SHC 6690

CONCEPTUAL SITE MODEL AND RISK ASSESSMENT PROPOSED COMMERCIAL DEVELOPMENT 720 SECOND STREET & 229 CASTRO STREET OAKLAND, CALIFORNIA

Project No. 044-00006
July 7, 2000

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GEOTECHNICAL ENGINEERING • ENVIRONMENTAL ENGINEERING
CONSTRUCTION TESTING AND INSPECTION

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1.0 INTRODUCTION

This report describes the Conceptual Site Model (CSM) and Risk Assessment for the property located at 720 Second Street and 229 Castro Street in Oakland, California (Site; Figures 1 & 2). The CSM and Risk Assessment were prepared by Krazan & Associates, Inc. (Krazan), on behalf of Mortenson. Krazan has also completed a Phase I Environmental Site Assessment (ESA) summarized in Krazan's report *Phase I Environmental Site Assessment 720 Second Street & 229 Castro Street, Oakland, California*, dated February 16, 2000, and collected soil and groundwater samples at the Site as presented in our investigation report *Soil and Groundwater Investigation, Proposed Commercial Development, 720 Second Street & 229 Castro Street, Oakland, California*, dated May 3, 2000. Some of the data presented in these reports are be summarized herein as part of our evaluation of the Site. The organization and content of the CSM are based in general accordance with guidance documents prepared by the United State Environmental Protection Agency (USEPA) and the State of California Department of Toxic Substances Control (DTSC) for the preparation and presentation of such materials (see Section 7.0).

2.0 FACILITY DESCRIPTION

2.1 Site Setting

The Site consists of three parcels of land under contract to Mortenson for purchase. Two of the parcels are owned by the Port of Oakland (Port). The remaining parcel is owned by a private food distributor. The Site occupies a square block of land in the City of Oakland bound by 2nd and 3rd Streets and Castro and Brush Street. It measures approximate 300 feet by 200 feet and encompasses an approximate area of 1.4 acres. The Site is located in an area of Oakland currently utilized for industrial and commercial purposes. Businesses adjacent to the Site include a retail office supplies store, a plating shop, a self-storage business, warehouses, and Port of Oakland storage and administrative facilities. The nearest current residential neighborhood is located at least 1,500 feet north of the Site. It also appears that

industrial work/loft spaces are being developed at the parcel located adjacent to the south of the Site across 2nd Street. Water and sewage disposal in the area of the Site is provided by the East Bay Municipal Utility District (EBMUD). Stormwater runoff is controlled by catch basins along the adjacent city streets. Currently, the eastern one-third of the Site is used for shipping and warehousing and is completely occupied by a brick warehouse/office structure. The western two-thirds of the Site is used by the Port for maintenance and equipment storage. Evidence of an underground storage tank (UST) in the form of a fill port and vent pipe were observed near the north side of the warehouse. No information pertaining to the UST was present in the City of Oakland or Alameda County regulatory agency files. Two main structures and some smaller sheds and temporary storage containers are located on the western portion of the Site.

2.2 Historical Information

The historical information for the Site is based on Krazan's February 16, 2000 Phase I ESA, which included the review of historical aerial photographs, Sanborn Fire Insurance Maps (SFIMs), City of Oakland Building Department records, and business directories. The brick building on the eastern one-third of the Site appears to have been constructed prior to 1950 and has been used for warehousing purposes since that time. Prior to the construction of the warehouse, this portion of the Site was used for residential and commercial purposes. The two main structures, located on the western portion of the Site, were constructed in the late 1960s; other structures, interpreted to be industrial in nature, were present on-site prior to the late 1960s.

The western portion of the Site was used by Phoenix Iron Works (PIW) from circa 1951 to approximately 1972. None of the regulatory agency information reviewed pertained to the operation of PIW. However, Sanborn Fire Insurance Maps (SFIMs) depict welding, pattern storage, foundry storage, flask yard, and other uses by PIW. The 1967 and 1970 SFIMs depict a paint dip tank and drying rack, which are no longer present, on the north side of the main structure (see Figure 2).

2.3 Regional Geology

The site is located in the eastern portion of the San Francisco Bay Area, approximately 1,500 feet north of the Oakland Inner Harbor and approximately 2.5 miles from the San Francisco Bay. The Site is at an elevation of approximately 10 feet above mean sea level with the topography in the area being relatively level with a gentle slope to the southwest. No surface water drainages are located near the Site, and the

nearest surface water bodies are the Oakland Inner Harbor to the south and Lake Merritt, located over a mile to the northeast.

The Site is located within the Coast Ranges Geomorphic Province of California, which is characterized by northwest-trending structural features, including faults and geologic units. Based on investigations conducted by Krazan, the Site is underlain by approximately five feet of fill material which is underlain by beach and dune sand deposits of the Merritt Formation. The Merritt Formation is described as loose, well-sorted, fine- to medium-grained sand with silt and clay.

Based on a review of the USGS topographic map for the area and file information for investigations conducted in the vicinity of the Site, the direction of groundwater flow is approximately south-southwest. Based on the investigations conducted by Krazan, groundwater is present at approximately six feet below the ground surface (BGS).

2.4 Project Description

The Site is proposed for redevelopment as the Oakland Telecom Access Center (OTAC), an advanced, four-story facility designed to meet the unique requirements of the telecommunications industry. The 120,000 square foot building design includes pre-cast and concrete structural capacity of up to 250 pounds per square foot to accommodate the heavy loads of telecommunications equipment. The foundation of the structure will be a solid concrete matt foundation. The roof and parapet have been designed to accommodate antennas for wireless communications. An equipment yard provides space for back-up generators giving the facility the ability to operate 24 hours per day even in the event of a power failure. The general layout of the proposed building is presented in Figure 3.

3.0 PROPOSED CONSTRUCTION PLAN

The proposed project construction plan includes the removal of existing structures, construction of a matt foundation, which involves the excavation of soils to a depth of approximately five feet below the current grade, and final construction of the building and associated parking and landscaping

3.1 Demolition of Current Structures

Initial project work will include establishing temporary erosion and sediment controls around the Site to maintain soils and debris on Site. A number of shallow well points will be installed for the purpose of de-watering at the Site. The de-watering activities will draw down the existing groundwater level at the

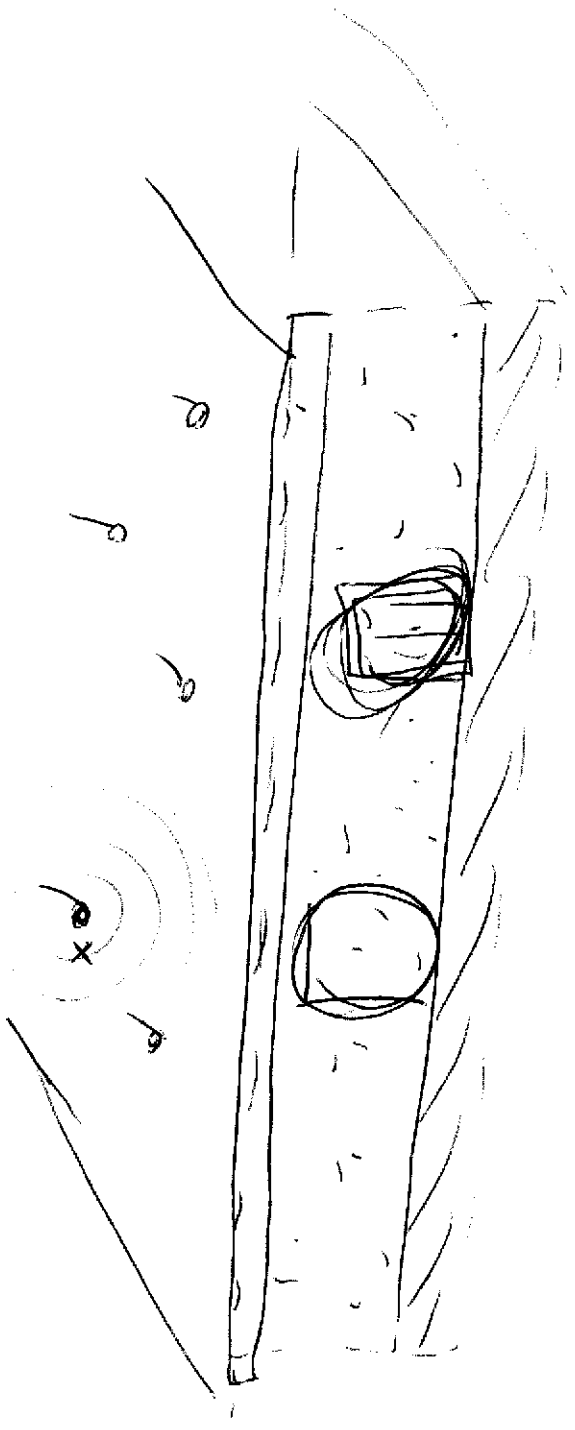
Site to allow construction to occur above the groundwater table. While the excavation for the matt foundation is not anticipated to be below the current groundwater level, the dewatering is being conducted to insure that groundwater will not be encountered during excavation and to provide a solid working surface for equipment. Discharge of groundwater will occur in accordance with any applicable permit requirements to either the storm or sanitary sewer. Demolition is anticipated to begin on the western portion of the Site. During demolition, a licensed asbestos abatement contractor will conduct removal of asbestos materials within the warehouse at the east side of the site in accordance with applicable laws for such activities. Additionally, abatement of lead-based paint identified on structures at the subject site will be conducted if required. Demolition of the warehouse will follow the abatement. Demolition of the buildings will include removal of all foundations and concrete slabs at and below grade. Removal of the identified UST and any affected soils will then occur. The Site will then consists of relatively level unpaved soil.

During the demolition phase, some of the on-site underground utilities that are to be located in or through the future parking area may be installed.

3.2 Foundation Construction

The proposed building has been designed to sit two (2) feet above existing grade to minimize excavation and interface of the foundation with existing groundwater. Subsequent to the demolition phase, soil at the Site will be excavated and set aside to provide for placement of the matt foundation. Excavation will begin at the east property line and proceed westward. Excavated materials will be temporarily stockpiled on plastic sheeting on the southern portion of the Site in the area of the future parking lot. It is estimated that approximately 9,000 cubic yards of soil will be excavated and temporarily stockpiled. The stockpile will be covered with plastic sheeting to minimize wind blown dust and sedimentation due to rain. It is estimated that approximately 6,700 cubic yards will be returned to areas on top of the matt and beneath the slab-on-grade building at the Site. Remaining overburden soil will be exported and disposed of off-site in accordance with applicable laws.

During the excavation work, two shafts will be drilled approximately 55 feet below the ground surface for the elevators. The shafts will be approximately two feet in diameter and will be double walled, in accordance with manufacturer specifications, to prevent infiltration of groundwater. The drilling of the shafts will not impact groundwater quality because the drilling will be conducted following the



excavation of fill, and will only encounter the Merritt Formation. Also, the sealing of the shafts will prevent migration of groundwater from the shallow to deeper zones.

The walls of the equipment yard will be supported by drilled piers. Drilling will occur in a similar manner as discussed for the elevator shafts. The piers will be two feet in diameter, drilled to approximately 12 to 15 feet BGS. The soil generated as part of this activity will be managed similarly to other excavated soil at the Site.

After excavation is completed in an area, the reinforcing steel and formwork will be installed for the matt foundation and the concrete matt will be placed. At this point, the stockpiled soil will be replaced around and over the matt for fill to slab-on-grade level. Simultaneously, the construction of the first floor concrete shear walls (floor 1 to 2) will begin.

3.3 Building Construction

The second floor concrete shear walls (floor 2 to 3) will be constructed after completion of first floor shear walls. Then, two floors of structural pre-cast structure will be erected. Concrete topping slabs will be placed over these pre-cast floors and construction of the next two floors of shear walls (floor 3 to 4 and 4 to roof) will occur. Again, once the shear walls are complete, structural pre-cast for these remaining structures will be erected and topped with a concrete slab. Once the structure is complete, work will begin to enclose the walls and roof of the building.

3.4 Utilities and Final Site Work

Concurrent with the final stages of building construction work, installation will proceed on the utilities that will be located over the matt foundation. It is anticipated that all of the utility installations (water, storm sewer, electrical, sanitary sewer, fiber, etc.) will occur above the existing groundwater table. When these utilities are complete, a concrete slab-on-grade will cap the utility/fill area (Figure 4). Remaining soils stockpiled in the parking/drive areas will be graded to meet the grades required as a result of raising the building. Then a 4-inch thick asphalt topping or concrete walks/paving will cap the parking area. Approximately 96 percent of the Site, including all occupied areas, will be capped with hardscape. At landscaped areas, the existing soils will be removed and lawfully disposed of to a depth of two feet, and replaced with a cap of two feet of imported clean soils. At this point, the entire Site will be capped. permanently?

4.0 IDENTIFICATION OF CHEMICALS OF POTENTIAL CONCERN

4.1 Site Characterization

Krazan has conducted extensive environmental review for the Site, the results of which are summarized in Krazan's February 16, 2000 Phase I ESA. The historical use of the western portion of the Site as a steel company, and the former existence of a paint dip tank at the property, suggested the need for additional investigation to determine whether the subsurface had been impacted by hazardous materials. As such, Krazan initiated a characterization of the soil and groundwater at the Site in accordance with procedures and guidelines established in the U.S. Environmental Protection Agency *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846).* The proposed removal of the UST, and a discussion of any related impacts will be addressed separately from this document. The results of the characterization are described in the report by Krazan titled *Soil and Groundwater Investigation, Proposed Commercial Development, 720 Second Street & 229 Castro Street, Oakland, California,* dated May 3, 2000, and the results are summarized below.

Based on the previous uses of the Site as identified in the environmental review of the Phase I ESA, the chemicals of potential concern (COPCs) for the Site included metals, petroleum hydrocarbons, volatile organic compounds (VOCs), and polynuclear aromatic hydrocarbons (PAHs).

As part of Krazan's characterization of the Site, Krazan drilled 28 soil borings from which we collected 40 soil samples and eight groundwater samples. In addition, Krazan installed three groundwater monitoring wells. The locations of the borings and groundwater monitoring wells are presented in Figure 2. Soil borings were advanced in the vicinity of the paint dip tank and UST, the only potential point sources identified in Krazan's investigation. The remaining borings were selected randomly based on procedures and guidelines for site characterization established in the U.S. Environmental Protection Agency *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846).* The results of the soil samples are summarized in Tables 1, 2, 3, and 5, respectively. The results of the groundwater samples are summarized in Table 4.

Based on the results of the characterization, no point source areas of contamination were identified with the exception of the UST, which will be properly removed and documented separately from this document. Elevated concentrations of lead were detected in some of the samples from the fill soils at the Site. In addition, one isolated detection of PAHs was obtained in that area. As such, the area of concern at the Site is identified as the fill soil.

The groundwater samples collected from the borings advanced during site characterization did not contain COPCs. The three groundwater monitoring wells installed on May 25, 2000 at the Site were sampled on June 27, 2000 and the samples were analyzed for total lead. Based on the analytical results, lead was not detected in groundwater above the reporting limit of 0.015 milligrams per liter (mg/l). Because this data were not previously reported, the laboratory report is included in Appendix A of this report. As such, with the exception of the area near the UST, the groundwater at the Site has not been impacted by any COPCs.

4.2 Process for Selecting Chemicals of Potential Concern

The chemicals detected as part of the characterization were compared to U.S. Environmental Protection Agency Region IX Preliminary Remedial Goals (PRGs) for industrial land use. The PRGs are conservative values used for screening human-health risks associated with contaminated media. The rationale for the PRG screening process is to focus the risk assessment and eliminate COPC that are not a risk at the Site based on the conservative values established by the U.S. Environmental Protection Agency. Based on the screening process, the final chemicals of concern at the Site are lead and PAHs. In one sample, several PAH compounds were detected at concentrations greater than the EPA Region IX PRGs for dermal contact and soil ingestion for an industrial land use setting. The concentrations of PAHs were, however, below the PRGs for inhalation of vapors from soil. These materials were detected within the historical fill but not detected in the underlying Merritt Formation. Site-wide the 80 percent upper confidence level (UCL) for lead was below the PRG for industrial land uses.

5.0 EXPOSURE ASSESSMENT

Exposure assessments estimate the chemical intake of each potential receptor via one or more complete exposure pathways. The four elements of a complete exposure pathway are as follows:

- A source of chemical release;
- A mechanism of release through a transport medium;
- A potential receptor.
- A point of contact between the potential receptor and the transport medium; and

If any one of these elements is missing, an exposure pathway is considered incomplete and there is no risk to the receptor.

An exposure assessment typically evaluates pathways, receptors, exposure duration, exposure frequency, and routes of exposure to assess total human exposures to the COPCs at a Site. The exposure assessment incorporates the physical setting as well as the future land use of the area. As discussed earlier in this report, the Site occupies a block of land in the City of Oakland which is bound by 2nd and 3rd Streets and Castro and Brush Street. Currently, the Site is used as shipping and warehousing for a food distributor and for maintenance and storage of equipment. The Site is located in an area of Oakland which is currently utilized for industrial and commercial purposes. Businesses adjacent to the Site include a retail office supplies store, a plating shop, a self-storage business, warehouses, and Port facilities. It also appears that industrial work/loft spaces are being developed at the parcel located adjacent to the south of the Site across 2nd Street. The nearest existing residential neighborhood is located at least 1,500 feet north of the Site. A multi-story building used as a telecommunication access center is proposed for the Site.

This assessment was conducted to address the redevelopment and future use of the Site, a commercial telecommunications facility. Accordingly, our analysis and evaluation is based on conditions deemed realistic for the proposed reuse.

5.1 Sources of Chemical Release, Media of Concern, and Transport Mechanism

Based on the historical operations at the Site and the characterization conducted by Krazan, no point sources for COPCs were identified at the Site. Area-wide concentrations of lead and one isolated occurrence of PAHs, presumably present within historical fill materials prior to placement, are present in the historical fill soils at depths between one and five feet BGS beneath the Site.

The only media of concern at the Site is the historical fill soils at depths of approximately one to five feet below the current surface grade. The groundwater and deeper, native soils have not been affected by the COPCs.

Potential transport mechanisms identified for the COPCs at the Site include dust-borne particulate transport and soil transport by storm water during foundation construction (Figure 5). Because groundwater has not been affected by the COPCs, groundwater transport of COPCs off-site was not considered. Leaching to groundwater was not considered as a transport mechanism for the following reasons: 1) the soil containing COPCs is located above the current and anticipated future groundwater table; 2) as is described in the Short Term Risk Management (STRM) plan (included under separate

cover), existing soil containing COPCs soil will be removed to the base of the existing fill material as part of the matt foundation construction; and 3) following completion of the matt foundation, the excavated material will be replaced around and above the matt foundation, which is and will remain higher than the groundwater level. As such, contaminated soil will not come into contact with the groundwater table. Therefore, it would be expected that the conditions of the Site with respect to the location of soil containing COPCs will not be significantly different following site development. As has been demonstrated by Krazan's characterization of the Site, the groundwater has not been impacted by COPCs, and based on the above discussion, it not anticipated to be impacted in the future.

5.2 Potential Receptors and Exposure Pathways

The potential receptors in the exposure evaluation consist of the individuals who might come in contact with the impacted media.

Future on-site occupants of the proposed telecommunication facility are not considered potential receptors because the Site will be completely capped with the building and parking areas, and two feet of clean fill will be placed within the minor landscaped areas (approximately four percent of the Site). Additionally there are no recreation areas or other areas where occupants of the building would come into contact with surface soils. Furthermore, future on-site occupants have no potential exposure to volatile emissions from the soil, because VOCs are not COPCs for soil or groundwater. Therefore, there is no point of contact for a COPC with a receptor, and all potential exposure pathways are incomplete.

Potential exposure to off-site occupants of buildings could only be considered complete by way of dust-borne particulates during construction of the foundation at the Site. However, dust control measures, as outlined in the STRM plan for the Site development, have been designed to minimize and/or eliminate this exposure, and therefore this pathway is considered incomplete.

The future construction worker may have potential contact with soil during excavation activities associated with construction of the foundation only. The complete exposure pathways for the future construction worker are: incidental ingestion soils, dermal contact with soils, and inhalation of dust-borne particulates. Potential exposure through inhalation of volatile emissions from the soil is an incomplete pathway, because VOCs were not identified as a final soil COPCs. The construction work at the Site involving soil handling will be conducted under provisions of a Health and Safety Plan as

outlined in the STRM plan, and therefore the potential exposure pathways for the future construction worker will be incomplete.

5.3 Potential Ecological Receptors

The only potential ecological receptors identified based on the CSM are aquatic organisms in the San Francisco Bay and Oakland Inner Harbor, located approximate 1,500 feet south of the Site. The potential exposure pathway for the ecological receptor includes transport of soil from the Site during the construction of the foundation via stormwater runoff. A Stormwater Pollution Prevention Plan (SWPP) for the development of the Site has been prepared and is incorporated into the STRM plan. Additionally, construction of the foundation at the Site is expected to be completed prior to the rainy season, further minimizing the likelihood of transport of sediments.

The migration of groundwater to the San Francisco Bay was not considered a potential exposure pathway because the groundwater at the Site has been analyzed for VOCs, PAHs, and lead, and none of these chemicals have been detected in groundwater.

6.0 SUMMARY

In summary, under the assumed exposure and development conditions as presented in the CSM, the two potential exposure pathways and receptors to chemicals of concern at the Site are exposure to historical fill soil by the future construction worker, and transport of sediment to the San Francisco Bay during construction. In both cases, the exposure pathways will be mitigated and/or eliminated by means of a Health and Safety Plan and Stormwater Pollution Prevention Plan. As such, these potential exposure pathways are considered incomplete. The results of the conceptual site model are illustrated in Figure 5.

7.0 REFERENCES

California Department of Toxic Substances Control (DTSC), Cal/EPA, 1992, *Supplemental Guidance For Human Health Multimedia Risk Assessments of Hazardous Waste Site and Permitted Facilities*, July.

California Department of Toxic Substances Control (DTSC), Cal/EPA, 1994, *Preliminary Endangerment Assessment Guidance Manual*, January.

Krazan & Associates, Inc., 2000, *Phase I Environmental Site Assessment 720 Second Street & 229 Castro Street, Oakland, California*, dated February 16, 2000.

Krazan & Associates, Inc., 2000, *Soil and Groundwater Investigation, Proposed Commercial Development, 720 Second Street & 229 Castro Street, Oakland, California*, dated May 3, 2000.

U.S. Environmental Protection Agency (USEPA), 1989, *Risk Assessment Guidance for Superfund, Vol. I: Human Health Evaluation Manual (Part A) Interim Final*, EPA/540/1-89/002, December

U.S. Environmental Protection Agency (USEPA), 1999, *Region IX Preliminary Remedial Goals*.

8.0 LIMITATIONS

The findings of this report were based upon the results of field and laboratory data, coupled with the interpretation of subsurface conditions, and future construction aspects proposed for the Site. Therefore, the findings are accurate only to the degree implied by review of the collected data and by professional interpretation. Additionally, should new data become available or the proposed uses of the Site change, Krazan's evaluation could be different that that presented in this report.

The findings presented herewith are based on professional interpretation using state-of-the art methods and equipment and a degree of conservatism deemed proper as of this report date. It is not warranted that such data cannot be superseded by future geotechnical, environmental, or technical developments.

This investigation and report were authorized by and prepared for the exclusive use of our client. Unauthorized use of or reliance on the information contained in this report without the expressed written consent of Krazan & Associates, Inc., is strictly prohibited.

If there are any questions or if we can be of further assistance, please do not hesitate to contact our office at (408) 271-2200.

Respectfully submitted,
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AJG/DA/ljk

TABLES

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
POLYNUCLEAR AROMATICH HYDROCARBONS
PROPOSED COMMERCIAL DEVELOPMENT
229 CASTRO STREET AND 720 SECOND STREET, OAKLAND, CALIFORNIA

Sample No	Depth	naphthalene	acenaphthylene	acenaphthene	fluorene	phenanthrene	anthracene	fluoranthene	pyrene	benzo (a) anthrancene	chrysene	benzo (b) fluoranthene	benzo (k) fluoranthene	benzo (a) pyrene	indeno (1,2,3,-cd) pyrene	dibenz (a, h) anthracene
B1-2	2	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
B2-2	2	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
B3-2	2	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
B4-3	3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
B5-3	3	<0.3	<0.3	<0.3	<0.3	1.3	<0.3	1.7	2.8	<0.3	0.95	0.7	<0.3	0.8	<0.3	<0.3
B6-3.5	3.5	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.5	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
B7-3	3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
B8-3.5	3.5	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
B8-13.5	13.5	4.7	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
B8-15.5	15.5	0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
B9-3	3	31	87	1	11	180	30	190	150	12	120	110	61	280	310	87
COMP1[3]	6 to 7.5	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
COMP2[4]	7	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
PRGs - dermal/ingest		41000	NA	120000	82000	NA	610000	48000	61000	4.6	460	4.6	46	0.46	4.6	0.46
PRGs - inhalation		190	NA	56000	56000	NA	1.1E+06	2.7E+08	470000	61000	6100000	61000	610000	6100	61000	6100

Notes:
1 All results given in milligrams per kilogram.
2 The samples were analyzed for polynuclear aromatic hydrocarbons by Environmental Protection Agency Method Number 8270.
Only constituents detected in concentrations greater than the reporting limit are presented in this table.
3 Depth is given in feet below the ground surface.
4 COMP1 = samples from B1, B2, B3, and B4 collected from 6 to 7.5 feet below the ground surface composited by the laboratory for a single analyses.
5 COMP2 = samples from B5, B6, B7, B8, and B9 collected from 7 feet below the ground surface composited by the laboratory for a single analyses.
6 PRGs = preliminary remedial goals established by the EPA Region IX. The PRGs are conservative values used for screening human-health risks associated with contaminated media in an industrial setting.
PRGs - dermal/ingest for dermal contact or ingestion of soil. The lower of the two values is presented. PRGs - inhalation are values for inhalation of vapors from soil.
7 NA = not applicable
8. The less than symbol (<) indicates that the constituent was not detected in concentrations greater than the value given.

TABLE 2
SOIL SAMPLE ANALYTICAL RESULTS
METALS ANALYSES
PROPOSED COMMERCIAL DEVELOPMENT
229 CASTRO STREET AND 720 SECOND STREET, OAKLAND, CALIFORNIA

Sample No.	Depth	antimony	arsenic	barium	beryllium	cadmium	chromium	cobalt	copper	lead	mercury	molybdenum	nickel	selenium	silver	thallium	vanadium	zinc
B1-2	2	<2	<5	2	<1	6	24	6	13	46	<0.1	3	10	18	<2	46	48	26
B2-2	2	<2	<5	97	<1	2	43	8	860	140	<0.1	3	20	<5	<2	10	31	220
B3-2	2	<2	<5	140	<1	2	33	9	49	410	<0.1	3	21	5	<2	12	278	140
B4-3	3	<2	<5	230	<1	6	41	10	78	780	<0.1	4	38	8	<2	11	29	650
B5-3	3	<2	<5	560	<1	9	30	10	940	2600	<0.1	5	52	<5	<2	42	39	2900
B6-3.5	3.5	<2	<5	1200	<1	11	83	14	280	3300	<0.1	7	51	18	<2	45	39	5200
B7-3	3	<2	<5	260	<1	2	20	7	55	1000	<0.1	2	130	3	<2	7	18	340
B8-3.5	3.5	<2	<5	38	<1	<1	27	3	5	ND	<0.1	<1	12	<5	<2	3	14	13
B8-13.5	13.5	<2	<5	52	<1	2	67	10	10	1	<0.1	3	38	<5	<2	12	29	29
B8-15.5	15.5	<2	<5	61	<1	3	62	12	14	2	<0.1	3	45	9	<2	16	34	32
B9-3	3	<2	<5	570	<1	20	40	20	170	3300	<0.1	7	100	18	<2	27	50	4500
COMP1[3]	6 to 7.5	<2	<5	52	<1	2	59	10	17	ND	<0.1	3	28	6	<2	12	30	23
COMP2[4]	7	<2	<5	27	<1	<1	120	4	11	ND	<0.1	2	13	<5	<2	3	53	31
PRGs - ingest		820	3.8	140000	4100	1000	3.1E+06	120000	76000	NA	610	10000	41000	10000	10000	NA	14000	610000

Notes:
1. All results given in milligrams per kilogram.
2. The samples were analyzed for metals by EPA Methods 6010 and 7471.
3. Depth is given in feet below the ground surface.
4. COMP1 = samples from B1, B2, B3, and B4 collected from 6 to 7.5 feet below the ground surface composited by the laboratory for a single analyses.
5. COMP2 = samples from B5, B6, B7, B8, and B9 collected from 7 feet below the ground surface composited by the laboratory for a single analyses.
6. PRGs = preliminary remedial goals established by the EPA Region IX. The PRGs are conservative values used for screening human-health risks associated with contaminated media in an industrial setting. PRGs - ingest for ingestion of soil.
7. NA = not applicable
8. The less than symbol (<) indicates that the constituent was not detected in concentrations greater than the value given.

TABLE 3
SOIL SAMPLE ANALYTICAL RESULTS
PETROLEUM HYDROCARBONS AND VOLATILE ORGANIC COMPOUNDS
PROPOSED COMMERCIAL DEVELOPMENT
229 CASTRO STREET AND 720 SECOND STREET, OAKLAND, CALIFORNIA

Sample No.	Depth	TPHg	TPHd	benzene	toluene	ethylbenzene	total xylenes	isopropyl benzene	n-propyl benzene	1,3,5-trimethyl benzene	1,2,4-trimethyl benzene	p-isopropyl toluene	napthalene
B1-2	2	NA	NA	0.084	0.200	0.067	0.420	0.011	0.032	0.010	0.190	0.007	0.180
B1-7.5	7.5	NA	NA	<0.005	<0.005	<0.005	<0.015	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
B2-2	2	NA	NA	0.050	0.140	0.042	0.219	<0.005	0.014	<0.005	0.077	<.005	0.096
B2-6	6	NA	NA	<0.005	<0.005	<0.005	<0.015	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
B3-2	2	NA	NA	0.010	0.029	0.009	0.048	<0.005	<0.005	<0.005	0.017	<.005	0.023
B3-7.5	7.5	NA	NA	<0.005	<0.005	<0.005	<0.015	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
B4-3	3	NA	NA	<0.005	0.006	<0.005	<0.015	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
B4-7	7	NA	NA	<0.005	0.035	0.029	0.138	<0.005	0.015	<0.005	0.069	<0.005	<0.005
B5-3	3	NA	NA	<0.005	0.005	<0.005	<0.015	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
B5-7	7	NA	NA	<0.005	<0.005	<0.005	<0.015	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
B6-3.5	3.5	NA	NA	<0.005	0.005	<0.005	<0.015	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
B6-7	7	NA	NA	<0.005	<0.005	<0.005	<0.015	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
B7-3	3	NA	NA	<0.005	0.009	<0.005	0.012	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
B7-7	7	NA	NA	<0.005	<0.005	<0.005	<0.015	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
B8-3.5	3.5	NA	NA	<0.005	<0.005	<0.005	<0.015	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
B8-7	7	310	<10	1.7	6.0	4.4	10.4	1.2	1.3	0.600	2.5	0.470	0.450
B8-13.5	13.5	430	<10	3.6	18	4.2	7.5	0.82	2.2	1.4	2.6	0.12	1.6
B8-15.5	15.5	230	<10	0.4	0.24	2	3.17	0.58	0.86	0.37	1.7	0.36	0.8
B9-3	3	NA	NA	<0.005	<0.005	<0.005	<0.015	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
B9-7	7	NA	NA	<0.005	0.027	0.014	0.068	<0.005	<0.005	<0.005	0.042	<0.005	0.087
PRGs - dermal/ingest		NA	NA	200	410000	200000	3100000	200000	20000	100000	100000	NA	190
PRGs - inhalation		NA	NA	1.5	2000	6200	4500	520	580	70	170	NA	41000

Notes:
1 All results given in milligrams per kilogram.
2. TPHg and TPHd = total petroleum hydrocarbons as gasoline and diesel by Environmental Protection Agency (EPA) Method 8015M.
3. Volatile organic compounds (VOCs) by EPA Method 8260. Other VOCs by EPA Method 8260 not reported in concentrations greater than the reporting limit.
4. The less than symbol (<) indicates that the constituent was not detected in concentrations greater than the value given.
5 PRGs = preliminary remedial goals established by the EPA Region IX. The PRGs are conservative values used for screening human-health risks associated with contaminated media in an industrial setting. PRGs - dermal/ingest for dermal contact or ingestion of soil. The lower of the two values is presented. PRGs - inhalation are values for inhalation of vapors from soil.
6 NA = not applicable

TABLE 4
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PROPOSED COMMERCIAL DEVELOPMENT
229 CASTRO STREET AND 720 SECOND STREET, OAKLAND, CALIFORNIA

Sample No.	TPHg	TPHd	benzene	toluene	ethylbenzene	total xylenes	isopropyl benzene	n-propyl benzene	1,3,5-trimethyl benzene	1,2,4-trimethyl benzene	p-isopropyl toluene	napthalene	PAHs	lead
B1-W[5]	NA	NA	<0.005	<0.005	<0.005	<0.015	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	NA
B2-W	NA	NA	<0.005	<0.005	<0.005	<0.015	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA
B3-W	NA	NA	<0.005	<0.005	<0.005	<0.015	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA
B5-W[5]	NA	NA	<0.005	<0.005	<0.005	<0.015	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	NA
B6-W[5]	NA	NA	<0.005	<0.005	<0.005	<0.015	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	NA
B7-W[5]	NA	NA	<0.005	<0.005	<0.005	<0.015	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	NA
B8-W	25	NA	3.4	6.6	2.0	3.9	<0.005	4.1	2.4	5.4	<0.005	0.970	NA	NA
MW-1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.015
MW-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.015
MW-3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.015

Notes:
1 All results given in milligrams per liter.
2. TPHg and TPHd = total petroleum hydrocarbons as gasoline and diesel by Environmental Protection Agency (EPA) Method 8015M.
3. Volatile organic compounds (VOCs) by EPA Method 8260. Other VOCs by EPA Method 8260 not reported in concentrations greater than the reporting limit.
4. The less than symbol (<) indicates that the constituent was not detected in concentrations greater than the value given.
5. PAH = polynuclear aromatic hydrocarbons by EPA Method 8270.
6. ND = not detected above the reporting limit.
7. NA = not analyzed

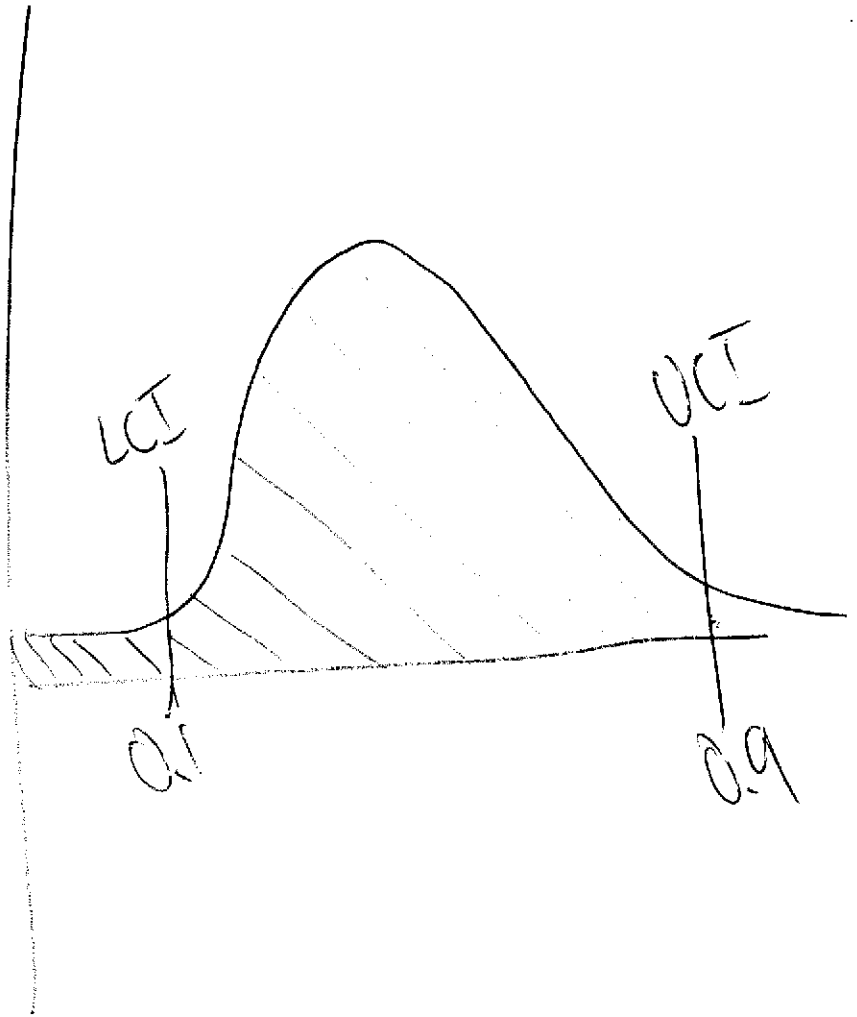

LCL
UCL
0.1
0.9

Table 27 samples analyzed for Pb
11 > 350 ppm Pb

TABLE 5
SOIL SAMPLE ANALYTICAL RESULTS
LEAD ANALYSES
PROPOSED COMMERCIAL DEVELOPMENT
229 CASTRO STREET AND 720 SECOND STREET, OAKLAND, CALIFORNIA

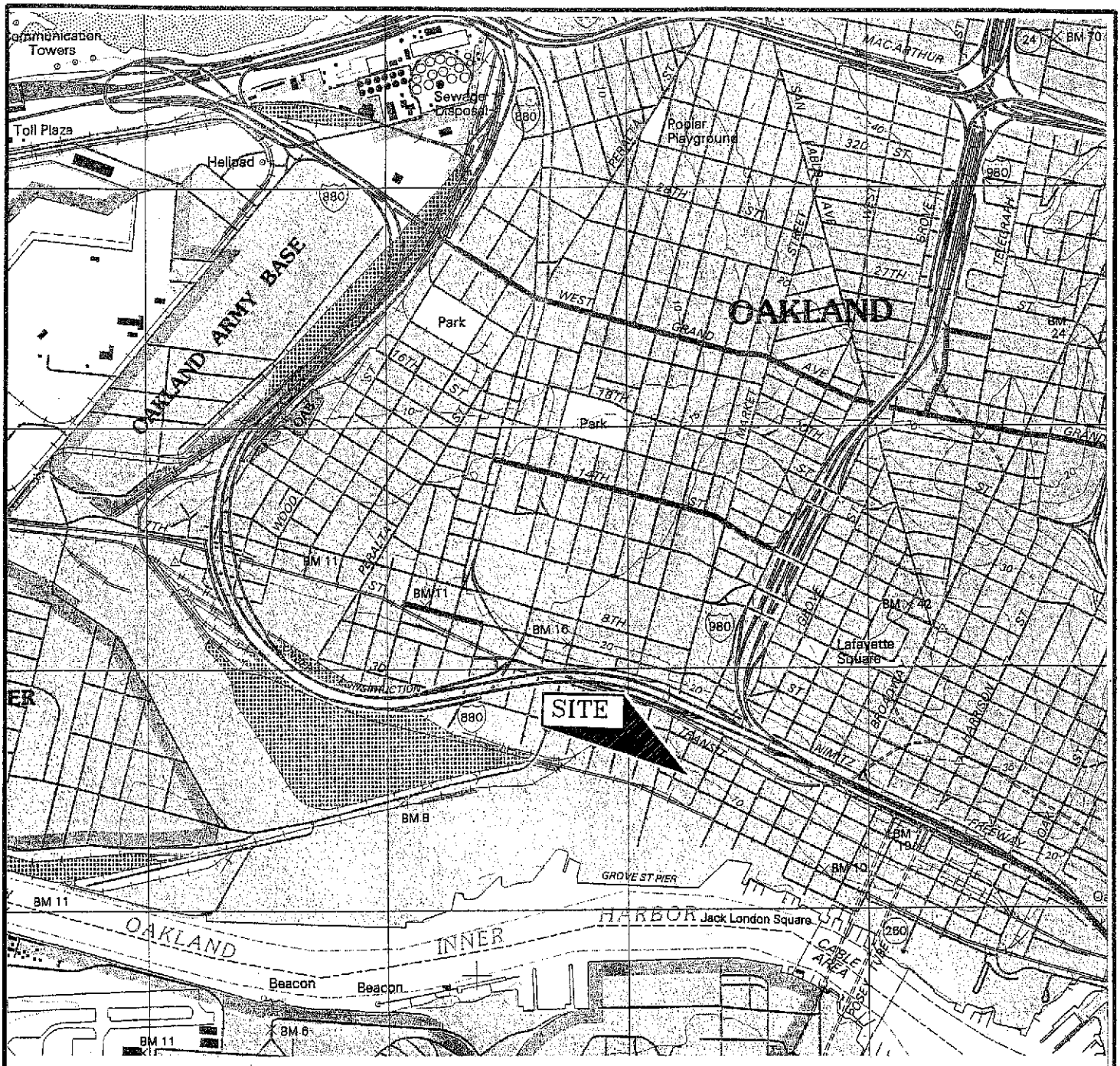
Sample No.	Depth Interval	Total Lead[1]	Soluble Lead[2]
B1	18 to 24 inches	46	NA
B2	18 to 24 inches	140	NA
B3	18 to 24 inches	410	NA
B4	30 to 36 inches	780	NA
B5	30 to 36 inches	2600	NA ?
B6	36 to 42 inches	3300	NA ?
B7	30 to 36 inches	1000	NA ?
B8	36 to 42 inches	<1	NA
B9	30 to 36 inches	3300	NA ?
S1	0 to 6 inches	280	0.5
S2	0 to 6 inches	99	0.1
S3	0 to 6 inches	620	1.3
S4	0 to 6 inches	180	0.4
S5	6 to 12 inches	2400	24
S6	6 to 12 inches	590	5.9
S7	6 to 12 inches	110	0.1
S8	6 to 12 inches	50	<0.1
S9	6 to 12 inches	310	0.5
S10	12 to 18 inches	1100	10
S11	12 to 18 inches	180	<0.1
S12	12 to 18 inches	200	0.3
S13	12 to 18 inches	1100	3.1
S14	12 to 18 inches	18	<0.1
S15	12 to 18 inches	68	<0.1
S16	0 to 6 inches	NA	2.6
S18	6 to 12 inches	NA	<0.1
S20	0 to 6 inches	95	NA
S21	12 to 18 inches	<1	NA
S22	6 to 12 inches	130	NA
80% UCL		961	NC

95% UCL

Notes:
1 Total lead results given in milligrams per kilogram.
2 Soluble lead results given in milligrams per liter.
3 The samples were analyzed for lead by EPA Methods 6010 and 7471.
4 Depth is given in inches below the ground surface.
5 NA = not analyzed
6 NC = not calculated

Commercial
1000 ppm Pb

FIGURES



MAP SOURCE:

USGS QUADRANGLE, 7.5–MINUTE (TOPOGRAPHIC)
OAKLAND WEST (DATED 1993)

0 2,000 4,000

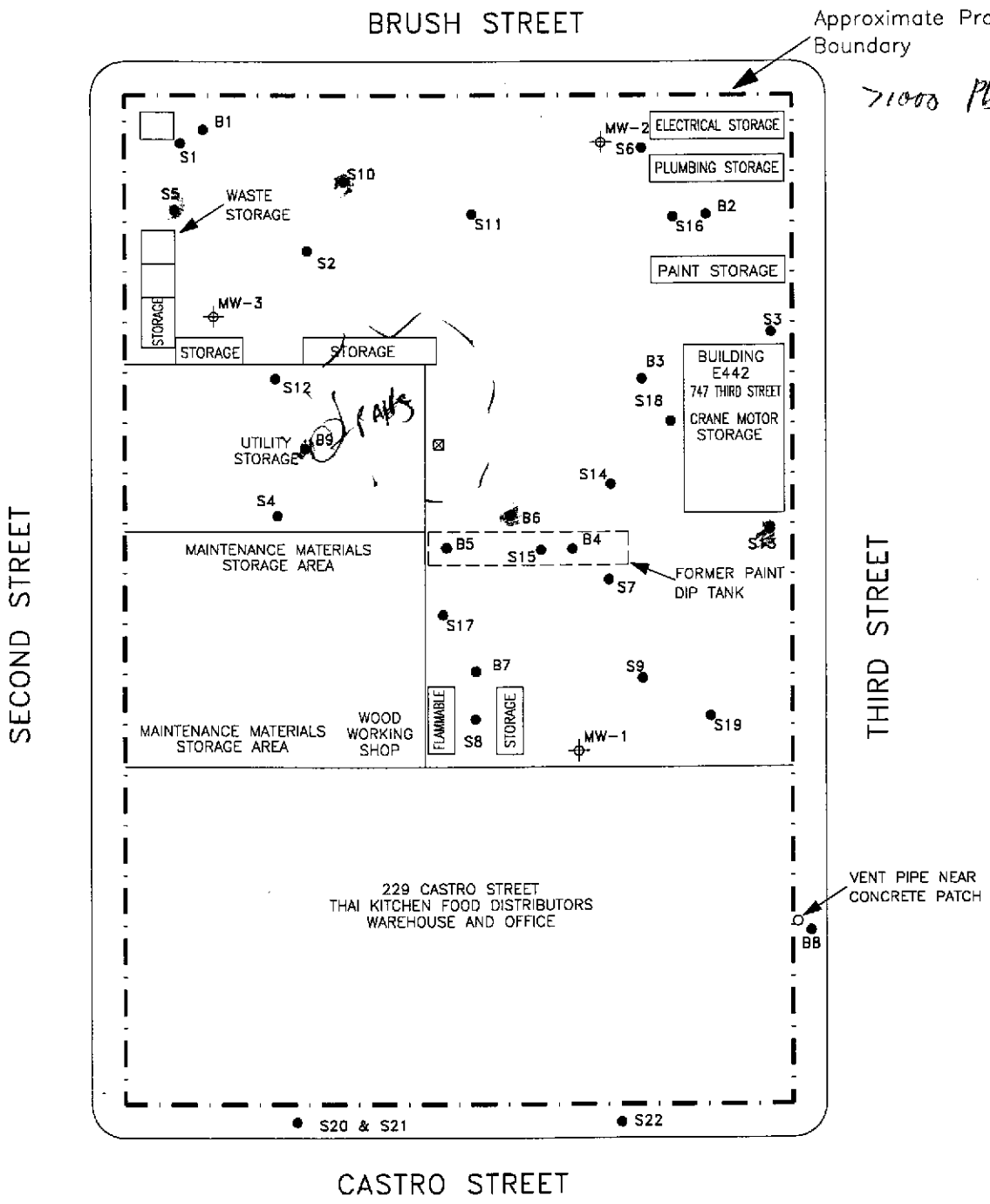
SCALE IN FEET (±)

VICINITY MAP

City Block Bound By:
Second, Third, Castro, & Brush Streets
Oakland, California

Scale:	Date:
AS SHOWN	2/00
Drawn by:	Approved by:
AJG	AJG
Project No.	Figure No.
044–00006	1

Krazan
ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SPECIALISTS
Offices Serving the Western United States



EXPLANATION

⊠ STORM DRAIN

MW-1 MONITORING WELL LOCATIONS AND DESIGNATIONS

S1 BORING LOCATION AND DESIGNATION

NOTES:
1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE
2. BASE MAP FROM FIELD MEASUREMENTS AND SANBORN MAPS

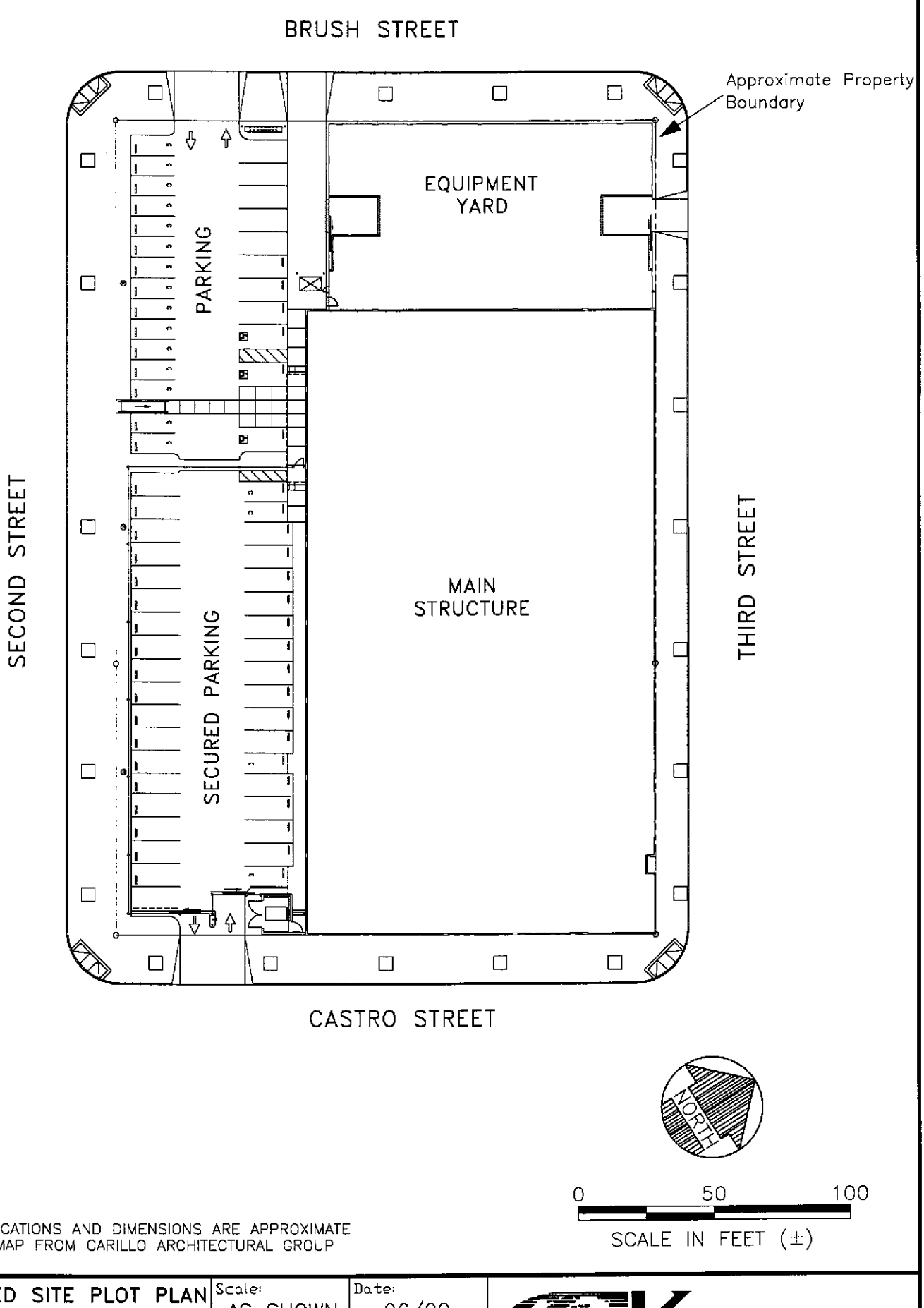
NORTH

0 50 100

SCALE IN FEET (±)

SOIL BORING AND MONITORING WELL LOCATION MAP City Block Bound By: Second, Third, Castro, & Brush Streets Oakland, California	Scale: AS SHOWN	Date: 06/00
	Drawn by: AJG	Approved by: AJG
	Project No. 044-00006	Figure No. 2

Krazan
ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SPECIALISTS
Offices Serving the Western United States



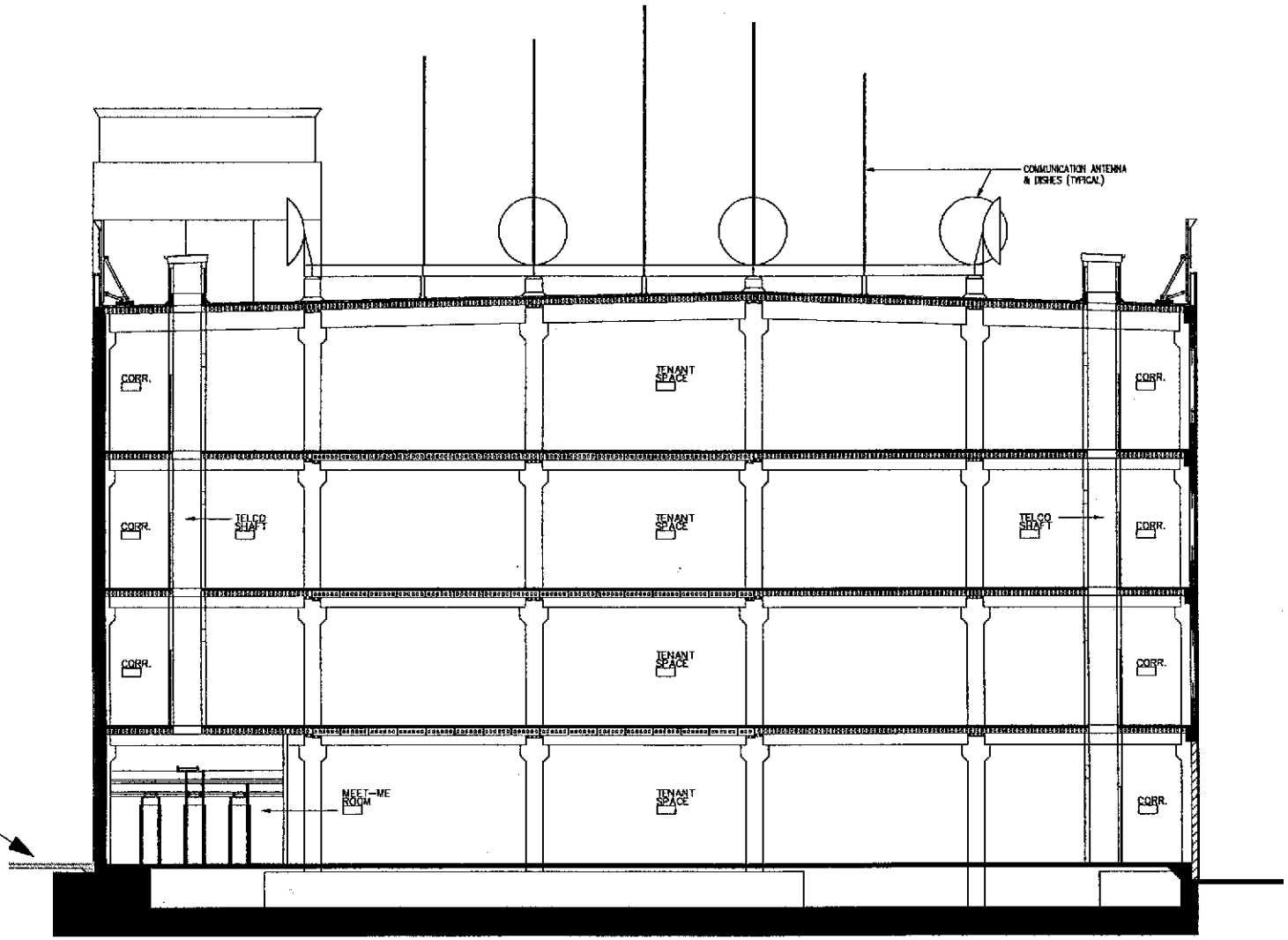
NOTES:
1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE
2. BASE MAP FROM CARILLO ARCHITECTURAL GROUP

PROPOSED SITE PLOT PLAN

City Block Bound By:
Second, Third, Castro, & Brush Streets
Oakland, California

Scale:	Date:
AS SHOWN	06/00
Drawn by:	Approved by:
AJG	AJG
Project No.	Figure No.
044-00006	3

Krazan
ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SPECIALISTS
Offices Serving the Western United States



FINAL GRADE

MATT FOUNDATION

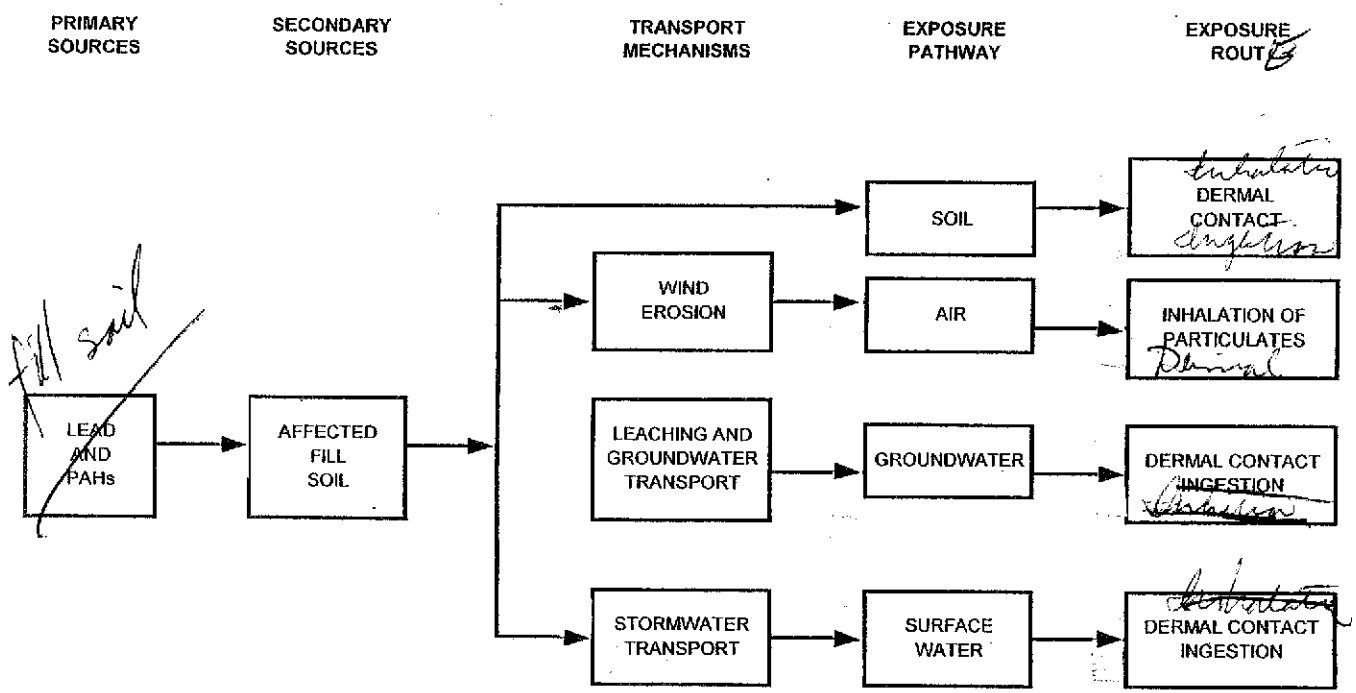
NOTES:
1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE
2. BASE MAP FROM CARILLO ARCHITECTURAL GROUP

CONCEPTUAL FOUNDATION CUTAWAY PLAN

City Block Bound By:
Second, Third, Castro, & Brush Streets
Oakland, California

Scale:	Date:
NONE	06/00
Drawn by:	Approved by:
AJG	AJG
Project No.	Figure No.
044-00006	4

Krazan
ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SPECIALISTS
Offices Serving the Western United States



LEGEND

inc. = incomplete pathway
* = complete pathway mitigated with plan

CONCEPTUAL SITE MODEL	Scale: NONE	Date: 06/00
City Block Bound By: Second, Third, Castro, & Brush Streets Oakland, California	Drawn by: AJG	Approved by: AJG
	Project No. 044-00006	Figure No. 5

Krazan
ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SPECIALISTS
Offices Serving the Western United States

APPENDIX A

Entech Analytical Labs, Inc.

CA ELAP# 2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

June 30, 2000

Alex Gallego
Krazan & Associates, Inc.
550 Parrott Street, Suite One
San Jose, CA 95112

Order: 21165 **Date Collected:** 6/27/00
Project Name: **Date Received:** 6/27/00
Project Number: 04400006 **P.O. Number:**
Project Notes:

On June 27, 2000, samples were received under documentented chain of custody. Results for the following analyses are attached:

Matrix	Test	Method
Liquid	Lead	EPA 200.7

Chemical analysis of these samples has been completed. Summaries of the data are contained on the following pages. USEPA protocols for sample storage and preservation were followed.

Entech Analytical Labs, Inc. is certified by the State of California (#2346). If you have any questions regarding procedures or results, please call me at 408-735-1550.

Sincerely,

Michelle L. Anderson
Lab Director

Entech Analytical Labs, Inc.

CA ELAP# 2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Krazan & Associates, Inc.
550 Parrott Street, Suite One
San Jose, CA 95112
Attn: Alex Gallego

Date: 6/30/00
Date Received: 6/27/00
Project Name:
Project Number: 04400006
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 21165 **Lab Sample ID:** 21165-001 **Client Sample ID:** MW-1
Sample Time: 11:30 AM **Sample Date:** 6/27/00 **Matrix:** Liquid

Parameter	Result	DF	PQL	DLR	Units	PrepDate	Analysis Date	QC Batch ID	Method
Lead	ND	1	0.015	0.015	mg/L	6/27/00	6/29/00	WM000619	EPA 200.7

Order ID: 21165 **Lab Sample ID:** 21165-002 **Client Sample ID:** MW-2
Sample Time: 11:45 AM **Sample Date:** 6/27/00 **Matrix:** Liquid

Parameter	Result	DF	PQL	DLR	Units	PrepDate	Analysis Date	QC Batch ID	Method
Lead	ND	1	0.015	0.015	mg/L	6/27/00	6/29/00	WM000619	EPA 200.7

Order ID: 21165 **Lab Sample ID:** 21165-003 **Client Sample ID:** MW-3
Sample Time: 12:00 PM **Sample Date:** 6/27/00 **Matrix:** Liquid

Parameter	Result	DF	PQL	DLR	Units	PrepDate	Analysis Date	QC Batch ID	Method
Lead	ND	1	0.015	0.015	mg/L	6/27/00	6/29/00		EPA 200.7

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

Krazan

Chain of Custody Record

DATE 6-27-00 PAGE 1 OF 1

RUSH

72 HR

KRAZAN & ASSOCIATES, INC.
ATTN: Alex G. (San Jose office)
215 WEST DAKOTA AVENUE
CLOVIS, CA 93612
(209) 348-2200 FAX: (209) 348-2201

Project No. 04400006

Sampler Signature: Michael L Maucy

Printed Name: Michael L Maucy

SAMPLE NO	DATE	TIME	DESCRIPTION/LOCATION	CAC METALS (TTLC)	PR. POLLUTANT METALS	TOTAL LEAD	TPH-DIESEL	TPH-GAS	BTXE/TPH-GAS	OIL & GREASE	HALOGENATED ORGANICS (EPA 8010/8021)	VOLATILE ORGANICS (EPA 8020/8021)	ORGANOCHLORINE PESTICIDES & PCB'S (EPA 8080)	PENTACHLOROPHENOL	CREOSOTE	DIOXINS/FURANS	ASBESTOS (PLM)	Total Lead	Salinity	Chlorides	NUMBER OF CONTAINERS	OBSERVATIONS/ COMMENTS
mw-1	6-27-00	1130	mw-1	2	1	6	5	-001								1		X			2	Filter and Preserve
mw-2		1145	mw-2		1			002										X	X	X	2	Sample as needed
mw-3		1200	mw-3		1			003										X			2	

88 JUN 27 13:25

RELINQUISHED BY	DATE	RECEIVED BY	DATE	RELINQUISHED BY	DATE	RECEIVED BY	DATE
Signature: Michael Maucy	6/27/00	Signature: Amy Dombek	6/27/00	Signature		Signature	
Printed Name: Michael Maucy	TIME 1320	Printed Name: Entech	TIME 1327	Printed Name	TIME	Printed Name	TIME
Company: Krazan		Company		Company		Company	
RELINQUISHED BY	DATE	RECEIVED BY	DATE	RELINQUISHED BY	DATE	RECEIVED BY (laboratory)	DATE 6/27/00
Signature		Signature		Signature		Signature: E-Bergquist	TIME 1325
Printed Name	TIME	Printed Name	TIME	Printed Name	TIME	Printed Name	TIME
Company		Company		Company		Company	

6 TOTAL NUMBER OF CONTAINERS SUBMITTED TO THE LAB

METHOD OF SHIPMENT/DELIVERY: Drop off

SPECIAL SHIPMENT/HANDLING OR STORAGE REQUIREMENTS: 72 hr T/A on Total lead Standard T/A on Salinity

RESULTS DUE: _____

☐ VERBAL ☐ WRITTEN

White - Lab Yellow - Project File Pink - C.O.C. Binder

JUN. 30, 2000 8:11AM NO. 008 P. 4/4