

REPORT LIMITATIONS

This report has been prepared in accordance with generally accepted practices using standards of care and diligence normally practiced by recognized consulting firms performing services of a similar nature. This report presents our professional judgment based upon data and findings identified in this report and the interpretation of such data based on our experience and background, and no warranty, either expressed or implied, is made. The conclusions presented are based on the current regulatory climate and may require revision if future regulatory changes occur.

The findings identified in this report are predicated on the results of the limited sampling and laboratory testing performed. This report does not address impacts related to sources other than those specified herein.

The contents of this report reflect the views of Geocon Environmental Consultants, Inc., who is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the State of California or the Federal Highway Administration. This report does not constitute a standard, specification, or regulation.

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DIVISION OF TOLL BRIDGE PROGRAM - ENVIRONMENTAL ENGINEERING BRANCH

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LIST OF ACRONYMS

40 CFR	Chapter 40 of the Code of Federal Regulations
ACBM	Asbestos Containing Building Material
AHERA	Asbestos Hazard Emergency Response Act
ATL	Advanced Technology Laboratories
Basin Plan	Water Quality Control Plan for the San Francisco Bay Basin
Caltrans	California Department of Transportation
CCR	California Code of Regulations
DOT	Department of Transportation
DTSC	Department of Toxic Substances Control
ELAP	Environmental Laboratory Accreditation Program
EPA	United States Environmental Protection Agency
Geocon	Geocon Environmental Consultants, Inc.
HB&T	HB&T Environmental, Inc.
I-80	Interstate 80
MCL	Maximum Contaminant Level
$\mu\text{g}/\text{m}^3$	Micrograms per cubic meter
mg/cm^2	Milligrams per square centimeter
mg/kg	Milligrams per Kilogram
mg/l	Milligrams per Liter
ppt	Parts per Thousand
QA/QC	Quality Assurance/Quality Control
RCRA	Resource, Conservation, and Recovery Act
SFOBB	San Francisco-Oakland Bay Bridge
STLC	Soluble Threshold Limit Concentration
SVOCs	Semi-volatile Organic Compounds
TCLP	Toxicity Characteristics Leaching Procedure
TO	Task Order
TPHd	Total Petroleum Hydrocarbons as diesel
TPHg	Total Petroleum Hydrocarbons as gasoline
TSI	Thermal System Insulation
TTLC	Total Threshold Limit Concentration
USCS	Unified Soil Classification System
VOCs	Volatile Organic Compounds
WET	Waste Extraction Test
WQOs	Water Quality Objectives
XRF	X-ray Florescence

EXECUTIVE SUMMARY

In accordance with California Department of Transportation (Caltrans) Contract No. 43Y097 and Task Order No. 04-002971-DU, Geocon Environmental Consultants, Inc. (Geocon) has performed environmental engineering services for the San Francisco – Oakland Bay Bridge (SFOBB) Gateway Project. The areas investigated included the Toll Operations Building, the Maintenance Garage/Storage Building, and an undeveloped western portion of the median. The existing east span of the SFOBB is scheduled for replacement and proposed construction activities include a new toll operations building in the SFOBB Toll Plaza median area and demolition of the existing buildings.

The purpose of the investigation was to attempt to characterize soil and groundwater beneath the site and to confirm the presence or absence of asbestos containing building material (ACBM) and lead-based paint in the two on-site buildings. The investigative results will be used by Caltrans to evaluate health and safety issues, soil re-use issues, and appropriate soil and groundwater disposal measures.

Soil samples collected exhibited non-hazardous concentrations of Title 22 metals (with the exception of three soil samples collected from the undeveloped median area that exhibited soluble lead concentrations greater than the Soluble Threshold Limit Concentration [STLC]); total petroleum hydrocarbons as diesel (TPHd) concentrations ranging from less than 1.0 mg/kg to 909 mg/kg; and slightly alkaline pH levels. Total petroleum hydrocarbons as gasoline (TPHg), volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs) were not detected above laboratory-reporting limit.

Groundwater samples collected from eight of the soil probes exhibited relatively low concentrations of TPHd, and concentrations of dissolved antimony, chromium, and lead that exceeded Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) water quality objectives (WQOs) or maximum contaminant level (MCL) thresholds. Groundwater pH ranged from 6.74 to 8.87. TPHg, VOCs, and SVOCs were not detected in the groundwater samples.

The presence of elevated soluble lead levels in surficial soil within the undeveloped median area will likely require the management, treatment and/or disposal of surficial soil generated from excavations during the construction activities as a California-hazardous waste in accordance with the Department of Toxic Substances Control (DTSC) variance.

Based on groundwater analytical data, extracted groundwater may require treatment for elevated metal and/or TPHd concentrations. Geocon recommends that engineering controls be utilized to minimize the volume of extracted groundwater.

The asbestos survey results confirmed the presence of ACBM in 50 of the 171 bulk samples collected. However, the analytical laboratory data showed that only one sample from each of the buildings surveyed contained friable asbestos. Friable asbestos was reported in a small debris pile at the west end of the maintenance building on the top of an air duct in a hallway attic and on the roof of the toll operations building in the thermal system insulation (TSI) located on Chill Waterpump No. 1.

It is recommended that Caltrans obtain a licensed asbestos removal contractor to appropriately remove and dispose of the friable asbestos in these areas. In addition, ACBM that is presently non-friable has the potential to become friable during demolition activities, and appropriate measures to mitigate and/or monitor during demolition should be implemented.

The lead-based paint inspection results indicated that lead-based paint, defined as paint or other surface coating that contains an amount of lead equal to, or greater than 1.0 milligram per cubic centimeter (mg/cm^2), is present throughout the toll operations building and the maintenance garage/storage building. According to the lead-based paint investigation report, detectable levels of lead require worker safety precautions until measurements of air-borne lead dust at the workers' breathing zone has been determined to be less than 50 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) for an 8-hour time-weighted-average.

It is recommended that if heavy equipment is used during the demolition of the two buildings, deteriorated lead-based paint should be removed or stabilized prior to the demolition activities. For more information, it is recommended that reference be made to DTSC Document No. 33, Revision No. 2, dated June 13, 1994 and CCR Section No. 60201.24.

SITE INVESTIGATION REPORT

1.0 INTRODUCTION

This Site Investigation Report presents the results of a limited subsurface soil and groundwater investigation, asbestos survey, and lead-based paint inspection performed in the median of Interstate 80 (I-80) adjacent to the San Francisco-Oakland Bay Bridge (SFOBB) Toll Plaza. The areas investigated included the toll operations building, the maintenance garage/storage building, and an undeveloped western portion of the median. This Site Investigation Report was prepared Geocon Environmental Consultants, Inc. (Geocon) under California Department of Transportation (Caltrans) Contract No. 43Y097 and Task Order (TO) No. 04-002971-DU.

1.1 Project Description and Proposed Improvements

The project site consists of the median area located between the eastbound and westbound lanes of I-80 adjacent to the SFOBB Toll Plaza located in Oakland, California. The median area currently contains parking areas, a toll operations building, a maintenance garage/storage building, and landscaped areas. The existing east span of the SFOBB is scheduled for replacement, and proposed construction activities include a new toll operations building in the SFOBB Toll Plaza median area, and demolition of the existing buildings. The project location is depicted on the attached Vicinity Map, Figure 1.

This site investigation was designed to characterize soil and groundwater that may be encountered during construction/demolition activities. The three areas that were investigated included the toll operations building, the maintenance garage/storage building, and the undeveloped western portion of the median. The areas are depicted on the Site Plan, Figure 2. Soil sampling, groundwater sampling, and a utility survey were performed in all three areas. The asbestos survey and lead-based paint inspection were performed at the toll operations building and maintenance garage/storage building.

1.2 Purpose

The purpose of the scope of work outlined in TO No. 04-002971-DU was to attempt to characterize soil and groundwater beneath the site and to confirm the presence or absence of asbestos containing building material (ACBM) and lead-based paint in the two on-site buildings. This work was accomplished through the advancement of direct-push soil probes, the collection of soil and groundwater samples, the performance of laboratory analyses, the performance of an asbestos survey, and the performance of a lead-based paint inspection. The investigative results will be used by Caltrans to evaluate health and safety issues; soil re-use issues, and appropriate soil and groundwater disposal measures.

2.0 BACKGROUND

The existing SFOBB was constructed in the mid-1930's. The east span of the SFOBB is scheduled for replacement as part of a significant statewide seismic retrofit effort by Caltrans. The existing median and associated structures are planned to undergo modifications as part of the overall SFOBB east span replacement project. According to Caltrans, improvements to the subject site were conceived prior to the SFOBB retrofit/replacement project. While proposed improvements to the subject site are not officially part of the retrofit work, the aesthetic look of the proposed buildings and area and the project schedules are being coordinated with the SFOBB retrofit project.

Potential contaminants of concern at the site include heavy metals, total petroleum hydrocarbons as gasoline (TPHg), total petroleum hydrocarbons as diesel (TPHd), volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs). The potential presence of ACBM and lead-based paint is also a potential concern for the toll operations and maintenance buildings that are scheduled for demolition.

2.1 Hazardous Waste Determination Criteria

Regulatory criteria to classify a waste as "California hazardous" for handling and disposal purposes are contained in the *California Code of Regulations (CCR)*, Title 22, Division 4.5, Chapter 11, Article 3, §66261.24. Criteria to classify a waste as "Resource, Conservation, and Recovery Act (RCRA) hazardous" are contained in Chapter 40 of the Code of Federal Regulations (40 CFR), Section 261.

For a waste containing metals, the waste is classified as "California hazardous" when its: 1) total metal content exceeds the Total Threshold Limit Concentration (TTLc); or 2) soluble metal content exceeds the Soluble Threshold Limit Concentration (STLC) based on Waste Extraction Test (WET) analysis. A material is classified as "RCRA hazardous" when its soluble metal content exceeds the Federal Regulatory Level based on Toxicity Characteristic Leaching Procedure (TCLP) testing.

State and federal regulatory levels have also been established for select VOC and SVOCs. There are no readily available established regulatory criteria for the classification of wastes containing petroleum hydrocarbons.

The above regulatory criteria are based on toxicity. Wastes may also be classified as hazardous based on other criteria such as corrosivity and ignitability. However, for the purposes of this investigation, toxicity (i.e., concentration) is the primary factor considered for waste classification.

Waste that is classified as either "California hazardous" or "RCRA hazardous", requires management as a hazardous waste and disposal to an approved disposal facility.

3.0 SCOPE OF SERVICES

Geocon performed the following scope of services, which included site meetings, on-site fieldwork, laboratory analyses and preparation of this Site Investigation Report.

3.1 Pre-Field Activities

- Conducted a pre-work site visit on February 10, 1999 to locate and inspect the work areas and to mark the direct-push probe locations.
- Prepared a Health and Safety Plan, dated February 10, 1999, to provide guidelines on the use of personal protective equipment and health and safety procedures during the field activities.
- Obtained Caltrans encroachment permit No. 0498-NSV-2229 to perform the field activities within the state right-of-way. A copy of the permit is included in Appendix A.
- Obtained a County of Alameda Public Works Agency Drilling Permit dated February 17, 1999. A copy of the permit is included in Appendix A.
- Provided 48-hour notification to Underground Service Alert (Ticket No. 374514), reviewed available project utility plans, and retained the services of Detecht, a Caltrans-approved private underground utility locating subcontractor, to attempt to identify the locations of subsurface structures and utilities in proximity to the proposed soil boring locations.
- Retained the services of HB&T Environmental, Inc. (HB&T), a Caltrans-approved subcontractor located in Sacramento, California, to perform the asbestos survey and lead-based paint inspection.
- Retained the services of Vironex, a California-licensed (Lic. No. C57-705927) and Caltrans-approved subcontractor, to perform the direct-push sampling activities.
- Retained the services of Advanced Technology Laboratories (ATL), a California-licensed (ELAP No. 1838) and Caltrans-approved subcontractor, located in Signal Hill, California, to perform the analytical testing services.

3.2 Field Activities

The fieldwork for this project was performed under the direct supervision of Geocon's field supervisor and/or project manager.

Soil and groundwater investigation fieldwork began on February 18, 1998 with the performance of the underground utility location survey (utility survey). The utility survey was conducted in the vicinity of the proposed sampling locations and was completed in 8 hours.

Fifteen soil probes were advanced and sampled on February 22 and 23, 1999 at the locations shown on Figure 2. Six probes were advanced adjacent to the toll operations building (ADMIN1 through ADMIN6); six probes were advanced adjacent to the maintenance garage/storage building (MNTNC1 through MNTNC6); and three probes were advanced along the center of the undeveloped portion of the median near the western site boundary (MED1 through MED3). In addition four surficial soil samples were also collected from the undeveloped portion of the median (MED4 through MED7).

The soil probes advanced adjacent to the toll operations building and maintenance garage/storage building were advanced to depths of approximately 26 feet (7.9 meters) below the ground surface. Soil samples were collected at the soil surface and from depths of approximately 5, 10, 15, 20 and 25 feet (1.5, 3, 4.5, 6, and 7.5 meters) below the ground surface, with the exception of soil probes ADMIN2 and ADMIN4 where refusal was encountered at depths of approximately 3½ feet (1 meter) and 11 feet (3.4 meters), respectively. In addition, one sample could not be recovered from a depth of approximately 25 feet (7.5 meters) at probe MNTNC5.

The soil probes advanced along the center of the undeveloped portion of the median were advanced to depths of approximately 8 feet (2.4 meters) below the ground surface. Soil samples were collected from depths of approximately 2, 4, 6, and 8 feet (0.6, 1.2, 1.8, and 2.4 meters) below the ground surface with the exception of MED1 where a sample could not be recovered from a depth of approximately 8 feet (2.4 meters).

Direct-push soil samples were collected in plastic sleeves, labeled, capped, placed in a chilled cooler, and shipped to ATL via overnight courier for chemical analyses. Chain-of-custody documentation for each sample was established in the field and accompanied the shipment of the samples to the laboratory.

Groundwater samples were collected from ADMIN1, ADMIN3, ADMIN5, ADMIN6, MNTNC1, MNTNC3, MNTNC6, and MED2. The eight groundwater samples were collected with disposable flexible plastic tubing placed through the probe driving rod. Water was drawn through the plastic tubing using a peristaltic pump. The groundwater samples were transferred to appropriate laboratory-provided containers, capped, labeled, placed in a chilled cooler, and shipped to ATL via overnight courier for chemical analyses. Chain-of-custody documentation for each sample was established in the field and accompanied the shipment of the samples to the laboratory.

The direct-push probes were logged under the supervision of a Certified Engineering Geologist following the Unified Soil Classification System (USCS). The direct-push borings were backfilled with bentonite/cement slurry and capped with an asphalt patch, where appropriate.

Sampling equipment was cleaned between each soil boring location by washing the equipment with an Alconox solution followed by a double rinse with deionized water. Rinseate and soil waste generated during the sampling activities was stored on-site in three 10-gallon Department of Transportation (DOT)-approved drums. On March 26, 1999 Ecologix, Inc. removed the drums from the site for disposal in accordance with applicable local, state, and federal regulations.

The asbestos survey and lead-based paint inspection were performed within the toll operations building and the maintenance garage/storage building. The lead-based paint inspection was performed from March 11 to 16, 1999. The asbestos survey was performed on October 5 and 6, 1998. The building locations are depicted on Figure 2.

4.0 INVESTIGATIVE METHODS

The rationale and method of investigation for the soil probe advancement, sampling procedures and protocols, laboratory analyses, asbestos survey, and lead-based paint inspection are discussed below.

4.1 Soil Sampling

The TO provided by Caltrans specified the direct-push boring locations, the soil and groundwater sampling intervals, and the analytical program. Caltrans selected the boring locations in areas under consideration for future construction activities within the project boundaries.

The soil samples from the direct-push soil probes (ADMIN1 through ADMIN6, MNTNC1 through MNTNC6, and MED1 through MED3) were collected using a Geoprobe hydraulic sampling system. The direct-push soil sampling system consisted of a truck-mounted percussion hammer to drive a driving rod attached to an approximately one-meter-long by five-centimeter-diameter sample barrel equipped with a pre-cleaned plastic sleeve. As the sample barrel was pushed into freshly exposed soil, soil entered the sample tube. The sample barrel was then pulled from the ground and the sample tube was removed from the sample barrel. The sample tube was then cut into a section at the depth corresponding to the designated sample interval, sealed with Teflon sheets and plastic caps, labeled, placed in a cooler chilled with ice, and transported to ATL under standard chain-of-custody procedures. The direct-push borings were logged according to the USCS. Boring logs are included as Appendix B.

The surficial soil samples from locations MED4 through MED7 were collected utilizing a stainless-steel handauger. The soil samples were transferred from the handauger to 4-ounce glass jars, labeled, placed in a cooler chilled with ice and transported to ATL under standard chain-of-custody procedures.

4.2 Groundwater Sampling

Groundwater samples were collected from probes ADMIN1, ADMIN3, ADMIN5, ADMIN6, MNTNC1, MNTNC3, MNTNC6, and MED2. The groundwater samples were collected from the direct-push borings by advancing a hydropunch sampling apparatus attached to the end of the driving rod to approximately 2 feet (0.6 meter) below the water table. The sampler was then raised 2 feet (0.6 meters) to expose the screen and allow groundwater to infiltrate into the interior of the driving rod. The sample was drawn from within the driving rod using disposable flexible tubing attached to a peristaltic pump. The groundwater samples were transferred to laboratory-provided containers and preserved as appropriate. The sample containers were labeled, placed in a cooler chilled with ice, and transported to ATL under standard chain-of-custody procedures.

4.3 Laboratory Analyses

Soil and groundwater samples were submitted to the laboratory for the following analyses under standard 10-day turn-around-time:

- Title 22 metals following United States Environmental Protection Agency (EPA) Test Method 6010.
- VOCs following EPA Test Method 8260.
- SVOCs following EPA Test Method 8270.
- TPHg following EPA Test Method 8015.
- TPHd following modified EPA Test Method 8015.
- Soil and water pH following EPA Test Methods 9045 and 150.1, respectively.

In addition to the above analyses, soil samples that exhibited a total metal concentration greater than ten times a respective STLC value were subsequently analyzed for the appropriate soluble metal via the TCLP and/or WET.

Quality assurance/quality control (QA/QC) procedures were performed for each method of analysis with specificity for each analyte listed in the test method's QA/QC. The laboratory QA/QC procedures included the following:

- One method blank for every ten samples, batch of samples, or type of matrix, whichever was more frequent.
- One sample analyzed in duplicate for every ten samples, batch of samples, or type of matrix, whichever was more frequent.
- One spiked sample for every ten samples, batch of samples, or type of matrix, whichever was more frequent, with the spike made at ten times the detection limit or at the analyte level.

Prior to submitting the soil and groundwater samples to the laboratory, the chain-of-custody documentation was reviewed for accuracy and completeness. The laboratory reports were also reviewed for accuracy and consistency with the chain-of-custody documentation. In addition, the laboratory QA/QC summary reports were reviewed to determine if the laboratory results are within tolerance control limits. Based upon this review process, the data quality appears to be adequate.

4.4 Asbestos Survey

The asbestos survey was performed by an Asbestos Hazard Emergency Response Act (AHERA) trained professional and included the identification and evaluation of suspect ACM. The ACM survey was performed for both the toll operations building and the maintenance garage/storage building and covered the accessible portions of the buildings interior and exterior. Suspect ACM was grouped into homogeneous areas and a representative number of samples were collected from each area.

In addition, each ACBM was evaluated for condition (i.e., evidence of deterioration, physical damage, and water damage) friability, accessibility, and proximity to air plenum or direct airstream. Bulk samples were analyzed for the presence of asbestos in accordance with EPA Test Method 600/M4-82-020, polarized light microscopy.

4.5 Lead-Based Paint Inspection

The lead-based paint inspection was performed by two California Department of Health Services-certified lead inspectors/assessors. During the inspection, approximately 1,100 x-ray fluorescence (XRF) readings were taken of painted surfaces within the toll operations building and the maintenance garage/storage building. The XRF readings were taken using a Niton XL 309 Spectrum Analyzer with a 15-month-old, 10-millicurie, radioactive cadmium 109 source in conformance with protocol outlined in the *HUD Guidelines for the Evaluation and Control of Lead-based Paint Hazards*.

5.0 INVESTIGATION RESULTS AND FIELD OBSERVATIONS

The investigation results from the soil and groundwater sampling, asbestos survey, and lead-based paint inspection are discussed below along with observations made in the field.

5.1 Soil and Groundwater Probes

For the soil samples, a summary of the analytical laboratory test results for total and soluble Title 22 metals is presented as Table I. A summary of the analytical laboratory test results for VOCs, SVOCs, TPHg, TPHd, and pH is presented as Table II. Copies of the laboratory reports and chain-of-custody documentation for the soil samples are included in Appendix C

For the groundwater samples, a summary of the analytical laboratory test results for dissolved Title 22 metals is presented as Table III. A summary of the analytical laboratory test results for VOCs, SVOCs, TPHg, TPHd, and pH is presented as Table IV. Copies of the laboratory reports and chain-of-custody documentation for the groundwater samples are also included in Appendix C.

Asphalt/concrete pavement was present at all soil sampling location except MED1, MED2, and MED4 through MED7. Subsurface soil encountered generally consisted of fill material overlying recent Bay Mud deposits to the maximum explored depth of approximately 26 feet (7.9 meters) below the ground surface. The fill material was primarily comprised of dry to moist, fine to coarse sand with traces of gravel. Bay Mud deposits consisting of saturated, gray to black clay were encountered in most of the deeper borings at depths ranging from approximately 17 feet (5.2 meters) to the termination depth of approximately 26 feet (7.9 meters) below the ground surface.

Groundwater was encountered beneath the site at depths ranging from approximately 8 to 9 feet (2.4 to 2.7 meters) below the ground surface. The water samples collected for dissolved Title 22 metals analyses were filtered by the analytical laboratory upon receipt, prior to preservation.

5.1.1 Toll Operations Building - Soil Analytical Results

One soil sample exhibited a total lead concentration greater than ten times the STLC. This sample was subsequently analyzed for soluble lead via the WET and exhibited a soluble lead concentration of 1.1 milligrams per liter (mg/l), less than the STLC of 5.0 mg/l. Other Title 22 metals were not detected at total concentrations greater than their respective TTLC values or greater than ten times their respective STLC values.

TPHd concentrations ranged from less than 1.0 milligram per kilogram (mg/kg) to 664 mg/kg. While concentrations were reported as TPHd, the laboratory indicated that the samples exhibiting concentrations of TPHd contained either hydrocarbons of an unknown pattern or single peak hydrocarbons that did not match the diesel pattern. Quantitation was based on the diesel standard.

TPHg, VOCs, and SVOCs were not detected above respective method detection limits. Soil pH values ranged from 7.8 to 10.4, with a mean of 9.2.

5.1.2 Toll Operations Building – Groundwater Analytical Results

Groundwater samples were collected from four of the probes advanced adjacent to the toll operations building.

For dissolved metals, the most stringent primary or secondary maximum contaminant levels (MCLs) listed for either state or federal drinking water standards are presented in Table III. The groundwater samples collected from probes ADMIN1 and ADMIN3 exhibited dissolved antimony concentrations of 0.006 and 0.009 mg/l, respectively, that exceeded or equaled the listed MCL of 0.006 mg/l. No other dissolved metals were detected above their respective MCLs.

The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan), adopted by the California Regional Water Quality Control Board - San Francisco Bay Region on June 21, 1995, is the master policy document governing water quality regulation in the San Francisco Bay region. Water Quality Objectives (WQOs) for surface waters containing toxic pollutants discharged to the Bay are presented in Section 3, Water Quality Objectives, of the Basin Plan. The objectives are divided into two categories, one for surface waters with salinities greater than 5 parts per thousand (ppt), presented in Table 3-3 of the Basin Plan, and one for surface waters with salinities less than 5 ppt, presented in Table 3-4 of the Basin Plan. Since the subject site is located adjacent to the San Francisco bay, it is assumed that the receiving waters for discharge from construction activities at the SFOBB Gateway Project would exceed a salinity of 5 ppt. The corresponding WQOs for dissolved metals in Table 3-3 of the Basin Plan are listed in Table III of this report. No dissolved metals were detected above the 4-day or 1-hour average WQOs.

VOCs, SVOCs, and TPHg were not detected in groundwater samples at concentrations greater than respective laboratory reporting limits. The groundwater sample collected from probe ADMIN6 exhibited a TPHd concentration of 0.2 mg/l. The laboratory indicated that this sample contained hydrocarbons that did not match the diesel pattern and suggested that the hydrocarbons were possibly motor oil. Other groundwater samples did not exhibit detectable concentrations of TPHd greater than the laboratory reporting limit of 0.05 mg/l. Groundwater samples exhibited pH values ranging from 6.74 to 8.46.

5.1.3 Maintenance Garage/Storage Building - Soil Analytical Results

Two soil samples exhibited total chromium concentrations greater than ten times its STLC. These samples were subsequently analyzed for soluble chromium via the WET and exhibited soluble chromium concentrations less than the STLC of 5.0 mg/l. Other total Title 22 metals were not detected at concentrations greater than their respective TTLC values or greater than ten times their respective STLC values.

TPHd concentrations ranged from less than 1.0 mg/kg to 909 mg/kg. While concentrations were reported as TPHd, the laboratory indicated that the samples exhibiting concentrations of TPHd contained either hydrocarbons of an unknown pattern or hydrocarbons that did not match the diesel pattern, possibly motor oil. Quantitation was based on the diesel standard.

TPHg, VOCs, and SVOCs were not detected above respective method detection limits. Soil pH values ranged from 8.6 to 9.9, with a mean of 9.2.

5.1.4 Maintenance Garage/Storage Building - Groundwater Analytical Results

Groundwater samples were collected from probes MNTNC1, MNTNC3, and MNTNC6 and exhibited dissolved antimony concentrations of 0.013, 0.009, and 0.14 mg/l, respectively, which exceed the listed MCL of 0.006 mg/l. In addition, the groundwater sample collected from probe MNTNC3 exhibited dissolved chromium, lead, and thallium concentrations of 0.087, 0.031, and 0.20 mg/l, respectively which exceeded the listed MCLs of 0.05, 0.015, and 0.002, respectively. No other dissolved metals were detected above their respective MCLs.

The groundwater sample collected from probe MNTNC6 exhibited a dissolved arsenic concentration of 0.048 mg/l that exceeded the 4-day average WQO of 0.036 mg/l. The groundwater sample collected from probe MNTNC3 exhibited dissolved chromium and lead concentrations of 0.087 and 0.031 mg/l, respectively that exceeded the 4-day average WQOs of 0.05 and 0.0056 mg/l, respectively. Other dissolved metals were not detected above the listed WQOs.

VOCs, SVOCs, and TPHg were not detected in groundwater samples at concentrations greater than respective laboratory reporting limits. The groundwater sample collected from probe MNTNC3 exhibited a TPHd concentration of 0.7 mg/l. The laboratory indicated that this sample contained hydrocarbons that did not match the diesel pattern and suggested that the hydrocarbons were possibly motor oil. Other groundwater samples did not exhibit detectable concentrations of TPHd greater than the laboratory reporting limit of 0.05 mg/l. The groundwater samples exhibited pH values ranging from 7.44 to 8.87.

5.1.5 Undeveloped Median Area – Soil Analytical Results

Two soil samples collected from the ground surface and one soil sample collected from a depth of approximately 2 feet (0.6 meter) below the ground surface exhibited total lead concentrations greater than ten times its STLC. These samples were subsequently analyzed for soluble lead via the WET and exhibited soluble lead concentrations greater than the STLC of 5.0 mg/l. These three soil samples were further analyzed for soluble lead via the TCLP and exhibited soluble lead concentrations less than the regulatory threshold of 5 mg/l. Other total Title 22 metals were not detected at concentrations greater than the respective TTLC values or greater than ten times the respective STLC values.

TPHd concentrations ranged from less than 1.0 mg/kg to 118 mg/kg. While concentrations were reported as TPHd, the laboratory indicated that the samples exhibiting concentrations of TPHd contained hydrocarbons of an unknown pattern, hydrocarbons that did not match the diesel pattern, possibly motor oil or weathered diesel, or hydrocarbons heavier than diesel, possible motor oil. Quantitation was based on the diesel standard.

TPHg, VOCs, and SVOCs were not detected above respective method detection limits. Soil pH values ranged from 7.3 to 9.6, with a mean of 8.5.

5.1.6 Undeveloped Median Area – Groundwater Analytical Results

A groundwater sample was collected from probe MED2 at a depth of approximately 10 feet (3 meters) below the ground surface and exhibited a dissolved antimony concentration of 0.019 mg/l that exceeded the listed MCL of 0.006 mg/l. Other dissolved metals were not detected at concentrations above their respective MCLs or listed WQOs.

VOCs, SVOCs, TPHg, and TPHd were not detected in the groundwater sample at concentrations greater than respective laboratory reporting limits. The groundwater sample exhibited a pH value of 7.04.

5.2 Asbestos Survey

The asbestos survey was performed by HB&T, and included assessment of the interiors and exteriors of both the maintenance garage/storage building and the toll operations building. HB&T's Asbestos Survey Report is presented in Appendix D and summarized below.

One-hundred-seventy-one bulk samples were analyzed during the survey. Ninety bulk samples were collected from the toll operations building, and 81 bulk samples were collected from the maintenance building. Of the 171 bulk ACBM samples collected from the two buildings, the laboratory analyses indicated the presence of asbestos in 50 of the 171 samples. Only one sample from each building was

noted as containing friable asbestos. Friable asbestos is defined as asbestos that is capable of being crushed to dust with normal hand pressure. The ACBMs noted during the survey included: thermal system insulation (TSI); floor tile and mastic; coated corrugated metal siding; silver and black roofing materials; and duct expansion joint cloth.

The general extent of ACBM identified in the first and second floors of the warehouse garage/storage building is shown on Figure 3. As shown on Figure 3, ACBM identified on the first floor of the warehouse garage/storage building included floor tile and associated mastic, TSI, and duct expansion joint cloth. The coated corrugated metal siding on the building exterior was also noted to be an ACBM. ACBM was noted in the floor tile and associated mastic on the second floor and the tower above the second floor. Friable asbestos was noted in an approximate 0.61 square meter debris pile accumulated on the top of an air duct at the west end of the warehouse garage/storage building hallway attic. Friable asbestos was not observed at other locations in the maintenance garage/storage building. Volume estimates for each ACBM identified in the warehouse garage/storage building are included in HB&T's report presented in Appendix D.

The general extent of ACBM identified for the toll operations building interior and roof areas is shown on Figures 4 and 5, respectively. As shown on Figure 4, ACBM identified on the first and second floors of the toll operations building are limited to floor tile and associated mastic. TSI was identified only in the substation office located in the toll operations building basement. The silver and black roofing material was also noted to be an ACBM (Figure 5), and the TSI in one small area of the roof was noted to be an ACBM. The roofing TSI is located on Chill Waterpump No.1, and was noted to be friable and in poor condition. The amount of this material is estimated at approximately one linear meter. Friable asbestos was not noted at other locations in the toll operations building. Volume estimates for each ACBM identified in the toll operations building are included in HB&T's report presented in Appendix D.

Asbestos containing building material

5.3 Lead-Based Paint Inspection

The lead-based paint inspection was performed by HB&T. Approximately 1,100 XRF readings were obtained within the toll operations building and the maintenance garage/storage building. Portions of the buildings not accessible during the inspection are noted with an "NA" on the figures included at the end of the HB&T report presented as Appendix E.

According to the lead-based inspection report, lead-based paint is defined as paint or other surface coating that contains an amount of lead equal to, or in excess of, 1 milligram per square centimeter (mg/cm^2) or more than half of one percent (0.5%) by weight. Positive lead-based paint (i.e., $> 1.0 \text{ mg}/\text{cm}^2$) was detected throughout both of the buildings surveyed.

The lead-based paint inspection report indicated that older portions of the toll operations building and maintenance garage/storage building contained lead-based paint at concentrations greater than 5.0 mg/cm². HB&T indicated that the XRF instrument's maximum reporting limit is 5.09 mg/cm². Since readings of 5.09 mg/cm² were reported within each building, concentrations greater than 5.09 mg/cm² are likely. A summary of the locations and condition of materials where lead-based paint was detected at concentrations greater than 5.0 mg/cm² is presented in Table V.

6.0 CONCLUSIONS AND RECOMMENDATIONS

The soil samples collected from the 12 probes advanced adjacent to the toll operations building and the maintenance garage/storage building did not exhibit total or soluble metal concentrations greater than federal or state thresholds. The maximum TPHd concentration for soil was reported at 909 mg/kg. Soil pH values were generally alkaline and ranged from 7.8 to 10.4. TPHg, VOCs, and SVOCs were not detected at concentrations greater than the respective laboratory reporting limits.

The soil samples collected from the three probes and four surface locations in the undeveloped center median portion of the site did not exhibit total or soluble metal concentrations greater than federal or state thresholds, with the exception of two surficial soil samples and one soil sample collected from a depth of approximately 2 feet (0.6 meter) below the ground surface that exhibited soluble lead concentrations greater than the STLC. The source of these elevated lead concentrations is likely aurally deposited lead due to historical leaded-gas-powered vehicle emissions. TPHd was detected at a maximum concentration of 118 mg/kg. Soil pH was slightly alkaline and ranged from 7.3 to 9.6. TPHg, VOCs, and SVOCs were not detected at concentrations greater than the respective laboratory reporting limits.

The presence of elevated soluble lead levels in surficial soil within the undeveloped median area will likely require the management, treatment and/or disposal of surficial soil generated from excavations during the construction activities as a California-hazardous waste in accordance with the DTSC variance.

The alkaline condition of the on-site soil is likely due to elevated salinity of groundwater beneath the site. While the laboratory did not measure the salinity of the groundwater beneath the site, elevated salinity would be expected due to the site's proximity to the San Francisco Bay. According to a representative with Vasco Road Sanitary Landfill, landfills typically accept soil with pH values between 2 and 12 as non-hazardous waste.

The analyzed groundwater samples exhibited relatively low concentrations of TPHd, and concentrations of dissolved antimony, chromium, and lead that exceeded Basin Plan WQOs or MCL thresholds. Groundwater pH ranged from 6.74 to 8.87. TPHg, VOCs, and SVOCs were not detected in the groundwater samples.

Based on groundwater analytical data, extracted groundwater may require treatment for elevated metal and/or TPHd concentrations. Geocon recommends that engineering controls be utilized to minimize the volume of extracted groundwater.

If dewatering is to be conducted during construction activities, then it is recommended that confirmation sampling of groundwater from the excavation be performed before dewatering operations commence. If elevated results are confirmed, then the discharge must be managed such that it will conform to Basin Plan WQOs.

The asbestos survey results confirmed the presence of ACBM in 50 of the 171 bulk samples collected. However, only two samples were noted as friable asbestos. Friable asbestos was reported in a small debris pile at the west end of the maintenance building on the top of an air duct in a hallway attic and on the roof of the toll operations building in the TSI located on Chill Waterpump No. 1.

It is recommended that Caltrans obtain a licensed asbestos removal contractor to appropriately remove and dispose of the friable asbestos in these areas. In addition, ACBM that are presently non-friable have the potential to become friable during demolition activities, and appropriate measures to mitigate and/or monitor during demolition should be implemented.

The lead-based paint inspection results indicated that lead-based paint, defined as paint or other surface coating that contains an amount of lead equal to, or greater than 1.0 mg/cm^2 , is present throughout the toll operations building and the maintenance garage/storage building. According to the report prepared by HB&T, detectable levels of lead require worker safety precautions until measurements of air-borne lead dust at the workers' breathing zone has been determined to be less than 50 micrograms per cubic meter ($\mu\text{g/m}^3$) for an 8-hour time-weighted-average.

It is recommended that if heavy equipment is used during the demolition of the two buildings, deteriorated lead-based paint should be removed or stabilized prior to the demolition activities. For more information, it is recommended that reference be made to Department of Toxic Substances Control (DTSC) document No. 33, revision No. 2, dated June 13, 1994 and CCR Section No. 60201.24.

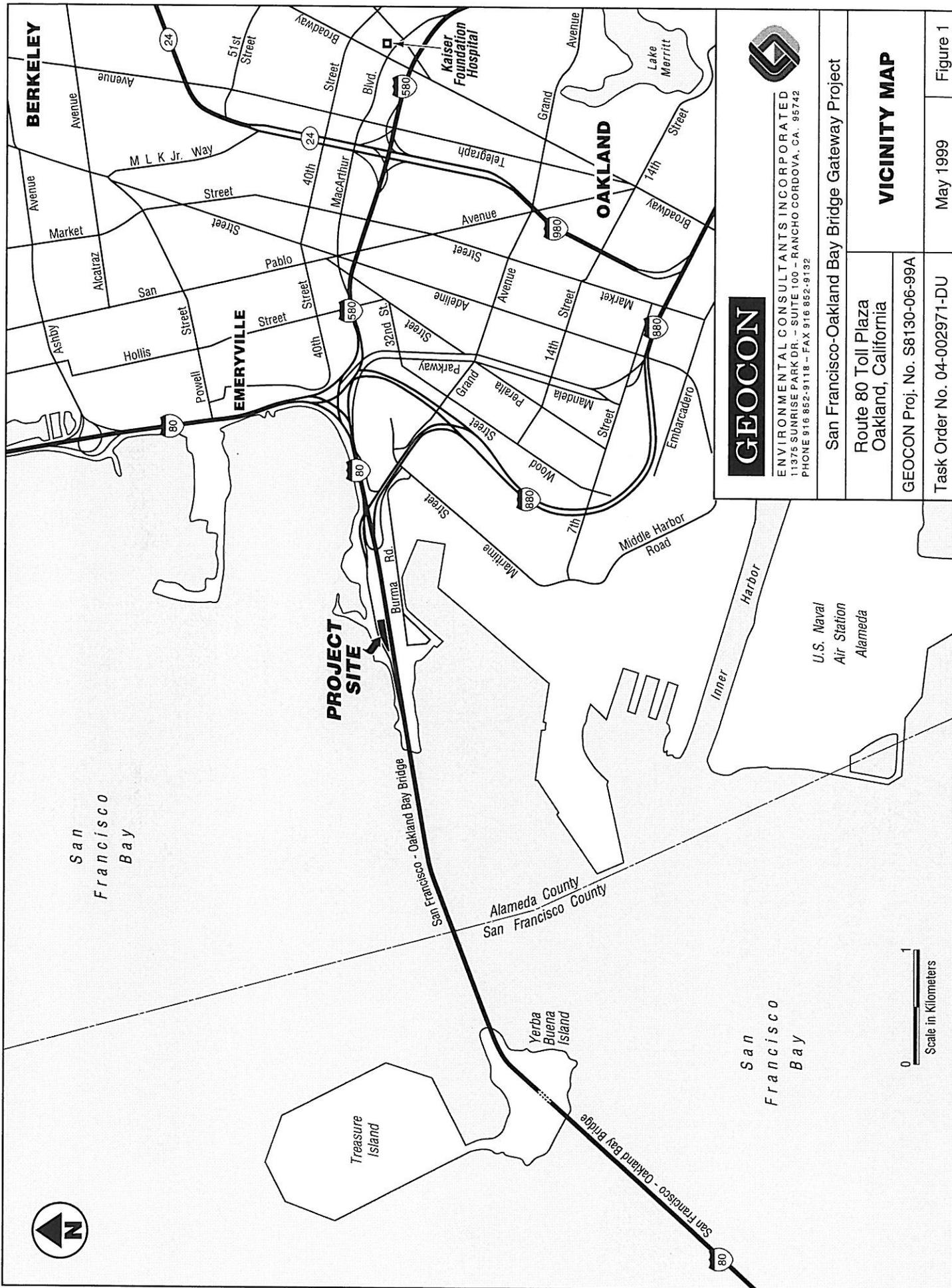
The excavation contractor(s) should prepare a comprehensive health and safety plan for construction activities scheduled to occur within the project boundaries defined in this Site Investigation Report which includes a discussion of the constituents of concern, routes of exposure, permissible exposure limits, and personal protective measures. The health and safety plan should be reviewed and signed by the on-site construction workers prior to any field activities.

7.0 REPORT LIMITATIONS

This report has been prepared exclusively for Caltrans. The information contained herein is only valid as of the date of the report, and will require an update to reflect additional information obtained.

The Client should recognize that this report is not a comprehensive site characterization and should not be construed as such. The County of Alameda Public Works Agency and/or other regulatory agencies may require additional soil and/or groundwater sampling. The findings as presented in this report are predicated on the results of the limited sampling and laboratory testing performed. In addition, the information obtained is not intended to address potential impacts related to sources other than those specified herein.

Therefore, the report should only be deemed conclusive with respect to the information obtained. No guarantee or warranty of the results of the report is implied within the intent of this report or any subsequent reports, correspondence or consultation either expressed or implied. Geocon strived to perform the services summarized herein in accordance with the local standard of care in the geographic region at the time the services were rendered.



GEOCON

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San Francisco-Oakland Bay Bridge Gateway Project	
Route 80 Toll Plaza Oakland, California	VICINITY MAP
GEOCON Proj. No. S8130-06-99A	
Task Order No. 04-002971-DU	May 1999
Figure 1	





LEGEND:

- ⊙ Approximate Probe Location
- ⊗ Approximate Surface Sample Location



SCALE: 1 : 2,000

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 PHONE 916 852-9118 - FAX 916 852-9132



San Francisco-Oakland Bay Bridge Gateway Project

Route 80 Toll Plaza
 Oakland, California

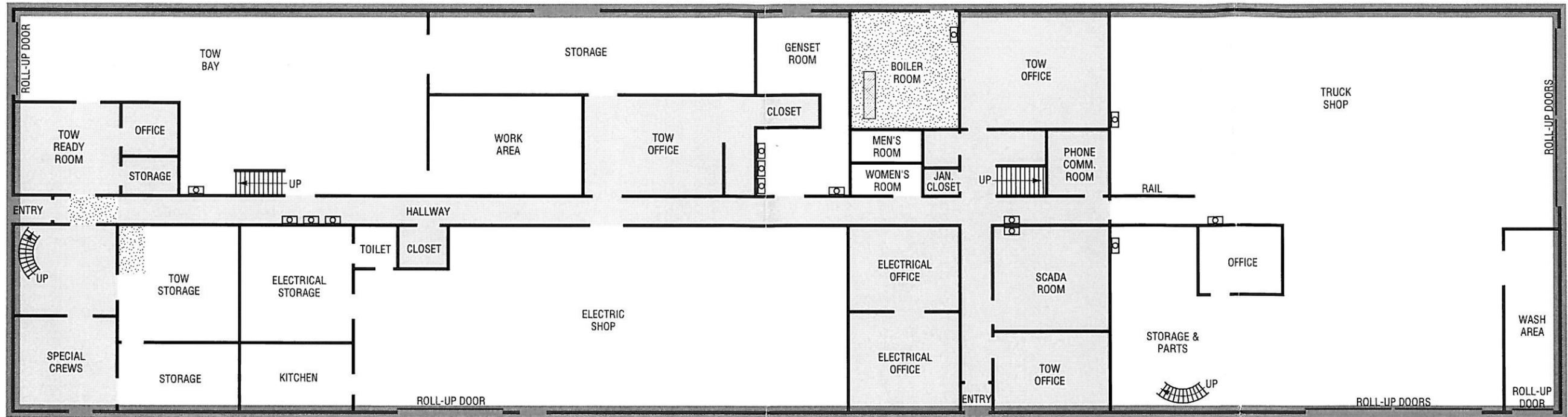
SITE PLAN

GEOCON Proj. No. S8130-06-99A

Task Order No. 04-002971-DU

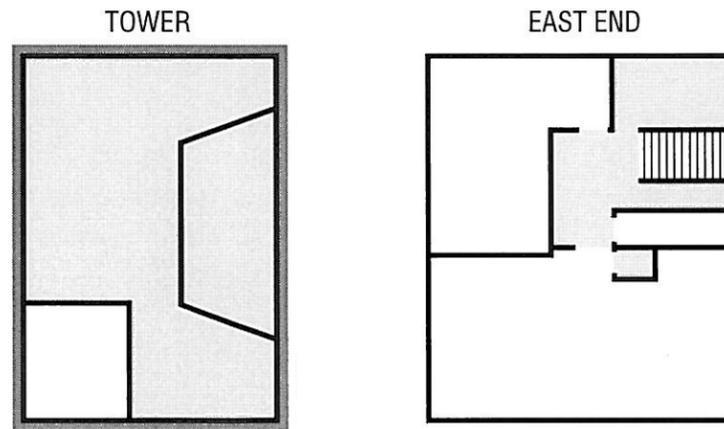
May 1999

Figure 2



FIRST FLOOR

SECOND FLOOR

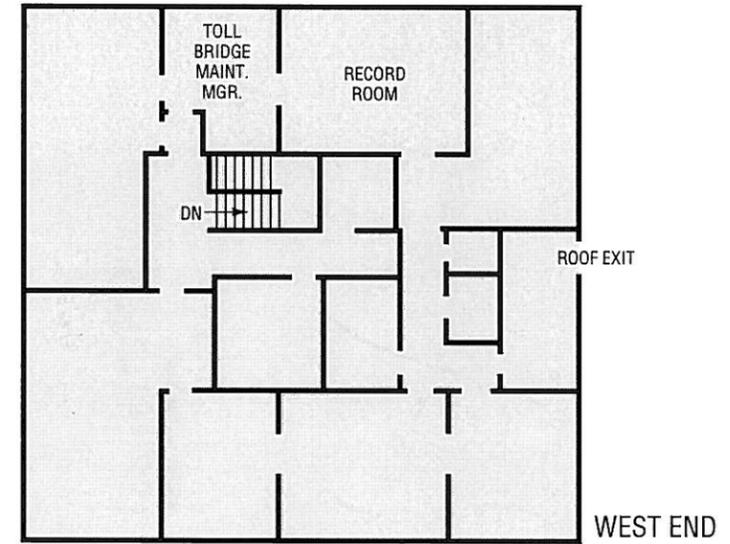
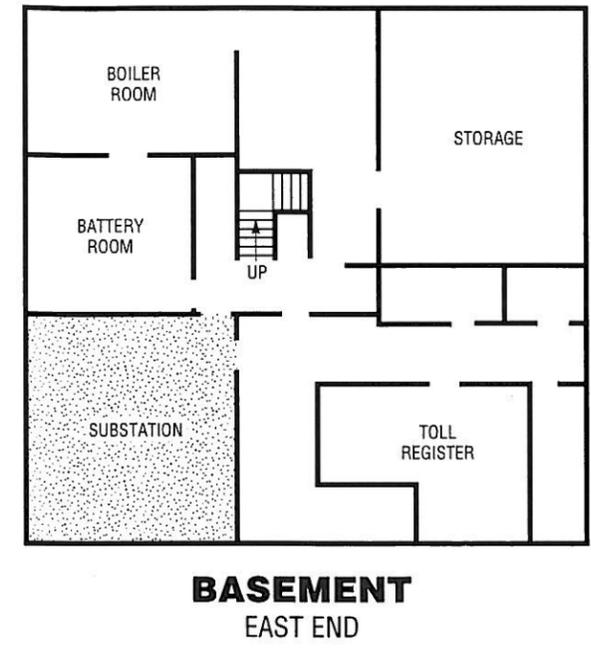
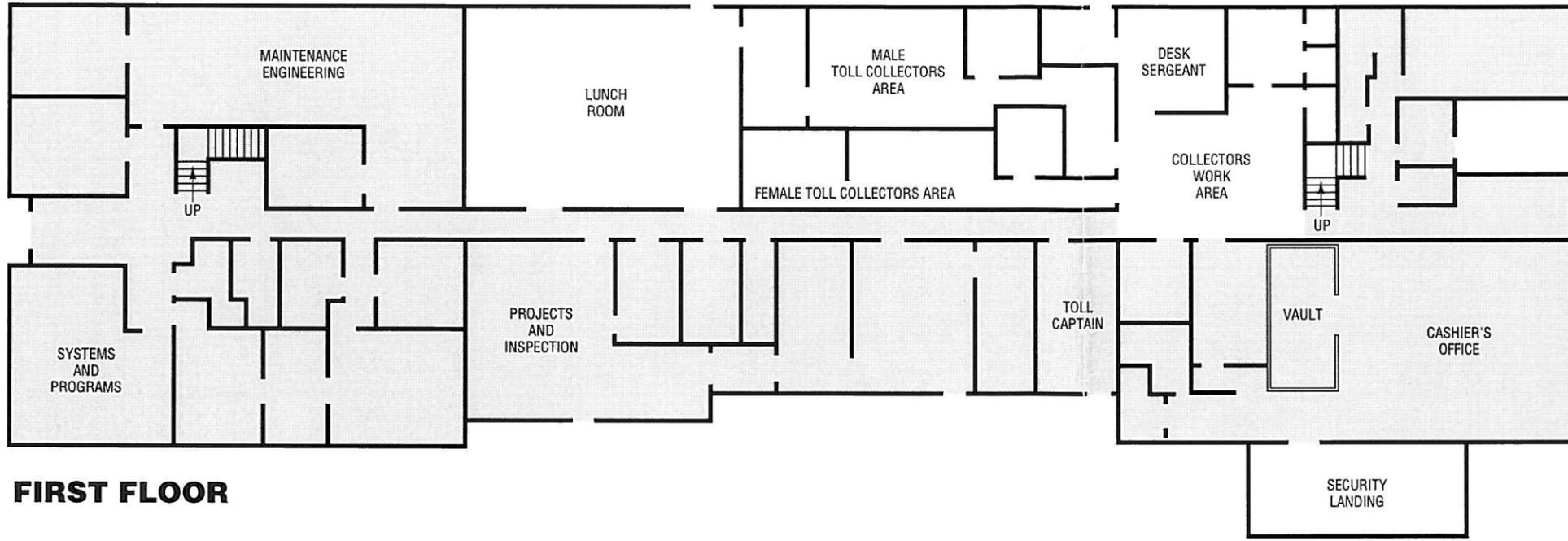


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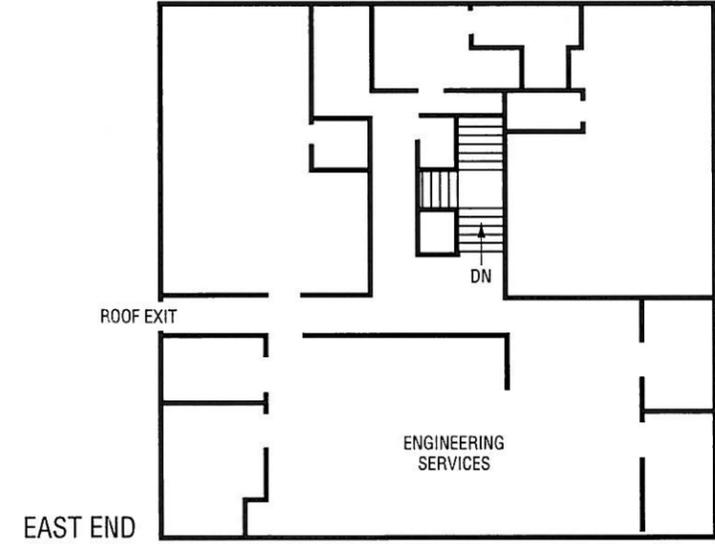
-  Floor Tile and Mastic
-  Thermal System Insulation (TSI)
-  Coated Corrugated Metal Siding
-  Duct Expansion Jointcloth

NOT TO SCALE

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San Francisco-Oakland Bay Bridge Gateway Project		
Route 80 Toll Plaza Oakland, California		ACBM MAP MAINTENANCE GARAGE/ STORAGE BUILDING
GEOCON Proj. No. S8130-06-99A		
Task Order No. 04-002971-DU	May 1999	Figure 3



SECOND FLOOR

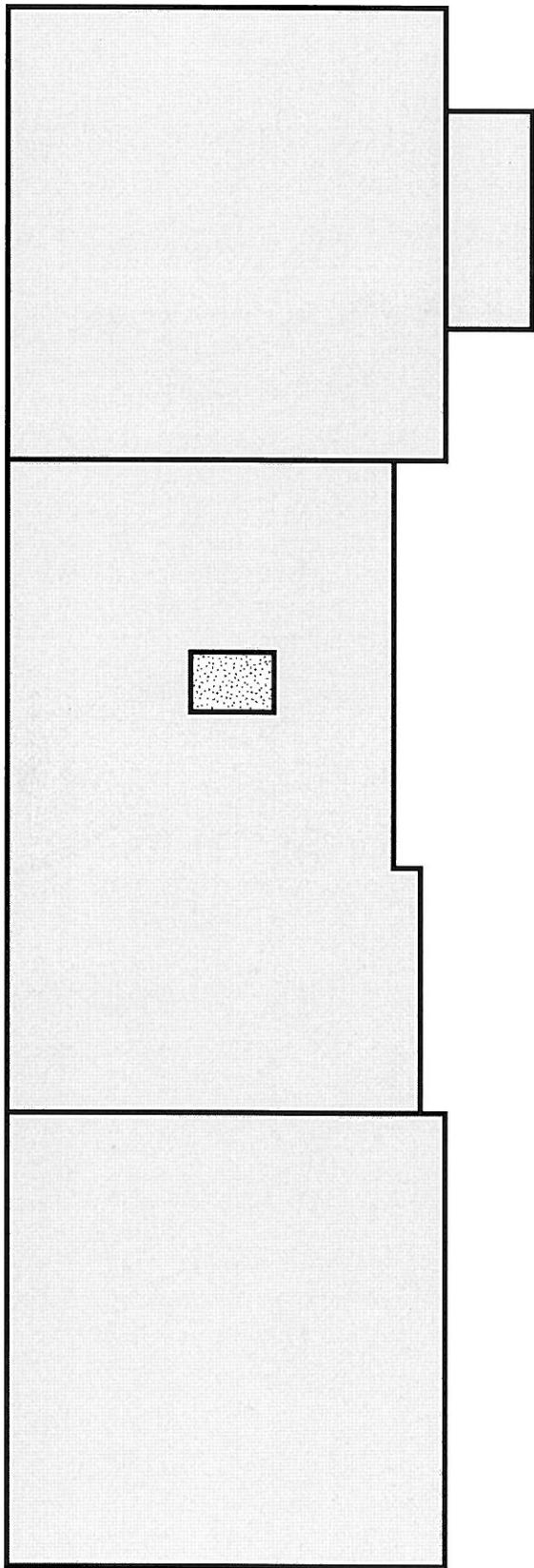


LEGEND:

-  Floor Tile and Mastic
-  Thermal System Insulation (TSI)

NOT TO SCALE

GEOCON		
<small>ENVIRONMENTAL CONSULTANTS INCORPORATED 11375 SUNRISE PARK DR. - SUITE 100 - RANCHO CORDOVA, CA 95742 PHONE 916 852-9118 - FAX 916 852-9132</small>		
San Francisco-Oakland Bay Bridge Gateway Project		
Route 80 Toll Plaza Oakland, California		ACBM MAP TOLL OPERATIONS BUILDING - BASEMENT, FIRST & SECOND FLOOR
GEOCON Proj. No. S8130-06-99A		May 1999
Task Order No. 04-002971-DU		Figure 4



LEGEND:

-  Silver and Black Roofing Material
-  Thermal System Insulation (TSI)

NOT TO SCALE

GEOCON



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San Francisco-Oakland Bay Bridge Gateway Project

Route 80 Toll Plaza
 Oakland, California

ACBM MAP
TOLL OPERATIONS
BUILDING - ROOF

GEOCON Proj. No. S8130-06-99A

Task Order No. 04-002971-DU

May 1999

Figure 5

TABLE I
SUMMARY OF ANALYTICAL LABORATORY TEST RESULTS
SOIL SAMPLES
SFOBB - GATEWAY PROJECT

Title 22 Metals - EPA Test Method 6010*

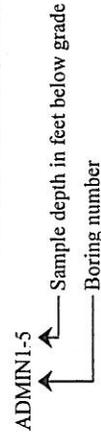
TOTAL METALS

ANALYTE	SAMPLE I.D.		ADMIN3-0	ADMIN3-5	ADMIN3-10	ADMIN3-15	ADMIN3-20	ADMIN3-25	ADMIN4-0	ADMIN4-5	ADMIN4-10
	TTL	10x STLC									
Antimony	500	150	0.60	0.43	0.71	0.48	<0.25	<0.25	0.54	<0.25	0.26
Arsenic	500	50	2.6	2.6	6.2	8.4	1.4	2.3	4.7	2.1	2.9
Barium	10000	1000	45	16	95	79	12	20	318	31	42
Beryllium	75	7.5	<0.050	<0.050	<0.050	0.059	<0.050	<0.050	<0.050	<0.050	<0.050
Cadmium	100	10	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Chromium	2500	50	3.3	13	27	27	10	15	14	13	19
Cobalt	8000	800	4.0	2.5	6.1	5.9	2.2	3.1	12	2.4	3.8
Copper	2500	250	7.6	4.0	17	18	2.9	3.2	39	3.6	5.4
Lead	1000	50	2.3	1.1	4.3	5.9	1.7	1.7	14	1.3	3.0
Mercury	20	2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Molybdenum	3500	3500	0.57	<0.25	0.89	0.69	<0.25	<0.25	3.5	0.27	0.43
Nickel	2000	200	2.4	16	42	42	14	19	19	15	23
Selenium	100	10	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Silver	500	50	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Thallium	700	70	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	0.74	<0.25	<0.25
Vanadium	2400	240	16	8.6	19	18	6.7	9.5	48	7.8	12
Zinc	5000	2500	20	10	39	38	14	23	41	13	18

Notes: Concentrations are in units of milligrams per kilogram (mg/kg)

* Total mercury by EPA Test Method 7471

< = Less than indicated reporting limit



SOLUBLE METALS

ANALYTE	SAMPLE I.D.		ADMIN3-0	ADMIN3-5	ADMIN3-10	ADMIN3-15	ADMIN3-20	ADMIN3-25	ADMIN4-0	ADMIN4-5	ADMIN4-10
	STLC/Federal threshold										
Chromium	5		---	---	---	---	---	---	---	---	---
Lead	5		---	---	---	---	---	---	---	---	---

Notes: Concentrations are in units of milligrams per liter (mg/l)

--- Analysis not performed

SUMMARY OF ANALYTICAL LABORATORY TEST RESULTS
SOIL SAMPLES
SFOBB - GATEWAY PROJECT

Title 22 Metals - EPA Test Method 6010*

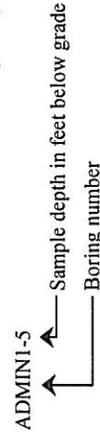
TOTAL METALS

ANALYTE	SAMPLE I.D.		ADMIN1-0	ADMIN1-5	ADMIN1-10	ADMIN1-15	ADMIN1-25	ADMIN2-0
	TTL	10x STL						
Antimony	500	150	0.71	0.82	0.48	0.30	0.51	1.3
Arsenic	500	50	4.2	4.5	2.8	2.0	3.4	6.7
Barium	10000	1000	85	87	23	12	47	101
Beryllium	75	7.5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Cadmium	100	10	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Chromium	2500	50	14	20	16	13	21	28
Cobalt	8000	800	4.2	4.3	2.9	2.3	4.3	7.1
Copper	2500	250	16	12	5.5	3.2	8.9	42
Lead	1000	50	3.4	4.5	1.5	0.74	3.2	244
Mercury	20	2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Molybdenum	3500	3500	1.6	1.6	<0.25	<0.25	0.50	1.4
Nickel	2000	200	38	30	18	16	26	48
Selenium	100	10	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Silver	500	50	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Thallium	700	70	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Vanadium	2400	240	9.3	15	10	8.1	13	19
Zinc	5000	2500	15	22	13	9.1	20	66

Notes: Concentrations are in units of milligrams per kilogram (mg/kg)

* Total mercury by EPA Test Method 7471

< = Less than indicated reporting limit



SOLUBLE METALS

ANALYTE	SAMPLE I.D.		ADMIN1-0	ADMIN1-5	ADMIN1-10	ADMIN1-15	ADMIN1-25	ADMIN2-0
	STL/Federal threshold							
Chromium	5		---	---	---	---	---	---
Lead	5		---	---	---	---	---	1.1

Notes: Concentrations are in units of milligrams per liter (mg/l)

--- Analysis not performed

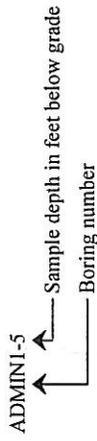
TABLE I
SUMMARY OF ANALYTICAL LABORATORY TEST RESULTS
SOIL SAMPLES
SFOBB - GATEWAY PROJECT

Title 22 Metals - EPA Test Method 6010*

TOTAL METALS

ANALYTE	SAMPLE I.D.		ADMINISTRATION											
	TTLc	10x STLc	ADMIN3-0	ADMIN3-5	ADMIN3-10	ADMIN3-15	ADMIN3-20	ADMIN3-25	ADMIN4-0	ADMIN4-5	ADMIN4-10			
Antimony	500	150	0.60	0.43	0.71	0.48	<0.25	<0.25	0.54	<0.25	0.26			
Arsenic	500	50	2.6	2.6	6.2	8.4	1.4	2.3	4.7	2.1	2.9			
Barium	10000	1000	45	16	95	79	12	20	318	31	42			
Beryllium	75	7.5	<0.050	<0.050	<0.050	0.059	<0.050	<0.050	<0.050	<0.050	<0.050			
Cadmium	100	10	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15			
Chromium	2500	50	3.3	13	27	27	10	15	14	13	19			
Cobalt	8000	800	4.0	2.5	6.1	5.9	2.2	3.1	12	2.4	3.8			
Copper	2500	250	7.6	4.0	17	18	2.9	3.2	39	3.6	5.4			
Lead	1000	50	2.3	1.1	4.3	5.9	1.7	1.7	14	1.3	3.0			
Mercury	20	2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10			
Molybdenum	3500	3500	0.57	<0.25	0.89	0.69	<0.25	<0.25	3.5	0.27	0.43			
Nickel	2000	200	2.4	16	42	42	14	19	19	15	23			
Selenium	100	10	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25			
Silver	500	50	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050			
Thallium	700	70	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	0.74	<0.25	<0.25			
Vanadium	2400	240	16	8.6	19	18	6.7	9.5	48	7.8	12			
Zinc	5000	2500	20	10	39	38	14	23	41	13	18			

Notes: Concentrations are in units of milligrams per kilogram (mg/kg)
 * Total mercury by EPA Test Method 7471
 <= Less than indicated reporting limit



SOLUBLE METALS

ANALYTE	SAMPLE I.D.		ADMINISTRATION											
	STLC/Federal threshold		ADMIN3-0	ADMIN3-5	ADMIN3-10	ADMIN3-15	ADMIN3-20	ADMIN3-25	ADMIN4-0	ADMIN4-5	ADMIN4-10			
Chromium	5		---	---	---	---	---	---	---	---	---			
Lead	5		---	---	---	---	---	---	---	---	---			

Notes: Concentrations are in units of milligrams per liter (mg/l)
 --- Analysis not performed

SAMPLE 1
SUMMARY OF ANALYTICAL LABORATORY TEST RESULTS
SOIL SAMPLES
SFOBB - GATEWAY PROJECT

Title 22 Metals - EPA Test Method 6010*

TOTAL METALS

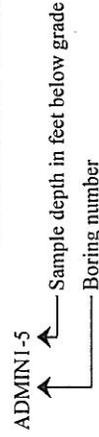
ANALYTE	SAMPLE I.D.		ADMINS-0	ADMINS-5	ADMINS-10	ADMINS-15	ADMINS-20	ADMINS-25
	TTLIC	10x STLIC						
Antimony	500	150	< 0.25	0.26	< 0.25	< 0.25	< 0.25	0.48
Arsenic	500	50	1.5	5.9	8.3	3.6	1.9	1.8
Barium	10000	1000	15	55	110	32	17	18
Beryllium	75	7.5	< 0.050	< 0.050	0.066	< 0.050	< 0.050	< 0.050
Cadmium	100	10	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15
Chromium	2500	50	12	16	29	22	12	11
Cobalt	8000	800	2.4	3.2	6.8	4.8	2.5	2.6
Copper	2500	250	3.1	12	18	6.2	2.3	2.3
Lead	1000	50	1.8	49	9.8	2.9	1.5	0.91
Mercury	20	2	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Molybdenum	3500	3500	< 0.25	0.99	0.90	0.50	< 0.25	< 0.25
Nickel	2000	200	18	20	41	26	15	14
Selenium	100	10	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Silver	500	50	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Thallium	700	70	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Vanadium	2400	240	7.9	11	19	16	7.5	7.2
Zinc	5000	2500	25	52	53	23	13	9.5

Notes:

Concentrations are in units of milligrams per kilogram (mg/kg)

* Total mercury by EPA Test Method 7471

< = Less than indicated reporting limit



SOLUBLE METALS

ANALYTE	SAMPLE I.D.		ADMINS-0	ADMINS-5	ADMINS-10	ADMINS-15	ADMINS-20	ADMINS-25
	STLC/Federal threshold							
Chromium	5		---	---	---	---	---	---
Lead	5		---	---	---	---	---	---

Notes:

Concentrations are in units of milligrams per liter (mg/l)

--- Analysis not performed

JLE I
SUMMARY OF ANALYTICAL LABORATORY TEST RESULTS
SOIL SAMPLES
SFOBB - GATEWAY PROJECT

Title 22 Metals - EPA Test Method 6010*

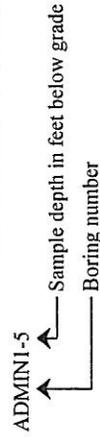
TOTAL METALS

ANALYTE	SAMPLE I.D.		ADMIN6-0	ADMIN6-5	ADMIN6-10	ADMIN6-15	ADMIN6-20	ADMIN6-25
	TTL	10x STL						
Antimony	500	150	1.2	0.69	0.72	0.77	0.47	0.56
Arsenic	500	50	7.9	2.1	1.8	6.7	1.7	2.5
Barium	10000	1000	63	15	9.7	51	16	24
Beryllium	75	7.5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Cadmium	100	10	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Chromium	2500	50	15	23	15	32	16	16
Cobalt	8000	800	13	3.3	2.4	5.3	2.3	2.8
Copper	2500	250	103	3.9	2.8	18	2.6	2.9
Lead	1000	50	1.0	2.5	0.89	18	0.60	2.6
Mercury	20	2	0.31	<0.10	<0.10	0.19	<0.10	<0.10
Molybdenum	3500	3500	2.5	<0.25	<0.25	0.79	<0.25	<0.25
Nickel	2000	200	8.3	28	17	31	17	16
Selenium	100	10	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Silver	500	50	<0.050	<0.050	<0.050	0.18	<0.050	<0.050
Thallium	700	70	0.33	<0.25	<0.25	<0.25	<0.25	<0.25
Vanadium	2400	240	78	13	8.8	23	9.8	10
Zinc	5000	2500	79	18	9.1	50	10	11

Notes: Concentrations are in units of milligrams per kilogram (mg/kg)

* Total mercury by EPA Test Method 7471

< = Less than indicated reporting limit



SOLUBLE METALS

ANALYTE	SAMPLE I.D.		ADMIN6-0	ADMIN6-5	ADMIN6-10	ADMIN6-15	ADMIN6-20	ADMIN6-25
	STL	Federal threshold						
Chromium	5	5	---	---	---	---	---	---
Lead	5	5	---	---	---	---	---	---

Notes: Concentrations are in units of milligrams per liter (mg/l)

--- Analysis not performed

SUMMARY OF ANALYTICAL LABORATORY TEST RESULTS
SOIL SAMPLES
SFOBB - GATEWAY PROJECT

Title 22 Metals - EPA Test Method 6010*

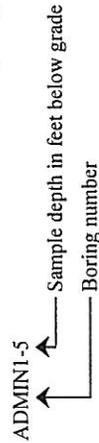
TOTAL METALS

ANALYTE	SAMPLE I.D.		MNTNC1-0	MNTNC1-5	MNTNC1-10	MNTNC1-15	MNTNC1-20	MNTNC1-25
	TTL	10x STL						
Antimony	500	150	0.85	0.74	0.64	0.61	0.47	0.85
Arsenic	500	50	3.5	2.4	3.0	1.3	1.8	9.2
Barium	10000	1000	33	26	40	8.6	25	33
Beryllium	75	7.5	<0.050	<0.050	<0.050	<0.050	<0.050	0.16
Cadmium	100	10	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Chromium	2500	50	17	13	37	13	20	44
Cobalt	8000	800	5.9	4.2	5.3	2.6	3.2	7.0
Copper	2500	250	7.4	5.1	5.3	2.8	3.7	27
Lead	1000	50	12	6.6	2.3	1.0	1.6	21
Mercury	20	2	<0.10	<0.10	<0.10	0.20	<0.10	0.25
Molybdenum	3500	3500	1.0	0.69	0.68	<0.25	<0.25	1.4
Nickel	2000	200	21	16	42	18	22	38
Selenium	100	10	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Silver	500	50	<0.050	<0.050	<0.050	<0.050	<0.050	0.15
Thallium	700	70	<0.25	0.26	<0.25	<0.25	<0.25	<0.25
Vanadium	2400	240	28	15	21	9.0	12	39
Zinc	5000	2500	34	31	18	8.4	12	64

Notes: Concentrations are in units of milligrams per kilogram (mg/kg)

* Total mercury by EPA Test Method 7471

< = Less than indicated reporting limit



SOLUBLE METALS

ANALYTE	SAMPLE I.D.		MNTNC1-0	MNTNC1-5	MNTNC1-10	MNTNC1-15	MNTNC1-20	MNTNC1-25
	STL	Federal threshold						
Chromium	5	5	---	---	---	---	---	---
Lead	5	5	---	---	---	---	---	---

Notes: Concentrations are in units of milligrams per liter (mg/l)

--- Analysis not performed

TABLE I
SUMMARY OF ANALYTICAL LABORATORY TEST RESULTS
SOIL SAMPLES
SFOBB - GATEWAY PROJECT

Title 22 Metals - EPA Test Method 6010*

TOTAL METALS

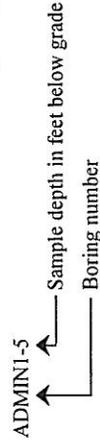
ANALYTE	SAMPLE I.D.		MNTNC2-0	MNTNC2-5	MNTNC2-10	MNTNC2-15	MNTNC2-20	MNTNC2-25
	TTL	10x STL						
Antimony	500	150	0.41	0.43	0.29	0.50	1.0	0.88
Arsenic	500	50	1.7	2.6	0.52	1.4	11	9.0
Barium	10000	1000	9.3	52	16	16	34	33
Beryllium	75	7.5	< 0.050	< 0.050	< 0.050	< 0.050	0.13	0.11
Cadmium	100	10	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15
Chromium	2500	50	3.7	16	19	18	45	40
Cobalt	8000	800	3.8	4.8	3.0	3.0	8.1	6.2
Copper	2500	250	40	8.1	3.0	2.7	29	38
Lead	1000	50	18	5.2	2.1	0.90	25	38
Mercury	20	2	< 0.10	< 0.10	< 0.10	< 0.10	0.38	0.68
Molybdenum	3500	3500	0.58	0.83	< 0.25	< 0.25	1.6	1.2
Nickel	2000	200	4.3	21	20	21	45	34
Selenium	100	10	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Silver	500	50	< 0.050	< 0.050	< 0.050	< 0.050	0.21	0.60
Thallium	700	70	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Vanadium	2400	240	26	15	13	13	40	33
Zinc	5000	2500	16	25	11	12	70	93

Notes:

Concentrations are in units of milligrams per kilogram (mg/kg)

* Total mercury by EPA Test Method 7471

< = Less than indicated reporting limit



SOLUBLE METALS

ANALYTE	SAMPLE I.D.		MNTNC2-0	MNTNC2-5	MNTNC2-10	MNTNC2-15	MNTNC2-20	MNTNC2-25
	STL	Federal threshold						
Chromium	5		---	---	---	---	---	---
Lead	5		---	---	---	---	---	---

Notes:

Concentrations are in units of milligrams per liter (mg/l)

--- Analysis not performed

SUMMARY OF ANALYTICAL LABORATORY TEST RESULTS
SOIL SAMPLES
SFOBB - GATEWAY PROJECT

Title 22 Metals - EPA Test Method 6010*

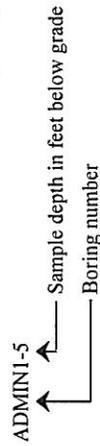
TOTAL METALS

ANALYTE	SAMPLE I.D.		MNTNC3-0	MNTNC3-5	MNTNC3-10	MNTNC3-15	MNTNC3-20	MNTNC3-25
	TTLT	10x STLTC						
Antimony	500	150	1.1	0.49	0.81	0.29	0.30	0.76
Arsenic	500	50	6.8	2.2	1.1	1.2	3.4	11
Barium	10000	1000	60	18	14	12	44	29
Beryllium	75	7.5	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	0.094
Cadmium	100	10	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15
Chromium	2500	50	8.7	18	19	9.0	20	37
Cobalt	8000	800	11	3.3	3.1	2.0	5.2	5.6
Copper	2500	250	66	4.4	2.8	2.3	5.9	34
Lead	1000	50	0.60	2.9	1.6	1.4	2.4	37
Mercury	20	2	0.27	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Molybdenum	3500	3500	2.3	< 0.25	< 0.25	0.37	0.69	1.9
Nickel	2000	200	6.9	23	23	14	25	30
Selenium	100	10	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Silver	500	50	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	0.47
Thallium	700	70	< 0.25	< 0.25	< 0.25	< 0.25	0.34	< 0.25
Vanadium	2400	240	70	12	12	6.1	14	30
Zinc	5000	2500	64	16	11	6.1	18	97

Notes: Concentrations are in units of milligrams per kilogram (mg/kg)

* Total mercury by EPA Test Method 7471

< = Less than indicated reporting limit



SOLUBLE METALS

ANALYTE	SAMPLE I.D.		MNTNC3-0	MNTNC3-5	MNTNC3-10	MNTNC3-15	MNTNC3-20	MNTNC3-25
	STLC/Federal threshold							
Chromium	5		---	---	---	---	---	---
Lead	5		---	---	---	---	---	---

Notes: Concentrations are in units of milligrams per liter (mg/l)

--- Analysis not performed

TABLE I
SUMMARY OF ANALYTICAL LABORATORY TEST RESULTS
SOIL SAMPLES
SFOBB - GATEWAY PROJECT

Title 22 Metals - EPA Test Method 6010*

TOTAL METALS

ANALYTE	SAMPLE I.D.		MNTNC4-0	MNTNC4-5	MNTNC4-10	MNTNC4-15	MNTNC4-20	MNTNC4-25
	TTL	10x STL						
Antimony	500	150	0.75	1.1	0.61	0.43	0.33	0.98
Arsenic	500	50	5.6	3.4	1.2	0.86	2.1	10.0
Barium	10000	1000	52	64	15	14	22	43
Beryllium	75	7.5	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	0.089
Cadmium	100	10	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15
Chromium	2500	50	6.6	79	18	14	16	50
Cobalt	8000	800	11	5.1	2.9	2.4	3.6	7.2
Copper	2500	250	55	11	2.8	2.7	3.9	45
Lead	1000	50	< 0.25	2.7	1.5	0.76	1.7	44
Mercury	20	2	0.37	0.15	< 0.10	< 0.10	< 0.10	0.63
Molybdenum	3500	3500	1.6	32	0.47	< 0.25	0.27	1.6
Nickel	2000	200	3.6	8.1	20	16	19	40
Selenium	100	10	0.53	0.75	< 0.25	< 0.25	< 0.25	0.43
Silver	500	50	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	1.00
Thallium	700	70	0.53	0.49	< 0.25	< 0.25	< 0.25	0.53
Vanadium	2400	240	57	31	12	9.1	11	36
Zinc	5000	2500	86	54	10	8.3	14	117

Notes:

Concentrations are in units of milligrams per kilogram (mg/kg)

* Total mercury by EPA Test Method 7471

< = Less than indicated reporting limit

ADMINI-5

↑ Sample depth in feet below grade

↑ Boring number

SOLUBLE METALS

ANALYTE	SAMPLE I.D.		MNTNC4-0	MNTNC4-5	MNTNC4-10	MNTNC4-15	MNTNC4-20	MNTNC4-25
	STL	Federal threshold						
Chromium	5	5	---	0.37	---	---	---	0.74
Lead	5	5	---	---	---	---	---	---

Notes:

Concentrations are in units of milligrams per liter (mg/l)

--- Analysis not performed

TABLE I
SUMMARY OF ANALYTICAL LABORATORY TEST RESULTS
SOIL SAMPLES
SFOBB - GATEWAY PROJECT

Title 22 Metals - EPA Test Method 6010*

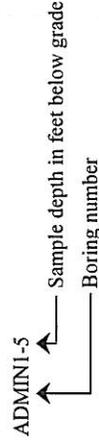
TOTAL METALS

ANALYTE	SAMPLE I.D.		MNTNC5-0	MNTNC5-5	MNTNC5-10	MNTNC5-15	MNTNC5-20
	TTL	10x STL					
Antimony	500	150	0.44	0.36	<0.25	<0.25	0.50
Arsenic	500	50	6.1	1.4	1.3	1.4	1.8
Barium	10000	1000	51	8.7	16	21	12
Beryllium	75	7.5	<0.050	<0.050	<0.050	<0.050	<0.050
Cadmium	100	10	<0.15	<0.15	<0.15	<0.15	<0.15
Chromium	2500	50	17	15	12	16	14
Cobalt	8000	800	5.9	2.7	2.2	2.7	3.0
Copper	2500	250	11	2.7	2.7	2.8	2.8
Lead	1000	50	9.5	2.3	3.0	2.4	1.6
Mercury	20	2	<0.10	<0.10	<0.10	<0.10	<0.10
Molybdenum	3500	3500	1.1	0.37	<0.25	<0.25	0.37
Nickel	2000	200	19	18	15	17	16
Selenium	100	10	0.52	<0.25	<0.25	<0.25	<0.25
Silver	500	50	<0.050	<0.050	<0.050	<0.050	<0.050
Thallium	700	70	<0.25	<0.25	<0.25	<0.25	<0.25
Vanadium	2400	240	26	10	8.7	9.0	8.8
Zinc	5000	2500	34	7.1	6.3	8.4	9.6

Notes: Concentrations are in units of milligrams per kilogram (mg/kg)

* Total mercury by EPA Test Method 7471

< = Less than indicated reporting limit



SOLUBLE METALS

ANALYTE	SAMPLE I.D.		MNTNC5-0	MNTNC5-5	MNTNC5-10	MNTNC5-15	MNTNC5-20
	STL	Federal threshold					
Chromium	5	5	---	---	---	---	---
Lead	5	5	---	---	---	---	---

Notes: Concentrations are in units of milligrams per liter (mg/l)

--- Analysis not performed

SUMMARY OF ANALYTICAL LABORATORY TEST RESULTS
SOIL SAMPLES
SFOBB - GATEWAY PROJECT

Title 22 Metals - EPA Test Method 6010*

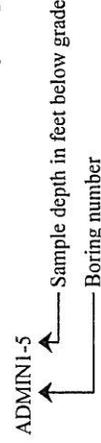
TOTAL METALS

ANALYTE	SAMPLE I.D.		MNTNC6-0	MNTNC6-5	MNTNC6-10	MNTNC6-15	MNTNC6-20	MNTNC6-25
	TTL	10x STL						
Antimony	500	150	0.84	<0.25	<0.25	<0.25	<0.25	0.27
Arsenic	500	50	7.6	2.2	1.8	2.8	3.8	0.79
Barium	10000	1000	74	19	15	25	20	13
Beryllium	75	7.5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Cadmium	100	10	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Chromium	2500	50	18	21	20	14	17	14
Cobalt	8000	300	12	3.6	3.4	2.5	4.1	2.2
Copper	2500	250	59	3.3	3.0	2.7	4.7	2.8
Lead	1000	50	0.58	1.3	4.9	1.1	4.0	1.0
Mercury	20	2	0.20	<0.10	0.44	<0.10	<0.10	<0.10
Molybdenum	3500	3500	2.1	0.28	0.66	0.27	<0.25	<0.25
Nickel	2000	200	7.2	25	23	15	17	13
Selenium	100	10	0.80	0.36	0.42	<0.25	0.28	<0.25
Silver	500	50	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Thallium	700	70	0.29	<0.25	<0.25	<0.25	<0.25	<0.25
Vanadium	2400	240	68	13	12	8.8	9.3	8.6
Zinc	5000	2500	69	9.9	9.0	7.1	13	6.6

Notes: Concentrations are in units of milligrams per kilogram (mg/kg)

* Total mercury by EPA Test Method 7471

< = Less than indicated reporting limit



SOLUBLE METALS

ANALYTE	SAMPLE I.D.		MNTNC6-0	MNTNC6-5	MNTNC6-10	MNTNC6-15	MNTNC6-20	MNTNC6-25
	STL	Federal threshold						
Chromium	5	5	---	---	---	---	---	---
Lead	5	5	---	---	---	---	---	---

Notes: Concentrations are in units of milligrams per liter (mg/l)

--- Analysis not performed

TABLE I
SUMMARY OF ANALYTICAL LABORATORY TEST RESULTS
SOIL SAMPLES
SFOBB - GATEWAY PROJECT

Title 22 Metals - EPA Test Method 6010*

TOTAL METALS

ANALYTE	SAMPLE I.D.		MED1-2	MED1-4	MED1-6	MED2-2	MED2-4	MED2-6	MED2-8
	TTL	10x STL							
Antimony	500	150	0.46	0.38	0.57	0.49	0.53	0.59	0.50
Arsenic	500	50	2.4	1.7	1.7	2.1	2.3	2.6	1.8
Barium	10000	1000	11	12	9.5	38	27	59	19
Beryllium	75	7.5	<0.050	<0.050	<0.050	0.13	<0.050	<0.050	<0.050
Cadmium	100	10	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Chromium	2500	50	18	18	12	9.7	14	12	26
Cobalt	8000	800	3.2	2.9	2.4	3.5	4.3	4.4	3.8
Copper	2500	250	4.0	3.2	2.4	13	7.4	7.4	3.6
Lead	1000	50	10	2.8	1.5	153	25	5.3	1.4
Mercury	20	2	<0.10	<0.10	<0.10	0.33	<0.10	<0.10	<0.10
Molybdenum	3500	3500	0.69	0.46	0.27	0.80	0.49	0.83	0.51
Nickel	2000	200	19	22	18	18	23	14	31
Selenium	100	10	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Silver	500	50	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Thallium	700	70	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Vanadium	2400	240	13	12	6.7	17	14	16	15
Zinc	5000	2500	15	9.8	8.2	57	26	22	13

Notes: Concentrations are in units of milligrams per kilogram (mg/kg)

* Total mercury by EPA Test Method 7471

< = Less than indicated reporting limit

ADMINI-5

↑ Sample depth in feet below grade

— Boring number

SOLUBLE METALS

ANALYTE	SAMPLE I.D.		MED1-2	MED1-4	MED1-6	MED2-2	MED2-4	MED2-6	MED2-8
	STL/Federal threshold								
Chromium	5		---	---	---	---	---	---	---
Lead	5		---	---	---	10 (2.0)	---	---	---

Notes: Concentrations are in units of milligrams per liter (mg/l)

--- Analysis not performed

Concentrations shown in parentheses are for TCLP

3LE I
SUMMARY OF ANALYTICAL LABORATORY TEST RESULTS
SOIL SAMPLES
SFOBB - GATEWAY PROJECT

Title 22 Metals - EPA Test Method 6010*

TOTAL METALS

ANALYTE	SAMPLE I.D.		MED3-2	MED3-4	MED3-6	MED3-8	MED4-0	MED5-0	MED6-0	MED7-0
	TTL	10x STL								
Antimony	500	150	1.4	0.61	0.31	0.64	0.88	0.80	1.1	0.66
Arsenic	500	50	5.8	1.8	2.2	1.3	7.9	3.5	22	3.1
Barium	10000	1000	80	20	22	22	127	42	127	30
Beryllium	75	7.5	<0.050	<0.050	<0.050	<0.050	0.18	<0.050	<0.050	<0.050
Cadmium	100	10	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Chromium	2500	50	45	12	13	14	28	13	17	23
Cobalt	8000	800	9.1	3.3	2.7	2.8	8.1	3.7	6.4	4.3
Copper	2500	250	19	4.8	3.8	3.1	23	14	17	8.8
Lead	1000	50	3.3	1.9	1.3	0.82	16	133	234	33
Mercury	20	2	<0.10	<0.10	<0.10	<0.10	0.15	<0.10	0.19	<0.10
Molybdenum	3500	3500	1.5	<0.25	<0.25	<0.25	2.1	1.3	2.3	0.57
Nickel	2000	200	18	16	14	16	45	22	11	25
Selenium	100	10	<0.25	<0.25	<0.25	0.44	0.46	<0.25	0.49	<0.25
Silver	500	50	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Thallium	700	70	1.6	<0.25	0.37	<0.25	0.35	<0.25	0.37	<0.25
Vanadium	2400	240	43	12	8.1	8.7	23	17	22	18
Zinc	5000	2500	56	12	9.3	9.3	48	57	79	25

Notes: Concentrations are in units of milligrams per kilogram (mg/kg)

* Total mercury by EPA Test Method 7471

< = Less than indicated reporting limit

ADMINI-5

↑ Sample depth in feet below grade

└ Boring number

SOLUBLE METALS

ANALYTE	SAMPLE I.D.		MED3-2	MED3-4	MED3-6	MED3-8	MED4-0	MED5-0	MED6-0	MED7-0
	STL	Federal threshold								
Chromium	5	5	---	---	---	---	---	---	---	---
Lead	5	5	---	---	---	---	---	8.2 (0.45)	16 (0.21)	---

Notes: Concentrations are in units of milligrams per liter (mg/l)

--- Analysis not performed

Concentrations shown in parentheses are for TCLP

TABLE II
SUMMARY OF ANALYTICAL LABORATORY TEST RESULTS
SOIL SAMPLES
SFOBB - GATEWAY PROJECT

Volatile Organic Compounds (VOCs)
Semi-volatile Organic Compounds (SVOCs)
Total Petroleum Hydrocarbons as Gasoline (TPHg)
Total Petroleum Hydrocarbons as Diesel (TPHd)
Soil pH

EPA Test Methods 8260, 8270, 8015, 8015M, and 9045, respectively

Sample ID	VOCs	SVOCs	TPHg (mg/kg)	TPHd (mg/kg)	pH
ADMIN1-0	ND	ND	< 1.0	< 1.0	9.0
ADMIN1-5	ND	ND	< 1.0	114*	9.5
ADMIN1-10	ND	ND	< 1.0	< 1.0	9.4
ADMIN1-15	ND	ND	< 1.0	< 1.0	9.2
ADMIN1-25	ND	ND	< 1.0	60**	9.9
ADMIN2-0	ND	ND	< 1.0	664**	7.8
ADMIN3-0	ND	ND	< 1.0	22*	8.5
ADMIN3-5	ND	ND	< 1.0	< 1.0	9.2
ADMIN3-10	ND	ND	< 1.0	< 1.0	10.0
ADMIN3-15	ND	ND	< 1.0	< 1.0	10.4
ADMIN3-20	ND	ND	< 1.0	< 1.0	9.5
ADMIN3-25	ND	ND	< 1.0	182*	8.9
ADMIN4-0	ND	ND	< 1.0	< 1.0	8.9
ADMIN4-5	ND	ND	< 1.0	< 1.0	9.1
ADMIN4-10	ND	ND	< 1.0	< 1.0	9.8
ADMIN5-0	ND	ND	< 1.0	< 1.0	8.3
ADMIN5-5	ND	ND	< 1.0	29*	10.0
ADMIN5-10	ND	ND	< 1.0	< 1.0	10.0
ADMIN5-15	ND	ND	< 1.0	< 1.0	9.5
ADMIN5-20	ND	ND	< 1.0	< 1.0	9.6
ADMIN5-25	ND	ND	< 1.0	< 1.0	8.9
ADMIN6-0	ND	ND	< 1.0	92*	8.9
ADMIN6-5	ND	ND	< 1.0	< 1.0	8.9
ADMIN6-10	ND	ND	< 1.0	< 1.0	9.3
ADMIN6-15	ND	ND	< 1.0	< 1.0	8.6
ADMIN6-20	ND	ND	< 1.0	< 1.0	9.0
ADMIN6-25	ND	ND	< 1.0	< 1.0	8.9

Notes:

ND = Not detected above laboratory reporting limit.

< = Less than indicated reporting limit

* = Sample contains hydrocarbons of an unknown pattern.

** = Sample contains single peak hydrocarbons that do not match the diesel pattern.

Quantifications are based on the diesel standard.

mg/kg = milligrams per kilogram

TABLE II
SUMMARY OF ANALYTICAL LABORATORY TEST RESULTS
SOIL SAMPLES
SFOBB - GATEWAY PROJECT

Volatile Organic Compounds (VOCs)
Semi-volatile Organic Compounds (SVOCs)
Total Petroleum Hydrocarbons as Gasoline (TPHg)
Total Petroleum Hydrocarbons as Diesel (TPHd)
Soil pH

EPA Test Methods 8260, 8270, 8015, 8015M, and 9045, respectively

Sample ID	VOCs	SVOCs	TPHg (mg/kg)	TPHd (mg/kg)	pH
MNTNC1-0	ND	ND	< 1.0	29#	9.2
MNTNC1-5	ND	ND	< 1.0	< 1.0	9.0
MNTNC1-10	ND	ND	< 1.0	< 1.0	9.3
MNTNC1-15	ND	ND	< 1.0	< 1.0	9.3
MNTNC1-20	ND	ND	< 1.0	< 1.0	9.1
MNTNC1-25	ND	ND	< 1.0	< 1.0	8.8
MNTNC2-0	ND	ND	< 1.0	< 1.0	9.0
MNTNC2-5	ND	ND	< 1.0	< 1.0	9.2
MNTNC2-10	ND	ND	< 1.0	< 1.0	8.7
MNTNC2-15	ND	ND	< 1.0	< 1.0	9.1
MNTNC2-20	ND	ND	< 1.0	9.4*	8.8
MNTNC2-25	ND	ND	< 1.0	26*	8.8
MNTNC3-0	ND	ND	< 1.0	134*	9.2
MNTNC3-5	ND	ND	< 1.0	< 1.0	9.2
MNTNC3-10	ND	ND	< 1.0	< 1.0	9.9
MNTNC3-15	ND	ND	< 1.0	< 1.0	9.7
MNTNC3-20	ND	ND	< 1.0	< 1.0	8.8
MNTNC3-25	ND	ND	< 1.0	21*	8.7
MNTNC4-0	ND	ND	< 1.0	< 1.0	9.5
MNTNC4-5	ND	ND	< 1.0	24*	9.5
MNTNC4-10	ND	ND	< 1.0	< 1.0	9.3
MNTNC4-15	ND	ND	< 1.0	< 1.0	9.7
MNTNC4-20	ND	ND	< 1.0	< 1.0	9.2
MNTNC4-25	ND	ND	< 1.0	18#	8.6
MNTNC5-0	ND	ND	< 1.0	909*	9.5
MNTNC5-5	ND	ND	< 1.0	< 1.0	9.0
MNTNC5-10	ND	ND	< 1.0	< 1.0	9.4
MNTNC5-15	ND	ND	< 1.0	< 1.0	9.5
MNTNC5-20	ND	ND	< 1.0	< 1.0	9.2
MNTNC6-0	ND	ND	< 1.0	164*	9.4
MNTNC6-5	ND	ND	< 1.0	< 1.0	9.1
MNTNC6-10	ND	ND	< 1.0	< 1.0	9.3
MNTNC6-15	ND	ND	< 1.0	< 1.0	9.6
MNTNC6-20	ND	ND	< 1.0	< 1.0	8.8
MNTNC6-25	ND	ND	< 1.0	< 1.0	9.0

Notes:

ND = Not detected above laboratory reporting limit.

< = Less than indicated reporting limit

* = Sample contains hydrocarbons of an unknown pattern.

= Sample contains hydrocarbons that do not match the diesel pattern, possibly motor oil.

Quantifications are based on the diesel standard.

mg/kg = milligrams per kilogram

TABLE II
SUMMARY OF ANALYTICAL LABORATORY TEST RESULTS
SOIL SAMPLES
SFOBB - GATEWAY PROJECT

Volatile Organic Compounds (VOCs)
Semi-volatile Organic Compounds (SVOCs)
Total Petroleum Hydrocarbons as Gasoline (TPHg)
Total Petroleum Hydrocarbons as Diesel (TPHd)
Soil pH

EPA Test Methods 8260, 8270, 8015, 8015M, and 9045, respectively

Sample ID	VOCs	SVOCs	TPHg (mg/kg)	TPHd (mg/kg)	pH
MED1-2	ND	ND	< 1.0	37^	8.3
MED1-4	ND	ND	< 1.0	< 1.0	8.7
MED1-6	ND	ND	< 1.0	< 1.0	8.7
MED2-2	ND	ND	< 1.0	118#	8.5
MED2-4	ND	ND	< 1.0	< 1.0	8.8
MED2-6	ND	ND	< 1.0	< 1.0	9.3
MED2-8	ND	ND	< 1.0	< 1.0	8.5
MED3-2	ND	ND	< 1.0	68**	8.1
MED3-4	ND	ND	< 1.0	< 1.0	9.2
MED3-6	ND	ND	< 1.0	< 1.0	9.6
MED3-8	ND	ND	< 1.0	< 1.0	8.6
MED4-0	ND	ND	< 1.0	30*	8.4
MED5-0	ND	ND	< 1.0	93#	8.0
MED6-0	ND	ND	< 1.0	81^	7.3
MED7-0	ND	ND	< 1.0	56^	7.5

Notes:-

ND = Not detected above laboratory reporting limit.

< = Less than indicated reporting limit

* = Sample contains hydrocarbons of an unknown pattern.

** = Sample contains hydrocarbons heavier than diesel, possibly motor oil.

= Sample contains hydrocarbons that do not match the diesel pattern, possibly motor oil.

^ = Sample contains hydrocarbons that do not match the diesel pattern, possibly weathered diesel.

Quantifications are based on the diesel standard.

mg/kg = milligrams per kilogram

TABLE III
SUMMARY OF ANALYTICAL LABORATORY TEST RESULTS
GROUNDWATER SAMPLES
SFOBB - GATEWAY PROJECT

Dissolved Title 22 Metals - EPA Test Method 6010*

ANALYTE	SAMPLE I.D.		ADMIN1	ADMIN3	ADMINS	ADMIN6	MNTNC1	MNTNC3	MNTNC6	MED2
	MCL ⁽¹⁾	WQO ⁽²⁾								
Antimony	0.006	NL	0.006	0.009	0.005	<0.005	0.013	0.009	0.14	0.019
Arsenic	0.05	0.036	<0.005	<0.005	<0.005	<0.005	0.012	<0.005	0.048	0.006
Barium	1.0	NL	0.17	0.086	0.38	0.82	0.45	0.14	0.23	0.12
Beryllium	0.004	NL	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	0.005	0.0093	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium	0.05 ⁽⁴⁾	0.05	<0.003	0.014	<0.003	<0.003	<0.003	0.087	<0.003	<0.003
Cobalt	NL	NL	<0.003	<0.003	<0.003	<0.003	<0.003	0.011	<0.003	<0.003
Copper	1.0	NL	<0.003	0.017	<0.003	<0.003	<0.003	0.063	0.012	<0.003
Lead	0.015	0.0056	<0.005	<0.005	<0.005	<0.005	<0.005	0.031	<0.005	<0.005
Mercury	0.002	0.000025	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Molybdenum	NL	NL	0.007	0.009	0.007	0.005	<0.005	0.007	0.011	0.005
Nickel	0.1	NL	<0.003	0.009	<0.003	0.005	<0.003	0.071	<0.003	<0.003
Selenium	0.01	NL	<0.005	<0.005	<0.005	<0.005	<0.005	0.006	<0.005	<0.005
Silver	0.05	NL	0.002	<0.001	0.003	0.007	0.002	0.001	0.002	<0.001
Thallium	0.002	NL	<0.005	<0.005	<0.005	<0.005	<0.005	0.020	<0.005	<0.005
Vanadium	NL	NL	<0.003	0.020	0.003	<0.003	0.005	0.094	0.016	0.004
Zinc	5.0	NL	0.051	0.063	0.044	0.050	<0.01	0.082	0.018	0.014

Notes: Concentrations are in units of milligrams per liter (mg/l)

* Mercury by EPA Test Method 7471

< = Less than indicated reporting limit

MCL = Maximum Contaminant Level

NL = Not Listed

(1) = Listed MCL is the most stringent primary or secondary level listed for either state or federal drinking water standards.

(2) = Water Quality Objectives for 4-day average from Table 3-3, Basin Plan.

(3) = Water Quality Objectives for 1-hour average from Table 3-3, Basin Plan.

(4) = Listed MCL is for total chromium

TABLE IV
SUMMARY OF ANALYTICAL LABORATORY TEST RESULTS
GROUNDWATER SAMPLES
SFOBB - GATEWAY PROJECT

Volatile Organic Compounds (VOCs)
Semi-volatile Organic Compounds (SVOCs)
Total Petroleum Hydrocarbons as Gasoline (TPHg)
Total Petroleum Hydrocarbons as Diesel (TPHd)
Water pH

EPA Test Methods 8260, 8270, 8015, 8015M, and 150.1, respectively

Sample ID	VOCs	SVOCs	TPHg (mg/l)	TPHd (mg/l)	pH
ADMIN1	ND	ND	< 0.05	< 0.05	7.68
ADMIN3	ND	ND	< 0.05	< 0.05	8.46
ADMIN5	ND	ND	< 0.05	< 0.05	7.93
ADMIN6	ND	ND	< 0.05	0.2*	6.74
MNTNC1	ND	ND	< 0.05	< 0.05	7.44
MNTNC3	ND	ND	< 0.05	0.7*	8.87
MNTNC6	ND	ND	< 0.05	< 0.05	7.62
MED2	ND	ND	< 0.05	< 0.05	7.04

Notes:

* = Sample contains hydrocarbons that do not match the diesel pattern, possibly motor oil.

Quantifications are based on the diesel standard.

mg/l = milligrams per liter

ND = not detected above the laboratory reporting limit

< = less than indicated reporting limit

TABLE V
SUMMARY OF LOCATIONS WHERE LEAD-BASED PAINT WAS DETECTED
AT CONCENTRATIONS GREATER THAN 5.0 mg/cm²
SFOBB-GATEWAY PROJECT
Toll Operations Building

Floor	Room Type	Room No.*	Structure	Feature	Condition	Substrate
Basement	Hall	B1	Door	Right Casing	Solid	Metal
Basement	Porch	B1	Pipes	---	Solid	Metal
Basement	Hall	B2	Door	Left Casing	Solid	Metal
Basement	Hall	B2	Door	Left Casing	Solid	Metal
Basement	Porch	B2	Pipes	---	---	Metal
Basement	Room	B3	Door	---	Solid	Metal
Basement	Room	B4	Door	Left Casing	Solid	Metal
Basement	Room	B4	Door	Left Casing	Solid	Metal
Basement	Room	B4	Equipment	Electric Panel	Solid	Metal
Basement	Room	B4	Pipes	---	Solid	Metal
Basement	Room	B4	Pipes	---	Solid	Metal
Basement	Room	B4	Pipes	---	Solid	Metal
Basement	Room	B7	Door	Left Casing	Solid	Metal
1	Bath	1	Wall	Lower	Solid	Tile
1	Bath	1	Wall	Upper	Solid	Tile
1	Bath	1	Wall	Middle	Solid	Tile
1	Stairwell	2	Stairs	Stringer	Solid	Metal
1	Bath	2	Wall	Lower	Solid	Tile
1	Bath	2	Wall	Lower	Solid	Tile
1	Bath	2	Wall	Lower	Solid	Tile
1	Bath	2	Wall	Lower	Solid	Tile
1	Bath	3	Wall	Lower	Solid	Tile
1	Bath	3	Wall	Lower	Solid	Tile
1	Bath	3	Wall	Lower	Solid	Tile
1	Bath	3	Wall	Lower	Solid	Tile
1	Bath	4	Wall	Lower	Solid	Tile
1	Bath	5	Wall	Lower	Solid	Tile
1	Bath	5	Wall	Upper	Solid	Metal
1	Bath	6	Wall	Lower	Solid	Tile
1	Bath	7	Wall	Lower	Solid	Tile
1	Bath	7	Wall	Lower	Cracked	Tile
1	Bath	8	Wall	Middle	Solid	Tile
1	Bath	9	Wall	Lower	Solid	Tile
1	Bath	10	Wall	Lower	Solid	Tile
1	Room	11	Wall	Middle	Solid	Paper
1	Room	11	Wall	Middle	Solid	Paper
1	Room	11	Wall	Upper	Solid	Paper
1	Room	11	Wall	Upper	Solid	Paper
1	Bath	11	Wall	Lower	Solid	Tile
1	Bath	12	Wall	Lower	Solid	Tile

Note:

N/A = Not Applicable

--- = Data not indicated in HB&T report

* = See figures at end of HB&T report for room number locations