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July 2, 2012

Mr. Jerry Wickham
Senior Hazardous Materials Specialist
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502-6577

c/o

Ms. Jan Shipley
Livermore Valley Joint Unified School District (LVJUSD)
685 East Jack London Boulevard
Livermore, California 94550

RE: Response Letter-Case Closure Review/Corrective Action Plan (CAP)
Laidlaw Transit-2900 Ladd Avenue, Livermore, California
Fuel Leak Case No. RO0000188, GeoTracker Global ID T0600100844
ACC Project Number: 3054-103.02

Dear Mr. Wickham:

ACC Environmental Consultants, Inc., (ACC) has prepared the enclosed Case Closure Response Letter/Corrective Action Plan (CAP) for the Case Closure Review for the Fuel Leak Case No. RO0000188/ GeoTracker Global ID T0600100844 at 2900 Ladd Avenue, Livermore, California. This Response Letter addresses the technical comments put forth in the April 12, 2012 Case Closure File Review prepared by Alameda County Environmental Health Services.

If you have any questions regarding this Work Plan, please call me at (510) 638-8400, extension 110 or email me at jsiudyla@accenv.com.

Sincerely,

Julia Siudyla
Project Geologist

Enclosures

Case Closure Review Response Letter/Corrective Action Plan (CAP)

2900 Ladd Avenue
Livermore, California

ACC Project Number 3054-103.02

Prepared for:

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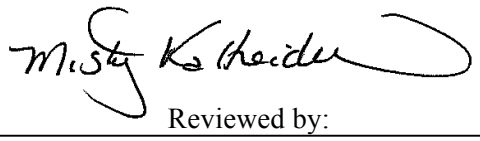

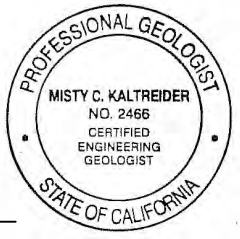

Reviewed by:
Misty C. Kaltreider, PG 7016, CEG 2466
Engineering Geologist

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1.0 INTRODUCTION

ACC Environmental Consultants, Inc., (ACC) has prepared the enclosed Case Closure Response Letter/Corrective Action Plan (CAP) for the Case Closure Review for the Fuel Leak Case No. RO0000188/ GeoTracker Global ID T0600100844 at 2900 Ladd Avenue, Livermore, California. This Response Letter addresses the technical comments put forth in the April 12, 2012 Case Closure File Review prepared by Alameda County Environmental Health Services.

1.1 Background

The Site is located at 2900 Ladd Avenue in Oakland, California (Figure 1). The Site is currently occupied by Livermore Joint and Unified School District Maintenance Yard (a.k.a. the LVJUSD Bus Barn). The former Underground Storage Tank Complex at the site consisted of three (3) USTs (Figure 2); 6,000-gallon regular gasoline, 6,000-gallon unleaded gasoline, and a 10,000-gallon diesel. In 1990, the 6,000-gallon regular gasoline UST located on the site failed tank tightness testing. As a result a soil boring was conducted which confirmed that the UST had an unauthorized release. All three USTs that were located on the subject property (including the 6,000-gallon regular gasoline UST) were removed from the ground in 1992.

Following tank removal, numerous soil and groundwater investigations were subsequently conducted at the site from 1990 through 2011 to delineate the extent of impact. These investigations are summarized in section 1.2 below.

1.2 Previous Site Investigations

August 1990 BSK & Associates (BSK) - Soil Boring/Sampling and Chemical Testing Report:
In 1990 the 6,000-gallon Regular Gasoline UST failed its tank tightness testing. As a result of this failure BSK conducted one angled soil boring (EB-1) to obtain a soil samples from underneath the UST. Two soil samples (EB-1, No. 2 and EB-1, No. 3) indicated elevated levels of Total Petroleum Hydrocarbons as Gasoline (TPHg) (1,500-2,300 mg/kg), Benzene (7.3-9.8 mg/kg), Toluene (54-79 mg/kg), Ethylbenzene (22-38mg/kg) and Total Xylenes (140-220 mg/kg) (BTEX). These levels exceeded the 1990 State Water Resource Control Board Actions Levels for TPHg and BTEX.

1990-1991 ENGEO Incorporated (ENGEO) Investigations:
In December of 1990 ENGEO conducted a soil and groundwater study in the vicinity of the UST basin on the subject property. ENGEO conducted three borings and converted one of the borings to a permanent monitoring well (MW-1). Both soil and groundwater samples were collected at MW-1. MW-1 was drilled to 67 feet bgs and the well screen was set from 42-67 feet bgs. Only soil sampling was conducted at the other two soil boring locations (B-1 and B-2). Soil samples indicated petroleum hydrocarbon soil impacts from 15-40 feet bgs. The groundwater sample from MW-1 indicated TPHg at 1,400 ppb (µg/L), Benzene at 63 ppb (µg/L), Ethylbenzene at 8 ppb (µg/L), Toluene at 52 ppb (µg/L), and Xylenes at 590 ppb (µg/L). Groundwater was encountered at 57 feet bgs during drilling and stabilized at 10 feet bgs.

It should be noted that during this investigation ENGEO punctured the 6,000-gallon regular gasoline UST. However, the UST was reportedly empty and no fuel was release.

1992 ENGEO Investigations:
In July and August of 1992 ENGEO conducted a groundwater-sampling event, well destruction, and removed the three (3) USTs. Groundwater sampling conducted on July 1, 1992 from MW-1, which reported elevated concentrations of fuel constituents. Well MW-1 was destroyed on July 9, 1992. In August of 1992 the

remaining product and USTs were removed. A 4th UST located adjacent to the LVJUSD property was also removed. At the time of the removal thirteen soil verification samples were collected from beneath the USTs, Product piping and dispensers. TPHg was detected at levels exceeding the laboratory detection limits under the north end of the Leaded Gasoline UST and under the Unleaded Gasoline Dispenser. Total Petroleum Hydrocarbons as Diesel (TPHd) was detected at levels exceeding the laboratory detection limits the north end of the Leaded Gasoline UST and under the Diesel Dispenser. Soil over excavation was conducted under the unleaded gasoline and diesel dispensers. Approximately 40 cubic yards (20 from the UST basin and 20 from the dispenser areas) of soil was removed and disposed of off site.

1993 ENGEO Investigations:
On July 8, 1993 ENGEO published a Soil and Groundwater Investigation Report that summarized results for 6 soil borings and the installation of MW-2, which was completed to 57 feet bgs and screened from 32 to 57 feet bgs. Information obtained from this report indicates that soil and groundwater impacts appear to be confined to the area to the northwest of the former UST Basin. Soil impacts appear to extend from 15 feet bgs to the top of the water table (approximately 35 feet bgs). Groundwater levels during the 1993 investigation were reported 15 feet higher than the 1992 event and the groundwater concentrations were also reported higher than previous events.

1994 ENGEO Investigations:
In July 1994 ENGEO conducted additional soil, groundwater, and soil gas investigation, which included the installation of monitoring wells MW-3 and MW-4. Both wells were completed to 53 feet bgs. Well MW-3 was screened from 28 to 53 ft bgs and well MW-4 was screened from 26 to 53 feet bgs. The groundwater sample from MW-2 reported 7,000 µg/L TPHg and 520 µg/L benzene. Wells MW-3 and MW-4 were both non-detect for TPHg and BTEX. Hydropunch groundwater samples collected from B10 and "A", indicated high levels of TPHg and BTEX up to 70,000 µg/L TPHg and 12,000 µg/L benzene. Soil samples collected during this investigation reported low to below laboratory detection limits for TPHg and BTEX. Based on the investigation, ENGEO indicated that a perched zone of groundwater was found at test holes B-9, B-10 "A", and in MW-4 at 20 feet bgs.

1998 SCA Environmental Inc. Tier 2 Assessment: Based on the Tier 2 assessment the site is not a candidate for closure. Two exposure pathways were identified at the site: 1) Soil leaching to groundwater and, 2) groundwater ingestion.

1999 ENEGO Investigations:
In July and August of 1999 well MW-5 was installed with a screen interval from 15 to 25 feet bgs. One soil sample was collected and analyzed from this boring (21.5 feet) and was non detect for TPHg and BTEX. Groundwater from this well was subsequently sampled and indicated elevated levels of TPHg and BTEX up to 92,000 µg/L TPHg and 9,900 µg/L benzene. MTBE was non detect.

Groundwater monitoring:
Periodic groundwater monitoring and sampling was conducted from 1995 through 2003. Initial sampling events reported detectable concentrations in well MW-2 and periodically in the other wells. In 2001, sheen was noted on the groundwater collected from MW-5. Depth to groundwater and groundwater flow direction were reported to vary seasonally. Groundwater sample results are summarized in Historical Soil and Groundwater Summary Tables included as Table 1 and Table 2.

November 2010- ACEHS Notice of Violation:
On November 18, 2010 Alameda County Environmental Heath Services (ACEHS) issued a Notice of Violation to LVJUSD pertaining to Fuel Leak Case Number RO0000188/GeoTracker Global ID T0600100844. ACEHS specifically requested a work plan to evaluate if the existing monitoring wells act

as conduits for vertical contamination migration; characterize the magnitude in the shallow and deeper groundwater zones through detailed lithologic assessment; conduct a water supply well survey within 2000 feet of the site; and comply with GeoTracker requirements.

2011 ACC Groundwater Monitoring Event:
In March of 2011 three monitoring wells were gauged and sampled. Depth to water in the wells ranged from 22.52 to 23.48 feet below top of well casing. During this event wells MW-2 and MW-3 were non detect for TPHg and BTEX, MW-4 was not sampled, and MW-5 had detections of TPHg and BTEX. No Free Product was found. Groundwater flow direction was not calculated.

2012 ACC Soil and Groundwater Characterization Report/Request for Low Risk Closure Report:
ACC's conducted eight (8) soil borings to a max depth of 65 feet below ground surface (bgs) in an effort to delineate the extent of soil and groundwater impact at the Site. In addition, ACC conducted three (3) CPT borings utilizing Columbia Technologies High Resolution Vertical Profiling Membrane Interface Probe (MIP).

This investigation concluded that thee remaining concentrations of TPHg and BTEX reported in the soil samples indicate that the impact is limited to the immediate down gradient vicinity of the former UST basin at depths ranging from 18- 25 ft bgs.

The remaining concentrations of TPHg and BTEX reported in the groundwater samples indicate that the impact is limited to the immediate down gradient vicinity of the former UST basin. Figure 6 depicts the extent of TPHg and Benzene in groundwater. The plume extends approximately 90 feet laterally from the source area. The majority of the impact appears to be limited to the shallow perched seasonal water-bearing zone that is separated by fine-grain soil. Concentrations in well MW2 and from adjacent grab water samples ACC3 and ACC4 are lower in then groundwater concentrations reported in well MW5, indicating the screen intervals extending into shallower impacted soil may contribute to elevated analyte concentrations in groundwater samples.

Existing monitoring wells at the site may be providing seasonal vertical conduits between shallow and the deeper water-bearing zones. Therefore, well abandonment is recommended to eliminate potential vertical preferential pathways. Soils at the Site are primarily fine-grained gravely clays with low estimated permeability which limit potential vertical, downward migration of dissolved-phase petroleum hydrocarbons into groundwater, and also minimize potential vertical, upward migration of vapor-phase petroleum hydrocarbons in soil gas.

Based on these conclusions ACC recommended that monitoring wells MW-2 through MW-4 be destroyed since they appear to be constructed to provide potential vertical conduit for shallow impacts into the deeper zones. Therefore, the wells should be properly abandoning the existing groundwater monitoring wells at the site. In addition, based on the limited residual impact and degrading concentrations over time, the residual concentrations in the soil and groundwater pose minimal risk to human health or the environment. ACC recommended that this site be evaluated for Low Risk Closure.

All soil sampling data is summarized in Table 1 and all groundwater sampling data is summarized in Table 2. All historical sample locations are provided on Figure 3- Previous Site Investigation Sample Location Map. The sample locations from the ACC 2011 investigation are presented on Figure 4.

2.0 SITE GEOLOGY

Based on ACC's initial site review, the existing network of four onsite monitoring wells appear to be screening in two water-bearing zones that have been identified below the site; Zone A at approximately 20 feet bgs (monitored by MW-5) and Zone B at approximately 35-55 feet bgs. Zone A appears to be a seasonal perched zone that does not appear to be horizontally continuous as it was only encountered during drilling of B-5/MW-2 and MW-5. Zone B appears to be monitored exclusively by well MW-1 at 42 to 67 feet bgs. Depth to groundwater varies seasonally. Since only well MW-5 was completed in the shallow zone, the groundwater flow direction in Zone A was not determined.

2.1 Regional Hydrogeology

According to the September 2005 *Groundwater Management Plan* prepared by the Zone 7 Water Agency (Zone 7), the site is located in the Mocho II Sub-Basin of the Main Livermore-Amadore Valley Groundwater Basin. Zone 7 Water Agency extracts groundwater from this basin for municipal drinking water. Sediments in this basin are described as recent alluvium consisting of sandy gravel and sandy clayey gravel from the surface to approximately 150 feet below grade (fbg). This alluvium overlies the Livermore Formation.

2.2 Site lithology

Based on the boring and well logs for the site, there appears to be shallow gravel/sand unit at approximately 12 to 25 feet bgs that is periodically saturated. The shallow unit was encountered in a majority of the borings B5 through B10, and MW1 – 5, however, during the initial investigation work conducted in 1990 B1 – B4 and MW-1 (Dec 1990) and during the ACC 2011 site characterization work (ACC2-ACC5), no free water was encountered in the shallow unit (Zone A). It is likely that this unit may have become saturated after completion of the monitoring wells that have screens and well pack intervals extending into to the shallow zone.

In general from review of the logs, a 6 to 10 foot thick fine-grain unit (clay to silt) was noted across the site that was found to separate the upper shallow unit with a deeper water-bearing zone. The deeper zone was noted in the logs as occurring in gravel/sandy zone at approximately 45 feet bgs and extends to the depth investigated of 67 feet bgs.

The well screens and sand pack for wells MW-2 through MW-4 extend from the deeper zone through the fine-grain clay layer separating the shallow and deeper zones and into the shallow zone. Well MW-5 was constructed to screen the shallow zone only and did not extend into the deeper zone. The majority of the residual soil impacts appear to be in the shallow permeable zone and extend into the fine-grain soil above the deeper water-bearing zone (11 to 36 feet bgs). No soil impacts were reported in the deeper permeable zone.

In reviewing the borings logs, it appears that soil logging and soil interpretation varied from the early 1990 through 2011. Because there appears to be some inconsistency in historical logging, our interpretation of the lithologic subsurface conditions are approximated and based on the observations made during our investigation in September 2011. Cross sections Overview (Figure 5) A-A' (Figure 6) and B-B' (Figure 7) illustrate the approximate subsurface conditions.

2.3 Hydrogeology

Previous groundwater monitoring of the existing wells associated with the site have found the depth to groundwater to range from 17.28 ft bgs to 39.5 ft bgs in the deeper screened wells (MW-1 through MW-4) and from 20.19 ft bgs to 24.35 ft bgs in the shallow screened well (MW-5). It is unknown if the monitoring wells have been surveyed to an established benchmark, and since the well screens for wells MW-2 through MW-4 appear to extend through two zones, the groundwater flow direction was not

calculated for the site. Based on sites in the area, the regional groundwater flow is generally varies from north to west.

Detailed cross sections are included as Figures 6 and 7. A Well Construction Details from the previously installed monitoring wells is summarized in Table 3.

3.0 Technical Comments

3.1 Comment Number 1

Water Supply Well in Proximity to Site:
A municipal water supply well (CWS-17) is located approximately 550 feet southeast of the site. This well is in addition to water supply wells identified in the Closure Report. We understand that well CWS-17 is not active at this time but may be used in the future. Pumping of well CWS-17 has the potential to change hydraulic gradients in the area and cause contamination from the 2900 Ladd Avenue site to migrate towards the water supply well. Because well CWS-17 is a potential receptor for the site, the fuel leak case cannot be closed at this time. Preparation of a Draft Corrective Action Plan (CAP) is expected to be necessary. We recommend a meeting be scheduled with ACEH prior to preparation of a CAP. Please call me at (510) 567-6791 or send me an electronic mail message at jerry.wickham@acgov.org to arrange a meeting to review options.

3.1.1 Comment Number 1 Response

Based on the findings from the additional investigation and limited extent of residual impact, the site appears to meet the San Francisco Bay Area Regional Water Quality Control Board's criteria for a low-risk site whereas:

- Contaminants remaining in the vadose zone must not reverse or threaten to reverse the mass reduction rate of groundwater pollutants. Rational provided in the Soil and Groundwater Characterization Report/Request for Low Risk Closure Report Fuel Leak Case No. RO0000188, GeoTracker Global ID T0600100844.

- Separate-phase product has been removed to the extent practicable. Rational provided in the Soil and Groundwater Characterization Report/Request for Low Risk Closure Report Fuel Leak Case No. RO0000188, GeoTracker Global ID T0600100844.

- No existing water supply wells, deeper aquifers, surface water or other receptors are threatened by pollutants remaining in the aquifer. Please See Comments below.

- The total pollutant mass remaining in the groundwater is decreasing at predicted rates and neither creates a risk to human health and safety or future beneficial uses(s) of the aquifer. Rational provided in the Soil and Groundwater Characterization Report/Request for Low Risk Closure Report Fuel Leak Case No. RO0000188, GeoTracker Global ID T0600100844.

Existing water supply wells, deeper aquifers, surface water or other receptors are threatened by pollutants remaining in the aquifer:

ACC has reviewed the well log for CWS-17 identified by ACEHS. This well log indicates that CWS-17 is a 30-inch diameter (transitioning to 16-inch at 516 feet bgs) municipal well installed in July 1960. This

well has a total depth of 529 feet. The sanitary seal on this well extends from 0 to 62 feet below ground surface. The well log also indicates that gas was reported in this boring from 309-472 feet bgs. It is unknown if "gas" identified in the boring log represented natural gas. This well is currently identified as inactive. Furthermore, this wells sanitary seal extends below the depth of all existing monitoring wells at the site and significantly below the known depth of existing contamination. In addition this well is not located in a down gradient position related to the contamination at the site.

The results of the sensitive receptor surveys conducted at sites in the area, indicated that there two active water supply wells/drinking water wells within 1⁄2 mile of the site. Both of these water supply wells/drinking water wells are located over 0.25 mile from the site. The closer water supply wells/drinking water well is located south from the site and the second water supply wells/drinking water well is located approximately 0.46 mile southwest from the site. Figure 5 illustrated the well locations.

As presented on Figure 8, TPHg Iso-concentration Map, the extent of the dissolved plume appears to be confined to the immediate downgradient vicinity of the UST basin around MW-5 on the site. As compared to the 2000 groundwater plume, the residual groundwater plume is shrinking and confined to the shallow perched zone onsite.

The properties downgradient and surrounding the site are residential homes and an elementary school. However, based on the limited extent of the plume and the lack of any onsite structures over the plume, the potential risk of residual plume to affect human health or the environment is considered low since the residual impact is localized in the soil immediately adjacent to the former tank excavation at depths from 18 to 25 feet bgs. Groundwater flow direction has been measured in previous groundwater monitoring events at the site to be to the North-Northwest. The regional groundwater flow is generally varies from north to west.

Based on the limited extent of the plume and degraded concentrations over time, the potential for the onsite plume to impact neighboring properties and water supply wells is minimal. In the event that ACHCS does not concur that this site meets the low risk closure criteria, ACC has presented an alternated Corrective Action Plan outlined in Section 4, below.

3.2 Comment Number 2

Monitoring Well Destruction:
Monitoring wells MW-2 through MW-4 appear to provide a potential vertical conduit for migration of contamination from shallower to deeper zones. These wells will need to be decommissioned to remove the potential vertical conduit. Please include plans to decommission and replace these wells as necessary in the Draft CAP requested below.

3.2.2 Comment Number 2 Response

ACC proposes to decommission MW-2 through MW-4, See Section 5.0 below.

4.0 Corrective Action Dual Phase Extraction (DPE) Pilot Test

Groundwater in monitoring wells MW-2 and MW-5 is impacted by elevated TPHg and BTEX. The dissolved-phase petroleum hydrocarbon concentrations in wells MW-2 and MW-5, indicates an ongoing source of impact to groundwater. Based on the nature and extent of hydrocarbon impacts at the site Dual Phase Extraction (DPE) may provided the most cost effective approach for clean up at the site.

DPE also known as multi-phased extraction (MPE) is a technology that uses high vacuum pumps to

extract various combinations impacted groundwater, separate phased petroleum products, and soil vapors. Extracting groundwater depresses the groundwater table and exposes hydrocarbons smeared in soils below the water table. Extracted liquids and vapor are then either treated and/or collected for disposal. The US Environmental Protection Agency (USEPA) indicates that DPE technology can be divided into two categories:

Single-Pump Systems. Single-pump systems rely on high-velocity airflow to lift suspended liquid droplets upwards by frictional drag through an extraction tube to the land surface. Single-pump vacuum extraction systems can be used to extract groundwater or combinations of separate-phase product and groundwater.

Single-pump DPE systems represent a recent adaptation of the long-established technology known as "vacuum groundwater extraction". This technology has been used for many decades as a standard method for extracting groundwater to control seepage or effect dewatering during excavation, construction and mining activities.

Single-pump DPE systems are generally better suited to low-permeability conditions, and they are difficult to implement at sites where natural fluctuations in groundwater levels are substantial. United States patents exist on certain applications of single-pump DPE systems (Hess *et al.*, 1991; Hajali *et al.*, 1992; Hess *et al.*, 1993). Single-pump DPE technology is sometimes referred to as bioslurping (Powers, 1994).

Dual-Pump Systems. The somewhat more conventional dual-pump systems use one pump to extract liquids from the well and a surface blower (the second pump) to extract soil vapor. A third DPE configuration uses a total of three pumps, including the surface blower together with one pump to extract floating product and one to extract groundwater. Both double- and triple-pump DPE systems extract the well liquids separately from the soil vapor and are similar in operation and application

Dual-pump DPE systems are simply a combination of traditional soil vapor extraction (SVE) and groundwater (and/or floating product) recovery systems. Dual-pump systems tend to be more flexible than single-pump systems, making dual-pump systems easier to apply over a wider range of site conditions (*e.g.*, fluctuating water tables, wide permeability ranges); however, equipment costs are higher.

4.1 48-Hour Pilot Test Event:

ACC proposes to utilize well MW-5 as a single extraction point. Since existing wells are screened into the deeper zone and are proposed to be destroyed; a temporary monitoring point will be installed near MW2 to be utilized as an observation point. The observation well will be constructed with a screen interval similar to MW5. The pilot test would aid in determining:

- The magnitude and potential sustainability of extracted hydrocarbon vapors;
- Determine the air flow rate that the vadose and dewatered soils can yield;
- Determine if the aquifer yield will be enhanced under vacuum;
- Determine sustainability yield;
- Assess groundwater drawdown and hydraulic control;
- Assess vacuum distribution and pneumatic radius of influence;
- Collect data to assist in full-scale remediation system design.

During the 48-hour pilot test event, vapor samples would be obtained from the observation well and extraction well at the start and at the end of the event. Combined well influent vapor samples would be obtained at the start and at the end of the event in 1-liter tedlar bags. A state certified laboratory

(TestAmerica) will analyze all groundwater and soil vapor samples for Total Petroleum Hydrocarbons as gasoline (TPHg), TPH as diesel, Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX).

4.2 Data Collection

ACC will collect water level measurements from all onsite wells (existing monitoring and extraction wells). Semi-annual groundwater sampling will be conducted prior to the pilot testing. In addition, induced vacuum, (in/H2O) readings in the observation well would be obtained at a minimum of twice a day to determine the radius of influence. Depth to water measurements would be collected a minimum of twice a day in the wells for the purpose of evaluating the drawdown and radius of influence. The DPE system would be manned 24 hours a day and would be able to take the appropriate vacuum and groundwater measurements.

4.3 Disposal of Generated Wastewater During a 48-Hour Event

Groundwater extracted during an event would be treated through two 500-pound granular activated carbon canisters connected in series. Approximately 100-300 gallons per day of treated groundwater would be reused/recycled in a liquid ring pump system as makeup water. Any remaining treated groundwater would be discharged onsite in accordance with a sanitary sewer permit or periodically transported via vacuum truck for offsite disposal.

5.0 WELL ABANDONMENT

Upon acceptance of this CAP and the pilot test has been completed. ACC will destroy onsite wells MW-2, MW-3 and MW-4.

The wells will be destroyed by overdrilling and removing all well construction materials within the original borehole. Using a tremie pipe, the created holes will be filled from the bottom upward to the original ground surface with a neat cement grout mix containing approximately 90 pounds of portland cement to five gallons of water.

The following procedures will be followed for each of the wells:

- Prior to destruction, the wells will be investigated to determine its condition and the details of construction. The depth, casing diameter, and construction and sealing design of the well will be ascertained. The wells will be sounded immediately before destruction to determine whether any obstructions would interfere with destruction.

- All downhole equipment will be precleaned prior to drilling the boring.

- The wells will be destroyed by removing all materials within the original borehole (including the well casing, screen, filter pack, and annular seal). This will be accomplished by overdrilling the borehole with 8-inch outside-diameter, hollow-stem augers. Annular well materials will be removed from the augers as they advance and will be stockpiled or drummed appropriately.

- Overdrilling will be completed to the total depths of 53 and 57 feet bgs in the wells.

- The reamed borings will then be backfilled with a neat cement grout mix after the augers are removed from the boring. The grout will be placed into the boring from the bottom of the hole to the surface via a tremie pipe. The top of each well will be finished to match the existing surface.

The polyvinyl chloride (PVC) well components and christy boxes will be removed and disposed by. Drill cuttings will be placed in 55-gallon drums and stored temporarily on site pending sample analytical results. One sample will be collected from each drum and composited at a state-certified laboratory for analysis of total petroleum hydrocarbons as diesel and motor oil (TPHd/mo).

Observation well installation:
During destruction of MW2 through MW4, the temporary observation well will be installed near MW2. The observation well will be constructed using hollow-stem augers and screened similar to MW5, from 15.to 25 feet bgs. The observation well will be destroyed via overdrilling following completion of the pilot test and follow-up confirmation monitoring.

6.0 REPORTING

A technical report discussing the pilot test, observations and findings, analytical results, conclusions, and recommendations will be prepared for LVJUSD and for submission to ACHCS.

All work conducted will be completed under the direct supervision of California Certified Engineering Geologist.

7.0 SCHEDULE

ACC will perform and complete the work within two weeks upon authorization to proceed from the Client and approval from ACEH.

8.0 PERJURY STATEMENT

ACC Environmental Consultant's declares, under penalty and perjury, that the information and/or recommendations contained in this document are true to the best of our knowledge.

Source: Google Earth, 2011

Title ***Site Location Map 2900 Ladd Avenue Livermore, California***	
Figure Number: 1	Scale: None
Project Number: 3054-103.01	Drawn By: JS
A·C·C ENVIRONMENTAL CONSULTANTS An Employee Owned Company	Date: 4/7/11
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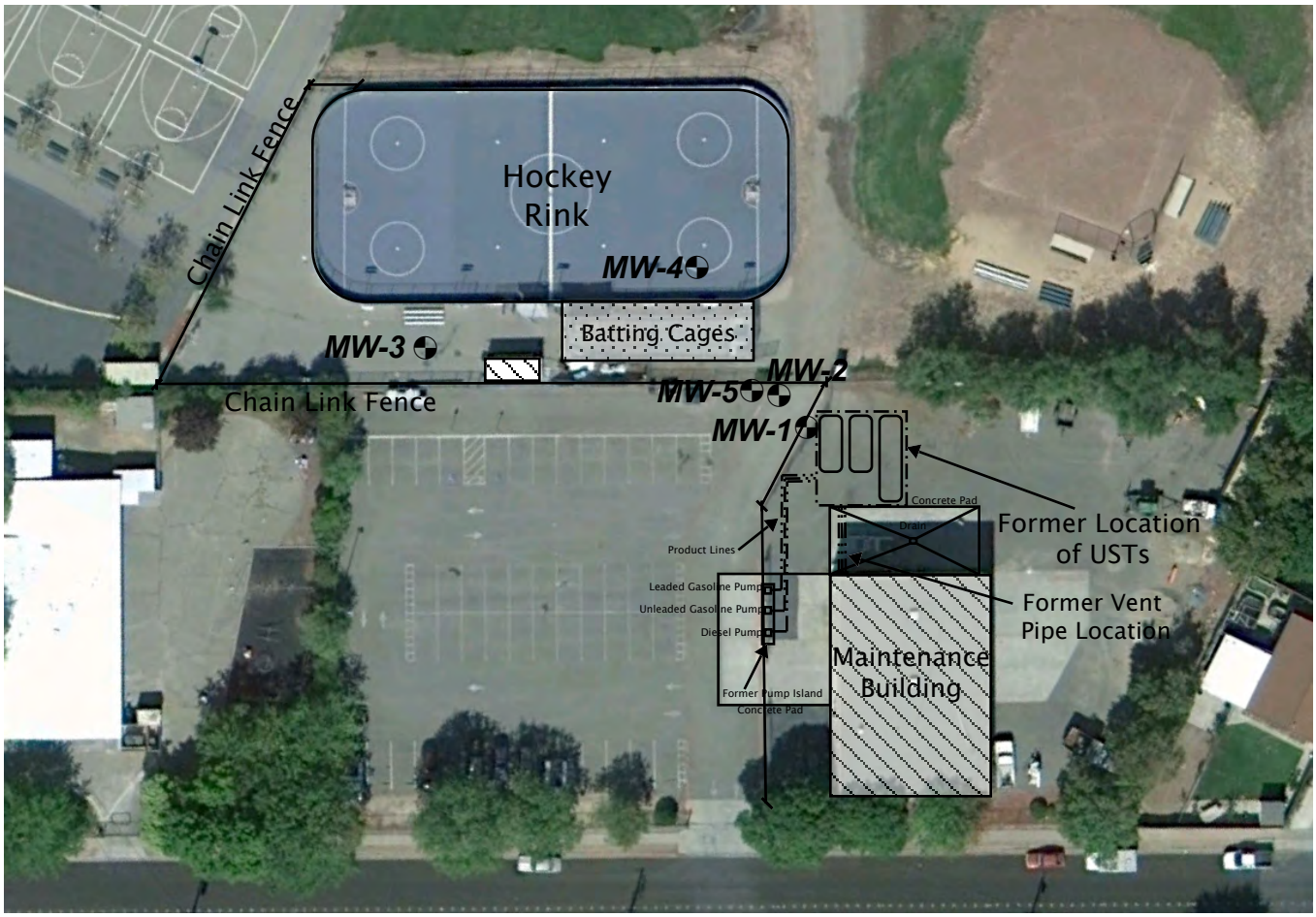

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Title ***Site Plan***
2900 Ladd Avenue
Livermore, California

Figure Number: 2	Drawn By: JS
Project Number: 3054-103.01	Date:4/6/11

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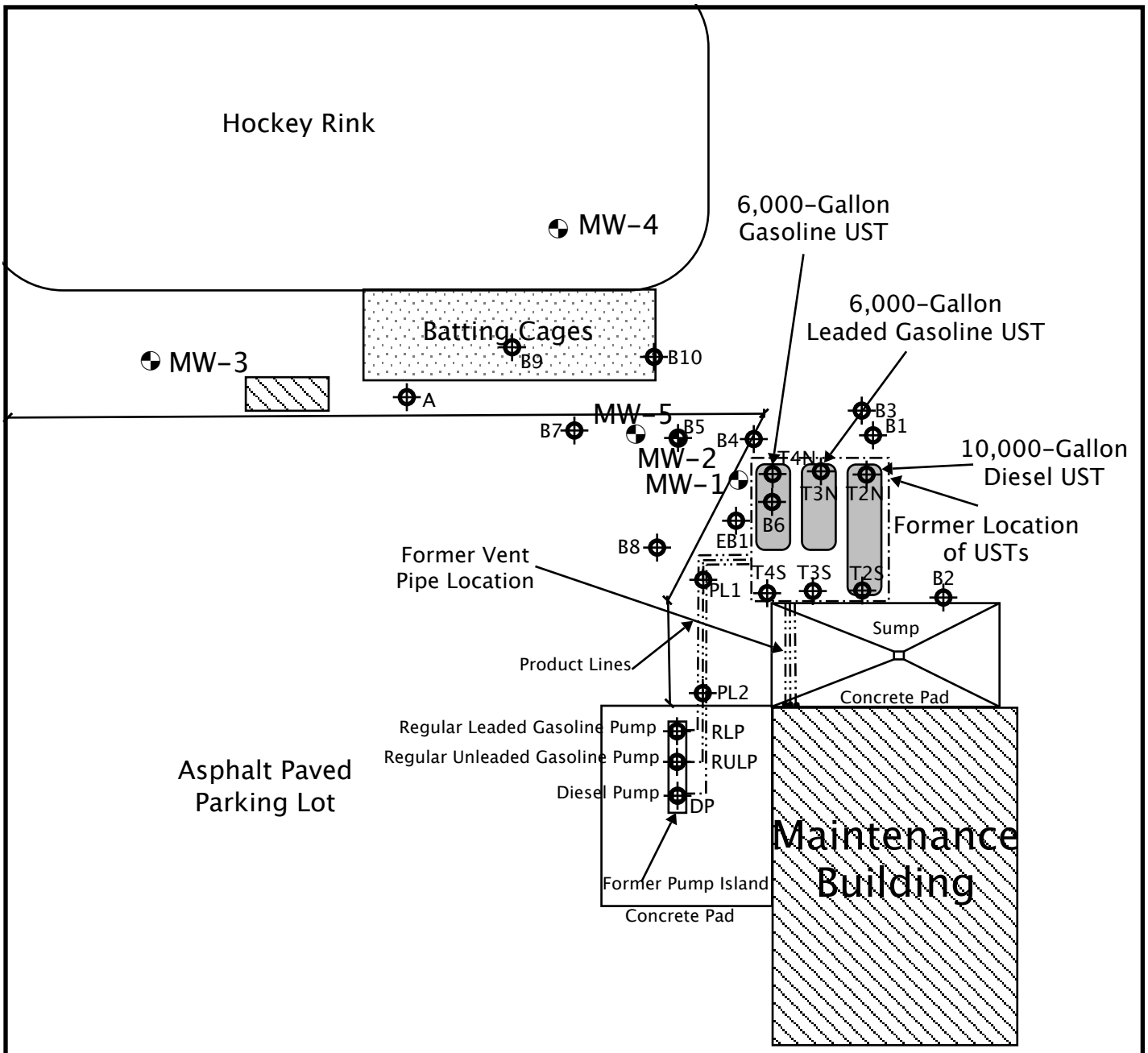

Scale

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Title ***Historical Sample Location Map***
2900 Ladd Avenue
Livermore, California

Figure Number: 3	Scale: None
Project Number: 3054-103.01	Drawn By: JS
	Date: 4/7/11

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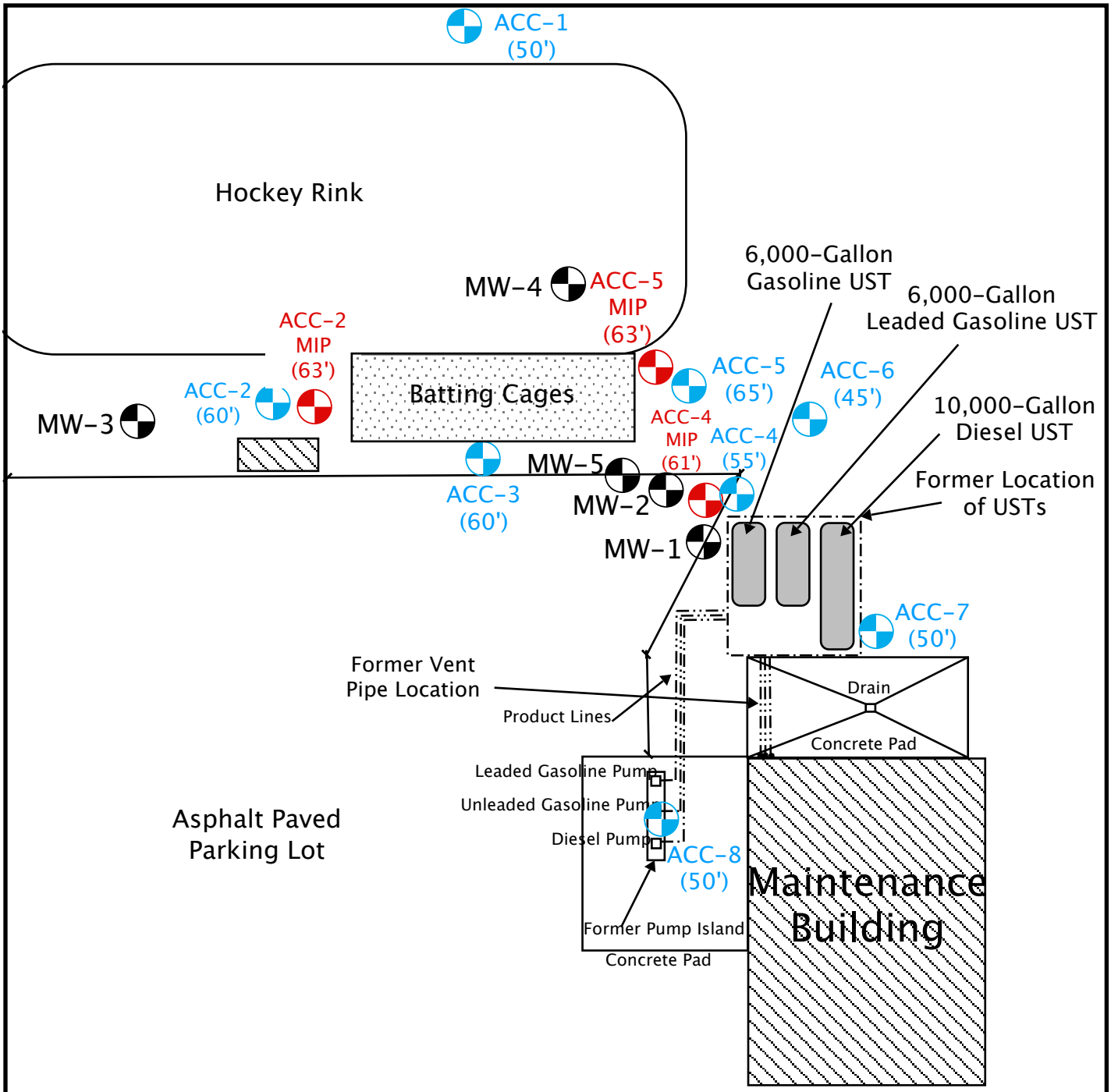

Title ***2011 Sample Locations***
2900 Ladd Avenue
Livermore, California

Figure Number: 4	Scale: None
Project Number: 3054-103.01	Drawn By: JS/GS
	Date: 9/22/11

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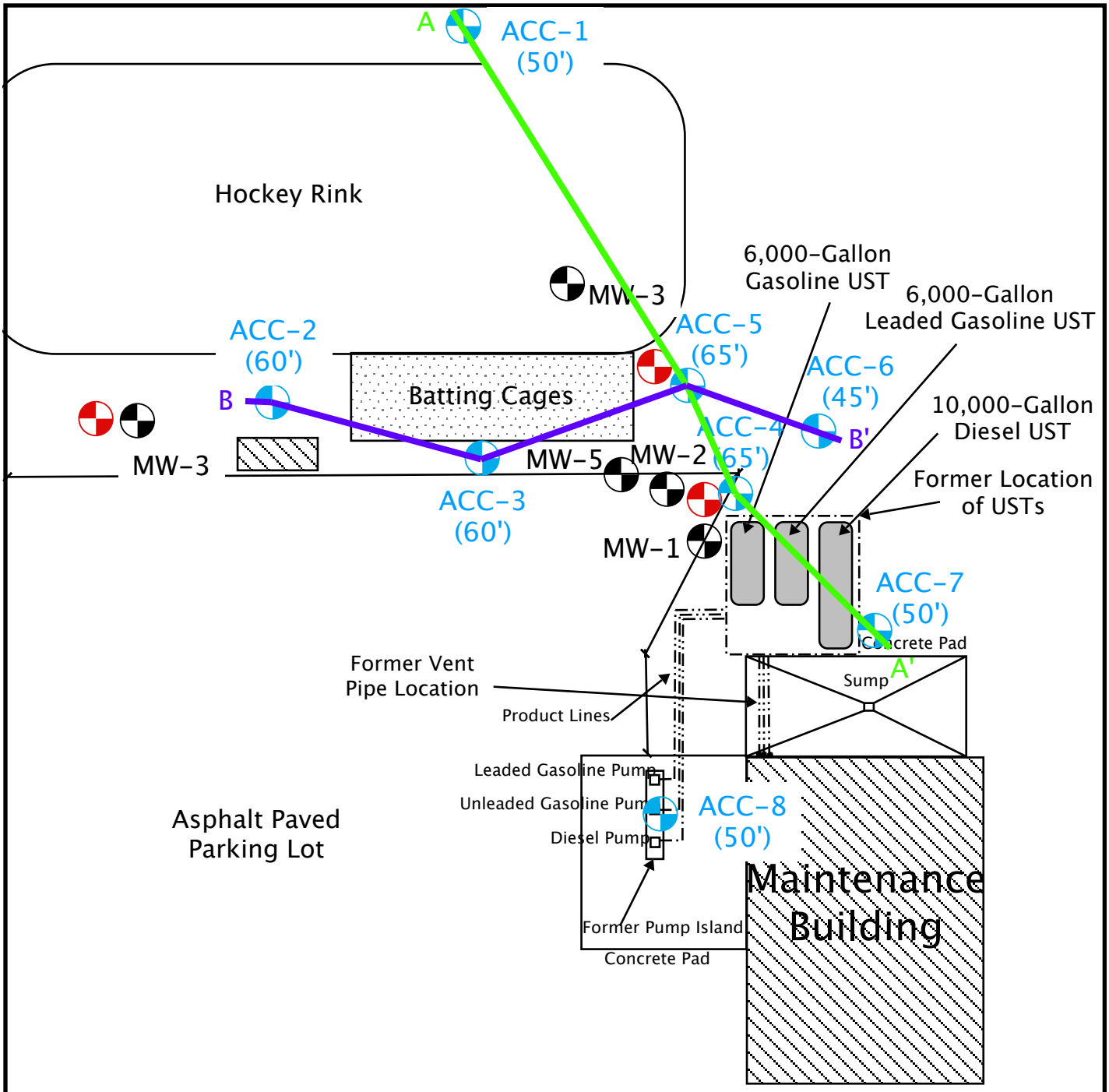

Title ***Cross Section Overview Map***
2900 Ladd Avenue
Livermore, California

Figure Number: 5	Scale: None
Project Number: 3054-103.01	Drawn By: JS/GS
	Date: 9/22/11

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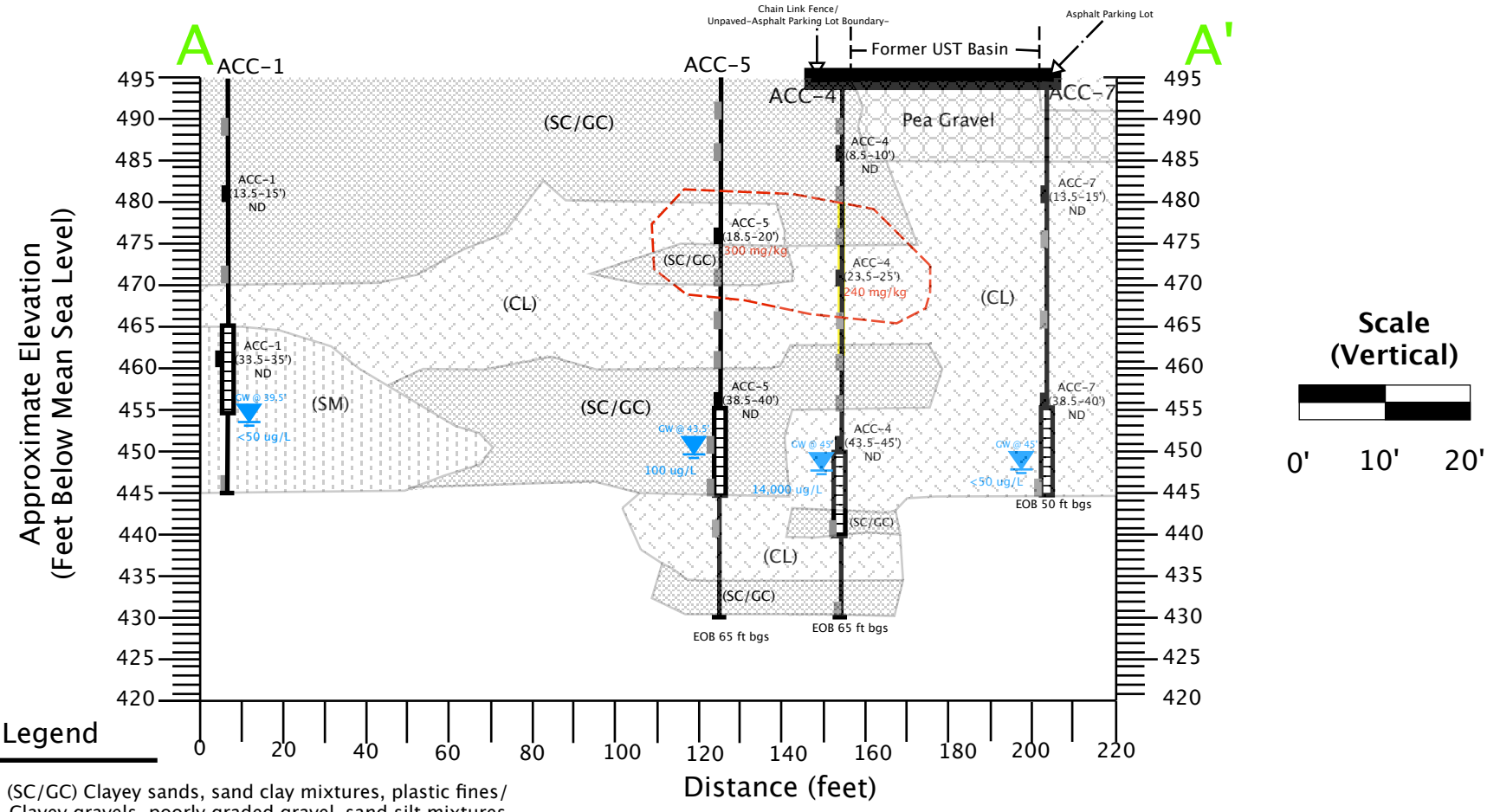
N W E S



Scale (Vertical)

0' 10' 20'

Scale (Horizontal)

0' 20' 40'

Legend

- (SC/GC) Clayey sands, sand clay mixtures, plastic fines/ Clayey gravels, poorly graded gravel-sand silt mixtures
- (SM) Silty sands, sand silt mixtures, non plastic fines
- Pea Gravel
- (CL) Inorganic clays of low-medium plasticity, gravely clays, sandy clays, silty clays, lean clays

- Depth to water during drilling
- Approximate 100 mg/kg extent of TPHg in soil
- 1.1 mg/kg Level of TPHg in soil
- <50 ug/L Level of TPHg in groundwater

- Soil sample collected
- Soil sample collected and submitted for analysis
- Odor noted on boring logs
- Screened interval of temporary monitoring well
- Bottom of boring

Title *2011 Geologic Cross Section A-A'*
2900 Ladd Avenue
Livermore, California

Figure Number: 8	Scale: None
Project Number: 6470-034.01	Drawn By: JS
	Date: 12/19/11

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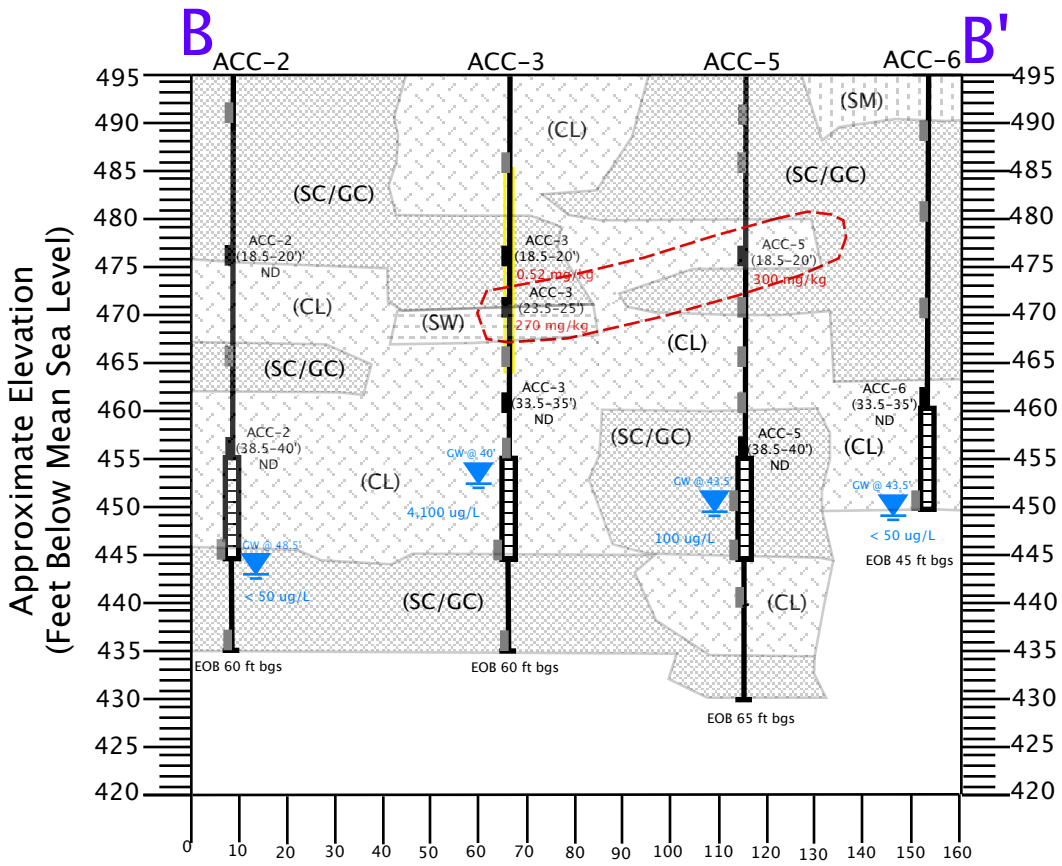
A-A'



20'
10'
0'
Scale
Vert. 1'=20'

Legend

- (SW) Well graded sands, gravelly sands, little or no fines
- (SM) Silty sands, sand silt mixtures, non plastic fines
- (CL) Inorganic clays of low-medium plasticity, gravely clays, sandy clays, silty clays, lean clays
- (SC/GC) Silty Sands, poorly graded sand-silt mixtures

Distance (feet)
Scale Horz. 1'=40'
0' 20' 30'

- Soil sample collected
- Soil sample collected and submitted for analysis
- Odor noted on boring logs
- Screened interval of temporary monitoring well
- Bottom of boring
- Approximate 100 mg/kg extent of TPHg in soil
- 1.1 mg/kg — Level of TPHg in soil
- <50 ug/L — Level of TPHg in groundwater
- Depth to water during drilling

Title ***2011Geologic Cross Section B-B'***
2900 Ladd Avenue
Livermore, California

Figure Number: 9	Scale: None
Project Number: 6470-034.01	Drawn By: JS
	Date: 4/7/11

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B-B'

TABLE 1
Soil Analytical Summary Table
2900 Ladd Avenue
Livermore, California
ACC Project Number: 3054-103.01

Boring / Sample ID	Sampling Depth / Interval - Feet Below Ground Surface (bgs)	Sampling Date	Matrix	Constituents & Concentrations mg/kg							
				TPHg	TPHd	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Lead
ACC1 (13.5-15')	13.5-15	12-Sep-11	Soil (mg/kg)	<0.240	NT	<0.0049	<0.0049	<0.0049	<0.0098	<0.0049	NT
ACC1 (33.5-35')	33.5-35	12-Sep-11	Soil (mg/kg)	<0.130	NT	<0.0027	<0.0027	<0.0027	<0.0053	<0.0027	NT
ACC2 (18.5-20')	18.5-20	13-Sep-11	Soil (mg/kg)	<0.120	NT	<0.0024	<0.0024	<0.0024	<0.0048	<0.0024	NT
ACC2 (38.5-40')	38.5-40	13-Sep-11	Soil (mg/kg)	<0.120	NT	<0.0024	<0.0024	<0.0024	<0.0048	<0.0024	NT
ACC3 (8.5-10')	8.5-10	14-Sep-11	Soil (mg/kg)	<0.120	NT	<0.0023	<0.0023	<0.0023	<0.0046	<0.0023	NT
ACC3 (18.5-20')	18.5-20	14-Sep-11	Soil (mg/kg)	0.52	NT	**0.046**	0.0047	0.027	0.097	<0.0021	NT
ACC3 (23.5-25')	23.5-25	14-Sep-11	Soil (mg/kg)	**270**	NT	**<2**	2.7	<2	**31**	**<2**	NT
ACC3 (33.5-35')	33.5-35	14-Sep-11	Soil (mg/kg)	<0.110	NT	<0.0023	0.0024	<0.0023	0.0074	<0.0023	NT
ACC4 (8.5-10')	8.5-10	14-Sep-11	Soil (mg/kg)	<0.110	NT	<0.0022	<0.0022	<0.0022	<0.0045	<0.0022	NT
ACC4 (23.5-25')	23.5-25	14-Sep-11	Soil (mg/kg)	**240**	NT	**2.3**	**12**	**2.8**	**24**	**<2.3**	NT
ACC4 (43.5-45')	43.5-45	14-Sep-11	Soil (mg/kg)	0.58	NT	0.02	0.051	0.001	0.058	<0.0047	NT
ACC5 (18.5-20')	18.5-20	15-Sep-11	Soil (mg/kg)	**300**	NT	**1.2**	**8.7**	**4.8**	**30**	**<1.1**	NT
ACC5 (38.5-40')	38.5-40	15-Sep-11	Soil (mg/kg)	<0.098	NT	<0.002	<0.002	<0.002	<0.0039	<0.002	NT
ACC6 (33.5-35')	33.5-35	15-Sep-11	Soil (mg/kg)	<0.094	NT	<0.0019	<0.0019	<0.0019	<0.0038	<0.0019	NT
ACC7 (13.5-15')	13.5-15	16-Sep-11	Soil (mg/kg)	<0.110	NT	<0.0023	<0.0023	<0.0023	<0.0045	<0.0023	NT
ACC7 (38.5-40')	38.5-40	16-Sep-11	Soil (mg/kg)	<0.120	NT	<0.0024	<0.0024	<0.0024	<0.0048	<0.0024	NT
ACC8 (5-6.5')	5-6.5	16-Sep-11	Soil (mg/kg)	<0.110	NT	<0.0022	<0.0022	<0.0022	<0.0044	<0.0022	NT
ACC8 (43.5-45')	43.5-45	16-Sep-11	Soil (mg/kg)	<0.120	NT	<0.0023	<0.0023	<0.0023	<0.0047	<0.0023	NT
B1-2	16	13-Dec-90	Soil (mg/kg)	1.1	NT	**0.18**	0.036	0.0053	0.032	NT	NT
B1-3	21	13-Dec-90	Soil (mg/kg)	1.5	NT	**0.16**	0.071	0.0081	0.051	NT	NT
B1-5	31	13-Dec-90	Soil (mg/kg)	ND	NT	0.013	ND	ND	ND	NT	NT
B1-11	44	13-Dec-90	Soil (mg/kg)	ND	NT	0.004	ND	ND	ND	NT	NT
B2-2	16	13-Dec-90	Soil (mg/kg)	ND	NT	0.016	0.0026	ND	ND	NT	NT
MW1-2	16	13-Dec-90	Soil (mg/kg)	**970**	NT	**8.1**	**27**	**13**	**27**	NT	NT
MW1-4	26	13-Dec-90	Soil (mg/kg)	**1,000**	NT	ND	**27**	**10**	**53**	NT	NT
MW1-6	36	13-Dec-90	Soil (mg/kg)	**2,700**	NT	ND	**27**	**10**	**53**	NT	NT
MW1-8	46	13-Dec-90	Soil (mg/kg)	ND	NT	0.001	0.004	ND	0.0099	NT	NT
EB-1, No. 2	14	25-Jul-90	Soil (mg/kg)	**2,300**	NT	**9.8**	**79**	**38**	**220**	NT	NT
EB-1, No. 3	17	25-Jul-90	Soil (mg/kg)	**1,500**	NT	**7.3**	**54**	**22**	**140**	NT	NT
T2-1N	11.5	6-Aug-92	Soil (mg/kg)	ND	37	ND	ND	ND	ND	NT	NT
T2-1S	12	6-Aug-92	Soil (mg/kg)	NT	ND	ND	ND	ND	ND	NT	NT
T3-1N	11.5	6-Aug-92	Soil (mg/kg)	ND	Nt	ND	ND	ND	ND	NT	NT
T3-1S	12	6-Aug-92	Soil (mg/kg)	ND	NT	ND	ND	ND	ND	NT	NT
T4-1N	11.5	6-Aug-92	Soil (mg/kg)	**1,200**	NT	**2.1**	**4.2**	**2.4**	**160**	NT	12
T4-1S	12	6-Aug-92	Soil (mg/kg)	ND	NT	ND	ND	ND	ND	NT	8.2
PL-1	4	6-Aug-92	Soil (mg/kg)	ND	ND	ND	ND	ND	ND	NT	NT
PL-2	4	6-Aug-92	Soil (mg/kg)	ND	ND	ND	ND	ND	ND	NT	NT
DP-1	3.75	6-Aug-92	Soil (mg/kg)	NT	46	ND	ND	ND	ND	NT	NT
RULP-1	3.5	6-Aug-92	Soil (mg/kg)	3	NT	ND	ND	0.0074	0.013	NT	12
RLP-1	3.75	6-Aug-92	Soil (mg/kg)	ND	NT	ND	ND	ND	ND	NT	NT
****ESLs - Groundwater is a current source of drinking water**	**Residential Land Use**	**Shallow Soil (≤ 3 m)**	**Soil (mg/kg)**	**83**	**83**	**0.044**	**2.9**	**2.30**	**2.26**	**0.023**	**200**
		Deep Soil (>3 m)	**Soil (mg/kg)**	**83**	**83**	**0.044**	**2.9**	**3.27**	**2.26**	**0.023**	**750**
	Commercial / Industrial Land Use	**Shallow Soil (≤ 3 m)**	**Soil (mg/kg)**	**83**	**83**	**0.044**	**2.9**	**3.27**	**2.26**	**0.023**	**750**
		Deep Soil (>3 m)	**Soil (mg/kg)**	**83**	**83**	**0.044**	**2.9**	**3.27**	**2.26**	**0.023**	**750**
PRG's		**Residential**	**Soil (mg/kg)**	**NA**	**NA**	**1.1**	**5,000**	**5.4**	**630**	**43**	**400**
		Commercial	**Soil (mg/kg)**	**NA**	**NA**	**5.4**	**46,000**	**27**	**2,700**	**220**	**800**
California Human Health Screening Levels (CHHSLS)		**Residential**	**Soil (mg/kg)**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**80**
		Commercial	**Soil (mg/kg)**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**320**

TABLE 1
Soil Analytical Summary Table
2900 Ladd Avenue
Livermore, California
ACC Project Number: 3054-103.01

Boring / Sample ID	Sampling Depth / Interval - Feet Below Ground Surface (bgs)	Sampling Date	Matrix	Constituents & Concentrations mg/kg							
				TPHg	TPHd	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Lead
B4-2	21	9-Apr-93	Soil (mg/kg)	**800**	9.1	**1.9**	**22**	**8.1**	**56**	NT	NT
B4-3	26	9-Apr-93	Soil (mg/kg)	**2,300**	ND	**7.7**	**88**	**35**	**210**	NT	NT
B4-4	30.5	9-Apr-93	Soil (mg/kg)	31	ND	**0.051**	0.64	**3.5**	**2.4**	NT	NT
B5-2	20.5	9-Apr-93	Soil (mg/kg)	**790**	ND	**2.8**	**21**	**6.7**	**4.1**	NT	NT
B5-3	25.5	9-Apr-93	Soil (mg/kg)	24	ND	**0.052**	0.62	**3.3**	2.2	NT	NT
B5-4	36	9-Apr-93	Soil (mg/kg)	1.1	ND	**0.23**	0.0083	ND	0.13	NT	NT
B5-5	41	9-Apr-93	Soil (mg/kg)	ND	ND	ND	ND	ND	ND	NT	NT
B6-1	15.5	9-Apr-93	Soil (mg/kg)	**860**	46	ND	**13**	**83**	**55**	NT	NT
B6-2	21	9-Apr-93	Soil (mg/kg)	**530**	**120**	**1.9**	**17**	**73**	**44**	NT	NT
B6-3	26	9-Apr-93	Soil (mg/kg)	**1,200**	ND	**4.1**	**39**	**150**	**100**	NT	NT
B6-4	31	9-Apr-93	Soil (mg/kg)	**410**	ND	ND	**4.5**	**35**	**22**	NT	NT
B7-1	16	9-Apr-93	Soil (mg/kg)	**670**	ND	**1.2**	**16**	**97**	**58**	NT	NT
B7-2	21	9-Apr-93	Soil (mg/kg)	46	ND	**0.19**	1.3	**6**	**3.6**	NT	NT
B7-3	26	9-Apr-93	Soil (mg/kg)	**480**	ND	ND	**6.7**	**40**	**25**	NT	NT
B7-4	31	9-Apr-93	Soil (mg/kg)	65	ND	**8.4**	1.3	**7.5**	**4.8**	NT	NT
B8-2	21	9-Apr-93	Soil (mg/kg)	18	ND	**1.6**	**3.1**	**3.3**	2.2	NT	NT
B8-3	26	9-Apr-93	Soil (mg/kg)	ND	ND	**0.08**	0.77	0.11	0.73	NT	NT
B8-4	30.5	9-Apr-93	Soil (mg/kg)	ND	ND	**0.05**	0.20	0.005	0.37	NT	NT
MW3-1	10	1-Jul-94	Soil (mg/kg)	ND	NT	ND	ND	ND	ND	NT	NT
MW3-2	15	1-Jul-94	Soil (mg/kg)	ND	NT	ND	ND	ND	ND	NT	NT
MW3-3	20	1-Jul-94	Soil (mg/kg)	ND	NT	ND	ND	ND	ND	NT	NT
MW3-4	25	1-Jul-94	Soil (mg/kg)	ND	NT	ND	ND	ND	ND	NT	NT
MW3-5	30	1-Jul-94	Soil (mg/kg)	ND	NT	ND	ND	ND	ND	NT	NT
MW3-6	35	1-Jul-94	Soil (mg/kg)	ND	NT	ND	ND	ND	ND	NT	NT
MW3-7	40	1-Jul-94	Soil (mg/kg)	ND	NT	ND	ND	ND	ND	NT	NT
MW4-1	10	1-Jul-94	Soil (mg/kg)	ND	NT	ND	ND	ND	ND	NT	NT
MW4-2	15	1-Jul-94	Soil (mg/kg)	26	NT	**0.21**	0.75	0.21	1.4	NT	NT
MW4-3	20	1-Jul-94	Soil (mg/kg)	44	NT	**0.25**	0.70	0.28	**2.3**	NT	NT
MW4-4	25	1-Jul-94	Soil (mg/kg)	ND	NT	ND	ND	ND	ND	NT	NT
MW4-5	30	1-Jul-94	Soil (mg/kg)	ND	NT	ND	ND	ND	ND	NT	NT
MW4-6	35	1-Jul-94	Soil (mg/kg)	ND	NT	ND	ND	ND	ND	NT	NT
MW4-7	40	1-Jul-94	Soil (mg/kg)	ND	NT	ND	ND	ND	ND	NT	NT
MW4-8	45	1-Jul-94	Soil (mg/kg)	ND	NT	ND	ND	ND	ND	NT	NT
B9-1	15	1-Jul-94	Soil (mg/kg)	ND	NT	**0.074**	0.008	0.011	0.059	NT	NT
B9-2	20	1-Jul-94	Soil (mg/kg)	**640**	NT	**4.2**	**23**	10	**70**	NT	NT
B9-3	25	1-Jul-94	Soil (mg/kg)	ND	NT	**0.12**	0.013	ND	0.02	NT	NT
B10-1	14	1-Jul-94	Soil (mg/kg)	3	NT	**0.5**	0.57	0.11	0.62	NT	NT
B10-2	18	1-Jul-94	Soil (mg/kg)	ND	NT	ND	ND	ND	ND	NT	NT
MW5-4	22	28-Jun-00	Soil (mg/kg)	ND	NT	ND	ND	ND	ND	ND	NT
****ESLs - Groundwater is a current source of drinking water**	**Residential Land Use**	**Shallow Soil (≤ 3 m)**	**Soil (mg/kg)**	**83**	**83**	**0.044**	**2.9**	**2.30**	**2.26**	**0.023**	**200**
		Deep Soil (>3 m)	**Soil (mg/kg)**	**83**	**83**	**0.044**	**2.9**	**3.27**	**2.26**	**0.023**	**750**
	Commercial / Industrial Land Use	**Shallow Soil (≤ 3 m)**	**Soil (mg/kg)**	**83**	**83**	**0.044**	**2.9**	**3.27**	**2.26**	**0.023**	**750**
		Deep Soil (>3 m)	**Soil (mg/kg)**	**83**	**83**	**0.044**	**2.9**	**3.27**	**2.26**	**0.023**	**750**
PRG's		**Residential**	**Soil (mg/kg)**	**NA**	**NA**	**1.1**	**5,000**	**5.4**	**630**	**43**	**400**
		Commercial	**Soil (mg/kg)**	**NA**	**NA**	**5.4**	**46,000**	**27**	**2,700**	**220**	**800**
California Human Health Screening Levels (CHHSLS)		**Residential**	**Soil (mg/kg)**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**80**
		Commercial	**Soil (mg/kg)**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**320**

Notes

***ESLs = Bay Area Regional Water Quality Control Board Environmental Screening Levels (Interim Final May 2008), where Groundwater IS a Current Source of Drinking Water*

PRGs=EPA Region 9 Preliminary Remediation Goal (April 2009)

CHHSLs = California Human Health Screening Levels for Soil, Cal EPA (January 2005) (Lead Revision September 2009)

NT: Not Tested; NM: Not Measured; NS: Not Sampled

**-- No Data*

Shadeded/Bolded Values Exceed Their Respective Criteria

TABLE 2
Groundwater Analytical Summary Table
2900 Ladd Ave
Livermore, CA
ACC Project Number: 3054-103.01

Boring / Well ID	Sampling Date	Matrix	DTW (in feet)	Constituents and Concentrations (µg/L)					
				TEPH-g	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
ACC-1	12-Sep-11	Water	39.5	<50	<0.50	<0.50	<0.50	<1.0	<0.50
ACC-2	13-Sep-11	Water	48.5	<50	<0.50	<0.50	<0.50	<1.0	<0.50
ACC-3	14-Sep-11	Water	39	**4,100**	**170**	**260**	**100**	**1,000**	**20**
ACC-4	14-Sep-11	Water	41.15	**14,000**	**1,500**	**1,900**	**500**	**2,500**	**4.5**
ACC-5	15-Sep-11	Water	43.5	**100**	**1.7**	8.9	4.4	19	<0.50
ACC-6	15-Sep-11	Water	43.5	<50	<0.50	<0.50	<0.50	<1.0	<0.50
ACC-7	16-Sep-11	Water	42.6	<50	<0.50	<0.50	<0.50	<1.0	<0.50
ACC-8	16-Sep-11	Water	46.8	<50	<0.50	<0.50	<0.50	<1.0	<0.50
MW-2	20-Apr-93	Water	30.81	**4,500**	**340**	**110**	8	**630**	NT
	12-May-94	Water	31.12	**7,000**	**520**	**220**	**35**	**410**	NT
	8-Feb-95	Water	28.04	**170**	**8.9**	4.5	2.1	17	NT
	23-May-95	Water	17.77	<50	<0.5	<0.5	<0.5	<0.5	NT
	20-Sep-95	Water	25.55	**8,400**	**2,500**	**1,200**	**180**	**940**	NT
	29-Dec-95	Water	20.91	**640**	0.7	<0.5	1.9	4.7	NT
	1-Nov-96	Water	22.63	**1,600**	**390**	**140**	25	**120**	NT
	29-Apr-97	Water	20.39	**4,900**	**640**	**240**	**83**	**200**	<250
	5-Aug-99	Water	26.18	**3,000**	**1,100**	**370**	**97**	**240**	<25
	1-Aug-00	Water	23.96	**2,200**	**850**	**240**	**74**	**240**	<50
	18-Jan-02	Water	30.85	**350**	**62**	0.85	0.82	2.5	<5
	2-Jul-02	Water	33.45	--	--	--	--	--	--
	4-Dec-02	Water	36.21	--	--	--	--	--	--
	31-Mar-11	Water	--	<50	<0.5	<0.5	<0.5	<1	<0.5
MW-3	12-Jul-94	Water	38.76	<50	<0.5	<0.5	<0.5	<0.5	NT
	8-Feb-95	Water	27.08	<50	<0.5	<0.5	<0.5	<0.5	NT
	23-May-95	Water	17.28	<50	<0.5	<0.5	<0.5	<0.5	NT
	20-Sep-95	Water	25.06	<50	**1.4**	<0.5	<0.5	<0.5	NT
	29-Dec-95	Water	20.25	50	**1.8**	<0.5	<0.5	<0.5	NT
	1-Nov-96	Water	22.22	<50	<0.5	<0.5	<0.5	<0.5	NT
	29-Apr-97	Water	20.05	<50	**1.7**	<0.5	<0.5	<0.5	<5
	5-Aug-99	Water	26.07	<50	<0.5	<0.5	<0.5	<0.5	<5
	20-Jul-00	Water	23.35	<50	**1.4**	3.6	<0.5	3.9	<5
	18-Jan-02	Water	30.5	<50	<.5	<0.5	<0.5	<0.5	<5
	2-Jul-02	Water	33.53	--	--	--	--	--	--
****ESLs**	**Groundwater is a Current or Potential Source of Drinking Water**	**Water**		**100**	**1**	**40**	**30**	**20**	**5**
PRG's	**MCLs**	**Water**		**NA**	**5**	**1,000**	**7,000**	**10,000**	**NA**

TABLE 2
Groundwater Analytical Summary Table
2900 Ladd Ave
Livermore, CA
ACC Project Number: 3054-103.01

Boring / Well ID	Sampling Date	Matrix	DTW (in feet)	Constituents and Concentrations (µg/L)					
				TEPH-g	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
MW-3	4-Dec-02	Water	36.35	--	--	--	--	--	--
	31-Mar-11	Water	--	<50	<0.5	<0.5	<0.5	<1	<0.5
MW-4	12-Jul-94	Water	39.5	<50	<0.5	<0.5	<0.5	<0.5	NT
	8-Feb-95	Water	27.66	<50	<0.5	<0.5	<0.5	<0.5	NT
	23-May-95	Water	17.68	60	<0.5	<0.5	<0.5	<0.5	NT
	20-Sep-95	Water	25.81	<50	<0.5	<0.5	<0.5	<0.5	NT
	29-Dec-95	Water	20.9	<50	<0.5	<0.5	<0.5	<0.5	NT
	1-Nov-96	Water	22.84	<50	**2.7**	<0.5	<0.5	<0.5	NT
	29-Apr-97	Water	20.57	<50	**2.6**	<0.5	<0.5	<0.5	**9.2**
	5-Aug-99	Water	26.64	**120**	**59.0**	<0.5	<0.5	<0.5	**19.0**
	20-Jul-00	Water	23.91	97	**21.0**	6.8	0.66	4.6	**11.0**
	18-Jan-02	Water	NM	NS	NS	NS	NS	NS	NS
	2-Jul-02	Water	--	--	--	--	--	--	--
MW-5	21-Jul-00	Water	20.19	**92,000**	**9,900**	**15,000**	**540**	**17,000**	<1,300
	18-Jan-02	Water	23.61	**63,000**	**5,900**	**10,000**	**1,900**	**15,000**	<1,300
	2-Jul-02	Water	24.29	**86,000**	**10,000**	**14,000**	**2,100**	**15,000**	<1,300
	4-Dec-02	Water	24.35	**72,000**	**8,500**	**11,000**	**1,600**	**10,000**	<1,300
	31-Mar-11	Water	--	**65,000**	**8,700**	**8,700**	**2,800**	**16,000**	<500
****ESLs**	**Groundwater is a Current or Potential Source of Drinking Water**	**Water**		**100**	**1**	**40**	**30**	**20**	**5**
PRG's	**MCLs**	**Water**		**NA**	**5**	**1,000**	**7,000**	**10,000**	**NA**

Notes

***ESLs = Bay Area Regional Water Quality Control Board Environmental Screening Levels (Interim Final May 2008) where Groundwater IS a Current or Potential Source of Drinking Water*

PRGs=EPA Region 9 Preliminary Remediation Goal November 2009)

[1]Metals analysis for these samples was run on unfiltered groundwater.

DTW: ;Depth to water (ft.) measured from top of casing (TOC).

NT: Not Tested; NM: Not Measured; NS: Not Sampled

**-- No Data*

Shaded/Bolded Values Exceed Their Respective Criteria

TABLE 3
Well Construction Detail Table
Laidlaw Transit
2900 Ladd Avnue
Livermore, California
3054-103.01

Well ID	Date Installed	TOC	Total Depth (bgs)	Casing Diameter (inches)	Screen Interval (bgs)	Zone	Status
MW-1	12/14/90	489.5	67 Feet	6	42-67	Undetermined	Inactive/ Abandoned
MW-2	4/13/93	Unknown	57 Feet	2	30-57		Active
MW-3	7/1/94	Unknown	53 Feet	2	28-53		Active
MW-4	6/30/94	Unknown	53 Feet	2 (Not Verified)	28-53		Inactive/ Needs to be located
MW-5	5/28/00	Unknown	25 Feet	2	15-25		Active

Notes:
bgs=below ground surface
TOC= Top of Casing

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Director

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

April 12, 2012

Ms. Jan Shipley (*Sent via E-mail to: JShipley@lvjusd.k12.ca.us*)
Livermore Unified School District
685 E. Jack London Blvd.
Livermore, CA 94550

Subject: Case Closure File Review for Fuel Leak Case No. RO0000188 and GeoTracker Global ID T0600100844, Laidlaw Transit (Maintenance Yard), 2900 Ladd Avenue, Livermore, CA 94550

Dear Ms. Shipley:

Alameda County Environmental Health (ACEH) staff has reviewed the case file for the above referenced site including the most recent report entitled, "*Soil and Groundwater Characterization Report/Request for Low Risk Closure Report, Laidlaw Transit, 2900 Ladd Avenue, Livermore, California*," dated January 6, 2012 (Closure Report). The Closure Report presents results from site assessment activities conducted in September 2011 and requests that the site be considered for low-risk closure.

Based on our review, the case cannot be considered for low-risk closure at this time due to the presence of a water supply well approximately 550 feet southeast of the former USTs. As discussed in technical comment 1 below, the water supply well is a potential receptor for the site. Due to the elevated concentrations of petroleum hydrocarbons including benzene in groundwater in the area of the former USTs and the proximity to a water supply well, the site cannot be considered a candidate for low-risk closure.

This decision is subject to appeal to the State Water Resources Control Board (SWRCB), pursuant to Section 25296.40 of the Health and Safety Code (Thompson-Richter Underground Storage Tank Reform Act - Senate Bill 562). Further information regarding the petition process is available on the SWRCB website (http://www.waterboards.ca.gov/water_issues/programs/ust/cleanup/petitions.shtml). You may also contact the SWRCB Underground Storage Tank Program at (916) 341-5752 for information regarding the appeal process. California Underground Storage Tank regulations allow any responsible party who believes that the corrective action plan for the site has been satisfactorily implemented, but where closure has not been granted, to petition the SWRCB for a review of the case.

We request that you address the following technical comments, perform the requested work, and send us the reports requested below.

TECHNICAL COMMENTS

1. **Water Supply Well in Proximity to Site.** A municipal water supply well (CWS-17) is located approximately 550 feet southeast of the site. This well is in addition to water supply wells identified in the Closure Report. We understand that well CWS-17 is not active at this time but may be used in the future. Pumping of well CWS-17 has the potential to change hydraulic gradients in the area and cause contamination from the 2900 Ladd Avenue site to migrate towards the water supply well. Because well CWS-17 is a potential receptor for the site, the fuel leak case cannot be closed at this time. Preparation of a Draft Corrective Action Plan (CAP) is expected to be necessary. We recommend a meeting be scheduled with ACEH prior to preparation of a CAP. Please call me at

(510) 567-6791 or send me an electronic mail message at jerry.wickham@acgov.org to arrange a meeting to review options.

2. **Monitoring Well Destruction.** Monitoring wells MW-2 through MW-4 appear to provide a potential vertical conduit for migration of contamination from shallower to deeper zones. These wells will need to be decommissioned to remove the potential vertical conduit. Please include plans to decommission and replace these wells as necessary in the Draft CAP requested below.

TECHNICAL REPORT REQUEST

Please submit technical reports to Alameda County Environmental Health (Attention: Jerry Wickham), according to the following schedule:

- **July 17, 2012** – Draft Corrective Action Plan (following a meeting to review options)

If you have any questions, please call me at (510) 567-6791 or send me an electronic mail message at jerry.wickham@acgov.org. Online case files are available for review at the following website: http://www.acgov.org/aceh/index.htm.

Sincerely,

Jerry Wickham, California PG 3766, CEG 1177, and CHG 297
Senior Hazardous Materials Specialist

Attachment: Responsible Party(ies) Legal Requirements/Obligations

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Danielle Stefani, Livermore Pleasanton Fire Department, 3560 Nevada St, Pleasanton, CA 94566 (*Sent via E-mail to: dstefani@lpfire.org*)

Colleen Winey (QIC 8021), Zone 7 Water Agency, 100 North Canyons Pkwy, Livermore, CA 94551 (*Sent via E-mail to: cwiney@zone7water.com*)

Julia Siudyla, ACC Environmental Consultants, 7977 Capwell Drive, Oakland, CA 94621 (*Sent via E-mail to: jsiudyla@accenv.com*)

Donna Drogos, ACEH (*Sent via E-mail to: donna.drogos@acgov.org*)
Jerry Wickham, ACEH (*Sent via E-mail to: jerry.wickham@acgov.org*)

GeoTracker, eFile

Attachment 1

Responsible Party(ies) Legal Requirements / Obligations

REPORT REQUESTS

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

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) GeoTracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the GeoTracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in GeoTracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/).

PERJURY STATEMENT

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

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

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

AGENCY OVERSIGHT

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

Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC)	**REVISION DATE:** July 20, 2010
	ISSUE DATE: July 5, 2005
	PREVIOUS REVISIONS: October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010
SECTION: Miscellaneous Administrative Topics & Procedures	**SUBJECT:** Electronic Report Upload (ftp) Instructions

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

REQUIREMENTS

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

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

Submission Instructions

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

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

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

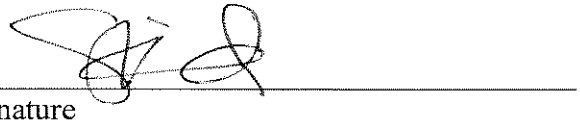
Alameda County Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

PERJURY STATEMENT

Name of Document or Report: **Response Letter-Case Closure Review/Corrective Action Plan (CAP), Laidlaw Transit-2900 Ladd Avenue, Livermore, California**

RO#0000188

I declare, under penalty and perjury, that the information and/or recommendations contained in the above stated document or report is true and correct to the best of my knowledge.



Signature

Susan Kinder
Company Officer or Legal Representative Name

Chief Business Official
Title

7/16/12
Date