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Closure Report  
Three Former Underground Storage Tanks  
at 6601 and 6603 Bay Street

Emeryville, California

18 August 1997  
(EKI 950074.03)

**Erler &  
Kalinowski, Inc.**

Consulting Engineers and Scientists

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18 August 1997

Ms. Susan Hugo  
Senior Hazardous Materials Specialist  
Alameda County Department of Environmental Health  
1131 Harbor Bay Parkway  
Alameda, California 94502

FILE

Subject: Closure Report  
6601 and 6603 Bay Street, Emeryville, California  
(EKI 950074.03)

Dear Ms. Hugo:

On behalf of Sybase, Inc., Erler & Kalinowski, Inc. ("EKI") is pleased to submit the enclosed report, entitled *Closure Report, Three Former Underground Storage Tanks at 6601 and 6603 Bay Street, Emeryville, California* and dated 18 August 1997. At our meeting on 4 September 1996, you requested that two additional rounds of groundwater monitoring be performed before Sybase, Inc. could request closure of the three former underground storage tanks ("USTs").

The results of this additional sampling are presented in this report and confirm that concentrations of chemicals of concern in groundwater continue to be stable or are decreasing. Also included in this report are the results of a risk-based corrective action ("RBCA") evaluation that indicates chemicals remaining in soil and groundwater associated with the former USTs pose no significant incremental risk to human health or the environment.

On the basis of these results, it is our opinion that no further investigation or action in this area is warranted. If possible, we would be interested in meeting with you during the week of 8 September 1997 to discuss the issue. I will call you later this week to schedule this meeting.

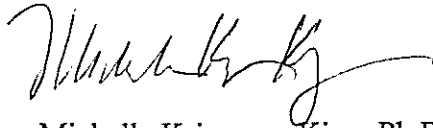
Ms. Susan Hugo  
18 August 1997  
Page 2

**Erlar &  
Kalinowski, Inc.**

Please call me or Brad McInroy at Sybase, Inc. (510-922-4570) with any questions.

Very truly yours,

ERLER & KALINOWSKI, INC.

A handwritten signature in black ink, appearing to read "Michelle Kriegman King". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Michelle Kriegman King, Ph.D.  
Project Manager

cc: Brad McInroy, Sybase, Inc.

Closure Report  
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**TABLE OF CONTENTS**

|   |    |
|---|----|
| 1.0 INTRODUCTION .....  | 1  |
| 2.0 SETTING .....   | 3  |
| 3.0 BACKGROUND .....  | 3  |
| 3.1 PREVIOUS SOIL AND GROUNDWATER INVESTIGATIONS ON<br>THE SITE .....         | 3  |
| 3.1.1 Investigations Performed Prior to 1996 .....                            | 3  |
| 3.1.2 Soil and Groundwater Investigation Performed by EKI in 1996.....        | 4  |
| 3.1.3 Downgradient Groundwater Monitoring .....                               | 5  |
| 3.2 SITE LAND USE HISTORY.....  | 5  |
| 4.0 GROUNDWATER MONITORING DOWNGRAIDENT OF FORMER UST SITE .6                 |    |
| 4.1 RESULTS OF JUNE 1997 GROUNDWATER MONITORING.....                          | 7  |
| 4.2 EVALUATION OF TRENDS IN DOWNGRAIDENT<br>GROUNDWATER MONITORING DATA ..... | 7  |
| 5.0 RISK-BASED EVALUATION OF SOIL AND GROUNDWATER CONDITIONS.8                |    |
| 5.1 EVALUATION OF POTENTIAL RISKS TO HUMAN HEALTH .....                       | 9  |
| 5.1.1 Potential Human Receptors.....  | 9  |
| 5.1.2 Soil Human Exposure Pathways.....                                       | 9  |
| 5.1.3 Groundwater Human Exposure Pathways .....                               | 11 |
| 5.2 POTENTIAL RISKS TO THE ENVIRONMENT .....                                  | 11 |
| 6.0 CONCLUSIONS.....  | 13 |
| 7.0 RECOMMENDATIONS.....  | 13 |
| 8.0 REFERENCES .....  | 14 |

Closure Report  
Three Former Underground Storage Tanks  
at 6601 and 6603 Bay Street  
Emeryville, California

18 August 1997

Sybase, Inc., Emeryville, California  
(EKI 950074.03)

**LIST OF TABLES**

|         |  |
|---------|--|
| Table 1 | Analytical Results for Groundwater Samples Collected Downgradient of the Former Underground Storage Tanks        |
| Table 2 | Results of Trend Analysis of Groundwater Data from Monitoring Wells MW-5 and MW-7                                |
| Table 3 | Comparison of Maximum Detected Chemical Concentrations in Soil with ASTM RBCA Tier 1 Risk-Based Screening Levels |
| Table 4 | Comparison of Chemical Concentrations in Groundwater with ASTM RBCA Tier 1 Risk-Based Screening Levels           |
| Table 5 | Potentially Applicable Water Quality Objectives for Protection of Aquatic Life and Human Health                  |

**LIST OF FIGURES**

|          |   |
|----------|---|
| Figure 1 | Site Location   |
| Figure 2 | Soil Boring and Monitoring Well Locations   |
| Figure 3 | Benzene Concentrations in Groundwater Samples Collected Downgradient of Former USTs |

Closure Report  
Three Former Underground Storage Tanks  
at 6601 and 6603 Bay Street  
Emeryville, California

18 August 1997

Sybase, Inc., Emeryville, California  
(EKI 950074.03)

**LIST OF APPENDICES**

- |            |  |
|------------|--|
| Appendix A | Letter from Michelle King (EKI) to Susan Hugo (ACDEH) Dated 18 December 1996 |
| Appendix B | Groundwater Potentiometric Surface in the Vicinity of 6601/6603 Bay Street   |
| Appendix C | Field Notes  |
| Appendix D | Laboratory Data Sheets   |

Closure Report  
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## **1.0 INTRODUCTION**

On behalf of Sybase, Inc., Erler & Kalinowski, Inc. ("EKI") has prepared this report for submittal to the Alameda County Department of Environmental Health ("ACDEH") to request closure for the site of three former underground storage tanks ("USTs") on the properties located at 6601 and 6603 Bay Street ("the Site") in Emeryville, California (Figure 1). This report also presents the results of the quarterly groundwater sampling downgradient of the former USTs conducted on 19 June 1997.

The three underground fuel storage tanks were removed from the Site in 1989. Since that time, quarterly groundwater sampling has been performed at two downgradient monitoring wells. Analysis of the sampling results indicates that petroleum hydrocarbon concentrations in groundwater downgradient of the former USTs are stable or decreasing. At the request of ACDEH, additional soil and groundwater sampling was conducted in June 1996 adjacent to the former USTs to confirm that there is not an ongoing source of petroleum hydrocarbons to groundwater at the Site. If the investigation confirmed this conclusion, ACDEH staff indicated that they would consider closing the former UST site. As discussed in detail in EKI's investigation report dated 23 August 1996, the available data indicate there are no significant sources of petroleum hydrocarbons in soil and groundwater relating to the former USTs.

At a subsequent meeting on 4 September 1996, ACDEH requested that two additional rounds of groundwater monitoring be performed before Sybase, Inc. could request closure of the three former USTs. A letter from EKI to ACDEH, dated 18 December 1996, confirming this understanding is provided in Appendix A. The purpose of this additional sampling was to demonstrate that concentrations of chemicals of concern in groundwater continue to be stable or decreasing. If the additional sampling confirmed that a stable or decreasing trend persisted, Sybase, Inc. would then request closure of the former USTs.

The results of the first round of groundwater sampling, conducted by EKI in December 1997, were submitted to ACDEH in a letter report dated 3 February 1997. The results of the second round of groundwater sampling, conducted by EKI in June 1997, are included in this report.

This request for closure of the former UST site is based on the following conclusions which are discussed in Sections 3 through 5 of this report:

- There are no significant sources of petroleum hydrocarbons relating to the former USTs remaining in soil. Polycyclic aromatic hydrocarbons (“PAHs”) and methyl tertiary butyl ether (“MTBE”) were not detected in soil samples collected at the former UST site. Downgradient concentrations of hydrocarbons in groundwater are not indicative of free-phase hydrocarbons.
- The groundwater monitoring results and statistical trend analysis confirm a stable or decreasing trend of chemical concentrations in groundwater.
- A risk-based corrective action (“RBCA”) evaluation indicates no significant incremental risk to human health from chemicals remaining in soil and groundwater.
- An evaluation of potential risks to the environment from chemicals in soil and groundwater indicates no significant impact to potentially sensitive environmental receptors.



## 2.0 SETTING

The Site is located on Bay Street between 66th Street and 67th Street in Emeryville, California. The northern portion of the Site is occupied by two concrete tiltup warehouse buildings that are used by Sybase, Inc. as office space for software engineers (Figure 2). The Site is bounded on the west by the Eastshore Freeway and on the east by Bay Street.

## 3.0 BACKGROUND

During previous investigations at the Site, petroleum hydrocarbons and benzene, toluene, ethylbenzene, and xylenes ("BTEX") were detected in soil and groundwater in the vicinity of the former USTs. In EKI's report dated 18 March 1996, an assessment of historic uses of the Site was included that identified potential on-site sources, other than the former USTs, for the hydrocarbons detected in the soil and groundwater on the Site. These evaluations are summarized below.

A review of regulatory agency records was also performed to identify potential off-site sources for hydrocarbons present in the soil and groundwater on the Site. The review of potentially upgradient release sites is summarized in the EKI report (EKI, 18 March 1996).

### 3.1 PREVIOUS SOIL AND GROUNDWATER INVESTIGATIONS ON THE SITE

#### 3.1.1 Investigations Performed Prior to 1996

Three underground fuel storage tanks were removed from the Site in 1989 (Figure 2). A report prepared by William Dubovsky Environmental ("Dubovsky"), dated July 1990, summarized the history and removal of the USTs and soil and groundwater sampling performed at that time. The three tanks were reportedly installed in 1973. The 6,000-gallon UST was used to store diesel and the 2,000-gallon and 7,500-gallon USTs were used to store gasoline (Dubovsky, 1990).

Prior to removal, all three tanks were inspected and no obvious holes, perforations, or corrosion were noted. During excavation of the tanks, however, black petroleum product reportedly flowed from the south wall into the excavation beside the diesel tank. The product that accumulated in the excavation was removed by a hazardous waste hauler. In total, an estimated 2,000 gallons of petroleum product were removed from the excavations (Dubovsky, 1990).

Analytical results for soil and groundwater samples collected from the excavation sidewalls and excavation pit, respectively, indicated the presence of total extractable petroleum hydrocarbons ("TEPH") quantified as diesel, total purgeable petroleum hydrocarbons ("TPPH") quantified as gasoline, oil and grease, and BTEX in both soil and

groundwater. Compounds detected in soil samples and their maximum concentrations were as follows (Dubovsky, 1990):

| Compound         | Maximum Concentration<br>in Soil (mg/kg) |
|------------------|--|
| Benzene          | 0.76                                     |
| Toluene          | 1.20                                     |
| Ethylbenzene     | 0.48                                     |
| Total Xylenes    | 21                                       |
| TEPH as Diesel   | 2,700                                    |
| TPPH as Gasoline | 270                                      |
| Oil & Grease     | 3,400                                    |

Grab groundwater samples were collected from the hydrocarbon/water mixture that accumulated in the excavation. Compounds detected in the grab groundwater samples and their maximum concentrations were as follows (Dubovsky, 1990):

| Compound         | Maximum Concentration<br>in Groundwater (ug/L) |
|------------------|--|
| Benzene          | 400  |
| Toluene          | 180  |
| Ethylbenzene     | 38   |
| Total Xylenes    | 290  |
| TEPH as Diesel   | 520  |
| TPPH as Gasoline | 6,300  |

Plate 1 in Appendix B depicts the groundwater potentiometric surface in the vicinity of the Site. These data were collected as part of investigations of properties adjacent to the Site (Subsurface Consultants, December 1995; PES Environmental, Inc., December 1995). Groundwater flow is to the southwest in the vicinity of the former USTs.

### 3.1.2 Soil and Groundwater Investigation Performed by EKI in 1996

In June 1996, EKI conducted a soil and groundwater investigation in the vicinity of the former UST site. The investigation consisted of collecting soil and grab groundwater samples from six borings (i.e., borings SB-1 through SB-6) and collecting groundwater samples from two downgradient monitoring wells as shown on Figure 2. The objectives of this investigation were as follows:

- to evaluate the concentration and lateral extent of hydrocarbons in soil and groundwater;
- to evaluate if hydrocarbon concentrations in groundwater near the location of the removed USTs were indicative of free-phase hydrocarbons; and

- to determine whether MTBE or PAHs were present in soil or groundwater.

The following conclusions were drawn from the results of the June 1996 investigation:

- Petroleum hydrocarbons were present in soil at low concentrations (i.e., up to 360 mg/kg) in the vicinity of the former USTs, indicating that there are no significant sources of petroleum hydrocarbons remaining in soil.
- Petroleum hydrocarbon concentrations in groundwater samples collected near the site of the former USTs indicated the possible presence of free-phase diesel range hydrocarbons; however, downgradient concentrations of hydrocarbons in groundwater are not indicative of free-phase hydrocarbons.
- MTBE was not detected in any of the soil samples. MTBE was detected in only three groundwater samples, at concentrations significantly less than its California Action Level of 35 ug/L (U.S. EPA, January 1995) and U.S. Environmental Protection Agency ("U.S. EPA") Preliminary Remediation Goal ("PRG") of 180 ug/L (U.S. EPA, 1 September 1995).
- PAHs were not detected in soil samples collected adjacent to the former USTs (i.e., from borings SB-3 and SB-4).

### 3.1.3 Downgradient Groundwater Monitoring

Since 1989, groundwater samples have been collected from two monitoring wells (MW-5 and MW-7) located off site and downgradient of the former tanks, and analyzed for TPH and BTEX (Figure 2). This groundwater monitoring has been performed by PES Environmental, Inc. on behalf of the Martin Group, the owner of the downgradient, adjacent property, located at 1650 65th Street (PES Environmental, Inc., December 1995) and, more recently, by EKI on behalf of Sybase, Inc. Although these wells are located off-site, they are both less than 75 feet downgradient of the former USTs.

The analytical results for all groundwater samples collected from the two downgradient monitoring wells (MW-5 and MW-7) are shown in Table 1. A plot of benzene concentrations measured in the downgradient wells over the past seven years is shown on Figure 3. Benzene concentrations measured downgradient of the former USTs have generally decreased since 1989 (see Figure 3 and Section 4.2).

## 3.2 SITE LAND USE HISTORY

Information on the land use history of the Site was obtained from a review of Sanborn fire insurance maps, historical aerial photographs, and a 21 December 1993 technical

briefing prepared by Weiss Associates (December 1993). According to Weiss Associates' technical briefing and review of aerial photographs, the subject property was located within San Francisco Bay until the 1930's. From the 1930's until the early 1950's, the Site was used by the City of Emeryville for disposal of municipal waste (Weiss Associates, December 1993).

As indicated by an aerial photograph of the Site from 7 July 1959, the currently existing buildings were constructed by 1959. In the same aerial photograph, a possible tank pad is visible south of the buildings on the Site. The two buildings on the Site were reportedly built for warehouse activities (Dubovsky, 1990). A 1967 Sanborn Map shows the buildings were used as a sugar warehouse and a liquor warehouse. In 1973, the two gasoline tanks and the diesel tank were reportedly installed in the approximate location of the suspected tank pad (Weiss Associates, December 1993). As discussed above, the tanks were removed in 1989. Sybase, Inc. purchased the property in 19\_\_ has used the buildings for office space since that time.

#### 4.0 GROUNDWATER MONITORING DOWNGRADIENT OF FORMER UST SITE

This section presents the results of the groundwater monitoring conducted by EKI in June 1997 and the results of a statistical trend analysis of chemical concentrations in groundwater.

##### 4.1 RESULTS OF JUNE 1997 GROUNDWATER MONITORING

Groundwater samples were collected from groundwater monitoring wells MW-5 and MW-7 (Figure 2) on 19 June 1997. Copies of the field notes and monitoring well purge and sample forms are included in Appendix C.

Prior to sampling, water levels were measured and the wells were purged using a precleaned submersible pump. Groundwater quality parameters were measured during purging (pH, temperature, conductivity, and turbidity). Purging was continued until a minimum of three casing volumes of groundwater were removed. All purge and sampling equipment was precleaned with Alconox® and de-ionized water prior to use.

Upon completion of purging at each well, groundwater samples were collected using a disposable Teflon® bailer, and transferred to the appropriate laboratory-supplied sample containers. The samples were labeled, placed in a cooler with ice, and transported under chain-of-custody procedures to Sequoia Analytical Laboratory in Redwood City, California, for analysis. The samples were analyzed for TPPH quantified as gasoline using EPA Method 8015 Modified; TEPH quantified as diesel using EPA Method 8015 Modified; and BTEX and MTBE using EPA Method 8020. Copies of the analytical data sheets and chain-of-custody forms are included in Appendix D.

The analytical results from this sampling round and all previous sampling in monitoring wells MW-5 and MW-7 are summarized in Table 1. Analytical results from the two most recent sampling rounds are consistent with past analytical results for these two wells.

##### 4.2 EVALUATION OF TRENDS IN DOWNGRADIENT GROUNDWATER MONITORING DATA

Groundwater samples from downgradient monitoring wells MW-5 and MW-7 have been collected 20 times since January 1992 (Table 1). Monitoring wells MW-5 and MW-7 are located approximately 65 and 25 feet downgradient of the former UST site, respectively. As an example of the observed data trends, benzene concentrations in groundwater samples collected from wells MW-5 and MW-7 are plotted on Figure 3. In general for both wells, benzene concentrations appear to be decreasing over time. This section presents the results of a statistical analysis to demonstrate that no significant upward trend exists in the data (i.e., to show that conditions are stable or improving.)

Groundwater data from wells MW-5 and MW-7 were statistically analyzed for a trend using the nonparametric Mann-Kendall test. The Mann-Kendall test is useful for detecting trends because the data do not have to be equally spaced in time and do not need to follow a particular distribution. The null hypothesis tested was “no upward trend exists.” The alternative hypothesis was “an upward trend exists.” The test was applied at a significance level equal to 0.05. Statistical guidance from the U.S. EPA (April 1994) recommends a significance level of 0.05 to help ensure adequate statistical power, while limiting the number of false positive results.

The Mann-Kendall test was performed on the groundwater monitoring results for TPPH, benzene, toluene, and total xylenes measured in samples collected from wells MW-5 and MW-7 (Table 1). Ethylbenzene was not evaluated because it has been detected only once in the seven years of groundwater sampling. TEPH was not evaluated because it has been analyzed infrequently. For concentrations not detected above the laboratory method detection limit, one-half of the detection limit value was used in the Mann-Kendall test. The number of measurements, “n”, and the calculated “S” statistic are listed in Table 2 for each compound and for each well. According to Gilbert (1987), when S is less than zero, the null hypothesis, “no upward trend exists”, is accepted. When S is greater than zero, if the probability associated with S is *greater than* the significance level of 0.05, the null hypothesis, “no upward trend exists”, is also accepted.

As shown in Table 2, the S statistic is negative for benzene and toluene in both wells, and for TPPH and total xylenes in well MW-7, indicating that “no upward trend exists” for these compounds. The S statistic for TPPH in well MW-5 is 14, corresponding to a probability level of 0.339 for S=14 and n=20 (Hollander and Wolfe, 1973). Because the probability of 0.339 is greater than significance level of 0.05, the null hypothesis, “no upward trend exists”, is accepted. Similarly, for total xylenes in well MW-5, the probability value is greater than the significance level of 0.05 (Table 2). Therefore, the null hypothesis, “no upward trend exists” (i.e. there is no upward trend), is accepted for TPPH, benzene, toluene, and total xylene concentrations in both wells.

The results of the Mann-Kendall test indicate that no upward trend exists for the two monitoring wells for all four analytes (i.e. a total of eight statistical tests) providing evidence of stable or improving groundwater conditions downgradient of the former USTs (i.e., a stable or shrinking plume).

## 5.0 RISK-BASED EVALUATION OF SOIL AND GROUNDWATER CONDITIONS

As discussed in Sections 5.1 and 5.2, the results of the soil and groundwater sampling in the vicinity and downgradient of the former UST site indicate the following:

- Potential risks to current and future Site occupants due to chemicals of concern in soil and groundwater relating to the former UST site are within or less than U.S. EPA's acceptable incremental risk range of  $10^{-6}$  to  $10^{-4}$  (i.e., one in one million to one in ten thousand) and are less than the Proposition 65 notification level of  $10^{-5}$ .
- Potential risks to the environment appear to be minimal based on available aquatic toxicity water quality objectives.

### 5.1 EVALUATION OF POTENTIAL RISKS TO HUMAN HEALTH

The following evaluation of potential human health risks is based on the American Society for Testing and Materials ("ASTM") guidance document entitled *Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites*, dated November 1995. This document is a useful guide to assess petroleum release sites based on the protection of human health and the environment. The document provides a tiered approach to evaluating petroleum release sites based on the complexity and levels of risk determined for a given site. The following evaluation consists of a Tier 1 evaluation of chemicals remaining in soil and groundwater related to the former USTs at the Site.

#### 5.1.1 Potential Human Receptors

The Site is located in a commercial/industrial area in Emeryville, California. The former USTs were located in an area that is now an asphalt-paved parking lot between two commercial buildings (Figure 2). The commercial building at the Site, currently occupied by Sybase, Inc., is located approximately 20 feet north of the UST excavation area. Emery Bay Plaza (1650 65th Street), another commercial building occupied by Sybase, Inc., is located approximately 35 feet south of the UST excavation area. The commercial/industrial occupants of the two buildings to the north and south of the former UST site and subsurface utility maintenance workers are the only potential human receptors identified.

#### 5.1.2 Soil Human Exposure Pathways

Maximum chemical concentrations detected in soil in the vicinity of the excavation are summarized in Table 3. This summary includes the results for (1) confirmation soil samples collected from the excavation sidewalls and bottom after the USTs were

removed in 1989, and (2) soil samples collected by EKI in 1996 from two soil borings advanced near the periphery of the excavated area.

The only complete exposure pathways of on-Site workers to the detected chemicals of concern in soil are through inhalation of chemicals volatilized from soil to outdoor air and through occasional exposure of soil by maintenance workers during work on subsurface utilities (e.g., through dermal contact, incidental ingestion, or inhalation). Volatilization from soil to indoor building air is unlikely because the former UST site and excavation area is located at a distance of 20 feet from the nearest existing building (i.e., to the north). Because the former UST site is covered with an asphalt parking lot, dermal contact with soil and incidental ingestion of soil containing chemicals of concern is not a complete exposure pathway for building occupants or passers-by. Lastly, leaching of chemicals from soil to groundwater used for drinking water is not a complete exposure pathway because groundwater at the Site is not used as a water source.

Risk-based screening levels (“RBSLs”) for soil, water, and air corresponding to various acceptable risk levels have been calculated by ASTM (1995) for typical human exposure pathways. The RBSLs for soil in commercial/industrial areas relating to potentially complete soil exposure pathways are listed in Table 3. Note that RBSLs are listed for detected chemicals in soil only. For each chemical, the RBSL in Table 3 corresponds to a  $10^{-5}$  (i.e., one in one hundred thousand) incremental lifetime carcinogenic risk or a non-carcinogenic hazard quotient of one for a standard 25-year commercial/industrial exposure scenario. For comparison, U.S. EPA specifies an acceptable incremental risk range of  $10^{-6}$  to  $10^{-4}$  (i.e., one in one million to one in ten thousand). The Proposition 65 notification level corresponds to an incremental cancer risk of  $10^{-5}$  (i.e., one in one million) (California Code of Regulations, Title 22, Section 12703). The RBSLs for benzene in Table 3 have been adjusted to account for the California carcinogenic slope factors for benzene.

Consistent with the ASTM guidance document (1995), no RBSLs are presented for TPPH and TEPH. ASTM states that total petroleum hydrocarbon (“TPH”) quantification methods “usually determine the total amount of hydrocarbons present as a single number and give no information on the types of hydrocarbon present. The TPHs should not be used for risk assessment because the general measure of TPH provides insufficient information about the amounts of individual chemical(s) of concern present.”

None of the detected chemical concentrations in soil at the former UST site exceed the potentially applicable RBSLs, indicating that risk levels corresponding to the potentially complete exposure pathways (i.e., volatilization from soil to outdoor air and dermal contact, incidental ingestion, and inhalation) are significantly below acceptable risk levels of  $10^{-5}$  incremental cancer risk for carcinogens and a hazard quotient of one for non-carcinogens.



### 5.1.3 Groundwater Human Exposure Pathways

Chemical concentrations detected in groundwater in the vicinity of the former UST site are summarized in Table 4. This summary includes the results for (1) grab groundwater samples collected by EKI in 1996 from two soil borings advanced near the periphery of the former UST excavation area, and (2) groundwater samples collected by EKI in 1997 from downgradient monitoring wells MW-5 and MW-7.

Of the BTEX compounds detected in groundwater at the Site and immediately downgradient of the former UST site, only benzene concentrations exceed California Maximum Contaminant Levels. The maximum detected MTBE concentration of 8.2 ug/L is significantly less than the California Action Level of 35 ug/L (U.S. EPA, January 1995). However, shallow groundwater at the Site is not utilized as a drinking water source. It is very unlikely that groundwater at the Site will be used as a drinking water source in the future due to the fact that the Site was once part of the City of Emeryville municipal waste landfill and due to the proximity of the Site to San Francisco Bay. As a result, ingestion of groundwater or dermal contact with chemicals of concern in groundwater are not complete exposure pathways at the Site.

Volatilization of chemicals from groundwater to both outdoor air and indoor building air are potentially complete exposure pathways. Based on the apparent southeasterly direction of groundwater flow, the occupants of Emery Bay Plaza at 1650 65th Street are the potentially exposed population for chemicals in indoor building air.

The RBSLs for groundwater in commercial/industrial areas relating to the potentially complete groundwater exposure pathways are listed in Table 4. The RBSLs for benzene in Table 4 have been adjusted to account for California carcinogenic slope factors for this chemical. RBSLs for MTBE in groundwater were calculated using the procedure outlined by ASTM (1995) and an inhalation reference dose of  $0.86 \text{ (mg/kg-d)}^{-1}$  (U.S. EPA, 1997). As discussed in Section 5.1.2, RBSLs for TEPH and TPPH are not provided in the ASTM guidance document (1995).

None of the detected chemical concentrations in groundwater at and downgradient of the former UST site exceed the potentially applicable RBSLs, indicating that risk levels corresponding to the potentially complete exposure pathways (i.e., volatilization from groundwater to indoor and outdoor air) are significantly below acceptable risk levels of  $10^{-5}$  incremental cancer risk for carcinogens and a hazard quotient of one for non-carcinogens.

## 5.2 POTENTIAL RISKS TO THE ENVIRONMENT

Environmental receptors that could potentially be at risk include sensitive plant species, wildlife, or aquatic organisms. Because the former UST site is paved with asphalt and the vicinity of the Site is commercial/industrial, it is unlikely that plants or wildlife are

present or are at risk due to chemicals of concern in soil at the former UST site. The remainder of this section is a discussion of potential risks to aquatic organisms.

The direction of groundwater flow at the Site is generally to the southwest (Appendix A). San Francisco Bay is located approximately 1,200 feet southwest and downgradient of the Site. No surface waters are known to be present between the Site and San Francisco Bay. Berkeley Aquatic Park, an artificial lagoon, is located north of Ashby Avenue between the Eastshore Freeway and the Southern Pacific Railroad, but it is not located downgradient of the Site.

Water quality standards for protection of saltwater aquatic life are established by the State Water Resources Control Board ("SWRCB") for San Francisco Bay in the California Enclosed Bays and Estuaries Plan (SWRCB, May 1993). This document also presents water quality standards for protection of human health relating to consumption of aquatic life that has been exposed to chemicals of concern. These and other potentially relevant water quality objectives are listed in Table 5. Of the chemicals of concern detected in the two groundwater monitoring wells immediately downgradient of the former UST site, only benzene exceeds any of the potentially applicable water quality objectives.

Benzene concentrations in groundwater appear to be attenuating to less-than-significant levels downgradient of the Site. Benzene was detected at a concentration of 3 ug/L in shallow groundwater approximately 300 to 400 feet downgradient of the former UST site (i.e., monitoring wells MW-3 and MW-4; PES Environmental, 29 December 1995). This concentration is significantly less than the applicable water quality objectives for benzene (Table 5). It is also possible that the detected benzene concentrations in these downgradient wells resulted from the leaking underground gasoline storage tank and product line removed from the eastern side this downgradient property, and not from the former USTs at 6601 and 6603 Bay Street.

Based on the information presented above, concentrations of benzene in groundwater are not likely to exceed applicable water quality objectives 1,200 feet downgradient of the Site at San Francisco Bay. Concentrations of other chemicals of concern detected in groundwater do not exceed their applicable water quality objectives. Thus, chemicals of concern in soil and groundwater from the former UST site do not appear to impact potentially sensitive environmental receptors.

## 6.0 CONCLUSIONS

The results of historical and recent soil and groundwater sampling in the vicinity and downgradient of the former UST site indicate the following:

- There are no significant sources of petroleum hydrocarbons relating to the former USTs remaining in soil. Downgradient concentrations of hydrocarbons in groundwater are not indicative of free-phase hydrocarbons.
- PAHs and MTBE were not detected in soil samples collected at the former UST site.
- Statistical analysis of historical petroleum hydrocarbon concentrations in groundwater indicates that concentrations of TPPH, benzene, toluene, and total xylenes are stable or decreasing (i.e., a stable or shrinking plume).
- Potential carcinogenic risks to current and future Site occupants and workers due to chemicals of concern in soil and groundwater relating to the former USTs are within or less than U.S. EPA's acceptable incremental risk range of  $10^{-6}$  to  $10^{-4}$  (i.e., one in one million to one in ten thousand) and are less than the Proposition 65 notification level of  $10^{-5}$ . Similarly, potential non-carcinogenic risks are below the threshold hazard quotient of one.
- Potential risks to the environment appear to be minimal based on available water quality objectives derived for the protection of aquatic organisms and human health.

## 7.0 RECOMMENDATIONS

Current soil and groundwater conditions in the vicinity of the former USTs indicate that there is no significant on-going source of petroleum hydrocarbons and BTEX to groundwater, and that concentrations in groundwater are stable or decreasing. In addition, PAHs and MTBE are not present in soil adjacent to the former USTs. Potential risks to human health and the environment due to chemicals of concern in soil and groundwater relating to the former UST site are within or below acceptable levels.

Therefore, closure of the former USTs located on the Sybase, Inc. property at 6601/6603 Bay Street is requested.

## **8.0 REFERENCES**

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**Table 1**  
**Analytical Results for Groundwater Samples Collected Downgradient of the**  
**Former Underground Storage Tanks (a)**  
6601 and 6603 Bay Street  
Sybase, Inc.  
Emeryville, California

| Well Number | Sample Date | Chemical Concentration in Groundwater (ug/L) (b) |         |         |         |               |               |      |
|-------------|-------------|--|---------|---------|---------|---------------|---------------|------|
|             |             | TPPH   | TEPH    | Benzene | Toluene | Ethyl-benzene | Total Xylenes | MTBE |
| MW-5        | Nov 89      | ND (c)   | NA (d)  | 74      | ND      | ND            | 4.2           | NA   |
|             | Feb 90      | ND   | NA      | 200     | ND      | ND            | ND            | NA   |
|             | May 90      | ND   | ND      | 110     | ND      | ND            | ND            | NA   |
|             | Aug 90      | ND   | 700     | 66      | 2.2     | ND            | 3.8           | NA   |
|             | Nov 90      | 600  | 900     | 69      | ND      | ND            | ND            | NA   |
|             | Mar 91      | ND   | 1100    | 66      | 2.3     | ND            | ND            | NA   |
|             | May 91      | ND   | ND      | 110     | ND      | ND            | ND            | NA   |
|             | Aug 91      | ND   | ND      | 78      | 2.1     | ND            | ND            | NA   |
|             | 29 Jan 92   | 190  | NA      | 90      | 0.5     | <0.3 (e)      | 0.6           | NA   |
|             | 28 Feb 92   | 230  | NA      | 110     | 0.9     | <0.3          | 0.5           | NA   |
|             | 28 May 92   | 130  | NA      | 100     | <0.5    | <0.5          | <0.5          | NA   |
|             | 27 Aug 92   | 520  | NA      | 83      | 2       | <0.5          | <0.5          | NA   |
|             | 10 Nov 92   | 240  | <100    | 74      | 1       | <0.3          | <0.6          | NA   |
|             | 18 Feb 93   | 190  | NA      | 56      | 0.6     | <0.5          | <0.5          | NA   |
|             | 20 May 93   | <200   | NA      | 56      | <2      | <2            | <2            | NA   |
|             | 19 Aug 93   | 170  | NA      | 50      | 0.7     | <0.5          | <0.5          | NA   |
|             | 15 Nov 93   | 220  | NA      | 49      | 1       | <1            | <1            | NA   |
|             | 14 Feb 94   | 140  | NA      | 62      | <0.5    | <0.5          | <0.5          | NA   |
|             | 16 May 94   | 310  | NA      | 140     | 3       | <3            | <3            | NA   |
|             | 12 Aug 94   | 500  | NA      | 95      | 34      | 4             | 14            | NA   |
|             | 3 Nov 94    | 400  | NA      | 79      | 0.6     | <0.5          | <2            | NA   |
|             | 9 Feb 95    | 300  | NA      | 74      | 0.8     | <0.5          | <2            | NA   |
|             | 9 May 95    | 200  | NA      | 47      | 0.5     | <0.5          | <2            | NA   |
|             | 10 Aug 95   | 200  | NA      | 46      | 0.5     | <0.5          | <2            | NA   |
|             | 13 Nov 95   | 300  | NA      | 48      | 0.7     | <0.5          | <2            | NA   |
|             | 15 Jun 96   | 180  | <40,000 | 39      | <0.5    | <0.5          | <0.5          | NA   |
|             | 27 Dec 96   | 220  | 4,500   | 54      | 0.5     | <0.5          | <0.5          | 15   |
|             | 19 Jun 97   | 210  | 4,800   | 38      | <0.5    | <0.5          | <0.5          | 7.5  |

**Table 1**  
**Analytical Results for Groundwater Samples Collected Downgradient of the**  
**Former Underground Storage Tanks (a)**  
6601 and 6603 Bay Street  
Sybase, Inc.  
Emeryville, California

| Well Number | Sample Date | Chemical Concentration in Groundwater (ug/L) (b) |      |         |         |               |               |      |
|-------------|-------------|--|------|---------|---------|---------------|---------------|------|
|             |             | TPPH   | TEPH | Benzene | Toluene | Ethyl-benzene | Total Xylenes | MTBE |
| MW-7        | May 90      | NA   | 600  | 240     | ND      | ND            | ND            | NA   |
|             | Aug 90      | ND   | ND   | 81      | 1.8     | ND            | ND            | NA   |
|             | Nov 90      | ND   | 800  | 54      | ND      | ND            | ND            | NA   |
|             | Mar 91      | ND   | ND   | 100     | 3.6     | ND            | ND            | NA   |
|             | May 91      | ND   | ND   | 120     | 2.7     | ND            | ND            | NA   |
|             | Aug 91      | ND   | ND   | 74      | 3.3     | ND            | ND            | NA   |
|             | 29 Jan 92   | 270  | NA   | 25      | 0.5     | <0.3          | 0.8           | NA   |
|             | 28 Feb 92   | 100  | NA   | 33      | 0.7     | <0.3          | 0.7           | NA   |
|             | 28 May 92   | 150  | NA   | 21      | <0.5    | <0.5          | <0.5          | NA   |
|             | 27 Aug 92   | 440  | NA   | 11      | 1       | <0.5          | <0.5          | NA   |
|             | 10 Nov 92   | 370  | <100 | 31      | 1.2     | <0.3          | 1.2           | NA   |
|             | 18 Feb 93   | 270  | NA   | 77      | 1.3     | <0.5          | 1.4           | NA   |
|             | 20 May 93   | 300  | NA   | 150     | 3       | <2            | 3             | NA   |
|             | 19 Aug 93   | 110  | NA   | 40      | 1       | <0.5          | 1.1           | NA   |
|             | 15 Nov 93   | 120  | NA   | 15      | 0.6     | <0.5          | 2.3           | NA   |
|             | 14 Feb 94   | 120  | NA   | 38      | <0.5    | <0.5          | <0.5          | NA   |
|             | 17 May 94   | <300   | NA   | 61      | <3      | <3            | <3            | NA   |
|             | 10 Aug 94   | 100  | NA   | 9       | <0.5    | <0.5          | <2            | NA   |
|             | 3 Nov 94    | 100  | NA   | 3       | <0.5    | <0.5          | <2            | NA   |
|             | 9 Feb 95    | 200  | NA   | 50      | 0.6     | <0.5          | <2            | NA   |
|             | 9 May 95    | 300  | NA   | 120     | 1       | <0.5          | <2            | NA   |
|             | 10 Aug 95   | <50  | NA   | 7       | <0.5    | <0.5          | <2            | NA   |
|             | 13 Nov 95   | 90   | NA   | 3       | <0.5    | <0.5          | <2            | NA   |
| 16 Jun 96   | <50         | 1,000  | 47   | 0.87    | <0.5    | 0.8           | 6.5           |      |
| 27 Dec 96   | 110         | 2,300  | 35   | 0.88    | <0.5    | 0.79          | 5.0           |      |
| 19 Jun 97   | 200         | 2,500  | 59   | 1.2     | <0.5    | <0.5          | 8.2           |      |

**Notes:**

- (a) Samples in 1996 and 1997 were collected by Eler & Kalinowski, Inc. Samples prior to 1992 were collected by Engineering-Science. All other data from PES Environmental, Inc. (December 1995).
- (b) TPPH = Total purgeable petroleum hydrocarbons quantified as gasoline  
TEPH = Total extractable petroleum hydrocarbons quantified as diesel  
MTBE = Methyl tertiary butyl ether
- (c) ND = Not detected. Note that detection limits were not available in the summary tables in PES, December 1995.
- (d) NA = Not Analyzed
- (e) Less than symbol (" $<$ ") indicates that the compound was not present above the detection limit indicated.

**Table 2**  
**Results of Trend Analysis of Groundwater Data from Monitoring Wells MW-5 and MW-7 (a)**  
6601 and 6603 Bay Street  
Sybase, Inc.  
Emeryville, California

| Statistical Parameters       | Well MW-5       |                 |                 |                 | Well MW-7       |                 |                 |                 |
|------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                              | TPPH            | Benzene         | Toluene         | Total Xylenes   | TPPH            | Benzene         | Toluene         | Total Xylenes   |
| n (b)                        | 20              | 28              | 20              | 20              | 20              | 28              | 20              | 20              |
| S (c)                        | 14              | -176            | -43             | 12              | -60             | -93             | -6              | -24             |
| Mann-Kendall Probability (d) | 0.339           | NA (e)          | NA              | 0.362           | NA              | NA              | NA              | NA              |
| Significance Level (f)       | 0.05            | 0.05            | 0.05            | 0.05            | 0.05            | 0.05            | 0.05            | 0.05            |
| Result (g)                   | No upward trend | No upward trend | No upward trend | No upward trend | No upward trend | No upward trend | No upward trend | No upward trend |

**Notes:**

- (a) The data from Table 1 were evaluated using the Mann-Kendall test. A value equal to half the detection limit was used for concentrations reported to be less than laboratory method detection limits. Because detection limit values were not available for data prior to 1992, only the data from 29 January 1992 to 19 June 1997 were used in the analyses for all compounds except benzene. All historical data for benzene were used because the benzene concentrations were above detection limits. A statistical evaluation of ethylbenzene concentrations was not performed because ethylbenzene concentrations were less than detection limits in all but one sample.
- (b) "n" is the number of sampling events.
- (c) "S" is the Mann-Kendall statistic calculated using the methodology described in Gilbert (1987).
- (d) Mann-Kendall probability is related to the values of S and n, and is obtained from Table A21 in Hollander and Wolfe (1973).
- (e) A negative S value indicates that the data are clearly not increasing and a Mann-Kendall probability is not applicable ("NA").
- (f) A significance level of 0.05 is recommended by U.S. EPA (1994).
- (g) A negative S value or a Mann-Kendall probability greater than the significance level indicates that there is no upward trend in the data (Gilbert, 1987).

**Abbreviations:**

TPPH = Total Purgeable Petroleum Hydrocarbons quantified as gasoline



**Table 3**  
**Comparison of Maximum Detected Chemical Concentrations in Soil**  
**with ASTM RBCA Tier 1 Risk-Based Screening Levels**

6601 and 6603 Bay Street  
 Sybase, Inc.  
 Emeryville, California

| Investigation, Report Date                              | Number of Soil Samples | Maximum Concentration Detected in Soil (mg/kg) (a) |         |              |               |
|---|------------------------|--|---------|--------------|---------------|
|   |                        | Benzene  | Toluene | Ethylbenzene | Total Xylenes |
| William Dubovsky Environmental, July 1990 (b)           | 11                     | 0.76   | 1.2     | 0.48         | 21            |
| Erler & Kalinowski, Inc., August 1996 (c)               | 2                      | <0.005   | 0.0094  | <0.005       | 0.015         |
| <u>RBCA Tier 1 Risk-Based Screening Levels (d)</u>      |                        |  |         |              |               |
| - Volatilization from Soil to Outdoor Air               |                        | 1.3  | RES (e) | RES          | RES           |
| - Ingestion, Dermal, and Inhalation from Surficial Soil |                        | 29   | 18,700  | 11,500       | 208,000       |
| - Volatilization from Soil to Indoor Air                |                        | N/A (f)  | N/A     | N/A          | N/A           |
| - Leaching from Soil to Groundwater for Drinking Water  |                        | N/A (g)  | N/A     | N/A          | N/A           |
| Are applicable Risk-Based Screening Levels exceeded?    |                        | NO   | NO      | NO           | NO            |

**Notes:**

- (a) Only chemicals detected in soil samples collected near the former UST site are shown. Soil samples collected by EKI in 1996 were analyzed for polycyclic aromatic hydrocarbons ("PAHs") and methyl tertiary butyl ether ("MTBE"), but they were not detected.
- (b) Maximum concentrations shown are for 11 soil samples collected from the excavation sidewalls and bottom.
- (c) Maximum concentrations shown are for 2 soil samples collected from borings SB-3 and SB-4 which were located nearest to the tank excavation.
- (d) Risk-Based Screening Levels ("RBSLs") for commercial/industrial soil corresponding to 10<sup>-5</sup> lifetime incremental carcinogenic risk or hazard quotient of 1 for each chemical (Table X2.1; ASTM, 1995). RBSLs for benzene were adjusted to account for the California carcinogenic slope factors for benzene. Although total purgeable petroleum hydrocarbons ("TPPH") quantified as gasoline and total extractable petroleum hydrocarbons ("TEPH") quantified as diesel were detected in the soil samples, no RBSLs exist for TPPH or TEPH as discussed in the text.
- (e) "RES" indicates that risk level is not exceeded for pure compound present at any concentration.
- (f) "N/A" indicates that exposure pathway is not applicable for detected chemicals at the former tank locations. Chemicals detected in soil are not located under or immediately adjacent to buildings.
- (g) This exposure pathway is not applicable because shallow groundwater at the Site is not used for drinking water and is not likely to be used in the future.

**Table 4**  
**Comparison of Chemical Concentrations in Groundwater**  
**with ASTM RBCA Tier 1 Risk-Based Screening Levels**  
6601 and 6603 Bay Street  
Sybase, Inc.  
Emeryville, California

| Well or Boring I.D. (b)                              | Sample Date (c) | Concentration in Groundwater (ug/L) (a) |         |              |               |            |
|--|-----------------|---|---------|--------------|---------------|------------|
|  |                 | Benzene                                 | Toluene | Ethylbenzene | Total Xylenes | MTBE       |
| SB-3   | 15 Jun 96       | 160                                     | <50     | <50          | <50           | <250       |
| SB-4   | 15 Jun 96       | 5.0                                     | <2      | <2           | <2            | <10        |
| MW-5   | 19 Jun 97       | 38                                      | <0.5    | <0.5         | <0.5          | 7.5        |
| MW-7   | 19 Jun 97       | 59                                      | 1.2     | <0.5         | <0.5          | 8.2        |
| <u>RBCA Tier 1 Risk-Based Screening Levels (d)</u>   |                 |   |         |              |               |            |
| - Volatilization from Groundwater to Outdoor Air     |                 | 53,000                                  | >S (e)  | >S           | >S            | >S         |
| - Vapor Intrusion from Groundwater to Indoor Air     |                 | 210                                     | 85,000  | >S           | >S            | 4,000,000. |
| - Ingestion of Groundwater                           |                 | N/A (f)                                 | N/A     | N/A          | N/A           | N/A        |
| Are applicable Risk-Based Screening Levels exceeded? |                 | NO                                      | NO      | NO           | NO            | NO         |

**Notes:**

(a) MTBE = Methyl tertiary butyl ether.

(b) See Figure 2 for locations of monitoring wells and soil borings.

(c) Date of most recent sampling from monitoring well or date of collection of grab groundwater sample.

(d) Risk-Based Screening Levels ("RBSLs") for groundwater in commercial/industrial areas corresponding to  $10^{-5}$  lifetime incremental carcinogenic risk or hazard quotient of 1 for each chemical (ASTM, 1995). The RBSL for benzene was adjusted to account for California carcinogenic slope factor for this chemical. RBSLs for MTBE were calculated using the procedure outlined by ASTM (1995) with an inhalation reference dose of  $0.86 \text{ (mg/kg-d)}^{-1}$ . Although total purgeable petroleum hydrocarbons ("TPPH") quantified as gasoline and total extractable petroleum hydrocarbons ("TEPH") quantified as diesel were detected in soil samples, no RBSLs exist for TPPH or TEPH as discussed in the text.

(e) ">S" indicates that risk level is not exceeded for all possible dissolved concentrations of this chemical (i.e., risk-based value exceeds saturation concentration).

(f) "N/A" indicates that exposure pathway is not applicable for detected chemicals at the former tank locations. Groundwater is not a water source at the site.

**Table 5**  
**Potentially Applicable Water Quality Objectives for Protection of Aquatic Life and Human Health**  
6601 and 6603 Bay Street  
Sybase, Inc.  
Emeryville, California

| Reference  | Protection Objective   | Concentration in Water (ug/L) (a) |       |         |         |                   |                  |      |
|--|------------------------|-----------------------------------|-------|---------|---------|-------------------|------------------|------|
|  |                        | TPPH                              | TEPH  | Benzene | Toluene | Ethyl-<br>benzene | Total<br>Xylenes | MTBE |
| Maximum concentration detected in groundwater downgradient of the former USTs (1997 data, this report) |                        | 210                               | 4,800 | 59      | 1.2     | <0.5              | <0.5             | 8.2  |
| California Enclosed Bays and Estuaries Plan (SWQRB, May 1993)  | Saltwater Aquatic Life | - (b)                             | -     | -       | -       | -                 | -                | -    |
|  | Human Health (c)       | -                                 | -     | 21      | 300,000 | 29,000            | -                | -    |
| National Toxics Rule (57 Federal Register 60911, 22 December 1992)                                     | Human Health (c,d)     | -                                 | -     | -       | -       | 29,000            | -                | -    |
| U.S. EPA Region XIII Clean Water Act 304a Criteria Chart (U.S. EPA Region XIII, July 1993)             | Aquatic Life           | -                                 | -     | -       | -       | -                 | -                | -    |
|  | Human Health (c,d)     | -                                 | -     | 71      | 200,000 | 29,000            | -                | -    |
| Most Stringent Lowest Effect Concentrations (U.S. EPA Integrated Risk Information System, 1997)        | Saltwater Aquatic Life | -                                 | -     | 700     | 5,000   | 430               | -                | -    |

**Notes:**

(a) MTBE = Methyl tertiary butyl ether

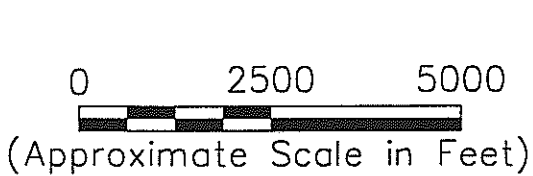
TEPH = Total Extractable Petroleum Hydrocarbons quantified as diesel

TPPH = Total Purgeable Petroleum Hydrocarbons quantified as gasoline

(b) No water quality objective is provided for this chemical.

(c) Value for protection of human health related to human consumption of aquatic life exposed to compound of concern.

(d) Does not include water quality objectives that include water used as drinking water.



## **Erler & Kalinowski, Inc.**

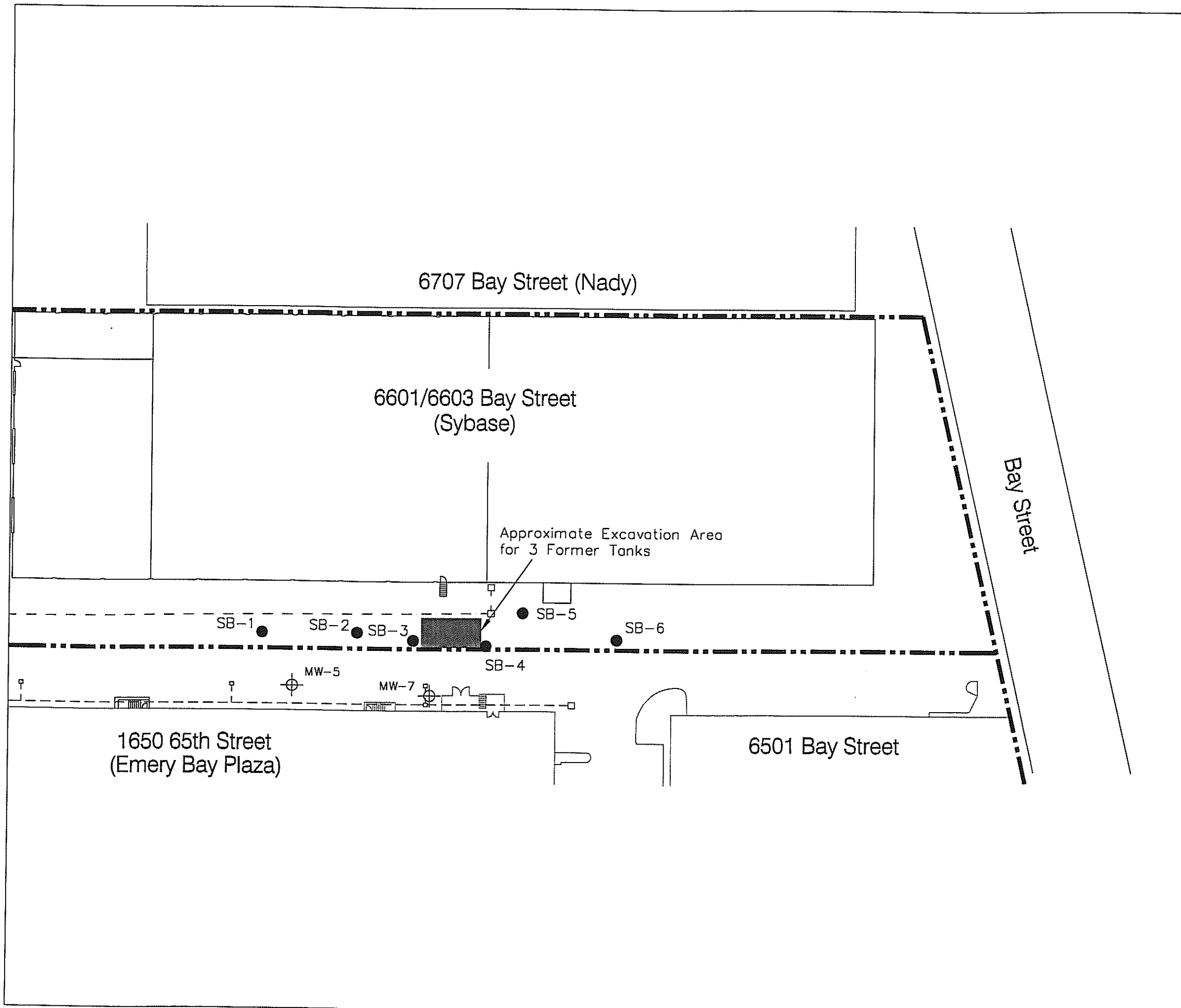
Site Location

6601/6603 Bay Street  
Emeryville, CA  
August 1997  
EKI 950074.03

Figure 1

**Notes:**

1. All locations are approximate.



**LEGEND**

- Property Boundary
- - - Sanitary Sewer Line
- - - Storm Drain Line
- ⊕ Off-Site Monitoring Well Location
- Approximate Excavation Area
- Soil Boring Location

**Notes:**

1. All locations are approximate.
2. Base map digitized from Alta Land Survey Title Map.

**Erler & Kalinowski, Inc.**

Soil Boring and Monitoring Well Locations

6601/6603 Bay Street  
 Emeryville, CA  
 August 1997  
 EKI 950074.03  
 Figure 2

**LEGEND**

- ◆— MW-5
- MW-7
- MW-5 Regression
- ..... MW-7 Regression

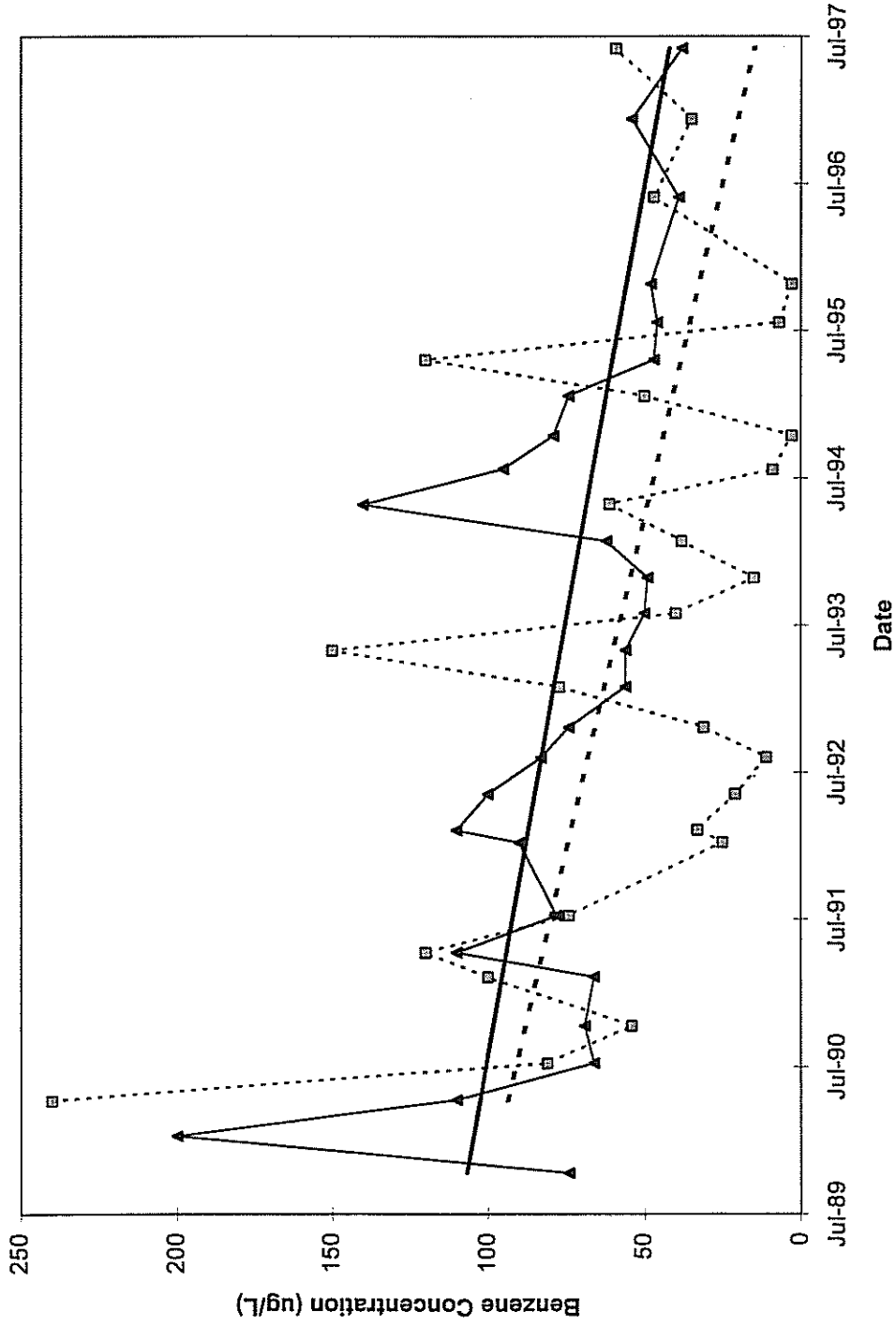
Notes:

1. Samples in 1986 and 1997 were collected by EKI. Samples from 1992 to 1995 were collected by PES Environmental Inc. Samples prior to 1992 were collected by Engineering Science.

**Erler &  
Kalinowski, Inc.**

**Benzene Concentrations in  
Groundwater Samples Collected  
Downgradient of Former USTs**

6601/6603 Bay Street  
Emeryville, California  
August 1997  
EKI 950074.03  
**Figure 3**



APPENDIX A

Letter from Michelle King (EKI) to Susan Hugo (ACDEH) Dated 18 December 1996

COPI

**Erler &  
Kalinowski, Inc.**

Consulting Engineers and Scientists

1730 So. Amplett Blvd., Suite 320  
San Mateo, California 94402  
(415) 578-1172  
Fax (415) 578-9131

18 December 1996

Ms. Susan Hugo  
Senior Hazardous Materials Specialist  
Alameda County Department of Environmental Health  
1131 Harbor Bay Parkway  
Alameda, California 94502

Subject: Additional Groundwater Monitoring  
6601 and 6603 Bay Street, Emeryville, California  
(EKI 950074.00)

Dear Ms. Hugo:

On the basis of our meeting on 4 September 1996, Sybase, Inc. is planning to proceed with the additional work agreed upon at the meeting regarding the three former underground storage tanks ("USTs") at the 6601 and 6603 Bay Street properties in Emeryville, California. As discussed at our meeting, Erler & Kalinowski, Inc. ("EKI"), on behalf of Sybase, Inc., will perform two additional rounds of groundwater monitoring well sampling and analyses to demonstrate that concentrations of chemicals of concern in groundwater continue to be stable or decreasing. Assuming the results continue to show that a stable or decreasing trend persists, Sybase, Inc. will then request closure of the former USTs.

The groundwater monitoring well sampling includes collecting groundwater samples from wells MW-5 and MW-7, located downgradient of the former USTs (Figure 1). Groundwater samples will be analyzed for total extractable petroleum hydrocarbons quantified as diesel (EPA Method 8015 Modified), total purgeable petroleum hydrocarbons (EPA Method 8015 Modified), and benzene, toluene, ethylbenzene, xylenes, and methyl tertiary butyl ether (EPA Method 8020).

After each round of groundwater sampling, EKI will submit a report to you with the results of the chemical analyses. If chemical concentrations continue to show a stable or decreasing trend, the second report will also include the following: (1) a discussion that shows that the site is of low risk and (2) a request for closure of the former USTs.

As discussed in our September meeting, the first round of groundwater monitoring well sampling will be performed on 26 or 27 December 1996 and the second round will be performed in June 1997.



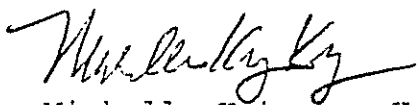
Ms. Susan Hugo  
18 December 1996  
Page 2

**Erlar &  
Kalinowski, Inc.**

Please call me or Dave Tricaso at Sybase, Inc. with any questions.

Very truly yours,

ERLER & KALINOWSKI, INC.



Michelle Kriegman King, Ph.D.  
Project Manager

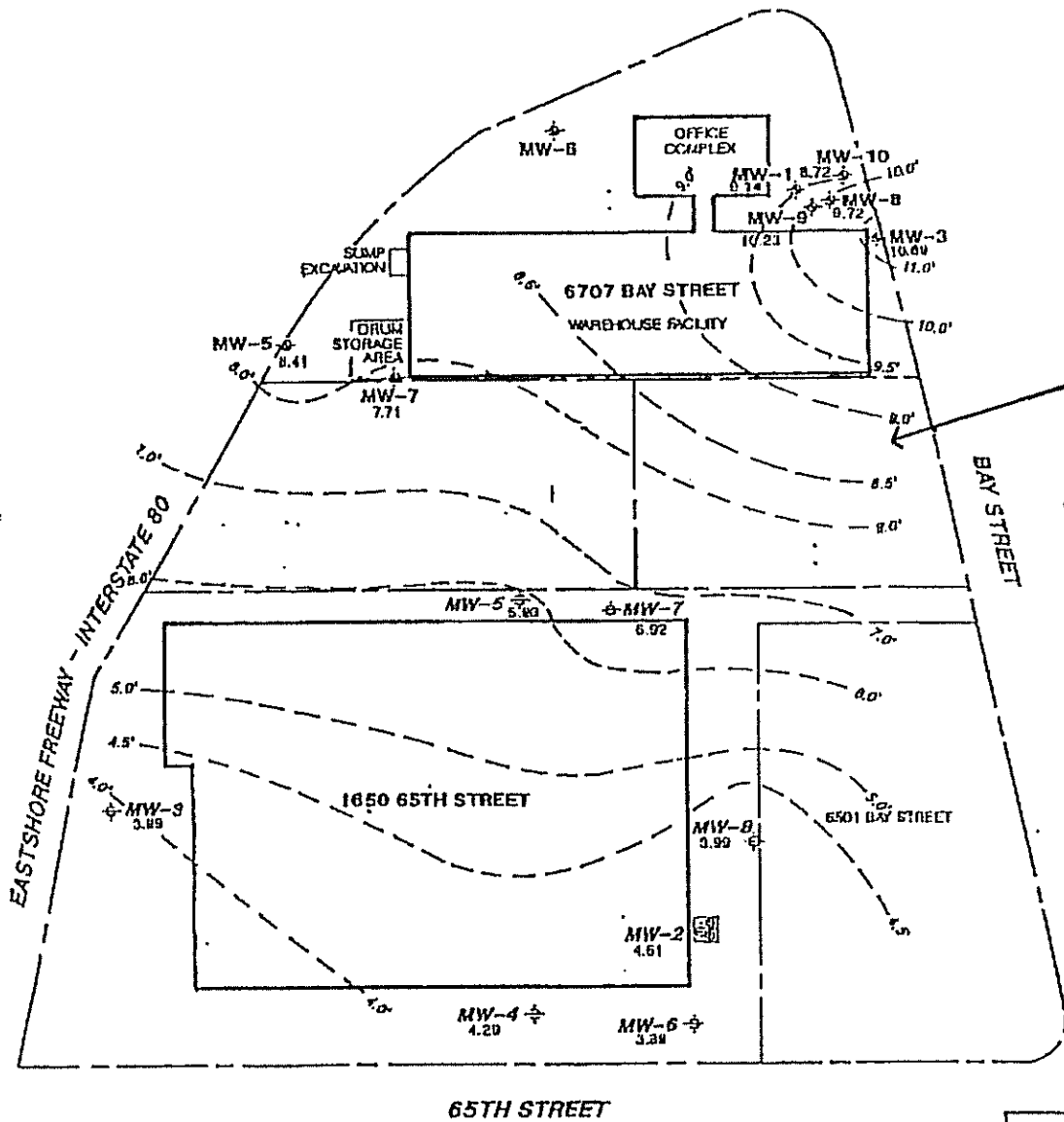
Attachment: Figure

cc: David Tricaso, Sybase, Inc.

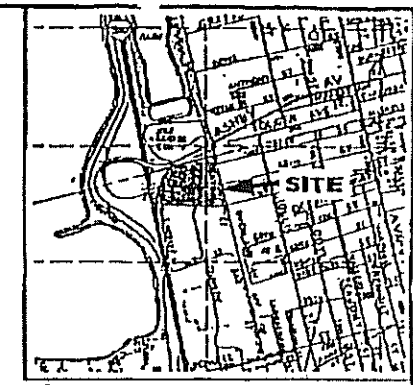
APPENDIX B

Groundwater Potentiometric Surface in the Vicinity of 6601/6603 Bay Street

Obtained from Subsurface Consultants, Inc.,  
*Groundwater Monitoring, November 1995 Event,*  
dated 15 December 1995

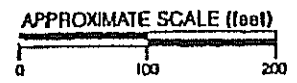


6601/6603 Bay Street



VICINITY MAP

- ⊕ MONITORING WELL BY SCI
- ⊕ MONITORING WELL BY OTHERS
- ⊕ GROUNDWATER EXTRACTION WELL BY OTHERS
- PROPERTY LINE
- EXISTING STRUCTURE
- - - GROUNDWATER ELEVATION CONTOUR (FEET) MSL - NOVEMBER 14, 1995



|                                  |                 |                                |
|----------------------------------|-----------------|--------------------------------|
| <b>SITE PLAN</b>                 |                 |                                |
| 6707 BAY STREET - EMERYVILLE, CA |                 | PLATE                          |
| JOB NUMBER<br>820.001            | DATE<br>12/6/95 | APPROVED<br><i>[Signature]</i> |
|                                  |                 | <b>1</b>                       |

Subsurface Consultants

APPENDIX C

Field Notes

Sheet: 1 of 1  
Date: 6/19/97  
Project: SUBASE  
EKI Job No.: 950074-00

Contractor: \_\_\_\_\_

EKI Staff On-site: ROGER LIAN

Weather: CLEAR

Temperature: \_\_\_\_\_ F Max \_\_\_\_\_ F Min

Work Hours: 6:50 to 11:40 Memos Issued: \_\_\_\_\_

Photos: \_\_\_\_\_

Special Conditions, Delays, Changes: \_\_\_\_\_

Accidents, Damage: \_\_\_\_\_

Sampling, Testing: PURGE & SAMPLE MW-7 AND MW-5 AT 6601 & 6603 Bay Street, Emeryville

Visitors to Site: \_\_\_\_\_

Work Report (Work done, Personnel/Equipment working): 6:50 I ARRIVED ON SITE & COVERED WORK AREA BEFORE OPENING WELLS.

7:30 MEASURED DEPTH TO WATER IN WELLS. CALIBRATED FIELD INSTRUMENTS FOR PH, <sup>DISSOLVED OXYGEN</sup> CONDUCTIVITY, TURBIDITY

7:45 STARTED PURGING MW-7 WITH A DECONNED 12-VOLT SUBMERSIBLE PUMP.

7:23 MW-7 PURGED OF 3 CASING VOLUMES. THE PUMP WAS DECONNED.

1:40 STARTED PURGING MW-5 WITH THE 12-VOLT PUMP.

10:52 AFTER THE PURGE WAS COMPLETED, SAMPLES WERE COLLECTED WITH A DECONNED BAKER.

1:09 SAMPLES WERE COLLECTED FROM MW-7 WITH A DECONNED TEFLON BAKER. PURGED & DEION WATER WAS PLACED IN A DRUM ON SITE (THERE ARE 8 DRUMS ON SITE IN THE TRASH BIN ENCLOSURE NEXT TO MW-7.) I LEAVE THE SITE @ 11:40.

Distribution: Project Inspection File (orig)  
Project Manager

By: Roger Lian

PROJECT NAME: SyBASE, 6601 & 6603 Bay Street, Emeryville DATE: 6/19/97  
 PROJECT NUMBER: 950074.00 WELL NUMBER: MW-5 PERSONNEL: R. Alvar

WELL VOLUME CALCULATION:  
 Depth of Well (ft.) 16.10 - Depth to Water (ft.) 6.54 = Water Column (ft.) 9.56 \* Multiplier (below) 0.64 = Casing Vol. (gallons) 6.12  
 Mult. for casing diam. = 2-inch=0.16; 4-inch=0.64; 6-inch=1.44 gals/ft.

opened @ 6:59, measured @ 7:28  
 No. of bailers prior to start of purge: 0

PURGE METHOD: 12-VOLT SUBMERSIBLE PUMP

PURGE DEPTH: 9 ft

START TIME: 9:40 END TIME: 10:29

TOTAL GALLONS PURGED: 21.0

INSTRUMENT CALIBRATION

Field Standard  
Instrument measure measure

Conductivity  
 pH (SEE MW-7)  
 pH  
 Turbidity  
 Temperature  
 Depth Probe

| SAMPLES: | Field I.D.  | Time Collected | Containers & Preservation               |
|----------|-------------|----------------|---|
|          | <u>MW-5</u> | <u>10:52</u>   | <u>{ 2 - 1-L. Amber<br/>3 - VOA+HCL</u> |

COMMENTS:

| Time                               | 9:47            | 10:00           | 10:15           | 10:22           | 10:29           |  |  |
|------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|--|
| Volume Purged (gallons)            | <u>3.0</u>      | <u>7.5</u>      | <u>12.3</u>     | <u>15.0</u>     | <u>21.0</u>     |  |  |
| Temperature (degrees F or C)       | <u>19.7</u>     | <u>19.9</u>     | <u>19.5</u>     | <u>19.4</u>     | <u>19.5</u>     |  |  |
| pH                                 | <u>6.62</u>     | <u>7.65</u>     | <u>7.66</u>     | <u>7.67</u>     | <u>7.69</u>     |  |  |
| Specific Conductivity (millimhos)  | <u>3.38</u>     | <u>3.29</u>     | <u>3.31</u>     | <u>3.31</u>     | <u>3.32</u>     |  |  |
| Turbidity/Color (NTU)              | <u>3.42</u>     | <u>1.22</u>     | <u>1.41</u>     | <u>1.34</u>     | <u>1.29</u>     |  |  |
| Odor                               | <u>-</u>        | <u>2X</u>       | <u>-</u>        | <u>-</u>        | <u>-</u>        |  |  |
| Dissolved Oxygen (mg/L)            | <u>0.3 mg/L</u> | <u>0.2 mg/L</u> | <u>0.2 mg/L</u> | <u>0.1 mg/L</u> | <u>0.1 mg/L</u> |  |  |
| Depth to Water during purge (feet) | <u>6.97</u>     | <u>6.90</u>     | <u>7.25</u>     | <u>7.28</u>     | <u>7.30</u>     |  |  |
| Number of Casing Volumes removed   | <u>0.49</u>     | <u>1.23</u>     | <u>2.01</u>     | <u>2.45</u>     | <u>3.43</u>     |  |  |
| Purge Rate (gallons/minute)        | <u>0.43</u>     | <u>0.35</u>     | <u>0.32</u>     | <u>0.39</u>     | <u>0.86</u>     |  |  |

GROUNDWATER PURGE SAMPLE FORM

PROJECT NAME: Sybase, 6601 6603 ~~Sty~~ Street, Emeryville DATE: 6/19/97  
 PROJECT NUMBER: 950074.00 WELL NUMBER: MW-7 PERSONNEL: R-D-Lion

WELL VOLUME CALCULATION:  
 Depth of Well (ft.) 18.87 - Depth to Water (ft.) 6.32 = Water Column (ft.) 12.55 \* Multiplier (below) 0.64 = Casing Vol. (gallons) 8.032  
 Mult. for casing diam. = 2-inch=0.16; 4-inch=0.64; 6-inch=1.44 gals/ft.

opened @ 6:58, measured @ 7:31  
 No. of bailers prior to start of purge: 0

PURGE METHOD: 12-VOLT SUBMERSIBLE PUMP  
 PURGE DEPTH: 9.4 → 18.5 ft  
 START TIME: 7:45 END TIME: 9:23

INSTRUMENT CALIBRATION

| Instrument                  | measure | Field Standard measure |
|-----------------------------|---------|------------------------|
| Disolved Oxygen - Orion 820 |         |                        |
| Conductivity                | 1.017   | 1.000                  |
| pH                          | 7.00    | 7.0                    |
| pH                          | 3.95    | 4.0                    |
| Turbidity                   | 0.02    | 0.02                   |
| Temperature, °C             | 17.9    | 17.5                   |
| Depth Probe #               | 6       |                        |

TOTAL GALLONS PURGED: 24.5

| SAMPLES: | Field I.D. | Time Collected | Containers & Preservation         |
|----------|------------|----------------|-----------------------------------|
|          | MW-7       | 11:09          | 2 - 1 L. AmBERS<br>3 - VOLS + HCL |

COMMENTS:

| Time                               | 7:50     | 8:05     | 8:25     | 8:32     | 9:03                    | 9:17                    | 9:23     |
|------------------------------------|----------|----------|----------|----------|-------------------------|-------------------------|----------|
| Volume Purged (gallons)            | 2.9      | 6.5      | 10.1     | 12.6     | 18.2<br><del>18.2</del> | 23.0                    | 24.5     |
| Temperature (degrees F or °C)      | 18.2     | 18.5     | 18.4     | 18.3     | 18.3                    | 18.2                    | 18.2     |
| pH                                 | 8.00     | 8.16     | 8.22     | 8.35     | 8.08                    | 7.95                    | 8.16     |
| Specific Conductivity (millimhos)  | 1.976    | 1.993    | 1.981    | 1.952    | 2.01                    | 2.01                    | 1.953    |
| Turbidity/Color (NTU)              | 2.26     | 1.74     | —        | 1.37     | 2.22                    | 4.36                    | 4.93     |
| Odor (%)                           | —        | (6%)     | (5%)     |          |                         |                         |          |
| DISOLVED OXYGEN, (mg/L)            | 0.9 mg/L | 0.6 mg/L | 0.5 mg/L | 0.5 mg/L | 0.9 mg/L                | 0.3 mg/L                | 0.2 mg/L |
| Depth to Water during purge (feet) | 9.02     | 10.20    | 11.9     | 12.65    | 15.42                   | 17.4                    | 17.8     |
| Number of Casing Volumes removed   | 0.36     | 0.81     | 1.26     | 1.49     | 1.77<br><del>2.27</del> | 2.86                    | 3.05     |
| Purge Rate (gallons/minute)        | 0.58     | 0.24     | 0.18     | 0.27     | 0.20                    | 0.34<br><del>0.60</del> | 0.25     |

APPENDIX D

Laboratory Data Sheets





|   |   |  |
|---|---|--|
| Erler & Kalinowski, Inc.<br>1730 South Amphlett, Ste 320<br>San Mateo, CA 94402<br>Attention: Michelle King | Client Proj. ID: 950074.00/Sybase<br>Sample Descript: MW-5<br>Matrix: LIQUID<br>Analysis Method: EPA 8015 Mod<br>Lab Number: 9706B67-01 | Sampled: 06/19/97<br>Received: 06/19/97<br>Extracted: 06/25/97<br>Analyzed: 07/01/97<br>Reported: 07/02/97 |
|---|---|--|

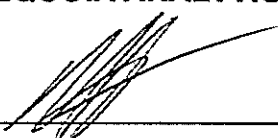
QC Batch Number: GC0625970HBPEXZ  
Instrument ID: GCHP19A

**Total Extractable Petroleum Hydrocarbons (TEPH)**

| Analyte  | Detection Limit<br>ug/L    | Sample Results<br>ug/L |
|--|----------------------------|------------------------|
| TEPH as Diesel<br>Chromatogram Pattern:<br>Unidentified HC | 100                        | 4800<br>C9-C24         |
| Surrogates<br>n-Pentacosane (C25)                          | Control Limits %<br>50 150 | % Recovery<br>433 Q    |

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL** - ELAP #1210

  
\_\_\_\_\_  
Mike Gregory  
Project Manager





|   |   |   |
|---|---|---|
| Erler & Kalinowski, Inc.<br>1730 South Amphlett, Ste 320<br>San Mateo, CA 94402<br>Attention: Michelle King | Client Proj. ID: 950074.00/Sybase<br>Sample Descript: MW-5<br>Matrix: LIQUID<br>Analysis Method: 8015Mod/8020<br>Lab Number: 9706B67-01 | Sampled: 06/19/97<br>Received: 06/19/97<br>Analyzed: 06/25/97<br>Reported: 07/02/97 |
|---|---|---|

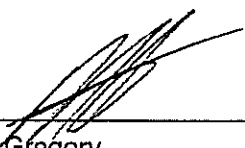
QC Batch Number: GC062597BTEX02A  
Instrument ID: GCHP02

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

| Analyte                                | Detection Limit<br>ug/L | Sample Results<br>ug/L |
|--|-------------------------|------------------------|
| TPPH as Gas                            | 50                      | 210                    |
| Methyl t-Butyl Ether                   | 2.5                     | 7.5                    |
| Benzene                                | 0.50                    | 38                     |
| Toluene                                | 0.50                    | N.D.                   |
| Ethyl Benzene                          | 0.50                    | N.D.                   |
| Xylenes (Total)                        | 0.50                    | N.D.                   |
| Chromatogram Pattern:<br>Weathered Gas |                         | C6-C12                 |
| <b>Surrogates</b>                      | <b>Control Limits %</b> | <b>% Recovery</b>      |
| Trifluorotoluene                       | 70 130                  | 148 Q                  |

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL** - ELAP #1210

  
Mike Gregory  
Project Manager





|                              |                                   |                     |
|------------------------------|-----------------------------------|---------------------|
| Erler & Kalinowski, Inc.     | Client Proj. ID: 950074.00/Sybase | Sampled: 06/19/97   |
| 1730 South Amphlett, Ste 320 | Sample Descript: MW-7             | Received: 06/19/97  |
| San Mateo, CA 94402          | Matrix: LIQUID                    | Extracted: 06/25/97 |
| Attention: Michelle King     | Analysis Method: EPA 8015 Mod     | Analyzed: 06/27/97  |
|                              | Lab Number: 9706B67-02            | Reported: 07/02/97  |

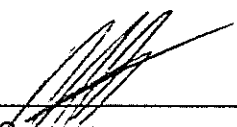
QC Batch Number: GC0625970HBPEXZ  
Instrument ID: GCHP4A

**Total Extractable Petroleum Hydrocarbons (TEPH)**

| Analyte  | Detection Limit<br>ug/L | Sample Results<br>ug/L |
|--|-------------------------|------------------------|
| TEPH as Diesel<br>Chromatogram Pattern:<br>Unidentified HC | 50                      | 2500<br>C9-C24         |
| <b>Surrogates</b>  | <b>Control Limits %</b> | <b>% Recovery</b>      |
| n-Pentacosane (C25)  | 50      150             | 146                    |

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL** - ELAP #1210

  
Mike Gregory  
Project Manager





|   |   |   |
|---|---|---|
| Erler & Kalinowski, Inc.<br>1730 South Amphlett, Ste 320<br>San Mateo, CA 94402<br>Attention: Michelle King | Client Proj. ID: 950074.00/Sybase<br>Sample Descript: MW-7<br>Matrix: LIQUID<br>Analysis Method: 8015Mod/8020<br>Lab Number: 9706B67-02 | Sampled: 06/19/97<br>Received: 06/19/97<br>Analyzed: 06/25/97<br>Reported: 07/02/97 |
|---|---|---|

QC Batch Number: GC062597BTEX03A  
Instrument ID: GCHP03

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

| Analyte                                | Detection Limit<br>ug/L     | Sample Results<br>ug/L |
|--|-----------------------------|------------------------|
| TPPH as Gas                            | 100                         | 200                    |
| Methyl t-Butyl Ether                   | 5.0                         | 8.2                    |
| Benzene                                | 1.0                         | 59                     |
| Toluene                                | 1.0                         | 1.2                    |
| Ethyl Benzene                          | 1.0                         | N.D.                   |
| Xylenes (Total)                        | 1.0                         | N.D.                   |
| Chromatogram Pattern:<br>Weathered Gas |                             | C6-C12                 |
| <b>Surrogates</b>                      | <b>Control Limits %</b>     | <b>% Recovery</b>      |
| Trifluorotoluene                       | 70                      130 | 88                     |

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**



Mike Gregory  
Project Manager





|                              |                                   |                     |
|------------------------------|-----------------------------------|---------------------|
| Erler & Kalinowski, Inc.     | Client Proj. ID: 950074.00/Sybase | Sampled:            |
| 1730 South Amphlett, Ste 320 | Sample Descript: Method Blank     | Received: 06/19/97  |
| San Mateo, CA 94402          | Matrix: LIQUID                    | Extracted: 06/25/97 |
| Attention: Michelle King     | Analysis Method: EPA 8015 Mod     | Analyzed: 06/27/97  |
|                              | Lab Number: 9706B67-03            | Reported: 07/02/97  |


QC Batch Number: GC0625970HBPEXZ  
Instrument ID: GCHP4A

**Total Extractable Petroleum Hydrocarbons (TEPH)**

| Analyte                                 | Detection Limit<br>ug/L     | Sample Results<br>ug/L |
|---|-----------------------------|------------------------|
| TEPH as Diesel<br>Chromatogram Pattern: | 50                          | N.D.                   |
| <b>Surrogates</b>                       | <b>Control Limits %</b>     | <b>% Recovery</b>      |
| n-Pentacosane (C25)                     | 50                      150 | 106                    |

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**




---

Mike Gregory  
Project Manager





|   |   |  |
|---|---|--|
| Erler & Kalinowski, Inc.<br>1730 South Amphlett, Ste 320<br>San Mateo, CA 94402<br>Attention: Michelle King | Client Proj. ID: 950074.00/Sybase<br>Sample Descript: Method Blank<br>Matrix: LIQUID<br>Analysis Method: 8015Mod/8020<br>Lab Number: 9706B67-03 | Sampled:<br>Received: 06/19/97<br>Analyzed: 06/25/97<br>Reported: 07/02/97 |
|---|---|--|

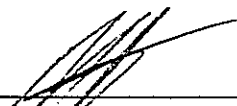
QC Batch Number: GC062597BTEX02A  
Instrument ID: GCHP02

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

| Analyte               | Detection Limit<br>ug/L | Sample Results<br>ug/L |
|-----------------------|-------------------------|------------------------|
| TPPH as Gas           | 50                      | N.D.                   |
| Methyl t-Butyl Ether  | 2.5                     | N.D.                   |
| Benzene               | 0.50                    | N.D.                   |
| Toluene               | 0.50                    | N.D.                   |
| Ethyl Benzene         | 0.50                    | N.D.                   |
| Xylenes (Total)       | 0.50                    | N.D.                   |
| Chromatogram Pattern: |                         |                        |
| <b>Surrogates</b>     | <b>Control Limits %</b> | <b>% Recovery</b>      |
| Trifluorotoluene      | 70 130                  | 104                    |

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Mike Gregory  
Project Manager





|   |   |  |
|---|---|--|
| Erier & Kalinowski, Inc.<br>1730 South Amphlett, Ste 320<br>San Mateo, CA 94402<br>Attention: Michelle King | Client Proj. ID: 950074.00/Sybase<br>Sample Descript: Method Blank<br>Matrix: LIQUID<br>Analysis Method: 8015Mod/8020<br>Lab Number: 9706B67-04 | Sampled:<br>Received: 06/19/97<br>Analyzed: 06/25/97<br>Reported: 07/02/97 |
|---|---|--|


QC Batch Number: GC062597BTEX03A  
Instrument ID: GCHP03

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

| Analyte               | Detection Limit<br>ug/L     | Sample Results<br>ug/L |
|-----------------------|-----------------------------|------------------------|
| TPPH as Gas           | 50                          | N.D.                   |
| Methyl t-Butyl Ether  | 2.5                         | N.D.                   |
| Benzene               | 0.50                        | N.D.                   |
| Toluene               | 0.50                        | N.D.                   |
| Ethyl Benzene         | 0.50                        | N.D.                   |
| Xylenes (Total)       | 0.50                        | N.D.                   |
| Chromatogram Pattern: |                             |                        |
| <b>Surrogates</b>     | <b>Control Limits %</b>     | <b>% Recovery</b>      |
| Trifluorotoluene      | 70                      130 | 101                    |

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
\_\_\_\_\_  
Mike Gregory  
Project Manager






|   |  |  |
|---|--|--|
| Erler & Kalinowski, Inc.<br>1730 South Amphlett, Ste 320<br>San Mateo, CA 94402<br>Attention: Michelle King | Client Proj. ID: 950074.00/Sybase<br>Lab Proj. ID: 9706B67 | Received: 06/19/97<br>Reported: 07/02/97 |
|---|--|--|

### LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 14 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

#Q - Surrogate coelution was confirmed.

SEQUOIA ANALYTICAL

  
\_\_\_\_\_  
Mike Gregory  
Project Manager





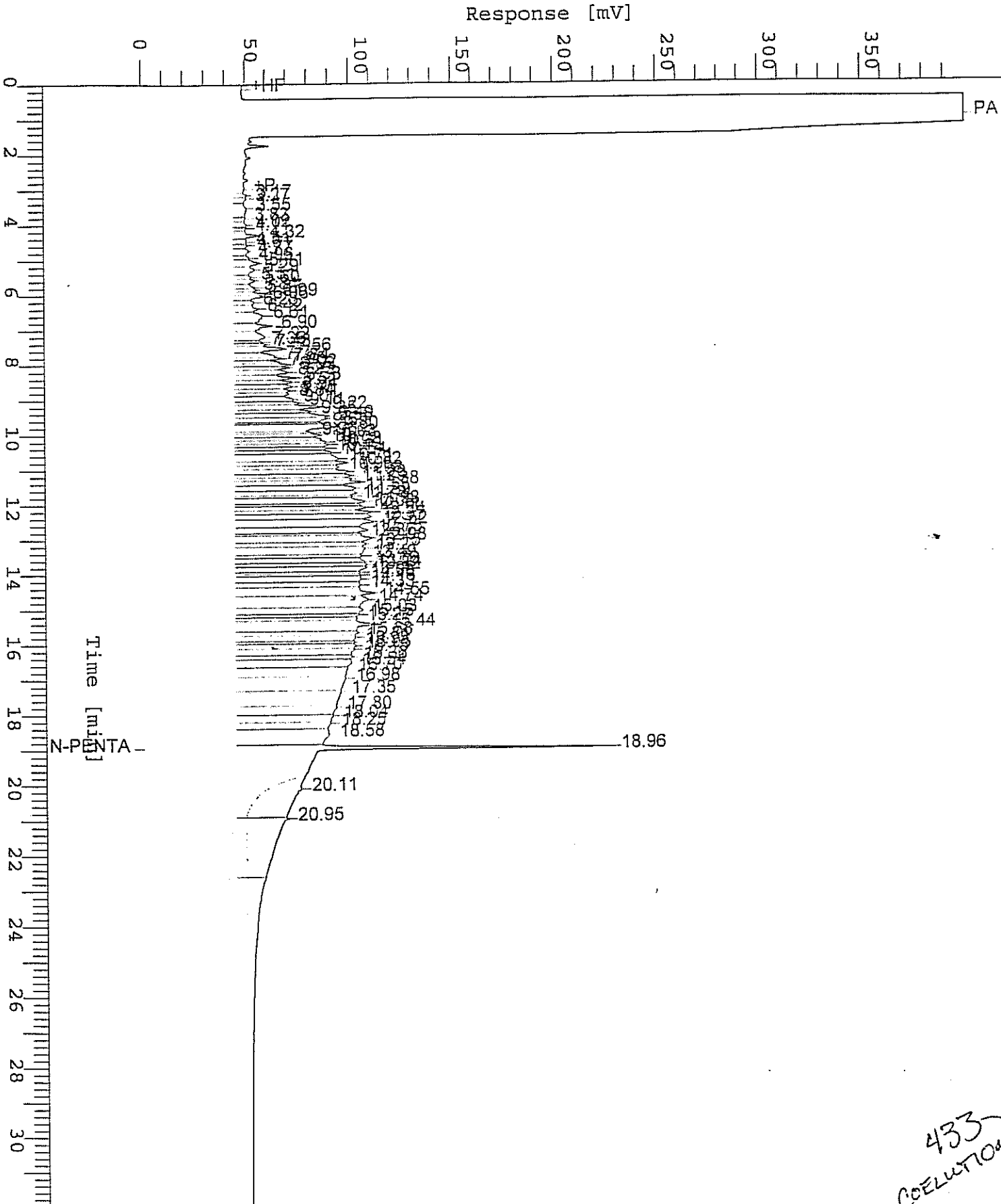
# Chromatogram

Sample Name : DW9706B67-1 (500:1\*2) RS1  
FileName : S:\GHP\_19\0629\627A047.raw  
Method : TPH19A  
Start Time : 0.00 min  
Scale Factor: 0.0

End Time : 31.99 min  
Plot Offset: 0 mV

Sample #: MW-5  
Date : 7/1/97 06:45  
Time of Injection: 7/1/97 06:13  
Low Point : 0.00 mV  
Plot Scale: 400.0 mV

Page 1 of 1



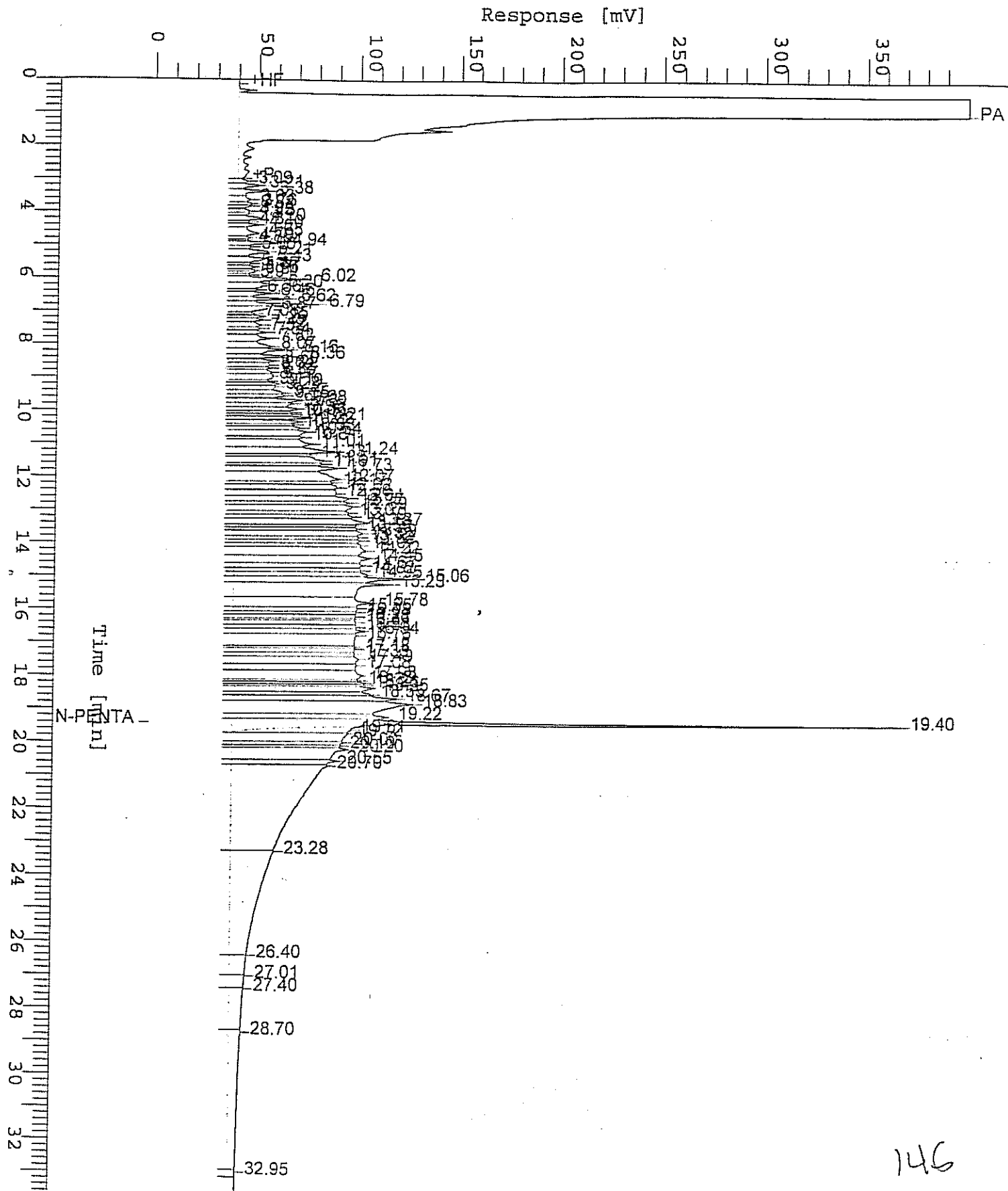
433  
COELUTION

# Chromatogram

Sample Name : DW9706B67-2 (500:1)  
FileName : S:\GHP\_04\0629\626A039.raw  
Method : TPH04A  
Start Time : 0.00 min  
Scale Factor : 0.0

End Time : 33.65 min  
Plot Offset : 0 mV

Sample #: MW-7  
Date : 6/27/97 13:35  
Time of Injection: 6/27/97 13:01  
Low Point : 0.00 mV  
Plot Scale: 400.0 mV  
High Point : 400.00 mV



146



Erler & Kalinowski, Inc.  
1730 So. Amphlett Blvd., Suite 320  
San Mateo, CA 94402  
Attention: Michelle King

Client Project ID: 950074.00/Sybase  
Matrix: LIQUID  
Sample Descript.: MW-7  
Work Order #: 9706B67 -01-03

Reported: Jul 7, 1997

### QUALITY CONTROL DATA REPORT

|                       |                 |
|-----------------------|-----------------|
| <b>Analyte:</b>       | Diesel          |
| <b>QC Batch#:</b>     | GC0625970HBPEXZ |
| <b>Analy. Method:</b> | EPA 8015M       |
| <b>Prep. Method:</b>  | EPA 3520        |

**Analyst:** G. Fish  
**MS/MSD #:** 9706B67-02-MSD  
**Sample Conc.:** 2500  
**Prepared Date:** 06/25/97  
**Analyzed Date:** 06/27/97  
**Instrument I.D.#:** GCHP4A  
**Conc. Spiked:** 1000 µg/L

**Result:** 3500  
**MS % Recovery:** 100

**Dup. Result:** 2500  
**MSD % Recov.:** 0.0

**RPD:** 33  
**RPD Limit:** 0-50

**LCS #:** LCS062597-LCS

**Prepared Date:** 06/25/97  
**Analyzed Date:** 06/27/97  
**Instrument I.D.#:** GCHP4A  
**Conc. Spiked:** 1000 µg/L

**LCS Result:** 800  
**LCS % Recov.:** 80

|                       |        |
|-----------------------|--------|
| <b>MS/MSD</b>         | 50-150 |
| <b>LCS</b>            | 60-140 |
| <b>Control Limits</b> |        |

SEQUOIA ANALYTICAL

  
Mike Gregory  
Project Manager

**Please Note:**

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

\*\* MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

9706B67.ERL <1>





Erler & Kalinowski, Inc. Client Project ID: 950074.00/Sybase  
 1730 So. Amphlett Blvd., Suite 320 Matrix: LIQUID  
 San Mateo, CA 94402 Sample Descript.: MW-5  
 Attention: Michelle King Work Order #: 9706B67-01, 03 Reported: Jul 7, 1997

**QUALITY CONTROL DATA REPORT**

| Analyte:       | Benzene         | Toluene         | Ethyl Benzene   | Xylenes         | Gas             |
|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| QC Batch#:     | GC062597BTEX02A | GC062597BTEX02A | GC062597BTEX02A | GC062597BTEX02A | GC062597BTEX02A |
| Analy. Method: | EPA 8020        | EPA 8020        | EPA 8020        | EPA 8020        | EPA 8015M       |
| Prep. Method:  | EPA 5030        | EPA 5030        | EPA 5030        | EPA 5030        | EPA 5030        |

|                   |                |                |                |                |                |
|-------------------|----------------|----------------|----------------|----------------|----------------|
| Analyst:          | R. Vincent     | R. Vincent     | R. Vincent     | R. Vincent     | R. Vincent     |
| MS/MSD #:         | 9706B67-01-MSD | 9706B67-01-MSD | 9706B67-01-MSD | 9706B67-01-MSD | 9706B67-01-MSD |
| Sample Conc.:     | 38             | N.D.           | N.D.           | N.D.           | 58             |
| Prepared Date:    | 06/25/97       | 06/25/97       | 06/25/97       | 06/25/97       | 06/25/97       |
| Analyzed Date:    | 06/25/97       | 06/25/97       | 06/25/97       | 06/25/97       | 06/25/97       |
| Instrument I.D.#: | GCHP2          | GCHP2          | GCHP2          | GCHP2          | GCHP2          |
| Conc. Spiked:     | 10 µg/L        | 10 µg/L        | 10 µg/L        | 30 µg/L        | 60 µg/L        |
| Result:           | 45             | 10             | 10             | 30             | 110            |
| MS % Recovery:    | 450            | 100            | 100            | 100            | 87             |
| Dup. Result:      | 44             | 10             | 10             | 31             | 110            |
| MSD % Recov.:     | 440            | 100            | 100            | 103            | 87             |
| RPD:              | 2.2            | 0.0            | 0.0            | 3.3            | 0.0            |
| RPD Limit:        | 0-25           | 0-25           | 0-25           | 0-25           | 0-25           |

| LCS #:            | LCS062597-LCS | LCS062597-LCS | LCS062597-LCS | LCS062597-LCS | LCS062597-LCS |
|-------------------|---------------|---------------|---------------|---------------|---------------|
| Prepared Date:    | 06/25/97      | 06/25/97      | 06/25/97      | 06/25/97      | 06/25/97      |
| Analyzed Date:    | 06/25/97      | 06/25/97      | 06/25/97      | 06/25/97      | 06/25/97      |
| Instrument I.D.#: | GCHP2         | GCHP2         | GCHP2         | GCHP2         | GCHP2         |
| Conc. Spiked:     | 10 µg/L       | 10 µg/L       | 10 µg/L       | 30 µg/L       | 60 µg/L       |
| LCS Result:       | 9.6           | 9.4           | 9.5           | 29            | 66            |
| LCS % Recov.:     | 96            | 94            | 95            | 97            | 110           |

|                |        |        |        |        |        |
|----------------|--------|--------|--------|--------|--------|
| MS/MSD         | 60-140 | 60-140 | 60-140 | 60-140 | 60-140 |
| LCS            | 70-130 | 70-130 | 70-130 | 70-130 | 70-130 |
| Control Limits |        |        |        |        |        |

SEQUOIA ANALYTICAL

*Mike Gregory*  
 Mike Gregory  
 Project Manager

**Please Note:**

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

\*\* MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9706B67.ERL <2>





Erler & Kalinowski, Inc.  
1730 So. Amphlett Blvd., Suite 320  
San Mateo, CA 94402  
Attention: Michelle King

Client Project ID: 950074.00/Sybase  
Matrix: LIQUID  
Sample Descript.: XSD  
Work Order #: 9706B67-02, 04

Reported: Jul 7, 1997

**QUALITY CONTROL DATA REPORT**

| Analyte:          | Benzene         | Toluene         | Ethyl Benzene   | Xylenes         | Gas             |
|-------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| QC Batch#:        | GC062597BTEX03A | GC062597BTEX03A | GC062597BTEX03A | GC062597BTEX03A | GC062597BTEX03A |
| Analy. Method:    | EPA 8020        | EPA 8020        | EPA 8020        | EPA 8020        | EPA 8015M       |
| Prep. Method:     | EPA 5030        | EPA 5030        | EPA 5030        | EPA 5030        | EPA 5030        |
| Analyst:          | R. Vincent      | R. Vincent      | R. Vincent      | R. Vincent      | R. Vincent      |
| MS/MSD #:         | 9706B78-02-XSD  | 9706B78-02-XSD  | 9706B78-02-XSD  | 9706B78-02-XSD  | 9706B78-02-XSD  |
| Sample Conc.:     | N.D.            | N.D.            | N.D.            | N.D.            | N.D.            |
| Prepared Date:    | 06/25/97        | 06/25/97        | 06/25/97        | 06/25/97        | 06/25/97        |
| Analyzed Date:    | 06/25/97        | 06/25/97        | 06/25/97        | 06/25/97        | 06/25/97        |
| Instrument I.D.#: | GCHP3           | GCHP3           | GCHP3           | GCHP3           | GCHP3           |
| Conc. Spiked:     | 10 µg/L         | 10 µg/L         | 10 µg/L         | 30 µg/L         | 60 µg/L         |
| Result:           | 9.5             | 9.4             | 9.4             | 26              | 42              |
| MS % Recovery:    | 95              | 94              | 94              | 87              | 70              |
| Dup. Result:      | 9.6             | 9.5             | 9.4             | 26              | 44              |
| MSD % Recov.:     | 96              | 95              | 94              | 87              | 73              |
| RPD:              | 1.0             | 1.1             | 0.0             | 0.0             | 4.7             |
| RPD Limit:        | 0-25            | 0-25            | 0-25            | 0-25            | 0-25            |

| LCS #:            | LCS062597-LCS | LCS062597-LCS | LCS062597-LCS | LCS062597-LCS | LCS062597-LCS |
|-------------------|---------------|---------------|---------------|---------------|---------------|
| Prepared Date:    | 06/25/97      | 06/25/97      | 06/25/97      | 06/25/97      | 06/25/97      |
| Analyzed Date:    | 06/25/97      | 06/25/97      | 06/25/97      | 06/25/97      | 06/25/97      |
| Instrument I.D.#: | GCHP3         | GCHP3         | GCHP3         | GCHP3         | GCHP3         |
| Conc. Spiked:     | 10 µg/L       | 10 µg/L       | 10 µg/L       | 30 µg/L       | 60 µg/L       |
| LCS Result:       | 9.4           | 9.4           | 9.4           | 26            | 42            |
| LCS % Recov.:     | 94            | 94            | 94            | 87            | 70            |

|                |        |        |        |        |        |
|----------------|--------|--------|--------|--------|--------|
| MS/MSD         | 60-140 | 60-140 | 60-140 | 60-140 | 60-140 |
| LCS            | 70-130 | 70-130 | 70-130 | 70-130 | 70-130 |
| Control Limits |        |        |        |        |        |

SEQUOIA ANALYTICAL

*Mike Gregory*  
Project Manager

Please Note:

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

\*\* MS= Matrix Spike, MSD= MS Duplicate, RPD= Relative % Difference

9706B67.ERL <3>



CHAIN OF CUSTODY / SAMPLE ANALYSIS REQUEST

Erler & Kalinowski, Inc.

Analytical Laboratory: Sequoia Analytical

Project Number: 950074.00

Page ( ) of ( )

Date Sampled: 6/19/97

Project Name: SYBASE

Sampled By: R. D. King

Source of Samples: G.W. MONITORING WELLS

Report Results To: MICHELLE KRISMAN-KING

Location: 6601 & 6603 BAY STREET, EMERYVILLE

Phone Number: 415-578-1172

9706B67

| Lab Sample I D | Field Sample I D | Sample Type | Number and Type of Containers | Time Collected | Analyses Requested (EPA Method Number) | Results Required By (Date/Time) |
|----------------|------------------|-------------|-------------------------------|----------------|--|---------------------------------|
|                | MW-5             | WATER       | 3-VOLS + HCL                  | 10:52          | TPH <sub>g</sub> / BTEX / MTBE         | 10 AM                           |
|                |                  |             | 2- 1-L. AMBER                 | 10:52          | TPH <sub>d</sub>                       | ↓                               |
|                | MW-7             | WATER       | 3- VOL + HCL                  | 11:09          | TPH <sub>g</sub> / BTEX / MTBE         | ↓                               |
|                |                  |             | 2- 1-L. AMBER                 | 11:09          | TPH <sub>d</sub>                       | ↓                               |
|                |                  |             |                               |                |  |                                 |
|                |                  |             |                               |                |  |                                 |
|                |                  |             |                               |                |  |                                 |
|                |                  |             |                               |                |  |                                 |
|                |                  |             |                               |                |  |                                 |
|                |                  |             |                               |                |  |                                 |
|                |                  |             |                               |                |  |                                 |
|                |                  |             |                               |                |  |                                 |

Special Instructions:

Relinquished By:

Name / Signature / Affiliation

Date

Time

Received By:

Name / Signature / Affiliation

|                                    |         |       |  |
|------------------------------------|---------|-------|--|
| ROGER D. LEON / <i>[Signature]</i> | 6/19/97 | 13:35 | PHIL T. VE / <i>[Signature]</i> / Sequoia A. |
|                                    |         |       |  |
|                                    |         |       |  |