RO 2567

Site Characterization Report
for
2942 San Pablo Avenue
Oakland, California

Performed For:
Mr. James Chung
San Pablo Auto Body
2924 San Pablo Avenue
Oakland, CA 94608

Prepared By:
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August 2004
Project: 04256

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August 31, 2004

Mr. Robert W. Schultz, R. G.
Alameda County Environmental Health Services
1131 Harbor Bay Parkway
Alameda, CA 94502

RE: Report of Additional Phase II Investigation
2942 San Pablo Avenue, Oakland, CA

Dear Mr. Schultz:

This report presents the results of the recent completion of additional exploratory soil borings with the membrane interface probe (MIP) system, soil and groundwater sampling, and installation of three monitoring wells at the above-referenced Property. The purpose of this work was to further characterize the vertical and lateral extent of volatile organic compounds (VOC), particularly trichloroethene (TCE) and its breakdown products, at the above-referenced site. The work was originally proposed in a work plan entitled "Work Plan for Site Characterization" dated March 18, 2004. The work plan was reviewed by Mr. Barney Chan of Alameda County Environmental Health Services Agency (ACEHSA) in a letter to the Property owner, Mr. James Chung, dated March 31, 2004. Revisions to the work plan requested by Mr. Chan were summarized in PIERS' work plan addendum dated April 12, 2004. In addition, installation of three monitoring wells was proposed. The work plan addendum was subsequently verbally approved by Mr. Chan. Following work plan approval, a cost estimate was prepared and a loan was obtained for the Property owner for this work from the City of Oakland Community and Economic Development Agency (OCEDA).

The scope of the work performed by PIERS for this investigation consisted of the following: obtaining permits from the Alameda County Public Works Agency, completion of fourteen membrane interface probe (MIP) borings and fifteen Geoprobe borings; installation of three monitoring wells; collection of soil and "grab" groundwater samples; well development, monitoring, and sampling; surveying of the wells; submission of the soil and groundwater samples for chemical analysis; data analysis and interpretation; and preparation of this report.

SITE DESCRIPTION AND BACKGROUND

The Property is located on the eastern side of San Pablo Avenue, at the intersection with 30th Street, in the City of Oakland, Alameda County, California (see Figure 1).

Previous historical research for the Property completed during a Phase I Environmental Site Assessment (ESA) indicated that a metal plating works operated on the eastern portion of the site, and a fuel dispenser island was located on the western portion of the site, near San Pablo Avenue. This research, and the initial soil and groundwater sampling completed based on those findings, is summarized in PIERS' ESA dated May 2003.

A previous environmental report entitled "Soil/Environmental Report, 2942 San Pablo Avenue, Oakland, California", by Globe Soil Engineers, dated November 19, 1999, had been completed for the Property. No evidence of environmental concerns was found by Globe Soil Engineers during their investigation; however, three borings were sited without knowledge of the prior service station or plating works.

Based on the initial soil and groundwater sampling, two more phases of exploratory borings were completed, with soil and groundwater sampling. Based on the analytical results, the groundwater beneath the Property at the location of the former service station has been impacted by a release of hydrocarbons. Also, solvents, particularly TCE, were present in elevated concentrations in groundwater, and at low concentrations in soil. Based on the historical research, the solvents in soil appeared to have originated from the former metal plating works.

This work was summarized in PIERS' reports entitled "Report of Additional Phase II Investigation" and "October 2003 Report of Additional Phase II Investigation" dated September 9, 2003 and October 3, 2003, respectively. The analytical results of the hydrocarbons and solvents detected during these investigations are summarized in the tables attached to this report.

SUMMARY – THIS INVESTIGATION

This investigative work was successful in identifying a source of TCE contamination in soil. The highest concentrations in soil, which began within a few feet of the surface, correspond to an unpaved area on the eastern side of an old concrete slab from the former plating works. Initially, five borings had been proposed in this area. The work proceeded in an iterative manner with each new boring relocated based on previous data. Additional borings to those proposed were completed with both the MIP system, and with soil and groundwater sampling by Geoprobe, in an attempt to delineate this source area for possible excavation. The borings located in this area are designated as B9B through B9M. The highest concentrations and the nearest surface impacts, based on the MIP data available on site during drilling, appeared to occur in B9I, B9D, B9H, and B9G.

FIELD ACTIVITIES

MIP Borings

On July 20 through 22, a Geoprobe equipped with the membrane interface probe (MIP) system was used at the Property to obtain qualitative data on total volatile organic compound (VOC) concentrations, and conductivity data that is useful for evaluating grain size and permeability. On July 22, 23, 26 and 27, additional borings were completed with soil and groundwater sampling, and three wells were installed. The MIP work allowed a determination of focused sampling intervals for both soil and groundwater in the borings.

The Geoprobe was provided by Vironex, Inc., of San Leandro, California, a state-licensed driller. Centrum Analytical Laboratories provided a van containing instrumentation for the MIP system, which included a photo-ionization detector (PID) and an electron capture detector (ECD). The instruments were plumbed to a nitrogen gas-filled line contained within the drilling rods. A special heated drill tip equipped with a membrane interface port and other sensing ports for conductivity was advanced ahead of the drilling rods. The data collected with the MIP system was continuous. The PID, ECD, and conductivity data were in milliSiemens per meter. A plot of the PID, ECD, conductivity, temperature, and speed data versus depth was provided at the completion of each hole. A concentration of one part per million (ppm) of TCE was used to calibrate the MIP. The ECD was designed to measure the lowest concentrations. At the source area, the concentrations were generally beyond the range of the ECD, and all of the data was collected with the PID.

Although every attempt was made to advance the drilling rods at the most uniform rate possible; while adding drilling rods, and to a lesser degree while advancing through soils of differing hardness, the PID and ECD data would indicate elevated peaks with no advancement in depth. This especially occurred on initial holes with only one operator where adding rods was slowest. These were considered "burnoffs" of VOCs on the tip, and not indicative (higher than) the in-place concentrations.

The first soil boring completed was near the previously identified source at B9, and was designated as B9B. Refusal was encountered with the MIP system at approximately sixty feet below grade at this boring, the deepest boring completed with the MIP system. Borings B9C through B9K were completed in the vicinity of this boring, and this effort was successful in identifying a source of VOCs in shallow soil. Refusal was also encountered at approximately 48 feet in boring B9I.

During completion of MIP boring B9D, the depth indicator failed, and no data was collected between approximately nine and fifteen feet below grade. This failure also occurred between approximately 23 and 26 feet below grade in MIP boring B9D. These intervals were sampled at other nearby locations to replace this coverage.

Mr. Barney Chan, Mr. Bob Schultz, and Mr. Don Hwang of the Alameda County Environmental Health Services Agency (ACEHSA) visited the site on July 20, 2004, the first day of MIP drilling.

The locations of the MIP borings are shown on Figures 2 through 8. The conductivity data obtained from the MIP drilling is presented on Figures 6 and 8, where it is used to correlate stratigraphic units. All of the MIP data obtained is attached to this report as Appendix E.

Geoprobe Sampling - General

After completion of fourteen MIP borings, the Geoprobe drill rig was used to complete fifteen other borings at or near the MIP locations. At these borings, soil and/or groundwater samples were collected from areas identified by the MIP system as having high concentrations of VOCs, or in the case of groundwater, of being a permeable zone and/or having high concentrations of VOCs.

Boring B17, originally proposed to be located within the San Pablo Auto Body Shop on the southern perimeter of the Property, cross-gradient and well distant from the source, was relocated along San Pablo Avenue to fill in a gap down-gradient from the source between B13 and B14.

The locations of the Geoprobe borings are shown on Figures 2 through 8 attached to this report. Copies of the boring logs are included with this report as Appendix C.

Soil Sampling

Refusal by the Geoprobe, using the 3-1/4-inch-diameter rods of the dual casing system, was encountered near the first encountered groundwater. Therefore, it was not possible to continuously core and collect soil samples below the first encountered water using the dual casing system. The dual casing system was considered necessary to minimize the potential for cross-contamination of water-bearing zones. Soil and groundwater sampling below the first encountered water was therefore generally done on a single sample basis (one Geoprobe liner or one hydropunch sample per boring), and the holes were backfilled immediately upon completion. Soil sampling below the first encountered water was only performed where deeper water did not enter the boring. Backfilling of the hydropunch holes, except for the first attempt, was done using a disposable PVC hydropunch screen so that the drilling rods could be used as tremie pipes immediately after sampling. Backfilling of the deeper soil sampling holes was completed by either inserting tremie pipes into the holes after withdrawal of the rods, or by reinserting the drilling rods and using the rods as tremie pipes. The holes were backfilled with neat cement grout, with bentonite used to seal the saturated zone.

The soil samples collected were primarily to characterize conditions at and near the contamination source area, anticipating that excavation would later be performed, and to determine the vertical extent of soil impacts. In addition to the source area, soil samples were collected from a boring beneath the underground hoist and at the locations of wells MW2 and MW3. These soil samples were collected to provide additional site characterization data and to allow correlation between MIP data and laboratory analyses.

Prior to drilling, the owner had removed an underground hoist. The location of the hoist is shown on Figure 2. There were several quarter-inch-diameter holes within the hoist between approximately 6.5 and eight feet below grade. The last two feet of the hoist was set in a concrete plug. A boring was completed at this location and samples were obtained from eleven and sixteen feet below grade, representing one and six feet beneath the hoist.

Grab Groundwater Sampling

Geoprobe borings were completed at several locations for hydropunch sample collection at the first encountered water. These locations included borings B13, B16, and B17 at the perimeter of the site. At these three locations, a disposable hydropunch screen was opened at approximately 33 to 37 feet below grade (34 to 38 feet below grade at B17). At B13 and B17, water sufficient for sample collection entered the borehole within an hour. At B16, the hole was initially dry, and a sample was collected the following morning, at which time the depth to groundwater had stabilized at approximately fifteen feet below grade.

All of the samples were collected by inserting small-diameter plastic tubing fitted with a chuck ball into the drilling rods or temporary casing. The groundwater was then surged upward through the tubing and decanted into VOAs at the top of the boreholes.

A grab water sample was also collected from boring B9I at the source area, during drilling. The sample was collected from approximately 32.5 feet below grade. Water was noticed on the drilling rod from 30 to 35 feet below grade, and then slotted casing was inserted in the borehole to allow sample collection. The casing was then used as a tremie pipe to seal the borehole.

Attempts were made to sample deeper water-bearing zones, and one sample was collected at the source area. The first attempt was made at B9I in the source area. At this location, after sampling the first water, a separate boring was completed within 1.5 feet of the original location. The drilling rods were extended to 49 feet below grade and a hydropunch screen was exposed between 45 and 49 feet below grade, which corresponded to a permeable zone on the MIP conductivity log. No water collected initially and the drilling rods were left in the hole overnight. The hole remained dry on the next day. At that time, the hydropunch tool was retracted and it was noted that the screen was smeared. The hydropunch tool was placed back in the hole and advanced to 53 feet below grade, with an exposed screen between 51 and 53 feet. No water collected in the borehole. The hole was then backfilled through the rods with the disposable hydropunch screen of PVC left in place. To characterize the deeper zone, a third boring was completed within 1.5 feet of the original locations, and a sample was collected at 46.5 feet below grade. The soil sample consisted of gravely silt (ML), with no free water. The hole was backfilled using the casing as a tremie pipe.

A grab groundwater sample from a deeper zone was successfully collected at B9B (source area). This was completed in a separate borehole where the only sample collected was the hydropunch sample. The sample was collected after opening a disposable hydropunch screen between 42 and 46 feet below grade. The borehole was then backfilled using the drilling rods as a tremie pipe.

An attempt was made to collect a grab groundwater sample at boring B17. At this location, after collecting water from approximately 36 feet below grade, a second borehole was completed to a depth of 52 feet below grade, with a disposable hydropunch screen opened from 48 to 52 feet below grade. The water could not be surged upward through the tubing. Upon retracting the tubing, it was noted the water was a slurry with sediment, and that there was about ten feet of water in the borehole. The boring was backfilled through the drilling rods.

Monitoring Well Installation

Three monitoring wells were constructed using one-inch-diameter casing with a pre-packed filter sand of #2/16 sand. The monitoring wells are designated as MW1 through MW3 on the Figures attached to this report. The wells were completed by coring with 3-1/4-inch-diameter rods to the total depth of 37 feet below grade at MW1, 34 feet below grade at MW2, and 36 feet below grade at MW3. The wells each have four feet of 0.010-inch PVC slotted screen. The filter pack extended to one foot above the screened interval inside the annulus. Approximately one or two feet of bentonite were placed over the sand pack, followed by neat cement grout to the surface. A Christy box was placed at the surface over the well casing.

Well Development, Monitoring and Sampling

On July 30, 2004, groundwater samples were obtained from monitoring wells MW1 through MW3 at the above-referenced site by North State Environmental of South San Francisco, CA. The wells were also developed by purging, and monitored. The wells were also monitored on July 27, 2004, by PIERS.

The groundwater samples were collected as follows: prior to sampling, the wells were checked for depth to water, and for the presence of free product and/or sheen. No free product or sheen was noted in any of the wells. Monitoring data collected this quarter is summarized on Table 3 and Figures 3 and 4.

Each well was bailed until the volume of water withdrawn was equal to at least ten well casing volumes. To assure that a representative groundwater sample was collected, periodic measurements of the temperature, pH and specific conductance were made. The sample was collected after the temperature, pH, and/or specific conductance reached relatively constant values.

Water samples were collected using new, disposable bailers. An effort was made to minimize exposure of the sample to air. The samples were decanted into clean VOA vials and/or one-liter amber bottles, as appropriate, which were then sealed with Teflon-lined screw caps, labeled, and stored in a cooler, on ice, until delivery to a state-certified laboratory. Sample containers were obtained directly from the analytical laboratory. Sampling equipment was cleaned after its use at each sampling location. Thermometers, pH electrodes, and conductivity probes were also cleaned after each sample was taken.

Subsequent to collection, the samples were immediately stored on ice in an appropriate ice chest. Samples were transported under Chain-of-Custody procedures to North State Environmental Laboratory in South San Francisco, CA. Excess water resulting from the sampling and cleaning procedures was collected and contained in pre-labeled, 55-gallon drums on-site pending receipt of laboratory analyses.

Copies of the field data sheets from the monitoring, purging, and sampling are attached to this report as Appendix A.

Surveying

On August 2, 2004, the tops of the three monitoring well boxes and the tops of the casings were surveyed to mean sea level by Kier and Wright of Pleasanton, California. A copy of the survey data is attached to this report as Appendix D.

Laboratory Analyses

All of the soil and groundwater samples were analyzed for VOCS and the fuel oxygenates by EPA Method 8260. The soil sample from B14/MW2 at a depth of 7.5 feet below grade, the grab groundwater sample from B17 down-gradient of the former service station features, and the samples from the monitoring wells were also analyzed for Total Petroleum Hydrocarbons (TPH) as gasoline; benzene, toluene, ethylbenzene and xylenes (BTEX); and methyl-tert-butyl-ether (MTBE) by EPA methods 8015 and 8020 (BTEX and MTBE are also detected by EPA Method 8260). The other grab groundwater samples were also analyzed for TPH as gasoline. The two samples from beneath the former hydraulic hoist location were analyzed for TPH as hydraulic fluid by EPA Method 8015, and for PCBs.

The analytical results of the soil and groundwater samples are tabulated in Tables 1A through 2D. The groundwater sample results for TCE are depicted on Figures 5 and 6, and soil and groundwater results for TCE are depicted on Figures 7 and 8. Copies of the laboratory analyses and the Chain of Custody documentation are attached to this report.

Hydrology and Geology

On July 27, 2004, the measured depth to groundwater in the three monitoring wells varied between 13.15 and 14.67 feet below the tops of the well casings. The direction of groundwater flow at the Property was to the west at an approximate gradient of 0.036 feet per foot. The monitoring data is summarized in Table 3 and on Figures 3 and 4.

On July 30, 2004, the measured depth to groundwater in the three monitoring wells varied between 13.20 and 14.40 feet below the tops of the well casings. The direction of groundwater flow was again to the west at an approximate gradient of 0.031 feet per foot.

The subsurface conditions encountered were predominantly silt with varying amounts of gravel. The gravels were highly weathered and decomposed. In interpreting the MIP data and the continuous coring data, which is depicted on cross-sections A-A' and B-B' (Figures 7 and 8), three lithologic units were defined. The first unit is comprised of the lowest permeable soils consisting predominantly of clay or silty clay (CL). This unit is defined on the cross-sections by those soils with greater than 150 milliSiemens per meter of conductivity during MIP logging. While the unit is of relatively low permeability, it is clear that the TCE at the source migrated vertically downward through up to five feet of thickness of these soils. The other occurrences of this unit at depth were predominantly discontinuous and less than two feet in thickness within the saturated zone (s).

The second unit is comprised of the highest permeable soils, which consisted of gravely silt (ML). This unit is defined as those soils with less than 50 milliSiemens per meter of conductivity during MIP logging. This unit also occurs in discontinuous layers of less than several feet within the saturated zone, except in the vicinity of MIP boring B14/well MW2. At this location, the unit was encountered from approximately 32.5 feet below grade to the total depth explored (about 43 feet).

The third unit is defined as those soils of intermediate permeability, between 50 and 150 milliSiemens per meter of conductivity. These soils vary from clayey silt (ML) to silt with some gravel (ML).

The three units are gradational laterally and vertically and discontinuous laterally, typical of alluvial fan deposits. The unit of intermediate permeability could be described as layers of fining upward and coarsening upward sequences, as shown on the cross-sections.

According to "Flatland Deposits – Their Geology and Engineering Properties and Their Importance to Comprehensive Planning" by Halley et al (U. S. G. S Professional Paper 943), the Property is underlain by Late Pleistocene alluvium, which is generally described as weakly consolidated, slightly weathered, poorly sorted, irregularly interbedded clay, silt, sand and gravel at least 150 feet thick. The alluvium was deposited in stream channels and on stream terraces in an alluvial fan setting.

Also, according to "Groundwater Study and Water Supply History of the East Bay Plain, Alameda and Contra Costa Counties", by Sandy Figuers, dated June 15, 1998, the Property is located within the Oakland sub-area of the San Francisco Basin, a tectonic depression that is filled primarily with a sequence of coalescing alluvial fans, occurring as irregular lenses eroded from the surrounding hills. Based on cross-sections accompanying this report, the Property is underlain by over 100 feet of Yerba Buena mud, which is underlain by about 260 feet of recent alluvium. The recent alluvium is in turn underlain by about 320 feet of Santa Clara-equivalent, fine-grained, alluvial fan-derived sediments. The depth to the underlying bedrock is about 600 feet. The Yerba Buena mud is considered to be an aquitard. However, the lithologic logging and MIP work completed during this investigation are more consistent with the recent alluvium unit.

According to Figuers, the Oakland sub-basin has two main aquifers, the Merritt Sand, which does not occur in the area of the Property, and deeper gravels. North Oakland has a surface clay between two to twenty feet in thickness, and water-bearing gravels occur at 20 to 25 feet and 45 to 50 feet, which is generally consistent with this investigation. Wells in this area (no longer active) averaged 150 feet in depth.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

This investigation identified the source of the TCE impacts in groundwater as an unpaved area just to the east of a concrete-paved area at the former metal plating works. The highest concentrations of TCE in near surface soils were found in boring B9D. The highest concentration of TCE in soil was found at boring B9I at a depth of fourteen feet below grade. The TCE in the vicinity of these borings represents a source area that will continue to contribute to the dissolved concentrations in groundwater until the source is remediated and the surface is paved.

After paving and site development with the proposed oil change and car wash facility, the only active exposure pathway at the Property will likely be by inhalation of indoor air. A risk assessment can be conducted to evaluate this pathway, and to confirm that other potential exposure pathways are not active.

The primary constituent of concern (COC) in soil at the Property is TCE. The only breakdown product of TCE that has been detected above the ESLs to date in soil is cis-1,2-dichloroethene (cis-1,2-DCE). No petroleum hydrocarbons have been detected in soil above the ESLs, except for MTBE, which was detected in soil sample B9D (3.3 ft) at a concentration of 0.062 ppm.

The primary COC at the Property in groundwater is also TCE. Cis, 1,2-DCE was detected at two locations above the ESL in groundwater, in B9B and B10B. 1,1-DCE was also detected above the ESL in B9B. PCE was also detected above the ESL in B9I. No TCE breakdown products were detected in the samples from the monitoring wells above the ESLs. The samples from the monitoring wells, more indicative of groundwater flow conditions, are an order of magnitude less than the grab samples and hydropunch samples.

TPH as gasoline was also detected in groundwater at the TCE source area during this investigation, above the ESLs. The highest concentration was detected at B9I (141,000 ppb). However, in this and other samples, the laboratory noted that this was partly due to a single peak of TCE. Benzene has not been detected in any water sample collected to date above a concentration of 37 ppb (Table 2A).

Lateral migration at the Property occurs preferentially along the discontinuous layers of more permeable gravely silt. As the depth to groundwater is approximately fifteen feet below grade, there does not appear to be the potential for groundwater to encounter utilities that could act as preferential pathways.

As refusal was encountered with both the MIP sampling probe and the dual casing setup on the Geoprobe rig, the vertical extent of contamination in groundwater is not entirely defined, but appears to attenuate with depth, based on sample results at B9B and B9I at the source area. As shown on Figure 7, the more permeable zone sampled at B9B at 42-46 feet below grade does not appear to represent a separate water zone bounded by impermeable aquitards.

Recommendations

To the extent practicable, the TCE-impacted soils identified as the source for the groundwater contamination (vicinity of B9D and B9I) should be remediated. Prior to performing this work, and after evaluation of all remedial options, a work plan would be prepared and submitted to ACEHSA.

The location of the former hoist appears to be within the footprint of the recessed vault for the proposed oil change facility. Any hydraulic oil-impacted soil encountered during excavation for the vault should be removed from the site to a landfill facility.

A risk assessment should be completed prior to completion of remediation and redevelopment of the site. The risk assessment should evaluate active pathways and determine the risk of inhalation of indoor air, including within the recessed vault area. It is anticipated that some impermeable membranes may need to be installed or applied during the construction of the oil change facility.

The three existing wells should be monitored and sampled quarterly. The next sampling is scheduled for approximately November 1, 2004.

DISTRIBUTION

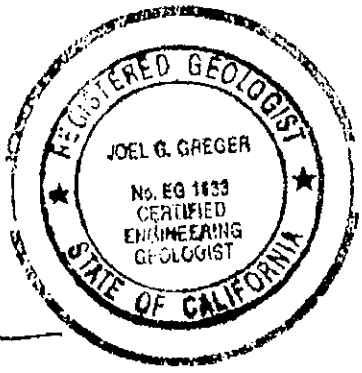
A copy of this report should be sent to Mr. Robert Schultz of the Alameda County Environmental Health Services Agency (ACEHSA), and to the Department of Toxic Substances Control (DTSC).

LIMITATIONS

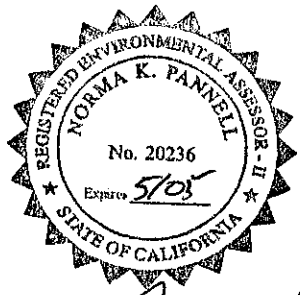
The observations and conclusions presented in this report are professional opinions based on the scope of work outlined herein. This report was prepared in accordance with generally accepted standards of environmental geological practice in California at the time this investigation was performed. The opinions presented apply to site conditions existing at the time of our study and cannot apply to site conditions or changes of which we are not aware or have not had the opportunity to evaluate. This investigation was conducted solely to evaluate environmental conditions beneath the Property at specific locations. Subsurface conditions may vary away from the data points available. Additional work, including subsurface investigation, can reduce the inherent uncertainties associated with this type of investigation. It must be recognized that any conclusions drawn from these data rely on the integrity of the information available at the time of investigation and that a full and complete determination of environmental contamination and risks cannot be made.

If you have any questions regarding this report, please do not hesitate to contact our office.

Sincerely,
PIERS Environmental Services, Inc.



Joel G. Greger
Senior Project Manager
CEG # EG1633, REA # 07079



Kay Pannell
Chief Operations Officer
REP #5800, REA-II #20236

Attachments
Tables 1A through 3
Figures 1 through 8

Appendix A – Well Purging and Sampling Data
Appendix B - Laboratory Analytical Data Sheets and Chain of Custody
Appendix C - Boring Logs
Appendix D - Survey Data
Appendix E – MIP data

TABLES

TABLE 1A
SOIL ANALYTICAL RESULTS - SOLVENTS - SOURCE AREA
2942 San Pablo Avenue, Oakland

Sample/ Depth (feet)	Date Sampled	TCE (ppm)	trans-1,2-DCE	cis-1,2-DCE	PCE (ppm)	Chloroform (ppm)	1,1,2-TCA (ppm)	2-Butanone (ppm)
B9 (1.5')	8/20/2003	0.065	0.019	0.04	ND	ND	ND	ND
MW1 (14.7')	7/26/2004	3.73	0.035	**0.244**	<0.005	<0.005	<0.005	<0.050
B9C (11')*	7/26/2004	**10.1**	0.032	**0.934**	0.032	<0.005	<0.005	<0.050
B9C (17')	7/26/2004	**3.03**	0.010	0.186	0.008	<0.005	<0.005	<0.050
B9D (3.3')**	7/26/2004	**37.9**	0.025	**0.308**	0.068	0.005	0.029	0.113
B9D (5.5')	7/26/2004	**23.8**	0.014	**0.526**	0.132	<0.005	0.034	0.138
B9D (8.3')	7/26/2004	**15.3**	0.015	**0.981**	0.036	0.008	0.031	0.205
B9D (15.7')	7/26/2004	**5.14**	<0.005	0.059	<0.005	0.012	<0.005	0.246
B9E (4')	7/27/2004	0.344	<0.005	0.008	<0.005	<0.005	<0.005	<0.050
B9E (10')***	7/27/2004	**2.67**	<0.005	**1.24**	0.015	<0.005	<0.005	<0.050
B9H (4.1')	7/26/2004	**0.818**	<0.005	0.078	<0.005	<0.005	<0.005	<0.050
B9H (10.2')	7/26/2004	**1.80**	<0.005	**0.301**	<0.005	<0.005	<0.005	<0.050
B9H (16.8')	7/26/2004	**8.84**	<0.005	0.147	0.018	<0.005	<0.005	<0.050
B9H (19.3')	7/26/2004	**5.63**	<0.005	0.006	<0.005	<0.005	<0.005	<0.050
B9I (10.5')	7/22/2004	**1.38**	<0.005	0.047	<0.005	<0.005	<0.005	<0.050
B9I (14')	7/22/2004	**92.0**	<0.005	0.037	0.241	0.013	0.016	<0.050
B9I (19')	7/22/2004	**6.15**	<0.005	<0.005	<0.005	0.007	<0.005	<0.050
B9I (34.5')	7/22/2004	**1.58**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.050
B9I (46.5')	7/22/2004	0.043	<0.005	<0.005	<0.005	<0.005	<0.005	<0.050
B9J (7.6')	7/26/2004	**0.562**	<0.005	0.038	<0.005	<0.005	<0.005	<0.005
B9J (15.5')	7/26/2004	**0.570**	<0.005	0.113	<0.005	<0.005	<0.005	<0.005
B9K (7.8')	7/22/2004	**1.52**	<0.005	0.195	0.006	<0.005	<0.005	<0.050
B9K (15.3')	7/22/2004	**3.88**	<0.005	0.007	<0.005	<0.005	<0.005	0.051
B9L (4')	7/27/2004	**0.536**	<0.005	0.010	<0.005	<0.005	<0.005	<0.050
B9L (10')	7/27/2004	**0.652**	<0.005	0.119	<0.005	<0.005	<0.005	<0.050
B9M (4')	7/27/2004	**3.210**	0.061	**1.90**	<0.005	<0.005	<0.005	<0.050
B9M (8.5')	7/27/2004	**4.370**	0.012	**0.765**	<0.005	<0.005	<0.005	<0.050
ESL - < 3m		0.46	0.67	0.19	0.25	0.27	0.07	
ESL > 3m		0.73	0.73	3.6	0.25	0.27	0.091	

EXPLANATION:

ppm = parts per million
TCE = Trichloroethene
DCE = Dichloroethene
TCA = Trichloroethane
ESL - Environmental Screening Level, Tables A /C (<3 meters), Tables B/D (> 3 meters).

* 1,1-DCE was detected at a concentration of 0.008 ppm.
** Acetone was detected at a concentration of 0.268, the ESL is 0.5 ppm.
*** 1,1-DCE was detected at a concentration of 0.006 ppm.

TABLE 1B
SOIL ANALYTICAL RESULTS - SOLVENTS - PERIMETER
2942 San Pablo Avenue, Oakland

Sample/ Depth (feet)	Date Sampled	TCE (ppm)	trans-1,2-DCE	cis-1,2-DCE	Chloroform (ppm)
B7 (1')	8/20/2003	0.022	<0.01	<0.01	ND
B7 (9.5')	8/20/2003	0.0057	<0.005	<0.005	ND
B7 (14.5')	8/20/2003	0.074	1.4	<0.005	ND
B10 (1.5')	8/20/2003	0.25	0.0065	0.029	ND
B10B (3')	9/23/2003	0.022	0.11	**0.24**	ND
B10B (6')	9/23/2003	0.046	0.016	0.11	ND
B10B (9')	9/23/2003	**0.54**	<0.033	**0.22**	ND
MW2 (7.5')	7/23/2004	0.012	<0.005	<0.005	0.007
MW2 (19.1')	7/23/2004	0.065	<0.005	<0.005	<0.005
ESL - < 3m		0.46	0.67	0.19	0.27
ESL > 3m		0.73	0.73	3.6	0.27

EXPLANATION:
ppm = parts per million
TCE = Trichloroethene
DCE = Dichloroethene
ESL - Environmental Screening Level, Tables A /C (<3 meters), Tables B/D (> 3 meters).

TABLE 1C
SOIL ANALYTICAL RESULTS -HOIST
2942 San Pablo Avenue, Oakland

Sample/ Depth (feet)	Date Sampled	TPH-HF (ppm)	PCBs (ppm)
HOIST (11')	7/23/2004	120	ND
HOIST (15.7')	7/23/2004	<10	ND
ESL		1,000	

EXPLANATION:
ppm = parts per million
TPH-HF = Total Petroleum Hydrocarbons as Hydraulic Fluid.

TABLE 1D
SOIL ANALYTICAL RESULTS - HYDROCARBONS
2942 San Pablo Avenue, Oakland

Sample/ Depth (feet)	Date Sampled	TPH-g (ppm)	TPH-ss (ppm)	Benzene (ppm)	Ethylbenzene (ppm)	Toluene (ppm)	Xylenes (ppm)	MTBE (ppm)
B4 (1.5')	5/8/2003	1.38	NA	<0.005	<0.005	<0.005	0.012	<0.005
B5 (2')	5/8/2003	1.37	NA	<0.005	<0.005	0.013	0.013	<0.005
B5 (9.5')	5/8/2003	0.711	NA	<0.005	0.007	<0.005	<0.010	<0.005
B7 (1')	8/20/2003	12	6.5	0.0093	0.032	0.0053	0.18	<0.05
B7 (9.5')	8/20/2003	12	5.7	0.017	0.04	0.015	0.29	<0.05
B7 (14.5')	8/20/2003	2.7	1.4	<0.005	0.01	0.005	0.065	<0.05
B9C (11')	7/26/2004	NA	NA	<0.005	<0.005	0.01	<0.010	<0.005
B9D (3.3')	7/26/2004	NA	NA	<0.005	<0.005	0.01	0.012	**0.062**
B9D (5.5')	7/26/2004	NA	NA	<0.005	<0.005	0.01	0.018	<0.005
B9D (8.3')	7/26/2004	NA	NA	<0.005	<0.005	0.007	<0.010	<0.005
B9D (15.7')	7/26/2004	NA	NA	<0.005	<0.005	<0.005	<0.010	<0.005
B9I (14')	7/22/2004	NA	NA	<0.005	<0.005	0.022	0.017	<0.005
MW2 (7.5')	7/23/2004	<0.5	NA	<0.005	<0.005	<0.005	<0.010	<0.005
ESL - < 3m		100	100	0.044	3.3	2.9	1.5	0.023
ESL > 3m		400	400	0.38/0.5*	13	9.3	1.5	5.6

EXPLANATION:
ppm = parts per million NA = not analyzed
TPHg/TPH-ss =Total Petroleum Hydrocarbons as gasoline/stoddard solvent.
ESL - Environmental Screening Level, Tables A /C (<3 meters), Tables B/D (> 3 meters).

* Tables B/D, groundwater is/is not a resource.

TABLE 2A
GRAB GROUNDWATER ANALYTICAL RESULTS - HYDROCARBONS
2942 San Pablo Avenue, Oakland

Sample/ Depth (feet)	Date Sampled	TPH-g (ppb)	TPH-ss (ppb)	Benzene (ppb)	Ethylbenzene (ppb)	Toluene (ppb)	Xylenes (ppb)	MTBE (ppb)
B5	5/8/2003	**5,310**	NA	15.4/37	**351/346**	14	4.9	<0.5
B6	5/8/2003	277	NA	<0.5	0.9	0.9	6.9	11/11
B7	8/20/2003	**4,900**	650	3.6	22	6.5	**100/120**	<17
B8	8/20/2003	<50	<50	<0.5	<0.5	0.55	0.52	<5.0
B9B (42-46')*	7/26/2004	**2,210#**	NA	6.7	<0.5	4.5	1.7	8.5
B9I**	7/26/2004	**141000#**	NA	<0.5	13.3	36.4	**55.7**	<0.5
B10B	9/23/2003	NA	NA	<25	<25	<25	<25	<25
B13	7/26/2004	<50	NA	0.9	<0.5	<0.5	<1	<0.5
B16***#	7/26/2004	137	NA	<0.5	1	<0.5	<1	4.2
B17 (34-38')	7/26/2004	95	NA	3/<0.5	<0.5/<0.5	1.8/<0.5	4.8/<1	<0.5
ESL		100/500	100/500	1.0/46	30/290	40/130	13/13	5.0/1,800

EXPLANATION:
ppb = parts per billion
Analytical results are by EPA Methods 8015 and/or 8260.
TPHg/ss =Total Petroleum Hydrocarbons as gasoline/stoddard solvent
ESL = Environmental Screening Level, groundwater is/is not a resource (Tables A + C/ B + D).

* Di-isopropyl ether (DIPE) was also detected at a concentration of 2.8 ppb.
** 1,3,5-Trimethylbenzene and 1,2,4-Trimethylbenzene were detected at concentrations of 1 and 4 ppm, respectively..
*** Napthalene was detected at a concentration of 2 ppm.
# Partly due to single TCE peak in gasoline range.

TABLE 2B
GRAB GROUNDWATER ANALYTICAL RESULTS - SOLVENTS
2942 San Pablo Avenue, Oakland

Sample/ Depth (feet)	Date Sampled	TCE (ppb)	cis-1,2-DCE	PCE (ppb)	Carbon Tetra Chloride	Chloroform (ppb)	1,1,2-TCA (ppb)	1,1,1-TCA (ppb)	1,2-DCA (ppb)	1,1-DCE (ppb)	Acetone (ppb)	Methylene Chloride
B5	05/08/03	**3,780**	193	ND	ND	ND	ND	ND	10	3	ND	ND
B7	08/20/03	**2,500**	<100	ND	ND	ND	ND	ND	<100	<100	ND	ND
B8	08/20/03	13	<0.5	ND	ND	ND	ND	ND	<0.5	<0.5	ND	ND
B9	08/20/03	**240,000**	<2,500	ND	ND	ND	ND	ND	<2,500	<2,500	ND	ND
B9B (42-46')*	07/26/04	**32,600**	**10,800**	4.1	<0.5	14.9	<1	<1	<1	**39**	<10	34
B9I **	07/22/04	**412,000**	27	**177**	180	32.7	19	15	<1	8.8	36	19
B10B	09/23/03	**2,400**	**1,000**	ND	ND	ND	ND	ND	<25	<25	ND	ND
B11	09/23/03	**570**	<25	ND	ND	ND	ND	ND	<25	<25	ND	ND
B12	09/23/03	**1,100**	<50	ND	ND	ND	ND	ND	<50	<50	ND	ND
B13	07/26/04	28.2	<1	<0.5	<0.5	<0.5	<1	<1	<1	<0.5	12	<5
B16	07/26/04	75.2	2	<0.5	<0.5	<0.5	<1	<1	<1	<0.5	22	<5
B17 (34-38')	07/26/04	13.6	<1	<0.5	<0.5	2	<1	<1	<1	<0.5	21	<5
ESL		5.0/360	6.0/590	5.0/120	0.5/950	100/340	5.0/350	62/62	0.5/200	6.0/25	700/1500	5.0/2,200

EXPLANATION:
ppb = parts per billion
ESL = Environmental Screening Level, groundwater is/is not a resource (Tables A + C/ B + D).

ANALYTICAL METHODS:
EPA Method 8260 or 8010.

* 1,1-DCA and trans-1,2-DCE were detected at concentrations of 0.006 and 350 ppb, respectively.
** 4-Methyl-1-2-pentanone was detected at a concentration of 5 ppb.

DCE = Dichloroethene
DCA = Dichloroethane
TCE = Trichloroethene.
TCA = Trichloroethane.
PCE - Tetrachloroethene

TABLE 2C
GROUNDWATER ANALYTICAL RESULTS - HYDROCARBONS -MONITORING WELLS
2942 San Pablo Avenue, Oakland

Sample/ Depth (feet)	Date Sampled	TPH-g (ppb)	TPH-ss (ppb)	Benzene (ppb)	Ethylbenzene (ppb)	Toluene (ppb)	Xylenes (ppb)	MTBE (ppb)
MW1	7/30/2004	**2,280**	NA	<0.5	<0.5	<0.5	<1	<0.5
MW2	7/30/2004	144	NA	<0.5	<0.5	<0.5	<1	<0.5
MW3	7/30/2004	63	NA	<0.5	<0.5	<0.5	<1	<0.5*
ESL		100/500	100/500	1.0/46	30/290	40/130	13/13	5.0/1,800

EXPLANATION:

* Di - isopropyl ether (DIPE) was detected at a concentration of 1.6 ppb.

ppb = parts per billion
Analytical results are by EPA Methods 8015 and/or 8260.
TPHg/ss =Total Petroleum Hydrocarbons as gasoline/stoddard solvent
ESL = Environmental Screening Level, groundwater is/is not a resource (Tables A + C/ B + D).

TABLE 2D
GROUNDWATER ANALYTICAL RESULTS - MONITORING WELLS
2942 San Pablo Avenue, Oakland

Sample/ Depth (feet)	Date Sampled	TCE (ppb)	cis-1,2-DCE	Acetone (ppb)	Chloroform (ppb)
MW1	7/30/2004	**5,670**	2	<10	2.1
MW2	7/30/2004	219	<1	51	3
MW3	7/30/2004	6.6	<1	<10	<0.5
ESL		5.0/360	6.0/590	700/1500	5.0/350

EXPLANATION:
ppb = parts per billion
DCE = Dichloroethene
TCE = Trichloroethene

ESL = Environmental Screening Level, groundwater is/is not a resource (Tables A + C/ B + D).

ANALYTICAL METHODS:
EPA Method 8260.

TABLE 3
GROUNDWATER MONITORING DATA
2942 San Pablo Avenue, Oakland

Well No.	Date	Groundwater Elevation - ft	Top of casing Elevation - ft	Depth to Water	Well Depth	Product Thickness	Sheen	Water purged (gallons)
MW1	727/2004	13.17	26.32	13.15				0
	7/30/2004	13.12		13.20	36.55	0	No	5
MW2	727/2004	9.93	24.60	14.67				0
	7/30/2004	10.30		14.30	33.10	0	No	4
MW3	727/2004	11.36	25.69	14.33				0
	7/30/2004	11.50		14.40	36.00	0	No	5

FIGURES

IDENTIFIED HAZARDOUS MATERIALS SITES
RADIUS REPORT
Site Vicinity Map

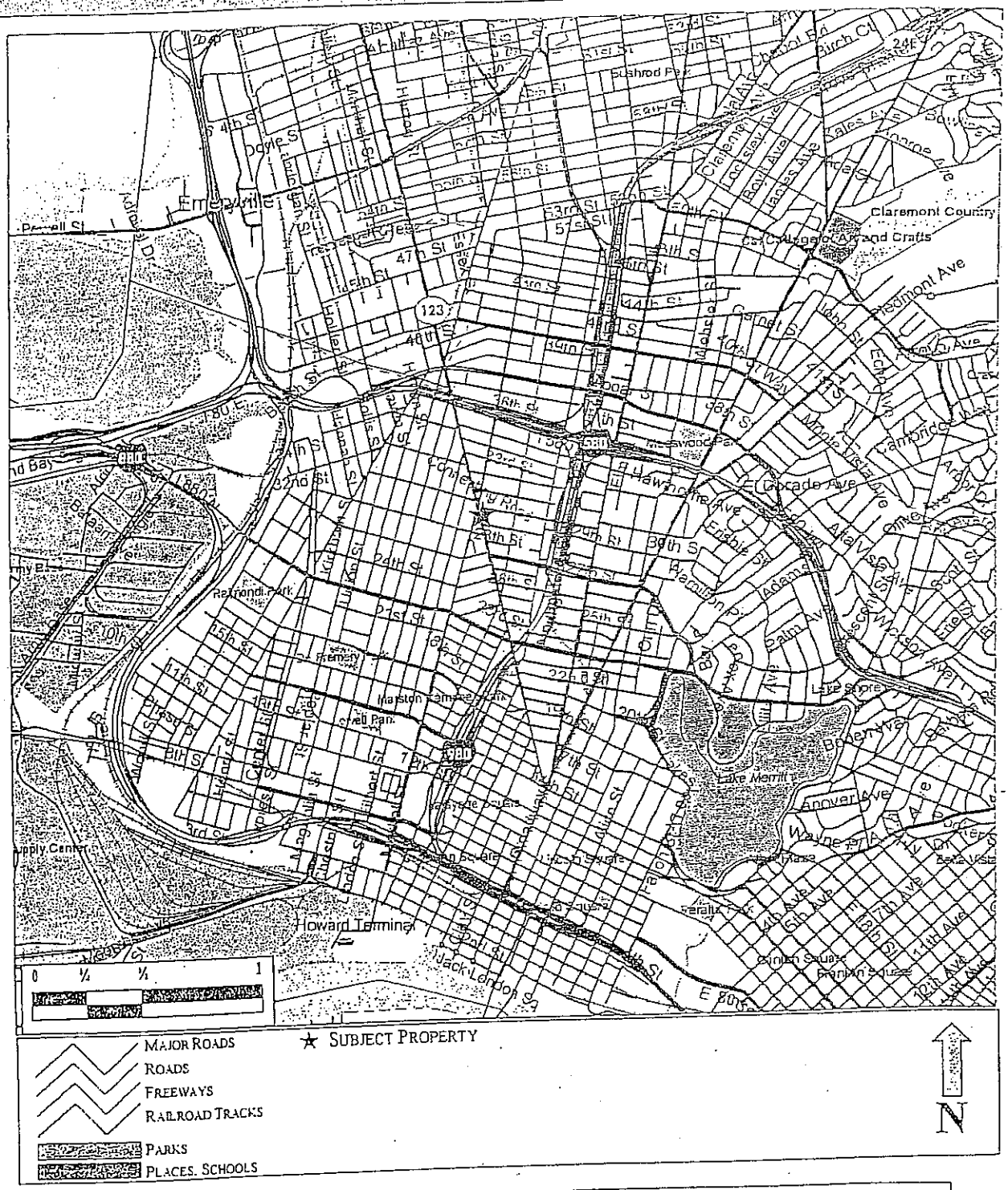


FIGURE 1
PROPERTY VICINITY MAP

2926-2942 SAN PABLO AVENUE
OAKLAND, CALIFORNIA

NOT TO SCALE
SEPTEMBER 2003

PIERS ENVIRONMENTAL SERVICES, INC. 1330 S. BASCOM AVE., SUITE F, SAN JOSE, CA 95128
PHONE: 408-559-1248 FAX: 408-559-1224 WWW.PIERSES.COM

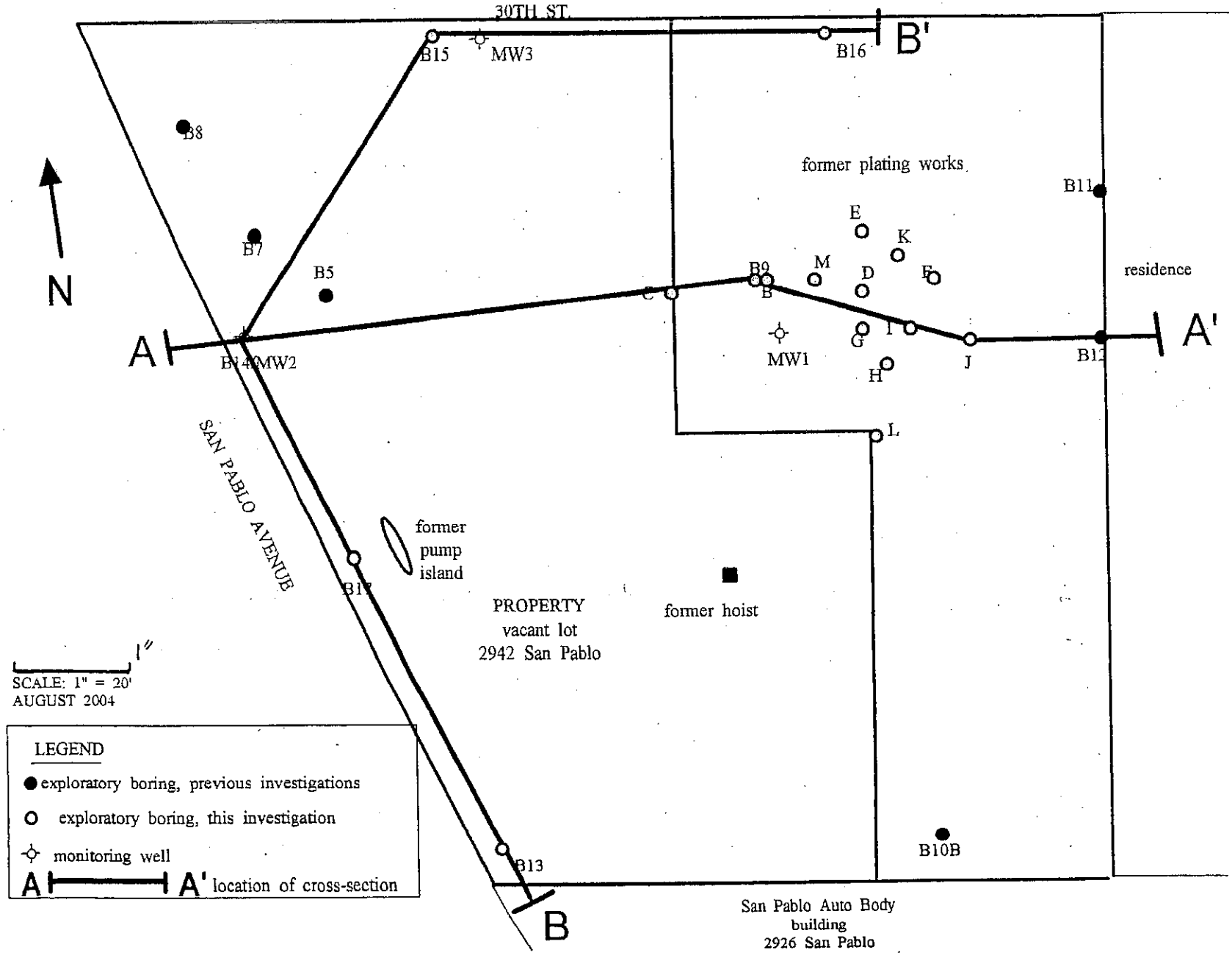


FIGURE 2
SITE PLAN

SCALE: 1" = 20'
AUGUST 2004

2926 SAN PABLO AVENUE
OAKLAND, CALIFORNIA

PIERS ENVIRONMENTAL SERVICES, INC. 1330 S. BASCOM AVE., SUITE F, SAN JOSE, CA 95128
PHONE: 408-559-1248 FAX: 408-559-1224 WWW.PIERSES.COM

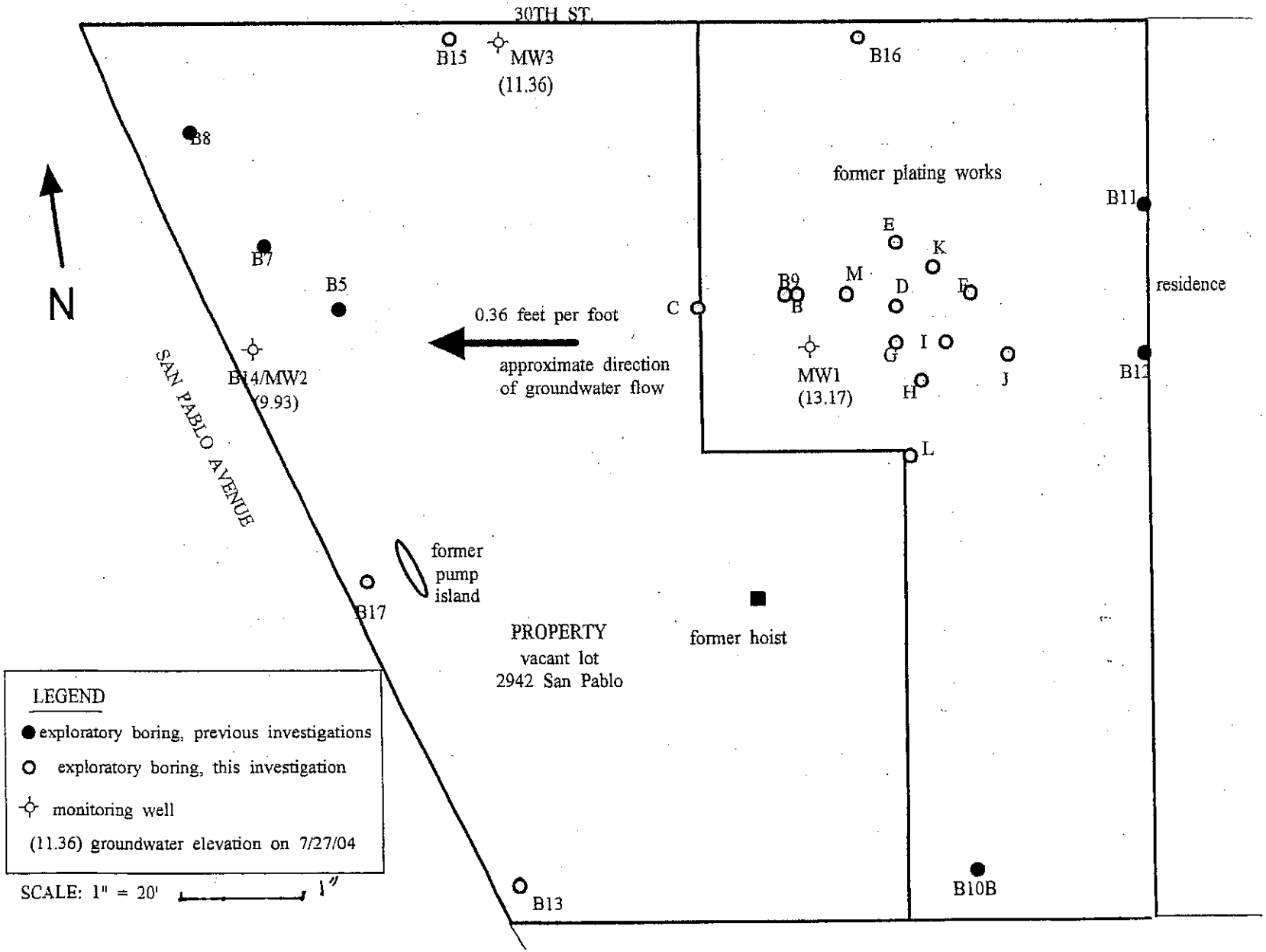


FIGURE 3

POTENTIOMETRIC SURFACE ON JULY 27, 2004

2926 SAN PABLO AVENUE
OAKLAND, CALIFORNIA

SCALE: 1" = 20'
AUGUST 2004

PIERS ENVIRONMENTAL SERVICES, INC. 1330 S. BASCOM AVE., SUITE F, SAN JOSE, CA 95128
PHONE: 408-559-1248 FAX: 408-559-1224 WWW.PIERSES.COM

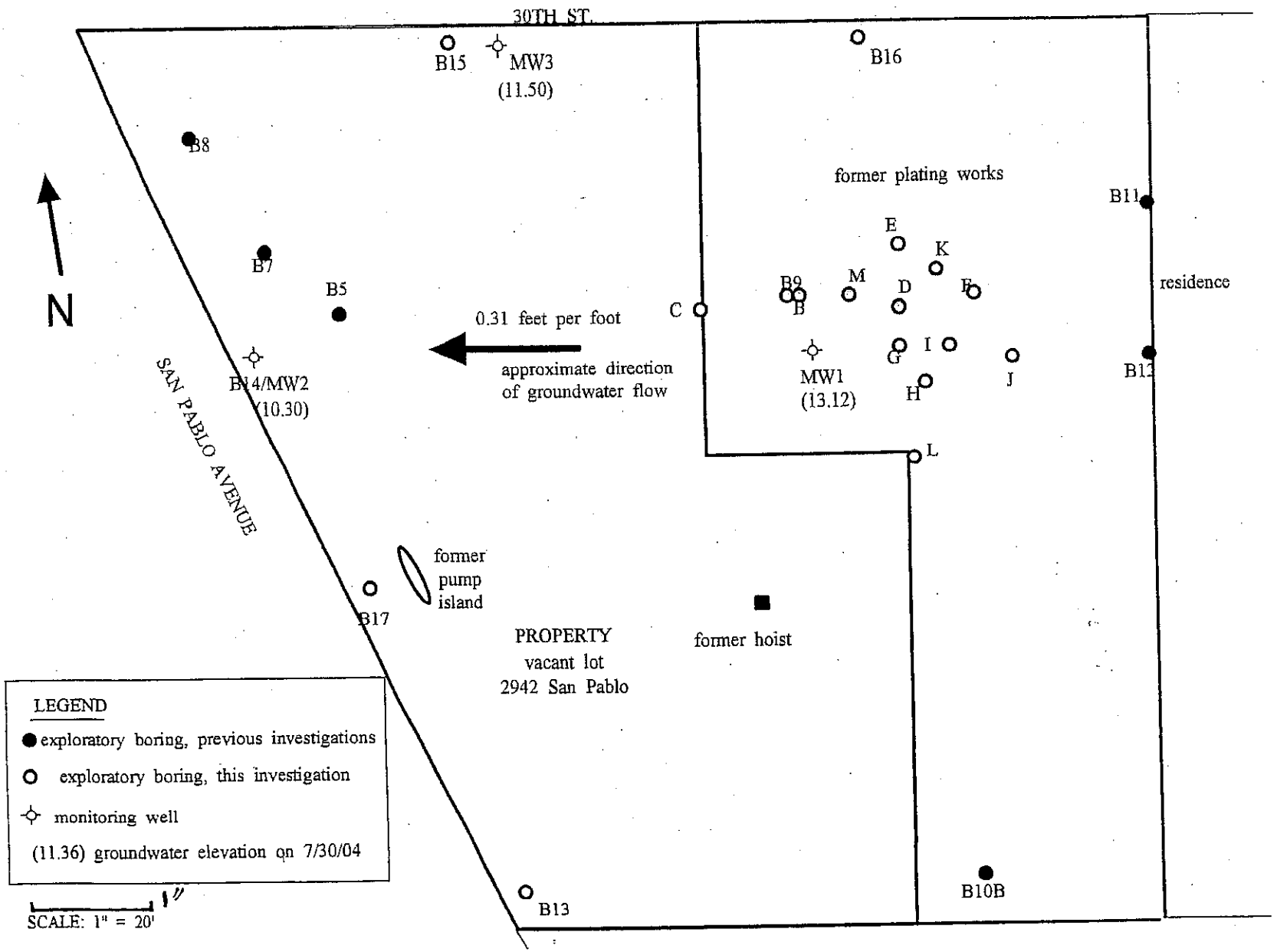


FIGURE 4

POTENTIOMETRIC SURFACE ON JULY 30, 2004

2926 SAN PABLO AVENUE
OAKLAND, CALIFORNIA

SCALE: 1" = 20'
AUGUST 2004

PIERS ENVIRONMENTAL SERVICES, INC. 1330 S. BASCOM AVE., SUITE F, SAN JOSE, CA 95128
PHONE: 408-559-1248 FAX: 408-559-1224 WWW.PIERSES.COM

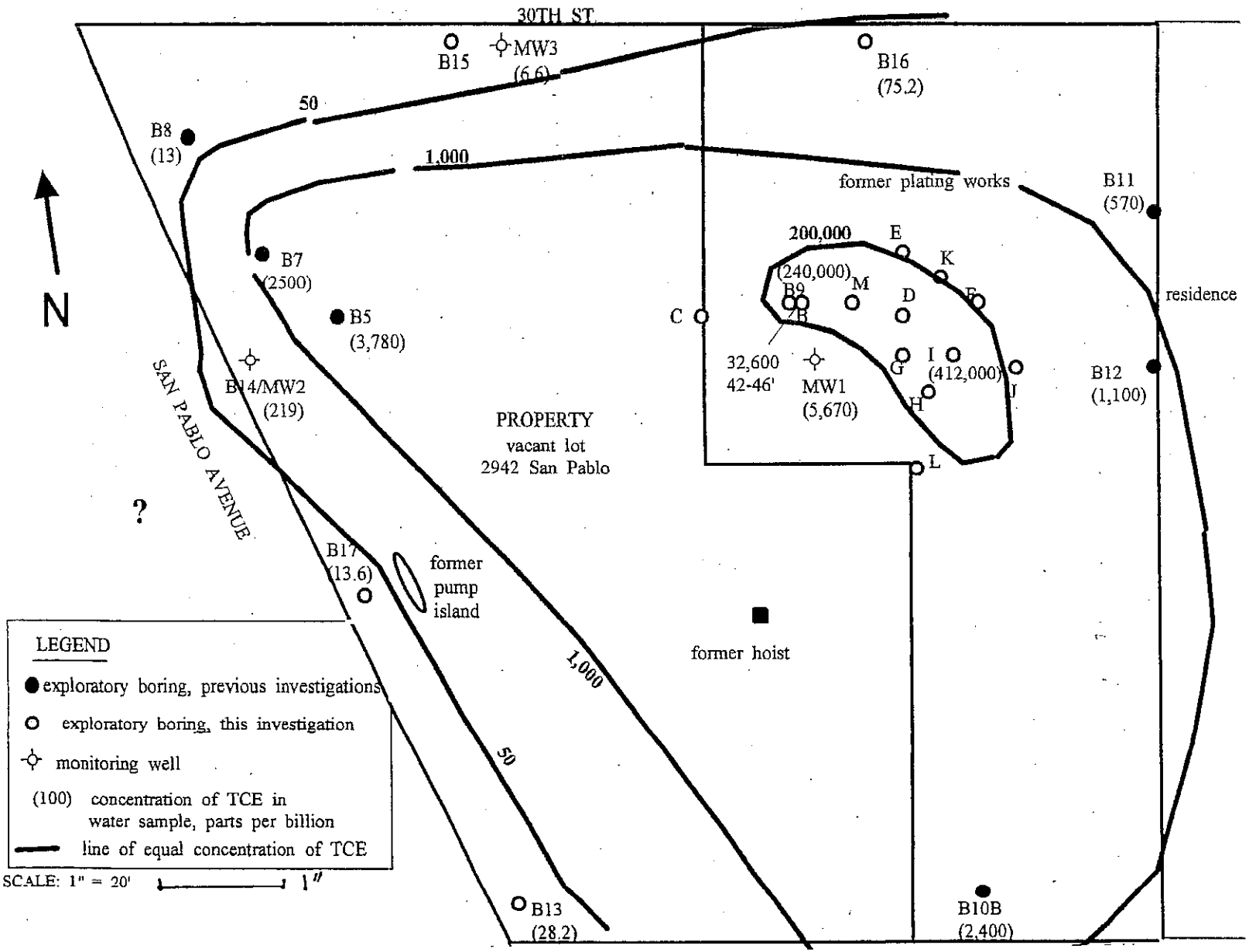


FIGURE 5

CONCENTRATIONS OF TCE IN GROUNDWATER, GRAB SAMPLES & MONITORING WELLS

SCALE: 1" = 20'
AUGUST 2004

2926 SAN PABLO AVENUE
OAKLAND, CALIFORNIA

PIERS ENVIRONMENTAL SERVICES, INC. 1330 S. BASCOM AVE., SUITE F, SAN JOSE, CA 95128
PHONE: 408-559-1248 FAX: 408-559-1224 WWW.PIERSES.COM

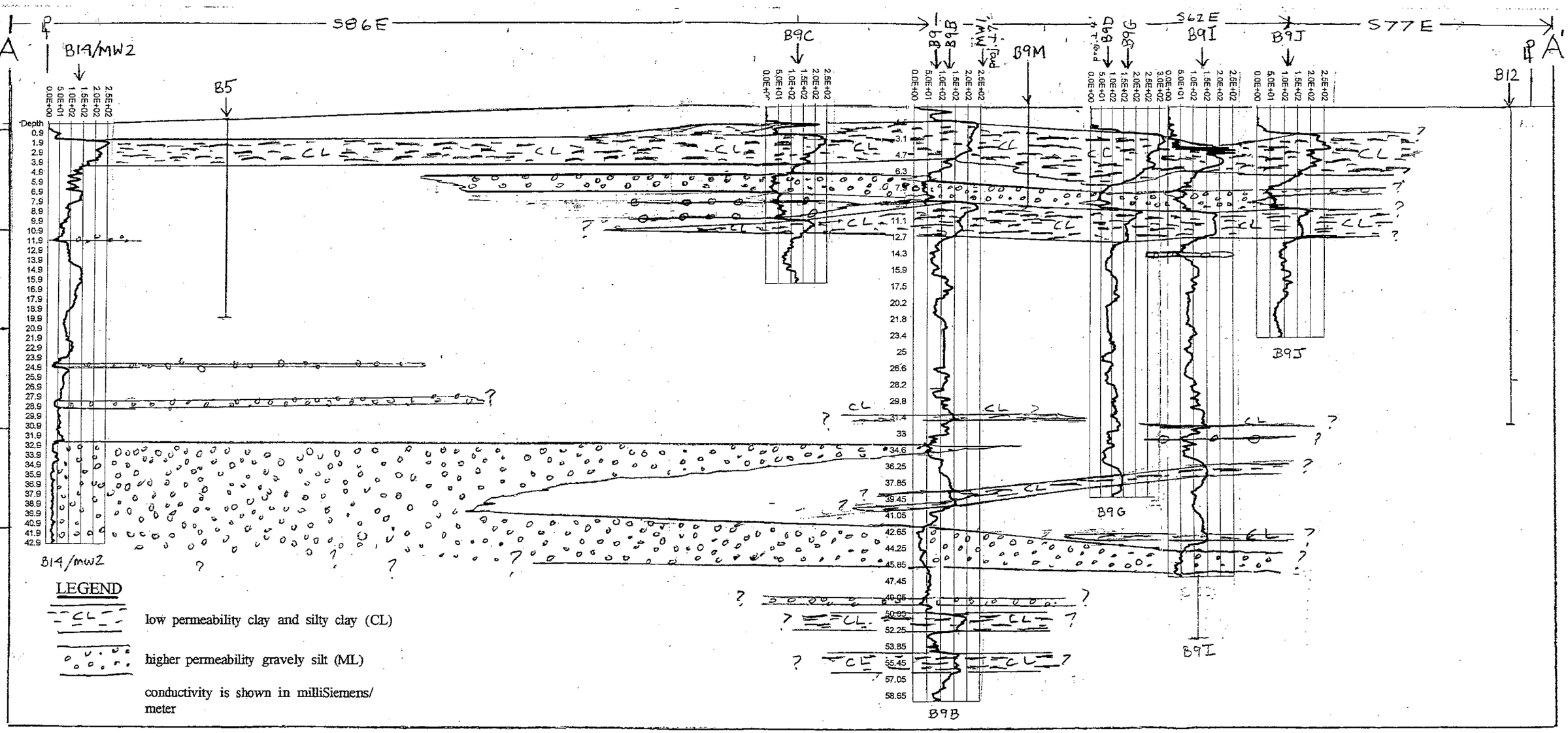
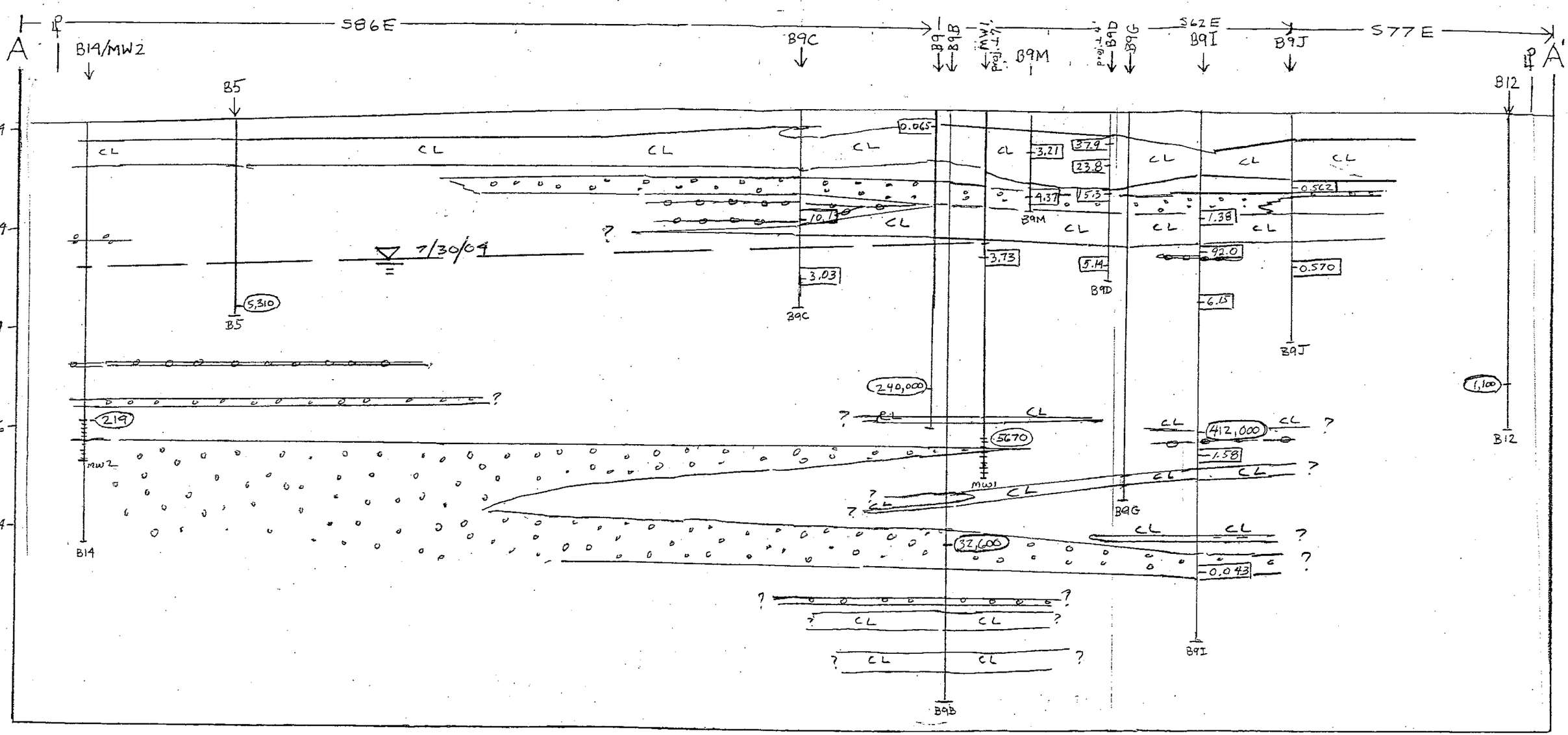


FIGURE 6

CROSS SECTION A – A[1]

2942 SAN PABLO AVENUE
OAKLAND, CA

SCALE: 1" = 10'
AUGUST 2004



LEGEND

CL	low permeability clay and silty clay (CL)
	higher permeability gravely silt (ML)
(219)	concentration of TCE in grab groundwater or monitoring well sample, this investigation and previous investigations, in ppb
13.03	concentration of TCE in soil, this investigation, in ppm

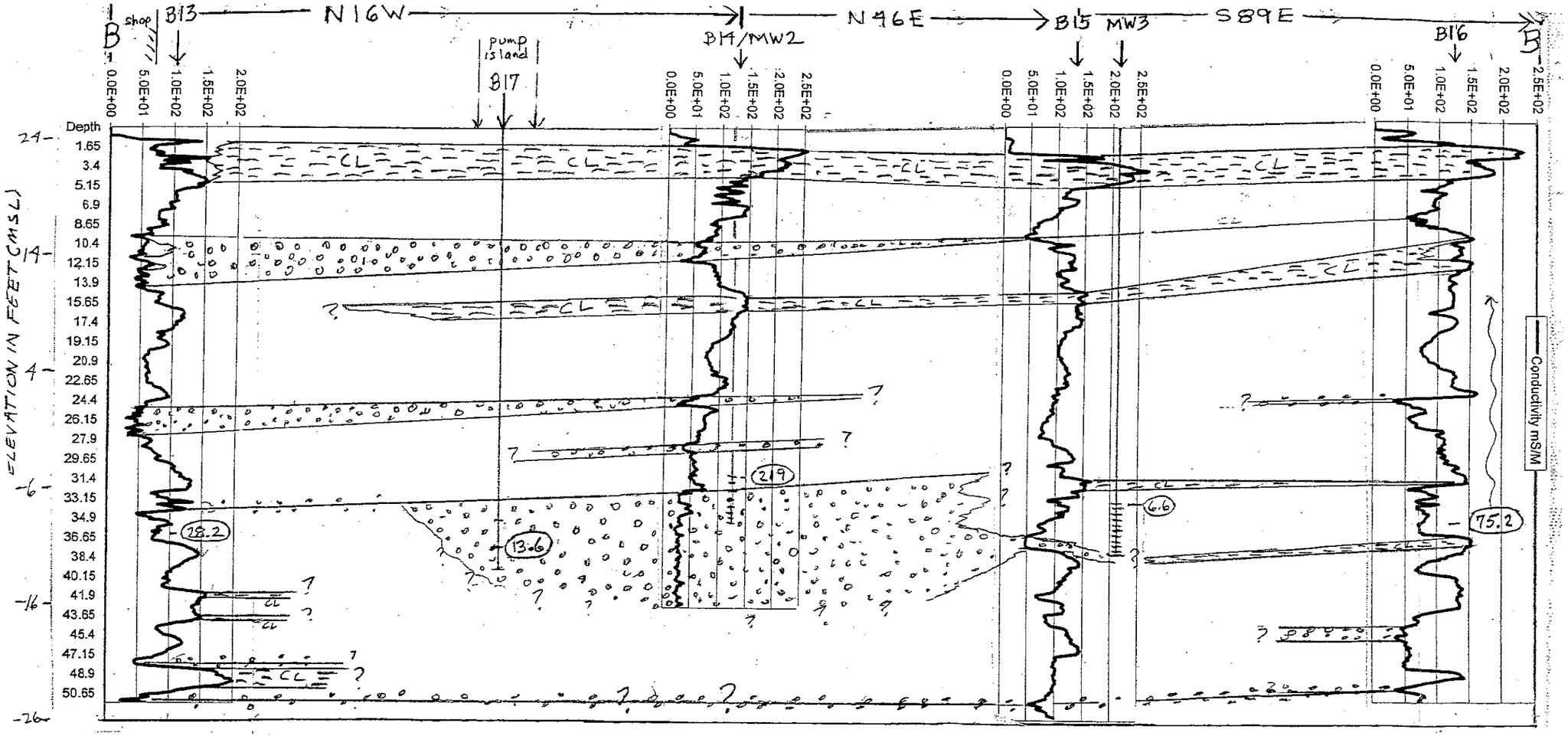
FIGURE 7

CROSS SECTION A – A^1 SHOWING TCE IN SOIL & GROUNDWATER

2942 SAN PABLO AVENUE
OAKLAND, CA

SCALE: 1" = 10'
AUGUST 2004

PIERS ENVIRONMENTAL SERVICES, INC. 1330 S. BASCOM AVE., SUITE F, SAN JOSE, CA 95128
PHONE: 408-559-1248 FAX: 408-559-1224 WWW.PIERSES.COM



LEGEND

low permeability clay and silty clay (CL)

higher permeability gravely silt (ML)

(28.2) concentration of TCE in grab groundwater or monitoring well sample, this investigation, in parts per billion

conductivity is shown in milliSiemens/meter

FIGURE 8

CROSS SECTION B – B^1 SHOWING TCE IN GROUNDWATER

2942 SAN PABLO AVENUE
OAKLAND, CA

HORIZ. SCALE: 1" = 20'
VERT. SCALE: 1" = 10'
AUGUST 2004

PIERS ENVIRONMENTAL SERVICES, INC. 1330 S. BASCOM AVE., SUITE F, SAN JOSE, CA 95128
PHONE: 408-559-1248 FAX: 408-559-1224 WWW.PIERSES.COM

APPENDIX A
WELL PURGING AND SAMPLING DATA

NORTH STATE LABS

WELL PURGING/SAMPLING DATA

Project Number: _____ Date: 07-30-04

Project / Site Location: 2926-42 SAN PABLO AVE
OAKLAND CA

Sampler/Technician: KAN ATKINSON

Casing Diameter (inches)	0.75	2	4	6
Casing Volumes (gallons)	0.02	0.2	0.7	1.52

Well No. MW-1

A. Total Well Depth	36.55
B. Depth To Water	13.20
C. Water Height (A-B)	23.35
D. Well Casing Diameter	1
E. Casing Volume	.02
F. Single Case Volume (CxE)	0.46
G. 10 Case Volume(s)(CxEx10)	4.60
H. 80% Recharge Level	13.66

Purge Event
Start Time: 1415
Finish Time: 1445
Post Purge Measurement
Depth to Water 36.40 / TWD - 36.60
Time Measured: 1450
Recharge/Sample Time
Depth to Water: 34.21
Time Measured: 1500

Well Fluid Parameters:				
Gals.	0	1.5	3	5
pH	7.87	7.80	7.79	7.81
T (°C)	22.4	22.3	22.3	22.1
Cond.	674	680	681	679
DO mg/L				
DO %				
Turbidity	73.4	70.1	69.8	68.9
ORP				
Summary Data:				
Total Gallons Purged: 5				
Purge device: DIAPHRAGM				
Sampling Device: DISP. BAILER				
Sample Collection Time: 1510				
Sample Appearance/Odor:				

* 1.5 GALS OF WATER ADDED ↑

Well No. MW-2

A. Total Well Depth	33.10
B. Depth To Water	14.30
C. Water Height (A-B)	18.80
D. Well Casing Diameter	1
E. Casing Volume	.02
F. Single Case Volume (CxE)	0.37
G. 10 Case Volume(s)(CxEx10)	3.70
H. 80% Recharge Level	

Purge Event
Start Time: 1315
Finish Time: 1340
Post Purge Measurement
Depth to Water 33.00 / TWD - 33.10
Time Measured: 1345
Recharge/Sample Time
Depth to Water: 31.18
Time Measured: 1350

Well Fluid Parameters:				
Gals.	0	1	2	4
pH	7.20	7.16	7.16	7.17
T (°C)	24.0	23.6	23.0	22.9
Cond.	450	455	458	453
DO mg/L				
DO %				
Turbidity	58.3	57.2	57.9	57.9
ORP				
Summary Data:				
Total Gallons Purged: 4				
Purge device: DIAPHRAGM				
Sampling Device: DISP. BAILER				
Sample Collection Time: 1350				
Sample Appearance/Odor:				

* 2 GALS OF WATER ADDED ↑

NORTH STATE LABS

WELL PURGING/SAMPLING DATA

Project Number: _____ Date: 07-30-04

Project / Site Location: 2926-42 SAN PABLO
OAKLAND CA

Sampler/Technician: IAN ATKINSON

Casing Diameter (inches)	0.75	2	4	6
Casing Volumes (gallons)	0.02	0.2	0.7	1.52

Well No. MW-3

A. Total Well Depth	36.00
B. Depth To Water	14.40
C. Water Height (A-B)	21.60
D. Well Casing Diameter	1
E. Casing Volume	.07
F. Single Case Volume (CxE)	0.43
G.10 Case Volume(s)(CxEx10)	4.30
H. 80% Recharge Level	14.83

Purge Event
Start Time: 1230
Finish Time: 1245
Post Purge Measurement
Depth to Water 35.60 / TWD - 36.00
Time Measured: 1250
Recharge/Sample Time
Depth to Water: 35.62
Time Measured: 1300

Well Fluid Parameters:				
Gals.	0	1	2.5	5
pH	7.51	7.86	7.79	7.62
T (°C)	24.3	23.9	22.7	22.8
Cond.	679	665	672	676
DO mg/L				
DO %				
Turbidity	TO HIGH	85.6	73.2	72.1
ORP				
Summary Data:				
Total Gallons Purged: 5				
Purge device: DIAPHRAGM				
Sampling Device: DISP. BAILER				
Sample Collection Time: 1300				
Sample Appearance/Odor:				

Well No. _____

A. Total Well Depth	
B. Depth To Water	
C. Water Height (A-B)	
D. Well Casing Diameter	
E. Casing Volume	
F. Single Case Volume (CxE)	
G. Case Volume(s)(CxEx)	
H. 80% Recharge Level	

Purge Event
Start Time:
Finish Time:
Post Purge Measurement
Depth to Water
Time Measured:
Recharge/Sample Time
Depth to Water:
Time Measured:

Well Fluid Parameters:				
Gals.				
pH				
T (°C)				
Cond.				
DO mg/L				
DO %				
Turbidity				
ORP				
Summary Data:				
Total Gallons Purged:				
Purge device:				
Sampling Device:				
Sample Collection Time:				
Sample Appearance/Odor:				

* 1 GAL OF WATER ADDED ↑

NORTH STATE LABS

FLUID-LEVEL MONITORING DATA

Project No: _____ Date: 07.30.04

Project/Site Location: 2926-42 SAN PABLO AVE OAKLAND CA

Technician: IVAN ATKINSON Method: ELECTRONIC

Well	Depth to Water (feet)	Depth to Product (feet)	Product Thickness (feet)	Total Well Depth (feet)	Comments
MW-1	13.20			36.55	@1050
MW-2	14.30			33.10	@1040
MW-3	14.40			36.00	@1030

Measurements referenced to top of well casing. NORTH

APPENDIX B
LABORATORY ANALYTICAL DATA SHEETS AND CHAIN OF CUSTODY

North State Environmental Analytical Laboratory

90 South Spruce Avenue, Suite W, South San Francisco, CA 94080
Phone: (650) 266-4563 Fax: (650) 266-4560

04-1154

Chain of Custody / Request for Analysis
Lab Job No.: _____ Page 1 of 2

Client: AERS ENVIRONMENTAL	Report to: Joel Greger	Phone: 5705935382	Turnaround Time: Regular
Mailing Address: 1330 S. Bascom Ave Suite F, San Jose CA 95128	Billing to: Aers	Fax: 408 5591254	Date: 7/22/04
		PO# / Billing Reference:	Sampler: Joel Greger

Project / Site Address: 2942 San Pablo Ave, Oakland, CA

Analysis Requested

	Sample ID	Sample Type	Container No. / Type	Pres.	Sampling Date / Time	VOCs & gasoline by 8260	TPH as gas/BTEX	Comments / Hazards
1	B9I (10.5')	soil	liner	ice	7/22/04 pm	X		
2	B9I (14')	↓	↓	↓	↓ ↓	X		
3	B9I (19')					X		
4	B9I (34.5')					X		
5	B9I (46.5')	↓	↓	↓	7/23/04 am	X		
6	B9I water	water	3 VOAs	HCl, ice	7/22/04 pm	X		
7	B9K (7.8)	soil	liner	ice	↓ ↓	X		
8	B9IC (15.3')	↓	↓	↓	↓ ↓	X		
9	mw2 (7.5')	↓	↓	↓	7/23/04 10 AM	X	X	
10	mw2 (19.1)	↓	↓	↓	↓ ↓	X		
11	mw3 (9')	↓	↓	↓	↓ 1130 PM	X		hold
12	mw3 (14.3)	↓	↓	↓	↓ ↓	X		hold
	mw3 (36')	↓	↓	↓	↓ "			hold
13	B16 water	water	3 VOAs	HCl	7/26/04 7:15 AM	X		

Relinquished by: Joel Greger	Date: 7/26/04	Time: 10AM	Received by:	Lab Comments
Relinquished by:	Date: 7/26/04	Time: 11AM	Received by:	
Relinquished by:	Date:	Time:	Received by:	

04-1154

North State Environmental Analytical Laboratory

90 South Spruce Avenue, Suite W, South San Francisco, CA 94080
Phone: (650) 266-4563 Fax: (650) 266-4560

Chain of Custody / Request for Analysis
Lab Job No.: _____ Page 2 of 2

Client: PIERS Environmental	Report to: Joel Gregor	Phone: 510 593 5382	Turnaround Time: Regular
Mailing Address: 1330 S. Bascom Ave, Suite F, San Jose CA 95128	Billing to: PIERS	Fax: 510 787 1457	Date: 7/26/04
		PO# / Billing Reference: 03408	Sampler: J. Gregor

Project / Site Address: 2942 San Pablo Ave, Oakland, CA

Analysis Requested

	Sample ID	Sample Type	Container No. / Type	Pres.	Sampling Date / Time	VOCs & Fuel Oxygenates by 8260	TPH as Hydraulic Fluid	PCB's					Comments / Hazards
12	B13 water	water	3 VOAs	HCl (ice)	7/26/04 9:15 Am	X							
13	Hoist (11')	Soil	1 liner	ice	8:20 Am		X	X					
14	Hoist (15.7')	Soil	↓	↓	↓ ↓		X	X					
15	B9D (3.3')	↓	↓	↓	↓ 8:30 Am	X							
16	B9D (5.5')	↓	↓	↓	↓ ↓	X							
17	B9D (8.3)	↓	↓	↓	↓ ↓	X							
18	B9D (15.7')	↓	↓	↓	↓ ↓	X							

Relinquished by: Joel Gregor	Date: 7/26/04	Time: 10 Am	Received by:	Lab Comments
Relinquished by:	Date: 7/26/04	Time: 1 PM	Received by:	
Relinquished by:	Date:	Time:	Received by:	

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04-1154

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Chain of Custody / Request for Analysis
Lab Job No.: _____ Page 1 of 2

Client: AERS ENVIRONMENTAL	Report to: Joel Gregor	Phone: 510 593 5382	Turnaround Time: Regular
Mailing Address: 1330 S. Bascom Ave Suite F, San Jose CA 95128	Billing to: AERS	Fax: 408 559 1244	
		PO# / Billing Reference:	Date: 7/22/04
			Sampler: Joel Gregor

Project / Site Address: 2942 San Pablo Ave, Oakland, CA

Analysis Requested

Sample ID	Sample Type	Container No. / Type	Pres.	Sampling Date / Time	VOCs & Fuel oxygenates by 8260	TPH as gas / BTEX						Comments / Hazards
B9I (10.5')	soil	liner	ice	7/22/04 pm	X							
B9I (14')	↓	↓	↓	↓ ↓	X							
B9I (19')					X							
B9I (24.5')					X							
B9I (46.5')	↓	↓	↓	7/23/04 4m	X							
B9I water	water	3 VOAs	HCl, ice	7/22/04 pm	X							
B9K (7.8)	soil	liner	ice	↓ ↓	X	X						
B9K (15.3')	↓	↓	↓		X							
MW2 (7.5')				7/23/04 10AM	X	X						
MW2 (19.1)				↓ ↓	X							
MW3 (7')				10:30 AM	X							hold
MW3 (19.3)				↓	X							hold
MW3 (36')												hold
B16 water	water	3 VOAs	ice, HCl	7/26/04 7:15AM	X							

Relinquished by: Joel Gregor	Date: 7/26/04	Time: 10AM	Received by:	Lab Comments
Relinquished by:	Date: 7/26/04	Time: 11AM	Received by:	
Relinquished by:	Date:	Time:	Received by:	

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04-1154

Chain of Custody / Request for Analysis
Lab Job No.: _____ Page 2 of 2

Client: PIERS Environmental	Report to: Joel Gregor	Phone: 510 593 5382	Turnaround Time: Regular
Mailing Address: 1330 S. Bascom Ave, Suite F San Jose CA 95128	Billing to: PIERS	Fax: 510 787 1457	Date: 7/26/04
		PO# / Billing Reference: 03408	Sampler: J. Gregor

Project / Site Address: 2942 San Pablo Ave Oakland, CA

Analysis Requested

Sample ID	Sample Type	Container No. / Type	Pres.	Sampling Date / Time	VOCs & Fuel Oxygenates by 8260	TPH as Gasoline Fuel	PCB's						Comments / Hazards
B13 water	water	3 VOAs	HCl (ice)	7/26/04 9:15 Am	X								
Hoist (11')	soil	1 liner	ice	8:20 Am		X	X						
Hoist (15.7')	soil	↓	↓	↓ ↓		X	X						
B9D (3.3')	↓	↓	↓	↓ 8:30 Am	X								
B9D (5.5')	↓	↓	↓	↓ ↓	X								
B9D (8.3)	↓	↓	↓	↓ ↓	X								
B9D (15.7')	↓	↓	↓	↓ ↓	X								

Relinquished by: Joel Gregor	Date: 7/26/04	Time: 10 Am	Received by:	Lab Comments
Relinquished by:	Date: 7/26/04	Time: 16:04	Received by:	
Relinquished by:	Date:	Time:	Received by:	

04-1154

North State Environmental Analytical Laboratory
90 South Spruce Avenue, Suite W, South San Francisco, CA 94080
Phone: (650) 266-4563 Fax: (650) 266-4560

Chain of Custody / Request for Analysis
Lab Job No.: _____ Page 1 of 2

Client: PIERS ENVIRONMENTAL	Report to: Joel Gregor	Phone: 510 593 5382	Turnaround Time: Regular
Mailing Address: 1330 S. Bascom Ave Suite F, San Jose CA 95128	Billing to: Piers	Fax: 408 559 1224	Date: 7/22/04
		PO# / Billing Reference:	Sampler: Joel Gregor
Project / Site Address: 2942 San Pablo Ave, Oakland, CA		Analysis Requested	

	Sample ID	Sample Type	Container No. / Type	Pres.	Sampling Date / Time	VOC's 8260 Full Compounds	TPH as gas/BTEX	TPH-G, BTEX					Comments / Hazards
1 ✓	B9I (0.5')	soil	liners	ice	7/22/04 pm	X							
2 ✓	B9I (14')					X							
3 ✓	B9I (19')					X							
4 ✓	B9I (34.5')					X							
5 ✓	B9I (46.5')				7/23/04 am	X		X					
6 ✓	B9I water	water	3 VOAs	HCl to pH<2	7/22/04 pm	X							
7 ✓	B9K (7.2)	soil	liners	ice		X							
8 ✓	B9IC (15.5')				7/23/04 10:45am	X	X						
9 ✓	mw2 (7.5')					X							
10 ✓	mw2 (19.1')				11:30 am								hold
11 ✓	mw3 (4')												hold
12 ✓	mw3 (14.3')												hold
	mw3 (36')												
13 ✓	B16 water	water	3 VOAs	ice HCl to pH<2	7/22/04 7:45am	X		X					

Relinquished by: Joel Gregor	Date: 7/22/04	Time: 10am	Received by: Mark Valles	Lab Comments
Relinquished by: Mark Valles	Date: 7/22/04	Time: 11AM	Received by: Christine Dell	
Relinquished by:	Date:	Time:	Received by:	

04-1154

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90 South Spruce Avenue, Suite W, South San Francisco, CA 94080
Phone: (650) 266-4563 Fax: (650) 266-4560

Chain of Custody / Request for Analysis
Lab Job No.: ______ Page 2 of 2

Client: PIERS Environmental	Report to: Joel Gregor	Phone: 510 593 5382	Turnaround Time: Regular
Mailing Address: 1330 S. Bascom Ave, Suite [illegible] San Jose CA 95128	Billing to: PIERS	Fax: 510 787457	Date: 7/26/04
		PO# / Billing Reference: 03458	Sampler: J. Gregor

Project / Site Address: 2942 San Pablo Ave, Oakland, CA

Analysis Requested

	Sample ID	Sample Type	Container No. / Type	Pres	Sampling Date / Time	VOCs & Fuel Oxygenates by 8260	TPH as [illegible]	PCB's	TPH G/8015				Comments / Hazards
12	B13 water	water	3 Voas	HCl, ice	7/7/04 9:15 Am	X			X				
13	Hoist (11')	soil	1 liner	ice	↓ 8:20 Am		X	X					
14	Hoist (15.7')	soil	↓	↓	↓ ↓		X	X					
15	B9D (3.3')	↓	↓	↓	↓ 8:35 Am	X							
16	B9D (5.5')	↓	↓	↓	↓ ↓	X							
17	B9D (8.3)	↓	↓	↓	↓ ↓	X							
18	B9D (15.7')	↓	↓	↓	↓ ↓	X							

Relinquished by: [signature]	Date: 7/26/04	Time: 10 am	Received by: [signature]	Lab Comments
Relinquished by: [signature]	Date: 7/26/04	Time: 1144	Received by: [signature]	
Relinquished by:	Date:	Time:	Received by:	

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Case Narrative

Client: PIERS Environmental
Project: 2942 SAN PABLO AVE., OAKLAND
Lab No: 04-1154
Date Received: 07/26/2004 Date reported: 08/13/2004

Complete report for three water samples and fifteen soil samples analyzed for VOCs and fuel oxygenates by method 8260B GC/MS. Sample 04-1154-09 was also analyzed for gasoline by method 8015M and BTEX by method 8021B. Samples 04-1154-13 and –14 were analyzed only for hydraulic oil by method 8015M. Additionally, as requested on 08/11/04, samples 04-1154-06, -11 and –12 were analyzed for gasoline by method 8015M. Sample 04-1154-11 had to be analyzed from an already opened voa with head space. No errors were noted during analysis. All QC/QA results were within acceptance limits.

John A. Murphy
Laboratory Director

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C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 04-1154
Client: PIERS Environmental
Project: 2942 SAN PABLO AVE. OAKLAND

Date Reported: 08/13/2004

Gasoline and BTEX by Methods 8015M/8021B
Hydraulic Hydrocarbons by Method 8015M

Analyte	Method	Result	Unit	Date Sampled	Date Analyzed
Sample: 04-1154-06 Client ID: B9I WATER				07/22/2004	W
Gasoline Range Organics	SW8020F	*141000	UG/L		08/12/2004
Sample: 04-1154-09 Client ID: MW2 (7.5')				07/23/2004	SO
Benzene	SW8020F	ND<5	UG/KG		08/03/2004
Ethylbenzene	SW8020F	ND<5	UG/KG		08/03/2004
Gasoline Range Organics	SW8020F	ND<500	UG/KG		08/03/2004
Toluene	SW8020F	ND<5	UG/KG		08/03/2004
Xylenes	SW8020F	ND<10	UG/KG		08/03/2004
Sample: 04-1154-11 Client ID: B16 WATER				07/26/2004	W
Gasoline Range Organics	SW8020F	*137	UG/L		08/12/2004
Sample: 04-1154-12 Client ID: B13 WATER				07/26/2004	W
Gasoline Range Organics	SW8020F	ND<50	UG/L		08/12/2004
Sample: 04-1154-13 Client ID: HOIST (11')				07/26/2004	SO
Hydraulic Oil	CATFH	120	MG/KG		07/30/2004
Sample: 04-1154-14 Client ID: HOIST (15.7')				07/26/2004	SO
Hydraulic Oil	CATFH	ND<10	MG/KG		07/30/2004

*Results partly due to single peak (TCE) in gasoline range.

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C E R T I F I C A T E O F A N A L Y S I S

Quality Control/Quality Assurance

Lab Number: 04-1154
Client: PIERS Environmental
Project: 2942 SAN PABLO AVE. OAKLAND

Date Reported: 08/13/2004
Gasoline and BTEX by Methods 8015M/8021B
Hydraulic Hydrocarbons by Method 8015M

Analyte	Method	Reporting Limit	Unit	Blank	Avg MS/MSD Recovery	RPD
Diesel Fuel #2	CATFH	1	MG/KG	ND	84/80	5
Hydraulic Oil	CATFH	10	MG/KG	ND	NA	NA
Benzene	SW8020F	5	UG/KG	ND	98/111	12
Toluene	SW8020F	5	UG/KG	ND	106/112	6
Ethylbenzene	SW8020F	5	UG/KG	ND	106/120	12
Xylenes	SW8020F	10	UG/KG	ND	110/119	8
Methyl-tert-butyl ether	SW8020F	5	UG/KG	ND	102/106	4
Gasoline Range Organics	SW8020F	500	UG/KG	ND	98/112	13
Gasoline Range Organics	SW8020F	50	UG/L	ND	110/112	2

ELAP Certificate NO:1753
Reviewed and Approved

John A.Murphy,Laboratory Director

North State Labs
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Case Narrative

Client: PIERS Environmental
Project: 2942 SAN PABLO AVE., OAKLAND
Lab No: 04-1154
Date Received: 07/26/2004 Date reported: 08/05/2004

Complete report for three water samples and fifteen soil samples analyzed for VOCs and fuel oxygenates by method 8260B GC/MS. Sample 04-1154-09 was also analyzed for gasoline by method 8015M and BTEX by method 8021B. Samples 04-1154-13 and –14 were analyzed only for hydraulic oil by method 8015M. No errors were noted during analysis. All QC/QA results were within acceptance limits.

John A. Murphy
Laboratory Director

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C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 04-1154
Client: PIERS Environmental
Project: 2942 SAN PABLO AVE. OAKLAND

Date Reported: 08/04/2004

Gasoline and BTEX by Methods 8015M/8021B
Hydraulic Hydrocarbons by Method 8015M

Analyte	Method	Result	Unit	Date Sampled	Date Analyzed
Sample: 04-1154-09	Client ID: MW2 (7.5')			07/23/2004	SO
Benzene	SW8020F	ND<5	UG/KG		08/03/2004
Ethylbenzene	SW8020F	ND<5	UG/KG		08/03/2004
Gasoline Range Organics	SW8020F	ND<500	UG/KG		08/03/2004
Toluene	SW8020F	ND<5	UG/KG		08/03/2004
Xylenes	SW8020F	ND<10	UG/KG		08/03/2004
Sample: 04-1154-13	Client ID: HOIST (11')			07/26/2004	SO
Hydraulic Oil	CATFH	120	MG/KG		07/30/2004
Sample: 04-1154-14	Client ID: HOIST (15.7')			07/26/2004	SO
Hydraulic Oil	CATFH	ND<10	MG/KG		07/30/2004

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CERTIFICATE OF ANALYSIS

Quality Control/Quality Assurance

ab Number: 04-1154
ient: PIERS Environmental
oject: 2942 SAN PABLO AVE. OAKLAND

te Reported: 08/04/2004
Gasoline and BTEX by Methods 8015M/8021B
Hydraulic Hydrocarbons by Method 8015M

nalyte	Method	Reporting Limit	Unit	Blank	Avg MS/MSD Recovery	RPD
esel Fuel #2	CATFH	1	MG/KG	ND	84/80	5
ydraulic Oil	CATFH	10	MG/KG	ND	NA	NA
nzene (08/03/04)	SW8020F	5	UG/KG	ND	98/111	12
oluene	SW8020F	5	UG/KG	ND	106/112	6
hylbenzene	SW8020F	5	UG/KG	ND	106/120	12
ylenes	SW8020F	10	UG/KG	ND	110/119	8
asoline Range Organics	SW8020F	500	UG/KG	ND	98/112	13

LAP Certificate NO:1753
eviewed and Approved

John A.Murphy,Laboratory Director

North State Labs
CA ELAP # 1753
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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-1154
Client : PIERS Environmental
Project : 2942 SAN PABLO AVE. OAKLAND

Date Sampled : 07/22/2004
Date Analyzed: 07/29/2004
Date Reported: 08/04/2004

Fuel Oxygenates by Method 8260B

Laboratory Number	04-1154-01	04-1154-02	04-1154-03	04-1154-04	04-1154-05
Client ID	B9I (10.5')	B9I (14')	B9I (19')	B9I (34.5')	B9I (46.5')
Matrix	SO	SO	SO	SO	SO
Analyte	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Methyl-tert-butyl ether	ND<5	ND<5	ND<5	ND<5	ND<5
Ethyl tert-butyl ether	ND<5	ND<5	ND<5	ND<5	ND<5
Tert-Amyl methyl ether	ND<5	ND<5	ND<5	ND<5	ND<5
Di-isopropyl ether (DIPE)	ND<5	ND<5	ND<5	ND<5	ND<5
Tert-Butyl alcohol	ND<250	ND<250	ND<250	ND<250	ND<250
1,2-Dichloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
1,2-Dibromoethane	ND<5	ND<5	ND<5	ND<5	ND<5
Ethanol	ND<500	ND<500	ND<500	ND<500	ND<500
SUR-Dibromofluoromethane	116	117	118	122	118
SUR-Toluene-d8	96	94	100	95	96
SUR-4-Bromofluorobenzene	106	104	107	103	105
SUR-1,2-Dichloroethane-d4	101	103	104	105	103

Comments:

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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-1154
Client : PIERS Environmental
Project : 2942 SAN PABLO AVE. OAKLAND

Date Sampled : 07/22/2004
Date Analyzed: 07/29/2004
Date Reported: 08/04/2004

Fuel Oxygenates by Method 8260B

Laboratory Number	04-1154-07	04-1154-08	04-1154-09	04-1154-10	04-1154-15
Client ID	B9K (7.8')	B9K (15.3')	MW2 (7.5')	MW2 (19.1')	B9D (3.3')
Matrix	SO	SO	SO	SO	SO
Analyte	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Methyl-tert-butyl ether	ND<5	ND<5	ND<5	ND<5	62
Ethyl tert-butyl ether	ND<5	ND<5	ND<5	ND<5	ND<5
Tert-Amyl methyl ether	ND<5	ND<5	ND<5	ND<5	ND<5
Di-isopropyl ether (DIPE)	ND<5	ND<5	ND<5	ND<5	ND<5
Tert-Butyl alcohol	ND<250	ND<250	ND<250	ND<250	ND<250
1,2-Dichloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
1,2-Dibromoethane	ND<5	ND<5	ND<5	ND<5	ND<5
Ethanol	ND<500	ND<500	ND<500	ND<500	ND<500
SUR-Dibromofluoromethane	123	124	118	124	124
SUR-Toluene-d8	100	96	100	99	95
SUR-4-Bromofluorobenzene	108	106	107	109	109
SUR-1,2-Dichloroethane-d4	107	107	104	113	107

Comments:

North State Labs
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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-1154
Client : PIERS Environmental
Project : 2942 SAN PABLO AVE. OAKLAND

Date Sampled : 07/26/2004
Date Analyzed: 07/29/2004
Date Reported: 08/04/2004

Fuel Oxygenates by Method 8260B

Laboratory Number	04-1154-16	04-1154-17	04-1154-18
Client ID	B9D (5.5')	B9D (8.3')	B9D (15.7')
Matrix	SO	SO	SO
Analyte	UG/KG	UG/KG	UG/KG
Methyl-tert-butyl ether	ND<5	ND<5	ND<5
Ethyl tert-butyl ether	ND<5	ND<5	ND<5
Tert-Amyl methyl ether	ND<5	ND<5	ND<5
Di-isopropyl ether (DIPE)	ND<5	ND<5	ND<5
Tert-Butyl alcohol	ND<250	ND<250	ND<250
1,2-Dichloroethane	ND<5	ND<5	ND<5
1,2-Dibromoethane	ND<5	ND<5	ND<5
Ethanol	ND<500	ND<500	ND<500
SUR-Dibromofluoromethane	119	124	127
SUR-Toluene-d8	95	97	97
SUR-4-Bromofluorobenzene	105	106	106
SUR-1,2-Dichloroethane-d4	101	105	110

Comments:

North State Labs
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C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 04-1154
Client : PIERS Environmental
Project : 2942 SAN PABLO AVE. OAKLAND

Date Sampled : 07/26/2004
Date Analyzed: 07/29/2004
Date Reported: 08/04/2004

Fuel Oxygenates by Method 8260B
Quality Control/Quality Assurance Summary

Laboratory Number	04-1154	MS/MSD	RPD	Recovery	RPD
Client ID	Blank	Recovery		Limit	Limit
Matrix	SO	SO			
Analyte	Results UG/KG	%Recoveries			
Ethanol	ND<500				
Methyl-tert-butyl ether	ND<5				
Di-isopropyl ether (DIPE)	ND<5				
Tert-Butyl alcohol	ND<250				
Ethyl tert-butyl ether	ND<5				
Tert-Amyl methyl ether	ND<5				
1,2-Dichloroethane	ND<5				
1,2-Dibromoethane	ND<5				
1,1-Dichloroethene	ND<5	118/117	1	54-155	27
Benzene	ND<5	114/113	1	72-122	22
Trichloroethene	ND<5	120/121	1	68-122	20
Toluene	ND<5	106/106	0	73-125	21
Chlorobenzene	ND<10	118/116	2	80-135	21
SUR-Dibromofluoromethane	110	118/125	6	54-145	23
SUR-Toluene-d8	96	97/97	0	81-108	14
SUR-4-Bromofluorobenzene	102	105/107	2	82-118	18
SUR-1,2-Dichloroethane-d4	94	102/115	12	70-125	25

Reviewed and Approved

John A. Murphy
Laboratory Director

North State Labs

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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-1154
Client : PIERS Environmental
Project : 2942 SAN PABLO AVE. OAKLAND

Date Sampled : 07/22/2004
Date Analyzed: 07/29/2004
Date Reported: 08/04/2004

Volatile Organics by GC/MS Method 8260

Laboratory Number	04-1154-01	04-1154-02	04-1154-03	04-1154-04	04-1154-05
Client ID	B9I (10.5')	B9I (14')	B9I (19')	B9I (34.5')	B9I (46.5')
Matrix	SO	SO	SO	SO	SO
Analyte	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Bromochloromethane	ND<25	ND<25	ND<25	ND<25	ND<25
Dichlorodifluoromethane	ND<25	ND<25	ND<25	ND<25	ND<25
Chloromethane	ND<50	ND<50	ND<50	ND<50	ND<50
Vinyl chloride	ND<25	ND<25	ND<25	ND<25	ND<25
Bromomethane	ND<25	ND<25	ND<25	ND<25	ND<25
Chloroethane	ND<25	ND<25	ND<25	ND<25	ND<25
Trichlorofluoromethane	ND<25	ND<25	ND<25	ND<25	ND<25
1,1-Dichloroethene	ND<5	ND<5	ND<5	ND<5	ND<5
Acetone	ND<250	ND<250	ND<250	ND<250	ND<250
Methylene chloride	ND<250	ND<250	ND<250	ND<250	ND<250
trans-1,2-Dichloroethene	ND<5	ND<5	ND<5	ND<5	ND<5
Methyl-tert-butyl ether	ND<5	ND<5	ND<5	ND<5	ND<5
1,1-Dichloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
2,2-Dichloropropane	ND<5	ND<5	ND<5	ND<5	ND<5
cis-1,2-Dichloroethene	47	37	ND<5	ND<5	ND<5
2-Butanone	ND<50	ND<50	ND<50	ND<50	ND<50
Chloroform	ND<5	15	7	ND<5	ND<5
Carbon tetrachloride	ND<5	273	ND<5	ND<5	ND<5
1,1-Dichloropropene	ND<5	ND<5	ND<5	ND<5	ND<5
Benzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,2-Dichloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
Trichloroethene	1380	92000	6150	1580	43
1,2-Dichloropropane	ND<5	ND<5	ND<5	ND<5	ND<5
Dibromomethane	ND<5	ND<5	ND<5	ND<5	ND<5
Bromodichloromethane	ND<5	ND<5	ND<5	ND<5	ND<5
trans-1,3-Dichloropropene	ND<5	ND<5	ND<5	ND<5	ND<5
4-Methyl-2-pentanone	ND<50	ND<50	ND<50	ND<50	ND<50
Toluene	ND<5	22	ND<5	ND<5	ND<5
cis-1,3-Dichloropropene	ND<5	ND<5	ND<5	ND<5	ND<5
1,1,2-Trichloroethane	ND<5	18	ND<5	ND<5	ND<5
Tetrachloroethene	ND<5	241	ND<5	ND<5	ND<5
1,3-Dichloropropane	ND<5	ND<5	ND<5	ND<5	ND<5
2-Hexanone	ND<50	ND<50	ND<50	ND<50	ND<50
Dibromochloromethane	ND<5	ND<5	ND<5	ND<5	ND<5
1,2-Dibromoethane	ND<5	ND<5	ND<5	ND<5	ND<5

Comments:

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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-1154
Client : PIERS Environmental
Project : 2942 SAN PABLO AVE. OAKLAND

Date Sampled : 07/22/2004
Date Analyzed: 07/29/2004
Date Reported: 08/04/2004

Volatile Organics by GC/MS Method 8260

Laboratory Number	04-1154-01	04-1154-02	04-1154-03	04-1154-04	04-1154-05
Client ID	B9I (10.5')	B9I (14')	B9I (19')	B9I (34.5')	B9I (46.5')
Matrix	SO	SO	SO	SO	SO
Analyte	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Chlorobenzene	ND<10	ND<10	ND<10	ND<10	ND<10
1,1,1,2-Tetrachloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
Ethylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
Xylene, Isomers m & p	ND<10	17	ND<10	ND<10	ND<10
o-Xylene	ND<5	ND<5	ND<5	ND<5	ND<5
Styrene	ND<5	ND<5	ND<5	ND<5	ND<5
Bromoform	ND<5	ND<5	ND<5	ND<5	ND<5
Isopropylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
Bromobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,1,2,2-Tetrachloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
n-Propylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
2-Chlorotoluene	ND<5	ND<5	ND<5	ND<5	ND<5
4-Chlorotoluene	ND<5	ND<5	ND<5	ND<5	ND<5
1,3,5-Trimethylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
tert-Butylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,2,4-Trimethylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,3-Dichlorobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,4-Dichlorobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
sec-Butylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,2-Dichlorobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
p-Butylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
Naphthalene	ND<10	ND<10	ND<10	ND<10	ND<10
1,2,4-Trichlorobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
Hexachlorobutadiene	ND<5	ND<5	ND<5	ND<5	ND<5
1,2,3-Trichlorobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,2,3-Trichloropropane	ND<5	ND<5	ND<5	ND<5	ND<5
Acetonitrile	ND<250	ND<250	ND<250	ND<250	ND<250
Acrylonitrile	ND<250	ND<250	ND<250	ND<250	ND<250
Isobutanol	ND<250	ND<250	ND<250	ND<250	ND<250
1,1,1-Trichloroethane	ND<5	18	ND<5	ND<5	ND<5
SUR-Dibromofluoromethane	116	117	118	122	118
SUR-Toluene-d8	96	94	100	95	96
SUR-4-Bromofluorobenzene	106	104	107	103	105
SUR-1,2-Dichloroethane-d4	101	103	104	105	103

Comments:

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CERTIFICATE OF ANALYSIS

Job Number: 04-1154
Client : PIERS Environmental
Project : 2942 SAN PABLO AVE. OAKLAND

Date Sampled : 07/22/2004
Date Analyzed: 07/29/2004
Date Reported: 08/04/2004

Volatile Organics by GC/MS Method 8260

Laboratory Number	04-1154-07	04-1154-08	04-1154-09	04-1154-10	04-1154-15
Client ID	B9K (7.8')	B9K (15.3')	MW2 (7.5')	MW2 (19.1')	B9D (3.3')
Matrix	SO	SO	SO	SO	SO
Analyte	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Bromochloromethane	ND<25	ND<25	ND<25	ND<25	ND<25
Dichlorodifluoromethane	ND<25	ND<25	ND<25	ND<25	ND<25
Chloromethane	ND<50	ND<50	ND<50	ND<50	ND<50
Vinyl chloride	ND<25	ND<25	ND<25	ND<25	ND<25
Bromomethane	ND<25	ND<25	ND<25	ND<25	ND<25
Chloroethane	ND<25	ND<25	ND<25	ND<25	ND<25
Trichlorofluoromethane	ND<25	ND<25	ND<25	ND<25	ND<25
1,1-Dichloroethene	ND<5	ND<5	ND<5	ND<5	ND<5
Acetone	ND<250	ND<250	ND<250	ND<250	268
Methylene chloride	ND<250	ND<250	ND<250	ND<250	ND<250
trans-1,2-Dichloroethene	ND<5	ND<5	ND<5	ND<5	25
Methyl-tert-butyl ether	ND<5	ND<5	ND<5	ND<5	62
1,1-Dichloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
2,2-Dichloropropane	ND<5	ND<5	ND<5	ND<5	ND<5
cis-1,2-Dichloroethene	195	7	ND<5	ND<5	308
2-Butanone	ND<50	51	ND<50	ND<50	113
Chloroform	ND<5	ND<5	7	ND<5	ND<5
Carbon tetrachloride	ND<5	ND<5	ND<5	ND<5	ND<5
1,1-Dichloropropene	ND<5	ND<5	ND<5	ND<5	ND<5
Benzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,2-Dichloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
Trichloroethene	1520	3880	12	65	37900
1,2-Dichloropropane	ND<5	ND<5	ND<5	ND<5	ND<5
Dibromomethane	ND<5	ND<5	ND<5	ND<5	ND<5
Bromodichloromethane	ND<5	ND<5	ND<5	ND<5	ND<5
trans-1,3-Dichloropropene	ND<5	ND<5	ND<5	ND<5	ND<5
4-Methyl-2-pentanone	ND<50	ND<50	ND<50	ND<50	ND<50
Toluene	ND<5	ND<5	ND<5	ND<5	10
cis-1,3-Dichloropropene	ND<5	ND<5	ND<5	ND<5	ND<5
1,1,2-Trichloroethane	ND<5	ND<5	ND<5	ND<5	29
Tetrachloroethene	6	ND<5	ND<5	ND<5	68
1,3-Dichloropropane	ND<5	ND<5	ND<5	ND<5	ND<5
2-Hexanone	ND<50	ND<50	ND<50	ND<50	ND<50
Dibromochloromethane	ND<5	ND<5	ND<5	ND<5	ND<5
1,2-Dibromoethane	ND<5	ND<5	ND<5	ND<5	ND<5

Comments:

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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-1154
Client : PIERS Environmental
Project : 2942 SAN PABLO AVE. OAKLAND

Date Sampled : 07/22/2004
Date Analyzed: 07/29/2004
Date Reported: 08/04/2004

Volatile Organics by GC/MS Method 8260

Laboratory Number	04-1154-07	04-1154-08	04-1154-09	04-1154-10	04-1154-15
Client ID	B9K (7.8')	B9K (15.3')	MW2 (7.5')	MW2 (19.1')	B9D (3.3')
Matrix	SO	SO	SO	SO	SO
Analyte	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Chlorobenzene	ND<10	ND<10	ND<10	ND<10	ND<10
1,1,1,2-Tetrachloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
Ethylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
Xylene, Isomers m & p	ND<10	ND<10	ND<10	ND<10	12
o-Xylene	ND<5	ND<5	ND<5	ND<5	ND<5
Styrene	ND<5	ND<5	ND<5	ND<5	ND<5
Bromoform	ND<5	ND<5	ND<5	ND<5	ND<5
Isopropylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
Bromobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,2,2-Tetrachloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
n-Propylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
2-Chlorotoluene	ND<5	ND<5	ND<5	ND<5	ND<5
4-Chlorotoluene	ND<5	ND<5	ND<5	ND<5	ND<5
1,3,5-Trimethylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
tert-Butylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,2,4-Trimethylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,3-Dichlorobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,4-Dichlorobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
sec-Butylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,2-Dichlorobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
n-Butylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
Naphthalene	ND<10	ND<10	ND<10	ND<10	ND<10
1,2,4-Trichlorobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
Hexachlorobutadiene	ND<5	ND<5	ND<5	ND<5	ND<5
1,2,3-Trichlorobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,2,3-Trichloropropane	ND<5	ND<5	ND<5	ND<5	ND<5
Acetonitrile	ND<250	ND<250	ND<250	ND<250	ND<250
Acrylonitrile	ND<250	ND<250	ND<250	ND<250	ND<250
Isobutanol	ND<250	ND<250	ND<250	ND<250	ND<250
1,1,1-Trichloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
SUR-Dibromofluoromethane	123	124	118	124	124
SUR-Toluene-d8	100	96	100	99	95
SUR-4-Bromofluorobenzene	108	106	107	109	109
SUR-1,2-Dichloroethane-d4	107	107	104	113	107

Comments:

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CERTIFICATE OF ANALYSIS

Job Number: 04-1154
Client : PIERS Environmental
Project : 2942 SAN PABLO AVE. OAKLAND

Date Sampled : 07/26/2004
Date Analyzed: 07/29/2004
Date Reported: 08/04/2004

Volatile Organics by GC/MS Method 8260

Laboratory Number	04-1154-16	04-1154-17	04-1154-18
Client ID	B9D (5.5')	B9D (8.3')	B9D (15.7')
Matrix	SO	SO	SO
Analyte	UG/KG	UG/KG	UG/KG
Bromochloromethane	ND<25	ND<25	ND<25
Dichlorodifluoromethane	ND<25	ND<25	ND<25
Chloromethane	ND<50	ND<50	ND<50
Vinyl chloride	ND<25	ND<25	ND<25
Bromomethane	ND<25	ND<25	ND<25
Chloroethane	ND<25	ND<25	ND<25
Trichlorofluoromethane	ND<25	ND<25	ND<25
1,1-Dichloroethene	ND<5	ND<5	ND<5
Acetone	ND<250	ND<250	ND<250
Methylene chloride	ND<250	ND<250	ND<250
trans-1,2-Dichloroethene	14	15	ND<5
Methyl-tert-butyl ether	ND<5	ND<5	ND<5
1,1-Dichloroethane	ND<5	ND<5	ND<5
2,2-Dichloropropane	ND<5	ND<5	ND<5
cis-1,2-Dichloroethene	526	981	59
2-Butanone	138	205	246
Chloroform	ND<5	8	12
Carbon tetrachloride	ND<5	ND<5	ND<5
1,1-Dichloropropene	ND<5	ND<5	ND<5
Benzene	ND<5	ND<5	ND<5
1,2-Dichloroethane	ND<5	ND<5	ND<5
Trichloroethene	23800	15300	5140
1,2-Dichloropropane	ND<5	ND<5	ND<5
Dibromomethane	ND<5	ND<5	ND<5
Bromodichloromethane	ND<5	ND<5	ND<5
trans-1,3-Dichloropropene	ND<5	ND<5	ND<5
4-Methyl-2-pentanone	ND<50	ND<50	ND<50
Toluene	10	7	ND<5
cis-1,3-Dichloropropene	ND<5	ND<5	ND<5
1,1,2-Trichloroethane	34	31	ND<5
Tetrachloroethene	132	36	ND<5
1,3-Dichloropropane	ND<5	ND<5	ND<5
2-Hexanone	ND<50	ND<50	ND<50
Dibromochloromethane	ND<5	ND<5	ND<5
1,2-Dibromoethane	ND<5	ND<5	ND<5

Comments:

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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-1154
Client : PIERS Environmental
Project : 2942 SAN PABLO AVE. OAKLAND

Date Sampled : 07/26/2004
Date Analyzed: 07/29/2004
Date Reported: 08/04/2004

Volatile Organics by GC/MS Method 8260

Laboratory Number	04-1154-16	04-1154-17	04-1154-18
Client ID	B9D (5.5')	B9D (8.3')	B9D (15.7')
Matrix	SO	SO	SO
Analyte	UG/KG	UG/KG	UG/KG
Chlorobenzene	ND<10	ND<10	ND<10
1,1,1,2-Tetrachloroethane	ND<5	ND<5	ND<5
Ethylbenzene	ND<5	ND<5	ND<5
Xylene, Isomers m & p	18	ND<10	ND<10
o-Xylene	ND<5	ND<5	ND<5
Styrene	ND<5	ND<5	ND<5
Bromoform	ND<5	ND<5	ND<5
Isopropylbenzene	ND<5	ND<5	ND<5
Bromobenzene	ND<5	ND<5	ND<5
1,1,2,2-Tetrachloroethane	ND<5	ND<5	ND<5
n-Propylbenzene	ND<5	ND<5	ND<5
2-Chlorotoluene	ND<5	ND<5	ND<5
4-Chlorotoluene	ND<5	ND<5	ND<5
1,3,5-Trimethylbenzene	ND<5	13	ND<5
tert-Butylbenzene	ND<5	ND<5	ND<5
1,2,4-Trimethylbenzene	ND<5	ND<5	ND<5
1,3-Dichlorobenzene	ND<5	ND<5	ND<5
1,4-Dichlorobenzene	ND<5	ND<5	ND<5
sec-Butylbenzene	ND<5	ND<5	ND<5
1,2-Dichlorobenzene	ND<5	ND<5	ND<5
p-Butylbenzene	ND<5	ND<5	ND<5
Naphthalene	ND<10	ND<10	ND<10
1,2,4-Trichlorobenzene	ND<5	ND<5	ND<5
Hexachlorobutadiene	ND<5	ND<5	ND<5
1,2,3-Trichlorobenzene	ND<5	ND<5	ND<5
1,2,3-Trichloropropane	ND<5	ND<5	ND<5
Acetonitrile	ND<250	ND<250	ND<250
Acrylonitrile	ND<250	ND<250	ND<250
Isobutanol	ND<250	ND<250	ND<250
1,1,1-Trichloroethane	ND<5	ND<5	ND<5
SUR-Dibromofluoromethane	119	124	127
SUR-Toluene-d8	95	97	97
SUR-4-Bromofluorobenzene	105	106	106
SUR-1,2-Dichloroethane-d4	101	105	110

Comments:

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C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 04-1154
Client : PIERS Environmental
Project : 2942 SAN PABLO AVE. OAKLAND

Date Sampled : 07/26/2004
Date Analyzed: 07/29/2004
Date Reported: 08/04/2004

Volatile Organics by GC/MS Method 8260
Quality Control/Quality Assurance Summary

Laboratory Number	04-1154	MS/MSD	RPD	Recovery	RPD
Client ID	Blank	Recovery		Limit	Limit
Matrix	SO	SO			
Analyte	Results UG/KG	%Recoveries			
Bromochloromethane	ND<25				
Dichlorodifluoromethane	ND<25				
Chloromethane	ND<50				
Vinyl chloride	ND<5				
Bromomethane	ND<25				
Chloroethane	ND<25				
Trichlorofluoromethane	ND<25				
1,1-Dichloroethene	ND<5	118/117	1	54-155	27
Acetone	ND<10				
Acetone	ND<250				
Methylene chloride	ND<250				
trans-1,2-Dichloroethene	ND<5				
Methyl-tert-butyl ether	ND<5				
1,1-Dichloroethane	ND<5				
2,2-Dichloropropane	ND<5				
cis-1,2-Dichloroethene	ND<5				
2-Butanone	ND<50				
Chloroform	ND<5				
Carbon tetrachloride	ND<5				
1,1-Dichloropropene	ND<5				
Benzene	ND<5	114/113	1	72-122	22
1,2-Dichloroethane	ND<5				
Trichloroethene	ND<5	120/121	1	68-122	20
1,2-Dichloropropane	ND<5				
Dibromomethane	ND<5				
Bromodichloromethane	ND<5				
trans-1,3-Dichloropropene	ND<5				
4-Methyl-2-pentanone	ND<50				
Toluene	ND<5	106/106	0	73-125	21
cis-1,3-Dichloropropene	ND<5				
1,1,2-Trichloroethane	ND<5				
Tetrachloroethene	ND<5				
1,3-Dichloropropane	ND<5				
2-Hexanone	ND<50				
Dibromochloromethane	ND<5				
1,2-Dibromoethane	ND<5				
Chlorobenzene	ND<10	118/116	2	80-135	21
1,1,1,2-Tetrachloroethane	ND<5				
Ethylbenzene	ND<5				
Xylene, Isomers m & p	ND<10				
o-Xylene	ND<5				

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C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 04-1154
Client : PIERS Environmental
Project : 2942 SAN PABLO AVE. OAKLAND

Date Sampled : 07/26/2004
Date Analyzed: 07/29/2004
Date Reported: 08/04/2004

Volatile Organics by GC/MS Method 8260
Quality Control/Quality Assurance Summary

Laboratory Number	04-1154	MS/MSD	RPD	Recovery	RPD
Client ID	Blank	Recovery		Limit	Limit
Matrix	SO	SO			
Analyte	Results UG/KG	%Recoveries			
Styrene	ND<5				
Bromoform	ND<5				
Isopropylbenzene	ND<5				
Bromobenzene	ND<5				
1,1,2,2-Tetrachloroethane	ND<5				
n-Propylbenzene	ND<5				
2-Chlorotoluene	ND<5				
4-Chlorotoluene	ND<5				
1,3,5-Trimethylbenzene	ND<5				
tert-Butylbenzene	ND<5				
1,2,4-Trimethylbenzene	ND<5				
1,3-Dichlorobenzene	ND<5				
1,4-Dichlorobenzene	ND<5				
sec-Butylbenzene	ND<5				
1,2-Dichlorobenzene	ND<5				
n-Butylbenzene	ND<5				
Naphthalene	ND<10				
1,2,4-Trichlorobenzene	ND<5				
Hexachlorobutadiene	ND<5				
1,2,3-Trichlorobenzene	ND<5				
1,2,3-Trichloropropane	ND<5				
Propionitrile	ND<5				
Acetonitrile	ND<250				
Acrylonitrile	ND<250				
Isobutanol	ND<250				
1,1,1-Trichloroethane	ND<5				
SUR-Dibromofluoromethane	110	118/125	6	54-145	23
SUR-Toluene-d8	96	97/97	0	81-108	14
SUR-4-Bromofluorobenzene	102	105/107	2	82-118	18
SUR-1,2-Dichloroethane-d4	94	102/115	12	70-125	25

Reviewed and Approved

John A. Murphy
Laboratory Director

North State Labs
CA ELAP # 1753
90 South Spruce Avenue, Suite V • South San Francisco, CA 94080 • (650) 266-4563 • FAX (650) 266-4560

CERTIFICATE OF ANALYSIS

Job Number: 04-1154
Client : PIERS Environmental
Project : 2942 SAN PABLO AVE. OAKLAND

Date Sampled : 07/22/2004
Date Analyzed: 08/03/2004
Date Reported: 08/05/2004

Fuel Oxygenates by Method 8260B

Laboratory Number	04-1154-06	04-1154-11	04-1154-12
Client ID	B9I WATER	B16 WATER	B13 WATER
Matrix	W	W	W
Analyte	UG/L	UG/L	UG/L
Methyl-tert-butyl ether	ND<0.5	4.2	ND<0.5
Ethyl tert-butyl ether	ND<1	ND<1	ND<1
tert-Amyl methyl ether	ND<1	ND<1	ND<1
Di-isopropyl ether (DIPE)	ND<0.5	ND<0.5	ND<0.5
tert-Butyl alcohol	ND<10	ND<10	ND<10
1,2-Dichloroethane	ND<1	ND<1	ND<1
1,2-Dibromoethane	ND<0.5	ND<0.5	ND<0.5
Ethanol	ND<100	ND<100	ND<100
SUR-Dibromofluoromethane	117	121	112
SUR-Toluene-d8	103	109	104
SUR-4-Bromofluorobenzene	112	111	99
SUR-1,2-Dichloroethane-d4	102	103	106

Comments:

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C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 04-1154
Client : PIERS Environmental
Project : 2942 SAN PABLO AVE. OAKLAND

Date Sampled : 07/22/2004
Date Analyzed: 08/03/2004
Date Reported: 08/05/2004

Fuel Oxygenates by Method 8260B
Quality Control/Quality Assurance Summary

Laboratory Number	04-1154	MS/MSD	RPD	Recovery	RPD
Client ID	Blank	Recovery		Limit	Limit
Matrix	W	W			
Analyte	Results UG/L	%Recoveries			
Ethanol	ND<100				
Methyl-tert-butyl ether	ND<0.5				
Di-isopropyl ether (DIPE)	ND<0.5				
Tert-butyl Alcohol	ND<10				
Ethyl tert-butyl ether	ND<1				
Tert-Amyl methyl ether	ND<1				
1,1-Dichloroethene	ND<0.5	75/82	9	61-128	25
Benzene	ND<0.5	122/122	0	74-135	21
Trichloroethene	ND<0.5	125/128	2	69-129	20
Toluene	ND<0.5	114/115	1	61-141	19
Chlorobenzene	ND<1	110/110	0	70-139	19
SUR-Dibromofluoromethane	118	119/114	4	67-129	21
SUR-Toluene-d8	104	106/107	1	72-119	16
SUR-4-Bromofluorobenzene	105	105/103	2	78-121	19
SUR-1,2-Dichloroethane-d4	98	110/113	3	85-115	25

Reviewed and Approved

John A. Murphy
Laboratory Director

North State Labs
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CERTIFICATE OF ANALYSIS

Lab Number: 04-1154
Client : PIERS Environmental
Project : 2942 SAN PABLO AVE. OAKLAND

Date Sampled : 07/22/2004
Date Analyzed: 08/03/2004
Date Reported: 08/05/2004

Volatile Organics by GC/MS Method 8260

Laboratory Number	04-1154-06	04-1154-11	04-1154-12
Client ID	B9I WATER	B16 WATER	B13 WATER
Matrix	W	W	W
Analyte	UG/L	UG/L	UG/L
Bromochloromethane	ND<1	ND<1	ND<1
Dichlorodifluoromethane	ND<1	ND<1	ND<1
Chloromethane	ND<1	ND<1	ND<1
Vinyl chloride	ND<0.5	ND<0.5	ND<0.5
Bromomethane	ND<1	ND<1	ND<1
Chloroethane	ND<1	ND<1	ND<1
Trichlorofluoromethane	ND<1	ND<1	ND<1
1,1-Dichloroethene	8.8	ND<0.5	ND<0.5
Acetone	36	22	12
Methylene chloride	19	ND<5	ND<5
trans-1,2-Dichloroethene	ND<1	ND<1	ND<1
Methyl-tert-butyl ether	ND<0.5	4.2	ND<0.5
1,1-Dichloroethane	ND<0.5	ND<0.5	ND<0.5
2,2-Dichloropropane	ND<1	ND<1	ND<1
cis-1,2-Dichloroethene	27	2	ND<1
2-Butanone	ND<5	ND<5	ND<5
Chloroform	32.7	ND<0.5	ND<0.5
Carbon tetrachloride	180	ND<0.5	ND<0.5
1,1-Dichloropropene	ND<1	ND<1	ND<1
Benzene	ND<0.5	ND<0.5	0.9
1,2-Dichloroethane	ND<1	ND<1	ND<1
Trichloroethene	412000	75.2	28.2
1,2-Dichloropropane	ND<1	ND<1	ND<1
Dibromomethane	ND<1	ND<1	ND<1
Bromodichloromethane	ND<1	ND<1	ND<1
trans-1,3-Dichloropropene	ND<1	ND<1	ND<1
4-Methyl-2-pentanone	5	ND<1	ND<1
Toluene	36.4	ND<0.5	ND<0.5
cis-1,3-Dichloropropene	ND<1	ND<1	ND<1
1,1,2-Trichloroethane	19	ND<1	ND<1
Tetrachloroethene	177	ND<0.5	ND<0.5
1,3-Dichloropropane	ND<1	ND<1	ND<1
2-Hexanone	ND<1	ND<1	ND<1
Dibromochloromethane	ND<1	ND<1	ND<1
1,2-Dibromoethane	ND<0.5	ND<0.5	ND<0.5

Comments:

North State Labs
CA ELAP # 1753
90 South Spruce Avenue, Suite V • South San Francisco, CA 94080 • (650) 266-4563 • FAX (650) 266-4560

C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 04-1154
Client : PIERS Environmental
Project : 2942 SAN PABLO AVE. OAKLAND

Date Sampled : 07/22/2004
Date Analyzed: 08/03/2004
Date Reported: 08/05/2004

Volatile Organics by GC/MS Method 8260

Laboratory Number	04-1154-06	04-1154-11	04-1154-12
Client ID	B9I WATER	B16 WATER	B13 WATER
Matrix	W	W	W
Analyte	UG/L	UG/L	UG/L
Chlorobenzene	ND<1	ND<1	ND<1
1,1,1,2-Tetrachloroethane	ND<1	ND<1	ND<1
Ethylbenzene	13.3	1	ND<0.5
Xylene, Isomers m & p	45	ND<1	ND<1
o-Xylene	10.7	ND<0.5	ND<0.5
Styrene	ND<1	ND<1	ND<1
Bromoform	ND<1	ND<1	ND<1
Isopropylbenzene	ND<1	ND<1	ND<1
Bromobenzene	ND<1	ND<1	ND<1
1,1,2,2-Tetrachloroethane	ND<1	ND<1	ND<1
n-Propylbenzene	ND<1	ND<1	ND<1
2-Chlorotoluene	ND<1	ND<1	ND<1
4-Chlorotoluene	ND<1	ND<1	ND<1
1,3,5-Trimethylbenzene	1	ND<1	ND<1
tert-Butylbenzene	ND<1	ND<1	ND<1
1,2,4-Trimethylbenzene	4	ND<1	ND<1
1,3-Dichlorobenzene	ND<1	ND<1	ND<1
1,4-Dichlorobenzene	ND<1	ND<1	ND<1
sec-Butylbenzene	ND<1	ND<1	ND<1
1,2-Dichlorobenzene	ND<1	ND<1	ND<1
p-Butylbenzene	ND<1	ND<1	ND<1
Naphthalene	ND<1	2	ND<1
1,2,4-Trichlorobenzene	ND<1	ND<1	ND<1
Hexachlorobutadiene	ND<1	ND<1	ND<1
1,2,3-Trichlorobenzene	ND<1	ND<1	ND<1
1,2,3-Trichloropropane	ND<1	ND<1	ND<1
Acetonitrile	ND<5	ND<5	ND<5
Acrylonitrile	ND<1	ND<1	ND<1
Isobutanol	ND<5	ND<5	ND<5
1,1,1-Trichloroethane	15	ND<1	ND<1
SUR-Dibromofluoromethane	117	121	112
SUR-Toluene-d8	103	109	104
SUR-4-Bromofluorobenzene	112	111	99
SUR-1,2-Dichloroethane-d4	102	103	106

Comments:

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CA ELAP # 1753
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C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 04-1154
Client : PIERS Environmental
Project : 2942 SAN PABLO AVE. OAKLAND

Date Sampled : 07/22/2004
Date Analyzed: 08/03/2004
Date Reported: 08/05/2004

Volatile Organics by GC/MS Method 8260
Quality Control/Quality Assurance Summary

Laboratory Number	04-1154	MS/MSD	RPD	Recovery	RPD
Client ID	Blank	Recovery		Limit	Limit
Matrix	W	W			
Analyte	Results UG/L	%Recoveries			
Bromochloromethane	ND<1				
Dichlorodifluoromethane	ND<1				
Chloromethane	ND<1				
Vinyl chloride	ND<0.5				
Bromomethane	ND<1				
Chloroethane	ND<1				
Trichlorofluoromethane	ND<1				
1,1-Dichloroethene	ND<0.5	75/82	9	61-128	25
Acetone	ND<10				
Methylene chloride	ND<5				
trans-1,2-Dichloroethene	ND<1				
Methyl-tert-butyl ether	ND<0.5				
1,1-Dichloroethane	ND<0.5				
2,2-Dichloropropane	ND<1				
cis-1,2-Dichloroethene	ND<1				
2-Butanone	ND<5				
Chloroform	ND<0.5				
Carbon tetrachloride	ND<0.5				
1,1-Dichloropropene	ND<1				
Benzene	ND<0.5	122/122	0	74-135	21
1,2-Dichloroethane	ND<1				
Trichloroethene	ND<0.5	125/128	2	69-129	20
1,2-Dichloropropane	ND<1				
Dibromomethane	ND<1				
Bromodichloromethane	ND<1				
trans-1,3-Dichloropropene	ND<1				
4-Methyl-2-pentanone	ND<1				
Toluene	ND<0.5	114/115	1	61-141	19
cis-1,3-Dichloropropene	ND<1				
1,1,2-Trichloroethane	ND<1				
Tetrachloroethene	ND<0.5				
1,3-Dichloropropane	ND<1				
2-Hexanone	ND<1				
Dibromochloromethane	ND<1				
1,2-Dibromoethane	ND<0.5				
Chlorobenzene	ND<1	110/110	0	70-139	19
1,1,1,2-Tetrachloroethane	ND<1				
Ethylbenzene	ND<0.5				
Xylene, Isomers m & p	ND<1				
o-Xylene	ND<0.5				
Styrene	ND<1				

North State Labs
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C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 04-1154
Client : PIERS Environmental
Project : 2942 SAN PABLO AVE. OAKLAND

Date Sampled : 07/22/2004
Date Analyzed: 08/03/2004
Date Reported: 08/05/2004

Volatile Organics by GC/MS Method 8260
Quality Control/Quality Assurance Summary

Laboratory Number	04-1154	MS/MSD	RPD	Recovery	RPD
Client ID	Blank	Recovery		Limit	Limit
Matrix	W	W			
Analyte	Results UG/L	%Recoveries			
Bromoform	ND<1				
Isopropylbenzene	ND<1				
Bromobenzene	ND<1				
1,1,2,2-Tetrachloroethane	ND<1				
n-Propylbenzene	ND<1				
2-Chlorotoluene	ND<1				
4-Chlorotoluene	ND<1				
1,3,5-Trimethylbenzene	ND<1				
tert-Butylbenzene	ND<1				
1,2,4-Trimethylbenzene	ND<1				
1,3-Dichlorobenzene	ND<1				
1,4-Dichlorobenzene	ND<1				
sec-Butylbenzene	ND<1				
1,2-Dichlorobenzene	ND<1				
n-Butylbenzene	ND<1				
Naphthalene	ND<1				
1,2,4-Trichlorobenzene	ND<1				
Hexachlorobutadiene	ND<1				
1,2,3-Trichlorobenzene	ND<1				
1,2,3-Trichloropropane	ND<1				
Acetonitrile	ND<5				
Acrylonitrile	ND<1				
Isobutanol	ND<5				
1,1,1-Trichloroethane	ND<1				
SUR-Dibromofluoromethane	118	119/114	4	67-129	21
SUR-Toluene-d8	104	106/107	1	72-119	16
SUR-4-Bromofluorobenzene	105	105/103	2	78-121	19
SUR-1,2-Dichloroethane-d4	98	110/113	3	85-115	25

Reviewed and Approved

John A. Murphy
Laboratory Director

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Certificate ID: 39809 - 7/30/2004 2:55:31 PM

Mark Dysert
North State Environmental Labs
90 South Spruce, Suite W
South San Francisco, CA 94080

Order: 39809
Project Name:
Project Number: 04-1154

Date Collected: 7/26/2004
Date Received: 7/27/2004
P.O. Number: 04-1154

Certificate of Analysis - Final Report

On July 27, 2004, samples were received under chain of custody for analysis. Entech analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix	Test	Method	Comments
Solid	EPA 8082A	EPA 8082A	
	PDF	PDF	

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346).
If you have any questions regarding this report, please call me at 408-588-0200.

Sincerely,

Laurie Glantz-Murphy
Laboratory Director

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

North State Environmental Labs
90 South Spruce, Suite W
South San Francisco, CA 94080
Attn: Mark Dysert

Date: 7/30/2004
Date Received: 7/27/2004
Project Name:
Project Number: 04-1154
P.O. Number: 04-1154
Sampled By: Client

Certified Analytical Report

Lab # : 39809-001 **Sample ID:** Hoist (11') **Matrix:** Solid **Sample Date:** 7/26/2004 8:20 AM

Method: EPA 8082A

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Aroclor 1221	ND		1	0.1	0.1	mg/Kg	07/27/2004	PS7374A	07/29/2004	PS7374A
Aroclor 1232	ND		1	0.1	0.1	mg/Kg	07/27/2004	PS7374A	07/29/2004	PS7374A
Aroclor 1242	ND		1	0.1	0.1	mg/Kg	07/27/2004	PS7374A	07/29/2004	PS7374A
Aroclor 1248	ND		1	0.1	0.1	mg/Kg	07/27/2004	PS7374A	07/29/2004	PS7374A
Aroclor 1254	ND		1	0.1	0.1	mg/Kg	07/27/2004	PS7374A	07/29/2004	PS7374A
Aroclor 1260	ND		1	0.1	0.1	mg/Kg	07/27/2004	PS7374A	07/29/2004	PS7374A
Aroclor 1262	ND		1	0.1	0.1	mg/Kg	07/27/2004	PS7374A	07/29/2004	PS7374A
Aroclor 1268	ND		1	0.1	0.1	mg/Kg	07/27/2004	PS7374A	07/29/2004	PS7374A

Surrogate	Surrogate Recovery	Control Limits (%)
Decachlorobiphenyl	86.0	42 - 127

Analyzed by: MTran - 07/29/2004
Reviewed by: MTU - 07/30/04

Lab # : 39809-002 **Sample ID:** Hoist (15.7') **Matrix:** Solid **Sample Date:** 7/26/2004 8:20 AM

Method: EPA 8082A

Parameter	Result	Flag	DF	PQL	PQLR	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Aroclor 1221	ND		1	0.1	0.1	mg/Kg	07/27/2004	PS7374A	07/29/2004	PS7374A
Aroclor 1232	ND		1	0.1	0.1	mg/Kg	07/27/2004	PS7374A	07/29/2004	PS7374A
Aroclor 1242	ND		1	0.1	0.1	mg/Kg	07/27/2004	PS7374A	07/29/2004	PS7374A
Aroclor 1248	ND		1	0.1	0.1	mg/Kg	07/27/2004	PS7374A	07/29/2004	PS7374A
Aroclor 1254	ND		1	0.1	0.1	mg/Kg	07/27/2004	PS7374A	07/29/2004	PS7374A
Aroclor 1260	ND		1	0.1	0.1	mg/Kg	07/27/2004	PS7374A	07/29/2004	PS7374A
Aroclor 1262	ND		1	0.1	0.1	mg/Kg	07/27/2004	PS7374A	07/29/2004	PS7374A
Aroclor 1268	ND		1	0.1	0.1	mg/Kg	07/27/2004	PS7374A	07/29/2004	PS7374A

Surrogate	Surrogate Recovery	Control Limits (%)
Decachlorobiphenyl	79.9	42 - 127

Analyzed by: MTran - 07/29/2004
Reviewed by: MTU - 07/30/04

ND = Not Detected at or above the PQL
PQL = Practical Quantitation Limit (No Dilution)
DF = Dilution Factor
PQLR = Practical Quantitation Limit for Reporting (Includes Dilution)

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Prep Batch ID: PS7374A
Prep Date: 7/27/2004

Validated by: MTU - 07/29/04

QC Batch ID: PS7374A
Matrix: Solid
Date of Analysis: 7/27/2004

Method: EPA 8082A

Parameter	Result	DF	PQL	PQLR	Units
Aroclor 1016	ND	1	0.1	0.1	mg/Kg
Aroclor 1221	ND	1	0.1	0.1	mg/Kg
Aroclor 1232	ND	1	0.1	0.1	mg/Kg
Aroclor 1242	ND	1	0.1	0.1	mg/Kg
Aroclor 1248	ND	1	0.1	0.1	mg/Kg
Aroclor 1254	ND	1	0.1	0.1	mg/Kg
Aroclor 1260	ND	1	0.1	0.1	mg/Kg
Aroclor 1262	ND	1	0.1	0.1	mg/Kg
Aroclor 1268	ND	1	0.1	0.1	mg/Kg

Surrogate for Blank	% Recovery	Control Limits
Decachlorobiphenyl	96.6	42 - 127

Quality Control - Laboratory Control Spike / Duplicate Results

Prep Batch ID: PS7374A
Prep Date: 7/27/2004

Reviewed by: MTU - 07/29/04

QC Batch ID: PS7374A
Date of Analysis: 7/27/2004

Method EPA 8082A — Solid — Conc. Units: mg/Kg

Parameter	Blank	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
Aroclor 1260	<0.1	0.2	0.225	LCS	7/27/2004	112.5			71 - 135

Surrogate	% Recovery	Control Limits
Decachlorobiphenyl	89.6	42 - 127

Aroclor 1260	<0.1	0.2	0.2209	LCSD	7/27/2004	110.5	1.8	30	71 - 135

Surrogate	% Recovery	Control Limits
Decachlorobiphenyl	89.6	42 - 127

North State Labs

90 South Spruce Avenue, Suite W, South San Francisco, CA 94080
Phone: (650) 266-4563 Fax: (650) 266-4560

Chain of Custody / Request for Analysis
Lab Job No.:_____ Page 1 of 1

Client: North State Labs	Report to: Mark Dysert	Phone:	Turnaround Time
Mailing Address:	Billing to:	Fax:	Std.
		email:	Date:
		PO# 04-1154	Sampler:

Project / Site Address / Global ID: 04-1154

Analysis Requested

EDF ☐

Sample ID	Sample Type	Container No. / Type	Pres.	Sampling Date / Time	PCBs							Field Point ID
Hoist (11')	Soil	1/4oz Jar	—	7.26.04/0820	X							39809-001
Hoist (15.7')	↓	↓	↓	↓ ↓	X							002

Relinquished by:	Date: 7.27.04	Time: 845	Received by:	Lab Comments/ Hazards
Relinquished by:	Date: 7/27/04	Time: 953	Received by: Reached	
Relinquished by:	Date:	Time:	Received by:	

TERMS: NET 30 OAC

04-1159

North State Labs

90 South Spruce Avenue, Suite W, South San Francisco, CA 94080
Phone: (650) 266-4563 Fax: (650) 266-4560

Chain of Custody / Request for Analysis
Lab Job No.:_____ Page 1 of 2

Client: Piers Environmental	Report to: Joel Gregor	Phone: 510 5935382	Turnaround Time: Regular
Mailing Address: 1330 S. Bascom Ave Suite F San Jose CA 95128	Billing to: Piers	Fax: 510 7871457	Date: 7-26-04
		email:	Sampler: J Gregor
		PO#	

Project / Site Address / Global ID:

Analysis Requested

	Sample ID	Sample Type	Container No. / Type	Pres.	Sampling Date / Time	VOCs + fuel oxygenates by 8260							EDF ☐ Field Point ID
1	B9H (4.1')	Soil	1 liner	ice	7-26-04 1015 Am	~~X~~							
2	B9H (10.2')	Soil	1 liner	ice	1030 Am	X							
3	B9J (7.6')				1045 Am	X							
4	B9J (15.5')				1055 Am	X							
5	B9C (11')				11:30 Am	X							
6	B9C (17')				11:40 Am	X							
7	~~MW~~ MW1 (14.7')			HCl ice	1230 PM	X							
8	B9B (42-46')	Water	3 VOAs		230 pm	X							
9	B9L (4')	Soil	1 liner	ice	7/27/04 Am	X							
10	B9L (10')					X							
11	B9M (4')					X							
12	B9M (8.5')					X							
13	B9E (4')					X							
14	B9E (10')		4	4		X							

Relinquished by: [signature] Date: 7/27/04 Time: 10:17 Am Received by: [signature]

Relinquished by: [signature] Date: 7/27/04 Time: 1102 AM Received by: [signature]

Relinquished by: Date: Time: Received by:

Lab Comments/ Hazards

TERMS: NET 30 OAC

04-1159

North State Labs
90 South Spruce Avenue, Suite W, South San Francisco, CA 94080
Phone: (650) 266-4563 Fax: (650) 266-4560

Chain of Custody / Request for Analysis
Lab Job No.:________ Page 2 of 3

Client: Piers Environmental	Report to: Joel Greger	Phone: 510 593 5382	Turnaround Time: Regular
Mailing Address: 1330 S. Bascom Ave Suite F San Jose CA 95128	Billing to: Piers	Fax: 510 787 1457	Date: 7/27/04
		email:	
		PO#	Sampler: J Greger

Project / Site Address / Global ID:

Analysis Requested

EDF ☐

	Sample ID	Sample Type	Container No. / Type	Pres.	Sampling Date / Time	VOCs & Fuel Oxygenates by 8260	TPHg & BTEX						Field Point ID
5	B17 (34-38)	water	3 Voas	HCL, Ice	7/26/04 930Am	X	X						
6	~~B17~~ B9H (19.3')	Soil	1 liner	ice	7/26/04 1040 Am	X							
7	B9H (16.8)	Soil	↓	↓	↓ ↓	X							

Relinquished by: [signature]	Date: 7/27/04	Time: 1017am	Received by: [signature]
Relinquished by: [signature]	Date: 7/27/04	Time: [illegible]	Received by:
Relinquished by:	Date:	Time:	Received by:

Lab Comments/ Hazards

North State Labs

90 South Spruce Avenue, Suite W, South San Francisco, CA 94080
Phone: (650) 266-4563 Fax: (650) 266-4560

Chain of Custody / Request fo. 04-1157
Lab Job No.:_____ Page 1

Client: Piers Environmental	Report to: Joel Gregor	Phone: 510 5935382	Turnaround Time: Regular
Mailing Address: 1330 S. Bascom Ave Suite F San Jose CA 95128	Billing to: Piers	Fax: 510 7871457	Date: 7-26-04
		email:	Sampler: J Gregor
Project / Site Address / Global ID:		PO#	EDF ☐

Sample ID	Sample Type	Container No. / Type	Pres.	Sampling Date / Time	VOCs 8260 only (Analysis Requested)	Field Point ID
B9H (4.1')	Soil	1 liner	Ice	7-26-04 1015 Am	X	
B9H (10.2')	Soil	1 liner	Ice	1030 Am	X	
B9J (7.6')				1045 Am	X	
B9J (15.5')				1055 Am	X	
B9C (11')				11:30 Am	X	
B9C (17')				11:45 Am	X	
MW1 MW1 (14.7')				1230 PM	X	
B9B (42-46')	Water	3 VOAs	HCl Ice	2:30 pm	X	
B9L (4')	Soil	1 liner	Ice	7/27/04 Am	X	
B9L (10')					X	
B9M (4')					X	
B9M (8.5')					X	
B9E (4')					X	
B9E (10')					X	

Relinquished by:	Date: 7/27/04	Time: 10:17 Am	Received by:	Lab Comments/ Hazards
Relinquished by:	Date: 7/27/04	Time: 1102 AM	Received by:	
Relinquished by:	Date:	Time:	Received by:	

TERMS: NET 30 OAC

04-1159

North State Labs

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Chain of Custody / Request for Analysis

Lab Job No.:__________ Page 2 of 3

Client: Piers Environmental	Report to: Joel Greger	Phone: 510 593 5382	Turnaround Time: Regular
Mailing Address: 1330 S. Bascom Ave Suite F San Jose CA 95128	Billing to: Piers	Fax: 510 787 1457	
		email:	Date: 7/27/04
		PO#	Sampler: J Greger

Project / Site Address / Global ID:

Analysis Requested

EDF ☐

Sample ID	Sample Type	Container No. / Type	Pres.	Sampling Date / Time	VOCs & Fuel Oxygenates by 8260	TPHg & BTEX	Field Point ID
B17 (37-38)	Water	3 VOAs	HCl, Ice	7/26/04 930 Am	X	X	
~~B-2~~ B9H (19.3')	Soil	Liner	Ice	7/26/04 1040 Am	X		
B9H (16.8)	Soil	↓	↓	↓ ↓	X		

Relinquished by: [illegible signature]	Date: 7/27/04	Time: 1017am	Received by: [illegible signature]
Relinquished by: [illegible signature]	Date: 7/27/04	Time: 1182 [illegible]	Received by:
Relinquished by:	Date:	Time:	Received by:

Lab Comments/ Hazards

04-1159

to mark Dysert

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Chain of Custody / Request for Analysis
Lab Job No.:_____ Page___of___

Client: P.E.S. Environmental	Report to: Joel Greger	Phone: 510 793382	Turnaround Time: Regular
Mailing Address: 1330 S. Bascom Ave. Suite E San Jose CA 95128	Billing to: P.E.S.	Fax: 510 787 1457	Date: 7-26-04
		email:	Sampler:
		PO#	

Project / Site Address / Global ID:

Analysis Requested

EDF ☐

Sample ID	Sample Type	Container No. / Type	Pres.	Sampling Date / Time								Field Point ID
						TPHG 8015						
B9B(42-46')	water					X						

Relinquished by:	Date:	Time:	Received by:	Lab Comments/ Hazards
Relinquished by:	Date:	Time:	Received by:	
Relinquished by:	Date:	Time:	Received by:	

North State Labs
CA ELAP # 1753
90 South Spruce Avenue, Suite V • South San Francisco, CA 94080 • **(650) 266-4563** • FAX (650) 266-4560

Case Narrative

Client: PIERS Environmental
Project: 2924-46 SAN PABLO AVE., OAKLAND
Lab No: 04-1159
Date Received: 07/27/2004 Date reported: 08/13/2004

Report for two water and fifteen soil samples analyzed for VOCs and fuel oxygenates by method 8260B GC/MS. Sample 04-1159-15 was also analyzed for gasoline by method 8015M and BTEX by method 8021B. No errors were noted during analysis. All QC/QA results were within acceptance limits. Additionally, as requested on 08/11/04, sample 04-1159-08 was analyzed for gasoline by method 8015M.The sample had to be analyzed from an already opened voa with head space. The lcs/lcsd results were reported as quality control for the added gasoline analysis because there was not enough sample to analyze a ms/msd.

John A. Murphy
Laboratory Director

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C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 04-1159
Client: PIERS Environmental
Project: 2924-46 SAN PABLO AVE., OAKLAND

Date Reported: 08/13/2004

Gasoline and BTEX by Methods 8015M/8021B

Analyte	Method	Result	Unit	Date Sampled	Date Analyzed
Sample: 04-1159-08 Client ID: B9B (42-46')				07/26/2004	W
Gasoline Range Organics	SW8020F	*2210	UG/L		08/12/2004
Sample: 04-1159-15 Client ID: B17 (34-38)				07/26/2004	W
Benzene	SW8020F	3	UG/L		08/04/2004
Ethylbenzene	SW8020F	ND<0.5	UG/L		08/04/2004
Gasoline Range Organics	SW8020F	95	UG/L		08/04/2004
Toluene	SW8020F	1.8	UG/L		08/04/2004
Xylenes	SW8020F	4.8	UG/L		08/04/2004

*Results partly due to single peak (TCE) in gasoline range.

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CERTIFICATE OF ANALYSIS

Quality Control/Quality Assurance

Lab Number: 04-1159
Client: PIERS Environmental
Project: 2924-46 SAN PABLO AVE., OAKLAND

Date Reported: 08/13/2004
Gasoline and BTEX by Methods 8015M/8021B

Analyte	Method	Reporting Limit	Unit	Blank	Avg MS/MSD Recovery	RPD
Gasoline Range Organics	SW8020F	50	UG/L	ND	80/74	8
Benzene	SW8020F	0.5	UG/L	ND	82/72	13
Toluene	SW8020F	0.5	UG/L	ND	88/80	10
Ethylbenzene	SW8020F	0.5	UG/L	ND	90/84	7
Xylenes	SW8020F	1.0	UG/L	ND	92/86	7
08/12/04						
Gasoline Range Organics	SW8020F	50	UG/L	ND	121/109	10

ELAP Certificate NO:1753
Reviewed and Approved

John A. Murphy, Laboratory Director

North State Labs
CA ELAP # 1753
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Case Narrative

Client: PIERS Environmental
Project: 2924-46 SAN PABLO AVE., OAKLAND
Lab No: 04-1159
Date Received: 07/27/2004 Date reported: 08/09/2004

Report for two water and fifteen soil samples analyzed for VOCs and fuel oxygenates by method 8260B GC/MS. Sample 04-1159-15 was also analyzed for gasoline by method 8015M and BTEX by method 8021B. No errors were noted during analysis. All QC/QA results were within acceptance limits.

John A. Murphy
Laboratory Director

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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-1159
Client : PIERS Environmental
Project : 2924-46 SAN PABLO AVE., OAKLAND

Date Sampled : 07/26/2004
Date Analyzed: 08/06/2004
Date Reported: 08/09/2004

Fuel Oxygenates by Method 8260B

Laboratory Number	04-1159-01	04-1159-02	04-1159-03	04-1159-04	04-1159-05
Client ID	B9H (4.1')	B9H (10.2')	B9J (7.6')	B9J (15.5')	B9C (11')
Matrix	SO	SO	SO	SO	SO
Analyte	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Methyl-tert-butyl ether	ND<5	ND<5	ND<5	ND<5	ND<5
Ethyl tert-butyl ether	ND<5	ND<5	ND<5	ND<5	ND<5
Tert-Amyl methyl ether	ND<5	ND<5	ND<5	ND<5	ND<5
Di-isopropyl ether (DIPE)	ND<5	ND<5	ND<5	ND<5	ND<5
Tert-Butyl alcohol	ND<250	ND<250	ND<250	ND<250	ND<250
1,2-Dichloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
1,2-Dibromoethane	ND<5	ND<5	ND<5	ND<5	ND<5
Ethanol	ND<500	ND<500	ND<500	ND<500	ND<500
SUR-Dibromofluoromethane	88	103	91	105	103
SUR-Toluene-d8	86	98	85	97	93
SUR-4-Bromofluorobenzene	99	103	100	102	99
SUR-1,2-Dichloroethane-d4	82	98	87	99	99

Comments:

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C E R T I F I C A T E O F A N A L Y S I S

ob Number: 04-1159
lient : PIERS Environmental
oject : 2924-46 SAN PABLO AVE., OAKLAND

Date Sampled : 07/26/2004
Date Analyzed: 08/04/2004
Date Reported: 08/09/2004

Fuel Oxygenates by Method 8260B

oratory Number	04-1159-06	04-1159-07	04-1159-09	04-1159-10	04-1159-11
ient ID	B9C (17')	MW1 (14.7')	B9L (4')	B9L (10')	B9M (4')
latrix	SO	SO	SO	SO	SO
alyte	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
ethyl-tert-butyl ether	ND<5	ND<5	ND<5	ND<5	ND<5
thyl tert-butyl ether	ND<5	ND<5	ND<5	ND<5	ND<5
rt-Amyl methyl ether	ND<5	ND<5	ND<5	ND<5	ND<5
-isopropyl ether (DIPE)	ND<5	ND<5	ND<5	ND<5	ND<5
ert-Butyl alcohol	ND<250	ND<250	ND<250	ND<250	ND<250
2-Dichloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
2-Dibromoethane	ND<5	ND<5	ND<5	ND<5	ND<5
thanol	ND<500	ND<500	ND<500	ND<500	ND<500
UR-Dibromofluoromethane	101	105	109	104	109
R-Toluene-d8	97	97	97	98	98
UR-4-Bromofluorobenzene	104	102	104	100	103
SUR-1,2-Dichloroethane-d4	94	101	108	101	106

Comments:

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CERTIFICATE OF ANALYSIS

Job Number: 04-1159
Client : PIERS Environmental
Project : 2924-46 SAN PABLO AVE., OAKLAND

Date Sampled : 07/27/2004
Date Analyzed: 08/05/2004
Date Reported: 08/09/2004

Fuel Oxygenates by Method 8260B

Laboratory Number	04-1159-12	04-1159-13	04-1159-14	04-1159-16	04-1159-17
Client ID	B9M (8.5')	B9E (4')	B9E (10')	B9H (19.3')	B9H (16.8')
Matrix	SO	SO	SO	SO	SO
Analyte	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Methyl-tert-butyl ether	ND<5	ND<5	ND<5	ND<5	ND<5
Ethyl tert-butyl ether	ND<5	ND<5	ND<5	ND<5	ND<5
tert-Amyl methyl ether	ND<5	ND<5	ND<5	ND<5	ND<5
Di-isopropyl ether (DIPE)	ND<5	ND<5	ND<5	ND<5	ND<5
tert-Butyl alcohol	ND<250	ND<250	ND<250	ND<250	ND<250
1,2-Dichloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
1,2-Dibromoethane	ND<5	ND<5	ND<5	ND<5	ND<5
Ethanol	ND<500	ND<500	ND<500	ND<500	ND<500
SUR-Dibromofluoromethane	108	112	105	111	104
SUR-Toluene-d8	96	98	98	97	95
SUR-4-Bromofluorobenzene	101	104	104	105	93
SUR-1,2-Dichloroethane-d4	106	111	102	109	109

Comments:

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C E R T I F I C A T E O F A N A L Y S I S

b Number: 04-1159
:lient : PIERS Environmental
oject : 2924-46 SAN PABLO AVE., OAKLAND

Date Sampled : 07/27/2004
Date Analyzed: 08/05/2004
Date Reported: 08/09/2004

Fuel Oxygenates by Method 8260B
Quality Control/Quality Assurance Summary

boratory Number	04-1159	MS/MSD	RPD	Recovery	RPD
:lient ID	Blank	Recovery		Limit	Limit
latrix	SO	SO			
alyte	Results UG/KG	%Recoveries			
thanol	ND<500				
thyl-tert-butyl ether	ND<5				
isopropyl ether (DIPE)	ND<5				
ert-Butyl alcohol	ND<250				
hyl tert-butyl ether	ND<5				
rt-Amyl methyl ether	ND<5				
,2-Dichloroethane	ND<5				
,2-Dibromoethane	ND<5				
-Dichloroethene	ND<5	85/89	5	54-155	27
nzene	ND<5	104/113	8	72-122	22
richloroethene	ND<5	104/114	9	68-122	20
oluene	ND<5	104/117	12	73-125	21
lorobenzene	ND<10	108/114	5	80-135	21
R-Dibromofluoromethane	102	111/111	0	54-145	23
UR-Toluene-d8	100	96/107	11	81-108	14
UR-4-Bromofluorobenzene	101	101/100	1	82-118	18
R-1,2-Dichloroethane-d4	114	106/112	6	70-125	25

Reviewed and Approved

John A. Murphy
Laboratory Director

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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-1159
Client : PIERS Environmental
Project : 2924-46 SAN PABLO AVE., OAKLAND

Date Sampled : 07/26/2004
Date Analyzed: 08/06/2004
Date Reported: 08/09/2004

Volatile Organics by GC/MS Method 8260

Laboratory Number	04-1159-01	04-1159-02	04-1159-03	04-1159-04	04-1159-05
Client ID	B9H (4.1')	B9H (10.2')	B9J (7.6')	B9J (15.5')	B9C (11')
Matrix	SO	SO	SO	SO	SO
Analyte	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Bromochloromethane	ND<25	ND<25	ND<25	ND<25	ND<25
Dichlorodifluoromethane	ND<25	ND<25	ND<25	ND<25	ND<25
Chloromethane	ND<50	ND<50	ND<50	ND<50	ND<50
Vinyl chloride	ND<25	ND<25	ND<25	ND<25	ND<25
Bromomethane	ND<25	ND<25	ND<25	ND<25	ND<25
Chloroethane	ND<25	ND<25	ND<25	ND<25	ND<25
Trichlorofluoromethane	ND<25	ND<25	ND<25	ND<25	ND<25
1,1-Dichloroethene	ND<5	ND<5	ND<5	ND<5	8
Acetone	ND<250	ND<250	ND<250	ND<250	ND<250
Methylene chloride	ND<250	ND<250	ND<250	ND<250	ND<250
trans-1,2-Dichloroethene	ND<5	ND<5	ND<5	ND<5	32
Methyl-tert-butyl ether	ND<5	ND<5	ND<5	ND<5	ND<5
1,1-Dichloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
2,2-Dichloropropane	ND<5	ND<5	ND<5	ND<5	ND<5
cis-1,2-Dichloroethene	78	301	38	113	934
2-Butanone	ND<50	ND<50	ND<50	ND<50	ND<50
Chloroform	ND<5	ND<5	ND<5	ND<5	ND<5
Carbon tetrachloride	ND<5	ND<5	ND<5	ND<5	ND<5
1,1-Dichloropropene	ND<5	ND<5	ND<5	ND<5	ND<5
Benzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,2-Dichloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
Trichloroethene	818	1800	562	570	10100
1,2-Dichloropropane	ND<5	ND<5	ND<5	ND<5	ND<5
Dibromomethane	ND<5	ND<5	ND<5	ND<5	ND<5
Bromodichloromethane	ND<5	ND<5	ND<5	ND<5	ND<5
trans-1,3-Dichloropropene	ND<5	ND<5	ND<5	ND<5	ND<5
4-Methyl-2-pentanone	ND<50	ND<50	ND<50	ND<50	ND<50
Toluene	ND<5	ND<5	ND<5	ND<5	10
cis-1,3-Dichloropropene	ND<5	ND<5	ND<5	ND<5	ND<5
1,1,2-Trichloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
Tetrachloroethene	ND<5	ND<5	ND<5	ND<5	32
1,3-Dichloropropane	ND<5	ND<5	ND<5	ND<5	ND<5
2-Hexanone	ND<50	ND<50	ND<50	ND<50	ND<50
Dibromochloromethane	ND<5	ND<5	ND<5	ND<5	ND<5

Comments:

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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-1159
Client : PIERS Environmental
Project : 2924-46 SAN PABLO AVE., OAKLAND

Date Sampled : 07/26/2004
Date Analyzed: 08/06/2004
Date Reported: 08/09/2004

Volatile Organics by GC/MS Method 8260

Laboratory Number	04-1159-01	04-1159-02	04-1159-03	04-1159-04	04-1159-05
Client ID	B9H (4.1')	B9H (10.2')	B9J (7.6')	B9J (15.5')	B9C (11')
Matrix	SO	SO	SO	SO	SO
Analyte	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
1,2-Dibromoethane	ND<5	ND<5	ND<5	ND<5	ND<5
Chlorobenzene	ND<10	ND<10	ND<10	ND<10	ND<10
1,1,1,2-Tetrachloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
Ethylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
Xylene, Isomers m & p	ND<10	ND<10	ND<10	ND<10	ND<10
o-Xylene	ND<5	ND<5	ND<5	ND<5	ND<5
Styrene	ND<5	ND<5	ND<5	ND<5	ND<5
Bromoform	ND<5	ND<5	ND<5	ND<5	ND<5
Isopropylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
Bromobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,1,2,2-Tetrachloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
n-Propylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
2-Chlorotoluene	ND<5	ND<5	ND<5	ND<5	ND<5
4-Chlorotoluene	ND<5	ND<5	ND<5	ND<5	ND<5
1,3,5-Trimethylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
tert-Butylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,2,4-Trimethylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,3-Dichlorobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,4-Dichlorobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
sec-Butylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,2-Dichlorobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
n-Butylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
Naphthalene	ND<10	ND<10	ND<10	ND<10	ND<10
1,2,4-Trichlorobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
Hexachlorobutadiene	ND<5	ND<5	ND<5	ND<5	ND<5
1,2,3-Trichlorobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,2,3-Trichloropropane	ND<5	ND<5	ND<5	ND<5	ND<5
Acetonitrile	ND<250	ND<250	ND<250	ND<250	ND<250
Acrylonitrile	ND<250	ND<250	ND<250	ND<250	ND<250
Isobutanol	ND<250	ND<250	ND<250	ND<250	ND<250
1,1,1-Trichloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
SUR-Dibromofluoromethane	88	103	91	105	103
SUR-Toluene-d8	86	98	85	97	93
SUR-4-Bromofluorobenzene	99	103	100	102	99

Comments:

North State Labs
CA ELAP # 1753
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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-1159
lient : PIERS Environmental
roject : 2924-46 SAN PABLO AVE., OAKLAND

Date Sampled : 07/26/2004
Date Analyzed: 08/06/2004
Date Reported: 08/09/2004

Volatile Organics by GC/MS Method 8260

aboratory Number	04-1159-01	04-1159-02	04-1159-03	04-1159-04	04-1159-05
lient ID	B9H (4.1')	B9H (10.2')	B9J (7.6')	B9J (15.5')	B9C (11')
Matrix	SO	SO	SO	SO	SO
Analyte	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
SUR-1,2-Dichloroethane-d4	82	98	87	99	99

Comments:

North State Labs
CA ELAP # 1753
90 South Spruce Avenue, Suite V • South San Francisco, CA 94080 • (650) 266-4563 • FAX (650) 266-4560

C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-1159
Client : PIERS Environmental
Project : 2924-46 SAN PABLO AVE., OAKLAND

Date Sampled : 07/26/2004
Date Analyzed: 08/04/2004
Date Reported: 08/09/2004

Volatile Organics by GC/MS Method 8260

Laboratory Number	04-1159-06	04-1159-07	04-1159-09	04-1159-10	04-1159-11
Client ID	B9C (17')	MW1 (14.7')	B9L (4')	B9L (10')	B9M (4')
Matrix	SO	SO	SO	SO	SO
Analyte	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Bromochloromethane	ND<25	ND<25	ND<25	ND<25	ND<25
Dichlorodifluoromethane	ND<25	ND<25	ND<25	ND<25	ND<25
Chloromethane	ND<50	ND<50	ND<50	ND<50	ND<50
Vinyl chloride	ND<25	ND<25	ND<25	ND<25	ND<25
Bromomethane	ND<25	ND<25	ND<25	ND<25	ND<25
Chloroethane	ND<25	ND<25	ND<25	ND<25	ND<25
Trichlorofluoromethane	ND<25	ND<25	ND<25	ND<25	ND<25
1,1-Dichloroethene	6	ND<5	ND<5	ND<5	ND<5
Acetone	ND<250	ND<250	ND<250	ND<250	ND<250
Methylene chloride	ND<250	ND<250	ND<250	ND<250	ND<250
trans-1,2-Dichloroethene	10	35	ND<5	ND<5	61
Methyl-tert-butyl ether	ND<5	ND<5	ND<5	ND<5	ND<5
1,1-Dichloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
2,2-Dichloropropane	ND<5	ND<5	ND<5	ND<5	ND<5
cis-1,2-Dichloroethene	186	244	10	119	1900
2-Butanone	ND<50	ND<50	ND<50	ND<50	ND<50
Chloroform	5	ND<5	ND<5	ND<5	ND<5
Carbon tetrachloride	ND<5	ND<5	ND<5	ND<5	ND<5
1,1-Dichloropropene	ND<5	ND<5	ND<5	ND<5	ND<5
Benzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,2-Dichloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
Trichloroethene	3030	3730	536	652	3210
1,2-Dichloropropane	ND<5	ND<5	ND<5	ND<5	ND<5
Dibromomethane	ND<5	ND<5	ND<5	ND<5	ND<5
Bromodichloromethane	ND<5	ND<5	ND<5	ND<5	ND<5
trans-1,3-Dichloropropene	ND<5	ND<5	ND<5	ND<5	ND<5
4-Methyl-2-pentanone	ND<50	ND<50	ND<50	ND<50	ND<50
Toluene	ND<5	ND<5	ND<5	ND<5	ND<5
cis-1,3-Dichloropropene	ND<5	ND<5	ND<5	ND<5	ND<5
1,1,2-Trichloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
Tetrachloroethene	8	ND<5	ND<5	ND<5	ND<5
1,3-Dichloropropane	ND<5	ND<5	ND<5	ND<5	ND<5
2-Hexanone	ND<50	ND<50	ND<50	ND<50	ND<50
Dibromochloromethane	ND<5	ND<5	ND<5	ND<5	ND<5

Comments:

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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-1159
Client : PIERS Environmental
Project : 2924-46 SAN PABLO AVE., OAKLAND

Date Sampled : 07/26/2004
Date Analyzed: 08/04/2004
Date Reported: 08/09/2004

Volatile Organics by GC/MS Method 8260

Laboratory Number	04-1159-06	04-1159-07	04-1159-09	04-1159-10	04-1159-11
Client ID	B9C (17')	MW1 (14.7')	B9L (4')	B9L (10')	B9M (4')
Matrix	SO	SO	SO	SO	SO
Analyte	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
1,2-Dibromoethane	ND<5	ND<5	ND<5	ND<5	ND<5
Chlorobenzene	ND<10	ND<10	ND<10	ND<10	ND<10
1,1,1,2-Tetrachloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
Ethylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
Xylene, Isomers m & p	ND<10	ND<10	ND<10	ND<10	ND<10
o-Xylene	ND<5	ND<5	ND<5	ND<5	ND<5
Styrene	ND<5	ND<5	ND<5	ND<5	ND<5
Bromoform	ND<5	ND<5	ND<5	ND<5	ND<5
Isopropylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
Bromobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,1,2,2-Tetrachloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
n-Propylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
2-Chlorotoluene	ND<5	ND<5	ND<5	ND<5	ND<5
4-Chlorotoluene	ND<5	ND<5	ND<5	ND<5	ND<5
1,3,5-Trimethylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
tert-Butylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,2,4-Trimethylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,3-Dichlorobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,4-Dichlorobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
sec-Butylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,2-Dichlorobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
n-Butylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
Naphthalene	ND<10	ND<10	ND<10	ND<10	ND<10
1,2,4-Trichlorobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
Hexachlorobutadiene	ND<5	ND<5	ND<5	ND<5	ND<5
1,2,3-Trichlorobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,2,3-Trichloropropane	ND<5	ND<5	ND<5	ND<5	ND<5
Acetonitrile	ND<250	ND<250	ND<250	ND<250	ND<250
Acrylonitrile	ND<250	ND<250	ND<250	ND<250	ND<250
Isobutanol	ND<250	ND<250	ND<250	ND<250	ND<250
1,1,1-Trichloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
SUR-Dibromofluoromethane	101	105	109	104	109
SUR-Toluene-d8	97	97	97	98	98
SUR-4-Bromofluorobenzene	104	102	104	100	103

Comments:

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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-1159
Client : PIERS Environmental
Project : 2924-46 SAN PABLO AVE., OAKLAND

Date Sampled : 07/26/2004
Date Analyzed: 08/04/2004
Date Reported: 08/09/2004

Volatile Organics by GC/MS Method 8260

Laboratory Number	04-1159-06	04-1159-07	04-1159-09	04-1159-10	04-1159-11
Client ID	B9C (17')	MW1 (14.7')	B9L (4')	B9L (10')	B9M (4')
Matrix	SO	SO	SO	SO	SO
Analyte	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
SUR-1,2-Dichloroethane-d4	94	101	108	101	106

Comments:

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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-1159
Client : PIERS Environmental
Project : 2924-46 SAN PABLO AVE., OAKLAND

Date Sampled : 07/27/2004
Date Analyzed: 08/05/2004
Date Reported: 08/09/2004

Volatile Organics by GC/MS Method 8260

Laboratory Number	04-1159-12	04-1159-13	04-1159-14	04-1159-16	04-1159-17
Client ID	B9M (8.5')	B9E (4')	B9E (10')	B9H (19.3')	B9H (16.8')
Matrix	SO	SO	SO	SO	SO
Analyte	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Bromochloromethane	ND<25	ND<25	ND<25	ND<25	ND<25
Dichlorodifluoromethane	ND<25	ND<25	ND<25	ND<25	ND<25
Chloromethane	ND<50	ND<50	ND<50	ND<50	ND<50
Vinyl chloride	ND<25	ND<25	ND<25	ND<25	ND<25
Bromomethane	ND<25	ND<25	ND<25	ND<25	ND<25
Chloroethane	ND<25	ND<25	ND<25	ND<25	ND<25
Trichlorofluoromethane	ND<25	ND<25	ND<25	ND<25	ND<25
1,1-Dichloroethene	ND<5	ND<5	8	ND<5	ND<5
Acetone	ND<250	ND<250	ND<250	ND<250	ND<250
Methylene chloride	ND<250	ND<250	ND<250	ND<250	ND<250
trans-1,2-Dichloroethene	12	ND<5	ND<5	ND<5	ND<5
Methyl-tert-butyl ether	ND<5	ND<5	ND<5	ND<5	ND<5
1,1-Dichloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
2,2-Dichloropropane	ND<5	ND<5	ND<5	ND<5	ND<5
cis-1,2-Dichloroethene	765	8	1240	6	147
2-Butanone	ND<50	ND<50	ND<50	ND<50	ND<50
Chloroform	ND<5	ND<5	ND<5	ND<5	ND<5
Carbon tetrachloride	ND<5	ND<5	ND<5	ND<5	ND<5
1,1-Dichloropropene	ND<5	ND<5	ND<5	ND<5	ND<5
Benzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,2-Dichloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
Trichloroethene	4370	344	2670	5630	8840
1,2-Dichloropropane	ND<5	ND<5	ND<5	ND<5	ND<5
Dibromomethane	ND<5	ND<5	ND<5	ND<5	ND<5
Bromodichloromethane	ND<5	ND<5	ND<5	ND<5	ND<5
trans-1,3-Dichloropropene	ND<5	ND<5	ND<5	ND<5	ND<5
4-Methyl-2-pentanone	ND<50	ND<50	ND<50	ND<50	ND<50
Toluene	ND<5	ND<5	ND<5	ND<5	ND<5
cis-1,3-Dichloropropene	ND<5	ND<5	ND<5	ND<5	ND<5
1,1,2-Trichloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
Tetrachloroethene	ND<5	ND<5	15	ND<5	18
1,3-Dichloropropane	ND<5	ND<5	ND<5	ND<5	ND<5
2-Hexanone	ND<50	ND<50	ND<50	ND<50	ND<50
Dibromochloromethane	ND<5	ND<5	ND<5	ND<5	ND<5

Comments:

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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-1159
Client : PIERS Environmental
Project : 2924-46 SAN PABLO AVE., OAKLAND

Date Sampled : 07/27/2004
Date Analyzed: 08/05/2004
Date Reported: 08/09/2004

Volatile Organics by GC/MS Method 8260

Laboratory Number	04-1159-12	04-1159-13	04-1159-14	04-1159-16	04-1159-17
Client ID	B9M (8.5')	B9E (4')	B9E (10')	B9H (19.3')	B9H (16.8')
Matrix	SO	SO	SO	SO	SO
Analyte	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
1,2-Dibromoethane	ND<5	ND<5	ND<5	ND<5	ND<5
Chlorobenzene	ND<10	ND<10	ND<10	ND<10	ND<10
1,1,1,2-Tetrachloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
Ethylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
Xylene, Isomers m & p	ND<10	ND<10	ND<10	ND<10	ND<10
o-Xylene	ND<5	ND<5	ND<5	ND<5	ND<5
Styrene	ND<5	ND<5	ND<5	ND<5	ND<5
Bromoform	ND<5	ND<5	ND<5	ND<5	ND<5
Isopropylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
Bromobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,1,2,2-Tetrachloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
n-Propylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
2-Chlorotoluene	ND<5	ND<5	ND<5	ND<5	ND<5
4-Chlorotoluene	ND<5	ND<5	ND<5	ND<5	ND<5
1,3,5-Trimethylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
tert-Butylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,2,4-Trimethylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,3-Dichlorobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,4-Dichlorobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
sec-Butylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,2-Dichlorobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
n-Butylbenzene	ND<5	ND<5	ND<5	ND<5	ND<5
Naphthalene	ND<10	ND<10	ND<10	ND<10	ND<10
1,2,4-Trichlorobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
Hexachlorobutadiene	ND<5	ND<5	ND<5	ND<5	ND<5
1,2,3-Trichlorobenzene	ND<5	ND<5	ND<5	ND<5	ND<5
1,2,3-Trichloropropane	ND<5	ND<5	ND<5	ND<5	ND<5
Acetonitrile	ND<250	ND<250	ND<250	ND<250	ND<250
Acrylonitrile	ND<250	ND<250	ND<250	ND<250	ND<250
Isobutanol	ND<250	ND<250	ND<250	ND<250	ND<250
1,1,1-Trichloroethane	ND<5	ND<5	ND<5	ND<5	ND<5
SUR-Dibromofluoromethane	108	112	105	111	104
SUR-Toluene-d8	96	98	98	97	95
SUR-4-Bromofluorobenzene	101	104	104	105	93

Comments:

C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-1159
Client : PIERS Environmental
Project : 2924-46 SAN PABLO AVE., OAKLAND

Date Sampled : 07/27/2004
Date Analyzed: 08/05/2004
Date Reported: 08/09/2004

Volatile Organics by GC/MS Method 8260

Laboratory Number	04-1159-12	04-1159-13	04-1159-14	04-1159-16	04-1159-17
Client ID	B9M (8.5')	B9E (4')	B9E (10')	B9H (19.3')	B9H (16.8')
Matrix	SO	SO	SO	SO	SO
Analyte	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
SUR-1,2-Dichloroethane-d4	106	111	102	109	109

Comments:

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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-1159
Client : PIERS Environmental
Project : 2924-46 SAN PABLO AVE., OAKLAND

Date Sampled : 07/27/2004
Date Analyzed: 08/05/2004
Date Reported: 08/09/2004

Volatile Organics by GC/MS Method 8260
Quality Control/Quality Assurance Summary

Laboratory Number	04-1159	MS/MSD	RPD	Recovery	RPD
Client ID	Blank	Recovery		Limit	Limit
Matrix	SO	SO			
Analyte	Results UG/KG	%Recoveries			
Bromochloromethane	ND<25				
Dichlorodifluoromethane	ND<25				
Chloromethane	ND<50				
Vinyl chloride	ND<5				
Bromomethane	ND<25				
Chloroethane	ND<25				
Trichlorofluoromethane	ND<25				
1,1-Dichloroethene	ND<5	85/89	5	54-155	27
Acetone	ND<250				
Methylene chloride	ND<250				
trans-1,2-Dichloroethene	ND<5				
Methyl-tert-butyl ether	ND<5				
1,1-Dichloroethane	ND<5				
2,2-Dichloropropane	ND<5				
cis-1,2-Dichloroethene	ND<5				
2-Butanone	ND<50				
Chloroform	ND<5				
Carbon tetrachloride	ND<5				
1,1-Dichloropropene	ND<5				
Benzene	ND<5	104/113	8	72-122	22
1,2-Dichloroethane	ND<5				
Trichloroethene	ND<5	104/114	9	68-122	20
1,2-Dichloropropane	ND<5				
Dibromomethane	ND<5				
Bromodichloromethane	ND<5				
trans-1,3-Dichloropropene	ND<5				
4-Methyl-2-pentanone	ND<50				
Toluene	ND<5	104/117	12	73-125	21
cis-1,3-Dichloropropene	ND<5				
1,1,2-Trichloroethane	ND<5				
Tetrachloroethene	ND<5				
1,3-Dichloropropane	ND<5				
2-Hexanone	ND<50				
Dibromochloromethane	ND<5				
1,2-Dibromoethane	ND<5				
Chlorobenzene	ND<10	108/114	5	80-135	21
1,1,1,2-Tetrachloroethane	ND<5				
Ethylbenzene	ND<5				
Xylene, Isomers m & p	ND<10				
o-Xylene	ND<5				
Styrene	ND<5				

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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-1159
Client : PIERS Environmental
Project : 2924-46 SAN PABLO AVE., OAKLAND

Date Sampled : 07/27/2004
Date Analyzed: 08/05/2004
Date Reported: 08/09/2004

Volatile Organics by GC/MS Method 8260
Quality Control/Quality Assurance Summary

Laboratory Number	04-1159	MS/MSD	RPD	Recovery Limit	RPD Limit
Client ID	Blank	Recovery			
Matrix	SO	SO			
Analyte	Results UG/KG	%Recoveries			
Bromoform	ND<5				
Isopropylbenzene	ND<5				
Bromobenzene	ND<5				
1,1,2,2-Tetrachloroethane	ND<5				
n-Propylbenzene	ND<5				
2-Chlorotoluene	ND<5				
4-Chlorotoluene	ND<5				
1,3,5-Trimethylbenzene	ND<5				
tert-Butylbenzene	ND<5				
1,2,4-Trimethylbenzene	ND<5				
1,3-Dichlorobenzene	ND<5				
1,4-Dichlorobenzene	ND<5				
sec-Butylbenzene	ND<5				
1,2-Dichlorobenzene	ND<5				
n-Butylbenzene	ND<5				
Naphthalene	ND<10				
1,2,4-Trichlorobenzene	ND<5				
Hexachlorobutadiene	ND<5				
1,2,3-Trichlorobenzene	ND<5				
1,2,3-Trichloropropane	ND<5				
Acetonitrile	ND<250				
Acrylonitrile	ND<250				
Isobutanol	ND<250				
1,1,1-Trichloroethane	ND<5				
SUR-Dibromofluoromethane	102	111/111	0	54-145	23
SUR-Toluene-d8	100	96/107	11	81-108	14
SUR-4-Bromofluorobenzene	101	101/100	1	82-118	18
SUR-1,2-Dichloroethane-d4	114	106/112	6	70-125	25

Reviewed and Approved

John A. Murphy
Laboratory Director

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C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 04-1159
Client: PIERS Environmental
Project: 2924-46 SAN PABLO AVE., OAKLAND

Date Reported: 08/09/2004

Gasoline and BTEX by Methods 8015M/8021B

Analyte	Method	Result	Unit	Date Sampled	Date Analyzed
Sample: 04-1159-15 Client ID: B17 (34-38)				07/26/2004	W
Benzene	SW8020F	3	UG/L		08/04/2004
Ethylbenzene	SW8020F	ND<0.5	UG/L		08/04/2004
Gasoline Range Organics	SW8020F	95	UG/L		08/04/2004
Toluene	SW8020F	1.8	UG/L		08/04/2004
Xylenes	SW8020F	4.8	UG/L		08/04/2004

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C E R T I F I C A T E O F A N A L Y S I S

Quality Control/Quality Assurance

ab Number: 04-1159
lient: PIERS Environmental
roject: 2924-46 SAN PABLO AVE., OAKLAND

te Reported: 08/09/2004
Gasoline and BTEX by Methods 8015M/8021B

nalyte	Method	Reporting Limit	Unit	Blank	Avg MS/MSD Recovery	RPD
asoline Range Organics	SW8020F	50	UG/L	ND	80/74	8
nzene	SW8020F	0.5	UG/L	ND	82/72	13
luene	SW8020F	0.5	UG/L	ND	88/80	10
thylbenzene	SW8020F	0.5	UG/L	ND	90/84	7
lenes	SW8020F	1.0	UG/L	ND	92/86	7

LAP Certificate NO:1753
Reviewed and Approved

John A. Murphy, Laboratory Director

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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-1159
Client : PIERS Environmental
Project : 2924-46 SAN PABLO AVE., OAKLAND

Date Sampled : 07/26/2004
Date Analyzed: 08/03/2004
Date Reported: 08/09/2004

Fuel Oxygenates by Method 8260B

Laboratory Number	04-1159-08	04-1159-15
Client ID	B9B (42-46')	B17 (34-38)
Matrix	W	W
Analyte	UG/L	UG/L
Methyl-tert-butyl ether	8.5	ND<0.5
Ethyl tert-butyl ether	ND<1	ND<1
tert-Amyl methyl ether	ND<1	ND<1
Di-isopropyl ether (DIPE)	2.8	ND<0.5
tert-Butyl alcohol	ND<10	ND<10
1,2-Dichloroethane	ND<1	ND<1
1,2-Dibromoethane	ND<0.5	ND<0.5
Ethanol	ND<100	ND<100
SUR-Dibromofluoromethane	113	121
SUR-Toluene-d8	102	107
SUR-4-Bromofluorobenzene	105	109
SUR-1,2-Dichloroethane-d4	109	99

Comments:

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C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 04-1159
Client : PIERS Environmental
Project : 2924-46 SAN PABLO AVE., OAKLAND

Date Sampled : 07/26/2004
Date Analyzed: 08/03/2004
Date Reported: 08/09/2004

Fuel Oxygenates by Method 8260B
Quality Control/Quality Assurance Summary

Laboratory Number	04-1159	MS/MSD	RPD	Recovery	RPD
Client ID	Blank	Recovery		Limit	Limit
Matrix	W	W			
Analyte	Results UG/L	%Recoveries			
Ethanol	ND<100				
Methyl-tert-butyl ether	ND<0.5				
Di-isopropyl ether (DIPE)	ND<0.5				
tert-butyl Alcohol	ND<10				
Ethyl tert-butyl ether	ND<1				
tert-Amyl methyl ether	ND<1				
1,1-Dichloroethene	ND<0.5	75/82	9	61-128	25
Benzene	ND<0.5	122/122	0	74-135	21
Trichloroethene	ND<0.5	125/128	2	69-129	20
Toluene	ND<0.5	114/115	1	61-141	19
Chlorobenzene	ND<1	110/110	0	70-139	19
SUR-Dibromofluoromethane	118	119/114	4	67-129	21
SUR-Toluene-d8	104	106/107	1	72-119	16
SUR-4-Bromofluorobenzene	105	105/103	2	78-121	19
SUR-1,2-Dichloroethane-d4	98	110/113	3	85-115	25

Reviewed and Approved

John A. Murphy
Laboratory Director

North State Labs
CA ELAP # 1753
90 South Spruce Avenue, Suite V • South San Francisco, CA 94080 • (650) 266-4563 • FAX (650) 266-4560

C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-1159
Client : PIERS Environmental
Project : 2924-46 SAN PABLO AVE., OAKLAND

Date Sampled : 07/26/2004
Date Analyzed: 08/03/2004
Date Reported: 08/09/2004

Volatile Organics by GC/MS Method 8260

Laboratory Number	04-1159-08	04-1159-15
Client ID	B9B (42-46')	B17 (34-38)
Matrix	W	W
Analyte	UG/L	UG/L
Bromochloromethane	ND<1	ND<1
Dichlorodifluoromethane	ND<1	ND<1
Chloromethane	ND<1	ND<1
Vinyl chloride	115	ND<0.5
Bromomethane	ND<1	ND<1
Chloroethane	ND<1	ND<1
Trichlorofluoromethane	ND<1	ND<1
1,1-Dichloroethene	39	ND<0.5
Acetone	ND<10	21
Methylene chloride	34	ND<5
trans-1,2-Dichloroethene	350	ND<1
Methyl-tert-butyl ether	8.5	ND<0.5
1,1-Dichloroethane	6	ND<0.5
2,2-Dichloropropane	ND<1	ND<1
cis-1,2-Dichloroethene	10800	ND<1
2-Butanone	ND<5	ND<5
Chloroform	14.9	2
Carbon tetrachloride	ND<0.5	ND<0.5
1,1-Dichloropropene	ND<1	ND<1
Benzene	6.7	ND<0.5
1,2-Dichloroethane	ND<1	ND<1
Trichloroethene	32600	13.6
1,2-Dichloropropane	ND<1	ND<1
Dibromomethane	ND<1	ND<1
Bromodichloromethane	ND<1	ND<1
trans-1,3-Dichloropropene	ND<1	ND<1
4-Methyl-2-pentanone	ND<1	ND<1
Toluene	4.5	ND<0.5
cis-1,3-Dichloropropene	ND<1	ND<1
1,1,2-Trichloroethane	ND<1	ND<1
Tetrachloroethene	4.1	ND<0.5
1,3-Dichloropropane	ND<1	ND<1
2-Hexanone	ND<1	ND<1
Dibromochloromethane	ND<1	ND<1
1,2-Dibromoethane	ND<0.5	ND<0.5

Comments:

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CERTIFICATE OF ANALYSIS

Job Number: 04-1159
Client : PIERS Environmental
Project : 2924-46 SAN PABLO AVE., OAKLAND

Date Sampled : 07/26/2004
Date Analyzed: 08/03/2004
Date Reported: 08/09/2004

Volatile Organics by GC/MS Method 8260

Laboratory Number	04-1159-08	04-1159-15
Client ID	B9B (42-46')	B17 (34-38)
Matrix	W	W
Analyte	UG/L	UG/L
Chlorobenzene	ND<1	ND<1
1,1,1,2-Tetrachloroethane	ND<1	ND<1
Ethylbenzene	ND<0.5	ND<0.5
Xylene, Isomers m & p	1	ND<1
o-Xylene	0.7	ND<0.5
Styrene	ND<1	ND<1
Bromoform	ND<1	ND<1
Isopropylbenzene	ND<1	ND<1
Bromobenzene	ND<1	ND<1
1,1,2,2-Tetrachloroethane	ND<1	ND<1
n-Propylbenzene	ND<1	ND<1
2-Chlorotoluene	ND<1	ND<1
4-Chlorotoluene	ND<1	ND<1
1,3,5-Trimethylbenzene	ND<1	ND<1
tert-Butylbenzene	ND<1	ND<1
1,2,4-Trimethylbenzene	ND<1	ND<1
1,3-Dichlorobenzene	ND<1	ND<1
1,4-Dichlorobenzene	ND<1	ND<1
sec-Butylbenzene	ND<1	ND<1
1,2-Dichlorobenzene	ND<1	ND<1
n-Butylbenzene	ND<1	ND<1
Naphthalene	ND<1	ND<1
1,2,4-Trichlorobenzene	ND<1	ND<1
Hexachlorobutadiene	ND<1	ND<1
1,2,3-Trichlorobenzene	ND<1	ND<1
1,2,3-Trichloropropane	ND<1	ND<1
Acetonitrile	ND<5	ND<5
Acrylonitrile	ND<1	ND<1
Isobutanol	ND<5	ND<5
1,1,1-Trichloroethane	ND<1	ND<1
SUR-Dibromofluoromethane	113	121
SUR-Toluene-d8	102	107
SUR-4-Bromofluorobenzene	105	109
SUR-1,2-Dichloroethane-d4	109	99

Comments:

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C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 04-1159
Client : PIERS Environmental
Project : 2924-46 SAN PABLO AVE., OAKLAND

Date Sampled : 07/26/2004
Date Analyzed: 08/03/2004
Date Reported: 08/09/2004

Volatile Organics by GC/MS Method 8260
Quality Control/Quality Assurance Summary

Laboratory Number	04-1159	MS/MSD	RPD	Recovery	RPD
Client ID	Blank	Recovery		Limit	Limit
Matrix	W	W			
Analyte	Results UG/L	%Recoveries			
Bromochloromethane	ND<1				
Dichlorodifluoromethane	ND<1				
Chloromethane	ND<1				
Vinyl chloride	ND<0.5				
Bromomethane	ND<1				
Chloroethane	ND<1				
Trichlorofluoromethane	ND<1				
1,1-Dichloroethene	ND<0.5	75/82	9	61-128	25
Acetone	ND<10				
Methylene chloride	ND<5				
trans-1,2-Dichloroethene	ND<1				
Methyl-tert-butyl ether	ND<0.5				
1,1-Dichloroethane	ND<0.5				
2,2-Dichloropropane	ND<1				
cis-1,2-Dichloroethene	ND<1				
2-Butanone	ND<5				
Chloroform	ND<0.5				
Carbon tetrachloride	ND<0.5				
1,1-Dichloropropene	ND<1				
Benzene	ND<0.5	122/122	0	74-135	21
1,2-Dichloroethane	ND<1				
Trichloroethene	ND<0.5	125/128	2	69-129	20
1,2-Dichloropropane	ND<1				
Dibromomethane	ND<1				
Bromodichloromethane	ND<1				
trans-1,3-Dichloropropene	ND<1				
4-Methyl-2-pentanone	ND<1				
Toluene	ND<0.5	114/115	1	61-141	19
cis-1,3-Dichloropropene	ND<1				
1,1,2-Trichloroethane	ND<1				
Tetrachloroethene	ND<0.5				
1,3-Dichloropropane	ND<1				
2-Hexanone	ND<1				
Dibromochloromethane	ND<1				
1,2-Dibromoethane	ND<0.5				
Chlorobenzene	ND<1	110/110	0	70-139	19
1,1,1,2-Tetrachloroethane	ND<1				
Ethylbenzene	ND<0.5				
Xylene, Isomers m & p	ND<1				
o-Xylene	ND<0.5				
Styrene	ND<1				

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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-1159
Client : PIERS Environmental
Project : 2924-46 SAN PABLO AVE., OAKLAND

Date Sampled : 07/26/2004
Date Analyzed: 08/03/2004
Date Reported: 08/09/2004

Volatile Organics by GC/MS Method 8260
Quality Control/Quality Assurance Summary

Laboratory Number	04-1159	MS/MSD	RPD	Recovery Limit	RPD Limit
Client ID	Blank	Recovery			
Matrix	W	W			
Analyte	Results UG/L	%Recoveries			
Bromoform	ND<1				
Isopropylbenzene	ND<1				
Bromobenzene	ND<1				
1,1,2,2-Tetrachloroethane	ND<1				
n-Propylbenzene	ND<1				
2-Chlorotoluene	ND<1				
4-Chlorotoluene	ND<1				
1,3,5-Trimethylbenzene	ND<1				
tert-Butylbenzene	ND<1				
1,2,4-Trimethylbenzene	ND<1				
1,3-Dichlorobenzene	ND<1				
1,4-Dichlorobenzene	ND<1				
sec-Butylbenzene	ND<1				
1,2-Dichlorobenzene	ND<1				
n-Butylbenzene	ND<1				
Naphthalene	ND<1				
1,2,4-Trichlorobenzene	ND<1				
Hexachlorobutadiene	ND<1				
1,2,3-Trichlorobenzene	ND<1				
1,2,3-Trichloropropane	ND<1				
Acetonitrile	ND<5				
Acrylonitrile	ND<1				
Isobutanol	ND<5				
1,1,1-Trichloroethane	ND<1				
SUR-Dibromofluoromethane	118	119/114	4	67-129	21
SUR-Toluene-d8	104	106/107	1	72-119	16
SUR-4-Bromofluorobenzene	105	105/103	2	78-121	19
SUR-1,2-Dichloroethane-d4	98	110/113	3	85-115	25

Reviewed and Approved

John A. Murphy
Laboratory Director

04-7187

North State Labs

90 South Spruce Avenue, Suite W, South San Francisco, CA 94080
Phone: (650) 266-4563 Fax: (650) 266-4560

Chain of Custody / Request for Analysis
Lab Job No.:_____ Page 1 of 1

Client: PIERS ENVIRONMENTAL	Report to: KAY PANNELL	Phone: 408 559 1248	Turnaround Time: STD TAT
Mailing Address: PIERS ENVIRONMENTAL 1330 S. BASCOM AVE STE F SAN JOSE CA 95128	Billing to:	Fax: 408 559 1224	Date: 07.30.04
		email:	Sampler: K. A.
		PO#	

Project / Site Address / Global ID: 2926-46 SAN PABLO AVE OAKLAND CA

Analysis Requested

EDF ☐

	Sample ID	Sample Type	Container No. / Type	Pres.	Sampling Date / Time	TPH-G	VOCs	FUEL OXYS					Field Point ID
1	MW-1	G.W.	3/VOAS	HCl	7.30.04 / 1500	X	X	X					
2	MW-2	↓	↓	↓	↓ / 1350	X	X	X					
3	MW-3	↓	↓	↓	↓ / 1300	X	X	X					

Relinquished by:		Date: 7.30.04	Time: 1700	Received by:
Relinquished by:		Date:	Time:	Received by:
Relinquished by:		Date:	Time:	Received by:

Lab Comments/ Hazards

TERMS: NET 30 OAC

North State Labs
CA ELAP # 1753
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Case Narrative

Client: PIERS ENVIRONMENTAL
Project: 2924-46 SAN PABLO AVE., OAKLAND
Lab No: 04-1187
Date Received: 07/30/2004 Date reported: 08/12/2004

Updated report for three water samples analyzed for gasoline by method 8015M, VOCs and fuel oxygenates by GC/MS method 8260B. No errors occurred during analysis. All QC/QA results were within acceptance limits.

John A. Murphy
Laboratory Director

North State Labs
CA ELAP # 1753
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C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 04-1187
Client: PIERS Environmental
Project: 2924-46 SAN PABLO AVE. OAKLAND

Date Reported: 08/10/2004

Gasoline Range Hydrocarbons by Method 8015M

Analyte	Method	Result	Unit	Date Sampled	Date Analyzed
Sample: 04-1187-01 Client ID: MW-1				07/30/2004	W
Gasoline Range Organics	SW8020F	2280	UG/L		08/06/2004
Sample: 04-1187-02 Client ID: MW-2				07/30/2004	W
Gasoline Range Organics	SW8020F	144	UG/L		08/06/2004
Sample: 04-1187-03 Client ID: MW-3				07/30/2004	W
Gasoline Range Organics	SW8020F	63	UG/L		08/06/2004

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C E R T I F I C A T E O F A N A L Y S I S

Quality Control/Quality Assurance

ab Number: 04-1187
ient: PIERS Environmental
roject: 2924-46 SAN PABLO AVE. OAKLAND

te Reported: 08/10/2004
Gasoline Range Hydrocarbons by Method 8015M

nalyte	Method	Reporting Limit	Unit	Blank	Avg MS/MSD Recovery	RPD
asoline Range Organics	SW8020F	50	UG/L	ND	114/111	3

LAP Certificate NO:1753
eviewed and Approved

John A.Murphy/Laboratory Director

North State Labs
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CERTIFICATE OF ANALYSIS

Job Number: 04-1187
Client : PIERS Environmental
Project : 2924-46 SAN PABLO AVE. OAKLAND

Date Sampled : 07/30/2004
Date Analyzed: 08/12/2004
Date Reported: 08/12/2004

Volatile Organics by GC/MS Method 8260

Laboratory Number	04-1187-01	04-1187-02	04-1187-03
Client ID	MW-1	MW-2	MW-3
Matrix	W	W	W
Analyte	UG/L	UG/L	UG/L
Bromochloromethane	ND<1	ND<1	ND<1
Dichlorodifluoromethane	ND<1	ND<1	ND<1
Chloromethane	ND<1	ND<1	ND<1
Vinyl chloride	ND<0.5	ND<0.5	ND<0.5
Bromomethane	ND<1	ND<1	ND<1
Chloroethane	ND<1	ND<1	ND<1
Trichlorofluoromethane	ND<1	ND<1	ND<1
1,1-Dichloroethene	ND<0.5	ND<0.5	ND<0.5
Acetone	ND<10	51	ND<10
Methylene chloride	ND<5	ND<5	ND<5
trans-1,2-Dichloroethene	ND<1	ND<1	ND<1
Methyl-tert-butyl ether	ND<0.5	ND<0.5	ND<0.5
1,1-Dichloroethane	ND<0.5	ND<0.5	ND<0.5
2,2-Dichloropropane	ND<1	ND<1	ND<1
cis-1,2-Dichloroethene	2	ND<1	ND<1
2-Butanone	ND<5	ND<5	ND<5
Chloroform	2.1	3	ND<0.5
Carbon tetrachloride	ND<0.5	ND<0.5	ND<0.5
1,1-Dichloropropene	ND<1	ND<1	ND<1
Benzene	ND<0.5	ND<0.5	ND<0.5
1,2-Dichloroethane	ND<1	ND<1	ND<1
Trichloroethene	5670	219	6.6
1,2-Dichloropropane	ND<1	ND<1	ND<1
Dibromomethane	ND<1	ND<1	ND<1
Bromodichloromethane	ND<1	ND<1	ND<1
trans-1,3-Dichloropropene	ND<1	ND<1	ND<1
4-Methyl-2-pentanone	ND<1	ND<1	ND<1
Toluene	ND<0.5	ND<0.5	ND<0.5
cis-1,3-Dichloropropene	ND<1	ND<1	ND<1
1,1,2-Trichloroethane	ND<1	ND<1	ND<1
Tetrachloroethene	ND<0.5	ND<0.5	ND<0.5
1,3-Dichloropropane	ND<1	ND<1	ND<1
2-Hexanone	ND<1	ND<1	ND<1
Dibromochloromethane	ND<1	ND<1	ND<1
1,2-Dibromoethane	ND<0.5	ND<0.5	ND<0.5

Comments:

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CERTIFICATE OF ANALYSIS

Job Number: 04-1187
Client : PIERS Environmental
Project : 2924-46 SAN PABLO AVE. OAKLAND

Date Sampled : 07/30/2004
Date Analyzed: 08/12/2004
Date Reported: 08/12/2004

Volatile Organics by GC/MS Method 8260

Laboratory Number	04-1187-01	04-1187-02	04-1187-03
Client ID	MW-1	MW-2	MW-3
Matrix	W	W	W
Analyte	UG/L	UG/L	UG/L
Chlorobenzene	ND<1	ND<1	ND<1
1,1,1,2-Tetrachloroethane	ND<1	ND<1	ND<1
Ethylbenzene	ND<0.5	ND<0.5	ND<0.5
Xylene, Isomers m & p	ND<1	ND<1	ND<1
o-Xylene	ND<0.5	ND<0.5	ND<0.5
Styrene	ND<1	ND<1	ND<1
Bromoform	ND<1	ND<1	ND<1
Isopropylbenzene	ND<1	ND<1	ND<1
Bromobenzene	ND<1	ND<1	ND<1
1,1,2,2-Tetrachloroethane	ND<1	ND<1	ND<1
n-Propylbenzene	ND<1	ND<1	ND<1
2-Chlorotoluene	ND<1	ND<1	ND<1
4-Chlorotoluene	ND<1	ND<1	ND<1
1,3,5-Trimethylbenzene	ND<1	ND<1	ND<1
tert-Butylbenzene	ND<1	ND<1	ND<1
1,2,4-Trimethylbenzene	ND<1	ND<1	ND<1
1,3-Dichlorobenzene	ND<1	ND<1	ND<1
1,4-Dichlorobenzene	ND<1	ND<1	ND<1
sec-Butylbenzene	ND<1	ND<1	ND<1
1,2-Dichlorobenzene	ND<1	ND<1	ND<1
n-Butylbenzene	ND<1	ND<1	ND<1
Naphthalene	ND<1	ND<1	ND<1
1,2,4-Trichlorobenzene	ND<1	ND<1	ND<1
Hexachlorobutadiene	ND<1	ND<1	ND<1
1,2,3-Trichlorobenzene	ND<1	ND<1	ND<1
1,2,3-Trichloropropane	ND<1	ND<1	ND<1
Acetonitrile	ND<5	ND<5	ND<5
Acrylonitrile	ND<1	ND<1	ND<1
Isobutanol	ND<5	ND<5	ND<5
1,1,1-Trichloroethane	ND<1	ND<1	ND<1
SUR-Dibromofluoromethane	111	99	97
SUR-Toluene-d8	89	91	91
SUR-4-Bromofluorobenzene	106	104	103
SUR-1,2-Dichloroethane-d4	110	95	90

Comments:

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C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 04-1187
Client : PIERS Environmental
Project : 2924-46 SAN PABLO AVE. OAKLAND

Date Sampled : 07/30/2004
Date Analyzed: 08/12/2004
Date Reported: 08/12/2004

Volatile Organics by GC/MS Method 8260
Quality Control/Quality Assurance Summary

Laboratory Number	04-1187	MS/MSD	RPD	Recovery Limit	RPD Limit
Client ID	Blank	Recovery			
Matrix	W	W			
Analyte	Results UG/L	%Recoveries			
Bromochloromethane	ND<1				
Dichlorodifluoromethane	ND<1				
Chloromethane	ND<1				
Vinyl chloride	ND<0.5				
Bromomethane	ND<1				
Chloroethane	ND<1				
Trichlorofluoromethane	ND<1				
1,1-Dichloroethene	ND<0.5	69/73	6	61-128	25
Acetone	ND<10				
Methylene chloride	ND<5				
trans-1,2-Dichloroethene	ND<1				
Methyl-tert-butyl ether	ND<0.5				
1,1-Dichloroethane	ND<0.5				
2,2-Dichloropropane	ND<1				
cis-1,2-Dichloroethene	ND<1				
2-Butanone	ND<5				
Chloroform	ND<0.5				
Carbon tetrachloride	ND<0.5				
1,1-Dichloropropene	ND<1				
Benzene	ND<0.5	104/102	2	74-135	21
1,2-Dichloroethane	ND<1				
Trichloroethene	ND<0.5	94/107	13	69-129	20
1,2-Dichloropropane	ND<1				
Dibromomethane	ND<1				
Bromodichloromethane	ND<1				
trans-1,3-Dichloropropene	ND<1				
4-Methyl-2-pentanone	ND<1				
Toluene	ND<0.5	98/106	8	61-141	19
cis-1,3-Dichloropropene	ND<1				
1,1,2-Trichloroethane	ND<1				
Tetrachloroethene	ND<0.5				
1,3-Dichloropropane	ND<1				
2-Hexanone	ND<1				
Dibromochloromethane	ND<1				
1,2-Dibromoethane	ND<0.5				
Chlorobenzene	ND<1	110/110	0	70-139	19
1,1,1,2-Tetrachloroethane	ND<1				
Ethylbenzene	ND<0.5				
Xylene, Isomers m & p	ND<1				
o-Xylene	ND<0.5				
Styrene	ND<1				

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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-1187
Client : PIERS Environmental
Project : 2924-46 SAN PABLO AVE. OAKLAND

Date Sampled : 07/30/2004
Date Analyzed: 08/12/2004
Date Reported: 08/12/2004

Volatile Organics by GC/MS Method 8260
Quality Control/Quality Assurance Summary

Laboratory Number	04-1187	MS/MSD	RPD	Recovery	RPD
Client ID	Blank	Recovery		Limit	Limit
Matrix	W	W			
Analyte	Results UG/L	%Recoveries			
Bromoform	ND<1				
Isopropylbenzene	ND<1				
Bromobenzene	ND<1				
n,1,2,2-Tetrachloroethane	ND<1				
n-Propylbenzene	ND<1				
2-Chlorotoluene	ND<1				
4-Chlorotoluene	ND<1				
n,3,5-Trimethylbenzene	ND<1				
tert-Butylbenzene	ND<1				
1,2,4-Trimethylbenzene	ND<1				
n,3-Dichlorobenzene	ND<1				
n,4-Dichlorobenzene	ND<1				
sec-Butylbenzene	ND<1				
1,2-Dichlorobenzene	ND<1				
n-Butylbenzene	ND<1				
Naphthalene	ND<1				
1,2,4-Trichlorobenzene	ND<1				
Hexachlorobutadiene	ND<1				
n,2,3-Trichlorobenzene	ND<1				
1,2,3-Trichloropropane	ND<1				
Acetonitrile	ND<5				
Acrylonitrile	ND<1				
Isobutanol	ND<5				
1,1,1-Trichloroethane	ND<1				
SUR-Dibromofluoromethane	95	101/104	3	67-129	21
SUR-Toluene-d8	90	90/94	4	72-119	16
SUR-4-Bromofluorobenzene	102	104/106	2	78-121	19
SUR-1,2-Dichloroethane-d4	91	90/91	1	85-115	25

Reviewed and Approved

John A. Murphy
Laboratory Director

North State Labs
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CERTIFICATE OF ANALYSIS

Job Number: 04-1187
Client : PIERS Environmental
Project : 2924-46 SAN PABLO AVE. OAKLAND

Date Sampled : 07/30/2004
Date Analyzed: 08/12/2004
Date Reported: 08/12/2004

Fuel Oxygenates by Method 8260B

Laboratory Number	04-1187-01	04-1187-02	04-1187-03
Client ID	MW-1	MW-2	MW-3
Matrix	W	W	W
Analyte	UG/L	UG/L	UG/L
Methyl-tert-butyl ether	ND<0.5	ND<0.5	ND<0.5
Ethyl tert-butyl ether	ND<1	ND<1	ND<1
tert-Amyl methyl ether	ND<1	ND<1	ND<1
Di-isopropyl ether (DIPE)	ND<0.5	ND<0.5	1.6
tert-Butyl alcohol	ND<10	ND<10	ND<10
1,2-Dichloroethane	ND<1	ND<1	ND<1
1,2-Dibromoethane	ND<0.5	ND<0.5	ND<0.5
Ethanol	ND<100	ND<100	ND<100
SUR-Dibromofluoromethane	111	99	97
SUR-Toluene-d8	89	91	91
SUR-4-Bromofluorobenzene	106	104	103
SUR-1,2-Dichloroethane-d4	110	95	90

Comments:

North State Labs
CA ELAP # 1753
90 South Spruce Avenue, Suite V • South San Francisco, CA 94080 • (650) 266-4563 • FAX (650) 266-4560

C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-1187
Client : PIERS Environmental
Project : 2924-46 SAN PABLO AVE. OAKLAND

Date Sampled : 07/30/2004
Date Analyzed: 08/12/2004
Date Reported: 08/12/2004

Fuel Oxygenates by Method 8260B
Quality Control/Quality Assurance Summary

Laboratory Number	04-1187	MS/MSD	RPD	Recovery	RPD
Client ID	Blank	Recovery		Limit	Limit
Matrix	W	W			
Analyte	Results UG/L	%Recoveries			
Ethanol	ND<100				
Methyl-tert-butyl ether	ND<0.5				
Di-isopropyl ether (DIPE)	ND<0.5				
tert-butyl Alcohol	ND<10				
Ethyl tert-butyl ether	ND<1				
tert-Amyl methyl ether	ND<1				
1,1-Dichloroethene	ND<0.5	69/73	6	61-128	25
Benzene	ND<0.5	104/102	2	74-135	21
Trichloroethene	ND<0.5	94/107	13	69-129	20
Toluene	ND<0.5	98/106	8	61-141	19
Chlorobenzene	ND<1	110/110	0	70-139	19
SUR-Dibromofluoromethane	95	101/104	3	67-129	21
SUR-Toluene-d8	90	90/94	4	72-119	16
SUR-4-Bromofluorobenzene	102	104/106	2	78-121	19
SUR-1,2-Dichloroethane-D4	91	90/91	1	85-115	25

Reviewed and Approved

John A. Murphy
Laboratory Director

APPENDIX C
BORING LOGS

Field Log of Boring 89B-HP

Location of Boring

4.1's of 89B

Approximate scale: 1" =

Logged by	J Gregor
Weather	warm, clear
Conditions	
Drilling Contractor	Vironex
Drilling Equipment	Geoprobe 6600
Driller's Name	Mike Martin & Lucas Dear
Drilling Method	Geoprobe
Sampling Methods	hydropunch
Hammer Weight	Drop
Start Time	2 PM — Date 7-26-04
Completion Time	2:30 PM — Date 7-26-04
Time of Backfilling	2:45 PM — Date 7-26-04 By VHO
Boring Depth, feet	46'
Casing Depth, feet	—
Water Depth, feet	42-46'
Time	
Date	
Surface Elevation	Datum

Drilling Rate (minutes per foot)	Sampler Type	Blows per 6 inches	Inches Driven	Inches Recovered	Sample Condition	Sample No./Depth	Penetrometer (tsf)	Standard Penetration Blow Count	Depth in Feet	Graphic Log
									1	
									2	
									3	
						HP			4	
									5	
									6	
									7	
									8	
									9	
									10	

TD - 46'
pushed rods to 46'
Retracted Rods + exposed disposable PVC hydropunch Screen 42-46', immediately collected 3 VOAs, water was a brown slurry.
Abandoned PVC screen & trimmed through rods.

Field Log of Boring B9C

Location of Boring

See map

Approximate scale: 1" =

Logged by	J. Gregor
Weather	Clear + warm
Conditions	
Drilling Contractor	Vironex
Drilling Equipment	Geoprobe 6600
Driller's Name	Mike Morton & Lucas Dear
Drilling Method	Geoprobe
Sampling Methods	direct push
Hammer Weight / Drop	
Start Time / Date	11:30 Am / 7-26-04
Completion Time / Date	11:45 Am / 7-26-04
Time of Backfilling / Date / By	11:45 Am / 7-26-04 / Viro
Boring Depth, feet	20
Casing Depth, feet	—
Water Depth, feet	Not H2O
Time	
Date	
Surface Elevation / Datum	

Drilling Rate (minutes per foot)	Sampler Type	Blows per 6 inches	Inches Driven	Inches Recovered	Sample Condition	Sample No./Depth	Penetrometer (tsf)	Standard Penetration Blow Count	Depth in Feet	Graphic Log
				Core runs					1	
									2	
									3	fill
									4	
									5	
									6	
									7	ML
									8	
									9	
									10	gr. silt (ML)

0-4.2' Fill: Silt w gravel + concrete + brick debris, dry.

@ 4.2' DK brown silt + clayey silt (ML), becoming olive color @ 4.5'

@9' gravel content increasing

@ 9.8' Gravelly silt (ML), St. moist, gravels highly weathered

Project Name 2942 San Pablo Project No. 1 Sheet 1 of

Field Log of Boring B9C
(continued)

Drilling Rate (minutes per foot)	Sampler Type	Blows per 6 inches	Inches Driven	Inches Recovered	Sample Condition	Sample No./Depth	Penetrometer (tsf)	Standard Penetration Blow Count	Depth in Feet	Graphic Log
							B9C (11')		1	gr silt
									2	
									3	ML
									4	
									5	
									6	ML GM
						B9C (17')			7	
									8	gr silt (ML)
									9	ML
									20	
									1	
									2	
									3	
									4	
									5	
									6	
									7	
									8	
									9	
									0	

Gravelly silt (ML), just above, free water 10.2 - 10.8'

@ 12.7' Olive clayey silt + silt (ML), mottled w Fe-oxide staining, saturated but no free water

15 - 17' Gravelly silt + silty Gravel (ML-GM), saturated.

@ 17' - 18.6' Gravelly silt (ML), saturated but no free water as at 15-17'

@ 18.6' olive clayey silt (ML) saturated but no free water

TD - 20'

Backfilled with neat cement grout

Field Log of Boring B9D

Location of Boring

See map

Approximate scale: 1" =

Logged by	JG		
Weather	overcast + mild		
Conditions			
Drilling Contractor	Vironex		
Drilling Equipment	Geoprobe 6600		
Driller's Name	Mike Martin & Lucas Dean		
Drilling Method	Direct Push		
Sampling Methods	↓		
Hammer Weight		Drop	
Start Time	8 20 AM	Date	7-26-04
Completion Time	850 AM	Date	↓
Time of Backfilling	9 AM	Date	7-26-04 By Viro
Boring Depth, feet	17'		
Casing Depth, feet	—		
Water Depth, feet	Not encountered		
Time			
Date			
Surface Elevation	Datum		

Drilling Rate (minutes per foot)	Sampler Type	Blows per 6 inches	Inches Driven	Inches Recovered	Sample Condition	Sample No./Depth	Penetrometer (tsf)	Standard Penetration Blow Count	Depth in Feet	Graphic Log
				Continuous Core		B9D (3.3')			1 2 3 4 5 6 7 8 9 10	
						B9D (5.5')				
						B9D (8.3')				

0 - 2.9' Fill consisting of concrete rubble + gravelly silt with sand

@ 2.9' DK brown clayey silt (ML) fill or disturbed native soil, wet, strong odor of solvents, glass fragments

@ 4' DK olive green clayey silt, v. moist, stiff, no odor

@ 4.7' Olive silt (ML) sl. moist, hard, mottled w/ Fe-oxide staining, occ. pebbles

@ 8.3' Olive silt (ML), as above except becomes gravelly, gravels highly weathered (no odor)

Project Name 2942 San Pablo Project No. _____ Sheet 1 of 2

Field Log of Boring B9D
(continued)

Drilling Rate (minutes per foot)	Sampler Type	Blows per 6 inches	Inches Driven	Inches Recovered	Sample Condition	Sample No./Depth	Penetrometer (tsf)	Standard Penetration Blow Count	Depth in Feet	Graphic Log
									0	
									1	
									2	
									3	
									4	
									5	
						B9D (15.7')			6	
									7	
									8	
									9	
									10	
									11	
									12	
									13	
									14	
									15	
									16	
									17	
									18	
									19	
									20	

No recovery 10-15 - could not get liner out of core barrel

15' Olive Clayey silt (ML), saturated, v. slight odor of solvents, stiff

16.2' Silt zone of sandy, gravelly, silty (ML), sand predom. fine-grained

TD sampler 17'

Backfilled w neat cement after completion

@ 16.8' - Clayey Silt (ML) saturated, stiff, v. slight odor

7947 San Pablo

Field Log of Boring B9E

Location of Boring	see siteplan
Approximate scale: 1" =	

Logged by	J. Greger		
Weather	overcast & mild		
Conditions			
Drilling Contractor	Vironex		
Drilling Equipment	Geoprobe 6600		
Driller's Name	Lucas Dean & Tim		
Drilling Method	Geoprobe		
Sampling Methods	Direct push		
Hammer Weight		Drop	
Start Time	8:15 Am	Date	7-27-04
Completion Time	8:25 Am	Date	7-27-04
Time of Backfilling	8:30 Am	Date 7-27-04	By Viro
Boring Depth, feet	11'		
Casing Depth, feet	—		
Water Depth, feet	No H2O		
Date			
Surface Elevation		Datum	

Drilling Rate (minutes per foot)	Sample Type	Blows per 6 Inches	Inches Driven	Inches Recovered	Sample Condition	Sample Depth	Penetrometer (tsf)	Standard Penetration Blow Count	Depth in Feet	Graph	Description
				Continuous Core					0		@0-1.6' top soil with concrete debris
									1		@1.6' brown silt (ML), dry, stiff
									2		@2.5' greenish brown, sl. moist
									3		@3.5 orangish brown to olive, Fe-oxide stained, few gravels
						B9E(4')			4	X	@4' slight odor?
									5		
									6		
									7		@7.8' Grades to sandy silt (ML), sand predom. fine grained, few gravels
									8		
									9		@9.1' olive to orangish brown gravelly silt (ML) moist, stiff, Sl. odor??
						B9E(10')			10	X	

Project Name 2947 San Pablo — Project No. TD-11' — Sheet 1 of 1

Field Log of Boring B9H

Location of Boring

See map

Approximate scale: 1" =

Logged by	JC
Weather	overcast + mild
Conditions	
Drilling Contractor	Vironex
Drilling Equipment	Geoprobe 6600
Driller's Name	Mike Martin & Lucas Dear
Drilling Method	Geoprobe
Sampling Methods	Continuous (direct push)
Hammer Weight	Drop
Start Time	10:15 AM — Date 7/26/07
Completion Time	10:41 AM — Date 7/26/07
Time of Backfilling	10:45 AM — Date 7/26/07 By Vir
Boring Depth, feet	20
Casing Depth, feet	—
Water Depth, feet	NA / H20
Time	
Date	
Surface Elevation	Datum

Drilling Rate (minutes per foot)	Sampler Type	Blows per 6 inches	Inches Driven	Inches Recovered	Sample Condition	Sample No./Depth	Penetrometer (tsf)	Standard Penetration Blow Count	Depth in Feet	Graphic Log
				→					1	Fill
									2	
									3	
						B9H (4.1)			4	
									5	ML
				Continuous					6	
									7	
									8	
									9	9" silt (ML)
				↓		B9H (10.2)			10	

0-1.7' Fill consisting of silt, sand + broken concrete debris

@ 1.7' Clayey silt + silt (ML) Olive, mottled w Fe oxide staining, sl. moist, v. stiff

@ 4.1' sl. odor

@ 8' gravel content + moisture increasing — olive gravelly silt moist - v. moist, stiff, cut around 9' gravels highly weathered, sl. odor ?

Project Name 2942 San Pablo Project No. _____ Sheet 1 of 2

Field Log of Boring B9H
(continued)

Drilling Rate (minutes per foot)	Sampler Type	Blows per 6 inches	Inches Driven	Inches Recovered	Sample Condition	Sample No./Depth	Penetrometer (tsf)	Standard Penetration Blow Count	Depth in Feet	Graphic Log	
						B9H (10.2)			1	gr silt (ML)	@10' Gravelly silt (ML), asphalt no obvious odor
									2	(ML)	@11' Olive clayey silt (ML) few gravels, v moist, v sft
									3		
									4		@14.2 Grades to Gravelly silt (ML), v moist, gravels highly weathered
									5	gr silt (ML)	@15.5 - Olive clayey silt (ML), saturated sft
									6	(ML)	
						B9H (16.8)			7		@17.3 Gravelly silt (ML), saturated gravels highly weathered
									8	gr silt (ML) sm	@18.1 16-7" of med-coarse gr silty sand (SM), saturated
						B9H (19.3)			9	ML	@18.7' Olive silt (ML), saturated
									20		gravels increasing @ 19.7'
											TD - 20'
											Backfilled w neat cement grout

Groundwater encountered

Project Name 2-947 San Pablo Project No. Sheet 2 of 2

Field Log of Boring B9-I

Location of Boring

See map

Approximate scale: 1" =

Logged by	JG		
Weather	warm, clear		
Conditions			
Drilling Contractor	Vironex		
Drilling Equipment	Geoprobe 6600		
Driller's Name	Mike + Paul		
Drilling Method	Geoprobe		
Sampling Methods	Continuous Core		
Hammer Weight (direct push)		Drop	
Start Time	1:34 PM	Date	7-22-04
Completion Time	9 AM	Date	7-23-04
Time of Backfilling	AM	Date	7-23-04 By VIRO
Boring Depth, feet	53'		
Casing Depth, feet			
Water Depth, feet	35.47'		
Time			
Date	7-22-04		
Surface Elevation	Datum		

Drilling Rate (minutes per foot)	Sampler Type	Blows per 6 inches	Inches Driven	Inches Recovered	Sample Condition	Sample No./Depth	Penetrometer (tsf)	Standard Penetration Blow Count	Depth in Feet	Graphic Log
				Continuous					1	
									2	
									3	
									4	
									5	ML
									6	
									7	
									8	
									9	SW
									10	

0-0.8 topsoil

0.8-4.8' Fill + dist. native soil w/ occ. brick fragments, rock angular to subrounded gravels to 1.5" ø, area of coarse sand. Predominantly lt. brown gravelly silt

@ 4.8' SILT (ML) olive, sl. moist, stiff, mottled w/ oxide staining

@ 7.5'-9.5' zone of lg gravels to 1.5" diameter then silt as above

@ 8.8-10.5' Sandy gravelly silt, locally wet subangular gravels to 1" ø, wet around gravels. Estimated up to 30% gravel

B9 (10-5)

Project Name 2942 St. Pablo

Project No. _____ Sheet 1 of 3

Field Log of Boring B9I
(continued)

Drilling Rate (minutes per foot)	Sampler Type	Blows per 6 inches	Inches Driven	Inches Recovered	Sample Condition	Sample No./Depth	Penetrometer (tsf)	Standard Penetration Blow Count	Depth in Feet	Graphic Log
									1	
									2	
									3	
						B9I (14')			4	X
									5	
									6	
									7	
									8	
						B9I (18')			9	X
									20	
									21	
									22	
									23	
									24	
									25	
									26	
									27	
									28	
									29	
									30	

Can not recover

As above

switched from dual casing to regular Geoprobe Rods due to resistence

12.5-15' Gravelly silt (ML), gravels highly weathered, strong odor of solvents @ 14', gravels to 2½" ϕ, v. moist, stiff

@ 16.7 - becoming fewer gravels @ 17' d. silt (ML) moist, stiff, v. homogeneous, mottled w/ Fe oxide staining.

20-25 olive Gravelly silt (ML) locally, wet around gravels, sub angular gravels generally < ½" ϕ, v. moist, stiff

25-27.3' silt (ML), becoming clayey silt @ 27.3', olive, v. moist to wet above 27.3, stiff.

Project Name 2945 San Pablo

Project No

Sheet 2 of 3

Field Log of Boring 9BI
(continued)

Drilling Rate (minutes per foot)	Sampler Type	Blows per 6 inches	Inches Driven	Inches Recovered	Sample Condition	Sample No./Depth	Penetrometer (tsf)	Standard Penetration Blow Count	Depth in Feet	Graphic Log
				↑ Cave in ↓	water sample	B9I (34.5')			30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50	ML

First water on rods 30-35'
@30-33.5' - Saturated, silt, slightly sandier (sandy silt, ML), sand v. fine grained

@33.5" @ live Silt (mL), much lower permeability. Inserted casing to 35' & collected 3 I was, Ten minutes later water measured at 15.47. Strong odor when inserted casing

small gravels to ¼" ϕ, highly weathered.
· Poor recovery, pushed 45.50 but disposable hp jammed, Recovered 45-47

B9I - hp attempt
- moved over 1.5' & drove hydropunch 45-49
· No water by 7AM 7-23-04. Screen smeared. Reinstalled rods to 53, pulled back to 51, no water. Trammied through rods moved over 1.5', sampled 45-47.
Gravelly silt, mL, moist, hard, no freewater
TD probed - 53' (B91-hp)
sampled - 47' (B91-deep soil)
All 3 holes backfilled 7-23-04

B91 - deep soil

No H2O in B91 hp attempt (separate hole) also no H2O 51-53

B9I (46.5') (3rd hole)

Sheet 3 of 3

Field Log of Boring B9 J

Location of Boring

See map

Approximate scale: 1" =

Logged by	Joel Gregor
Weather	clear + warm
Conditions	
Drilling Contractor	Vironex
Drilling Equipment	Geoprobe 6600
Driller's Name	Mike Martin & Lucas Dear
Drilling Method	Geoprobe
Sampling Methods	Continuous direct push
Hammer Weight	Drop
Start Time 10:15 AM	Date 7-26-04
Completion Time 11 AM	Date 7-26-04
Time of Backfilling 11 AM	Date 7-26-04 By VHG
Boring Depth, feet 17.5	
Casing Depth, feet —	
Water Depth, feet No H2O	
Time	
Date	
Surface Elevation	Datum

Drilling Rate (minutes per foot)	Sampler Type	Blows per 6 inches	Inches Driven	Inches Recovered	Sample Condition	Sample No./Depth	Penetrometer (tsf)	Standard Penetration Blow Count	Depth in Feet	Graphic Log
									1	
									2	ML
									3	
									4	
									5	
									6	
									7	
						B9.5(7.6)			8	
									9	GR SILT (ML)
									10	

0 - 1.8' Fill consisting of Gravelly silt + concrete debris

1.8 Brown silt (ML) becoming olive ~ 2.8', sl. moist, stiff, occ. gravels

@ 8.5' grades to gravelly silt (ML) wet w/ some gravels, gravels highly weathered no obvious odor

Project Name 2942 San Pablo Project No. _____ Sheet 1 of 2

Field Log of Boring B9 J
(continued)

Drilling Rate (minutes per foot)	Sampler Type	Blows per 6 inches	Inches Driven	Inches Recovered	Sample Condition	Sample No./Depth	Penetrometer (tsf)	Standard Penetration Blow Count	Depth in Feet	Graphic Log	
				Continuous		B9 J (15.5)			1	gr ML	Gravelly silt (ML) as above
									12	gr ML w sand	@12-13.3' Gravelly silt ~~Silty gravel~~ w sand (ML) saturated, no appr. odor
									13	SP	@13.3' olive silt & clayey silt (ML), saturated, soft
									14	ML	
									15		
									16	X	
										Silt	@16-16.5' Free water in sandy
									7	ML	gravelly silt (ML) no appr. odor
											@16.5' Olive silt & clayey silt
									8		
									9		TD-17.5
									0		Back filled with neat cement grout
									1		
									2		
									3		
									4		
									5		
									6		
									7		
									8		
									9		
									0		

Project Name 2647 San Pablo

Project No.

Sheet 7 of 7

Field Log of Boring ~~B9~~ A

Location of Boring

See map

Approximate scale: 1" =

Logged by	JG
Weather	clear & warm
Conditions	
Drilling Contractor	Vironex
Drilling Equipment	Geoprobe 6620
Driller's Name	Mike & Paul
Drilling Method	Geoprobe
Sampling Methods	Continuous Core
Hammer Weight	(direct push) — Drop
Start Time	12:45 pm — Date 7-22-04
Completion Time	1 pm — Date 7-22-04
Time of Backfilling	1 pm — Date 7-22-04 — By Vir
Boring Depth, feet	17
Casing Depth, feet	—
Water Depth, feet	~~B9~~ H2O
Time	
Date	
Surface Elevation	Datum

Drilling Rate (minutes per foot)	Sampler Type	Blows per 6 inches	Inches Driven	Inches Recovered	Sample Condition	Sample No./Depth	Penetrometer (tsf)	Standard Penetration Blow Count	Depth in Feet	Graphic Log
									1	
									2	
									3	CL+ML
									4	ML
									5	
									6	
									7	
						B9K (7.8')			8	X
									9	
									10	

0-1.5' base rock / Top soil & soil

1.5-2.2 - old soil? - fill
Gravelly silt, generally brownish grayish black, gravels are angular, highly weathered, soil is dry, stiff

2.2-4' Clay & silty clay (CL+ML)
sl. moist, v. stiff, olive.

4.2' grades to clayey silt (ML)
sl. moist, hard, mottled w/ Fe + Mn O staining, occ. pebbles

7.5 - silt (ML), as above except stiff (softer), moist, occ. rounded gravels + 1" ø

10-15 olive clayey silt (ML), moist, stiff
v. homogeneous, abundant plant remains

Project Name 2942 San Pablo — Project No. _____ — Sheet 1 of 2

Field Log of Boring B9K
(continued)

Drilling Rate (minutes per foot)	Sampler Type	Blows per 6 inches	Inches Driven	Inches Recovered	Sample Condition	Sample No./Depth	Penetrometer (tsf)	Standard Penetration Blow Count	Depth in Feet	Graphic Log	
									1		
									2	ML	
									3		
									4		
						B9K(15.3')			5	ML	15.- gradational change to silt than sandy silt, sand v. fine gr., v. moist to wet
									6		
									7	cl + ml	sandy zone 15.2 - 15.8 then olive clayey silt to silty clay (ML) low permeability, moist, stiff
									8		TD. 17'
									9		No odors or obvious contamination
									20		
									1		
									2		
									3		
									4		
									5		
									6		
									7		
									8		
									9		
									0		

Project Name 2942 San Pablo Project No. _____ Sheet 2 of 2

Field Log of Boring B9L

Logged by	J Gregor
Weather	overcast & mild
Conditions	
Drilling Contractor	Vironex
Drilling Equipment	Geoprobe 6600
Driller's Name	Lucas Dean & Tim
Drilling Method	Geoprobe
Sampling Methods	Continuous Core

Hammer Weight		Drop	
Start Time 7:26 Am		Date 7/27/04	
Completion Time 7:40 Am		Date 7/27/04	
Time of Backfilling 7:45 Am		Date 7/27/04	By VIRO
Boring Depth, feet	11'		
Casing Depth, feet	—		
Water Depth, feet	No H2O		
Time			
Date			
Surface Elevation	Datum		

Location of Boring

See site plan

Approximate scale: 1" =

Drilling Rate (minutes per foot)	Sampler Type	Blows per 6 inches	Inches Driven	Inches Recovered	Sample Condition	Sample No./Depth	Penetrometer (tsf)	Standard Penetration Blow Count	Depth in Feet	Graphic Log	Description
											0-1 not cored
				Continuous Core (arrow 1–10')					1		1-7.4' brown silt (ML) dry, stiff
									2		@1.4' greenish brown silt (ML) mottled w orange + organics, sl. moist, stiff
									3		
						B9L(4')			4	X	sl. odor? @4'
									5		
									6		
									7		
									8		7.8' Gravelly silt (ML) with coarse sand first six inches, greenish brown, moist, stiff, slight odor?
									9		
						B9L(10')			10	X	

TD=11'

Project Name 2942 San Pablo Project No. ______ Sheet 1 of 1

Field Log of Boring B9m

Location of Boring

See map

Approximate scale: 1" =

Logged by	J Gregor
Weather	overcast & mild
Condition	
Drilling Contractor	Vironex
Drilling Equipment	Geoprobe 6600
Driller's Name	Lucas Dean & Tim
Drilling Method	Geoprobe
Sampling Methods	Direct Push
Hammer Weight	Drop
Start Time 8AM	Date 7-27-04
Completion Time 8:10 AM	Date 7-27-04
Time Backfilling 8:15 AM	Date 7-27-04 By Vir
Boring Depth, feet 10'	
Casing Depth, feet —	
Water Depth, feet No H2O	
Time	
Date	
Surface Elevation	Datum

Drilling Rate (minutes per foot)	Sampler Type	Blows per 6 inches	Inches Driven	Inches Recovered	Sample Condition	Sample No./Depth	Penetrometer (tsf)	Standard Penetration (blows/foot)	Depth in Feet	Graphic Log
			1'	Continuous Core		B9m(4')			1	
						B9m(8.5')			4	
									5	ML
									6	
									7	
									8	
									9	
									10	

0-1' Concrete pavement, S+G

1-8' Brown silt (ML), dry

8-8.8' Clayey silt (ML) brown to green changing to olive at 8.3' saturated at 8.8' (perched), strong petroleum odor

8.8-10' orangish brown gravelly (ML) silt, sandy over first 6" inches, moist, slight odor

TD-10'

Project Name 2942 San Pablo Project No. _____ Sheet 1 of 1

Field Log of Boring MW1

Location of Boring

See map

Approximate scale: 1" =

Logged by	J Gregor
Weather	Clear & warm
Conditions	
Drilling Contractor	Vironex
Drilling Equipment	Geoprobe 6600
Driller's Name	Mike Martin + Lucas Dear
Drilling Method	Geoprobe
Sampling Methods	Direct push
Hammer Weight	Drop
Start Time	1230 PM — Date 7-26-04
Completion Time	1:50 PM — Date 7/26/04
Time of Backfilling	built well — Date 7/26 — By Viro
Boring Depth, feet	37
Casing Depth, feet	37
Water Depth, feet	19.1'
Time	1:52 PM
Date	7/26/04
Surface Elevation	Datum

Drilling Rate (minutes per foot)	Sampler Type	Blows per 6 inches	Inches Driven	Inches Recovered	Sample Condition	Sample No./Depth	Penetrometer (tsf)	Standard Penetration Blow Count	Depth in Feet	Graphic Log
				Cobbles					1	
									2	
									3	
									4	
									5	CL / ML sand
									6	
									7	ML
									8	
									9	GW silt ML
									10	

0-5 not cored

5'-5.4" - dk green silty clay (CL), moist, plastic.

5.4"-6" Grayish black silty sand (ML) saturated, no obvious odor *

6-8.8' clayey silt (ML), sl. moist, v. stiff, mottled.

8.8' Grades to gravelly silt (ML) sl. moist, v. stiff, cobbles highly weathered

Project Name 1942 San Pablo Project No. _____ Sheet 1 of 2

* possibly from old sewer utility trench backfill

Field Log of Boring MW1
(continued)

Drilling Rate (minutes per foot)	Sampler Type	Blows per 6 inches	Inches Driven	Inches Recovered	Sample Condition	Sample No./Depth	Penetrometer (tsf)	Standard Penetration Blow Count	Depth in Feet	Graphic Log
				← continuous →		MW1(11-13')			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	ML

slough in core barrel to 11.8'

@ 11.8' Gravelly silt, coarse (ML)

@ 12.7' Olive clayey silt (ML), moist, slight to hard

TD sampler 15'

cored to 37' w 8 1/4" rods
+ built well screened
w 0.010 slot 33-37
(1" casing w prefabricated
sandpack)

(continues to 37') see above

2947 San Pablo

Project No

Sheet 2 of 2

Field Log of Boring MW2/B14

Location of Boring

See map

Approximate scale: 1" =

Logged by	JG
Weather	overcast & mild
Conditions	
Drilling Contractor	Vironex
Drilling Equipment	Geoprobe 6600
Driller's Name	Mike Marth & Lucas Dear
Drilling Method	Geoprobe
Sampling Methods	Continuous to 20'
Hammer Weight	— Drop
Start Time	9Am Date 7-23-04
Completion Time	10 Am Date 7-23-04
Time of Backfilling	(bent well 10 Am) Date 7-23-04 By Viro
Boring Depth, feet	34
Casing Depth, feet	34
Water Depth, feet	21.76 < TOC
Time	1130 Am
Date	7-23-04
Surface Elevation	Datum

Drilling Rate (minutes per foot)	Sampler Type	Blows per 6 inches	Inches Driven	Inches Recovered	Sample Condition	Sample No./Depth	Penetrometer (tsp)	Standard Penetration Blow Count	Depth in Feet	Graphic Log
				Continuous		MW2(7.5)			1 2 3 4 5 6 7 8 9 10	CL ML ML

0-0.8 Asphalt + S+G base

0.8 - Gray silty clay (CL), sl. moist, V. stiff

2.4 Grades to clayey silt (ML), sl. moist, stiff, mottled Fe oxide staining

8.8' - Gravelly silt (ML) v. moist, stiff, gravels predominantly 1/4" ø, highly weathered

Project Name 2942 San Pablo Project No. _____ Sheet 1 of 2

Field Log of Boring MW2/B14
(continued)

Drilling Rate (minutes per foot)	Sampler Type	Blows per 6 inches	Inches Driven	Inches Recovered	Sample Condition	Sample No./Depth	Penetrometer (tsf)	Standard Penetration Blow Count	Depth in Feet	Graphic Log
				Core Recovery		MW2(19.1')			11	ML
									12	
									13	ML
									14	
									15	
									16	
									17	
									18	
									19	
									20	
									21	
									22	
									23	
									24	
									25	
									26	
									27	
									28	
									29	
									30	

Large gravels at 11.5, continued gravelly silt (ML), as above except gravel content higher, gravels to 1.5"ø

wet zone 14'-14.8'

3" dk gray gravel zone then Clayey silt (ML), olive w reddish brown Fe oxide staining, occ. rounded gravels, much lower permeability

T.D. < creek - 20'

No odors or staining

Built well screened 30-34"

After reaming hole with 3 ¼ inch dual casing setup

Bentonite 28-29

Neat cement 0-28'

Field Log of Boring MW3/B15

Location of Boring

See map

Approximate scale: 1" =

Logged by	JG
Weather	overcast & mild
Conditions	+
Drilling Contractor	Vironex
Drilling Equipment	Geoprobe 6600
Driller's Name	Mike Martin & Lucas Dear
Drilling Method	Geoprobe
Sampling Methods	direct push
Hammer Weight	Drop
Start Time	1130 AM Date 7/23/04
Completion Time	1230 PM Date 7/23/04
Time of Backfilling	(built well) Date 7/23/04 By Vir
Boring Depth, feet	36
Casing Depth, feet	36
Water Depth, feet	23.12 ~TOC 7-23-04
Time	1:52
Date	7-23-04
Surface Elevation	Datum

Drilling Rate (minutes per foot)	Sampler Type	Blows per 6 inches	Inches Driven	Inches Recovered	Sample Condition	Sample No./Depth	Penetrometer (tsf)	Standard Penetration Blow Count	Depth in Feet	Graphic Log
				Core Hideous		MW3(9')			1	
									2	CL
									3	
									4	
									5	
									6	ml
									7	
									8	gr silt (ML)
									9	
									10	ML

0-1.5' Base rock + topsoil

@ 1.8' Brown silt (ML) becoming olive brown @ 5', sl. moist, stiff

@ 5' Olive silt (ML), as above, mottled w/ Fe oxide staining

@ 7.9' Δ to gravelly silt (ML), highly weathered gravels to ½" ϕ,

@ 9.0' ± wet zone w/ sand @ olive silt (ML), few gravels

Project Name 2942 San Pablo Project No. _____ Sheet 1 of 3

Field Log of Boring MW3/B15
(continued)

Drilling Rate (minutes per foot)	Sampler Type	Blows per 6 inches	Inches Driven	Inches Recovered	Sample Condition	Sample No./Depth	Penetrometer (tsf)	Standard Penetration Blow Count	Depth in Feet	Graphic Log
				Cuttings		MW3(14.3')			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	ML ML

3-4" gravelly zone, highly weathered gravels to 1.5" ϕ

@12 clayey soft (ML), dive, v. moist, stiff, occ rounded gravels

Withdrew sampling rods & Restarted w 3¼" dual casing setup

Screen 32-36

Project Name 2942 San Pablo Project No. _____ Sheet 2 of 3

Field Log of Boring MW3/B15
(continued)

Drilling Rate (minutes per foot)	Sampler Type	Blows per 6 inches	Inches Driven	Inches Recovered	Sample Condition	Sample No./Depth	Penetrometer (tsf)	Standard Penetration Blow Count	Depth in Feet	Graphic Log	Description
									31		
									32		
									33		Sampled 33.3–36.3 w/in dual casing system
									34		~33.5 Olive silt (ML)
									35		~35 A. to gravelly silt (ML) predominantly ½" Ø or less
							MW3 (36)		36	⊠	
									7		TD sampled 36.3 prepack screened 32-36 Sand 31-36 (w/in ¾ rods) Bent 30-31' Neat Cement 0-30
									8		
									9		
									0		
									1		
									2		
									3		
									4		
									5		
									6		
									7		
									8		
									9		
									0		

Project Name 2942 San Pablo Project No. ______ Sheet 3 of 3

Field Log of Boring B-13 (hp only)

Location of Boring

See map

Approximate scale: 1" =

Logged by	J. Granger
Weather	overcast & mild
Conditions	
Drilling Contractor	Vironex
Drilling Equipment	Geoprobe 6610
Driller's Name	Mike Martin & Lucas Dear
Drilling Method	Geoprobe
Sampling Methods	Hydropunch
Hammer Weight	Drop
Start Time 7:40 AM	Date 7-26-04
Completion Time 8:00 AM	Date 7-26-04
Time of Backfilling 9:00 AM	Date 7-26-04 By Vivo
Boring Depth, feet 37'	
Casing Depth, feet —	
Water Depth, feet 33-37'	
Time 9 AM	
Date 7-26-04	
Surface Elevation	Datum

Drilling Rate (minutes per foot)	Sampler Type	Blows per 6 inches	Inches Driven	Inches Recovered	Sample Condition	Sample No./Depth	Penetrometer (tsf)	Standard Penetration Blow Count	Depth in Feet	Graphic Log
			3 VOAs			HP			5	

Pushed Rods to 37'; Pulled back + exposed disposable PVC screen 33-37'.

No water 8 AM

9 AM - collected 3 VOAs

Backfilled by using rods as tremie (neat cement)

TD-37'

Project Name 2942 San Pablo

Project No. _____ Sheet 1 of 1

Field Log of Boring B-16 (hp only)

Location of Boring

Approximate scale: 1" =

Logged by	Joel Greger
Weather	clear & warm
Conditions	
Drilling Contractor	Vironex
Drilling Equipment	Geoprobe 6600
Driller's Name	Mike Martin & Lucas Dear
Drilling Method	Geoprobe
Sampling Methods	hydropunch
Hammer Weight	Drop
Start Time 2:00 PM	Date 7-23-04
Completion Time 2:45	Date 7-23-04
Time of Backfilling 7:10 AM	Date 7-23-04 By VIRO
Boring Depth, feet 37	
Casing Depth, feet	
Water Depth, feet 15.2	7-26-04 7:00 AM
Time	
Date	
Surface Elevation	Datum

Drilling Rate (minutes per foot)	Sampler Type	Blows per 6 inches	Inches Driven	Inches Recovered	Sample Condition	Sample No./Depth	Penetrometer (tsf)	Standard Penetration Blow Count	Depth in Feet	Graphic Log
									1	
									2	
									3	
						↑			4	
			3 voas			hp			5	
			7-26-04						6	
						↓			37	
									8	
									9	
									10	

Pushed rods to 37' + retracted screen 33-37' (disposable PVC screen). No H2O 2:30 PM 7-23-04, Returned 7-26-04, measured H2O @ ≈ 15.2 below grade & collected 3 VOAs. Backfilled by using rods as tremmie pipe.

TD-37

Field Log of Boring B-17 (hp only)

Location of Boring

See map

Approximate scale: 1" =

Logged by	JG
Weather	overcast & mild
Conditions	
Drilling Contractor	Vironex
Drilling Equipment	Geoprobe 6600
Driller's Name	Lucas Deer & Tim
Drilling Method	Geoprobe
Sampling Methods	hydropunch
Hammer Weight	Drop
Start Time	7AM Date 7-27-04
Completion Time	10:40 AM Date 7-27-04
Time of Backfilling	10:40 AM Date 7-27-04 By Viro
Boring Depth, feet	52'
Casing Depth, feet	—
Water Depth, feet	34-38'
Time	930 Am
Date	7-27-04
Surface Elevation	Datum

Drilling Rate (minutes per foot)	Sampler Type	Blows per 6 inches	Inches Driven	Inches Recovered	Sample Condition	Sample No./Depth	Penetrometer (tsf)	Standard Penetration Blow Count	Depth in Feet	Graphic Log
						No H2O			1	
									2	
									3	
									4	
									5	
			3 voas immediately						6	
									7	
									8	
									9	
									10	

Pushed rods to 34' + retracted 4' casing 4' hydropunch screen (30-34). No H2O in quantity allowing sampling by 9:15 AM. Pulled rods + cleaned screen. Pushed rods to 38 + exposed screen 34-38'. Collected 3 voas @ 9:30 AM Pulled rods

+D-38'

Field Log of Boring B-17 (hp only)
(continued)

Drilling Rate (minutes per foot)	Sampler Type	Blows per 6 inches	Inches Driven	Inches Recovered	Sample Condition	Sample No./Depth	Penetrometer (tsf)	Standard Penetration Blow Count	Depth in Feet	Graphic Log
									41	
									42	
									43	
									44	
									45	
									46	
									47	
									48	
									49	
						hp			50	
									51	
									52	
									53	
									54	
									55	
									56	
									57	
									58	

Pushed rods to 52' + pulled back 4' exposing 48-52'. Could not get water to enter tubing due to sediment. Upon removal of small diameter tubing there appeared to be water (slurry) from 42' on. As this did not appear to be a separate water zone, the disposable PVC screen was left in place + the hole was backfilled with neat cement by using the rods as a tremie pipe

TD-52'

APPENDIX D
SURVEY DATA

DATE: 7/30/04
JOB# A04621

TABLE OF ELEVATIONS
ON MONITORING WELLS

PIERS ENVIRONMENTAL SERVICES, INIC.
2942 SAN PABLO, OAKLAND

WELL ID #	NORTHING (FT.) / LATITUDE (D.M.S.)	EASTING (FT.) / LONGITUDE (D.M.S.)	ELEVATION (FT.)	DESCRIPTION
MW-1	N/A	N/A	26.32	1" PVC, N. SIDE
			26.60	LID
MW-2	N/A	N/A	24.60	1" PVC, N. SIDE
			24.88	LID
MW-3	N/A	N/A	25.69	1" PVC, N. SIDE
			26.03	LID

BENCH MARK : # 18WE19 (CITY OF OAKLAND)

MONUMENT IS 35 FEET SOUTHERLY OF NORTHERLY PROPERTY LINE ON 30TH STREET AND 13 FEET WESTERLY OF C/L OF SAN PABLO. MONUMENT IS 14 FEET NORTH OF MONUMENT AT SAN PABLO AND MARKET ON MONUMENT LINE.

ELEVATION= 23.869 FEET
(NAVD 1929)

Kier & Wright Engineers Surveyors, Inc.
1233 Quarry Lane, Suite 145, Pleasanton, CA 94566
Phone (925) 249-6555,
Fax (925) 249-6563

8/3/2004
8:40 AM

APPENDIX E
MIP DATA

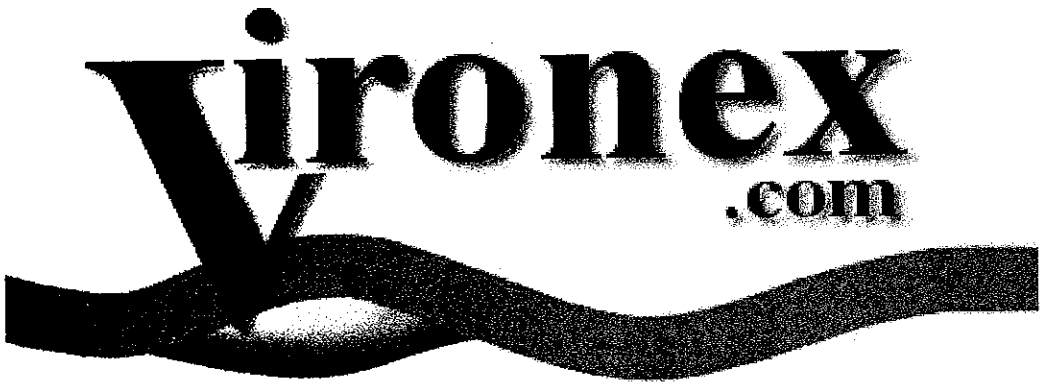

Vironex
.com

TABLE OF CONTENTS

Client: Piers Environmental Services
Joel Gerger

Start Date: 7/20/2004
Completed Date: 7/22/2004

Site Address: 2942 San Pablo, Oakland, CA

Project Scope: Collected Membrane Interface Probe logs from 14 boring locations to approximately 40-60 feet to find contaminant mass.

Project Information:

Date	Boring	Notes
7/20/2004	B-14	Stringpot Broke and replaced
7/21/2004	B-9-H	Thermocouple Problem
7/22/2004	B-9-I	Conductivity Spikes
7/22/2004	B-9-J	Replaced Membrane

MIP Boring and Confirmation Sampling Summary

Date Sampled	Boring Name	TD of boring	Confirmation Samples Soil	Confirmation Samples Groundwater
7/20/2004	B-9-B	59	NA	NA
7/20/2004	B-14	43	NA	NA
7/20/2004	B-9-C	19	NA	NA
7/20/2004	B-9-D	20	NA	NA
7/20/2004	B-9-E	3	NA	NA
7/20/2004	B-9-F	3	NA	NA
7/21/2004	B-15	50	NA	NA
7/21/2004	B-13	52	NA	NA
7/21/2004	B-16	52	NA	NA
7/21/2004	B-9-G	39	NA	NA
7/22/2004	B-9-H	27	NA	NA
7/22/2004	B-9-I	48	NA	NA
7/22/2004	B-9-J	24	NA	NA
7/22/2004	B-9-K	23	NA	NA

Calibration: Vironex utalizes a standard test* prior to each MIP boring. A mixture of 100 mL of water and 500 mL of Trichloroethene are mixed and transferred into a galvanized test pipe. The MIP is then lowered into the test pipe for 30 seconds and then extracted. The trip time* is then noted and is entered in the SC 4000 Computer.

**Standard Test - A test that ensures that the MIP system is working correctly, and is performed before each boring.*
**Trip Time - Time it takes for the standard to enter the MIP probe, at the probe membrane, till the time a significant response is noticed on the SC 4000 Computer*

MIP Components Used:
- Geoprobe 6600
- SC 4000 MIP Computer
- Flow Control Box
- HP Gas Chromatograph
- ECD (Electron Capture Detector)
- PID (Photo Ionization Detector)
- 200' Trunk Line
- 1.5" MIP Probe
- 1.5" Drive Rods

Lithology: The conductivity of soils is different for each type of media. Finer grained sediments, such as silts or clays, will have a higher EC signal. While coarser grained sediments, sands and gravel, will have a lower EC signal. Lithology should be correlated wi

Jeff Baker
Northern CA Sales Manager

John McAssey
Regional Manager

Client: Piers Environmental Services
Joel Greger

Start Date: 7/20/2004
Completed Date: 7/22/2004

Site Address: 2942 San Pablo, Oakland, CA

MIP Boring Calibration

Date Sampled	Boring Name	Standard ug/L	Standard	Time Response
7/20/2004	**STD	1mg/L	*TCE	110
7/20/2004	B-9-B	NA		110
7/20/2004	B-9-B part 2	NA		110
7/20/2004	**STD	1mg/L	*TCE	110
7/20/2004	B-14	NA		110
7/20/2004	**STD	5mg/L	*TCE	110
7/20/2004	B-9-C	NA		110
7/20/2004	**STD	5mg/L	*TCE	100
7/20/2004	B-9-D	NA		100
7/20/2004	**STD	5mg/L	*TCE	100
7/20/2004	B-9-E	NA		100
7/20/2004	B-9-F	NA		100
7/21/2004	**STD	0.5 mg/L	*TCE	110
7/21/2004	B-15	NA		110
7/21/2004	**STD	0.5 mg/L	*TCE	105
7/21/2004	B-14	NA		105
7/21/2004	**STD	0.5 mg/L	*TCE	105
7/21/2004	B-16	NA		105
7/21/2004	**STD	0.5 mg/L	*TCE	105
7/21/2004	B-9-G	NA		105
7/21/2004	B-9-H	NA		105
7/22/2004	**STD	4mg/L	*TCE	120
7/22/2004	B-9-H	NA		120
7/22/2004	B-9-I	NA		120
7/22/2004	B-9-J	NA		110
7/22/2004	B-9-K	NA		120

*Trichloroethylene
**Standard Test

PRELIMINARY DATA - Pending QA/QC Review

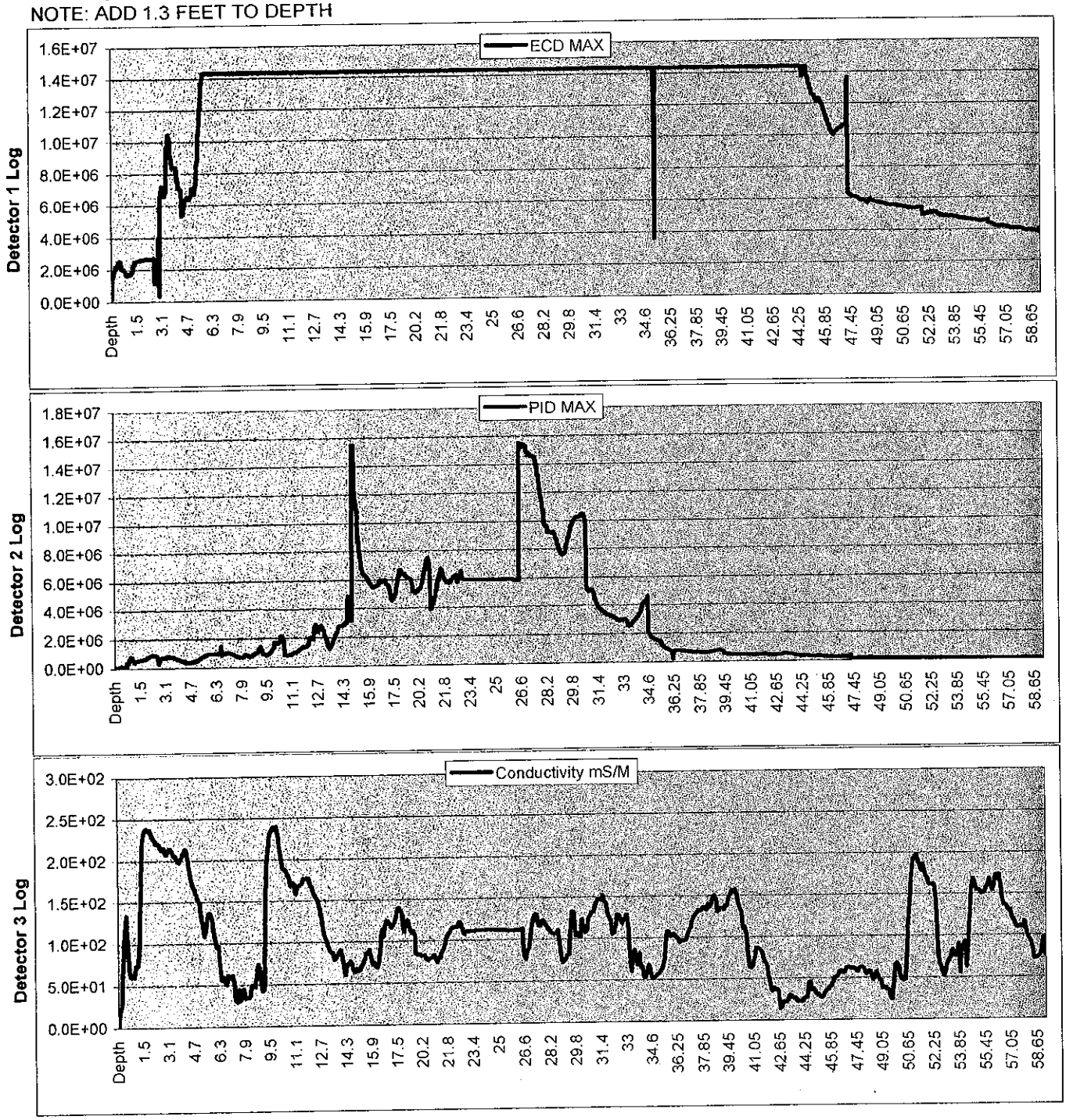
MIP Log Results by Boring - Detector Reading vs. Depth

Client: Piers Environmental Services I
Project: 2942 San Pablo
Boring I.D B-9-B

Job No.: M1-570
Log Date: 07/20/04
Analyst: SMC

Detector 1 : Electron Capture (ECD)
Detector 2 : Photo Ionization (PID)
Detector 3 : Electrical Conductance (EC)

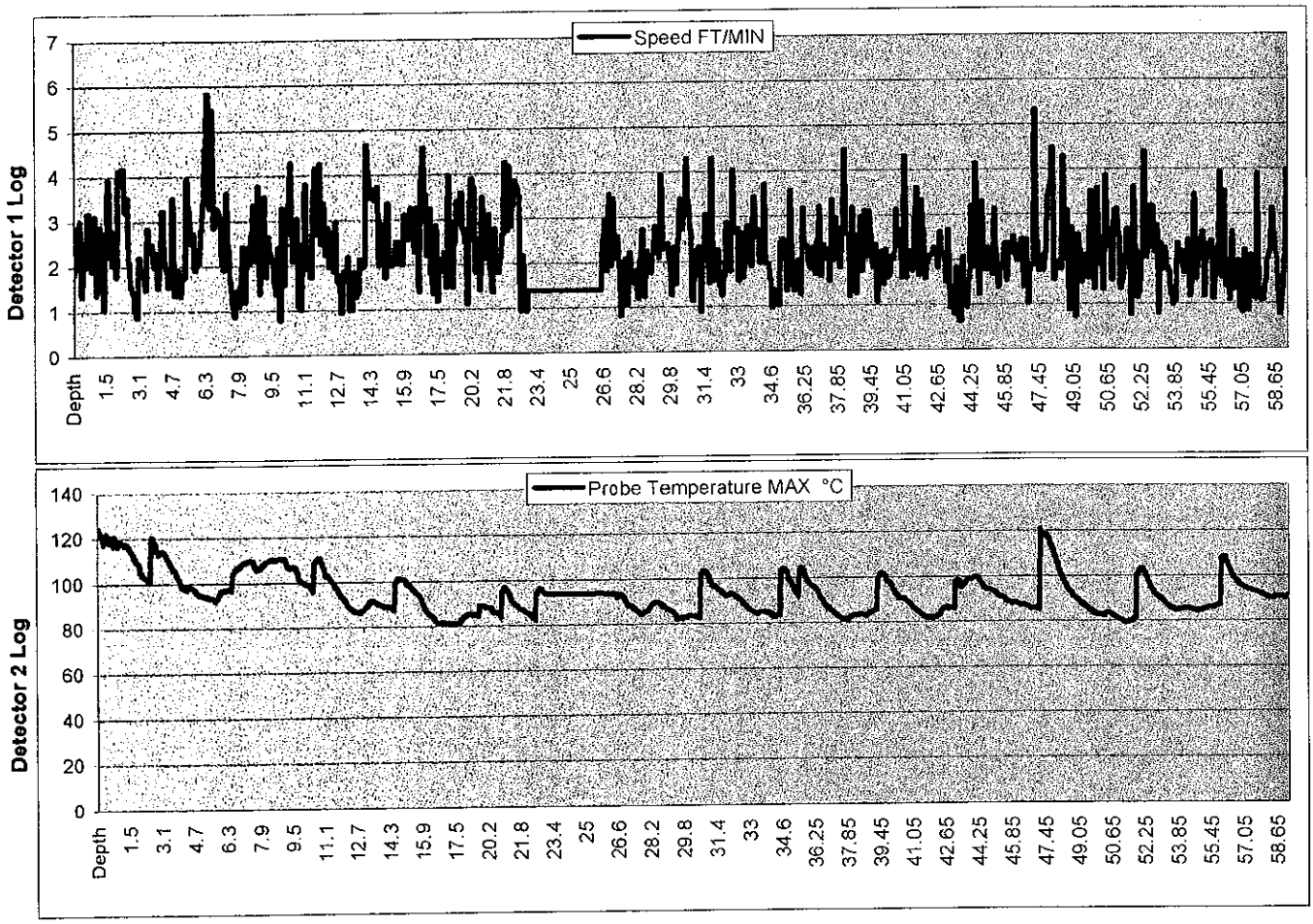
NOTE: ADD 1.3 FEET TO DEPTH



MIP Log Results by Boring - Detector Reading vs. Depth

Client: Piers Environmental Services | Job No.: M1-570
Project: 2942 San Pablo | Log Date: 07/20/04
Boring I.D B-9-B | Analyst: SMC

Detector 1 : Probe Speed
Detector 2 : Probe Temperature

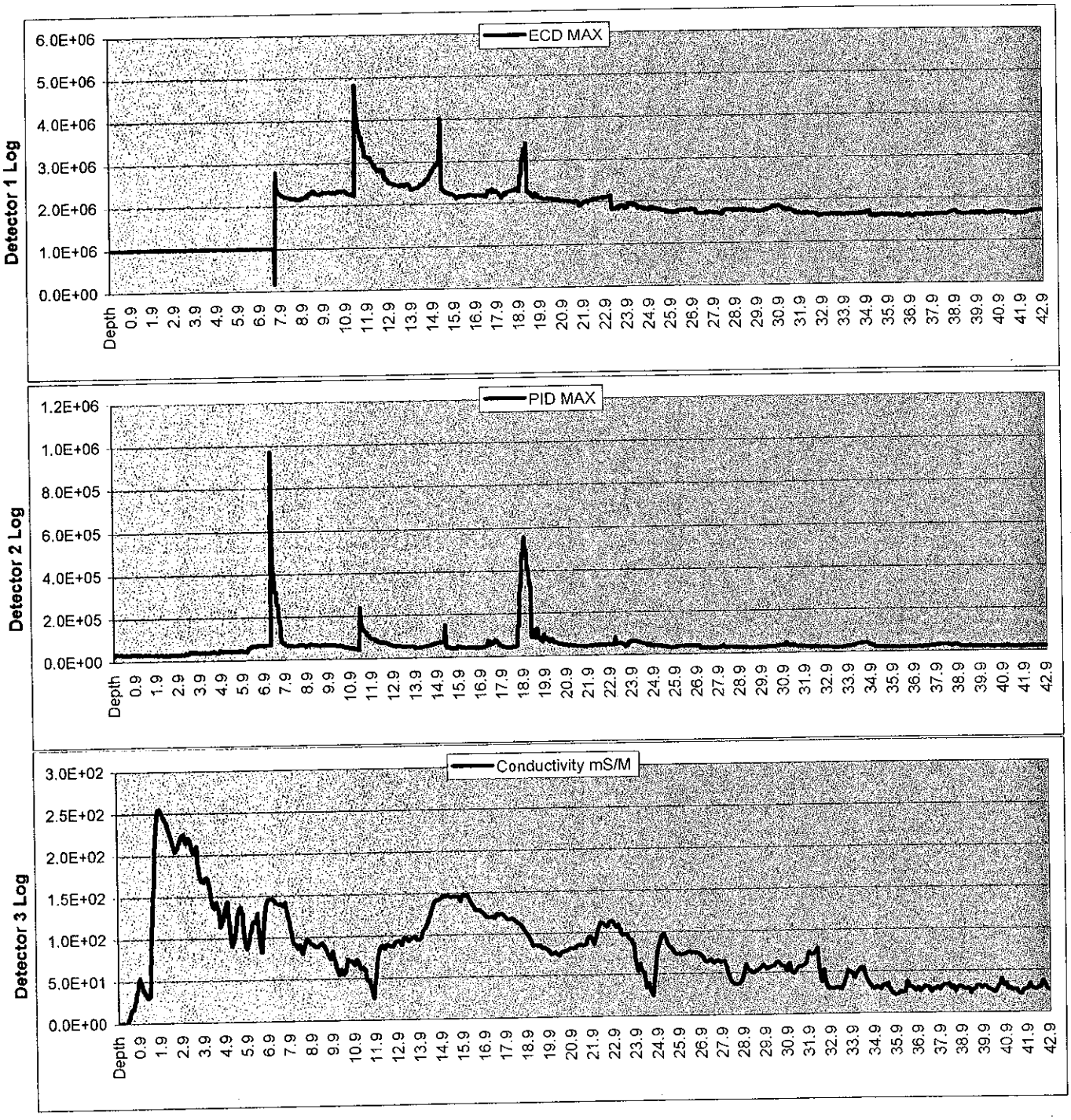


PRELIMINARY DATA - Pending QA/QC Review

MIP Log Results by Boring - Detector Reading vs. Depth

Client: Piers Environmental Services I Job No.: M1-570
Project: 2942 San Pablo Log Date: 07/20/04
Boring I.D B-14 Analyst: SMC

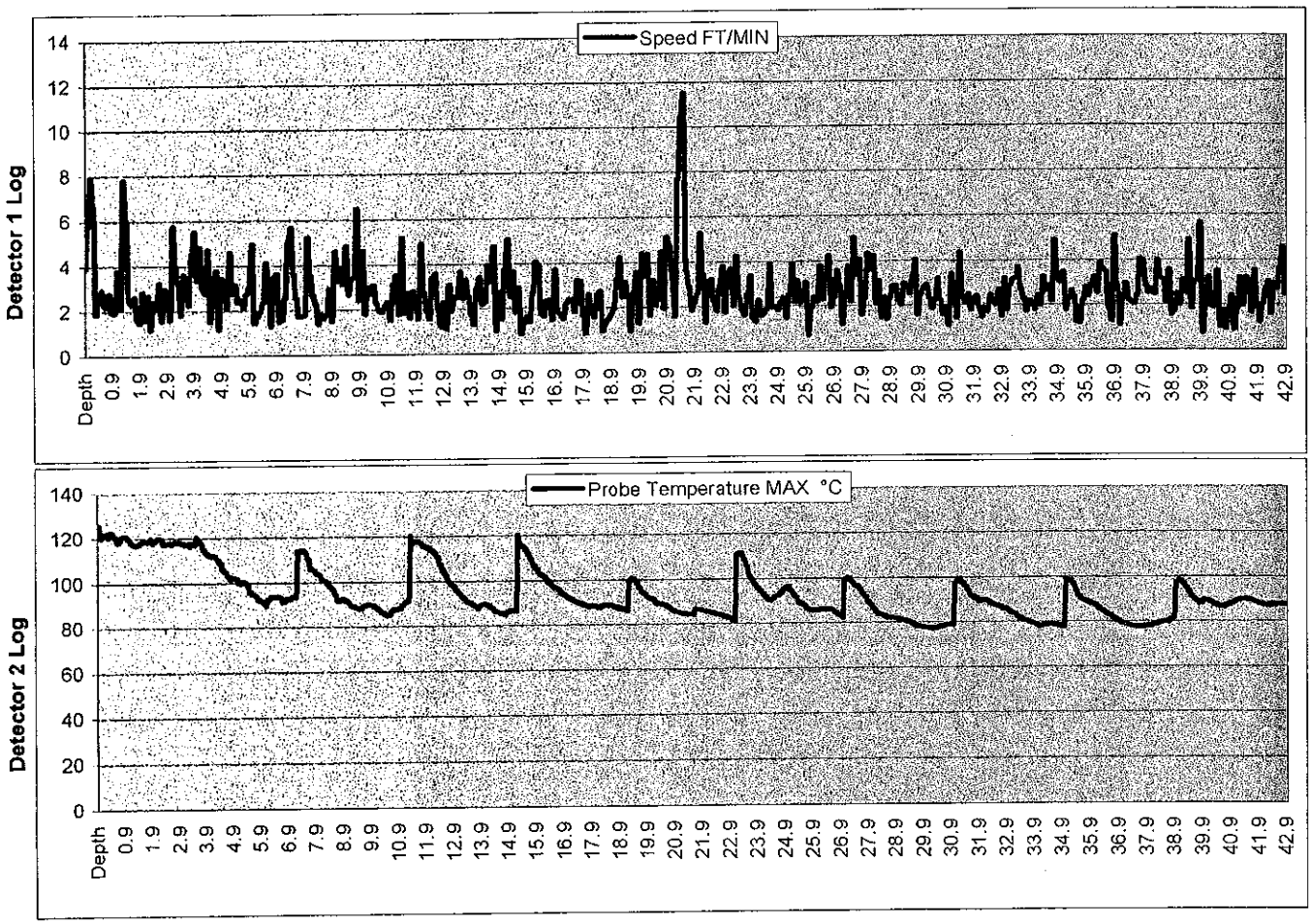
Detector 1 : Electron Capture (ECD)
Detector 2 : Photo Ionization (PID)
Detector 3 : Electrical Conductance (EC)



MIP Log Results by Boring - Detector Reading vs. Depth

Client: Piers Environmental Services I Job No.: M1-570
Project: 2942 San Pablo Log Date: 07/20/04
Boring I.D B-14 Analyst: SMC

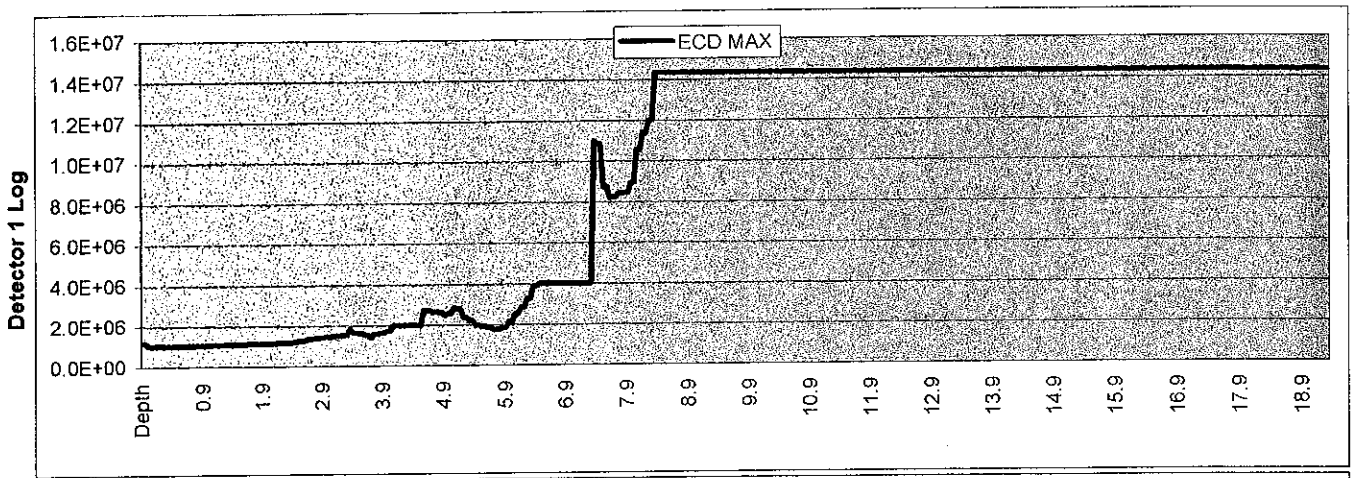
Detector 1 : Probe Speed
Detector 2 : Probe Temperature

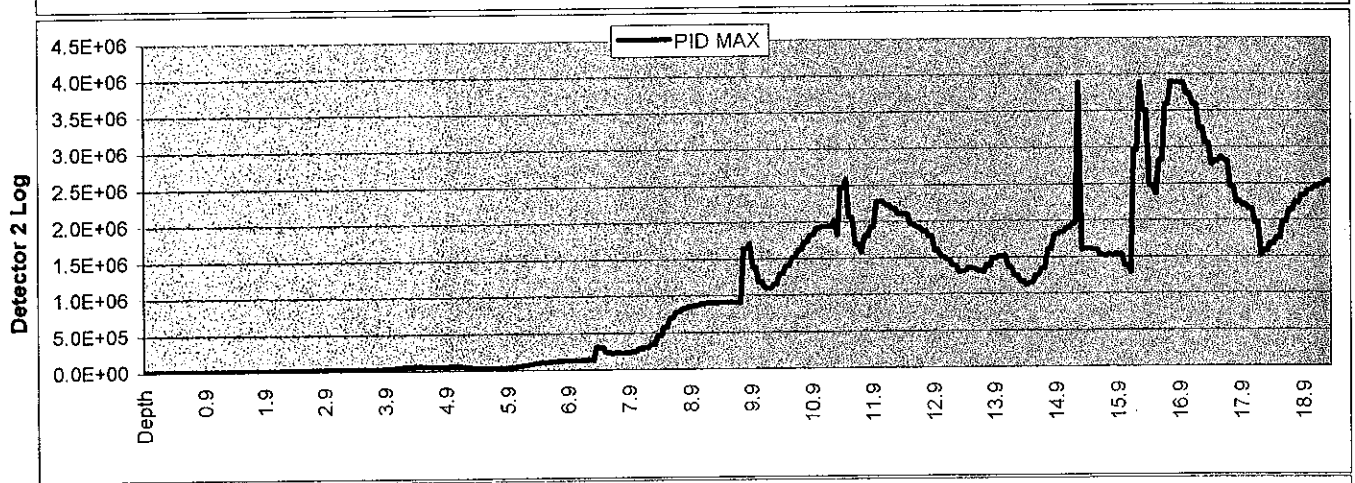


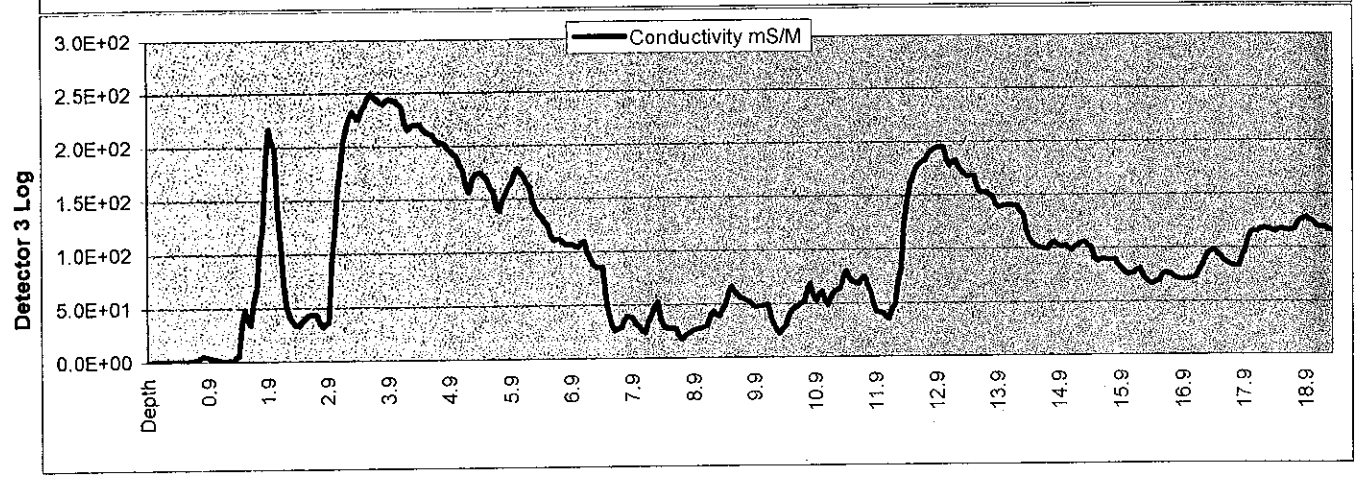
PRELIMINARY DATA - Pending QA/QC Review

MIP Log Results by Boring - Detector Reading vs. Depth

Client:	Piers Environmental Services I	Job No.:	M1-570	Detector 1 :	Electron Capture (ECD)
Project:	2942 San Pablo	Log Date:	07/20/04	Detector 2 :	Photo Ionization (PID)
Boring I.D	B-9-C	Analyst:	SMC	Detector 3 :	Electrical Conductance (EC)



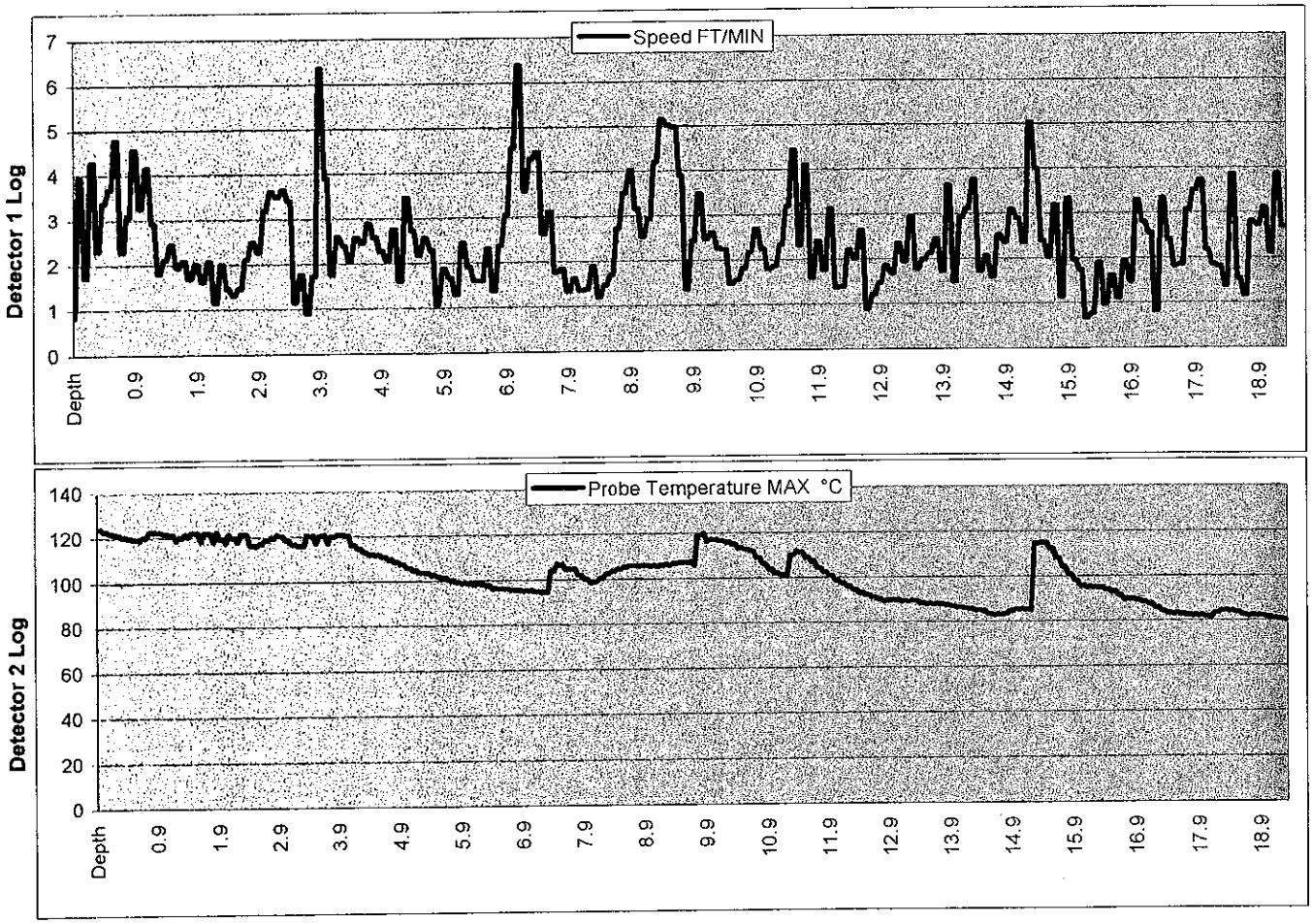




MIP Log Results by Boring - Detector Reading vs. Depth

Client: Piers Environmental Services I Job No.: M1-570
Project: 2942 San Pablo Log Date: 07/20/04
Boring I.D B-9-C Analyst: SMC

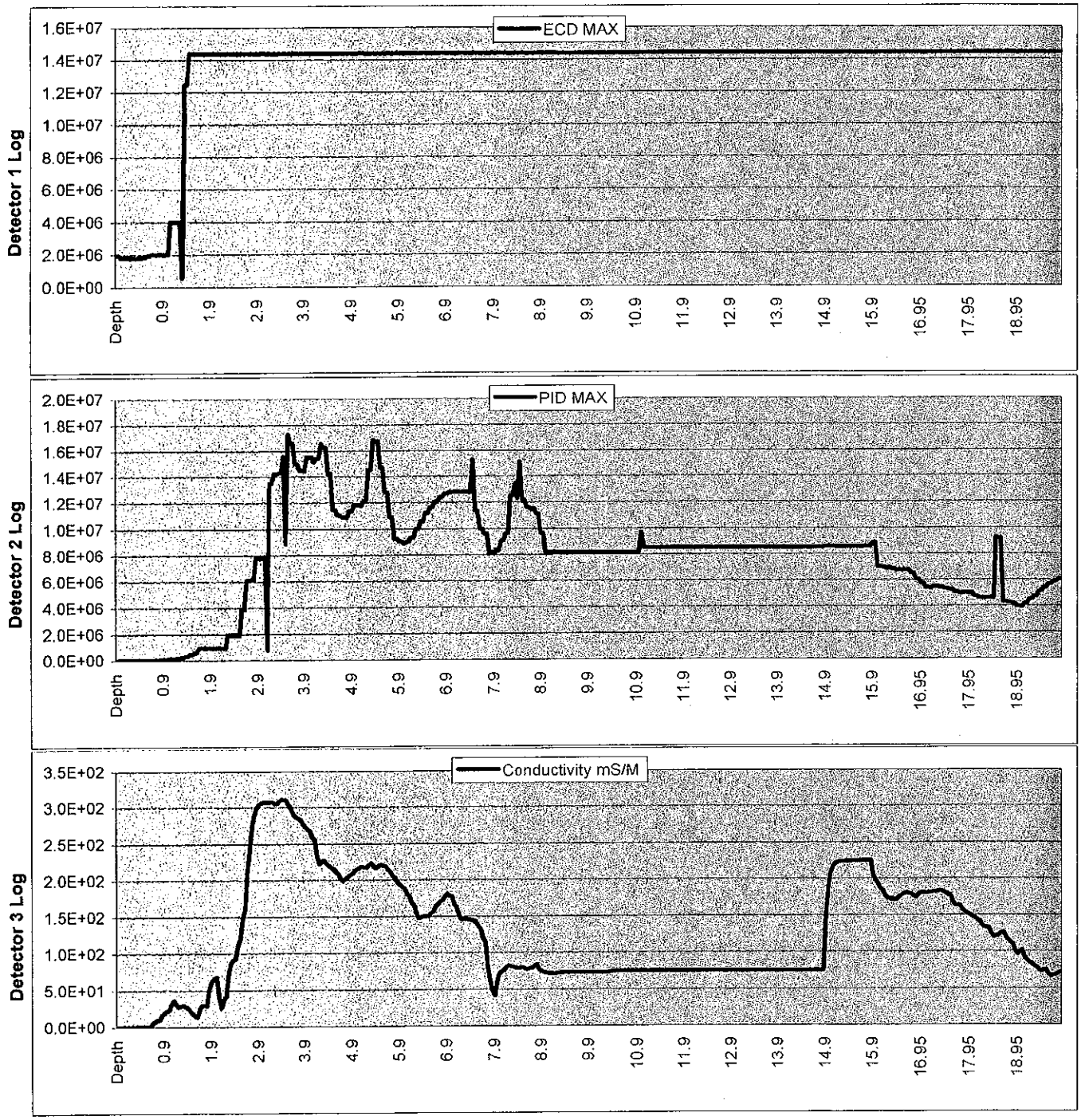
Detector 1 : Probe Speed
Detector 2 : Probe Temperature



PRELIMINARY DATA - Pending QA/QC Review

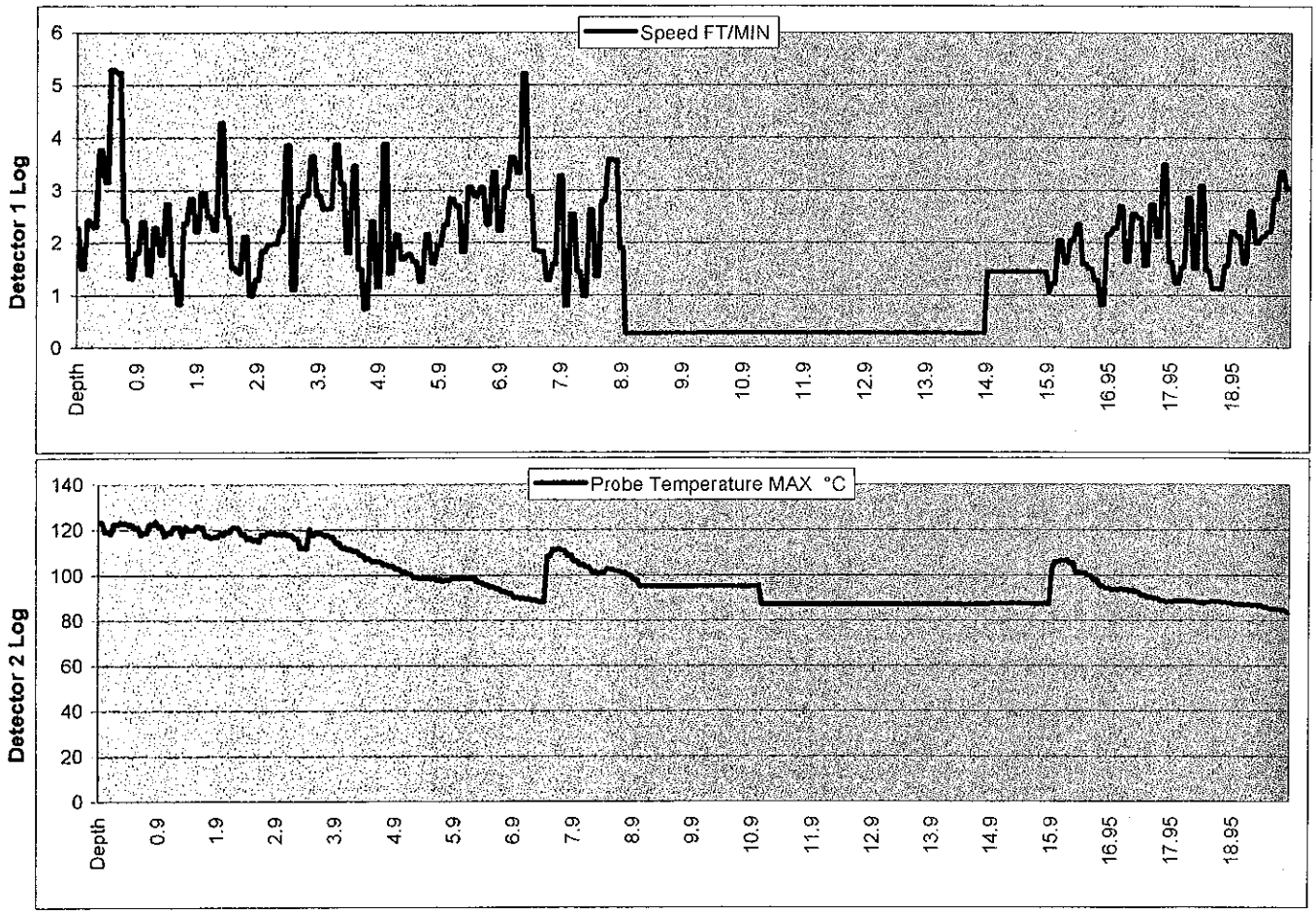
MIP Log Results by Boring - Detector Reading vs. Depth

Client:	Piers Environmental Services I	Job No.:	M1-570	Detector 1 :	Electron Capture (ECD)
Project:	2942 San Pablo	Log Date:	07/20/04	Detector 2 :	Photo Ionization (PID)
Boring I.D	B-9-D	Analyst:	SMC	Detector 3 :	Electrical Conductance (EC)



MIP Log Results by Boring - Detector Reading vs. Depth

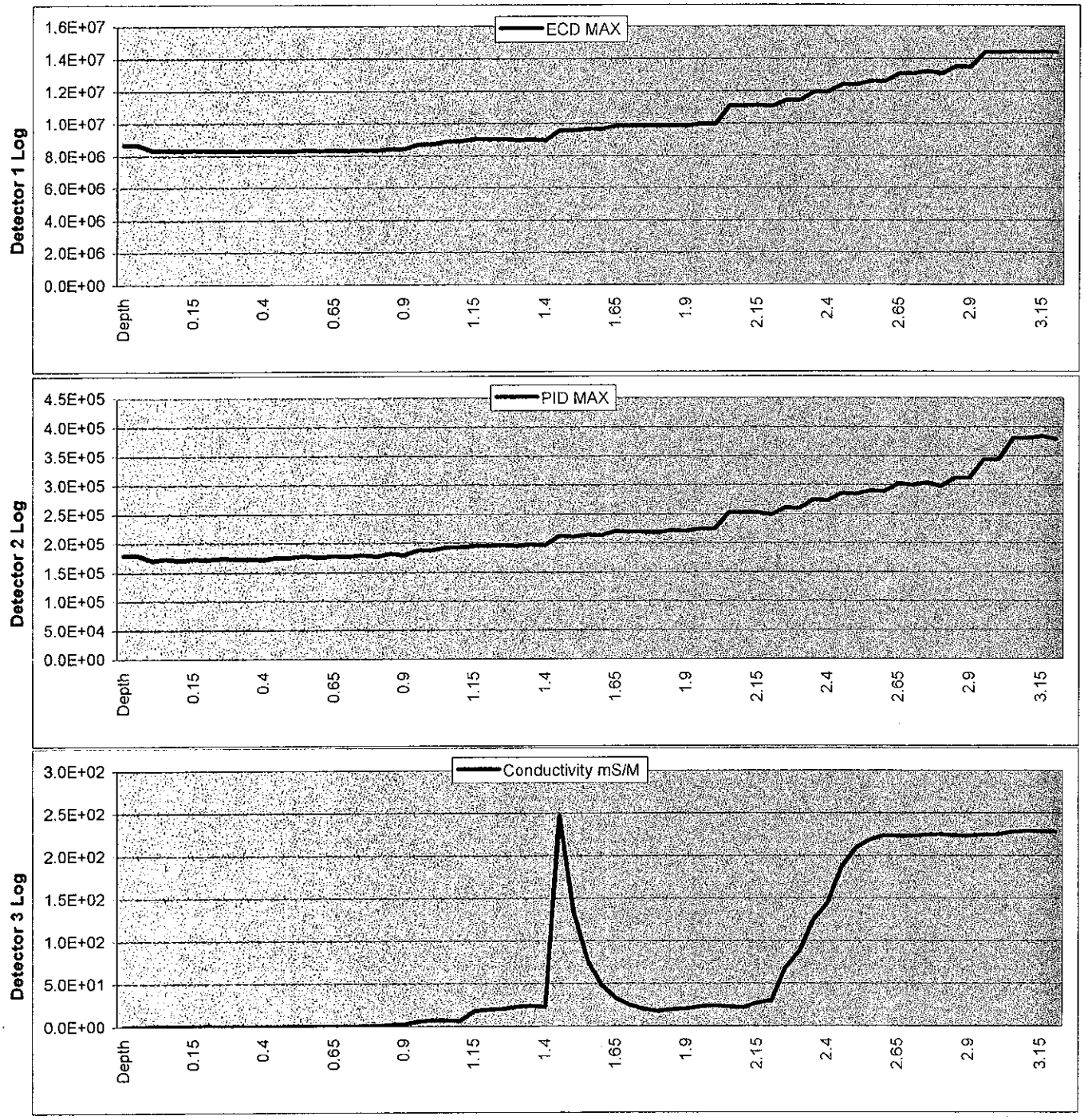
Client:	Piers Environmental Services I	Job No.:	M1-570	Detector 1 :	Probe Speed
Project:	2942 San Pablo	Log Date:	07/20/04	Detector 2 :	Probe Temperature
Boring I.D	B-9-D	Analyst:	SMC		



PRELIMINARY DATA - Pending QA/QC Review

MIP Log Results by Boring - Detector Reading vs. Depth

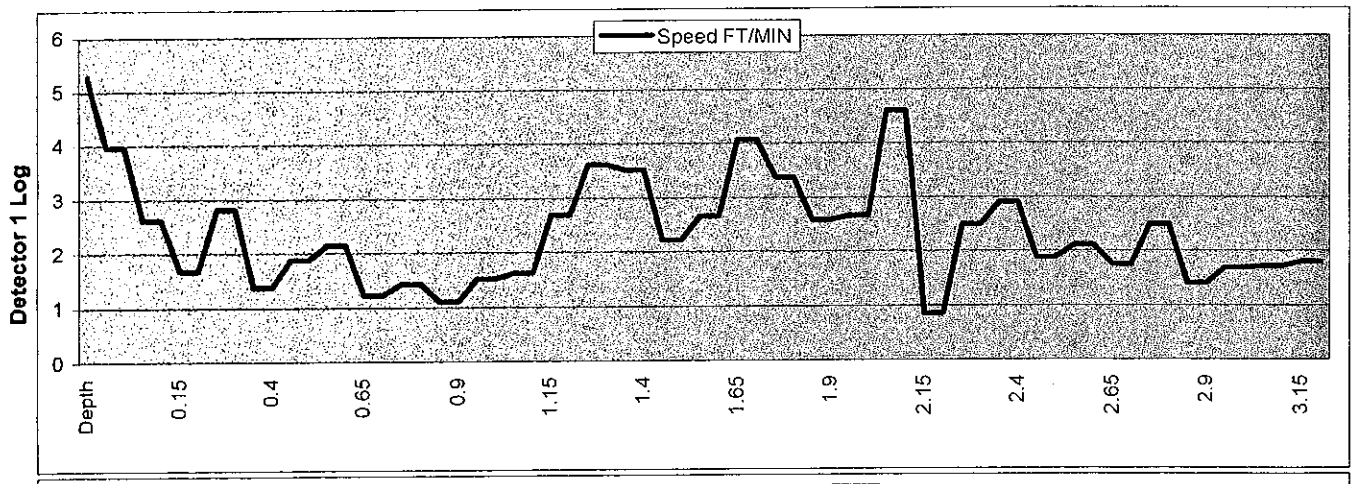
Client:	Piers Environmental Services I	Job No.:	M1-570	Detector 1 :	Electron Capture (ECD)
Project:	2942 San Pablo	Log Date:	07/20/04	Detector 2 :	Photo Ionization (PID)
Boring I.D	B-9-E	Analyst:	SMC	Detector 3 :	Electrical Conductance (EC)

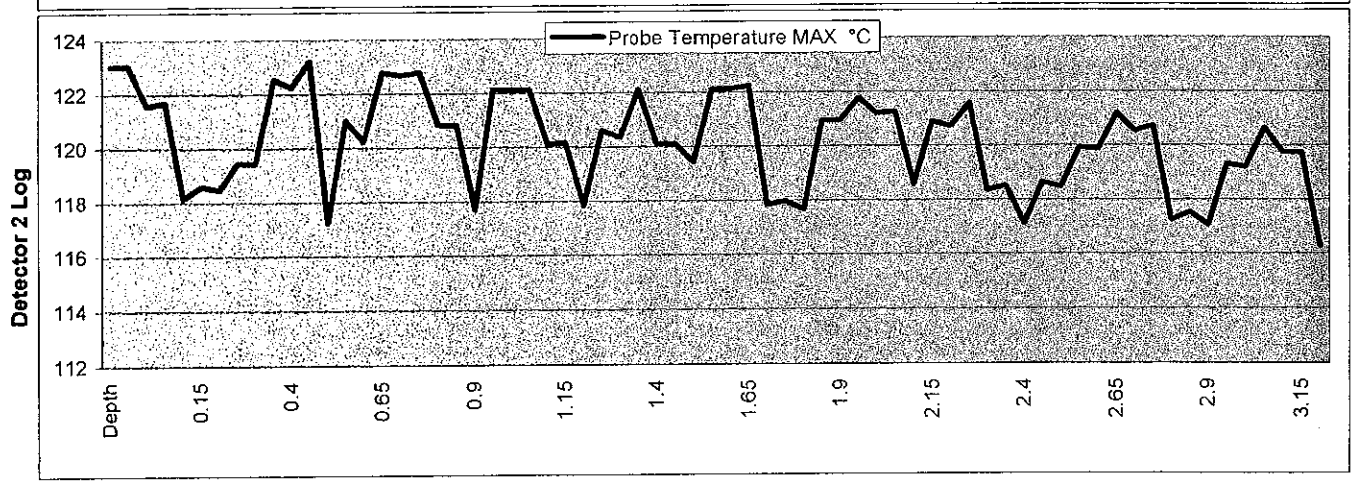


MIP Log Results by Boring - Detector Reading vs. Depth

Client: Piers Environmental Services I Job No.: M1-570
Project: 2942 San Pablo Log Date: 07/20/04
Boring I.D B-9-E Analyst: SMC

Detector 1 : Probe Speed
Detector 2 : Probe Temperature

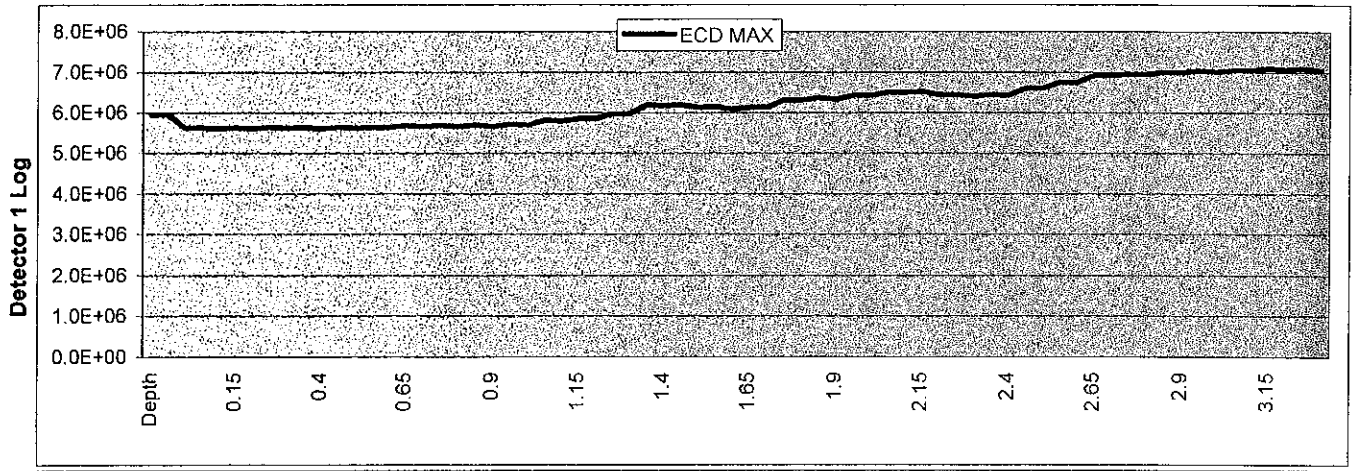


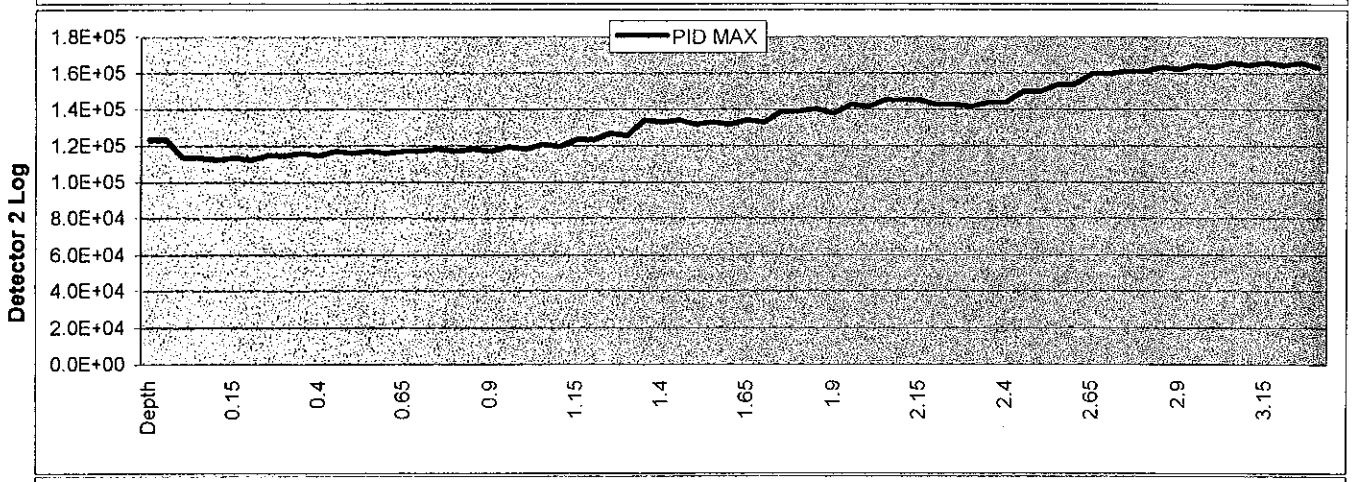


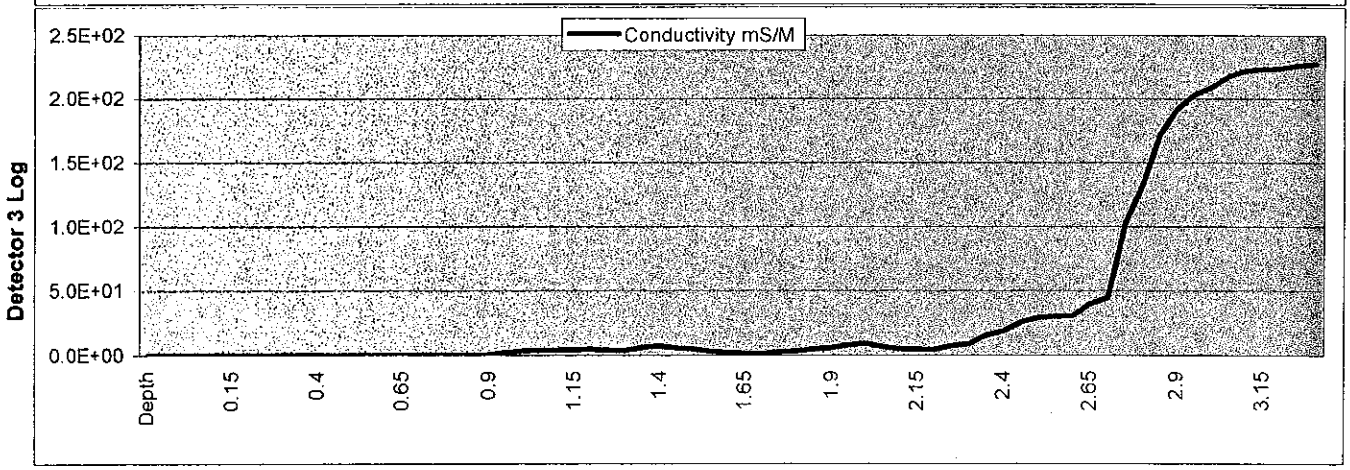
PRELIMINARY DATA - Pending QA/QC Review

MIP Log Results by Boring - Detector Reading vs. Depth

Client:	Piers Environmental Services I	Job No.:	M1-570	Detector 1 :	Electron Capture (ECD)
Project:	2942 San Pablo	Log Date:	07/20/04	Detector 2 :	Photo Ionization (PID)
Boring I.D	B-9-F	Analyst:	SMC	Detector 3 :	Electrical Conductance (EC)

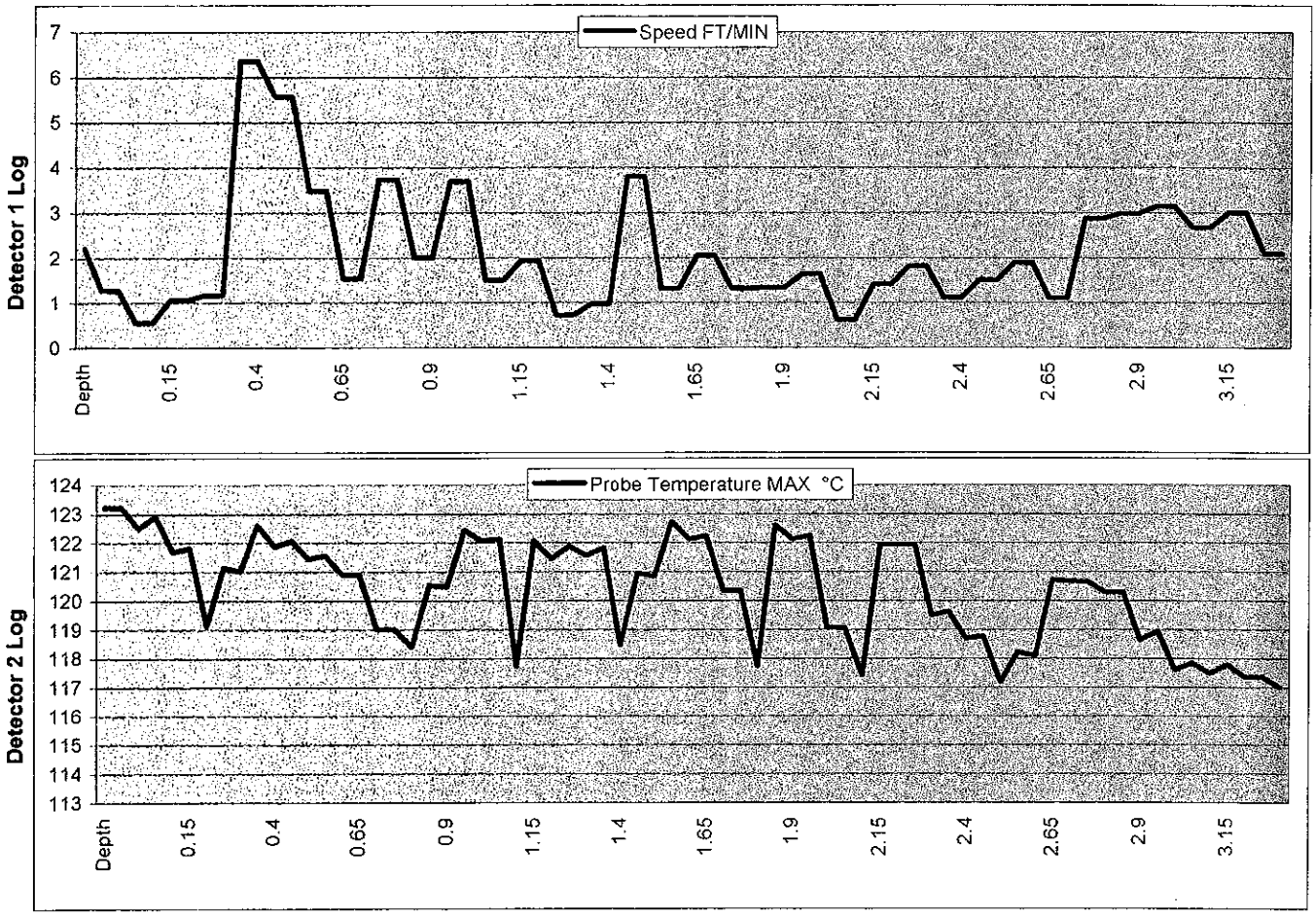






MIP Log Results by Boring - Detector Reading vs. Depth

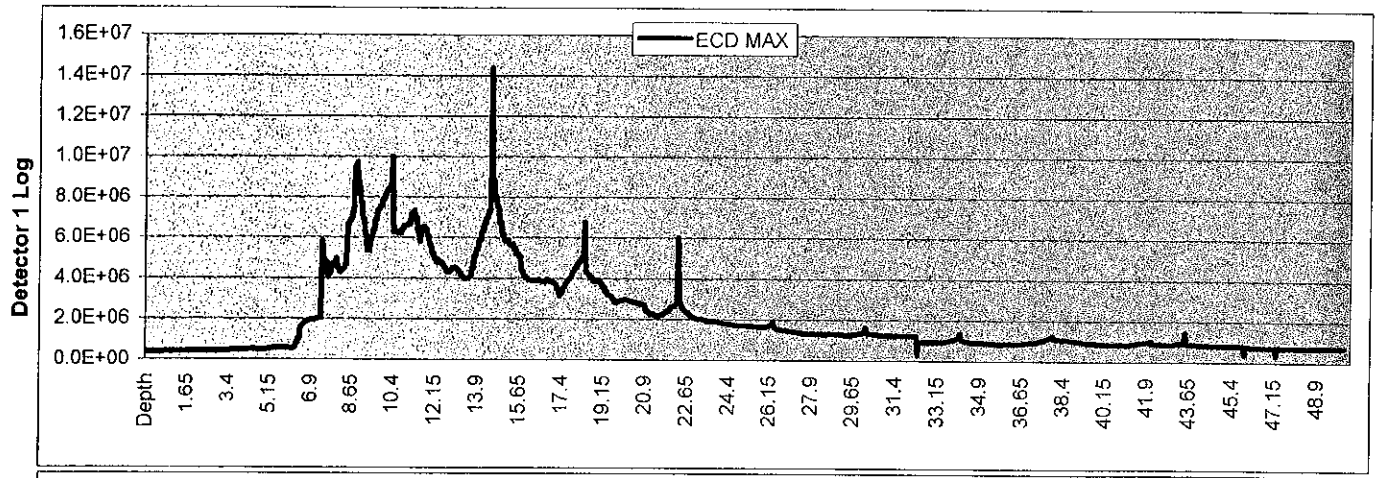
Client:	Piers Environmental Services I	Job No.:	M1-570	Detector 1 :	Probe Speed
Project:	2942 San Pablo	Log Date:	07/20/04	Detector 2 :	Probe Temperature
Boring I.D	B-9-F	Analyst:	SMC		

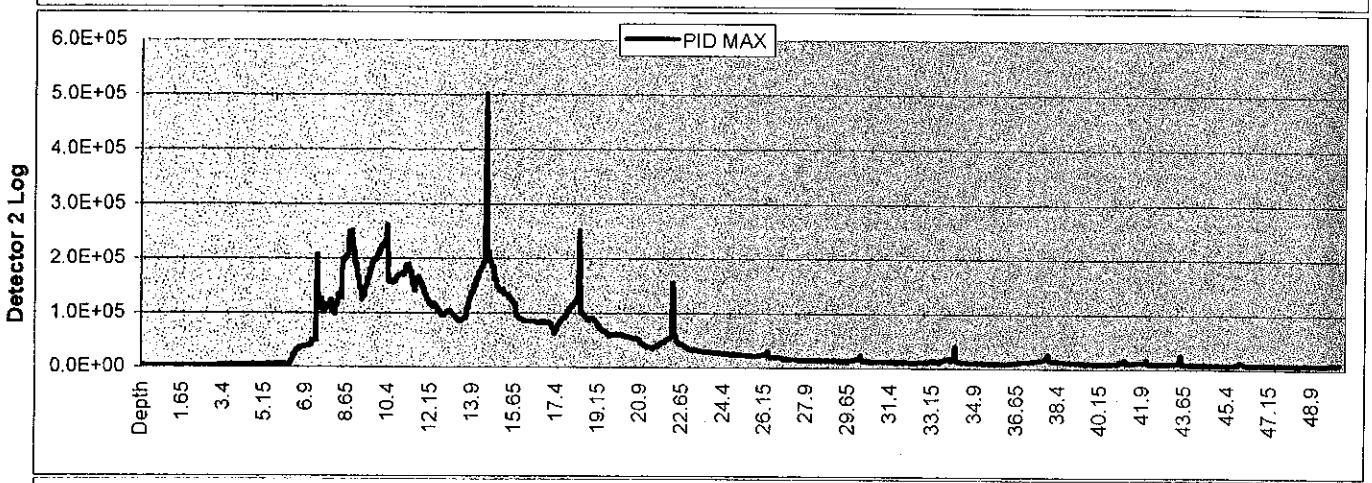


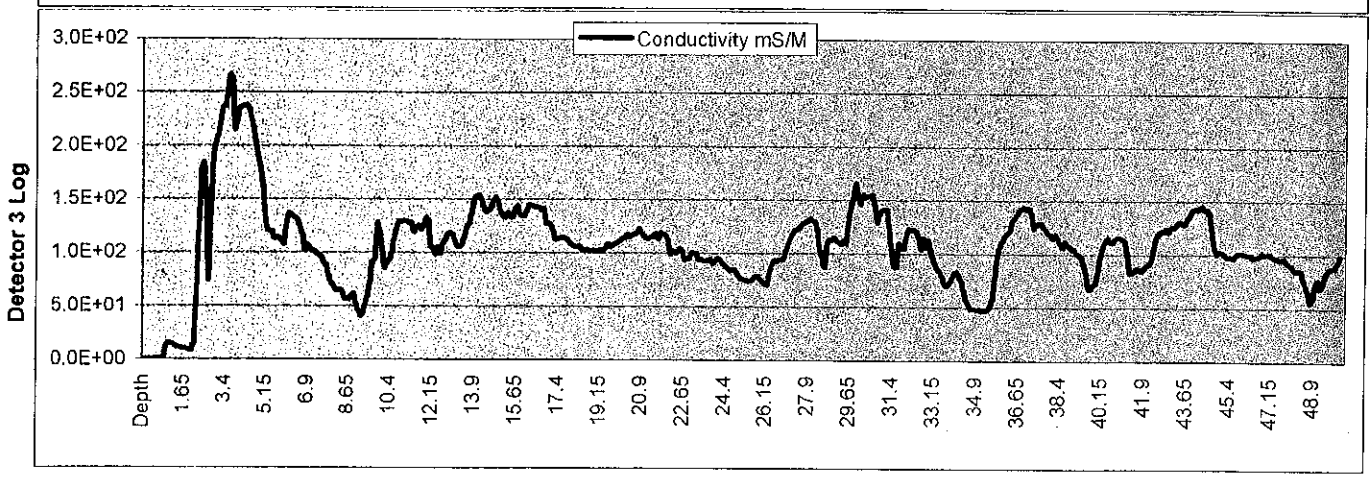
PRELIMINARY DATA - Pending QA/QC Review

MIP Log Results by Boring - Detector Reading vs. Depth

Client:	Piers Environmental Services I	Job No.:	M1-721	Detector 1 :	Electron Capture (ECD)
Project:	2942 San Pablo, Oakland	Log Date:	07/21/04	Detector 2 :	Photo Ionization (PID)
Boring I.D.:	B-15	Analyst:	SMC	Detector 3 :	Electrical Conductance (EC)

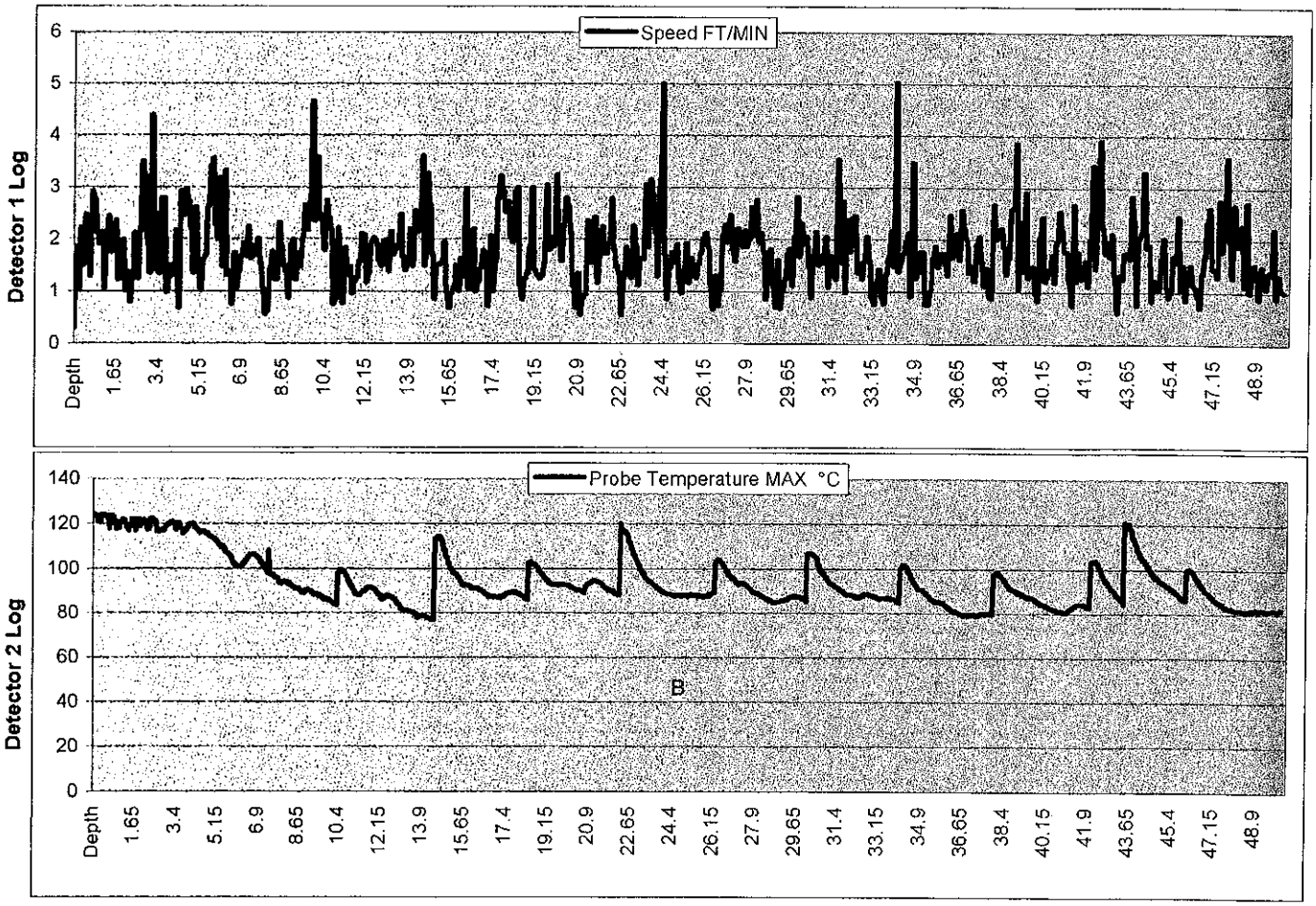






MIP Log Results by Boring - Detector Reading vs. Depth

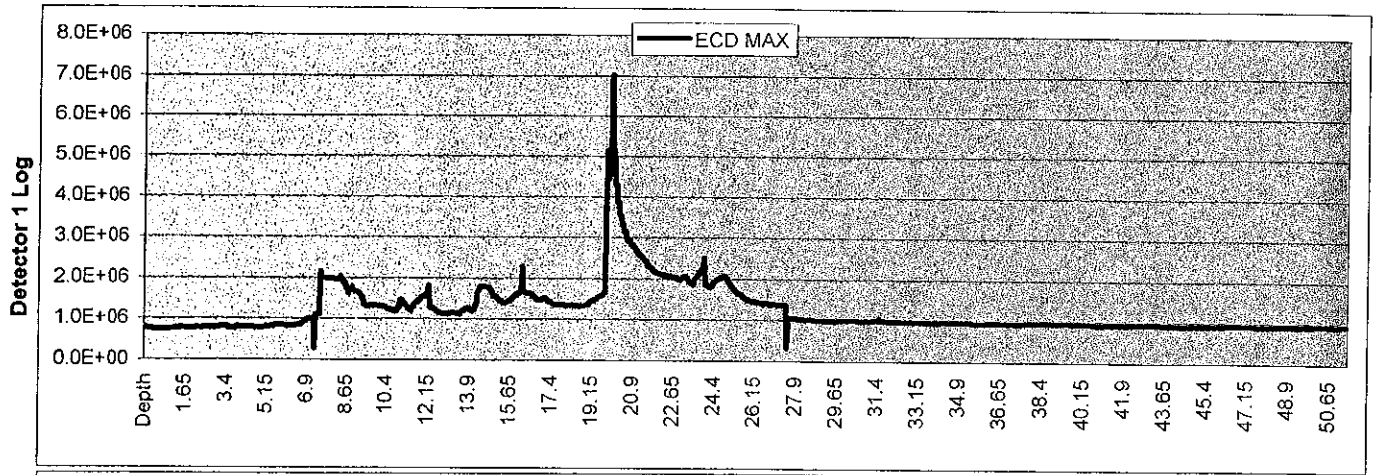
Client:	Piers Environmental Services I	Job No.:	M1-721	Detector 1 :	Probe Speed
Project:	2942 San Pablo, Oakland	Log Date:	07/21/04	Detector 2 :	Probe Temperature
Boring I.D.:	B-15	Analyst:	SMC		

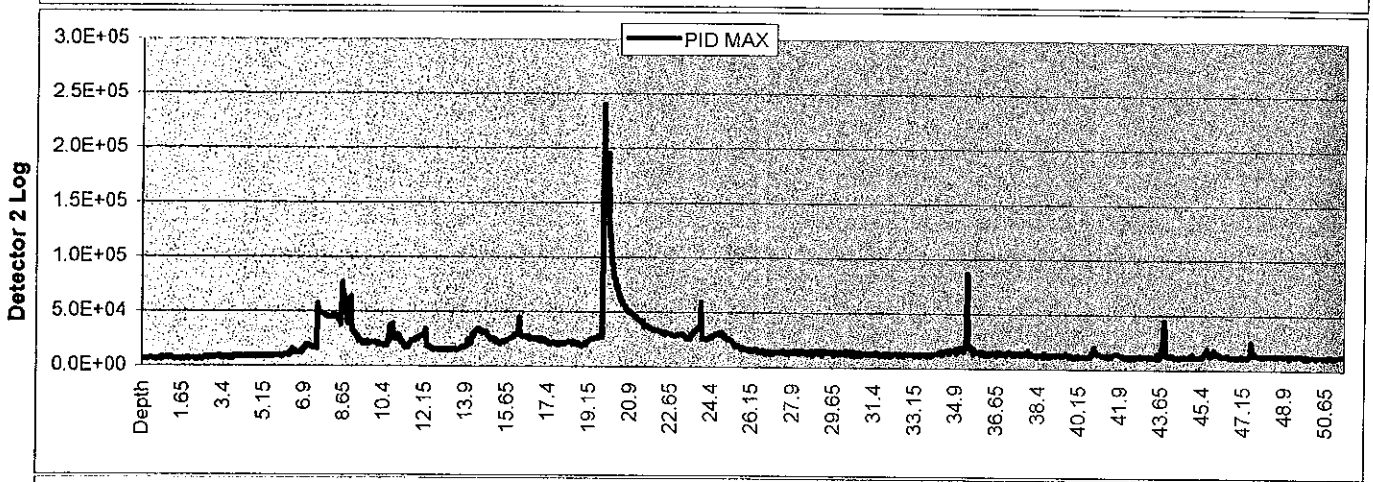


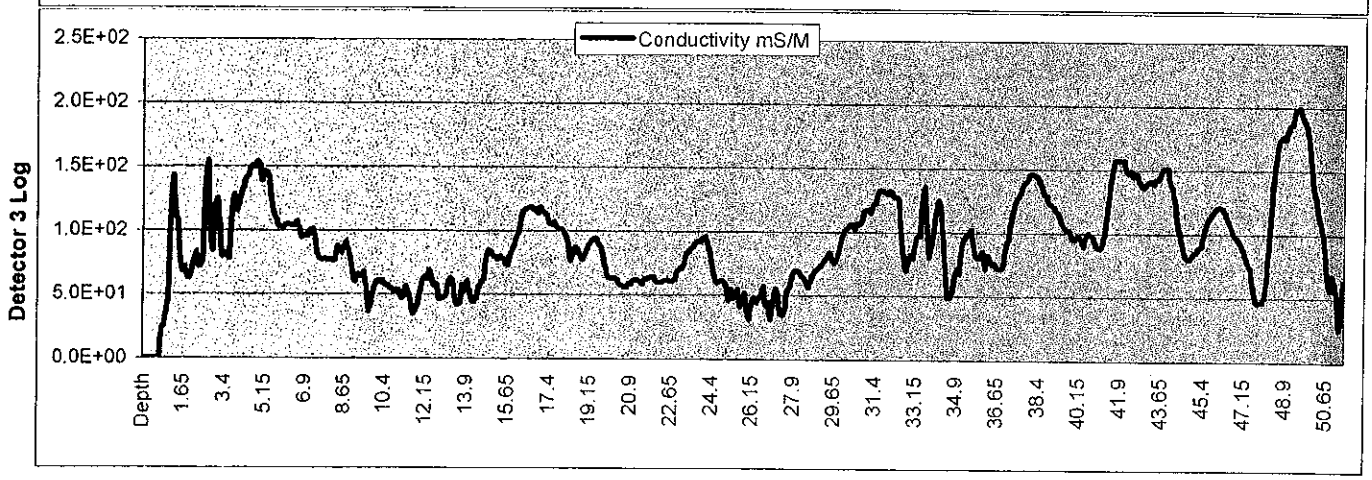
PRELIMINARY DATA - Pending QA/QC Review

MIP Log Results by Boring - Detector Reading vs. Depth

Client:	Piers Environmental Services I	Job No.:	M1-721	Detector 1 :	Electron Capture (ECD)
Project:	2942 San Pablo, Oakland	Log Date:	07/21/04	Detector 2 :	Photo Ionization (PID)
Boring I.D.:	B-13	Analyst:	SMC	Detector 3 :	Electrical Conductance (EC)

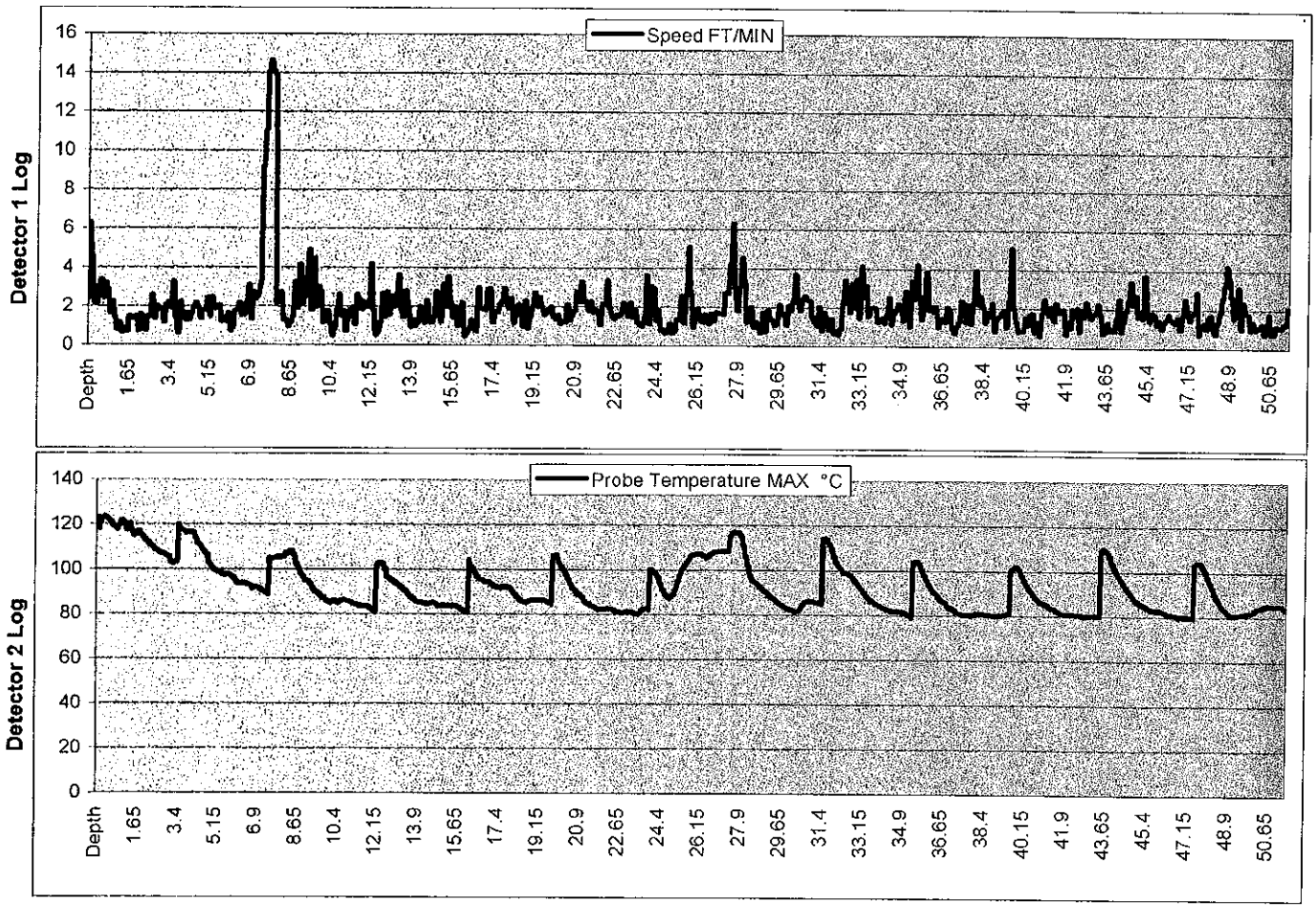






MIP Log Results by Boring - Detector Reading vs. Depth

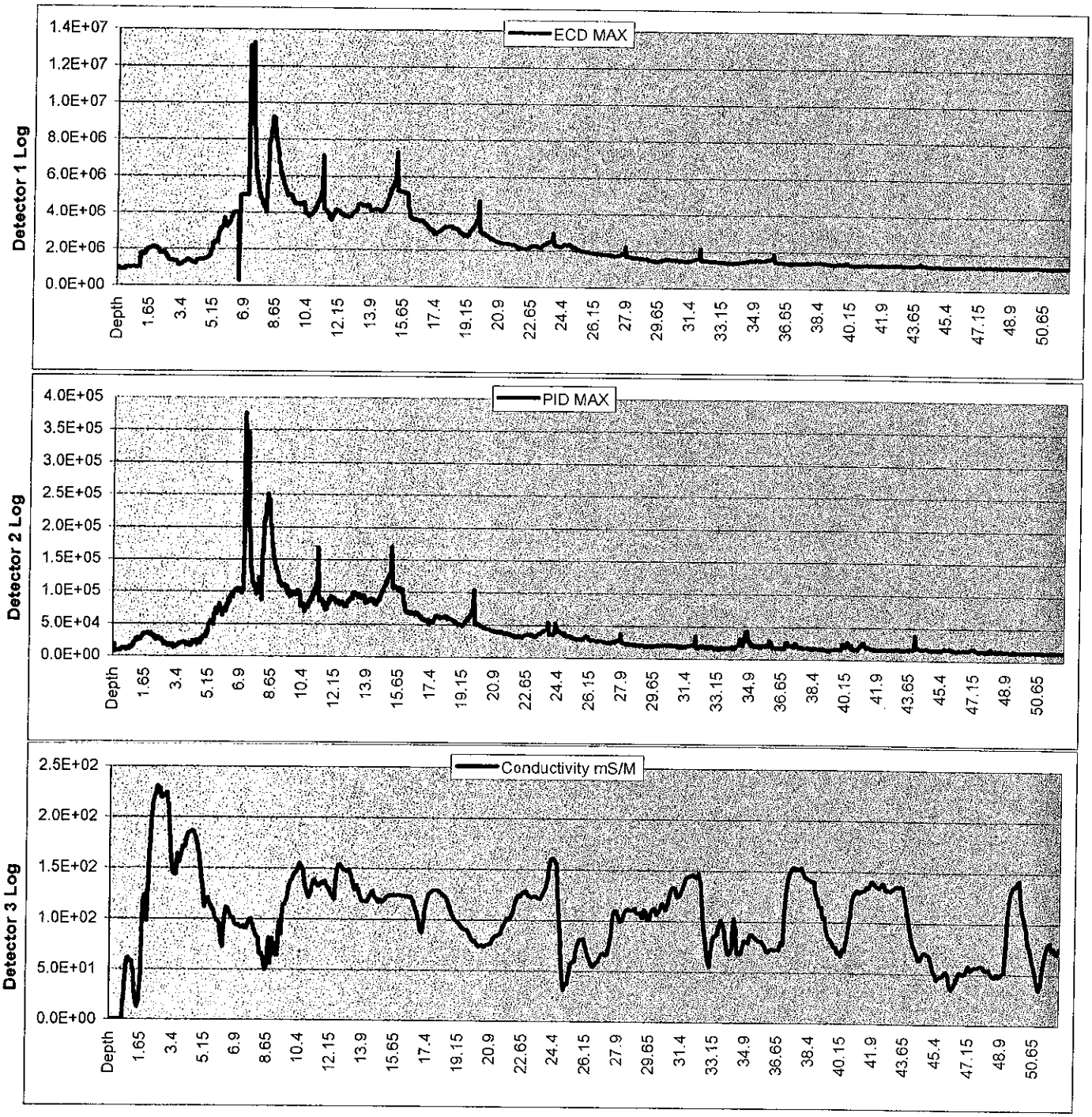
Client:	Piers Environmental Services I	Job No.:	M1-721	Detector 1 :	Probe Speed
Project:	2942 San Pablo, Oakland	Log Date:	07/21/04	Detector 2 :	Probe Temperature
Boring I.D.:	B-13	Analyst:	SMC		



PRELIMINARY DATA - Pending QA/QC Review

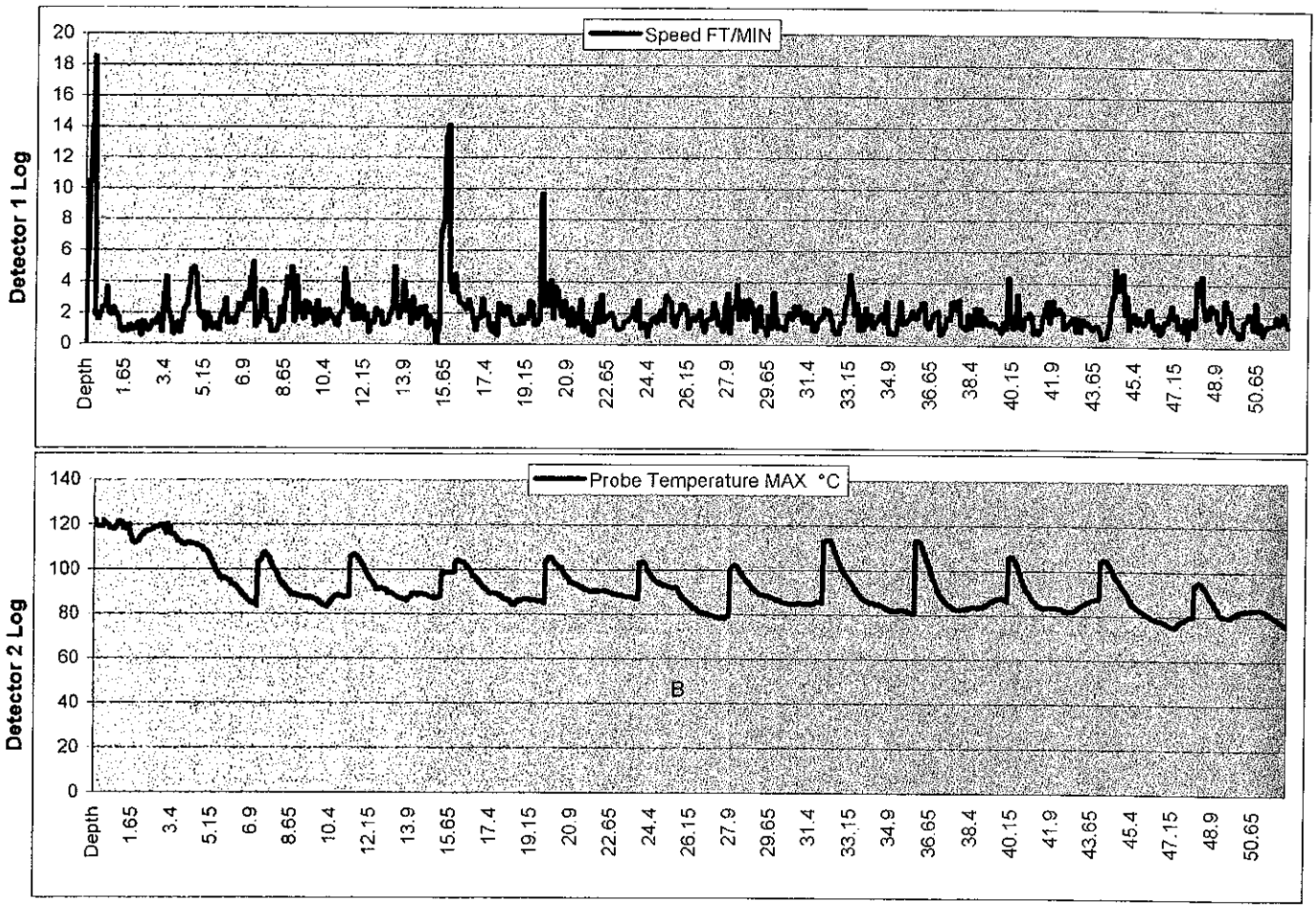
MIP Log Results by Boring - Detector Reading vs. Depth

Client:	Piers Environmental Services I	Job No.:	M1-721	Detector 1 :	Electron Capture (ECD)
Project:	2942 San Pablo, Oakland	Log Date:	07/21/04	Detector 2 :	Photo Ionization (PID)
Boring I.D.:	B-16	Analyst:	SMC	Detector 3 :	Electrical Conductance (EC)



MIP Log Results by Boring - Detector Reading vs. Depth

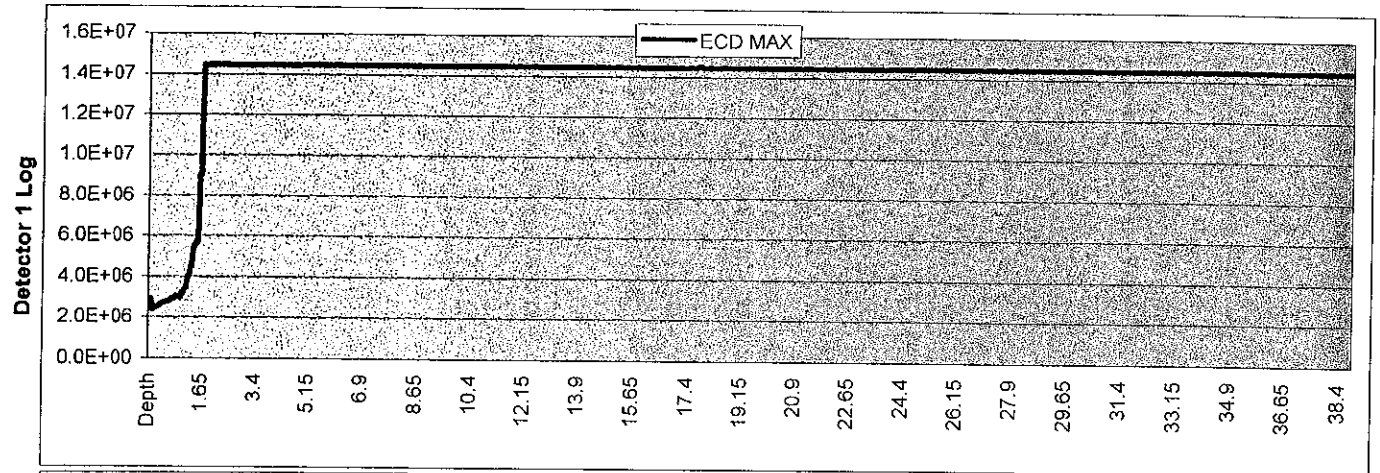
Client:	Piers Environmental Services I	Job No.:	M1-721	Detector 1 :	Probe Speed
Project:	2942 San Pablo, Oakland	Log Date:	07/21/04	Detector 2 :	Probe Temperature
Boring I.D.:	B-16	Analyst:	SMC		

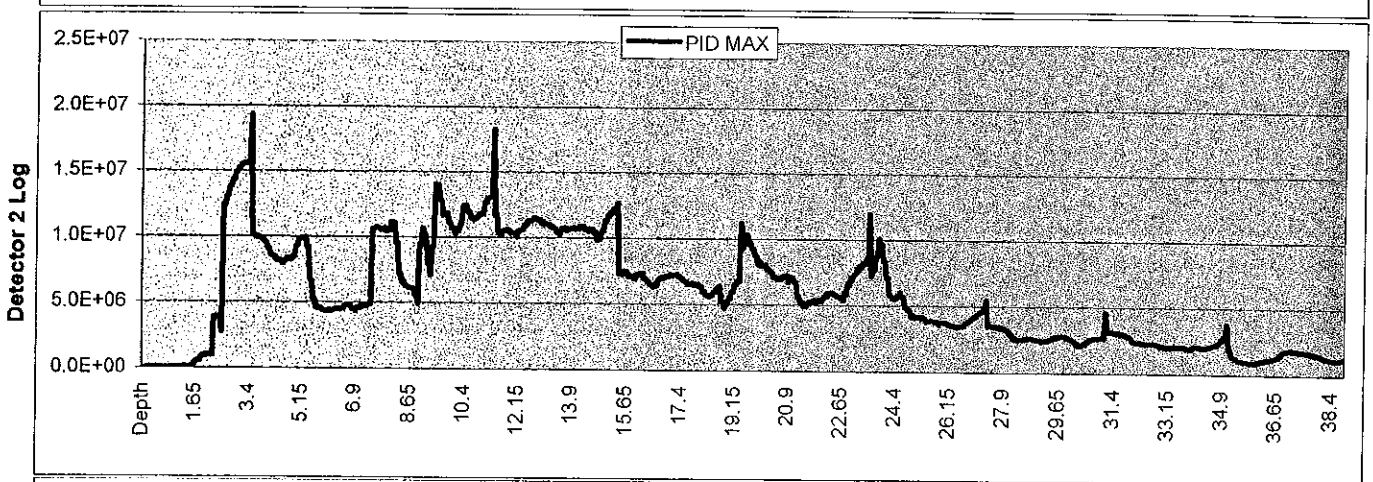


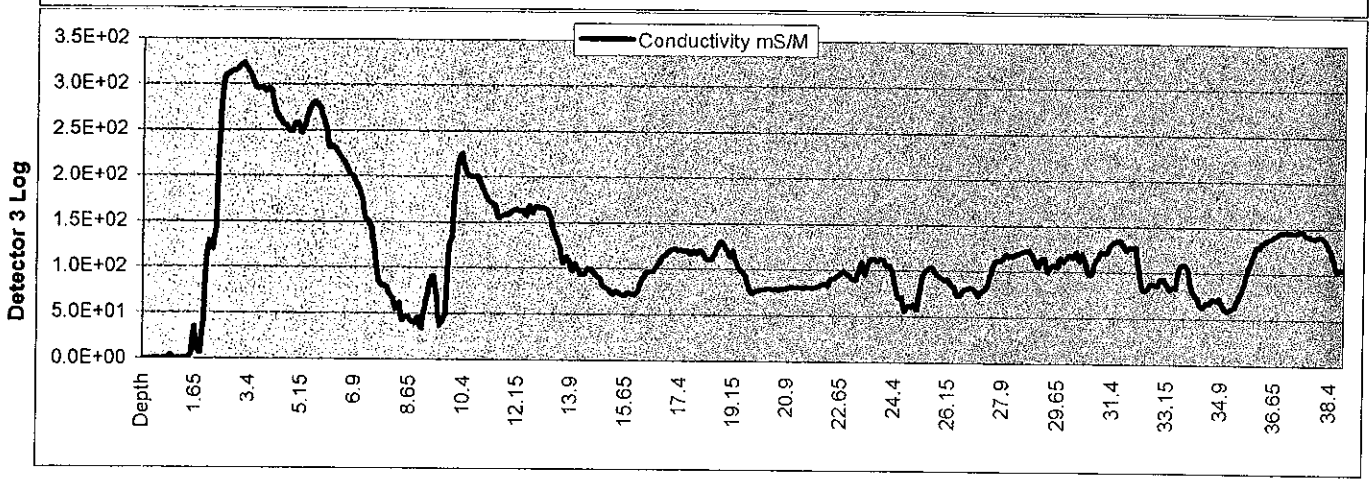
PRELIMINARY DATA - Pending QA/QC Review

MIP Log Results by Boring - Detector Reading vs. Depth

Client:	Piers Environmental Services I	Job No.:	M1-721	Detector 1 :	Electron Capture (ECD)
Project:	2942 San Pablo, Oakland	Log Date:	07/21/04	Detector 2 :	Photo Ionization (PID)
Boring I.D.:	B-9-G	Analyst:	SMC	Detector 3 :	Electrical Conductance (EC)

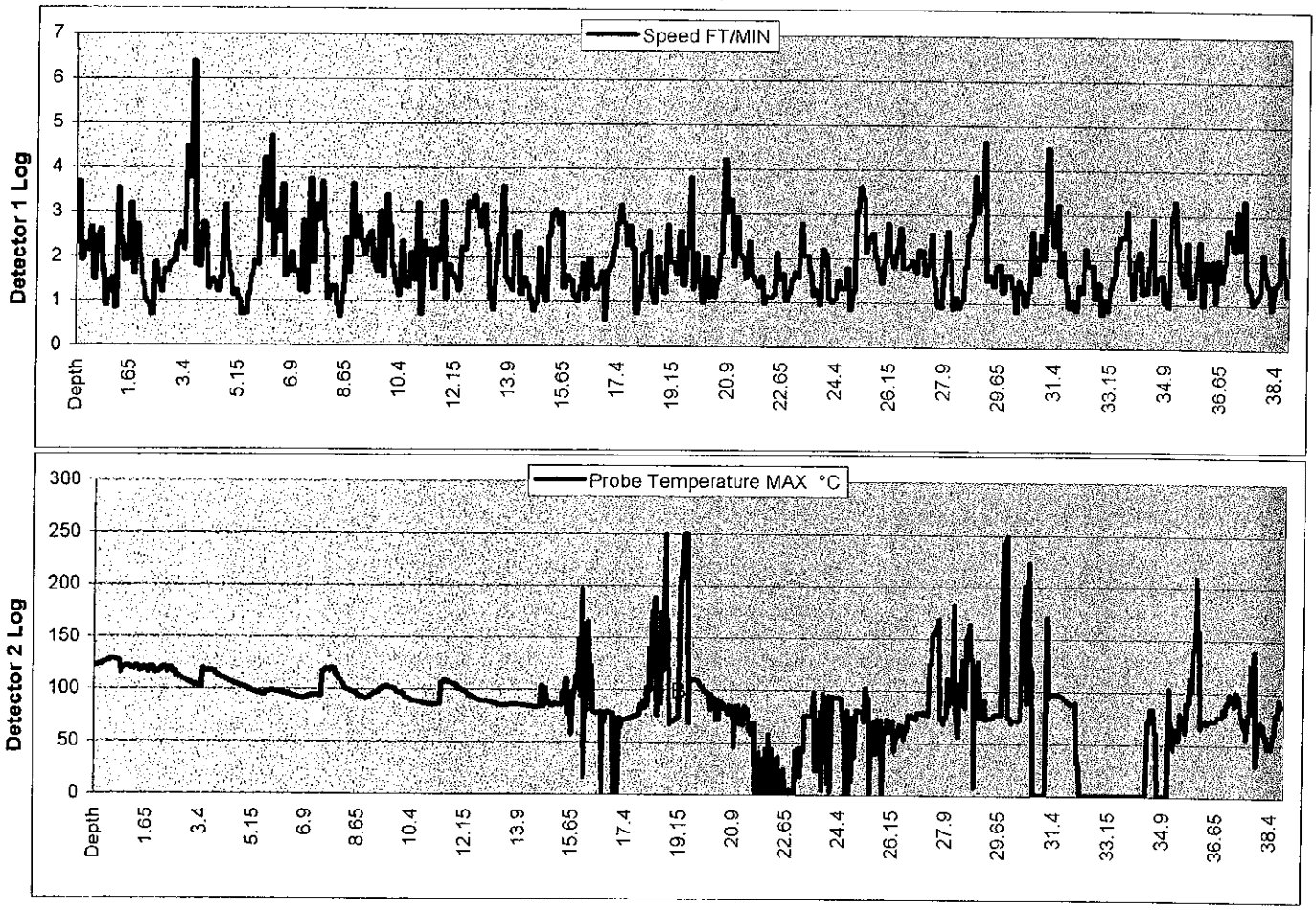






MIP Log Results by Boring - Detector Reading vs. Depth

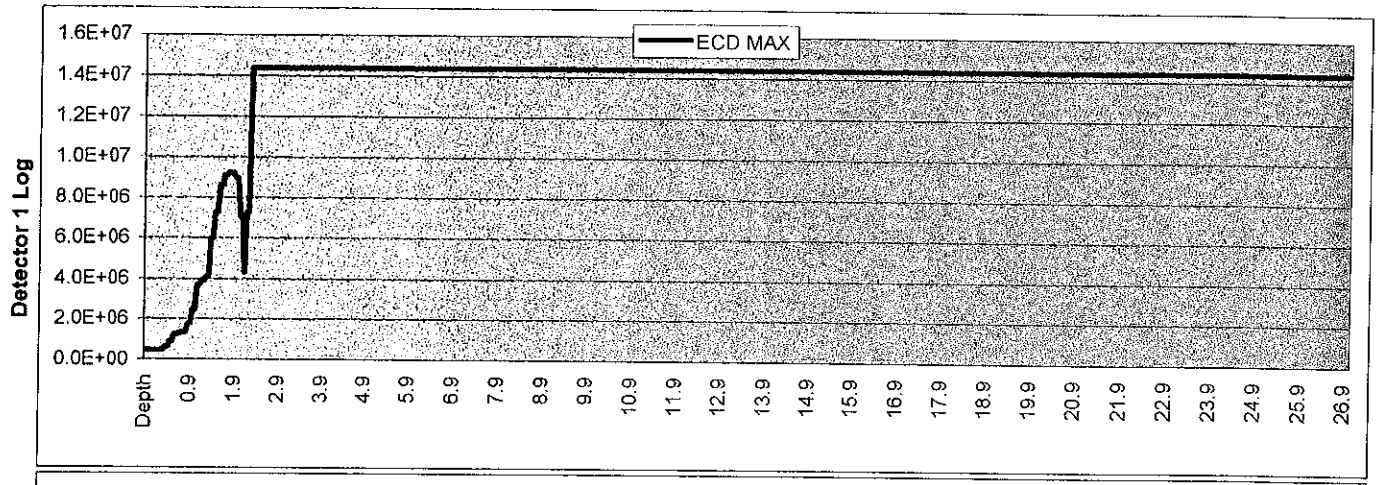
Client:	Piers Environmental Services I	Job No.:	M1-721	Detector 1 :	Probe Speed
Project:	2942 San Pablo, Oakland	Log Date:	07/21/04	Detector 2 :	Probe Temperature
Boring I.D.:	B-9-G	Analyst:	SMC		

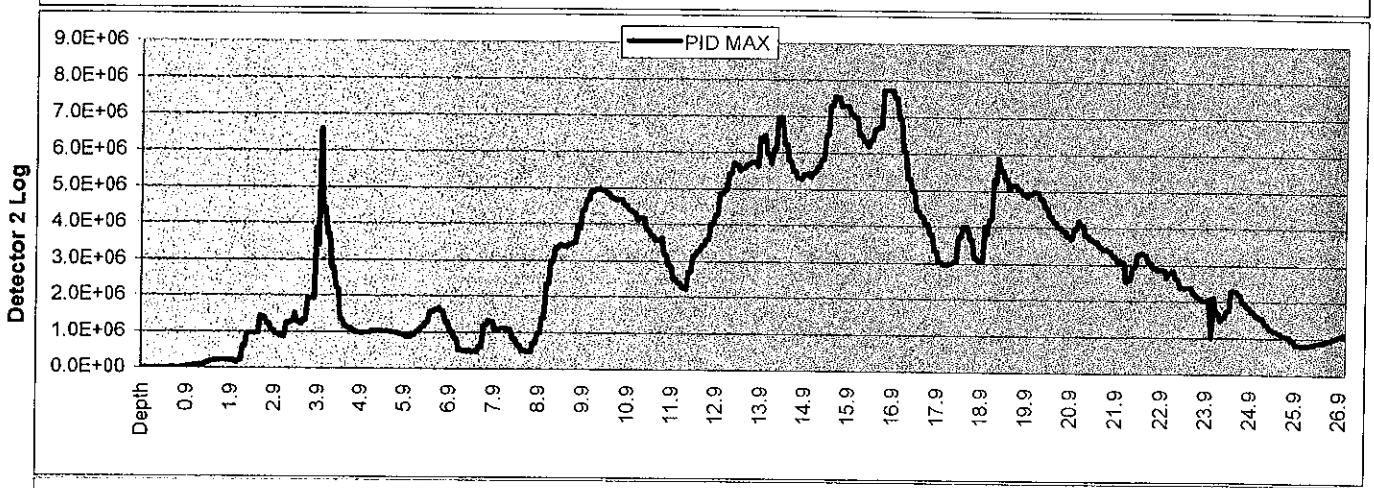


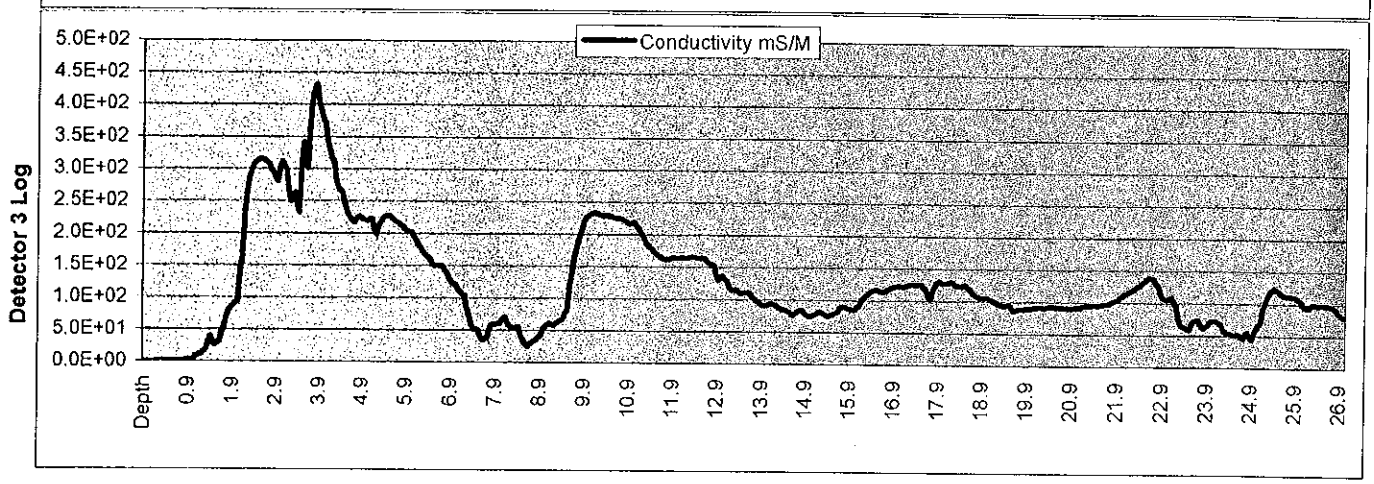
PRELIMINARY DATA - Pending QA/QC Review

MIP Log Results by Boring - Detector Reading vs. Depth

Client:	Piers Environmental Services I	Job No.:	M1-572	Detector 1 :	Electron Capture (ECD)
Project:	2942 San Pablo, Oakland	Log Date:	07/22/04	Detector 2 :	Photo Ionization (PID)
Boring I.D.:	B-9-H	Analyst:	SMC	Detector 3 :	Electrical Conductance (EC)

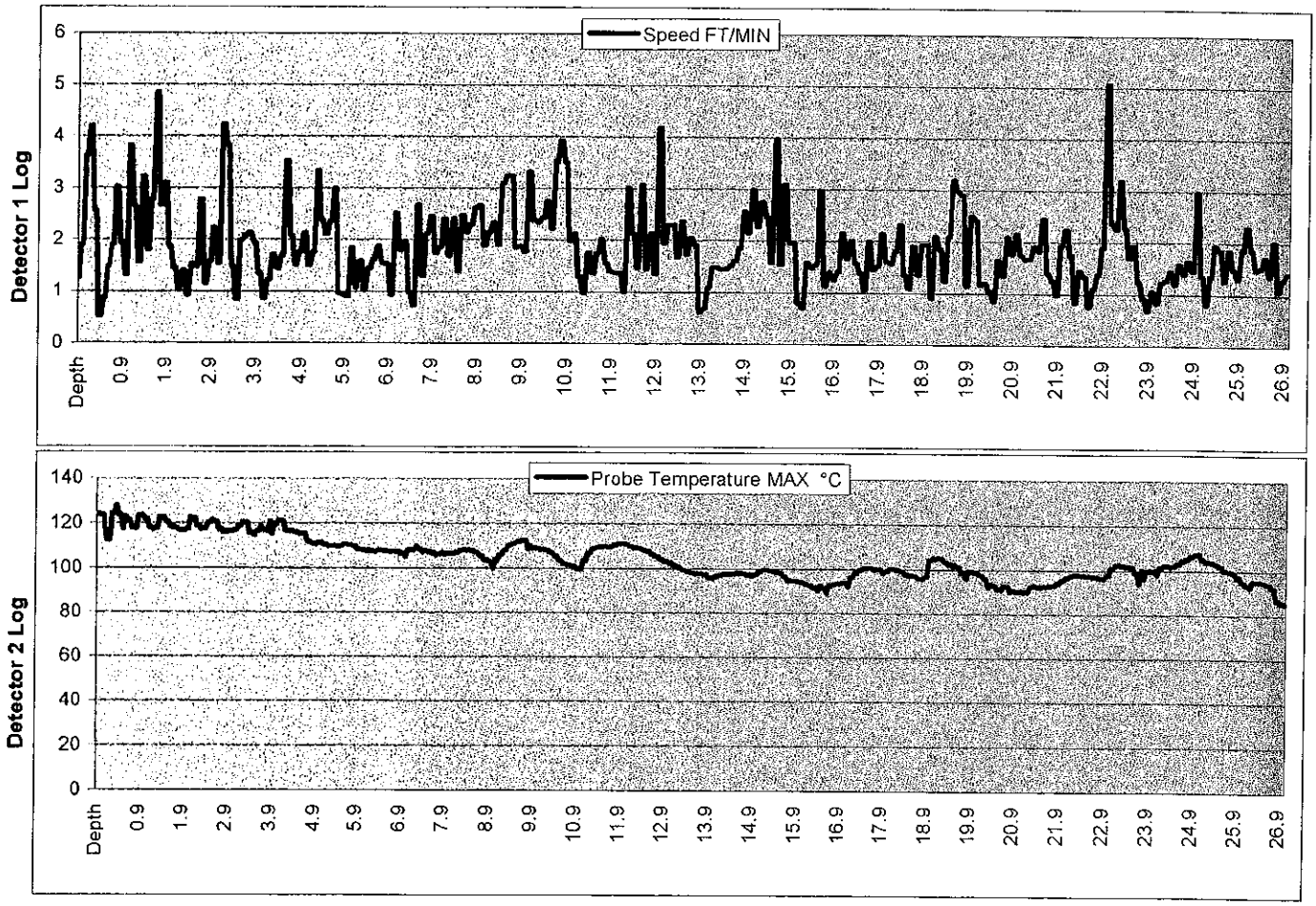






MIP Log Results by Boring - Detector Reading vs. Depth

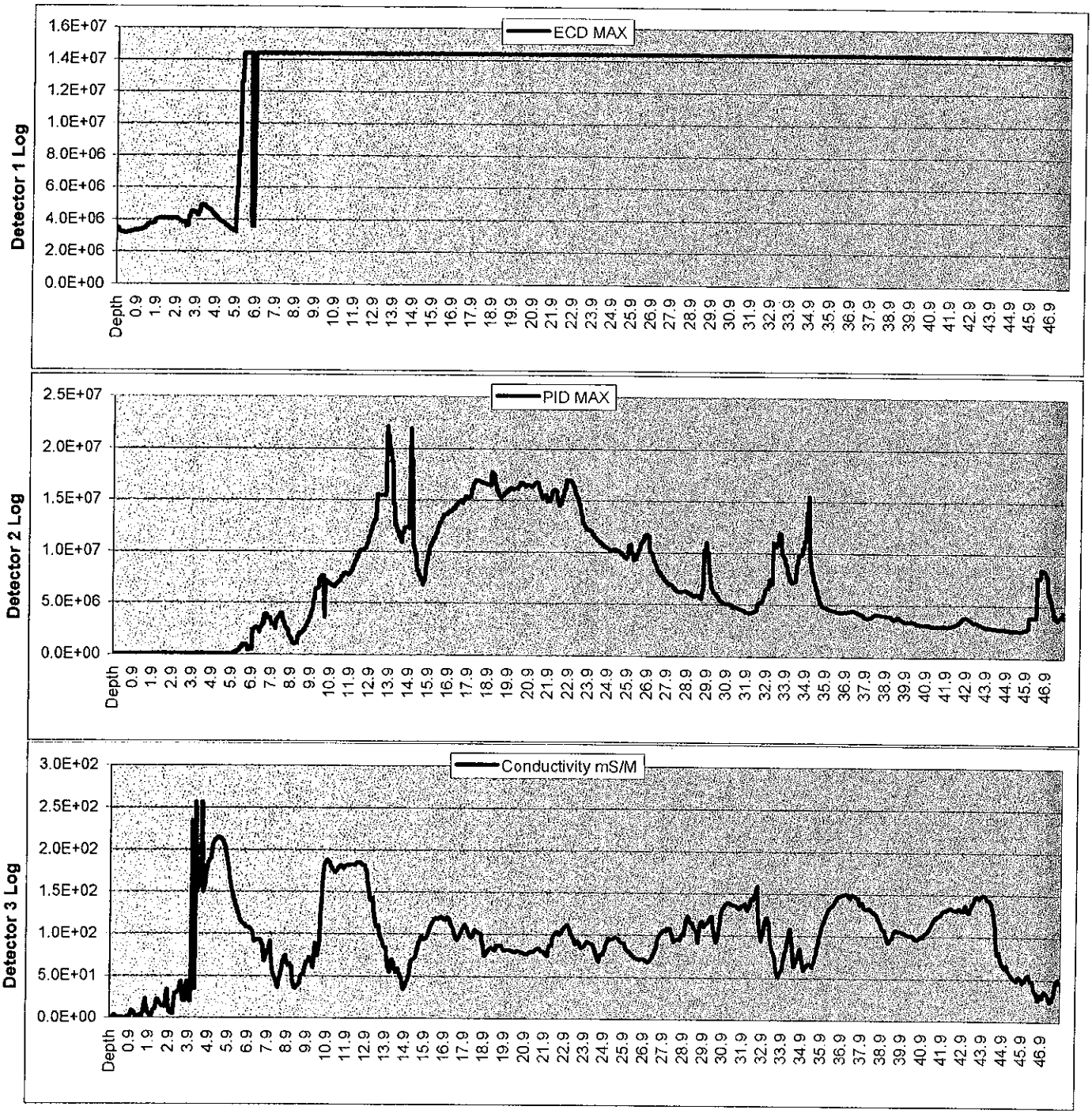
Client:	Piers Environmental Services I	Job No.:	M1-572	Detector 1 :	Probe Speed
Project:	2942 San Pablo, Oakland	Log Date:	07/22/04	Detector 2 :	Probe Temperature
Boring I.D.:	B-9-H	Analyst:	SMC		



PRELIMINARY DATA - Pending QA/QC Review

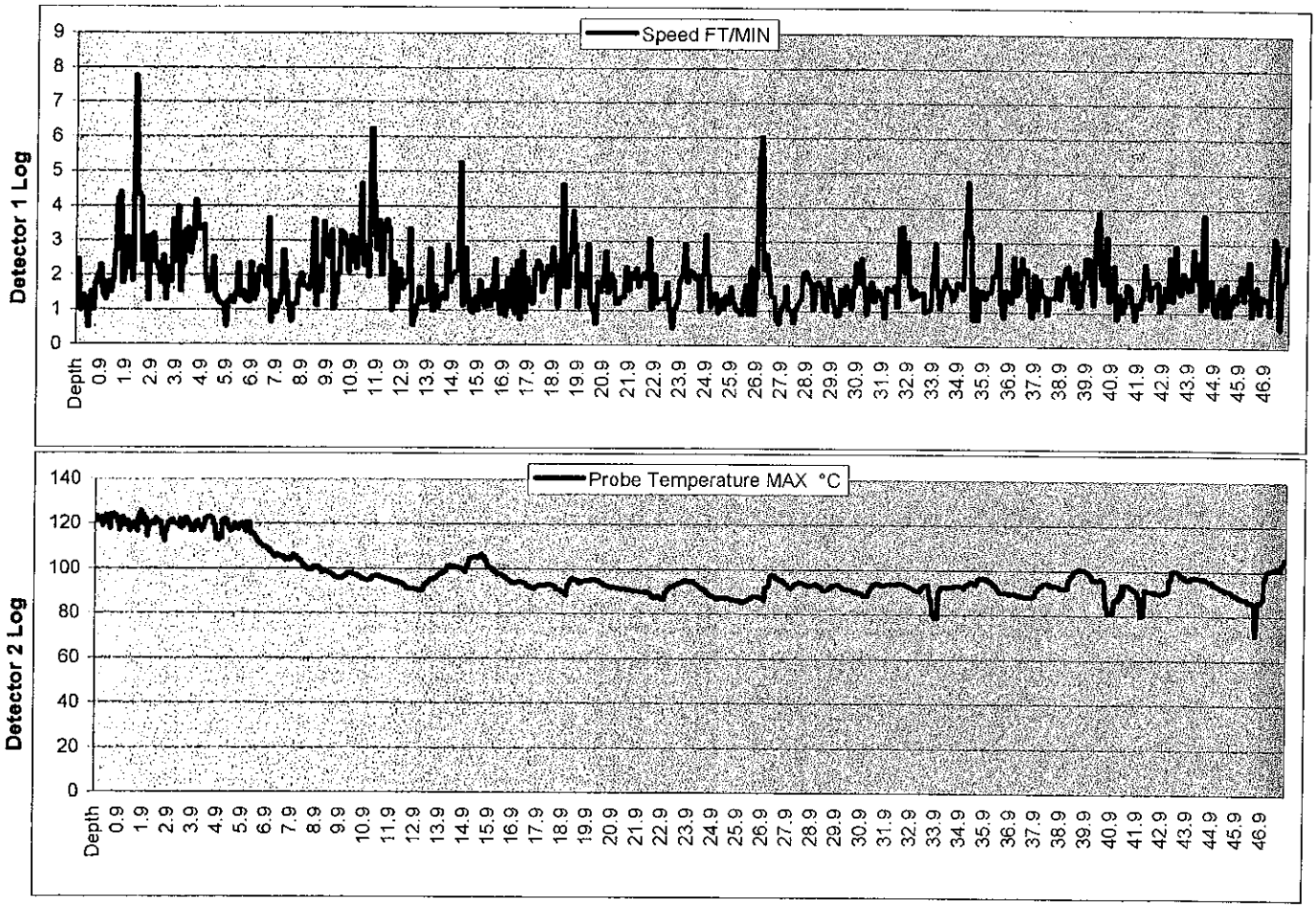
MIP Log Results by Boring - Detector Reading vs. Depth

Client:	Piers Environmental Services I	Job No.:	M1-572	Detector 1 :	Electron Capture (ECD)
Project:	2942 San Pablo, Oakland	Log Date:	07/22/04	Detector 2 :	Photo Ionization (PID)
Boring I.D.:	B-9-I	Analyst:	SMC	Detector 3 :	Electrical Conductance (EC)



MIP Log Results by Boring - Detector Reading vs. Depth

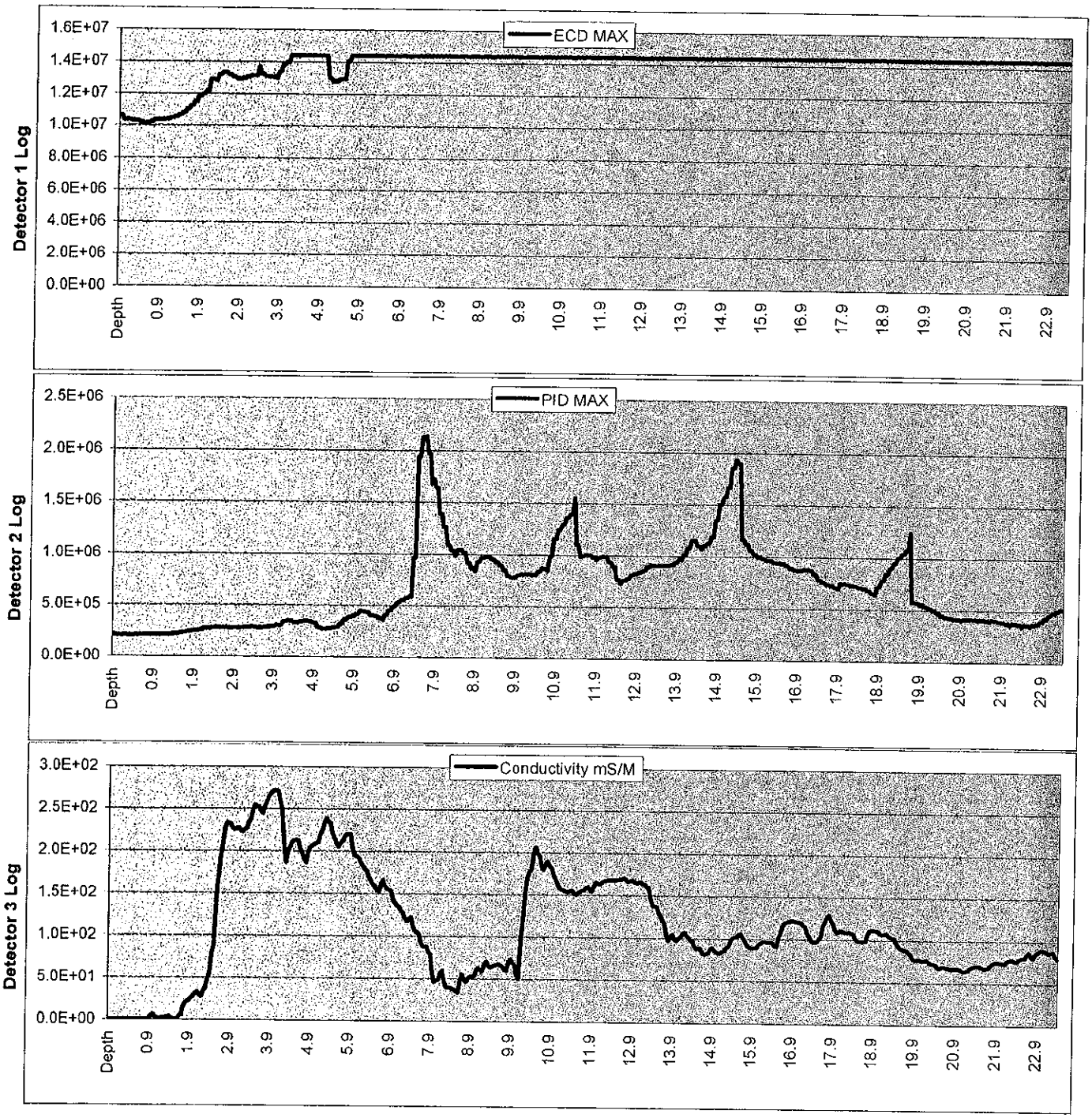
Client:	Piers Environmental Services I	Job No.:	M1-572	Detector 1 :	Probe Speed
Project:	2942 San Pablo, Oakland	Log Date:	07/22/04	Detector 2 :	Probe Temperature
Boring I.D.:	B-9-I	Analyst:	SMC		



PRELIMINARY DATA - Pending QA/QC Review

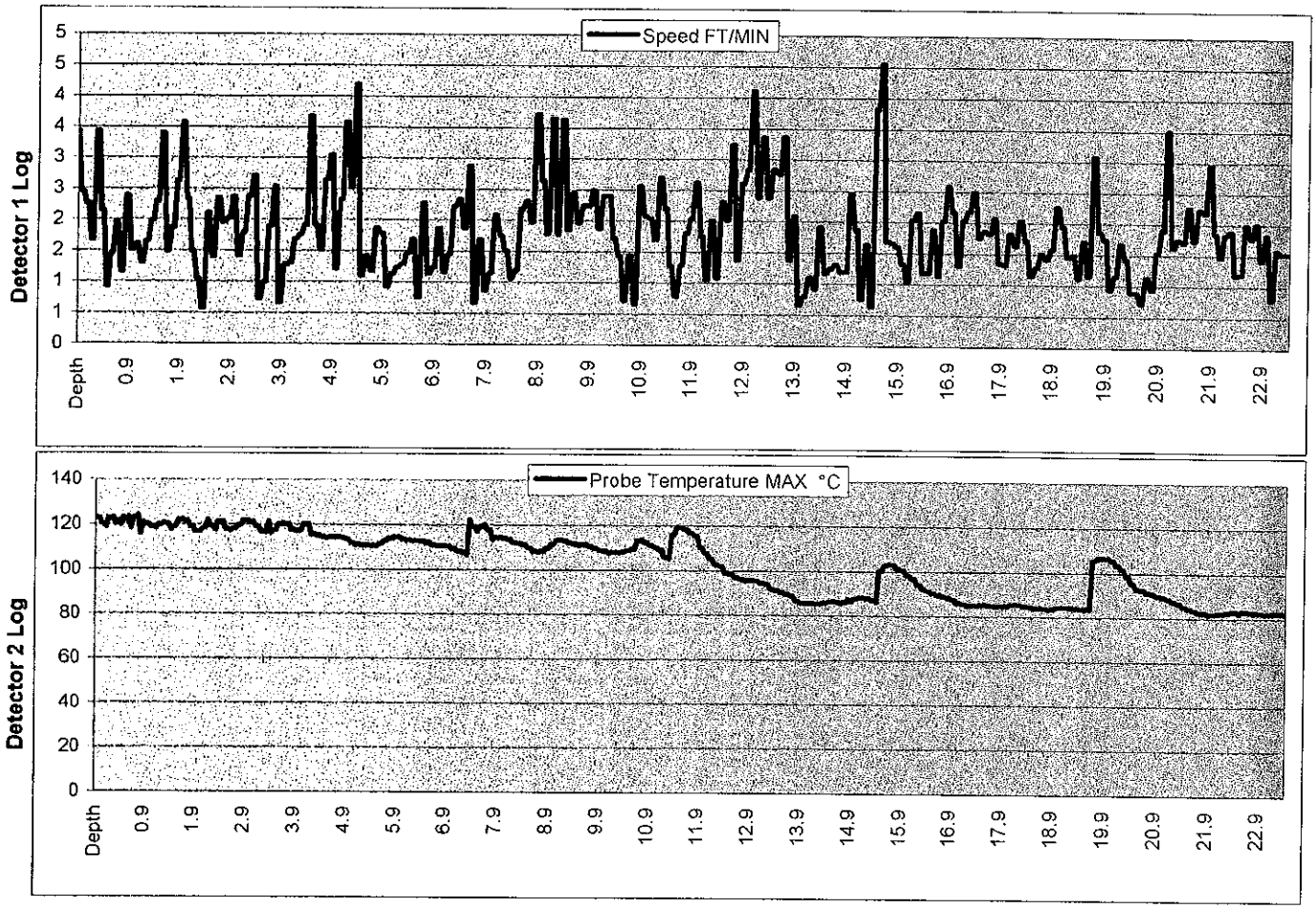
MIP Log Results by Boring - Detector Reading vs. Depth

Client:	Piers Environmental Services I	Job No.:	M1-572	Detector 1 :	Electron Capture (ECD)
Project:	2942 San Pablo, Oakland	Log Date:	07/22/04	Detector 2 :	Photo Ionization (PID)
Boring I.D.:	B-9-J	Analyst:	SMC	Detector 3 :	Electrical Conductance (EC)



MIP Log Results by Boring - Detector Reading vs. Depth

Client:	Piers Environmental Services I	Job No.:	M1-572	Detector 1 :	Probe Speed
Project:	2942 San Pablo, Oakland	Log Date:	07/22/04	Detector 2 :	Probe Temperature
Boring I.D.:	B-9-J	Analyst:	SMC		

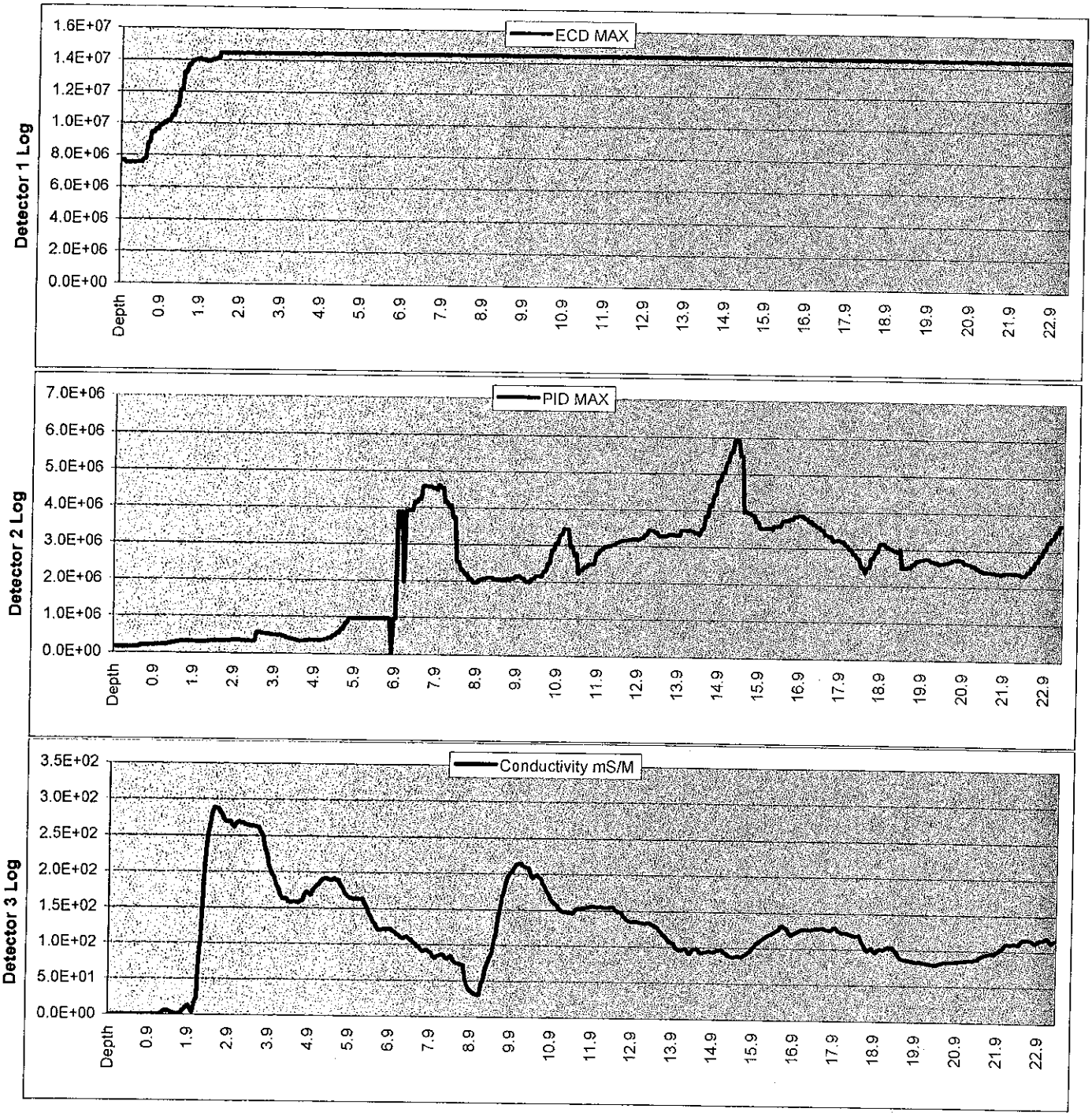


PRELIMINARY DATA - Pending QA/QC Review

MIP Log Results by Boring - Detector Reading vs. Depth

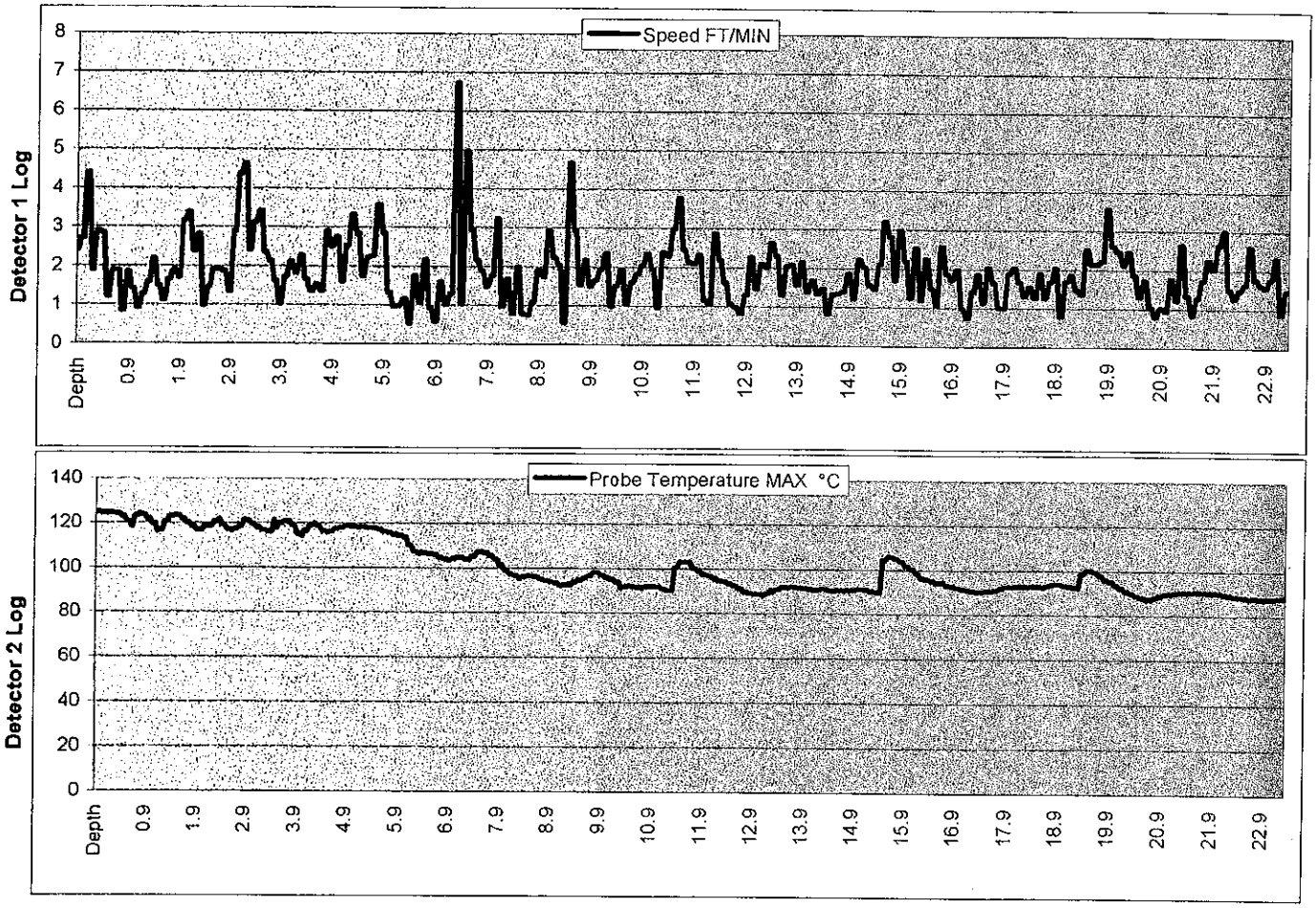
Client: Piers Environmental Services I Job No.: M1-572
Project: 2942 San Pablo, Oakland Log Date: 07/22/04
Boring I.D.: B-9-K Analyst: SMC

Detector 1 : Electron Capture (ECD)
Detector 2 : Photo Ionization (PID)
Detector 3 : Electrical Conductance (EC)

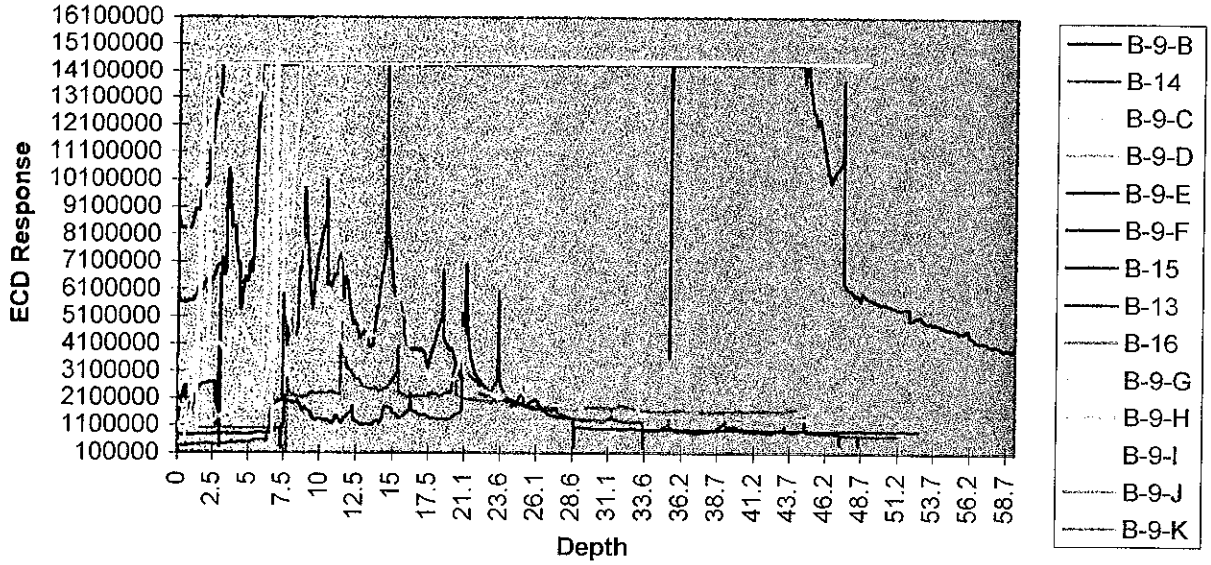


MIP Log Results by Boring - Detector Reading vs. Depth

Client:	Piers Environmental Services I	Job No.:	M1-572	Detector 1 :	Probe Speed
Project:	2942 San Pablo, Oakland	Log Date:	07/22/04	Detector 2 :	Probe Temperature
Boring I.D.:	B-9-K	Analyst:	SMC		



Maximum ECD Response Same Scale



Maximum PID Response Same Scale