East Bay Municipal Utility District

Fontaine Pumping Plant Replacement Project Final Hazards and Hazardous Materials Technical Report

September 2021

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PANORAMA ENVIRONMENTAL, INC.

East Bay Municipal Utility District

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Final Hazards and Hazardous Materials Report

September 2021

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1 Introduction

1.1 Project Overview

The East Bay Municipal Utility District (EBMUD) is proposing to replace its existing Fontaine Pumping Plant (PP) to address aging water distribution infrastructure and improve operational reliability and redundancy. Specifically, the Fontaine Pumping Plant Replacement Project (Project) includes the following three primary components:

- Demolition of the existing 20-million-gallon-per-day (mgd) Fontaine PP and construction of a new retaining wall (shown on Figure 1) at 8445 Ney Avenue in the City of Oakland (Alameda County) and abandonment of existing pipelines by cutting, capping, and filling the pipeline with cellular concrete at three existing pipeline abandonment disconnection sites (shown on Figure 2);
- Construction of a new 20-mgd PP and 24-inch rate control station (shown on Figure 3) at 9601 MacArthur Boulevard in the City of Oakland (Alameda County); and
- Installation of approximately 1,300 feet of new 30-inch-diameter suction pipeline and approximately 3,600 feet of new 30-inch-diameter discharge pipeline (using open trench construction methods) that would connect the new PP to the distribution system (shown on Figure 4).

The new PP would consist of three pumps, associated mechanical and electrical equipment, and a 24-inch-diameter rate control station located inside an approximately 45-feet wide, 50-feet long, and 23-feet tall building. The new PP site would include an approximate 25-foot-tall antenna, outdoor light fixtures, site accesses, a parking area, outdoor transformer and switchgear, and perimeter fencing. The Project would also include building architectural treatments and site landscaping as described in the *East Bay Municipal Utility District Fontaine Pumping Plant Replacement Project Aesthetics Conceptual Design Report* (Panorama Environmental, Inc., MWA Architects, and Dillingham Associates, 2021).

Figure 1 Existing Fontaine Pumping Plant (8445 Ney Avenue)

Figure 2 Existing Pipeline Abandonment Disconnection Sites

Figure 3 New Fontaine Pumping Plant (9601 MacArthur Boulevard)

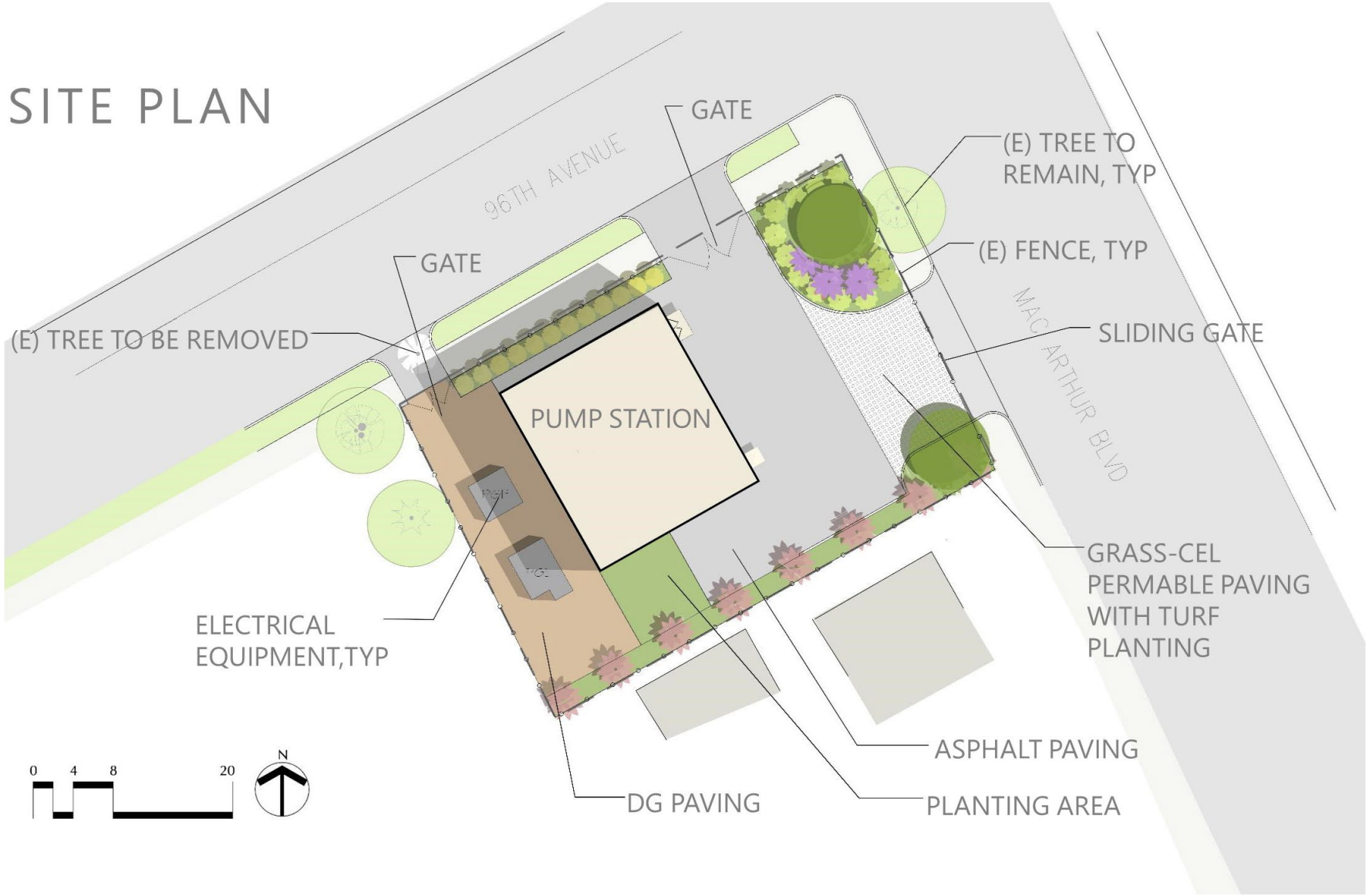


Figure 4 New Pumping Plant and New Pipeline Location

1.2 Definitions

1.2.1 Waste

"Waste" is considered to be any solid, liquid, or contained gaseous material that is (1) disposed of, recycled, or incinerated, or (2) accumulated, stored, or treated before or in lieu of being disposed of, recycled, or incinerated.

1.2.2 Hazardous Waste

"Hazardous waste" is any waste that meets the criteria for identification of a hazardous waste as set forth in California Code of Regulations, Title 22, Section 66261.3. A waste may be hazardous if it exhibits one or more of the characteristics of toxicity, reactivity, corrosivity, or ignitability, or if it is included on a specific list of wastes the United States (U.S.) Environmental Protection Agency (EPA) and/or California Department of Toxic Substances Control (DTSC) has determined are hazardous because the waste poses substantial present or potential hazards to human health or the environment.

1.2.3 Hazardous Waste Manifest

A "hazardous waste manifest" is an EPA document (paper or electronic) designed to track hazardous waste from the moment it leaves the facility where it was generated, until it reaches the off-site waste management facility that will store, treat and/or dispose of the hazardous waste. The manifest is what ties the generator to the waste from "cradle to grave".

These definitions are instructive but not comprehensive. State and federal legal definitions of hazardous waste are complex and subject to exceptions. Waste sample collection, analyses, and data comparison with Title 22 action levels may be necessary to determine if a waste is a hazardous waste.

1.2.4 Hazardous Material

The term "hazardous material" has varying definitions depending on the regulatory programs. For the purposes of this technical report, the term refers to both hazardous materials and hazardous wastes. The California Health and Safety Code Section 25501(n) defines hazardous material as: any material that because of its quantity, concentrations, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

1.2.5 Screening Levels for Hazardous Materials in Soil, Soil Gas, or Groundwater

The U.S. EPA Regional Screening Levels and San Francisco Bay Regional Water Quality Control Board (RWQCB) Environmental Screening Levels (ESLs) are guidelines used to evaluate the potential risk associated with chemicals in soil or groundwater where a release of hazardous materials has occurred. Although developed and maintained by the RWQCB, ESLs are used by regulatory agencies throughout the State. Screening levels have been established for both residential and commercial/industrial land uses, and for construction workers. Residential screening levels are the most restrictive. Soil with chemical concentrations below these ESLs generally would not require remediation and would be suitable for unrestricted uses if disposed of offsite.

Commercial/industrial screening levels are generally less restrictive than residential screening levels because they are based on potential worker exposure to hazardous materials in the soil (and these are generally less than residential exposures). Screening levels for construction workers are also less restrictive than for commercial/industrial workers because construction workers are only exposed to the chemical of concern during the duration of construction, while industrial workers are assumed to be exposed over a working lifetime. Chemical concentrations below these screening levels generally would not require remediation and would be suitable for unrestricted uses.

1.2.6 Recognized Environmental Condition

A Recognized Environmental Condition (a REC) is defined by the American Society for Testing and Materials (ASTM) in Standard E1527-13 as "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment."

1.2.7 Historic Recognized Environmental Concern

A historic REC (HREC) is defined by ASTM in Standard E1527-13 as "a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls)."

1.2.8 Hazards

Hazards include physical hazards that could affect public health and safety. Physical hazards evaluated under the California Environmental Quality Act (CEQA) include, but are not limited to, proximity to airports, wildland fire hazards, and objects that could induce current and voltage and result in shock hazards.

2 Environmental Setting

2.1 Hazardous Materials and Wastes

2.1.1 Existing Pumping Plant and Existing Pipeline Abandonment

Based on preliminary review of the SWRCB GeoTracker database and DTSC EnviroStor database, no hazardous materials release sites (open and closed) were identified within 0.25 mile of the existing PP or existing pipeline abandonment disconnection sites. Samples for asbestos and lead were taken in 2003 from various electrical components at the existing PP. The analysis revealed the presence of asbestos in the motor control center panel and the presence of lead in the motor's paint coating. An occupational lead exposure assessment was completed in 2006 for the existing PP, which identified the presence of lead at varying levels in the paint on various facility features, including the walls, floor, ceiling, motor, and pipelines. The assessment also determined that although typical maintenance activities at the existing PP are unlikely to cause lead to become airborne, abrasive activities (such as demolition) could cause the lead in the paint to become a significant source of airborne lead (Sui, 2006). Documentation and reports relevant to the 2003 and 2006 lead and asbestos assessments are provided in Appendix A.

2.1.2 New Pumping Plant and New Pipelines

Records Review

Based on review of the SWRCB GeoTracker database and DTSC EnviroStor database, nine hazardous materials release sites were identified within 0.25 mile of the new PP and new pipeline alignments. Three of the sites are part of active permitted operations and another site is a historic underground storage tank (UST). The remaining five release sites have been closed because residual contamination (if any) does not pose an unacceptable health risk to the current site users. Table 1 provides a summary of the nine release sites.

A Phase I Environmental Site Assessment (ESA) was conducted in June 2013 for the new PP site by URS (URS Corporation, 2013). As a part of the Phase I ESA, a regulatory database search report was prepared for the new PP property by Environmental Data Resources Inc. (EDR) on February 26, 2013. The goal of the database search was to identify whether the property or adjacent properties have been or are currently listed on federal and/or State databases as areas with known contaminants. Neither the new PP site nor the adjacent property addresses were listed in the environmental databases reviewed in the EDR report, indicating that they are not known to contain any hazardous wastes or contaminants.

Table 1 Hazardous Materials Release Sites within 0.25-mile of the New Pumping Plant and New Pipelines[1]

Site Name	Address	Case Type	Status
M&K Gas and Food	2740 98th Avenue	Permitted UST	Active
Allied Signal Inc	9808 Springfield Street	Resource Conservation and Recovery Act (RCRA) Small Quantity Generator	Active
City of Oakland Fire Station #26	2611 98th Avenue	Above-ground storage tank	Active
L & H Auto/Nam's Transmission	9868 MacArthur Boulevard	Historic UST	Inactive
Verdese Carter Park	98th and Bancroft Avenues	Voluntary Cleanup	Expanded Site Inspection/Remedial Investigation[a]
ARCO	2740 98th Avenue	Leaking UST (LUST) Cleanup Site	Completed-Case Closed
Oakland Aviation School	9859 MacArthur Boulevard	Mercury Release Cleanup Site	Completed-Case Closed
BP Oil Company Facility #11133/Tosco Northwest Co No 11133/Mobil Service Station	2220 98th Avenue	LUST Cleanup Site	Completed-Case Closed
UNOCAL #4710	9780 Bancroft Avenue	LUST Cleanup Site	Completed-Case Closed

Notes:

[a] The EDR report identifies this hazardous materials release site as being under active regulatory oversight for ongoing investigation and cleanup activities; however, voluntary cleanup was completed by AlliedSignal (now Honeywell International) in 1996 (U.S. EPA, 2000).

[1] An additional 20 records were identified in the EDR report, but due to poor or inadequate address information, could not be located.

The EDR report also collected listings of potential gas station/service station sites and dry-cleaning establishments, which fall under a category of information EDR classifies as "High Risk Historical Records." The EDR report found two "Historical Auto Stations," including one located at 9722 MacArthur Boulevard and another at 9868 MacArthur Boulevard, and one "Historical Cleaner," located at 2506 98th Avenue, all of which are located within 0.25 mile of the new PP site.

Four unmappable/orphan sites were listed in the EDR report. Due to poor or inadequate address information, the sites could not be accurately located by EDR. The Phase I ESA concluded that the unmappable/orphan sites are not expected to be located within or adjacent to the new PP site.

Site History and Reconnaissance

The Phase I ESA did not identify any RECs, but one HREC was identified based on a review of historical aerial photographs. An HREC is not considered to be a REC for the purposes of a Phase I ESA. Rather, an HREC indicates a past release of hazardous substances or petroleum products that has been remediated to below regulatory standards and given regulatory closure with no use restrictions. The site, therefore, does not represent a current environmental concern and does not necessitate listing on State or federal environmental databases. The HREC, which was a gas station, was present on the property from at least 1950 to 1952 (it may have been present until approximately 1958 but is not represented on the 1959 Sanborn[2] map). Based on a review of available historical documentation, the site appears to have been converted to a vacant lot sometime between 1968 and 1974 (the building appears to have been left standing until some period before 1974) and has remained vacant since at least 1974. The gas station may have used USTs or aboveground storage tanks (ASTs) to store fuel. If a UST was used at the new PP site, it may have been left in place along with appurtenances such as valving and piping to aboveground fueling stations. A UST, if present, may have corroded and collapsed and the hazardous materials associated with it may be present subsurface (URS Corporation, 2013).

As a part of the Phase I ESA, a site reconnaissance of the new PP site was conducted on February 14, 2013. No hazardous substances or petroleum products were observed at the Project site and no evidence of USTs or ASTs or evidence of transformers were observed. Because the site is undeveloped, solid and hazardous wastes are not currently being generated. Domestic garbage and debris, including concrete pieces, paper, plastic, and metal, were observed scattered throughout the site. No staining or leaking associated with the debris or

[2] Sanborn maps are a uniform series of large-scale maps dating from 1867 to the present. The maps were designed to assist fire insurance agents in determining the degree of hazard associated with a particular property and, therefore, show the size, shape, and construction of dwellings, commercial buildings, and factories as well as fire walls, locations of windows and doors, sprinkler systems, and types of roofs. The maps also indicate widths and names of streets, property boundaries, building use, and house and block numbers.

fencing was observed and, therefore, it is not expected to represent a REC. No drug paraphernalia (such as syringes) or physical evidence of contamination were observed during the site reconnaissance (URS Corporation, 2013).

Findings and Subsequent Investigation

Previous Investigations and Potential Contamination

If an AST or UST were previously used to store fuel on site, a release of fuels from the tank could have historically impacted soil and groundwater. However, the potential for hydrocarbon constituents, including gasoline and benzene, toluene, ethylbenzene, and xylenes (BTEX), to persist in the environment for a period of 50 or 60 years is unlikely. Therefore, the Phase I ESA did not recommend sampling to evaluate possible adverse impacts to soil and groundwater from a potential historical release of gasoline and BTEX. Volatilization to the atmosphere and leaching by infiltrating surface water and groundwater likely degraded any potential hydrocarbons and mitigated impacts.

Tetraethyl lead (TEL) was commonly used as an octane booster in gasoline during the 1950s. TEL is more recalcitrant than hydrocarbons and BTEX and has a strong tendency to adsorb to soil and sediments. If an uncontrolled release of fuels occurred from a UST or AST located on an unpaved area, the hydrocarbons would likely have degraded but elevated TEL concentrations could persist in shallow soil. The potential for elevated TEL to be present in shallow soils is not regarded as a REC because no release is known to have occurred and the commercial storage and handling of gasoline does not necessarily constitute a source of concern. Nonetheless, to evaluate whether the site has been adversely impacted by a historical release of TEL, the Phase I ESA recommended collecting shallow soil samples and analyzing for TEL. Soil sampling and testing for TEL (through organic lead testing) were conducted as part of a Phase II ESA, the results of which are described below (see "Soil Boring and Sampling" section). Excavation or other activities that disturb soil during construction at the site may generate lead-containing dust that presents a human health threat to construction workers and nearby residents (URS Corporation, 2013).

Subsurface Investigation and Soil Sampling

Phase II ESA

A Phase II ESA was conducted in February 2016 for the site by Engineering/Remediation Resources Group, Inc (ERRG) (ERRG, 2016). The Phase II ESA investigated potential impacts to the site from historical gas and oil facilities or other activities at the site. The Phase II ESA included a subsurface investigation (utility locating and ground-penetrating radar [GPR] survey) to identify whether USTs were present on site, collection of soil samples to assess whether a release from any identified USTs had occurred, and analysis of soil samples to characterize contaminants. The results of the subsurface investigation and sample soil analyses, as well as an assessment of potential groundwater contamination, are summarized below.

Subsurface Investigation

The utility survey was part of the Phase II ESA and was performed over a 30-foot-by-64-foot area in the northeast corner of the site to cover all boring locations. Utility locating was performed to detect metal objects up to 10 feet below ground surface (bgs). Metal was detected on the eastern end of the surveyed area and no metal was detected on the western end. On the eastern end of the area, a well-defined metal anomaly measuring 10 feet by 10 feet was detected; however, the depth could not be determined. Other anomalies in the area were undefined, but are suspected to be rebar within reinforced concrete, old piping, metal debris, or buried reinforced concrete footings (ERRG, 2016).

A GPR survey was also performed over a 40-foot-by-30-foot area in the northeast corner of the site to evaluate the subsurface for the presence of a UST. The GPR survey was inhibited by clay soil within the survey area; however, multiple buried metal, concrete, or other anomalies were detected in the eastern side of the survey area. While no definitive evidence of a UST was identified during the GPR survey, the results were inconclusive and unable to confirm or deny the presence of a UST (ERRG, 2016).

Soil Boring and Sampling

The soil sampling investigation, conducted as part of the Phase II ESA, consisted of advancing eight soil boring locations between 20 and 25 feet bgs in the area where buried metal/anomalies were identified. During the investigation, fill material or other evidence of a UST were not encountered. Total petroleum hydrocarbons (TPH) as gasoline, fuel oxygenates, polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), and organic lead (indicative of the presence of TEL) were below detection limits in all soil samples collected from the eight soil borings. TPH as diesel and motor oil were detected in seven of the 24 soil samples at concentrations less than the environmental screening levels (ESLs) for soil. Additionally, the chromatography exhibited patterns that differed from the standard, suggesting chemical weathering over a long period of time.

Groundwater

Groundwater contamination at the new PP site is unlikely, since there was no groundwater encountered at 25 feet bgs and photoionization detector readings were quite low (between 10 feet bgs and 25 feet bgs) and analytical results for TPH (gas, diesel, and motor oil), fuel oxygenates, PAHs, VOCs, and lead concentrations were not detectable, or they were below ESLs or U.S. EPA Region 9 regional screening levels (RSLs).

2.2 Underground Utilities

The new PP site is currently undeveloped and is not serviced by utilities. Legacy utility infrastructure (e.g., water well, subsurface water pipelines, subsurface power lines, underground storage tank with appurtenances) may be present but, based on historical data, is unlikely to have been in use since approximately 1974, when the site was known to have been vacant.

Available drawings and easement/rights-of-way documentation in the vicinity of the new pipelines, existing PP, and disconnection points were reviewed to identify the presence of underground utilities (other than EBMUD's water distribution infrastructure). Except for one 5-foot-wide easement for a wastewater pipeline at the existing PP site, no other underground utilities were identified.

2.3 Schools

Based on a review of federal records for public and private schools with grades ranging from pre-kindergarten to 12th grade, two schools are within approximately 0.25 mile of the existing PP and five schools are within approximately 0.25 mile of the new PP and new pipelines (U.S. Department of Education, 2017). The locations of the schools are shown on Figure 5 and data for each school is provided in Table 2.

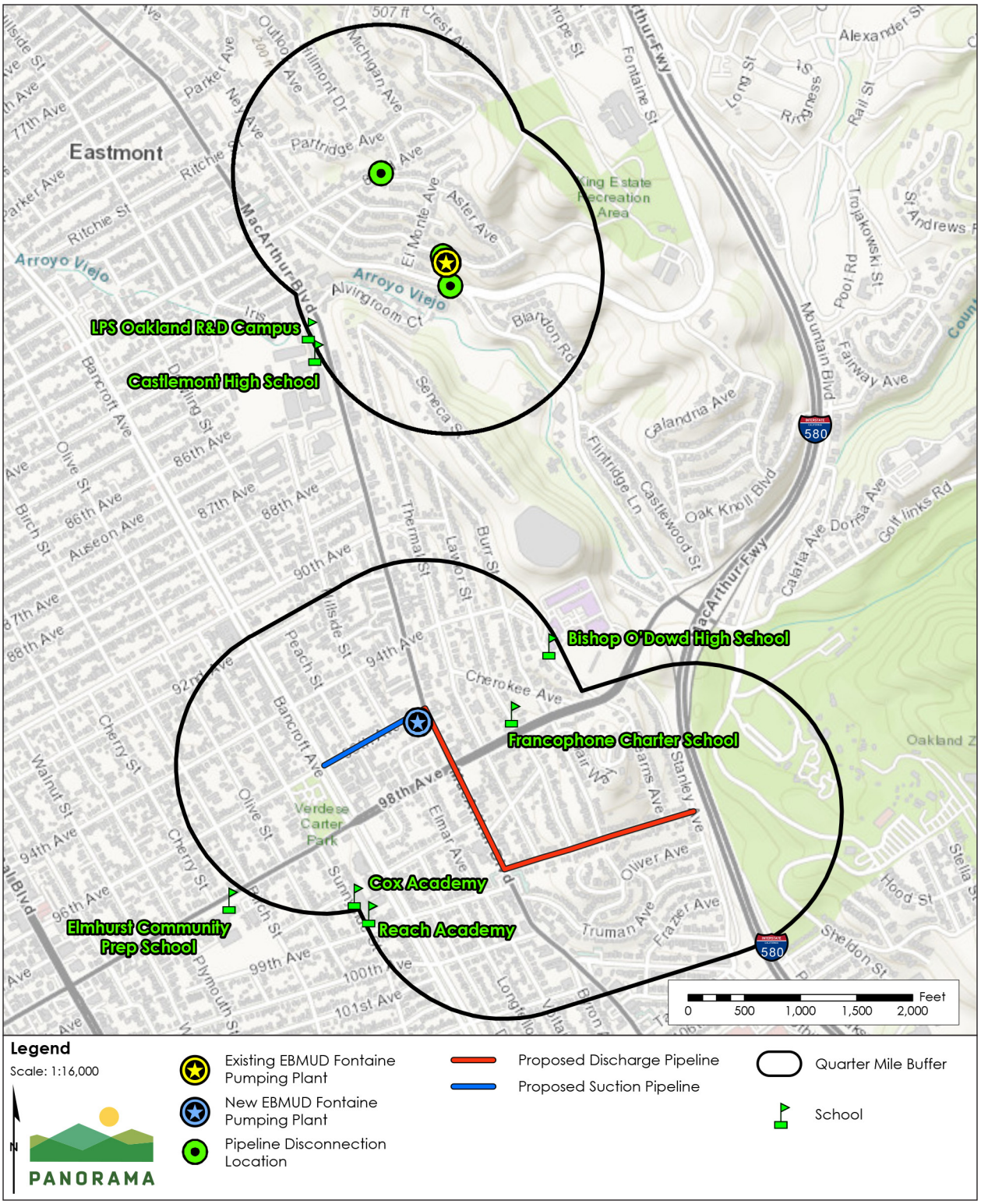
Table 2 Schools within 0.25-Mile of the Proposed Project Area

School Name	Lowest Grade	Highest Grade	Street Address	City
Existing Pumping Plant and Existing Pipeline Abandonment				
Castlemont High School	9	12	8601 MacArthur Boulevard	Oakland
LPS Oakland R & D Campus	9	12	8601 MacArthur Boulevard	Oakland
New Pumping Plant and New Pipelines				
Francophone Charter School	KG	8	9736 Lawlor Street	Oakland
Reach Academy	KG	5	9860 Sunnyside Street	Oakland
Cox Academy	KG	5	9860 Sunnyside Street	Oakland
Elmhurst Community Prep	6	8	1800 98th Avenue	Oakland
Bishop O'Dowd High School	9	12	9500 Stearns Ave	Oakland

2.4 Airports

No private airstrips are mapped within 2 miles of the existing PP, existing pipeline abandonment disconnection sites, new PP, or new pipelines (FAA, 2019). The nearest public-use airport is the Oakland International Airport, which is located approximately 3.2 miles southwest of the new PP site and approximately 3.5 miles southwest of the existing PP. The Alameda County Airport Land Use Commission has adopted an Airport Land Use Compatibility Plan for the Oakland International Airport that includes height restrictions for structures (including construction equipment) near the airport based on the FAR Part 77. The FAR Part 77 height restrictions do not extend over the existing or new PP sites and do not apply to the Project (ESA, 2012).

Figure 5 Schools within 0.25 Mile of Fontaine Pumping Plant Project Sites



2.5 Wildland Fires

California Department of Forestry and Fire Protection (CAL FIRE) has mapped Very High Fire Hazard Severity Zones (VHFHSZ) in Oakland to assist responsible local agencies with identifying requirements to reduce the potential for losses of life, property, and resources from wildland fire. Neither the existing PP nor the new PP site is within a mapped VHFHSZ. However, the existing PP site is adjacent to a VHFHSZ and the new PP site is approximately 0.3 mile west of a VHFHSZ. Approximately 500 feet of the new 30-inch-diameter discharge pipeline is located within a VHFHSZ (CAL FIRE, 2008).

3 Regulatory Setting

3.1 Federal Regulations

3.1.1 Hazardous Waste Management

Resource Conservation and Recovery Act

The U.S. EPA is the lead agency responsible for enforcing federal laws and regulations governing hazardous materials that affect public health or the environment. The RCRA was enacted in 1976 to provide a general framework for the U.S. EPA to regulate hazardous waste from the time it is generated until its ultimate disposal. Under the RCRA, a waste may be considered hazardous if it exhibits certain hazardous characteristics (ignitability, corrosivity, reactivity, or toxicity) or if it is included on a specific list of wastes that the U.S. EPA has determined are hazardous. Any generator, transporter, or facility that treats, stores, or disposes of hazardous waste is required to ensure that the waste is properly managed from "cradle to grave" by complying with the federal waste manifest system and other regulations regarding hazardous waste identification, classification, generation, management and disposal.

Toxic Substances Control Act

The Toxic Substances Control Act (TSCA) of 1976 provides the U.S. EPA with authority to require reporting, record-keeping and testing, and restrictions related to chemical substances and/or mixtures. The TSCA addresses the production, importation, use, and disposal of specific chemicals, including asbestos and lead-based paint.

National Emission Standards for Hazardous Air Pollutants

The air toxics provisions of the Clean Air Act (CAA) require the U.S. EPA to develop and enforce regulations to protect the public from exposure to airborne contaminants that are known to be hazardous to human health. The U.S. EPA establishes National Emission Standards for Hazardous Air Pollutants (NESHAP) in accordance with Section 112 of the CAA. The list of hazardous air pollutants includes specific compounds that are known or suspected to cause cancer or other serious health effects, including asbestos and lead.

3.1.2 Hazardous Materials Transportation

The federal Hazardous Materials Transportation Act was amended in 1990 and 1994 to improve the protection of life, property, and the environment from the inherent risks of transporting hazardous materials in all major modes of commerce. The U.S. Department of Transportation (U.S. DOT) developed hazardous materials regulations that govern the classification, packaging, communication, transportation, and handling of hazardous materials,

as well as employee training and incident reporting. The transportation of hazardous materials is subject to both RCRA and U.S. DOT regulations.

3.1.3 Worker Health and Safety

The Occupational Health and Safety Administration (OSHA) is the federal agency responsible for enforcement and implementation of federal laws and regulations pertaining to worker health and safety. Under OSHA jurisdiction, the Hazardous Waste Operations and Emergency Response regulations require training and medical supervision for workers at hazardous waste sites. OSHA also enforces regulations that pertain to the demolition, removal, storage, and disposal of structures where asbestos is present. These regulations require specific enclosures to contain asbestos such as filtration systems and vacuums or collection devices, testing and monitoring, use of respiratory protection, depending on the nature of the asbestos-related work.

3.2 State Regulations

3.2.1 Hazardous Waste Management

The DTSC administers the federal RCRA program in California, as well as additional State-specific requirements for managing hazardous waste in accordance with the California Hazardous Waste Control Law. The State criteria for identifying hazardous waste based on characteristics of toxicity, flammability, reactivity, and corrosiveness are broader than the RCRA hazardous waste criteria; therefore, hazardous wastes in California can be identified as either RCRA hazardous waste or non-RCRA hazardous waste.

3.2.2 Hazardous Materials Release Sites

In California, the U.S. EPA has granted most enforcement authority of federal hazardous materials regulations to the California EPA (CalEPA). The State Water Resources Control Board (SWRCB) and DTSC are responsible for overseeing the remediation of contaminated soil and groundwater sites under the authority of the CalEPA. The provisions of Government Code 65962.5 (also known as the Cortese List) require the SWRCB, DTSC, California Department of Health Services, and California Department of Resources Recycling and Recovery to submit information pertaining to sites associated with solid waste disposal, hazardous waste disposal, and/or hazardous materials releases to CalEPA.

3.2.3 Hazardous Materials Transportation

The California Highway Patrol, California Department of Transportation (Caltrans), and DTSC are responsible for enforcing federal and State regulations pertaining to the transportation of hazardous materials. If a discharge or spill of hazardous materials occurs during transportation, the transporter is required to take appropriate immediate action to protect human health and the environment (e.g., notify local authorities and contain the spill), and is responsible for the discharge cleanup.

3.2.4 Worker Health and Safety

State worker health and safety regulations related to construction activities are enforced by the California Division of Occupational Safety and Health (CAL OSHA). Regulations include requirements for protective clothing, training, and limits on exposure to hazardous materials. These regulations also require implementation of specific worker safety requirements for excavation hazards (e.g., falling or cave-in of the excavation wall).

CAL OSHA also enforces requirements on lead safety during construction activities such as demolition of structures containing lead. This regulation requires proper lead sampling and testing, regular air sampling to ensure appropriate protective requirements are used, implementation of specific requirements during demolition (e.g., working training, control of lead by high-efficiency particulate air (HEPA) vacuuming and wet clean up, use of respirators, etc.), and development of a compliance program.

3.2.5 Subsurface Utility Notification Requirements

California Government Code, Section 4216 et seq., requires owners and operators of underground utilities participate in a Regional Notification Center. Excavators must notify the appropriate Regional Notification Center at least 2 business days prior to excavation to allow utility owners/operators adequate time to mark the location of their subsurface utilities, provide information, and/or give clearance prior to digging. Underground Services Alert of Northern California (USA North) is the Regional Notification Center for all proposed excavation activities in the Project vicinity. When excavation is proposed within 10 feet of a high-priority subsurface utility (defined as high-pressure natural gas pipelines with normal operating pressures greater than 60 pounds per square inch, petroleum pipelines, pressurized sewage pipelines, conductors or cables that have a potential to ground of 60,000 volts or more, or hazardous materials pipelines that are potentially hazardous to employees or the public, if damaged), the excavator must coordinate an on-site meeting with the owner/operator of the utility to determine the action or activities required to verify the location of such installations. An excavator discovering or causing damages to a high-priority subsurface utility must immediately notify the utility owner/operator and the appropriate emergency response personnel. In accordance with the California Code of Regulations, Title 8, Section 1541, the approximate location of subsurface utilities (e.g., sewer, telephone, fuel, electric, and water lines) must be identified prior to excavation work.

3.3 Local Regulations

3.3.1 Overview

Pursuant to California Government Code Section 53091, EBMUD, as a local agency and utility district serving a broad regional area, is not subject to building and land use zoning ordinances for projects involving facilities for the production, generation, storage, or transmission of water. However, it is the practice of EBMUD to work with local jurisdictions and neighboring communities during project planning, and to consider local environmental protection policies for guidance.

3.3.2 Alameda County

In Alameda County, the Alameda County Department of Environmental Health (ACDEH) is the Certified Unified Program Agency (CUPA) that coordinates and enforces numerous local, State, and federal hazardous materials management and environmental protection programs in the county, including the Hazardous Materials Business Plan (HMBP), Hazardous Waste Generator, Underground Storage Tank, Aboveground Petroleum Storage Act, and California Accidental Release Prevention programs.

3.3.3 City of Oakland General Plan

The Safety Element of the City of Oakland General Plan identifies various policies and actions with the intent to minimize the potential risks to human and environmental health from natural and man-made disasters, wildland fires, and hazardous materials releases. Policies related to hazards and hazardous materials include the following:

- **Policy PS-1.** Maintain and enhance the City's capacity to prepare for, mitigate, respond to, and recover from disasters and emergencies.
- **Policy FI-1.** Prioritize the reduction of the wildfire hazard, with an emphasis on prevention.
- **Policy HM-1.** Minimize the potential risks to human and environmental health and safety associated with the past and present use, handling, storage, and disposal of hazardous materials.
- **Policy HM-2.** Reduce the public's exposure to toxic air contaminants through appropriate land use and transportation strategies.
- **Policy HM-3.** Seek to prevent industrial and transportation accidents involving hazardous materials and enhance the City's capacity to respond to such incidents.

3.3.4 City of Oakland

Emergency Management Services Division

The Oakland Emergency Management Services Division, under the Oakland Fire Department, provides emergency management planning, response, recovery, and mitigation services for natural, technological, and man-made emergencies and disasters affecting the City of Oakland.

The Emergency Management Services Division coordinates the activities of all the City's agencies relating to planning, preparation, and implementation of the City's Emergency Plan.

Department of Planning and Building

The City of Oakland implemented standard conditions of approval that apply to projects when they receive discretionary planning-related approval. The standard conditions of approval related to hazards and hazardous materials are outlined below.

- **Hazardous Materials Related to Construction**. Requires implementation of best management practices (BMPs) during construction to minimize potential negative effects on groundwater, soils, and human health.
- **Hazardous Building Materials and Site Contamination**. Requires reparation of a Hazardous Building Materials Assessment, Environmental Site Assessment, Health and Safety Plan, and BMPs required for contaminated sites. Applies to all projects involving: (a) redevelopment or change of use of a historically industrial or commercial site; (b) a contaminated site as identified in City records; or (c) a site listed on the State Cortese List; and site remediation activities are required based on an environmental site assessment.
- **Hazardous Materials Business Plan**. Requires preparation of a HMBP. Applies to all projects involving the handling, storage, or transportation of hazardous materials during business operations.

3.4 EBMUD Practices and Procedures

3.4.1 EBMUD Standard Construction Specifications

EBMUD Standard Construction Specifications set forth the contract requirements for environmental compliance to which construction workers must adhere and stipulate that EBMUD and its contractor are responsible for maintaining compliance with applicable federal, State, and local requirements. These specifications are implemented to all EBMUD projects as part of standard construction procedures. Standard Construction Specifications related to hazards and hazardous materials include the following:

- Standard Construction Specification 01 35 24, Project Safety Requirements
- Standard Construction Specification 01 35 44, Environmental Requirements
- Standard Construction Specification 01 55 26, Traffic Regulation
- Standard Construction Specification 02 83 13, Lead Hazard Control Activities
- Standard Construction Specification Section 02 82 13, Asbestos Control Activities
- Standard Construction Specification 01 18 05, Project Utility Sources and Site Conditions

Several of these Standard Construction Specifications require the preparation and implementation of plans that outline procedures to be followed to ensure the safe and lawful handling of hazardous materials, as well as documentation of compliance with plan

requirements. EBMUD reviews contractor submittals for conformance with the requirements of the contract documents and specified laws and regulations. Specific planning documents and procedures related to hazards and hazardous materials that are required by EBMUD for construction are described by relevant Standard Construction Specification below.

Standard Construction Specification 01 35 24, Project Safety Requirements

Project Safety and Health Plan

In accordance with Section 1.3.B of Standard Construction Specification 01 35 24, Project Safety Requirements, prior to construction, the project contractor must prepare a Project Safety and Health Plan, approved by EBMUD, that addresses anticipated hazards related to hazardous materials, confined spaces, fall protection, open-trench construction, or excavations in accordance with CAL OSHA regulations. The contractor must also designate in the plan a Project Health and Safety Representative and a qualified person to take air samples and measurements of known or suspected hazardous materials. All personnel who will likely be exposed to hazardous substances are required to undergo appropriate training in accordance with the plan. The plan must also include an Emergency Action Plan that requires notifying any responsive agencies in the event of an accident (EBMUD, 2017a).

Excavation Safety Plan

In accordance with Section 1.3.C of Standard Construction Specification 01 35 24, Project Safety Requirements, prior to project excavation, the project contractor must prepare an Excavation Safety Plan, approved by EBMUD, which describes requirements for worker protection and control of ground movement. The plan must include drawings and details of system(s) to be used, the area in which each type of system will be used, dewatering, means of access and egress, storage of materials, and equipment restrictions (EBMUD, 2017a).

Electrical Safety Plan

In accordance with Section 1.3.H, Electrical Safety Plan, of Standard Construction Specification 01 35 24, Project Safety Requirements, if pipeline work is proposed adjacent to electrical transmission lines, the project contractor must prepare an Electrical Safety Plan describing requirements to protect workers from hazardous voltages on pipelines and appurtenances as a result of electromagnetic induction from the electrical transmission lines. The plan must be approved by EBMUD prior to construction (EBMUD, 2017a).

Standard Construction Specification 01 35 44, Environmental Requirements

Stormwater Pollution Prevention Plan

In accordance with Section 1.3.A, Storm Water Management, of Standard Construction Specification 01 35 44, Environmental Requirements, the project's contractor must prepare a Stormwater Pollution Prevention Plan (SWPPP) during construction for coverage under the Construction General Permit in accordance with the requirements of the SWRCB. The SWPPP must include requirements to prevent the discharge of contaminated stormwater runoff from the construction site and must be submitted to EBMUD and the SWRCB prior to construction (EBMUD, 2018).

Water Control and Disposal Plan

In accordance with Section 1.3.B, Water Control and Disposal Plan, of Standard Construction Specification 01 35 44, Environmental Requirements, the project contractor must prepare a Water Control and Disposal Plan, approved by EBMUD, which describes requirements for containing, handling, and disposing of groundwater, runoff water, construction water or any other liquids that come into contact with the interior surface of EBMUD facilities. The plan, which must be submitted to EBMUD prior to construction, must include a sampling and analytical program for the characterization of any wastewater, as needed, prior to disposal (EBMUD, 2018).

Construction and Demolition Waste Disposal Plan

In accordance with Section 1.3.C, Construction and Demolition Waste Disposal Plan, of Standard Construction Specification 01 35 44, Environmental Requirements, prior to construction, the project contractor must prepare a Construction and Demolition Waste Disposal Plan that describes requirements for removing, handling, transporting, and disposing of any waste material (except liquid wastes addressed in the Water Control and Disposal Plan), and must be approved by EBMUD. The plan must include a sampling and analytical program for characterizing any waste material, as needed, prior to reuse, recycling, or disposal. The plan must also identify the disposal method for soil and the approved disposal site and include written documentation that the disposal site will accept the waste. Materials and wastes may only be recycled, reused, reclaimed, or disposed of at locations approved by EBMUD. Prior to disposition of wastes, the contractor must submit copies of waste profile forms and correspondence between the contractor and the disposal facility to EBMUD. Prior to disposal of hazardous wastes, the contractor must submit copies of the waste manifests to EBMUD and provide documentation that the waste hauler is regulated by the State to transport hazardous wastes (EBMUD, 2018).

Spill Prevention and Response Plan

In accordance with Section 1.3.D, Spill Prevention and Response Plan, of EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements, the project contractor must prepare a Spill Prevention and Response Plan, which must be prepared prior to construction and approved by EBMUD that describes methods for preventing and controlling the accidental release of hazardous materials used during project construction. The plan must include phone numbers for notifying appropriate regulatory agencies and EBMUD, spill-related worker and public health and safety issues, and spill control and cleanup procedures (EBMUD, 2018).

Dust Control and Monitoring Plan

In accordance with Section 1.3.E, Dust Control and Monitoring Plan, of EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements, prior to construction, the project contractor must submit a Dust Control and Monitoring Plan that details the means and methods for controlling and monitoring dust generated by demolition and other work on the site. The plan must comply with all applicable regulations, including, but not limited to, the Bay Area Air Quality Management District (BAAQMD) Particulate Matter and Visible Emissions Regulation 1 and Public Nuisance Rule (which limits air contaminants that cause a public

nuisance to any considerable number of persons or the public); outline BMPs for preventing dust emissions; provide guidelines for training of employees and procedures to be used during operations and maintenance activities; and detail the equipment and methods used to monitor compliance with the plan (EBMUD, 2018).

Standard Construction Specification 02 83 13, Lead Hazard Control Activities

Lead Demolition Plan

In accordance with Section 1.4.B, Lead Demolition Plan, of EBMUD's Standard Construction Specification 02 83 13, Lead Hazard Control Activities, before the start of demolition, the contractor must prepare a Lead Demolition Plan detailing handling, engineering control, removal, and disposal procedures for lead-containing materials. All workers performing work must meet the requirements of the California Department of Health Services lead-related construction interim certification. The lead work area must be isolated using caution tape, and the job site must be secured at all times. During demolition, the contractor must protect against contamination of soils, water, adjacent buildings and properties, and the airborne release of hazardous materials and dusts. Transportation equipment for removal of lead-containing materials must be suitable for loading, temporary storage, transit, and unloading of waste without exposure to persons or property. The contractor must also remove all evidence of lead-containing materials from the jobsite that are related to project demolition (EBMUD, 2016b).

Standard Construction Specification Section 02 82 13, Asbestos Control Activities

Asbestos Abatement Plan of Action

In accordance with Section 1.5.B, Plan of Action, of EBMUD's Standard Construction Specification 02 82 13, Asbestos Control Activities, EBMUD requires that the contractor submit a detailed plan outlining the procedures to address asbestos abatement, control, and disposal. The plan must include the location and layout of decontamination areas, sequencing of asbestos work, interface of trades involved in the performance of work, location of approved disposal site, detailed description of the methods to be employed to control pollution, description of use of portable HEPA ventilation system(s), method of removal to prohibit visible emissions in the work area (including suppressing airborne particulates using a minimum of two misting units operated simultaneously), and packaging of removed asbestos debris. All workers performing work must meet the requirements of the Asbestos Certification issued by the California Contractors State License Board. During demolition, the contractor must protect against contamination of soils, water, adjacent residences and properties, and the airborne release of hazardous materials and dusts. Asbestos materials uncovered during the demolition activities must be disposed of in an approved manner complying with all applicable federal, State, and local regulations (EBMUD, 2014).

Standard Construction Specification 01 55 26, Traffic Regulation

Traffic Control Plan

EBMUD requires that the contractor prepare a Traffic Control Plan, in accordance with Section 1.2, Submittals, Section 1.3, Quality Assurance, and Section 1.4, Job Conditions, of

EBMUD's Standard Construction Specification 01 55 26, Traffic Regulation, a minimum of 15 calendar days prior to initiating construction. The plan must include circulation and detour plans to minimize impacts to local street circulation, a description of emergency response vehicle access, procedures to schedule construction to minimize overlapping phases (to the extent feasible), identification of designated contractor staging areas, and appropriate parking locations for construction crew members. The plan must be reviewed and approved by all agencies having jurisdiction and must conform to the most recently adopted edition of the Manual on Uniform Traffic Control Devices (EBMUD, 2017b).

Standard Construction Specification 01 18 05, Project Utility Sources and Site Conditions

This Standard Construction Specification acknowledges that the accuracy and completeness of utilities indicated on project engineering drawings are not guaranteed. As such, EBMUD and its contractor is required to take all necessary precautions to avoid damage to existing utilities. As detailed in Section 1.3, Submittal of Plans and Procedures, of Standard Construction Specification 01 18 05, Project Utility Sources and Site Conditions, these precautions include notifying USA (in accordance with California Government Code, Section 4216 et seq.), as well as contacting all utility owners not registered with USA but known to have utilities in the project area to locate underground utilities present in the project area, a minimum of four days prior to excavation activities (EBMUD, 2016a). This specification also provides guidance and notification procedures during the following activities or when the following conditions are encountered:

- Potholing (or other procedures) to verify utility location(s)
- Known utilities require protection during construction
- A utility shown on project drawings but not locatable in the field
- A utility is damaged during project construction
- A utility is encountered and requires relocation during construction

3.4.2 EBMUD Procedures and Engineering Standard Practices

In addition to EBMUD's Standard Construction Specifications, EBMUD also requires implementation of various standard procedures and engineering standard practices as part of project planning and implementation. Procedures and engineering standard practices relevant to hazards and hazardous materials include Procedure 711, Hazardous Waste Removal, and Engineering Standard Practice 514, Identifying Buried Conflicts, both of which are summarized below.

Procedure 711, Hazardous Waste Removal

EBMUD Procedure 711, Hazardous Waste Removal, defines hazardous waste and establishes responsibilities for removal of hazardous wastes from EBMUD facilities. The procedure outlines specific steps and responsibilities for characterizing the waste and determining what analyses are needed to classify the waste; coordinating waste disposal, reuse, or recycling issues; labeling, storing, inspecting, and maintaining inventory records for the waste; and reviewing, signing, and tracking any hazardous waste handling and disposal requirements and hazardous waste manifests (EBMUD, 2019).

Engineering Standard Practice 514, Identifying Buried Conflicts

Engineering Standard Practice 514, Identifying Buried Conflicts, requires the identification and investigation of existing underground utilities during the planning, design, and pre-construction phases to reduce the potential for impacts to buried utilities during construction. Specifically, Sections III and V of Engineering Standard Practice 514, Identifying Buried Conflicts identify industry best practices; techniques for identifying potential buried conflicts; minimum steps required to identify existing utilities; guidelines for collecting/depicting utility data during project planning, design, and construction; and determining factors for identifying buried conflicts (EBMUD, 2008).

4 Project Impacts

4.1 Significance Criteria

Consistent with Appendix G of the CEQA Guidelines, the Project is considered to have a significant impact related to hazards and hazardous materials if it would:

1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials
2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment
3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school
4. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment
5. For a project located within an area covered by an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project area
6. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan
7. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildfires

4.2 Impact Discussion

Impact Hazards-1 and 2: Potential to create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. ***(Less than Significant)***

Construction

Routine Transport, Use, Disposal, and Accidental Release of Hazardous Materials

Project construction would require the use of hazardous materials such as fuels, lubricants, paints, and solvents for motorized heavy equipment, such as excavators, bulldozers, and backhoes. Minor maintenance activities and refueling of equipment and vehicles from mobile or stationary fuel supply sources could occur at the Project work areas, including the existing PP, existing pipeline abandonment disconnection sites, new PP and new pipeline alignments,

during construction. If not properly managed, the routine transport, use, and disposal of hazardous materials could pose a threat to human health or the environment. For example, hazardous materials have the potential to be released or spilled accidentally during maintenance, refueling, or servicing of equipment and vehicles. Improperly disposed of, spilled, or leaking hazardous materials could create a significant hazard to workers, the public, or the environment.

Hazardous materials handling, disposal, and transport must occur in accordance with applicable federal, State, and local regulations. Hazardous materials must be transported to and from the Project area in accordance with RCRA and U.S. DOT regulations, managed in accordance with the Alameda County Department of Environmental Health's CUPA programs, and disposed of in accordance with RCRA and the California Code of Regulations at a facility that is permitted to accept the waste. Workers handling hazardous materials are also required to adhere to OSHA and CAL OSHA health and safety requirements.

In addition to complying with federal, State, and local regulations, as detailed in Section 3.4, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements, which requires preparation and implementation of a Project-specific Spill Prevention and Response Plan, SWPPP, and Construction and Demolition Waste Disposal Plan. The contents of and requirements of these plans are summarized below.

- **Spill Prevention and Response Plan.** In accordance with Section 1.3.D, Spill Prevention and Response Plan, of EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements, this plan would specify methods for preventing and controlling the accidental release of hazardous materials used during construction and would include a list of the hazardous substances proposed for use or generated on site; requirements to be taken to prevent spills, monitor hazardous substances, and provide immediate responses to spills; phone numbers for notifying appropriate regulatory agencies and EBMUD; identification of spill-related worker and public health and safety issues for each known hazardous substance used on the jobsite; and spill control and cleanup procedures.
- **SWPPP.** In accordance with SWRCB requirements and Section 1.3.A, Storm Water Management, of EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements, a SWPPP would be prepared and implemented during Project construction for coverage under the Construction General Permit. The SWPPP would require implementation of BMPs for hazardous materials storage and containment of releases to prevent runoff into existing stormwater collection systems or waterways.
- **Construction and Demolition Waste Disposal Plan.** In accordance with Section 1.3.C, Construction and Demolition Waste Disposal Plan, of Standard Construction Specification 01 35 44, Environmental Requirements, this plan would describe requirements for removing, handling, transporting, and disposing of any waste material, and requires the contractor to submit copies of wastes manifests prior to

disposal of hazardous wastes and documentation that the waste hauler is regulated by the State to transport hazardous wastes.

Section 1.3.B, Project Safety and Health Plan, of EBMUD's Standard Construction Specification 01 35 24, Project Safety Requirements, also requires the contractor to prepare a Project Safety and Health Plan that addresses anticipated hazards related to hazardous materials, describes appropriate training requirements, and identifies qualified hazardous material testing personnel. EBMUD and its contractor would also comply with EBMUD Procedure 711, Hazardous Waste Removal, which outlines specific steps for characterizing wastes, coordinating waste disposal, maintaining inventories of hazardous waste, and tracking any hazardous waste handling and disposal requirements. Because compliance with existing regulations and programs are mandatory and EBMUD and its contractor would implement Standard Construction Specifications 01 35 24, Project Safety Requirements, and 01 35 44, Environmental Requirements, and Procedure 711, Hazardous Waste Removal, as part of the Project, the potential to create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials would be less than significant.

Accidental Rupture of High-Priority Subsurface Utilities

As discussed in Section 2.2, it is currently unknown whether high-priority subsurface utilities are present at the new PP site or along the new pipeline alignments. Subsurface high-priority utilities could be inadvertently damaged during excavation activities at the new PP site or along the new pipeline alignment. The rupture of a high-pressure gas pipeline could result in a release of flammable liquids or gases. Contact with buried electrical utilities could cause electrocution or shock. Such damage to utilities could fatally injure construction workers, damage equipment, and ignite fires.

Consistent with California Government Code 4216.2, the construction crew is required to contact USA North at least 2 working days prior to initiation of ground-disturbing activities. USA North would notify the utility providers in the vicinity of the planned excavations to mark the location of underground utilities and coordinate with the contractor (as necessary) to avoid damages. Construction workers are required to adhere to CAL OSHA health and safety requirements for open trench construction excavations.

As detailed in Section 3.4, a number of EBMUD's standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including EBMUD's Standard Construction Specification 01 18 05, Project Utility Sources and Site Conditions, which would reduce the potential for impacts to buried utilities during construction. In accordance with EBMUD's Standard Construction Specification 01 18 05, Project Utility Sources and Site Conditions, all utility owners not registered with USA but known to have utilities in the Project area must be contacted a minimum of 4 days prior to excavation activities. EBMUD and its contractor would also comply with Section V, Requirements and Guidelines for Planning, Design, and Construction, of EBMUD's Engineering Standard Practice 514, Identifying Buried Conflicts, that identifies the minimum steps required to identify existing utilities; guidelines for

collecting/depicting utility data during project planning, design, and construction; and determining factors for identifying buried conflicts.

If the Project is determined to be located adjacent to an underground electrical transmission line during procedures outlined in Engineering Standard Practice 514, Identifying Buried Conflicts, the contractor would be required to prepare and implement an Electrical Safety Plan, in accordance with Section 1.3.H, Electrical Safety Plan, of EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements. This plan would identify requirements to protect workers from hazardous voltages on pipelines or associated structures. Section 1.3.B, Project Safety and Health Plan, of Standard Construction Specification 01 35 24, Project Safety Requirements, also requires contractors to prepare a Project Safety and Health Plan, as previously described above. This plan would address anticipated hazards related to open trench construction and excavations and include an Emergency Action Plan that requires notification of responsive agencies in the event of an accident. Because compliance with existing regulations and programs are mandatory and EBMUD and its contractor would implement EBMUD Engineering Standard Practice 514, Identifying Buried Conflicts, and Standard Construction Specifications 01 35 24, Project Safety Requirements, as part of the Project, impacts from accidental rupture of high-priority subsurface utilities would be less than significant.

Disturbance of Hazardous Materials

Construction activities include soil excavation at the existing PP site, new PP site, existing pipeline abandonment disconnection sites, and along the new pipeline alignments, which have the potential to disturb existing unknown hazardous materials in the soil or groundwater. Demolition activities at the existing PP site also have the potential to encounter lead and asbestos in the building material and equipment.

Existing Pumping Plant Site

No hazardous materials release sites (open and closed) were identified within 0.25 mile of the existing PP. As described in Section 2.1.1, the existing PP contains lead in the paint on various facility features, including the walls, ceiling, floors, electrical equipment, and pipelines. Asbestos is contained within the electrical equipment such as the motor control center panel. Demolition of the existing PP could result in release of lead or asbestos into the environment that could create a hazard to the public and the environment.

Asbestos wastes must be handled and disposed of in accordance with the federal, State, and local regulations, including OSHA Asbestos Construction Standard (29 CFR Section 1926.1101), which regulates construction work involving demolition of facilities containing asbestos, worker training, and disposal of asbestos waste. For example, these regulations require specific enclosures or regulated areas (a marked-off site where construction workers work with asbestos, including adjoining areas where debris and waste from asbestos work accumulates or where airborne concentrations of asbestos exceed, or can possibly exceed, the permissible exposure limit) to contain asbestos, including filtration systems and vacuums or collection devices and regular testing and monitoring of airborne asbestos during asbestos-removal activities (OSHA, 2002). The NESHAP regulations also specify work practices for asbestos to be

followed during demolitions of all structures, installations, and buildings (excluding residential buildings that have four or fewer dwelling units). These work practices include notifying all appropriate agencies before any demolition of buildings that could contain a certain threshold amount of asbestos or asbestos-containing material. As detailed in Section 3.4, a number of EBMUD's standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Section 1.5.B, Plan of Action, of EBMUD's Standard Construction Specification 02 82 13, Asbestos Control Activities. This specification requires a preparation of a plan of action for asbestos abatement that includes a detailed plan of the procedures for compliance with the regulations included in this specification. Asbestos abatement would also be included in the Construction and Demolition Waste Disposal Plan, in accordance with Section 1.3.C, Construction and Demolition Waste Disposal Plan, of Standard Construction Specification 01 35 44, Environmental Requirements.

CAL OSHA enforces requirements on lead safety during construction activities such as demolition of structures containing lead under California Code of Regulations, Title 8, Section 1532.1. This regulation requires proper lead sampling and testing, regular air sampling to ensure appropriate protective requirements are used, implementation of specific requirements during demolition (e.g., working training, control of lead by HEPA vacuuming and wet clean up, use of respirators, etc.), and development of a compliance program. As detailed in Section 3.4, a number of EBMUD's standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Section 1.4.B, Lead Demolition Plan, of EBMUD's Standard Construction Specification 02 83 13, Lead Hazard Control Activities, which requires EBMUD's contractor to prepare a Lead Demolition Plan that specifies handling, engineering control, removal, and disposal procedures for lead-containing coating. Because compliance with existing regulations and programs are mandatory and EBMUD and its contractor would implement EBMUD's Standard Construction Specification 02 82 13 (Asbestos Hazard Control Activities), Standard Construction Specification 02 83 13, Lead Hazard Control Activities, and Standard Construction Specification 01 35 44, Environmental Requirements, as part of the Project, the potential to emit hazardous emissions would be less than significant.

EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements, also requires preparation of a Construction and Demolition Waste Disposal Plan (under Section 1.3.C, Construction and Demolition Waste Disposal Plan), which would identify how the construction contractor would remove, handle, transport, and dispose of all materials required in a safe, appropriate, and lawful manner, as well as preparation of a Dust Control and Monitoring Plan (under Section 1.3.E, Dust Control and Monitoring Plan) that details the means and methods for controlling and monitoring dust generated by demolition and other work on the site thereby reducing the potential for asbestos or lead to become airborne. The specification requires that the plan comply with all applicable regulations including, but not limited to, the BAAQMD Particulate Matter and Visible Emissions Regulation 1 and Public Nuisance Rule, outline BMPs for preventing dust emissions, provide guidelines for training of employees, and detail the equipment and methods used to monitor compliance with the plan.

EBMUD and its contractor would also comply with EBMUD Procedure 711, Hazardous Waste Removal, which outlines specific steps for characterizing hazardous materials, including asbestos and lead, coordinating waste disposal, maintaining inventories of hazardous waste, and tracking any hazardous waste handling and disposal requirements, as part of the Project.

Because compliance with existing regulations and programs, including the TSCA and NESHAP, are mandatory and EBMUD and its contractor would implement EBMUD's Standard Construction Specification 02 82 13, Asbestos Hazard Control Activities, Standard Construction Specification 02 83 13 (Lead Hazard Control), and Standard Construction Specification 01 35 44, Environmental Requirements, and EBMUD Procedure 711, Hazardous Waste Removal, as part of the Project, the potential to create a significant hazard to the public or the environment through accidental exposure to lead or asbestos would be less than significant.

New Pumping Plant Site and New Pipelines

Potential and/or known sources of subsurface contamination in the vicinity of the Project include a historic gas station at the new PP site, former industrial and commercial properties along the new pipeline alignments, and existing fill materials along the new pipeline alignments.

As discussed in Section 2.1.2, soil testing at the new PP site indicated that contaminants are at levels that were not detectable, or were below ESLs or U.S. EPA Region 9 RSLs; therefore, it is unlikely that there have been hazardous materials released of significant quality at the surface or subsurface and contaminated soils are not expected to be encountered during construction of the new PP. No groundwater was encountered at 25 feet bgs at the new PP site; therefore, encountering of contaminated groundwater is not anticipated (URS Corporation, 2013).

The chemical quality of soil and groundwater that may be encountered during Project-related excavation has not been assessed for the new pipelines and unanticipated contaminated soil or groundwater could be encountered. The proper management and disposal (if necessary) of contaminated soil and/or groundwater is required to ensure the protection of workers and the environment. The disturbance of contaminated soil and/or groundwater (if any) during Project excavation activities during construction could, therefore, pose a significant hazard to construction workers and/or the environment.

Section 1.3.B, Project Safety and Health Plan, of EBMUD's Standard Construction Specification 01 35 24, Project Safety Requirements, requires that a Project Safety and Health Plan be prepared that includes requirements to protect workers from exposure to contaminants that could potentially be released during construction.

Because EBMUD and its contractor would implement EBMUD's Standard Construction Specification 01 35 24, Project Safety Requirements, the potential to create a significant hazard to the public or the environment through accidental release of contaminated soil or groundwater during construction of the new PP and new pipelines would be less than significant.

Operation

Operation of the Project would not involve the routine transport of hazardous materials to or from the Project site or involve ground disturbance that could result in exposure to contaminated soil or groundwater. Solvents, cleaners, or other chemicals may be used during maintenance of the new PP for cleaning equipment or to prevent corrosion but would be used in very small quantities. The use, storage, and transport of hazardous materials throughout the operational life of the Project would be carried out in accordance with federal, State, and local regulations for transport, storage, use, and disposal of hazardous materials. Operation of the Project would not require excavation or other ground-disturbing activities that could result in accidental release of subsurface hazardous materials or impacts to subsurface utilities. The potential impacts related to hazardous materials during operation would be less than significant.

Impact Hazards-3: Potential to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. (*Less than Significant*)

As discussed in Impact Hazards-1 and 2, Project construction would require the use of some hazardous materials, including fuels, lubricants, paints, and solvents, at the existing PP, existing pipeline abandonment disconnection sites, new PP and new pipeline alignments. Seven schools are located within 0.25 mile of these Project areas. It is unlikely that the Project would expose schools to these types of hazardous materials during construction because potential impacts associated with exposure to construction fuels and materials are highly localized, and none of the schools are located on or adjacent to any of the Project sites. As discussed under Impact Hazards-1 and 2, hazardous materials used during construction would be managed in accordance with applicable regulations and CUPA programs, and EBMUD would require its contractor to implement Section 1.3.B, Project Safety and Health Plan, of Standard Construction Specification 01 35 24 , Project Safety Requirements, and Section 1.3.D, Spill Prevention and Response Plan, of Standard Construction Specification 01 35 44, Environmental Requirements, which require the development of a Project Safety and Health Plan and Spill Prevention and Response Plan, respectively. The Project Safety and Health Plan would address anticipated hazards related to hazardous materials and include an Emergency Action Plan that provides notification procedures in the event of an accident. The Spill Prevention and Response Plan would define protocols to prevent and control the accidental release of hazardous materials during construction, identify notification protocols, and provide spill control and cleanup procedures. Because there are no schools located within or adjacent to the Project sites and EBMUD would implement standard practices related to the use of hazardous or acutely hazardous materials during Project construction, the impact on nearby schools would be less than significant.

Operation

Operation of the Project may require periodic use of solvents, cleaners, or other chemicals as part of routine maintenance activities for the new PP; however, these would be used in very small quantities. No schools are located at or adjacent to the new PP. Impacts to schools would not occur.

Impact Hazards-4: Potential to create a significant hazard to the public or the environmental by being located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. (*No Impact*)

The existing PP, existing pipeline abandonment disconnection sites, new PP, and new pipeline alignments are not located on a site included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. No impacts related to hazards or releases from these sites from construction or operation of the Project would occur.

Impact Hazards-5: Potential to result in a safety hazard or excessive noise for people residing or working in the project area from being located within an airport land use plan, or within two miles of a public airport or public use airport. (*No Impact*)

The existing PP, existing pipeline abandonment disconnection sites, new PP, and new pipeline alignments are not located within an airport land use plan or within two miles of a public airport or public use airport. No impacts related to airports or airport land use plans from construction or operation of the Project would occur.

Impact Hazards-6: Potential to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. (*Less than Significant*)

Construction

The City of Oakland has adopted Emergency Management Plans that provide a general framework for local agencies to implement emergency response and evacuation procedures. Construction of the new pipelines could require full and/or partial closure of roadways, which could impede emergency access during these closures. As detailed in Section 3.4, a number of EBMUD's standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Section 1.2, Submittals, of EBMUD Standard Construction Specification 01 55 26, Traffic Regulation, which requires the preparation of a Traffic Control Plan that conforms to the most current version of the Caltrans Manual of Traffic Controls for Construction and Maintenance Work Zones and requires that the Traffic Control Plan include a description of emergency response vehicle access. If the road or area is completely blocked, preventing access by an emergency responder, a contingency plan must be included. Because EBMUD's Standard Construction Specifications 01 55 26, Traffic Regulation, would be implemented as part of the Project, impacts on emergency response and evacuation during construction would be less than significant.

Operation

Operation of the new PP and new pipelines would not require lane or road closures and would not impair or physically interface with an adopted emergency response plan or emergency evacuation plan. No impacts to emergency response or evacuation plans from operation of the Project would occur.

Impact Hazards-7: Potential to expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. (*No Impact*)

Portions of the Project are located adjacent to or within a VHFHSZ, as defined by CALFIRE, including the existing PP and approximately 500 feet of the new discharge pipeline alignment.

The existing PP and new pipelines are located entirely in developed urban/suburban areas and would not include any work in wildland areas. The Project would not expose people or structures to a potential wildfire. No impacts would occur from construction or operation of the Project.

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URS Corporation. (2013). *Phase I Environmental Site Assessment, 9601 Macarthur Boulevard, Oakland, California 94605.*

Appendix A Lead and Asbestos Assessment Documentation

January 23, 2003 Fontaine Pumping Plant

Attached are photos of MCC panel asbestos, and the orange motor Lead sample locations at Fontaine Pumping Plant resulting from a follow-up to the Wood Pumping Plant assessment requested by affected staff. The four samples were taken on 1/14/03 and submitted for analysis to Forensic Analytical the following day. The final report was received 1/22/03. The data confirms the following.

3 samples for asbestos in MCC

- 2 white paper like maters are confirmed asbestos containing.
- 1 black paper like material does not contain asbestos.

1 sample for lead from the orange motor

- Lead was confirmed with a value of 53,000ppm.

Because the analytical results are positive, work should not be performed within the MCC panel nor on the orange Motor until a Restricted Work Authorization (RWA) (RSP-3700) is completed. This will involve a negative exposure assessment as determined by personal breathing zone sampling of workers performing the tasks. WHS will work with the affected work unit to complete the RWA and perform the sampling as quickly as possible.

Edwin Ostrowski, EHSII
Workplace Health & Safety
375 Eleventh Street, MS#704
Oakland, CA 94607
Telephone: 510-287-1919
Pager: 510-437-7234
eh&s emergency pager: 437-7363

> -----Original Message-----
> **From:** Ostrowski, Ed
> **Sent:** Thursday, January 09, 2003 9:06 AM
> **To:** Bradshaw, Earle
> **Cc:** Chavez, Don
> **Subject:** FW: Asbestos Electrical Components vis Fontaine
>
> Earle,
> If this doesn't answer your question or the components are indeed different, contact me and we'll check it out.
>
> -----Original Message-----
> **From:** Ostrowski, Ed
> **Sent:** Thursday, January 09, 2003 9:01 AM
> **To:** Chavez, Don; Cardoza, Carlos
> **Cc:** Rocha, Raymundo; Williams, Michael J; Lepore, Bruce; Bradshaw, Earle; Dedic, Joe; Carleton, John
> **Subject:** Asbestos Electrical Components

On January 7, 2003 WHS met with MSD-West Electrical Supervisor, Don Chavez, at Wood pumping plant to assess electrical components which may contain asbestos as part of the equipment heat/arc/blast shielding. In particular we sought to discover if a heavy cardboard like material was used as shielding (similar to materials used at the WW plant). None of this was found. However, arc-blast shields (photo attached) found in one of the panels appears to be asbestos containing, but is not friable since its designed purpose is to maintain integrity in the event of an arc/blast. Ordinary handling, transport, and disposal would not render this component friable. Provisions for labeling these components do not apply since they have been modified by bonding agents or binder per Cal/OSHA Title 8 section k of the asbestos standard. We were informed that the scope of the electrical systems found at the Wood PP is the typical style of installation throughout the MSD East/West areas.

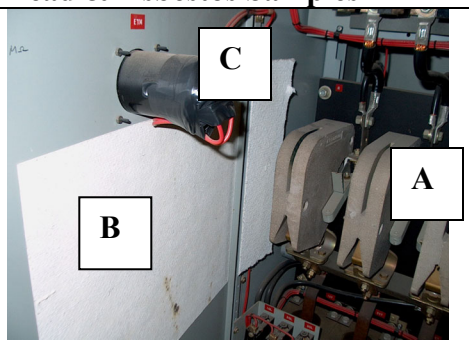
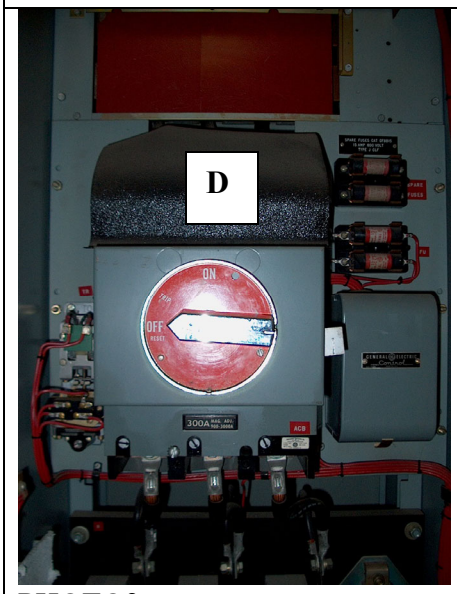
Don has agreed to hold and document a tailgate safety session to inform his staff of the assessment. If other materials are discovered which may be friable electrical staff will affix an asbestos warning label on the panels during normal scheduled preventative maintenance.

DANGER [ELECTRICAL COMPONENT]

CONTAINS ASBESTOS FIBERS

AVOID CREATING DUST

CANCER AND LUNG DISEASE HAZARD

FONTAINE PUMPING PLANT	Lead & Asbestos Samples
 PHOTO1: General Electric MCC panels. Colorations and age indicate lead paint coatings. These panels have asbestos components shown in photos 1 & 2.	 PHOTO2: A. Arc blast shields contain a matrixed composite asbestos formulation. They are non-friable and can be handled without special precautions. B. 12”x12” white fibrous material affixed to the door (in front of acr blast shields when closed.) Material was analyzed to contain 75% Chrysotile Asbestos. Friable with some visible damage. C. 4”x12” white fibrous material fastened to MCC carcass left of arc blast shield. Material was analyzed to contain 90% Chrysotile Asbestos. Friable with some visible damage.
 PHOTO3: Black paper-like material (D) curled over (PG&E) power feed to MCC unit. No Asbestos detected.	 PHOTO4: Orange motor unit; paint sampled to contain 53,000 parts per million of lead.

SCA
Environmental, Inc.

August 21, 2006

Mr. Rowland Keith
Senior Project Scientist
ERRG, Inc.
185 Mason Circle, Suite A
Concord, CA 94520 email: rkeith@errg.net

Mr. Robert Newman
EH&S
EBMUD
375 11th Street
Oakland, CA 94607-4240 email: rnewman@ebmud.com

RE: Occupational Lead Exposure Assessment
EBMUD's Fontaine Pumping Plant at
8445 Ney Ave., Oakland, CA
SCA Project No.: B7939

Dear Rowland and Robert,

This letter summarizes the observations, opinions and recommendations based on the site visit conducted on August 17, 2006. The purpose of the site visit was to assess potential occupational exposures by the EBMUD Maintenance Workers to the lead (ranging from 1,960 to 79,400 ppm) present in various types of paint inside the site.

Site Description & Observations

The Fontaine Pumping Plant is a single story building with an estimated footprint of 25 ft x 50 ft. The lead levels of the various types of paint are reported as follows:

Surface	Lead Levels (mg/kg, or ppm)
Walls	1,960
Floor	8,110
Piping	79,400

The 1977 constructed building is partially below grade. Its concrete roof is covered by landscaping with sprinklers. In addition, a roof hatch opens to the street level – the hatch is locked, but not waterproof.

Due to the design and construction of this building, the pan-formed concrete roof shows multiple signs of moisture intrusion, resulting in widespread peeling of paint from the ceiling, walls and the floor. The floor has about 50% of the paint gone, and it appears to have been cleaned recently without visible paint chips. The probably elevated moisture problem also might

have affected some of the equipment: one of the 18-inch pipes has all its paint gone with significant rusting.

The building is typically vacant with less than 4 hours of occupancy at a time, although during maintenance, workers can be present for 8 hours a day for a complete week. Some work requires the maintenance workers working on their backs on the floor. This building is typically locked and is considered a non-public facility.

Background about Lead

Lead is toxic when entering the body by breathing or swallowing lead dusts, fumes, or mists. Once in the body, lead enters the blood stream and may be carried to all parts of the body. The body can eliminate some lead, but if there is continued lead exposure, the body absorbs and stores more lead than it can eliminate. This stored lead may cause irreversible damage to cells, organs and whole body processes. After exposure stops, it takes months or even years for all the lead to be removed from the body.

Exposure to lead may affect each person differently. Even before symptoms appear, lead may cause unseen injury to the body. During early stages of lead poisoning, mild symptoms may be overlooked as non-specific medical complaints, including:

Loss of appetite Joint and muscle aches

Trouble sleeping Metallic taste

Irritability Decreased sex drive

Fatigue Lack of concentration

Headache Moodiness

Brief intense exposure or prolonged overexposure may result in severe damage to the blood-forming, nervous, urinary, and reproductive systems. Some noticeable medical problems include:

Stomach pains Tremors

Weakness of extremities Convulsions or seizures

High blood pressure Anemia

Nausea Constipation or diarrhea

Health effects of low level lead exposure to children and pregnant women are more severe than to adults.

Since elemental lead is a suspect carcinogen and known teratogen and neurotoxic in high doses, several standards are listed as follows. However, most of these regulations are focused on preventing childhood lead poisoning, so they are NOT applicable to this site (but are included herein for comprehensiveness sake).

1. Lead exposures in the workplace are regulated by California Division of Occupational Safety and Health (commonly called CalOSHA), which has certain regulatory requirements for identifying and controlling potential lead exposures. Currently applicable regulations for the general industry have been adopted by CalOSHA (8 CCR

5216). The current CalOSHA 8-hour Permissible Exposure Level (PEL) for lead is 50 microgram / cubic meter (µg/M^3). This regulation is applicable to this site.

One of the key applicable components in this regulation is proper housekeeping of lead containing debris. If the debris can become aerosolized to the extent of approaching the PEL, then it must be cleaned up.

2. Current EPA and Cal/EPA regulations do not require lead-based paint (LBP) to be removed just because it is present.

   In California, loose and peeling LBP or other wastes exceeding the Total Threshold Level Concentration (TTLC) of 1,000 parts per million (ppm, equivalent to [µg/g or mg/kg]) would be required to be disposed of as non-RCRA hazardous waste. However, if the leachable lead contents of the wastes exceed the Soluble Threshold Level Concentration (STLC) of 5 mg/liter, then the wastes have to be disposed of as RCRA waste.

3. The major definitions of LBP or lead-coated surfaces are listed as follows:

   a. U. S. Housing Urban Development (HUD) defines LBP as paint that contains either >0.5% by weight of lead, or =1 mg/cm^2. This regulation is addressed towards housing facilities and is NOT applicable to the site.

   b. Consumer Product Safety Commission (CPSC) prohibits the manufacturing of paint that contains more than 600 ppm (0.06%) of lead.

   c. CalOSHA has a guideline that if the lead content is below 600 ppm, then the paint is generally considered not a major source of concern.

4. Lead is on the "Proposition 65" list, given its toxic potential in causing reproductive hazards.

5. The California Department of Health Services' (DHS) regulation 17 CCR Sections 35001 through 36100 requires all demolition, stabilization or scraping for repainting of paints defined under the HUD Guidelines as "lead-based paints" to be completed by Certified Lead Workers and Supervisors. This regulation affects all public, non-industrial buildings, including schools, offices, and housing for permanent renovations, expected to last over 20 years. Furthermore, the DHS regulations require the use of dust controls, medical surveillance and respiratory protection, oftentimes exceeding the minimum standards outlined under Cal/OSHA's regulation 8 CCR 1532.1. This DHS regulation is NOT applicable to this site (which is a non-public site).

Opinions and Recommendations

Our opinions and recommendations are presented below:

A. Based on the observations and understanding of the typical maintenance activities, it is highly unlikely that lead can become airborne in a detectable level (est. <2 microgram /

cubic meter, or <4% of the CalOSHA PEL). Based on our own professional experience, lead in paint chips has very low chance of becoming aerosolized (with the exceptions discussed in the following paragraph), even for lead abatement workers scrapping off lead paint overhead, their exposures are typically many times below the CalOSHA standard, and often below detection.

B. If there were abrasive blasting, torching or welding activities on the painted surfaces, then the lead in the paint can become a significant source of airborne lead. [Welders are known to have significant exposures to airborne lead, even if the lead contents are low on coated steel.] We understand that welding or abrasive blasting is not done on the painted equipment, if that is not the case, proper (and complete) abatement of the surfaces must occur prior to such activities.

C. Lead from paint chips can contaminate the hands and face, if not cleansed prior to eating, smoking, etc., can be accidentally ingested. This exposure route is a CalOSHA concern. This concern can be addressed as part of a lead awareness training program, and ensuring that some hand-washing (or cleaning) facilities are available for the maintenance workers.

D. Paint chips containing lead can potentially contaminate clothing, shoes, etc. and brought home by the workers, and become secondary sources of lead exposures to family members. This concern can be addressed as part of a lead awareness training program, and that disposable clothing be used to prevent contaminating the workers' own clothing.

E. Any paint chips should be cleaned up for general housekeeping reason. Wet mopping, damp sweeping, or vacuuming with a HEPA-filtered vacuum cleaner is preferred. CalOSHA prohibits cleaning lead debris with a compressed air gun (or a leafblower) or dry sweeping.

F. Because of the inherent water intrusion problems of this building, even if the paint on the walls and ceiling are to be stripped and re-painted, the new paint would likely peel within a couple of years if the water intrusion problem is not corrected. In addition, the water intrusion (high humidity) may shorten the service life of the building and other components.

G. If the paint is to be stripped and re-coated, a workplan should be prepared in order to address the health and safety issues during stripping (including potential presence of other components, such as PCB, asbestos, etc.), which is beyond the scope of this assessment. [The whitish coating underneath the wall (and probably ceiling) paint may be simply efflorescence from the concrete, however, it must be tested to confirm that it is not a skimcoat that contains asbestos.]

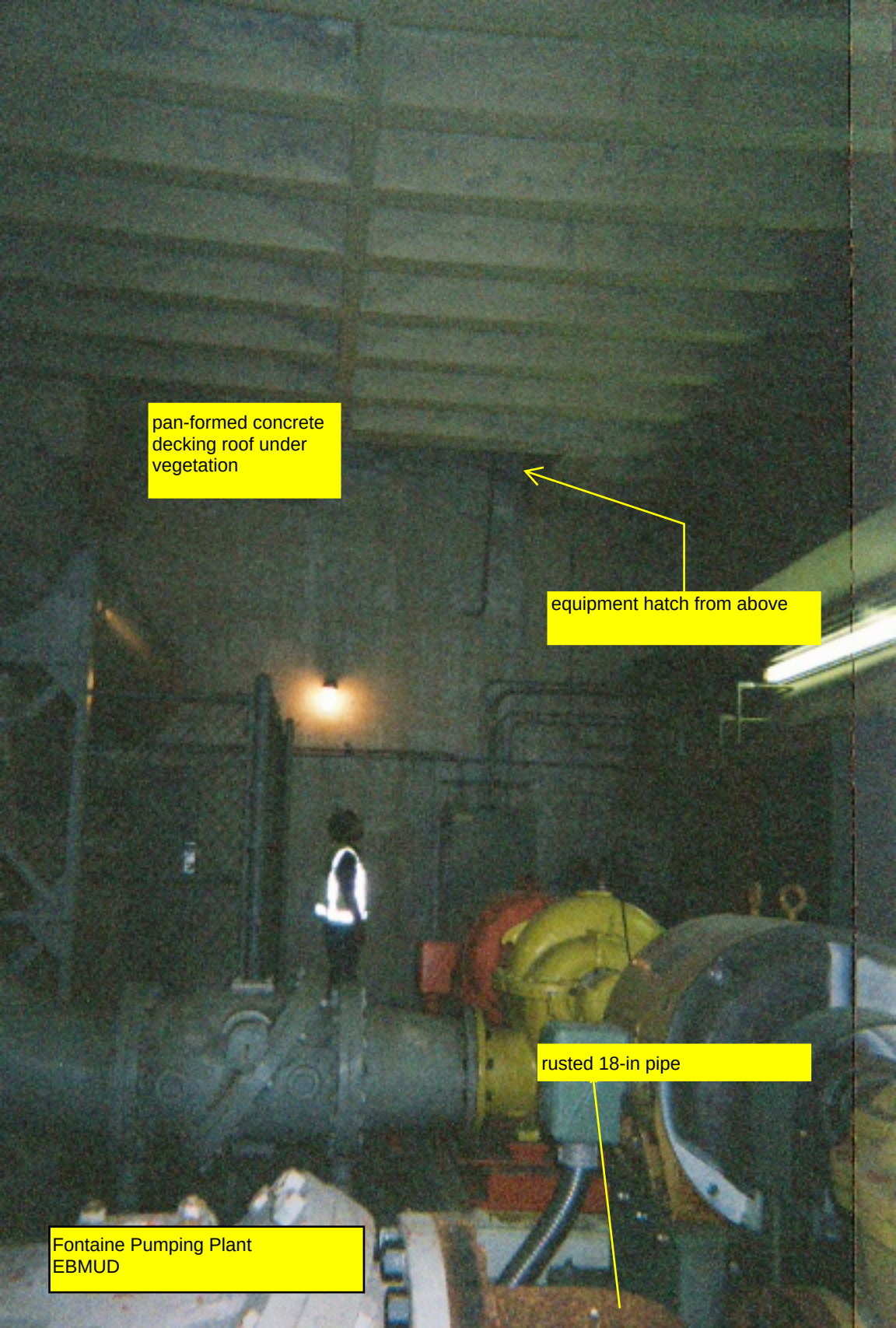
If you have any questions regarding this report, please call me anytime.

Sincerely,
SCA Environmental, Inc.

Chuck C. Siu, CIH, PE, DHS I/M/PD
President
(510) 267-2726
csiu@sca-enviro.com

Attachments: site photos

Fontaine Pumping Plant
EBMUD


pan-formed concrete decking roof under vegetation
equipment hatch from above
rusted 18-in pipe
Fontaine Pumping Plant
EBMUD

Known ACM and PACM Locations (updated Feb. 2004)	
Location	**Suspect Material (abatement or control in parens)**
39th Avenue Reservoir (installed 1961)	roofing section and side panels [Galbestos]
Almond Reservoir	various materials
Berryman West Pumping plant	electrical wiring (abated 1999-2000)
Bixler Office	ceiling tiles
Oakport, Warehouse Pipe Saw Awning	rof awning; asbestos disposal bin
Old Bixler PP	expansion joint packing material (abated 1999)
Central Area Service Center (CMS, valve crews)	floor tiles, transite wallboard (partly abated during 2002 renovation
Central Reservoir (Built 1961)	roofing materials, (encapped 2003)
Claremont Reservoir (Built 1961)	roofing material, (encapped 2003)
Claremont Center	electrical wiring, floor tiles, roofing materials
Danville Reservoir (Built 1961)	roofing materials (demolition planned 2006)
El Cerrito Center	electrical wiring (abated 1999-2000)
Leland Reservoir	various materials
Material Testing Lab (Central Reservoir)	floor tiles, wiring, roofing materials
Maloney Reservoir (Built 1960)	roofing materials, (encapped 2003)
Moraga Reservoir (Built 1966)	roofing materials (encapping planned 2004)
North Reservoir (Built 1961)	roofing materials, (encapped 2003)
Orinda WTP	floor tiles
Pardee Powerhouse	electrical wiring
Pardee Rec. Raw Water Pump Bldg.	roof/siding
Pardee Chemical Plant	wall panels
Pardee Original Buildings	electrical wiring
Pardee Outlet Tower Storage Shed	roofing materials, siding
Pardee Power Generation System	gasket and electrical insulating materials
Pardee Waste Water Systems	AC Pipe
Piedmont Pumping Plant	roofing materials (abated and roof replaced prior circa 1999)
Richmond Business Office	ceiling materials, floor tiles
San Leandro Business Office	ceiling materials, floor tiles throughout (lobby tiles abated 2002)
San Pablo Center Substation	electrical wiring (abated 1999-2000)
Scenic Reservoir	various materials
Sobrante Clearwell (Built 1964)	roofing materials, possible craftsub-liner areas
Summit West Pumping Plant	electrical wiring (abated 1999-2000)
Upper San Leandro WTP Clearwell	roofing materials
Walnut Creek Clearwell (Built 1967)	abated, demolished summer 2003
Walnut Creek Pumping Station 1 & 2	wall tiles
Walpert PP	roofing materials, siding materials
Wastewater Treatment Plant	
Admininstration Buiding	roofing materials
Digesters	roofing materials
Influent Pump Station	roofing materials

prepared by WHS

Maintenance Center (old)	roofing materials
Operations Center	ceiling and roofing materials
Oxygen Production Plant	roofing materials
Grit Dewatering Building	roofing materials
Sludge Dewatering Building	roofing materials
Sedimentation Tank Blower Building	window caulking
District Wide	
Raw Water Distribution System	gasket materials, asbestos containing cement pipe
Treated Water Distribution System	gasket materials, asbestos containing cement pipe

RWA Bulk and Air Sample Location/Structure	**Substance**
2737 Randall Way, Hayward (c/s Stacey Lane)	Asbestos
165th Street and Los Banos, Oakland	Asbestos
1000 Broadway Vault, Oakland	Asbestos + Lead- Value
Bacon Reservoir	Asbestos – Roofing
Berryman Pumping Plant	Lead + Asbestos – MCC
Central Reservoir	Asbestos
Claremont Reservoir	Asbestos
Danville Reservoir	Asbestos
Fontaine Pumping Plant	Asbestos – MCC – Panel
Maloney Reservoir	Asbestos
Montclair Pumping Plant	Asbestos – Electric Board
Moraga Reservoir	Asbestos
NAB 9th Floor Legal	Asbestos – Fire Proofing
North Reservoir	Asbestos
Oakport Carpenter Shed	Asbestos – Panels
Oakport	Asbestos – Tile
Oakport Pot Pipe Saw roof	Asbestos – Roofing
Piedmont Pumping Plant	Lead (walls, rafters, ceiling)
Piedmont Reservoir	Asbestos –Weir
San Leandro Business Office	Asbestos (furnace gasket)
San Pablo WTP	Asbestos – Wire Wrap
Sobrante Clearwell	Asbestos
Spring Lot, Richmond	Asbestos
Walnut Creek – Clear well	Asbestos
Walpert Pumping Plant	Asbestos – Debris
WC Clearwell	Asbestos – Soil Layer
Warehouse	Asbestos – Gaskets
WTTP – Digestor Gallery	Asbestos – heat exchangers gasket
WW Digestor 6	Asbestos
WW Field Services Building	Asbestos – Roof Filter
WW Pump Station A	

ACM and PACM in Electrical Equipment - EBMUD

Location	Equipment	Component	How Designated [1] [2]
Danville Pumping Plant #1 (older Pumping Plant on site)	Starter Cabinets #1, #2, #4	Gray cables	Lab – 15% asbestos (sampled 5/18/07 from cabinet #2)
	Starter Cabinets #1, #2, #4	Arc chutes	Lab – 25% asbestos (sampled 5/18/07 from cabinet #1)
	Starter Cabinet #4	Greenish shield on door	Lab -25 % asbestos (sampled 7/24/07)
	Starter Cabinet #2	Black base material from test switch on door	Lab -15 % asbestos (sampled 7/24/07)
Bryant-Colorados / Leland Pumping Plant	Unit #7 Cabinet (Bryant)	Arc chutes	Lab – positive for asbestos (TEM) (sampled 5/24/07)
	Unit #4, #5 Cabinets (Bryant)	Inside black contactors, white contactor shields, motor overload blocks	WHS visual inspection *(suspected, but unable to sample)*
	Unit #1 Cabinet (Leland)	Arc chutes, gray cables	WHS visual inspection *(suspected)*
Bryant Pumping Plant #2	Starter Cabinet #8	Arc chutes	Lab – 12% asbestos (sampled 5/24/07)
	Old, Out of Service Switchgear	Arc chutes, gray cables	WHS visual inspection *(suspected)*
Peralta Pumping Plant	Unit #1, #2 Starter Cabinets	Arc chutes & Black/gray mesh cables	WHS visual inspection *(suspected)*
	Main Breaker/Meter Section	Black/gray mesh cables	WHS visual inspection *(suspected)*
Lafayette WTP	In ground/pull boxes by Ops/Instrument building	Transite conduit	Lab – 20% crysotile & 15% amphibole or crocidilite (sampled 7/26/07) - see blueprints for locations
	Filter Building Tan MCC, East part of Building	White, gray cables Starter blocks	WHS visual inspection *(suspected)*
Upper San Leandro WTP	In ground/pull boxes at aeration basin	Transite Conduit	Blueprint notation & visual inspection

ACM and PACM in Electrical Equipment - EBMUD

Location	Equipment	Component	How Designated [1] [2]
Upper San Leandro WTP (cont)	Spare cabinet in Ops Center MCC	Gray cable	Lab - 45% asbestos (sampled 7/11/07)
Redwood Pumping Plant	Redwood #1 Starter Cabinet	Sheeting on door Arc chutes, shelf	Lab – 75% asbestos (sampled 7/11/07) WHS visual inspection *(suspected)*
	Redwood #2, #3 Starter Cabinets	Arc chutes, shelf	WHS visual inspection *(suspected)*
39th Avenue Pumping Plant	39th Ave #1, #2 Starter Cabinets	Arc chutes, shelf	WHS visual inspection *(suspected)*
Fontaine Pumping Plant	Units #1, #2, #3 Starter Cabinets	Are chutes	WHS visual inspection *(suspected)*
Montclair	Units #1, #2 Starter Cabinets	Arc chutes Grey cables Black backboards/panel	WHS visual inspection *(suspected)*
Estates	Survey Pending	Starters	Suspected by Elec Shop
Diablo Vista Pumping Plant	Unit #3 Cabinet	Arc chutes	Lab - 7% asbestos (sampled 9/26/07)
	Unit #1, #2, #3 Cabinets	Gray cables Black backboards	WHS visual inspection *(suspected)* Lab - 5% asbestos (sampled 9/26/07)
Almond Pumping Plant	Unit #1, #2 Starter Cabinets	Arc chutes, black mesh cable	WHS visual inspection *(suspected)*
Proctor Pumping Plant	Unit #3 Starter Cabinet	Black mesh cables	Sampled 7/11/07 (negative)
Quarry Pumping Plant	Starter Cabinets #1, #2, #3	Arc chutes	WHS visual inspection *(suspected)*
Palo Seco	Survey Pending		
May Pumping Plant	Electrical cabinet (damaged in flood as of 7/11/07)	Black/white mesh cables (two types)	Sampled 7/11/07 (negative)

ACM and PACM in Electrical Equipment - EBMUD

Location	Equipment	Component	How Designated [1] [2]
Jensen #1 Pumping Plant	Starter Cabinet #2	Black mesh cable, possibly inside contactors	WHS visual inspection *(suspected)*
Firetrail #1 Pumping Plant	Meter Section (inside)	White/black mesh cable	WHS visual inspection *(suspected)*
South Pumping Plant	Unit #1 Cabinet	Black mesh cable	WHS visual inspection *(suspected)*
Bayfair Pumping Plant	Units #2, #3, Potential Transformer	Gray/black mesh cables	WHS visual inspection *(suspected)*
Summit North	Survey Pending		Suspected by Elec Shop
Shasta Pumping Plant	Units #1-#3 Starter Cabinets Units #1-#3 Starter Cabinets	Arc Chutes Dark Gray Cables	WHS visual inspection *(suspected)* Lab – 8% asbestos (sampled 8/21/07)
Woods Pumping Plant	Units #1, #2 Starter Cabinets	Contactors	WHS visual inspection *(suspected)*
Walnut Creek Pumping Plant #3	ITE Breaker in MCC Section	In Circuit Breaker	Reported by Elec Shop
Maloney Pumping Plant	Unit #2 Cabinet	Possibly in contactors Black insulating material in lower cabinet area	WHS visual inspection *(suspected)* Lab – 7% asbestos (sampled 7/24/07)
	Unit #1 Cabinet	Gray cables Gray arc chutes Gray disks on side of arc chutes Black backboard	WHS visual inspection *(suspected)* Lab – 10% asbestos (sampled 7/24/07) Lab – 55% asbestos (sampled 7/24/07) Lab – 8% asbestos (sampled 7/24/07)
Donald Pumping Plant	All Cabinets	Gray cables	WHS visual inspection *(suspected)*
Schapiro Pumping Plant	Starter Cabinets #1-#3	Arc chutes, backboards	WHS visual inspection *(suspected)*
Road 24 Pumping Plant	Starter Cabinets	Starter blocks	WHS visual inspection *(suspected)*
UPCOUNTRY			
Pardee Center Redwood Building	Gasket on Spare Light in Storage Shelves	White Gasket	Lab – 75% asbestos (sampled 9/25/07)

ACM and PACM in Electrical Equipment - EBMUD

Location	Equipment	Component	How Designated [1] [2]
	Main Switch Box, Downstairs	Black backboard	WHS visual inspection *(suspected)*
Pardee Outlet Tower	Gate Control Boxes	White Shields Inside Enclosures	Lab – 10% asbestos (sampled 9/25/07)
Pardee Powerhouse	Transformer Hoist	White cables Black cables, backboard	Lab – 45% asbestos (sampled 9/25/07) WHS visual inspection *(suspected)*
	Control Room, Back of Main Board #5	Gray cables	WHS visual inspection *(suspected)*
	Unit #3 Breaker 10 & 11 Unit #3 Breaker 52E	Arc Chutes Arc Chutes	WHS visual inspection *(suspected)* WHS visual inspection *(suspected)*
Camanche Powerhouse	Unit #2 Others Units not inspected, but suspected	Arc Chutes	Lab – 20% asbestos (sampled 9/25/07)
Bixler High Head Pumping Plant	Pumps #1-#4 Controls Cabinets	Arc Chutes	WHS visual inspection *(suspected)*
Bixler 60kV Switchyard	4160V Breaker Cabinet	Arc Chutes	WHS visual inspection *(suspected)*
Indian Slough Wasteway #2	Inside Breaker #2 for Valve Starters	White insulating material	WHS visual inspection *(suspected)*
	Inside Main Breaker	Grey insulating material	WHS visual inspection *(suspected)*
Indian Slough Wasteway #1	Inside Line Starter Cabinet	White shielding material	WHS visual inspection *(suspected)*
MAIN WASTEWATER TREATMENT PLANT			
Oxygen Plant MCC P17	Liquid O2 Vaporizer Heater Cubicles #2-#11	White Line Side Shields	Lab – similar shield sampled in 2002 by WHS
Oxygen Plant MCC P17	Drain Vaporizer Heater Cubicles #1-#2	White Line Side Shields	Lab – similar shield sampled in 2002 by WHS
Oxygen Plant MCC P17	Noted Cubicles: Instrument	White Line Side Shields	Lab – similar shield sampled in 2002

ACM and PACM in Electrical Equipment - EBMUD

Location	Equipment	Component	How Designated [1] [2]
	Air Compressor, Spare, Welding Disconnect		by WHS
Oxygen Plant MCC P16	Spare Cubicle	White Line Side Shield	Lab – similar shield sampled in 2002 by WHS
Ops Center MCC P9	Noted Cubicles: Return Sludge Pump #2, No. 3 Water Pump #2	Shield Behind Circuit Breaker	Sampled 8/22/07 (**negative**)
North Secondary Bldg MCC	Spare Cubicle (below feeder panel HG)	White Line Side Shield	Lab – similar shield sampled in 2002 by WHS
South Secondary Bldg MCC P14A	Spare Cubicle above Purge Blower Cubicle	White Line Side Shield	Lab – similar shield sampled in 2002 by WHS
South Secondary Bldg MCC	Recirc Compressor B-1 Cubicle	White plaster material lining inside of contactor	Lab – 8% asbestos (sampled 8/22/07)
Grit Dewatering Second Floor MCC	Entire MCC Contaminated	Deteriorated White Line Side Shields, Particles	Lab – similar shield sampled in 2002 by WHS
Digester Control Building MCC P5B Front	Hot Water Circulating Pump CP-11 Cubicle	White Line Side Shield	Lab – 35% asbestos (sampled Nov 03)
Digester Control Building MCC P5A Rear	Transformer Feeder Cubicle	White Line Side Shield	Lab – 35% asbestos (sampled Nov 03)
IPS Mid Level, Old Air Compressor Room	Old, tan air compressor disconnect	White gasket between molding pieces	Lab – 95% asbestos (sampled 12/3/03)
Dewatering Building	Light Fixtures	Heat Shields	Lab – 75% asbestos (sampled 9/4/03)
Power Generation Station MCC	Generator #1-#3 Breaker Cabinets	Arc Chutes	Lab – 20% asbestos (sampled 4/8/03)
Power Generation Station	Noted Cabinets: U28 Feeder, Feeder 1 Breaker, Station Service Breaker	Arc Chutes	Lab – 20% asbestos (sampled 4/8/03)
U13 Substation	Noted Cubicles: Unlabeled	White Line Side Shields	Lab – similar shield sampled in 2002

ACM and PACM in Electrical Equipment - EBMUD

Location	Equipment	Component	How Designated [1] [2]
	(3), 15 kVA trans, Sump Pump SP-6, Ltg Panel Main & Panel DB, Gas Circ Compressor, Spare (3)		by WHS
U13 Substation	Noted Cubicles: Sludge Transfer Pump #5 and #6, Exhaust Fan EF-5, Gas Recirculation Compressors #11A and #10B	White Line Side Shields	Lab – similar shield sampled in 2002 by WHS
REMOTE WASTEWATER FACILITIES			
Station D	Four combination motor starters	Black material on starter White overload relay block	Suspected by age, WHS inspected 8/29/07
Station D	Lighting panel	Grey/brown insulating shield	Suspected by age, WHS inspected 8/29/07
Station E	Four combination motor starters	Black material on starter White overload relay block	Suspected by age, WHS inspected 8/29/07
Station E	Lighting panel	Grey/brown insulating shield	Suspected by age, WHS inspected 8/29/07
Station L	Combination Motor Starters for Motors 1 and 2, Air Compressor Starter Cabinet	Black material on starter White overload relay block	Suspected by age, WHS inspected 8/29/07

Notes

(1) All asbestos detected in laboratory is chrysotile asbestos unless otherwise noted.

(2) Entries stating "WHS Visual Inspection (suspected)" means that similar equipment has been tested in a lab and found to be positive or there is other strong evidence that the material listed contains asbestos.