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transmitted via email only

Ms. Carmen Santos
U.S. Environmental Protection Agency, Region 9
Mail Code WST-5
75 Hawthorne Street
San Francisco, CA 94105

Subject: Toxic Substance Control Act Risk-Based Cleanup Notification and Certification 40 CFR 761.61(c), Former Pacific Electric Motors Facility, 1009 66th Avenue, Oakland, California

Dear Ms. Santos:

In response to our telephone conference calls and email messages in December 2009, the property owner, Aspire Public Schools ("Aspire") and LFR Inc. an ARCADIS company (LFR) are requesting to revise the approach to the cleanup project at the former Pacific Electric Motors Facility at 1009 66th Avenue in Oakland, California ("the Site"; Figure 1).

As we have discussed, the approach to the cleanup at the Site will be changing from a Self-Implementing Cleanup Plan (SICP) to a Risk-Based Cleanup Plan (RBCP) as outlined in the Toxic Substance Control Act (TSCA) in accordance with 40 Code of Federal Regulations (CFR) 761.61(c). The key reason for this change is that analytical results of confirmation soil samples collected through the course of the SICP indicated that some of the affected soil is present in inaccessible locations along two of the property boundaries. The presence of this inaccessible affected soil would not allow for a successful completion under the SICP requirements provided in TSCA in accordance with CFR 761.61(a). Thus changing approaches at this time will allow for the successful completion of the cleanup under a RBCP.

This work is being conducted under the regulatory oversight of the Alameda County Environmental Health Department (ACEH) in accordance with the Revised Corrective Action Plan, Proposed Aspire High School Site, 1009 66th Avenue, Oakland, California (Fuel Leak Case No. RO0000411; "the CAP") submitted to the ACEH on July 17, 2009. The CAP was approved by ACEH in their letter to Aspire dated August 13, 2009.

Please note that the proposed remediation for this Site does not include cleanup of polychlorinated biphenyls (PCBs) in surface or groundwater sediments in marine and freshwater ecosystems,

510.652.4500 m
510.652.2246 f
1900 Powell Street, 12th Floor
Emeryville, California 94608
Offices Nationwide
www.lfr.com

sewers or sewage treatment systems, any private or public drinking water sources or distribution systems, grazing lands, or vegetable gardens.

This RBCP has been prepared in accordance with CFR 761.61(c) and provides a plan for removal and disposal of affected soil identified during site investigations conducted in 2006, 2007, and 2009. The technical approach detailed in this RBCP includes the following:

- The excavation of soil containing the following chemicals of concern (COCs): PCBs, lead, arsenic, total petroleum hydrocarbons as gasoline (TPHg), total petroleum hydrocarbons as diesel (TPHd), total petroleum hydrocarbons as motor oil (TPHmo), semivolatile organic compounds (SVOCs), and volatile organic compounds (VOCs) at concentrations greater than their respective cleanup goals to an estimated depth of 2 feet below ground surface (bgs). The respective cleanup goals are provided in Table 1.
- The excavation and off-site disposal of PCB-affected concrete and building materials.
- Collecting confirmation soil samples for the analysis of COCs.
- Assessing the analytical results of the confirmation soil samples to determine that the soil remaining in place meets the specific cleanup goals for each COC.
- Backfilling the areas of excavation with imported fill soil.

As discussed during the conference call between representatives of the U.S. Environmental Protection Agency (EPA) and LFR on December 19, 2009, this approach is consistent with TSCA requirements under 40 CFR Part 761 and is fully protective of human health and the environment. In addition, removing affected soil that contains COCs greater than their respective cleanup goals and backfilling the excavations with imported soil will allow for the planned redevelopment of the Site as a school.

Background

On behalf of Aspire, LFR is currently working under the oversight of the ACEH, and previously the EPA's Department of Toxic Substances Control (DTSC), to investigate and remediate a site with historical industrial land use. Following the implementation of the approved CAP, the Site will be redeveloped into a charter high school. Portions of the CAP, including remediation of petroleum-affected groundwater have been implemented. In order to meet financial and construction milestones for the redevelopment project, LFR initiated the remediation of soil described in this letter in early November 2009. A detailed presentation of the site conditions and the context of the remedial action proposed for this Site is presented in the CAP.

As part of the investigation and risk assessment activities, a number of COCs were identified, including TPHg, benzene, toluene, ethylbenzene, and total xylenes (BTEX), SVOCs, metals, and PCBs. The PCBs detected in soil samples collected at the Site were likely associated with Pacific

Electric Motors' operations during the time when they owned the property from 1948 to 2001. Results of previous soil characterization have indicated that a small portion of PCB-affected soil at the Site may constitute a TSCA waste, and this letter has been prepared to address this waste. In addition, this letter outlines what is believed to be the applicability and jurisdiction of TSCA on this overall effort, and describes how the remedial efforts will be implemented to comply with TSCA.

As presented in the CAP, two soil samples collected from an area in the northeastern corner of the Site during previous remedial assessments in 1992 contained concentrations of PCBs greater than 50 mg/kg. Based on the available data it has been determined that the PCB-affected soil has been removed from this portion of the Site (ARS 1992). The source of the PCBs in soil is not well documented but is likely from previous site operations conducted by Pacific Electric Motors associated with repair or assembly and/or storage of electric motors and their associated components.

The following sections provide a summary of the site description, regulatory involvement, history, and TSCA applicability. The letter from LFR to EPA dated November 18, 2009, includes some detailed information regarding the sampling and monitoring procedures that have taken place and that are proposed to take place at the Site.

Site Description

The 2.51-acre Site is located on the western side of 66th Avenue between East 14th Street to the north and San Leandro Street to the south, and is currently developed with two buildings referred to as the "Manufacturing/Office Building" and the "Warehouse" (Figure 2). Previous site use for manufacturing and warehouse storage has resulted in the presence of COCs in soil and groundwater beneath the Site. Several phases of investigation of soil, soil-vapor, and groundwater quality have been completed at the Site to assess the nature and extent of COCs in soil and groundwater. Results from previous investigations have been submitted to the DTSC in several reports, with the most comprehensive summary of the site data being provided in the CAP.

Previous Soil Investigations

Soil Sampling Methods

During the site investigation activities, soil borings were advanced using a hand auger for the first 5 feet and advanced when necessary from 5 feet bgs to total depth using continuous core, direct-push, drilling methods. Soils were continuously logged for lithology, and samples were collected from one or more of the following depths: surface, intermediate, and deep intervals (just above groundwater). Additional soil samples were collected if there was evidence of contamination (stained soil and/or vapors).

The majority of the soil samples from the Site were analyzed for TPHg. In most areas, samples were also submitted for metals and SVOC analyses. Where site histories were such that there was a potential for solvent use or there were field indications of volatiles possibly present, samples were submitted for VOC analysis. In addition, soil samples were also analyzed for PCBs in those locations where site histories indicated the potential handling of PCBs. In many locations where PCBs were detected in soil, several "step-out" borings were advanced to further assess and delineate the extent of PCB-affected soil.

As discussed with representatives of EPA, LFR collected additional pre-cleanup characterization data (i.e., conducted more PCB soil sampling activities in October 2009) to adequately characterize the soil quality at the Site and provide the information required by 40 CFR 761.61(a)(3) in order to conduct a self-implementing cleanup. The scope of the additional sampling is provided below.

Existing Soil Sampling Results

Prior to collecting the soil samples associated with the pre-cleanup characterization assessment, a total of 99 soil samples collected from 47 locations at the Site were analyzed for PCBs in accordance with U.S. EPA SW-846 Method 8082. Soil analytical results for PCBs are presented on Figure 2.

PCBs in excess of the site-specific cleanup goal of 0.13 milligram per kilogram (mg/kg) were detected in four areas proposed for excavation at the Site delineated as PCB1, PCB2, PCB3, and PCB4 on Figure 3. One soil sample containing PCBs in excess of the TSCA guideline of 50 mg/kg was detected in a soil sample collected approximately 0.5 foot bgs from soil boring 4B located in the former warehouse building within the footprint of excavation PCB1. The exceedances of the site-specific and TSCA guidelines were detected primarily in the top 2 feet of soil just under the asphalt (maximum concentration of 69.68 mg/kg).

Groundwater Sampling - PCB results

Groundwater samples were collected from a selected number of wells that have been installed at the Site using a low-flow sample collection method. As with the soil samples, the majority of the groundwater grab samples were analyzed for TPHg, SVOCs, VOCs, and dissolved metals. As requested by the EPA in October 2009, groundwater samples from wells ASMW3I, SMW4I, and SVMW4 were submitted for PCB analyses. PCBs were not reported above the laboratory reporting limit of 0.5 microgram per liter (μg/l) in any of these groundwater samples.

Additional Soil Sampling

As discussed with representatives of EPA, LFR conducted pre-cleanup characterization (i.e., collected more soil samples for PCB analysis) to further characterize the soil quality at the Site and provide the information required by 40 CFR 761.61(a)(3) to conduct a self-implementing cleanup.

The following scope of work was implemented in response to the email from the EPA to LFR on October 13, 2009 and the telephone conference call on October 19, 2009 between representatives of the EPA and LFR. EPA requested the collection of additional soil and concrete samples at the Site. To comply with this request, LFR prepared a map of the Site illustrating the locations and analytical results of the soil samples previously collected at the Site, the proposed areas of excavation for PCB-affected soil, and the proposed locations of additional soil and concrete samples to be collected (Figure 2). Soil samples were collected in accordance with the sampling protocols provided in the SICP, dated October 23, 2009.

Rationale for Additional Soil Sampling

To determine the proposed sample locations, a grid comprised of 75-foot spacing was laid over the 2.5-acre Site. The parking area and the portion of the building that was used as office space (located closest to 66th Avenue) is not included on this grid sampling due to the lack of potential use and handling of PCBs in that area of the Site. The 75-foot spacing was selected so that two transects would run east-west across the long axis of the Site; 75-foot transects were then placed to establish the grid pattern. This approach is similar to grid requirements provided in 40 CFR 761 Subpart N, but it accommodates for the relatively large size of the area being sampled. At grid node locations that did not have an existing soil sample within approximately 25 feet of the node, the collection of a soil sample approximately 0.5 to 1.0 foot bgs was proposed. To further assess soil quality at the Site, three soil samples were added to the driveways that run along the sides of the former warehouse buildings.

To assess soil quality at this location, LFR collected two additional soil samples in close proximity to the transformer and air compressor. LFR collected soil samples adjacent to the sanitary and storm sewer pipelines that are to be abandoned as part of the redevelopment of the Site. Soil samples will be collected every approximately 50 feet of sewer line approximately 1 to 2 feet below the pipeline invert.

Based on the size of the Site, the locations of the existing PCB data, and the locations of the proposed soil samples, LFR believes that the shallow soil quality (and concrete) has been adequately characterized for the presence of PCBs.

Oil Samples

In addition to the sampling locations shown on Figure 2, LFR collected soil samples in the immediate vicinity of a former transformer, air compressor, and associated sanitary sewer and storm drain lines to address the potential for the air compressor to be a source of PCBs. Samples of the oil contained in an air compressor and transformer were collected and submitted for PCB analysis. The former transformer and air compressor are currently located outside the warehouse building along the south side of the building (see Figure 2). Each of these oils did not contain PCBs at concentrations greater than the laboratory reporting limits.

Cleanup Plan

The RBCP was developed to address the presence of affected soils (and concrete) containing COCs at concentrations greater than their respective cleanup goals. The excavation of the affected soil began at the Site in accordance with the SICP and the EPA letter on November 4, 2009. As of January 5, 2010 the areas illustrated on Figure 3 have been excavated.

Soil containing COCs at concentrations greater than their respective cleanup goals at depths less than 2 feet bgs have been excavated and transported for off-site disposal. The excavated areas will be backfilled with imported soil. This approach meets the requirements of TSCA and will allow likely future site redevelopment activities (including subsurface utility placement) to be conducted without disturbing soils affected by COCs above their respective cleanup goals. RBCP activities will include the following:

- Excavating and direct loading or temporarily staging affected soil (as necessary)
- Collecting confirmation soil samples within the final excavation limits in accordance with TSCA requirements for laboratory analysis
- Transporting the affected soil for off-site disposal
- Surveying the final excavation limits and
- Placing clean backfill within the excavated areas

Work activities to be performed as part of the RBCP are discussed below in more detail, followed by a summary of the proposed schedule and an overview of contingency measures to be implemented if unforeseen obstacles require a change in the cleanup approach.

Pre-Excavation Activities

Work activities to be implemented in preparation for implementing the soil excavation activities included the following:

- Identifying the proposed excavation limits and existing subsurface utilities by field surveying activities, as needed, marking the limits using spray paint, stakes, and flagging, as appropriate.
- Constructing material staging areas for temporary staging of excavated soil (prior to transportation and off-site disposal). A minimum of two material staging areas will be required: one for soil classified as a TSCA-regulated waste (PCBs at concentrations greater than or equal to 50 mg/kg), and one for soil classified as a non-TSCA non-hazardous waste (PCB concentrations greater than 1 mg/kg but less than 50 mg/kg). Each material staging area will be bermed and lined with a low-permeability liner that will slope to a lined collection sump. Soil placed within the material staging areas will be covered using low-permeability material (to minimize potential siltation/migration of soil beyond staging areas). The low-permeability liner and cover will be secured to resist potential wind forces.
- Constructing an equipment decontamination pad. The decontamination pad will be bermed and lined with a low-permeability liner that will slope to a lined collection sump.
- Mobilizing a storage tank(s) for temporary storage of water generated by the soil excavation activities, including rainfall that accumulates within the excavation area (if any), water that accumulates in the material staging areas, if any, and wash water generated by decontamination of personnel and equipment.
- Mobilizing all labor, equipment, materials, supplies, and all things necessary and incidental for implementing the soil excavation activities.

Soil Excavation

Based on the analytical results obtained for the site characterization sampling described above, soil excavation has been performed at the Site at the areas illustrated on Figure 3. Proposed areas of excavation EXC1 and EXC2 adjacent to 66th Avenue have not yet been excavated due to access constraints associated with the ingress and egress to the Site and waste profiling issues. This area is scheduled for excavation between January 18 and January 29, 2010.

Excavation sidewalls were sloped/benched in accordance with Occupational Safety and Health Administration requirements for excavation, as outlined in 29 CFR 1926 Subpart P (as necessary). In accordance with California Code of Regulations (CCR) Title 8 and the California Business and Professions Code, the sloping method has been approved by a California-registered civil engineer.

As of January 5, 2010 a total of approximately 3,910 tons of affected soil has been removed from the Site and confirmation soil samples documenting the successful removal of the affected soil have been collected at various locations across the Site. Of this total, approximately 970 tons of PCB-affected soil and concrete was disposed of as TSCA waste at Waste Management's Kettleman Hills Class I Landfill located in Kettleman City, California ("Kettleman"). The remaining approximately 2,940 tons of affected soil excavated from the Site was temporarily stockpiled and subsequently disposed of at Republic Waste's Vasco Road Class II Landfill located in Livermore, California

("Vasco Road"). In addition, approximately 249 tons of concrete and asphalt were removed and disposed of at Republic Waste's Keller Canyon Class II Landfill located in Pittsburg, California ("Keller Canyon").

The final excavation limits were based on verification samples collected in accordance with TSCA requirements and submitted for traditional laboratory analysis (Figure 3).

The soil excavation activities have been and will continue to be conducted using a backhoe or excavator or other appropriate equipment. Excavation activities will be performed by a qualified, HAZWOPER-trained contractor. Soil removed from the excavation will be transported to a material staging area or direct loaded for off-site transportation and disposal, as described below. Soil will be transported to the material staging areas using a loader, dump truck, or other appropriate equipment.

Additional activities to be conducted in connection with the soil removal include:

- Removing utilities that currently pass through the area of the proposed excavation, as necessary and appropriate.
- Implementing dust control measures in compliance with Bay Area Air Quality Management District's best management practices, including: watering active excavation area twice daily, if needed; covering trucks hauling soils; and brushing off trucks and tires to minimize potential tracking of soil onto adjacent roadways.
- As necessary, rain water that accumulates within the excavation area (if any) will be removed to a storage tank that will be located in a lined secondary containment area. If rainwater is pumped to a storage tank, sampling will be performed to characterize the water for either off-site transportation and treatment or discharge to the on-site sewer (pending applicable permits and approvals). Please note that the soil removal activities have been scheduled during the rainy season for the Oakland area, thus management of precipitation may be required.
- Performing airborne particulate monitoring (dust monitoring) as described below.
- Maintaining the excavation until the analytical results of the verification soil samples indicate that the cleanup objectives have been achieved. Although the Site is fenced and security is provided to control public access, fencing or other appropriate barriers will be placed directly around the excavation perimeter to further limit access (until backfilling is completed). Verification soil samples will be submitted to the laboratory and a 24-hour to 48-hour turnaround will be requested to minimize the amount of time the excavation is open. While the excavation is open, daily inspections will be performed to evaluate the condition of the fencing, the sloping/benching/shoring, and other protective systems. Based on inspection results, corrective actions will be implemented, as needed.

- Covering soil stockpiled in the material staging areas with a low-permeability material to minimize contact with precipitation and potential migration/siltation of soil beyond staging areas. The low-permeability liner will be secured to resist wind forces.
- Decontaminating project equipment (including excavation equipment, trucks, hand-tools, etc.) and materials that come in contact with affected site media prior to demobilizing from the Site and prior to re-grading clean soil around the excavation areas. In addition, equipment used to handle soil that exhibits PCBs at concentrations greater than 50 mg/kg will be decontaminated prior to handling soil that exhibits PCBs at concentrations less than 50 mg/kg. The decontamination activities will be conducted within the lined equipment decontamination area. Decontamination activities will be performed until no visible soil or debris is present on the equipment surfaces. Washwater generated by the equipment decontamination activities will be containerized for characterization sampling and appropriate treatment/disposal. Solid wastes generated by the equipment decontamination activities will be containerized for off-site disposal.

Verification Soil Sampling

Upon completion of anticipated soil removal activities, verification soil samples have been and will continue to be collected and submitted to TestAmerica Laboratories, Inc. ("TestAmerica") for chemical analyses. The locations of the soil samples are illustrated on Figure 3 and the analytical results of the samples are provided in Tables 2 through 9. The laboratory reports for the confirmation samples are on file at the LFR Emeryville office. In accordance with 40 CFR 761.283 confirmation soil samples from excavations PCB1, PCB2, PCB3, and PCB4 have been collected from the bottom of the excavation on a square-based grid overlying the entire removal area, with a spacing of 1.5 meters and one soil sample will be collected from the top of each sidewall for every 30 linear feet of sidewall. Individual samples from the excavation bottom have been collected for every approximate 400 square feet of excavation (one bottom sample for each 20 by 20 foot area). Sidewall and bottom floor samples have been analyzed as discrete grab samples. PCB analysis has been performed in accordance with USEPA SW-846 Method 8082.

Waste Handling / Off-Site Disposal

Based on results of characterization sampling, soil will be transported for off-site disposal as a TSCA-regulated waste (PCB concentrations greater than or equal to 50 mg/kg). In addition soil will be transported for off-site disposal as a non-TSCA waste (PCB concentrations greater than 1 mg/kg but less than 50 mg/kg). The volume of excavated soil may increase (or decrease) based on the results of confirmation soil sampling, and actual size of the proposed areas of excavation.

Solid wastes generated by the proposed excavation activities will be direct-loaded for off-site disposal (provided sufficient analytical data are available to characterize the waste for disposal) or temporarily transferred to material staging areas prior to off-site disposal. The soils will be wetted,

as necessary, to reduce the potential for dust generation during loading and transport activities. As each truck is filled, it will be inspected to ensure that the waste soil is securely covered and that the tires of the haul trucks are reasonably free of accumulated soil prior to leaving the Site. Excavated soil will be loaded and transported for off-site disposal in accordance with applicable rules and regulations.

Water used during the excavation activities will be containerized in a storage tank and sampled to characterize the water for either off-site transportation and treatment or discharge to the on-site sewer (pending applicable permits and approvals). Characterization sampling will be performed pursuant to the requirements of the receiving treatment/disposal facility.

Wastes will be transported for off-site treatment/disposal under a bill-of-lading, non-hazardous waste manifest, or hazardous waste manifest, as appropriate. TSCA-regulated waste will be transported by registered hazardous waste haulers holding a currently valid registration issued by DTSC and meeting federal requirements imposed by the Department of Transportation (DOT) and U.S. EPA under the Resource Conservation and Recovery Act (RCRA). Haulers are also subject to California hazardous waste law requirements pertaining to hauling of hazardous wastes (Health and Safety Code §25100 et seq. and §25163 et seq.; 22 CCR §66263.10 et seq.; 13 CCR §1160 et seq.; California Vehicle Code §12804 et seq.; and §31300 et seq.), which are implemented and enforced by DTSC as well as the California Highway Patrol, Department of Motor Vehicles, local sheriff, and police agencies who have general responsibilities for the transportation of hazardous waste on state and local roadways.

TSCA-regulated waste will be transported to Kettleman. It is a Class I landfill operating under permit number 16-AA-0023. Non-hazardous waste will be transported to Vasco Road. It is a Class II landfill operating under permit number 01-AA-0010. The distance from the Site to Vasco Road is approximately 30 miles, and the approximate travel time is 1 hour. The distance from the Site to Kettleman is approximately 225 miles, and the approximate travel time is 3 hours and 30 minutes.

Based on the estimated quantity of material to be removed, it is anticipated that trucks will be on site for approximately two weeks to transport material to the appropriate disposal facility. Trucks will be limited to arriving at and departing from the Site between the hours of 9:00 am and 3:30 pm in order to avoid peak hour traffic impacts.

Air Monitoring

Real-time airborne monitoring for particulates (dust) will be conducted during activities with the potential to generate dust (e.g., excavation, material handling, and backfilling) in accordance with an addendum to the site-specific Health and Safety Plan (in development). The air monitoring equipment will be calibrated at least once daily, prior to the start of work activities. The results of airborne particulate monitoring will be recorded by the on-site health and safety supervisor (or designated alternative) at a minimum frequency of once per hour, unless site conditions and work

activities being conducted do not cause the generation of dust. Details regarding the air monitoring plan are provided in the letter from LFR to EPA dated November 18, 2009.

Cover Placement

Following receipt of laboratory analytical results indicating that the soil cleanup objectives have been achieved, a licensed surveyor will survey the final excavation limits. The excavation will then be backfilled and compacted with the excavator bucket. The limits of the excavation (and verification samples) will be surveyed by a licensed surveyor.

Site Restoration

Site restoration will proceed by placing soils excavated for purposes of benching/ sloping, followed by placing and grading clean backfill material imported from off site (as needed). Backfill will be placed, compacted, and graded in accordance with applicable Alameda County regulations.

Prior to backfilling, samples will be collected from the material excavated for benching/sloping and the backfill source (or existing data on backfill will be utilized) to verify that the proposed material does not exhibit unacceptable physical or chemical characteristics. Backfill material will be sampled at a frequency of 1 sample per 1,000 cubic yards of material. Samples will be submitted for laboratory analysis for PCBs, TPH, VOCs, SVOCs/PAHs, and metals. Backfill material will not have COCs at concentrations greater than their respective specific cleanup goals. Alternate sources of backfill will be identified if unacceptable results are obtained. Prior to placing/grading backfill, equipment that came into contact with affected soil will be appropriately decontaminated.

Exposure Assessment and Cleanup Goal Evaluation

An exposure assessment evaluation of the Former Pacific Electrical Motors Facility located at 1009 66th Avenue, Oakland, California (the Site) describes how receptors could potentially come in contact with chemicals of potential concern (COPCs). The objectives of an exposure assessment are to:

- Identify potential exposure pathways to individuals who may come in contact with COPCs originating at the Site
- Characterize potentially exposed receptor populations
- Estimate the extent of the exposure
- Estimate the exposure point concentration (EPC) for each COPC

The methodology of this exposure assessment follows the U.S. EPA (1989) and DTSC (1996) risk assessment guidelines. An exposure assessment evaluation generally includes four tasks.

The first task of the exposure assessment is to identify potentially exposed human receptor populations that may come in contact with the COPCs. This requires knowledge of (and/or making reasonable assumptions regarding) receptor populations that may have access to the Site currently and in the future.

The second task is to identify relevant exposure pathways for the identified human receptor populations, by which potentially exposed receptor populations may contact environmental media that contain residual chemicals originating from the Site.

The third task requires an estimation of EPCs at the points of potential human receptor contact for all COPCs identified at the Site. EPCs are the sampling results used to represent the concentrations of COPCs.

The fourth task requires a comparison between the recommended cleanup goals and EPCs for the COPCs.

Identification of Potentially Exposed Human Populations at the Site

Potentially exposed hypothetical receptor populations are identified at the Site based on the school land-use designation.

Potential receptor populations include:

- current construction workers
- future children (i.e., high school students)
- future commercial workers (e.g., teachers, janitors, and administrators)

Identification of Relevant Exposure Pathways at the Site

According to the U.S. EPA (1989) and DTSC (1996) risk assessment guidelines, exposure pathways consist of four necessary elements:

- a source and mechanism of chemical release
- a retention or transport medium (or media in cases involving media transfer)
- a point of potential human contact with the contaminated medium (referred to as an exposure point)

- an exposure route (e.g., inhalation) at the exposure point

A pathway is considered "complete" only if these four conditions are met. Complete exposure pathways for each identified receptor population are presented below. However since the proposed redevelopment plan includes the installation of school buildings and/or surface paving over the entire Site, direct exposure to affected soils will be incomplete. For risk management purposes, the evaluation considers direct exposure to soils by the future site occupants. This is highly conservative and is performed for risk management purposes.

Current construction workers:

(1) incidental soil ingestion
(2) dermal contact with soil
(3) inhalation of airborne particulates generated during soil intrusive activities

Future children (i.e., high school students):

(1) incidental soil ingestion
(2) dermal contact with soil
(3) inhalation of airborne particulates generated from volatilization and during re-suspension of soil particles

Future commercial workers (e.g., teachers, janitors, and administrators):

(1) incidental soil ingestion
(2) dermal contact with soil
(3) inhalation of airborne particulates generated from volatilization and during re-suspension of soil particles

Concentrations of COPCs in groundwater and soil gas following the proposed remedial efforts are currently not available. However, soil-gas cleanup goals were developed and presented in the CAP (LFR 2009). Soil-gas samples will be collected in the future after there- installation and operation of the soil-vapor extraction/air sparging system (SVE/AS). During the operation of the SVE/AS, soil-gas samples will be collected on a periodic basis and analyzed from selected COPCs. The analytical results of these soil-gas samples will be screened against the goals presented in the CAP.

The proposed development plan for the structures to be constructed in the vicinity of the active remediation area at the Site includes a 1 to 2 foot crawl space between the ground surface and the floor(s) of the buildings. This crawl space will mitigate the potential pathway for affected soil gas to migrate into indoor air at the Site.

In addition, as a precaution, in the event that cleanup goals for soil vapor are not met prior to site redevelopment and occupancy, Aspire proposes to implement a monitoring program to assess for

the possible presence of VOCs in the crawl space of buildings constructed in the vicinity of the active remediation area. If VOCs are detected at concentrations that represent a potential threat to human health with respect to the vapor intrusion pathway, then Aspire will install an active venting system in the crawl space. If the active venting system is installed, a routine monitoring and maintenance plan will be implemented to ensure that the active venting system is operating according to design to allow for site redevelopment while soil-gas and groundwater remediation is in progress.

In the event that this contingency is triggered, Aspire will provide the ACEH (and EPA) with a work plan to conduct the crawl space monitoring and for the installation and operation of the active venting system for the crawl spaces (if needed) under separate cover. A diagram of the exposure pathway evaluation of the Site is presented on Figure 4 for the three potentially exposed hypothetical receptor populations.

ProUCL Statistical Evaluation

Soil analytical data from the Site are evaluated in order to develop EPCs for each selected COPC. The COPCs consist of the chemicals with detections above analytical reporting limits in the post-remediation verification samples. The COPCs include PCBs, TPH, arsenic, and lead. The remainder of the previously identified COPCs is not evaluated in this exposure assessment because their analytical results were below their respective reporting limits.

The U.S. EPA public domain statistical software package ProUCL 4.0 is used to determine the statistical data distribution and 95 percent upper confidence limit (UCL) of the mean for each COPC. As per U.S. EPA (1989) guidance, the lower of either 95 percent UCL or the maximum concentration is selected as the EPC. Detected concentrations and reporting limits, if results are below reporting limits, are used in the statistical evaluations. Duplicate samples are not included in the data set for each media. In addition, COPCs with fewer than six detections are not evaluated statistically. Following the U.S. EPA guidance, in these cases, maximum concentrations are used as the EPC. More detailed information about ProUCL can be accessed by visiting the following U.S. EPA website: http://www.epa.gov/esd/tsc/software.htm.

Only analytical results for soil samples collected from within the Site's property line are applied to the exposure assessment evaluation. Analytical results for soil samples that were collected along the Site's property line are not used for the evaluation because this soil does not represent a potential exposure to future site inhabitants as it represents soil quality that is not readily accessible or located on the Site. Furthermore, the sample results used as data for the evaluation are collected post remediation, including excavation activities. Therefore, analytical results for the confirmation soil samples collected as part of the remedial activities taking place at the Site are used for the evaluation.

Recommended Cleanup Goals

The EPC for the selected COPC is compared to recommended cleanup goals presented in the CAP. The goals were developed based on the high school student receptor (OEHHA 2004). If the EPC for the COPC is below its respective recommended cleanup goal, then a health concern is not expected for the potential receptor population. However, if the EPC for the COPC exceeds its recommended cleanup goal, then an appropriate remedy will be developed for the Site in order for concentrations to meet recommended cleanup goals.

Comparisons will be performed as follows for carcinogenic compounds:

$$\underline{Risk_{EPC}} = \underline{EPC_{soil}} \times \frac{TRisk}{CUG}$$

Where:

$\underline{Risk_{EPC}}$ = estimated risk for COPC (target = 10^{-6})
EPC_{soil} = exposure point concentration for soil
TRisk = target risk used for the CUP calculation (10^{-6})
CUG = cleanup goal presented for the COPCs in CAP

The cleanup will be considered complete when the sum of the $Risk_{EPC}$ equals 1×10^{-6}.

Comparisons will be performed as follows for non-carcinogenic compounds:

$$\underline{Hazard_{EPC}} = \frac{EPC_{soil}}{CUG}$$

Where:

$\underline{Hazard_{EPC}}$ = estimated risk for Site (target = 1)
EPC_{soil} = exposure point concentration for soil
CUP = cleanup goal presented for the COPCs in CAP

The metals arsenic and lead will be evaluated by comparing their respective EPCs to the established cleanup goals. The cleanup goal for arsenic in soil is based on naturally occurring background concentrations and the cleanup goal for lead in soil is based on the residential California Human Health Screening Level (OEHHA 2009). As previously stated, the cleanup goals are presented in the CAP.

Project Schedule

Excavation activities started at the Site in early November 2009. As of January 8, 2010, excavations PCB1, PCB2, PCB3, PCB4, and EXC4 have been completed and the affected soil has been transported for off-site disposal. Verification soil sampling has also been performed and the data is being assessed for compliance with the 95 percent UCL. Site restoration would be completed within approximately one week of receiving acceptable verification sampling results for the excavation.

Reporting

Upon completion of cleanup activities, LFR will prepare a summary report to satisfy the reporting requirements of 40 CFR 761.61(a)(9). The summary report will include the following:

- The date and time soil cleanup was completed or terminated
- A brief description of the excavation location and the nature of the materials contaminated
- Pre-cleanup sampling data used to establish the spill boundaries and a brief description of the sampling methodology used to establish the spill boundaries
- The depth of soil excavation and volume of soil removed
- Results of post-cleanup verification sampling

Closing

This RBCP was developed in accordance with TSCA requirements presented under 40 CFR 761. As previously discussed, the approach detailed in this RBCP fulfills TSCA requirements and is fully protective of human health and the environment. It is important to note that the project cleanup goal of 0.13 mg/kg for PCBs is lower and more protective than the 1 mg/kg goal in TSCA regulations.

Following your review of this letter, please do not hesitate to contact me if you have any questions or require additional information.

Sincerely,

Alan D. Gibbs, P.G., C.HG.
Vice President/Principal Hydrogeologist

Ron Goloubow, P.G.
Senior Associate Geologist

References:

Applied Remedial Systems (ARS). 1992. Remediation of PCB-Affected Soils, Pacific Electric Motors, 1009 66th Avenue, Oakland, California. October 20.

California Environmental Protection Agency, Office of Environmental Health Hazard Assessment (OEHHA). 2004. Guidance for School Site Risk Assessment Pursuant to Health and Safety Code Section 901(f): Guidance for Assessing Exposures and Health Risks at Existing and Proposed School Sites. Final Report. February.

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U.S. Environmental Protection Agency (U.S. EPA). 1989. Risk Assessment Guidance for Superfund, Human Health Evaluation Manual, Part A. Interim Final. December 29.

LFR Inc. (LFR). 2009. Revised Corrective Action Plan, Proposed Aspire High School Site, 1009 66th Avenue, Oakland, California (Fuel Leak Case No. RO0000411). July 17.

Attachments

Table 1 – Recommended Cleanup Goals for Confirmation Soil Samples
Table 2 – Analytical Results for Confirmation Soil Samples Collected from Excavation PCB1, PCBs and TPH
Table 3 – Analytical Results for Confirmation Soil Samples Collected from Excavation PCB2, PCBs

Table 4 – Analytical Results for Confirmation Soil Samples Collected from Excavation PCB3, PCBs, SVOCs, and Metals
Table 5 – Analytical Results for Confirmation Soil Samples Collected from Excavation PCB3, TPH and VOCs
Table 6 – Analytical Results for Confirmation Soil Samples Collected from Excavation PCB4, PCBs
Table 7 – Analytical Results for Confirmation Soil Samples Collected from Excavation 4, TPH and VOCs
Table 8 – Analytical Results for Confirmation Soil Samples Collected from Excavation 4, PCBs, SVOCs, and Metals
Table 9 – Analytical Results for Confirmation Soil Samples Collected from Excavations 1 and 2, Metals
Figure 1 – Site Vicinity Map
Figure 2 – PCBs Detected in Soil 0 to 5 Feet Below Ground Surface
Figure 3 – Site Plan Showing Excavation Areas and Confirmation Sample Locations
Figure 4 – Exposure Pathway Evaluation, Potential, Current, and Future Conditions

cc: Mr. Mike Barr, Aspire Public Schools
Charles Robitaille, Pacific Charter Schools
Paresh Khatri, Alameda County Environmental Health Department

LFR an ARCADIS company

Certification Statement

Owner: Aspire Public Schools

Parties Conducting Cleanup: ARCADIS US Inc. and Innovative Construction Solutions

Project: Former Pacific Motors Facility – 1009 66th Avenue, Oakland, CA

In accordance with 761.61; I, Michael Barr, hereby certify, that all sampling plans, sample collection procedures, sample preparation procedures, extraction procedures, and instrumental/chemical analysis procedures used to assess or characterize the presence, concentrations, and extent of impacted media for Former Pacific Motors Facility – 1009 66th Avenue, Oakland, CA are on file and available for USEPA review at the following location:

ARCADIS US Inc.

Contact: Ron Goloubow

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C. 1001 and 15 U.S.C. 2615), I certify that the information contained in or accompanying this document is true, accurate, and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate, and complete.

By: _____

Michael Barr - Aspire Public Schools

By: _____

Ron Goloubow – ARCADIS US Inc.

Date: January 14, 2010

510.652.4500 m
510.652.2246 f
www.lfr.com
1900 Powell Street, 12th Floor
Emeryville, California 94608
Offices Nationwide

Table 1
Recommended Cleanup Goals
for Confirmation Soil Samples
Former Pacific Electric Motors Site
1009 66th Avenue, Oakland, California

Chemical of Potential Concern in Each Media	ESL[1] Residential (direct exposure)	ESL Commercial (direct exposure)	DTSC-Approved Goal	Student Receptor Cleanup Goal[5]	Recommended Cleanup Goal[6]
Soil (mg/kg)					
TPH as gasoline	110	450	100	720	**450**
TPH as diesel	110	450	500	800	**450**
TPH as motor oil	370	3700	500	800	**800**
benzo(a)pyrene	0.038	0.13	0.05	0.21	**0.13**
benzo(a)anthracene	0.38	1.3	0.51	2.1	**1.3**
benzo(k)fluoranthene	0.38	1.3	0.51	2.1	**1.3**
chrysene	23	210	4.06	21	**21**
napthalene	1.3	2.8	4.06	21.0	**2.8**
benzene	0.12	0.27	4.96	4.5	**0.27**
arsenic	0.39	1.6	7 [2]	7 [2]	**7 [2]**
lead	260	750	80 [3]	80 [3]	**80 [3]**
chromium IV	9.4	360	17 [4]	17 [4]	**17 [4]**
PCBs	0.22	0.74	0.13	0.39	**0.13**
Groundwater (μg/L)	ESL residential (vapor intrusion)				
benzene	540	---	20	---	---
toluene	170,000	---	---	---	---
ethylbenzene	380,000	---	---	---	---
xylenes	160,000	---	---	---	---
Soil Gas (μg/m^3)					
benzene	84	280	---	1,200	**280**
toluene	63,000	170,000	---	680,000	**170,000**
ethylbenzene	980	3,300	---	15,500	**3,300**
xylenes	21,000	58,000	---	232,000	**58,000**
TPH as gasoline	10,000	29,000	---	116,000	**29,000**

Notes:

1. Environmental Screening Level - SFRWQCB 2008
2. Based on estimate of background concentration - Appendix B of the Revised Corrective Action Plan (LFR 2009)
3. Based on DTSC school program
4. Based on residential CHSSL
5. Calculated from residential ESL and considering a school exposure scenario (calculation spreadsheets in Appendix B)
6. The lower of student or teacher receptor

μg/L = micrograms per liter

μg/m^3 = micrograms per cubic meter

mg/kg = milligrams per kilogram

Table 2
Analytical Results for Confirmation Soil Samples Collected from Excavation PCB1, PCBs and TPH
Former Pacific Electric Motors Site
1009 66th Avenue, Oakland, California
concentrations in milligrams per kilogram (mg/kg)

PCB Excavation 1

Sample ID	Date	PCBs	TPHd	TPHmo
EXC-PCB-1 W-SIDEWALL 2' NORTH	**11/4/2009**	**0.540**	NA	NA
EXC-PCB-1 W-SIDEWALL 2' NORTH 2	*11/10/2009*	*<0.050*	NA	NA
EXC-PCB-1 N-SIDEWALL 2' WEST 2	*11/10/2009*	*0.069*	NA	NA
EXC-PCB-1 W-SIDEWALL 2' SOUTH	**11/4/2009**	**0.240**	NA	NA
EXC-PCB-1 S-SIDEWALL 2' EAST	11/4/2009	<0.050	NA	NA
EXC-PCB-1 S-SIDEWALL 2' WEST	11/4/2009	<0.050	NA	NA
EXC-PCB-1 N-SIDEWALL 2' WEST	11/6/2009	<0.050	NA	NA
EXC-PCB-1 N-SIDEWALL 2' EAST	**11/6/2009**	**0.950**	NA	NA
EXC-PCB1 N-SDWALL-2'-EAST2	*11/11/2009*	*<0.050*	NA	NA
EXC-PCB-1 E-SIDEWALL 2' NORTH	11/6/2009	<0.050	NA	NA
EXC-PCB-1 E-SIDEWALL 2' SOUTH	11/6/2009	<0.050	NA	NA
EXC-PCB1 E-SDWALL-2'-NORTH2	*11/11/2009*	*<0.050*	NA	NA
EXC-PCB-1 NW BOTTOM 4'*	**11/6/2009**	**0.460**	NA	NA
EXC-PCB-1 NW2 BOTTOM 4'	*11/10/2009*	*<0.050*	NA	NA
EXC TPH/PCB1 NW-BOTTOM 3'-R*	***11/18/2009***	***1.700***	NA	NA
EXC PCB1-NW-BOTTOM4'-R2	*11/23/2009*	*<0.050*	NA	NA
EXC-PCB-1 NE BOTTOM 4'	11/6/2009	<0.050	NA	NA
EXC-PCB1E-NE2-BOTTOM 4'	*11/11/2009*	*<0.050*	NA	NA
EXC-PCB1E-NE3-BOTTOM 4'	*11/11/2009*	*<0.050*	NA	NA
EXC-PCB-1 CENTER BOTTOM 4'	11/6/2009	0.074	NA	NA
EXC-PCB-1 SW BOTTOM 4'	11/6/2009	0.058	NA	NA
EXC-PCB-1 SE BOTTOM 4'	11/6/2009	<0.050	NA	NA
EXC TPH/PCB1 SW-BOTTOM 4'*	**11/12/2009**	**5.600**	NA	NA
EXC TPH/PCB1 SW-BOTTOM 4'-R*	***11/17/2009***	***0.930***	NA	NA
EXC TPH/PCB1-SW-BOTTOM4'-R2	***11/20/2009***	***1.900***	NA	NA
EXC TPH/PCB1-SW-BOTTOM6'-R2	***11/23/2009***	***0.720***	NA	NA
EXC TPH/PCB1 SE-BOTTOM 4'*	**11/12/2009**	**0.680**	NA	NA
EXC TPH/PCB1 SE-BOTTOM 4'-R	*11/17/2009*	*<0.050*	NA	NA
EXC TPH/PCB1 NW-BOTTOM 4'	11/17/2009	<0.050	NA	NA
EXC TPH/PCB1W-BOTTOM4'-R	*11/24/2009*	*<0.050*	NA	NA
EXC TPH/PCB1 S-SDWALL 2'EAST	**11/12/2009**	**1.200**	1.8	<50
EXC TPH/PCB1 S-SDWALL 2'EAST-DUP	**11/12/2009**	**0.700**	85	82
EXC TPH/PCB1 S-SDWALL2'-EAST-R	*11/18/2009*	*<0.050*	NA	NA
EXC TPH/PCB1 N-SDWALL2'-WEST	**11/17/2009**	**0.140**	5.8	<50
EXC TPH/PCB1 N-SDWALL2'-WEST-R	*11/21/2009*	*<0.049*	*<1.0*	*<50*

Table 2
Analytical Results for Confirmation Soil Samples Collected from Excavation PCB1, PCBs and TPH
Former Pacific Electric Motors Site
1009 66th Avenue, Oakland, California
concentrations in milligrams per kilogram (mg/kg)

PCB Excavation 1

Sample ID	Date	PCBs	TPHd	TPHmo
EXC TPH/PCB1 S-SDWALL2'-WEST-R	*11/18/2009*	*<0.050*	<0.99	<50
EXC TPH/PCB1 W-SDWALL2'-SOUTH	11/18/2009	**5.000**	210	61
EXC TPH/PCB1 W-SDWALL2'-SOUTH-R	*11/23/2009*	***7.500***	*400*	*140*
EXC TPH/PCB1 W-SDWALL2'-SOUTH-R2	*11/24/2009*	*<0.050*	*0.99*	*<50*
EXC TPH/PCB1 W-SDWALL2'-NORTH	**11/19/2009**	**0.220**	7.5	<50
EXC TPH/PCB1W-SDWALL2'-NORTH-R	*11/24/2009*	*<0.050*	*0.99*	*<50*
REGULATORY CONCENTRATIONS				
Soil Cleanup Goal		0.130	450	800

Notes:

PCBs = polychlorinated biphenyls

Samples analyzed by TestAmerica Laboratories Inc. for PCBs using EPA Test method 8082.

Bold font denotes results above soil cleanup goal.

Italic font denotes results of sample collected at the location of "over-excavation" where analytical results were above cleanup goals.

* Denotes the soil sample was collected approximately 3 feet below grade.

** Sample mislabeled in the field; Sample actually collected from EXC-PCB1.

Table 3
Analytical Results for Confirmation Soil Samples Collected from Excavation PCB2, PCBs
Former Pacific Electric Motors Site
1009 66th Avenue, Oakland, California

concentrations in milligrams per kilogram (mg/kg)

PCB Excavation 2

Sample ID	Date	PCBs
EXC-PCB-2 W-SIDEWALL 2'	11/4/2009	<0.050
EXC-PCB2 E-SIDEWALL 2'	**11/4/2009**	**1.3**
EXC-PCB-2 E2-SIDEWALL 2'	*11/10/2009*	*<0.050*
EXC-PCB-2 SO-SIDEWALL 2'	11/4/2009	<0.050
EXC-PCB-2 N-SIDEWALL 2'	11/4/2009	<0.050
EXC-PCB-2 CENTER BOTTOM 4'	11/5/2009	<0.050
REGULATORY CONCENTRATIONS		
Soil Cleanup Goal		0.130

Notes:

PCBs = polychlorinated biphenyls

Samples analyzed by TestAmerica Laboratories Inc. for PCBs using EPA Test metho

Bold font denotes results above soil cleanup goal.

Italic font denotes results of sample collected at the location of "over-excavation" where analytical results were above cleanup goals.

* Denotes the soil sample was collected approximately 3 feet below grade.

Table 4
Analytical Results for Confirmation Soil Samples Collected from Excavation PCB3, PCBs, SVOCs, and Metals
Former Pacific Electric Motors Site
1009 66th Avenue, Oakland, California

concentrations in milligrams per kilogram (mg/kg)

PCB Excavation 3

Sample ID	Notes	Date	PCBs	benzo(a)pyrene	benzo(a) anthracene	benzo(k) fluoranthene	chrysene	napthalene	Arsenic	Lead
EXC PCB3 N-BOTTOM4'		11/21/2009	<0.050	NA	NA	NA	NA	NA	NA	NA
EXC PCB3 S-BOTTOM4'		11/21/2009	<0.050	NA	NA	NA	NA	NA	NA	NA
EXC PCB3-SE-CORNER4'		11/23/2009	<0.049	<0.067	<0.33	<0.067	<0.067	<0.067	4.3	5.4
EXC PCB3-NE-CORNER3'		**11/23/2009**	**0.290**	<0.067	<0.33	<0.067	<0.067	<0.067	**42**	25
EXC PCB3-NE-CORNER3'R1		*12/8/2009*	*0.270*	NA	NA	NA	NA	NA	**7.1**	NA
EXC PCB3-E1-SDWALL2'		11/23/2009	**0.300**	<0.066	<0.33	<0.066	<0.066	<0.066	**84**	42
EXC PCB3-E1-SDWALL2'R1		*12/8/2009*	<0.050	NA	NA	NA	NA	NA	**100**	NA
EXC PCB3-E2-SDWALL2'		11/23/2009	<0.050	<0.067	<0.33	<0.067	<0.067	<0.067	<3.8	5.4
EXC PCB3-NW-Corner 3'	1	11/23/2009	**0.550**	<0.067	<0.33	0.11	0.19	<0.067	**41**	12
EXC PCB3-SW-CORNER4'		11/23/2009	<0.050	<0.067	<0.33	<0.067	<0.067	<0.067	5.4	6.1
EXC PCB3-W1-SDWALL2'		11/23/2009	**0.210**	<0.066	<0.33	<0.066	<0.066	<0.066	**160**	12
EXC PCB3-W2-SDWALL2'	2	11/23/2009	**8.700**	<0.066	<0.33	<0.066	<0.066	<0.066	**61**	13
EXC PCB3-W3-SDWALL2'		11/23/2009	<0.050	<0.066	<0.33	<0.066	<0.066	<0.066	**9.2**	7.4
EXC PCB3-N-SDWALL2'		11/23/2009	<0.050	<0.067	<0.33	<0.067	<0.067	<0.067	**87**	48
EXC PCB3-N-SDWALL2'R1		*12/8/2009*	<0.050	NA	NA	NA	NA	NA	**27**	NA
EXC PCB3-S-SDWALL2'		11/23/2009	<0.049	<0.067	<0.33	<0.067	<0.067	<0.067	**62**	4.5
REGULATORY CONCENTRATIONS										
Soil Cleanup Goal			0.130	0.13	1.3	1.3	21	2.8	7	80

Notes:

Samples analyzed by TestAmerica Laboratories Inc. for PCBs using EPA Test method 8082.

Bold font denotes results above soil cleanup goal.

Italic font denotes results of sample collected at the location of "over-excavation" where analytical results were above cleanup goals.

PCBs = polychlorinated biphenyls

1 - Sample contained phenanthrene 0.088; fluoranthene 0.28; pyrene 0.28; benzo[b]fluoranthene 0.18; and benzo[a]pyrene 0.15

2 - Sample contained: pyrene 0.079; benzo(b) fluoranthene 0.013; and benzo[g,h,i]perylene 0.10

NA = parameter not analyzed

Table 5
Analytical Results for Confirmation Soil Samples Collected from Excavation PCB3, TPH and VOCs
Former Pacific Electric Motors Site
1009 66th Avenue, Oakland, California

concentrations in milligrams per kilogram (mg/kg)

Excavation PCB3

Sample ID	Date	TPHg	TPHmo	TPHd	Benzene	Toluene	Ethyl benzene	Total Xylenes	Ethylene Dibromid	1,2-DCA
EXC PCB3-NW-CORNER3'	11/23/2009	<250	68	37	<0.0049	<0.0049	<0.0049	<0.0099	<0.0049	<0.0049
EXC PCB3-S-SDWALL2'	11/23/2009	<250	<50	16	<0.005	<0.005	<0.005	22	<0.005	<0.005
EXC PCB3-SE-CORNER4'	11/23/2009	<240	<50	4.6	<0.0048	<0.0048	<0.0048	<0.0098	<0.0048	<0.0048
EXC PCB3-NE-CORNER3'	11/23/2009	<250	<49	9.3	<0.0049	<0.0049	<0.0049	<0.0099	<0.0049	<0.0049
EXC PCB3-E1-SDWALL2'	11/23/2009	<250	59	31	<0.0049	<0.0049	<0.0049	<0.0098	<0.0049	<0.0049
EXC PCB3-E2-SDWALL2'	11/23/2009	<240	<50	15	<0.0049	<0.0049	<0.0049	<0.0097	<0.0049	<0.0049
EXC PCB3-SW-CORNER4'	11/23/2009	<240	<49	<0.99	<0.0049	<0.0049	<0.0049	<0.0097	<0.0049	<0.0049
EXC PCB3-W1-SDWALL2'	11/23/2009	<250	<49	1.7	<0.005	<0.005	<0.005	<0.0099	<0.005	<0.005
EXC PCB3-W2-SDWALL2'	11/23/2009	<250	<50	12	<0.005	<0.005	<0.005	<0.010	<0.005	<0.005
EXC PCB3-N-SDWALL2'	11/23/2009	<250	<50	16	<0.005	<0.005	<0.005	<0.010	<0.005	<0.005
EXC PCB3-W3-SDWALL2'	11/23/2009	<250	<49	<0.99	<0.005	<0.005	<0.005	<0.010	<0.005	<0.005
REGULATORY CONCENTRATIONS										
Soil Cleanup Goal		450	800	450	0.27	NE	NE	NE	0.13	1.3

Notes:

TPHg = total petroleum hydrocarbons in the gasoline-range (C5-C12)

TPHd = total petroleum hydrocarbons in the diesel-range (C10-C28)

TPHmo = total petroleum hydrocarbons in the motor oil-range (C24-C36)

1,2-DCA = 1,2-dichloroethane, commonly known as ethylene dichloride (EDC)

NE = none established

Samples analyzed by TestAmerica Laboratories Inc. for TPHg, TPHd, and TPHmo by EPA test method 8015B; benzene, toluene, ethylbenzene, and total xylenes analyzed by EPA test method 8260A.

Bold font denotes results above soil cleanup goal.

Italic font denotes results of sample collected at the location of "over-excavation" where analytical results were above cleanup goals.

Table 6
Analytical Results for Confirmation Soil Samples Collected from Excavation PCB4, PCBs
Former Pacific Electric Motors Site
1009 66th Avenue, Oakland, California

concentrations in milligrams per kilogram (mg/kg)

PCB Excavation 4

Sample ID	Date	PCBs
EXC PCB4-N-SDWALL2'	11/21/2009	0.084
EXC-PCB4-N2-SDWALL2'	11/21/2009	<0.050
EXC PCB4-S-SDWALL2'	**11/21/2009**	**0.180**
EXC PCB4-S1-SDWALL2'R1	*12/8/2009*	*0.230*
EXC-PCB4-S2-SDWALL2'	11/21/2009	**0.200**
EXC PCB4-W-SDWALL2'	11/21/2009	**6.500**
EXC PCB4-W-SDWALL2'R1	*12/8/2009*	*0.066*
EXC PCB4-E-SDWALL2'	11/21/2009	0.120
EXC-PCB4-W-BOTTOM4'	11/21/2009	**0.170**
EXC-PCB4-W-BOTTOM6' R1	*12/8/2009*	*<0.049*
EXC-PCB4-E-BOTTOM4'	11/21/2009	<0.049
REGULATORY CONCENTRATIONS		
Soil Cleanup Goal		0.130

Notes:

Samples analyzed by TestAmerica Laboratories Inc. for PCBs using EPA Test metho

Bold font denotes results above soil cleanup goal.

Italic font denotes results of sample collected at the location of "over-excavation" where analytical results were above cleanup goals.

PCBs = polychlorinated biphenyls

Table 7
Analytical Results for Confirmation Soil Samples Collected
from Excavation 4, TPH and VOCs
Former Pacific Electric Motors Site
1009 66th Avenue Oakland, California
concentrations in milligrams per kilogram (mg/kg)

Excavation 4

Sample ID	Date	TPHg	TPHmo	TPHd	Benzene	Toluene	Ethyl benzene	Total Xylenes	Ethylene Dibromid	1,2-DCA
EXC4-NORTH1-SDWALL1'	11/20/09	<0.240	**1,200**	320	<0.0049	<0.0049	<0.0049	<0.0097	<0.0049	<0.0049
EXC4-NORTH2-SDWALL1'	11/20/09	0.690	**1,100**	**1,000**	<0.005	<0.005	<0.005	<0.0099	<0.005	<0.005
EXC4-NORTH3-SDWALL1'	11/20/09	<0.250	<50	4.5	<0.005	<0.005	<0.005	<0.0099	<0.005	<0.005
EXC4-NORTH4-SDWALL1'	11/20/09	<0.240	<50	1.1	<0.0048	0.0092	<0.0048	0.035	<0.0048	<0.0048
EXC4-NORTH5-SDWALL1'	11/20/09	0.950	<0.99	<50	<0.0049	<0.0049	0.0072	0.042	<0.0049	<0.0049
EXC4-NORTH6-SDWALL1'	11/20/09	0.760	100	190	<0.0049	<0.0049	<0.0049	<0.0099	<0.0049	<0.0049
EXC4-25'NORTH1-SDWALL1	*11/27/09*	*<0.250*	*5.1*	*<50*	*<0.005*	*<0.005*	*<0.005*	*<0.0099*	*<0.005*	*<0.005*
EXC4-25'NORTH2-SDWALL1	*11/27/09*	*<0.250*	*14*	*67*	*1*	*1*	*1*	*<0.010*	*<0.0051*	*<0.0051*
EXC4-25'NORTH3-SDWALL1	*11/27/09*	*<0.240*	*7.5*	*<50*	*9*	*9*	*9*	*<0.0098*	*<0.0049*	*<0.0049*
EXC4-25'NORTH4-SDWALL1	*11/27/09*	*<0.240*	*4.2*	*<49*	*8*	*8*	*8*	*<0.0095*	*<0.0048*	*<0.0048*
EXC4-25'NORTH5-SDWALL1	*11/27/09*	*<0.240*	*<0.99*	*<50*	*8*	*8*	*8*	*<0.0096*	*<0.0048*	*<0.0048*
EXC4-25'NORTH6-SDWALL1	*11/27/09*	*<0.240*	*<0.99*	*<49*	*8*	*8*	*8*	*<0.0096*	*<0.0048*	*<0.0048*
EXC4-25'NORTH7-SDWALL1	*11/27/09*	*<0.250*	***990***	*<250*	*9*	*9*	*9*	*<0.0099*	*<0.0049*	*<0.0049*
EXC4-SOUTH2-SDWALL1'	11/20/09	1.3	**4,200**	**850**	0.012	0.0092	0.019	0.170	<0.0049	<0.0049
EXC4-SOUTH3-SDWALL1'	11/21/09	160	780	**3,400**	<2.0	<2.0	<2.0	37	<2.0	<2.0
EXC4-SOUTH4-SDWALL1'	11/21/09	<0.250	15	150	<0.005	<0.005	<0.005	<0.010	<0.005	<0.005
EXC4-SOUTH5-SDWALL1'	11/21/09	<0.240	230	**2,400**	<0.0049	<0.0049	<0.0049	<0.0098	<0.0049	<0.0049
EXC4-SOUTH6-SDWALL1'	11/21/09	<0.250	53	490	<0.0049	<0.0049	<0.0049	<0.0098	<0.0049	<0.0049
EXC4-SOUTH7-SDWALL1'	11/21/09	<0.250	42	450	<0.0049	<0.0049	<0.0049	<0.0099	<0.0049	<0.0049
EXC-4-SOUTH-4A-SDWALL 1	*11/27/09*	*<0.250*	*<0.99*	*<50*	*<0.0049*	*<0.0049*	*<0.0049*	*<0.0098*	*<0.0049*	*<0.0049*
EXC-4-SOUTH-4B-SDWALL 1	*11/27/09*	*<0.240*	*<0.99*	*<49*	*<0.0049*	*<0.0049*	*<0.0049*	*<0.0097*	*<0.0049*	*<0.0049*
EXC-4-SOUTH-4C-SDWALL 1	*11/27/09*	*<0.240*	*32*	*120*	*<0.0049*	*<0.0049*	*<0.0049*	*<0.0097*	*<0.0049*	*<0.0049*
EXC4-EAST1-SDWALL1'	11/21/09	<0.250	250	430	<0.005	<0.005	<0.005	<0.010	<0.005	<0.005
EXC4-EAST6-SDWALL1'	11/21/09	<0.240	350	**3,000**	<0.0047	<0.0047	<0.0047	<0.0094	<0.0047	<0.0047
EXC4-EAST7-SDWALL1'	11/21/09	<0.240	590	**3,100**	<0.0047	<0.0047	<0.0047	<0.0094	<0.0047	<0.0047
EXC4-EAST8-SDWALL1'	11/21/09	<0.250	17	<99	<0.005	<0.005	<0.005	<0.010	<0.005	<0.005
EXC4-EAST2--SDWALL1'	11/19/09	<0.250	64	17	<0.005	<0.005	<0.005	<0.010	<0.005	<0.005
EXC4-EAST3--SDWALL1'	11/19/09	<0.240	<50	<1.0	<0.0048	<0.0048	<0.0048	<0.0095	<0.0048	<0.0048
EXC4-EAST4--SDWALL1'	11/19/09	<0.250	190	54	<0.005	<0.005	<0.005	0.014	<0.005	<0.005
EXC4-EAST5--SDWALL1'	11/19/09	<0.240	<50	3.2	<0.0047	<0.0047	<0.0047	<0.0095	<0.0047	<0.0047
REGULATORY CONCENTRATIONS										
Soil Cleanup Goal		450	800	450	0.27	NE	NE	NE	0.13	1.3

Notes:

TPHg = total petroleum hydrocarbons in the gasoline-range (C5-C12)

TPHd = total petroleum hydrocarbons in the diesel-range (C10-C28)

TPHmo = total petroleum hydrocarbons in the motor oil-range (C24-C36)

1,2-DCA = 1,2-dichloroethane, commonly known as ethylene dichloride (EDC)

NE = none established

Samples analyzed by TestAmerica Laboratories Inc. for TPHg, TPHd, and TPHmo by EPA test method 8015B; benzene, toluene, ethylbenzene, and total xylenes analyzed by EPA test method 8260A.

Bold font denotes results above soil cleanup goal.

Italic font denotes results of sample collected at the location of "over-excavation" where analytical results were above cleanup goals.

Table 8
Analytical Results for Confirmation Soil Samples Collected
from Excavation 4, PCBs, SVOCs, and Metals
Former Pacific Electric Motors Site
1009 66th Avenue, Oakland, California
concentrations in milligrams per kilogram (mg/kg)

Excavation 4

Sample ID	Date	PCBs	benzo(a)pyrene	benzo(a) anthracene	benzo(k) fluoranthene	chrysene	napthalene	Arsenic	Lead
EXC4-NORTH1-SDWALL1'	11/20/09	**40.000**	<3.3	<16	<3.3	<3.3	<3.3	**13**	**97**
EXC4-N1-SDWALL1'-R	*01/05/10*	**0.470**	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*8.7*
EXC4-NORTH2-SDWALL1'	11/20/09	**0.290**	<0.33	<1.6	<0.33	<0.33	<0.33	**16**	53
EXC4-NORTH3-SDWALL1'	11/20/09	<0.050	<0.066	<0.33	<0.066	<0.066	<0.066	6.7	17
EXC4-NORTH4-SDWALL1'	11/20/09	<0.050	<0.066	<0.33	<0.066	<0.066	<0.066	**110**	27
EXC4-NORTH5-SDWALL1'	11/20/09	<0.050	<0.067	<0.33	<0.067	<0.067	<0.067	**49**	20
EXC4-NORTH6-SDWALL1'	11/20/09	<0.050	<0.33	<1.6	<0.33	<0.33	<0.33	**47**	29
EXC4-25'NORTH1-SDWALL1'	*11/30/09*	***4.200***	*NA*	*NA*	*NA*	*NA*	*NA*	*<3.9*	*5.5*
EXC4-25'NORTH2-SDWALL1'	*11/30/09*	***2.600***	*NA*	*NA*	*NA*	*NA*	*NA*	*<3.9*	*13*
EXC4-25'NORTH3-SDWALL1'	*11/30/09*	***1.100***	*NA*	*NA*	*NA*	*NA*	*NA*	***7.2***	*37*
EXC4-25'NORTH4-SDWALL1'	*11/30/09*	*0.067*	*NA*	*NA*	*NA*	*NA*	*NA*	***9.2***	*38*
EXC4-25'NORTH5-SDWALL1'	*11/30/09*	*<0.050*	*NA*	*NA*	*NA*	*NA*	*NA*	*<4.1*	*5.1*
EXC4-25'NORTH6-SDWALL1'	*11/30/09*	*<0.050*	*NA*	*NA*	*NA*	*NA*	*NA*	*<3.9*	*5.7*
EXC4-25'NORTH7-SDWALL1'	*11/30/09*	***0.330***	*NA*	*NA*	*NA*	*NA*	*NA*	*<4.1*	*12*
EXC4-50'NORTH1-SDWALL1'	*11/30/09*	***0.360***	*NA*	*NA*	*NA*	*NA*	*NA*	*4.1*	*NA*
EXC4-50'NORTH2-SDWALL1'	*11/30/09*	***0.730***	*NA*	*NA*	*NA*	*NA*	*NA*	*4.7*	*NA*
EXC4-50'NORTH3-SDWALL1'	*11/30/09*	***0.250***	*NA*	*NA*	*NA*	*NA*	*NA*	***39***	*NA*
EXC4-50'NORTH3-SDWALL1'-1	*11/30/09*	***0.250***	*NA*	*NA*	*NA*	*NA*	*NA*	***4.3***	*NA*
EXC4-50'NORTH4-SDWALL1'	*01/05/10*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	***13***	*67*
EXC4-SOUTH2-SDWALL1'	11/20/09	0.059	<6.7	<33	<6.7	<6.7	<6.7	5.3	15
EXC4-SOUTH3-SDWALL1'	11/21/09	<0.050	<3.3	<16	<3.3	<3.3	<3.3	4.4	15
EXC4-SOUTH4-SDWALL1'	11/21/09	<0.048	<0.67	<3.3	<0.67	<0.67	<0.67	4.6	4.1
EXC4-SOUTH5-SDWALL1'	11/21/09	<0.049	<6.6	<33	<6.6	<6.6	<6.6	<4.1	4.0
EXC4-SOUTH6-SDWALL1'	11/21/09	<0.049	<1.7	<8.2	<1.7	<1.7	<1.7	6.3	6.2
EXC4-SOUTH7-SDWALL1'	11/21/09	<0.050	<3.3	<16	<3.3	<3.3	<3.3	5.5	6.2
EXC-4-South-4A-SDWALL1'	*11/30/09*	<0.050	*NA*	*NA*	*NA*	*NA*	*NA*	*5.2*	*11*

Table 8
Analytical Results for Confirmation Soil Samples Collected from Excavation 4, PCBs, SVOCs, and Metals
Former Pacific Electric Motors Site
1009 66th Avenue, Oakland, California

concentrations in milligrams per kilogram (mg/kg)

Excavation 4

Sample ID	Date	PCBs	benzo(a)pyrene	benzo(a) anthracene	benzo(k) fluoranthene	chrysene	napthalene	Arsenic	Lead
EXC-4-South-4B-SDWALL1'	*11/30/09*	<0.050	*NA*	*NA*	*NA*	*NA*	*NA*	*5.5*	*9.7*
EXC-4-South-4C-SDWALL1'	*11/30/09*	<0.050	*NA*	*NA*	*NA*	*NA*	*NA*	***56***	***100***
*EXC-4-South-4C-SDWALL2'**	*12/21/09*	NA	*NA*	*NA*	*NA*	*NA*	*NA*	***30***	***8.1***
EXC4-EAST1-SDWALL1'	11/21/09	<0.490	<0.067	<0.33	<0.067	<0.067	<0.067	**150**	34
EXC4-EAST6-SDWALL1'	11/21/09	<0.049	<6.6	<33	<6.6	<6.6	<6.6	**11**	78
EXC4-EAST7-SDWALL1'	11/21/09	<0.050	<3.3	<16	<3.3	<3.3	<3.3	**11**	61
EXC4-EAST8-SDWALL1'	11/21/09	<0.050	<1.7	<8.2	<1.7	<1.7	<1.7	**13**	48
EXC4-EAST2--SDWALL1'	11/19/09	<0.050	<0.33	<1.6	<0.33	<0.33	<0.33	**120**	64
EXC4-EAST3--SDWALL1'	11/19/09	<0.050	<0.067	<0.33	<0.067	<0.067	<0.067	**80**	14
EXC4-EAST4--SDWALL1'	11/19/09	<0.050	<0.33	<1.6	<0.33	<0.33	<0.33	**58**	37
EXC4-EAST5--SDWALL1'	11/19/09	<0.050	<0.067	<0.33	<0.067	<0.067	<0.067	**170**	75
REGULATORY CONCENTRATIONS									
Soil Clean-Up Goal		0.130	0.13	1.3	1.3	21	2.8	7	80

Notes:

PCBs = polychlorinated biphenyls

TPHd = total petroleum hydrocarbons in the diesel-range (C10-C28)

TPHmo= total petroleum hydrocarbons in the motor oil-range (C24-C36)

Samples analyzed by TestAmerica Laboratories Inc. for PCBs using EPA test method 8082; semivolatile organic compounds by EPA test method 8270C; metals by EPA Test method 6010 series.

Bold font denotes results above soil cleanup goal.

Italic font denotes results of sample collected at the location of "over-excavation" where analytical results were above cleanup goals.

*EXC-4-South-4C-SDWALL2' was originally mislabeled as EXC-4-South-46-SDWALL2' and is titled as such in the lab reports.

Table 9
Analytical Results for Confirmation Soil Samples Collected from Excavations 1 and 2, Metals
Former Pacific Electric Motors Site
1009 66th Avenue, Oakland, California
concentrations in milligrams per kilogram (mg/kg)

Excavation 1

Sample ID	Date	Lead	Arsenic
EXC1-N-SDWALL1'	11/21/09	**200**	**7.5**
EXC1-NORTH R1-SDWALL1'	*11/30/09*	***440***	***8.2***
EXC1-NR2-SDWALL1'	*12/14/09*	***140***	*5.2*
EXC1-N-R3SDWALL2'	12/21/09	**120**	6.0
EXC1-E-SDWALL1'	11/21/09	**220**	**8.4**
EXC1-EAST R1-SDWALL1'	*11/30/09*	***220***	***7.5***
EXC1-NWR2-CORNER1'	*12/15/09*	**160**	**7.3**
EXC1-S-SDWALL1'	11/21/09	**130**	**8.4**
EXC1-W-SDWALL1'	11/21/09	**360**	**17**
EXC1-WEST R1-SDWALL1'	*11/30/09*	***130***	***7.9***
EXC1-WR2-SDWALL1'	*12/14/09*	***210***	***7.1***
EXC1/2-N-CENTER2'	12/21/09	**300**	**7.3**
EXC1/2-N-CENTER-R	1/5/10	**210**	NA
EXC1/2-S-CENTER2'	12/21/09	**96**	6.5

Excavation 2

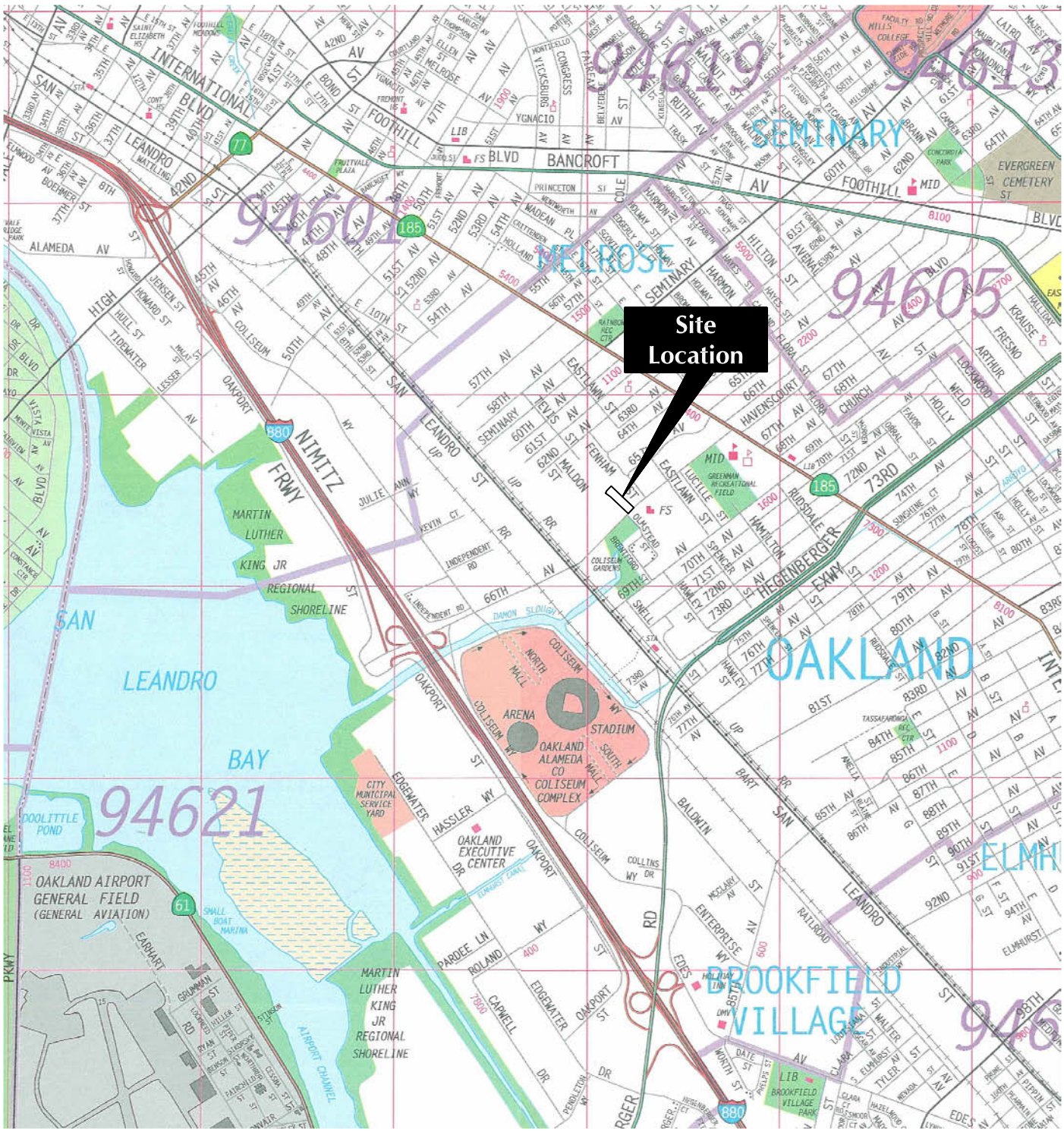
Sample ID	Date	Lead	Arsenic
EXC2-N-SDWALL1'	11/21/09	**310**	6.4
EXC2-NORTH-R1-SDWALL1'	*11/30/09*	***220***	***7.1***
EXC2-NR2-SDWALL1'	*12/14/09*	**300**	6.9
EXC2-NER2-CORNER1	*12/15/09*	**220**	6.6
EXC2-S-SDWALL1'	11/21/09	**270**	**8.8**
EXC2-S-R3SDWALL2'	12/21/09	**130**	6.8
EXC2-E-SDWALL1'	11/21/09	**130**	6.5
EXC2-EAST-R1-SDWALL1'	*11/30/09*	*68*	*6.1*
EXC2-ER2-SDWALL1'	*12/14/09*	***210***	***7.7***
EXC2-W-SDWALL1'	11/21/09	**120**	**22**
REGULATORY CONCENTRATIONS			
Cleanup goal		80	7

Notes:

Samples analyzed by TestAmerica Laboratories Inc. for metals by EPA Test method 6010 series.

Bold font denotes results above soil cleanup goal.

Italic font denotes results of sample collected at the location of "over-excavation" where analytical results were above cleanup goals.



MAP SOURCE:
Copyright 1995, Thomas Bros. Map
ALAMEDA COUNTY
2002 Edition

0 1,000' 2,000' 4,000'
Scale in Feet

PROPOSED CHARTER SCHOOL SITE
1009 66TH AVENUE, OAKLAND, CALIFORNIA

SITE VICINITY MAP

ARCADIS

FIGURE
1

CITY:(Reqd) DIV/GROUP:(Reqd) DB:(Reqd) LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
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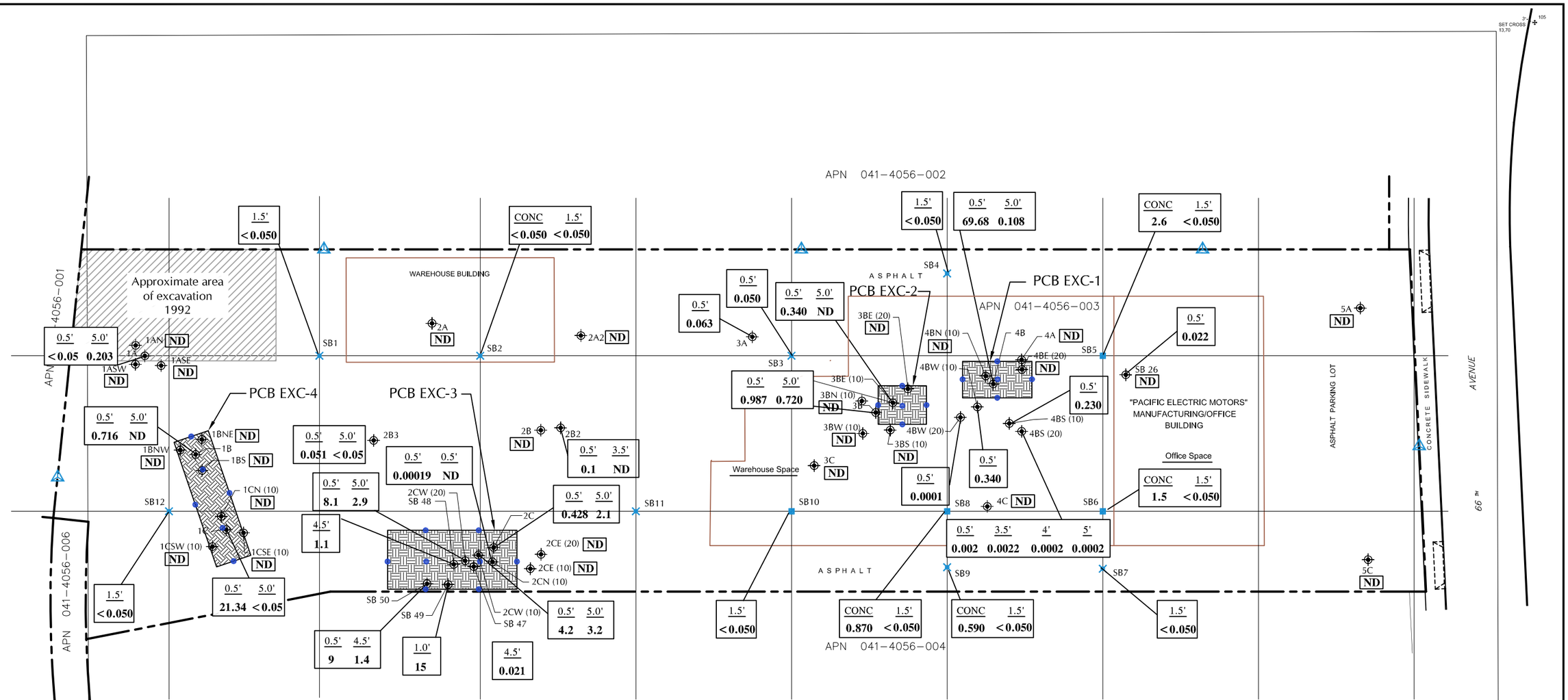
SV-1.jpg
SV-1.jpg
SV-2.jpg
SV-2.jpg
Thomas Guide Site Map.jpg



EXPLANATION:

1B Soil sample location

Soil and concrete sample location based on a 75'x75' grid spacing (5 locations - 10/2009)

Proposed confirmation soil sample based on a 30'x30' grid spacing

Soil sample location based on a 75'x75' grid spacing (9 locations - 10/2009)

Air monitoring station

Property line

Proposed excavation of PCB-affected soil

4.5' — Depth in feet
1.1 — Concentration in mg/kg

ND = Not detected at or above laboratory reporting limits

CONC = Concrete sample

0 50 Feet

PROPOSED CHARTER SCHOOL SITE
1009 66TH AVENUE, OAKLAND, CALIFORNIA

PCBs DETECTED IN SOIL
0 TO 5 FEET BELOW GROUND SURFACE

ARCADIS

FIGURE
2

CITY:(Reqd) DIV/GROUP:(Reqd) DB:(Reqd) LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=REF*
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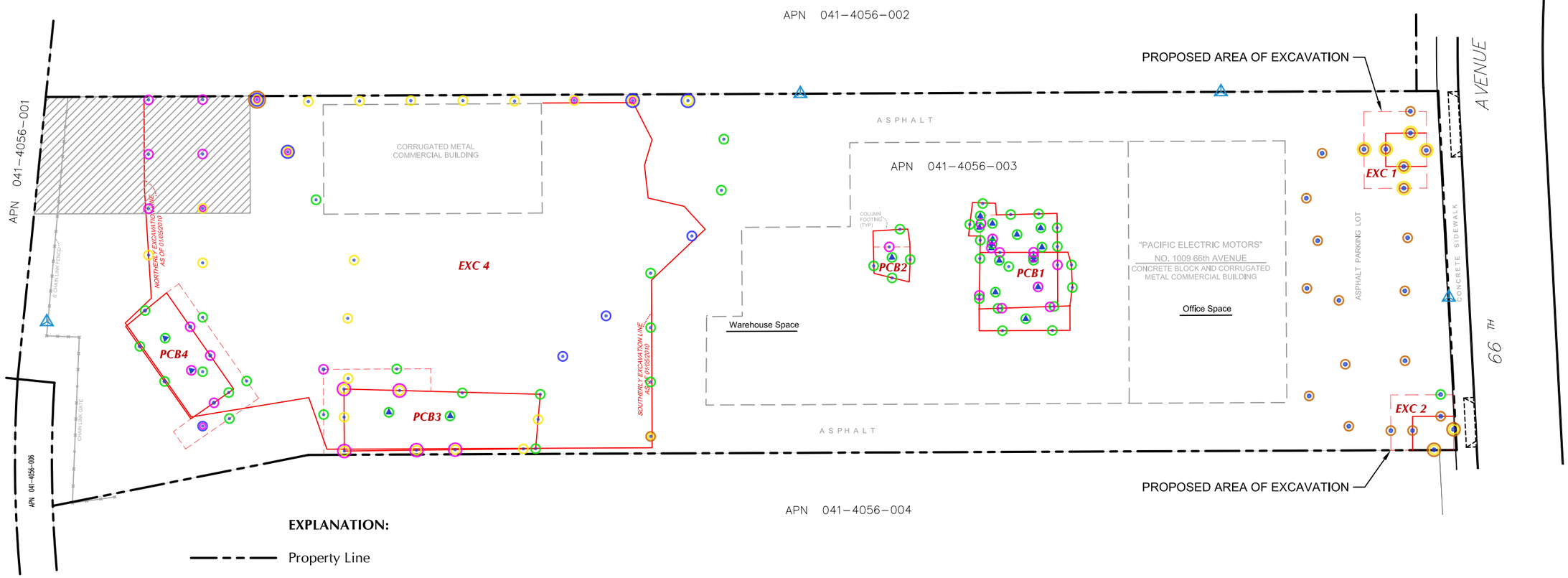
Survey Plan.jpg



EXPLANATION:

- Property Line
- Former Warehouse Building
- Excavation
- Reported Area of Excavation of PCB-Affected Soil in 1992
- Air Monitoring Station
- Sidewall Confirmation Sample Location and ID
- Bottom Confirmation Sample Location and ID
- Passed All Criteria
- Failed Polychlorinated Biphenyls
- Failed Arsenic
- Failed Lead
- Failed Total Petroleum Hydrocarbons

0 50 Feet

PROPOSED CHARTER SCHOOL SITE
1009 66TH AVENUE, OAKLAND, CALIFORNIA

SITE PLAN SHOWING EXCAVATION AREAS AND CONFIRMATION SAMPLE LOCATIONS

ARCADIS

FIGURE
3

CITY:(Reqd) DIV/GROUP:(Reqd) DB:(Reqd) LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
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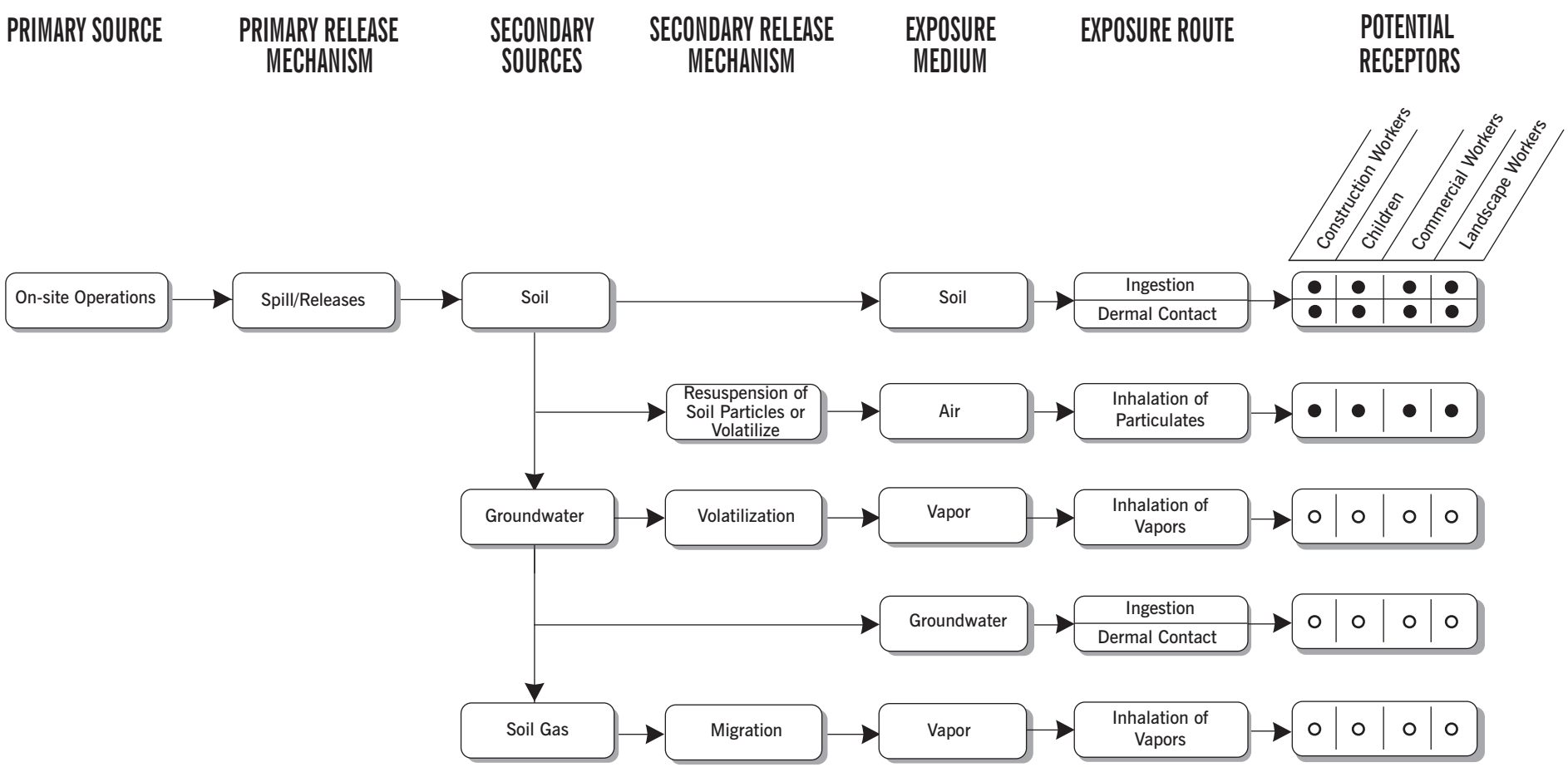

EXPLANATION

● Complete exposure pathway

○ Groundwater and soil gas analytical results not available. Post remediation samples will be collected after the installation of the groundwater treatment systems.

PROPOSED CHARTER SCHOOL SITE
1009 66th AVENUE, OAKLAND, CALIFORNIA

Exposure Pathway Evaluation
Potential Current and Future Conditions

ARCADIS

FIGURE
4