FUGRO

REVISED CORRECTIVE ACTION PLAN

1916 Webster Street
Alameda, California

Prepared For:

Housing Authority of the City of Alameda
701 Atlantic Avenue
Alameda, California 94501

Prepared By:

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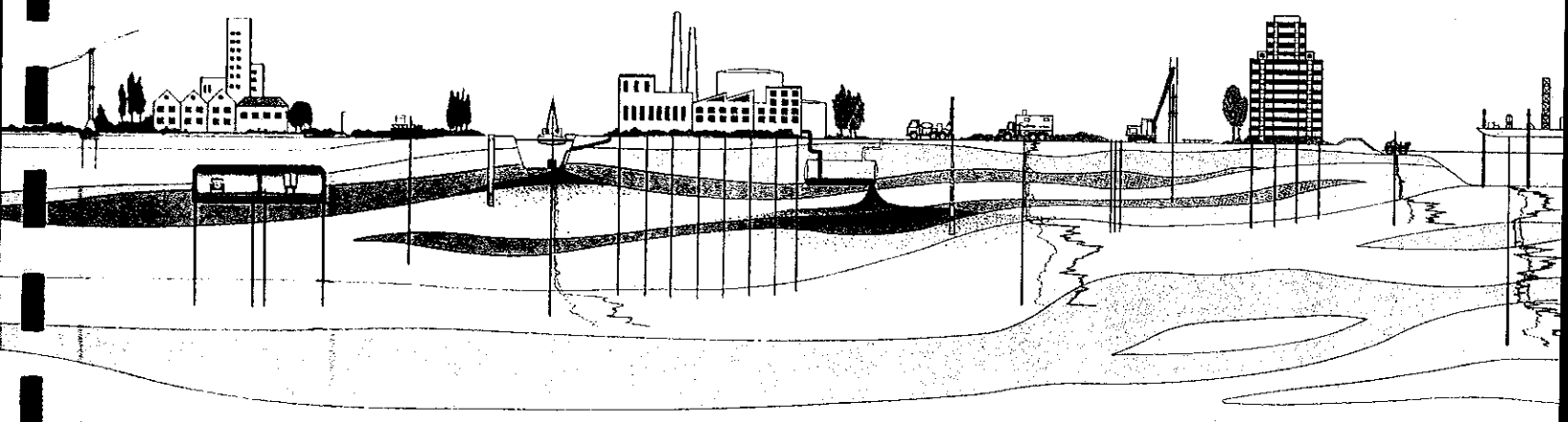
Fugro Project No. 9437-7623

NOVEMBER 1994



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November 9, 1994
Project No. 9437-7623

Ms. Sasha George
Housing Authority of the City of Alameda
701 Atlantic Avenue
Alameda, California 94501

Revised Corrective Action Plan
1916 Webster Street
Alameda, California

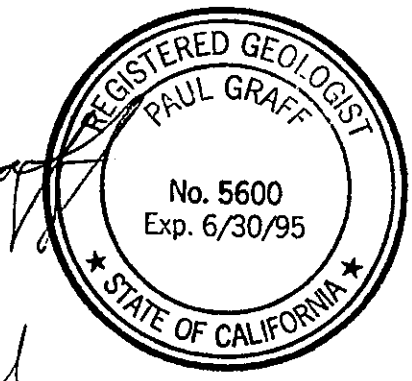
Dear Ms. George:

Fugro West, Inc. is pleased to provide the Housing Authority of the City of Alameda (AHA) with the enclosed Revised Corrective Action Plan which presents the results of the environmental assessment and interim remedial activities conducted at the AHA facility located at 1916 Webster Street in Alameda, California. These activities were authorized on June 22, 1994, and were performed in general accordance with the scope of services outlined in our Proposal No. 9437-7623, dated June 14, 1994.

We appreciate the opportunity to provide environmental services to the AHA on this project. If you have any questions concerning this report, or if we can assist you in any other matter, please contact us at (415) 296-1041.

Sincerely,

FUGRO WEST, INC.



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1.0 INTRODUCTION

Fugro West, Inc. (Fugro), has prepared this revised corrective action plan (RCAP) on behalf of the Housing Authority of the City of Alameda (AHA) for the site located at 1916 Webster Street in Alameda, California (Figure 1 - Site Location Map). Corrective action is proposed in response to requirements of the Alameda County Health Care Services Agency, Department of Environmental Health, Hazardous Materials Division.

The following sections include descriptions of the site background, site characterization and interim remedial actions performed to date, and discussions of remedial alternatives, including feasibility of each alternative, rationale for the selected alternative, and implementation of the selected alternative.

2.0 BACKGROUND

During July and August 1986, a 280-gallon underground storage tank (UST) was removed from the site, and an environmental investigation was conducted to determine the extent of petroleum hydrocarbon (hydrocarbon) impacted soils (Figure 2 - Site Map). A series of soil borings were drilled at the site and soil samples collected for laboratory analysis. Groundwater monitoring wells were installed in two of the borings, and groundwater samples were collected for laboratory analysis. According to the findings report, hydrocarbons remained in soil at locations north and east of the excavation, to a depth of at least six feet below ground surface (bgs). Hydrocarbons were identified in all soil and groundwater samples analyzed. Additional soil excavation conducted during September 1986 failed to remove the impacted soil completely.

Later investigations included drilling additional boreholes and installing one additional groundwater monitoring well. The groundwater was sampled on a quarterly basis and the results of the monitoring showed an apparent decrease in hydrocarbon concentrations at the downgradient perimeter of the impacted area. The results of the soil sampling showed that the affected soil did not extend beyond an area approximately 55 feet square extending to the north fenceline. Potential for hydrocarbons beneath the building was mentioned in the workplan but was not addressed in the investigation.

On February 10, 1994, a Corrective Action Plan (CAP) was produced for the site. The remedial activities proposed in the CAP included removing up to 160 cubic yards (yds^3) of soil, 50 yds^3 of which was expected to be impacted. Between March 3, and March 5, 1994, Environmental Science and Engineering, Inc. (ESE) excavated approximately 220 yds^3 of impacted soil and stockpiled it at the site. Laboratory analysis of soil samples collected from the perimeter of the excavation indicate that two areas of impacted soil still remained.

These areas include the southeast corner of the excavation where site structures prevent continued soil removal, extending north to within 15 feet of the fence line, and up to 35 feet east of the excavation. what was depth of excavation

Laboratory analysis of a groundwater sample collected from the excavation indicated that groundwater impacted by hydrocarbons still exists in the former UST location. This groundwater was not removed during the most recent excavation. Additionally, the vertical extent of impacted

soil has not been defined. Impacted soil below the water table may exist as a result of vertical fluctuation of the water table, which may cause the smearing and entrainment of undissolved hydrocarbons as a result of the adsorption of dissolved phase hydrocarbons to saturated soils.

In May of 1994, Versar, Inc. was contracted by the AHA to conduct a technical review of the current site conditions. In conjunction with the technical review, Versar prepared a discussion of remedial options for the site and recommendations for further actions. Based on this report, AHA prepared an Request for Proposal (RFP) to conduct additional characterization and remedial activities at the subject site. In June of 1994, Fugro was contracted to implement the first phase of the defined scope of services from the RFP. These tasks included:

Task 1.	Remove and dispose of stockpiled soil;
Task 2.	Install a soil vapor extraction system;
Task 3.	Close the excavation;
Task 4.	Conduct a groundwater assessment;
Task 5.	Amend the Corrective Action Plan; and
Task 6.	Continue groundwater monitoring activities.

The second phase of the defined scope of work includes the implementation of the Revised Corrective Action Plan.

3.0 SITE CHARACTERIZATION

Prior to performing field activities, Fugro personnel prepared a Health and Safety Plan (HASP) to document the potential health concerns associated with site activities. The HASP documented health hazards associated with the chemical constituents anticipated to be encountered, outlined emergency response procedures and identified personnel responsibilities in the event of an emergency response, in accordance with 29 CFR 1910 requirements.

3.1 Removal and Disposal of Stockpiled Soils

In March of 1994, ESE excavated approximately 220 yds^3 of petroleum hydrocarbon contaminated soils and stockpiled them at the subject site. The stockpiles were sampled by ESE and covered with visqueen. Composite soil samples collected by ESE and analyzed for Total Petroleum Hydrocarbons as gasoline (TPH(g)) and Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) indicated concentration ranging from 2.3 mg/kg to 2,100 mg/kg of TPH(g) and 0.12 mg/kg to 21 mg/kg of Benzene. Additional disposal characterization samples collected by Fugro were analyzed for TPH(g), BTEX, reactivity, corrosivity, ignitability, and lead. Analytical results indicated that the soils were required to be disposed of as non-hazardous petroleum contaminated soils.

On Saturday, July 16, 1994, 17 end dump trailers of soil were removed from the site. During the soil removal activities, Fugro personnel monitored air within the breathing zone and head space of stockpiled soils with a Photoionization Detector (PID). Table 1 (Soil Removal PID Readings), summarizes the levels detected. PID readings within the breathing zone did not exceed 3.2 ppm, while head space levels for stockpiled soils ranged from 12.5 ppm to 61.5 ppm. The soils were

transported by Den Beste Transporters to the Bay Area Tank and Marine (BATM) facility in San Francisco, California. A total of 330 yds^3 of soils were disposed of at the BATM facility. Appendix A (Stockpiled Soils Documentation) of this report includes laboratory analysis reports, field notes, and Hazardous Waste Acceptance Forms for Disposal of Petroleum Contaminated Soils.

3.2 Excavation Closure/Vapor Extraction System

Before backfilling the excavation, trenching for horizontal soil vapor extraction (SVE) piping was completed. A one-foot wide trench was excavated to permit the placement of the blank casing connected to the SVE slotted PVC casing. Additional trenching for the blank casing leading to the treatment compound at the northeastern corner of the site was also excavated.

Approximately one to four inches of water were present within the excavation zone. The variation in depth of the water was due to the irregular surface of the base of the excavation. Approximately 1,300 gallons of hydrocarbon impacted water was removed from the excavation using a vacuum tanker. The water was transported to Gibson Environmental in Redwood City and properly treated and recycled.

To facilitate the installation of a monitoring well ten feet downgradient from the former UST locations (within the excavation zone), a six foot section of steel casing was secured within the excavation to serve as a conduit for the installation of the monitoring well. The casing is 12 and three-quarter inches inside diameter, one-quarter-inch thick and was notched with eight, four-inch vertical torch cuts on the bottom eight inches to allow water to flow into the well if it rises above the base of the steel casing. In addition, a five-inch square notch was removed from the top of the casing to allow the end of a four-inch diameter blank PVC casing to enter into the side of the casing. This PVC will serve as a conduit for tubing required for the groundwater extraction system (Figure 3 - Groundwater and Vapor Extraction System Casings Installed).

Subsequently, backfilling of the excavation was initiated. As defined within the RFP, engineered pea gravel was used to backfill the excavation to a depth of ten inches below grade. When the excavation zone was filled to a depth of five feet below grade, a 15-foot horizontal proposed slotted PVC casing for later SVE was placed in the excavation and blank casing laid within the trench leading to the remediation system compound. Backfill activities were then completed to a depth of ten inches below grade. All casing for later SVE was placed a minimum of 18 inches below grade (Figure 4 - Section A-A' (Figure 3) - Horizontal Vapor Extraction Well).

The engineered pea gravel was covered with 0.006 inch (6-mil) thick plastic sheeting. A total of six inches of road base material was then placed in the excavation and trench and compacted using a 40-inch, four ton roller. This method of compaction used over the engineered pea gravel should provide greater than 90 percent compaction. Four inches of asphalt were placed to cover the excavation and trench. Appendix B (Excavation Closure/Dewatering Documentation) of this report includes field notes and water transportation/disposal documentation.

3.3 Groundwater Assessment

The following sections describe the placement of three groundwater monitoring wells to assist in further characterization of groundwater. In addition, the methodology and results of aquifer testing are discussed. Finally, groundwater monitoring activities are discussed.

3.3.1 Monitoring Well Installation

One groundwater extraction well (MW-4) was installed within ten feet downgradient of the previously excavated UST. The well was constructed of four-inch diameter schedule 40 PVC casing and extended to 15 feet bgs. The uppermost five feet of well construction material consisted of blank casing that was screw-threaded into a ten-foot section of 0.03-inch slotted screen,. The bottom of the well was covered with a threaded cap. A coarse clean sand was placed in the annular space around the screen from a depth of four feet to 15 feet bgs. A one-foot thick plug of bentonite pellets was placed around the well casing from three to four feet bgs. The remaining well annuls was filled with concrete. The top of the well was covered with a well monument box. The monument box is slotted to correspond to the notch in the steel casing to facilitate using MW-4 as an extraction well. To assist with aquifer testing activities, and characterization of the extent of groundwater impact, a second monitoring well (MW-5), of the same construction, was installed approximately 27-feet northeast of MW-4. Soil samples collected during the installation of the three monitoring wells were analyzed for TPH(g) and BTEX using EPA Method 8020 and 8015 Modified. Laboratory analysis of the samples collected reported concentrations of Benzene ranging from 0.08 mg/kg to 0.14 mg/kg in soils from MW-5 and MW-4, respectively. The soil sample collected from MW-4 reported a concentration of 1.7 mg/kg TPH(g).

Finally, an upgradient well (MW-6) was constructed on the south side of the property. MW-6 was placed in this upgradient location to assist aquifer testing tasks by providing background information and to potentially detect on-site migration of contaminants from upgradient sources. The six wells were surveyed and a local groundwater gradient to the north-northeast was estimated (Figure 5 - Potentiometric Surface Map). Appendix C (Monitoring Well Installation Documentation) of this report includes the well permit, field notes, laboratory analysis reports, monitoring well construction details, and monitoring well survey report.

3.3.2 Aquifer Testing

An aquifer pumping test was conducted on the site from 9:20 AM on September 20 to 12:00 PM on September 21, 1994 (1,600 minutes). The test consisted of using a submersible electric pump to remove water from well MW-4 at rates ranging from approximately 0.3 to 2 gallons-per-minute (gpm). An In-Situ, Inc. Hermit 2000 datalogger was used to continuously record water levels in MW-4, MW-5 (27 feet from MW-4), MW-3 (55 feet from MW-4), and MW-3 (57 feet from MW-4). Water levels in these wells and in wells MW-1 (64 feet from MW-4) and MW-6 (160 feet from MW-4) were also measured periodically with an electronic water level indicator. Well MW-6 was used to assess background water level changes not associated with pumping. The water was pumped into a 6,500-gallon polyethylene tank on site, pending characterization for disposal. Laboratory analysis of the stored water indicated no detectable concentrations of petroleum hydrocarbons.

The purpose of the test was to assess the water-producing capacity and the transmissivity and storativity of the shallow aquifer. The transmissivity of an aquifer is the amount of water that can be transmitted horizontally by the full saturated thickness of the aquifer under a unit hydraulic gradient. The hydraulic gradient is the slope of the water table. The hydraulic conductivity describes the rate at which water can move through an aquifer. The transmissivity equals the hydraulic conductivity times the saturated thickness of the aquifer. Hydraulic conductivity times hydraulic gradient equals the average groundwater velocity. Storativity is the volume of water that an aquifer will absorb or release from storage per unit surface area per unit change in water level. Transmissivity and storativity may be estimated from pumping test data by plotting the well drawdowns (changes in water levels) vs time since the start of pumping. Using established equations and some general assumptions about the aquifer allows the calculation of these parameters.

Maximum drawdown in the pumping well was approximately 7 feet. Maximum drawdown in the five observation wells ranged from approximately 0.05 (MW-6) to 0.80 (MW-5) feet. No overall adjustments were made to the data because water levels from MW-6 indicated insignificant background variations. Because of the pumping rate changes, the data were analyzed using Cooper-Jacob's method for step-type pumping, documented in "Analysis and Evaluation of Pumping Test Data", by G.P. Kruseman and N.A. de Ridder, 1983. This analysis involves transforming the usual drawdown vs time plots into specific drawdown vs weighted log mean time, prior to applying the Cooper-Jacob equations. The data analysis yielded transmissivity estimates of 91.5, 25, 183, and 70 ft^2/day from wells MW-4, MW-5, MW-2, and MW-3, respectively. Using an approximate thickness of 10 feet for the thickness of the water-bearing zone penetrated by the wells, these values correspond to hydraulic conductivities of 9.2, 2.5, 1.8, and 7.0 ft/day. According to Freeze and Cherry (1979), these values are typical of a silty sand aquifer (hydraulic conductivity values ranging from approximately 0.5 to 500 ft/day). Storativity values estimated from the data were 0.0069, 0.0048, and 0.0012 from wells MW-5, MW-2, and MW-3, respectively. These values appear to be low for a water table aquifer (typical storativity values range from 0.01 to 0.30).

The aquifer parameters are used to assess the feasibility of groundwater pumping to remediate the groundwater and control the spread of impacted groundwater. A capture zone is the area around a pumping well where the groundwater will eventually be removed by that well. The shape and extent of a capture zone is dependent upon the pumping rate, aquifer transmissivity, and hydraulic gradient. It assumes the aquifer properties remain the same over the area investigated. Well MW-4 appeared to be capable of sustaining a pumping rate of approximately 0.5 gpm. Assuming an average transmissivity (T) of 80 ft^2/day, a pumping rate (Q) of 0.5 gpm (96 ft^3/day), and an hydraulic gradient (i) of 0.009 ft/ft, the long-term downgradient capture zone $r_{dg} = Q/2\pi Ti = (96)/2(\pi)(80)(0.009) = 21$ feet. Similarly, the maximum capture zone width = $Q/Ti = 96/(80)(0.009) = 133$ feet (Figure 6 - Groundwater Extraction Well Capture Zone). Appendix D (Aquifer Testing Documentation) of this report includes field notes, test data plots, and the produced water laboratory analysis report.

3.3.3 Groundwater Monitoring

Groundwater monitoring data including water level measurements and analytical results have been collected for varying time periods since October 1992. Fugro conducted one groundwater monitoring episode for monitor wells MW-1 through MW-3 for the second quarter of 1994. Quarterly monitoring activities for the third quarter of 1994 through the second quarter of 1995 will be

conducted on all six wells at the site. The groundwater monitoring activities include: 1) continued observation of groundwater level changes; 2) monitoring of groundwater quality; and 3) evaluation of site remediation progress.

Groundwater analytical results from the October 10, 1994 quarterly groundwater monitoring event reported no detectable concentrations of Benzene and TPH(g) in wells MW-1 through MW-3 and MW-6. Benzene concentrations of 900 mg/l and 840 mg/l were reported in samples collected from wells MW-4 and MW-5, respectively. TPH(g) concentrations of 2,400 mg/l and 2,000 mg/l were reported in samples collected from wells MW-4 and MW-5.

The concentrations of Benzene and TPH(g) reported in Wells MW-4 and MW-5 are above the proposed cleanup goals defined within the original CAP prepared by ESE. Therefore, appropriate measures will be outlined within this RCAP to reduce hydrocarbon concentrations in groundwater to the proposed cleanup goals.

Other conclusions that may be drawn from this groundwater monitoring data include the potential that impacted groundwater is relatively limited in its extent. This is based on the information that the three downgradient wells MW-1 through MW-3 reported did not contain Benzene or TPH(g). In addition, the analysis of the groundwater sample collected from MW-6 indicates that hydrocarbons from potential upgradient sources were not observed to be migrating on site.

4.0 CORRECTIVE ACTION

Based on site characterization activities to date, the groundwater monitoring activities, pilot-scale aquifer testing performed, and interim remedial activities, the extents of hydrocarbons remaining within the subsurface soils and groundwater has been generally delineated. The following sections include discussions of the remediation objectives, alternatives, and suitability of selected alternative(s) to address the remaining hydrocarbons beneath the site.

4.1 Corrective Action Objectives

The objectives of the corrective action are to: 1) reduce the potential for additional migration of petroleum hydrocarbons from the vadose zone (or capillary fringe) to the underlying shallow groundwater; 2) reduce the existing concentrations of benzene and TPH(g) in the shallow groundwater beneath the site; 3) reduce the potential for off-site migration of contaminants.

In accordance with the original CAP prepared by others, the proposed cleanup goals are to reduce soil hydrocarbon concentrations to below 10 mg/kg TPH(g) and below 1.0 mg/kg total BTEX, and to reduce groundwater hydrocarbon concentrations below 0.05 mg/l TPHg and below established California regulatory action levels for drinking water, for BTEX. The current regulatory action levels are 0.001 mg/l for benzene, 1.0 mg/l for toluene, 0.680 mg/l for ethylbenzene, and 1.75 mg/l for total xylenes.

4.2 Corrective Action Alternatives

Corrective action alternatives for this site include soil excavation, bioremediation (bioventing/biosparging with nutrient supplementation), air sparging, soil venting, groundwater pumping, or a combination of these.

4.2.1 Soil Excavation

Because impacted soils south of the excavation cannot be removed using conventional "dig and chase" methods, an alternative methodology must be selected. Options for impacted soil remediation include providing temporary support for the site structures during the excavation process and shoring of excavated areas close to the building. Providing shoring and temporary support for structures is a difficult and expensive process. Furthermore, for safety reasons, work within the building could not be conducted during the excavating. Because of equipment restrictions, this option also requires that the contamination not extend far beneath the building. An estimated 50 yds^3 of soil may need to be removed from beneath the building. An estimated 180 yds^3 of soil would be removed from the remainder of the yard. This option does not remediate groundwater or soil hydrocarbons that may exist below the water table. Finally, tenant health and safety issues will be difficult to address when implementing this option.

4.2.2 Bioremediation

Bioremediation of the groundwater and capillary fringe region would require addition of oxygen and nutrients. The dispersion of added oxygen and nutrients can not be sufficiently controlled to ensure that all impacted soils and groundwater are remediated.

4.2.3 Air Sparging

Air sparging is the addition of air below the water table using a system of sparging wells. The addition of air volatilizes organic compounds and brings them to the surface of the water table. Soil vapor extraction can then be used to remove the volatized organics for treatment. This technology requires the injection of compressed air, which, in the presence of high concentrations of gasoline, can create an explosive atmosphere beneath the surface of the site. This technology has relatively high operating costs and typically is used where dewatering is not an option.

4.2.4 Soil Venting

Soil venting is a feasible option in the sandy soils identified at the subject site. Soil venting will enhance natural volatilization and diffusion of petroleum hydrocarbons present in soil and floating on groundwater by removing soil vapors containing petroleum hydrocarbons from the vadose zone. Decreasing the mass of petroleum hydrocarbons in the soil vapors above groundwater should also enhance the upward diffusion and volatilization of petroleum hydrocarbons from the groundwater by increasing the magnitude of the concentration gradient between these phases. This process can be enhanced further by lowering the water table to expose impacted saturated soils.

Soil venting also increases the oxygen content of the subsurface through the introduction of atmospheric air. Increasing the availability of oxygen to naturally occurring microbes in the vadose and saturated zones will likely stimulate increased rates of natural biodegradation of petroleum hydrocarbons in soil and groundwater.

4.2.5 Groundwater Pumping

Because the impacted soil has not been effectively addressed, the desorbing and leaching of hydrocarbons into the groundwater is likely to continue. Pumping and treating groundwater has been shown to be an ineffective and time-consuming technology due to the very low solubility of petroleum hydrocarbons. Current data from sites using pump and treat technology exclusively to remediate petroleum hydrocarbons indicate extremely long project durations and difficulties with achieving regulatory objectives.

Groundwater pump and treat technology can be successful, however, when it is used with other technologies such as soil vapor extraction and air sparging, or when used solely for temporary plume containment. When used in conjunction with soil vapor extraction, groundwater pump and treat is used to lower the water table and expose additional impacted soil to vapor flow. The hydrocarbons can then be removed more readily in the vapor phase. This method also contains the groundwater plume during remediation.

5.0 SELECTED REVISED CORRECTIVE ACTIONS

Based on the existing conditions at the subject property, Fugro has evaluated the revised corrective action alternatives and recommends that a soil vapor extraction (SVE) system be implemented in combination with a groundwater pump and treat system. The groundwater pump and treat system will be employed to assist in decreasing the potential for off-site migration of hydrocarbons and to lower the groundwater table to allow the SVE system to extract soil vapors from the upper portion of the saturated zone.

5.1 Soil Vapor Extraction

SVE will be implemented by installing vapor extraction wells and extracting vapors from these wells. The wells will be spaced to generally influence the area of the site characterized as containing hydrocarbons. The actual layout of the vapor extraction wells will be based on the approximate radius of influence observed during a vapor extraction pilot test. The following paragraphs discuss the existing site conditions, conceptual design, remedial testing and implementation of the SVE system.

During the performance of Fugro's initial activities at the subject property, due to health and safety concerns, the closure of the excavation zone was established as a high priority. As defined within the work plan, Fugro installed a horizontal vapor extraction well within the backfill of the excavation zone. Fugro does not consider this horizontal well sufficient to remediate the remaining hydrocarbons at the subject site.

Therefore, Fugro recommends that a total of two vertical vapor extraction wells be installed at the site. The vapor wells should be installed within the areas south and east of the former excavation determined to be impacted by petroleum hydrocarbons. Well locations are proposed within the northeast corner of the building structure (in current tenant office locations) and east of the former excavation.

5.1.1 Installation of Vapor Extraction Wells

The objectives of installing the wells are to:

- Perform a pilot-scale SVE testing and the implementation of a full-scale system.
- Further assessment of the subsurface stratigraphic conditions.
- Assess physical and chemical parameters for design of the SVE system.

The borings will be drilled using 10-inch diameter hollow-stem augers. The borings will be drilled approximately four feet into the groundwater, approximately 12.5-feet bgs. The materials encountered during the drilling operations will be logged by a geologist and compiled on boring logs illustrating stratigraphic and textural variations, sampling intervals and monitoring results.

Immediately following sample collection, the geologist will scan the headspace above the sample using a photoionization detector (PID). Care will be taken to minimize the time between extraction of the sample from the borehole and the scanning procedure as much as practical to limit the loss of volatile compounds from the soil sample. Following PID scanning of the sample, the measurements will be recorded on the boring log. The soils will be collected in appropriate containers for either physical or chemical testing and kept in cool storage as directed by the testing laboratory prior to shipment to the laboratory.

The augers will be steam cleaned before entering the site and between each boring to minimize the potential for cross-contamination between boreholes. Liquids from the steam cleaning operations will be drummed on-site, sampled and submitted to the laboratory for the analysis using EPA Method 8015M/8020 for TPHg and BTEX. The drums will be stored at a location specified by AHA. Following acquisition of the analytical results, appropriate disposal methodologies will be developed. Disposal of the drummed liquids will be performed by AHA in accordance with Federal, state and local requirements.

Following the drilling and sampling activities, four-inch-diameter, schedule 40 PVC well casing and screen will be installed in the boreholes, and the borings will be completed as vapor extraction/monitor wells. It is anticipated that the screened interval will extend from two and one-half feet below ground surface to a depth of approximately 12.5-feet below ground surface. The annular space adjacent to the casing and screen will be backfilled with a coarse gravel pack to provide a capillary break to reduce the potential for unsaturated flow through the backfill materials. The upper two feet of the annular space in the borehole will be backfilled with a one-foot thick bentonite seal and cement-bentonite grout to reduce the potential for vertical saturated flow through the annular space resulting from surface infiltration of incidental precipitation or other potential water sources. A surface vault with locking cap will be installed to allow access to the wells for future vapor

extraction and monitoring activities. The base of the vaults will be slot cut prior to installation to accommodate subsurface piping for vapor extraction remedial activities (Figure 7 - Typical Vapor Extraction Well Construction Details (4" casing)).

Ambient air concentrations and exposure monitoring will be performed in accordance with the site Health and Safety Plan to ensure that personnel exposure thresholds are not exceeded and applicable air emission standards are met.

5.1.2 Pilot Soil Vapor Extraction Study

The objectives of the pilot soil vapor extraction study are to:

- Obtain parameters for full-scale SVE design;
- Develop air permitting requirements;
- Demonstrate applicability of SVE to the site.

The pilot soil vapor extraction study will utilize the extraction wells. A vacuum will be placed on each well and flow rates and effluent gas concentrations will be measured using a flow meter and portable flame-ionization detector. The vapor effluent will be discharged through Granular Activated Carbon (GAC) canisters. The vacuum induced in the unsaturated zone will be monitored in each surrounding well to assess the radius of influence.

Flow rates and vacuum pressures will be measured periodically. Soil vapor concentrations will be monitored by FID and bag samples will be collected for laboratory analysis.

5.1.3 Data Analysis

Several methods of analyses are available to approximate the flow of gas through the subsurface, predict the zone of influence from vapor extraction activities and assist in selecting blowers and pumps, manifold configurations and well geometries for the soil vapor extraction system design. The governing equations for vapor phase transport through the unsaturated zone enable calculations of flow by convective transport, hydrodynamic dispersion and molecular diffusion in the gaseous and aqueous phase.

The flow of gases and vapors through porous media is covered extensively in the literature. Mass flow equations based on groundwater flow models have been used by convention to simulate gaseous flow caused by differential pressure gradients resulting from vapor extraction. Flow models utilized in this analysis to determine gaseous flow are variations of Darcy's law for groundwater movement that have been described by Massmann (1989) and Kerfoot (1990). The purpose of this section is to document the mathematical framework for calculating the flow of volatile organic compounds within the gaseous phase through the subsurface unsaturated zone.

Six input parameters are required to model vapor transport, including gas viscosity, initial gas density, temperature, molecular weight of the gas, and the porosity and permeability of the porous media. Information regarding each of these input parameters, including qualifying assumptions used, is included in the following discussion.

5.2 Groundwater Pump and Treat

The design of the groundwater extraction system will be based on the aquifer testing information and modeling activities previously conducted at the subject site. The groundwater extraction system for the site will consist of two recovery wells with pneumatic recovery pumps. The pumps will draw groundwater from the shallow unconfined aquifer and deliver it to a treatment system. The groundwater extraction will create a cone of depression surrounding each well. The two wells proposed for recovery are MW-4 and MW-5.

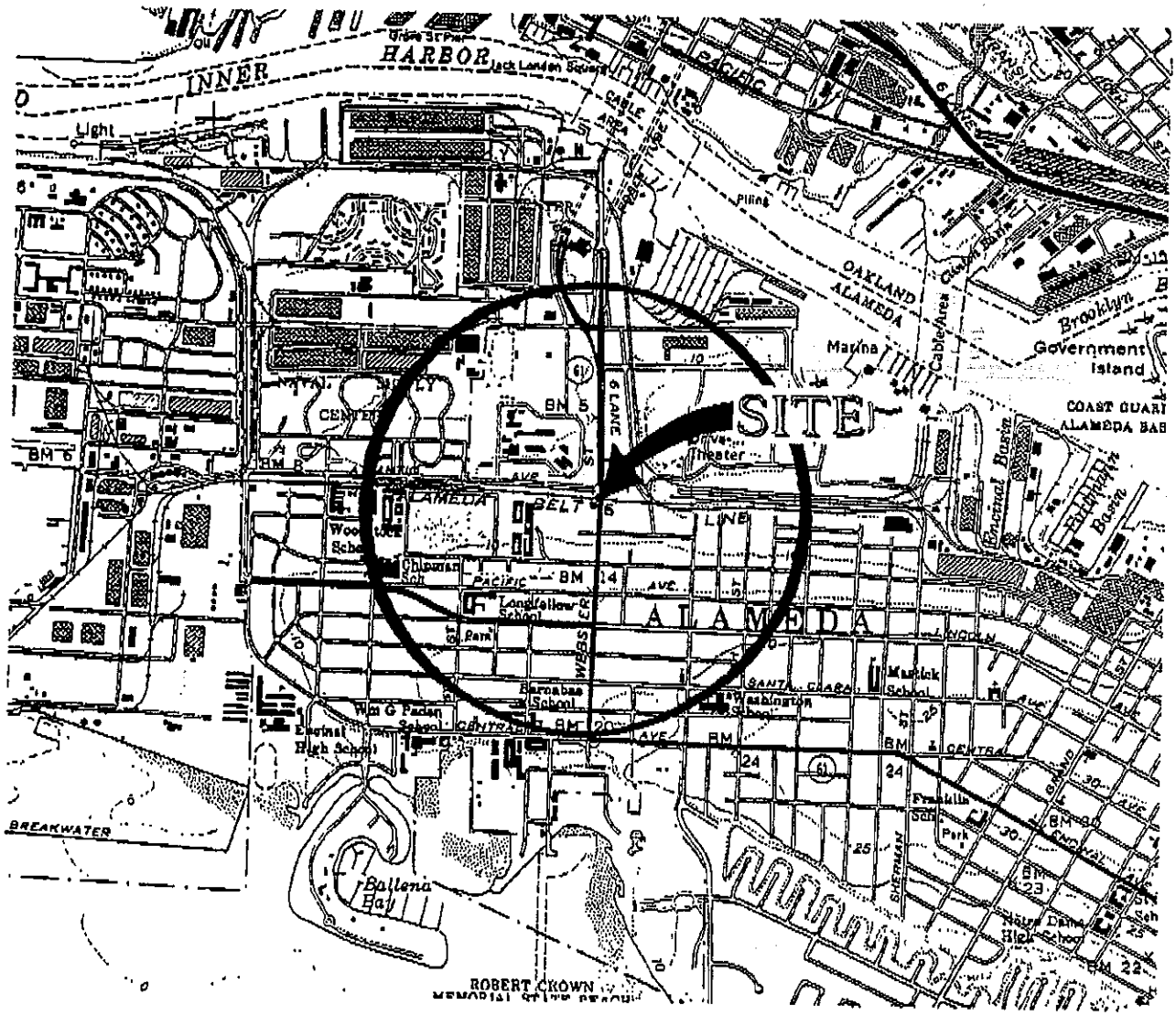
The aquifer tests previously conducted at the site revealed that maximum drawdown in the pumping well (MW-4) was approximately seven feet. Maximum drawdown in the five observation wells ranged from approximately 0.05 (MW-6) to 0.80 (MW-5) feet. The data analysis yielded transmissivity estimates of 91.5, 25, 183, and 70 ft^2/day from wells MW-4, MW-5, MW-2, and MW-3, respectively. Using an approximate thickness of ten feet for the water-bearing zone penetrated by the wells, these values correspond to hydraulic conductivites of 9.2, 2.5, 1.8, and 7.0 ft/day.

Well MW-4 appeared to be capable of sustaining a pumping rate of approximately 0.5 gpm. Assuming an average transmissivity (T) of 80 ft^2/day, a pumping rate (Q) of 0.5 gpm (96 ft^3/day), and an hydraulic gradient (i) of 0.009 ft/ft, the long-term downgradient capture zone $r_{dg} = Q/2Ti = (96)/2(\pi)(80)(0.009) = 21$ feet. Similarly, the maximum capture zone width = 96/(80)(0.009) = 133 feet. These capture zone estimates will be refined during evaluation of the recovery system. Additional recovery wells may be recommended after the results of the operating system are evaluated.

5.3 Implementation Schedule

Following approval of this RCAP and a workplan to install the vapor extraction wells and conduct pilot vapor extraction, testing will be implemented. Upon completion of testing and data reduction, an appropriate treatment system based on flow rates, concentration levels, and system components will be proposed. Implementation of this revised corrective action plan should take about three to four months.

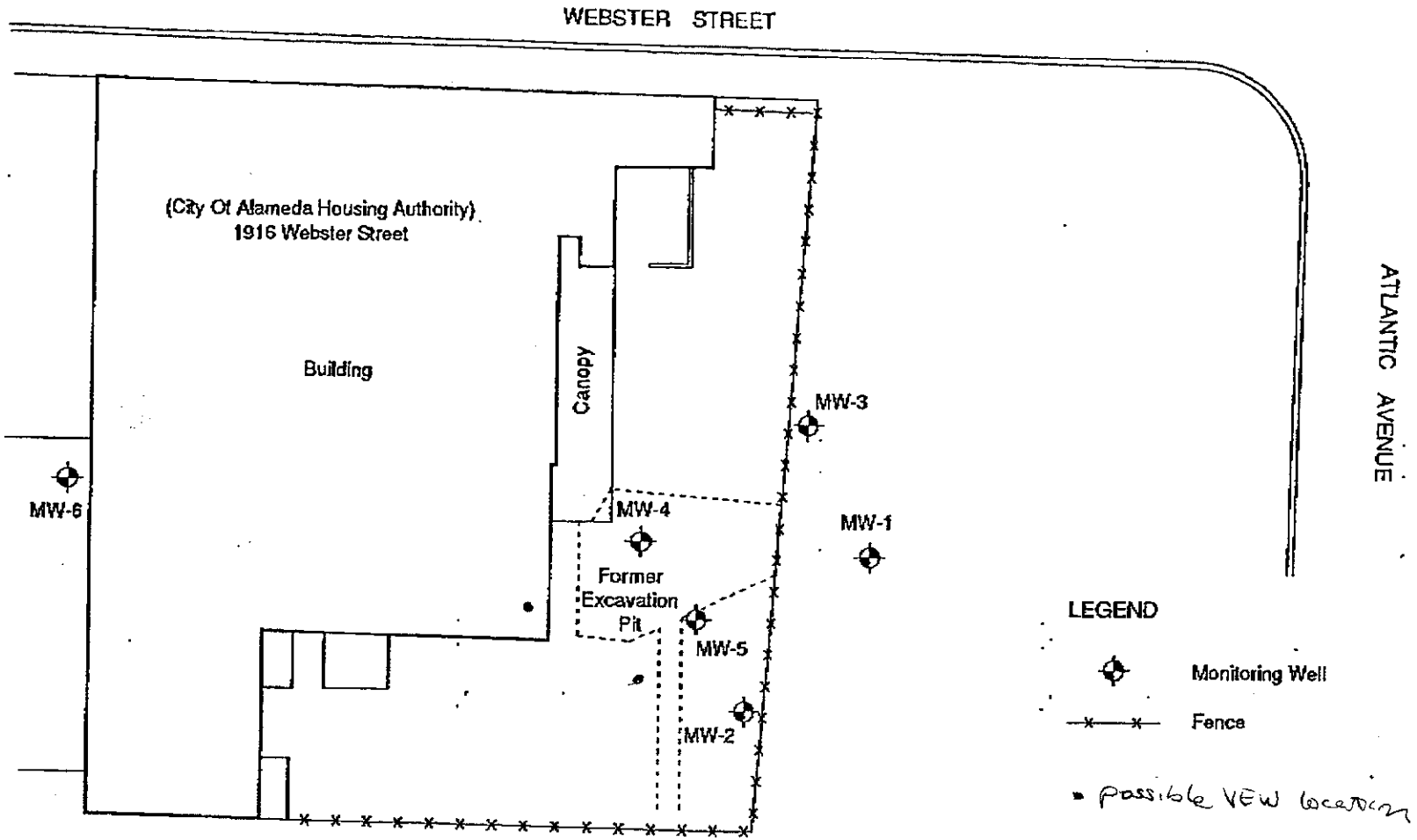
FIGURES



GENERAL NOTES:

BASE MAP FROM USGS
7.5 MINUTE TOPOGRAPHIC
OAKLAND WEST, CA

FUGRO	DRAWN BY: D. Haga DATE: September 19, 1994 REVISED BY: DATE:	SITE LOCATION MAP Alameda Housing 1916 Webster Street Alameda, CA	FIGURE 1 PROJECT NUMBER: 94-37-7623



NOTES

Site Sketch After Map
By Ron Archer, Civil Engineer, Inc.

All Locations Are Approximate

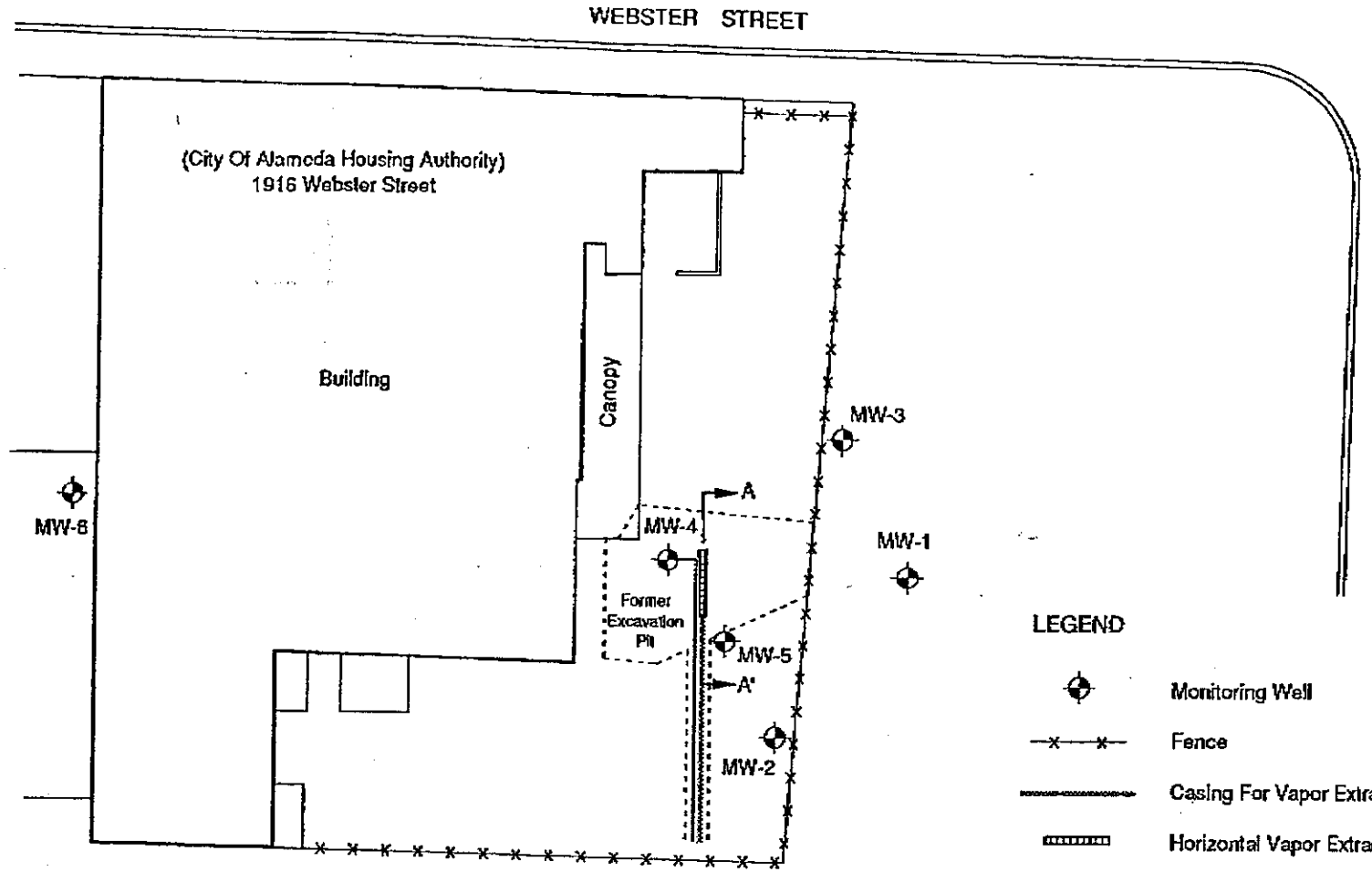
0 50 100
Approximate Scale In Feet

FUGRO

DRAWN BY: D. Hada	SITE MAP
DATE: September 19, 1994	
REVISED BY:	Alameda Housing 1916 Webster Street Alameda, CA
DATE:	

FIGURE 2

PROJECT NUMBER: 94-37-7623



LEGEND

- Monitoring Well
- Fence
- Casing For Vapor Extraction System
- Horizontal Vapor Extraction Well
- Casing For Groundwater Extraction System
- A — A' Cross Section Line For Horizontal Vapor Extraction Well, Figure 4

NOTES

Site Sketch After Map
By Ron Archer, Civil Engineer, Inc.

All Locations Are Approximate

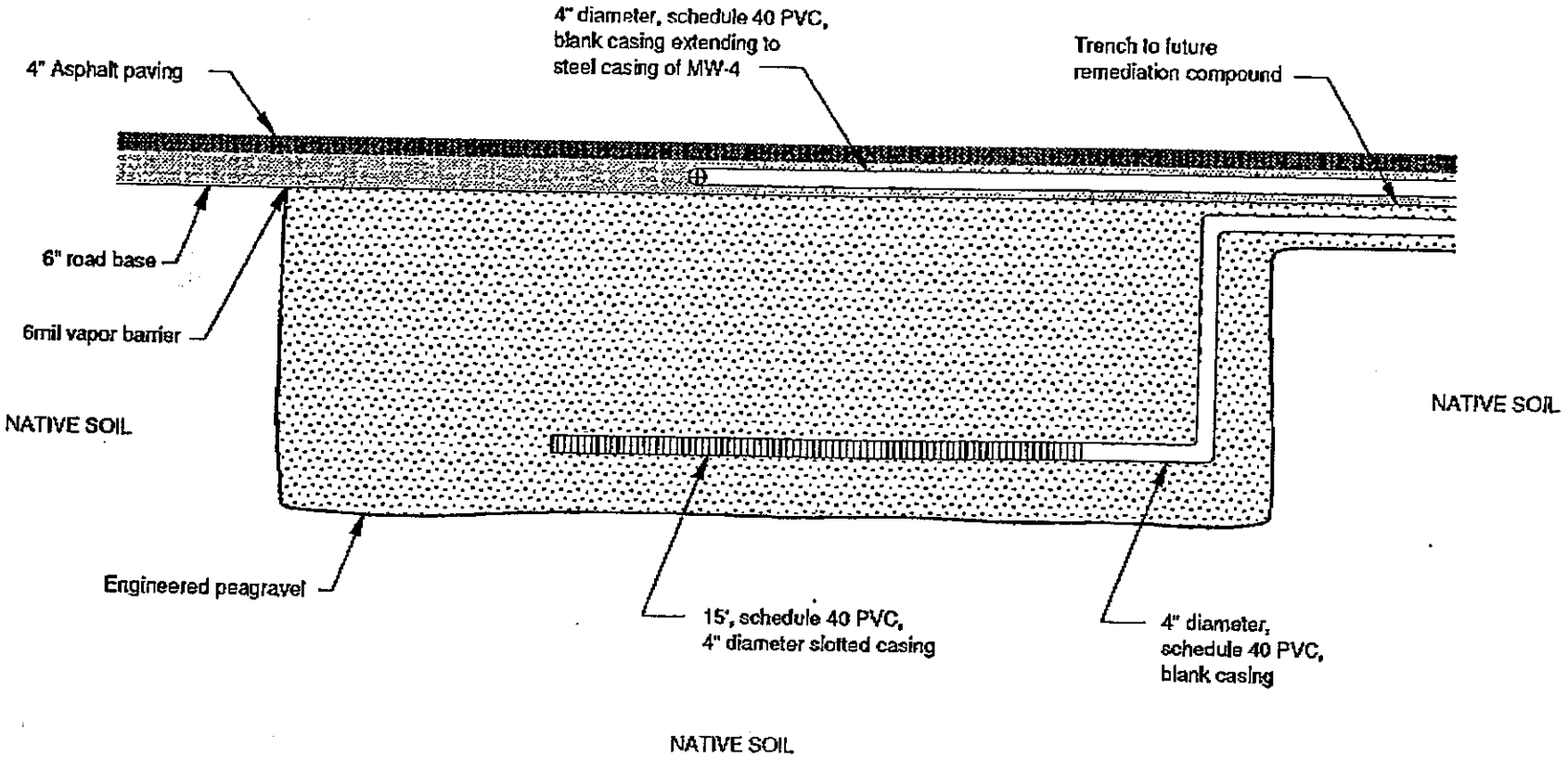
0 50 100
Approximate Scale In Feet

FUGRO

DRAWN BY: D. Hada	GROUNDWATER AND VAPOR EXTRACTION SYSTEM CASINGS INSTALLED
DATE: November 2, 1994	Alameda Housing 1916 Webster Street Alameda, CA
REVISED BY:	
DATE:	

FIGURE 3

PROJECT NUMBER: 94-37-7623



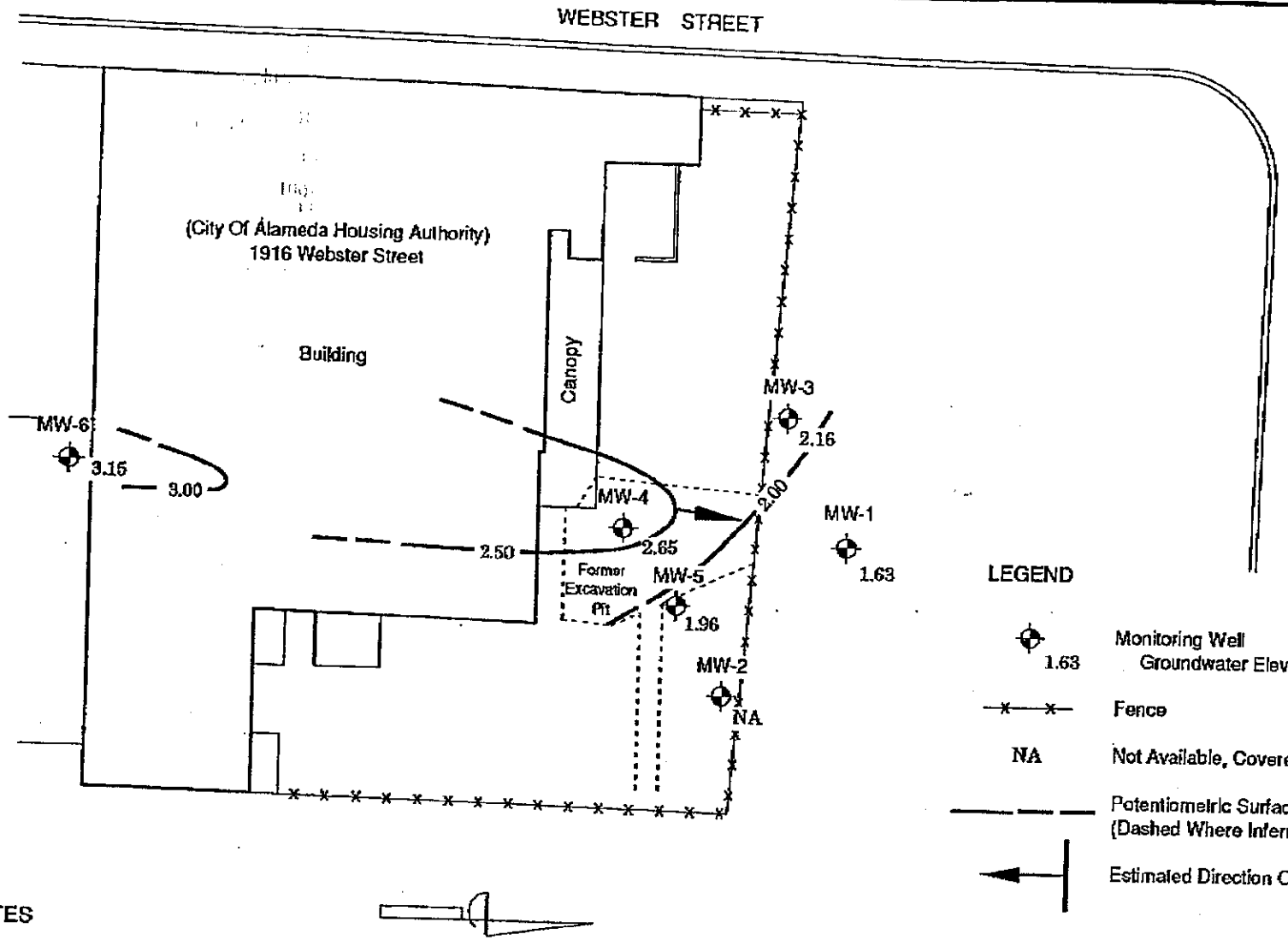
NOT TO SCALE

FUGRO

DRAWN BY: O. Hada	SECTION A - A' (Figure 3) HORIZONTAL VAPOR EXTRACTION WELL
DATE: November 2, 1994	
REVISED BY:	Alameda Housing 1916 Webster Street Alameda, CA
DATE:	

FIGURE 4

PROJECT NUMBER: 94-37-7623



LEGEND

- 1.63 — Monitoring Well, Groundwater Elevation In Feet
- Fence
- NA — Not Available, Covered With Pea Gravel
- Potentiometric Surface Contour Line (Dashed Where Inferred)
- Estimated Direction Of Groundwater Flow

Hydraulic Gradient = 0.009 ft/ft
Contour Interval = 0.50 ft

NOTES

Site Sketch After Map
By Ron Archer, Civil Engineer, Inc.

All Locations Are Approximate

0 50 100
Approximate Scale In Feet

FUGRO

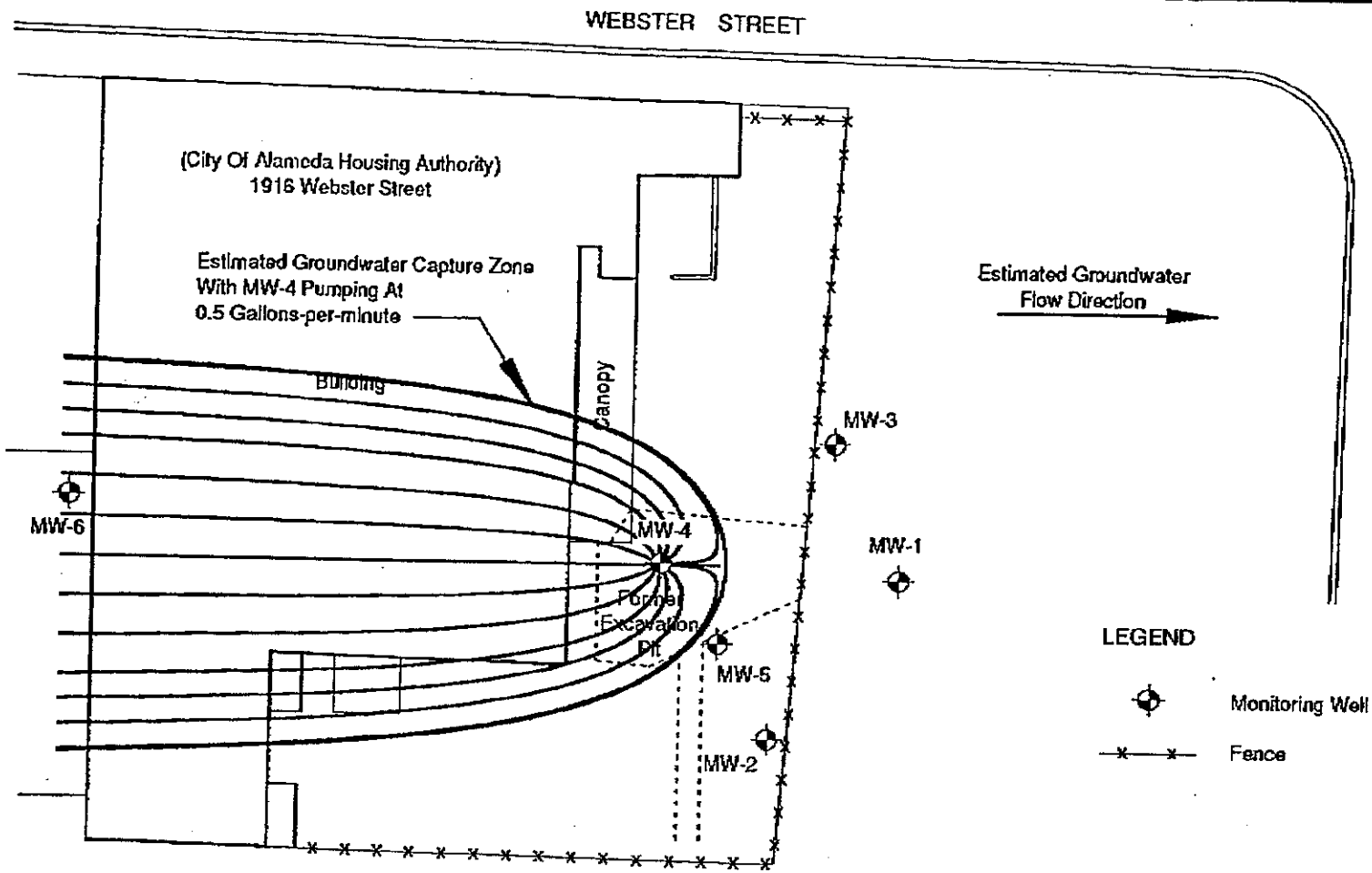
DRAWN BY:	D. Hada
DATE:	September 19, 1994
REVISED BY:	
DATE:	

POTENTIOMETRIC SURFACE MAP
September 12, 1994

Alameda Housing
1916 Webster Street
Alameda, CA

FIGURE
5

PROJECT NUMBER:
94-37-7623



NOTES

Site Sketch After Map
By Ron Archer, Civil Engineer, Inc.

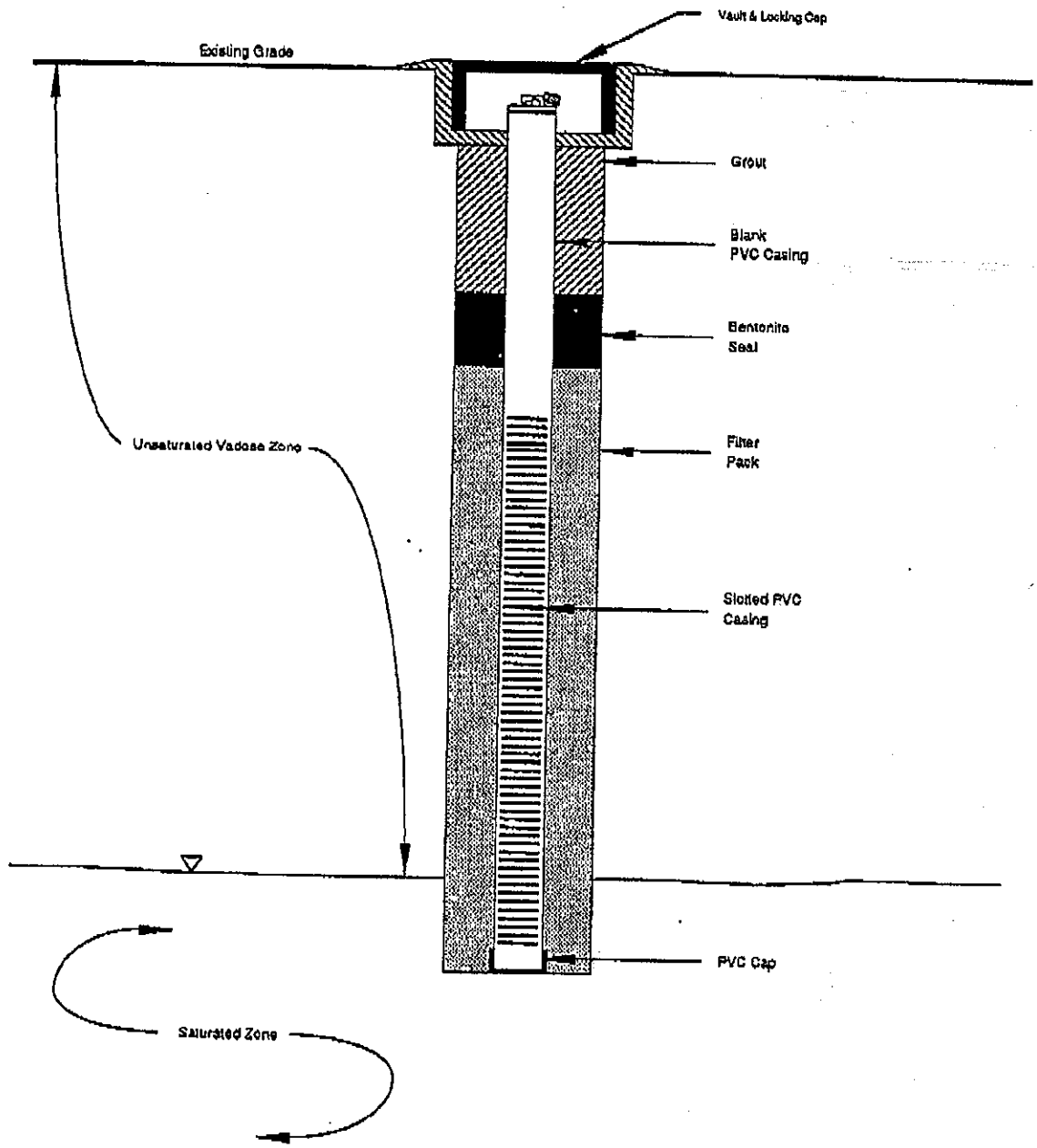
All Locations Are Approximate

0 50 100
Approximate Scale In Feet

FUGRO

DRAWN BY: D. Hada	GROUNDWATER EXTRACTION WELL CAPTURE ZONE
DATE: November 2, 1994	FIGURE 6
REVISED BY:	Alameda Housing 1916 Webster Street Alameda, CA
DATE:	PROJECT NUMBER: 94-37-7623

Vapor Extraction Well (4" casing)



(NOT TO SCALE)

FUGRO	DRAWN BY: D. Hada DATE: November 2, 1994 REVISED BY: DATE:	TYPICAL VAPOR EXTRACTION WELL CONSTRUCTION DETAILS (4" Casing) Alameda Housing 1916 Webster Street Alameda, CA	FIGURE 7 PROJECT NUMBER: 94-37-7623

TABLES

1916 Webster Street Stockpiled Soil Removal PID Readings (parts per million)			Date: 7-16-94
Time	**Breathing Zone**	**Stockpile Soils**	**Activity***
STOCKPILE 1			
0731	0.0	51.0	R
0736	0.0	39.6	R
0746	1.0	44.9	L
0755	0.0	41.2	L
0808	0.0	32.2	R
0812	3.2	46.5	L
0822	2.5	49.1	L
0832	0.0	29.0	R
0842	0.0	25.2	R
0851	2.7	52.5	L
0901	2.8	61.6	L
0908	0.0	31.2	R
0919	2.9	61.5	L
0926	3.2	58.0	L
0935	3.0	60.2	L
0946	2.7	56.0	L
0857	2.0	47.5	L
1009	0.0	23.0	R
1016	2.1	46.2	L
1027	1.7	32.0	L
1052	0.0	19.0	R
1103	2.0	43.5	L
1113	2.1	40.2	R

1916 Webster Street Stockpiled Soil Removal PID Readings (parts per million)			Date: 7-16-94
Time	**Breathing Zone**	**Stockpile Soils**	**Activity***
1124	0.0	22.2	R
1140	0.0	12.5	R
1205	0.0	20.0	L
1220	0.0	16.0	L
1240	0.0	12.2	L
1250	0.0	0.0	R
STOCKPILE 2			
1251	0.0	0.0	R
1300	0.0	0.0	L
1315	0.0	0.0	L
1325	0.0	0.0	L
1340	0.0	0.0	R

* R = Rest
L = Loading or Repositioning Soil

APPENDIX A

STOCKPILED SOILS DOCUMENTATION

Excelchem
Environmental Labs

4946 Watt Avenue, #38
North Highlands, CA 95660
(916)334-8661

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: STEPHEN BOUDREAU
Phone #: (415) 296-1041

Company/Address: SUITE 44 MONTGOMERY ST. 1010 SAN FRANCISCO, CA 94104
FAX #: (415) 296-0944

Project Number: 9437-7623
P.O.#:
Project Name: HOUSING AUTHORITY OF ALAMEDA

Project Location: 916 WEBSTER, ALAMEDA
Sampler Signature: Bill McDonald

Sample ID	Sampling DATE	Sampling TIME	Container VOA	Container SLEEVE	Container 1L GLASS	Container 1L PLASTIC	Method Preserved HCl	Method Preserved HNO_3	Method Preserved ICE	Method Preserved NONE	Matrix WATER	Matrix SOIL	BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel (8015)	TPH as Oil (8015)	Total Oil & Grease (5520 B/E,F)	Total Oil & Grease IR (5520 B/E,F,C)	96 - Hour Fish Bioassay	EPA 601/8010	EPA 602/8020	EPA 615/8150	EPA 608/8080 - Pesticides	EPA 608/8080-PCBs	EPA 624/8240	EPA 625/8270	ORGANIC LEAD	Reactivity, Corrosivity, Ignitibility	CAM - 17 Metals	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	Cd, Cr, Pb, Zn, Ni	W.E.T. (Y)	TOTAL (Y)	RUSH SERVICE (12 hr) or (24 hr)	EXPEDITED SERVICE (48 hr) or (1 wk)	STANDARD SERVICE (2wk)
SP II A,B,C,D	7/1/94	10:50		X								X	X	X	X												X									X	
SP I E,F,G,H,	↓	11:20		X								X	X	X	X												X									↓	
SP I I,J,K,L		11:50		X								X	X	X	X												X										
SP I M,N,O,P	↓	12:20		X								X	X	X	X												X									↓	

Relinquished by: _____ Date 7/5/94 Time 5:08 pm
Received by: Mindy Somers

Relinquished by: _____ Date _____ Time _____
Received by: _____

Relinquished by: _____ Date 7/5/94 Time 5:30 pm
Received by Laboratory: Mindy Somers

Remarks:

Bill To:

Excelchem
Environmental Labs
4946 Watt Avenue, #38
North Highlands, CA 95660
(916)334-8661

ANALYSIS REPORT

Attention:	Mr. Stephen Boudreau	Date Sampled :	07-01-94
	FUGRO-WEST, INC.	Date Received:	07-05-94
	44 Montgomery St., Suite 1010	TPHg Analyzed:	07-13-94
	San Francisco, CA 94104	BTEX Analyzed:	07-13-94
		TPHd Analyzed:	07-11-94
Project :	9437-7623	Matrix:	Soil

	Benzene PPM	Toluene PPM	Ethyl-benzene PPM	Total Xylenes PPM	TPHg PPM	TPHd PPM
Reporting Limit:	0.005	0.005	0.005	0.005	1.0	1.0
SAMPLE Laboratory Identification:						
SPII A,B,C,D S0794084	ND	ND	ND	ND	ND	ND

ppm = Parts per million = mg/Kg = milligram per Kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

BTEX– Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID).
TPHg–Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by modified EPA Method 8015, which utilizes a GC equipped with an FID.
TPHd–Total petroleum hydrocarbons as diesel (high boiling points) are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laboratory Representative

07-13-94
Date Reported

Excelchem
Environmental Labs
4946 Watt Avenue, #38
North Highlands, CA 95660
(916)334-8661

ANALYSIS REPORT

Attention: Mr. Stephen Boudreau
FUGRO-WEST, INC.
44 Montgomery St., Suite 1010
San Francisco, CA 94104

Project : 9437-7623

Date Sampled : 07-01-94
Date Received: 07-05-94
TPHg Analyzed: 07-12-94
BTEX Analyzed: 07-12-94
TPHd Analyzed: 07-11-94
Matrix: Soil

	Benzene PPM	Toluene PPM	Ethyl-benzene PPM	Total Xylenes PPM	TPHg PPM	TPHd PPM
Reporting Limit:	0.005	0.005	0.005	0.005	1.0	5.0
SAMPLE Laboratory Identification:						
SP1 E,F,G,H S0794085	ND	ND	ND	ND	ND	ND
SP1 I,J,K,L S0794086	ND	ND	ND	ND	ND	ND
SP1 M,N,O,P S0794087	ND	ND	ND	ND	ND	ND

ppm = Parts per million = mg/Kg = milligram per Kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID).
TPHg--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by modified EPA Method 8015, which utilizes a GC equipped with an FID.
TPHd--Total petroleum hydrocarbons as diesel (high boiling points) are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laboratory Representative

07-13-94
Date Reported

Excelchem
Environmental Labs

4946 Watt Avenue, #38
North Highlands, CA 95660
(916)334-8661

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: STEPHEN BOUDREAU
Phone #:
Company/Address:
FAX #:
Project Number: 9437-7623
P.O.#:
Project Name:
Project Location:
Sampler Signature:

Sample ID	Sampling DATE	Sampling TIME	Container: VOA	SLEEVE	1L GLASS	PLASTIC	Method Preserved: HCl	HNO_3	ICE	NONE	Matrix: WATER	SOIL
SPII A,B,C,D	7-1-94	10:50				X			X			X
SP1 E,F,G,H	↓	11:20				X			X			X
SP1 I,J,K,L		11:50				X			X			X
SP1 M,N,O,P	↓	12:20				X			X			X

ANALYSIS REQUEST

BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel (8015)	TPH as Oil (8015)	Total Oil & Grease (5520 B/E,F)	Total Oil & Grease IR (5520 B/E,F,C)	96 - Hour Fish Bioassay	EPA 601/8010	EPA 602/8020	EPA 615/8150	EPA 608/8080 - Pesticides	EPA 608/8080-PCBs	EPA 624/8240	EPA 625/8270	ORGANIC LEAD	Reactivity, Corrosivity, Ignitibility	CAM - 17 Metals	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	Cd, Cr, Pb, Zn, Ni	W.E.T. (✓)	TOTAL (✓)
															X			X			
															X			X			
															X			X			
															X			X			

TAT

RUSH SERVICE (12 hr) or (24 hr)
EXPEDITED SERVICE (48 hr) or ~~(1 wk)~~
STANDARD SERVICE ~~(2 wk)~~ X

Relinquished by:	Date	Time	Received by:
Micky Powers	7/6/94	15:50	
Relinquished by	Date	Time	Received by:
Relinquished by	Date	Time	Received by Laboratory:

Remarks: Sent To A.T.L.

* IF Pb results greater than 50ppm then run STLC Pb.

Bill To: Excelchem.

Client:	Excelchem Environmental Labs	Lab No. :	See Below
Address:	4946 Watt Avenue, #38	Date Sampled:	07/01/94
	North Highlands, CA 95660	Date Received:	07/07/94
Attn:	Mr. John Somers	Date Analyzed:	07/07/94

Project: 9437-7623

Matrix: Soil

EPA Method 1010 (Flash Point)		
Lab No.	Sample ID	Results, degrees F
940707-007	SP II A,B,C,D	>200
940707-008	SP 1 E,F,G,H	>200
940707-009	SP 1 I,J,K,L	>200
940707-010	SP 1 M,N,O,P	>200

MDL = Method Detection Limit
ND = Not Detected. (Below DLR)
DLR = MDL X Dilution Factor
DF = Dilution Factor

Reviewed/Approved By: _____ Date: 7/15/94

Edgar P. Caballero
Laboratory Director

The cover letter is an integral part of this analytical report.

Client:	Excelchem Environmental Labs	Lab No. :	See Below
Address:	4946 Watt Avenue, #38	Date Sampled:	07/01/94
	North Highlands, CA 95660	Date Received:	07/07/94
Attn:	Mr. John Somers	Date Analyzed:	07/07/94

Project: 9437–7623

Matrix: Soil

EPA Method 9045 (PH)				
Lab No.	Sample ID	Results	DLR	DF
940707–007	SP II A,B,C,D	6.8	—	—
940707–008	SP 1 E,F,G,H	7.3	—	—
940707–009	SP 1 I,J,K,L	7.1	—	—
940707–010	SP 1 M,N,O,P	6.8	—	—

MDL = Method Detection Limit
ND = Not Detected. (Below DLR)
DLR = MDL X Dilution Factor
DF = Dilution Factor

Reviewed/Approved By: _____ Date: 7/15/94

Edgar P. Caballero
Laboratory Director

The cover letter is an integral part of this analytical report.

Client:	Excelchem Environmental Labs	Lab No. :	See Below
Address:	4946 Watt Avenue, #38	Date Sampled:	07/01/94
	North Highlands, CA 95660	Date Received:	07/07/94
Attn:	Mr. John Somers	Date Analyzed:	07/11/94

Project: 9437-7623

Matrix: Soil

EPA Method 9010 (Cyanide)				
Lab No.	Sample ID	Results, mg/kg	DLR, mg/kg	DF
940707-007	SP II A,B,C,D	ND	0.1	1
940707-008	SP 1 E,F,G,H	0.1	0.1	1
940707-009	SP 1 I,J,K,L	ND	0.1	1
940707-010	SP 1 M,N,O,P	ND	0.1	1

MDL = Method Detection Limit
ND = Not Detected. (Below DLR)
DLR = MDL X Dilution Factor
DF = Dilution Factor

Reviewed/Approved By: _____ Date: 7/15/94

Edgar P. Caballero
Laboratory Director

The cover letter is an integral part of this analytical report.

Client:	Excelchem Environmental Labs	Lab No. :	See Below
Address:	4946 Watt Avenue, #38	Date Sampled:	07/01/94
	North Highlands, CA 95660	Date Received:	07/07/94
Attn:	Mr. John Somers	Date Analyzed:	07/11/94

Project: 9437-7623

Matrix: Soil

EPA Method 9030 (Sulfide)				
Lab No.	Sample ID	Results, mg/kg	DLR, mg/kg	DF
940707-007	SP II A,B,C,D	0.5	0.5	1
940707-008	SP 1 E,F,G,H	0.5	0.5	1
940707-009	SP 1 I,J,K,L	0.5	0.5	1
940707-010	SP 1 M,N,O,P	0.5	0.5	1

MDL = Method Detection Limit
ND = Not Detected. (Below DLR)
DLR = MDL X Dilution Factor
DF = Dilution Factor

Reviewed/Approved By: _____ Date: 7/15/94

Edgar P. Caballero
Laboratory Director

The cover letter is an integral part of this analytical report.

Client:	Excelchem Environmental Labs	Lab No. :	See Below
Address:	4946 Watt Avenue, #38	Date Sampled:	07/01/94
	North Highlands, CA 95660	Date Received:	07/07/94
Attn:	Mr. John Somers	Date Digested:	07/09/94
		Date Analyzed:	07/10/94
Project:	9437-7623		
Matrix:	Soil		

EPA Method 7420 (Lead)				
Lab No.	Sample ID	Results, mg/kg	DLR, mg/kg	DF
940707-007	SP II A,B,C,D	35	0.5	1
940707-008	SP 1 E,F,G,H	20	0.5	1
940707-009	SP 1 I,J,K,L	24	0.5	1
940707-010	SP 1 M,N,O,P	25	0.5	1

MDL = Method Detection Limit
ND = Not Detected. (Below DLR)
DLR = MDL X Dilution Factor
DF = Dilution Factor

Reviewed/Approved By: _____ Date: 7/15/94

Edgar P. Caballero
Laboratory Director

The cover letter is an integral part of this analytical report.

Form: Vta.(fldobsrv-5/92)

REPORT OF FIELD OBSERVATIONS

FUGRO

Job No.: 9437-7623	Date: 7-16-94 M T W T F S S
Client: Alameda Housing Authority	Project: 1916 Webster ST (A.H.A.)
Location: Alameda CA.	Weather: Warm 82°
Observer: Dan Jones	Observation Period: Start: 0700 Stop:

Description: 0700: FW on site. BAY Area Tank + marine on site. Ed Faabro (Lead man) with 4 other workers will remove Two stockpiles on site.
0722: one truck leaves loaded with soil. (IVN587)
Agenda for the day is to remove Large stockpile located at the North east area of site first.
0745: TRUCK leaves fully loaded with soil. (SP00310)
Total of 4 18 yard Capacity TRUCKS are on site
0815: Workers stop to reposition TRUCK on poly that was placed under TRUCK.
0825: TRUCK leaves fully loaded with soil. (FT82518)
no TRUCKS are on site at this time as they are on route or returning from CARGO and 3RD ST in San fransisco where they off load.
0838: Empty TRUCK enters site. loading begins.
0850: Ed Faabro advises FW he now has 5 TRUCKS available to remove soil from site.
0858: TRUCK leaves site loaded with soil (FT82516)
Tracktor operator scrapes up debris that have fallen around TRUCK before next TRUCK enters site.
AT this Time 75% of stockpile remains on site.
0911: Empty TRUCK arrives to load up.
0927 TRUCK leaves loaded with soil (FT82517)
TRACTOR operator repositions soil and scrapes ground of overspill before next TRUCK enters site.

Mileage: _____ miles

Copy Sent To Client: Y N	Continued On Next Page	Page 1 Of 4

Form: Vta.(Idobsrv-5/92)
REPORT OF FIELD OBSERVATIONS

Job No.: 9437-7623	Date: 7-16-94 (M T W T F S S)
Client: Alameda Housing Authority	Project: 916 Webster ST
Location: Alameda CA	Weather: Warm
Observer: Dan Jones	Observation Period: Start: 0700 Stop:

Description: 0933: TRUCK Arrives empty TO SITE.
0947: TRUCK leaves full of soil (SP22490)
TRACTOR repositions soil pile away from chain link Fence To better access next TRUCK working area is Tight. ~~End~~
0952: TRUCK Arrives empty TO SITE. FW advises contractor that TRUCK is not lined with poly. worker places poly in bed of Truck.
1018: TRUCK leAves SITE Full of soil (SP27564)
1020: Empty TRUCK enters site.
1042: TRUCK leaves SITE full of soil (FT82516)
1045: TRUCK enters SITE empty.
CITY police on SITE FW advises police that contractor is removing dirt.
1049 Police leAve SITE. FW is asked by Ed faabro To sign generator sheets for desposal of soil. FW signs each generator sheet for Trucks That have left site full of soil.
1105: TRUCK leaves SITE full of soil (1VH6760)
TRACTOR operATOR repositions soil.
~~TRUC~~ 1109: empty TRUCK arrives on SITE
1132: TRUCK leaves SITE Full of soil (FT82517)
1136: empty TRUCK on SITE
1147: TRUCK leaves full of dirt (1VN5887)
1148: workers break for lunch

Mileage: _____ miles

Copy Sent To Client: Y N	Continued On Next Page	Page 2 of 4

Form: Vta.(Ildobsrv-5/92)
REPORT OF FIELD OBSERVATIONS

Job No.: 9437-7623	Date: 7-16-94	M	T	W	T	F	S	S
Client: Alameda Housing Authority	Project: 1916 Webster ST							
Location: Alameda CA	Weather: warm 82°							
Observer: Dan Dorn	Observation Period: Start: 0700 Stop:							

Description: Ed Faabro informs FW that he must call his Supervisor after he removes 12 loads of soil from site. FW contacts project Manager Steve Boudreau informs steve that contractor may only unload 12 loads. FW project Manager gives contractor approval to continue to load out soil.
1210: Workers return from lunch empty truck is being filled.
1220: TRUCK leaves full of dirt (SP00310)
1223: TRUCK arrives empty loading begins.
1245: TRuck Leaves Full of dirt (FT82518)
all of dirt from NORTH EAST STOCKpile has been removed one worker remains to detail the area.
Workers begin to remove dirt from stockpile next to Webster ST. entrance
1300: TRUCK leaves full of dirt (FT82516)
~~FEU~~ 1303: TRUCK arrives empty on site.
1326: TRUCK Leaves site Full of dirt (FT82517)
Workers continue to detail debris from North/east removal area.
1330: All TRUCKS are off site for the day. Tractor operator continues detail of both stockpile areas.
1350: CONTRACTOR is finished with detailing of both work areas
1400: FW begins well sampling event.

Mileage: _____ miles

Copy Sent To Client: Y N	Continued On Next Page	Page 3 Of 4

Form: Vla.(fldobsrv-5/92)

FUGRO ☒ McClelland

REPORT OF FIELD OBSERVATIONS

Job No.: 9437-7623	Date: 7-18-94 (M T W T F S S)
Client: Alameda Housing Authority	Project: 1916 Webster ST
Location: Alameda CA	Weather: Warm 82°
Observer: Dan Jones	Observation Period: Start: 0700 Stop: 1710

Description: 1405: FW begins To prep site. All wells are measured for depths. well sequence will be MW3, MW1, MW2. Fw will purge 11 gals TOTal from SiTe. all wells are 2" and will be sampled for The following BTex-TPH as gasoline, Tph as Diesel, TOTal Oil + greASe, LeAd - ORganic leAd. Fw checks recharge of all wells. 80% recharge has been achieved. Fw samples all wells with desposable bailers and desposable rope. Fw enTers all daTa entry on siTe. All electric garage doors, fences, well lids and CAPs have been securly locked. Fw dose one last walk around SiTe To double chech security

1710: Fw off siTe for The day.

Dan Jones

Mileage: _____ miles

Copy Sent To Client: Y N	Continued On Next Page	Page 4 Of 4

L - Loading or Repositioning soil.

PID Readings

	Breathing Zone	Stockpile	
~~0725~~	~~48.0~~	~~56.0~~	~~L~~
0731	0.0	51.0	R
0736	0.0	39.6	R
0746	1.0	44.9	L
0755	0.0	41.2	L
0808	0.0	32.2	R
0812	3.2	46.5	L
0822	2.5	49.1	L
0832	0.0	29.0	R
0842	0.0	25.2	R
0851	2.7	52.5	L
0901	2.8	61.6	L
0908	0.0	31.2	R
0919	2.9	61.5	L
0926	3.2	58.0	L
0935	3.0	60.2	L
0946	2.7	56.0	L
0957	2.0	47.5	L
1009	0.0	23.0	R
1016	2.1	46.2	L
1027	1.7	32.0	L
1052	0.0	19.0	R
1103	2.0	43.5	L
1113	2.1	40.2	R
1124	00	22.2	R
1140	00	12.5	R
1205	00	20.0	L
1220	00	16.0	L

PID Readings

	Breathing zone	Stockpile	
1240	0.0	12.2	L
250	0.0	0.0	R

SMALL- STOCK PILE NEXT TO WEBSTER ST

251	0.0	0.0	R
1300	0.0	0.0	L
1315	0.0	0.0	L
1325	0.0	0.0	L
1340	0.0	0.0	R

NOTES: 7/18

PID READINGS.

LOCATION	READING		TIME	READING #2
BACKGROUND	- 0.0	-	8:28	0.0 - 8:55
STOCKPILE 2	- 1.2	-	8:33	" - 8:53
TRAFFIC	- 1.8	-	8:33	↓ - 8:54
STOCKPILE 1	- 1.7	-	8:36	0.0 - 8:52
EXCAVATION	- 2.0	-	8:40	0.0 - 8:52
ENTRANCE	- 1.2	-	8:42	0.0 - 8:51
OFFICE - JOHN	- 1.4	-	8:43	0.0 - 8.51
OFFICE - CYNTHIA	- 0.0	-	8:45	0.0 - 8:45
~~PACKING~~ area	- 0.6	-	8:49	0.0 - 8:49
SHIPPING	~~0.0~~			

NOT

STA 10 WHEELER SEMI

NON-HAZARDOUS WASTE ACCEPTANCE FORM
FOR DISPOSAL OF
PETROLEUM CONTAMINATED SOIL

LOAD # 1

Generator Information:

1. Name: Housing Authority: City of Alameda Date: 7 / 16 / 94
2. Address: 1916 Webster St.
3. City, State, Zip: Alameda, CA 94501
4. Contact Person: Stephen Boudreau' Phone No.: (415) 296-1041

Waste Description: hydrocarbon contaminated soil

Components of Waste: soil/hydrocarbons

Containers (type): end dump Volume: 18 yds Weight: _____

I hereby certify that the above named material does not contain free liquid that is defined by 40 CFR 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator (print & sign): Dan Jones Dan Jones Date: 7-16-94

Transporter Information:

Transporter Name: DonBestie Trans Phone: (707) 838 1467

Address: 209 Mailiard Truck No.: 21 21A

Windsor 95492 License No.: _____

I hereby certify that the above named material was picked up at the generator site listed above and that the above named material was delivered without incident to the destination ~~listed~~ below.

Driver (Print & Sign): _____ Date: 7 / 16/94

Disposal Facility Acceptance Certification:

I hereby certify that the above named material has been accepted for disposal at BATM Facility, SWL 344C, S.F., California and to the best of my knowledge the foregoing is true and accurate.

Received By (print & sign): _____ Date: 7/16/94

STA_____

10 WHEELER SEMI

NON-HAZARDOUS WASTE ACCEPTANCE FORM FOR DISPOSAL OF PETROLEUM CONTAMINATED SOIL

LOAD # 2

Generator Information:

1. Name: Housing Authority: City of Alameda Date: 7 /16 / 94
2. Address: 1916 Webster St
3. City, State, Zip: Alameda, CA 94501
4. Contact Person: Stephen Boudreau Phone No.: (415) 296-1041

Waste Description: hydrocarbon contaminated soil

Components of Waste: soil/hydrocarbons

Containers (type): end dump Volume: 18 Weight: _____

I hereby certify that the above named material does not contain free liquid that is defined by 40 CFR 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator (print & sign): Dan Jones Dan Jones Date: 7-16-94

Transporter Information:

Transporter Name: Don Beetle Phone: 707 838-1407

Address: 204 Main St Truck No.: 84

Windsor License No.: EW27664

I hereby certify that the above named material was picked up at the generator site listed above and that the above named material was delivered without incident to the destination listed below.

Driver (Print & Sign): Mike Bauman Date: 7/16/94

MIKE BAUMAN

Disposal Facility Acceptance Certification:

I hereby certify that the above named material has been accepted for disposal at BATM Facility, SWL 344C, S.F., California and to the best of my knowledge the foregoing is true and accurate.

Received By (print & sign): _____ Date: 7/16/94

STA_____

10 WHEELER SEMI

NON-HAZARDOUS WASTE ACCEPTANCE FORM FOR DISPOSAL OF PETROLEUM CONTAMINATED SOIL

LOAD # 3

Generator Information:

1. Name: Housing Authority: City of Alameda Date: 7/16/94
2. Address: 1916 Webster St
3. City, State, Zip: Alameda, CA 94501
4. Contact Person: Stephen Boudreau Phone No.: (415) 296-1041

Waste Description: hydrocarbon contaminated soil

Components of Waste: soil/hydrocarbons

Containers (type): end dump Volume: 18 yd Weight: _____

I hereby certify that the above named material does not contain free liquid that is defined by 40 CFR 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator (print & sign): Dan Jones Dan Jones Date: 7-16-94

Transporter Information:

Transporter Name: DEN BESTE / FLETCHER Phone: 707 838-1407

Address: 209 MALI CT Truck No.: 5

WINDSOR CA License No.: SP-26274

I hereby certify that the above named material was picked up at the generator site listed above and that the above named material was delivered without incident to the destination listed below.

Driver (Print & Sign): ROGER FLETCHER Date: 7/16/94

Roger Fletcher

Disposal Facility Acceptance Certification:

I hereby certify that the above named material has been accepted for disposal at BATM Facility, SWL 344C, S.F., California and to the best of my knowledge the foregoing is true and accurate.

Received By (print & sign): _____ Date: 7/16/94

STA
10 WHEELER SEMI

NON-HAZARDOUS WASTE ACCEPTANCE FORM
FOR DISPOSAL OF
PETROLEUM CONTAMINATED SOIL

LOAD # 4

Generator Information:

1. Name: Housing Authoiry: City of Alameda Date: 7/16/94
2. Address: 1916 Webster St.
3. City, State, Zip: Alameda, CA 94501
4. Contact Person: Stephen Boudreau Phone No.: (415) 296-1041

Waste Description: hydrocarbon contaminated soil

Components of Waste: soil/hydrocarbons

Containers (type): end dump Volume: 10 YD Weight:

I hereby certify that the above named material does not contain free liquid that is defined by 40 CFR 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator (print & sign): Dan Jones Dan Jones Date: 7-16-94

Transporter Information:

Transporter Name: William Dan Beste Phone: (707) 8381407
Address: 209 Main CT Truck No.: 094
Windsor Ca- License No.: SP33657

I hereby certify that the above named material was picked up at the generator site listed above and that the above named material was delivered without incident to the destination listed below.

Driver (Print & Sign): David Dan Date: 7/16/94

Disposal Facility Acceptance Certification:

I hereby certify that the above named material has been accepted for disposal at BATM Facility, SWL 344C, S.F., California and to the best of my knowledge the foregoing is true and accurate.

Received By (print & sign): [illegible] Date: 7/16/94

STA
10 WHEELER SEMI

NON-HAZARDOUS WASTE ACCEPTANCE FORM
FOR DISPOSAL OF
PETROLEUM CONTAMINATED SOIL

LOAD # 5

Generator Information:

1. Name: Housing Authority: City of Alameda Date: 7/16/94
2. Address: 1916 Webster St
3. City, State, Zip: Alameda, CA 94501
4. Contact Person: Stephen Boudreau Phone No.: (415) 296-1041

Waste Description: hydrocarbon contaminated soil

Components of Waste: soil/hydrocarbons

Containers (type): end dump Volume: 20yd Weight:

I hereby certify that the above named material does not contain free liquid that is defined by 40 CFR 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator (print & sign): Dan Jones Dan Jones Date: 7-16-94

Transporter Information:

Transporter Name: DEN BESTE Phone: (707) 838-1407

Address: 930 Shiloh Rd Bldg 44 Truck No.: 711

WINDSOR CA License No.: SP31751

I hereby certify that the above named material was picked up at the generator site listed above and that the above named material was delivered without incident to the destination listed below.

Driver (Print & Sign): KEVIN STOFFEL Date: 7/16/94

Kevin Stoffel

Disposal Facility Acceptance Certification:

I hereby certify that the above named material has been accepted for disposal at BATM Facility, SWL 344C, S.F., California and to the best of my knowledge the foregoing is true and accurate.

Received By (print & sign): Date: 7/16/94

STA_____

10 WHEELER SEMI

NON-HAZARDOUS WASTE ACCEPTANCE FORM
FOR DISPOSAL OF
PETROLEUM CONTAMINATED SOIL

LOAD # 6

Generator Information:

1. Name: Housing Authority: City of Alameda Date: 7 / 16 /94
2. Address: 1916 Webster St.
3. City, State, Zip: Alameda, CA 94501
4. Contact Person: Stephen Boudreau Phone No.: (415) 296-1041

Waste Description: hydrocarbon contaminated soil

Components of Waste: soil/hydrocarbons

Containers (type): end dump Volume: 18 Weight: _____

I hereby certify that the above named material does not contain free liquid that is defined by 40 CFR 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator (print & sign): Dan Jones Dan Jones Date: 7-16-94

Transporter Information:

Transporter Name: DenBeste Phone: (707)-838-1407

Address: 209 Maili Ct Truck No.: 21 21A

Windsor License No.: FT50264

I hereby certify that the above named material was picked up at the generator site listed above and that the above named material was delivered without incident to the destination listed below.

Driver (Print & Sign): [signature] Date: 7/16/94

Disposal Facility Acceptance Certification:

I hereby certify that the above named material has been accepted for disposal at BATM Facility, SWL 344C, S.F., California and to the best of my knowledge the foregoing is true and accurate.

Received By (print & sign): [signature] Date: 7/16/94

STA
10 WHEELER SEMI

NON-HAZARDOUS WASTE ACCEPTANCE FORM
FOR DISPOSAL OF
PETROLEUM CONTAMINATED SOIL

LOAD # 1

Generator Information:

1. Name: Housing Authority: City of Alameda Date: 7 / 16 / 94
2. Address: 1916 Webster St
3. City, State, Zip: Alameda, CA 94501
4. Contact Person: Stephen Boudreau Phone No.: (415) 296-1041

Waste Description: hydrocarbon contaminated soil

Components of Waste: soil/hydrocarbons

Containers (type): end dump Volume: 18yD Weight:

I hereby certify that the above named material does not contain free liquid that is defined by 40 CFR 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator (print & sign): Dan Jones Dan Jones Date: 7-16-94

Transporter Information:

Transporter Name: Don Bost Jr Phone: (209) 838-1407

Address: 209 Main St Winton CA Truck No.: 84

License No.: 2127564

I hereby certify that the above named material was picked up at the generator site listed above and that the above named material was delivered without incident to the destination listed below.

Driver (Print & Sign): Mike Baxman Date: 7/16/94

MIKE BAXMAN

Disposal Facility Acceptance Certification:

I hereby certify that the above named material has been accepted for disposal at BATM Facility, SWL 344C, S.F., California and to the best of my knowledge the foregoing is true and accurate.

Received By (print & sign): Jose L [illegible] Date: 7/16/94

STA 8

10 WHEELER SEMI

NON-HAZARDOUS WASTE ACCEPTANCE FORM
FOR DISPOSAL OF
PETROLEUM CONTAMINATED SOIL

LOAD # 8

Generator Information:

1. Name: Housing Authority: City of Alameda Date: 7 / 16 / 94
2. Address: 1916 Webster ST
3. City, State, Zip: Alameda, CA 94501
4. Contact Person: Stephen Boudreau Phone No.: (415) 296-1041

Waste Description: hydrocarbon contaminated soil

Components of Waste: soil/hydrocarbons

Containers (type): End Dump Volume: 20CY Weight: _____

I hereby certify that the above named material does not contain free liquid that is defined by 40 CFR 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator (print & sign): Dan Jones Dan Jones Date: 7-16-94

Transporter Information:

Transporter Name: Bayside Trucking Phone: (408) 927-9321

Address: 1460 Old Calaveras Rd Truck No.: R86

San Jose, CA License No.: SP00310

I hereby certify that the above named material was picked up at the generator site listed above and that the above named material was delivered without incident to the destination listed below.

Driver (Print & Sign): JOHN GOODWIN Date: 7/16/94

Disposal Facility Acceptance Certification:

I hereby certify that the above named material has been accepted for disposal at BATM Facility, SWL 344C, S.F., California and to the best of my knowledge the foregoing is true and accurate.

Received By (print & sign): _____ Date: 7/16/94

STA_____

10 WHEELER SEMI

NON-HAZARDOUS WASTE ACCEPTANCE FORM FOR DISPOSAL OF PETROLEUM CONTAMINATED SOIL

LOAD # 9

Generator Information:

1. Name: Housing Authority: City of Alameda Date: 7/16/94
2. Address: 1916 Webster St
3. City, State, Zip: Alameda, CA 94501
4. Contact Person: Stephen Boudreau Phone No.: (415)296-1041

Waste Description: hydrocarbon contaminated soil

Components of Waste: soil/hydrocarbons

Containers (type): end dump Volume: 20yD Weight: _____

I hereby certify that the above named material does not contain free liquid that is defined by 40 CFR 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator (print & sign): DAN JONES Dan Jones Date: 7-16-94

Transporter Information:

Transporter Name: DEN BESTE / FLETCHER Phone: (707) 838-1407

Address: 209 MAIN ST Truck No.: 5

WINDSOR CA License No.: SP. 26274

I hereby certify that the above named material was picked up at the generator site listed above and that the above named material was delivered without incident to the destination listed below.

Driver (Print & Sign): ROGER FLETCHER Date: 7/16/94

Roger Fletcher

Disposal Facility Acceptance Certification:

I hereby certify that the above named material has been accepted for disposal at BATM Facility, SWL 344C, S.F., California and to the best of my knowledge the foregoing is true and accurate.

Received By (print & sign): _____ Date: 7/16/94

STA
10 WHEELER SEMI

NON-HAZARDOUS WASTE ACCEPTANCE FORM
FOR DISPOSAL OF
PETROLEUM CONTAMINATED SOIL

LOAD # 10

Generator Information:

1. Name: Housing Authority: City of Alameda Date: 7 /16 / 94
2. Address: 1916 Webster St
3. City, State, Zip: Alameda, CA 94501
4. Contact Person: Stephen Boudreau Phone No.: (415)296-1041

Waste Description: hydrocarbon contaminated soil

Components of Waste: soil/hydrocarbons

Containers (type): end dump Volume: 20yd Weight:

I hereby certify that the above named material does not contain free liquid that is defined by 40 CFR 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator (print & sign): Dan Jones Dan Jones Date: 7-16-94

Transporter Information:

Transporter Name: William Dan Beste Phone: (707) 838 1417
Address: 209 Mercy Ct Truck No.: 094
Windsor License No.: SP3257

I hereby certify that the above named material was picked up at the generator site listed above and that the above named material was delivered without incident to the destination listed below.

Driver (Print & Sign): David Stamp Date: 7/16/94
David Stamp

Disposal Facility Acceptance Certification:

I hereby certify that the above named material has been accepted for disposal at BATM Facility, SWL 344C, S.F., California and to the best of my knowledge the foregoing is true and accurate.

Received By (print & sign): [signature] Date: 7/16/94

STA 11

10 WHEELER SEMI

NON-HAZARDOUS WASTE ACCEPTANCE FORM FOR DISPOSAL OF PETROLEUM CONTAMINATED SOIL

LOAD # 11

Generator Information:

1. Name: Housing Authority: City of Alameda Date: 7 / 16 / 94
2. Address: 1916 Webster St
3. City, State, Zip: Alameda, CA 94501
4. Contact Person: Stephen Boudreau Phone No.: (415) 296-1041

Waste Description: hydrocarbon contaminated soil

Components of Waste: soil/hydrocarbons

Containers (type): end dump Volume: 20YD Weight: _____

I hereby certify that the above named material does not contain free liquid that is defined by 40 CFR 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator (print & sign): Don Jones Don Jones Date: 7-16-94

Transporter Information:

Transporter Name: DEN BESTE Phone: (707) 838-1407

Address: 930 Shiloh Rd Bldg 44 Truck No.: 711

Windsor CA License No.: SP31757

I hereby certify that the above named material was picked up at the generator site listed above and that the above named material was delivered without incident to the destination listed below.

Driver (Print & Sign): Kevin Stoffel Date: 7/16/94

KEVIN STOFFEL

Disposal Facility Acceptance Certification:

I hereby certify that the above named material has been accepted for disposal at BATM FAcility, SWL 344C, S.F., California and to the best of my knowledge the foregoing is true and accurate.

Received By (print & sign): _____ Date: 7/16/94

STA
10 WHEELER SEMI

NON-HAZARDOUS WASTE ACCEPTANCE FORM
FOR DISPOSAL OF
PETROLEUM CONTAMINATED SOIL

LOAD # 12

Generator Information:

1. Name: Housing Authority: City of Alameda Date: 7/16/94
2. Address: 1916 Webster St
3. City, State, Zip: Alameda, CA 94501
4. Contact Person: Stephen Boudreau Phone No.: (415) 296-1041

Waste Description: hydrocarbon contaminated soil

Components of Waste: soil/hydrocarbons

Containers (type): end dump Volume: 20yd Weight:

I hereby certify that the above named material does not contain free liquid that is defined by 40 CFR 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator (print & sign): Dan Jones Dan Jones Date: 7-16-94

Transporter Information:

Transporter Name: Don Reeste Phone: (707) 838-1407
Address: 26 Main CT Truck No.: 21 219
Windsor License No.: SP22401

I hereby certify that the above named material was picked up at the generator site listed above and that the above named material was delivered without incident to the destination listed below.

Driver (Print & Sign): Jon Don Bet Date: 7/16/94

Disposal Facility Acceptance Certification:

I hereby certify that the above named material has been accepted for disposal at BATM Facility, SWL 344C, S.F., California and to the best of my knowledge the foregoing is true and accurate.

Received By (print & sign): Date: 7/16/94

STA_____

10 WHEELER SEMI

NON-HAZARDOUS WASTE ACCEPTANCE FORM FOR DISPOSAL OF PETROLEUM CONTAMINATED SOIL

LOAD # 13

Generator Information:

1. Name: Housing Authority: City of Alameda Date: 7 /16 /94
2. Address: 1916 Webster St
3. City, State, Zip: Alameda, CA 94501
4. Contact Person: Stephen Boudreau Phone No.: (415) 296-1041

Waste Description: hydrocarbon contaminated soil

Components of Waste: soil/hydrocarbons

Containers (type): end dump Volume: 20yd Weight: _____

I hereby certify that the above named material does not contain free liquid that is defined by 40 CFR 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator (print & sign): Dan Jones Dan Jones Date: 7-16-94

Transporter Information:

Transporter Name: Dan Beetle Phone: 707 838-1407

Address: 209 main st Truck No.: 24

Windsor License No.: SP276644

I hereby certify that the above named material was picked up at the generator site listed above and that the above named material was delivered without incident to the destination listed below.

Driver (Print & Sign): MIKE BAYMAN Date: 7/16/94

MIKE BAYMAN

Disposal Facility Acceptance Certification:

I hereby certify that the above named material has been accepted for disposal at BATM Facility, SWL 344C, S.F., California and to the best of my knowledge the foregoing is true and accurate.

Received By (print & sign): _____ Date: 7/16/94

STA

10 WHEELER SEMI

NON-HAZARDOUS WASTE ACCEPTANCE FORM

FOR DISPOSAL OF

PETROLEUM CONTAMINATED SOIL

LOAD # 14

Generator Information:

1. Name: Housing Authority: City of Alameda Date: 7 / 16 / 94
2. Address: 1916 Webster Street
3. City, State, Zip: Alameda, CA 94501
4. Contact Person: Stephen Boudreau Phone No.: (415) 296-1041

Waste Description: hydrocarbon contaminated soil

Components of Waste: soil/hydrocarbons

Containers (type): end dump Volume: 20YD Weight:

I hereby certify that the above named material does not contain free liquid that is defined by 40 CFR 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator (print & sign): Dan Jones [signature] Date: 7-16-94

Transporter Information:

Transporter Name: [illegible] Phone: (90?) 927-9321

Address: 14 [illegible] Truck No.: 12B6

[illegible] License No.: 5P00310

I hereby certify that the above named material was picked up at the generator site listed above and that the above named material was delivered without incident to the destination listed below.

Driver (Print & Sign): John [illegible] [signature] Date: 7/16/94

Disposal Facility Acceptance Certification:

I hereby certify that the above named material has been accepted for disposal at BAYM facility, SWL 344C, S.F. , California and to the best of my knowledge the foregoing is true and accurate.

Received By (print & sign): [signature] Date: 7/16/94

STA 15

10 WHEELER SEMI

NON-HAZARDOUS WASTE ACCEPTANCE FORM
FOR DISPOSAL OF
PETROLEUM CONTAMINATED SOIL

LOAD #

Generator Information:

1. Name: Housing Authority: City Of Alameda Date: 7 / 16 / 94
2. Address: 1916 Webster St
3. City, State, Zip: Alameda, CA 94501
4. Contact Person: Stephen Boudreau Phone No.: (415) 296-1041

Waste Description: Hydrocarbon contaminated soil

Components of Waste: soil/hydrocarbons

Containers (type): end dump Volume: 20yD Weight:

I hereby certify that the above named material does not contain free liquid that is defined by 40 CFR 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator (print & sign): Don Jones Don Jones Date: 7-16-94

Transporter Information:

Transporter Name: DeBESTE / FLETCHER Phone: (707) 838-1407

Address: 209 MAILI CT Truck No.: 5

WINDSOR CA License No.: SP.26276

I hereby certify that the above named material was picked up at the generator site listed above and that the above named material was delivered without incident to the destination listed below.

Driver (Print & Sign): ROGER FLETCHER Date: 7/16/94
Roger Fletcher

Disposal Facility Acceptance Certification:

I hereby certify that the above named material has been accepted for disposal at BATM Facility, SWL 344C, S.F., California and to the best of my knowledge the foregoing is true and accurate.

Received By (print & sign): Date: 7/16/94

STA 16

10 WHEELER SEMI

NON-HAZARDOUS WASTE ACCEPTANCE FORM

FOR DISPOSAL OF

PETROLEUM CONTAMINATED SOIL

LOAD #_____

Generator Information:

1. Name: Housing Authority/City of Alameda Date: 7/16/94
2. Address: 1916 Webster ST
3. City, State, Zip: Alameda CA 94501
4. Contact Person: Steve Boudeau Phone No.: (415) 296-1041

Waste Description: Hydrocarbon contaminated soil

Components of Waste: Soil / Hydrocarbons

Containers (type): end dump Volume: 20yD Weight: _____

I hereby certify that the above named material does not contain free liquid that is defined by 40 CFR 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator (print & sign): Dan Jones Dan Jones Date: 7-16-94

Transporter Information:

Transporter Name: William DeBeats, Phone: (707) 838-1407

Address: 209 Main St Truck No.: 094

Winters Ca License No.: SP33657

I hereby certify that the above named material was picked up at the generator site listed above and that the above named material was delivered without incident to the destination listed below.

Driver (Print & Sign): David Hays Date: 7/16/94

David Hays

Disposal Facility Acceptance Certification:

I hereby certify that the above named material has been accepted for disposal at _____, California and to the best of my knowledge the foregoing is true and accurate.

Received By (print & sign): _____ Date: 7/16/94

STA_____

10 WHEELER SEMI

NON-HAZARDOUS WASTE ACCEPTANCE FORM FOR DISPOSAL OF PETROLEUM CONTAMINATED SOIL

LOAD # 17

Generator Information:

1. Name: Housing Authority: City of Alameda Date: 7/16/94
2. Address: 1916 Webster ST
3. City, State, Zip: Alameda CA 94501
4. Contact Person: Steve Boudreau Phone No.: (415) 296-1041

Waste Description: Hydrocarbon contaminated soil

Components of Waste: Soil / Hydrocarbon

Containers (type): End dump Volume: 20yd Weight: _____

I hereby certify that the above named material does not contain free liquid that is defined by 40 CFR 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator (print & sign): Dan Jones Dan Jones Date: 7-16-94

Transporter Information:

Transporter Name: DEN BESTE Phone: (707) 838-1407

Address: 930 Shiloh Rd Bldg 44 Truck No.: 211

WINDSOR CA. License No.: SP31751

I hereby certify that the above named material was picked up at the generator site listed above and that the above named material was delivered without incident to the destination listed below.

Driver (Print & Sign): KEVIN STOFFER Date: 7/16/94

Kevin D. Stoffel

Disposal Facility Acceptance Certification:

I hereby certify that the above named material has been accepted for disposal at _____, California and to the best of my knowledge the foregoing is true and accurate.

Received By (print & sign): _____ Date: 7/16/94

APPENDIX B

EXCAVATION CLOSURE/DEWATERING DOCUMENTATION

Form: Vta.(fldobsrv-5/92)

REPORT OF FIELD OBSERVATIONS

FUGRO

Job No.: 9437-7623	Date: 7/22/94 (M T W T X S S)
Client: ALAMEDA HOUSING AUTHORITY	Project:
Location: 1916 WEBSTER ST.	Weather: SUNNY 65-80°
Observer: TRACE RANKIN	Observation Period: Start 0630 Stop: 1730

Description: FW ON SITE @0625 | 0630 LOADED GRAVEL TRUCK ON SITE (SP33657) PEA GRAVEL, 0645 RICH WRIGHT ON SITE (BAY AREA-OPERATOR) 0700-0710 LOADED TRUCK DUMP & OFF SITE, 0730-0740 2ND LOADED (SP31751) TRUCK DUMP & LEAVE | 0710-0800 BAY AREA BACKFILL | 0800-0850 WAIT ON TRUCKS | 0850-0900 LOADED TRUCK (SP33657) ARRIVED & DUMPED 0900-0915 BACKFILL // BOB KEMP (BAY AREA) ON SITE @0730 | 0930-0940 LOADED TRUCK (SP31751) ARRIVED & DUMPED | 0945-1000 BACKFILL 1000-1005 S. GEORGE (AHA) ON SITE TO CHECK PROGRESS | 0845 ED FAMPO (BAY AREA) ON SITE - HE SAW OUT FOR TRENCH 0900-1000 | 1007 TRENCHING STARTED | 1040-1055 (SP31751) BACK WITH LOAD OF BASE, 1055-1155 (SP33657) BACK W/ LOAD OF PEA GRAVEL | 1106 WHILE TRENCHING ENCOUNTERED 4" STEEL LINE, ONE END OF PIPE ENDS IN TRENCH (SEE PHOTO) SEEMS TO BE ONLY ≈ 10' LONG, HAS CRACKED & LIFTED ASPHALT, 1117 WENT TO PHONE S. GEORGE (AHA) | TRENCHING & BACKFILLING STILL GOING ON - 1130 1130 S. GEORGE ON SITE WITH CARE (?) (AHA ALSO) SAW OUT ASPHALT & PULL OUT PIPE, AHA SATISFIED PIPE IS ~~BEST~~ NO TO ANYTHING LEFT SITE @ 1155 | 1155-1210 (SP31751) LOADED TRUCK, BASE, ARRIVED & DUMPED | 1200-1300 BAY AREA OFF FOR LUNCH | 1307 FW REP FINISHED LAYING 4" LINE IN TRENCH FOR VE - CAPPED END (TRENCH 18" DEEP) ALSO SET IN 4" CONDUIT LINE - 1605 | 1415-1615 BAY AREA LEVELING OUT PEA GRAVEL IN EXCAVATION | 1615-1640 BACK LOES IN TRENCH 1640-1700 BAY AREA PUT EQUIP UP & SECURE EXCAVATION SITE WITH BARRICADES | 1650-1700 FW, WENT TO PH S. BOURDEAU (P.M.) OF DAYS PROGRESS & STATUS | 1700-1730 FW PUT AWAY EQUIP & WALK AROUND SITE, CHECK & LOCK GATES & ROLL UP DOORS

Mileage: 114 miles

Copy Sent To Client: Y N	Continued On Next Page	Page 1 Of 2

Form: Vta.(fldobsrv-5/92)

REPORT OF FIELD OBSERVATIONS

FUGRO

Job No.: 9437-7623	Date: 7/22/94	M	T	W	T	X F	S	S
Client: ALAMEDA HOUSING AUTHORITY	Project:							
Location: 1916 WEBSTER ST ALAMEDA	Weather: SUNNY 65-80°							
Observer: TRACE RANKIN	Observation Period: Start: 0630 Stop: 1730							

Description: FW MONITORED SITE AREA WITH FOXBORO FID, SEE ATTACHED FIELD NOTES

BAY AREA EMPLOYEES ON SITE/RICH WRIGHT (OPERATOR) 0645-1700, BOB KEMP (SUPER) 0800-0945, 1400-1700/ED FAABAD (OPERATOR, LABORER) 0845-1700
TRUCK DRIVERS & # OF LOADS/SP3175 - KEVIN STOFFEL (III), SP33657 DAVID HARP (III)

NOTE: TRENCH ENDS AT EDGE OF PLANTER ALONG FENCE. VE LINE IN WEST SIDE OF TRENCH & CONDUIT IN EAST SIDE

Mileage: _____ miles

Copy Sent To Client: Y N	~~Continued On Next Page~~	Page 2 Of 2

5855 Olivas Park Drive • Ventura, California 93003-7672 • (805) 650-7000, FAX (805) 650-7010

Form: Vta.(fldobsrv-5/92)

REPORT OF FIELD OBSERVATIONS

FUGRO

Job No.: 9437-7623	Date: 7/21/94	M	T	W	X	F	S	S
Client: ALAMEDA HOUSING AUTHORITY	Project:							
Location: 916 WEBSTER ST	Weather: SUNNY 65°-80°							
Observer: TRACE RANKIN	Observation Period: Start: 0630 Stop: 1630							

Description: 1430 LOADED TRUCK (SP34076) ARRIVED & DUMPED -1440 / 1430 BACKHOE ON SITE / 1440-1450 (SP33657) LOADED TRUCK ARRIVED & DUMPED / 1450-1530 BACKFILL EXCAVATION / 1515-1525 (SP31751) LOADED TRUCK ARRIVED & DUMPED 1530-1630 BAY AREA STARTED PUTTING EQUIPMENT AWAY. NO MORE GRAVEL TRUCKS TODAY, PICK UP TOOLS, SECURE EXCAVATION, FW REP DID FINAL WALK AROUND LOCK ALL GATES & ROLL UP DOORS

BAY AREA TANK EMPLOYEES ON SITE / RICH WRIGHT (OPERATOR) 0715-1630, MIKE PEDERSON (SALES) 0800-1200, BOB KEMP (SUPERVISOR) 1000-1630 RICHARD HUGHES 1100-1630 (LABORER)
LAIDLAW DRIVER - BRIAN MINER
TRUCK DRIVERS & # OF LOADS / SP31751 - KEVIN STOFFEL (1111) SP33657 - DAVID HARP (1111), SP34076 - JOHN LEACH (11)
≈25 TON EA TRUCK, TOTAL PEA GRAVEL TODAY 175 TON

FW CONTINUALLY MONITORED WORK AREA WITH A FOXBORO FID SEE ATTACHED FIELD SHEETS

MET WITH S. GEORGE (AHA) EARLIER IN DAY - GIVEN PRECAUTIONS & CONCERNS OF AHA. I WAS ASKED TO NOTIFY HER OF ANY COMPLAINTS AND/OR PROBLEMS ON SITE. PHONED & LEFT MESSAGE OF PROGRESS ≈ ~~700~~ 1100 HRS ON VOICEMAIL

PHOTOS TAKEN THROUGHOUT DAY DURING WORK

Mileage: _____ miles

Copy Sent To Client: Y N	Continued On Next Page	Page 2 Of 2

Form: Vta.(fldobsrv-5/92)

REPORT OF FIELD OBSERVATIONS

Job No.: 9437-7623	Date: 7/21/94 (M T W **X** F S S)
Client: ALAMEDA HOUSING AUTHORITY	Project:
Location: 1916 WEBSTER ST	Weather: SUNNY 65°-80°
Observer: TRACE RANKIN	Observation Period: Start: 0630 Stop: 1630

Description: 0400-0630 TRAVEL TO SITE, MEET WITH FW PROJECT MANAGER S. BOURDEAU & GO OVER PLANS FOR BACKFILLING EXCAVATION, AND INSTALLATION OF HORIZONTAL VE LINE & CONDUIT. ALSO INSTALLATION OF 12" CONDUCTOR PIPE FOR FUTURE MONITOR WELL. 0715 BAY AREA TANK ON SITE WITH AVC PIPE (RIGHT WRIGHT). 0730 LAIDLAW VAC TRUCK ON SITE (BRIAN MINER) OPEN UP SITE & POSITION VAC TRUCK, SUCKING OUT EXCAVATION WATER @ 0755 TO 0920. (2) LOADED TRUCKS ON SITE @ 0825 (PEA GRAVEL) TRUCK LICENSE #'S SP33657 & SP31751, BOTH DUMP, OFFSITE @ 0905. 0905-0915 ~~0920~~ BAY AREA PUSHED PEA GRAVEL INTO EXCAVATION. 0920-1000 LAIDLAW PICK UP HOSES, COMPLETE PAPERWORK. FW REP SIGNED GIBSON PROFILE SHEET & BILL OF LADING FOR LOADED WATER (≈1300 GAL) DESTINED FOR GIBSON IN REDWOOD CITY. VAC TRUCK GONE @ 1000 / BOB KEMP w/ BAY AREA TANK ON SITE @ 1000. MIKE PEDERSON (BAY AREA) ON SITE @ 0800 WAIT ON TRUCKS TO 1015. SAME 2 TRUCKS RETURNED LOADED @ 1045, BOTH DUMP & GONE BY 1100 / 1115-1130 BAY ~~BAAREA~~ PUSHED ~~BOTH~~ BOTH LOADS INTO EXCAVATION / 1100-1225 WAIT ON TRUCKS, 1285 3RD LOADED TRUCK ARRIVED (SP34076), GONE @ 1230 / 1240 LOADED TRUCK DUMPED, GONE @ 1250. GRAVEL BEING PUSHED INTO EXCAVATION DURING THIS TIME. 1250-1345 PREP BOTTOM OF EXCAVATION, ASSEMBLE & INSTALLED HORIZONTAL VE (VAPOR EXTRACTION) LINE INTO ~~TRENCH~~ EXCAVATION. PIPE SET ON ≈ 12"-16" PEA GRAVEL. PUT 90° ELBOW ON ONE END & CAP OTHER, INSTALL RISER TO TOP OF EXCAVATION. INSTALL 12 3/4 OD STEEL PIPE IN EXCAVATION. BACK FILL OVER VE LINE, PUSH STEEL PIPE INTO GROUND ≈ 6" WITH LOADER BUCKET, LEVEL UP, BACKFILL AROUND BOTTOM / 1345-1430 BREAK FOR LUNCH

Mileage: 106 miles

Copy Sent To Client: Y N | Continued On Next Page | Page 1 Of 2

Gibson Environmental

#2875
FUGRO WEST, INC.

July 22, 1994

BAY AREA TANK & MARINE

4851 SUNRISE DR STE 104
MARTINEZ,CA 94553

EPA# CA* (007515)

This letter is to inform you that Gibson Environmental has accepted your material for recycling.

Gibson certifies that the material received on the manifests indicated below has been properly treated and recycled.

Date	Manifest	Movement	Quantity	UOM
07/21/94	068	00102430	1,300	GAL

If this information does not agree with your records, please notify us within ten days so we can resolve any discrepancies.

Generators, know your wastestream. Gibson Bakersfield is only permitted to accept the following wastes that are varying combinations of oil, water and solids under California Waste Codes 221, 222, 223, 241. In addition, Gibson at Bakersfield may accept waste codes D004 through D043.

For information as to approved codes for Gibson's Wilmington and Redwood City facilities, please call (800) 582-3935.

This notice is required by the Department of Toxic Substance Control.

Gibson Environmental
Customer Service
3300 Truxtun Avenue Suite 200
Bakersfield, CA 93301
(805) 327-0413

#14842

This Shipping Order must be legibly filled in, in Ink, in Indelible Pencil, or in Carbon, and retained by the Agent.

Shipper's No.

Carrier's No.

Carrier LAIDLAW ENVIRONMENTAL SERVICES

RECEIVE, subject to the classifications and tariffs in effect on the date of the issue of this Shipping Order,

7-21 1994 from HOUSING AUTHORITY : CITY of ALAMEDA

Property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which the carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Shipper hereby certifies that he is familiar with all the terms and conditions of the Uniform Straight Bill of Lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to BAY AREA TANK & MARINE INC 4451 CHESLEY DR #104 MARTINEZ CA 9455-

Destination GIBSON ENVIRONMENTAL (Mail or street address of consignee—For purposes of notification only) State CA Zip Code ____ County SAN MAT.

Delivery Address ★ 475 SEAPORT BLVD.

(★ To be filled in only when shipper desires and governing tariffs provide for delivery thereof.)

Route ____ Car or Vehicle Initials ____ No. ____

Delivering Carrier LAIDLAW ENVIRONMENTAL SVS

No. Packages	Kind of Package, Description of Articles, Special Marks, and Exceptions	*Weight (Subject to Correction)	Class or Rate	Check Column
1	VACUUM TRUCK, NON HAZ GROUNDWATER WITH LOW LEVELS HYDROCARBONS (0-1 %)	1300 GAL (ESTIMATED)		
	RELEASE # 14842			

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:

The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor.)

If charges are to be prepaid, write or stamp here, "To Be Prepaid."

Received $ ____ to apply in prepayment of the charges on the property described hereon.

Agent or Cashier

Per ____

(The signature here acknowledges only the amount prepaid.)

Charges Advanced:

$ ____

*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight."

NOTE—Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.

The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding ____ per ____

"The fibre boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of Uniform Freight Classification."

Shipper's imprint in lieu of stamp; not a part of bill of lading approved by the Interstate Commerce Commission.

Shipper, Per Douglas Muniz 7/21/94

Agent must detach and retain this Shipping Order and must sign the Original Bill of Lading.

Permanent post-office address of shipper.

CARBONLESS SPEED

REDIFORM: 65696

POLY PAK (50 SETS) 6P696

60L #5611

Gibson Environmental

475 SEAPORT BOULEVARD
REDWOOD CITY, CA 94063
(415) 368-5511

JW # 18062
506 # 2875

ORIGIN: Bay Area Tank & Marine

DESTINATION: GIBSON ENVIRONMENTAL
475 SEAPORT BOULEVARD
REDWOOD CITY, CA 94063

WEIGHT TAG NUMBER

DATE: July 21, 1994

MANIFEST#: 068

INVOICE TO:

PRICE: 75

CARRIER #	CARRIER	RELEASE#	COMMODITY	TDS	PH	GRAV.	NET GALLONS/BBLS
15027 / 5007	Laidlaw	14842	WW	900	8.5	10	13006 / 30.95

ARRIVED TO UNLOAD	START TO UNLOAD	FINISH UNLOADING	SOLIDS %	WASHOUT GALLONS	DEDUCT B S & W %	NET BARRELS
1130 AM / PM	AM / PM	1230 AM / PM	1%		99%	

LOADED FROM: Vac Truck

UNLOADED TO: 30719

LOADER'S SIGNATURE: Tanya Moniz

DRIVER'S SIGNATURE: Brian Myers

REMARKS:

RECEIPT TICKET
02430
R 5611

APPENDIX C

MONITORING WELL INSTALLATION DOCUMENTATION

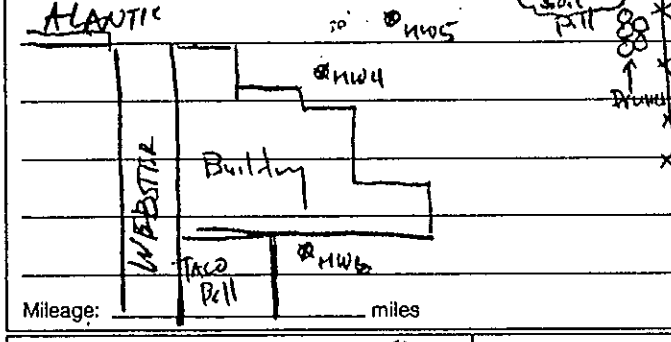
Steve Boudreau 94-37-7623
Jeff Ung

Form: Vta.(fldobsrv-5/92)

REPORT OF FIELD OBSERVATIONS

Job No.: 9437-7623	Date: 9-12-94 (M) T W T F S S
Client: ALAMEDA HOUSING	Project: 1916 Webster
Location: 1916 WEBSTER ST, ALAMEDA, CA	Weather: Partly Cloudy
Observer: JEFFREY C. UNG	Observation Period: ~~8:30~~ Start: 8:30 Stop: 4:00

Description: ~~MW4~~ DRILLER (WEST HAZMAT) ARRIVED @ 8:30 AM
Driller (Scott) Helper (Ruben) / Drilling CME 55 mobile drill rig
- Survey Company Survey MW 1 & MW 3 / could not locate MW 2 (covered by pea gravel), The survey company will survey the newly installed wells 9/13/94.
- MW 4 drilled thru conductor hole in the backfill area / sample collected from bottom of conductor hole 5.5' bgs to 7' bgs, gray black silty sand FN wet / odor (sample S1) / start 9:30 / 7'-15' gray brn silty sand / Well installed 10' screen, 5' solid / Well was ~~developed~~ swabbed & developed (~ 25 g removed) - blow counts 5-6-6 / PID = 123
- MW 5 (start 11:15) 0-3" Asphalt 3"-5' black silty sand moist strong odor / Sample @ 5'-6.5', blow cts 7-9-12, 5'-5.5' black silty sand FN, wet, strong odor PID = 130 / 5.5-6.5' lt. gray silty sand, wet, no odor / 6.5'-8' lt. gray silty sand / 8'-15' greenish brown silty sand wet / Well swabbed & developed (~ 25 g water)
- MW 6 (start 1:30) / 0-3" Asphalt / 3"-3' brn silty silt, damp, no odor / 3'-5' black silty clay, slight odor, moist / sample 5'-6.5', blow cts 8-7-6 grayish tan wet silty sand no odor, PID = 0 / 6.5-15' green silty sand
- Backfilled @ 3:00 & cemented @ 3:30



Ground Water ~~Temperature~~ Level Measurements

Well #	TIME	DGW (Feet)
MW 1	2:17p	4.88
3	2:45p	4.55
4	2:36p	4.9
5	2:30p	5.35
6	3:15p	4.94

Copy Sent To Client: Y (N)	Continued On Next Page	Page 1 Of 1

Form Vta
REPORT

ZONE 7 WATER AGENCY

6997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 VOICE (510) 484-2600
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT
1916 WEBSTER STREET
ALAMEDA, CA

CLIENT
Name ALAMEDA HOUSING AUTHORITY
Address 701 ATLANTIC AVE Voice 510-522-8422
City ALAMEDA CA Zip 94501

APPLICANT
Name FUGRO WEST, INC.
STEPHEN BOUDREAU Fax 415-786-0994
Address 4 MONTGOMERY ST, STE 1210 Voice 415-786-1044
City S.F. Zip 94104

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	___	General	___
Water Supply	___	Contamination	___
Monitoring	X	Well Destruction	___

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other ___
Municipal ___ Irrigation ___

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger X
Cable ___ Other ___

DRILLER'S LICENSE NO. WEST HAZMAT 554979

WELL PROJECTS
Drill Hole Diameter 10 in. Maximum
Casing Diameter 4 in. Depth 15 ft.
Surface Seal Depth 5 ft. Number 3

GEOTECHNICAL PROJECTS
Number of Borings ___ Maximum
Hole Diameter ___ in. Depth ___ ft.

ESTIMATED STARTING DATE 9/12/94
ESTIMATED COMPLETION DATE 9/12/94

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [signature] Date 9/6/94

FOR OFFICE USE

PERMIT NUMBER 94563
LOCATION NUMBER

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

(B.) WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved Craig A. Mayfield Date 7-Sep-94

Excelchem
Environmental Labs

4946 Watt Avenue, #38
North Highlands, CA 95660
(916)334-8661

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

ANALYSIS REQUEST 94-37-7623

TAT

Project Manager: JEFFREY C. UNG
Phone #: (916)782-2110
FAX #(916) 786-7030
Company/Address: FUGRO WEST, INC 1050 MELODY LN, ROSEVILLE, CA 95678
Project Number: 9437-7623
P.O.#:
Project Name: ALAMEDA HOUSING
Project Location: 1916 WEBSTER ST.
Sampler Signature:

Sample ID	Sampling DATE	Sampling TIME	Container VOA	Container SLEEVE	Container 1L GLASS	Container 1L PLASTIC	Method Preserved HCl	Method Preserved HNO_3	Method Preserved ICE	Method Preserved NONE	Matrix WATER	Matrix SOIL	BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel (8015)	TPH as Oil (8015)	Total Oil & Grease (5520 B/E,F)	Total Oil & Grease IR (5520 B/E,F,C)	96 - Hour Fish Bioassay	EPA 601/8010	EPA 602/8020	EPA 615/8150	EPA 608/8080 - Pesticides	EPA 608/8080-PCBs	EPA 624/8240	EPA 625/8270	ORGANIC LEAD	Reactivity, Corrosivity, Ignitibility	W.E.T.	TOTAL	CAM - 17 Metals	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	Cd, Cr, Pb, Zn, Ni			RUSH SERVICE (12 hr) or (24 hr)	EXPEDITED SERVICE (48 hr) or (1 wk)	STANDARD SERVICE (2wk) 5day
S1	9/12/94	0930		✓					✓	✓		✓		✓																									✓
S2	↓	1100		✓					✓	✓		✓		✓																									✓
S3	↓	1335		✓					✓			✓		✓																									✓

SU 9/12/22
SU 9/12/23
SU 9/12/24

Relinquished by:	Date	Time	Received by:
	9/13/94		
Relinquished by	Date	Time	Received by:
Relinquished by	Date	Time	Received by Laboratory: 9/13/94

Remarks: RECEIVED
SEP 2 2 199[illegible]
Ans'd CF/JW

Bill To:

Excelchem
Environmental Labs
4946 Watt Avenue, #38
North Highlands, CA 95660
(916)334-8661

ANALYSIS REPORT

Attention: Mr. Jeffrey Ung
FUGRO WEST, INC.
1050 Melody Lane, Suite 160
Roseville, CA 95678
Project : 9437-7623

Date Sampled: 09-12-94
Date Received: 09-13-94
TPHg Analyzed: 09-15-94
BTEX Analyzed: 09-15-94
Matrix: Soil

	Benzene PPM	Toluene PPM	Ethyl-benzene PPM	Total Xylenes PPM	TPHg PPM
Reporting Limit:	0.005	0.005	0.005	0.005	1.0
SAMPLE Laboratory Identification:					
S1 S0994222	0.14	0.014	0.006	0.074	1.7
S2 S0994223	0.080	ND	ND	0.018	ND
S3 S0994224	ND	ND	ND	ND	ND

ppm = Parts per million = mg/Kg = milligram per Kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

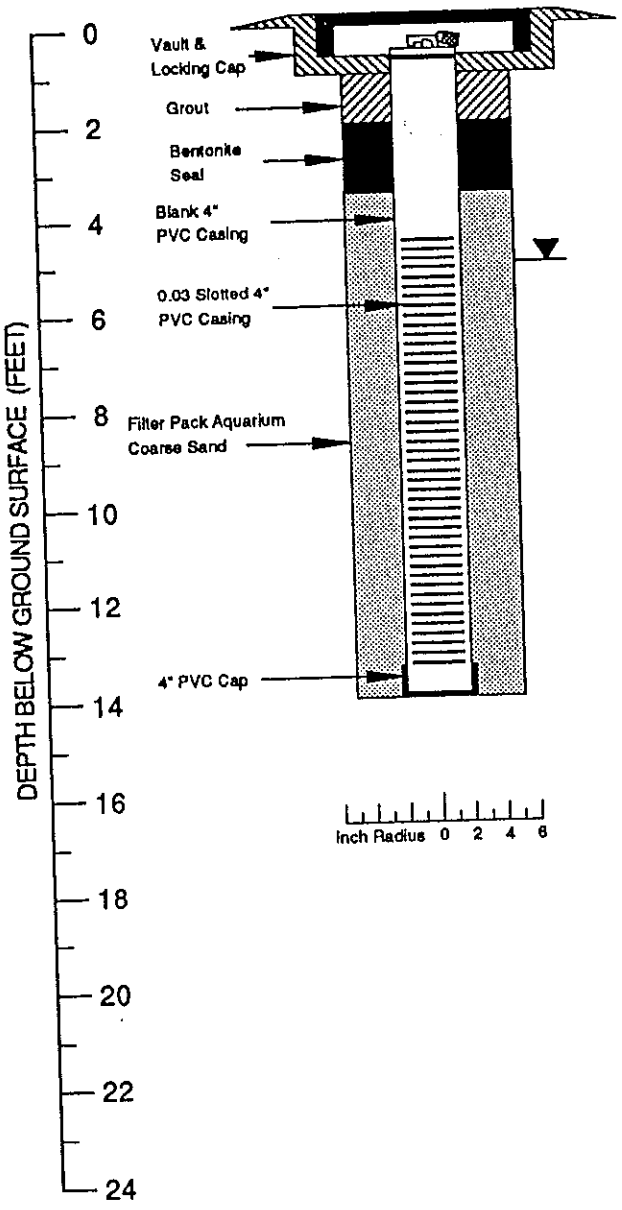
ANALYTICAL PROCEDURES

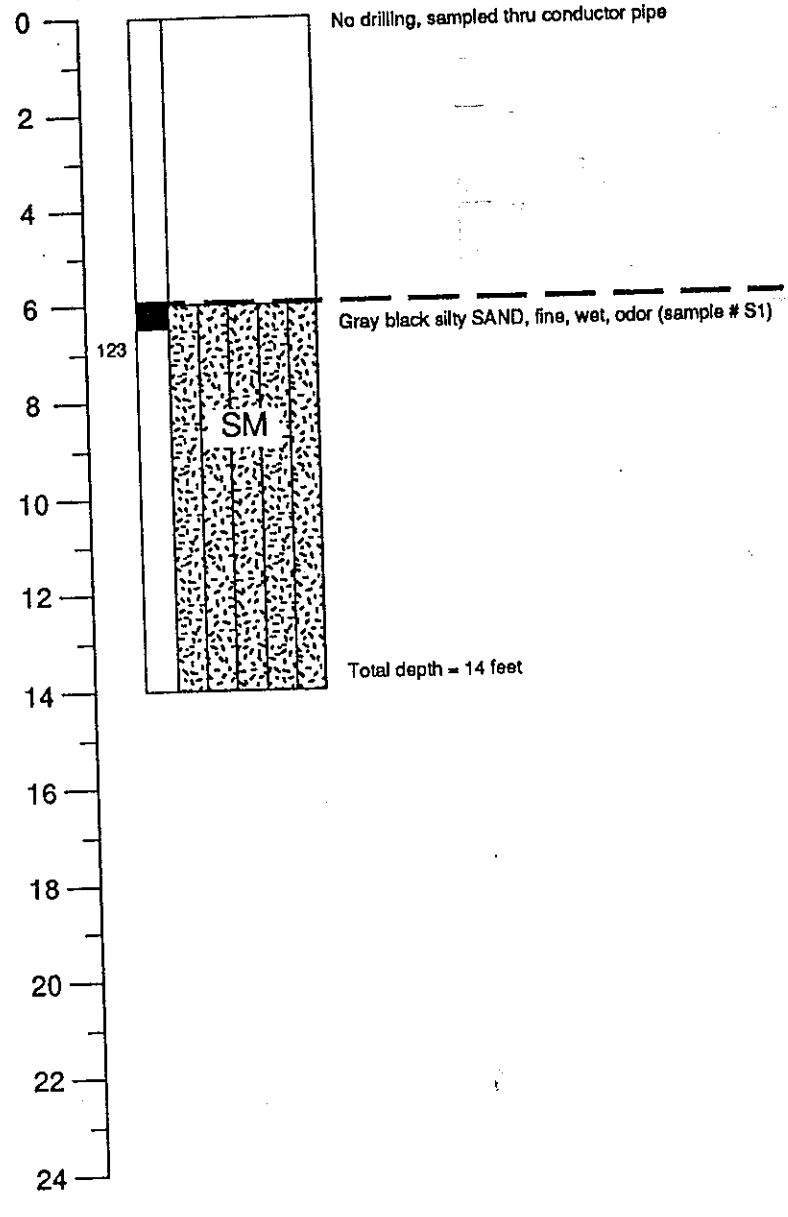
BTEX– Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID).
TPHg–Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030 followed by analysis using modified EPA Method 8015, which uses a GC equipped with and FID.

09-20-94

EXCELCHEM ENVIRONMENTAL LABS IS CERTIFIED BY THE STATE OF CALIFORNIA
DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY
(Certification No. 1760)

WELL CONSTRUCTION DETAIL





Logged by:	J. Ung	Drilling Company:	West Hazmat Drilling	Well Head Completion:	10:30 hrs
Project Mgr:	S. Boudreau	Drilling Method:	Hollow Stem Auger	Type of Sampler:	Split Spoon
Date Drilled:	September 12, 1994	Driller:	Scott & Rueben	TD (Total Depth):	14'

Explanation

- Water level in completed well
- First water found during drilling
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- Sieve sample
- Continuous Core

Contacts:

- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K — Estimated permeability (hydraulic conductivity) 1K= primary, 2K= secondary
- NR — No Recovery

Monitoring Well 4

Alameda Housing
1916 Webster Street
Alameda, CA

FUGRO

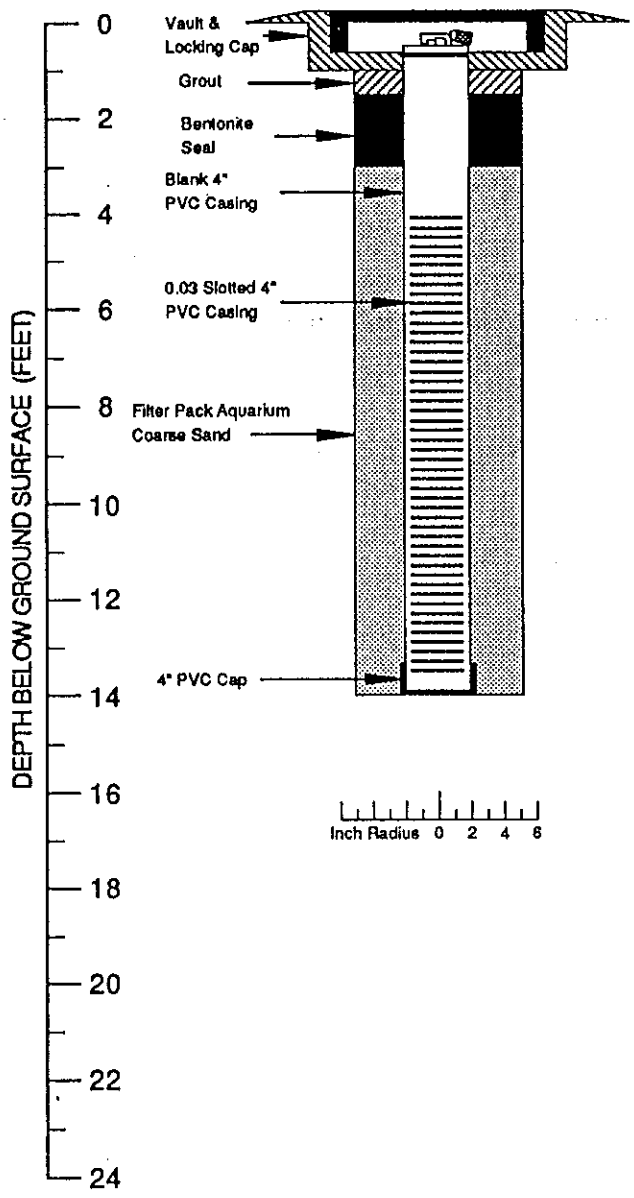
Drawn By:	D. Hada
Date:	September 13, 1994
Revised By:	
Date:	

Page: 1 of 1

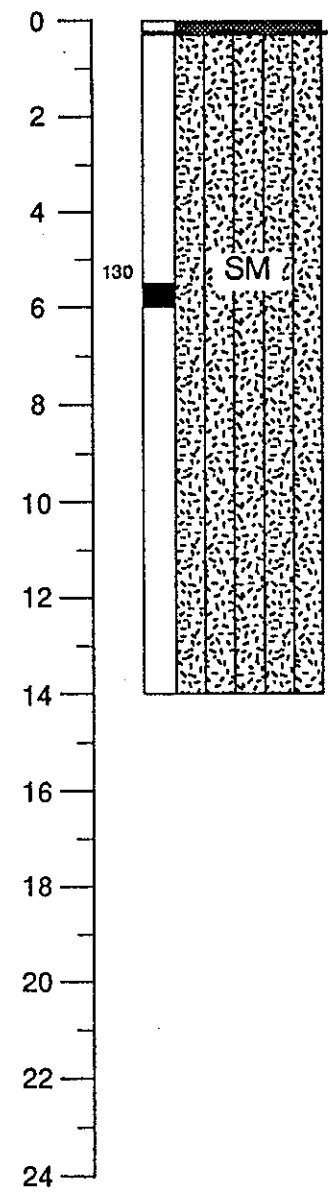
Well Number: MW-4

Job Number: 94-37-7623

WELL CONSTRUCTION DETAIL



GRAPHIC LOG



DESCRIPTION

Asphalt

Black silty SAND, moist, odor (strong)

Black silty SAND, fine, wet, odor

Light gray silty SAND, fine, wet, no odor

Greenish brown silty SAND, fine, wet, slight odor

Total depth = 14 feet

Logged by:	J. Ung	Drilling Company:	West Hazmat Drilling	Well Head Completion:	12:45 hrs
Project Mgr:	S. Boudreau	Drilling Method:	Hollow Stem Auger	Type of Sampler:	Split Spoon
Date Drilled:	September 12, 1994	Driller:	Scott & Rueben	TD (Total Depth):	14'

Explanation

- Water level in completed well
- First water found during drilling
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- Sieve sample
- Continuous Core

Contacts:

- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K — Estimated permeability (hydraulic conductivity) 1K= primary, 2K= secondary
- NR — No Recovery

Monitoring Well 5

Alameda Housing
1916 Webster Street
Alameda, CA

FUGRO

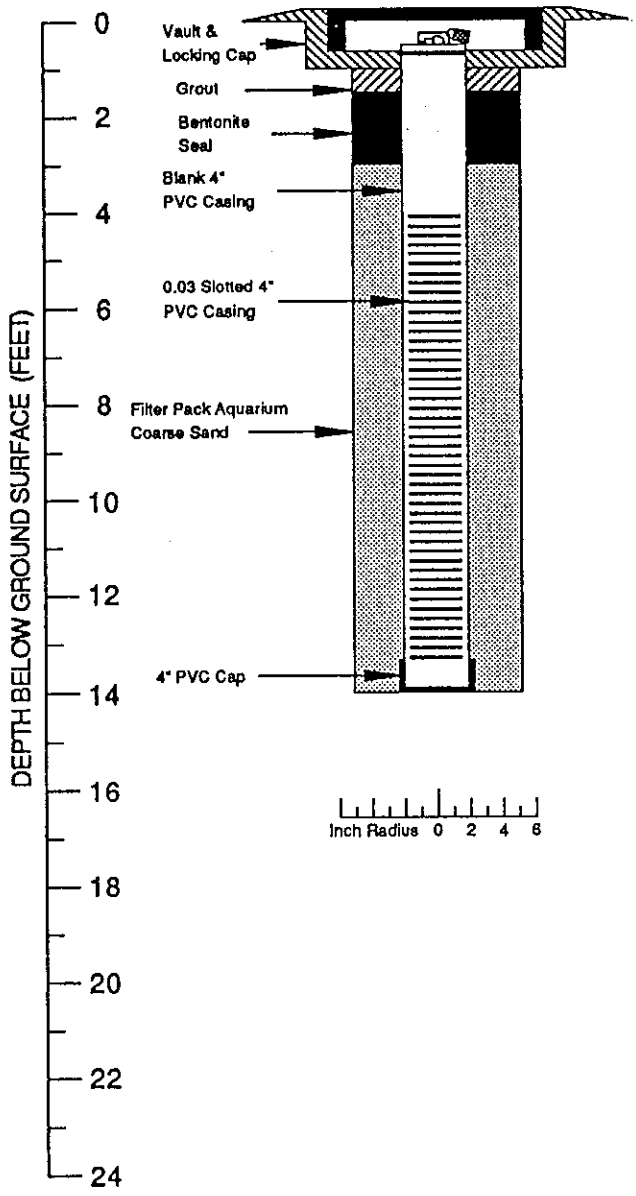
Drawn By: D. Hada
Date: September 13, 1994
Revised By:
Date:

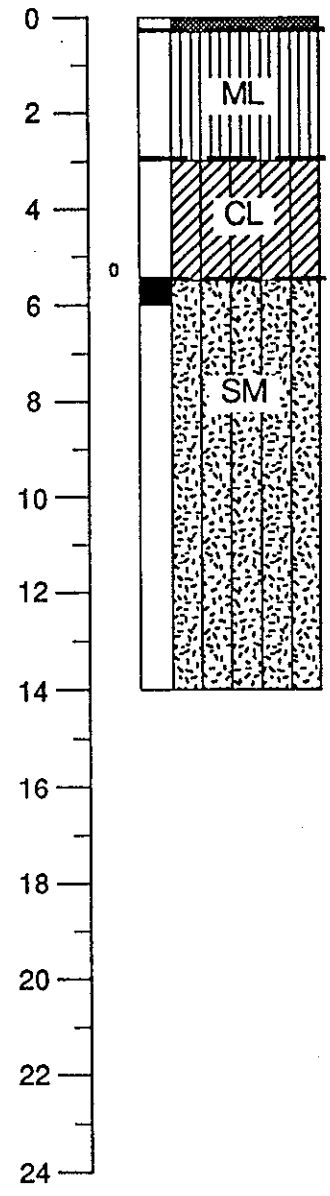
Page: 1 of 1

Well Number: MW-5

Job Number: 94-37-7623

WELL CONSTRUCTION DETAIL





Logged by:	J. Ung	Drilling Company:	West Hazmat Drilling	Well Head Completion:	15:00 hrs
Project Mgr:	S. Boudreau	Drilling Method:	Hollow Stem Auger	Type of Sampler:	Split Spoon
Date Drilled:	September 12, 1994	Driller:	Scott & Rueben	TD (Total Depth):	14'

Explanation

- Water level in completed well
- First water found during drilling
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- Sieve sample
- Continuous Core

Contacts:

- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational
- est K — Estimated permeability (hydraulic conductivity) 1K= primary, 2K= secondary
- NR — No Recovery

Monitoring Well 6

Alameda Housing
1916 Webster Street
Alameda, CA

Drawn By:	D. Hada
Date:	September 13, 1994
Revised By:	
Date:	

Page: 1 of 1

Well Number: MW-6

Job Number: 94-37-7623

RON ARCHER
CIVIL ENGINEER, INC.

CONSULTING • PLANNING • DESIGN • SURVEYING

4133 Mohr Ave., Suite E • Pleasanton, CA 94566

(510) 462-9372

REGISTERED PROFESSIONAL ENGINEER
RONALD R. ARCHER
No. 23721
Exp. 12/31/97
CIVIL
STATE OF CALIFORNIA

JOB NO. 2179

SEPTEMBER 12, 1994

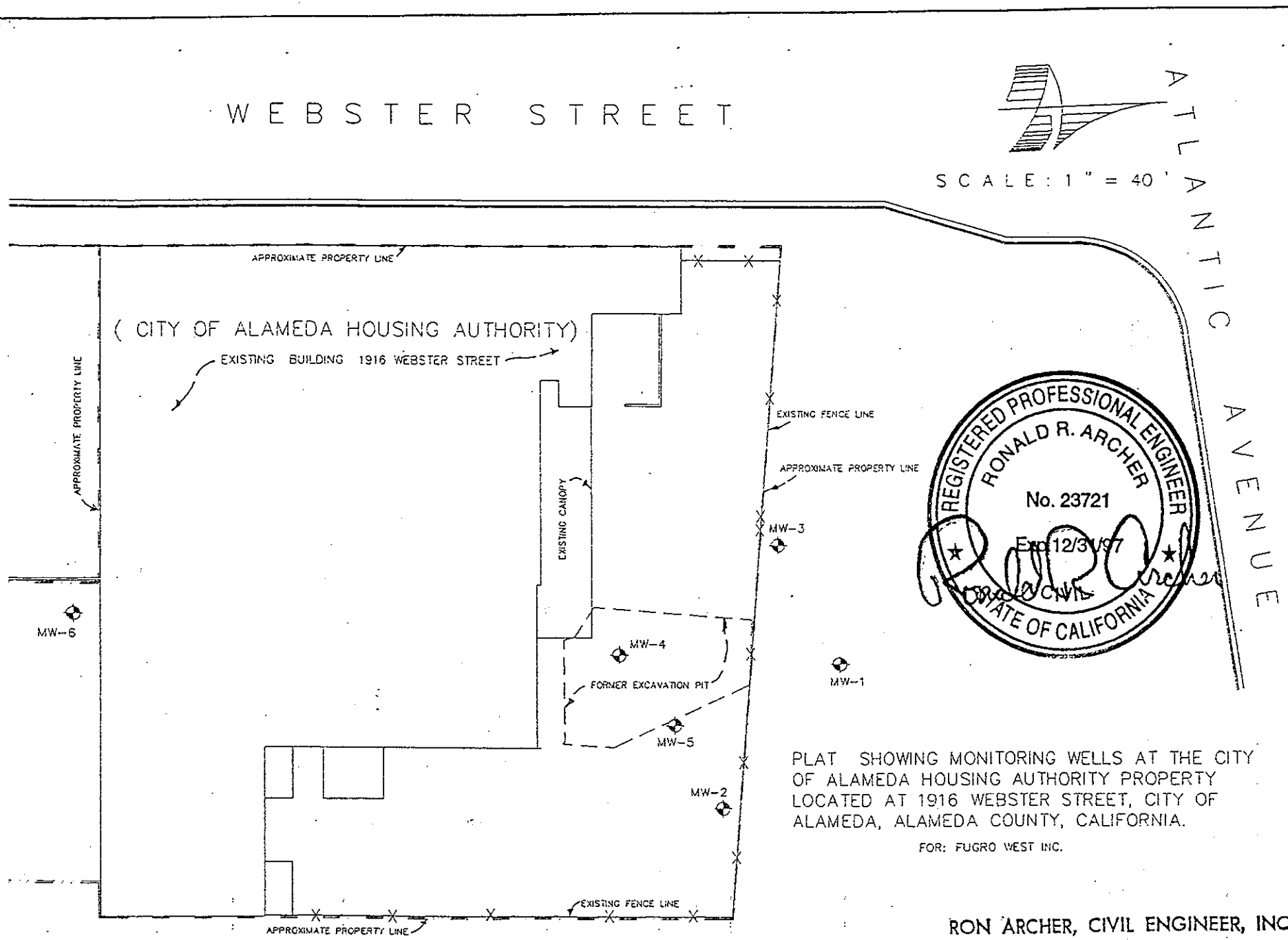
ELEVATIONS OF EXISTING MONITORING WELLS AT THE CITY OF ALAMEDA HOUSING AUTHORITY PROPERTY LOCATED AT 1916 WEBSTER STREET AT ATLANTIC AVENUE, CITY OF ALAMEDA, ALAMEDA COUNTY, CALIFORNIA.

FOR: FUGRO WEST INC.

BENCHMARK: A FOUND CUT SQUARE IN TOP OF CONCRETE CURB AT A STORM INLET APPROXIMATELY 75 FEET EAST OF THE INTERSECTION OF ATLANTIC AVENUE AND CONSTITUTION WAY ON THE SOUTH SIDE OF ATLANTIC. ELEVATION TAKEN AS 7.50 MEAN SEA LEVEL.

MONITORING WELL DATA TABLE

WELL DESIGNATION	TOP OF CASING ELEVATION	TOP OF BOX ELEVATION
MW-1	6.51	6.67
MW-2	7.26	7.53
MW-3	6.71	7.09
MW-4	7.55	7.84
MW-5	7.31	7.65
MW-6	8.09	8.60



PLAT SHOWING MONITORING WELLS AT THE CITY OF ALAMEDA HOUSING AUTHORITY PROPERTY LOCATED AT 1916 WEBSTER STREET, CITY OF ALAMEDA, ALAMEDA COUNTY, CALIFORNIA.

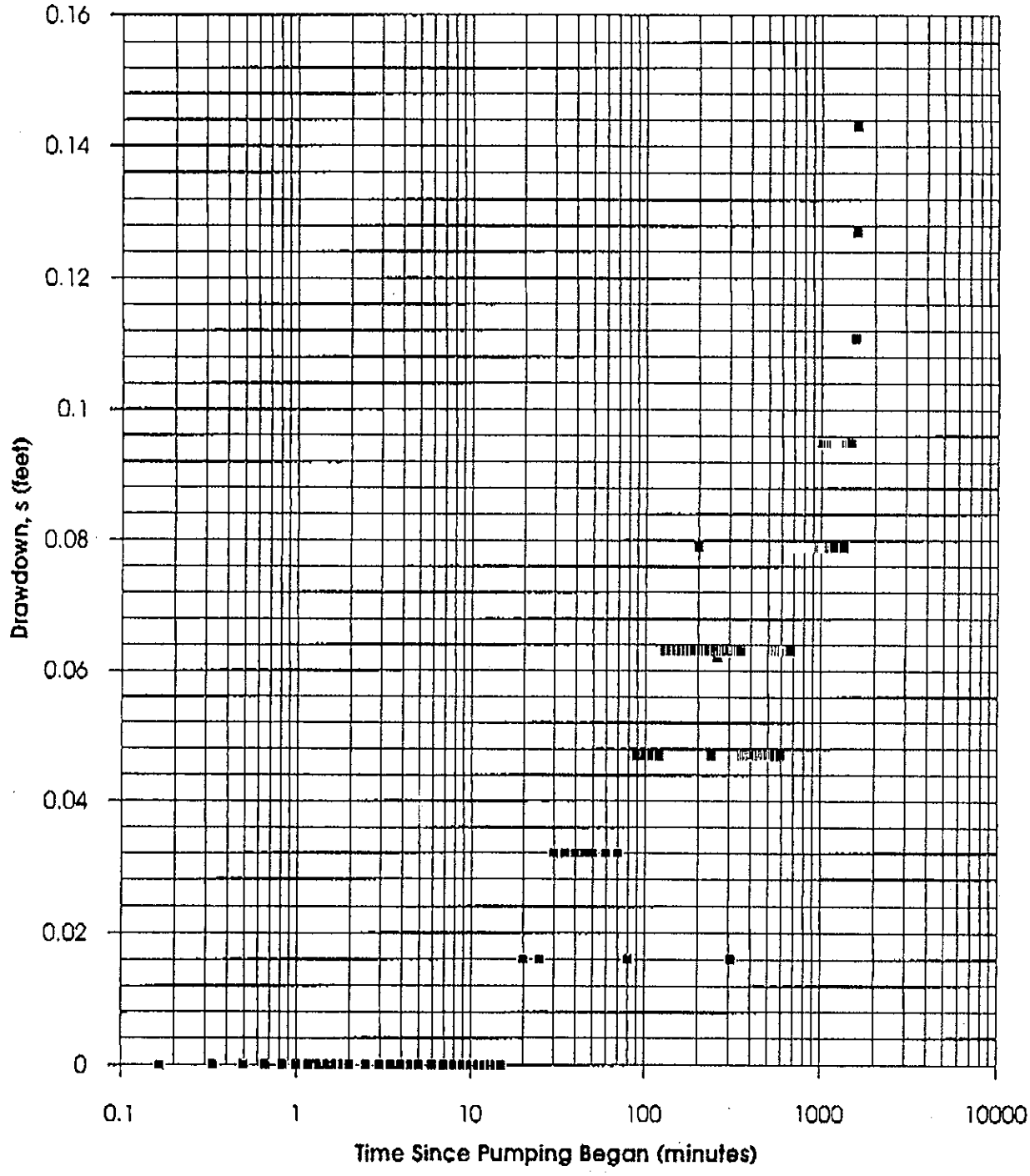
FOR: FUGRO WEST INC.

RON ARCHER, CIVIL ENGINEER, INC.
4133 MOHR AVE., SUITE E
PLEASANTON, CA 94566

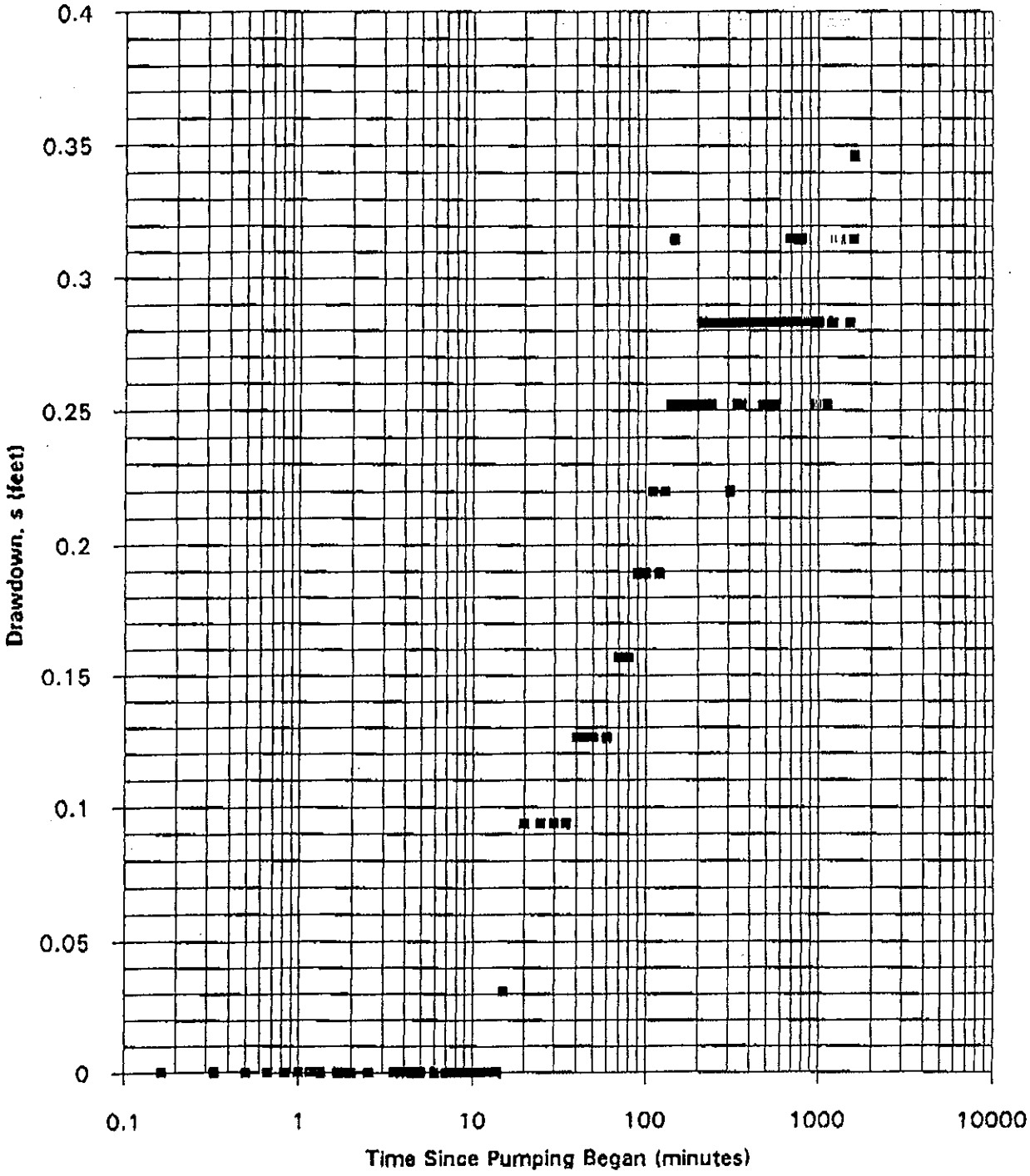
APPENDIX D

AQUIFER TESTING DOCUMENTATION

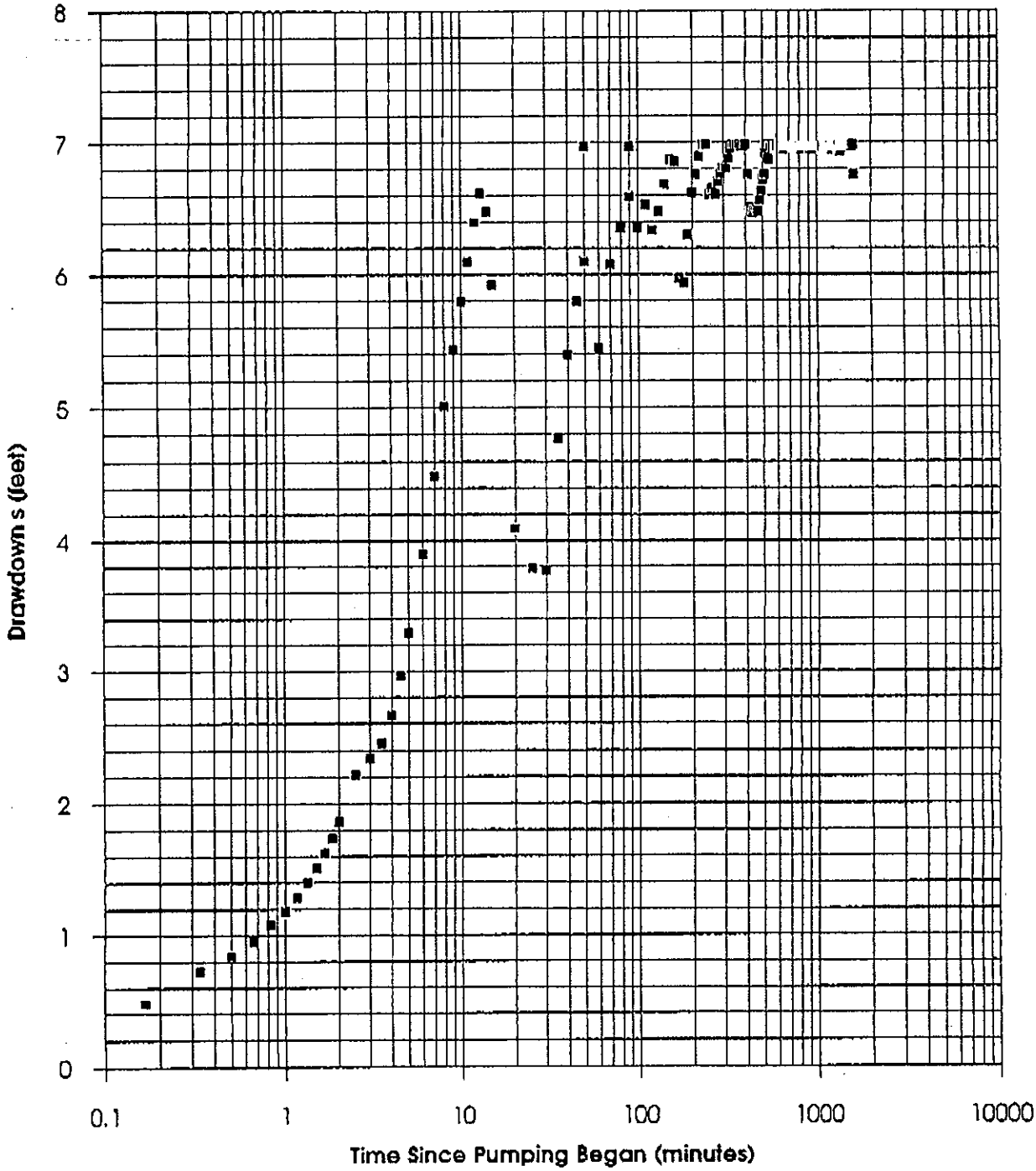
MW-2 (55 feet from pumping well) Test Data



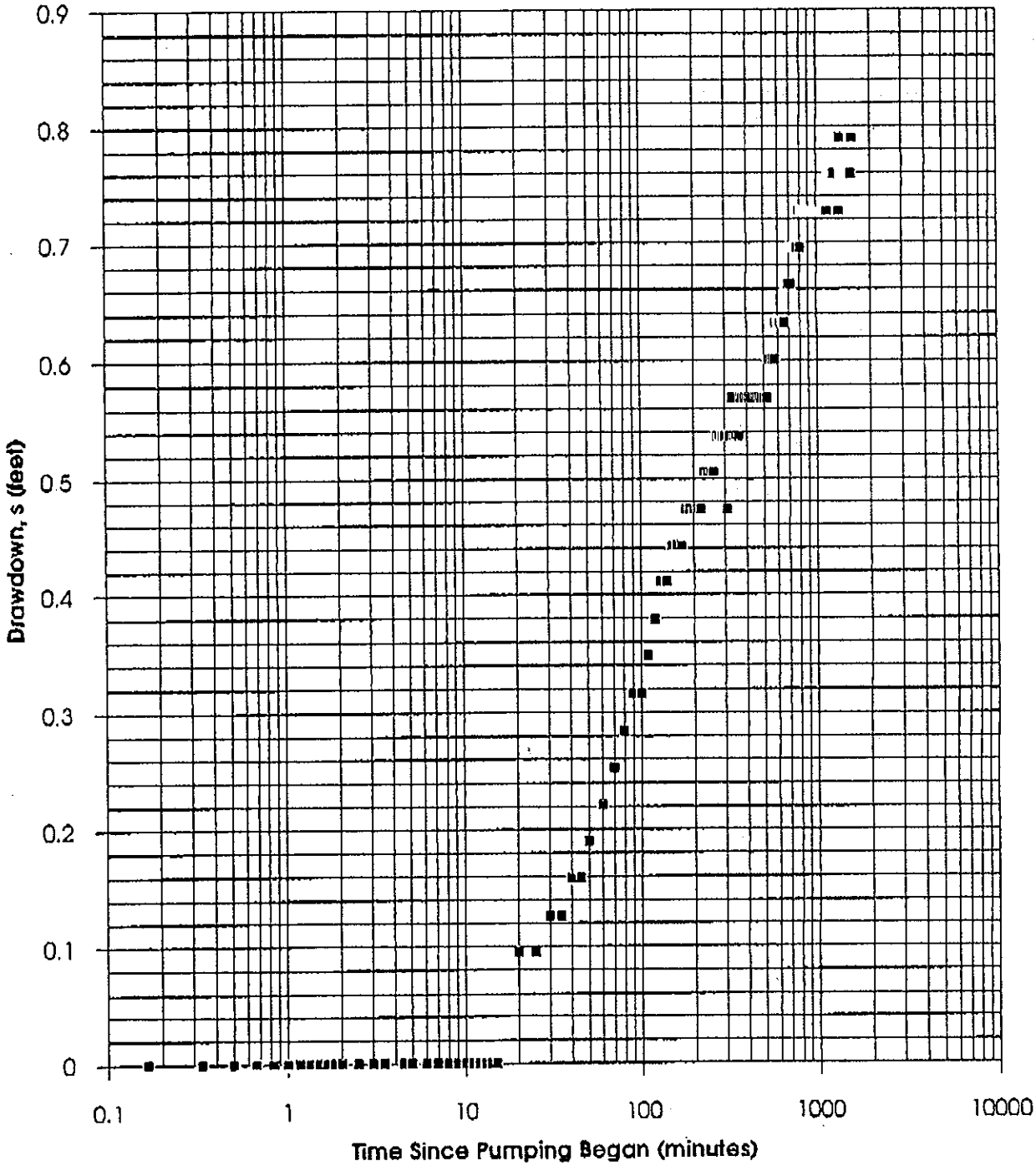
MW-3 (57 feet from pumping well) Pumping Data



MW-4 (Pumping Well) Test Data

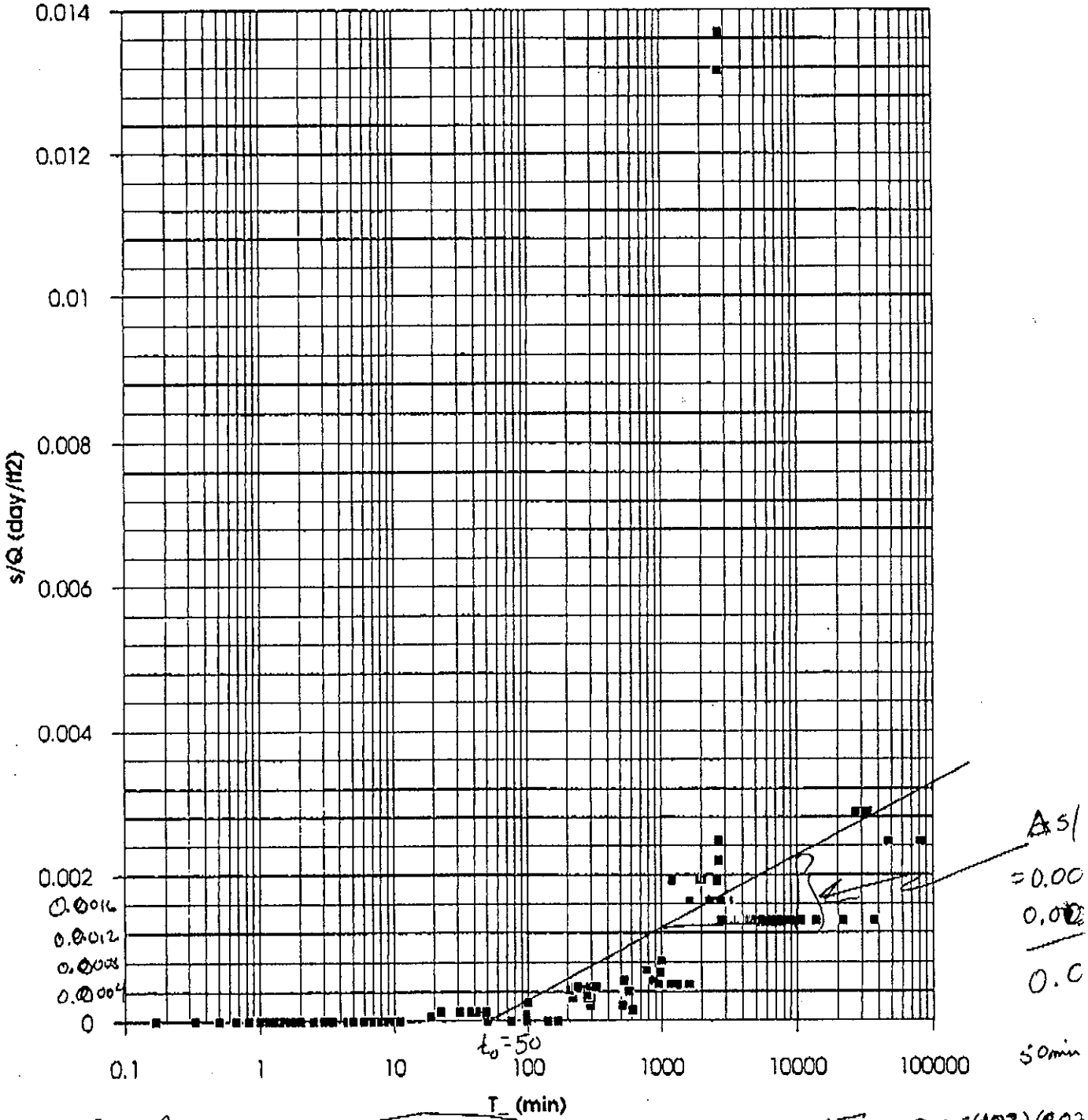


MW-5 (27 feet from pumping well) Test Data



r = 55'

MW-2 - Specific Drawdown, s/Q vs Weighted Log Mean Time, T_



JACOB

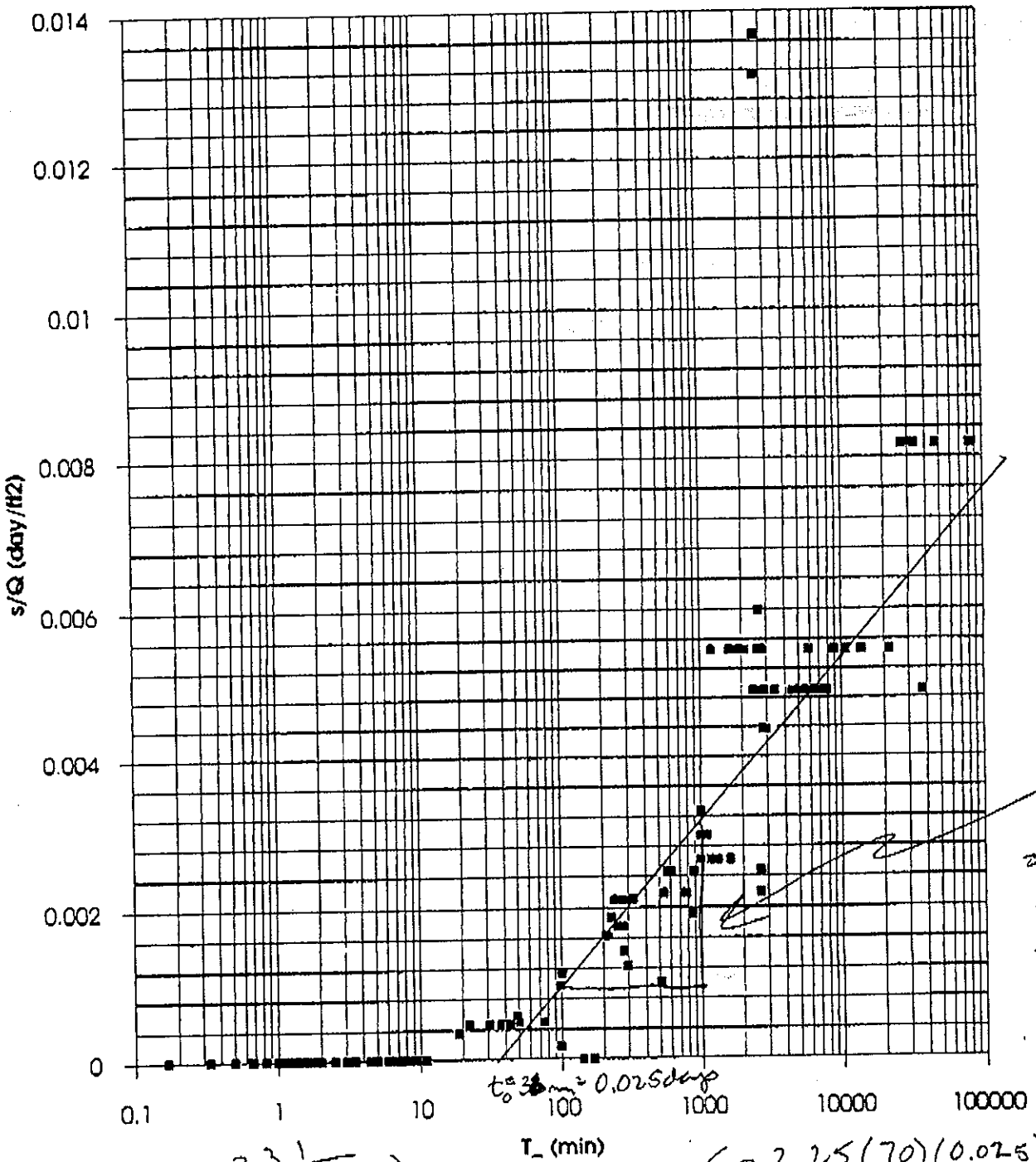
$T = \frac{2.3}{4\pi}\frac{1}{\Delta s/Q} = \frac{2.3}{4\pi}\frac{1}{0.001} =$ 183 ft²/day

$S = \frac{2.25\,T\,t_0}{r^2} = \frac{2.25(183)(0.03}{(55)^2}$

≈ 0.0018

r = 51'

MW-3 - Specific Drawdown, s/Q vs Weighted Log Mean Time, T_



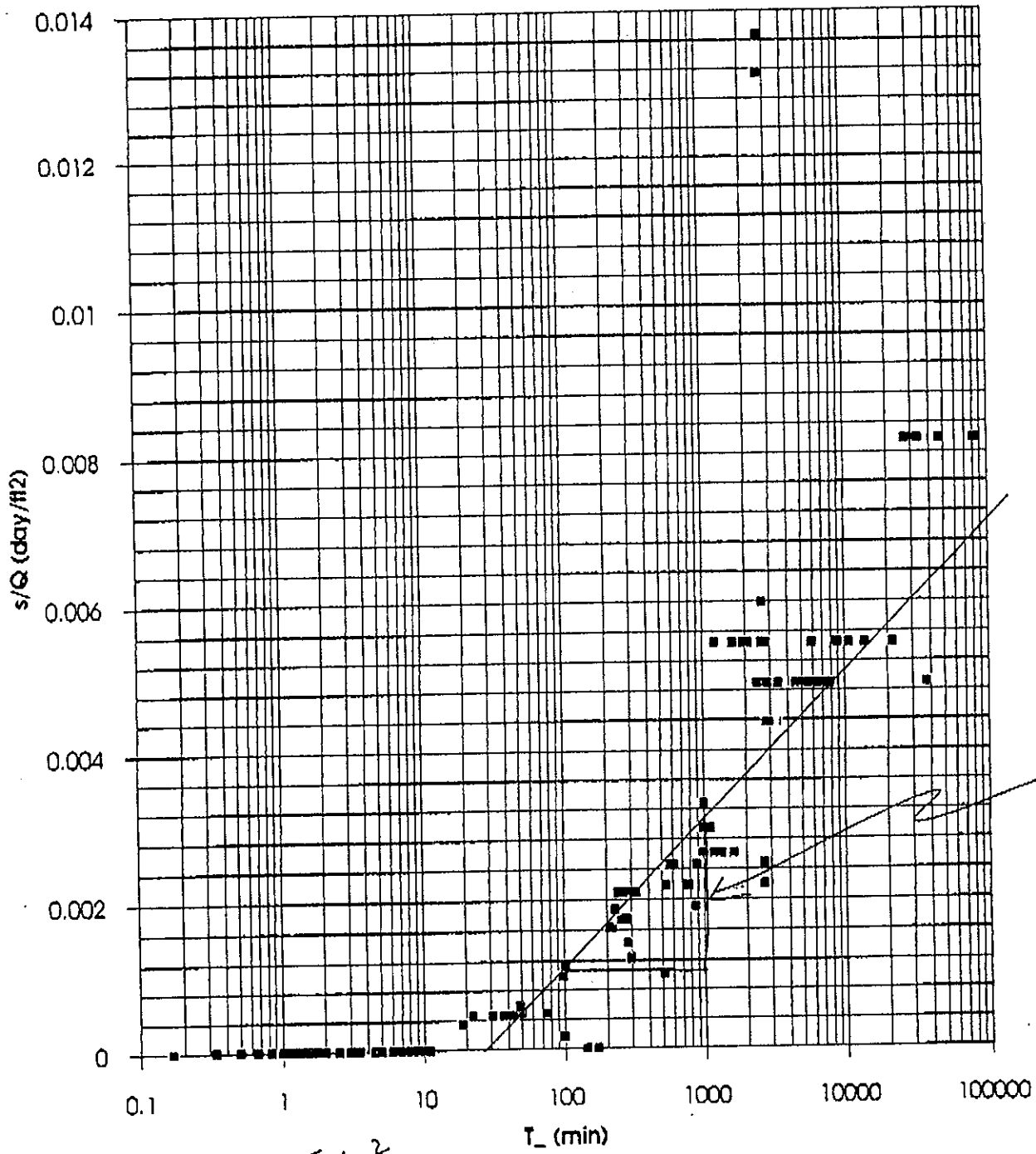
$$T = \frac{2.3}{4\pi}\frac{1}{\Delta(s/Q)} = \frac{2.3}{4\pi(0.0026)}$$

$= 70\ ft^2/day$

$$S = \frac{2.25(70)(0.025)}{(51)^2}$$

$= 0.0012$

MW-4 - Pumping Well - Specific Drawdown, s/Q vs Weighted Log Mean Time, T_



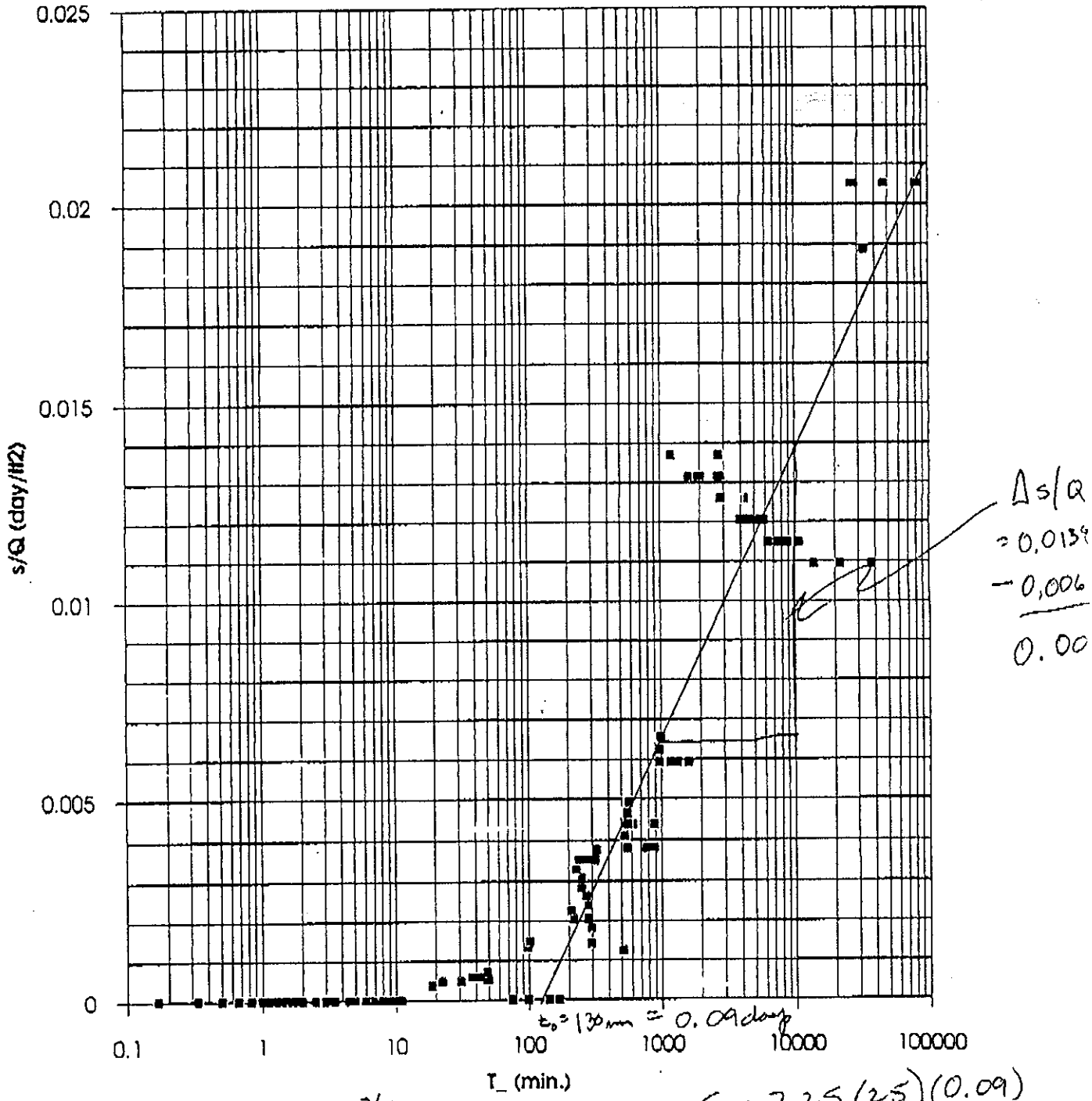
$\Delta s/Q$
$= 0.0$
$- 0.0$
0.0

$T = \frac{2.3}{4\pi} \frac{1}{0.0020} = 91.5 \frac{ft^2}{day}$

No S

r = 27'

MW-5 - Specific Drawdown, s/Q vs Weighted Log Mean Time, T_



Δs/Q
= 0.0139
− 0.006
0.00

$T = \frac{2.3}{4\pi} \frac{1}{0.0073} = 25\ ft^2/day$

$S = \frac{2.25(25)(0.09)}{(27)^2}$

$= 0.0069$

[redacted]-20-94 94-37-7623 Start test @ 9:00AM

Time	Pump rate	Depth to water MW-4	MW-5	MW-2	MW-3	MW-1	MW-6	Remarks	Water
[redacted]	0	4.97	5.00	5.24	4.54	4.84	4.54		
[redacted]:30	2.0	11.66	—	—	—	—	—	lowered pump rate @ 9:32	
[redacted]:38	1.0	9.31	5.03	5.24	4.58	4.87	4.55		
[redacted]:47	1.0	8.77	—	—	—	—	—	increase to 1.4 gpm	
[redacted]:56	1.4	10.03	5.08	5.24	4.59	4.89	4.54		
10:04	1.4	10.73	—	—	—	—	—		
[redacted]:09	1.4	11.00	5.11	5.24	4.60	4.90	4.54		
[redacted]:13	1.4	11.21	—	—	—	—	—	Adjusted flow to .6g to [redacted] 0.8 gpm	
10:30	1.0	10.94	5.19	5.24	4.61	4.93	4.54	Adj. to 1 gpm	
[redacted]:41	1.0	11.42	—	—	—	—	—		
[redacted]:47	1.0	11.72	—	—	—	—	—	Adj. to 0.8gpm	
[redacted]:07	0.8	11.40	5.27	5.24	4.65	4.97	4.55		
[redacted]:16	0.8	11.63	—	—	—	—	—	Adjust to 0.75gpm	
11:22	0.75	11.30	—	—	—	—	—		
[redacted]:26	0.75	11.34	5.29	5.24	4.66	4.99	4.55		
[redacted]:45	0.75	11.82	5.32	5.24	4.67	5.00	4.55		
[redacted]:57	0.75	11.95	—	—	—	—	—	Adj. to 0.6 gpm	
[redacted]:05pm	0.60	11.10	—	—	—	—	—		
12:17pm	0.60	10.70	5.33	5.23	4.68	5.00	4.55	Adjust flow to 0.7	
[redacted]:25	0.70	11.11	—	—	—	—	—		
[redacted]:41	0.70	11.56	—	—	—	—	—		
1:00pm	0.70	11.83	5.36	5.24	4.70	5.03	4.54		
[redacted]:19pm	0.70	12.00	—	—	—	—	—	Adjust flow to 0.6	
[redacted]:37pm	0.60	11.60	—	—	—	—	—		
[redacted]:52	0.60	11.53	—	—	—	—	—		
[redacted]:05	0.60	11.64	5.39	5.24	4.72	5.06	4.54		
2:50	0.60	11.84	5.41	5.24	4.73	5.06	4.55		
[redacted]:00	0.50	Below 12.40	5.43	5.24	4.74	5.08	4.55	Adj. to 0.5gpm	

[redacted]-20-94 94-37-7623 Start test @ 9:00 AM

Time	Pump rate	Depth to water MW-4	MW-5	MW-2	MW-3	MW-1	MW-6	Water	Comments
[redacted]	0	4.97	5.00	5.24	4.54	4.84	4.54		
[redacted]:30	2.0	11.66	—	—	—	—	—		lowered pump rate @ 9:32
[redacted]:38	1.0	9.31	5.03	5.24	4.58	4.87	4.55		
[redacted]:47	1.0	8.77	—	—	—	—	—		increase to 1.4 gpm
[redacted]:56	1.4	10.03	5.08	5.24	4.59	4.89	4.54		
10:04	1.4	10.73	—	—	—	—	—		
[redacted]:03	1.4	11.00	5.11	5.24	4.60	4.90	4.54		
[redacted]:13	1.4	11.21	—	—	—	—	—		Adjusted flow to .6g to [redacted] 0.8 gpm
10:30	1.0	10.94	5.19	5.24	4.61	4.93	4.54		Adj. to 1 gpm
[redacted]:41	1.0	11.42	—	—	—	—	—		
[redacted]:47	1.0	11.72	—	—	—	—	—		Adj. to 0.8gpm
[redacted]:07	0.8	11.40	5.27	5.24	4.65	4.97	4.55		
[redacted]:16	0.8	11.63	—	—	—	—	—		Adjust to 0.75gpm
[redacted]:22	0.75	11.30	—	—	—	—	—		
[redacted]:26	0.75	11.34	5.29	5.24	4.66	4.99	4.55		
[redacted]:45	0.75	11.82	5.32	5.24	4.67	5.00	4.55		
[redacted]:57	0.75	11.95	—	—	—	—	—		Adj. to 0.6 gpm
[redacted]:05pm	0.60	11.10	—	—	—	—	—		
12:17pm	0.60	10.70	5.33	5.23	4.68	5.00	4.55		Adjust flow to 0.7
[redacted]:25	0.70	11.11	—	—	—	—	—		
[redacted]:41	0.70	11.56	—	—	—	—	—		
1:00pm	0.70	11.83	5.36	5.24	4.70	5.03	4.54		Adjust flow to 0.6
[redacted]19pm	0.70	12.00	—	—	—	—	—		
[redacted]:37pm	0.60	11.60	—	—	—	—	—		
[redacted]:52	0.60	11.53	—	—	—	—	—		
[redacted]:05	0.60	11.64	5.39	5.24	4.72	5.06	4.54		
2:50	0.60	11.84	5.41	5.24	4.73	5.06	4.55		
[redacted]:00	0.50	Below 12.40	5.43	5.24	4.74	5.08	4.55		Adj. to 0.5gpm

Time	rate gpm	Temp Well MW-4	MW-5	MW-2	MW-3	MW-1	MW-6	
9-20-94 4:[illegible]pm	0.5	11.45	—	—	—	—	—	Pg. 2 of 3
4:[illegible]0pm	0.5	11.44	5.43	5.25	4.74	5.08	4.55	94-37-7623
5:[illegible]0pm	0.5	11.43	—	—	—	—	—	
5:[illegible]20pm	0.5	11.47	—	—	—	—	—	
5:33	0.5	11.62	—	—	—	—	—	
5:55	0.5	11.71	5.40	5.24	4.74	5.08	4.54	
6:12	0.5	11.84	—	—	—	—	—	
7:55	0.5	12.32	5.45	5.26	4.77	5.11	4.56	
[illegible]:00	0.3	—	5.48	5.25	4.80	5.08	4.58	
9/21/94 12:00 pm	0.3	—	5.54	5.18	4.78	5.13	4.59	
[illegible]:00 am	0.3	—	5.51	5.16	4.74	5.09	4.58	
[illegible]:00	0.3	—	5.52	5.19	4.75	5.11	4.53	
[illegible]:20 Am	0.3	—	5.59	5.33	4.82	5.18	4.59	Adjust to 0.2 gpm - to;
8:00 Am	0.3	12.00	—	—	—	—	—	Adjust back to .3 gpm
[illegible]:41	0.3	12.08	5.55	5.33	4.81	5.16	4.59	
[illegible] Am	0.3	12.23	5.53	5.31	4.80	5.14	4.59	
[illegible]:15 Am	0.3	11.16	5.50	5.30	4.76	5.09	4.59	
			Stop test @ Noon 9-21-94					

9-21-94
Start @ 12:32 P

Time	rate	mw-4	mw-5	mw-2	mw-3	mw-1	mw-6
2:15pm	.3	11.16	5.50	5.30	4.76	5.09	4.59
2:37pm	⊖	9.00	5.46	5.27	4.75	5.07	—
2:45	⊖	7.92	—	—	—	—	—
2:50	⊖	7.45	5.44	5.30	4.73	5.06	4.59
3:05	⊖	6.36	5.41	5.30	4.69	5.01	—
3:18	⊖	5.89	5.36	5.30	4.68	4.99	4.59
3:33	⊖	6.50	5.32	5.30	4.65	4.96	—
1:50pm	⊖	5.23	5.27	5.30	4.62	4.91	4.59
2:08	⊖	5.04	5.22	5.30	4.59	4.87	4.58
2:30	⊖	5.08	5.17	5.29	4.58	4.86	4.57
					stop test	@ 2:38pm. 9-21-94	

Pg. 383

Job# 94-37-762

In 2' of Water in Bkt

94-37-7623

MW-5 - Input 1

MW-2 - Input 2

MW-3 - Input 3

MW-4 - Input 4

flow meter - Input 5

DTW = 4.94 in MW-4 @ 4:40 pm 9-19-94

DT top of pump = 12.28

7.34' [redacted] of water above top of pump

Marvin home - 408-287-8317

Do not let level in MW-4 (pumpwell) top below → 11.50

Excelchem
Environmental Labs

4946 Watt Avenue, #38
North Highlands, CA 95660
(916)334-8661

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Steve Boudreau
Phone #: (415) 296-1041
Company/Address: Fugro West, Inc. 44 Montgomery St. #1010, SF CA. 94104
FAX #: 415-296-0944
Project Number: 94-37-7623
P.O.#:
Project Name: Alameda Housing Authority
Project Location: 1916 Webster St, Alameda, CA.
Sampler Signature: JK Wendt

Sample ID	Sampling DATE	Sampling TIME	Container VOA	Container SLEEVE	Container 1L GLASS	Container 1L PLASTIC	Method Preserved HCl	Method Preserved HNO_3	Method Preserved ICE	Method Preserved NONE	Matrix WATER	Matrix SOIL
Baker Tank	9-21-94	3pm	X				X		X		X	

ANALYSIS REQUEST

BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel/Oil (8015)	Total Oil & Grease (5520 B/E,F)	Total Oil & Grease IR (5520 B/E,F,C)	96 - Hour Fish Bioassay	EPA 601/8010	EPA 602/8020	EPA 615/8150	EPA 608/8080 - Pesticides	EPA 608/8080-PCBs	EPA 624/8240	EPA 625/8270	ORGANIC LEAD	Reactivity, Corrosivity, Ignitibility	W.E.T. (Y)	TOTAL (Y)	CAM - 17 Metals	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	Cd, Cr, Pb, Zn, Ni	
	X																				WD99443

TAT

RUSH SERVICE (12 hr) or (24 hr)	EXPEDITED SERVICE (48 hr)	STANDARD SERVICE
		X

	Date	Time		
Relinquished by: JK Wendt	9/22/94	13:10	Received by:	Remarks:
Relinquished by			Received by:	
Relinquished by	9/22/94	13:10	Received by Laboratory: Mial Pa	Bill To:

Excelchem
Environmental Labs
4946 Watt Avenue, #38
North Highlands, CA 95660
(916)334-8661

ANALYSIS REPORT

Attention: Mr. Steve Boudreau
FUGRO WEST, INC.
44 Montgomery St., Ste 1010
San Francisco, CA 94104
Project #: 94-37-7623

Date Sampled : 09-21-94
Date Received: 09-22-94
BTEX Analyzed: 09-26-94
TPHg Analyzed: 09-26-94
Matrix: Water

	Benzene PPB	Toluene PPB	Ethyl-benzene PPB	Total Xylenes PPB	TPHg PPB
Reporting Limit:	0.5	0.5	0.5	0.5	50
SAMPLE Laboratory Identification:					
BAKER TANK W0994399	ND	ND	ND	ND	ND

PPB = Parts per billion = ug/L = micrograms per liter
ND = Not Detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

BTEX– Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are analyzed by using EPA Method 602 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID).
TPHg–Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are analyzed by using modified EPA Method 8015, which utilizes a GC equipped with an FID.

Laboratory Representative

09-27-94
Date Reported