Erler & Kalinowski, Inc.

**Consulting Engineers and Scientists**

1870 Ogden Drive
Burlingame, CA 94010
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14 May 2010

To Potential Recipients of Electronic Files:

Erler & Kalinowski, Inc. ("EKI") has provided our CLIENT, Sybase, Inc., with paper copies of the *Site Investigation and Closure Request Report,* dated 14 May 2010, prepared by EKI. An electronic copy of this report, including the text, tables, figures, and appendices, is provided as an uploaded file to the Alameda County Environmental Health Department ("ACEH") ftp site (ftp://alcoftp1.acgov.org) in *.pdf (i.e., Adobe Acrobat) format.

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Sincerely,

ERLER & KALINOWSKI, INC.

Michelle K. King, Ph.D.
Vice President

Erler & Kalinowski, Inc.

# Site Investigation and Closure Request Report

## 6601/6603 Shellmound Street
## Emeryville, California

**Prepared by:**

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**14 May 2010**

**EKI 950074.05**

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14 May 2010

Mr. Mark Detterman
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject: Site Investigation and Closure Request Report
6601/6603 Shellmound Street (formerly Bay Street), Emeryville, California
(EKI 950074.05)

Dear Mr. Detterman:

On behalf of Sybase, Inc. ("Sybase"), Erler & Kalinowski ("EKI"), is pleased to submit the *Site Investigation and Closure Request Report* ("Report") for the property located at 6601/6603 Shellmound Street (formerly Bay Street), California. This Closure Request is being submitted in conclusion to the site investigation conducted in general accordance with the *Work Plan for Additional Site Characterization* dated 1 June 2009 and related documents ("Work Plan").

The Closure Request covers the following items that the Alameda County Environmental Health Department ("ACEH") requested to be covered by additional site characterization:

(1) Separate phase and dissolved phase contaminant definition,
(2) Preferential pathway study,
(3) Source area definition (lateral and vertical extent in soil), and
(4) Soil gas sampling.

The results of previous investigations at the Site and the additional site characterization presented in this Report indicate the following:

- The lateral extent of petroleum hydrocarbons and related constituents in groundwater have been characterized. Although a sheen is present in the vicinity and downgradient of the former tank area, the extent is limited as shown by the groundwater data at locations MW-5, MW-7, GGW-3 and GGW-4 on Figure 2 of the Report.

- The concentration of benzene in monitoring wells MW-5 and MW-7 have decreased significantly over time to below detection limits, as shown in Table 2. In addition, petroleum hydrocarbon and related constituent concentrations in grab groundwater samples collected in 2010 were significantly lower than those collected in 1996.

- No lateral or vertical conduits were identified during the investigation. Wells located in the vicinity of the Site have shallow screens for groundwater investigation or remediation purposes. Potential lateral conduits were confirmed to be above the groundwater table.

- Petroleum hydrocarbon impacts from the former USTs to soil at the Site are generally in the saturated zone. VOC and PAH concentrations in soil are generally below commercial/industrial ESLs. The Site is paved and there is no direct contact based on the current usage.

- Based on residual VOC concentrations in soil and groundwater, there is no significant vapor intrusion risk to building occupants at 1650 65th Street and 6601/6603 Shellmound Street.

Taken together, closure of the former USTS located at 6601 and 6603 Shellmound Street (formerly Bay Street), Emeryville, California is requested. We look forward to discussing the findings in the Report with you.

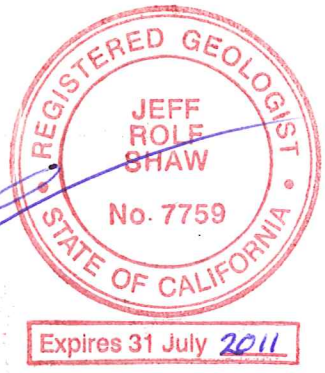
Please do not hesitate to call if you have any questions.

Very truly yours,

ERLER & KALINOWSKI, INC.

Michelle K. King, Ph.D.
Vice President

Jeff R. Shaw, P.G. (#7759)
Project Geologist

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Julie Treinen, Griffin Capital

**SITE INVESTIGATION AND CLOSURE REQUEST REPORT**

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## APPENDICES

# 1 INTRODUCTION

On behalf of Sybase, Inc. ("Sybase"), Erler & Kalinowski, Inc. ("EKI") is pleased to submit this *Site Investigation and Closure Request Report* ("Closure Request") associated with the underground storage tanks ("USTs") formerly located at 6601 and 6603 Shellmound Street (formerly Bay Street), Emeryville, California (the "Site") (Figure 1). Sybase sold the Site in 1998 and the Site is currently occupied by the Ex'pression College for Digital Arts. Historically, the Site was part of the former Emeryville municipal landfill.

This Closure Request summarizes the result of the additional Site characterization done in general accordance with (1) the *Work Plan for Additional Site Characterization* prepared by EKI on 1 June 2009 ("Work Plan"), (2) the 14 August 2009 approval letter from Alameda County Environmental Health department ("ACEH"), and (3) the 11 September 2009 letter from EKI in response to the approval letter.

The Work Plan was prepared as required by ACEH in a letter dated 29 December 2008 ("ACEH 2008 Letter"). The Work Plan was developed based upon EKI's review of available Site information as summarized below and discussions with ACEH staff by phone on 26 February 2009 and at a meeting on 16 April 2009.

The ACEH 2008 Letter requested the following:

(1) separate phase and dissolved phase contaminant definition,
(2) preferential pathway study,
(3) source area definition (lateral and vertical extent in soil), and
(4) soil gas sampling.

This Closure Request provides background information and a summary of the Site history, presents information collected during the additional Site characterization, and summarizes the investigation conducted on the four topics identified above. Based on the findings, EKI suggests that no further study or action is necessary and requests that the Site be considered for closure.

## 1.1 Limitations and Exceptions of Site Investigation

The conclusions and recommendations presented herein are our professional opinion and are not a warranty or guaranty as to the presence, absence, or extent of contamination at the Site or of releases from or near the Site. The facts presented herein are based on available information obtained by EKI and represent existing conditions at the Site at the time the information was collected.

## 1.2 Report Reliance

This report was prepared pursuant to EKI's Agreement with the Sybase, dated 4 February 2009 and subsequent work authorizations, dated 16 May 2009 and 15 March 2010, and as such, is for the sole use and reliance of the Sybase. Unless specifically authorized in writing in an agreement acceptable to EKI, the reliance on this report by any other entity or third party is not permitted or authorized. Reliance on the information contained in this report by any other entity or third party without written authorization by EKI does not make the third party a beneficiary to EKI's Agreement with Sybase. Any such unauthorized reliance on or use of this report, including any of its information or conclusions, will be at such third party's sole risk.

# 2 SUMMARY OF BACKGROUND AND SITE HISTORY

Three underground fuel storage tanks were reportedly installed at the Site in 1973.[1] The 6,000-gallon UST was used to store diesel (the easternmost UST) and the 7,500-gallon and 2,000-gallon USTs (central and western USTs, respectively) were used to store gasoline. The USTs were removed from the Site in 1989 (Figure 2) (Dubovsky and Petite, 1990).

Prior to removal of the tanks, all three tanks were inspected and no obvious holes, perforations, or corrosion were noted (Dubovsky and Petite, 1990). During excavation of the tanks, however, petroleum product reportedly flowed from the south wall into the excavation beside the 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 and Petite, 1990).

The Dubovsky Report indicates that the diesel tank was removed in August 1989 and the two gasoline tanks were removed in October 1989, but some overexcavation may have occurred between August 1989 and February 1990 when the tank excavations were backfilled. The exact sequence of events and the extent of overexcavation are not fully described in the Dubovsky Report.

## 2.1 Excavation Confirmation Sampling

The presumed excavation extent based on the figure in the Dubovsky Report is shown on Figure 2. However, this excavation extent was not confirmed in the drilling performed as part of the Site investigation (see Section 6). Analytical results for soil and groundwater samples collected from the excavation sidewalls and excavation pit, respectively, indicated the presence of total extractable petroleum hydrocarbons quantified as diesel

[1] A report prepared by William Dubovsky Environmental and Petite Engineering, dated July 1990 ("Dubovsky and Petite, 1990" or "Dubovsky Report") summarized the history and removal of the USTs and soil and groundwater sampling performed at that time.

("TEPH"), total purgeable petroleum hydrocarbons quantified as gasoline ("TPPH"), oil and grease, and benzene, toluene, ethylbenzene, and xylenes ("BTEX") in both soil and groundwater.

### 2.2 Post-Excavation Groundwater Monitoring

From 1989 through 1997, groundwater samples were collected from two monitoring wells (MW-5 and MW-7), located off-site and downgradient of the former tanks, and analyzed for TPPH and BTEX (Figure 2). These data were collected as part of investigations for the property at 1650 65$^{th}$ Street, located adjacent to the Site (PES, 1995). EKI collected samples from these wells in 1996 and 1997 on behalf of Sybase and analyzed these samples for TEPH, TPPH, BTEX, and methyl tertiary butyl ether ("MTBE") (EKI, 1997a).

Although MW-5 and MW-7 are located off-site, they are both less than 75 feet downgradient of the former USTs. Appendix A contains a figure depicting the groundwater potentiometric surface in the vicinity of the Site.

Historical groundwater data from MW-5 and MW-7 were statistically evaluated in a closure report for the Site (EKI, 1997a). Results of the Mann-Kendall test for TPPH, benzene, toluene, and xylenes concentrations in groundwater from the wells showed that no statistically significant upward trend was observed. Moreover, a regression analysis of benzene concentrations in groundwater from wells MW-5 and MW-7 showed a downward slope. Taken together, the groundwater data indicated that conditions were stable or improving downgradient of the former USTs (i.e., the plume is stable or shrinking) (EKI, 1997a).

### 2.3 1996 Soil and Groundwater Investigation

In 1996, EKI installed six soil boreholes at the Site to assess the lateral extent of petroleum hydrocarbons and related constituents in soil and groundwater (EKI, 1996). Results of the groundwater sampling from that investigation are shown on Figure 2 and tables summarizing all soil and groundwater results from the 1996 investigation are provided in Appendix B. Key findings from the investigation were as follows, as updated by the current depiction of the potential tank excavation extent (EKI, 1996):

- Petroleum hydrocarbons and related constituents are present in soil at low concentrations (i.e., up to 360 milligrams per kilogram or mg/kg) in unsaturated zone soil in the vicinity of the former USTs (locations SB-3, SB-4, and SB-5). These results indicate that there are no significant sources of petroleum hydrocarbons remaining in shallow soil.

- The highest concentrations of TEPH and TPPH were detected in soil samples collected from boreholes SB-1 and SB-6, which are located approximately 75 feet

west and 50 feet east of the former USTs, respectively.[2] The laboratory chromatograms for soil samples collected from borings SB-1 and SB-6 indicate that the hydrocarbons detected at these locations are different from those detected in soil from boreholes SB-2 through SB-5. Therefore, the petroleum hydrocarbons detected in soil for boreholes SB-1 and SB-6 do not likely originate from the former USTs.

- Petroleum hydrocarbon concentrations in groundwater samples collected near the former USTs may indicate the presence of separate phase hydrocarbons ("SPH"); however, downgradient concentrations of petroleum hydrocarbons are not indicative of SPH. SPH was observed in the groundwater samples from boreholes SB-5 and SB-6, located east of the USTs, but not from boreholes SB-3 and SB-4 which were located nearest to the former USTs.

- The origin of the petroleum hydrocarbons detected at locations SB-1, SB-5, and SB-6 is unclear, but may be related to the fact that the Site was once part of the City of Emeryville municipal waste landfill. Because the waste materials disposed in the landfill probably contained various types of petroleum hydrocarbons, these chemicals may be ubiquitous at the Site.

- MTBE was not detected in any of the soil samples. MTBE was detected in only three groundwater samples and all detections were below the drinking water Maximum Contaminant Level ("MCL") of 13 micrograms per liter ("ug/L").

- Polycyclic aromatic hydrocarbons ("PAHs") were not detected in soil samples collected adjacent to the former USTs (samples SB-3 and SB-4). Therefore, PAHs are not likely associated with the former USTs. PAHs were detected in the groundwater sample collected from location SB-6, but are likely associated with the SPH observed at that location. Due to their hydrophobic nature, PAHs are not likely to be mobile in groundwater.

- Of the BTEX compounds, only benzene was detected in groundwater samples at concentrations greater than MCLs.

### 2.4 1997 Closure Request

In 1997, EKI, on behalf of Sybase, submitted a closure report (EKI, 1997a and 1997b) based on the following findings:

- There are no significant sources of petroleum hydrocarbons related to the former USTs remaining in shallow soil. Downgradient concentrations of petroleum hydrocarbons in groundwater at wells MW-5 and MW-7 are not indicative of SPH.

[2] As discussed in Section 6, the eastern edge of the excavation does not appear to extend as far to the east as shown on the figures. The borehole log for borehole SB-8 does not appear to contain backfill as was observed at borehole SB-7.

- PAHs and MTBE were not detected in soil samples collected at the former UST site.

- Statistical analysis of historical petroleum hydrocarbon and related constituent concentrations in groundwater indicates that TPPH, benzene, toluene, and xylenes concentrations are stable or decreasing (i.e., a stable or shrinking plume).

- Potential carcinogenic risks to current and future Site occupants and workers due to residual 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. These conclusions are still appropriate based on comparison of data to current published screening criteria.

- 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.

In response to the closure report, ACEH issued a letter, dated 23 June 1998, indicating that ACEH was ready to prepare a case closure memorandum for review by ACEH staff and submittal to the Regional Water Quality Control Board, San Francisco Bay Region ("RWQCB"). The letter further indicated that a case closure letter may be issued within 60 to 90 days of the date of the June 1998 letter. However, a case closure letter for the Site was never received by Sybase and ACEH has since then reportedly lost all of the files for the Site.

### 2.5 ACEH 2008 Letter and EKI 2009 Work Plan

In 2006, ACEH requested that Sybase provide ACEH with available documents associated with the Site because they had lost their files. ACEH subsequently reviewed the available information for the Site and requested in the ACEH 2008 Letter that (1) the extent of separate phase and dissolved phase petroleum hydrocarbons in groundwater be defined, (2) potential preferential pathways, including both utility lines and nearby wells, be assessed, (3) the vertical and lateral extent of petroleum hydrocarbons in soil be defined, and (4) the vapor intrusion pathway be assessed by performing soil gas sampling. The proposed approach to address the issues in the ACEH 2008 Letter is presented below.

EKI provided the Work Plan in June 2009 for additional site characterization. ACEH conditionally approved the Work Plan based on incorporations of a few minor revisions in a 14 August 2009 letter. EKI provided a response to the approval letter in a follow-up letter dated 11 September 2009. The scope of work for the Site investigation reported herein is summarized below.

# 3 FIELD ACTIVITIES

In March and April 2010, EKI performed additional Site characterization activities at the Site. Three soil boreholes and four boreholes for grab groundwater sampling were installed at the Site. Soil and groundwater samples were collected and analyzed for petroleum hydrocarbons and related constituents. The sampling locations were selected on the basis of existing data, as well as limitations imposed by the existing buildings and utilities.

A summary of the field activities is provided below, and the methodology is described in more detail in Appendix C. The results of the Site investigation are presented in Sections 4, 5, 6, and 7.

## 3.1 Pre-Field Activities

Sybase does not own or have any current contractual relationship with the Site owner or the owner of the adjacent 1650 65th Street Property. Sybase contacted the aforementioned owners and the current tenants prior to the start of field activities in order to obtain access. EKI reviewed the planned field work tasks, sampling locations, and schedule with the owner and tenant. Underground Services Alert ("USA") was contacted to identify known buried utilities, and a private utility locating company cleared the proposed drilling locations for buried utilities using electromagnetic detectors and the marked lines from the USA-notified utility companies. The private locator also looked for the presence of the unconfirmed sanitary sewer line potentially located north of the former USTs.

EKI secured an Alameda County Public Works Agency drilling permit (Permit Number W2010-0130), which is attached in Appendix D. EKI subcontracted Gregg Drilling and Testing of Martinez, California, a California-licensed drilling contractor, to perform subsurface work for soil and groundwater sampling. Osborne's Concrete Coring of Fremont, California also provided specific services during installation of the temporary monitoring wells. EKI prepared a site-specific Health and Safety Plan for EKI field personnel and required adherence as appropriate by their contractors.

Groundwater and soil samples were shipped to Curtis & Tompkins, Ltd. of Berkeley, California, which is a California-certified laboratory.

## 3.2 Groundwater Investigation

EKI's 2009 Work Plan stated that groundwater samples would be collected from three pre-pack temporary monitoring wells, GGW-1 through GGW-3, to be installed at the Site. These monitoring wells were installed south, southeast, and east of the former tank excavation area on 6 March 2010 to characterize the lateral extent of SPH and dissolved phase petroleum hydrocarbons in groundwater. Temporary monitoring wells were chosen for groundwater sample collection to reduce the amount of sediments in samples.

On 9 April 2010, a fourth grab groundwater sampling location, GGW-4, was installed south of GGW-2 to further characterize the lateral extent of impacted groundwater at the Site. Mark Detterman of ACEH agreed to this additional sampling location in an e-mail, dated 10 March 2010. The grab groundwater sampling locations are shown on Figure 2. More detailed information regarding the temporary monitoring well installation is included in the field logs included in Appendix C.

EKI collected samples from the four temporary monitoring wells and the existing monitoring wells MW-5 and MW-7 (see Figure 2). EKI used low-flow sampling techniques and noted whether sheen or SPH was present during groundwater sampling. Grab groundwater samples were analyzed for:

- TPPH using EPA Method 8015M;
- TEPH using EPA Method 8015M;
- BTEX, Fuel Oxygenates, 1,2-dibromoethane ("EDB"), and 1,2-dichloroethane ("EDC") using EPA Method 8260B;
- PAHs by EPA Method 8270C (from the temporary monitoring locations only); and
- Total Dissolved Solids ("TDS").

### 3.3 Preferential Pathway Study

For the utility survey, EKI reviewed an undated survey map (included as Appendix C in the Work Plan) and performed file reviews at the City of Emeryville Building Department and Public Works Department. Figures 3 and 4 depict the locations of the known former and existing utilities at the Site, which include an "unconfirmed storm line" and an existing storm drain line (on the adjacent property) in the vicinity of the former USTs.

However, based on the information reviewed at the Building and Public Works Departments, there is no evidence that a sanitary sewer line is present in that portion of the property; rather, the sanitary sewer line for the 6601 and 6603 Shellmound Street buildings is located at the northern edge of the Site (Figure 3). The unconfirmed sanitary line was not found by the utility locating service used to clear drilling locations. As part of the investigation, EKI field verified of the depth of the existing storm drain south of the former USTs.

EKI submitted a well survey request to the California Department of Water Resources ("DWR"). As discussed with ACEH, the well survey radius was reduced to 500 feet. EKI received the results of the well survey from DWR on 21 May 2009. The results of the well survey are included in Section 5.1 of this Closure Report.

### 3.4 Soil Investigation

ACEH requested that soil samples be collected deeper than 7.5 feet below ground surface ("ft bgs") at the UST excavation and in the downgradient direction from the UST excavation area. In the 14 August 2009 letter, ACEH also requested that soil samples be collected from the capillary fringe and from depths with high levels of impacts.

Soil boreholes SB-7, SB-8, and SB-9 were drilled and sampled on 9 April 2010, both for geologic logging and chemical analysis. The boreholes SB-7 and SB-8 were installed in the immediate vicinity of the former USTs (on the western and eastern sides of the former USTs, respectively) to characterize the vertical extent of petroleum hydrocarbons (see Figure 5). At borehole SB-7, EKI collected soil samples from approximately 5 ft bgs, 8 ft bgs, and 13 ft bgs, and 20.5 ft bgs. At borehole SB-8, EKI collected samples from approximately 4.5 ft bgs, 13 ft bgs, and 17.5 ft bgs.

The borehole SB-9 was installed approximately 10 to 15 feet south-by-southeast from the former UST excavation area (see Figure 5). This location was selected to assess the lateral extent of petroleum hydrocarbons in soil. EKI collected samples at borehole SB-9 from 5 ft bgs, 9 ft bgs, 12.5 ft bgs, and 19 ft bgs.

The boreholes were drilled using direct-push with a split-barrel sampler to obtain a continuous core to the total depth of the borehole. Details of stratigraphy for all sampling locations are recorded in the borehole logs included in Appendix E. Soil samples also were collected for chemical analysis at an off-site laboratory.

Soil cores were screened with an organic vapor meter ("OVM") equipped with a photoionization detector. The screening was used for soil sampling to identify depths with the highest level of impact for sampling. Soil samples were analyzed for the following constituents:

- TPPH using EPA Method 8015M;
- TEPH using EPA Method 8015M;
- BTEX, Fuel Oxygenates, EDB, and EDC using EPA Method 8260;
- PAHs by EPA Method 8270C; and
- Moisture Content by ASTM D2216.

### 3.5 Vapor Intrusion Assessment

As discussed in the 2009 Work Plan, groundwater data collected as part of this investigation (including naphthalene) were used to update the vapor intrusion assessment in the Site Investigation Report. In their 14 August 2009 letter, ACEH stipulated that soil concentrations be considered as part of the vapor intrusion assessment.

### 3.6 Investigation-Derived Wastes

Soil cuttings and cores, purged groundwater from the boreholes and monitoring wells, and rinsate from equipment cleaning were contained in labeled, sealed 55-gallon DOT-approved steel drums, and staged on-site pending receipt of analytical results. A composite sample from the soil drums and a grab sample from the water drum was analyzed for disposal characterization. After the analytical results were reviewed, the wastes were disposed by Clearwater Environmental of Fremont, California, in accordance with applicable laws and regulations as described in the Work Plan.

## 4 EXTENT OF SEPARATE PHASE AND DISSOLVED PHASE HYDROCARBONS IN GROUNDWATER

The ACEH 2008 Letter indicated that the concentrations of petroleum hydrocarbons detected in groundwater are indicative of the presence of SPH. Based on review of the borehole logs from EKI's 1996 investigation, the petroleum hydrocarbons were generally described as a "sheen." The field notes indicate the presence of "floating product" at some locations, but the thickness of product is not noted, presumably because the groundwater samples were collected from open boreholes, not from monitoring wells (EKI, 1996). No sheen or SPH was observed in the downgradient monitoring wells MW-5 and MW-7 (EKI, 1996, 1997a).[3] As such, data from wells MW-5 and MW-7 are believed to represent dissolved concentrations of petroleum hydrocarbons and related constituents in groundwater.

As discussed above, EKI collected the following samples to further characterize the extent of dissolved phase petroleum hydrocarbons and SPH, if present:

- Four grab groundwater samples from temporary wells installed to the south, southeast, east of the former tank excavation, and east of the building at 1650 65th Street (Figure 2).

- Two groundwater samples from monitoring wells MW-5 and MW-7.

Groundwater samples were analyzed for TEPH, TPPH, BTEX, EDB, EDC, fuel oxygenates, TDS, and PAHs (grab groundwater samples only). A summary of analytical results is shown in Table 1. Results for analytes that were not detected and not listed in Table 1 are provided in the analytical laboratory reports included in Appendix F.

[3] As requested by Donna Drogos of ACEH, EKI determined that the top of the screen in wells MW-5 and MW-7 is 6.7 ft bgs. If the water table is deeper than 6.7 feet bgs, then the well is suitable to assess the presence of SPH. Depending on the time of year and amount of rainfall, the water table has historically been higher than 6.7 feet bgs. However, based on the available data, SPH was not present in the wells when the water table was deeper than 6.7 feet bgs.

Laboratory quality control criteria were attained as shown in the analytical laboratory reports.

Sheen, indicative of SPH, was observed in saturated zone soil and on samples collected from locations GGW-1 and GGW-2. The sheen thickness was too thin to be measured. No sheens were observed at locations GGW-3, GGW-4, MW-5, and MW-7. The water table in monitoring wells MW-5 and MW-7 were encountered at 6.81 ft bgs and 5.46 ft bgs, respectively. The water table was thus not deep enough to assess the presence of sheen in well MW-7 based on the top of the screen.[3]

The following organic analytes were detected in at least one sample: TEPH, TPPH, benzene, toluene, ethylbenzene, xylenes, diisopropyl ether, MTBE, and tert-butyl alcohol. EDB, EDC, other fuel oxygenates not previously mentioned, and PAHs were not detected above laboratory reporting limits.

VOC concentrations in the groundwater samples were all below available California drinking water MCLs with the following exception. Benzene was detected in the groundwater sample collected from location GGW-1 at 56 ug/L and from location GGW-3 at 2.1 ug/L, greater than the MCL of 1 ug/L. However, the benzene groundwater concentration was significantly below the risk-based threshold for vapor intrusion to indoor commercial/industrial air from groundwater (1,800 ug/L).

No MCL exists for TEPH and TPPH; instead, RWQCB (2008) provides an Environmental Screening Level ("ESL") based on gross contamination of 100 ug/L of petroleum hydrocarbons quantified as either diesel or gasoline where groundwater is a potential drinking water resource and an ESL of 210 ug/L for protection of aquatic habitats for non-drinking water resources. TEPH was detected above both of these ESLs in groundwater samples collected from locations GGW-1, GGW-2, and well MW-5, and only the 100 ug/L ESL at location GGW-3. TPPH was detected above the ESL in the groundwater sample collected from location GGW-1.

Tert-butyl alcohol was not detected above the DPH drinking water notification level of 12 ug/L. No drinking water screening level is available for diisopropyl ether, which was detected only in the sample collected from location GGW-3 at 2.4 ug/L.

Total dissolved solids ("TDS") ranged in groundwater samples from 690 mg/L to 1,530 mg/L. Based on California drinking water regulations, these concentrations exceeded secondary MCLs for total dissolved solids as described below. All measured concentrations exceeded the recommended secondary MCL of 500 mg/L. Drinking water concentrations less than the upper secondary MCL of 1,000 mg/L are acceptable if it is neither reasonable nor feasible to provide a more suitable drinking water. Drinking water concentrations between the upper secondary MCL and the short term secondary MCL, 1,500 mg/L, are acceptable only on a temporary basis pending construction of treatment facilities or development of acceptable new water sources.

The RWQCB established a 3,000 mg/L limit for waters that potentially suitable for municipal supplies (RWQCB, 2007). The TDS concentrations measured in Site groundwater are less than this 3,000 mg/L limit. Given that TDS concentrations at the Site exceed the upper secondary MCL, but are less than 3,000 ug/L, the tables in this report present results compared to both the potential drinking water supply and non-drinking water supply ESLs.

Concentrations of petroleum hydrocarbons, BTEX, and MTBE in samples from wells MW-5 and MW-7 decreased significantly compared to historical levels (see Table 2). A statistical analysis of benzene concentrations showed a significant linear decrease in benzene concentrations over time at wells MW-5 and MW-7. In addition, benzene was not detected above reporting limits for the first time in these wells. These results indicate that groundwater concentrations are stable or decreasing (i.e., a stable or shrinking plume). Similarly, the concentrations of TEPH and related constituents decreased significantly in grab groundwater samples collected in 1996 versus those collected in 2010 as part of this investigation (Figure 2). EKI does not know if the lower concentrations in the grab groundwater samples are due to natural attenuation of the petroleum hydrocarbons, improved sampling techniques, or a combination of the two.

As shown on Figure 2, locations MW-5, MW-7, GGW-4, and GGW-3 generally bound the lateral extent of significant petroleum impact in groundwater. Some petroleum hydrocarbons may be present under the northeastern portion of the 1650 65$^{th}$ Street building. However, the available data suggest that the extent under the building would be very limited. In addition, as discussed above, the decrease in concentrations from the mid-1990s to present indicate that the plume is stable or shrinking.

# 5 PREFERENTIAL PATHWAY STUDY

The ACEH 2008 Letter requested that the Site and vicinity be evaluated for lateral and vertical conduits, such as utilities (including potential backfill in the utility trench) and nearby wells. EKI provided initial findings of the preferential pathway study in the 2009 Work Plan. The entirety of the preferential pathway study is presented below.

## 5.1 Utility Survey

For the utility survey, EKI reviewed an undated survey map (included as Appendix C in the Work Plan) and performed file reviews at the City of Emeryville Building Department and Public Works Department. Figures 3 and 4 depict the locations of the known former and existing utilities at the Site, which include an “unconfirmed storm line” and an existing storm drain line (on the adjacent property) in the vicinity of the former USTs.

The survey map shows an “unconfirmed storm line” located immediately north of the tank area and extending to the west. Construction drawings from 1994 reviewed during

the Building Department file review indicate that plans were in place to remove, backfill, and compact this storm drain. Although specific depth information was not available for the "unconfirmed storm line," the invert elevations of other storm drain lines present on the western portion of the property at that time were approximately 2 ft bgs. In addition, these other storm drains were 10 inches in diameter. Figure 4 is a cross-section illustrating the subsurface conceptual Site model in the vicinity of the former USTs (see Figure 3 for the location of the cross-section). Assuming the "unconfirmed storm line" is similar to the other on-Site lines existing at that time, the cross-section illustrated on Figure 4 shows that the "unconfirmed storm line" was at a higher elevation than the highest measured water table, even assuming 6 inches of backfill under the pipe. This "unconfirmed storm line" was not found by the utility locating service used to clear drilling locations. Thus, the "unconfirmed storm line" was not likely to have been a conduit to spread petroleum hydrocarbons from the former USTs.

An existing storm drain line is also located on the adjacent property (i.e., 1650 65$^{th}$ Street), approximately 30 feet south of the former USTs. EKI verified the elevation of the invert in the field during the March and April 2010 field activities. According to the measurements, the invert is located approximately 1.5 ft bgs, which is above the highest measured water table, even assuming 6 inches of backfill under the storm drain pipe. Therefore, the storm drain line on the 1650 65$^{th}$ Street property is also not likely to act as a conduit to spread petroleum hydrocarbons in groundwater at the Site.

The survey map also shows a sanitary easement that is 5 feet wide immediately north of the southern property boundary. However, based on the information reviewed at the Building and Public Works Departments and the utility locating survey, there is no evidence that a sanitary sewer line is present in that portion of the property; rather, the sanitary sewer line for the 6601 and 6603 Shellmound Street buildings is located at the northern edge of the Site (Figure 3).

Taken together, the former and existing utilities at the Site are not likely to have caused significant lateral migration of petroleum hydrocarbons and related constituents at the Site.

### 5.2 Well Survey

In response to ACEH's request, EKI submitted a well survey request to DWR. Eight wells are currently located within 500 feet of the Site. Information about the wells is summarized in Table 3. Most of the wells are shallow groundwater monitoring wells associated with the 1650 65$^{th}$ Street Property (including wells MW-5 and MW-7), located to the south of the Site. Additional information regarding the wells may be found in the well construction logs included in Appendix C.

According to the well logs one of the wells is an extraction well that is not intended for domestic, irrigation, industrial, or municipal use. It was installed as part of a shallow groundwater remediation project at the 1650 65$^{th}$ Street property to address impacts

unrelated to the Site. EKI understands that the extraction well is currently inactive. In addition, all the nearby wells have screens are limited to less than 30 ft bgs. Therefore, these wells are unlikely to be conduits for vertical transfer of contaminants. In addition, they are unlikely to be significant routes of exposure of impacted groundwater to human receptors.

## 6 EXTENT OF PETROLEUM HYDROCARBONS IN SOIL

The ACEH 2008 Letter requested that soil samples be collected to characterize the vertical and lateral extent of petroleum impacts. In 1996, soil samples were collected from the vadose zone on the eastern and western boundaries of the former UST excavation area (EKI, 1996). The data indicated no significant impact to vadose zone soil from the USTs. The sidewall confirmation soil samples from the tank excavation were collected at a depth of 7.5 ft bgs. Based on EKI's review of the Dubovsky Report, it appears that that the samples from October 1989 were collected after rainfall in which the water level in the tank pit had risen to 7.5 feet bgs (Dubovsky and Petite, 1990). As shown on Figure 4, the average depth to groundwater in the nearby wells is 6.7 feet bgs, which would indicate that the sidewall confirmation soil samples were all collected within the groundwater "smear zone." ACEH requested that soil samples be collected from the capillary fringe and deeper than 7.5 ft bgs at the UST excavation and in the downgradient direction from the UST excavation area.

To characterize the extent of petroleum hydrocarbons in soil, EKI collected the following samples:

- Soil borehole SB-7, installed within the western portion of the UST excavation footprint (Figure 5). EKI collected soil samples at approximately 5 ft bgs, 8 ft bgs, 13 ft bgs, and 20.5 ft bgs.

- Soil borehole SB-8, installed east of the former USTs and potentially in the excavation footprint (Figure 5).[4] EKI collected soil samples at approximately 4.5 ft bgs, 13 ft bgs, and 17.5 ft bgs.

- Soil borehole SB-9, installed approximately 10 to 15 feet south-to-southeast of the former UST excavation. EKI collected soil samples at approximately 5 ft bgs, 9 ft bgs, 12.5 ft bgs, and 19 ft bgs.

Soil samples were analyzed for TEPH, TPPH, BTEX, EDB, EDC, fuel oxygenates, and PAHs. A summary of analytical results is shown in Table 4 and on Figure 5. Results for

[4] The borehole log for location SB-8 does not appear to contain backfill as was observed at location SB-7. As a result the location SB-8 may be outside of the excavation extent of the former USTs. The borehole log is included in Appendix E.

analytes that were not detected and not listed in Table 4 are provided in the analytical laboratory reports included in Appendix F. Laboratory quality control criteria were attained as shown in the analytical laboratory reports.

The following organic analytes were detected in at least one sample: TEPH, TPPH, benzene, ethylbenzene, xylenes, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, fluoranthene, fluorene, phenanthrene, and pyrene. Measured concentrations of these detected chemicals in soil were less than the ESLs, except as discussed below. EDB, EDC, fuel oxygenates, and other PAHs not previously mentioned were not detected above laboratory reporting limits.

TEPH and TPPH concentrations were compared to available soil ESLs, including those protective of groundwater as drinking water (83 mg/kg) and non-drinking water resources (180 mg/kg) as well as commercial/industrial exposure for soil less than 10 ft bgs (450 mg/kg) and greater than 10 ft bgs (4,200 mg/kg). As indicated in Table 4, TEPH and TPPH concentrations in soil samples collected at the Site exceed these various ESLs. The highest concentrations (up to 4,600 mg/kg) were detected in soil samples collected from the saturated zone, where there were observations of visual impacts (i.e., samples from 8 to 13 ft bgs). Petroleum hydrocarbon concentrations were significantly lower (49 to 900 mg/kg) in the capillary fringe samples collected from 4.5 to 5 ft bgs. The lowest overall concentrations were detected in the samples collected from 17.5 to 20.5 ft bgs (6.2 to 78 mg/kg). These findings are also shown on the cross section on Figure 4 and in plan view on Figure 5.

Benzo(a)pyrene ("BaP") was the only PAH or VOC that was present above the ESL. BaP was detected in the 4.5 ft bgs sample from location SB-8 at a concentration of 0.16 mg/kg, which is slightly greater than the commercial/industrial ESL of 0.13 mg/kg.

These results show that residual petroleum hydrocarbons are present in the smear zone and below the water table. Based on visual observation of the borehole logs, the petroleum hydrocarbons do not significantly extend beyond a depth of 14 to 16 ft bgs. The data from 17.5 to 20.5 ft bgs further characterize the vertical extent of impact. Given that the petroleum hydrocarbons are largely in the saturated zone, the extent of impact is best evaluated through assessment of the groundwater data (Section 4).

In addition, the toxic components of petroleum hydrocarbons, namely BTEX and PAHs, are generally not detected or are present at low concentrations (i.e., below the commercial/industrial ESLs). Therefore, the residual petroleum hydrocarbons and related constituents do not pose a significant risk to on-site workers.

# 7 VAPOR INTRUSION ASSESSMENT

The ACEH 2008 Letter requested that a vapor intrusion assessment be performed including soil gas data. State regulatory guidance (i.e., California Department of Toxic Substances Control, 2005) indicates a preference for soil gas data in performing a vapor intrusion assessment; however, if groundwater is impacted, the guidance recommends that groundwater data also be used in the assessment.

As discussed at the 16 April 2009 meeting, ACEH is most concerned about benzene and naphthalene for the vapor intrusion pathway. EKI reviewed the available groundwater data and compared them to the ESLs for vapor intrusion concerns (RWQCB, 2008). The maximum benzene concentration in groundwater (including the 2006 grab groundwater data and the recent 2010 sampling event) is 160 ug/L, whereas the commercial/industrial ESL is 1,800 ug/L. Only one groundwater sample had been analyzed for naphthalene prior to the 2010 sampling event. Naphthalene was not detected above the laboratory reporting limit of 10,000 ug/L. The commercial/industrial screening level based on the vapor intrusion pathway is 11,000 ug/L. During the 2010 sampling event, naphthalene was not detected above the laboratory reporting limits, which ranged from 9.4 ug/L to 98 ug/L, in the four grab groundwater samples.

ACEH also indicated at our meeting that groundwater data alone may not be sufficient to assess vapor intrusion if significant soil impacts are present. Soil ESLs are not available for the vapor intrusion pathway. EKI evaluated whether the existing benzene concentrations in unsaturated zone soil are present at "source concentrations" by comparing the available data to the direct contact and groundwater protection ESLs. The maximum benzene concentration in the 1996 investigation was 0.019 mg/kg, which is less than both the ESL of 0.27 mg/kg for direct contact under commercial land use and the ESL of 0.044 mg/kg for protection of drinking water resources. Benzene concentrations measured in the confirmation soil samples during the tank removal in 1989 are higher (up to 0.76 mg/kg), but would correspond to a human health risk of $3 \times 10^{-6}$ based on the direct contact pathway.

ACEH commented in their 14 August 2009 letter regarding the Work Plan that if collected soil samples contain higher concentrations than previously detected (i.e., 0.76 mg/kg), sub-slab soil vapor or soil gas samples may be required. However, the maximum benzene concentration measured in soil samples during the 2010 investigation was 0.01 mg/kg. No further analysis for the impact of soil benzene concentrations as part of the vapor intrusion assessment is thereby required.

Naphthalene was not detected in the soil samples analyzed in 1996, although the reporting limits were elevated (Appendix B and EKI, 1996). In addition, naphthalene was not detected in soil samples during the recent 2010 investigation above laboratory reporting limits, which ranged from 0.075 mg/kg to 1.9 mg/kg. In EKI's opinion, the available soil data from the unsaturated zone (where soil impacts could be a source for vapor intrusion) do not show significant impacts from naphthalene.

Based on the investigation results, there is no significant vapor intrusion risk resulting from residual VOCs in soil and groundwater.

## 8 CONCLUSIONS AND RECOMMENDATIONS

The results of previous investigations and the recent 2010 investigation at the Site indicate the following:

- The lateral extent of petroleum hydrocarbons and related constituents in groundwater have been characterized. Although a sheen is present in the vicinity and downgradient of the former tank area, the extent is limited as shown by the groundwater data at locations MW-5, MW-7, GGW-3 and GGW-4 on Figure 2.

- The concentration of benzene in monitoring wells MW-5 and MW-7 have decreased significantly over time to below detection limits, as shown in Table 2. In addition, petroleum hydrocarbon and related constituent concentrations in grab groundwater samples collected in 2010 were significantly lower than those collected in 1996.

- No lateral or vertical conduits were identified during the investigation. Wells located in the vicinity of the Site have shallow screens for groundwater investigation or remediation purposes. Potential lateral conduits were confirmed to be above the groundwater table.

- Petroleum hydrocarbon impacts from the former USTs to soil at the Site are generally in the saturated zone. VOC and PAH concentrations in soil are generally below commercial/industrial ESLs. The Site is paved and there is no direct contact based on the current usage.

- Based on residual VOC concentrations in soil and groundwater, there is no significant vapor intrusion risk to building occupants at 1650 65$^{th}$ Street and 6601/6603 Shellmound Street.

Taken together, closure of the former USTS located at 6601 and 6603 Shellmound Street (formerly Bay Street), Emeryville, California is requested.

## 9 REFERENCES


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RWQCB, 2007. *San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan),* Regional Water Quality Control Board, San Francisco Bay Region, January 2007.

RWQCB, 2008. *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater*, Regional Water Quality Control Board, San Francisco Bay Region, May 2008.

**Table 1**

***Summary of Groundwater Analytical Data from the Spring 2010 Investigation***

6601/6603 Shellmound Street, Emeryville, California

| Sample Location | Collection Date | Petroleum Compounds (ug/L) (a,b) | | Volatile Organic Compounds (ug/L) (a,c) | | | | | | | | | | PAHs (a,d) | Total dissolved solids (milligrams per liter) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | TEPH | TPPH | Benzene | Toluene | Ethylbenzene | Xylenes, m- & p- | Xylene, o- | Diisopropyl ether | Methyl tert-butyl ether | Tert-butyl alcohol | 1,2-Dibromoethane | 1,2-Dichloroethane | | |
| GGW-1 | 3/6/2010 | **34,000** | **550** | **56** | 2.7 | 2.2 | 4 | 2.2 | <0.5 | 1.4 | 11 | <0.5 | <0.5 | ND | **1,420** |
| GGW-2 | 3/6/2010 | **10,000** | 90 (e) | 0.9 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <10 | <0.5 | <0.5 | ND | **700** |
| GGW-3 | 3/6/2010 | **180 (e)** | <50 | **2.1** | <0.5 | <0.5 | <0.5 | <0.5 | 2.4 | <0.5 | <10 | <0.5 | <0.5 | ND | **1,530** |
| GGW-4 | 4/9/2010 | <50 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <10 | <0.5 | <0.5 | ND | **690** |
| MW-5 | 3/6/2010 | **250 (e)** | 99 (e) | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 2 | <10 | <0.5 | <0.5 | ND | **1,290** |
| MW-7 | 3/6/2010 | <50 | <50 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <20 | <1 | <1 | ND | **780** |
| ESL for drinking water consumption | | 210 | 210 | 1 | 150 | 300 | 1800 | | - | 13 | 12 | 0.05 | 0.5 | - | 500 to 1,500 |
| ESL for C/I vapor intrusion | | - | - | 1,800 | 530,000 | 170,000 | 160,000 | | - | 80,000 | - | 510 | 690 | - | - |
| ESL for gross contamination, in drinking water | | 100 | 100 | 170 | 40 | 30 | 20 | | - | 5 | 50,000 | 50,000 | 7,000 | - | - |
| ESL for gross contamination, in non-drinking water | | 2,500 | 5,000 | 20,000 | 400 | 300 | 5,300 | | - | 1,800 | 50,000 | 50,000 | 50,000 | - | - |
| San Francisco Bay Basin Plan (see Reference 2) | | - | - | 1 | 150 | 300 | 1750 | | - | 13 | - | 0.05 | 0.5 | - | 3,000 |

Abbreviations:

"C/I" = commercial/industrial land use

"ESL" = Environmental Screening Level (see Reference 1)

"MCL" = Maximum Contaminant Level

"ND" = not detected above laboratory reporting limits

"PAHs" = polycyclic aromatic hydrocarbons

"TEPH" = total extractable petroleum hydrocarbons, quantified as diesel

"TPPH" = total purgeable petroleum hydrocarbons, quantified as gasoline

"ug/L" = micrograms per liter

"VOCs" = volatile organic compounds

## Table 1

### *Summary of Groundwater Analytical Data from the Spring 2010 Investigation*

6601/6603 Shellmound Street, Emeryville, California

Notes:

(a) Concentrations exceeding at least one of the screening criteria are shown in bold text.
(b) TEPH and TPPH were analyzed using EPA Method 8015M.
(c) VOCs were analyzed using EPA Method 8260B. This table only includes detected analytes.
(d) PAHs were analyzed using EPA Method 8270. No PAHs were detected in the groundwater samples.
(e) Sample exhibits a chromatographic pattern which does not resemble the standard.

References:


1. *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater* , California Regional Water Quality Control Board, San Francisco Bay Region, revised May 2008.
2. *San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan)* , California Regional Water Quality Control Board, San Francisco Bay Region, January 2007.

**Table 2**

***Summary of Historical Analytical Results for Groundwater Samples from Monitoring Wells (a)***

6601/6603 Shellmound Street, Emeryville, California

| Well Number | Sample Date | Chemical Concentration (ug/L) (b) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | TPPH | TEPH | Benzene | Toluene | Ethyl-benzene | Total Xylenes | MTBE |
| MW-5 | Nov 89 | ND | NA | 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 (c) | 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 | <0.5 | <0.5 | NA |
| | 10 Nov 92 | 240 | <100 | 74 | 1.0 | <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 | 1.0 | <1 | <1 | NA |
| | 14 Feb 94 | 140 | NA | 62 | <0.5 | <0.5 | <0.5 | NA |
| | 16 May 94 | 310 | NA | 140 | 3.0 | <3 | <3 | NA |
| | 12 Aug 94 | 500 | NA | 95 | 34 | 4.0 | 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 | 8.1 |
| | 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 |
| | 6 Mar 10 | 99 | 250 | <0.5 | <0.5 | <0.5 | <1 | 2 |

## Table 2

***Summary of Historical Analytical Results for Groundwater Samples from Monitoring Wells (a)***

6601/6603 Shellmound Street, Emeryville, California

| Well Number | Sample Date | Chemical Concentration (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 | <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 | 3.0 | <2 | 3.0 | NA |
| | 19 Aug 93 | 110 | NA | 40 | 1.0 | <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 | <0.5 | <0.5 | <2 | NA |
| | 3 Nov 94 | 100 | NA | 3.0 | <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 | <0.5 | <0.5 | <2 | NA |
| | 13 Nov 95 | 90 | NA | 3.0 | <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 |
| | 6 Mar 10 | <50 | <50 | <1 | <1 | <1 | <2 | <1 |

Abbreviations:
"MTBE" = methyl tert-butyl ether
"NA" = not analyzed
"ND" = not detected
"TEPH" = total extractable petroleum hydrocarbons quantified as diesel
"TPPH" = total purgeable petroleum hydrocarbons quantified as gasoline
"ug/L" = micrograms per liter

Notes:
(a) Samples were collected in 1996 to 2010 by Erler & Kalinowski, Inc. Samples prior to 1992 were collected by Engineering Science. All other data are from PES Environmental, Inc. (December 1995)
(b) Note that detection limits were not available in the summary tables in PES, December 1995.
(e) Less than symbol ("<") indicated that the compound was not present above the indicated laboratory reporting limit.

## Table 3

### *Summary of Surrounding Wells within 500 Feet of the Site*

6601/6603 Shellmound Street, Emeryville, California

| Address | Owner's Well Number | State Well Number | Well Type | Installation | Abandonment | Total Depth (ft bgs) | Screen Interval (ft bgs) |
|---|---|---|---|---|---|---|---|
| 6707 Bay Street | MW-7 | 15/4W 15D1 | Monitoring | 1/1990 | - | 22 | 7 - 22 |
| | MW-8 | 15/4W 15D2 | Monitoring | 1/1990 | - | 21.5 | 7 - 21.5 |
| 1650 65th Street | MW-1 | 15/4W 15E1 | Monitoring | 7/1987 | 1/1988 | 30 | 9 - 30 |
| | MW-3 | 15/4W 15E6 | Monitoring | 11/1989 | - | 22 | 6.6 - 18 |
| | MW-4 | 15/4W 15E7 | Monitoring | 11/1989 | - | 19 | 6.1 - 15.8 |
| | MW-5 | 15/4W 15E8 | Monitoring | 11/1989 | - | 21.5 | 6.7 - 17.9 |
| | MW-6 | 15/4W 15E11/18 | Monitoring | 3/1990 | - | 22.1 | 7.1 - 21.8 |
| | MW-7 | 15/4W 15E12/19 | Monitoring | 3/1990 | - | 19 | 6.7 - 18.7 |
| | EW-1 | 15/4W 15E13 | Extraction | 3/1990 | - | 30 | 8.3 - 28.9 |

Abbreviations:
"ft bgs" = feet below ground surface

**Table 4**

***Summary of Soil Analytical Data from the Spring 2010 Investigation***

6601/6603 Shellmound Street, Emeryville, California

| Sample Location | Sample Depth (feet bgs) | Collection Date | Petroleum Compounds (mg/kg) (a,b) | | Volatile Organic Compounds (mg/kg) (a,c) | | | | | | | PAHs (mg/kg) (a,d) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | TEPH | TPPH | Benzene | Toluene | Ethylbenzene | Xylenes, m- & p- | Xylene, o- | 1,2-Dibromoethane | 1,2-Dichloroethane | Anthracene | Benzo(a)anthracene | Benzo(a)pyrene | Benzo(b)fluoranthene | Benzo(k)fluoranthene | Chrysene | Fluoranthene | Fluorene | Phenanthrene | Pyrene |
| SB-7 | 5.0 - 5.5 | 4/9/2010 | **100** | <0.23 | <0.0058 | <0.0058 | <0.0058 | <0.0058 | <0.0058 | <0.0058 | <0.0058 | <0.092 | <0.092 | <0.092 | <0.092 | <0.092 | <0.092 | <0.092 | <0.092 | <0.092 | <0.092 |
| | 8.0 - 8.5 | 4/9/2010 | **4,400** | **160** | <0.57 | <0.57 | <0.57 | <0.57 | <0.57 | <0.57 | <0.57 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 |
| | 13.0 - 13.5 | 4/9/2010 | **1,000** | 1.5 | 0.012 | <0.0051 | 0.014 | 0.0066 | <0.0051 | <0.0051 | <0.0051 | <0.08 | <0.08 | <0.08 | <0.08 | <0.08 | <0.08 | <0.08 | 0.16 | 0.24 | 0.08 |
| | 20.5 - 21.0 | 4/9/2010 | 6.2 | <0.18 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.078 | <0.078 | <0.078 | <0.078 | <0.078 | <0.078 | <0.078 | <0.078 | <0.078 | <0.078 |
| SB-8 | 4.5 - 5.0 | 4/9/2010 | **900** | 0.19 | <0.0047 | <0.0047 | <0.0047 | <0.0047 | <0.0047 | <0.0047 | <0.0047 | 0.099 | 0 15 | **0.16** | 0.23 | 0.076 | 0.18 | 0.41 | <0.075 | 0.26 | 0.39 |
| | 13.0 - 13.5 | 4/9/2010 | **2,500** | 0.77 | <0.0046 | <0.0046 | <0.0046 | <0.0046 | <0.0046 | <0.0046 | <0.0046 | <0.08 | <0.08 | 0.13 | 0.16 | <0.08 | 0.11 | 0 38 | 0.14 | 0.49 | 0.46 |
| | 17.5 - 18.0 | 4/9/2010 | 12 | <0.21 | <0.0053 | <0.0053 | <0.0053 | <0.0053 | <0.0053 | <0.0053 | <0.0053 | <0.083 | <0.083 | <0.083 | <0.083 | <0.083 | <0.083 | <0.083 | <0.083 | <0.083 | <0.083 |
| SB-9 | 5.0 - 5.5 | 4/9/2010 | 49 | <0.22 | <0.0045 | <0.0045 | <0.0045 | <0.0045 | <0.0045 | <0.0045 | <0.0045 | <0.076 | <0.076 | <0.076 | <0.076 | <0.076 | <0.076 | <0.076 | <0.076 | <0.076 | <0.076 |
| | 9.0 - 9.5 | 4/9/2010 | **4,600** | **140** | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <1.5 | <0.77 | <0.77 | <0.77 | <0.77 | <0.77 | <0.77 | 1.6 | 0.9 | 2.8 | 2.6 |
| | 12.5 - 13.0 | 4/9/2010 | **3,200** | **98** | 0.0077 | <0.0049 | <0.0049 | <0.0049 | <0.0049 | <0.0049 | <0.0049 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | 0.49 | <0.4 | 1.1 | 0.65 |
| | 19.0 - 19.5 | 4/9/2010 | 78 | <0.23 | <0.0058 | <0.0058 | <0.0058 | <0.0058 | <0.0058 | <0.0058 | <0.0058 | <0.086 | <0.086 | <0.086 | <0.086 | <0.086 | <0.086 | <0.086 | <0.086 | <0.086 | <0.086 |
| ESL for C/I direct exposure (shallow soil) | | | 450 | 450 | 0 27 | 210 | 5 | 100 | | 0.044 | 0.48 | 26,000 | 1 3 | 0.13 | 1.3 | 1.3 | 210 | 4,400 | 2,800 | 3,300 | 6,600 |
| ESL for C/I direct exposure (deep soil) | | | 4,200 | 4,200 | 12 | 650 | 210 | 420 | | 1.7 | 21 | 100,000 | 15 | 1.5 | 15 | 15 | 2,400 | 14,000 | 12,000 | 11,000 | 21,000 |
| ESL for groundwater protection of drinking water resource | | | 83 | 83 | 0.044 | 2.9 | 3.3 | 2.3 | | 0.00033 | 0.00045 | 2.8 | 12 | 130 | 46 | 2.7 | 23 | 60 | 8.9 | 11 | 85 |
| ESL for groundwater protection of non-drinking water resource | | | 180 | 180 | 2 | 9.3 | 4.7 | 11 | | 1 | 1.8 | 2.8 | 12 | 130 | 46 | 37 | 23 | 60 | 8.9 | 11 | 85 |

Abbreviations:

"C/I" = commercial/industrial land use

"ESL" = Environmental Screening Level (see Reference 1)

"feet bgs" = feet below ground surface

"mg/kg" = milligrams per kilogram

"PAHs" = polycyclic aromatic hydrocarbons

"TEPH" = total extractable petroleum hydrocarbons, quantified as diesel

"TPPH" = total purgeable petroleum hydrocarbons, quantified as gasoline

"VOCs" = volatile organic compounds

Notes:

(a) Soil concentrations are reported on a dry-weight basis. Concentrations exceeding at least one of the screening critera are shown in bold text.

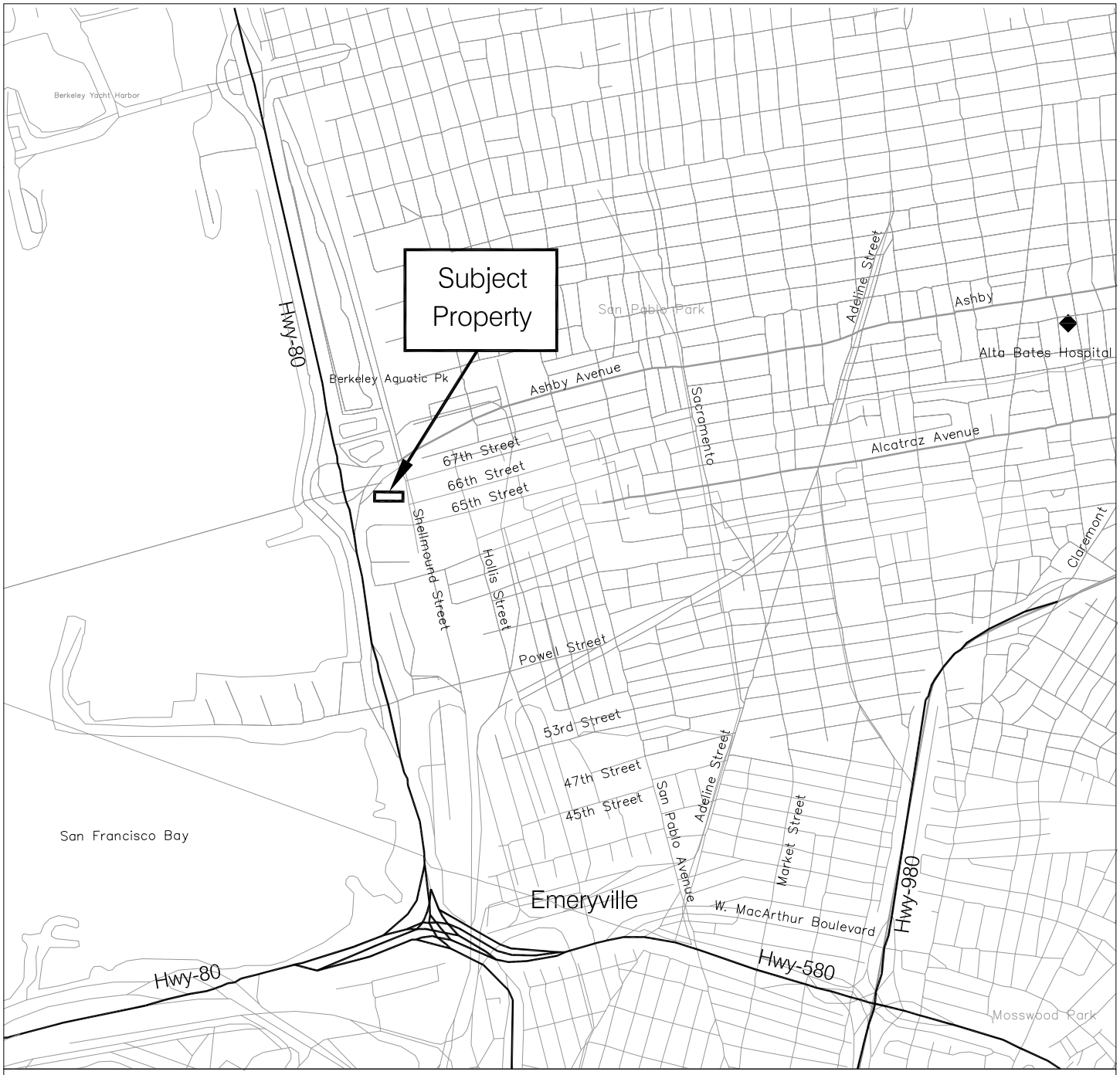
(b) TEPH and TPPH were analyzed using EPA Method 8015M.

(c) VOCs were analyzed using EPA Method 8260B. This table only includes detected analytes.

(d) PAHs were analyzed using EPA Method 8270C. This table only includes detected analytes

References:

1. *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater* , California Regional Water Quality Control Board, San Francisco Bay Region, revised May 2008.




Notes:

1. All locations are approximate.

0 2500 5000

(Approximate Scale in Feet)

N

**Erler & Kalinowski, Inc.**

Site Location

6601/6603 Shellmound Street
Emeryville, CA
May 2010
EKI 950074.05

Figure 1

G:\950074.05\May10\Figure 01.dwg 5-14-10

| SB-1 (ug/L) | 1996 |
|---|---|
| TEPH | 9,400 |
| TPPH | 930 |
| Benzene | <5 |
| Toluene | <5 |
| Ethylbenzene | 11 |
| Xylenes | 17 |
| MTBE | <25 |

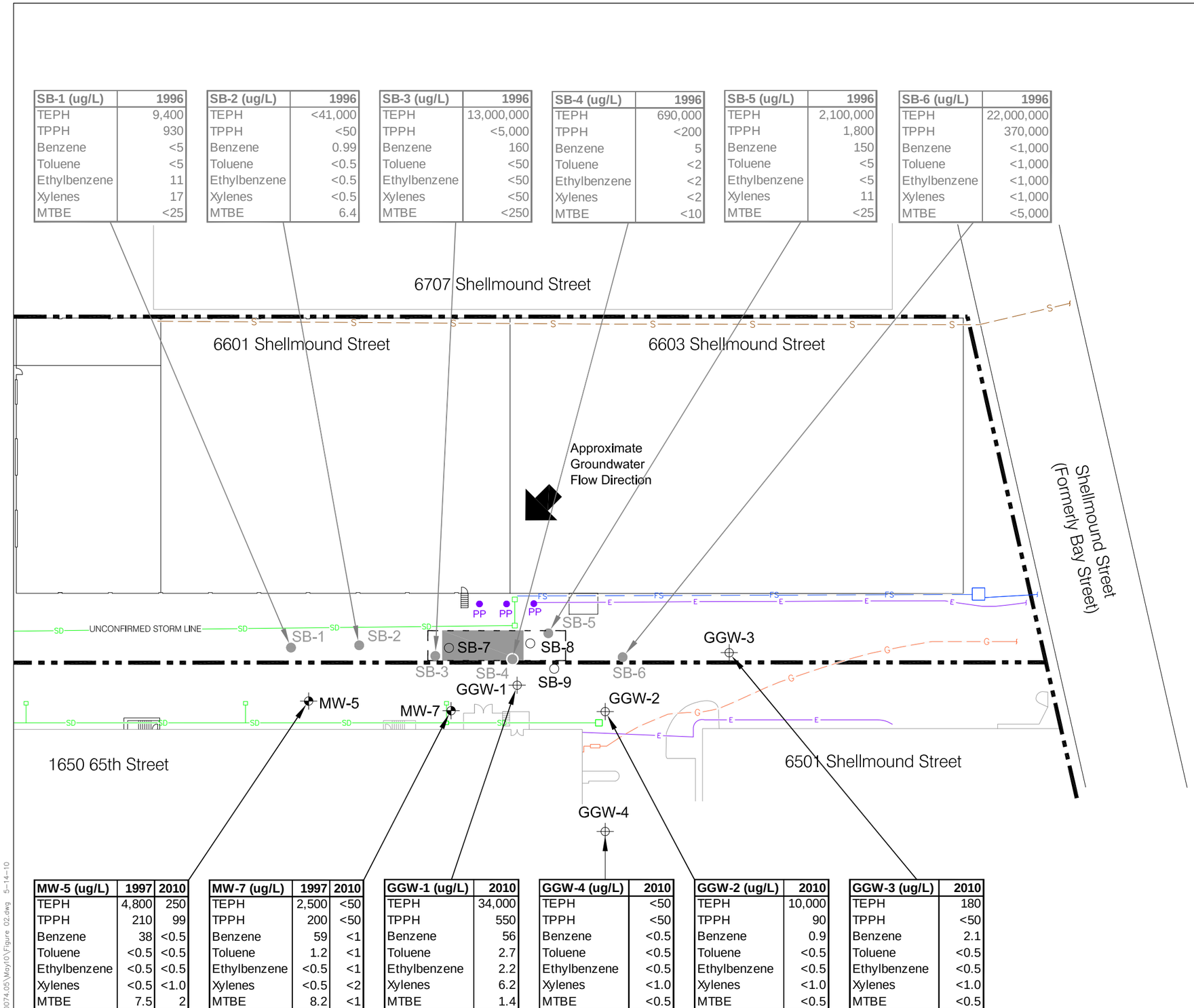
| SB-2 (ug/L) | 1996 |
|---|---|
| TEPH | <41,000 |
| TPPH | <50 |
| Benzene | 0.99 |
| Toluene | <0.5 |
| Ethylbenzene | <0.5 |
| Xylenes | <0.5 |
| MTBE | 6.4 |

| SB-3 (ug/L) | 1996 |
|---|---|
| TEPH | 13,000,000 |
| TPPH | <5,000 |
| Benzene | 160 |
| Toluene | <50 |
| Ethylbenzene | <50 |
| Xylenes | <50 |
| MTBE | <250 |

| SB-4 (ug/L) | 1996 |
|---|---|
| TEPH | 690,000 |
| TPPH | <200 |
| Benzene | 5 |
| Toluene | <2 |
| Ethylbenzene | <2 |
| Xylenes | <2 |
| MTBE | <10 |

| SB-5 (ug/L) | 1996 |
|---|---|
| TEPH | 2,100,000 |
| TPPH | 1,800 |
| Benzene | 150 |
| Toluene | <5 |
| Ethylbenzene | <5 |
| Xylenes | 11 |
| MTBE | <25 |

| SB-6 (ug/L) | 1996 |
|---|---|
| TEPH | 22,000,000 |
| TPPH | 370,000 |
| Benzene | <1,000 |
| Toluene | <1,000 |
| Ethylbenzene | <1,000 |
| Xylenes | <1,000 |
| MTBE | <5,000 |




| MW-5 (ug/L) | 1997 | 2010 |
|---|---|---|
| TEPH | 4,800 | 250 |
| TPPH | 210 | 99 |
| Benzene | 38 | <0.5 |
| Toluene | <0.5 | <0.5 |
| Ethylbenzene | <0.5 | <0.5 |
| Xylenes | <0.5 | <1.0 |
| MTBE | 7.5 | 2 |

| MW-7 (ug/L) | 1997 | 2010 |
|---|---|---|
| TEPH | 2,500 | <50 |
| TPPH | 200 | <50 |
| Benzene | 59 | <1 |
| Toluene | 1.2 | <1 |
| Ethylbenzene | <0.5 | <1 |
| Xylenes | <0.5 | <2 |
| MTBE | 8.2 | <1 |

| GGW-1 (ug/L) | 2010 |
|---|---|
| TEPH | 34,000 |
| TPPH | 550 |
| Benzene | 56 |
| Toluene | 2.7 |
| Ethylbenzene | 2.2 |
| Xylenes | 6.2 |
| MTBE | 1.4 |

| GGW-4 (ug/L) | 2010 |
|---|---|
| TEPH | <50 |
| TPPH | <50 |
| Benzene | <0.5 |
| Toluene | <0.5 |
| Ethylbenzene | <0.5 |
| Xylenes | <1.0 |
| MTBE | <0.5 |

| GGW-2 (ug/L) | 2010 |
|---|---|
| TEPH | 10,000 |
| TPPH | 90 |
| Benzene | 0.9 |
| Toluene | <0.5 |
| Ethylbenzene | <0.5 |
| Xylenes | <1.0 |
| MTBE | <0.5 |

| GGW-3 (ug/L) | 2010 |
|---|---|
| TEPH | 180 |
| TPPH | <50 |
| Benzene | 2.1 |
| Toluene | <0.5 |
| Ethylbenzene | <0.5 |
| Xylenes | <1.0 |
| MTBE | <0.5 |

0 50 100

(Approximate Scale in Feet)

N

## Legend:

- Property Boundary
- Approximate Tank Area
- Approximate Excavation Area (as depicted in Dubovsky and Petite, 1990)
- Off-Site Monitoring Well Location
- Soil Boring Location (1996)
- Soil Boring Location (2010)
- Grab Groundwater Sampling Location (2010)
- Power Pole (PP)
- Storm Drain Line
- Fire Service Line
- Sanitary Sewer Line
- Electrical Line
- Gas Line

## Abbreviations:

ug/L = micrograms per Liter
MTBE = Methyl Tertiary Butyl Ether
TEPH = Total Extractable Petroleum Hydrocarbons
TPPH = Total Purgeable Petroleum Hydrocarbons

## Notes:

1. All locations are approximate.
2. Basemap source: Digitized from Alta Land Survey Title Map (undated).
3. Posted groundwater data are from the 6 March 2010 and 9 April 2010 sampling event. Previous groundwater investigation were conducted in 1996 and 1997.

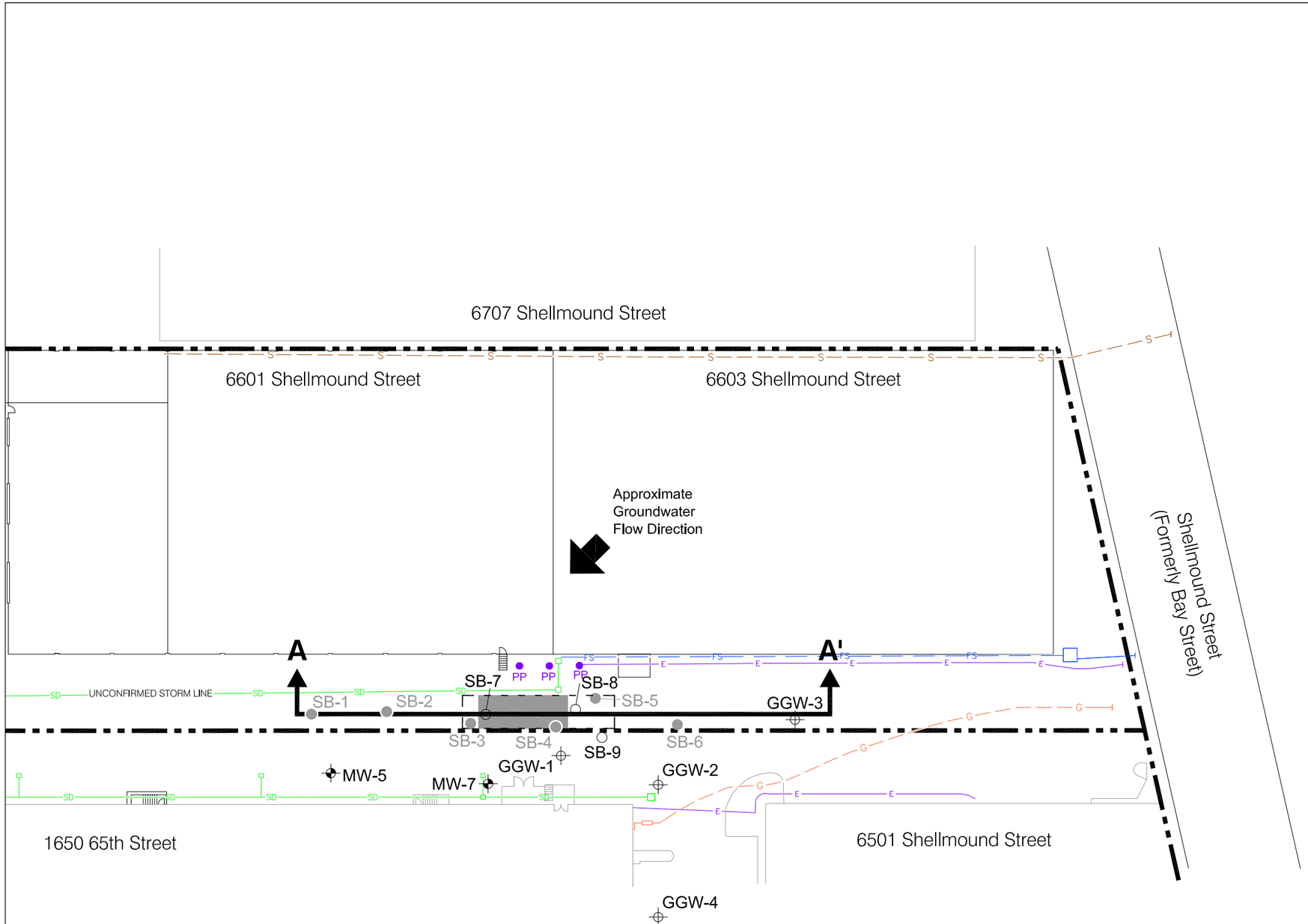
**Erler & Kalinowski, Inc.**

# Groundwater Sampling Results

6601/6603 Shellmound Street
Emeryville, CA
May 2010
EKI 950074.05

Figure 2

G:\950074.05\Mxd\10\Figure 02.dwg 5-14-10




N

0 50 100

(Approximate Scale in Feet)

## Legend:

- Property Boundary
- Approximate Tank Area
- Approximate Excavation Area (as depicted in Dubovsky and Petite, 1990)
- Off-Site Monitoring Well Location
- Soil Boring Location (1996)
- Soil Boring Location (2010)
- Grab Groundwater Sampling Location (2010)
- Power Pole (PP)
- Storm Drain Line
- Fire Service Line
- Sanitary Sewer Line
- Electrical Line
- Gas Line
- Cross-Section Location (See Figure 4)

## Notes:

1. All locations are approximate.
2. Basemap source: Digitized from Alta Land Survey Title Map (undated).

**Erler & Kalinowski, Inc.**

Location of Utilities and Cross-Section

6601/6603 Shellmound Street
Emeryville, CA
May 2010
EKI 950074.05

Figure 3

G:\950074.05\May10\Figure 03.dwg 5-14-10

**A** (West) — **A'** (East)

6601 Shellmound Street Property | 6603 Shellmound Street Property

SB-1 | MW-5 (Proj. 27 ft N) | SB-2 | SB-3 (Proj. 5 ft N) | SB-7 | MW-7 (Proj. 32 ft N) | SB-4 (Proj. 7 ft N) | SB-8 | SB-5 (Proj. 6 ft S) | SB-6 (Proj. 6 ft N) | GGW-3

Approximate Location of Former Storm Drain Line (Assumed Slope=0.003 ft/ft and 10 Inch Diameter) (See Note 5) (Projected 10 ft South)

Approximate Elevation of Ground Surface

2,000 Gal. Gasoline UST

7,500 Gal. Gasoline UST

6,000 Gal. Diesel UST

(Maximum)

(Average)

(Minimum)

Approximate Location of Former USTs

Approximate Elevation - Feet Mean Sea Level

13 12 11 10 9 8 7 6 5 4 3 2 1 0 -1 -2 -3 -4 -5 -6 -7 -8 -9

B=<0.12 mg/kg
TEPH=820 mg/kg

B=0.019 mg/kg
TEPH=210 mg/kg

B=<0.005 mg/kg
TEPH=86 mg/kg

B=0.0058 mg/kg
TEPH=100 mg/kg

B=<0.005 mg/kg
TEPH=360 mg/kg

B=<0.0047 mg/kg
TEPH=900 mg/kg

B=<0.005 mg/kg
TEPH=1,800 mg/kg

B=<0.005 mg/kg
TEPH=120 mg/kg

B=0.64 mg/kg
TEPH=NA

B=<0.57 mg/kg
TEPH=4,400 mg/kg

B=0.02 mg/kg
TEPH=1,500/2,300 mg/kg

B=<5 ug/L
TEPH=9,400 ug/L

B=150 ug/L
TEPH=2,100,000 ug/L

B=160 ug/L
TEPH=13,000,000 ug/L

B=5.0 ug/L
TEPH=690,000 ug/L

B=<1,000 ug/L
TEPH=22,000,000 ug/L

B= <0.5 ug/L
TEPH=250 ug/L

B=<1.0 ug/L
TEPH=<50 ug/L

B=<2 mg/kg
TEPH=2,400 mg/kg

B=0.99 ug/L
TEPH=<41,000 ug/L

B=0.012 mg/kg
TEPH=1,000 mg/kg

B=<0.0046 mg/kg
TEPH=2,500 mg/kg

B=<2 mg/kg
TEPH=2,400 mg/kg

B=2.1 ug/L
TEPH=180 ug/L

B=<0.0053 mg/kg
TEPH=12 mg/kg

Approximate Location of UST Excavation Extent Depicted in Dubovsky and Petite (1990)
Note: Excavation reportedly backfilled with virgin material, but debris was encountered at locations SB-3, SB-4, SB-5, and SB-8 suggesting excavation may not be as large as depicted.

B=<0.005 mg/kg
TEPH=6.2 mg/kg

Borehole extended to 24 feet bgs

(Vertical Scale: 1" = 3') 3 2 1 0

(5X Vertical Exaggeration)

0 15 30

(Horizontal Scale: 1" = 15')

## Notes:

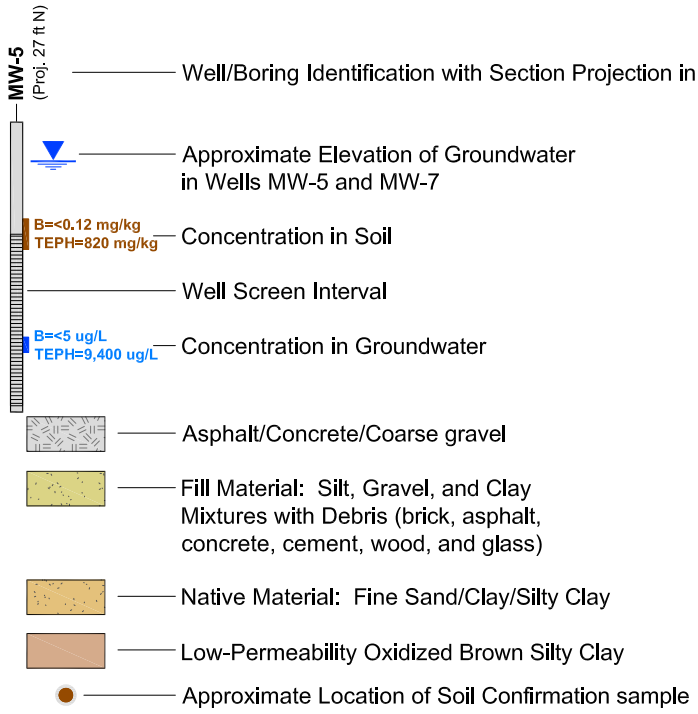
1. For Legend, Abbreviations, References and Notes, See Figure 4A.

**Erler & Kalinowski, Inc.**

Subsurface Conceptual Site Model
in the Vicinity of Former USTs
Cross-Section A - A'
6601/6603 Shellmound Street
Emeryville, CA
May 2010
EKI 950074.05
Figure 4

G:\950074.05\May10\Figure 04.dwg 5-14-10

## Legend:




## Abbreviations:

| | |
|---|---|
| < | = not detected above stated reporting limit |
| B | = benzene |
| ft | = feet |
| Gal. | = gallon |
| MSL | = mean sea level |
| mg/kg | = milligrams per kilogram |
| ug/L | = micrograms per liter |
| NA | = not analyzed |
| TEPH | = total extractable petroleum hydrocarbons |
| USTs | = underground storage tanks |

## References:


a) Dubovsky and Petite, 1990. *Environmental Report, 6601 and 6603 Bay Street, Emeryville, California,* William Dubovsky Environmental and D. Larry Petite, July 1990.

b) Engineering-Science, Inc., 1989. *Groundwater Contamination Investigation, 1650 65th Street Property, Emeryville, California,* Engineering-Science, Inc., November 1989.

c) Engineering-Science, Inc., 1990. *Evaluation of Groundwater Alternatives and Remedial Action Plan, 65th Street Property, Emeryville, California,* Engineering-Science, Inc., November 1990.

d) EKI, 1996. *Results of Soil and Groundwater Investigation at 6601 and 6603 Bay Street, Emeryville, California,* Erler & Kalinowski, Inc., 23 August 1996.

e) EKI, 1997. *Closure Report, Three Former Underground Storage Tanks at 6601 and 6603 Bay Street, Emeryville, California,* Erler & Kalinowski, Inc., 18 August 1997.


## Notes:

1. All locations are approximate.
2. The data displayed at each location is projected up to approximately 32 feet from either side of the cross-section.
3. Data presented on this figure for soil and groundwater are from Dubovsky and Petite, 1990, EKI, 1996, EKI, 1997, and this investigation (2010).
4. Geologic information presented on this figure is from Engineering-Science, Inc., 1989 and 1990, EKI, 1996, and this investigation (2010).
5. According to construction drawings from 1994, plans were in place to remove, backfill, and compact this storm drain line during improvements and seismic upgrades at the site.

**Erler & Kalinowski, Inc.**

Legend, Abbreviations, References and Notes

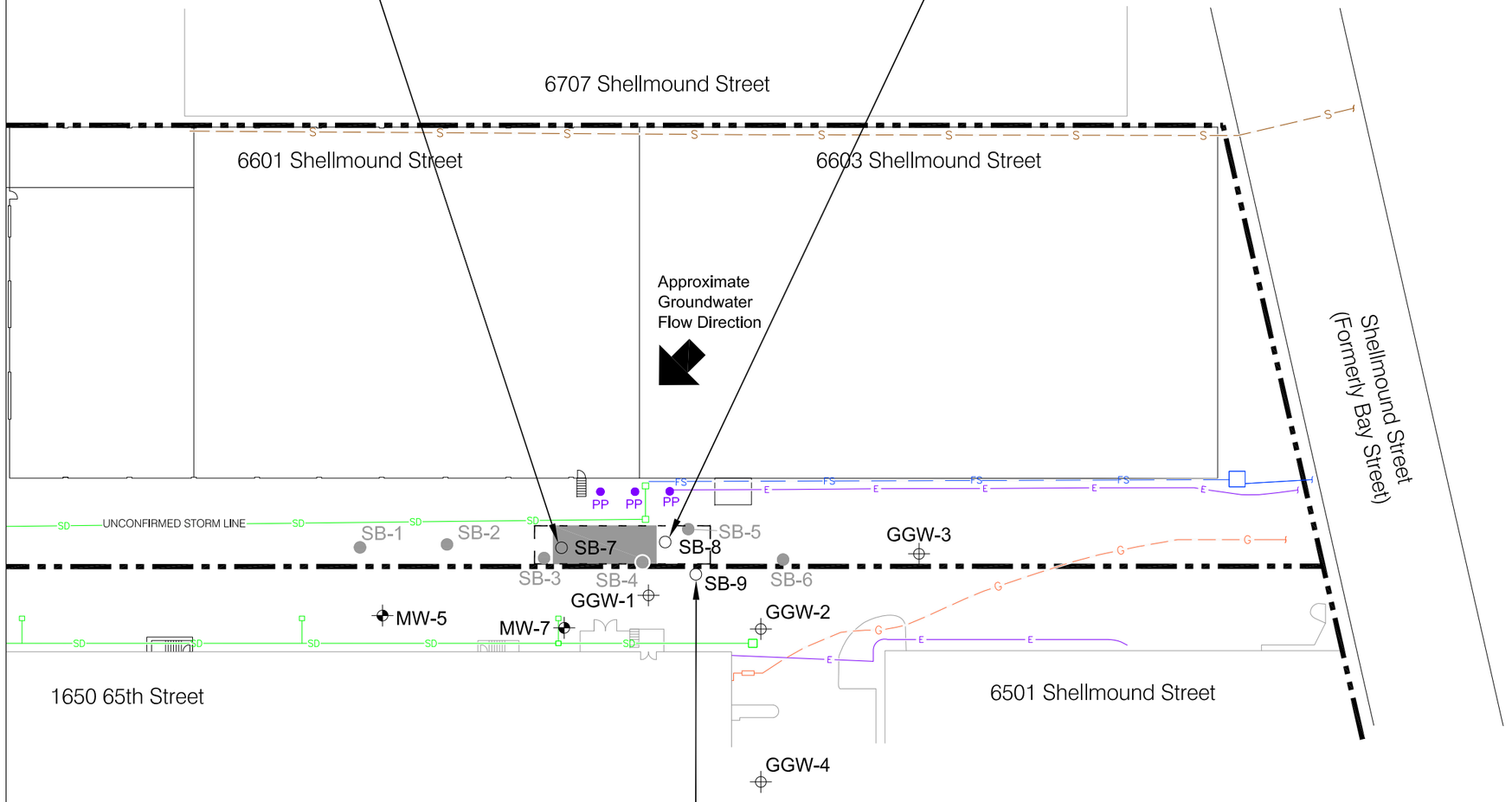
6601/6603 Shellmound Street
Emeryville, CA
May 2010
EKI 950074.05

Figure 4A

G:\950074.05\May10\Figure 04.dwg 5-14-10

| SB-7 (mg/kg) | 5.0-5.5 ft bgs | 8.0-8.5 ft bgs | 13.0-13.5 ft bgs | 20.5-21.0 ft bgs |
|---|---|---|---|---|
| TEPH | 100 | 4,400 | 1,000 | 6.2 |
| TPPH | <0.23 | 160 | 1.5 | <0.18 |
| Benzene | <0.0058 | <0.57 | 0.012 | <0.005 |
| Toluene | <0.0058 | <0.57 | <0.0051 | <0.005 |
| Ethylbenzene | <0.0058 | <0.57 | 0.014 | <0.005 |
| Xylenes | <0.0116 | <1.14 | 0.0066 | <0.010 |
| MTBE | <0.0058 | <0.57 | <0.0051 | <0.005 |

| SB-8 (mg/kg) | 4.5-5.0 ft bgs | 13.0-13.5 ft bgs | 17.5-18.0 ft bgs |
|---|---|---|---|
| TEPH | 900 | 2,500 | 12 |
| TPPH | 0.19 | 0.77 | <0.21 |
| Benzene | <0.0047 | <0.0046 | <0.0053 |
| Toluene | <0.0047 | <0.0046 | <0.0053 |
| Ethylbenzene | <0.0047 | <0.0046 | <0.0053 |
| Xylenes | <0.0094 | <0.0092 | <0.0106 |
| MTBE | <0.0047 | <0.0046 | <0.0053 |




| SB-9 (mg/kg) | 5.0-5.5 ft bgs | 9.0-9.5 ft bgs | 12.5-13.0 ft bgs | 19.0-19.5 ft bgs |
|---|---|---|---|---|
| TEPH | 49 | 4,600 | 3,200 | 78 |
| TPPH | <0.22 | 140 | 98 | <0.23 |
| Benzene | <0.0045 | <1.5 | 0.0077 | <0.0058 |
| Toluene | <0.0045 | <1.5 | <0.0049 | <0.0058 |
| Ethylbenzene | <0.0045 | <1.5 | <0.0049 | <0.0058 |
| Xylenes | <0.0090 | <3.0 | <0.0098 | <0.0116 |
| MTBE | <0.0045 | <1.5 | <0.0049 | <0.0058 |

N

0 50 100

(Approximate Scale in Feet)

## Legend:

- Property Boundary
- Approximate Tank Area
- Approximate Excavation Area (as depicted in Dubovsky and Petite, 1990)
- Off-Site Monitoring Well Location
- Soil Boring Location (1996)
- Soil Boring Location (2010)
- Grab Groundwater Sampling Location (2010)
- Power Pole (PP)
- Storm Drain Line
- Fire Service Line
- Sanitary Sewer Line
- Electrical Line
- Gas Line

## Abbreviations:

| | | |
|---|---|---|
| ft bgs | = | feet below ground surface |
| mg/kg | = | milligrams per kilogram |
| MTBE | = | Methyl Tertiary Butyl Ether |
| TEPH | = | Total Extractable Petroleum Hydrocarbons |
| TPPH | = | Total Purgeable Petroleum Hydrocarbons |

## Notes:

1. All locations are approximate.
2. Basemap source: Digitized from Alta Land Survey Title Map (undated).
3. Posted soil data are from 9 April 2010 sampling event.

**Erler & Kalinowski, Inc.**

Soil Sampling Results

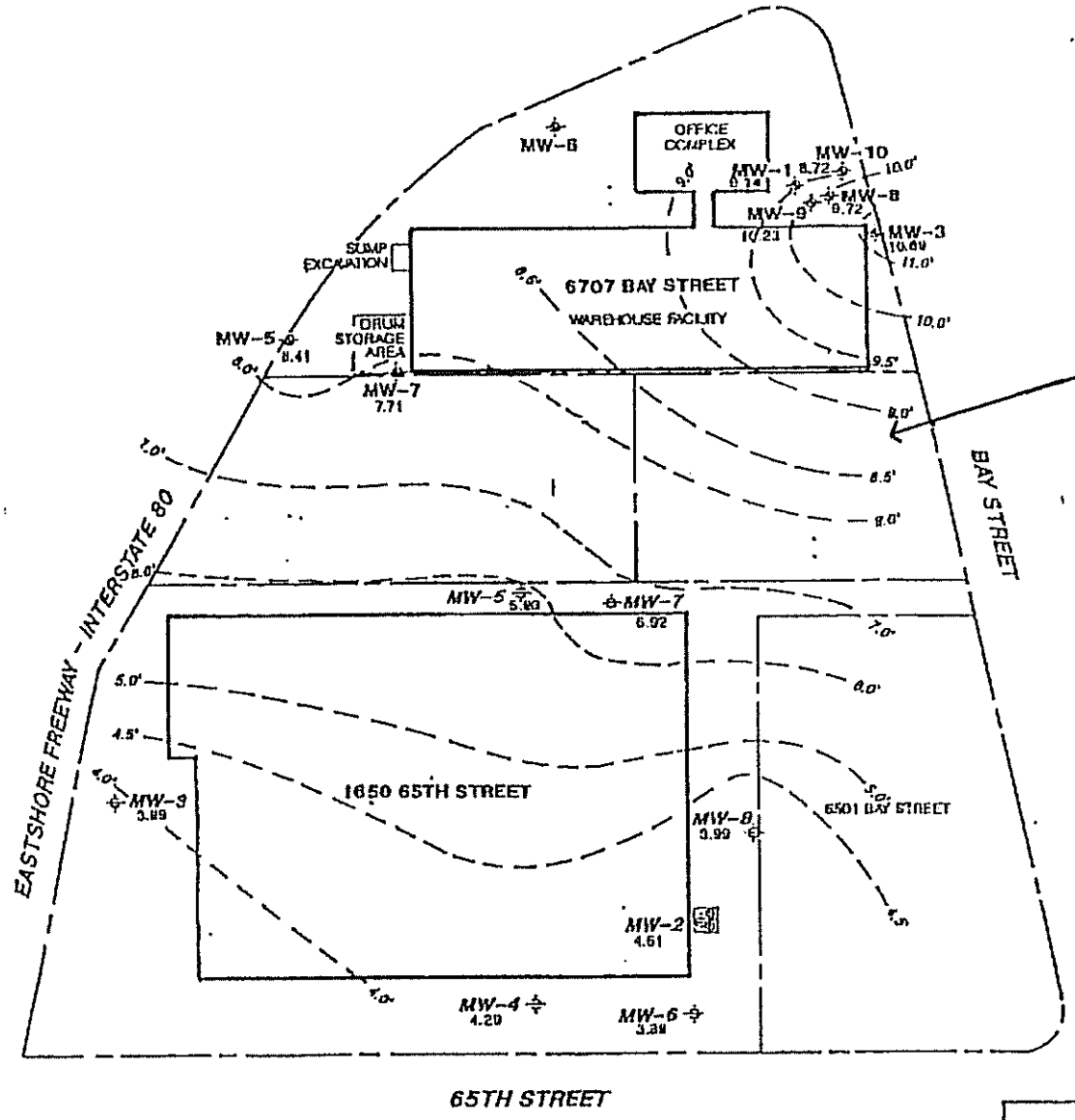
6601/6603 Shellmound Street
Emeryville, CA
May 2010
EKI 950074.05

Figure 5

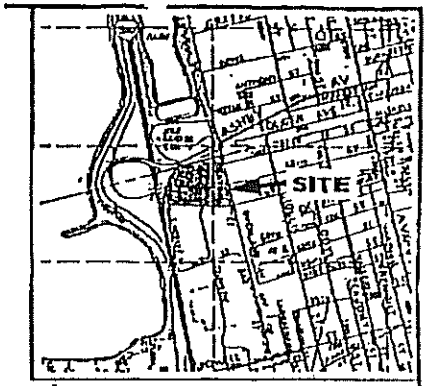
G:\950074.05\May10\Figure 05.dwg 5-14-10

**APPENDIX A**
**Potentiometric Surface Map**

Groundwater Potentiometric Surface in the Vicinity of 6601/6603 Shellmound Street
(Obtained from Subsurface Consultants, Inc.,
*Groundwater Monitoring, November 1995 Event*, 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 15, 1995

N

APPROXIMATE SCALE (feet)

0 100 200

# SITE PLAN

Subsurface Consultants

6707 BAY STREET – EMERYVILLE, CA

| JOB NUMBER | DATE | APPROVED |
|---|---|---|
| 820.001 | 12/6/95 | |

PLATE 1

**APPENDIX B**
**Tables Containing Soil and Groundwater Data from 1996 Investigation**

(Tables 2 through 7 from EKI, 1996)

**Table 2**
**Summary of Soil and Groundwater Sampling Depths and Analyses (a)**
**6601 and 6603 Bay Street**
**Sybase, Inc.**
**Emeryville, California**
**(EKI 950074.03)**

| Sample ID (b) | Sample Location | Sample Depth (feet bgs) (c) | TPPH as gasoline / BTEX & MTBE (EPA 8015 and 8020) | TEPH as diesel (EPA 8015) | TEPH and Fuel Fingerprint (d) | PAHs (EPA Method 8100) |
|---|---|---|---|---|---|---|
| **Soil** | | | | | | |
| SB-1-5 | SB-1 | 4.5-5 | x | x | | |
| SB-2-5 | SB-2 | 4.5-5 | x | x | | |
| SB-3-5 | SB-3 | 4.5-5 | x | x | | x |
| SB-4-5 | SB-4 | 4.5-5 | x | x | | x |
| SB-5-6 | SB-5 | 5.5-6 | x | x | | |
| SB-6-5 | SB-6 | 4.5-5 | x | x | | |
| **Groundwater** | | | | | | |
| Travel Blank | - | - | x | | | |
| SB-1 | SB-1 | 11.0 | x | x | | |
| SB-2 | SB-2 | 13.5 | x | x | | |
| SB-3 | SB-3 | 11.5 | x | | x | |
| SB-4 | SB-4 | 11.5 | x | x | | |
| SB-5 | SB-5 | 10.5 | x | | x | |
| SB-6 | SB-6 | 11.5 | x | | x | x |
| MW-5 | MW-5 | 18.0 (e) | x | x | | |
| MW-7 | MW-7 | 6.7-18.7 (e) | x | x | | |

Notes:

(a) Soil and grab groundwater samples collected by Erler & Kalinowski, Inc. on 15 June 1996 and 16 June 1996.

(b) See Figure 2 for sampling locations corresponding to Sample ID.

(c) "feet bgs" denotes feet below ground surface. Grab groundwater samples were collected through the hollow stem augers in borings drilled to the depth indicated.

(d) For a fuel fingerprint analysis, the laboratory attempts to match the sample chromatogram with that of various hydrocarbon standards. The analysis includes the entire extractable range, i.e. from carbon chain lengths C9 to C40.

(e) Sample depth for the monitoring wells are indicated by the screened interval of the well. For well MW-5, only the bottom depth of the screened interval is known.

Abbreviations:

TPPH = Total Purgeable Petroleum Hydrocarbons
BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes
MTBE = Methyl tertiary butyl ether
TEPH = Total Extractable Petroleum Hydrocarbons
PAHs = Polycyclic Aromatic Hydrocarbons

**Table 3**
**Total Petroleum Hydrocarbon Concentrations in Soil Samples (a)**
**6601 and 6603 Bay Street**
**Sybase, Inc.**
**Emeryville, California**
**(EKI 950074.03)**

| | Total Purgeable Petroleum Hydrocarbons | | | Total Extractable Petroleum Hydrocarbons | | |
|---|---|---|---|---|---|---|
| Sample ID (b) | Conc. as gas (c) (mg/kg) | Laboratory Description of Chromatogram Pattern | Additional Comments (d) | Conc. as diesel (e) (mg/kg) | Laboratory Description of Chromatogram Pattern | Additional Comments (c) |
| SB-1-5 | 200 | Unidentifiable pattern of hydrocarbons in C8-C12 range. | Mound centered at 17 min. (not observed in other soil samples). | 820 | Unidentifiable pattern of hydrocarbons in C9-C24 range. | Mound in less than C12 range (not observed in other soil samples). Mound centered at C28. |
| SB-2-5 | 1.1 | Pattern characteristic of weathered gasoline in C8-C12 range. | Mound centered at 23 min. | 210 | Unidentifiable pattern of hydrocarbons in C9-C24 range. | Mound centered at C30. |
| SB-3-5 | <1.0 | Not detected. | Mound centered at 23 min. | 86 | Unidentifiable pattern of hydrocarbons in C9-C24 range. | Mound centered at C30. |
| SB-4-5 | 4.2 | Unidentifiable pattern of hydrocarbons greater than C9. | Mound centered at 23 min. | 360 | Unidentifiable pattern of hydrocarbons in C10-C24 range. | Mound centered at C30. |
| SB-5-6 | 7.3 | Unidentifiable pattern of hydrocarbons greater than C8. | Mound centered at 23 min. | 120 | Unidentifiable pattern of hydrocarbons in C9-C24 range. | Some small peaks in less than C12 range. Mound centered at C30. |
| SB-6-5 | 2.5 | Unidentifiable pattern of hydrocarbons in C8-C12 range. | Mound centered at 23 min. Also several peaks centered at 17 min. | 1,800 | Unidentifiable pattern of hydrocarbons in C9-C40 range. | Very different pattern from other soil samples. Discrete peaks at C14, C17, C20, C24, and C28. |

Notes:

(a) Soil samples collected by Erler & Kalinowski, Inc. on 15 June 1996.

(b) Sampling locations corresponding to Sample ID are shown in Figure 3.

(c) Concentration quantified as gasoline (includes C6 to C12 compounds).

(d) Appendix G contains chromatograms from laboratory analysis of soil samples and, for comparison, petroleum hydrocarbon and n-alkane standards.

(e) Concentration quantified as diesel (includes C9 to C24 compounds).

**Table 4**
**Concentrations of Petroleum Hydrocarbon-Related Compounds in Soil Samples (a)**
**6601 and 6603 Bay Street**
**Sybase, Inc.**
**Emeryville, California**
**(EKI 950074.03)**

| Sample ID (b) | Benzene (mg/kg) | Toluene (mg/kg) | Ethyl-benzene (mg/kg) | Total Xylenes (mg/kg) | MTBE (mg/kg) | PAHs (mg/kg) |
|---|---|---|---|---|---|---|
| SB-1-5 | <0.12 | <0.12 | 0.29 | 2.8 | <0.62 | NA |
| SB-2-5 | 0.019 | <0.005 | <0.005 | 0.0092 | <0.025 | NA |
| SB-3-5 | <0.005 | <0.005 | <0.005 | <0.005 | <0.025 | ND |
| SB-4-5 | <0.005 | 0.0094 | <0.005 | 0.015 | <0.025 | ND |
| SB-5-6 | <0.005 | 0.0062 | <0.005 | 0.021 | <0.025 | NA |
| SB-6-5 | <0.005 | <0.005 | <0.005 | 0.026 | <0.025 | NA |
| PRG (c) | 3.2 | 2,800 | 690 | 990 | 3,400 | |

Notes:
(a) Soil samples collected by Erler & Kalinowski, Inc. on 15 June 1996.
(b) Sampling locations corresponding to Sample ID are shown in Figure 2.
(c) U.S. EPA Preliminary Remediation Goals ("PRGs") for industrial soils (U.S. EPA, 1 September 1995).

Abbreviations:
MTBE = Methyl tertiary butyl ether
PAHs = Polycyclic Aromatic Hydrocarbons
NA = Not analyzed
ND = No compounds detected above laboratory method detection limits (See Appendix E for laboratory data sheets

**Table 5**
**Total Petroleum Hydrocarbon Concentrations in Groundwater Samples (a)**
**6601 and 6603 Bay Street**
**Sybase, Inc.**
**Emeryville, California**
**(EKI 950074.03)**

| | Total Purgeable Petroleum Hydrocarbons | | | Total Extractable Petroleum Hydrocarbons | | |
|---|---|---|---|---|---|---|
| Sample ID (b) | Conc. as gas (c) (ug/L) | Laboratory Description of Chromatogram Pattern | Additional Comments (c) | Conc. (d) (ug/L) | Laboratory Description of Chromatogram Pattern | Additional Comments (c) |
| SB-1 | 930 | Unidentifiable pattern of hydrocarbons greater than C8. | Discrete peaks in 12-20 min. range. | 9,400 (as diesel) | Unidentifiable pattern of hydrocarbons in C9-C24 range. | Mound in less than C12 range. |
| SB-2 | <50 | Not detected. | Small mound centered at 24 min. | <41,000 (as diesel) | Not detected. | No peaks visible. |
| SB-3 | <5000 | Not detected. | Mound centered at 24 min. | 13,000,000 (total extract.) | Pattern characteristic of diesel and unidentifiable pattern of hydrocarbons in C25-C36 range. | Mound centered at C17 with some discrete peaks. |
| SB-4 | <200 | Not detected. | Small mound centered at 24 min. | 690,000 (as diesel) | Pattern characteristic of weathered diesel. | Mound centered at C17 with some discrete peaks. |
| SB-5 | 1,800 | Unidentifiable pattern of hydrocarbons greater than C11 and discrete peak in C6-C7 range. | Mound centered at 24 min. | 2,100,000 (total extract.) | Pattern characteristic of diesel. | Mound centered at C17. |
| SB-6 | 370,000 | Unidentifiable pattern of hydrocarbons greater than C11. | Mound centered at 24 min. | 22,000,000 (total extract.) | Pattern characteristic of diesel. | Mound centered at C17. |
| MW-5 | 180 | Pattern characteristic of weathered gasoline in C6-C12 range. | Discrete peaks in 16-23 min. range. | <40,000 (as diesel) | Not detected. | No peaks visible. |
| MW-7 | <50 | Not detected. | No peaks or mounds. | 1,000 (as diesel) | Unidentifiable pattern of hydrocarbons in C9-C24 range. | Mound centered at C24 (not observed in other groundwater samples). |

Notes:

(a) Groundwater samples collected by Erler & Kalinowski, Inc. on 15 and 16 June 1996.

(b) Sampling locations corresponding to Sample ID are shown in Figure 2.

(c) Concentration quantified as gasoline (includes C6 to C12 compounds).

(d) Appendix G contains chromatograms from laboratory analysis of samples and, for comparison, petroleum hydrocarbon and n-alkane standards.

(e) Concentration quantified either as diesel (includes C9 to C24 compounds) or as total extractable petroleum hydrocarbons (includes C9 to C40 compounds).

**Table 6**
**Concentrations of Petroleum Hydrocarbon-Related Compounds**
**in Groundwater Samples (a)**
**6601 and 6603 Bay Street**
**Sybase, Inc.**
**Emeryville, California**
**(EKI 950074.03)**

| Sample ID (b) | Benzene (ug/L) | Toluene (ug/L) | Ethyl-benzene (ug/L) | Total Xylenes (ug/L) | MTBE (ug/L) | PAHs | |
|---|---|---|---|---|---|---|---|
| | | | | | | Acenaph-thene (ug/L) | Fluorene (ug/L) |
| SB-1 | <5 | <5 | 11 | 17 | <25 | NA | NA |
| SB-2 | 0.99 | <0.5 | <0.5 | <0.5 | 6.4 | NA | NA |
| SB-3 | 160 | <50 | <50 | <50 | <250 | NA | NA |
| SB-4 | 5.0 | <2 | <2 | <2 | <10 | NA | NA |
| SB-5 | 150 | <5 | <5 | 11 | <25 | NA | NA |
| SB-6 | <1,000 | <1,000 | <1,000 | <1,000 | <5,000 | 12,000-42,000 (c) | 25,000-96,000 (c) |
| MW-5 | 39 | <0.5 | <0.5 | <0.5 | 8.1 | NA | NA |
| MW-7 | 47 | 0.87 | <0.5 | 0.8 | 6.5 | NA | NA |
| PRG (d) | 0.39 | 720 | 1,300 | 1,400 | 180 | 370 | 240 |
| MCL (e) | 1 | 150 | 700 | 1,750 | - (f) | - | - |

Notes:

(a) Groundwater samples collected by Erler & Kalinowski, Inc. on 15 and 16 June 1996.

(b) Sampling locations corresponding to Sample ID are shown in Figure 2.

(c) Laboratory indicated that results may be artificially high due to presence of unknown, interfering hydrocarbon. PAHs are most likely associated with free product present in groundwater sample. Therefore, the reported concentrations are likely to be greater than actual aqueous concentrations. Sample analyzed after hold time.

(d) U.S. EPA Preliminary Remediation Goals ("PRGs") for drinking water (U.S. EPA, 1 September 1995).

(e) Maximum Contaminant Levels ("MCLs") for drinking water.

(f) Hyphen indicates that an MCL is not availabe for this compound.

Abbreviations:

MTBE = Methyl tertiary butyl ether

PAHs = Polycyclic Aromatic Hydrocarbons

NA = Not analyzed

**Table 7**
**Results of Trend Analysis for Groundwater Data from Wells MW-5 and MW-7 (a)**
**6601 and 6603 Bay Street**
**Sybase, Inc.**
**Emeryville, California**
**(EKI 950074.03)**

| Statistical Parameters | Well MW-5 | | | | Well MW-7 | | | |
|---|---|---|---|---|---|---|---|---|
| | TPPH | Benzene | Toluene | Total Xylenes | TPPH | Benzene | Toluene | Total Xylenes |
| n (b) | 18 | 26 | 18 | 18 | 18 | 26 | 18 | 18 |
| S (c) | 14 | -135 | -18 | 21 | -61 | -96 | -22 | 2 |
| Mann-Kendall Probability (d) | 0.313 | NA (e) | NA (e) | 0.227 | NA (e) | NA (e) | NA (e) | 0.485 |
| 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 16 June 1996 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 Hollaender 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

# APPENDIX C
# Field Methods and Procedures for Soil and Groundwater Sampling

# APPENDIX C
## Field Methods and Procedures for Soil and Groundwater Sampling
## 6601/6603 Shellmound Street, Emeryville, California

On behalf of Sybase, Inc. ("Sybase"), Erler and Kalinowski, Inc. ("EKI") performed soil and groundwater sampling for chemical analysis at the 6601-6603 Shellmound Street property ("Site") in March and April 2010. This Closure Request summarizes the result of the additional Site characterization done in general accordance with (1) the *Work Plan for Additional Site Characterization* prepared by EKI on 1 June 2009 ("Work Plan"), (2) the 14 August 2009 approval letter from Alameda County Environmental Health department ("ACEH"), and (3) the 11 September 2009 letter from EKI in response to the approval letter.

## C.1 PREPARATION

In preparation for field work, EKI applied for and obtained a drilling permit from the Alameda County Public Works Agency ("ACPWA"). The permit, number W2010-0130, was approved on 3 March 2010. A copy of the drilling permit is included at the back of this appendix. A site-specific Health and Safety Plan ("HSP") also was prepared for the work.

EKI contracted with Gregg Drilling and Testing of Martinez, California, ("Gregg") a State of California-licensed drilling contractor, to perform subsurface work for soil and grab groundwater sampling. As specified in the Work Plan, planning included the use of prefabricated dual-pipe casing with "prepack" filter-packed screened sections for grab groundwater sampling, in order to help reduce groundwater sample turbidity.

On Wednesday, 3 March 2010, EKI visited the Site and part of the adjacent property to the south at 1650 65$^{th}$ Street, to mark planned drilling locations, identify access constraints, and to discuss the upcoming field sampling schedule. EKI had scheduled the work for the following Saturday in order to meet the requirements of the current tenant, Ex'pression Digital Arts College. Accompanying EKI on the Site visit were Susan Shirk of TMG Partners and Jacob Warren of Ex'pression. EKI also checked the general condition of the two on-Site monitoring wells scheduled for sampling, MW-5 and MW-7, concluding that the wells did not need development prior to sampling. The planned locations of the soil and grab groundwater sample boreholes were marked on the ground, and Underground Services Alert ("USA") was notified of the work, so that the buried utility owners and operators could mark the locations of their various existing lines.

Two days later, on Friday, 5 March 2010, EKI visited the Site with a private utility locating company to clear the proposed drilling locations for buried utilities using electromagnetic detectors and the marked lines from the USA-notified utility companies. The final borehole locations did not appear to be in conflict with any known utility lines.

## C.2 SITE INVESTIGATION

On 6 March 2010, EKI met Gregg at the Site to begin the drilling and sampling project. EKI purged and sampled two onsite monitoring wells, MW-5 and MW-7, while the grab groundwater sample boreholes were being completed to depth.

Each of the locations was cored by Osborne's Concrete Coring of Fremont, California prior to drilling. The concrete cores were left in-place for safety, and were removed only when drilling of a particular borehole began.

Soil boreholes GGW-1, GGW-2, and GGW-3 were drilled on 6 March 2010, using a truck-mounted Marl 2.5 DP combination direct-push and auger rig. The upper five-foot interval of every borehole was drilled out using a 3½-inch diameter hand-auger, so that any unmarked or otherwise undetected utility lines could be discovered without damage or exposure of workers to utility-related hazards. Subsurface materials encountered in the upper five feet of depth generally were poorly sorted, and probably were related to a former landfill at the Site. Brick and concrete fragments were common, which slowed the hand-augering process.

Grab groundwater sampling was conducted in these boreholes, using 1.5-inch ID temporary PVC casing with 0.010-inch slotted casing encased in sand-filled stainless-steel "prepack" screens. As described above, coarse materials encountered in the shallow subsurface slowed drilling, thus, the boreholes planned for soil sampling, SB-7, SB-8, and SB-9, were drilled on a subsequent 9 April 2010 mobilization, using a track-mounted Marl M5T combination direct-push and auger rig. A fourth grab groundwater sample borehole, GGW-4, also was advanced at this time. Borehole locations are shown on Figure 2. Field notes and borehole logs for the investigation are included in Appendix E of this report.

Gregg Drilling pre-cleaned all of the non-disposable drilling and sampling equipment they supplied during the investigation. Disposable equipment such as temporary casing was new and unused. EKI-supplied equipment also either was new or pre-cleaned. The supervising geologist inspected the drilling and sampling equipment for obvious contamination prior to the start of work, and none was evident. No steam-cleaning was performed on-site, as Gregg provided sufficient drillpipe and bits to advance all boreholes in a given day without the need to re-use augers. The sampling equipment was hand-washed in a 3-bin system with a non-phosphate detergent and a double rinse with distilled water. The rinse water generated by decontamination was collected and contained in a DOT-approved 55-gallon drum by the driller.

### C.2.1 Grab Groundwater Sampling

Boreholes GGW-1, GGW-2, GGW-3, and GGW-4 were drilled using direct-push with a 2.5-inch inner diameter "macro core" split-barrel sampler to obtain a continuous core to the total depth of the borehole. Afterward, each borehole was reamed with 8.25-inch O.D. hollow-stem augers to facilitate placement of a temporary casing with prepacked screen for grab groundwater sampling.

Soil samples were collected for geologic logging, which was performed by an EKI California Professional Geologist, or a geologist working under the supervision of a Professional Geologist. Stratigraphic and geologic details observed in the cores are provided in the borehole logs in Appendix E.

Soil cores were screened with a Thermo-Electric Model 580-B organic vapor meter ("OVM") equipped with a photoionization detector. The OVM was calibrated upwind and away from the exclusion zone at the beginning of each workday with a mixture of 100 ppmv isobutylene in compressed air.

Separate phase hydrocarbons ("SPH") were encountered in two of the four drilled groundwater sample boreholes. In order to avoid saturating the entire length of sandpack and screen with SPH and potentially biasing the grab groundwater sample analyses, the prepack screen sections were threaded together, saturated with distilled water, then inserted into a plastic sheath constructed from the inner polyethylene liner bag which held the screen during shipping. The bottom of the sheath covering the screen was twisted and loosely taped, then the assembly was inserted into the augers. Once the bottom of the screen extended several feet below the waterline, the casing was pushed down while the sheath was pulled up, until the bottom end came undone and the screen could be fed into the augers through the sheath, past the SPH, to the total depth of the borehole. The screen was inserted quickly, and the sheath was withdrawn and discarded. A ten-foot length of prepack screen with a four-foot blank PVC riser was installed in each grab groundwater sample borehole using this technique.

After placement of the temporary casing, EKI attempted to measure SPH thickness using a product interface probe, but the thickness in the casing was generally limited to a sheen and an actual thickness could not be measured. In accordance with the Work Plan, purging and sampling was conducted using a peristaltic pump with the intake set below the water surface. The intake tubing was emplaced using a stilling tube which was temporarily sealed until its opening was below the water surface.

Groundwater samples were collected from the temporary casing using "low-flow sampling techniques" (i.e., in general accordance with EPA recommended procedures *(Low Flow (Minimal Drawdown) Groundwater Sampling Procedures*, EPA/540/S-95/504, April 1996, and *Use of Low-Flow Methods for Groundwater Purging and Sampling: An Overview*, US EPA Region 9, Quick Reference Advisory, December 1995). In accordance with these protocols, groundwater was purged until at least three of

four parameters (temperature, specific conductance, pH, and turbidity) had stabilized. Turbidity remained relatively high in the water samples collected, despite the careful use of prepacked screens.

Following purging, groundwater samples were collected into pre-cleaned, laboratory supplied sample containers appropriate for the method of analysis, using the peristaltic pump. New tubing was used in each borehole. Each sample was labeled with a unique sample number and the date and time of collection, placed in a zip-closure plastic bag, logged onto a chain-of-custody form, and placed in a chilled ice chest for transport to the laboratory. Grab groundwater samples were analyzed by Curtis & Tompkins, Ltd. of Berkeley, California, a California-certified laboratory, for the following constituents:

- Total Purgeable Petroleum Hydrocarbons as gasoline ("TPPH) using EPA Method 8015M;
- Total Extractable Petroleum Hydrocarbons as diesel ("TEPH") ") using EPA Method 8015M;
- benzene, toluene, ethylbenzene, xylenes ("BTEX"), fuel oxygenates, 1,2-dibromoethane, and 1,2-dichloroethane using EPA Method 8260B;
- polycyclic aromatic hydrocarbons ("PAHs") using EPA Method 8270C; and
- total dissolved solids ("TDS").

Laboratory data sheets are included on a CD in Appendix F.

### C.2.2 Monitoring Well Sampling

The initial inspection of the two existing on-Site monitoring wells (MW-5 and MW-7) indicated that their condition was acceptable for purposes of groundwater sampling. The wells were purged and sampled using the same low-flow sampling techniques as were used in the temporarily-cased boreholes. In accordance with these protocols, groundwater was purged until at least three of four parameters (temperature, specific conductance, pH, and turbidity) had stabilized. Turbidity of water pumped from the wells was very low, relative to the grab groundwater samples.

Following purging, groundwater samples were collected into pre-cleaned, laboratory supplied sample containers appropriate for the method of analysis, using the peristaltic pump. New tubing was used in each borehole. Each sample was labeled with a unique sample number and the date and time of collection, placed in a zip-closure plastic bag, logged onto a chain-of-custody form, and placed in a chilled ice chest for transport to the laboratory. Grab groundwater samples were analyzed by Curtis & Tompkins, Ltd. for the same set of constituents as the grab groundwater samples. Laboratory data sheets are included on a CD in Appendix F.

### C.2.3 Soil Sampling

Soil boreholes SB-7, SB-8, and SB-9 were drilled and sampled on 9 April 2010, both for geologic logging and off-site chemical analysis. The boreholes were drilled using direct-push with a 2.5-inch inner diameter "macro core" split-barrel sampler to obtain a continuous core to the total depth of the borehole.

Soil samples were collected and geologically logged by a California Professional Geologist, or an EKI geologist working under his supervision. Details of stratigraphy for all sampling locations are recorded in the borehole logs in Appendix E. Soil samples also were collected for chemical analysis at Curtis & Tompkins, Ltd.

Soil cores were screened with a Thermo-Electric Model 580-B organic vapor meter ("OVM") equipped with a photoionization detector. The OVM was calibrated upwind and away from the exclusion zone at the beginning of each workday with a mixture of 100 ppmv isobutylene in compressed air.

Samples of soil for chemical analysis were collected in either 5g Encore® samplers, for analysis of VOCs and TPH-g, or new laboratory-provided 8-oz glass jars, for nonvolatile analytes. Each sample was labeled with a unique sample number and the date and time of collection, placed in a zip-closure plastic bag, logged onto a chain-of-custody form, and placed in a chilled ice chest for transport to the laboratory.

Soil samples were analyzed for the following constituents:

- TPPH using EPA Method 8015M;
- TEPH using EPA Method 8015M;
- BTEX, fuel oxygenates, 1,2-dibromoethane, and 1,2-dichloroethane using EPA Method 8260B;
- PAHs by EPA Method 8270C; and
- moisture content by ASTM D2216.

Laboratory data sheets are included on a CD in Appendix F.

### C.2.4 Grouting and Surface Completion

All boreholes completed at the Site were backfilled with neat cement grout from the total depth of the borehole. Neat cement grout was mixed at the surface using Type I/II Portland cement, and emplaced in each borehole using a tremie pipe from the bottom of

the hole upwards, in accordance with ACPWA requirements. The final surface completion was concrete, dyed black to match the existing asphalt parking lot surface.

ACPWA staff were notified of the work within time frames specified in the drilling permit. Because the initial day of drilling (6 March 2010) fell on a weekend, no grout inspector was available, but an on-site inspection was performed by ACPWA during grouting of boreholes drilled on the second day of investigation, 9 April 2010. ACPWA did not raise any concerns regarding the grouting procedure during or after the inspection.

## C.3 INVESTIGATION-DERIVED WASTES

Soil cuttings and cores, purged groundwater from the boreholes and monitoring wells, and rinsate from equipment cleaning were contained in labeled, sealed 55-gallon DOT-approved steel drums, and staged on-site pending receipt of analytical results. A composite sample from the soil drums and a grab sample from the water drum was analyzed for disposal characterization. After the analytical results were reviewed, the wastes were disposed by Clearwater Environmental of Fremont, California, in accordance with applicable laws and regulations as described in the Work Plan.

**APPENDIX D**
**Alameda County Public Works Agency Drilling Permit**

# Alameda County Public Works Agency - Water Resources Well Permit

399 Elmhurst Street
Hayward, CA 94544-1395
Telephone: (510)670-6633 Fax:(510)782-1939

**Application Approved on: 03/03/2010 By jamesy**

**Permit Numbers: W2010-0130**
**Permits Valid from 03/06/2010 to 03/08/2010**

**Application Id:** 1267223797462
**City of Project Site:** Emeryville
**Site Location:** 6601/6603 Bay Street, Emeryville, CA 94608
**Project Start Date:** 03/06/2010
**Completion Date:** 03/08/2010
**Assigned Inspector:** Contact John Shouldice at (510) 670-5424 or johns@acpwa.org

**Applicant:** Erler & Kalinowski, Inc. - Logan Hansen
1870 Ogden Drive, Burlingame, CA 94010
**Phone:** 650-292-9100

**Property Owner:** Vince Herington Sybase, Inc
One Sybase Drive, Dublin, CA 94568
**Phone:** --

**Client:** ** same as Property Owner **

**Contact:** Jeff Shaw
**Phone:** 650-292-9100
**Cell:** 650-207-6185

**Total Due:** $265.00
**Receipt Number: WR2010-0062** **Total Amount Paid:** $265.00
**Payer Name : Erler & Kalinowski, Inc. - Tom** Paid By: CHECK **PAID IN FULL**
**Kalinowski**

**Works Requesting Permits:**

Borehole(s) for Investigation-Environmental/Monitorinig Study - 6 Boreholes
Driller: Gregg Drilling & Testing, Inc. - Lic #: 485165 - Method: hstem **Work Total: $265.00**

**Specifications**

| Permit Number | Issued Dt | Expire Dt | # Boreholes | Hole Diam | Max Depth |
|---|---|---|---|---|---|
| W2010-0130 | 03/03/2010 | 06/04/2010 | 6 | 6.00 in. | 20.00 ft |

**Specific Work Permit Conditions**

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site. The containers shall be clearly labeled to the ownership of the container and labeled hazardous or non-hazardous.

2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.

3. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

4. Applicant shall contact John Shouldice for an inspection time at 510-670-5424 at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

5. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of $500.00.

6. Prior to any drilling activities onto any public right-of-ways, it shall be the applicants responsibilities to contact and coordinate a Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits required for that City or to the County and follow all City or County Ordinances. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County a Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

7. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.

# PROGRAMS AND SERVICES

## Well Standards Program

**The Alameda County Public Works Agency, Water Resources is located at:**
**399 Elmhurst Street**
**Hayward, CA 94544**
**For Driving Directions or General Info, Please Contact 510-670-5480 or wells@acpwa.org**
For Drilling Permit information and process contact James Yoo at
Phone: 510-670-6633
FAX: 510-782-1939
Email: Jamesy@acpwa.org

Alameda County Public Works is the administering agency of General Ordinance Code, Chapter 6.88 . The purpose of this chapter is to provide for the regulation of groundwater wells and exploratory holes as required by California Water Code. The provisions of these laws are administered and enforced by Alameda County Public Works Agency through its Well Standards Program.

**Drilling Permit Jurisdictions in Alameda County:** There are four jurisdictions in Alameda County.

### Location: Agency with Jurisdiction Contact Number

Berkeley City of Berkeley Ph: 510-981-7460
Fax: 510-540-5672

Fremont, Newark, Union City Alameda County Water District Ph: 510-668-4460
Fax: 510-651-1760

Pleasanton, Dublin, Livermore, Sunol Zone 7 Water Agency Ph: 925-454-5000
Fax: 510-454-5728

**The Alameda County Public Works Agency, Water Resources** has the responsibility and authority to issue drilling permits and to enforce the County Water Well Ordinance 73-68. This jurisdiction covers the western Alameda County area of **Oakland**, **Alameda**,**Piedmont**, **Emeryville**, **Albany**, **San Leandro**, **San Lorenzo**, **Castro Valley**, and **Hayward** . The purpose of the drilling permits are to ensure that any new well or the destruction of wells, including geotechnical investigations and environmental sampling within the above jurisdiction and within Alameda County will not cause pollution or contamination of ground water or otherwise jeopardize the health, safety or welfare of the people of Alameda County.

**Permits** are required for all work pertaining to wells and exploratory holes at any depth within the jurisdiction of the Well Standards Program. A completed permit application *(30 Kb)** , along with a site map, should be submitted at least **ten (10) working days prior to the planned start of work**. Submittals should be sent to the address or fax number provided on the application form. When submitting an application via fax, please use a high resolution scan to retain legibility.

**Fees**
**Beginning April 11, 2005** , the following fees shall apply:

A permit to construct, rehabilitate, or destroy wells, including cathodic protection wells, but excluding dewatering wells (*Horizontal hillside dewatering and dewatering for construction period only), shall cost $300.00 per well.

A permit to bore exploratory holes, including temporary test wells, shall cost $200 per site. A site includes the project parcel as well as any adjoining parcels.

Please make checks payable to: **Treasurer, County of Alameda**

**Permit Fees are exempt to State & Federal Projects**
Applicants shall submit a letter from the agency requesting the fee exemption.

**Scheduling Work/Inspections:**
Alameda County Public Works Agency (ACPWA), Water Resources Section requires scheduling and inspection of permitted work. All drilling activities must be scheduled in advance. Availability of inspections will vary from week to week and will come on a first come, first served bases. To ensure inspection availability on your desired or driller scheduled date, the following procedures are required:

Please contact **James Yoo at 510-670-6633** to schedule the inspection date and time (You must have drilling permit approved prior to scheduling).

Schedule the work as far in advance as possible (at least 5 days in advance); and confirm the scheduled drilling date(s) at least 24 hours prior to drilling.

Once the work has been scheduled, an ACPWA Inspector will coordinate the inspection requirements as well as how the Inspector can be reached if they are not at the site when Inspection is required. Expect for special circumstances given, all work will require the inspection to be conducted during the working hours of 8:30am to 2:30pm., Monday to Friday, excluding holidays.

**Request for Permit Extension:**
Permits are only valid from the start date to the completion date as stated on the drilling permit application and Conditions of Approval. To request an extension of a drilling permit application, applicants must request in writing prior to the completion date as set forth in the Conditions of Approval of the drilling permit application. Please send fax or email to Water Resources Section, Fax 510-782-1939 or email at wells@acpwa.org. There are no additional fees for permit extensions or for re-scheduling inspection dates. You may not extend your drilling permit dates beyond 90 days from the approval date of the permit application. **NO refunds** shall be given back after 90 days and the permit shall be deemed voided.

**Cancel a Drilling Permit:**
Applicants may cancel a drilling permit only in writing by mail, fax or email to Water Resources Section, Fax 510-782-1939 or email at wells@acpwa.org. If you do not cancel your drilling permit application before the drilling completion date or notify in writing within 90 days, Alameda County Public Works Agency, Water Resources Section may void the permit and No refunds may be given back.

**Refunds/Service Charge:**
A service charge of $25.00 dollars for the first check returned and $35.00 dollars for each subsequent check returned.

Applicants who cancel a drilling permit application **before** we issue the approved permit(s), will receive a **FULL** refund (at any amount) and will be mailed back within two weeks.

Applicants who cancel a drilling permit application **after** a permit has been issued will then be charged a service fee of $50.00 (fifty Dollars).

To collect the remaining funds will be determined by the amount of the refund to be refunded (see process below).

Board of Supervisors Minute Order, File No. 9763, dated January 9, 1996, gives blanket authority to the Auditor-Controller to process claims, from all County departments for the refund of fees which do not exceed $500 (Five Hundred Dollars)(with the exception of the County Clerk whose limit is $1,500).

Refunds over the amounts must be authorized by the Board of Supervisors Minute Order, File No. 9763 require specific approval by the Board of Supervisors. The forms to request for refunds under $500.00 (Five Hundred Dollars) are available at this office or any County Offices. If the amount is exceeded, a Board letter and Minute Order must accompany the claim. Applicant shall fill out the request form and the County Fiscal department will process the request.

**Enforcement**
Penalty. Any person who does any work for which a permit is required by this chapter and who fails to obtain a permit shall be guilty of a misdemeanor punishable by fine not exceeding Five Hundred Dollars ($500.00) or by imprisonment not exceeding six months, or by both such fine and imprisonment, and such person shall be deemed guilty of a separate offense for each and every day or portion thereof during which any such

violation is committed, continued, or permitted, and shall be subject to the same punishment as for the original offense. (Prior gen. code §3-160.6)

**Enforcement actions will be determined by this office on a case-by-case basis**
Drilling without a permit shall be the cost of the permit(s) and a fine of $500.00 (Five Hundred Dollars).

**Well Completion Reports** (State DWR-188 forms) must be filed with the Well Standards Program within 60 days of completing work. Staff will review the report, assign a state well number, and then forward it to the California Department of Water Resources (DWR). Drillers should not send completed reports to DWR directly. Failure to file a Well Completion Report or deliberate falsification of the information is a misdemeanor; it is also grounds for disciplinary action by the Contractors' State License Board. Also note that filed Well Completion Reports are considered private record protected by state law and can only be released to the well owner or those specifically authorized by government agencies.

See our website (www.acgov.org/pwa/wells/index.shtml) for links to additional forms.

**APPENDIX E**
**Borehole Logs**

# Borehole & Well Construction Log

Erler & Kalinowski, Inc.

| | | | | | |
|---|---|---|---|---|---|
| BOREHOLE LOCATION | 6601 6603 She mound Street, Emeryv e, Ca forn a | | | BOREHOLE / WELL NAME | **GGW-1** |
| DRILLING COMPANY | Gregg Dr ng & Test ng, Inc., C 57 L c. # 485165 | | | PROJECT NAME | **6601/6603 Bay Street** |
| DRILLING METHOD | Ho ow Stem Auger (Mar M2.5 DP) | | | PROJECT NUMBER | **950074.05** |
| CONDUCTOR CASING | NA | DIAMETER (inches) | FROM (feet) TO | DATE STARTED | 3/6/10 DATE COMPLETED 3/6/10 |
| BLANK CASING | NA | DIAMETER (inches) | FROM (feet) TO | BOREHOLE DIAM (inches) | 8.0 TOTAL DEPTH (feet) 15 |
| PERFORATED CASING | NA | DIAMETER (inches) | FROM (feet) TO | DATUM | NA |
| GROUT | Type I/II Port and Cement | | FROM (feet) 0.0 TO 15.0 | TOP OF CASING | GROUND SURFACE |
| SEAL | NA | | FROM (feet) TO | LOGGED BY | Jeff Shaw, PG #7759 |
| FILTER PACK | NA | | FROM (feet) TO | CHECKED BY | Jeff Shaw, PG #7759 |
| REMARKS | Hand augered to 5 ft bgs. Samp ed us ng D rect Push "Macro Core". | | | | |

| SAMPLES: TIME COLLECTED | SAMPLE NAME | SAMPLE TYPE | RECOVERY (feet) | BLOW COUNT | OVM (ppmv) | DEPTH (feet) | MATERIAL DESCRIPTION AND DRILLING NOTES | USCS CODE | GRAPHIC LOG | WELL CONSTRUCTION |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | | | | ASPHALT | | | |
| | | | | | | | CONCRETE | | | |
| | | | | | | 1 | F LL (SANDY CLAY) black (10YR 2/1) 35% medium to coarse grained sand 65% clay brick fragments and angular clasts to 0 5-inches common stiff moist | F LL (CL) | | |
| | | | | | 0 | 2 | | | | |
| | | | 4 | | 0 | 3 | Brick fragments very common clay has less sand and is stiffer | | | |
| | | | | | 0 | 4 | F LL (SAND) dark gray (10YR 4/1) trace clay soft loose moist | F LL (SP) | | |
| | | | | | 0 | 5 | F LL (CLAY W TH SAND & GRAVEL) black (10YR 2/1) 10% fine gravel 10% fine to coarse grained sand 80% clay brick and wood fragments common possible sheen stiff moist to wet | F LL (CL) | | |
| | | | 1.6 | | 0 | 6 | | | | |
| | | | | | | 7 | ▽ | | | |
| | | | | | | 8 | No more brick fragments sheen on core clearly visible weak petroleum odor | | | |
| | | | | | 23.1 | 9 | | | | |
| | | | 2 | | 35.2 | | SAND W TH GRAVEL very dark brown(10YR 2/2) 20% fine to medium gravel 80% fine to coarse grained sand rounded to angular lithic fragments moderate petroleum odor sheen dense wet | SW | | |
| | | | | | 61 | 10 | | | | |
| | | | 2 | | | | | | | |

1-EK S D - BH AND MW LOG SYBASE2 GPJ EK F V5 GD 4/27/10

## Borehole & Well Construction Log

Erler & Kalinowski, Inc.

| PROJECT NAME | 6601/6603 Bay Street | PROJECT NUMBER | 950074.05 | BOREHOLE / WELL NAME | GGW 1 |
|---|---|---|---|---|---|

| SAMPLES | | | | | | | MATERIAL DESCRIPTION AND DRILLING NOTES | USCS CODE | GRAPHIC LOG | WELL CONSTRUCTION |
|---|---|---|---|---|---|---|---|---|---|---|
| TIME COLLECTED | SAMPLE NAME | SAMPLE TYPE | RECOVERY (feet) | BLOW COUNT | OVM (ppmv) | DEPTH (feet) | | | | |
| | | | 2 | | 14.3 | 12 | SAND W TH GRAVEL very dark brown(10YR 2/2) 20% fine to medium gravel 80% fine to coarse grained sand rounded to angular lithic fragments moderate petroleum odor sheen dense wet *(continued)* | SW | | |
| | | | | | 24.8 | 13 | | | | |
| | | | 3 | | 9.9 | 14 | Coarse angular gravel interval 4-inches thick | | | |
| | | | | | 7.1 | 15 | CLAY W TH SAND black (10YR 2/1) 5% angular fine gravel 20% medium to coarse grained sand 75% clay lithic fragments with possible altered volcanic in clasts stiff soft wet | CL | | |
| | | | | | 7.7 | 16 | Total Depth of Borehole = 15 feet | | | |
| | | | | | | 17 | | | | |
| | | | | | | 18 | | | | |
| | | | | | | 19 | | | | |
| | | | | | | 20 | | | | |
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| | | | | | | 26 | | | | |
| | | | | | | 27 | | | | |
| | | | | | | 28 | | | | |

1-EK S D - BH AND MW LOG SYBASE2.GPJ EK F V5.GD 4/27/10

# Borehole & Well Construction Log

Erler & Kalinowski, Inc.

| | | | | | |
|---|---|---|---|---|---|
| BOREHOLE LOCATION | 6601 6603 She mound Street, Emeryv e, Ca forn a | | | BOREHOLE / WELL NAME | **GGW-2** |
| DRILLING COMPANY | Gregg Dr ng & Test ng, Inc., C 57 L c. # 485165 | | | PROJECT NAME | **6601/6603 Bay Street** |
| DRILLING METHOD | Ho ow Stem Auger (Mar M2.5 DP) | | | PROJECT NUMBER | **950074.05** |
| CONDUCTOR CASING | NA | DIAMETER (inches) | FROM (feet) TO | DATE STARTED | 3/6/10 DATE COMPLETED 3/6/10 |
| BLANK CASING | NA | DIAMETER (inches) | FROM (feet) TO | BOREHOLE DIAM (inches) | 8.0 TOTAL DEPTH (feet) 15 |
| PERFORATED CASING | NA | DIAMETER (inches) | FROM (feet) TO | DATUM | NA |
| GROUT | Type I/II Port and Cement | | FROM (feet) 0.0 TO 15.0 | TOP OF CASING | GROUND SURFACE |
| SEAL | NA | | FROM (feet) TO | LOGGED BY | Jeff Shaw, PG #7759 |
| FILTER PACK | NA | | FROM (feet) TO | CHECKED BY | Jeff Shaw, PG #7759 |
| REMARKS | Hand augered to 5 ft bgs. Samp ed us ng D rect Push "Macro Core". | | | | |

| SAMPLES: TIME COLLECTED | SAMPLE NAME | SAMPLE TYPE | RECOVERY (feet) | BLOW COUNT | OVM (ppmv) | DEPTH (feet) | MATERIAL DESCRIPTION AND DRILLING NOTES | USCS CODE | GRAPHIC LOG | WELL CONSTRUCTION |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0.5 | | 0 | 1 | ASPHALT | | | |
| | | | | | | | F LL (GRAVEL W TH SAND) dark grayish brown(10YR 4/2) 65% gravel 30% medium to coarse grained sand 5% clay rounded to subangular clasts to 2-inches brick fragments common loose to medium dense wet | F LL (GP) | | |
| | | | 4.5 | | 0 | 3 | | | | |
| | | | | | 0 | 4 | Brick fragments very common up to 1 5-inches size loose dry | | | |
| | | | | | 0.2 | 5 | F LL (SANDY CLAY) black (10YR 2/1) 30% fine to medium grained sand 10% silt 60% clay brick fragments less common than above wood fragments up to 4-inches long faint petroleum odor soft moist | F LL (CL) | | |
| | | | 1 | | | 6 | | | | |
| | | | | | | 7 | Wood debris oily sheen on core faint odor wet | | | |
| | | | | | 2.1 | 8 | GRAVEL W TH SAND black(2 5Y 2 5/1) 60% gravel 40% fine to coarse grained sand subrounded to subangular lithic fragments greater than 1 5-inches common rare brick fragments oily sheen very pronounced with faint odor common wood debris loose wet | GP | | |
| | | | 0.5 | | | 9 | | | | |
| | | | | | 1.6 | 10 | | | | |
| | | | 1.5 | | | | | | | |

1-EK S D - BH AND MW LOG SYBASE2 GPJ EK F V5 GD 4/27/10

## Borehole & Well Construction Log

Erler & Kalinowski, Inc.

| PROJECT NAME | 6601/6603 Bay Street | PROJECT NUMBER | 950074.05 | BOREHOLE / WELL NAME | GGW 2 |
|---|---|---|---|---|---|

| SAMPLES | | | | | | DEPTH (feet) | MATERIAL DESCRIPTION AND DRILLING NOTES | USCS CODE | GRAPHIC LOG | WELL CONSTRUCTION |
|---|---|---|---|---|---|---|---|---|---|---|
| TIME COLLECTED | SAMPLE NAME | SAMPLE TYPE | RECOVERY (feet) | BLOW COUNT | OVM (ppmv) | | | | | |
| | | | 2 | | 1.7 | 12 | GRAVEL W TH SAND black(2 5Y 2 5/1) 60% gravel 40% fine to coarse grained sand subrounded to subangular lithic fragments greater than 1 5-inches common rare brick fragments oily sheen very pronounced with faint odor common wood debris loose wet *(continued)* | GP | | |
| | | | | | 7.1 | 13 | Four-inch silt interval | | | |
| | | | 2 | | | 14 | | | | |
| | | | | | 0.5 | 15 | CLAY black (10YR 2/1) 10% fine to coarse grained sand faint petroleum odor rare greenish-black mottles soft moist to wet | CL | | |
| | | | | | | | Total Depth of Borehole = 15 feet | | | |
| | | | | | | 16 | | | | |
| | | | | | | 17 | | | | |
| | | | | | | 18 | | | | |
| | | | | | | 19 | | | | |
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| | | | | | | 27 | | | | |
| | | | | | | 28 | | | | |

1-EK S D - BH AND MW LOG SYBASE2 GPJ EK F V5 GD 4/27/10

# Borehole & Well Construction Log

Erler & Kalinowski, Inc.

| | | | | | |
|---|---|---|---|---|---|
| BOREHOLE LOCATION | 6601 6603 She mound Street, Emeryv e, Ca forn a | | | BOREHOLE / WELL NAME | **GGW-3** |
| DRILLING COMPANY | Gregg Dr ng & Test ng, Inc., C 57 L c. # 485165 | | | PROJECT NAME | **6601/6603 Bay Street** |
| DRILLING METHOD | Ho ow Stem Auger (Mar M2.5 DP) | | | PROJECT NUMBER | **950074.05** |
| CONDUCTOR CASING | NA | DIAMETER (inches) | FROM (feet) TO | DATE STARTED | 3/6/10 DATE COMPLETED 3/6/10 |
| BLANK CASING | NA | DIAMETER (inches) | FROM (feet) TO | BOREHOLE DIAM (inches) | 8.0 TOTAL DEPTH (feet) 15 |
| PERFORATED CASING | NA | DIAMETER (inches) | FROM (feet) TO | DATUM | NA |
| GROUT | Type I/II Port and Cement | | FROM (feet) 0.0 TO 15.0 | TOP OF CASING | GROUND SURFACE |
| SEAL | NA | | FROM (feet) TO | LOGGED BY | Jeff Shaw, PG #7759 |
| FILTER PACK | NA | | FROM (feet) TO | CHECKED BY | Jeff Shaw, PG #7759 |
| REMARKS | Hand augered to 5 ft bgs. Samp ed us ng D rect Push "Macro Core". | | | | |

| SAMPLES | | | | | | | MATERIAL DESCRIPTION AND DRILLING NOTES | USCS CODE | GRAPHIC LOG | WELL CONSTRUCTION |
|---|---|---|---|---|---|---|---|---|---|---|
| TIME COLLECTED | SAMPLE NAME | SAMPLE TYPE | RECOVERY (feet) | BLOW COUNT | OVM (ppmv) | DEPTH (feet) | | | | |
| | | | 1.5 | | | 1 | ASPHALT<br>CONCRETE | | | |
| | | | | | 0 | 2 | F LL (GRAVEL W TH S LT AND SAND) brown (10YR 4/3) concrete and lithic fragments common loose dry | F LL (GW) | | |
| | | | | | 0 | 3 | F LL (CLAY) very dark brown(10YR 2/2) 20% fine to coarse grained sand 80% clay grey-green mottled hard moist | F LL (CL) | | |
| | | | 3.5 | | 0 | 4 | Very hard augering cobbles and concrete fragments near-refusal | | | |
| | | | | | | 5 | F LL (S LT W TH SAND) black (10YR 2/1) 15% medium to coarse grained sand trace fine angular gravel moist | F LL (ML) | | |
| | | | 1.5 | | 0 | 6 | | | | |
| | | | | | 0 | 7 | Metal foil and debris wet<br>Gravel increased with depth (to 20%) | | | |
| | | | 1.2 | | 0 | 8 | CLAY W TH SAND black (10YR 2/1) 10% sub-rounded to sub-angular gravel 15% fine to coarse grained sand 75% clay trace plant material soft moist to wet | CL | | |
| | | | 0 | | | 9 | S LTY GRAVEL W TH SAND black (10YR 2/1) 55% sub-rounded to angular gravel 30% fine to coarse grained sand 15% silt mixed lithic fragments in gravels loose wet generally poor recovery | GW | | |
| | | | 0.2 | | 0 | 10 | | | | |

1-EK S D - BH AND MW LOG SYBASE2 GPJ EK F V5 GD 4/27/10

## Borehole & Well Construction Log

Erler & Kalinowski, Inc.

| PROJECT NAME | 6601/6603 Bay Street | PROJECT NUMBER | 950074.05 | BOREHOLE / WELL NAME | GGW 3 |
|---|---|---|---|---|---|

| SAMPLES | | | | | | | MATERIAL DESCRIPTION AND DRILLING NOTES | USCS CODE | GRAPHIC LOG | WELL CONSTRUCTION |
|---|---|---|---|---|---|---|---|---|---|---|
| TIME COLLECTED | SAMPLE NAME | SAMPLE TYPE | RECOVERY (feet) | BLOW COUNT | OVM (ppmv) | DEPTH (feet) | | | | |
| | | | 0.2 | | 0 | 12 | S LTY GRAVEL W TH SAND black (10YR 2/1) 55% sub-rounded to angular gravel 30% fine to coarse grained sand 15% silt mixed lithic fragments in gravels loose wet generally poor recovery *(continued)* | GW | | |
| | | | 0.2 | | | 13 | | | | |
| | | | 1.5 | | 0 | 14 | CLAY W TH SAND greenish black(10GY 2 5/1) 20% medium to coarse grained sand 80% clay Bay mud trace gravels and shell fragments hydrogen sulfide odor soft wet | CL | | |
| | | | | | | 15 | 2-inch fine sand layer with shell fragments<br>Total Depth of Borehole = 15 feet | | | |
| | | | | | | 16 | | | | |
| | | | | | | 17 | | | | |
| | | | | | | 18 | | | | |
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| | | | | | | 27 | | | | |
| | | | | | | 28 | | | | |

1-EK S D - BH AND MW LOG SYBASE2 GPJ EK F V5 GD 4/27/10

# Borehole & Well Construction Log

Erler & Kalinowski, Inc.

| | | | |
|---|---|---|---|
| BOREHOLE LOCATION | 6601 6603 She mound Street, Emeryv e, Ca forn a | BOREHOLE / WELL NAME | **GGW-4** |
| DRILLING COMPANY | Gregg Dr ng & Test ng, Inc., C 57 L c. # 485165 | PROJECT NAME | **6601/6603 Bay Street** |
| DRILLING METHOD | D rect Push (Mar M5) | PROJECT NUMBER | **950074.05** |
| CONDUCTOR CASING: NA | DIAMETER (inches): | FROM (feet): TO: | DATE STARTED: 4/9/10 — DATE COMPLETED: 4/9/10 |
| BLANK CASING: NA | DIAMETER (inches): | FROM (feet): TO: | BOREHOLE DIAM (inches): 2.3 — TOTAL DEPTH (feet): 13.5 |
| PERFORATED CASING: NA | DIAMETER (inches): | FROM (feet): TO: | DATUM: NA |
| GROUT: Type I/II Port and Cement | | FROM (feet): 0.0 TO: 13.5 | TOP OF CASING — GROUND SURFACE |
| SEAL: NA | | FROM (feet): TO: | LOGGED BY: Adam Abe es |
| FILTER PACK: NA | | FROM (feet): TO: | CHECKED BY: Jeff Shaw, PG #7759 |
| REMARKS: Hand augered to 5 ft bgs. Samp ed us ng D rect Push "Macro Core". | | | |

| SAMPLES: TIME COLLECTED | SAMPLE NAME | SAMPLE TYPE | RECOVERY (feet) | BLOW COUNT | OVM (ppmv) | DEPTH (feet) | MATERIAL DESCRIPTION AND DRILLING NOTES | USCS CODE | GRAPHIC LOG | WELL CONSTRUCTION |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0.33 | | | | ASPHALT Two 2-inch layers of asphalt (pre-cored) | | | |
| | | | | | 0 | 1 | F LL (S LTY SAND) light yellowish brown (10YR 6/4) 70% fine to medium grained sand 30% silt dry | F LL (SM) | | |
| | | | | | 0 | 2 | | | | |
| | | | 4.4 | | 0 | 3 | Sand color darkens to brown (10YR 4/3) hard moist | | | |
| | | | | | 0 | | F LL (GRAVEL) gray (10YR 6/1) 100% angular gravel up to 3-inches concrete and lithic fragments common loose dry | F LL (GW) | | |
| | | | | | | 4 | F LL (S LTY SAND) light yellowish brown (10YR 6/4) 70% fine to medium grained sand 30% silt dry | F LL (SM) | | |
| | | | | | | 5 | F LL (SANDY S LT) brown (10YR 4/3) 20% fine to medium grained sand 80% silt firm wet | F LL (ML) | | |
| | | | | | 0 | 6 | ▽ | | | |
| | | | 3 | | 0 | 7 | | | | |
| | | | | | 0 | | | | | |
| | | | | | 0 | 8 | F LL (S LTY SAND W TH GRAVEL) very dark gray (10YR 3/1) 20% fine to coarse gravel 65% medium to coarse grained sand 15% silt coarse sand fraction consists primarily of quartz and feldspar grains sand grades from medium to coarse with depth loose wet | F LL (SM) | | |
| | | | | | 0 | 9 | F LL (CLAY) dark yellowish brown (10YR 3/6) medium plasticity hard dry | F LL (CL) | | |
| | | | 4 | | 0 | 10 | F LL (S LT) white (10YR 8/1) silt-sized material that may be finely-crushed concrete soft | F LL (ML) | | |

1-EK S D - BH AND MW LOG SYBASE2 GPJ EK F V5 GD 4/27/10

## Borehole & Well Construction Log

Erler & Kalinowski, Inc.

| PROJECT NAME | 6601/6603 Bay Street | PROJECT NUMBER | 950074.05 | BOREHOLE / WELL NAME | GGW 4 |
|---|---|---|---|---|---|

| SAMPLES | | | | | | | MATERIAL DESCRIPTION AND DRILLING NOTES | USCS CODE | GRAPHIC LOG | WELL CONSTRUCTION |
|---|---|---|---|---|---|---|---|---|---|---|
| TIME COLLECTED | SAMPLE NAME | SAMPLE TYPE | RECOVERY (feet) | BLOW COUNT | OVM (ppmv) | DEPTH (feet) | | | | |
| | | | 4<br>0.2<br>0.2<br>0.2<br>1.5<br>1.5 | | 0<br>0<br>0 | 12<br>13<br>14<br>15<br>16<br>17<br>18<br>19<br>20<br>21<br>22<br>23<br>24<br>25<br>26<br>27<br>28 | F LL (SAND) black (10YR 2/1) 100% fine grained sand non-cohesive coarsens downward to fine and medium grained sand very loose wet<br><br>Drillers report refusal due to concrete debris or possibly slab minor concrete recovered in sampler shoe<br>Total Depth of Borehole = 13 5 feet | F LL (SW) | | |

1-EK S D - BH AND MW LOG SYBASE2 GPJ EK F V5 GD 4/27/10

# Borehole & Well Construction Log

Erler & Kalinowski, Inc.

| | | | | | |
|---|---|---|---|---|---|
| BOREHOLE LOCATION | 6601 6603 She mound Street, Emeryv e, Ca forn a | | | BOREHOLE / WELL NAME | **SB-7** |
| DRILLING COMPANY | Gregg Dr ng & Test ng, Inc., C 57 L c. # 485165 | | | PROJECT NAME | **6601/6603 Bay Street** |
| DRILLING METHOD | D rect Push (Mar M5) | | | PROJECT NUMBER | **950074.05** |
| CONDUCTOR CASING | NA | DIAMETER (inches) | FROM (feet) TO | DATE STARTED | 4/9/10 DATE COMPLETED 4/9/10 |
| BLANK CASING | NA | DIAMETER (inches) | FROM (feet) TO | BOREHOLE DIAM (inches) | 2.3 TOTAL DEPTH (feet) 24 |
| PERFORATED CASING | NA | DIAMETER (inches) | FROM (feet) TO | DATUM | NA |
| GROUT | Type I/II Port and Cement | | FROM (feet) 0.0 TO 24.0 | TOP OF CASING | GROUND SURFACE |
| SEAL | NA | | FROM (feet) TO | LOGGED BY | Adam Abe es |
| FILTER PACK | NA | | FROM (feet) TO | CHECKED BY | Jeff Shaw, PG #7759 |
| REMARKS | Hand augered to 5 ft bgs. Samp ed us ng D rect Push "Macro Core". | | | | |

| SAMPLES: TIME COLLECTED | SAMPLES: SAMPLE NAME | SAMPLES: SAMPLE TYPE | SAMPLES: RECOVERY (feet) | SAMPLES: BLOW COUNT | SAMPLES: OVM (ppmv) | DEPTH (feet) | MATERIAL DESCRIPTION AND DRILLING NOTES | USCS CODE | GRAPHIC LOG | WELL CONSTRUCTION |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1.25 | | | 0 | ASPHALT two 2-inch layers of asphalt (pre-cored) | | | |
| | | | | | | | CONCRETE | | | |
| | | | | | | 1 | F LL (SAND W TH GRAVEL) brown (10YR 4/3) 15% medium angular gravel 80% fine to medium grained sand gravels are lithic fragments very hard dry | F LL (SP) | | |
| | | | | | 0.2 | 2 | | | | |
| | | | 3.75 | | | 3 | | | | |
| | | | | | 0 | 4 | | | | |
| 10 07 | SB-7-5-5 5 | | | | 0.4 | 5 | F LL (CLAYEY SAND W TH GRAVEL) very dark gray (10YR 3/1) 10% gravel 50% medium to coarse grained sand 40% clay medium plasticity moist | F LL (SC) | | |
| | | | 3 | | 13.2 | 6 | | | | |
| | | | | | 17.5 | 7 | | | | |
| | | | | | 61.4 | 8 | | | | |
| 10 10 | SB-7-8-8 5 | | | | 105 | | F LL (GRAVEL W TH SAND) very dark grayish brown (10YR 3/2) 60% fine to medium gravel 40% medium to coarse grained sand sheen on core hydrocarbon odor large concrete piece at approximately 9 ft bgs prevented recovery of sample from 9 to 12 ft loose wet | F LL (GP) | | |
| | | | 1 | | 109 | 9 | | | | |
| | | | | | | 10 | | | | |

1-EK S D - BH AND MW LOG SYBASE2 GPJ EK F V5 GD 4/27/10

# Borehole & Well Construction Log

Erler & Kalinowski, Inc.

| PROJECT NAME | 6601/6603 Bay Street | PROJECT NUMBER | 950074.05 | BOREHOLE / WELL NAME | SB 7 |
|---|---|---|---|---|---|

| SAMPLES | | | | | | | MATERIAL DESCRIPTION AND DRILLING NOTES | USCS CODE | GRAPHIC LOG | WELL CONSTRUCTION |
|---|---|---|---|---|---|---|---|---|---|---|
| TIME COLLECTED | SAMPLE NAME | SAMPLE TYPE | RECOVERY (feet) | BLOW COUNT | OVM (ppmv) | DEPTH (feet) | | | | |
| | | | 1 | | | 12 | | F LL (GP) | | |
| | | | | | 12.1 | | SAND black(2 5Y 2 5/1) 100% fine grained sand hydrocarbon odor loose wet | SP | | |
| 10 20 | SB-7-13-13 5 | | | | 21.8 | 13 | | | | |
| | | | | | 51.3 | | | | | |
| | | | | | 25.2 | 14 | | | | |
| | | | 2.5 | | | | SAND black(2 5Y 2 5/1) 100% fine to medium grained sand Large orange sandstone cobble prevented recovery loose wet | SP | | |
| | | | | | | 15 | | | | |
| | | | | | | 16 | | | | |
| | | | | | 4.2 | | | | | |
| | | | | | 5 | 17 | | | | |
| | | | | | | | S LT W TH SAND yellowish brown (10YR 5/8) 10% fine grained sand 90% silt medium soft moist | ML | | |
| | | | 1 | | | 18 | | | | |
| | | | | | | 19 | | | | |
| | | | | | | 20 | | | | |
| | | | | | 0.2 | | | | | |
| 10 28 | SB-7-20 5-21 | | | | 0.3 | 21 | | | | |
| | | | | | | 22 | | | | |
| | | | 4 | | | | | | | |
| | | | | | 0.3 | 23 | | | | |
| | | | | | | 24 | Total Depth of Borehole = 24 feet | | | |
| | | | | | | 25 | | | | |
| | | | | | | 26 | | | | |
| | | | | | | 27 | | | | |
| | | | | | | 28 | | | | |

1-EK S D - BH AND MW LOG SYBASE2 GPJ EK F V5 GD 4/27/10

# Borehole & Well Construction Log

Erler & Kalinowski, Inc.

| | | | | | |
|---|---|---|---|---|---|
| BOREHOLE LOCATION | 6601 6603 She mound Street, Emeryv e, Ca forn a | | | BOREHOLE / WELL NAME | **SB-8** |
| DRILLING COMPANY | Gregg Dr ng & Test ng, Inc., C 57 L c. # 485165 | | | PROJECT NAME | **6601/6603 Bay Street** |
| DRILLING METHOD | D rect Push (Mar M5) | | | PROJECT NUMBER | **950074.05** |
| CONDUCTOR CASING | NA | DIAMETER (inches) | FROM (feet) TO | DATE STARTED | 4/9/10 DATE COMPLETED 4/9/10 |
| BLANK CASING | NA | DIAMETER (inches) | FROM (feet) TO | BOREHOLE DIAM (inches) | 2.3 TOTAL DEPTH (feet) 18 |
| PERFORATED CASING | NA | DIAMETER (inches) | FROM (feet) TO | DATUM | NA |
| GROUT | Type I/II Port and Cement | | FROM (feet) 0.0 TO 18.0 | TOP OF CASING | GROUND SURFACE |
| SEAL | NA | | FROM (feet) TO | LOGGED BY | Adam Abe es |
| FILTER PACK | NA | | FROM (feet) TO | CHECKED BY | Jeff Shaw, PG #7759 |
| REMARKS | Hand augered to 5 ft bgs. Samp ed us ng D rect Push "Macro Core". | | | | |

| SAMPLES: TIME COLLECTED | SAMPLES: SAMPLE NAME | SAMPLES: SAMPLE TYPE | SAMPLES: RECOVERY (feet) | SAMPLES: BLOW COUNT | OVM (ppmv) | DEPTH (feet) | MATERIAL DESCRIPTION AND DRILLING NOTES | USCS CODE | GRAPHIC LOG | WELL CONSTRUCTION |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1.25 | | 0 | 0 | ASPHALT two two-inch layers of asphalt (pre-cored) | | | |
| | | | | | 0.2 | 1 | CONCRETE | | | |
| | | | | | 0 | 2 | SANDY CLAY W TH GRAVEL dark gray (10YR 4/1) 15% fine to medium gravel 20% fine to coarse grained sand 65% clay medium plasticity dry | F LL (CL) | | |
| | | | 3.75 | | 0.3 | 3 | | | | |
| | | | | | 0.2 | 4 | SAND W TH CLAY dark grayish brown(10YR 4/2) 10% fine angular gravel 65% fine to coarse grained sand 25% clay low plasticity dry | F LL (SC) | | |
| 09 15 | SB-8-4 5-5 | | | | 0.2 | 5 | | | | |
| | | | | | 1.3 | 6 | F LL (GRAVEL) light yellowish brown (10YR 6/4) large sandstone cobble dry | F LL (GW) | | |
| | | | 3 | | 4.5 | 7 | CLAY brown (10YR 4/3) clay layer with common roots and wood (possibly reworked native materials) medium plasticity soft moist to wet | F LL (CL) | | |
| | | | | | 5.1 | 8 | Approximately 2-inch thick white subrounded gravel layer loose wet | | | |
| | | | 4 | | 4.5 | 9 | | | | |
| | | | | | | 10 | Approximately 3-inch thick white subrounded to subangular gravel layer medium plasticity hard dry | | | |

1-EK S D - BH AND MW LOG SYBASE2 GPJ EK F V5 GD 4/27/10

# Borehole & Well Construction Log

Erler & Kalinowski, Inc.

| PROJECT NAME | 6601/6603 Bay Street | PROJECT NUMBER | 950074.05 | BOREHOLE / WELL NAME | SB 8 |
|---|---|---|---|---|---|

| SAMPLES | | | | | | DEPTH (feet) | MATERIAL DESCRIPTION AND DRILLING NOTES | USCS CODE | GRAPHIC LOG | WELL CONSTRUCTION |
|---|---|---|---|---|---|---|---|---|---|---|
| TIME COLLECTED | SAMPLE NAME | SAMPLE TYPE | RECOVERY (feet) | BLOW COUNT | OVM (ppmv) | | | | | |
| | | | 4 | | 2.1 | 12 | CLAY brown (10YR 4/3) clay layer with common roots and wood (possibly reworked native materials) medium plasticity soft moist to wet *(continued)* | F LL (CL) | | |
| | | | | | 1.4 | 13 | | | | |
| 09 30 | SB-8-13-13 5 | | | | 0.4 | | SANDY CLAY very dark grayish brown (10YR 3/2) 35% fine to medium grained sand 65% clay from 13 5 ft to 14 ft drilled through wood low plasticity soft wet | F LL (CL) | | |
| | | | 3 | | 0.5 | 14 | GRAVEL white (10YR 8/1) 95% angular medium gravel 5% clay gravels are of granitic origin very loose dry to moist | F LL (GW) | | |
| | | | | | 0 | 15 | CLAY W TH SAND very dark gray (10YR 3/1) 20% medium grained sand hard moist to wet | CL | | |
| | | | | | 0 | 16 | | | | |
| | | | 2 | | | 17 | SANDY S LT yellowish brown (10YR 5/8) 30% fine to medium grained sand 70% silt medium hard dry | ML | | |
| 09 50 | SB-8-17 5-18 | | | | 0 | 18 | Total Depth of Borehole = 18 feet | | | |
| | | | | | | 19 | | | | |
| | | | | | | 20 | | | | |
| | | | | | | 21 | | | | |
| | | | | | | 22 | | | | |
| | | | | | | 23 | | | | |
| | | | | | | 24 | | | | |
| | | | | | | 25 | | | | |
| | | | | | | 26 | | | | |
| | | | | | | 27 | | | | |
| | | | | | | 28 | | | | |

1-EK S D - BH AND MW LOG SYBASE2 GPJ EK F V5 GD 4/27/10

# Borehole & Well Construction Log

Erler & Kalinowski, Inc.

| | | | |
|---|---|---|---|
| BOREHOLE LOCATION | 6601 6603 She mound Street, Emeryv e, Ca forn a | BOREHOLE / WELL NAME | **SB-9** |
| DRILLING COMPANY | Gregg Dr ng & Test ng, Inc., C 57 L c. # 485165 | PROJECT NAME | **6601/6603 Bay Street** |
| DRILLING METHOD | D rect Push (Mar M5) | PROJECT NUMBER | **950074.05** |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| CONDUCTOR CASING | NA | DIAMETER (inches) | FROM (feet) | TO | DATE STARTED | 4/9/10 | DATE COMPLETED 4/9/10 |
| BLANK CASING | NA | DIAMETER (inches) | FROM (feet) | TO | BOREHOLE DIAM (inches) | 2.3 | TOTAL DEPTH (feet) 20 |
| PERFORATED CASING | NA | DIAMETER (inches) | FROM (feet) | TO | DATUM | NA | |
| GROUT | Type I/II Port and Cement | | FROM (feet) 0.0 | TO 20.0 | TOP OF CASING | | GROUND SURFACE |
| SEAL | NA | | FROM (feet) | TO | LOGGED BY | Adam Abe es | |
| FILTER PACK | NA | | FROM (feet) | TO | CHECKED BY | Jeff Shaw, PG #7759 | |

REMARKS: Hand augered to 5 ft bgs. Samp ed us ng D rect Push "Macro Core".

| SAMPLES: TIME COLLECTED | SAMPLE NAME | SAMPLE TYPE | RECOVERY (feet) | BLOW COUNT | OVM (ppmv) | DEPTH (feet) | MATERIAL DESCRIPTION AND DRILLING NOTES | USCS CODE | GRAPHIC LOG | WELL CONSTRUCTION |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 0 | | ASPHALT two two-inch layers of asphalt (pre-cored) | | | |
| | | | 1.25 | | | | CONCRETE | | | |
| | | | | | 0 | 1 | | | | |
| | | | | | | | F LL (SANDY CLAY) very dark gray (10YR 3/1) 25% fine to medium grained sand 75% clay medium plasticity medium hard moist | F LL (CLAY) | | |
| | | | | | 0 | 2 | | | | |
| | | | 3.75 | | | 3 | | | | |
| | | | | | 0.3 | | F LL (GRAVEL) white (10yr 8/1) 100% coarse gravel possible old concrete layer with large cobbles requiring extensive breaking using a pry-bar dry | F LL (GW) | | |
| | | | | | | | F LL (CLAYEY SAND) very dark gray (10YR 3/1) 65% medium to coarse grained sand 35% clay dry | F LL (SC) | | |
| | | | | | 0.5 | 4 | | | | |
| 13 10 | SB-9-5-5-5 5 | | | | | 5 | | | | |
| | | | | | 0 | | F LL (GW) white (10YR 8/1) 100% coarse old concrete layer medium plasticity soft moist to wet | F LL (GW) | | |
| | | | | | 0.1 | | F LL (SANDY CLAY) very dark gray (10YR 3/1) 65% medium to coarse grained sand 35% clay as above from 3 5 ft to 5 ft loose moist | F LL (SC) | | |
| | | | 3 | | 1 | 6 | | | | |
| | | | | | | 7 | | | | |
| | | | | | 26 | | F LL (SANDY S LT) light olive brown (2 5Y 5/6) 25% fine grained sand 75% silt medium hard moist | F LL (SM) | | |
| | | | | | | 8 | | | | |
| | | | | | 42.9 | | | | | |
| | | | | | | | F LL (GRAVEL) black (10YR 2/1) 95% medium to coarse gravel 5% silt color of material due to presence of free-product and sheen on sample loose wet | F LL (GP) | | |
| 13 30 | SB-9-9-9 5 | | 3 | | 59.5 | 9 | | | | |
| | | | | | | 10 | | | | |
| | | | | | 41.7 | | CLAY dark gray (10YR 4/1) 5% fine grained sand 95% silt extensive roots present soft moist | CL | | |
| | | | | | 31.4 | | | | | |

1-EK S D - BH AND MW LOG SYBASE2 GPJ EK F V5 GD 4/27/10

# Borehole & Well Construction Log

Erler & Kalinowski, Inc.

| PROJECT NAME | 6601/6603 Bay Street | PROJECT NUMBER | 950074.05 | BOREHOLE / WELL NAME | SB 9 |
|---|---|---|---|---|---|

| SAMPLES | | | | | | | MATERIAL DESCRIPTION AND DRILLING NOTES | USCS CODE | GRAPHIC LOG | WELL CONSTRUCTION |
|---|---|---|---|---|---|---|---|---|---|---|
| TIME COLLECTED | SAMPLE NAME | SAMPLE TYPE | RECOVERY (feet) | BLOW COUNT | OVM (ppmv) | DEPTH (feet) | | | | |
| | | | 3 | | 14.5 | 12 | SAND light yellowish brown (10YR 6/4) 95% fine grained sand 5% clay loose soft moist | SW | | |
| 13 40 | SB-9-12 5-13 | | | | 14.6 | 13 | | | | |
| | | | | | 8.2 | | | | | |
| | | | 3 | | 4.7 | 14 | GRAVEL W TH SAND dark grayish brown(10YR 4/2) 70% fine to medium gravel 30% medium to coarse grained sand loose wet | GW | | |
| | | | | | | 15 | | | | |
| | | | | | | 16 | | | | |
| | | | | | 26.2 | 17 | CLAY very dark gray (10YR 3/1) roots and shell fragments common moist | CL | | |
| | | | | | 28.7 | | | | | |
| | | | 4 | | 20.4 | 18 | | | | |
| | | | | | | 19 | | | | |
| 13 48 | SB-9-19-19 5 | | | | 5.5 | | CLAY light yellowish brown (10YR 6/4) roots and shell fragments common soft moist | CL | | |
| | | | | | 3.8 | 20 | Total Depth of Borehole = 20 feet | | | |
| | | | | | | 21 | | | | |
| | | | | | | 22 | | | | |
| | | | | | | 23 | | | | |
| | | | | | | 24 | | | | |
| | | | | | | 25 | | | | |
| | | | | | | 26 | | | | |
| | | | | | | 27 | | | | |
| | | | | | | 28 | | | | |

1-EK S D - BH AND MW LOG SYBASE2 GPJ EK F V5 GD 4/27/10

Daily Inspection Report No. _____

Erler & Kalinowski, Inc.

Contractor: Gregg Drilling, Osborne's Coring
EKI Staff On-Site: J. Shaw, R. Lion
Weather: overcast
Temperature: 55 °F Min to 65 °F Max
IDW: 1 water, 4 soil drums @ staging loc

Sheet: 1 of 1
Date: 6 May 2010
Project: 6601-6603 Bay St.
EKI Job No: 250074.05

EKI Work Hours: 0655 to 1830 (tot: 12) Contractor Hours: 0655 to 1830 (tot: 12)

Changes, Special Conditions, Delays, Standby Time: _____

Accidents, Damage: _____

Sampling, Testing: Grab groundwater sampling

Visitors to Site: _____

Work Report (Work done, Personnel/Equipment working):

0655 - EKI, Osborne, Gregg on-site, walk through
0710 - H&S meet, calib 5808 avm w/100 ppm isobutylene in air
0730 - Coring GGW-3, R. Lion onsite
0750 - Start HA GGW-3
0840 - Done HA to 5 ft bgs - v. hard, near refusal @ 3.5 ft
0925 - TD GGW-3 @ 15' ft bgs, Gravel w/ poor recov 10'-13', will use "Macrocore" next BH for better recov. Bay mud @ base, slow to clean off augers. Set prepack casing (14 ft total, all screen)
0950 - Osborne done coring
1005 - HA'ing GGW-2, very wet, pass from rain past few days, loc is near low in pavement @ catchment.
1040 - V. hard HA'ing, cobbles & gravels, brick frags
1100 - start coring w/ rig - DP "Macrocore".
1135 - TD GGW-2 @ 15 ft bgs
1205 - Setting prepack casing w/ 10' plastic sleeve to set past worst of FHP. Saturated prepack w/ Distilled Water prior to insertion, reamed w/ augers prior as well (casing 1'-15' bgs)
1300 - Break for lunch & round up mat'ls, RDL stays onsite
1345 - Back onsite, GGW-1 HA'd to 5 ft.
1425 - TD GGW-1 @ 15 ft bgs, ream w/ augers to set casing
1450 - Setting casing w/ plastic sheath, 2x5' + 1x4', 14 ft in BH (GGW-1)
1500 - Cleaning up, RDL sampling GGW-1 (setting up to sample)
1700 - Grouting BHs, left msg w/ ACPWA re grout @ 1520, they are not coming to site (based on L. Hansen conversation w/ John Shouldice) but will visit Mon.
1830 - EKI & Gregg offsite. Drums: 1 water, 4 soil, marked & labeled in TMG specified staging loc behind (West of) 6603 Shellmound Ave.

Daily Inspection Report No. 20100409

Erler & Kalinowski, Inc.

Sheet: 1 of 2
Date: 4-9-2010 FRIDAY
Project: Subase
EKI Job No: 950074.05

Contractor: Gregg Drilling & Testing.
EKI Staff On-Site: AGA Abeles; RD Lion
Weather: AM – Cool, Calm, Clear.
Temperature: 60 °F Min to 70 °F Max
IDW: Drums of Soil & Water left near freeway, west of Bldg.
EKI Work Hours: 0640 to 1700 (tot: 10+) Contractor Hours: 0700 to 1530 (tot: 8:30)
Changes, Special Conditions, Delays, Standby Time:
Difficulty hand augering to 5 ft @ GGW-4 + SB-9.
Accidents, Damage:

Sampling, Testing: Soil Samples (3/4 samples at SB-7, 8, 9). Water Sample @ GGW-4. Drum Samples (Water & Soil).
Visitors to Site: John Shaddick (Alameda County).

Work Report (Work done, Personnel/Equipment working):

0640 - AGA leaves house to pick up ice for samples.
0655 - AGA arrives at Site, cones off area around GGW-4. Gregg Drilling already on Site. Driller – Vance; Helper – Angel. Rig – Mail MST track mounted combo DP/Auger. Rig transported on support truck.
0700 - AGA shows Gregg drilling locations. Drillers unload rig at GGW-4.
0705 - AGA leads health and safety meeting. See HSP form.
0720 - Gregg begins hand augering at GGW-4.
0730 - Drillers reach Hand auger refusal at ~3.5' bgs. Move to new location ~1.5' South of initial attempt.
0745 - Drillers reach hand auger refusal at ~3.5' bgs due to concrete layer. Move to new location ~3' east of previous attempt.
0800 - Move back to second attempt due to shallow (<2 ft bgs) very solid concrete at third location.
0805 - Drillers make it to 4' bgs before hitting metal or concrete object on side of hole. Hand augering stopped by AGA. AGA instructs drillers to move to SB9.
0845 - Drillers reach hand auger refusal at SB-9 at ~3.5 ft bgs. AGA instructs drillers to mob to SB-8 (pre-cored)
0855 - Drillers reach 5 ft hand augering at SB-8.
0900 - Drillers begin direct push drilling at SB-8 using 2.25" macrocore and 4-ft runs.
0930 - Drillers reach 18' bgs. AGA indicates that is total depth of boring. SB-8 appears to be outside of area excavated during tank removal due to presence of roots and other native material beginning at approximately 8' bgs.
0940 - Drillers clean downhole equipment and grout SB-8 to ~2' bgs using tremie pipe. Grout – Type I/II Portland Cement.
0950 - Drillers hand auger at location SB-7, which is pre-cored.
0958 - Drillers reach hand auger depth of 5' bgs.

cont →

Daily Inspection Report No. 20160409

Erler & Kalinowski, Inc.

Sheet: 2 of 2
Date: Fri 4/9/2016
Project: Sybase
EKI Job No: 950074.05

Contractor: Gregg Drilling & Testing, Inc.

1000 – Drillers begin DP sampling at SB-7.
1025 – Drillers reach depth of 24' bgs. AGA TD's hole.
1035 – Extensive Sheen observed in core at SB-7 and lithology indicates that boring is located in tank removal excavation backfill due to presence of concrete and other lithic rocks to a depth of ~13' bgs. No shell fragments or roots are observed above ~14' as well. Due to very limited recovery from 16' to 20', borehole was extended to 24' bgs in order to sample below zone where sheen observed and with low organic vapor meter response. Likely that such an area exists from 16 to 20, but that depth could not be sampled due to limited recovery. Drillers could not step off and redrill due to need for ~~not~~ holes to be cored.
1040 Drillers cleaning downhole equipment and grouting SB-7.
1110 Drillers resume attempting to hand auger at GGW-4.
~~1200 Drillers take lunch AGA~~
1145 Roger Lion (EKI) on site.
1220 Drillers reach hand auger refusal. AGA approves use of augers spinning slowly to break through rock layer.
1230 Drillers reach 5' bgs with augers. Proceed to use direct push to drill hole.
1240 Drillers reach a concrete or rock layer at 13.5'. Drillers report refusal. Water level at approximately 6' bgs. AGA instructs drillers to place Pre-Pak well w/ 10 ft of screen in borehole. RDL begins calibrating instruments to prepare for sampling water @ GGW-4.
1250 Drillers move to SB-9 and use probe to drill to 5' and proceed to drill boring.
1330 Drillers reach 20' bgs at SB-9 and TD hole.
1350 Drillers are cleaning equipment and moving IDW to back of building.
1450 RDL finishes sampling and drillers grout GGW-4. Drillers then add # of concrete to bring all holes to surface. Drillers use black dye to match existing asphalt color.
1510 Gregg off-site.
1530 AGA and RDL Sample IDW.
~1600 RDL off-site with samples to Curtis & Tompkins.
1700 AGA finishes measuring locations relative to buildings. Storm Drain near GGW-2 has ~~a~~ top elevation of 0.6' bgs and a bottom of ~1.7' bgs.
1710 AGA ~~off~~-Site to BKI in Burlingame.

**Erler & Kalinowski, Inc.**

# CHAIN OF CUSTODY RECORD



CONSULTING ENGINEERS AND SCIENTISTS 1870 Ogden Drive, Burlingame CA 94010 PHONE: 650-292-9100 FAX: 650-552-9012

**Project Name:** 6601 Bay Street

**Project No.:** 950074.05

**Location:** Emeryville, CA

**Sampled By:** R. Lion /

**Reporting:**
Electronic Format: EDD Hard Copy Format: PDF
EPA Data Report Level: II

Please report results to the following:
(1) Logan Hansen: lohansen@ekiconsult.com
(2) Cindy Cheng: ccheng@ekiconsult.com
(3) Jeff Shaw: jshaw@ekiconsult.com

**Laboratory:**

Curtis & Tompkins, Ltd.
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900

**EKI COC No.:** (YYYYMMDD-#)

Revision: _____ (A, B, C, D, etc.)
Date: By:

**ANALYSES REQUESTED**

| Method No. | EPA 8015M | EPA 8015M EPA 3630 | | EPA 8260B | EPA 200.8 / EPA 245.1 | Field Filtered with 0.45-micron filter | EPA 8270 | | | | PLACE ON HOLD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte Group | TPH-Gas | TPH as Diesel Silica Gel Cleanup | | BTEX and fuel oxygenates | Title 22 Metals | | PAHs | TDS | | | |

| Field Sample Identification | Lab Sample No. | Date | Time | Matrix | No./Type of Containers | EXPECTED TURNAROUND TIME | Remarks |
|---|---|---|---|---|---|---|---|
| MW-5 | | 03/06/10 | 10:50 | water | 6 VOAs w/ HCl | standard | |
| | | | | | 2 Amber 500-ml | | |
| | | | | | 1-250-ml poly | | |
| MW-7 | | 03/06/10 | 09:44 | water | 6 VOAs w/ HCl | standard | |
| | | | | | 2 Amber 500-ml | | |
| | | | | | 1-250-ml poly | | |
| GGW-1 | | 03/06/10 | 16:44 | water | 6 VOAs w/ HCl | standard | |
| | | | | | 2 Amber Liters | | |
| | | | | | 2 Amber 500-ml | | |
| | | | | | 1-250-ml poly | | |
| GGW-2 | | 03/06/10 | 14:55 | water | 6 VOAs w/ HCl | standard | |
| | | | | | 2 Amber Liters | | |
| | | | | | 2 Amber 500-ml | | |
| | | | | | 1-250-ml poly | | |
| GGW-3 | | 03/06/10 | 12:50 | water | 6 VOAs w/ HCl | standard | |
| | | | | | 2 Amber Liters | | |
| | | | | | 2 Amber 500-ml | | |
| | | | | | 1-250-ml poly | | |

**Special Instructions:**

| Relinquished by: (Signature/Affiliation) | Date | Time | Received by: (Signature/Affiliation or Carrier/Air Bill No.) |
|---|---|---|---|
| Logan Hansen EKI | 03/08/10 | 1120 | Desiree N Jetrault 3/8/10 1120 |
| Relinquished by: (Signature/Affiliation) | Date | Time | Received by: (Signature/Affiliation) |
| Relinquished by: (Signature/Affiliation) | Date | Time | Received by: (Signature/Affiliation) |

PROJECT NAME: 6601 BAY STREET
PROJECT NUMBER: 950074.05
DATE: 03/06/10
PERSONNEL: ROGER LION

**Well/Borehole ID:** MW-7

WELL VOLUME CALCULATION: @ 08:12

| Depth of Well (ft.) | | Depth to Water (ft.) | | Water Column (ft.) | | Multiplier (below) | | Casing Volume (gallons) | (* 3.8 =liters) |
|---|---|---|---|---|---|---|---|---|---|
| | - | 5.46 | = | | * | 0.64 | = | | |

Mult. for casing diam. = 2-inch=0.16; 4-inch=0.64; 6-inch=1.44 gals/ft.

PURGE METHOD:
Pump Serial #
PUMP INLET DEPTH: 6.5 → 8 ft

START TIME: 08:45 END TIME: 09:37
(data record #_____)

TOTAL VOLUME PURGED: 7 LITERS

SAMPLES COLLECTED: @ 09:44
2 - 500mL. AMBER
6 - VOAs + HCL
1 - 250mL PLASTIC

INSTRUMENTS:
Controller:
Flow-Through Cell:
METER:
SONDE:
(See daily calibration sheet)

DEPTH PROBE:

NOTES:

| Clock Time | Elapsed Time (min) | Purge Rate (L/min) | Volume Purged (L) | Casing Volumes removed | Depth to water (feet) | pH | Temperature (C) | Conductivity (mS/cm) | Dissolved Oxygen (mg/L) | ORP RedOx Potential (mV) | Turbidity (NTU) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 08:49 | 4 | 0.25 | ~~2~~ 1 | | 6.01 | 7.27 | 15.98 | 1.305 | 2.39 | +158.7 | 4.84 | |
| 08:57 | 12 | 0.12 | 2. | | 6.41 | 7.32 | 16.04 | 1.463 | 0.51 | +102.1 | 5.86 | |
| 09:02 | 17 | 0.20 | 3. | | 6.54 | 7.33 | 16.03 | 1.468 | 1.08 | +50.0 | 4.18 | |
| 09:10 | 25 | 0.12 | 4. | | 6.66 | 7.33 | 15.86 | 1.475 | 0.36 | -1.7 | 2.65 | |
| 09:21 | 32 | 0.14 | 5. | | 6.81 | 7.35 | 15.91 | 1.472 | 1.07 | -20.9 | 1.90 | |
| 09:30 | 45 | 0.08 | 6. | | 7.10 | 7.34 | 16.01 | 1.477 | 0.47 | -26.0 | 1.95 | |
| 09:37 | 52 | 0.14 | 7 | | 7.21 | 7.34 | 16.05 | 1.478 | 0.32 | -29.2 | 1.92 | |

PROJECT NAME: 6601 BAY STREET
PROJECT NUMBER: 950074.05
DATE: 03/06/10
PERSONNEL: ROGER LEON

**Well/Borehole ID:** MW-5

WELL VOLUME CALCULATION:

| Depth of Well (ft.) | | Depth to Water (ft.) | | Water Column (ft.) | | Multiplier (below) | | Casing Volume (gallons) | (* 3.8 =liters) |
|---|---|---|---|---|---|---|---|---|---|
| 18.10 | - | 6.81 | = | 3.29 | * | | = | | |

Mult. for casing diam. = 2-inch=0.16; 4-inch=0.64; 6-inch=1.44 gals/ft.

PURGE METHOD: PERISTALTIC PUMP
Pump Serial #
PUMP INLET DEPTH: 85 → 75 ft

START TIME: 09:59 END TIME: 10:47
(data record #_____)

TOTAL VOLUME PURGED: 9.2 LITERS

SAMPLES COLLECTED: @10:50
2 - 500 ML AMBERS
6 - VOAs + HCL
1 - 250 ML PLASTIC

INSTRUMENTS:
Controller:
Flow-Through Cell:
METER:
SONDE:
(See daily calibration sheet)

DEPTH PROBE:

NOTES:

| Clock Time | Elapsed Time (min) | Purge Rate (L/min) | Volume Purged (L) | Casing Volumes removed | Depth to water (feet) | pH | Temperature (C) | Conductivity (mS/cm) | Dissolved Oxygen (mg/L) | RedOx Potential (mV) | Turbidity (NTU) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10:17 | 18 | 917 | 3. | | 6.87 | 7.38 | 16.92 | 2.139 | 0.34 | -146.7 | 2.53 | |
| 10:26 | 27 | 0.22 | 5. | | 6.88 | 7.39 | 16.96 | 2.179 | 0.17 | -165.4 | 4.23 | |
| 10:31 | 32 | 0.2 | 6. | | 6.89 | 7.40 | 16.94 | 2.192 | 0.14 | -164.3 | 2.33 | |
| 10:36 | 37 | 02 | 7. | | 6.88 | 7.40 | 16.91 | 2.208 | 0.10 | -168.5 | 1.11 | |
| 10:47 | 48 | 0.2 | 9.2 | | 6.88 | 7.38 | 16.80 | 2.156 | 0.41 | -159.9 | 1.29 | |

PROJECT NAME: 6601 BAY STREET
PROJECT NUMBER: 950074.05
DATE: 03/06/10
PERSONNEL: ROGER LUON

**Well/Borehole ID:** 66W-1

WELL VOLUME CALCULATION:

| Depth of Well (ft.) | | Depth to Water (ft.) | | Water Column (ft.) | | Multiplier (below) | | Casing Volume (gallons) | (* 3.8 =liters) |
|---|---|---|---|---|---|---|---|---|---|
| | - | 9.40 @ 15:50 | = | | * | | = | | |

Mult. for casing diam. = 2-inch=0.16; 4-inch=0.64; 6-inch=1.44 gals/ft.

PURGE METHOD:
Pump Serial #
PUMP INLET DEPTH: ~11 ft

START TIME: 15:56 END TIME: 16:41
(data record #_____)

TOTAL VOLUME PURGED: 12.0

SAMPLES COLLECTED: @16:44
6 VOAs
2 1L AMBER
2 ½L AMBER
1 PLASTIC

INSTRUMENTS:
Controller:
Flow-Through Cell:
METER:
SONDE:
(See daily calibration sheet)

DEPTH PROBE:

NOTES: NO LNAPL, SHEEN

| Clock Time | Elapsed Time (min) | Purge Rate (L/min) | Volume Purged (L) | Casing Volumes removed | Depth to water (feet) | pH | Temperature (C) | Conductivity (mS/cm) | Dissolved Oxygen (mg/L) | ORP RedOx Potential (mV) | Turbidity (NTU) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16:03 | 7 | 0.36 | 2.5 | | 9.35 | 10.72 | 17.43 | 1.729 | 0.07 | -407.8 | HIGH | SHEEN |
| 16:13 | 17 | 0.30 | 5.5 | | 9.30 | 10.68 | 17.29 | 1.635 | 0.06 | -408.6 | | |
| 16:23 | 27 | 0.25 | 8.0 | | 9.30 | 10.70 | 17.29 | 1.616 | 0.04 | -423.6 | HIGH | |
| 16:36 | 40 | 0.23 | 11.0 | | 9.25 | 10.67 | 17.18 | 1.571 | 0.03 | -429.0 | | |
| 16:41 | 45 | 0.20 | 12.0 | | 9.25 | 10.67 | 17.18 | 1.576 | 0.03 | -432.5 | | |

PROJECT NAME: 6601 BAY STREET
PROJECT NUMBER: 950074.05
DATE: 03/06/10
PERSONNEL: Roger Lion

**Well/Borehole ID:** GGW-2

WELL VOLUME CALCULATION:

| Depth of Well (ft.) | | Depth to Water (ft.) | | Water Column (ft.) | | Multiplier (below) | | Casing Volume (gallons) | (* 3.8 =liters) |
|---|---|---|---|---|---|---|---|---|---|
| | - | | = | | * | | = | | |

Mult. for casing diam. = 2-inch=0.16; 4-inch=0.64; 6-inch=1.44 gals/ft.

PURGE METHOD: PERISTALTIC Pump
Pump Serial #
PUMP INLET DEPTH: _____

START TIME: 13:45 END TIME: 14:47
(data record #_____)

TOTAL VOLUME PURGED: 13 LITERS

SAMPLES COLLECTED: ~~NONE~~
2 500ML AMBER
2 1 LITER AMBER
6 VOAS

INSTRUMENTS:
Controller:
Flow-Through Cell:
METER:
SONDE:
(See daily calibration sheet)

DEPTH PROBE:

NOTES:
NO LNAPLE LAYER OUTSIDE SCREEN. SHEEN ON PURGE WATER.

| Clock Time | Elapsed Time (min) | Purge Rate (L/min) | Volume Purged (L) | Casing Volumes removed | Depth to water (feet) | pH | Temperature (C) | Conductivity (mS/cm) | Dissolved Oxygen (mg/L) | ORP RedOx Potential (mV) | Turbidity (NTU) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13:55 | 10 | 0.25 | 2.5 | | — | 9.06 | 17.30 | 0.911 | 0.11 | -378.5 | 91.5 | |
| 14:08 | 23 | 0.19 | 5.0 | | — | 8.66 | 16.99 | 1.072 | 0.06 | -347.7 | 253. | |
| 14:17 | 32 | 0.22 | 7.0 | | — | 8.67 | 17.09 | 0.911 | 0.17 | -320.6 | 238. | SHEEN |
| 14:25 | 40 | 0.25 | 9.0 | | — | 8.63 | 17.12 | 0.922 | 0.06 | -323.1 | 252. | |
| 14:35 | 50 | 0.20 | 11.0 | | — | 8.63 | 17.16 | 0.926 | 0.03 | -335.9 | 253. | SHEEN |
| 14:47 | 62 | 0.17 | 13. | | — | 8.66 | 17.25 | 0.936 | 0.03 | -352.8 | 287. | |
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PROJECT NAME: 6601 BAY STREET
PROJECT NUMBER: 950074.05
DATE: 03/06/10
PERSONNEL: ROGER LION

**Well/Borehole ID:** GGW-3

WELL VOLUME CALCULATION:

| Depth of Well (ft.) | | Depth to Water (ft.) | | Water Column (ft.) | | Multiplier (below) | | Casing Volume (gallons) | (* 3.8 =liters) |
|---|---|---|---|---|---|---|---|---|---|
| | - | 7.16 | = | @11.21 | * | | = | | |

Mult. for casing diam. = 2-inch=0.16; 4-inch=0.64; 6-inch=1.44 gals/ft.

PURGE METHOD: PERISTALTIC PUMP.
Pump Serial #
PUMP INLET DEPTH: _____

START TIME: 11:25 END TIME: 12:39
(data record #_____)

TOTAL VOLUME PURGED: 10 LITERS

SAMPLES COLLECTED: @12:50
2 AMBER 1L.
2 AMBER 500mL
6 VOAS + HCL
1 250mL POLY

INSTRUMENTS:
Controller:
Flow-Through Cell:
METER:
SONDE:
(See daily calibration sheet)

DEPTH PROBE:

NOTES: NO SHEEN, NO LNAPLE LAYER. H2S ODOR

| Clock Time | Elapsed Time (min) | Purge Rate (L/min) | Volume Purged (L) | Casing Volumes removed | Depth to water (feet) | pH | Temperature (C) | Conductivity (mS/cm) | Dissolved Oxygen (mg/L) | RedOx Potential (mV) | Turbidity (NTU) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11:29 | 4. | 0.25 | 1. | | 7.18 | 8.11 | 17.34 | 2071 | 0.63 | -211.2 | 284. | |
| 11:33 | 8. | 0.25 | 2. | | 7.15 | 8.20 | 17.62 | 2.123 | 0.24 | -230.3 | 287. | |
| 11:39 | 14. | 0.17 | 3. | | 7.18 | 8.21 | 17.60 | 2.139 | 1.38 | -200.16 | 267. | |
| 11:48 | 23. | 0.16 | 4.4 | | ~~8.18~~ 7.16 | 8.18 | - | - | - | - | 245. | |
| 11:58 | 33. | 0.22 | 6.6 | | 7.17 | 8.17 | 17.53 | 2.131 | 0.03 | -231.7 | 225. | |
| 12:10 | 45. | 0.05 | 7. | | 7.16 | 8.17 | 17.28 | 2.118 | 0.03 | -270.3 | 216. | |
| 12:19 | 54. | 0.11 | 8. | | 7.16 | 8.17 | 17.31 | 2.118 | 0.02 | -287.4 | 210. | H2S ODOR |
| 12:29 | 64. | 0.10 | 9. | | 7.16 | 8.17 | 17.29 | 2.117 | 0.02 | -294.3 | 210. | |
| 12:39 | 74. | 0.10 | 10. | | 7.16 | 8.17 | 17.40 | 2.121 | 0.02 | -308.7 | 235. | |

# Calibration Form

Personnel: Roger Lin

Start Time: 0801 End Time: 08:33

**Flow Cell:** YSI 556 MPS

Meter Serial No.: 06A2173 Sonde Serial No.: 09M63 R6118

**Turbidity Meter:** _____

Sheet 1 of 1

Day/Date: 03/06/10

Project: 6601 BAY STREET

EKI Job No.: 950074.05

| | | Reference | Units | Reading | Time |
|---|---|---|---|---|---|
| Specific Conductance | Rinse probe twice with rinse solution and discard | ✓ | ✓ | | |
| | Fill cup with approx. 55 mL of reference solution (immerse probe past vent hole in Cond/Temp sensor) | | ✓ | | |
| | Enter reference concentration; Allow 1 minute for equilibration | | | | |
| | Press Enter when stabilized; Record reading | 4.49 | mS/cm | 4.458 | 08:03 |
| | Rinse probe twice with tap or purified water and discard | | ✓ ✓ | | |
| Dissolved Oxygen (DO) | Fill cup with approx. 3 mm of water (make sure DO and Temp sensor are NOT immersed in water) | | | | |
| | Engage only 1 or 2 threads of the transport/calibration cup (DO sensor should be vented to atmosphere) | | | | |
| | Enter current local barometric pressure (NOT corrected to MSL); Press Enter | | mm Hg | 756.5 | 08:05 |
| | Allow approx. 10 minutes for air to become saturated; Press Enter when stabilized | 100 | % | 96.3 | 0814 |
| | Record DO in % saturation and mg/L | | mg/L | 10.01 | 08:14 |
| | Mix new batch of distilled water saturated with sodium sulfite (Add 2 pinches of sodium sulfite per Liter) | | | ✓ | |
| | Fill cup with sodium sulfite solution; Allow approx. 2 minutes for DO to approach <0.3 mg/L | | | | |
| | Record reading | | mg/L | 0.1 | 08:17 |
| | Record DO in % saturation | | % | 1.0 | 0817 |
| | Record ORP | | mV | -190. | 08:17 |
| | Rinse probe twice with tap or purified water and discard | | | | |
| pH 7 Buffer | Rinse probe twice with rinse solution and discard | | ✓ | | |
| | Fill cup with approx. 30 mL of reference solution (upright position) | | ✓ | | |
| | Allow 1 minute for equilibration; Record current Temperature of reference solution | | °C | 13.62 7.t | 08:19 |
| | Enter reference concentration (adjusted for current Temp) | | | 7.05 | |
| | Allow 1 minute for equilibration; Press Enter when stabilized; Record reading | 7.05 | Std Units | 7.15 | 08:20 |
| | Rinse probe twice with tap or purified water and discard | | ✓ ✓ | | |
| pH 4 Buffer | Rinse probe twice with rinse solution and discard | | ✓ | | |
| | Fill cup with approx. 30 mL of reference solution (upright position) | | ✓ | | |
| | Allow 1 minute for equilibration; Record current Temperature of reference solution | | °C | 14.1 | 08:24 |
| | Enter reference concentration (adjusted for current Temp) | | | 4.04 | |
| | Allow 1 minute for equilibration; Press Enter when stabilized; Record reading | 4.04 | Std Units | 4.11 | 08:24 |
| | Rinse probe twice with tap or purified water and discard | | ✓ ✓ | | |
| Oxidation-Reduction | Rinse probe twice with rinse solution and discard | | ✓ | | |
| | Fill cup with approx. 30 mL of reference solution (upright position) | | ✓ | | |
| | Allow 1 minute for equilibration; Record current Temperature of reference solution | | °C | 13.85 | 0828 |
| | Enter reference concentration (adjusted for current Temp) | | | | |
| | Allow 1 minute for equilibration; Press Enter when stabilized; Record reading | 246. | mV | 214.4 | 08:28 |
| | Rinse probe twice with tap or purified water and discard | | | | |
| Check pH and ORP | Rinse probe twice with rinse solution and discard | | ✓ | | |
| | Fill cup with approx. 30 mL of pH reference solution (upright position) | | ✓ | | |
| | Wait 1 minute and record reading | 7.05 | Std Units | 7.06 | 08:31 |
| | Fill cup with approx. 30 mL of ORP reference solution (upright position) | | | | |
| | Wait 1 minute and record reading | 246. | mV | 212. | 08:33 |
| Turbidity | Place reference solution into meter; Enter reference value | | | | |
| | Press start; Record reading HF | 0.02 | NTUs | 0.02 | 0833 |

PROJECT NAME: 6601 BAY STREET
PROJECT NUMBER: 950074.05
DATE: 04/09/10
PERSONNEL: RDLeon

**Well/Borehole ID:** GGW-4

WELL VOLUME CALCULATION:

| Depth of Well (ft.) | Depth to Water (ft.) | Water Column (ft.) | Multiplier (below) | Casing Volume (gallons) | (* 3.8 =liters) |
|---|---|---|---|---|---|
| - | 6.30 = | | * | = | |

Mult. for casing diam. = 2-inch=0.16; 4-inch=0.64; 6-inch=1.44 gals/ft.

PURGE METHOD:

Pump Serial #

PUMP INLET DEPTH: _____

START TIME: 13:16 END TIME: 14:03

(data record #_____)

TOTAL VOLUME PURGED:

SAMPLES COLLECTED: 3 AMBERS } 14:08
6 VOAs + HCl
1 1-l PLASTIC

INSTRUMENTS: MEASURED STANDARD

~~Controller~~: CONDUCTIVITY 1404. 1413. uS/cm
~~Flow-Through Cell~~: pH 7.04 7.00
METER: pH 4.02 4.00
SONDE: ~~TURBIDITY~~ 0.02 0.02
(See daily calibration sheet)
DO 9.75 mg/L 101.7% 101.7%
DEPTH PROBE: ORP 244 mV 239 mV

NOTES:

| Clock Time | Elapsed Time (min) | Purge Rate (L/min) | Volume Purged (L) | Casing Volumes removed | Depth to water (feet) | pH | Temperature (C) | Conductivity (mS/cm) | Dissolved Oxygen (mg/L) | RedOx Potential (mV) | Turbidity (NTU) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13:23 | 7. | | 1.2 | | 6.40 | 6.92 | 18.4 | 1104. | 1.24 mg/L 11.9% | -052. | 398. | |
| 13:35 | 19. | | 5.0 | | 6.43 | 6.86 | 18.1 | 1090. | 0.56 6.9% | -056. | 545. | NO SHEEN |
| 13:45 | 29. | | 8.0 | | 6.45 | 6.86 | 18.1 | 1080. | 0.55 5.9% | -055. | 36.6 | |
| 13:55 | 39 | | 11.0 | | 6.46 | 6.86 | 18.1 | 1080. | 5.9% | -056. | 60.4 | |
| 1403 | 47 | | 13.0 | | ~~6.~~ .46 | 6.82 | 18.2 | 1078. | 0.49 5.5 | -057. | 26.3 | |
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**APPENDIX F**
**Laboratory Data Sheets (on CD)**


Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

**Laboratory Job Number 218663**
**ANALYTICAL REPORT**

| | |
|---|---|
| Erler & Kalinowski, Inc. | Project : 950074.05 |
| 1870 Ogden Drive | Location : 6601 Bay Street |
| Burlingame, CA 94010-5306 | Level : II |

| Sample ID | Lab ID |
|---|---|
| MW-5 | 218663-001 |
| MW-7 | 218663-002 |
| GGW-1 | 218663-003 |
| GGW-2 | 218663-004 |
| GGW-3 | 218663-005 |

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 03/12/2010
Project Manager

NELAP # 01107CA

Curtis & Tompkins, Ltd.

# CASE NARRATIVE

| | |
|---|---|
| Laboratory number: | **218663** |
| Client: | **Erler & Kalinowski, Inc.** |
| Project: | **950074.05** |
| Location: | **6601 Bay Street** |
| Request Date: | **03/08/10** |
| Samples Received: | **03/08/10** |

This data package contains sample and QC results for five water samples, requested for the above referenced project on 03/08/10. The samples were received cold and intact.

**TPH-Purgeables and/or BTXE by GC (EPA 8015B):**
No analytical problems were encountered.

**TPH-Extractables by GC (EPA 8015B):**
No analytical problems were encountered.

**Volatile Organics by GC/MS (EPA 8260B):**
MW-7 (lab # 218663-002) was diluted due to foaming. No other analytical problems were encountered.

**Semivolatile Organics by GC/MS (EPA 8270C):**
No analytical problems were encountered.

**Total Dissolved Solids (TDS) (SM2540C):**
No analytical problems were encountered.

**Erler & Kalinowski, Inc.**
CONSULTING ENGINEERS AND SCIENTISTS

# CHAIN OF CUSTODY RECORD

Z18663



1870 Ogden Drive, Burlingame CA 94010 PHONE: 650-292-9100 FAX: 650-552-9012

| | |
|---|---|
| **Project Name**: 6601 Bay Street | **Project No.**: 950074.05 |
| **Location**: Emeryville, CA | **Sampled By**: R. Lion / |
| **Reporting**: Electronic Format: EDD Hard Copy Format: PDF; EPA Data Report Level: II | **Laboratory**: Curtis & Tompkins, Ltd. 2323 Fifth Street Berkeley, CA 94710 (510) 486-0900 |
| Please report results to the following: (1) Logan Hansen: lohansen@ekiconsult.com (2) Cindy Cheng: ccheng@ekiconsult.com (3) Jeff Shaw: jshaw@ekiconsult.com | |

**ANALYSES REQUESTED**

**EKI COC No.:** (YYYYMMDD-#)

Revision: _____ (A, B, C, D, etc.)

Date: By:

| Field Sample Identification | Lab Sample No. | Date | Time | Matrix | No./Type of Containers | Method No. / Analyte Group: EPA 8015M TPH-Gas | EPA 8015M EPA 3630 TPH as Diesel Silica Gel Cleanup | | EPA 8260B BTEX and fuel oxygenates | EPA 200.8 / EPA 245.1 Title 22 Metals | Field Filtered with 0.45-micron filter | EPA 8270 PAHs | TDS | | | PLACE ON HOLD | EXPECTED TURNAROUND TIME | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 MW-5 | | 03/06/10 | 10:50 | water | 6 VOAs w/ HCl | X | | | X | | | | | | | | standard | |
| | | | | | 2 Amber 500-ml | | X | | | | | - | | | | | | |
| | | | | | 1-250-ml poly | | | | | | | | X | | | | | |
| 2 MW-7 | | 03/06/10 | 09:44 | water | 6 VOAs w/ HCl | X | | | X | | | | | | | | standard | |
| | | | | | 2 Amber 500-ml | | X | | | | | - | | | | | | |
| | | | | | 1-250-ml poly | | | | | | | | X | | | | | |
| 3 GGW-1 | | 03/06/10 | 16:44 | water | 6 VOAs w/ HCl | X | | | X | | | | | | | | standard | |
| | | | | | 2 Amber Liters | | | | | | | X | | | | | | |
| | | | | | 2 Amber 500-ml | | X | | | | | | | | | | | |
| | | | | | 1-250-ml poly | | | | | | | | X | | | | | |
| 4 GGW-2 | | 03/06/10 | 14:55 | water | 6 VOAs w/ HCl | X | | | X | | | | | | | | standard | |
| | | | | | 2 Amber Liters | | | | | | | X | | | | | | |
| | | | | | 2 Amber 500-ml | | X | | | | | | | | | | | |
| | | | | | 1-250-ml poly | | | | | | | | X | | | | | |
| 5 GGW-3 | | 03/06/10 | 12:50 | water | 6 VOAs w/ HCl | X | | | X | | | | | | | | standard | |
| | | | | | 2 Amber Liters | | | | | | | X | | | | | | |
| | | | | | 2 Amber 500-ml | | X | | | | | | | | | | | |
| | | | | | 1-250-ml poly | | | | | | | | X | | | | | |

**Special Instructions:**

| | | | | | |
|---|---|---|---|---|---|
| **Relinquished by:** (Signature/Affiliation) | | Date | Time | **Received by:** (Signature/Affiliation or Carrier/Air Bill No.) | |
| [signature] | | 03/08/10 | 1120 | [signature] | 3/8/10 1120 |
| **Relinquished by:** (Signature/Affiliation) | | Date | Time | **Received by:** (Signature/Affiliation) | |
| **Relinquished by:** (Signature/Affiliation) | | Date | Time | **Received by:** (Signature/Affiliation) | |

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 218663 Date Received 3/8/10 Number of coolers 2
Client EKI Project 6001 BAY ST.

Date Opened 3/8/10 By (print) M. VILLANUEVA (sign)
Date Logged in ↓ By (print) ↓ (sign) ↓

1. Did cooler come with a shipping slip (airbill, etc) YES (NO)
Shipping info

2A. Were custody seals present? ... ☐ YES (circle) on cooler on samples ☐ (NO)
How many Name Date
2B. Were custody seals intact upon arrival? YES NO (N/A)
3. Were custody papers dry and intact when received? (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) (YES) NO
6. Indicate the packing in cooler: (if other, describe)

☑ Bubble Wrap ☑ Foam blocks ☑ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation: ONLY 1 COOLER

Type of ice used: ☑ Wet ☐ Blue/Gel ☐ None Temp(°C) 3.7 W/TEMP BLANK

☐ Samples Received on ice & cold without a temperature blank

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? YES (NO)
If YES, what time were they transferred to freezer?
9. Did all bottles arrive unbroken/unopened? YES (NO)
10. Are samples in the appropriate containers for indicated tests? (YES) NO
11. Are sample labels present, in good condition and complete? (YES) NO
12. Do the sample labels agree with custody papers? (YES) NO
13. Was sufficient amount of sample sent for tests requested? (YES) NO
14. Are the samples appropriately preserved? (YES) NO N/A
15. Are bubbles > 6mm absent in VOA samples? (YES) NO N/A
16. Was the client contacted concerning this sample delivery? YES NO
If YES, Who was called? By Date:

COMMENTS
SAMPLE # 3 (-1L AMB RECD FROZEN/BROKEN

Curtis & Tompkins, Ltd.

# Total Volatile Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 218663 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5030B |
| Project#: | 950074.05 | Analysis: | EPA 8015B |
| Matrix: | Water | Batch#: | 160750 |
| Units: | ug/L | Sampled: | 03/06/10 |
| Diln Fac: | 1.000 | Received: | 03/08/10 |

Field ID: MW-5 Lab ID: 218663-001
Type: SAMPLE Analyzed: 03/10/10

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | 99 Y | 50 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 125 | 48-162 |
| Bromofluorobenzene (FID) | 100 | 52-158 |

Field ID: MW-7 Lab ID: 218663-002
Type: SAMPLE Analyzed: 03/10/10

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | ND | 50 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 101 | 48-162 |
| Bromofluorobenzene (FID) | 99 | 52-158 |

Field ID: GGW-1 Lab ID: 218663-003
Type: SAMPLE Analyzed: 03/10/10

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | 550 | 50 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 112 | 48-162 |
| Bromofluorobenzene (FID) | 116 | 52-158 |

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

## Total Volatile Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 218663 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5030B |
| Project#: | 950074.05 | Analysis: | EPA 8015B |
| Matrix: | Water | Batch#: | 160750 |
| Units: | ug/L | Sampled: | 03/06/10 |
| Diln Fac: | 1.000 | Received: | 03/08/10 |

Field ID: GGW-2 Lab ID: 218663-004
Type: SAMPLE Analyzed: 03/10/10

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | 90 Y | 50 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 101 | 48-162 |
| Bromofluorobenzene (FID) | 103 | 52-158 |

Field ID: GGW-3 Lab ID: 218663-005
Type: SAMPLE Analyzed: 03/10/10

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | ND | 50 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 98 | 48-162 |
| Bromofluorobenzene (FID) | 100 | 52-158 |

Type: BLANK Analyzed: 03/09/10
Lab ID: QC535347

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | ND | 50 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 75 | 48-162 |
| Bromofluorobenzene (FID) | 74 | 52-158 |

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## Total Volatile Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 218663 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5030B |
| Project#: | 950074.05 | Analysis: | EPA 8015B |
| Type: | LCS | Diln Fac: | 1.000 |
| Lab ID: | QC535348 | Batch#: | 160750 |
| Matrix: | Water | Analyzed: | 03/09/10 |
| Units: | ug/L | | |

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| Gasoline C7-C12 | 1,000 | 851.1 | 85 | 73-121 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 128 | 48-162 |
| Bromofluorobenzene (FID) | 102 | 52-158 |

Curtis & Tompkins, Ltd.

Batch QC Report

## Total Volatile Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 218663 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5030B |
| Project#: | 950074.05 | Analysis: | EPA 8015B |
| Field ID: | ZZZZZZZZZZ | Batch#: | 160750 |
| MSS Lab ID: | 218646-007 | Sampled: | 03/05/10 |
| Matrix: | Water | Received: | 03/05/10 |
| Units: | ug/L | Analyzed: | 03/09/10 |
| Diln Fac: | 1.000 | | |

Type: MS Lab ID: QC535349

| Analyte | MSS Result | Spiked | Result | %REC | Limits |
|---|---|---|---|---|---|
| Gasoline C7-C12 | 13.89 | 2,000 | 2,104 | 105 | 49-129 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 135 | 48-162 |
| Bromofluorobenzene (FID) | 106 | 52-158 |

Type: MSD Lab ID: QC535350

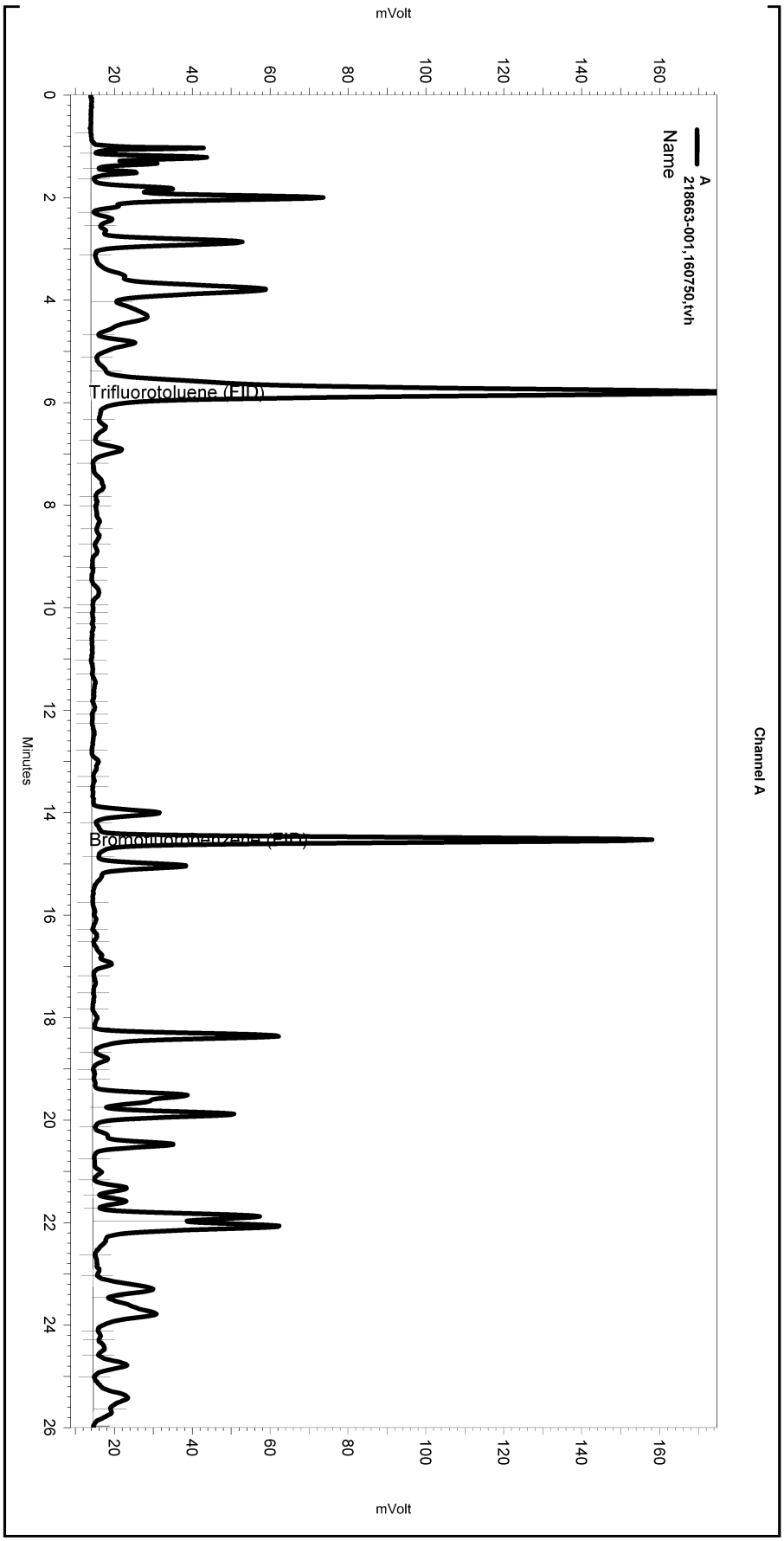
| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| Gasoline C7-C12 | 2,000 | 2,101 | 104 | 49-129 | 0 | 19 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 135 | 48-162 |
| Bromofluorobenzene (FID) | 110 | 52-158 |

RPD= Relative Percent Difference

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC04\Sequence\068.seq**
Sample Name: **218663-001,160750,tvh**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC04\Data\068_020**
Instrument: GC04 (Offline) Vial: N/A Operator: RSK-175 Analyst (lims2k3\rsk175)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC04\Method\tvhbtxe036.met

Software Version 3.1.7
Run Date: 3/10/2010 12:34:14 AM
Analysis Date: 3/10/2010 11:38:31 AM
Sample Amount: 5 Multiplier: 5
Vial & pH or Core ID: b1.0




---< General Method Parameters >---

No items selected for this section

---< A >---

No items selected for this section

Integration Events

| Enabled | Event Type | Start (Minutes) | Stop (Minutes) | Value |
|---|---|---|---|---|
| Yes | Width | 0 | 0 | 0.2 |
| Yes | Threshold | 0 | 0 | 50 |

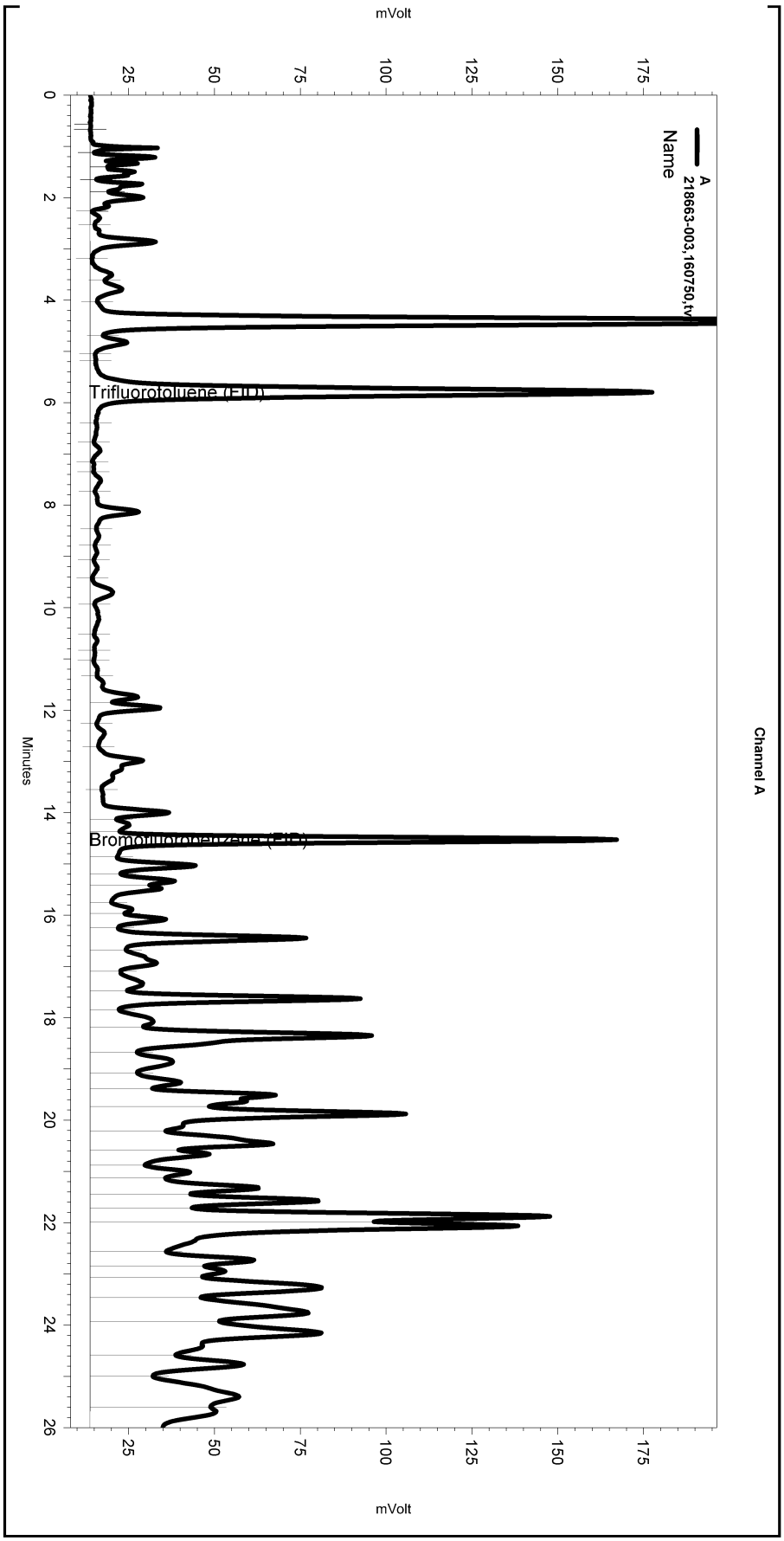
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\068_020

| Enabled | Event Type | Start (Minutes) | Stop (Minutes) | Value |
|---|---|---|---|---|
| Yes | Split Peak | 5.391 | 0 | 0 |

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC04\Sequence\068.seq**
Sample Name: **218663-003,160750,tvh**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC04\Data\068_023**
Instrument: GC04 (Offline) Vial: N/A Operator: RSK-175 Analyst (lims2k3\rsk175)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC04\Method\tvhbtxe036.met

Software Version 3.1.7
Run Date: 3/10/2010 2:27:11 AM
Analysis Date: 3/10/2010 11:39:01 AM
Sample Amount: 5 Multiplier: 5
Vial & pH or Core ID: b1.0




---< General Method Parameters >---

No items selected for this section

---< A >---

No items selected for this section

Integration Events

| Enabled | Event Type | Start (Minutes) | Stop (Minutes) | Value |
|---|---|---|---|---|
| Yes | Width | 0 | 0 | 0.2 |
| Yes | Threshold | 0 | 0 | 50 |

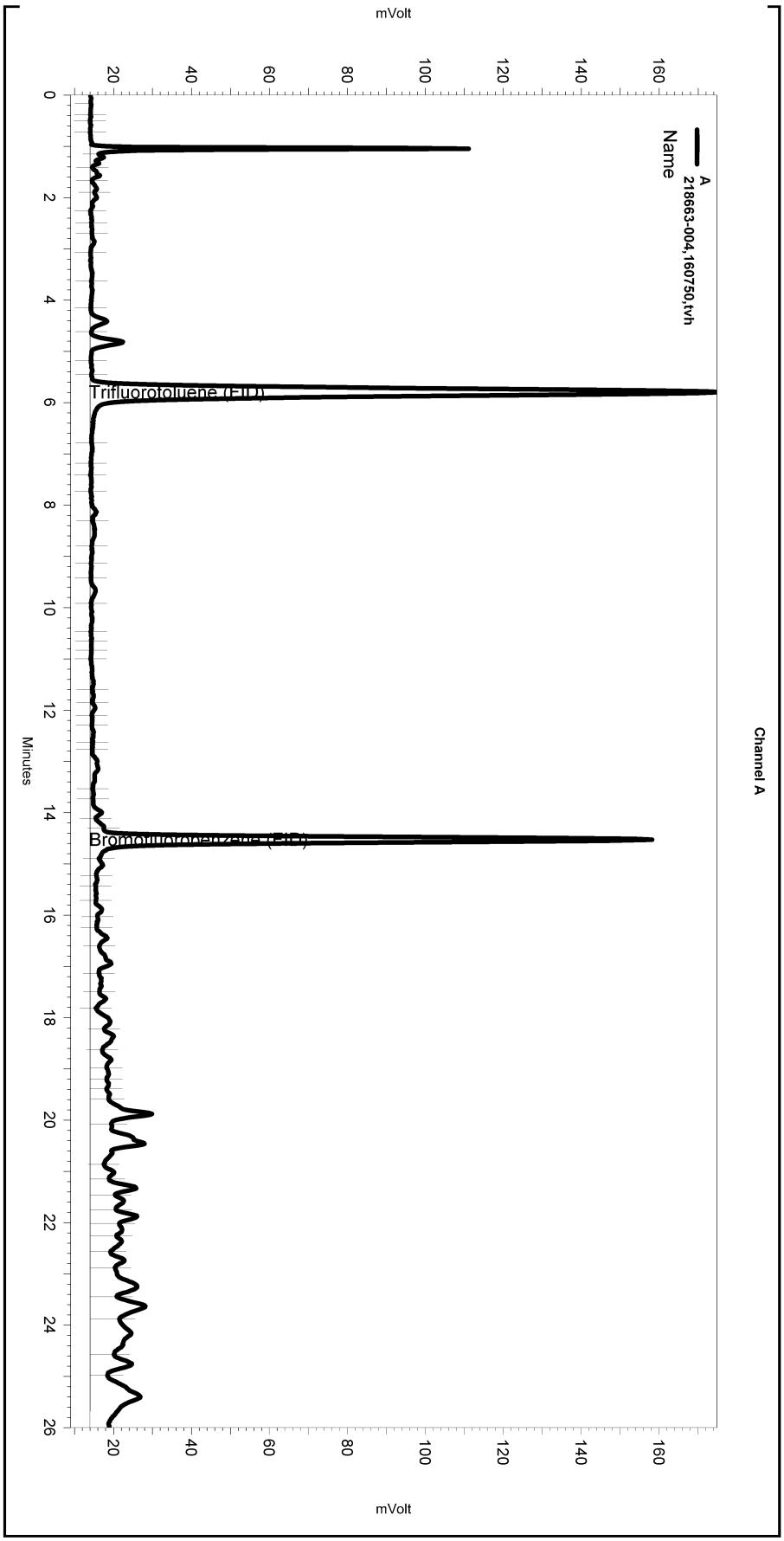
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\068_023

| Enabled | Event Type | Start (Minutes) | Stop (Minutes) | Value |
|---|---|---|---|---|
| Yes | Lowest Point Horizontal Baseli | 0 | 26.017 | 0 |
| Yes | Split Peak | 5.187 | 0 | 0 |

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC04\Sequence\068.seq**
Sample Name: **218663-004,160750,tvh**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC04\Data\068_025**
Instrument: GC04 (Offline) Vial: N/A Operator: RSK-175 Analyst (lims2k3\rsk175)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC04\Method\tvhbtxe036.met

Software Version 3.1.7
Run Date: 3/10/2010 3:42:27 AM
Analysis Date: 3/10/2010 11:39:21 AM
Sample Amount: 5 Multiplier: 5
Vial & pH or Core ID: b1.0




---< General Method Parameters >---

No items selected for this section

---< A >---

No items selected for this section

Integration Events

| Enabled | Event Type | Start (Minutes) | Stop (Minutes) | Value |
|---|---|---|---|---|
| Yes | Width | 0 | 0 | 0.2 |
| Yes | Threshold | 0 | 0 | 50 |

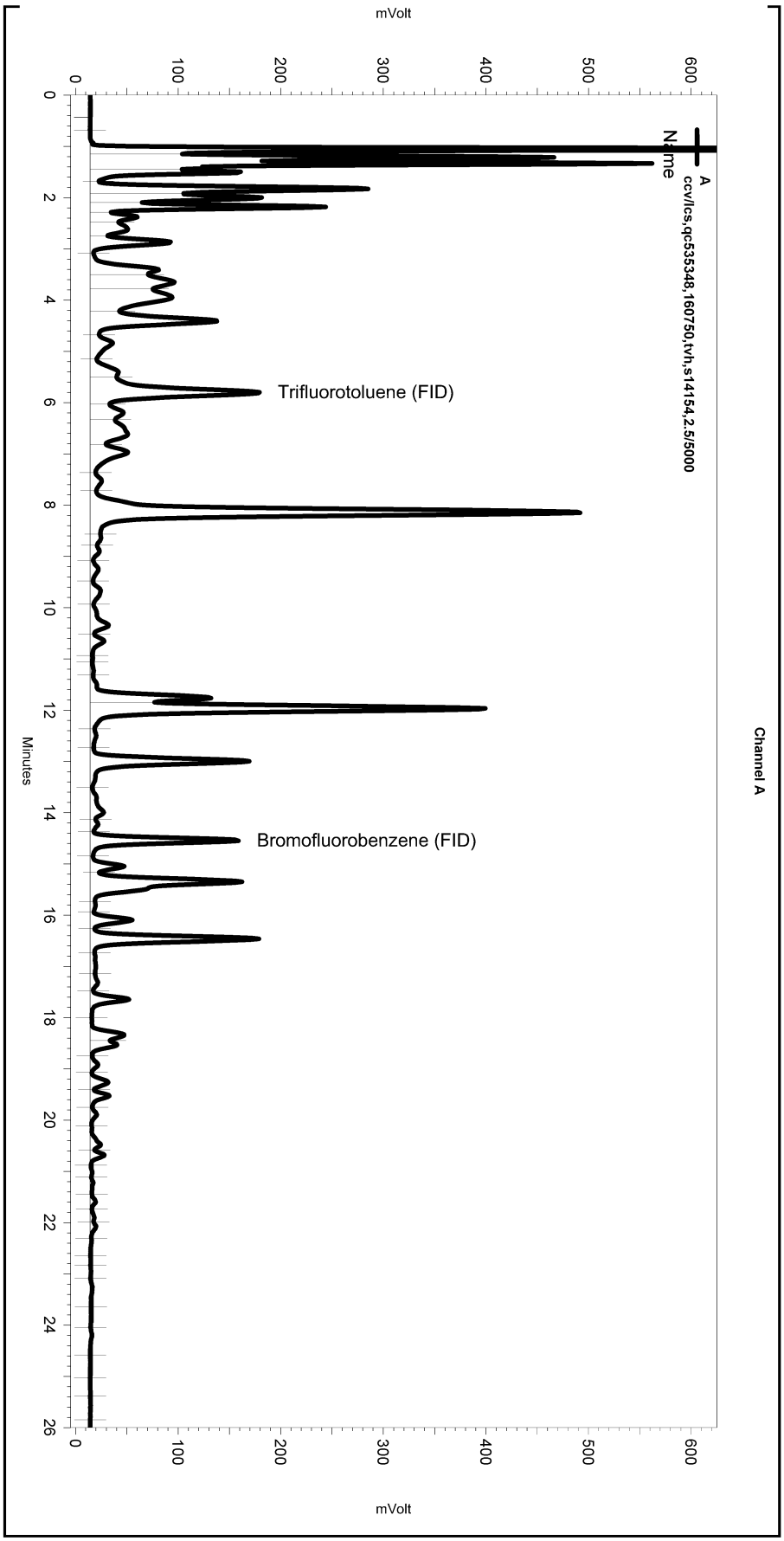
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\068_025

| Enabled | Event Type | Start (Minutes) | Stop (Minutes) | Value |
|---|---|---|---|---|
| Yes | Lowest Point Horizontal Baseli | 0 | 26.017 | 0 |
| Yes | Split Peak | 14.302 | 0 | 0 |

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC04\Sequence\068.seq**
Sample Name: **ccv/lcs,qc535348,160750,tvh,s14154,2.5/5000**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC04\Data\068_003**
Instrument: GC04 (Offline) Vial: N/A Operator: RSK-175 Analyst (lims2k3\rsk175)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC04\Method\tvhbtxe036.met

Software Version 3.1.7
Run Date: 3/9/2010 10:29:25 AM
Analysis Date: 3/10/2010 10:25:16 AM
Sample Amount: 5 Multiplier: 5
Vial & pH or Core ID: {Data Description}

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---< General Method Parameters >---
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No items selected for this section

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---< A >---
---

No items selected for this section

Integration Events

| Enabled | Event Type | Start (Minutes) | Stop (Minutes) | Value |
|---|---|---|---|---|
| Yes | Width | 0 | 0 | 0.2 |
| Yes | Threshold | 0 | 0 | 50 |

Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\068_003

| Enabled | Event Type | Start (Minutes) | Stop (Minutes) | Value |
|---|---|---|---|---|

None

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# Total Extractable Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 218663 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 3520C |
| Project#: | 950074.05 | Analysis: | EPA 8015B |
| Matrix: | Water | Sampled: | 03/06/10 |
| Units: | ug/L | Received: | 03/08/10 |
| Diln Fac: | 1.000 | Prepared: | 03/09/10 |
| Batch#: | 160762 | Analyzed: | 03/10/10 |

Field ID: MW-5 Lab ID: 218663-001
Type: SAMPLE Cleanup Method: EPA 3630C

| Analyte | Result | RL |
|---|---|---|
| Diesel C10-C24 | 250 Y | 50 |

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 95 | 39-150 |

Field ID: MW-7 Lab ID: 218663-002
Type: SAMPLE Cleanup Method: EPA 3630C

| Analyte | Result | RL |
|---|---|---|
| Diesel C10-C24 | ND | 50 |

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 95 | 39-150 |

Field ID: GGW-1 Lab ID: 218663-003
Type: SAMPLE Cleanup Method: EPA 3630C

| Analyte | Result | RL |
|---|---|---|
| Diesel C10-C24 | 34,000 | 50 |

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 85 | 39-150 |

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

## Total Extractable Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 218663 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 3520C |
| Project#: | 950074.05 | Analysis: | EPA 8015B |
| Matrix: | Water | Sampled: | 03/06/10 |
| Units: | ug/L | Received: | 03/08/10 |
| Diln Fac: | 1.000 | Prepared: | 03/09/10 |
| Batch#: | 160762 | Analyzed: | 03/10/10 |

Field ID: GGW-2 Lab ID: 218663-004
Type: SAMPLE Cleanup Method: EPA 3630C

| Analyte | Result | RL |
|---|---|---|
| Diesel C10-C24 | 10,000 | 50 |

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 92 | 39-150 |

Field ID: GGW-3 Lab ID: 218663-005
Type: SAMPLE Cleanup Method: EPA 3630C

| Analyte | Result | RL |
|---|---|---|
| Diesel C10-C24 | 180 Y | 50 |

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 86 | 39-150 |

Type: BLANK Cleanup Method: EPA 3630C
Lab ID: QC535407

| Analyte | Result | RL |
|---|---|---|
| Diesel C10-C24 | ND | 50 |

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 99 | 39-150 |

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## Total Extractable Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 218663 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 3520C |
| Project#: | 950074.05 | Analysis: | EPA 8015B |
| Matrix: | Water | Batch#: | 160762 |
| Units: | ug/L | Prepared: | 03/09/10 |
| Diln Fac: | 1.000 | Analyzed: | 03/10/10 |

Type: BS
Lab ID: QC535408
Cleanup Method: EPA 3630C

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| Diesel C10-C24 | 2,500 | 2,200 | 88 | 34-144 |

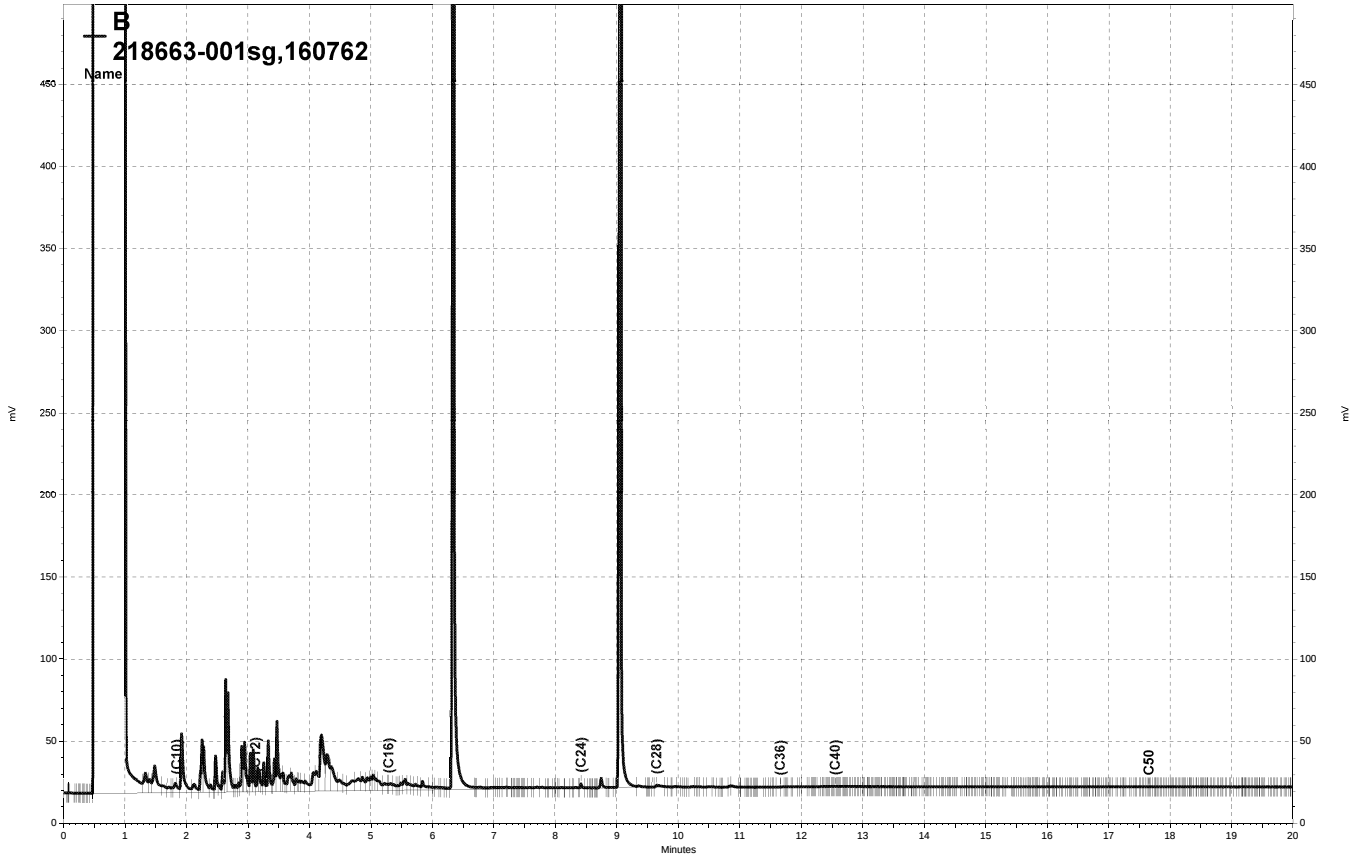
| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 102 | 39-150 |

Type: BSD
Lab ID: QC535409
Cleanup Method: EPA 3630C

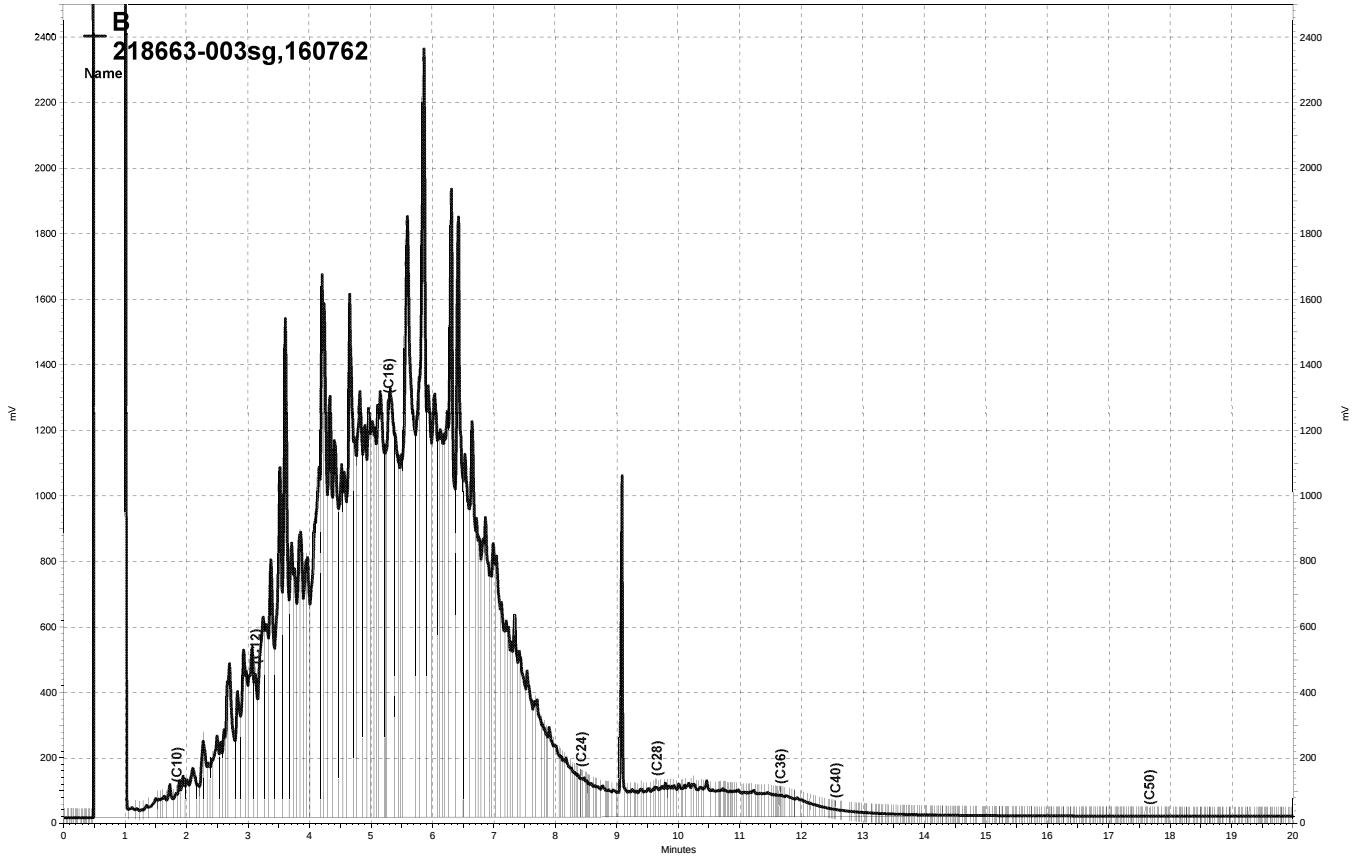
| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| Diesel C10-C24 | 2,500 | 2,320 | 93 | 34-144 | 5 | 48 |

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 109 | 39-150 |

RPD= Relative Percent Difference




\\Lims\gdrive\ezchrom\Projects\GC14B\Data\069b020, B

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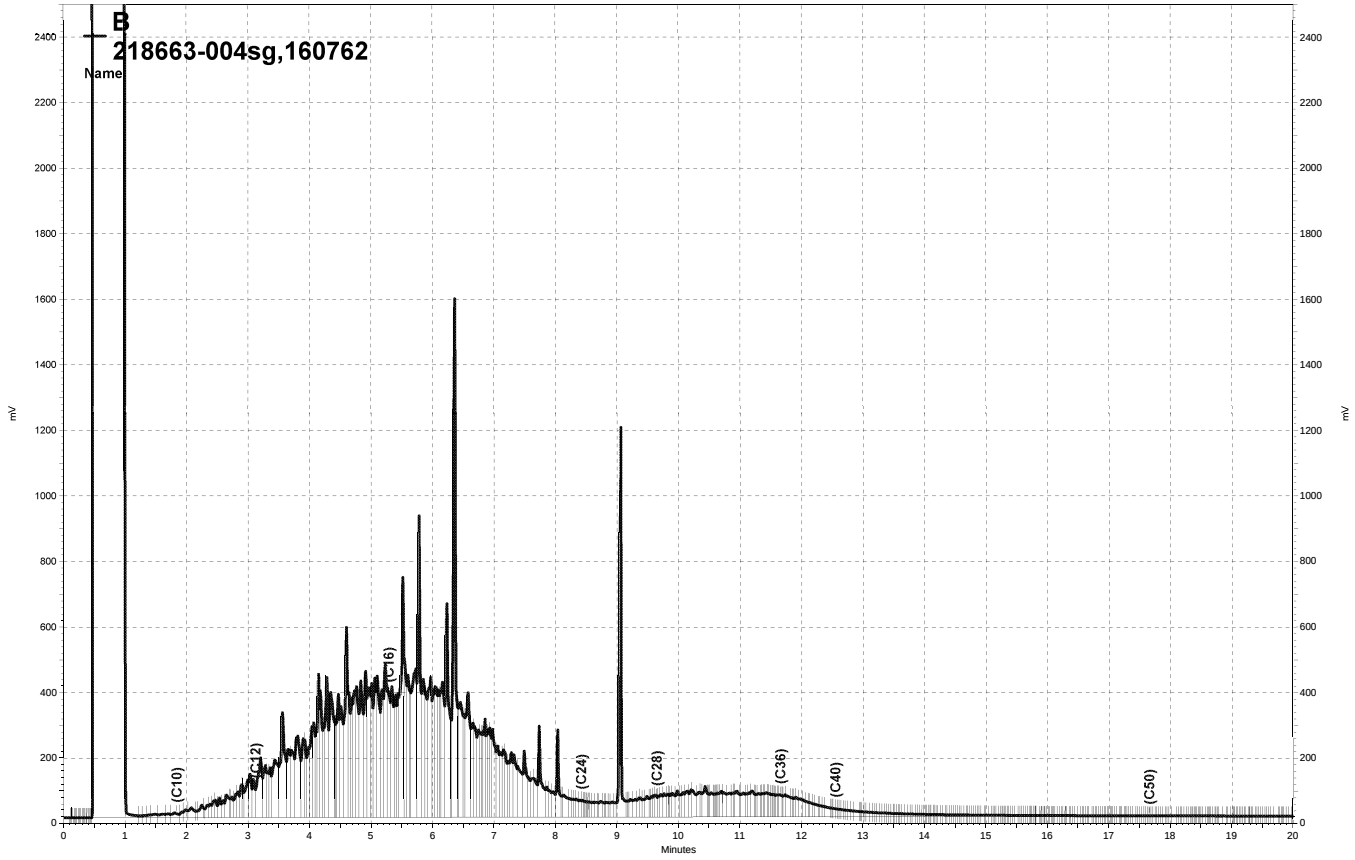
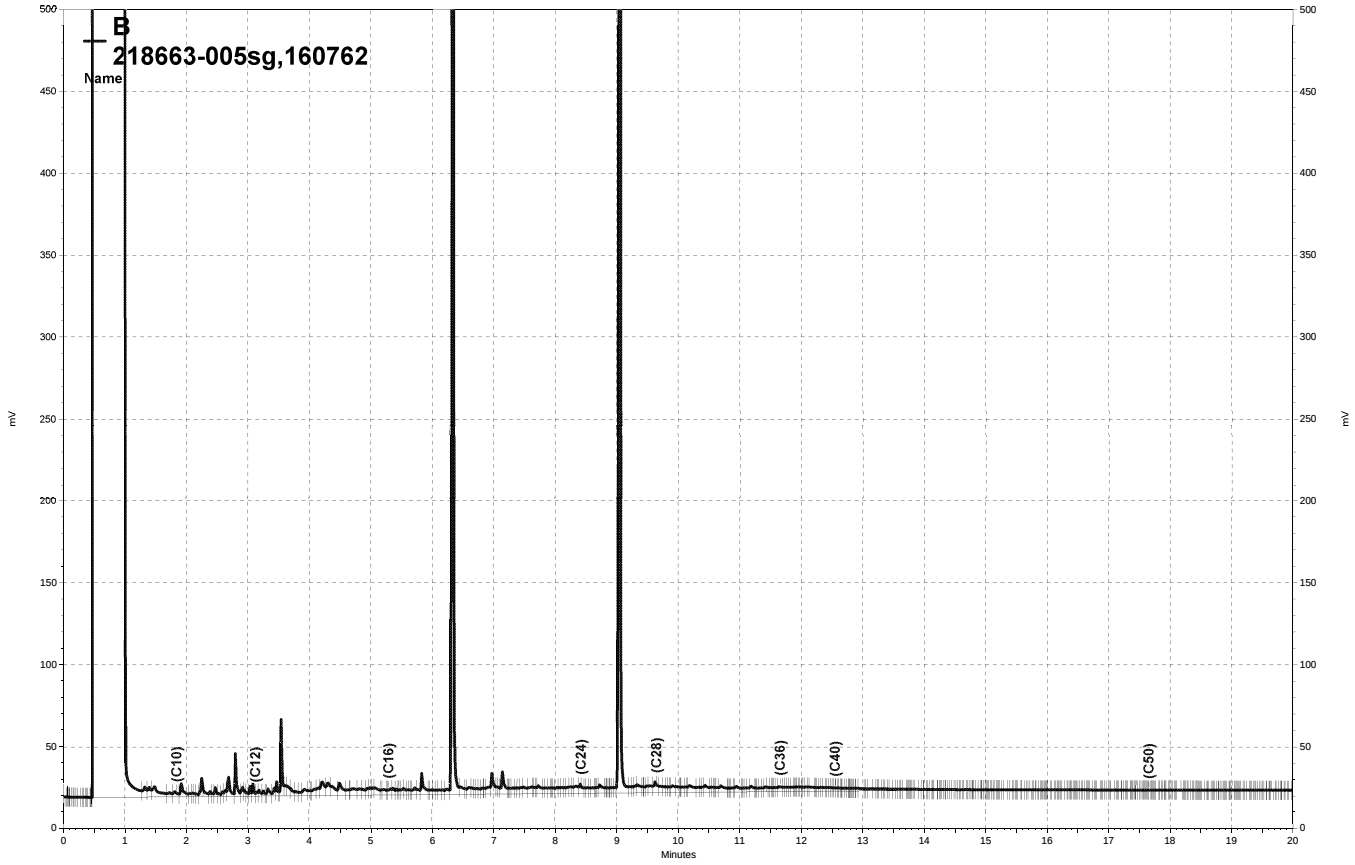



\\Lims\gdrive\ezchrom\Projects\GC14B\Data\069b023, B

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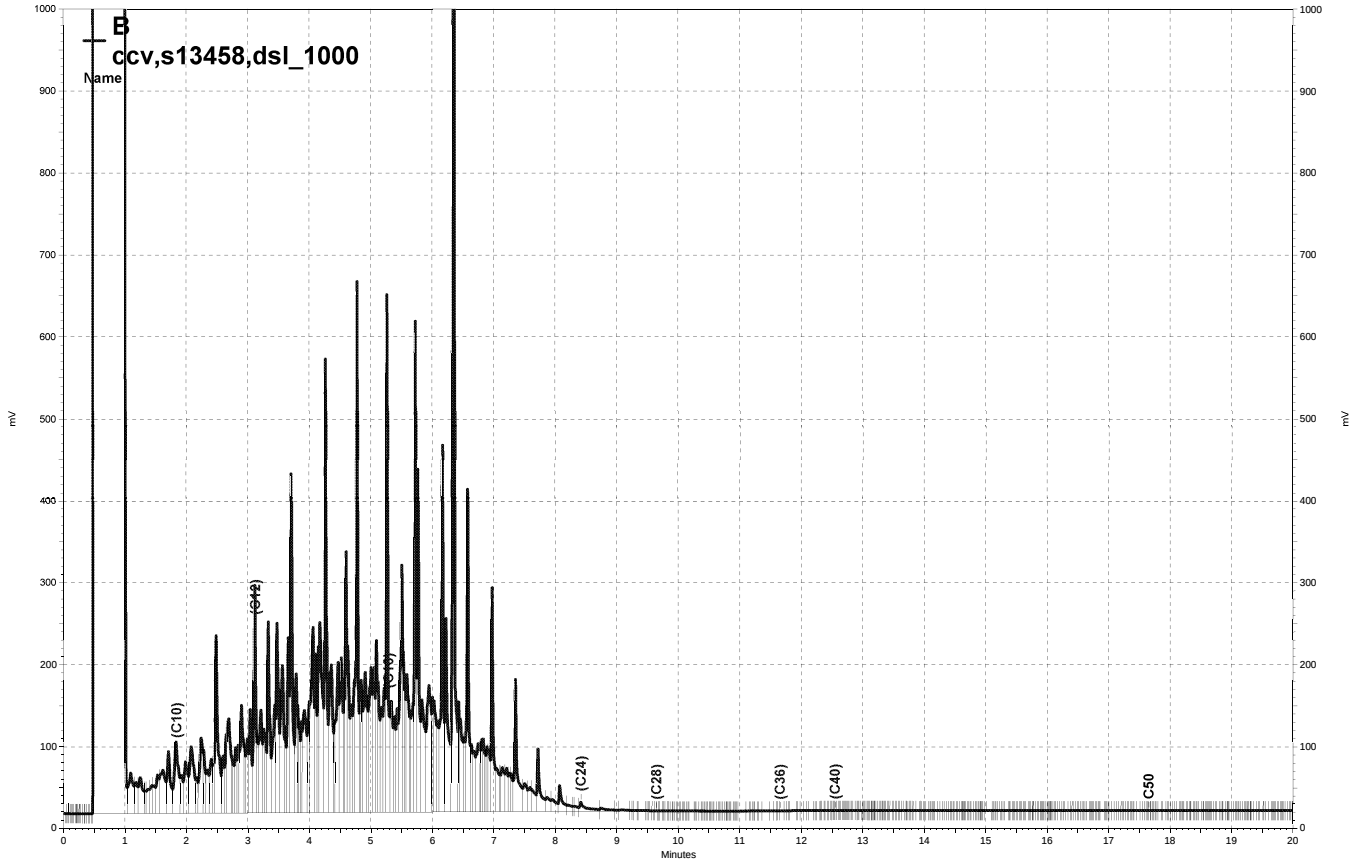



\\Lims\gdrive\ezchrom\Projects\GC14B\Data\069b013, B

Curtis & Tompkins, Ltd.

## BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 218663 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5030B |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Field ID: | MW-5 | Batch#: | 160772 |
| Lab ID: | 218663-001 | Sampled: | 03/06/10 |
| Matrix: | Water | Received: | 03/08/10 |
| Units: | ug/L | Analyzed: | 03/10/10 |
| Diln Fac: | 1.000 | | |

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 10 |
| MTBE | 2.0 | 0.5 |
| Isopropyl Ether (DIPE) | ND | 0.5 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 0.5 |
| 1,2-Dichloroethane | ND | 0.5 |
| Benzene | ND | 0.5 |
| Methyl tert-Amyl Ether (TAME) | ND | 0.5 |
| Toluene | ND | 0.5 |
| 1,2-Dibromoethane | ND | 0.5 |
| Ethylbenzene | ND | 0.5 |
| m,p-Xylenes | ND | 0.5 |
| o-Xylene | ND | 0.5 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 104 | 81-124 |
| 1,2-Dichloroethane-d4 | 100 | 73-140 |
| Toluene-d8 | 109 | 88-113 |
| Bromofluorobenzene | 102 | 80-127 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 218663 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5030B |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Field ID: | MW-7 | Batch#: | 160772 |
| Lab ID: | 218663-002 | Sampled: | 03/06/10 |
| Matrix: | Water | Received: | 03/08/10 |
| Units: | ug/L | Analyzed: | 03/10/10 |
| Diln Fac: | 2.000 | | |

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 20 |
| MTBE | ND | 1.0 |
| Isopropyl Ether (DIPE) | ND | 1.0 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 1.0 |
| 1,2-Dichloroethane | ND | 1.0 |
| Benzene | ND | 1.0 |
| Methyl tert-Amyl Ether (TAME) | ND | 1.0 |
| Toluene | ND | 1.0 |
| 1,2-Dibromoethane | ND | 1.0 |
| Ethylbenzene | ND | 1.0 |
| m,p-Xylenes | ND | 1.0 |
| o-Xylene | ND | 1.0 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 94 | 81-124 |
| 1,2-Dichloroethane-d4 | 91 | 73-140 |
| Toluene-d8 | 100 | 88-113 |
| Bromofluorobenzene | 98 | 80-127 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 218663 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5030B |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Field ID: | GGW-1 | Batch#: | 160817 |
| Lab ID: | 218663-003 | Sampled: | 03/06/10 |
| Matrix: | Water | Received: | 03/08/10 |
| Units: | ug/L | Analyzed: | 03/11/10 |
| Diln Fac: | 1.000 | | |

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | 11 | 10 |
| MTBE | 1.4 | 0.5 |
| Isopropyl Ether (DIPE) | ND | 0.5 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 0.5 |
| 1,2-Dichloroethane | ND | 0.5 |
| Benzene | 56 | 0.5 |
| Methyl tert-Amyl Ether (TAME) | ND | 0.5 |
| Toluene | 2.7 | 0.5 |
| 1,2-Dibromoethane | ND | 0.5 |
| Ethylbenzene | 2.2 | 0.5 |
| m,p-Xylenes | 4.0 | 0.5 |
| o-Xylene | 2.2 | 0.5 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 102 | 81-124 |
| 1,2-Dichloroethane-d4 | 94 | 73-140 |
| Toluene-d8 | 106 | 88-113 |
| Bromofluorobenzene | 98 | 80-127 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

## BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 218663 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5030B |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Field ID: | GGW-2 | Batch#: | 160772 |
| Lab ID: | 218663-004 | Sampled: | 03/06/10 |
| Matrix: | Water | Received: | 03/08/10 |
| Units: | ug/L | Analyzed: | 03/10/10 |
| Diln Fac: | 1.000 | | |

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 10 |
| MTBE | ND | 0.5 |
| Isopropyl Ether (DIPE) | ND | 0.5 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 0.5 |
| 1,2-Dichloroethane | ND | 0.5 |
| Benzene | 0.9 | 0.5 |
| Methyl tert-Amyl Ether (TAME) | ND | 0.5 |
| Toluene | ND | 0.5 |
| 1,2-Dibromoethane | ND | 0.5 |
| Ethylbenzene | ND | 0.5 |
| m,p-Xylenes | ND | 0.5 |
| o-Xylene | ND | 0.5 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 100 | 81-124 |
| 1,2-Dichloroethane-d4 | 90 | 73-140 |
| Toluene-d8 | 107 | 88-113 |
| Bromofluorobenzene | 99 | 80-127 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 218663 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5030B |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Field ID: | GGW-3 | Batch#: | 160772 |
| Lab ID: | 218663-005 | Sampled: | 03/06/10 |
| Matrix: | Water | Received: | 03/08/10 |
| Units: | ug/L | Analyzed: | 03/10/10 |
| Diln Fac: | 1.000 | | |

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 10 |
| MTBE | ND | 0.5 |
| Isopropyl Ether (DIPE) | 2.4 | 0.5 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 0.5 |
| 1,2-Dichloroethane | ND | 0.5 |
| Benzene | 2.1 | 0.5 |
| Methyl tert-Amyl Ether (TAME) | ND | 0.5 |
| Toluene | ND | 0.5 |
| 1,2-Dibromoethane | ND | 0.5 |
| Ethylbenzene | ND | 0.5 |
| m,p-Xylenes | ND | 0.5 |
| o-Xylene | ND | 0.5 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 95 | 81-124 |
| 1,2-Dichloroethane-d4 | 81 | 73-140 |
| Toluene-d8 | 103 | 88-113 |
| Bromofluorobenzene | 97 | 80-127 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 218663 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5030B |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Matrix: | Water | Batch#: | 160772 |
| Units: | ug/L | Analyzed: | 03/10/10 |
| Diln Fac: | 1.000 | | |

Type: BS Lab ID: QC535456

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| tert-Butyl Alcohol (TBA) | 125.0 | 99.51 | 80 | 36-156 |
| MTBE | 25.00 | 19.38 | 78 | 61-123 |
| Isopropyl Ether (DIPE) | 25.00 | 22.56 | 90 | 54-139 |
| Ethyl tert-Butyl Ether (ETBE) | 25.00 | 21.37 | 85 | 64-133 |
| 1,2-Dichloroethane | 25.00 | 21.03 | 84 | 66-141 |
| Benzene | 25.00 | 24.67 | 99 | 81-122 |
| Methyl tert-Amyl Ether (TAME) | 25.00 | 19.98 | 80 | 73-124 |
| Toluene | 25.00 | 27.24 | 109 | 82-122 |
| 1,2-Dibromoethane | 25.00 | 24.49 | 98 | 81-122 |
| Ethylbenzene | 25.00 | 27.10 | 108 | 86-125 |
| m,p-Xylenes | 50.00 | 54.56 | 109 | 83-127 |
| o-Xylene | 25.00 | 27.21 | 109 | 81-122 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 97 | 81-124 |
| 1,2-Dichloroethane-d4 | 94 | 73-140 |
| Toluene-d8 | 104 | 88-113 |
| Bromofluorobenzene | 100 | 80-127 |

Type: BSD Lab ID: QC535457

| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| tert-Butyl Alcohol (TBA) | 125.0 | 105.0 | 84 | 36-156 | 5 | 23 |
| MTBE | 25.00 | 20.94 | 84 | 61-123 | 8 | 11 |
| Isopropyl Ether (DIPE) | 25.00 | 22.10 | 88 | 54-139 | 2 | 11 |
| Ethyl tert-Butyl Ether (ETBE) | 25.00 | 22.09 | 88 | 64-133 | 3 | 11 |
| 1,2-Dichloroethane | 25.00 | 20.41 | 82 | 66-141 | 3 | 12 |
| Benzene | 25.00 | 22.67 | 91 | 81-122 | 8 | 12 |
| Methyl tert-Amyl Ether (TAME) | 25.00 | 20.35 | 81 | 73-124 | 2 | 11 |
| Toluene | 25.00 | 26.13 | 105 | 82-122 | 4 | 12 |
| 1,2-Dibromoethane | 25.00 | 25.39 | 102 | 81-122 | 4 | 11 |
| Ethylbenzene | 25.00 | 26.31 | 105 | 86-125 | 3 | 12 |
| m,p-Xylenes | 50.00 | 54.03 | 108 | 83-127 | 1 | 13 |
| o-Xylene | 25.00 | 26.59 | 106 | 81-122 | 2 | 12 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 94 | 81-124 |
| 1,2-Dichloroethane-d4 | 92 | 73-140 |
| Toluene-d8 | 106 | 88-113 |
| Bromofluorobenzene | 99 | 80-127 |

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

## BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 218663 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5030B |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Type: | BLANK | Diln Fac: | 1.000 |
| Lab ID: | QC535458 | Batch#: | 160772 |
| Matrix: | Water | Analyzed: | 03/10/10 |
| Units: | ug/L | | |

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 10 |
| MTBE | ND | 0.5 |
| Isopropyl Ether (DIPE) | ND | 0.5 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 0.5 |
| 1,2-Dichloroethane | ND | 0.5 |
| Benzene | ND | 0.5 |
| Methyl tert-Amyl Ether (TAME) | ND | 0.5 |
| Toluene | ND | 0.5 |
| 1,2-Dibromoethane | ND | 0.5 |
| Ethylbenzene | ND | 0.5 |
| m,p-Xylenes | ND | 0.5 |
| o-Xylene | ND | 0.5 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 97 | 81-124 |
| 1,2-Dichloroethane-d4 | 101 | 73-140 |
| Toluene-d8 | 103 | 88-113 |
| Bromofluorobenzene | 105 | 80-127 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 218663 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5030B |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Matrix: | Water | Batch#: | 160817 |
| Units: | ug/L | Analyzed: | 03/11/10 |
| Diln Fac: | 1.000 | | |

Type: BS Lab ID: QC535621

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| tert-Butyl Alcohol (TBA) | 125.0 | 93.06 | 74 | 36-156 |
| MTBE | 25.00 | 19.03 | 76 | 61-123 |
| Isopropyl Ether (DIPE) | 25.00 | 21.59 | 86 | 54-139 |
| Ethyl tert-Butyl Ether (ETBE) | 25.00 | 20.92 | 84 | 64-133 |
| 1,2-Dichloroethane | 25.00 | 19.48 | 78 | 66-141 |
| Benzene | 25.00 | 22.85 | 91 | 81-122 |
| Methyl tert-Amyl Ether (TAME) | 25.00 | 19.76 | 79 | 73-124 |
| Toluene | 25.00 | 25.28 | 101 | 82-122 |
| 1,2-Dibromoethane | 25.00 | 23.12 | 92 | 81-122 |
| Ethylbenzene | 25.00 | 25.95 | 104 | 86-125 |
| m,p-Xylenes | 50.00 | 51.71 | 103 | 83-127 |
| o-Xylene | 25.00 | 25.26 | 101 | 81-122 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 95 | 81-124 |
| 1,2-Dichloroethane-d4 | 93 | 73-140 |
| Toluene-d8 | 106 | 88-113 |
| Bromofluorobenzene | 101 | 80-127 |

Type: BSD Lab ID: QC535622

| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| tert-Butyl Alcohol (TBA) | 125.0 | 101.1 | 81 | 36-156 | 8 | 23 |
| MTBE | 25.00 | 19.32 | 77 | 61-123 | 1 | 11 |
| Isopropyl Ether (DIPE) | 25.00 | 20.86 | 83 | 54-139 | 3 | 11 |
| Ethyl tert-Butyl Ether (ETBE) | 25.00 | 21.13 | 85 | 64-133 | 1 | 11 |
| 1,2-Dichloroethane | 25.00 | 19.41 | 78 | 66-141 | 0 | 12 |
| Benzene | 25.00 | 23.11 | 92 | 81-122 | 1 | 12 |
| Methyl tert-Amyl Ether (TAME) | 25.00 | 20.32 | 81 | 73-124 | 3 | 11 |
| Toluene | 25.00 | 24.97 | 100 | 82-122 | 1 | 12 |
| 1,2-Dibromoethane | 25.00 | 23.23 | 93 | 81-122 | 0 | 11 |
| Ethylbenzene | 25.00 | 24.84 | 99 | 86-125 | 4 | 12 |
| m,p-Xylenes | 50.00 | 51.86 | 104 | 83-127 | 0 | 13 |
| o-Xylene | 25.00 | 25.04 | 100 | 81-122 | 1 | 12 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 97 | 81-124 |
| 1,2-Dichloroethane-d4 | 95 | 73-140 |
| Toluene-d8 | 103 | 88-113 |
| Bromofluorobenzene | 99 | 80-127 |

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

## BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 218663 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5030B |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Type: | BLANK | Diln Fac: | 1.000 |
| Lab ID: | QC535623 | Batch#: | 160817 |
| Matrix: | Water | Analyzed: | 03/11/10 |
| Units: | ug/L | | |

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 10 |
| MTBE | ND | 0.5 |
| Isopropyl Ether (DIPE) | ND | 0.5 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 0.5 |
| 1,2-Dichloroethane | ND | 0.5 |
| Benzene | ND | 0.5 |
| Methyl tert-Amyl Ether (TAME) | ND | 0.5 |
| Toluene | ND | 0.5 |
| 1,2-Dibromoethane | ND | 0.5 |
| Ethylbenzene | ND | 0.5 |
| m,p-Xylenes | ND | 0.5 |
| o-Xylene | ND | 0.5 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 99 | 81-124 |
| 1,2-Dichloroethane-d4 | 102 | 73-140 |
| Toluene-d8 | 103 | 88-113 |
| Bromofluorobenzene | 105 | 80-127 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# Polynuclear Aromatics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 218663 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 3520C |
| Project#: | 950074.05 | Analysis: | EPA 8270C |
| Field ID: | GGW-1 | Batch#: | 160787 |
| Lab ID: | 218663-003 | Sampled: | 03/06/10 |
| Matrix: | Water | Received: | 03/08/10 |
| Units: | ug/L | Prepared: | 03/10/10 |
| Diln Fac: | 10.00 | Analyzed: | 03/11/10 |

| Analyte | Result | RL |
|---|---|---|
| Naphthalene | ND | 98 |
| Acenaphthylene | ND | 98 |
| Acenaphthene | ND | 98 |
| Fluorene | ND | 98 |
| Phenanthrene | ND | 98 |
| Anthracene | ND | 98 |
| Fluoranthene | ND | 98 |
| Pyrene | ND | 98 |
| Benzo(a)anthracene | ND | 98 |
| Chrysene | ND | 98 |
| Benzo(b)fluoranthene | ND | 98 |
| Benzo(k)fluoranthene | ND | 98 |
| Benzo(a)pyrene | ND | 98 |
| Indeno(1,2,3-cd)pyrene | ND | 98 |
| Dibenz(a,h)anthracene | ND | 98 |
| Benzo(g,h,i)perylene | ND | 98 |

| Surrogate | %REC | Limits |
|---|---|---|
| Nitrobenzene-d5 | DO | 34-113 |
| 2-Fluorobiphenyl | DO | 36-115 |
| Terphenyl-d14 | DO | 1-124 |

DO= Diluted Out
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# Polynuclear Aromatics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 218663 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 3520C |
| Project#: | 950074.05 | Analysis: | EPA 8270C |
| Field ID: | GGW-2 | Batch#: | 160787 |
| Lab ID: | 218663-004 | Sampled: | 03/06/10 |
| Matrix: | Water | Received: | 03/08/10 |
| Units: | ug/L | Prepared: | 03/10/10 |
| Diln Fac: | 1.000 | Analyzed: | 03/11/10 |

| Analyte | Result | RL |
|---|---|---|
| Naphthalene | ND | 9.9 |
| Acenaphthylene | ND | 9.9 |
| Acenaphthene | ND | 9.9 |
| Fluorene | ND | 9.9 |
| Phenanthrene | ND | 9.9 |
| Anthracene | ND | 9.9 |
| Fluoranthene | ND | 9.9 |
| Pyrene | ND | 9.9 |
| Benzo(a)anthracene | ND | 9.9 |
| Chrysene | ND | 9.9 |
| Benzo(b)fluoranthene | ND | 9.9 |
| Benzo(k)fluoranthene | ND | 9.9 |
| Benzo(a)pyrene | ND | 9.9 |
| Indeno(1,2,3-cd)pyrene | ND | 9.9 |
| Dibenz(a,h)anthracene | ND | 9.9 |
| Benzo(g,h,i)perylene | ND | 9.9 |

| Surrogate | %REC | Limits |
|---|---|---|
| Nitrobenzene-d5 | 84 | 34-113 |
| 2-Fluorobiphenyl | 73 | 36-115 |
| Terphenyl-d14 | 22 | 1-124 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# Polynuclear Aromatics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 218663 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 3520C |
| Project#: | 950074.05 | Analysis: | EPA 8270C |
| Field ID: | GGW-3 | Batch#: | 160787 |
| Lab ID: | 218663-005 | Sampled: | 03/06/10 |
| Matrix: | Water | Received: | 03/08/10 |
| Units: | ug/L | Prepared: | 03/10/10 |
| Diln Fac: | 1.000 | Analyzed: | 03/11/10 |

| Analyte | Result | RL |
|---|---|---|
| Naphthalene | ND | 9.4 |
| Acenaphthylene | ND | 9.4 |
| Acenaphthene | ND | 9.4 |
| Fluorene | ND | 9.4 |
| Phenanthrene | ND | 9.4 |
| Anthracene | ND | 9.4 |
| Fluoranthene | ND | 9.4 |
| Pyrene | ND | 9.4 |
| Benzo(a)anthracene | ND | 9.4 |
| Chrysene | ND | 9.4 |
| Benzo(b)fluoranthene | ND | 9.4 |
| Benzo(k)fluoranthene | ND | 9.4 |
| Benzo(a)pyrene | ND | 9.4 |
| Indeno(1,2,3-cd)pyrene | ND | 9.4 |
| Dibenz(a,h)anthracene | ND | 9.4 |
| Benzo(g,h,i)perylene | ND | 9.4 |

| Surrogate | %REC | Limits |
|---|---|---|
| Nitrobenzene-d5 | 85 | 34-113 |
| 2-Fluorobiphenyl | 76 | 36-115 |
| Terphenyl-d14 | 26 | 1-124 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## Polynuclear Aromatics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 218663 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 3520C |
| Project#: | 950074.05 | Analysis: | EPA 8270C |
| Type: | BLANK | Diln Fac: | 1.000 |
| Lab ID: | QC535508 | Batch#: | 160787 |
| Matrix: | Water | Prepared: | 03/10/10 |
| Units: | ug/L | Analyzed: | 03/11/10 |

| Analyte | Result | RL |
|---|---|---|
| Naphthalene | ND | 10 |
| Acenaphthylene | ND | 10 |
| Acenaphthene | ND | 10 |
| Fluorene | ND | 10 |
| Phenanthrene | ND | 10 |
| Anthracene | ND | 10 |
| Fluoranthene | ND | 10 |
| Pyrene | ND | 10 |
| Benzo(a)anthracene | ND | 10 |
| Chrysene | ND | 10 |
| Benzo(b)fluoranthene | ND | 10 |
| Benzo(k)fluoranthene | ND | 10 |
| Benzo(a)pyrene | ND | 10 |
| Indeno(1,2,3-cd)pyrene | ND | 10 |
| Dibenz(a,h)anthracene | ND | 10 |
| Benzo(g,h,i)perylene | ND | 10 |

| Surrogate | %REC | Limits |
|---|---|---|
| Nitrobenzene-d5 | 84 | 34-113 |
| 2-Fluorobiphenyl | 80 | 36-115 |
| Terphenyl-d14 | 86 | 1-124 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## Polynuclear Aromatics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 218663 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 3520C |
| Project#: | 950074.05 | Analysis: | EPA 8270C |
| Matrix: | Water | Batch#: | 160787 |
| Units: | ug/L | Prepared: | 03/10/10 |
| Diln Fac: | 1.000 | Analyzed: | 03/11/10 |

Type: BS Lab ID: QC535509

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| Naphthalene | 30.00 | 21.71 | 72 | 49-111 |
| Acenaphthylene | 30.00 | 23.96 | 80 | 39-135 |
| Acenaphthene | 30.00 | 26.36 | 88 | 45-117 |
| Fluorene | 30.00 | 24.09 | 80 | 51-116 |
| Phenanthrene | 30.00 | 24.39 | 81 | 51-115 |
| Anthracene | 30.00 | 22.86 | 76 | 53-116 |
| Fluoranthene | 30.00 | 24.30 | 81 | 50-115 |
| Pyrene | 30.00 | 24.43 | 81 | 43-131 |
| Benzo(a)anthracene | 30.00 | 26.23 | 87 | 52-115 |
| Chrysene | 30.00 | 25.07 | 84 | 46-125 |
| Benzo(b)fluoranthene | 30.00 | 27.19 | 91 | 43-123 |
| Benzo(k)fluoranthene | 30.00 | 27.36 | 91 | 35-139 |
| Benzo(a)pyrene | 30.00 | 24.91 | 83 | 39-111 |
| Indeno(1,2,3-cd)pyrene | 30.00 | 26.19 | 87 | 26-138 |
| Dibenz(a,h)anthracene | 30.00 | 26.31 | 88 | 31-134 |
| Benzo(g,h,i)perylene | 30.00 | 26.53 | 88 | 27-146 |

| Surrogate | %REC | Limits |
|---|---|---|
| Nitrobenzene-d5 | 81 | 34-113 |
| 2-Fluorobiphenyl | 82 | 36-115 |
| Terphenyl-d14 | 86 | 1-124 |

Type: BSD Lab ID: QC535510

| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| Naphthalene | 30.00 | 24.39 | 81 | 49-111 | 12 | 29 |
| Acenaphthylene | 30.00 | 26.62 | 89 | 39-135 | 11 | 27 |
| Acenaphthene | 30.00 | 29.46 | 98 | 45-117 | 11 | 34 |
| Fluorene | 30.00 | 26.49 | 88 | 51-116 | 10 | 30 |
| Phenanthrene | 30.00 | 26.98 | 90 | 51-115 | 10 | 28 |
| Anthracene | 30.00 | 25.33 | 84 | 53-116 | 10 | 27 |
| Fluoranthene | 30.00 | 26.43 | 88 | 50-115 | 8 | 27 |
| Pyrene | 30.00 | 27.39 | 91 | 43-131 | 11 | 29 |
| Benzo(a)anthracene | 30.00 | 29.18 | 97 | 52-115 | 11 | 29 |
| Chrysene | 30.00 | 27.98 | 93 | 46-125 | 11 | 29 |
| Benzo(b)fluoranthene | 30.00 | 30.01 | 100 | 43-123 | 10 | 34 |
| Benzo(k)fluoranthene | 30.00 | 29.73 | 99 | 35-139 | 8 | 33 |
| Benzo(a)pyrene | 30.00 | 26.94 | 90 | 39-111 | 8 | 31 |
| Indeno(1,2,3-cd)pyrene | 30.00 | 28.42 | 95 | 26-138 | 8 | 33 |
| Dibenz(a,h)anthracene | 30.00 | 28.52 | 95 | 31-134 | 8 | 33 |
| Benzo(g,h,i)perylene | 30.00 | 28.37 | 95 | 27-146 | 7 | 33 |

| Surrogate | %REC | Limits |
|---|---|---|
| Nitrobenzene-d5 | 90 | 34-113 |
| 2-Fluorobiphenyl | 90 | 36-115 |
| Terphenyl-d14 | 92 | 1-124 |

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

# Total Dissolved Solids (TDS)

| | | | |
|---|---|---|---|
| Lab #: | 218663 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | METHOD |
| Project#: | 950074.05 | Analysis: | SM2540C |
| Analyte: | Total Dissolved Solids | Sampled: | 03/06/10 |
| Matrix: | Water | Received: | 03/08/10 |
| Units: | mg/L | Prepared: | 03/09/10 |
| Batch#: | 160755 | Analyzed: | 03/10/10 |

| Field ID | Type | Lab ID | Result | RL | Diln Fac |
|---|---|---|---|---|---|
| MW-5 | SAMPLE | 218663-001 | 1,290 | 13 | 1.250 |
| MW-7 | SAMPLE | 218663-002 | 780 | 10 | 1.000 |
| GGW-1 | SAMPLE | 218663-003 | 1,420 | 11 | 1.111 |
| GGW-2 | SAMPLE | 218663-004 | 700 | 11 | 1.111 |
| GGW-3 | SAMPLE | 218663-005 | 1,530 | 13 | 1.250 |
| | BLANK | QC535379 | ND | 10 | 1.000 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## Total Dissolved Solids (TDS)

| | | | |
|---|---|---|---|
| Lab #: | 218663 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | METHOD |
| Project#: | 950074.05 | Analysis: | SM2540C |
| Analyte: | Total Dissolved Solids | Batch#: | 160755 |
| Field ID: | ZZZZZZZZZZ | Sampled: | 03/03/10 |
| MSS Lab ID: | 218583-006 | Received: | 03/03/10 |
| Matrix: | Water | Prepared: | 03/09/10 |
| Units: | mg/L | Analyzed: | 03/10/10 |

| Type | Lab ID | MSS Result | Spiked | Result | RL | %REC | Limits | RPD | Lim | Diln Fac |
|---|---|---|---|---|---|---|---|---|---|---|
| BS | QC535380 | | 104.0 | 90.00 | | 87 | 75-106 | | | 1.000 |
| BSD | QC535381 | | 104.0 | 90.00 | | 87 | 75-106 | 0 | 15 | 1.000 |
| SDUP | QC535382 | 12,140 | | 12,160 | 100.0 | | | 0 | 12 | 10.00 |

RL= Reporting Limit
RPD= Relative Percent Difference


Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

**Laboratory Job Number 219374**
**ANALYTICAL REPORT**

| | |
|---|---|
| Erler & Kalinowski, Inc. | Project : 950074.05 |
| 1870 Ogden Drive | Location : 6601 Bay Street |
| Burlingame, CA 94010-5306 | Level : II |

| Sample ID | Lab ID |
|---|---|
| GGW-4 | 219374-001 |

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 04/19/2010
Project Manager

NELAP # 01107CA

Curtis & Tompkins, Ltd.

# CASE NARRATIVE

| | |
|---|---|
| Laboratory number: | **219374** |
| Client: | **Erler & Kalinowski, Inc.** |
| Project: | **950074.05** |
| Location: | **6601 Bay Street** |
| Request Date: | **04/09/10** |
| Samples Received: | **04/09/10** |

This data package contains sample and QC results for one water sample, requested for the above referenced project on 04/09/10. The sample was received cold and intact.

**TPH-Purgeables and/or BTXE by GC (EPA 8015B):**
No analytical problems were encountered.

**TPH-Extractables by GC (EPA 8015B):**
No analytical problems were encountered.

**Volatile Organics by GC/MS (EPA 8260B):**
No analytical problems were encountered.

**Semivolatile Organics by GC/MS (EPA 8270C):**
No analytical problems were encountered.

**Total Dissolved Solids (TDS) (SM2540C):**
No analytical problems were encountered.

**Erler & Kalinowski, Inc.**

CONSULTING ENGINEERS AND SCIENTISTS

# CHAIN OF CUSTODY RECORD

1870 Ogden Drive, Burlingame CA 94010 PHONE: 650-292-9100 FAX: 650-552-9012

249374



| | | |
|---|---|---|
| **Project Name**<br>6601 Bay Street | **Project No.**<br>950074.05 | **EKI COC No.:** (YYYYMMDD-#) |
| **Location:**<br>Emeryville, CA | **Sampled By:**<br>R. Lion / | Revision: _____ (A, B, C, D, etc.)<br>Date: By: |
| **Reporting:**<br>Electronic Format: EDD Hard Copy Format: PDF<br>EPA Data Report Level: II<br><br>Please report results to the following:<br>(1) Logan Hansen: lohansen@ekiconsult.com<br>(2) Cindy Cheng: ccheng@ekiconsult.com<br>(3) Jeff Shaw: jshaw@ekiconsult.com | **Laboratory:**<br>Curtis & Tompkins, Ltd.<br>2323 Fifth Street<br>Berkeley, CA 94710<br>(510) 486-0900 | |

**ANALYSES REQUESTED**

| Field Sample Identification | Lab Sample No. | Date | Time | Matrix | No./Type of Containers | Method No. / Analyte Group: EPA 8015M TPH-Gas | EPA 8015M EPA 3630 TPH as Diesel Silica Gel Cleanup | | EPA 8260B BTEX and fuel oxygenates | EPA 200.8 / EPA 245.1 Title 22 Metals | Field Filtered with 0.45-micron filter | EPA 8270 PAHs | TDS | | | PLACE ON HOLD | EXPECTED TURNAROUND TIME | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-5 | | | | water | 6 VOAs w/ HCl | X | | | X | | | - | | | | | standard | RDL |
| | | | | | 2 Amber 500-ml | | X | | | | | | | | | | | |
| | | | | | 1-250-ml poly | | | | | | | | X | | | | | |
| MW-7 | | | | water | 6 VOAs w/ HCl | X | | | X | | | - | | | | | standard | RDL |
| | | | | | 2 Amber 500-ml | | X | | | | | | | | | | | |
| | | | | | 1-250-ml poly | | | | | | | | X | | | | | |
| GGW-4 | | 04/09/10 | 1408 | water | 6 VOAs w/ HCl | X | | | X | | | | | | | | standard | |
| | | | | | 2 Amber Liters | | | | | | | X | | | | | | |
| | | | | | 2 Amber 500ml | | X | | | | | | | | | | | |
| | | | | | 1-250ml poly | | | | | | | | X | | | | | |
| ~~GGW-2~~ | | | | water | 6 VOAs w/ HCl | X | | | X | | | | | | | | standard | RDL |
| | | | | | 2 Amber Liters | | | | | | | X | | | | | | |
| | | | | | 2 Amber 500-ml | | X | | | | | | | | | | | |
| | | | | | 1-250-ml poly | | | | | | | | X | | | | | |
| ~~GGW-3~~ | | | | water | 6 VOAs w/ HCl | X | | | X | | | | | | | | standard | RDL |
| | | | | | 2 Amber Liters | | | | | | | X | | | | | | |
| | | | | | 2 Amber 500-ml | | X | | | | | | | | | | | |
| | | | | | 1-250-ml poly | | | | | | | | X | | | | | |

SEE NOTE

**Special Instructions:** ADD EDC & EDB TO ANALYTE LIST

| | | | | | |
|---|---|---|---|---|---|
| **Relinquished by:** | (Signature/Affiliation) | Date 4/9/10 | Time 1523 | **Received by:** | (Signature/Affiliation or Carrier/Air Bill No.) |
| **Relinquished by:** | (Signature/Affiliation) | Date | Time | **Received by:** | (Signature/Affiliation) |
| **Relinquished by:** | (Signature/Affiliation) | Date | Time | **Received by:** | (Signature/Affiliation) |

**COOLER RECEIPT CHECKLIST**

Curtis & Tompkins, Ltd.

Login # 210374 Date Received 4/9/10 Number of coolers 2
Client EKI Project 6601-6603 BAY STREET

Date Opened 4/9/10 By (print) M. VILLANUEVA (sign)
Date Logged in 4/9/10 By (print) [illegible] (sign) [illegible]

1. Did cooler come with a shipping slip (airbill, etc) _____ YES (NO)
Shipping info _____

2A. Were custody seals present? ... ☐ YES (circle) on cooler on samples ☐ (NO)
How many _____ Name _____ Date _____
2B. Were custody seals intact upon arrival? _____ YES NO (N/A)
3. Were custody papers dry and intact when received? _____ (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? _____ (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) (YES) NO
6. Indicate the packing in cooler: (if other, describe) _____

☐ Bubble Wrap ☐ Foam blocks ☑ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation:

Type of ice used: ☑ Wet ☐ Blue/Gel ☐ None Temp(°C) _____

☑ Samples Received on ice & cold without a temperature blank

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES (NO)
If YES, what time were they transferred to freezer? _____
9. Did all bottles arrive unbroken/unopened? _____ (YES) NO
10. Are samples in the appropriate containers for indicated tests? _____ (YES) NO
11. Are sample labels present, in good condition and complete? _____ (YES) NO
12. Do the sample labels agree with custody papers? _____ (YES) NO
13. Was sufficient amount of sample sent for tests requested? _____ (YES) NO
14. Are the samples appropriately preserved? _____ (YES) NO N/A
15. Are bubbles > 6mm absent in VOA samples? _____ (YES) NO N/A
16. Was the client contacted concerning this sample delivery? _____ YES (NO)
If YES, Who was called? _____ By _____ Date: _____

COMMENTS

_____
_____
_____
_____
_____
_____
_____
_____

Curtis & Tompkins, Ltd.

# Total Volatile Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 219374 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5030B |
| Project#: | 950074.05 | Analysis: | EPA 8015B |
| Field ID: | GGW-4 | Batch#: | 161875 |
| Matrix: | Water | Sampled: | 04/09/10 |
| Units: | ug/L | Received: | 04/09/10 |
| Diln Fac: | 1.000 | | |

Type: SAMPLE Analyzed: 04/11/10
Lab ID: 219374-001

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | ND | 50 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 95 | 48-162 |
| Bromofluorobenzene (FID) | 92 | 52-158 |

Type: BLANK Analyzed: 04/10/10
Lab ID: QC539941

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | ND | 50 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 96 | 48-162 |
| Bromofluorobenzene (FID) | 91 | 52-158 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## Total Volatile Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 219374 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5030B |
| Project#: | 950074.05 | Analysis: | EPA 8015B |
| Type: | LCS | Diln Fac: | 1.000 |
| Lab ID: | QC539942 | Batch#: | 161875 |
| Matrix: | Water | Analyzed: | 04/10/10 |
| Units: | ug/L | | |

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| Gasoline C7-C12 | 1,000 | 902.7 | 90 | 73-121 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 128 | 48-162 |
| Bromofluorobenzene (FID) | 97 | 52-158 |

Curtis & Tompkins, Ltd.

Batch QC Report

## Total Volatile Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 219374 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5030B |
| Project#: | 950074.05 | Analysis: | EPA 8015B |
| Field ID: | ZZZZZZZZZZ | Batch#: | 161875 |
| MSS Lab ID: | 219314-005 | Sampled: | 04/06/10 |
| Matrix: | Water | Received: | 04/07/10 |
| Units: | ug/L | Analyzed: | 04/11/10 |
| Diln Fac: | 1.000 | | |

Type: MS Lab ID: QC539943

| Analyte | MSS Result | Spiked | Result | %REC | Limits |
|---|---|---|---|---|---|
| Gasoline C7-C12 | 1,538 | 2,000 | 3,310 | 89 | 49-129 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 155 | 48-162 |
| Bromofluorobenzene (FID) | 114 | 52-158 |

Type: MSD Lab ID: QC539944

| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| Gasoline C7-C12 | 2,000 | 3,084 | 77 | 49-129 | 7 | 19 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 159 | 48-162 |
| Bromofluorobenzene (FID) | 115 | 52-158 |

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

# Total Extractable Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 219374 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 3520C |
| Project#: | 950074.05 | Analysis: | EPA 8015B |
| Field ID: | GGW-4 | Batch#: | 161908 |
| Matrix: | Water | Sampled: | 04/09/10 |
| Units: | ug/L | Received: | 04/09/10 |
| Diln Fac: | 1.000 | Prepared: | 04/12/10 |

| | | | |
|---|---|---|---|
| Type: | SAMPLE | Analyzed: | 04/13/10 |
| Lab ID: | 219374-001 | Cleanup Method: | EPA 3630C |

| Analyte | Result | RL |
|---|---|---|
| Diesel C10-C24 | ND | 50 |

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 107 | 39-150 |

| | | | |
|---|---|---|---|
| Type: | BLANK | Analyzed: | 04/14/10 |
| Lab ID: | QC540074 | Cleanup Method: | EPA 3630C |

| Analyte | Result | RL |
|---|---|---|
| Diesel C10-C24 | ND | 50 |

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 105 | 39-150 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## Total Extractable Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 219374 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 3520C |
| Project#: | 950074.05 | Analysis: | EPA 8015B |
| Type: | LCS | Diln Fac: | 1.000 |
| Lab ID: | QC540075 | Batch#: | 161908 |
| Matrix: | Water | Prepared: | 04/12/10 |
| Units: | ug/L | Analyzed: | 04/14/10 |

Cleanup Method: EPA 3630C

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| Diesel C10-C24 | 2,500 | 2,497 | 100 | 34-144 |

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 112 | 39-150 |

Curtis & Tompkins, Ltd.

# BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 219374 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5030B |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Field ID: | GGW-4 | Batch#: | 161891 |
| Lab ID: | 219374-001 | Sampled: | 04/09/10 |
| Matrix: | Water | Received: | 04/09/10 |
| Units: | ug/L | Analyzed: | 04/12/10 |
| Diln Fac: | 1.000 | | |

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 10 |
| MTBE | ND | 0.5 |
| Isopropyl Ether (DIPE) | ND | 0.5 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 0.5 |
| 1,2-Dichloroethane | ND | 0.5 |
| Benzene | ND | 0.5 |
| Methyl tert-Amyl Ether (TAME) | ND | 0.5 |
| Toluene | ND | 0.5 |
| 1,2-Dibromoethane | ND | 0.5 |
| Ethylbenzene | ND | 0.5 |
| m,p-Xylenes | ND | 0.5 |
| o-Xylene | ND | 0.5 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 108 | 81-124 |
| 1,2-Dichloroethane-d4 | 121 | 73-140 |
| Toluene-d8 | 100 | 88-113 |
| Bromofluorobenzene | 100 | 80-127 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 219374 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5030B |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Matrix: | Water | Batch#: | 161891 |
| Units: | ug/L | Analyzed: | 04/12/10 |
| Diln Fac: | 1.000 | | |

Type: BS Lab ID: QC540016

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| tert-Butyl Alcohol (TBA) | 125.0 | 96.58 | 77 | 36-156 |
| MTBE | 25.00 | 21.27 | 85 | 61-123 |
| Isopropyl Ether (DIPE) | 25.00 | 24.74 | 99 | 54-139 |
| Ethyl tert-Butyl Ether (ETBE) | 25.00 | 22.52 | 90 | 64-133 |
| 1,2-Dichloroethane | 25.00 | 28.92 | 116 | 66-141 |
| Benzene | 25.00 | 26.48 | 106 | 81-122 |
| Methyl tert-Amyl Ether (TAME) | 25.00 | 23.90 | 96 | 73-124 |
| Toluene | 25.00 | 25.88 | 104 | 82-122 |
| 1,2-Dibromoethane | 25.00 | 23.09 | 92 | 81-122 |
| Ethylbenzene | 25.00 | 27.01 | 108 | 86-125 |
| m,p-Xylenes | 50.00 | 54.24 | 108 | 83-127 |
| o-Xylene | 25.00 | 26.69 | 107 | 81-122 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 95 | 81-124 |
| 1,2-Dichloroethane-d4 | 119 | 73-140 |
| Toluene-d8 | 99 | 88-113 |
| Bromofluorobenzene | 94 | 80-127 |

Type: BSD Lab ID: QC540017

| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| tert-Butyl Alcohol (TBA) | 125.0 | 99.93 | 80 | 36-156 | 3 | 23 |
| MTBE | 25.00 | 21.39 | 86 | 61-123 | 1 | 11 |
| Isopropyl Ether (DIPE) | 25.00 | 24.53 | 98 | 54-139 | 1 | 11 |
| Ethyl tert-Butyl Ether (ETBE) | 25.00 | 22.38 | 90 | 64-133 | 1 | 11 |
| 1,2-Dichloroethane | 25.00 | 28.09 | 112 | 66-141 | 3 | 12 |
| Benzene | 25.00 | 25.11 | 100 | 81-122 | 5 | 12 |
| Methyl tert-Amyl Ether (TAME) | 25.00 | 23.25 | 93 | 73-124 | 3 | 11 |
| Toluene | 25.00 | 24.77 | 99 | 82-122 | 4 | 12 |
| 1,2-Dibromoethane | 25.00 | 23.13 | 93 | 81-122 | 0 | 11 |
| Ethylbenzene | 25.00 | 25.79 | 103 | 86-125 | 5 | 12 |
| m,p-Xylenes | 50.00 | 52.03 | 104 | 83-127 | 4 | 13 |
| o-Xylene | 25.00 | 25.88 | 104 | 81-122 | 3 | 12 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 95 | 81-124 |
| 1,2-Dichloroethane-d4 | 118 | 73-140 |
| Toluene-d8 | 99 | 88-113 |
| Bromofluorobenzene | 94 | 80-127 |

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

## BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 219374 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5030B |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Type: | BLANK | Diln Fac: | 1.000 |
| Lab ID: | QC540018 | Batch#: | 161891 |
| Matrix: | Water | Analyzed: | 04/12/10 |
| Units: | ug/L | | |

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 10 |
| MTBE | ND | 0.5 |
| Isopropyl Ether (DIPE) | ND | 0.5 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 0.5 |
| 1,2-Dichloroethane | ND | 0.5 |
| Benzene | ND | 0.5 |
| Methyl tert-Amyl Ether (TAME) | ND | 0.5 |
| Toluene | ND | 0.5 |
| 1,2-Dibromoethane | ND | 0.5 |
| Ethylbenzene | ND | 0.5 |
| m,p-Xylenes | ND | 0.5 |
| o-Xylene | ND | 0.5 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 103 | 81-124 |
| 1,2-Dichloroethane-d4 | 119 | 73-140 |
| Toluene-d8 | 100 | 88-113 |
| Bromofluorobenzene | 100 | 80-127 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# Polynuclear Aromatics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 219374 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 3520C |
| Project#: | 950074.05 | Analysis: | EPA 8270C |
| Field ID: | GGW-4 | Batch#: | 161951 |
| Lab ID: | 219374-001 | Sampled: | 04/09/10 |
| Matrix: | Water | Received: | 04/09/10 |
| Units: | ug/L | Prepared: | 04/13/10 |
| Diln Fac: | 1.000 | Analyzed: | 04/14/10 |

| Analyte | Result | RL |
|---|---|---|
| Naphthalene | ND | 9.9 |
| Acenaphthylene | ND | 9.9 |
| Acenaphthene | ND | 9.9 |
| Fluorene | ND | 9.9 |
| Phenanthrene | ND | 9.9 |
| Anthracene | ND | 9.9 |
| Fluoranthene | ND | 9.9 |
| Pyrene | ND | 9.9 |
| Benzo(a)anthracene | ND | 9.9 |
| Chrysene | ND | 9.9 |
| Benzo(b)fluoranthene | ND | 9.9 |
| Benzo(k)fluoranthene | ND | 9.9 |
| Benzo(a)pyrene | ND | 9.9 |
| Indeno(1,2,3-cd)pyrene | ND | 9.9 |
| Dibenz(a,h)anthracene | ND | 9.9 |
| Benzo(g,h,i)perylene | ND | 9.9 |

| Surrogate | %REC | Limits |
|---|---|---|
| Nitrobenzene-d5 | 48 | 34-113 |
| 2-Fluorobiphenyl | 53 | 36-115 |
| Terphenyl-d14 | 57 | 1-124 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## Polynuclear Aromatics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 219374 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 3520C |
| Project#: | 950074.05 | Analysis: | EPA 8270C |
| Type: | BLANK | Diln Fac: | 1.000 |
| Lab ID: | QC540225 | Batch#: | 161951 |
| Matrix: | Water | Prepared: | 04/13/10 |
| Units: | ug/L | Analyzed: | 04/14/10 |

| Analyte | Result | RL |
|---|---|---|
| Naphthalene | ND | 10 |
| Acenaphthylene | ND | 10 |
| Acenaphthene | ND | 10 |
| Fluorene | ND | 10 |
| Phenanthrene | ND | 10 |
| Anthracene | ND | 10 |
| Fluoranthene | ND | 10 |
| Pyrene | ND | 10 |
| Benzo(a)anthracene | ND | 10 |
| Chrysene | ND | 10 |
| Benzo(b)fluoranthene | ND | 10 |
| Benzo(k)fluoranthene | ND | 10 |
| Benzo(a)pyrene | ND | 10 |
| Indeno(1,2,3-cd)pyrene | ND | 10 |
| Dibenz(a,h)anthracene | ND | 10 |
| Benzo(g,h,i)perylene | ND | 10 |

| Surrogate | %REC | Limits |
|---|---|---|
| Nitrobenzene-d5 | 64 | 34-113 |
| 2-Fluorobiphenyl | 66 | 36-115 |
| Terphenyl-d14 | 83 | 1-124 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## Polynuclear Aromatics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 219374 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 3520C |
| Project#: | 950074.05 | Analysis: | EPA 8270C |
| Matrix: | Water | Batch#: | 161951 |
| Units: | ug/L | Prepared: | 04/13/10 |
| Diln Fac: | 1.000 | Analyzed: | 04/14/10 |

Type: BS Lab ID: QC540226

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| Naphthalene | 30.00 | 16.25 | 54 | 49-111 |
| Acenaphthylene | 30.00 | 18.69 | 62 | 39-135 |
| Acenaphthene | 30.00 | 20.60 | 69 | 45-117 |
| Fluorene | 30.00 | 19.93 | 66 | 51-116 |
| Phenanthrene | 30.00 | 18.88 | 63 | 51-115 |
| Anthracene | 30.00 | 18.52 | 62 | 53-116 |
| Fluoranthene | 30.00 | 17.67 | 59 | 50-115 |
| Pyrene | 30.00 | 25.09 | 84 | 43-131 |
| Benzo(a)anthracene | 30.00 | 19.81 | 66 | 52-115 |
| Chrysene | 30.00 | 19.82 | 66 | 46-125 |
| Benzo(b)fluoranthene | 30.00 | 22.23 | 74 | 43-123 |
| Benzo(k)fluoranthene | 30.00 | 21.91 | 73 | 35-139 |
| Benzo(a)pyrene | 30.00 | 17.73 | 59 | 39-111 |
| Indeno(1,2,3-cd)pyrene | 30.00 | 15.78 | 53 | 26-138 |
| Dibenz(a,h)anthracene | 30.00 | 16.19 | 54 | 31-134 |
| Benzo(g,h,i)perylene | 30.00 | 15.58 | 52 | 27-146 |

| Surrogate | %REC | Limits |
|---|---|---|
| Nitrobenzene-d5 | 57 | 34-113 |
| 2-Fluorobiphenyl | 66 | 36-115 |
| Terphenyl-d14 | 88 | 1-124 |

Type: BSD Lab ID: QC540227

| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| Naphthalene | 30.00 | 15.92 | 53 | 49-111 | 2 | 29 |
| Acenaphthylene | 30.00 | 16.99 | 57 | 39-135 | 10 | 27 |
| Acenaphthene | 30.00 | 18.96 | 63 | 45-117 | 8 | 34 |
| Fluorene | 30.00 | 17.85 | 59 | 51-116 | 11 | 30 |
| Phenanthrene | 30.00 | 16.75 | 56 | 51-115 | 12 | 28 |
| Anthracene | 30.00 | 16.31 | 54 | 53-116 | 13 | 27 |
| Fluoranthene | 30.00 | 15.44 | 51 | 50-115 | 13 | 27 |
| Pyrene | 30.00 | 22.60 | 75 | 43-131 | 10 | 29 |
| Benzo(a)anthracene | 30.00 | 17.79 | 59 | 52-115 | 11 | 29 |
| Chrysene | 30.00 | 17.52 | 58 | 46-125 | 12 | 29 |
| Benzo(b)fluoranthene | 30.00 | 18.79 | 63 | 43-123 | 17 | 34 |
| Benzo(k)fluoranthene | 30.00 | 20.09 | 67 | 35-139 | 9 | 33 |
| Benzo(a)pyrene | 30.00 | 15.60 | 52 | 39-111 | 13 | 31 |
| Indeno(1,2,3-cd)pyrene | 30.00 | 13.39 | 45 | 26-138 | 16 | 33 |
| Dibenz(a,h)anthracene | 30.00 | 13.63 | 45 | 31-134 | 17 | 33 |
| Benzo(g,h,i)perylene | 30.00 | 13.26 | 44 | 27-146 | 16 | 33 |

| Surrogate | %REC | Limits |
|---|---|---|
| Nitrobenzene-d5 | 56 | 34-113 |
| 2-Fluorobiphenyl | 62 | 36-115 |
| Terphenyl-d14 | 79 | 1-124 |

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

## Total Dissolved Solids (TDS)

| | | | |
|---|---|---|---|
| Lab #: | 219374 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | METHOD |
| Project#: | 950074.05 | Analysis: | SM2540C |
| Analyte: | Total Dissolved Solids | Batch#: | 161943 |
| Field ID: | GGW-4 | Sampled: | 04/09/10 |
| Matrix: | Water | Received: | 04/09/10 |
| Units: | mg/L | Prepared: | 04/13/10 |
| Diln Fac: | 1.000 | Analyzed: | 04/14/10 |

| Type | Lab ID | Result | RL |
|---|---|---|---|
| SAMPLE | 219374-001 | 690 | 10 |
| BLANK | QC540194 | ND | 10 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## Total Dissolved Solids (TDS)

| | | | |
|---|---|---|---|
| Lab #: | 219374 | Location: | 6601 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | METHOD |
| Project#: | 950074.05 | Analysis: | SM2540C |
| Analyte: | Total Dissolved Solids | Batch#: | 161943 |
| Field ID: | ZZZZZZZZZZ | Sampled: | 04/07/10 |
| MSS Lab ID: | 219303-040 | Received: | 04/07/10 |
| Matrix: | Water | Prepared: | 04/13/10 |
| Units: | mg/L | Analyzed: | 04/14/10 |

| Type | Lab ID | MSS Result | Spiked | Result | RL | %REC | Limits | RPD | Lim | Diln Fac |
|---|---|---|---|---|---|---|---|---|---|---|
| BS | QC540195 | | 104.0 | 96.00 | | 92 | 75-106 | | | 1.000 |
| BSD | QC540196 | | 104.0 | 94.00 | | 90 | 75-106 | 2 | 15 | 1.000 |
| SDUP | QC540197 | 1,633 | | 1,648 | 12.50 | | | 1 | 12 | 1.250 |

RL= Reporting Limit
RPD= Relative Percent Difference


Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

**Laboratory Job Number 219372**
**ANALYTICAL REPORT**

| | |
|---|---|
| Erler & Kalinowski, Inc. | Project : 950074.05 |
| 1870 Ogden Drive | Location : 6601-6603 Bay Street |
| Burlingame, CA 94010-5306 | Level : II |

| Sample ID | Lab ID |
|---|---|
| SB-8-4.5-5 | 219372-001 |
| SB-8-13-13.5 | 219372-002 |
| SB-8-17.5-18 | 219372-003 |
| SB-7-5-5.5 | 219372-004 |
| SB-7-8-8.5 | 219372-005 |
| SB-7-13-13.5 | 219372-006 |
| SB-7-20.5-21 | 219372-007 |
| SB-9-5-5.5 | 219372-008 |
| SB-9-9-9.5 | 219372-009 |
| SB-9-12.5-13 | 219372-010 |
| SB-9-19-19.5 | 219372-011 |

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: Trig Bolton Date: 04/19/2010
Project Manager

NELAP # 01107CA

Curtis & Tompkins, Ltd.

# CASE NARRATIVE

| | |
|---|---|
| Laboratory number: | **219372** |
| Client: | **Erler & Kalinowski, Inc.** |
| Project: | **950074.05** |
| Location: | **6601-6603 Bay Street** |
| Request Date: | **04/09/10** |
| Samples Received: | **04/09/10** |

This data package contains sample and QC results for eleven soil samples, requested for the above referenced project on 04/09/10. The samples were received cold and intact.

**TPH-Purgeables and/or BTXE by GC (EPA 8015B):**
No analytical problems were encountered.

**TPH-Extractables by GC (EPA 8015B):**
Matrix spikes QC540200,QC540201 (batch 161944) were not reported because the parent sample required a dilution that would have diluted out the spikes. Many samples were diluted due to the dark and viscous nature of the sample extracts. No other analytical problems were encountered.

**Volatile Organics by GC/MS (EPA 8260B):**
Matrix spikes were not performed for this analysis in batch 162048 because matrix or site history indicated the recoveries would be non-meaningful. Low recoveries were observed for 1,2-dibromoethane in the MS/MSD for batch 161890; the parent sample was not a project sample, the LCS was within limits, and the associated RPD was within limits. SB-7-8-8.5 (lab # 219372-005) and SB-9-9-9.5 (lab # 219372-009) were diluted due to high hydrocarbons. No other analytical problems were encountered.

**Semivolatile Organics by GC/MS (EPA 8270C):**
SB-9-12.5-13 (lab # 219372-010) was diluted due to the dark and viscous nature of the sample extract. No other analytical problems were encountered.

**Moisture (ASTM D2216/CLP):**
No analytical problems were encountered.

219372

**Erler & Kalinowski, Inc.**

# CHAIN OF CUSTODY RECORD



CONSULTING ENGINEERS AND SCIENTISTS 1870 Ogden Drive, Burlingame CA 94010 PHONE: 650-292-9100 FAX: 650-552-9012

| | |
|---|---|
| **Project Name**: 6601-6603 Bay Street | **Project No.**: 950074.05 |
| **Location:** 6601-6603 Shellmound Street, Emeryville, CA | **Sampled By:** AG Abeles |
| **Reporting:** Electronic Format: EDF Hard Copy Format: PDF; EPA Data Report Level: II; Please report results to the following: (1) Michelle King: mking@ekiconsult.com (2) Cindy Cheng: ccheng@ekiconsult.com (3) Jeff Shaw: jshaw@ekiconsult.com | **Laboratory:** Curtis & Tompkins, LTD, 2323 Fifth Street, Berkeley, CA 94710, (510) 486-0900, attn: Tracy Babjar / John Goyette |

**EKI COC No.:** (YYYYMMDD-#) 20100409-1

Revision: _____ (A, B, C, D, etc.) Date: By:

**ANALYSES REQUESTED**

| Method No. | 8260B | 8015M | 8015M | 8270 | | | Field Filtered with 0.45-micron filter | PLACE ON HOLD | EXPECTED TURNAROUND TIME | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| Analyte Group | BTEX + Oxygenates + EDC + EDB | TPH-gasoline | TPH-diesel | PAHs | Percent Moisture | | | | | |

| | Field Sample Identification | Lab Sample No. | Date | Time | Matrix | No./Type of Containers | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SB-8-4.5-5 | | 4/9/2010 | 0915 | Soil | 3x 5g Encores | X | | | | | | | STD | |
| | | | | | | 3x 5g Encores | | X | | | | | | | |
| | | | | | | 8-oz soil sample jar | | | X | X | X | | | | |
| 2 | SB-8-13-13.5 | | " | 0930 | " | 3x 5g Encores | X | | | | | | | STD | |
| | | | | | | 3x 5g Encores | | X | | | | | | | |
| | | | | | | 8-oz soil sample jar | | | X | X | X | | | | |
| 3 | SB-8-17.5-18 | | " | 0950 | " | 3x 5g Encores | X | | | | | | | STD | |
| | | | | | | 3x 5g Encores | | X | | | | | | | |
| | | | | | | 8-oz soil sample jar | | | X | X | X | | | | |
| 4 | SB-7-5-5.5 | | " | 1007 | " | 3x 5g Encores | X | | | | | | | STD | |
| | | | | | | 3x 5g Encores | | X | | | | | | | |
| | | | | | | 8-oz soil sample jar | | | X | X | X | | | | |
| 5 | SB-7-8-8.5 | | " | 1010 | " | 3x 5g Encores | X | | | | | | | STD | |
| | | | | | | 3x 5g Encores | | X | | | | | | | |
| | | | | | | 8-oz soil sample jar | | | X | X | X | | | | |

**Special Instructions:** Report all Results as Dry Weight.

| | | | |
|---|---|---|---|
| **Relinquished by:** (Signature/Affiliation) AG Abeles EKI | Date 4/9/2010 | Time 1430 | **Received by:** (Signature/Affiliation or Carrier/Air Bill No.) |
| **Relinquished by:** (Signature/Affiliation) | Date 4/9/10 | Time 1523 | **Received by:** (Signature/Affiliation) |
| **Relinquished by:** (Signature/Affiliation) | Date | Time | **Received by:** (Signature/Affiliation) |

219372

**Erler & Kalinowski, Inc.**
CONSULTING ENGINEERS AND SCIENTISTS

# CHAIN OF CUSTODY RECORD



1870 Ogden Drive, Burlingame CA 94010 PHONE: 650-292-9100 FAX: 650-552-9012

**Project Name:** 6601-6603 Bay Street
**Project No.:** 950074.05
**Location:** 6601-6603 Shellmound Street, Emeryville, CA
**Sampled By:** AG Abeles
**Reporting:**
Electronic Format: EDF Hard Copy Format: PDF
EPA Data Report Level: II
Please report results to the following:
(1) Michelle King: mkking@ekiconsult.com
(2) Cindy Cheng: ccheng@ekiconsult.com
(3) Jeff Shaw: jshaw@ekiconsult.com

**Laboratory:**
Curtis & Tompkins, LTD
2323 Fifth Street,
Berkeley, CA 94710
(510) 486-0900
attn: Tracy Babjar / John Goyette

**ANALYSES REQUESTED**

**EKI COC No.:** (YYYYMMDD-#) 20100409-1
Revision: _____ (A, B, C, D, etc.)
Date: By:

| Field Sample Identification | Lab Sample No. | Date | Time | Matrix | No./Type of Containers | Method No. / Analyte Group: 8260B + BTEX + Oxygenates + EDC + EDB | 8015M TPH-gasoline | 8015M TPH-diesel | 8270 PAHs | Percent Moisture | | Field Filtered with 0.45-micron filter | PLACE ON HOLD | EXPECTED TURNAROUND TIME | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 SB-7-13-13.5 | | 4/09/2010 | 1020 | Soil | 3x 5g Encores | X | | | | | | | | STD | |
| | | | | | 3x 5g Encores | | X | | | | | | | | |
| | | | | | 8-oz soil sample jar | | | X | X | X | | | | | |
| 7 SB-7-20.5-21 | | | 1028 | Soil | 3x 5g Encores | X | | | | | | | | STD | |
| | | | | | 3x 5g Encores | | X | | | | | | | | |
| | | | | | 8-oz soil sample jar | | | X | X | X | | | | | |
| 8 SB-9-5-5.5 | | | ~~1330~~ 1310 | Soil | 3x 5g Encores | X | | | | | | | | STD | |
| | | | | | 3x 5g Encores | | X | | | | | | | | |
| | | | | | 8-oz soil sample jar | | | X | X | X | | | | | |
| 9 SB-9-9-9.5 | | | 1330 | Soil | 3x 5g Encores | X | | | | | | | | STD | |
| | | | | | 3x 5g Encores | | X | | | | | | | | |
| | | | | | 8-oz soil sample jar | | | X | X | X | | | | | |
| 10 SB-9-12.5-13 | | | 1340 | Soil | 3x 5g Encores | X | | | | | | | | STD | |
| | | | | | 3x 5g Encores | | X | | | | | | | | |
| | | | | | 8-oz soil sample jar | | | X | X | X | | | | | |

**Special Instructions:** Please Report all results as dry weight.

| | | | |
|---|---|---|---|
| **Relinquished by:** (Signature/Affiliation) | Date: 4/9/2010 | Time: 1430 | **Received by:** (Signature/Affiliation or Carrier/Air Bill No.) |
| **Relinquished by:** (Signature/Affiliation) | Date: 4/9/10 | Time: 1523 | **Received by:** (Signature/Affiliation) |
| **Relinquished by:** (Signature/Affiliation) | Date: | Time: | **Received by:** (Signature/Affiliation) |

=FieldDataForms-JRS-20100209.xlsxWater

219372

**Erler & Kalinowski, Inc.**

# CHAIN OF CUSTODY RECORD

PAGE 3 OF 3

CONSULTING ENGINEERS AND SCIENTISTS | 1870 Ogden Drive, Burlingame CA 94010 | PHONE: 650-292-9100 | FAX: 650-552-9012

| | |
|---|---|
| **Project Name**<br>6601-6603 Bay Street | **Project No.**<br>950074.05 |
| **Location:**<br>6601-6603 Shellmound Street, Emeryville, CA | **Sampled By:** AG Aleles |
| **Reporting:**<br>Electronic Format: EDF Hard Copy Format: PDF<br>EPA Data Report Level: II<br>Please report results to the following:<br>(1) Michelle King: mkking@ekiconsult.com<br>(2) Cindy Cheng: ccheng@ekiconsult.com<br>(3) Jeff Shaw: jshaw@ekiconsult.com | **Laboratory:**<br>Curtis & Tompkins, LTD<br>2323 Fifth Street,<br>Berkeley, CA 94710<br>(510) 486-0900<br>attn: Tracy Babjar / John Goyette |

**ANALYSES REQUESTED**

| Method No. | 8260B | 8015M | 8015M | 8270 | Percent Moisture | | Field Filtered with 0.45-micron filter | PLACE ON HOLD |
|---|---|---|---|---|---|---|---|---|
| Analyte Group | BTEX + Oxygenates + EDC + EDB | TPH-gasoline | TPH-diesel | PAHs | | | | |

**EKI COC No.:** (YYYYMMDD-#) 20100409-1

Revision: _____ (A, B, C, D, etc.)

Date: By:

| Field Sample Identification | Lab Sample No. | Date | Time | Matrix | No./Type of Containers | EXPECTED TURNAROUND TIME | Remarks |
|---|---|---|---|---|---|---|---|
| 11 SB-9-19-19.5 | | 4/09/2010 | 1346 | Soil | 3x 5g Encores<br>3x 5g Encores<br>8-oz soil sample jar | STD | |
| | | | | | 3x 5g Encores<br>3x 5g Encores<br>-oz soil sample jar | | |
| | | | | | 3x 5g Encores<br>3x 5g Encores<br>-oz soil sample jar | | |
| | | | | | 3x 5g Encores<br>3x 5g Encores<br>-oz soil sample jar | | |
| | | | | | 3x 5g Encores<br>3x 5g Encores<br>-oz soil sample jar | | |

**Special Instructions:**
Please Report all Results as Dry Weight

| | | | | | |
|---|---|---|---|---|---|
| **Relinquished by:** | (Signature/Affiliation) EKI | Date 4/9/2010 | Time 1436 | **Received by:** | (Signature/Affiliation or Carrier/Air Bill No.) |
| **Relinquished by:** | (Signature/Affiliation) | Date 4/9/10 | Time 1523 | **Received by:** | (Signature/Affiliation) |
| **Relinquished by:** | (Signature/Affiliation) | Date | Time | **Received by:** | (Signature/Affiliation) |

=FieldDataForms-JRS-20100209.xlsxWater

**COOLER RECEIPT CHECKLIST** Curtis & Tompkins, Ltd.

Login # 219372 Date Received 4/9/10 Number of coolers 2
Client EKI Project 6601-6603 BAY STREET

Date Opened 4/9/10 By (print) M. VILLANUEVA (sign)
Date Logged in [illegible] By (print) [illegible] (sign) [illegible]

1. Did cooler come with a shipping slip (airbill, etc) YES (NO)
Shipping info

2A. Were custody seals present? ... ☐ YES (circle) on cooler on samples ☐ (NO)
How many Name Date
2B. Were custody seals intact upon arrival? YES NO (N/A)
3. Were custody papers dry and intact when received? (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) (YES) NO
6. Indicate the packing in cooler: (if other, describe)

☐ Bubble Wrap ☐ Foam blocks ☑ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation:

Type of ice used: ☑ Wet ☐ Blue/Gel ☐ None Temp(°C)

☑ Samples Received on ice & cold without a temperature blank

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? (YES) NO
If YES, what time were they transferred to freezer? 1600
9. Did all bottles arrive unbroken/unopened? (YES) NO
10. Are samples in the appropriate containers for indicated tests? (YES) NO
11. Are sample labels present, in good condition and complete? (YES) NO
12. Do the sample labels agree with custody papers? (YES) NO
13. Was sufficient amount of sample sent for tests requested? (YES) NO
14. Are the samples appropriately preserved? YES NO (N/A)
15. Are bubbles > 6mm absent in VOA samples? YES NO (N/A)
16. Was the client contacted concerning this sample delivery? YES (NO)
If YES, Who was called? By Date:

COMMENTS

Curtis & Tompkins, Ltd.

## Gasoline by GC/FID (5035 Prep)

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5035 |
| Project#: | 950074.05 | Analysis: | EPA 8015B |
| Matrix: | Soil | Sampled: | 04/09/10 |
| Units: | mg/Kg | Received: | 04/09/10 |
| Basis: | dry | | |

| | | | |
|---|---|---|---|
| Field ID: | SB-8-4.5-5 | Diln Fac: | 1.000 |
| Type: | SAMPLE | Batch#: | 161874 |
| Lab ID: | 219372-001 | Analyzed: | 04/11/10 |
| Moisture: | 11% | | |

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | 0.19 Y | 0.18 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 103 | 38-168 |
| Bromofluorobenzene (FID) | 103 | 27-175 |

| | | | |
|---|---|---|---|
| Field ID: | SB-8-13-13.5 | Diln Fac: | 1.000 |
| Type: | SAMPLE | Batch#: | 161874 |
| Lab ID: | 219372-002 | Analyzed: | 04/11/10 |
| Moisture: | 17% | | |

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | 0.77 Y | 0.33 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 104 | 38-168 |
| Bromofluorobenzene (FID) | 98 | 27-175 |

| | | | |
|---|---|---|---|
| Field ID: | SB-8-17.5-18 | Diln Fac: | 1.000 |
| Type: | SAMPLE | Batch#: | 161874 |
| Lab ID: | 219372-003 | Analyzed: | 04/11/10 |
| Moisture: | 21% | | |

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | ND | 0.21 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 99 | 38-168 |
| Bromofluorobenzene (FID) | 98 | 27-175 |

| | | | |
|---|---|---|---|
| Field ID: | SB-7-5-5.5 | Diln Fac: | 1.000 |
| Type: | SAMPLE | Batch#: | 161874 |
| Lab ID: | 219372-004 | Analyzed: | 04/11/10 |
| Moisture: | 28% | | |

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | ND | 0.23 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 100 | 38-168 |
| Bromofluorobenzene (FID) | 98 | 27-175 |

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

## Gasoline by GC/FID (5035 Prep)

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5035 |
| Project#: | 950074.05 | Analysis: | EPA 8015B |
| Matrix: | Soil | Sampled: | 04/09/10 |
| Units: | mg/Kg | Received: | 04/09/10 |
| Basis: | dry | | |

| | | | |
|---|---|---|---|
| Field ID: | SB-7-8-8.5 | Diln Fac: | 10.00 |
| Type: | SAMPLE | Batch#: | 161906 |
| Lab ID: | 219372-005 | Analyzed: | 04/13/10 |
| Moisture: | 13% | | |

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | 160 Y | 11 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 134 | 38-168 |
| Bromofluorobenzene (FID) | 142 | 27-175 |

| | | | |
|---|---|---|---|
| Field ID: | SB-7-13-13.5 | Diln Fac: | 1.000 |
| Type: | SAMPLE | Batch#: | 161874 |
| Lab ID: | 219372-006 | Analyzed: | 04/11/10 |
| Moisture: | 17% | | |

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | 1.5 | 0.22 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 137 | 38-168 |
| Bromofluorobenzene (FID) | 131 | 27-175 |

| | | | |
|---|---|---|---|
| Field ID: | SB-7-20.5-21 | Diln Fac: | 1.000 |
| Type: | SAMPLE | Batch#: | 161874 |
| Lab ID: | 219372-007 | Analyzed: | 04/11/10 |
| Moisture: | 16% | | |

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | ND | 0.18 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 102 | 38-168 |
| Bromofluorobenzene (FID) | 103 | 27-175 |

| | | | |
|---|---|---|---|
| Field ID: | SB-9-5-5.5 | Diln Fac: | 1.000 |
| Type: | SAMPLE | Batch#: | 161874 |
| Lab ID: | 219372-008 | Analyzed: | 04/11/10 |
| Moisture: | 13% | | |

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | ND | 0.22 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 104 | 38-168 |
| Bromofluorobenzene (FID) | 97 | 27-175 |

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

## Gasoline by GC/FID (5035 Prep)

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5035 |
| Project#: | 950074.05 | Analysis: | EPA 8015B |
| Matrix: | Soil | Sampled: | 04/09/10 |
| Units: | mg/Kg | Received: | 04/09/10 |
| Basis: | dry | | |

| | | | |
|---|---|---|---|
| Field ID: | SB-9-9-9.5 | Diln Fac: | 5.000 |
| Type: | SAMPLE | Batch#: | 161906 |
| Lab ID: | 219372-009 | Analyzed: | 04/13/10 |
| Moisture: | 14% | | |

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | 140 Y | 5.8 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 120 | 38-168 |
| Bromofluorobenzene (FID) | 164 | 27-175 |

| | | | |
|---|---|---|---|
| Field ID: | SB-9-12.5-13 | Diln Fac: | 5.000 |
| Type: | SAMPLE | Batch#: | 161906 |
| Lab ID: | 219372-010 | Analyzed: | 04/13/10 |
| Moisture: | 17% | | |

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | 98 Y | 6.0 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 111 | 38-168 |
| Bromofluorobenzene (FID) | 146 | 27-175 |

| | | | |
|---|---|---|---|
| Field ID: | SB-9-19-19.5 | Diln Fac: | 1.000 |
| Type: | SAMPLE | Batch#: | 161874 |
| Lab ID: | 219372-011 | Analyzed: | 04/11/10 |
| Moisture: | 23% | | |

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | ND | 0.23 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 104 | 38-168 |
| Bromofluorobenzene (FID) | 108 | 27-175 |

| | | | |
|---|---|---|---|
| Type: | BLANK | Batch#: | 161874 |
| Lab ID: | QC539937 | Analyzed: | 04/10/10 |
| Diln Fac: | 1.000 | | |

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | ND | 0.20 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 100 | 38-168 |
| Bromofluorobenzene (FID) | 98 | 27-175 |

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

## Gasoline by GC/FID (5035 Prep)

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5035 |
| Project#: | 950074.05 | Analysis: | EPA 8015B |
| Matrix: | Soil | Sampled: | 04/09/10 |
| Units: | mg/Kg | Received: | 04/09/10 |
| Basis: | dry | | |

| | | | |
|---|---|---|---|
| Type: | BLANK | Batch#: | 161906 |
| Lab ID: | QC540065 | Analyzed: | 04/12/10 |
| Diln Fac: | 1.000 | | |

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | ND | 0.20 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 101 | 38-168 |
| Bromofluorobenzene (FID) | 100 | 27-175 |

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## Gasoline by GC/FID (5035 Prep)

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5035 |
| Project#: | 950074.05 | Analysis: | EPA 8015B |
| Type: | LCS | Diln Fac: | 1.000 |
| Lab ID: | QC539938 | Batch#: | 161874 |
| Matrix: | Soil | Analyzed: | 04/10/10 |
| Units: | mg/Kg | | |

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| Gasoline C7-C12 | 1.000 | 0.9435 | 94 | 74-123 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 116 | 38-168 |
| Bromofluorobenzene (FID) | 100 | 27-175 |

Curtis & Tompkins, Ltd.

Batch QC Report

## Gasoline by GC/FID (5035 Prep)

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5035 |
| Project#: | 950074.05 | Analysis: | EPA 8015B |
| Field ID: | ZZZZZZZZZZ | Diln Fac: | 1.000 |
| MSS Lab ID: | 219364-006 | Batch#: | 161874 |
| Matrix: | Soil | Sampled: | 04/08/10 |
| Units: | mg/Kg | Received: | 04/09/10 |
| Basis: | as received | Analyzed: | 04/10/10 |

Type: MS Lab ID: QC539939

| Analyte | MSS Result | Spiked | Result | %REC | Limits |
|---|---|---|---|---|---|
| Gasoline C7-C12 | 0.7046 | 9.615 | 9.881 | 95 | 14-138 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 131 | 38-168 |
| Bromofluorobenzene (FID) | 105 | 27-175 |

Type: MSD Lab ID: QC539940

| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| Gasoline C7-C12 | 9.615 | 9.709 | 94 | 14-138 | 2 | 52 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 136 | 38-168 |
| Bromofluorobenzene (FID) | 105 | 27-175 |

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

## Gasoline by GC/FID (5035 Prep)

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5035 |
| Project#: | 950074.05 | Analysis: | EPA 8015B |
| Type: | LCS | Diln Fac: | 1.000 |
| Lab ID: | QC540066 | Batch#: | 161906 |
| Matrix: | Soil | Analyzed: | 04/12/10 |
| Units: | mg/Kg | | |

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| Gasoline C7-C12 | 1.000 | 0.9530 | 95 | 74-123 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 109 | 38-168 |
| Bromofluorobenzene (FID) | 100 | 27-175 |

Curtis & Tompkins, Ltd.

Batch QC Report

## Gasoline by GC/FID (5035 Prep)

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5035 |
| Project#: | 950074.05 | Analysis: | EPA 8015B |
| Field ID: | ZZZZZZZZZZ | Diln Fac: | 1.000 |
| MSS Lab ID: | 219369-020 | Batch#: | 161906 |
| Matrix: | Soil | Sampled: | 04/01/10 |
| Units: | mg/Kg | Received: | 04/02/10 |
| Basis: | as received | Analyzed: | 04/12/10 |

Type: MS Lab ID: QC540067

| Analyte | MSS Result | Spiked | Result | %REC | Limits |
|---|---|---|---|---|---|
| Gasoline C7-C12 | 0.07791 | 10.20 | 9.106 | 88 | 14-138 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 130 | 38-168 |
| Bromofluorobenzene (FID) | 102 | 27-175 |

Type: MSD Lab ID: QC540068

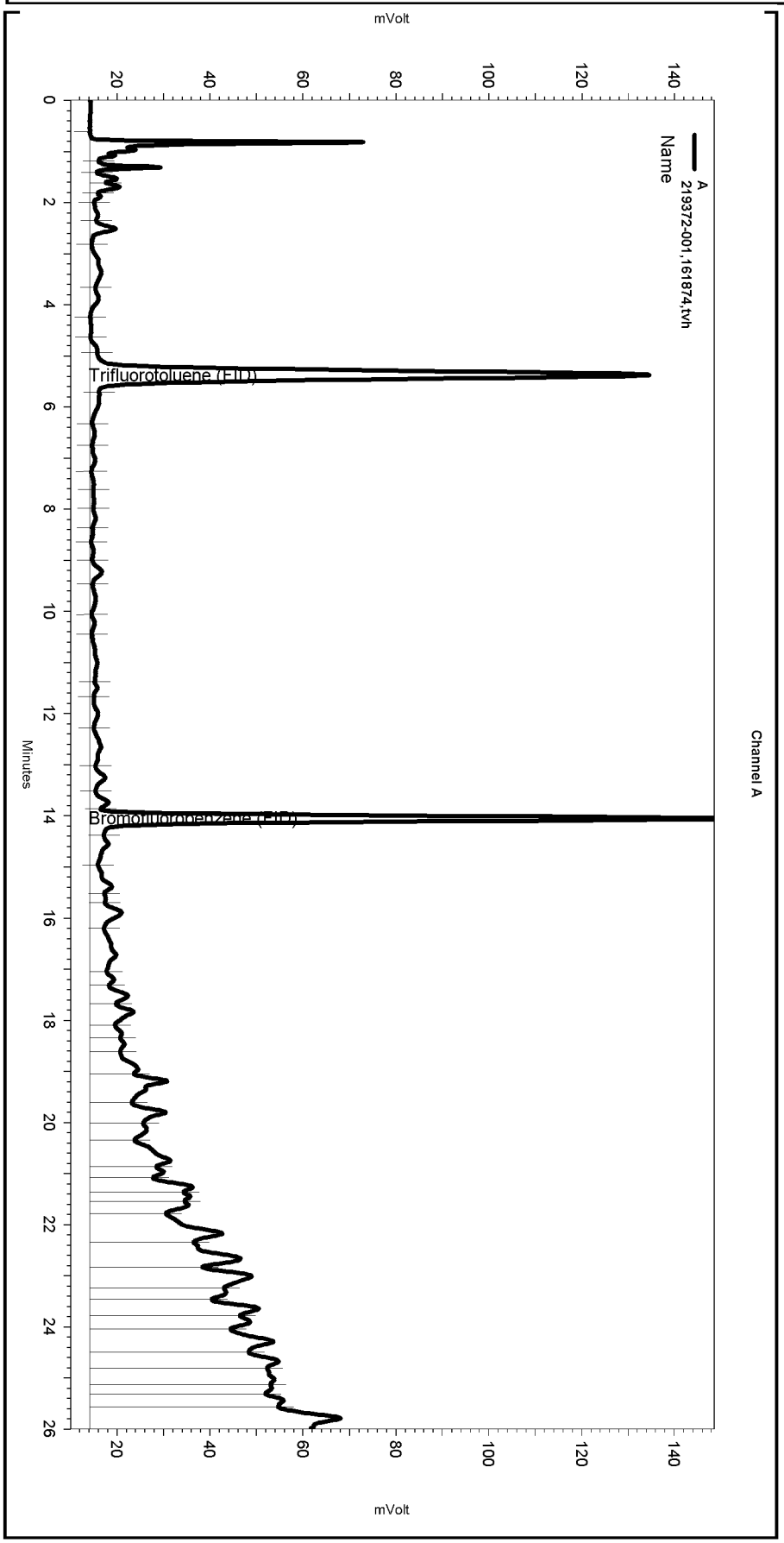
| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| Gasoline C7-C12 | 9.901 | 8.696 | 87 | 14-138 | 2 | 52 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 127 | 38-168 |
| Bromofluorobenzene (FID) | 104 | 27-175 |

RPD= Relative Percent Difference

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC19\Sequence\100.seq**
Sample Name: **219372-001,161874,tvh**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC19\Data\100_012**
Instrument: GC19 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC19\Method\tvhbtxe091.met

Software Version 3.1.7
Run Date: 4/11/2010 2:16:58 AM
Analysis Date: 4/12/2010 10:59:17 AM
Sample Amount: 6.1 Multiplier: 6.1
Vial & pH or Core ID: a




---< General Method Parameters >---

No items selected for this section

---< A >---

No items selected for this section

Integration Events

| Enabled | Event Type | Start (Minutes) | Stop (Minutes) | Value |
|---|---|---|---|---|
| Yes | Width | 0 | 0 | 0.2 |
| Yes | Threshold | 0 | 0 | 50 |

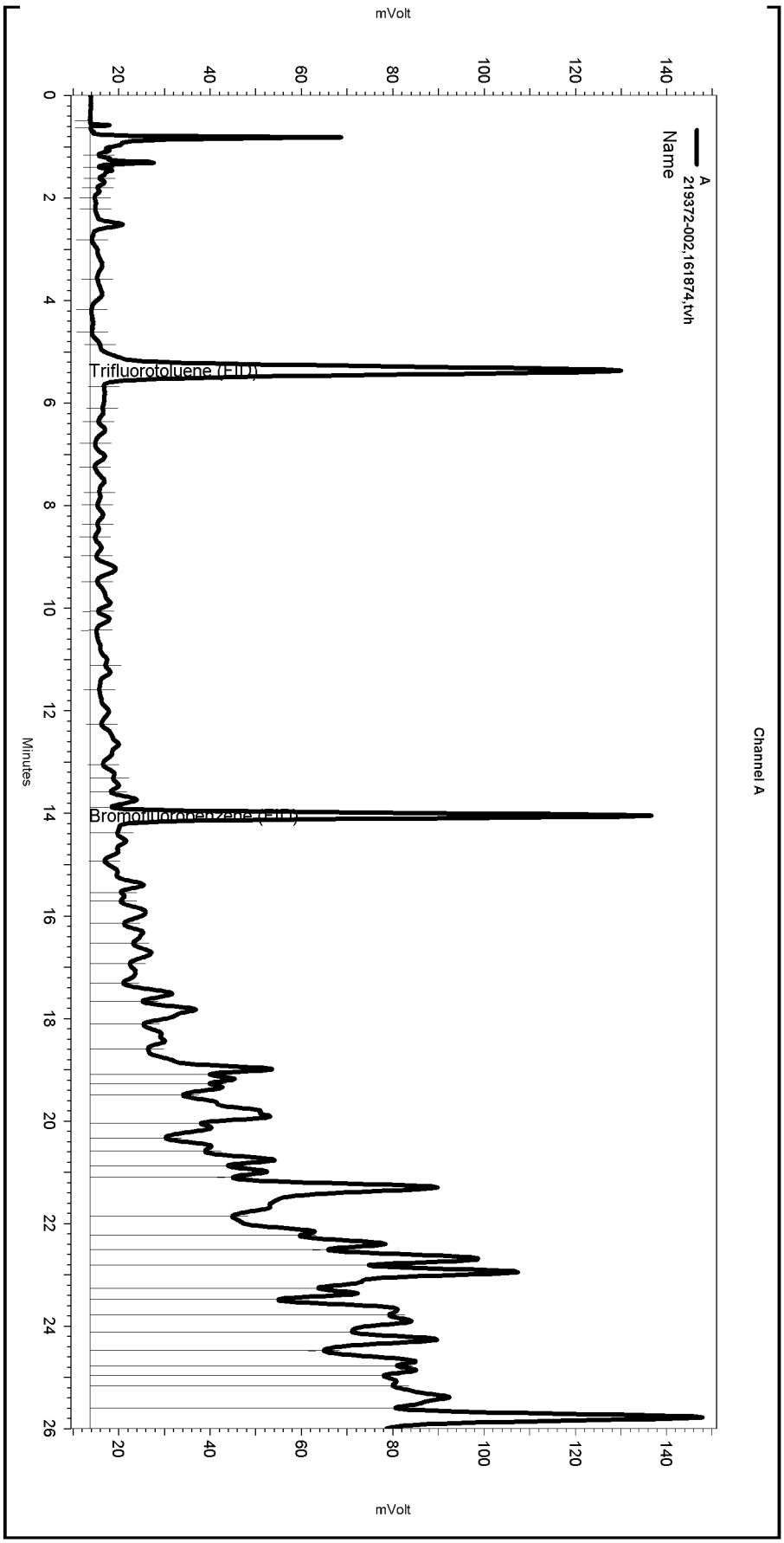
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC19\Data\100_012

| Enabled | Event Type | Start (Minutes) | Stop (Minutes) | Value |
|---|---|---|---|---|
| Yes | Lowest Point Horizontal Baseli | 0 | 26.017 | 0 |
| Yes | Split Peak | 4.937 | 0 | 0 |

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC19\Sequence\100.seq**
Sample Name: **219372-002,161874,tvh**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC19\Data\100_015**
Instrument: GC19 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC19\Method\tvhbtxe091.met

Software Version 3.1.7
Run Date: 4/11/2010 4:09:44 AM
Analysis Date: 4/12/2010 11:28:06 AM
Sample Amount: 3.7 Multiplier: 3.7
Vial & pH or Core ID: a




---< General Method Parameters >---

No items selected for this section

---< A >---

No items selected for this section

Integration Events

| Enabled | Event Type | Start (Minutes) | Stop (Minutes) | Value |
|---|---|---|---|---|
| Yes | Width | 0 | 0 | 0.2 |
| Yes | Threshold | 0 | 0 | 50 |

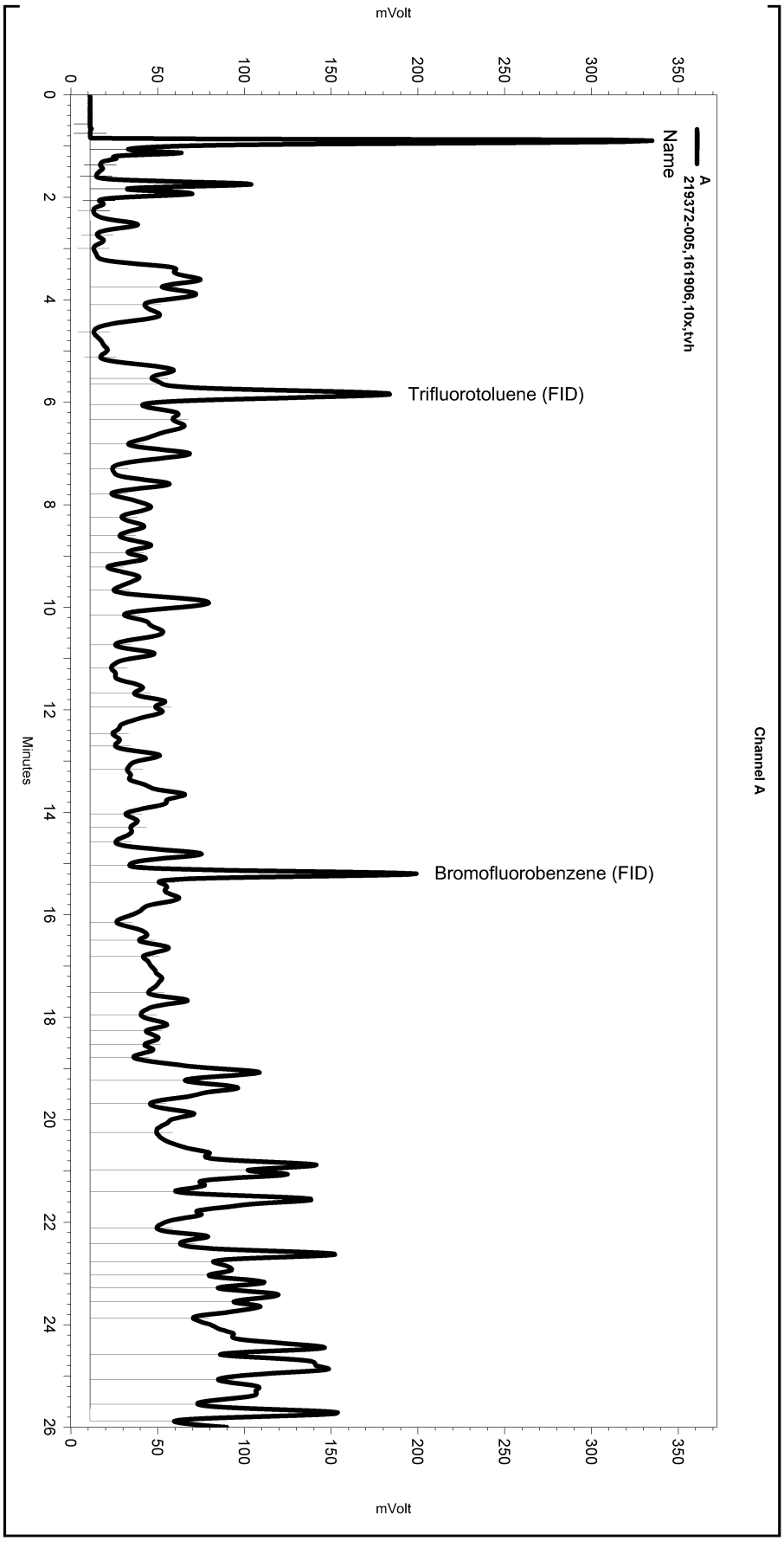
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC19\Data\100_015

| Enabled | Event Type | Start (Minutes) | Stop (Minutes) | Value |
|---|---|---|---|---|
| Yes | Lowest Point Horizontal Baseli | 0 | 26.017 | 0 |
| Yes | Split Peak | 4.874 | 0 | 0 |

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC07\Sequence\102.seq**
Sample Name: **219372-005,161906,10x,tvh**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC07\Data\102_030**
Instrument: GC07 (Offline) Vial: N/A Operator: RSK-175 Analyst (lims2k3\rsk175)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC07\Method\tvhbtxe091.met

Software Version 3.1.7
Run Date: 4/13/2010 7:02:54 AM
Analysis Date: 4/13/2010 1:05:05 PM
Sample Amount: 1 Multiplier: 1
Vial & pH or Core ID: a




---< General Method Parameters >---

No items selected for this section

---< A >---

No items selected for this section

Integration Events

| Enabled | Event Type | Start (Minutes) | Stop (Minutes) | Value |
|---|---|---|---|---|
| Yes | Width | 0 | 0 | 0.2 |
| Yes | Threshold | 0 | 0 | 50 |

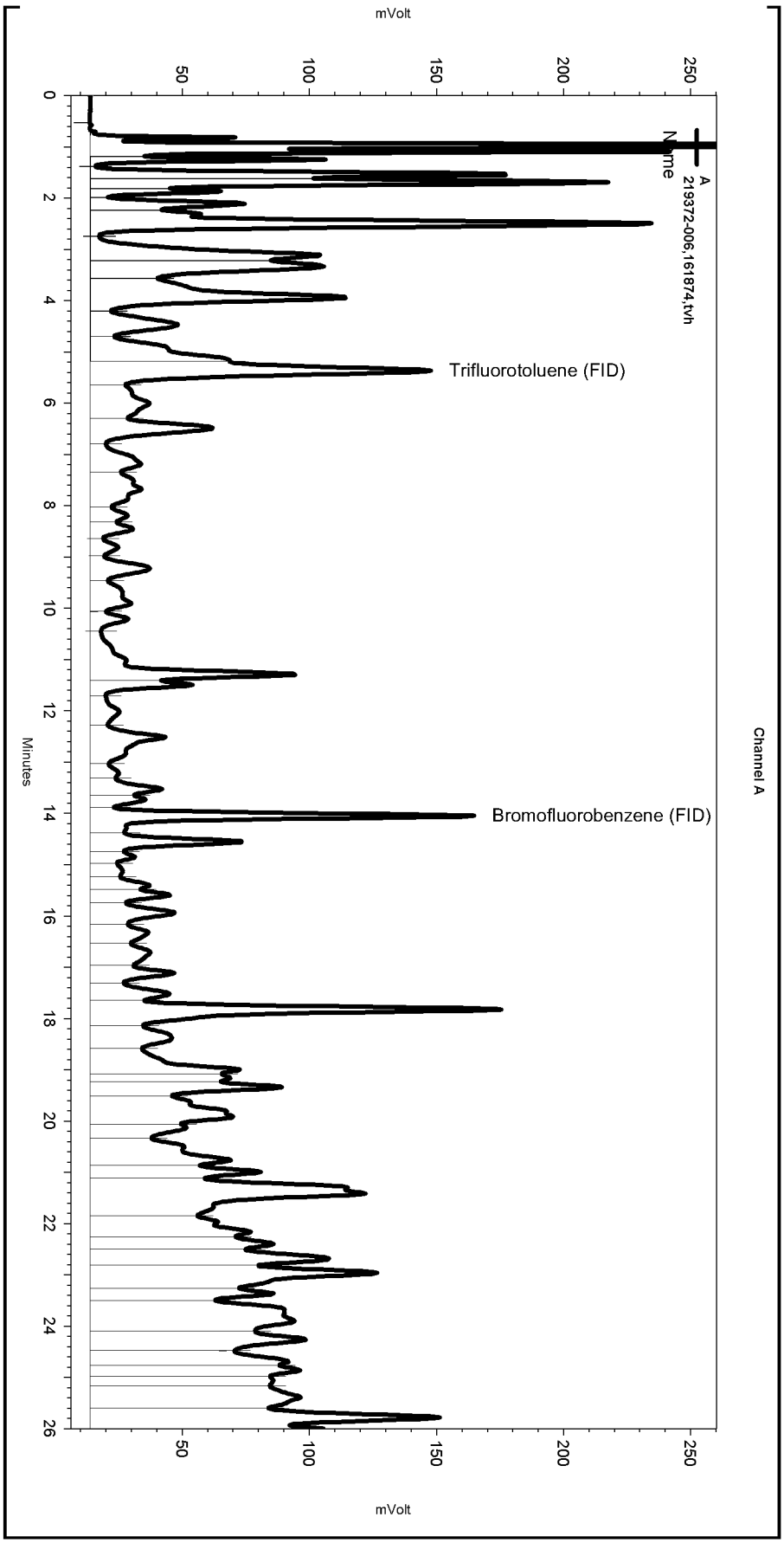
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC07\Data\102_030

| Enabled | Event Type | Start (Minutes) | Stop (Minutes) | Value |
|---|---|---|---|---|
| Yes | Lowest Point Horizontal Baseli | 0 | 26.017 | 0 |
| Yes | Split Peak | 5.645 | 0 | 0 |

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC19\Sequence\100.seq**
Sample Name: **219372-006,161874,tvh**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC19\Data\100_019**
Instrument: GC19 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC19\Method\tvhbtxe091.met

Software Version 3.1.7
Run Date: 4/11/2010 6:40:03 AM
Analysis Date: 4/12/2010 11:28:33 AM
Sample Amount: 5.59 Multiplier: 5.59
Vial & pH or Core ID: a




---< General Method Parameters >---

No items selected for this section

---< A >---

No items selected for this section

Integration Events

| Enabled | Event Type | Start (Minutes) | Stop (Minutes) | Value |
|---|---|---|---|---|
| Yes | Width | 0 | 0 | 0.2 |
| Yes | Threshold | 0 | 0 | 50 |

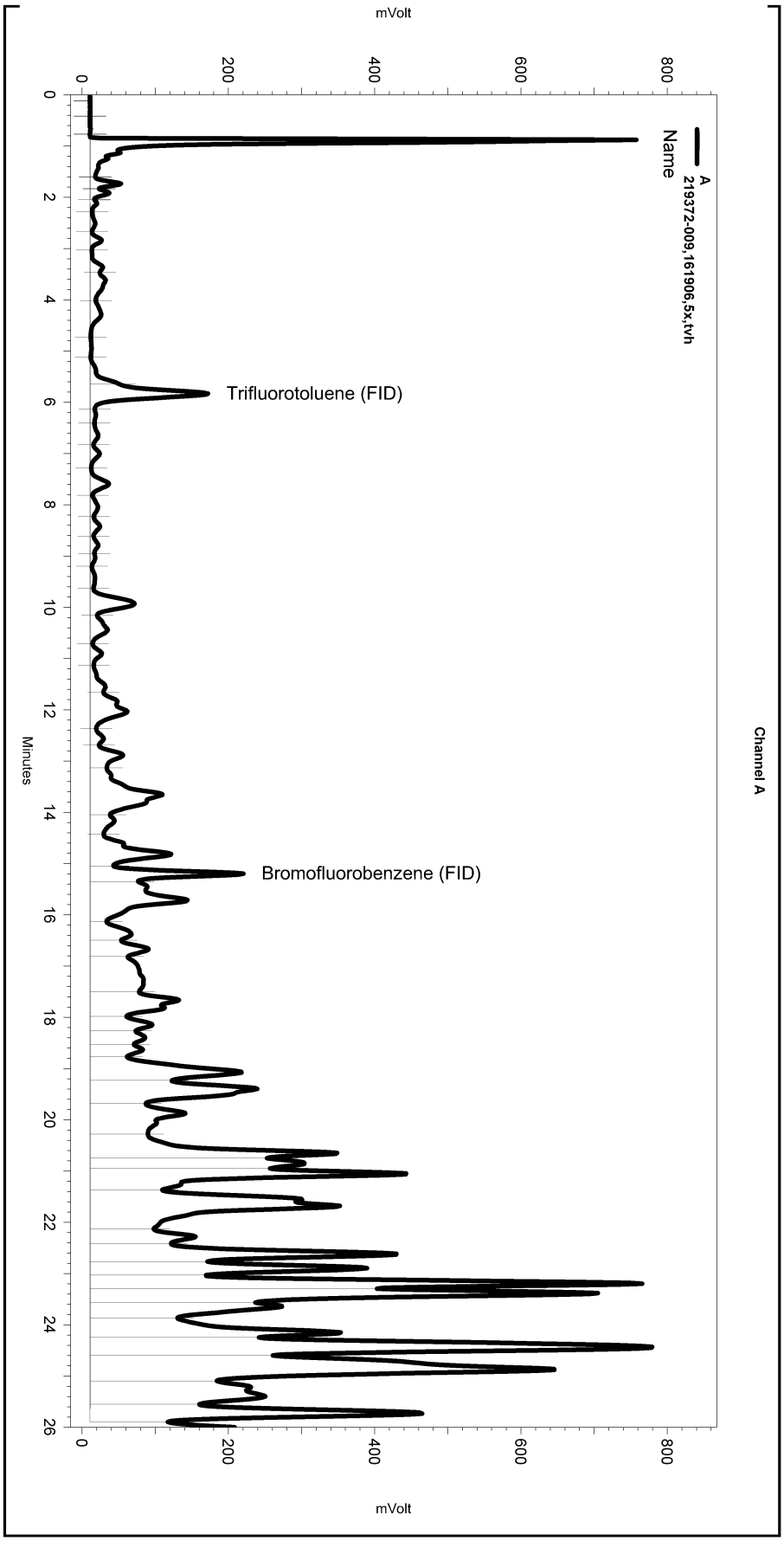
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC19\Data\100_019

| Enabled | Event Type | Start (Minutes) | Stop (Minutes) | Value |
|---|---|---|---|---|
| Yes | Lowest Point Horizontal Baseli | 0 | 26.017 | 0 |
| Yes | Split Peak | 5.191 | 0 | 0 |

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC07\Sequence\102.seq**
Sample Name: **219372-009,161906,5x,tvh**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC07\Data\102_031**
Instrument: GC07 (Offline) Vial: N/A Operator: RSK-175 Analyst (lims2k3\rsk175)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC07\Method\tvhbtxe091.met

Software Version 3.1.7
Run Date: 4/13/2010 7:38:57 AM
Analysis Date: 4/13/2010 1:05:11 PM
Sample Amount: 1 Multiplier: 1
Vial & pH or Core ID: a




---< General Method Parameters >---

No items selected for this section

---< A >---

No items selected for this section

Integration Events

| Enabled | Event Type | Start (Minutes) | Stop (Minutes) | Value |
|---|---|---|---|---|
| Yes | Width | 0 | 0 | 0.2 |
| Yes | Threshold | 0 | 0 | 50 |

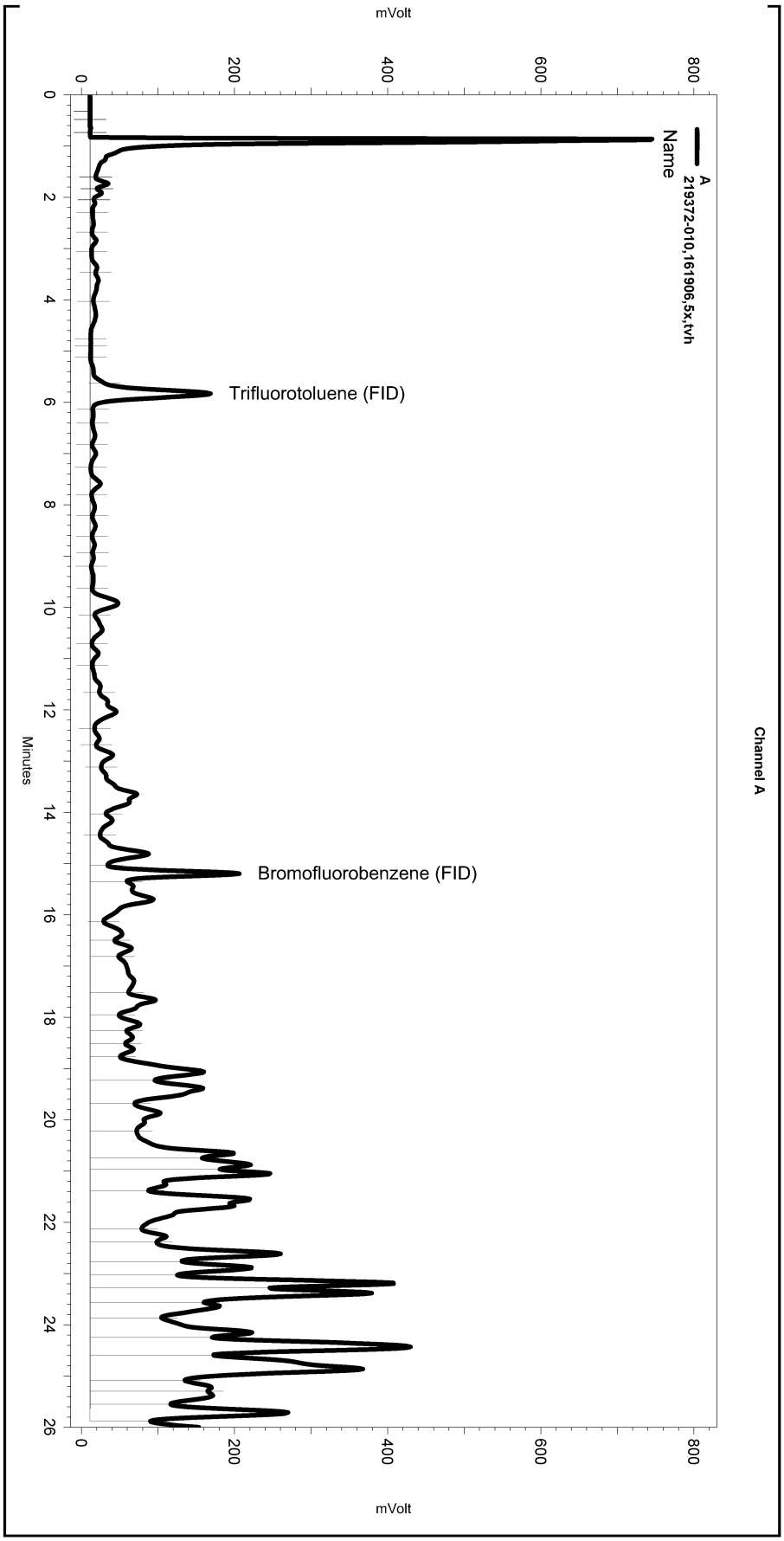
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC07\Data\102_031

| Enabled | Event Type | Start (Minutes) | Stop (Minutes) | Value |
|---|---|---|---|---|
| Yes | Lowest Point Horizontal Baseli | 0 | 26.017 | 0 |
| Yes | Split Peak | 5.651 | 0 | 0 |

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC07\Sequence\102.seq**
Sample Name: **219372-010,161906,5x,tvh**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC07\Data\102_032**
Instrument: GC07 (Offline) Vial: N/A Operator: RSK-175 Analyst (lims2k3\rsk175)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC07\Method\tvhbtxe091.met

Software Version 3.1.7
Run Date: 4/13/2010 8:14:50 AM
Analysis Date: 4/13/2010 1:05:21 PM
Sample Amount: 1 Multiplier: 1
Vial & pH or Core ID: a




---< General Method Parameters >---

No items selected for this section

---< A >---

No items selected for this section

Integration Events

| Enabled | Event Type | Start (Minutes) | Stop (Minutes) | Value |
|---|---|---|---|---|
| Yes | Width | 0 | 0 | 0.2 |
| Yes | Threshold | 0 | 0 | 50 |

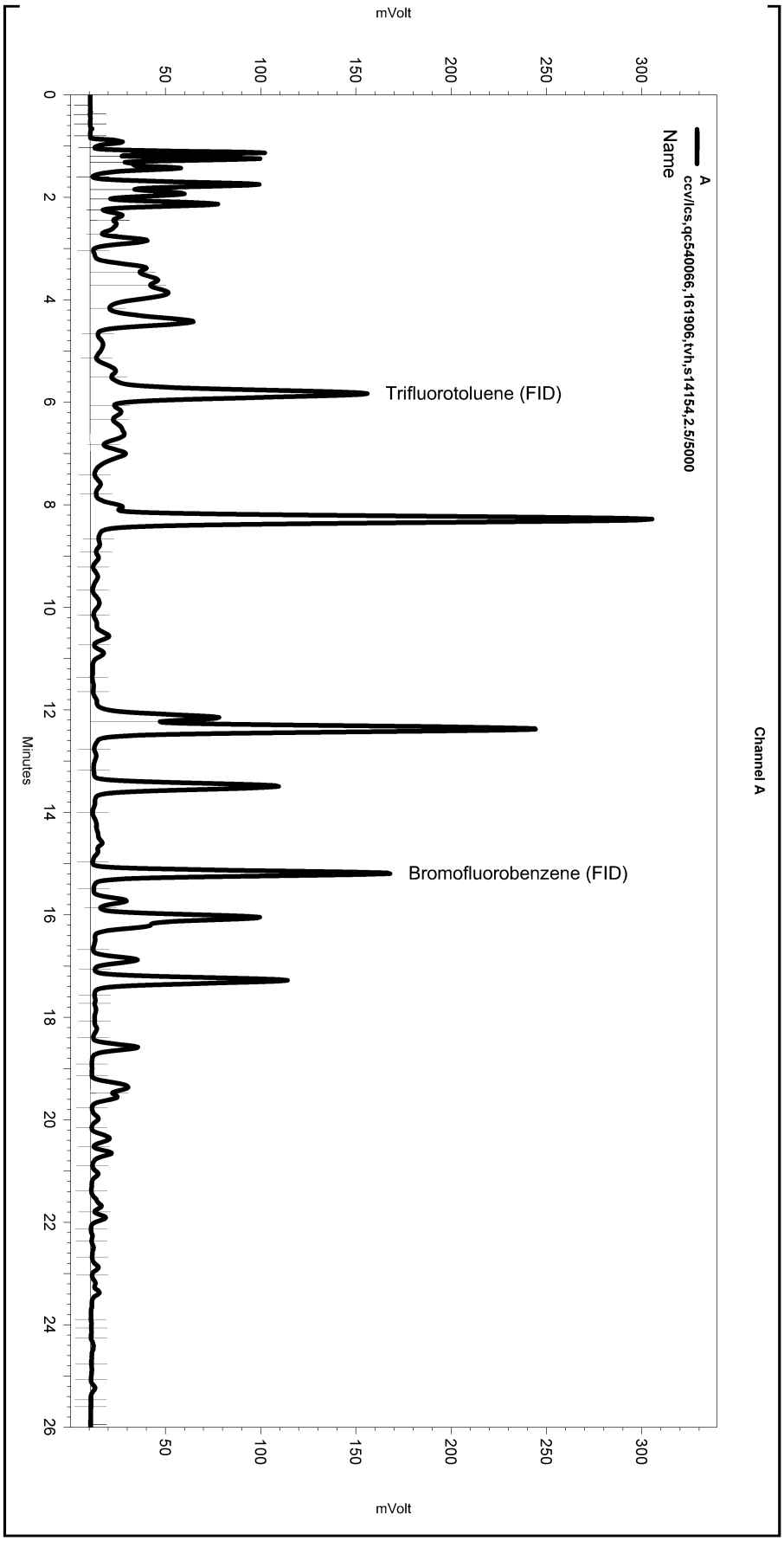
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC07\Data\102_032

| Enabled | Event Type | Start (Minutes) | Stop (Minutes) | Value |
|---|---|---|---|---|
| Yes | Lowest Point Horizontal Baseli | 0 | 26.017 | 0 |
| Yes | Split Peak | 5.637 | 0 | 0 |

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC07\Sequence\102.seq**
Sample Name: **ccv/lcs,qc540066,161906,tvh,s14154,2.5/5000**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC07\Data\102_003**
Instrument: GC07 (Offline) Vial: N/A Operator: RSK-175 Analyst (lims2k3\rsk175)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC07\Method\tvhbtxe091.met

Software Version 3.1.7
Run Date: 4/12/2010 9:29:56 AM
Analysis Date: 4/13/2010 12:12:24 PM
Sample Amount: 1 Multiplier: 1
Vial & pH or Core ID: {Data Description}

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---< General Method Parameters >---
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No items selected for this section

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---< A >---
---

No items selected for this section

Integration Events

| Enabled | Event Type | Start (Minutes) | Stop (Minutes) | Value |
|---|---|---|---|---|
| Yes | Width | 0 | 0 | 0.2 |
| Yes | Threshold | 0 | 0 | 50 |

Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC07\Data\102_003

| Enabled | Event Type | Start (Minutes) | Stop (Minutes) | Value |
|---|---|---|---|---|
| None | | | | |

Curtis & Tompkins, Ltd.

# Total Extractable Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | SHAKER TABLE |
| Project#: | 950074.05 | Analysis: | EPA 8015B |
| Matrix: | Soil | Sampled: | 04/09/10 |
| Units: | mg/Kg | Received: | 04/09/10 |
| Basis: | dry | Prepared: | 04/13/10 |
| Batch#: | 161944 | | |

| | | | |
|---|---|---|---|
| Field ID: | SB-8-4.5-5 | Diln Fac: | 10.00 |
| Type: | SAMPLE | Analyzed: | 04/13/10 |
| Lab ID: | 219372-001 | Cleanup Method: | EPA 3630C |
| Moisture: | 11% | | |

| Analyte | Result | RL |
|---|---|---|
| Diesel C10-C24 | 900 Y | 11 |

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | DO | 16-164 |

| | | | |
|---|---|---|---|
| Field ID: | SB-8-13-13.5 | Diln Fac: | 5.000 |
| Type: | SAMPLE | Analyzed: | 04/14/10 |
| Lab ID: | 219372-002 | Cleanup Method: | EPA 3630C |
| Moisture: | 17% | | |

| Analyte | Result | RL |
|---|---|---|
| Diesel C10-C24 | 2,500 | 6.0 |

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 95 | 16-164 |

| | | | |
|---|---|---|---|
| Field ID: | SB-8-17.5-18 | Diln Fac: | 1.000 |
| Type: | SAMPLE | Analyzed: | 04/14/10 |
| Lab ID: | 219372-003 | Cleanup Method: | EPA 3630C |
| Moisture: | 21% | | |

| Analyte | Result | RL |
|---|---|---|
| Diesel C10-C24 | 12 | 1.3 |

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 121 | 16-164 |

| | | | |
|---|---|---|---|
| Field ID: | SB-7-5-5.5 | Diln Fac: | 2.000 |
| Type: | SAMPLE | Analyzed: | 04/13/10 |
| Lab ID: | 219372-004 | Cleanup Method: | EPA 3630C |
| Moisture: | 28% | | |

| Analyte | Result | RL |
|---|---|---|
| Diesel C10-C24 | 100 | 2.8 |

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 113 | 16-164 |

Y= Sample exhibits chromatographic pattern which does not resemble standard
DO= Diluted Out
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

## Total Extractable Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | SHAKER TABLE |
| Project#: | 950074.05 | Analysis: | EPA 8015B |
| Matrix: | Soil | Sampled: | 04/09/10 |
| Units: | mg/Kg | Received: | 04/09/10 |
| Basis: | dry | Prepared: | 04/13/10 |
| Batch#: | 161944 | | |

| | | | |
|---|---|---|---|
| Field ID: | SB-7-8-8.5 | Diln Fac: | 20.00 |
| Type: | SAMPLE | Analyzed: | 04/14/10 |
| Lab ID: | 219372-005 | Cleanup Method: | EPA 3630C |
| Moisture: | 13% | | |

| Analyte | Result | RL |
|---|---|---|
| Diesel C10-C24 | 4,400 | 23 |

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | DO | 16-164 |

| | | | |
|---|---|---|---|
| Field ID: | SB-7-13-13.5 | Diln Fac: | 5.000 |
| Type: | SAMPLE | Analyzed: | 04/14/10 |
| Lab ID: | 219372-006 | Cleanup Method: | EPA 3630C |
| Moisture: | 17% | | |

| Analyte | Result | RL |
|---|---|---|
| Diesel C10-C24 | 1,000 | 6.0 |

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 81 | 16-164 |

| | | | |
|---|---|---|---|
| Field ID: | SB-7-20.5-21 | Diln Fac: | 1.000 |
| Type: | SAMPLE | Analyzed: | 04/14/10 |
| Lab ID: | 219372-007 | Cleanup Method: | EPA 3630C |
| Moisture: | 16% | | |

| Analyte | Result | RL |
|---|---|---|
| Diesel C10-C24 | 6.2 | 1.2 |

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 85 | 16-164 |

| | | | |
|---|---|---|---|
| Field ID: | SB-9-5-5.5 | Diln Fac: | 2.000 |
| Type: | SAMPLE | Analyzed: | 04/14/10 |
| Lab ID: | 219372-008 | Cleanup Method: | EPA 3630C |
| Moisture: | 13% | | |

| Analyte | Result | RL |
|---|---|---|
| Diesel C10-C24 | 49 Y | 2.3 |

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 82 | 16-164 |

Y= Sample exhibits chromatographic pattern which does not resemble standard
DO= Diluted Out
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

## Total Extractable Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | SHAKER TABLE |
| Project#: | 950074.05 | Analysis: | EPA 8015B |
| Matrix: | Soil | Sampled: | 04/09/10 |
| Units: | mg/Kg | Received: | 04/09/10 |
| Basis: | dry | Prepared: | 04/13/10 |
| Batch#: | 161944 | | |

| | | | |
|---|---|---|---|
| Field ID: | SB-9-9-9.5 | Diln Fac: | 25.00 |
| Type: | SAMPLE | Analyzed: | 04/14/10 |
| Lab ID: | 219372-009 | Cleanup Method: | EPA 3630C |
| Moisture: | 14% | | |

| Analyte | Result | RL |
|---|---|---|
| Diesel C10-C24 | 4,600 | 29 |

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | DO | 16-164 |

| | | | |
|---|---|---|---|
| Field ID: | SB-9-12.5-13 | Diln Fac: | 10.00 |
| Type: | SAMPLE | Analyzed: | 04/14/10 |
| Lab ID: | 219372-010 | Cleanup Method: | EPA 3630C |
| Moisture: | 17% | | |

| Analyte | Result | RL |
|---|---|---|
| Diesel C10-C24 | 3,200 | 12 |

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | DO | 16-164 |

| | | | |
|---|---|---|---|
| Field ID: | SB-9-19-19.5 | Diln Fac: | 1.000 |
| Type: | SAMPLE | Analyzed: | 04/14/10 |
| Lab ID: | 219372-011 | Cleanup Method: | EPA 3630C |
| Moisture: | 23% | | |

| Analyte | Result | RL |
|---|---|---|
| Diesel C10-C24 | 78 | 1.3 |

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 94 | 16-164 |

| | | | |
|---|---|---|---|
| Type: | BLANK | Analyzed: | 04/14/10 |
| Lab ID: | QC540198 | Cleanup Method: | EPA 3630C |
| Diln Fac: | 1.000 | | |

| Analyte | Result | RL |
|---|---|---|
| Diesel C10-C24 | ND | 1.0 |

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 120 | 16-164 |

Y= Sample exhibits chromatographic pattern which does not resemble standard
DO= Diluted Out
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

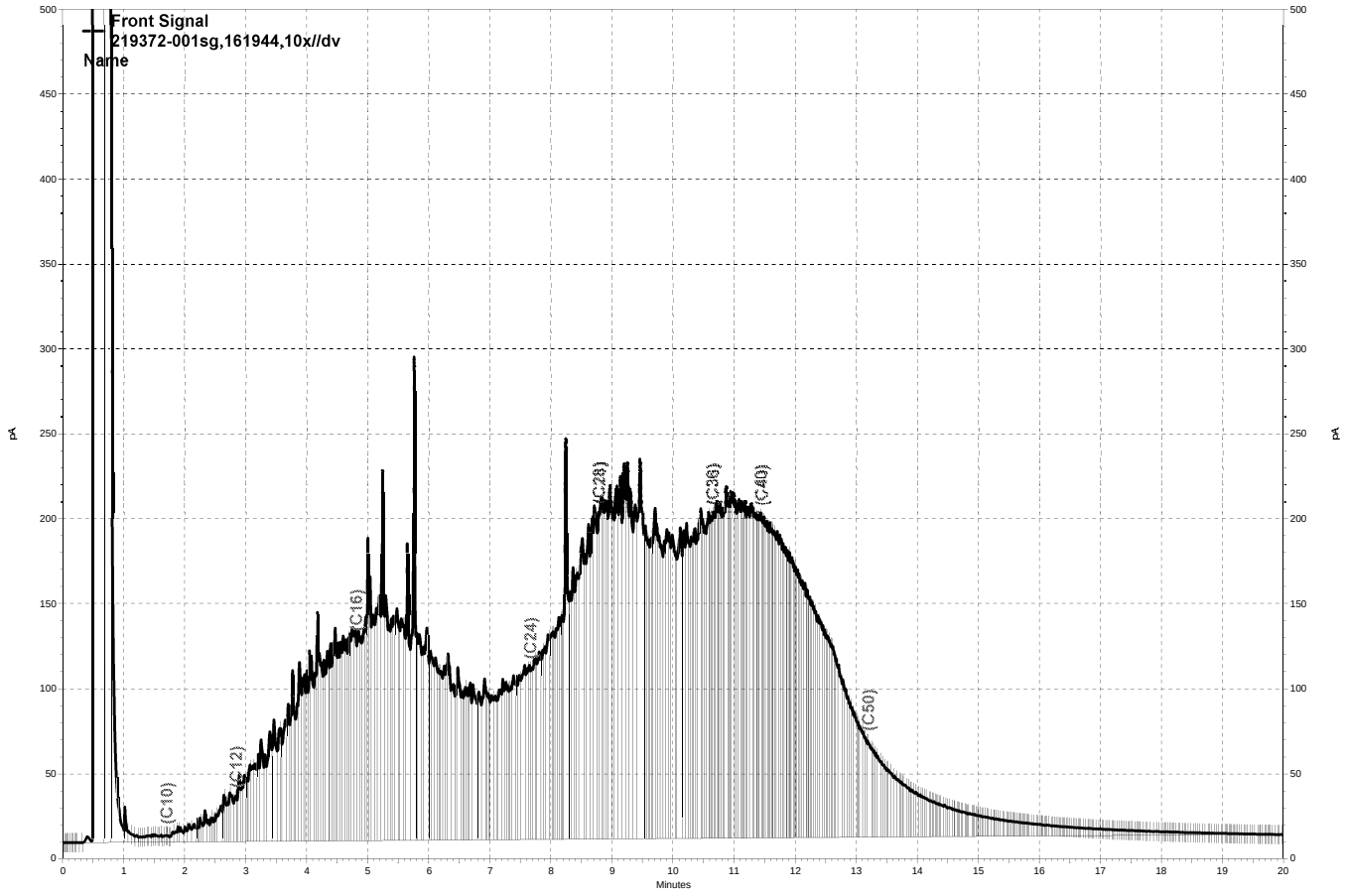
## Total Extractable Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | SHAKER TABLE |
| Project#: | 950074.05 | Analysis: | EPA 8015B |
| Type: | LCS | Diln Fac: | 1.000 |
| Lab ID: | QC540199 | Batch#: | 161944 |
| Matrix: | Soil | Prepared: | 04/13/10 |
| Units: | mg/Kg | Analyzed: | 04/14/10 |

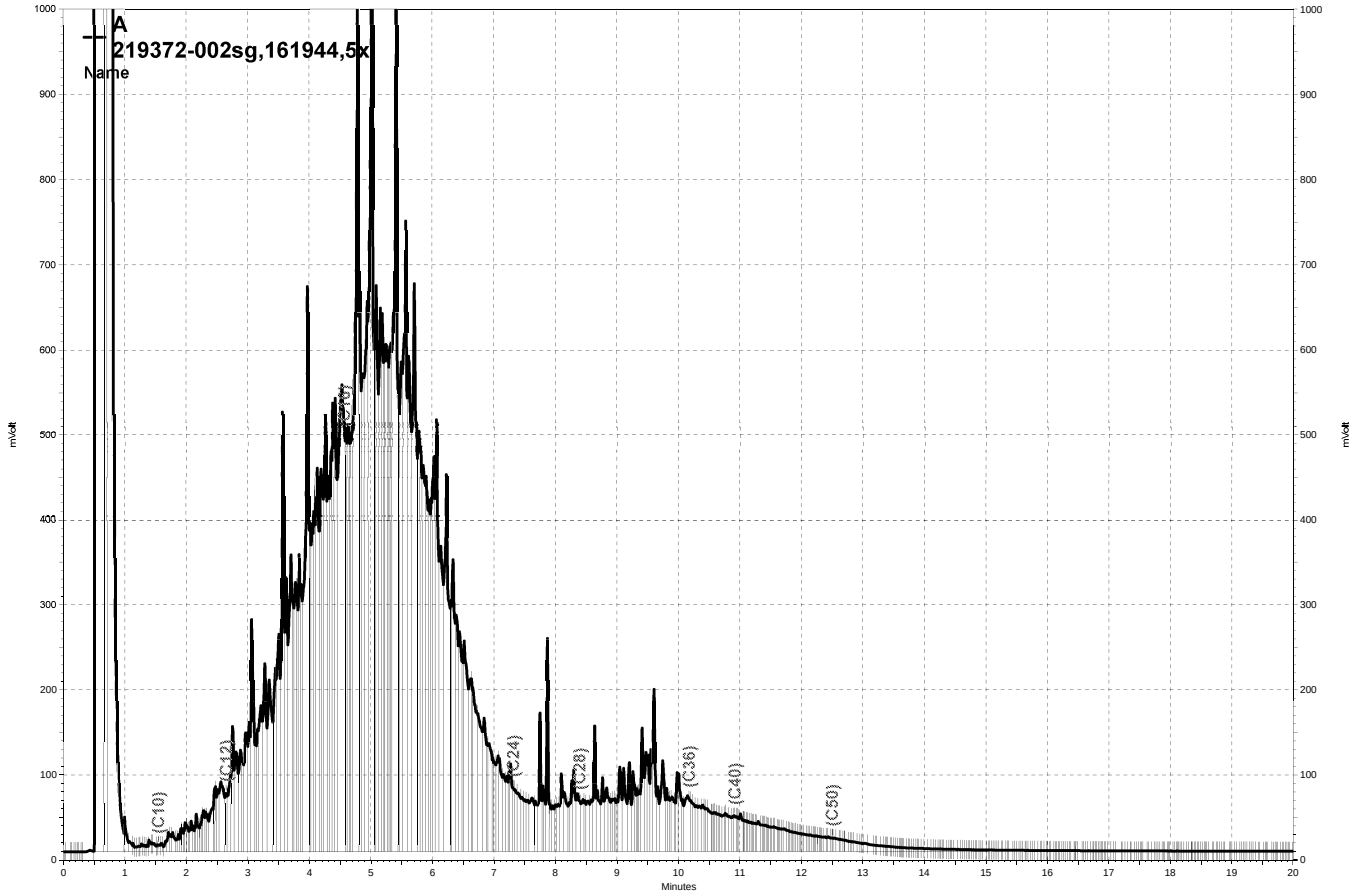
Cleanup Method: EPA 3630C

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| Diesel C10-C24 | 49.97 | 58.69 | 117 | 36-151 |

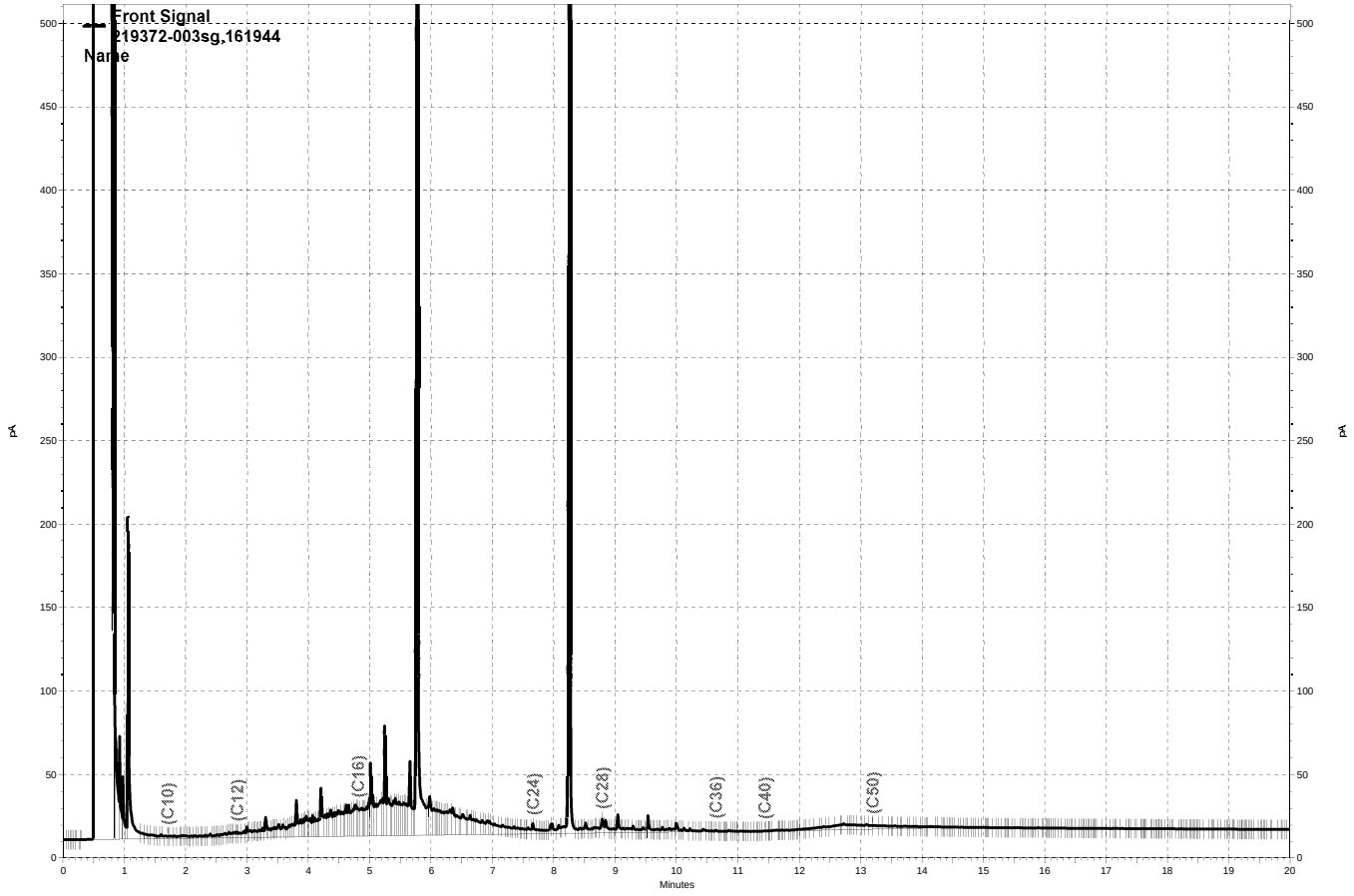
| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 122 | 16-164 |



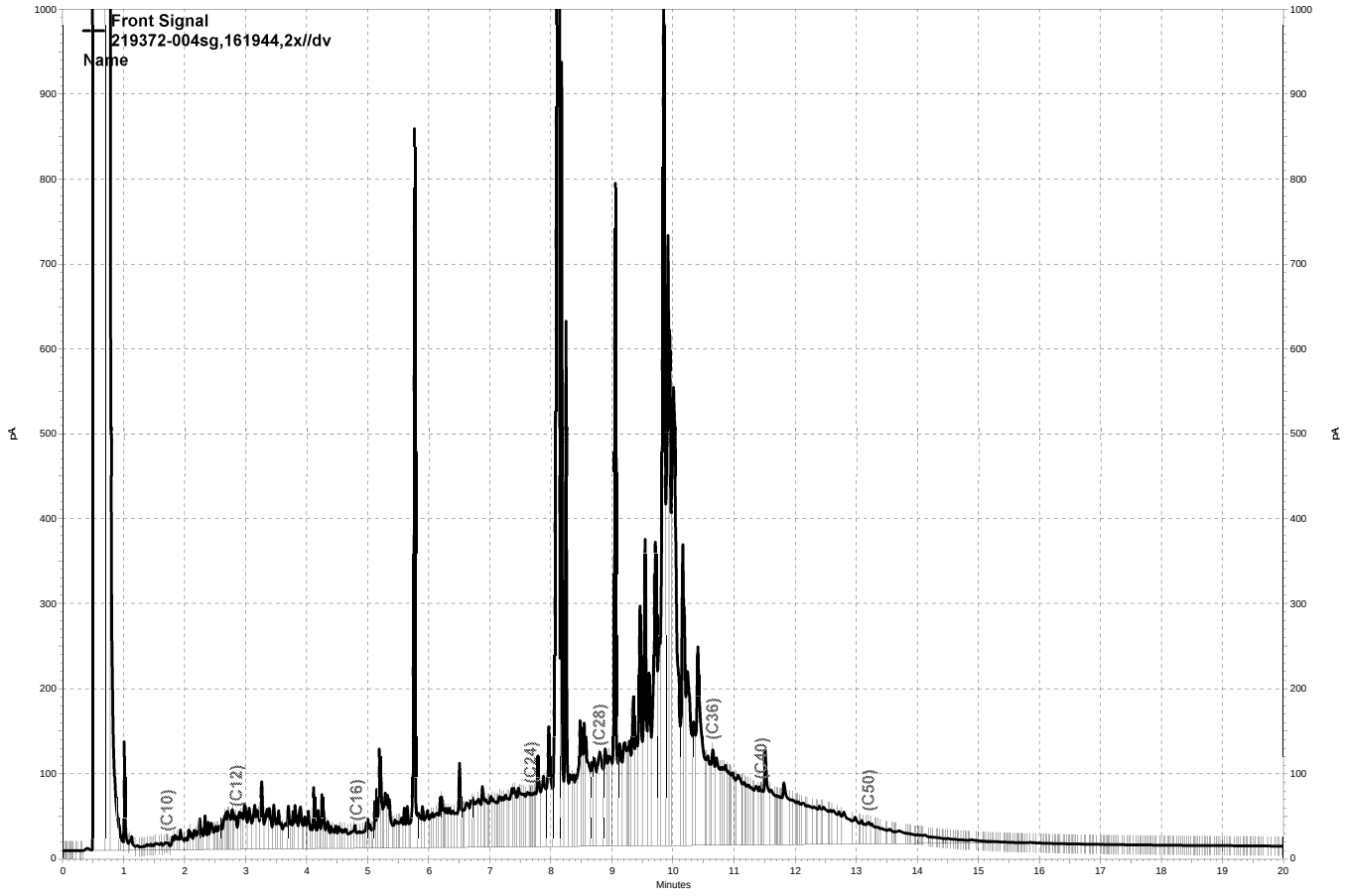

G:\ezchrom\Projects\GC27\Data\103a019.dat, Front Signal



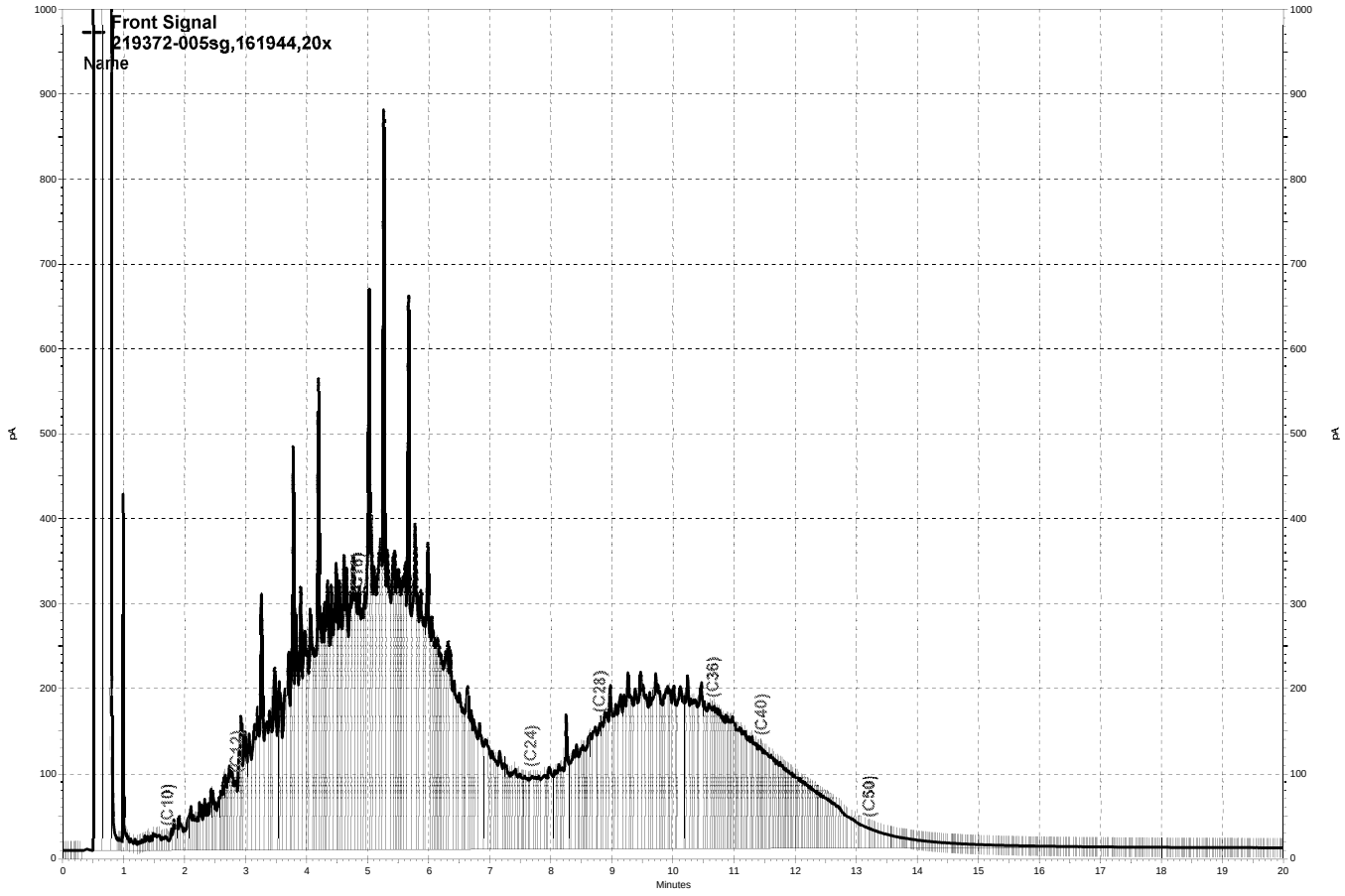

\\Lims\gdrive\ezchrom\Projects\GC26\Data\104a013, A



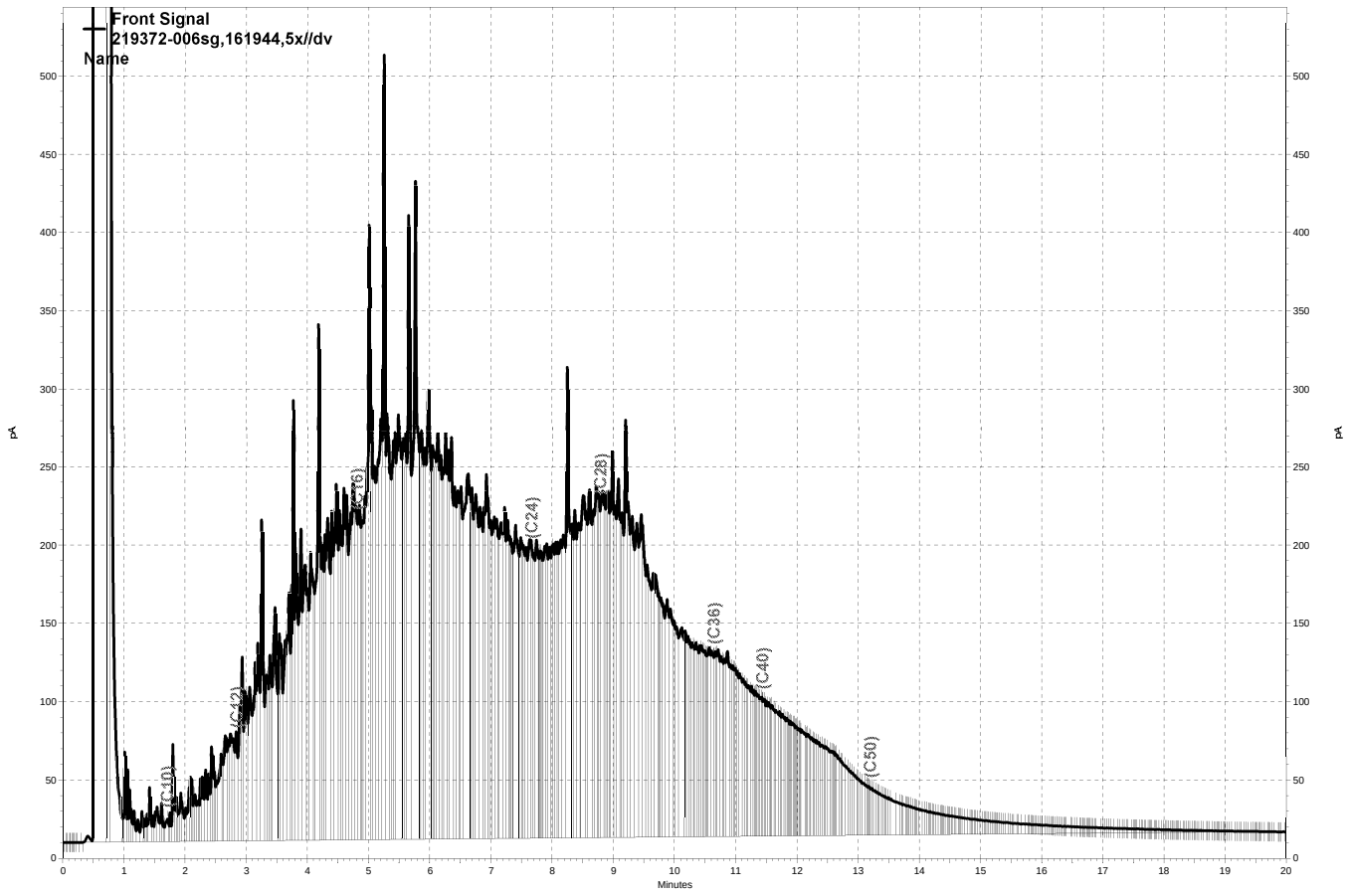

G:\ezchrom\Projects\GC27\Data\103a028.dat, Front Signal



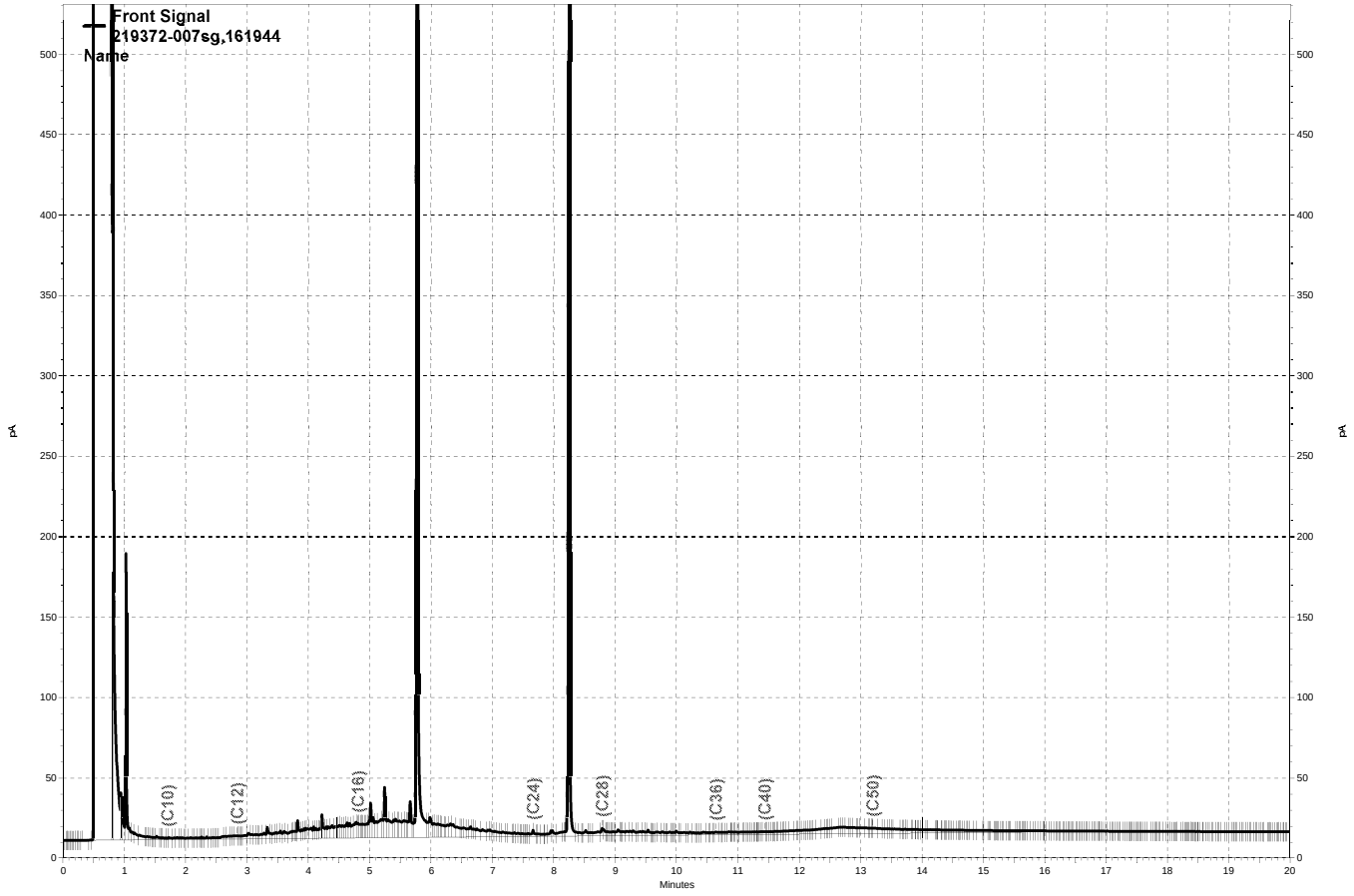

G:\ezchrom\Projects\GC27\Data\103a021.dat, Front Signal



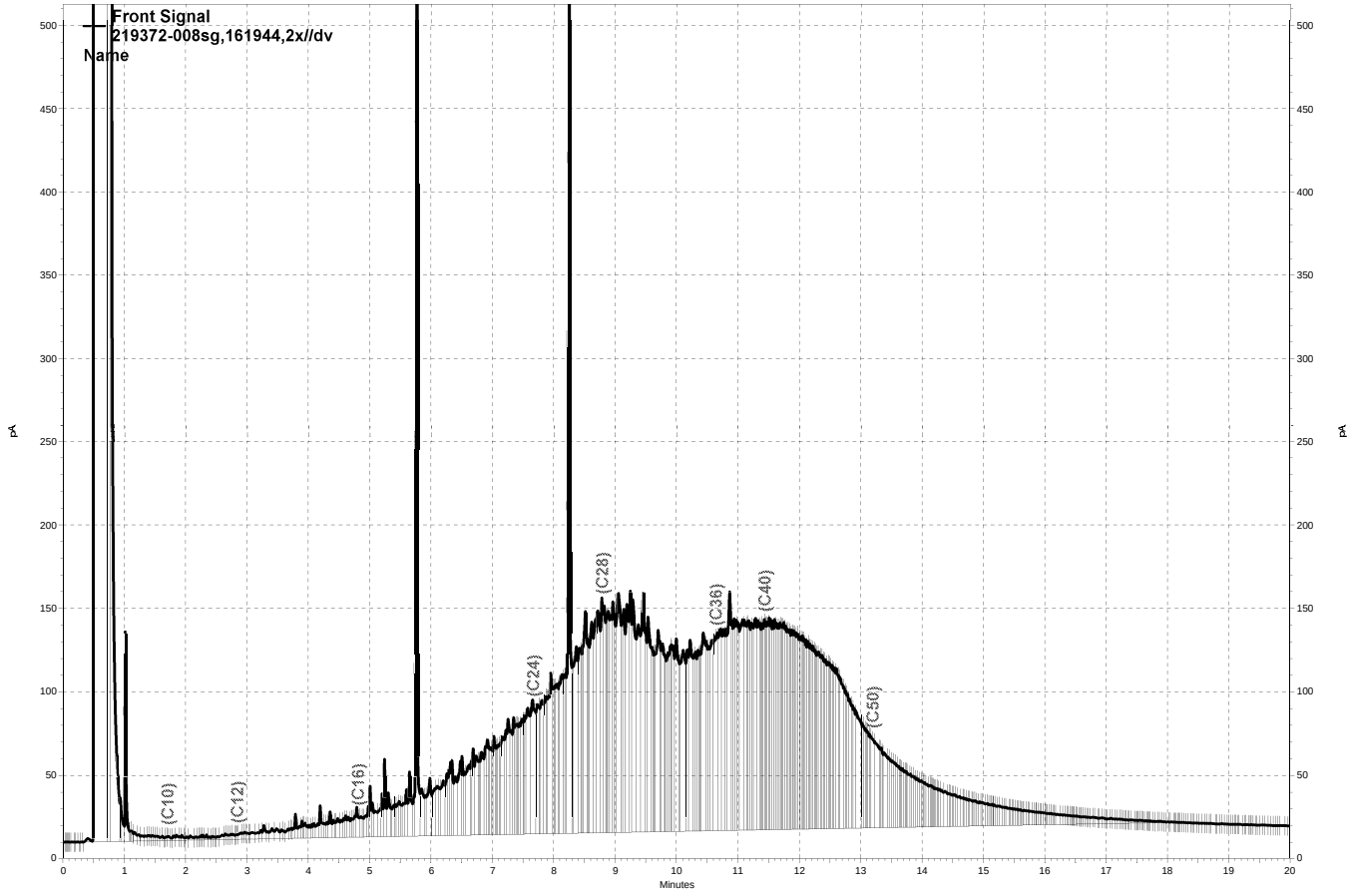

G:\ezchrom\Projects\GC27\Data\104a006.dat, Front Signal



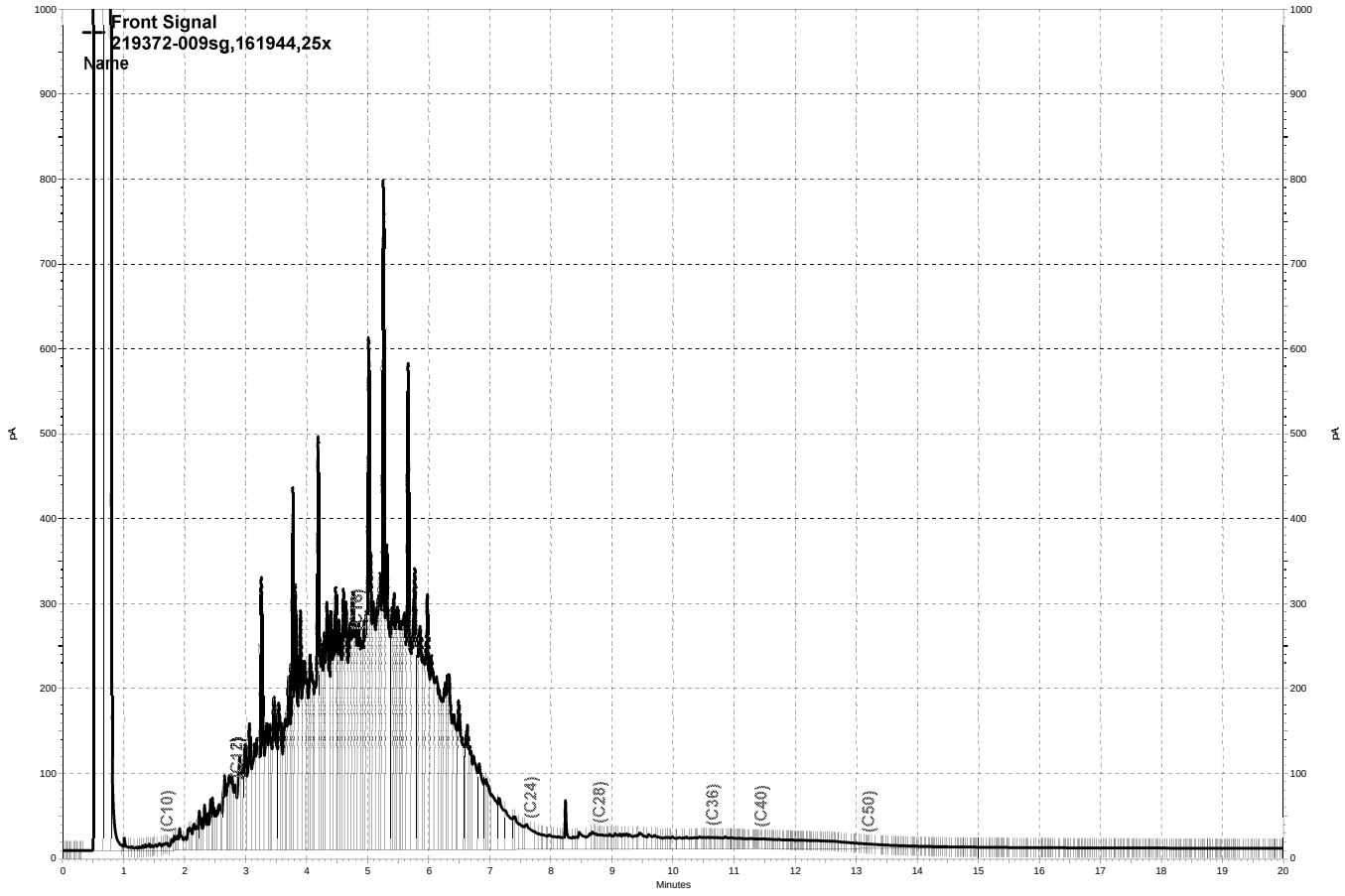

G:\ezchrom\Projects\GC27\Data\103a023.dat, Front Signal



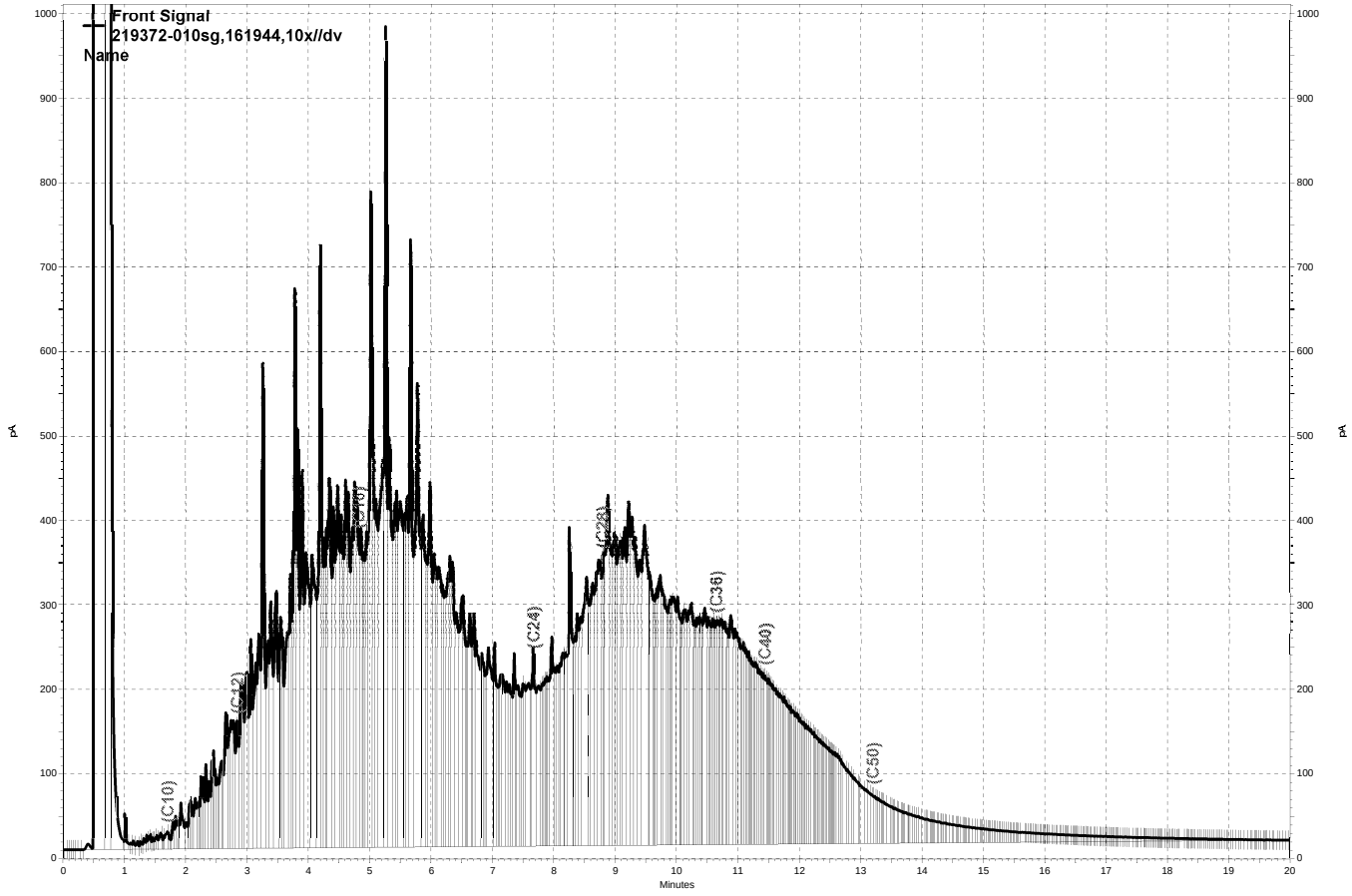

G:\ezchrom\Projects\GC27\Data\103a029.dat, Front Signal



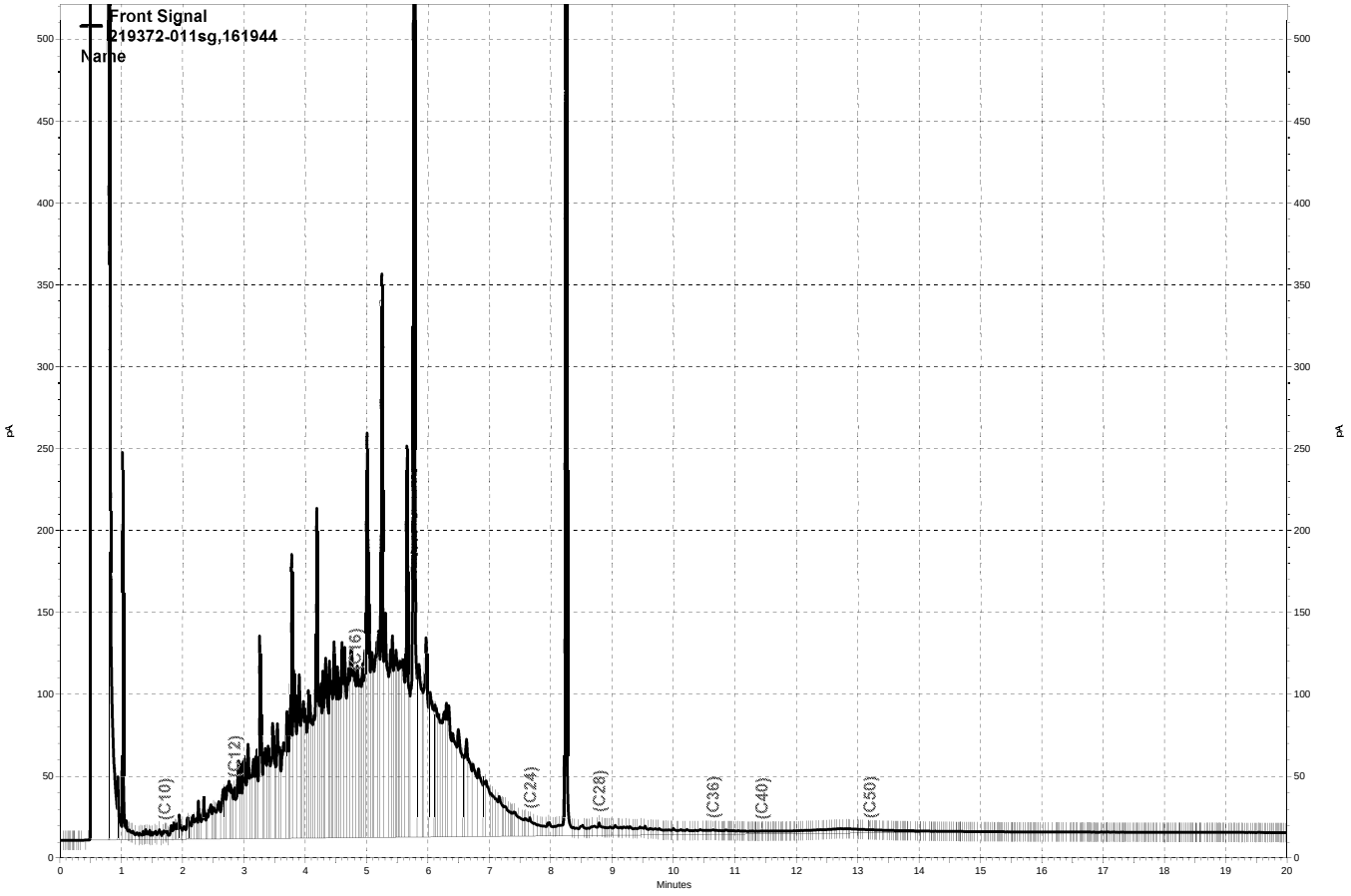

G:\ezchrom\Projects\GC27\Data\103a024.dat, Front Signal



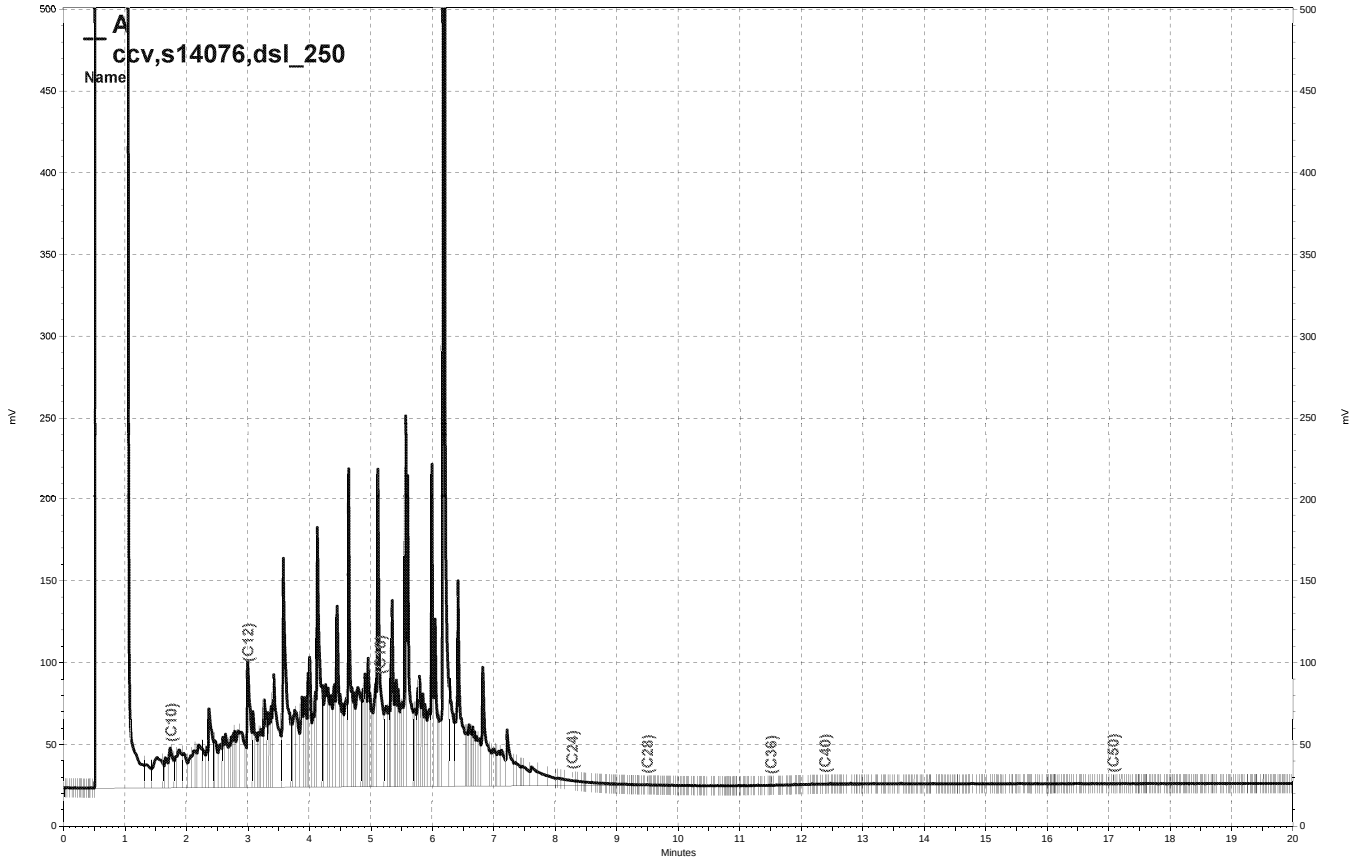

G:\ezchrom\Projects\GC27\Data\104a007.dat, Front Signal




G:\ezchrom\Projects\GC27\Data\103a026.dat, Front Signal




G:\ezchrom\Projects\GC27\Data\103a034.dat, Front Signal




\\Lims\gdrive\ezchrom\Projects\GC17A\Data\103a032, A

Curtis & Tompkins, Ltd.

# BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5035 |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Field ID: | SB-8-4.5-5 | Diln Fac: | 0.8347 |
| Lab ID: | 219372-001 | Batch#: | 161890 |
| Matrix: | Soil | Sampled: | 04/09/10 |
| Units: | ug/Kg | Received: | 04/09/10 |
| Basis: | dry | Analyzed: | 04/12/10 |

Moisture: 11%

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 94 |
| MTBE | ND | 4.7 |
| Isopropyl Ether (DIPE) | ND | 4.7 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 4.7 |
| 1,2-Dichloroethane | ND | 4.7 |
| Benzene | ND | 4.7 |
| Methyl tert-Amyl Ether (TAME) | ND | 4.7 |
| Toluene | ND | 4.7 |
| 1,2-Dibromoethane | ND | 4.7 |
| Ethylbenzene | ND | 4.7 |
| m,p-Xylenes | ND | 4.7 |
| o-Xylene | ND | 4.7 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 102 | 59-139 |
| 1,2-Dichloroethane-d4 | 108 | 54-153 |
| Toluene-d8 | 106 | 83-118 |
| Bromofluorobenzene | 116 | 61-146 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5035 |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Field ID: | SB-8-13-13.5 | Diln Fac: | 0.7716 |
| Lab ID: | 219372-002 | Batch#: | 161890 |
| Matrix: | Soil | Sampled: | 04/09/10 |
| Units: | ug/Kg | Received: | 04/09/10 |
| Basis: | dry | Analyzed: | 04/12/10 |

Moisture: 17%

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 93 |
| MTBE | ND | 4.6 |
| Isopropyl Ether (DIPE) | ND | 4.6 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 4.6 |
| 1,2-Dichloroethane | ND | 4.6 |
| Benzene | ND | 4.6 |
| Methyl tert-Amyl Ether (TAME) | ND | 4.6 |
| Toluene | ND | 4.6 |
| 1,2-Dibromoethane | ND | 4.6 |
| Ethylbenzene | ND | 4.6 |
| m,p-Xylenes | ND | 4.6 |
| o-Xylene | ND | 4.6 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 102 | 59-139 |
| 1,2-Dichloroethane-d4 | 107 | 54-153 |
| Toluene-d8 | 105 | 83-118 |
| Bromofluorobenzene | 130 | 61-146 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5035 |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Field ID: | SB-8-17.5-18 | Diln Fac: | 0.8375 |
| Lab ID: | 219372-003 | Batch#: | 161895 |
| Matrix: | Soil | Sampled: | 04/09/10 |
| Units: | ug/Kg | Received: | 04/09/10 |
| Basis: | dry | Analyzed: | 04/12/10 |

Moisture: 21%

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 110 |
| MTBE | ND | 5.3 |
| Isopropyl Ether (DIPE) | ND | 5.3 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 5.3 |
| 1,2-Dichloroethane | ND | 5.3 |
| Benzene | ND | 5.3 |
| Methyl tert-Amyl Ether (TAME) | ND | 5.3 |
| Toluene | ND | 5.3 |
| 1,2-Dibromoethane | ND | 5.3 |
| Ethylbenzene | ND | 5.3 |
| m,p-Xylenes | ND | 5.3 |
| o-Xylene | ND | 5.3 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 93 | 59-139 |
| 1,2-Dichloroethane-d4 | 101 | 54-153 |
| Toluene-d8 | 95 | 83-118 |
| Bromofluorobenzene | 106 | 61-146 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5035 |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Field ID: | SB-7-5-5.5 | Diln Fac: | 0.8319 |
| Lab ID: | 219372-004 | Batch#: | 161895 |
| Matrix: | Soil | Sampled: | 04/09/10 |
| Units: | ug/Kg | Received: | 04/09/10 |
| Basis: | dry | Analyzed: | 04/12/10 |

Moisture: 28%

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 120 |
| MTBE | ND | 5.8 |
| Isopropyl Ether (DIPE) | ND | 5.8 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 5.8 |
| 1,2-Dichloroethane | ND | 5.8 |
| Benzene | ND | 5.8 |
| Methyl tert-Amyl Ether (TAME) | ND | 5.8 |
| Toluene | ND | 5.8 |
| 1,2-Dibromoethane | ND | 5.8 |
| Ethylbenzene | ND | 5.8 |
| m,p-Xylenes | ND | 5.8 |
| o-Xylene | ND | 5.8 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 89 | 59-139 |
| 1,2-Dichloroethane-d4 | 103 | 54-153 |
| Toluene-d8 | 101 | 83-118 |
| Bromofluorobenzene | 109 | 61-146 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5035 |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Field ID: | SB-7-8-8.5 | Diln Fac: | 100.0 |
| Lab ID: | 219372-005 | Batch#: | 162048 |
| Matrix: | Soil | Sampled: | 04/09/10 |
| Units: | ug/Kg | Received: | 04/09/10 |
| Basis: | dry | Analyzed: | 04/15/10 |

Moisture: 13%

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 11,000 |
| MTBE | ND | 570 |
| Isopropyl Ether (DIPE) | ND | 570 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 570 |
| 1,2-Dichloroethane | ND | 570 |
| Benzene | ND | 570 |
| Methyl tert-Amyl Ether (TAME) | ND | 570 |
| Toluene | ND | 570 |
| 1,2-Dibromoethane | ND | 570 |
| Ethylbenzene | ND | 570 |
| m,p-Xylenes | ND | 570 |
| o-Xylene | ND | 570 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 83 | 59-139 |
| 1,2-Dichloroethane-d4 | 88 | 54-153 |
| Toluene-d8 | 97 | 83-118 |
| Bromofluorobenzene | 100 | 61-146 |
| Trifluorotoluene (MeOH) | 102 | 25-170 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5035 |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Field ID: | SB-7-13-13.5 | Diln Fac: | 0.8475 |
| Lab ID: | 219372-006 | Batch#: | 161895 |
| Matrix: | Soil | Sampled: | 04/09/10 |
| Units: | ug/Kg | Received: | 04/09/10 |
| Basis: | dry | Analyzed: | 04/12/10 |

Moisture: 17%

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 100 |
| MTBE | ND | 5.1 |
| Isopropyl Ether (DIPE) | ND | 5.1 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 5.1 |
| 1,2-Dichloroethane | ND | 5.1 |
| Benzene | 12 | 5.1 |
| Methyl tert-Amyl Ether (TAME) | ND | 5.1 |
| Toluene | ND | 5.1 |
| 1,2-Dibromoethane | ND | 5.1 |
| Ethylbenzene | 14 | 5.1 |
| m,p-Xylenes | 6.6 | 5.1 |
| o-Xylene | ND | 5.1 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 80 | 59-139 |
| 1,2-Dichloroethane-d4 | 89 | 54-153 |
| Toluene-d8 | 96 | 83-118 |
| Bromofluorobenzene | 101 | 61-146 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5035 |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Field ID: | SB-7-20.5-21 | Diln Fac: | 0.8333 |
| Lab ID: | 219372-007 | Batch#: | 161895 |
| Matrix: | Soil | Sampled: | 04/09/10 |
| Units: | ug/Kg | Received: | 04/09/10 |
| Basis: | dry | Analyzed: | 04/12/10 |

Moisture: 16%

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 99 |
| MTBE | ND | 5.0 |
| Isopropyl Ether (DIPE) | ND | 5.0 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 5.0 |
| 1,2-Dichloroethane | ND | 5.0 |
| Benzene | ND | 5.0 |
| Methyl tert-Amyl Ether (TAME) | ND | 5.0 |
| Toluene | ND | 5.0 |
| 1,2-Dibromoethane | ND | 5.0 |
| Ethylbenzene | ND | 5.0 |
| m,p-Xylenes | ND | 5.0 |
| o-Xylene | ND | 5.0 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 90 | 59-139 |
| 1,2-Dichloroethane-d4 | 88 | 54-153 |
| Toluene-d8 | 96 | 83-118 |
| Bromofluorobenzene | 105 | 61-146 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5035 |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Field ID: | SB-9-5-5.5 | Diln Fac: | 0.7837 |
| Lab ID: | 219372-008 | Batch#: | 161895 |
| Matrix: | Soil | Sampled: | 04/09/10 |
| Units: | ug/Kg | Received: | 04/09/10 |
| Basis: | dry | Analyzed: | 04/12/10 |

Moisture: 13%

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 90 |
| MTBE | ND | 4.5 |
| Isopropyl Ether (DIPE) | ND | 4.5 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 4.5 |
| 1,2-Dichloroethane | ND | 4.5 |
| Benzene | ND | 4.5 |
| Methyl tert-Amyl Ether (TAME) | ND | 4.5 |
| Toluene | ND | 4.5 |
| 1,2-Dibromoethane | ND | 4.5 |
| Ethylbenzene | ND | 4.5 |
| m,p-Xylenes | ND | 4.5 |
| o-Xylene | ND | 4.5 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 81 | 59-139 |
| 1,2-Dichloroethane-d4 | 96 | 54-153 |
| Toluene-d8 | 99 | 83-118 |
| Bromofluorobenzene | 106 | 61-146 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5035 |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Field ID: | SB-9-9-9.5 | Diln Fac: | 250.0 |
| Lab ID: | 219372-009 | Batch#: | 162048 |
| Matrix: | Soil | Sampled: | 04/09/10 |
| Units: | ug/Kg | Received: | 04/09/10 |
| Basis: | dry | Analyzed: | 04/15/10 |

Moisture: 14%

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 29,000 |
| MTBE | ND | 1,500 |
| Isopropyl Ether (DIPE) | ND | 1,500 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 1,500 |
| 1,2-Dichloroethane | ND | 1,500 |
| Benzene | ND | 1,500 |
| Methyl tert-Amyl Ether (TAME) | ND | 1,500 |
| Toluene | ND | 1,500 |
| 1,2-Dibromoethane | ND | 1,500 |
| Ethylbenzene | ND | 1,500 |
| m,p-Xylenes | ND | 1,500 |
| o-Xylene | ND | 1,500 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 81 | 59-139 |
| 1,2-Dichloroethane-d4 | 86 | 54-153 |
| Toluene-d8 | 107 | 83-118 |
| Bromofluorobenzene | 97 | 61-146 |
| Trifluorotoluene (MeOH) | 105 | 25-170 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5035 |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Field ID: | SB-9-12.5-13 | Diln Fac: | 0.8052 |
| Lab ID: | 219372-010 | Batch#: | 161895 |
| Matrix: | Soil | Sampled: | 04/09/10 |
| Units: | ug/Kg | Received: | 04/09/10 |
| Basis: | dry | Analyzed: | 04/12/10 |

Moisture: 17%

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 97 |
| MTBE | ND | 4.9 |
| Isopropyl Ether (DIPE) | ND | 4.9 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 4.9 |
| 1,2-Dichloroethane | ND | 4.9 |
| Benzene | 7.7 | 4.9 |
| Methyl tert-Amyl Ether (TAME) | ND | 4.9 |
| Toluene | ND | 4.9 |
| 1,2-Dibromoethane | ND | 4.9 |
| Ethylbenzene | ND | 4.9 |
| m,p-Xylenes | ND | 4.9 |
| o-Xylene | ND | 4.9 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 85 | 59-139 |
| 1,2-Dichloroethane-d4 | 92 | 54-153 |
| Toluene-d8 | 101 | 83-118 |
| Bromofluorobenzene | 108 | 61-146 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5035 |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Field ID: | SB-9-19-19.5 | Diln Fac: | 0.8929 |
| Lab ID: | 219372-011 | Batch#: | 161895 |
| Matrix: | Soil | Sampled: | 04/09/10 |
| Units: | ug/Kg | Received: | 04/09/10 |
| Basis: | dry | Analyzed: | 04/12/10 |

Moisture: 23%

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 120 |
| MTBE | ND | 5.8 |
| Isopropyl Ether (DIPE) | ND | 5.8 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 5.8 |
| 1,2-Dichloroethane | ND | 5.8 |
| Benzene | ND | 5.8 |
| Methyl tert-Amyl Ether (TAME) | ND | 5.8 |
| Toluene | ND | 5.8 |
| 1,2-Dibromoethane | ND | 5.8 |
| Ethylbenzene | ND | 5.8 |
| m,p-Xylenes | ND | 5.8 |
| o-Xylene | ND | 5.8 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 91 | 59-139 |
| 1,2-Dichloroethane-d4 | 92 | 54-153 |
| Toluene-d8 | 97 | 83-118 |
| Bromofluorobenzene | 104 | 61-146 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5035 |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Type: | BLANK | Diln Fac: | 1.000 |
| Lab ID: | QC540014 | Batch#: | 161890 |
| Matrix: | Soil | Analyzed: | 04/12/10 |
| Units: | ug/Kg | | |

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 100 |
| MTBE | ND | 5.0 |
| Isopropyl Ether (DIPE) | ND | 5.0 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 5.0 |
| 1,2-Dichloroethane | ND | 5.0 |
| Benzene | ND | 5.0 |
| Methyl tert-Amyl Ether (TAME) | ND | 5.0 |
| Toluene | ND | 5.0 |
| 1,2-Dibromoethane | ND | 5.0 |
| Ethylbenzene | ND | 5.0 |
| m,p-Xylenes | ND | 5.0 |
| o-Xylene | ND | 5.0 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 95 | 59-139 |
| 1,2-Dichloroethane-d4 | 97 | 54-153 |
| Toluene-d8 | 103 | 83-118 |
| Bromofluorobenzene | 103 | 61-146 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5035 |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Type: | LCS | Diln Fac: | 1.000 |
| Lab ID: | QC540015 | Batch#: | 161890 |
| Matrix: | Soil | Analyzed: | 04/12/10 |
| Units: | ug/Kg | | |

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| tert-Butyl Alcohol (TBA) | 125.0 | 140.3 | 112 | 32-148 |
| MTBE | 25.00 | 23.58 | 94 | 47-136 |
| Isopropyl Ether (DIPE) | 25.00 | 26.89 | 108 | 43-148 |
| Ethyl tert-Butyl Ether (ETBE) | 25.00 | 25.15 | 101 | 51-139 |
| 1,2-Dichloroethane | 25.00 | 26.39 | 106 | 54-150 |
| Benzene | 25.00 | 28.19 | 113 | 73-134 |
| Methyl tert-Amyl Ether (TAME) | 25.00 | 24.73 | 99 | 65-131 |
| Toluene | 25.00 | 30.18 | 121 | 72-134 |
| 1,2-Dibromoethane | 25.00 | 26.55 | 106 | 70-133 |
| Ethylbenzene | 25.00 | 29.71 | 119 | 74-134 |
| m,p-Xylenes | 50.00 | 61.04 | 122 | 74-133 |
| o-Xylene | 25.00 | 28.90 | 116 | 73-127 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 97 | 59-139 |
| 1,2-Dichloroethane-d4 | 102 | 54-153 |
| Toluene-d8 | 102 | 83-118 |
| Bromofluorobenzene | 98 | 61-146 |

Curtis & Tompkins, Ltd.

Batch QC Report

## BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5035 |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Type: | BLANK | Diln Fac: | 1.000 |
| Lab ID: | QC540026 | Batch#: | 161895 |
| Matrix: | Soil | Analyzed: | 04/12/10 |
| Units: | ug/Kg | | |

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 100 |
| MTBE | ND | 5.0 |
| Isopropyl Ether (DIPE) | ND | 5.0 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 5.0 |
| 1,2-Dichloroethane | ND | 5.0 |
| Benzene | ND | 5.0 |
| Methyl tert-Amyl Ether (TAME) | ND | 5.0 |
| Toluene | ND | 5.0 |
| 1,2-Dibromoethane | ND | 5.0 |
| Ethylbenzene | ND | 5.0 |
| m,p-Xylenes | ND | 5.0 |
| o-Xylene | ND | 5.0 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 93 | 59-139 |
| 1,2-Dichloroethane-d4 | 105 | 54-153 |
| Toluene-d8 | 97 | 83-118 |
| Bromofluorobenzene | 106 | 61-146 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5035 |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Type: | LCS | Diln Fac: | 1.000 |
| Lab ID: | QC540027 | Batch#: | 161895 |
| Matrix: | Soil | Analyzed: | 04/12/10 |
| Units: | ug/Kg | | |

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| tert-Butyl Alcohol (TBA) | 100.0 | 99.22 | 99 | 32-148 |
| MTBE | 20.00 | 17.59 | 88 | 47-136 |
| Isopropyl Ether (DIPE) | 20.00 | 20.36 | 102 | 43-148 |
| Ethyl tert-Butyl Ether (ETBE) | 20.00 | 19.53 | 98 | 51-139 |
| 1,2-Dichloroethane | 20.00 | 19.12 | 96 | 54-150 |
| Benzene | 20.00 | 18.81 | 94 | 73-134 |
| Methyl tert-Amyl Ether (TAME) | 20.00 | 17.34 | 87 | 65-131 |
| Toluene | 20.00 | 20.06 | 100 | 72-134 |
| 1,2-Dibromoethane | 20.00 | 17.83 | 89 | 70-133 |
| Ethylbenzene | 20.00 | 19.66 | 98 | 74-134 |
| m,p-Xylenes | 40.00 | 40.37 | 101 | 74-133 |
| o-Xylene | 20.00 | 20.07 | 100 | 73-127 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 98 | 59-139 |
| 1,2-Dichloroethane-d4 | 97 | 54-153 |
| Toluene-d8 | 99 | 83-118 |
| Bromofluorobenzene | 104 | 61-146 |

Curtis & Tompkins, Ltd.

Batch QC Report

## BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5035 |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Field ID: | ZZZZZZZZZZ | Batch#: | 161895 |
| MSS Lab ID: | 219364-006 | Sampled: | 04/08/10 |
| Matrix: | Soil | Received: | 04/09/10 |
| Units: | ug/Kg | Analyzed: | 04/12/10 |
| Basis: | as received | | |

Type: MS Diln Fac: 0.8741
Lab ID: QC540047

| Analyte | MSS Result | Spiked | Result | %REC | Limits |
|---|---|---|---|---|---|
| tert-Butyl Alcohol (TBA) | 71.63 | 218.5 | 257.2 | 85 | 22-153 |
| MTBE | <1.322 | 43.71 | 33.27 | 76 | 38-136 |
| Isopropyl Ether (DIPE) | <1.128 | 43.71 | 39.39 | 90 | 28-152 |
| Ethyl tert-Butyl Ether (ETBE) | <0.8502 | 43.71 | 39.33 | 90 | 39-144 |
| 1,2-Dichloroethane | <0.8174 | 43.71 | 31.72 | 73 | 39-143 |
| Benzene | 18.39 | 43.71 | 61.18 | 98 | 53-139 |
| Methyl tert-Amyl Ether (TAME) | <0.5538 | 43.71 | 35.45 | 81 | 52-133 |
| Toluene | 1.371 | 43.71 | 35.89 | 79 | 49-139 |
| 1,2-Dibromoethane | <0.5260 | 43.71 | 31.30 | 72 | 46-137 |
| Ethylbenzene | 7.402 | 43.71 | 43.77 | 83 | 38-145 |
| m,p-Xylenes | 1.463 | 87.41 | 69.67 | 78 | 38-145 |
| o-Xylene | <0.9860 | 43.71 | 35.96 | 82 | 38-141 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 100 | 59-139 |
| 1,2-Dichloroethane-d4 | 93 | 54-153 |
| Toluene-d8 | 101 | 83-118 |
| Bromofluorobenzene | 107 | 61-146 |

Type: MSD Diln Fac: 0.8772
Lab ID: QC540048

| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| tert-Butyl Alcohol (TBA) | 219.3 | 224.6 | 70 | 22-153 | 14 | 41 |
| MTBE | 43.86 | 32.03 | 73 | 38-136 | 4 | 36 |
| Isopropyl Ether (DIPE) | 43.86 | 35.28 | 80 | 28-152 | 11 | 29 |
| Ethyl tert-Butyl Ether (ETBE) | 43.86 | 35.88 | 82 | 39-144 | 10 | 28 |
| 1,2-Dichloroethane | 43.86 | 31.03 | 71 | 39-143 | 3 | 24 |
| Benzene | 43.86 | 59.54 | 94 | 53-139 | 3 | 35 |
| Methyl tert-Amyl Ether (TAME) | 43.86 | 34.20 | 78 | 52-133 | 4 | 27 |
| Toluene | 43.86 | 35.94 | 79 | 49-139 | 0 | 33 |
| 1,2-Dibromoethane | 43.86 | 32.53 | 74 | 46-137 | 4 | 27 |
| Ethylbenzene | 43.86 | 45.32 | 86 | 38-145 | 3 | 36 |
| m,p-Xylenes | 87.72 | 73.16 | 82 | 38-145 | 5 | 37 |
| o-Xylene | 43.86 | 35.86 | 82 | 38-141 | 1 | 36 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 91 | 59-139 |
| 1,2-Dichloroethane-d4 | 88 | 54-153 |
| Toluene-d8 | 93 | 83-118 |
| Bromofluorobenzene | 102 | 61-146 |

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

## BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5035 |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Field ID: | ZZZZZZZZZZ | Batch#: | 161890 |
| MSS Lab ID: | 219304-004 | Sampled: | 04/07/10 |
| Matrix: | Soil | Received: | 04/07/10 |
| Units: | ug/Kg | Analyzed: | 04/12/10 |
| Basis: | dry | | |

| | | | |
|---|---|---|---|
| Type: | MS | Moisture: | 88% |
| Lab ID: | QC540049 | Diln Fac: | 0.9862 |

| Analyte | MSS Result | Spiked | Result | %REC | Limits |
|---|---|---|---|---|---|
| tert-Butyl Alcohol (TBA) | <58.84 | 2,055 | 1,494 | 73 | 22-153 |
| MTBE | 10.31 | 410.9 | 261.8 | 61 | 38-136 |
| Isopropyl Ether (DIPE) | <6.218 | 410.9 | 255.6 | 62 | 28-152 |
| Ethyl tert-Butyl Ether (ETBE) | <5.222 | 410.9 | 248.6 | 61 | 39-144 |
| 1,2-Dichloroethane | <1.783 | 410.9 | 206.8 | 50 | 39-143 |
| Benzene | <4.818 | 410.9 | 259.9 | 63 | 53-139 |
| Methyl tert-Amyl Ether (TAME) | <5.431 | 410.9 | 236.2 | 57 | 52-133 |
| Toluene | 8.329 | 410.9 | 242.1 | 57 | 49-139 |
| 1,2-Dibromoethane | <5.119 | 410.9 | 143.1 | 35 * | 46-137 |
| Ethylbenzene | <6.228 | 410.9 | 197.3 | 48 | 38-145 |
| m,p-Xylenes | <9.970 | 821.8 | 368.3 | 45 | 38-145 |
| o-Xylene | <4.962 | 410.9 | 176.3 | 43 | 38-141 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 99 | 59-139 |
| 1,2-Dichloroethane-d4 | 102 | 54-153 |
| Toluene-d8 | 108 | 83-118 |
| Bromofluorobenzene | 120 | 61-146 |

| | | | |
|---|---|---|---|
| Type: | MSD | Moisture: | 88% |
| Lab ID: | QC540050 | Diln Fac: | 0.9671 |

| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| tert-Butyl Alcohol (TBA) | 2,015 | 1,890 | 94 | 22-153 | 25 | 41 |
| MTBE | 403.0 | 300.5 | 72 | 38-136 | 16 | 36 |
| Isopropyl Ether (DIPE) | 403.0 | 301.2 | 75 | 28-152 | 18 | 29 |
| Ethyl tert-Butyl Ether (ETBE) | 403.0 | 289.2 | 72 | 39-144 | 17 | 28 |
| 1,2-Dichloroethane | 403.0 | 205.1 | 51 | 39-143 | 1 | 24 |
| Benzene | 403.0 | 251.2 | 62 | 53-139 | 1 | 35 |
| Methyl tert-Amyl Ether (TAME) | 403.0 | 262.6 | 65 | 52-133 | 13 | 27 |
| Toluene | 403.0 | 222.0 | 53 | 49-139 | 7 | 33 |
| 1,2-Dibromoethane | 403.0 | 132.9 | 33 * | 46-137 | 5 | 27 |
| Ethylbenzene | 403.0 | 176.1 | 44 | 38-145 | 9 | 36 |
| m,p-Xylenes | 805.9 | 323.5 | 40 | 38-145 | 11 | 37 |
| o-Xylene | 403.0 | 153.5 | 38 | 38-141 | 12 | 36 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 102 | 59-139 |
| 1,2-Dichloroethane-d4 | 103 | 54-153 |
| Toluene-d8 | 112 | 83-118 |
| Bromofluorobenzene | 127 | 61-146 |

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

## BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5035 |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Type: | BLANK | Diln Fac: | 1.000 |
| Lab ID: | QC540603 | Batch#: | 162048 |
| Matrix: | Soil | Analyzed: | 04/15/10 |
| Units: | ug/Kg | | |

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 100 |
| MTBE | ND | 5.0 |
| Isopropyl Ether (DIPE) | ND | 5.0 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 5.0 |
| 1,2-Dichloroethane | ND | 5.0 |
| Benzene | ND | 5.0 |
| Methyl tert-Amyl Ether (TAME) | ND | 5.0 |
| Toluene | ND | 5.0 |
| 1,2-Dibromoethane | ND | 5.0 |
| Ethylbenzene | ND | 5.0 |
| m,p-Xylenes | ND | 5.0 |
| o-Xylene | ND | 5.0 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 85 | 59-139 |
| 1,2-Dichloroethane-d4 | 105 | 54-153 |
| Toluene-d8 | 107 | 83-118 |
| Bromofluorobenzene | 105 | 61-146 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## BTXE & Oxygenates

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 5035 |
| Project#: | 950074.05 | Analysis: | EPA 8260B |
| Matrix: | Soil | Batch#: | 162048 |
| Units: | ug/Kg | Analyzed: | 04/15/10 |
| Diln Fac: | 1.000 | | |

Type: BS Lab ID: QC540604

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| tert-Butyl Alcohol (TBA) | 100.0 | 92.34 | 92 | 32-148 |
| MTBE | 20.00 | 15.72 | 79 | 47-136 |
| Isopropyl Ether (DIPE) | 20.00 | 16.57 | 83 | 43-148 |
| Ethyl tert-Butyl Ether (ETBE) | 20.00 | 16.28 | 81 | 51-139 |
| 1,2-Dichloroethane | 20.00 | 19.18 | 96 | 54-150 |
| Benzene | 20.00 | 18.18 | 91 | 73-134 |
| Methyl tert-Amyl Ether (TAME) | 20.00 | 16.94 | 85 | 65-131 |
| Toluene | 20.00 | 20.97 | 105 | 72-134 |
| 1,2-Dibromoethane | 20.00 | 18.10 | 91 | 70-133 |
| Ethylbenzene | 20.00 | 19.13 | 96 | 74-134 |
| m,p-Xylenes | 40.00 | 40.90 | 102 | 74-133 |
| o-Xylene | 20.00 | 21.25 | 106 | 73-127 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 96 | 59-139 |
| 1,2-Dichloroethane-d4 | 107 | 54-153 |
| Toluene-d8 | 103 | 83-118 |
| Bromofluorobenzene | 95 | 61-146 |

Type: BSD Lab ID: QC540605

| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| tert-Butyl Alcohol (TBA) | 100.0 | 88.64 | 89 | 32-148 | 4 | 30 |
| MTBE | 20.00 | 16.01 | 80 | 47-136 | 2 | 23 |
| Isopropyl Ether (DIPE) | 20.00 | 15.85 | 79 | 43-148 | 4 | 20 |
| Ethyl tert-Butyl Ether (ETBE) | 20.00 | 16.55 | 83 | 51-139 | 2 | 22 |
| 1,2-Dichloroethane | 20.00 | 19.50 | 98 | 54-150 | 2 | 21 |
| Benzene | 20.00 | 18.25 | 91 | 73-134 | 0 | 19 |
| Methyl tert-Amyl Ether (TAME) | 20.00 | 17.28 | 86 | 65-131 | 2 | 21 |
| Toluene | 20.00 | 21.94 | 110 | 72-134 | 4 | 19 |
| 1,2-Dibromoethane | 20.00 | 18.56 | 93 | 70-133 | 3 | 24 |
| Ethylbenzene | 20.00 | 21.42 | 107 | 74-134 | 11 | 22 |
| m,p-Xylenes | 40.00 | 44.10 | 110 | 74-133 | 8 | 22 |
| o-Xylene | 20.00 | 21.91 | 110 | 73-127 | 3 | 22 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 93 | 59-139 |
| 1,2-Dichloroethane-d4 | 107 | 54-153 |
| Toluene-d8 | 105 | 83-118 |
| Bromofluorobenzene | 97 | 61-146 |

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

# Polynuclear Aromatics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 3550B |
| Project#: | 950074.05 | Analysis: | EPA 8270C |
| Field ID: | SB-8-4.5-5 | Batch#: | 161915 |
| Lab ID: | 219372-001 | Sampled: | 04/09/10 |
| Matrix: | Soil | Received: | 04/09/10 |
| Units: | ug/Kg | Prepared: | 04/12/10 |
| Basis: | dry | Analyzed: | 04/13/10 |
| Diln Fac: | 1.000 | | |

Moisture: 11%

| Analyte | Result | RL |
|---|---|---|
| Naphthalene | ND | 75 |
| Acenaphthylene | ND | 75 |
| Acenaphthene | ND | 75 |
| Fluorene | ND | 75 |
| Phenanthrene | 260 | 75 |
| Anthracene | 99 | 75 |
| Fluoranthene | 410 | 75 |
| Pyrene | 390 | 75 |
| Benzo(a)anthracene | 150 | 75 |
| Chrysene | 180 | 75 |
| Benzo(b)fluoranthene | 230 | 75 |
| Benzo(k)fluoranthene | 76 | 75 |
| Benzo(a)pyrene | 160 | 75 |
| Indeno(1,2,3-cd)pyrene | ND | 75 |
| Dibenz(a,h)anthracene | ND | 75 |
| Benzo(g,h,i)perylene | ND | 75 |

| Surrogate | %REC | Limits |
|---|---|---|
| Nitrobenzene-d5 | 60 | 27-106 |
| 2-Fluorobiphenyl | 63 | 30-113 |
| Terphenyl-d14 | 53 | 18-133 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# Polynuclear Aromatics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 3550B |
| Project#: | 950074.05 | Analysis: | EPA 8270C |
| Field ID: | SB-8-13-13.5 | Batch#: | 161915 |
| Lab ID: | 219372-002 | Sampled: | 04/09/10 |
| Matrix: | Soil | Received: | 04/09/10 |
| Units: | ug/Kg | Prepared: | 04/12/10 |
| Basis: | dry | Analyzed: | 04/13/10 |
| Diln Fac: | 1.000 | | |

Moisture: 17%

| Analyte | Result | RL |
|---|---|---|
| Naphthalene | ND | 80 |
| Acenaphthylene | ND | 80 |
| Acenaphthene | ND | 80 |
| Fluorene | 140 | 80 |
| Phenanthrene | 490 | 80 |
| Anthracene | ND | 80 |
| Fluoranthene | 380 | 80 |
| Pyrene | 460 | 80 |
| Benzo(a)anthracene | ND | 80 |
| Chrysene | 110 | 80 |
| Benzo(b)fluoranthene | 160 | 80 |
| Benzo(k)fluoranthene | ND | 80 |
| Benzo(a)pyrene | 130 | 80 |
| Indeno(1,2,3-cd)pyrene | ND | 80 |
| Dibenz(a,h)anthracene | ND | 80 |
| Benzo(g,h,i)perylene | ND | 80 |

| Surrogate | %REC | Limits |
|---|---|---|
| Nitrobenzene-d5 | 59 | 27-106 |
| 2-Fluorobiphenyl | 59 | 30-113 |
| Terphenyl-d14 | 53 | 18-133 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# Polynuclear Aromatics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 3550B |
| Project#: | 950074.05 | Analysis: | EPA 8270C |
| Field ID: | SB-8-17.5-18 | Batch#: | 161915 |
| Lab ID: | 219372-003 | Sampled: | 04/09/10 |
| Matrix: | Soil | Received: | 04/09/10 |
| Units: | ug/Kg | Prepared: | 04/12/10 |
| Basis: | dry | Analyzed: | 04/13/10 |
| Diln Fac: | 1.000 | | |

Moisture: 21%

| Analyte | Result | RL |
|---|---|---|
| Naphthalene | ND | 83 |
| Acenaphthylene | ND | 83 |
| Acenaphthene | ND | 83 |
| Fluorene | ND | 83 |
| Phenanthrene | ND | 83 |
| Anthracene | ND | 83 |
| Fluoranthene | ND | 83 |
| Pyrene | ND | 83 |
| Benzo(a)anthracene | ND | 83 |
| Chrysene | ND | 83 |
| Benzo(b)fluoranthene | ND | 83 |
| Benzo(k)fluoranthene | ND | 83 |
| Benzo(a)pyrene | ND | 83 |
| Indeno(1,2,3-cd)pyrene | ND | 83 |
| Dibenz(a,h)anthracene | ND | 83 |
| Benzo(g,h,i)perylene | ND | 83 |

| Surrogate | %REC | Limits |
|---|---|---|
| Nitrobenzene-d5 | 49 | 27-106 |
| 2-Fluorobiphenyl | 48 | 30-113 |
| Terphenyl-d14 | 54 | 18-133 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# Polynuclear Aromatics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 3550B |
| Project#: | 950074.05 | Analysis: | EPA 8270C |
| Field ID: | SB-7-5-5.5 | Batch#: | 161915 |
| Lab ID: | 219372-004 | Sampled: | 04/09/10 |
| Matrix: | Soil | Received: | 04/09/10 |
| Units: | ug/Kg | Prepared: | 04/12/10 |
| Basis: | dry | Analyzed: | 04/13/10 |
| Diln Fac: | 1.000 | | |

Moisture: 28%

| Analyte | Result | RL |
|---|---|---|
| Naphthalene | ND | 92 |
| Acenaphthylene | ND | 92 |
| Acenaphthene | ND | 92 |
| Fluorene | ND | 92 |
| Phenanthrene | ND | 92 |
| Anthracene | ND | 92 |
| Fluoranthene | ND | 92 |
| Pyrene | ND | 92 |
| Benzo(a)anthracene | ND | 92 |
| Chrysene | ND | 92 |
| Benzo(b)fluoranthene | ND | 92 |
| Benzo(k)fluoranthene | ND | 92 |
| Benzo(a)pyrene | ND | 92 |
| Indeno(1,2,3-cd)pyrene | ND | 92 |
| Dibenz(a,h)anthracene | ND | 92 |
| Benzo(g,h,i)perylene | ND | 92 |

| Surrogate | %REC | Limits |
|---|---|---|
| Nitrobenzene-d5 | 65 | 27-106 |
| 2-Fluorobiphenyl | 61 | 30-113 |
| Terphenyl-d14 | 63 | 18-133 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# Polynuclear Aromatics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 3550B |
| Project#: | 950074.05 | Analysis: | EPA 8270C |
| Field ID: | SB-7-8-8.5 | Batch#: | 161915 |
| Lab ID: | 219372-005 | Sampled: | 04/09/10 |
| Matrix: | Soil | Received: | 04/09/10 |
| Units: | ug/Kg | Prepared: | 04/12/10 |
| Basis: | dry | Analyzed: | 04/14/10 |
| Diln Fac: | 25.00 | | |

Moisture: 13%

| Analyte | Result | RL |
|---|---|---|
| Naphthalene | ND | 1,900 |
| Acenaphthylene | ND | 1,900 |
| Acenaphthene | ND | 1,900 |
| Fluorene | ND | 1,900 |
| Phenanthrene | ND | 1,900 |
| Anthracene | ND | 1,900 |
| Fluoranthene | ND | 1,900 |
| Pyrene | ND | 1,900 |
| Benzo(a)anthracene | ND | 1,900 |
| Chrysene | ND | 1,900 |
| Benzo(b)fluoranthene | ND | 1,900 |
| Benzo(k)fluoranthene | ND | 1,900 |
| Benzo(a)pyrene | ND | 1,900 |
| Indeno(1,2,3-cd)pyrene | ND | 1,900 |
| Dibenz(a,h)anthracene | ND | 1,900 |
| Benzo(g,h,i)perylene | ND | 1,900 |

| Surrogate | %REC | Limits |
|---|---|---|
| Nitrobenzene-d5 | DO | 27-106 |
| 2-Fluorobiphenyl | DO | 30-113 |
| Terphenyl-d14 | DO | 18-133 |

DO= Diluted Out
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# Polynuclear Aromatics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 3550B |
| Project#: | 950074.05 | Analysis: | EPA 8270C |
| Field ID: | SB-7-13-13.5 | Batch#: | 161915 |
| Lab ID: | 219372-006 | Sampled: | 04/09/10 |
| Matrix: | Soil | Received: | 04/09/10 |
| Units: | ug/Kg | Prepared: | 04/12/10 |
| Basis: | dry | Analyzed: | 04/13/10 |
| Diln Fac: | 1.000 | | |

Moisture: 17%

| Analyte | Result | RL |
|---|---|---|
| Naphthalene | ND | 80 |
| Acenaphthylene | ND | 80 |
| Acenaphthene | ND | 80 |
| Fluorene | 160 | 80 |
| Phenanthrene | 240 | 80 |
| Anthracene | ND | 80 |
| Fluoranthene | ND | 80 |
| Pyrene | 80 | 80 |
| Benzo(a)anthracene | ND | 80 |
| Chrysene | ND | 80 |
| Benzo(b)fluoranthene | ND | 80 |
| Benzo(k)fluoranthene | ND | 80 |
| Benzo(a)pyrene | ND | 80 |
| Indeno(1,2,3-cd)pyrene | ND | 80 |
| Dibenz(a,h)anthracene | ND | 80 |
| Benzo(g,h,i)perylene | ND | 80 |

| Surrogate | %REC | Limits |
|---|---|---|
| Nitrobenzene-d5 | 49 | 27-106 |
| 2-Fluorobiphenyl | 60 | 30-113 |
| Terphenyl-d14 | 52 | 18-133 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# Polynuclear Aromatics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 3550B |
| Project#: | 950074.05 | Analysis: | EPA 8270C |
| Field ID: | SB-7-20.5-21 | Batch#: | 161915 |
| Lab ID: | 219372-007 | Sampled: | 04/09/10 |
| Matrix: | Soil | Received: | 04/09/10 |
| Units: | ug/Kg | Prepared: | 04/12/10 |
| Basis: | dry | Analyzed: | 04/13/10 |
| Diln Fac: | 1.000 | | |

Moisture: 16%

| Analyte | Result | RL |
|---|---|---|
| Naphthalene | ND | 78 |
| Acenaphthylene | ND | 78 |
| Acenaphthene | ND | 78 |
| Fluorene | ND | 78 |
| Phenanthrene | ND | 78 |
| Anthracene | ND | 78 |
| Fluoranthene | ND | 78 |
| Pyrene | ND | 78 |
| Benzo(a)anthracene | ND | 78 |
| Chrysene | ND | 78 |
| Benzo(b)fluoranthene | ND | 78 |
| Benzo(k)fluoranthene | ND | 78 |
| Benzo(a)pyrene | ND | 78 |
| Indeno(1,2,3-cd)pyrene | ND | 78 |
| Dibenz(a,h)anthracene | ND | 78 |
| Benzo(g,h,i)perylene | ND | 78 |

| Surrogate | %REC | Limits |
|---|---|---|
| Nitrobenzene-d5 | 57 | 27-106 |
| 2-Fluorobiphenyl | 56 | 30-113 |
| Terphenyl-d14 | 56 | 18-133 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# Polynuclear Aromatics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 3550B |
| Project#: | 950074.05 | Analysis: | EPA 8270C |
| Field ID: | SB-9-5-5.5 | Batch#: | 161915 |
| Lab ID: | 219372-008 | Sampled: | 04/09/10 |
| Matrix: | Soil | Received: | 04/09/10 |
| Units: | ug/Kg | Prepared: | 04/12/10 |
| Basis: | dry | Analyzed: | 04/13/10 |
| Diln Fac: | 1.000 | | |

Moisture: 13%

| Analyte | Result | RL |
|---|---|---|
| Naphthalene | ND | 76 |
| Acenaphthylene | ND | 76 |
| Acenaphthene | ND | 76 |
| Fluorene | ND | 76 |
| Phenanthrene | ND | 76 |
| Anthracene | ND | 76 |
| Fluoranthene | ND | 76 |
| Pyrene | ND | 76 |
| Benzo(a)anthracene | ND | 76 |
| Chrysene | ND | 76 |
| Benzo(b)fluoranthene | ND | 76 |
| Benzo(k)fluoranthene | ND | 76 |
| Benzo(a)pyrene | ND | 76 |
| Indeno(1,2,3-cd)pyrene | ND | 76 |
| Dibenz(a,h)anthracene | ND | 76 |
| Benzo(g,h,i)perylene | ND | 76 |

| Surrogate | %REC | Limits |
|---|---|---|
| Nitrobenzene-d5 | 39 | 27-106 |
| 2-Fluorobiphenyl | 48 | 30-113 |
| Terphenyl-d14 | 43 | 18-133 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# Polynuclear Aromatics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 3550B |
| Project#: | 950074.05 | Analysis: | EPA 8270C |
| Field ID: | SB-9-9-9.5 | Batch#: | 161915 |
| Lab ID: | 219372-009 | Sampled: | 04/09/10 |
| Matrix: | Soil | Received: | 04/09/10 |
| Units: | ug/Kg | Prepared: | 04/12/10 |
| Basis: | dry | Analyzed: | 04/14/10 |
| Diln Fac: | 10.00 | | |

Moisture: 14%

| Analyte | Result | RL |
|---|---|---|
| Naphthalene | ND | 770 |
| Acenaphthylene | ND | 770 |
| Acenaphthene | ND | 770 |
| Fluorene | 900 | 770 |
| Phenanthrene | 2,800 | 770 |
| Anthracene | ND | 770 |
| Fluoranthene | 1,600 | 770 |
| Pyrene | 2,600 | 770 |
| Benzo(a)anthracene | ND | 770 |
| Chrysene | ND | 770 |
| Benzo(b)fluoranthene | ND | 770 |
| Benzo(k)fluoranthene | ND | 770 |
| Benzo(a)pyrene | ND | 770 |
| Indeno(1,2,3-cd)pyrene | ND | 770 |
| Dibenz(a,h)anthracene | ND | 770 |
| Benzo(g,h,i)perylene | ND | 770 |

| Surrogate | %REC | Limits |
|---|---|---|
| Nitrobenzene-d5 | DO | 27-106 |
| 2-Fluorobiphenyl | DO | 30-113 |
| Terphenyl-d14 | DO | 18-133 |

DO= Diluted Out
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# Polynuclear Aromatics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 3550B |
| Project#: | 950074.05 | Analysis: | EPA 8270C |
| Field ID: | SB-9-12.5-13 | Batch#: | 161915 |
| Lab ID: | 219372-010 | Sampled: | 04/09/10 |
| Matrix: | Soil | Received: | 04/09/10 |
| Units: | ug/Kg | Prepared: | 04/12/10 |
| Basis: | dry | Analyzed: | 04/13/10 |
| Diln Fac: | 5.000 | | |

Moisture: 17%

| Analyte | Result | RL |
|---|---|---|
| Naphthalene | ND | 400 |
| Acenaphthylene | ND | 400 |
| Acenaphthene | ND | 400 |
| Fluorene | ND | 400 |
| Phenanthrene | 1,100 | 400 |
| Anthracene | ND | 400 |
| Fluoranthene | 490 | 400 |
| Pyrene | 650 | 400 |
| Benzo(a)anthracene | ND | 400 |
| Chrysene | ND | 400 |
| Benzo(b)fluoranthene | ND | 400 |
| Benzo(k)fluoranthene | ND | 400 |
| Benzo(a)pyrene | ND | 400 |
| Indeno(1,2,3-cd)pyrene | ND | 400 |
| Dibenz(a,h)anthracene | ND | 400 |
| Benzo(g,h,i)perylene | ND | 400 |

| Surrogate | %REC | Limits |
|---|---|---|
| Nitrobenzene-d5 | 52 | 27-106 |
| 2-Fluorobiphenyl | 50 | 30-113 |
| Terphenyl-d14 | 50 | 18-133 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

## Polynuclear Aromatics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 3550B |
| Project#: | 950074.05 | Analysis: | EPA 8270C |
| Field ID: | SB-9-19-19.5 | Batch#: | 161915 |
| Lab ID: | 219372-011 | Sampled: | 04/09/10 |
| Matrix: | Soil | Received: | 04/09/10 |
| Units: | ug/Kg | Prepared: | 04/12/10 |
| Basis: | dry | Analyzed: | 04/13/10 |
| Diln Fac: | 1.000 | | |

Moisture: 23%

| Analyte | Result | RL |
|---|---|---|
| Naphthalene | ND | 86 |
| Acenaphthylene | ND | 86 |
| Acenaphthene | ND | 86 |
| Fluorene | ND | 86 |
| Phenanthrene | ND | 86 |
| Anthracene | ND | 86 |
| Fluoranthene | ND | 86 |
| Pyrene | ND | 86 |
| Benzo(a)anthracene | ND | 86 |
| Chrysene | ND | 86 |
| Benzo(b)fluoranthene | ND | 86 |
| Benzo(k)fluoranthene | ND | 86 |
| Benzo(a)pyrene | ND | 86 |
| Indeno(1,2,3-cd)pyrene | ND | 86 |
| Dibenz(a,h)anthracene | ND | 86 |
| Benzo(g,h,i)perylene | ND | 86 |

| Surrogate | %REC | Limits |
|---|---|---|
| Nitrobenzene-d5 | 52 | 27-106 |
| 2-Fluorobiphenyl | 48 | 30-113 |
| Terphenyl-d14 | 48 | 18-133 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## Polynuclear Aromatics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 3550B |
| Project#: | 950074.05 | Analysis: | EPA 8270C |
| Type: | BLANK | Diln Fac: | 1.000 |
| Lab ID: | QC540090 | Batch#: | 161915 |
| Matrix: | Soil | Prepared: | 04/12/10 |
| Units: | ug/Kg | Analyzed: | 04/13/10 |

| Analyte | Result | RL |
|---|---|---|
| Naphthalene | ND | 66 |
| Acenaphthylene | ND | 66 |
| Acenaphthene | ND | 66 |
| Fluorene | ND | 66 |
| Phenanthrene | ND | 66 |
| Anthracene | ND | 66 |
| Fluoranthene | ND | 66 |
| Pyrene | ND | 66 |
| Benzo(a)anthracene | ND | 66 |
| Chrysene | ND | 66 |
| Benzo(b)fluoranthene | ND | 66 |
| Benzo(k)fluoranthene | ND | 66 |
| Benzo(a)pyrene | ND | 66 |
| Indeno(1,2,3-cd)pyrene | ND | 66 |
| Dibenz(a,h)anthracene | ND | 66 |
| Benzo(g,h,i)perylene | ND | 66 |

| Surrogate | %REC | Limits |
|---|---|---|
| Nitrobenzene-d5 | 58 | 27-106 |
| 2-Fluorobiphenyl | 63 | 30-113 |
| Terphenyl-d14 | 55 | 18-133 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## Polynuclear Aromatics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 3550B |
| Project#: | 950074.05 | Analysis: | EPA 8270C |
| Type: | LCS | Diln Fac: | 1.000 |
| Lab ID: | QC540091 | Batch#: | 161915 |
| Matrix: | Soil | Prepared: | 04/12/10 |
| Units: | ug/Kg | Analyzed: | 04/13/10 |

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| Naphthalene | 1,000 | 561.8 | 56 | 39-120 |
| Acenaphthylene | 1,000 | 546.2 | 55 | 29-141 |
| Acenaphthene | 1,000 | 564.5 | 56 | 35-118 |
| Fluorene | 1,000 | 613.7 | 61 | 34-126 |
| Phenanthrene | 1,000 | 586.0 | 59 | 38-122 |
| Anthracene | 1,000 | 578.1 | 58 | 38-127 |
| Fluoranthene | 1,000 | 606.3 | 61 | 39-121 |
| Pyrene | 1,000 | 521.1 | 52 | 28-136 |
| Benzo(a)anthracene | 1,000 | 602.4 | 60 | 36-123 |
| Chrysene | 1,000 | 604.2 | 60 | 32-132 |
| Benzo(b)fluoranthene | 1,000 | 545.6 | 55 | 29-130 |
| Benzo(k)fluoranthene | 1,000 | 558.6 | 56 | 36-127 |
| Benzo(a)pyrene | 1,000 | 501.8 | 50 | 24-128 |
| Indeno(1,2,3-cd)pyrene | 1,000 | 572.1 | 57 | 27-135 |
| Dibenz(a,h)anthracene | 1,000 | 570.4 | 57 | 31-133 |
| Benzo(g,h,i)perylene | 1,000 | 580.9 | 58 | 27-139 |

| Surrogate | %REC | Limits |
|---|---|---|
| Nitrobenzene-d5 | 55 | 27-106 |
| 2-Fluorobiphenyl | 58 | 30-113 |
| Terphenyl-d14 | 55 | 18-133 |

Curtis & Tompkins, Ltd.

Batch QC Report

## Polynuclear Aromatics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 3550B |
| Project#: | 950074.05 | Analysis: | EPA 8270C |
| Field ID: | SB-8-4.5-5 | Batch#: | 161915 |
| MSS Lab ID: | 219372-001 | Sampled: | 04/09/10 |
| Matrix: | Soil | Received: | 04/09/10 |
| Units: | ug/Kg | Prepared: | 04/12/10 |
| Basis: | dry | Analyzed: | 04/13/10 |
| Diln Fac: | 1.000 | | |

Type: MS Moisture: 11%
Lab ID: QC540092

| Analyte | MSS Result | Spiked | Result | %REC | Limits |
|---|---|---|---|---|---|
| Naphthalene | 22.80 | 1,115 | 624.4 | 54 | 32-116 |
| Acenaphthylene | <17.71 | 1,115 | 644.0 | 58 | 23-143 |
| Acenaphthene | 30.65 | 1,115 | 586.3 | 50 | 28-114 |
| Fluorene | 52.02 | 1,115 | 597.6 | 49 | 31-117 |
| Phenanthrene | 264.4 | 1,115 | 822.5 | 50 | 18-128 |
| Anthracene | 98.82 | 1,115 | 705.4 | 54 | 32-121 |
| Fluoranthene | 413.3 | 1,115 | 927.1 | 46 | 23-121 |
| Pyrene | 389.5 | 1,115 | 978.7 | 53 | 20-135 |
| Benzo(a)anthracene | 154.1 | 1,115 | 764.6 | 55 | 18-129 |
| Chrysene | 179.7 | 1,115 | 796.1 | 55 | 18-131 |
| Benzo(b)fluoranthene | 234.1 | 1,115 | 959.9 | 65 | 20-131 |
| Benzo(k)fluoranthene | 75.94 | 1,115 | 792.9 | 64 | 26-131 |
| Benzo(a)pyrene | 161.2 | 1,115 | 695.6 | 48 | 18-121 |
| Indeno(1,2,3-cd)pyrene | 59.67 | 1,115 | 337.1 | 25 | 6-121 |
| Dibenz(a,h)anthracene | <15.02 | 1,115 | 311.7 | 28 | 10-118 |
| Benzo(g,h,i)perylene | 67.91 | 1,115 | 303.3 | 21 | 1-127 |

| Surrogate | %REC | Limits |
|---|---|---|
| Nitrobenzene-d5 | 60 | 27-106 |
| 2-Fluorobiphenyl | 60 | 30-113 |
| Terphenyl-d14 | 59 | 18-133 |

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

## Polynuclear Aromatics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | EPA 3550B |
| Project#: | 950074.05 | Analysis: | EPA 8270C |
| Field ID: | SB-8-4.5-5 | Batch#: | 161915 |
| MSS Lab ID: | 219372-001 | Sampled: | 04/09/10 |
| Matrix: | Soil | Received: | 04/09/10 |
| Units: | ug/Kg | Prepared: | 04/12/10 |
| Basis: | dry | Analyzed: | 04/13/10 |
| Diln Fac: | 1.000 | | |

Type: MSD Moisture: 11%
Lab ID: QC540093

| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| Naphthalene | 1,116 | 702.8 | 61 | 32-116 | 12 | 45 |
| Acenaphthylene | 1,116 | 719.6 | 64 | 23-143 | 11 | 43 |
| Acenaphthene | 1,116 | 650.5 | 56 | 28-114 | 10 | 44 |
| Fluorene | 1,116 | 649.3 | 54 | 31-117 | 8 | 43 |
| Phenanthrene | 1,116 | 945.5 | 61 | 18-128 | 14 | 52 |
| Anthracene | 1,116 | 784.8 | 61 | 32-121 | 11 | 45 |
| Fluoranthene | 1,116 | 1,113 | 63 | 23-121 | 18 | 54 |
| Pyrene | 1,116 | 1,169 | 70 | 20-135 | 18 | 58 |
| Benzo(a)anthracene | 1,116 | 905.5 | 67 | 18-129 | 17 | 50 |
| Chrysene | 1,116 | 922.3 | 67 | 18-131 | 15 | 52 |
| Benzo(b)fluoranthene | 1,116 | 1,149 | 82 | 20-131 | 18 | 57 |
| Benzo(k)fluoranthene | 1,116 | 951.2 | 78 | 26-131 | 18 | 52 |
| Benzo(a)pyrene | 1,116 | 828.4 | 60 | 18-121 | 17 | 57 |
| Indeno(1,2,3-cd)pyrene | 1,116 | 384.0 | 29 | 6-121 | 13 | 51 |
| Dibenz(a,h)anthracene | 1,116 | 362.9 | 33 | 10-118 | 15 | 49 |
| Benzo(g,h,i)perylene | 1,116 | 347.0 | 25 | 1-127 | 13 | 53 |

| Surrogate | %REC | Limits |
|---|---|---|
| Nitrobenzene-d5 | 68 | 27-106 |
| 2-Fluorobiphenyl | 66 | 30-113 |
| Terphenyl-d14 | 64 | 18-133 |

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

# Moisture

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | METHOD |
| Project#: | 950074.05 | Analysis: | ASTM D2216/CLP |
| Analyte: | Moisture, Percent | Batch#: | 161946 |
| Matrix: | Soil | Sampled: | 04/09/10 |
| Units: | % | Received: | 04/09/10 |
| Diln Fac: | 1.000 | Analyzed: | 04/13/10 |

| Field ID | Lab ID | Result | RL |
|---|---|---|---|
| SB-8-4.5-5 | 219372-001 | 11 | 1 |
| SB-8-13-13.5 | 219372-002 | 17 | 1 |
| SB-8-17.5-18 | 219372-003 | 21 | 1 |
| SB-7-5-5.5 | 219372-004 | 28 | 1 |
| SB-7-8-8.5 | 219372-005 | 13 | 1 |
| SB-7-13-13.5 | 219372-006 | 17 | 1 |
| SB-7-20.5-21 | 219372-007 | 16 | 1 |
| SB-9-5-5.5 | 219372-008 | 13 | 1 |
| SB-9-9-9.5 | 219372-009 | 14 | 1 |
| SB-9-12.5-13 | 219372-010 | 17 | 1 |
| SB-9-19-19.5 | 219372-011 | 23 | 1 |

RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## Moisture

| | | | |
|---|---|---|---|
| Lab #: | 219372 | Location: | 6601-6603 Bay Street |
| Client: | Erler & Kalinowski, Inc. | Prep: | METHOD |
| Project#: | 950074.05 | Analysis: | ASTM D2216/CLP |
| Analyte: | Moisture, Percent | Units: | % |
| Field ID: | SB-9-19-19.5 | Diln Fac: | 1.000 |
| Type: | SDUP | Batch#: | 161946 |
| MSS Lab ID: | 219372-011 | Sampled: | 04/09/10 |
| Lab ID: | QC540208 | Received: | 04/09/10 |
| Matrix: | Soil | Analyzed: | 04/13/10 |

| MSS Result | Result | RL | RPD | Lim |
|---|---|---|---|---|
| 23.47 | 22.75 | 1.000 | 3 | 44 |

RL= Reporting Limit
RPD= Relative Percent Difference