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Alameda County
Environmental Health

April 4, 2011

Mr. Jerry Wickham
Alameda County Health Care Services
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Re: CITADEL **Project No. 0222.1001.0**
Remedial Action Plan
Former Red Star Yeast Company
1396 5th Street
Oakland, California 94607
SLIC Case Number: RO0002896
Global ID: T06019794669

Dear Mr. Wickham:

As a legally authorized representative of Oakland Housing Investors, LP, I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge.

Sincerely,

David R. Lukens
Vice President of Red Star-Michaels, LLC,
Co-Administrative General Partner of
Oakland Housing Investors, L.P.

Enclosure

April 4, 2011

Mr. Harvey Fernebok
Oakland Housing Investors, LP
2010 Main Street, Suite 1250
Irvine, California 92614

Re: CITADEL Project No. 0222.1001.0
Remedial Action Plan
Former Red Star Yeast Company
1396 5th Street
Oakland, California 94607
SLIC Case Number: RO0002896
Global ID: T06019794669

Dear Mr. Fernebok:

In accordance with your request and authorization, Citadel Environmental Services, Inc. (Citadel) has prepared the attached Remedial Action Plan for the above-referenced property.

Should you have any questions after reviewing the findings contained in this report, please do not hesitate to contact the undersigned at your convenience at (714) 547-4301. Citadel appreciates this opportunity to be of professional service on this project.

Sincerely,
CITADEL ENVIRONMENTAL SERVICES, INC.

Allan Coffee
Director, Environmental Services

Enclosure

Citadel Environmental Services, Inc. 400 North Tustin Avenue, Suite 340, Santa Ana, CA 92705
Tel: (714) 547-4301 Fax: (714) 547-4647 www.citadelenvironmental.com

CITADEL
ENVIRONMENTAL SERVICES, INC.

An Employee-Owned Company

OAKLAND HOUSING INVESTORS, LP
2010 MAIN STREET, SUITE 1250
IRVINE, CALIFORNIA 92614

CITADEL
ENVIRONMENTAL
SERVICES, INC.

REMEDIAL ACTION PLAN
FORMER RED STAR YEAST COMPANY

1396 5th Street
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CITADEL Project Number 0222.1001.0

April 4, 2011

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1.0 INTRODUCTION

From January - March 2011, Citadel Environmental Services, Inc. (Citadel) conducted a Subsurface Investigation at the vacant property located at 1396 5th Street in Oakland, California. The site has a history of environmental issues related to past uses and is under the oversight of Alameda County Environmental Health (ACEH) (SLIC Case number RO0002896). The Global ID Number for the site is T06019794669.

The site occupies about 0.88 acres of vacant land in Oakland, California. The property was first provided a legal description in 1880, and from sometime before 1902 until 2006 was used for yeast manufacturing, vinegar production, and for various brewery operations. Environmental issues identified at the property include above ground and underground fuel tanks, the use of various chemicals with several documented releases, and an unauthorized release of mercury to the sewer system with apparent impacts to the subsurface soil. These issues have been mostly addressed by separate remedial actions. However, the site also has a surficial layer of artificial fill that appears to be 3-5 feet thick and extends across much of the property. Previous testing indicated the fill had elevated levels of lead in some areas, and detectable but generally low levels of mercury. Groundwater is present at about 4 feet below grade and previous sampling indicated that the groundwater beneath portions of the site was impacted with diesel and oil-range petroleum hydrocarbons.

Oakland Housing Investors, LP is proposing to construct an affordable housing project for seniors at the site. The five-story building will include four levels of apartments above the on-grade first level that includes retail and office space and lobby areas. Nearly the entire site will be covered with paved surfaces or poured concrete.

In October 2008, SCS Engineers prepared a Property Mitigation Plan (PMP) that detailed important aspects of the investigation history and property uses. The PMP also included a proposed scope of work to further investigate the property as a preliminary step towards mitigation and re-development. This plan was conditionally accepted by ACEH and is the basis for the current investigation. Primary items of concern in this investigation are providing a more detailed characterization of the artificial fill that extends across much of the site, identifying the locations of underground structures using geophysical techniques and exposing these by excavation. In addition, groundwater wells were installed to provide more data on the quality of groundwater. The reader is directed to the PMP for more details on the scope of work, and background information on the site history and proposed development. This report is supplemental to the PMP.

The recent subsurface investigation was an independent assessment of the property that was intended to characterize the quality of the shallow fill soil, which was identified as a source of on-site contamination. The investigation included installation of 15 soil borings, 5 groundwater monitoring wells, and excavation of 4 pits to expose underground structures identified by a geophysical survey. The goal of this work was to provide data that could be used to make rational decisions on what work might be necessary to allow the proposed commercial / residential development to proceed. The criteria for judging the results are based on the San

Francisco Environmental Screening Levels developed by the San Francisco Regional Water Quality Control Board (SFRWQCB).

The results of the investigation demonstrated that the western half of the property has several areas impacted with lead, but the eastern half is apparently impacted only in one specific localized area. After reviewing the results with ACEH, a plan was developed to remove the artificial fill from the western side of the property and from targeted areas on the eastern portion of the site. The excavated material will be disposed appropriately and imported soil will be used to fill the site prior to construction. This Remedial Action Plan details the proposed scope of work for this phase of the project.

2.0 GEOLOGY/HYDROGEOLOGY

The City of Oakland has identified three Oakland-specific soil types that can be used for determining site specific target levels. Merritt sands are primarily located in flatlands to the west of Lake Merritt. They typically consist of fine-grained silty sand with lenses of sandy clay and clay. Merritt sands typically feature low moisture content and high permeability. The second category is the sandy silts, which are found throughout Oakland and consist of unconsolidated, moderately sorted sand, silt, and clay. These are considered moderate permeability deposits. Clayey silts are found primarily along the bay and estuary and typically contain organic material, peat, and thin lenses of sand. These are typically low permeability deposits.

Based on the drilling logs, the shallow sediments consist of a mixture of silty clay, clayey silt, sandy silt, and silty sand textured material, with varying amounts of brick, glass, gravel and concrete. This material may be characterized as clayey silt in the Oakland definition (though it is apparently imported fill and not a natural sediment unit). This fill layer extends from the surface to an average depth of about 4-5 feet below grade across most of the site and is underlain mostly by silty sand deposits that are taken to represent the Merritt sand unit.

Groundwater is present at approximately 4 feet below grade and reportedly flows to the southwest. Groundwater in this area is part of the East Bay Sub Basin of the Santa Clara Valley Basin (Number 2-9.04). Existing beneficial uses include municipal, agricultural, and industrial process supply; however, it is probable that the groundwater is not suitable for theses uses due to high total dissolved solid content (reportedly as high as 2,400 mg/L). The TDS levels may be naturally occurring due to the proximity to the bay.

The ACEH requested a survey of municipal wells within 2,000 feet of the property. Citadel ordered a Geo Check Report from Environmental Data Resources, Inc. (EDR) of Milford, Connecticut to provide this information. Results from the EDR report indicate there are no municipal wells located within a one-mile radius of the site.

3.0 GEOPHYSICAL SURVEY

As indicated in the PMP and approved by ACEH, a geophysical survey was conducted across the property to identify subsurface features of concern. Possible structures of concern identified in the PMP included an abandoned water supply well, an elevator shaft, sewer lines, and possible USTs. The geophysical survey included a combination of methods including terrain conductivity, magnetometer survey, ground penetrating radar, and electromagnetic line locating. The survey was conducted by Spectrum Geophysics of Burbank, California, on January 26th and 27th, 2011.

Results of the survey identified four anomalies that warranted further investigation. Each of these areas was investigated using a backhoe to expose the anomaly. In each case, a metal structure was found, but the precise nature of each was not immediately identified. However, these areas (identified as Pits 1-4) provided targets for boring installation and soil sampling. These areas were subsequently evaluated by excavation as an attempt to determine their depth, as reported later in this document. A fifth anomaly was also identified at this time but shallow excavation revealed no subsurface structure. Later excavation in March 2011 to 12 feet below grade (Pit 5) identified the properly abandoned water supply well.

4.0 SUBSURFACE SITE INVESTIGATION

On March 4TH and 5th, 2011, Citadel installed fifteen (15) soil borings (CB1 through CB15) to 4-6 feet below grade, using a hand auger tool. The borings were installed across the site to provide a reasonable profile of the soil conditions across the property. Some borings were targeted in areas of potential environmental concern, including the four (4) pits discussed above. During drilling of each boring, concrete, brick or other hard debris was encountered in the shallow artificial fill layer, which hindered drilling progress. In the later borings, a backhoe was used to excavate the upper couple of feet, providing better access for the hand auger tool. This significantly improved the drilling conditions, yet still allowed for representative soil sampling. In addition, soil samples were collected at 6 feet below grade in each excavated pit for laboratory analysis.

Five groundwater monitoring wells (MW1 through MW5) were also installed across the site using the hand auger tool. The wells were installed to 6.5 feet below grade and were constructed of 2-inch PVC. The wells were screened from 4 to 6.5 feet with 0.02-inch factory slotted casing. A filter pack consisting of #3 Monterey sand was installed from 3 to 6.5 feet, and the wells were sealed to the surface with Portland cement. The wells are only temporary and extend approximately one to two feet above grade for visibility. The borings and temporary wells were installed under permit with the Alameda County Public Works Agency (Permit #W2011-0057) and the surface seal was inspected in the field by and ACPWA Inspector.

Soil samples were collected at 1, 2, 3, 4, and 6 feet below grade in most borings for geologic logging and laboratory analysis. This provided a representative profile of the artificial fill layer both in cross section and in the lateral coordinate directions. Each sample was screened in the field for volatile emissions using a photo-ionization detector (PID). The samples were collected in glass laboratory jars and sealed with Teflon tape and threaded lids. The samples were immediately placed on ice pending delivery to the California Department of Health Services (DHS) certified laboratory.

The samples were tested for carbon chain hydrocarbons corresponding to gasoline, diesel fuel, and oil weights (C5-C12, C13-C24, and C25-C40 ranges, respectively) by EPA Method 8015M and Title 22 heavy metals (CAM) by EPA Method 6010. Three select soil samples were also analyzed for volatile organic compounds (VOC) by EPA method 8260B (full scan) and for semi-volatiles (SVOC) by EPA Method 8270C. CalTech Environmental Laboratories of Paramount, California analyzed the samples.

5.0 LABORATORY ANALYSIS

Soil Sampling Results

There were no VOCs or SVOCs detected in the soil samples (CB10-3, CB12-4, and Pit 2-6) analyzed by the laboratory. The results of the carbon chain soil analysis indicated several samples had detectable levels of petroleum hydrocarbons, though most had very low or less than detectable values. The laboratory data was compared to the SFRWQCB ESL guidelines for petroleum hydrocarbons. The ESLs are screening values that are protective of groundwater, terrestrial biota, and human health concerns, and they are very conservative, especially when evaluating shallow soil (<10 feet below grade). Results indicated three soil samples had oil-range hydrocarbon concentrations in excess of the ESL (370 mg/Kg) and two samples had concentrations in excess of the diesel-range values (100 mg/Kg). The maximum concentrations were 740 mg/Kg for oil-range hydrocarbons and 160 mg/Kg for diesel-range (both in sample CB12-4). Soil sample Pit 2-6 was the only other location with oil and diesel range hydrocarbons that exceeded the ESL's. No gasoline range hydrocarbons were detected in any of the soil samples. These results are summarized in **Table 1**.

The results of the heavy metal analysis indicated detectable levels of 10 heavy metals including barium, cadmium, chromium, cobalt, copper, lead, mercury, nickel, vanadium, and zinc. The concentrations were compared to the heavy metal ESLs and results indicated at least one sample contained barium, cadmium, copper, lead, mercury, and vanadium in excess of the respective ESL. Except for non-detectable values, every concentration exceeded the vanadium ESL guideline (of 16 mg/Kg).

However, the primary concerns for this site are probably the lead and mercury levels. Lead was detected across the site in previous investigations and the artificial fill is suspected of containing significant values of lead in spots. The highest lead concentration was 2,400 mg/Kg, detected in sample CB9-6. The ESL for lead in shallow soil is 200 mg/Kg, and 13 samples exceeded this threshold. However, the distribution is uneven across the site and many samples had very low or less than detectable levels. In addition, the concentrations between one-foot intervals could vary widely within a single boring. This suggests hot-spots of lead contamination that are spatially isolated.

The results of the mercury analysis in soil were more understated - just three samples had concentrations that exceeded the mercury ESL (1.3 mg/Kg). These samples CB11-1, CB11-2, and CB15-1 are all located in the upper two feet of soil, situated along the northern margin of the property. These data suggest the mercury impact is very isolated and can be readily accessed and removed. The laboratory results from heavy metals are summarized in **Table 1A**.

Groundwater Sampling Results

On March 5, 2011, groundwater samples were collected from the five (5) new groundwater monitoring wells. The samples were collected 24 hours after well installation with no pre-purging before sampling. The samples were collected using disposable Teflon hand bailers and were stored in laboratory supplied containers appropriate for the specific analyses. The samples were tested for carbon chain hydrocarbons corresponding to gasoline, diesel fuel, and oil weights (C5-C12, C13-C24, and C25-C40 ranges, respectively) by EPA Method 8015M and volatile organic compounds (VOC) by EPA method 8260B (full scan). In addition, two samples, MW4 and MW5, were tested for semi-volatiles (SVOC) by EPA Method 8270C. CalTech Environmental Laboratories of Paramount, California analyzed the samples.

Results indicated one sample had detectable levels of oil-range hydrocarbons, with 2,400 µg/L. This level exceeds the ESL guideline of 210 µg/L for heavy hydrocarbons. No other petroleum hydrocarbons, VOC, or SVOC were detected by analysis. These results are summarized in **Table 2**.

Summary of Results

This investigation was supplemental to the PMP prepared for the site in 2008. The scope of work included identifying unknown subsurface structures using a geophysical survey. The structures were uncovered by excavation, and soil sampling was conducted to define limited soil contamination, mostly by lead, with Pit 2 also having moderate levels of oil-range hydrocarbons.

In addition, the artificial fill layer that covers much of the site to a depth of about 4 feet was investigated and profiled by installing 15 soil borings across the property. The fill has numerous hot spots of lead contamination and limited zones of mercury, and other heavy metal contamination. Three zones of contamination with hydrocarbon levels that exceed ESLs were also identified within the fill. Five groundwater wells were installed at the site and testing of groundwater indicated just one sample had detectable levels of hydrocarbon, with 2,400 µg/L oil-range hydrocarbons.

6.0 REMEDIATION CONSIDERATIONS

The investigation identified at least three environmental issues which need to be resolved as the redevelopment plans are considered. The first is resolution of the subsurface metal structures identified by the geophysical survey and the excavation pilot program. Three of the pits had low but actionable levels of soil contamination in the fill material, but the primary concern is removal of the structures to enable construction and allow access to native soil in deeper intervals. One of the pits, Pit 4, requires further excavation to allow removal of the structure.

The artificial fill material requires additional consideration. Portions of the fill material contain significant concentrations of lead with apparently less significant concentrations of petroleum, mercury, and cadmium. In some areas, sediments below the fill contain elevated metals (primarily lead) and petroleum concentrations. The uneven distribution of significant levels of lead makes mitigation of this issue difficult because there can be no assurance that all impacted areas were addressed. However, given the density of sampling in this investigation, the removal of several hot spots of lead and/or mercury by discrete excavation is arguably a reasonable attempt at mitigating the issue. Given the sensitive nature of the proposed development, it would be advantageous to remove as much of the artificial fill as possible to resolve the issue and allow for closure.

Finally, the condition of the underlying groundwater is an environmental concern. The results from groundwater sampling of monitoring wells suggest that groundwater is impacted in an isolated zone with oil-range hydrocarbons in the vicinity of MW5. Although the ESLs for soil were exceeded, the dissolved levels are relatively low. If the extent of contamination is limited and can be demonstrated to be stable over time, this case is a good candidate for closure. In addition, if the soil around MW5 was excavated to a reasonable extent, the dissolved levels could improve dramatically, and this issue may be resolved with little effort.

7.0 SUBSURFACE METAL STRUCTURES

In late March 2011, each of the four pits (Pit 1-4) was further investigated and the metal structures were removed using an excavator. Pits 1 and 2 were apparently structural pilings that extended to about 12 feet below grade. Pit 3 was identified as the elevator piston and extended to about 15 feet below grade. Pit 4 was identified as a connection to the sewer system. An additional pit, Pit 5, was excavated to 12 feet below grade near the southeast corner of the site. This excavation identified the properly abandoned water supply well.

Confirmation soil samples were collected from each Pit to gauge the quality of soil after removal of the structures. Results indicated just one sample had actionable levels of contamination. Sample Pit 4-2 had 310 mg/Kg lead. This area will require additional excavation for removal of the lead-impacted soil.

8.0 REMEDIAL ACTION PLAN - SOIL EXCAVATION

The results of the subsurface investigation demonstrated that the western half of the property has many areas impacted with lead, but the eastern half is apparently impacted only in one specific area. After reviewing the results with ACEH, a plan was developed to remove the artificial fill from the western side of the property and from targeted areas on the east. The excavated material will be disposed appropriately, and imported soil will be used to fill the site prior to construction. An environmental excavation contractor will be selected to conduct this phase of the work.

Removal of the soil in the western half of the property will require excavation of approximately 4,200 cubic yards of material that includes brick, wood, concrete, and glass. The material will be stockpiled and separated to the extent possible into classifications of regulated, hazardous, and non-hazardous waste. Periodic sampling of the spoils will be used to characterize the material for profiling. The final criteria required for the removal, waste classification, and ultimate disposal of the export materials will be determined and approved by the receiving facility and conducted in accordance with local, state and federal regulations. Final confirmatory samples will be evaluated with the Environmental Screening Levels (ESLs) developed by SFRWQCB as health risk and protective based guideline values for shallow soil (<10 feet and groundwater is not usable for drinking supply), with the exception of vanadium, which is not applicable to this remediation.

Planning and site preparation for this phase of the project will include the following tasks:

The Owner and Contractor will determine standard operating procedures (SOP) with chain of command protocols for implementation of the soil removal action including removal of hazardous waste. The written SOP will include Names and Positions of individuals involved with soil management and their specific roles.

Contractor will provide a site-specific storm water management plan, as required in the Project Manual and according to local requirements for construction projects. The storm water management plan will be submitted along with the Site Operations Plan.

Contractor will prepare a Storm Water Pollution Prevention Plan (SWPPP) and maintain conditions specified in that plan to control surface water runoff. Contractor shall supply, install, and maintain all erosion control items including silt fences, straw wattle, sand bags, drain inlet filters, etc. Contractor shall provide all necessary SWPPP reports and monitoring before, during, and after each rain event during the rough grading scope of work.

Contractor will provide a site-specific remediation contingency plan, including a Spill Control and Countermeasures Plan in accordance with 40 CFR 264, subtitle D.

Contractor will obtain a Grading Permit.

Contractor will prepare a Traffic Control Plan and maintain Traffic Control as appropriate and as required by City and/or County.

Contractor will prepare logistical plans for truck traffic into and out of the site, including but not limited to:

- Stabilize and widen existing access for construction traffic.
- Construct on-site roads as necessary.
- Identify underground and overhead utilities and obstacles.
- Construct temporary facilities for personnel, decontamination facilities, and parking.
- Construct a truck loading area according to requirements.

The excavation location and position will be delineated with stakes and then the excavation positions will be recorded on a site map as measured from GPS coordinates, permanent site features such as property boundaries or other permanent markers. A licensed surveyor should be assigned for this task.

Contractor will notify USA Dig Alert at least 48 hours prior to excavation, as required by law. The General Contractor will procure the services of subcontractors for site utility clearance in excavation areas, soil excavation, soil transportation, and soil disposal. Contractor must confirm that utilities located in the area of the proposed excavation have been properly decommissioned.

Contractor will identify the location and alignment of underground and overhead utilities and obstacles. The Contractor will review applicable as-built drawings to identify the location of potential subsurface utilities and/or obstructions in the subject area. The Contractor will arrange for decommissioning of utilities identified in the area of the proposed excavations.

The Owner will obtain an EPA identification number for profiling of excavated soil for off-site disposal.

The Contractor will schedule trucks to remove soil and associated bulk materials from the site and transport to disposal facility(s). Contractor will arrange delivery of the soil at the disposal facilities.

The Contractor will make appropriate regulatory notifications including Cal-OSHA and Air Quality notifications, if required.

The Contractor shall obtain a current Cal/OSHA Excavation permit, if required, and a copy of this permit and a copy of the letter notifying Cal/OSHA that the permit will be used at the job site are to be given to the Site Manager prior to excavating deeper than five (5) feet below existing grade.

The Contractor is responsible for preparation of a Health and Safety Plan and enforcing the Health and Safety Plan for site development activities.

The Contractor will remove trees, debris and any other obstructions in excavation areas prior to soil removal work.

The Contractor will clear a path to allow soil transport trucks to be loaded at each area of excavation. Stabilize and widen existing access for construction traffic.

The Contractor will construct temporary facilities for personnel, decontamination facilities, parking, and truck loading area as necessary for the project.

The Contractor will provide fencing around the excavation areas for Site security, which is of the utmost importance to protect the public, secure equipment and materials left on site, eliminate the chance of spreading contamination, and assure worker safety.

The Contractor will delineate and divide the work area into an exclusion zone, a contamination reduction zone, and a support zone. The exclusion zone will be maintained around the work area by placing signs, barricades, and/or yellow tape as necessary. The size and the shape of the exclusion zone will be determined by the site conditions; it will be large enough to include the potentially hazardous zones around the site.

The Contractor will place yellow caution barricade tape around the excavation areas any time the work area is left unattended and until the excavation is backfilled to its original ground surface level. Equipment and materials will be stored inside the barricaded area to secure them after hours. Flammable liquid will be stored in approved designated locations only under the direction of the Site Manager.

Excavation Plan

The strategy for soil removal will be to initiate excavation on the eastern side of the property with excavation to about 5 feet bgs in the vicinity of Boring CB2. Then the excavation will proceed gradually to the westward, and the eastern portion of the site can be used for soil stockpiling as indicated on **Figure 4**. Soil will be removed from the site regularly to expedite the procedure, so frequent laboratory analysis will be required of the spoils, sidewalls, and bottom of the excavation for verification and profiling. The ESLs developed by SFRWQCB as health risk and protective based guideline values for shallow soil will be utilized as remediation goals, with the exception of vanadium, which is not applicable to this remediation. These results will be used to direct the fate of the excavated soil based on its category. The waste stockpiles will be managed on-site in accordance with applicable regulatory requirements including, daily inspection and maintenance of stockpile cover including monitoring for VOCs with a PID and dust suppression.

Prior to contaminated soils being disposed off site, a hazardous waste determination for those soils must be made. The hazardous waste determination for metals contamination in soil should be evaluated using the following criteria:

A. The TTLC criteria (Total Threshold Limit Concentration; State standard: Title 22 CCR, Section 66261.24)

B. For any material in which the metal concentrations are greater than the listed TTLC values, the materials will be considered a hazardous waste upon removal and must be disposed of accordingly.

C. Ten times the STLC criteria (Soluble Threshold Limit Concentration; State standard: Title 22 CCR, Section 66261.24). For any material where the TTLC results are greater than ten times the listed STLC values but less than the listed

TTLC values, the sample should be re-analyzed by the Waste Extraction Test procedure. If the resulting STLC value exceeds Table II of 66261.24, the materials will be considered a hazardous waste upon removal and must be disposed of accordingly.

D. Twenty times the TCLP criteria (Toxic Characteristic Leachate Procedure; Federal Standard 40 CFR 261.24 and 22 CCR 66261.24). For any material where the metal concentrations are greater than twenty times the TCLP listed values but less than the TTLC listed values, the sample should be re-analyzed by the TCLP procedure. If the resulting TCLP value exceeds Table I of 66261.24, the materials will be considered a hazardous waste upon removal and must be disposed of accordingly.

Work for excavation and loading will be performed only within hours set forth by the local jurisdiction. This includes moving equipment to and from job site, repairs to equipment, and delivering of parts, supplies and fuel. The proposed working hours are from 7:00 am to 6:00 pm, hauling hours from 8:00 am to 4:00 pm, Monday through Saturday. The contractor will follow the city approved haul route. Ingress and egress shall be per approved haul route. Contractor may utilize double bottom dumps, end dumps, super 10 wheeler, and 10 wheeler trucks as necessary to complete this scope of work.

Health and Safety

Contractor will develop a site-specific Health and Safety Plan (HASP) for work conducted at the site as required pursuant to the regulations in *29 Code of Federal Regulations (CFR) Part 1910.120 and California Code of Regulations (CCR), Title 8, Section 5192.* The HASP will be prepared for the work described in this RAP. The HASP will include material safety data sheets (MSDSs) or similar information for site-specific compounds (petroleum hydrocarbons, heavy metals) and details regarding physical and chemical hazards that could be encountered at the site. The HASP will also include a map showing directions between the site and the local hospital or emergency center.

Contractor staff will be provided a copy of the HASP. Contractor and subcontracted personnel involved with the proposed field work will review proper health and safety practices presented in the HASP prior to initiating field work and on a daily basis in the morning before field work begins.

The site development requires that approximately 4,400 cubic yards of soil be excavated and exported from the site. The soil has been profiled for general waste characteristics. The environmental manager will monitor the excavation as conducted by the Contractor and direct the excavation, characterization, loading for off-site disposal of excavated materials.

The Contractor’s hazmat certified operator will excavate soil at the direction of the Owner's environmental manager.

All workers, visitors and all other people at this site must abide by the rules and procedures presented in the Site-Specific HASP.

The Contractor is responsible for the Health & Safety of their employees and their subcontractors. The Contractor and their subcontractors are responsible for preparation and enforcement of a Health & Safety Plan for all activities associated with their work at this site.

Prior to excavation, Contractor will verify the appropriate underground utility locating parties have completed the location and depths of underground utilities within the excavation limits and peripheral area. Excavation will not commence until all underground utilities have been identified and field located / staked. Due to the depth of the excavation, sloping and shoring requirements will be enacted per OSHA 29CFR1926.651. Temporary and permanent shoring is not planned for this site. No person is allowed to enter an excavation at depth of 4-5 feet without proper sidewall slopes or shoring.

Excavated soil shall be loaded into appropriately licensed dump trucks for off-site disposal. Commonly utilized excavation methods and equipment shall be utilized for excavation of soil for removal. The equipment to be used for contaminated soil movement will be dedicated to contaminated soil movement until all identified contaminated soil has been dealt with appropriately.

Equipment needs for the other project operations will be performed by other equipment to minimize a potential spread of contamination. When the designated source areas have been remediated, all contaminated equipment will be decontaminated over visqueen and the contaminated debris and visqueen placed into the last truck heading for the appropriate disposal site. Clean material or geofabric will be placed on the ground surface at the source areas to provide an additional clean barrier to keep the tracks clean. This engineering control is to prevent spread of COC's and reduce equipment contamination. Best Management Practices for dust control measures will be followed for soil excavation and truck loading activities. Excavation and soil loading will be stopped when wind gusts exceed 25 miles per hour.

The contractor will use a water truck to lightly spray work areas as necessary to control fugitive dust and the Owner's environmental manager will monitor the work zone using a handheld photo ionization detector (PID) and stationary, strategically positioned (upwind and downwind) digital aerosol dust monitors that record the concentration of airborne dust at various locations around the excavation and soil loading areas.

SPECIAL NOTIFICATIONS: All construction activities located within 1,000 feet of sensitive receptors (defined as schools, playgrounds, daycares, and hospitals) shall notify each of these sites in writing at least 30 days before construction activities begin.

Demolition and/or excess construction materials will be separated on-site for reuse/recycling or proper disposal. During grading and construction, separate bins for recycling of construction materials will be provided on site. Materials with recycled content will be used in project construction.

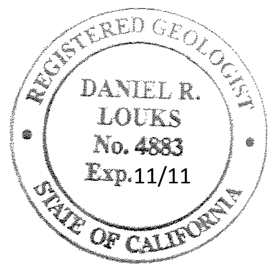
9.0 LIMITATIONS

The information and opinions rendered in this report are exclusively for use by the Client. Citadel Environmental Services, Inc. will not distribute this report without the Client's written consent, except as may be required by law or court order. The recommendations expressed in this report took into consideration the purpose and scope of this limited assignment. We accept responsibility for the competent performance of our duties in executing the assignment and preparing this report in accordance with the normal standards of our profession, but disclaim any responsibility for consequential damages resulting from inaccuracies in information provided by the Client, federal, state, county, or local regulatory agencies, etc.

10.0 SIGNATURE & PROFESSIONAL CERTIFICATION

I certify that this document has been prepared under my direction and/or supervision, and to the best of my knowledge and belief, the information submitted is accurate and complete.

CITADEL ENVIRONMENTAL SERVICES, INC.



Dan Louks
California Professional Geologist #4883

Table 1
Summary of Soil Sampling Results (mg/Kg)

Sample ID	VOC	SVOC	C5-C12 Hc	C13-C24 Hc	C25-C40 Hc
CB1-1	---	---	ND	ND	47
CB1-2	---	---	ND	ND	ND
CB1-3	---	---	ND	ND	44
CB1-4	---	---	ND	ND	52
CB2-1	---	---	ND	ND	ND
CB2-2	---	---	ND	ND	ND
CB2-3	---	---	ND	ND	ND
CB2-4	---	---	ND	ND	ND
CB3-1	---	---	ND	ND	ND
CB3-2	---	---	ND	ND	33
CB3-3	---	---	ND	ND	ND
CB3-4	---	---	ND	ND	37
CB4-1	---	---	ND	ND	ND
CB4-2	---	---	ND	ND	38
CB4-3	---	---	ND	ND	ND
CB4-4	---	---	ND	ND	ND
CB5-1	---	---	ND	ND	ND
CB5-2	---	---	ND	ND	ND
CB5-3	---	---	ND	ND	ND
CB5-4	---	---	ND	ND	ND
CB6-1	---	---	ND	ND	ND
CB6-2	---	---	ND	ND	51
CB6-3	---	---	ND	ND	ND
CB6-4	---	---	ND	ND	ND
CB7-1	---	---	ND	ND	ND
CB7-2	---	---	ND	ND	ND
CB7-3	---	---	ND	ND	ND
CB7-4	---	---	ND	ND	ND
CB8-1	---	---	ND	ND	ND
CB8-2	---	---	ND	ND	ND
CB8-3	---	---	ND	ND	ND
CB8-4	---	---	ND	ND	ND
CB8-6	---	---	ND	ND	ND
ESL	***---***	***---***	***100***	***100***	***370***

Table 1 - continued
Summary of Soil Sampling Results (mg/Kg)

Sample ID	VOC	SVOC	C5-C12 Hc	C13-C24 Hc	C25-C40 Hc
CB9-1	---	---	ND	ND	ND
CB9-2	---	---	ND	ND	ND
CB9-3	---	---	ND	ND	ND
CB9-4	---	---	ND	82	190
CB9-6	---	---	ND	37	96
CB10-1	---	---	ND	17	58
CB10-2	---	---	ND	ND	ND
CB10-3	ND	ND	ND	**200**	**470**
CB10-4	---	---	ND	12	54
CB10-6	---	---	ND	ND	ND
CB11-1	---	---	ND	ND	57
CB11-2	---	---	ND	62	140
CB11-3	---	---	ND	ND	69
CB11-4	---	---	ND	ND	ND
CB11-6	---	---	ND	ND	ND
CB12-1	---	---	ND	ND	58
CB12-2	---	---	ND	48	290
CB12-3	---	---	ND	96	**460**
CB12-4	ND	ND	ND	**160**	**740**
CB12-6	---	---	ND	ND	88
CB13-1	---	---	ND	ND	68
CB13-2	---	---	ND	ND	ND
CB13-3	---	---	ND	ND	ND
CB13-4	---	---	ND	ND	ND
CB14-1	---	---	ND	17	ND
CB14-2	---	---	ND	58	ND
CB14-3	---	---	ND	ND	ND
CB14-4	---	---	ND	ND	ND
CB15-1	---	---	ND	ND	ND
CB15-2	---	---	ND	ND	66
CB15-3	---	---	ND	ND	87
CB15-4	---	---	ND	ND	ND
ESL	***---***	***---***	***100***	***100***	***370***

Table 1 - continued
Summary of Soil Sampling Results (mg/Kg)

Sample ID	VOC	SVOC	C5-C12 Hc	C13-C24 Hc	C25-C40 Hc
MW1-6	---	---	ND	ND	ND
MW2-6	---	---	ND	ND	ND
MW3-6	---	---	ND	ND	130
MW4-6	---	---	ND	ND	ND
MW5-6	---	---	ND	ND	ND
Pit 1-6	---	---	ND	ND	ND
Pit 2-6	ND	ND	ND	**140**	**440**
Pit 3-6	---	---	ND	ND	73
Pit 4-6	---	---	ND	ND	ND
ESL	***---***	***---***	***100***	***100***	***370***

Notes: VOC - volatile organic compounds analyzed by EPA Method 8260B. SVOC -semi volatile organic compounds analyzed by EPA Method 8270C. Environmental Screening Levels (ESLs) developed by SFRWQCB as health risk and protective based guideline values for shallow soil (<10 feet and groundwater is not usable for drinking supply). Taken from Table B1 - Residential Use. .

Table 1A: Summary of Heavy Metal Results (mg/Kg)

Sample ID	Barium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Nickel	Vanadium	Zinc
CB1-1	150	1.2	42	13	51	28	0.081	49	43	78
CB1-2	180	1.2	53	18	61	33	0.095	58	68	100
CB1-3	330	1.5	68	20	80	94	0.19	69	66	150
CB1-4	310	1.3	50	64	120	47	0.083	60	47	120
CB2-1	120	1.2	50	15	48	**740**	0.75	97	40	54
CB2-2	190	1.4	78	23	62	19	0.091	79	60	84
CB2-3	120	ND	40	11	48	ND	ND	50	37	57
CB2-4	180	1.3	41	9.8	56	110	0.074	50	74	120
CB3-1	320	1.4	52	16	76	49	0.052	61	62	140
CB3-2	340	**3.3**	42	15	58	39	0.061	96	47	87
CB3-3	160	ND	43	10	45	41	0.063	45	44	66
CB3-4	160	ND	80	11	44	8.7	0.059	76	75	65
CB4-1	170	**1.9**	41	14	55	11	0.077	50	44	70
CB4-2	230	ND	62	17	58	56	0.11	130	100	75
CB4-3	140	ND	48	12	52	12	0.053	45	50	67
CB4-4	160	ND	46	11	53	40	0.064	46	56	84
CB5-1	260	ND	22	15	64	23	0.066	35	60	100
CB5-2	180	1.5	38	12	54	3.6	ND	46	42	57
CB5-3	120	ND	50	10	45	ND	ND	40	44	30
CB5-4	120	ND	37	9.7	45	ND	ND	37	43	44
CB6-1	300	1.5	30	20	77	56	0.078	44	74	120
CB6-2	170	1.5	41	15	65	13	0.058	63	42	75
CB6-3	160	ND	43	10	44	ND	ND	36	47	38
CB6-4	140	ND	52	10	47	ND	ND	48	47	32
CB7-1	140	1.4	41	16	65	ND	0.064	69	33	59
CB7-2	180	1.6	37	13	60	2.4	0.089	54	39	60
CB7-3	89	ND	47	10	41	ND	ND	36	47	20
CB7-4	190	ND	54	16	62	ND	ND	62	50	59
CB8-1	170	**1.7**	54	16	66	35	0.12	63	53	91
CB8-2	550	1.4	20	8.4	87	98	0.36	32	44	82
CB8-3	460	ND	25	11	81	**830**	0.87	32	41	380
CB8-4	810	ND	16	7.4	96	170	0.34	20	45	110
CB8-6	400	**1.7**	43	7.6	120	**530**	0.62	33	51	150
ESL	***750***	***1.7***	***750***	***40***	***230***	***200***	***1.3***	***150***	*****	***600***

Table 1A – continued: Summary of Heavy Metal Results (mg/Kg)

Sample ID	Barium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Nickel	Vanadium	Zinc
CB9-1	180	1.6	41	15	70	46	0.093	55	45	98
CB9-2	290	1.4	66	18	120	180	0.29	110	120	160
CB9-3	320	1.5	51	20	**300**	**590**	1.1	**180**	240	270
CB9-4	**1,100**	1.4	20	15	96	160	0.49	32	110	68
CB9-6	430	ND	42	10	63	**2,400**	0.80	31	72	98
CB10-1	360	ND	35	17	73	25	0.064	48	84	100
CB10-2	290	ND	31	16	90	110	0.084	43	69	160
CB10-3	860	**1.8**	27	15	98	95	0.24	40	110	83
CB10-4	350	ND	50	18	55	20	0.21	44	77	26
CB10-6	120	ND	36	8.0	42	12	0.074	25	39	38
CB11-1	320	**2.0**	47	16	140	**300**	**1.3**	57	68	300
CB11-2	500	**2.6**	51	13	**360**	**710**	**2.8**	59	74	530
CB11-3	180	ND	46	8.8	51	120	0.75	31	48	82
CB11-4	100	ND	42	8.0	39	110	0.37	29	42	27
CB11-6	200	ND	46	8.4	81	150	0.52	33	47	76
CB12-1	280	1.5	28	17	75	54	0.074	39	70	140
CB12-2	200	ND	49	10	120	120	0.44	41	50	110
CB12-3	170	ND	42	11	81	96	0.17	54	59	99
CB12-4	520	ND	33	12	110	180	0.29	54	67	210
CB12-6	**890**	1.4	81	12	79	25	0.097	17	98	31
CB13-1	220	ND	57	14	77	34	0.083	55	51	99
CB13-2	190	ND	41	13	67	42	0.066	51	48	96
CB13-3	220	ND	31	15	68	40	0.079	42	57	99
CB13-4	110	ND	48	7.3	43	53	0.057	28	43	120
CB14-1	200	**1.7**	49	11	69	**340**	0.39	40	50	140
CB14-2	280	ND	49	12	75	190	0.16	40	53	120
CB14-3	300	ND	24	9.2	83	**270**	0.23	26	72	86
CB14-4	100	ND	34	7.1	44	84	0.073	25	39	37
CB15-1	220	ND	40	12	86	**830**	**1.7**	47	55	230
CB15-2	170	ND	49	14	87	140	0.12	49	58	170
CB15-3	130	ND	44	11	140	28	0.089	38	81	62
CB15-4	600	ND	39	9.7	60	61	0.082	35	59	100
ESL	***750***	***1.7***	***750***	***40***	***230***	***200***	***1.3***	***150***	*****	***600***

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Table 1A – continued: Summary of Heavy Metal Results (mg/Kg)

Sample ID	Barium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Nickel	Vanadium	Zinc
MW1-6	84	ND	55	11	40	ND	0.053	51	52	34
MW2-6	90	ND	39	8.5	41	ND	ND	30	39	24
MW3-6	120	ND	36	7.0	41	53	0.066	25	36	41
MW4-6	140	ND	22	7.7	52	**260**	0.25	24	34	78
MW5-6	25	ND	ND	ND	13	ND	ND	ND	ND	12
Pit 1-6	77	ND	40	6.6	37	ND	0.069	24	39	21
Pit 2-6	710	ND	18	18	100	130	0.13	34	110	44
Pit 3-6	280	ND	36	9.9	130	**300**	0.22	37	47	160
Pit 4-6	190	ND	54	7.3	53	**650**	0.38	28	44	130
ESL	***750***	***1.7***	***750***	***40***	***230***	***200***	***1.3***	***150***	*****	***600***

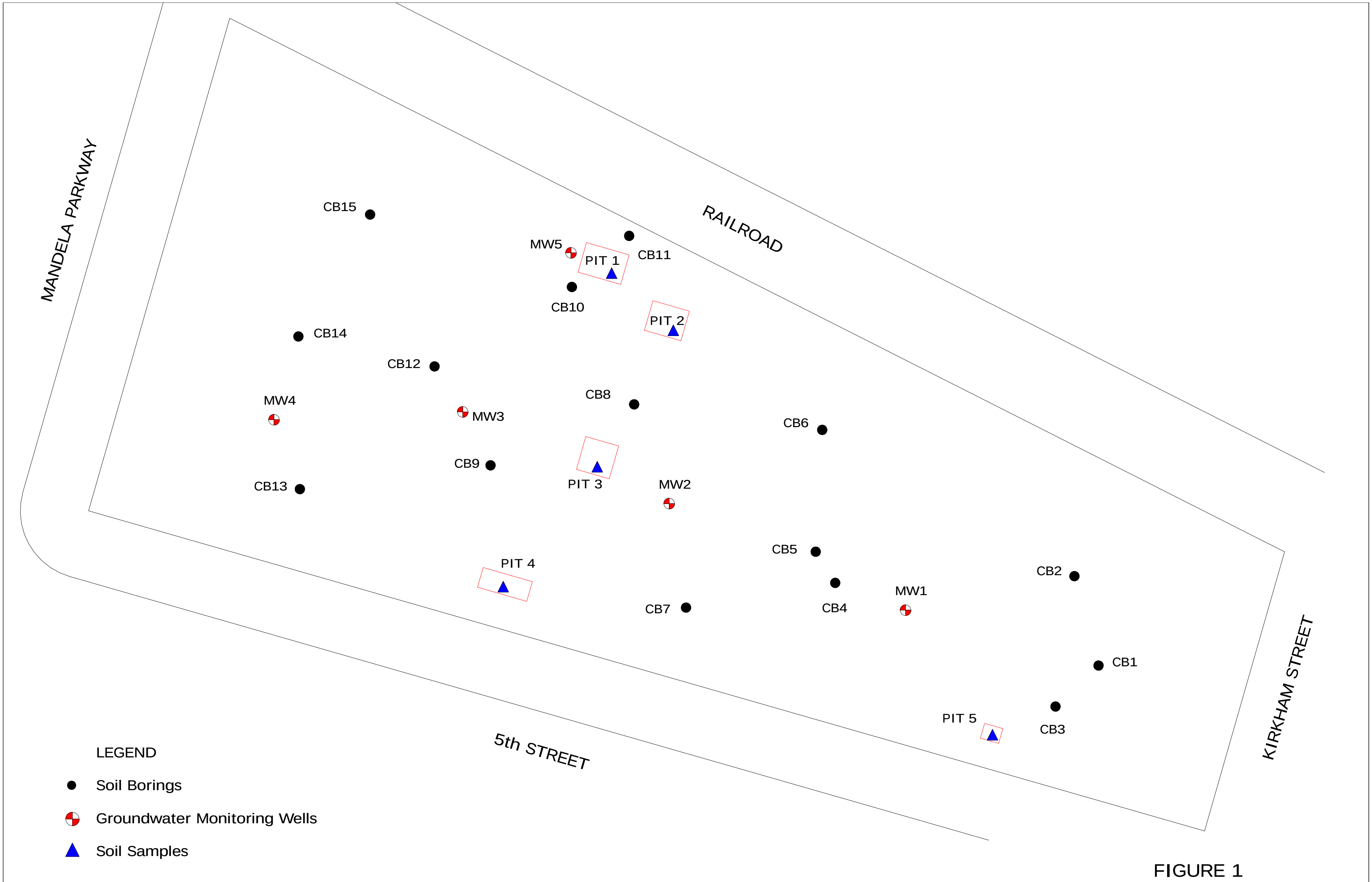
Notes: Environmental Screening Levels (ESLs) developed by SFRWQCB as health risk and protective based guideline values for shallow soil (<10 feet and groundwater is not usable for drinking supply). Taken from Table B1 - Residential Use. * ESL for Vanadium not applicable.

TABLE 2
Summary of Groundwater Sampling Results (µg/L)

Sample ID	VOC	SVOC	C5-C12 Hc	C13-C24 Hc	C25-C40 Hc
Sampled March 5, 2011					
MW1	ND	---	ND	ND	ND
MW2	ND	---	ND	ND	ND
MW3	ND	---	ND	ND	ND
MW4	ND	ND	ND	ND	ND
MW5	ND	ND	ND	ND	2,400
ESL	***--***	***--***	***210***	***210***	***210***

Notes: Environmental Screening Levels (ESLs) developed by SFRWQCB as health risk and protective based guideline values when groundwater is not a potential drinking water source (Table F-1b).

FIGURES



SCALE	APPROXIMATE SCALE IN FEET 0 40 80		NORTH
DRAWN BY	J. NICOLICH	3/7/11	N W E S
CHECKED BY	D. LOUKS	3/9/11	
REVISED BY			

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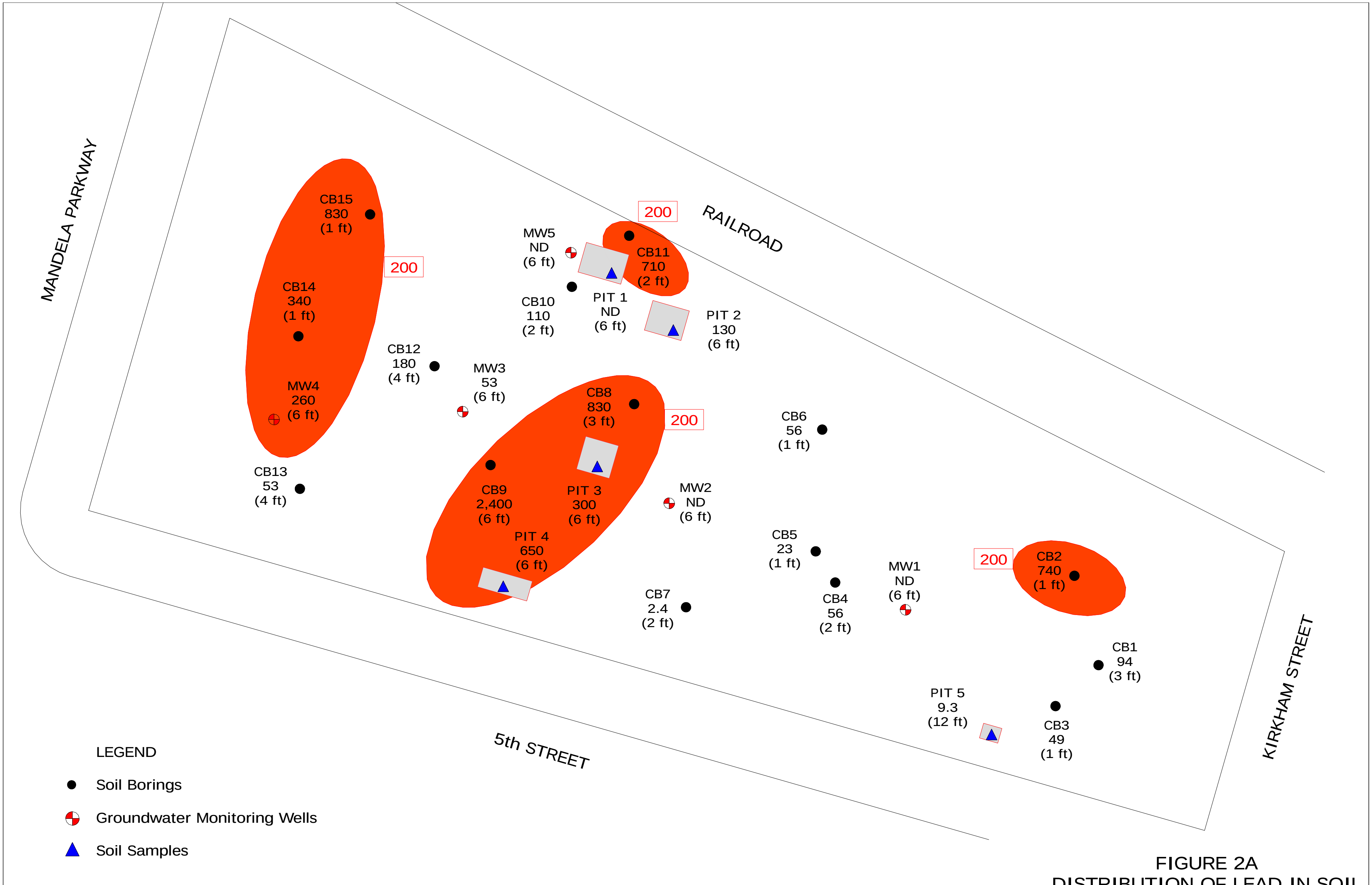
FIGURE 1
GENERAL SITE PLAN
COMMERCIAL PROPERTY
1396 5th Street
Oakland, California



SCALE	APPROXIMATE SCALE IN FEET 0 40 80		NORTH
DRAWN BY	J. NICOLICH	3/7/11	
CHECKED BY	D. LOUKS	3/9/11	
REVISED BY			

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FIGURE 2A
DISTRIBUTION OF LEAD IN SOIL
COMMERCIAL PROPERTY
1396 5th Street
Oakland, California

Maximum Lead Concentrations Shown
in mg/Kg (Depth of Sample).

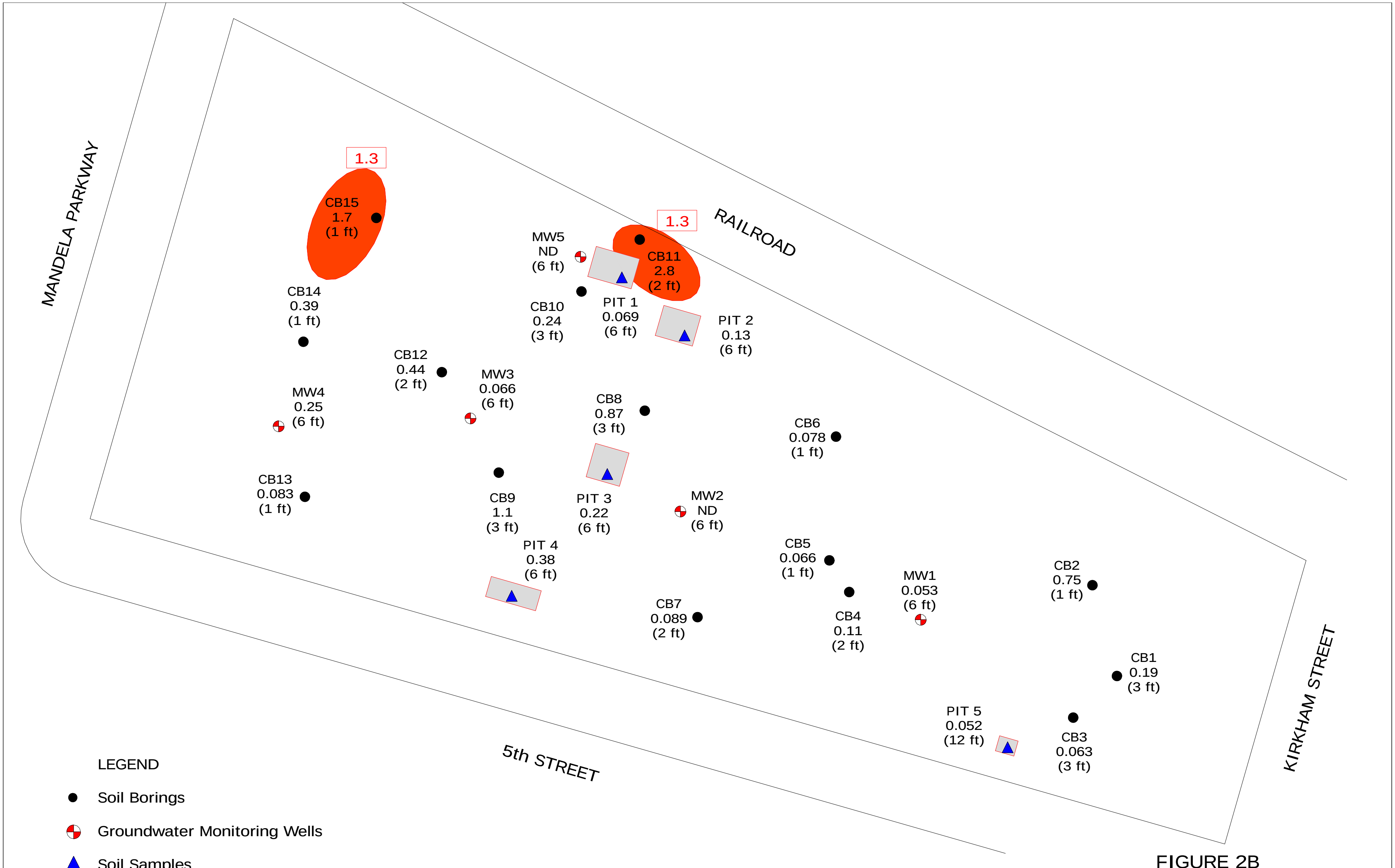

FIGURE 2B
DISTRIBUTION OF MERCURY IN SOIL
COMMERCIAL PROPERTY
1396 5th Street
Oakland, California

SCALE	APPROXIMATE SCALE IN FEET 0 40 80		NORTH
DRAWN BY	J. NICOLICH	3/7/11	N W E S
CHECKED BY	D. LOUKS	3/9/11	
REVISED BY			

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Maximum Mercury Concentrations Shown in mg/Kg (Depth of Sample).

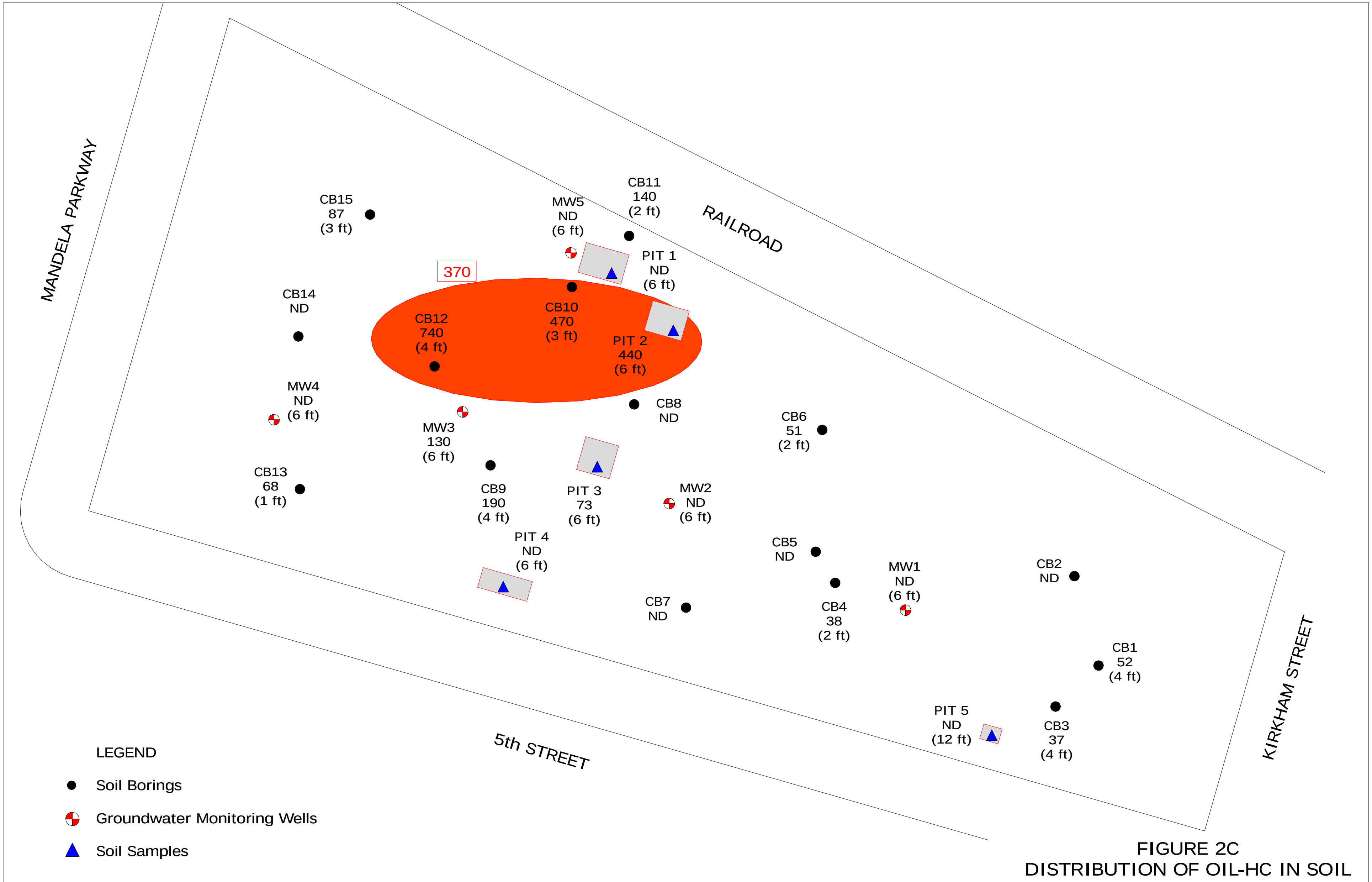

FIGURE 2C
DISTRIBUTION OF OIL-HC IN SOIL
COMMERCIAL PROPERTY
1396 5th Street
Oakland, California

Maximum Oil-Range Hydrocarbon Concentrations Shown in mg/Kg (Depth of Sample).

SCALE	APPROXIMATE SCALE IN FEET 0 40 80		NORTH
DRAWN BY	J. NICOLICH	3/7/11	N W E S
CHECKED BY	D. LOUKS	3/9/11	
REVISED BY			

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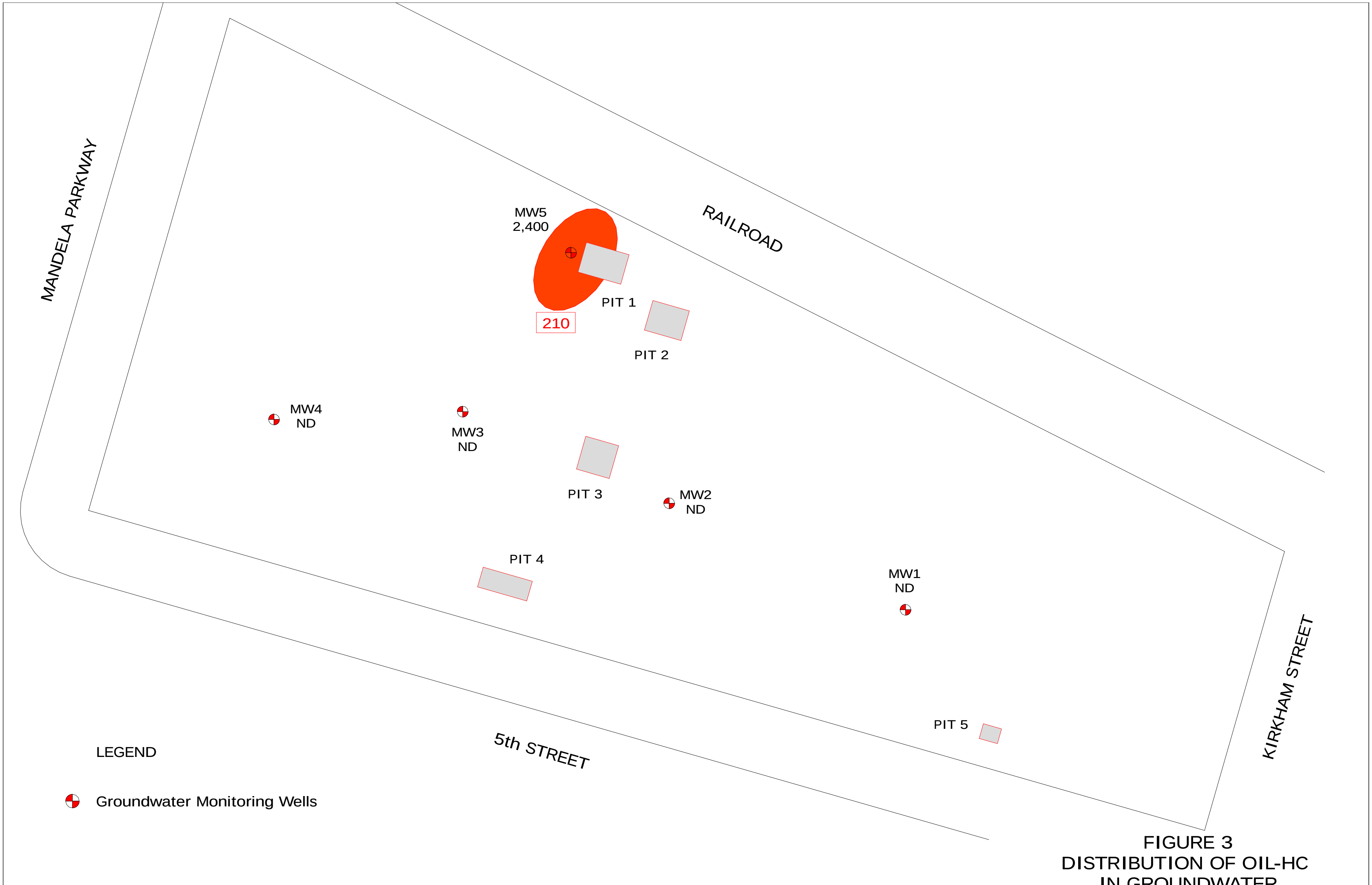

FIGURE 3
DISTRIBUTION OF OIL-HC
IN GROUNDWATER
COMMERCIAL PROPERTY
1396 5th Street
Oakland, California

Dissolved Oil-Range Hydrocarbon
Concentrations Shown in ug/L.

SCALE	APPROXIMATE SCALE IN FEET 0 40 80		NORTH
DRAWN BY	J. NICOLICH	3/7/11	N W E S
CHECKED BY	D. LOUKS	3/9/11	
REVISED BY			

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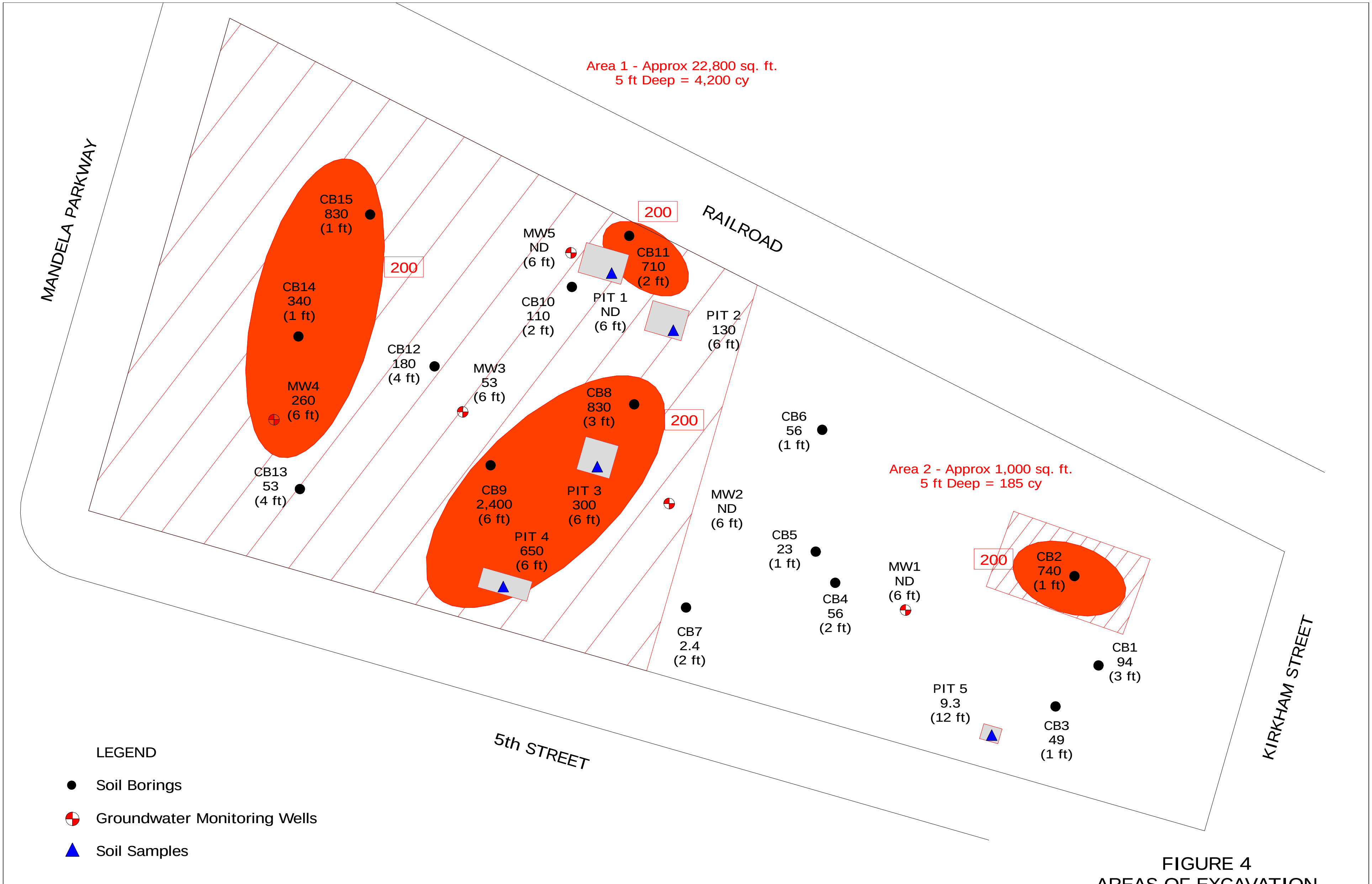

SCALE	APPROXIMATE SCALE IN FEET 0 40 80		NORTH
DRAWN BY	J. NICOLICH	3/7/11	N W E S
CHECKED BY	D. LOUKS	3/9/11	
REVISED BY			

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FIGURE 4
AREAS OF EXCAVATION
COMMERCIAL PROPERTY
1396 5th Street
Oakland, California

Maximum Lead Concentrations Shown in mg/Kg (Depth of Sample).