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Southwest Division
Naval Facilities Engineering Command
Contracts Department
1220 Pacific Highway, Building 127, Room 112
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CONTRACT NO. N68711-98-D-5713
CTO NO. 0026

FINAL

2001 ANNUAL GROUNDWATER MONITORING REPORT FOR MULTIPLE 13 AREA SITES, MCB CAMP PENDLETON

Revision 0
September 28, 2001

MARINE CORPS BASE
CAMP PENDLETON, CALIFORNIA

DCN: FWSD-RAC-01-0748

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September 28, 2001
FWSD-RAC-01-0748
CTO No. 0026

Mr. Ed Miranda
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Subject: **Final 2001 Annual Groundwater Monitoring Report for Multiple 13 Area Sites, Marine Corps Base Camp Pendleton, California**

Reference: SWDIV Contract No. N68711-98-D-5713, CTO No. 0026, Environmental Remedial Action Contract for Sites in Southern California, Arizona, New Mexico, and Southern Nevada

Dear Ed:

Attached is a copy of the subject Report presenting groundwater analytical results for multiple underground storage tank (UST) sites in the 13 Area. As an Annual Report, it includes data from both the July 2001 and February 2001 semiannual monitoring events.

Results from the July 2001 monitoring event indicate that expansion of the contaminant plumes has occurred in some areas since the previous monitoring event. Most significantly, approximately one foot of phase-separated hydrocarbons was encountered in deep aquifer Well S5/8/9/17-MW15. Also, TPH-purgeable as gasoline (0.22 mg/L) was detected north of 16th Street in Well S1-MW17. In general, groundwater flow directions and gradients have changed little in both the shallow and deep aquifers.

If you have any questions, please call.

Sincerely,

Foster Wheeler Environmental Corporation

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ABBREVIATIONS AND ACRONYMS

bgs	below ground surface
CTO	Contract Task Order
1,2-DCA	1,2-dichloroethane
DEH	Department of Environmental Health
DO	dissolved oxygen
EPA	U.S. Environmental Protection Agency
ft/ft	foot per foot
FWENC	Foster Wheeler Environmental Corporation
LCS	laboratory control sample
µg/L	micrograms per liter
MCB	Marine Corps Base
mg/L	milligrams per liter
MS/MSD	matrix spike/matrix spike duplicate
MTBE	methyl tert-butyl ether
ORP	oxidation/reduction potential
PAH	polynuclear aromatic hydrocarbon
PRD	product recovery device
PSH	phase-separated hydrocarbon
PWC	Public Works Center
QAPP	Quality Assurance Project Plan
QA/QC	quality assurance/quality control
RPD	relative percent difference
RWQCB	Regional Water Quality Control Board
TCE	trichloroethene
TOC	total organic carbon
TPH	total petroleum hydrocarbons
TRPH	total recoverable petroleum hydrocarbons
UST	underground storage tank
VOC	volatile organic compound
WQO	water quality objective

1.0 INTRODUCTION

This Annual Groundwater Monitoring Report summarizes the results of the past year of groundwater sampling at multiple sites in 13 Area, Marine Corps Base (MCB) Camp Pendleton, California. Included in this report are the results of the July 2001 monitoring event (covering the period April 2001 through September 2001). Sampling results from the first semiannual 2001 monitoring event (covering the period October 2000 through March 2001) were previously reported in the *Final First Semiannual 2001 Groundwater Monitoring Report for Multiple 13 Area Sites, Marine Corps Base Camp Pendleton, California* (FWENC, 2001a). The groundwater sampling conducted at the site, as well as the associated reporting activities, were performed by Foster Wheeler Environmental Corporation (FWENC) under Contract Task Order (CTO) No. 0026 for the Naval Facilities Engineering Command, Southwest Division, Contract No. N68711-98-D-5713.

1.1 SCOPE OF WORK

Semiannual monitoring included measurement of groundwater and phase-separated hydrocarbon (PSH) levels, as well as collection and analysis of groundwater samples. Monitored wells are listed in Section 2.0. Groundwater samples were analyzed for some or all of the following: total petroleum hydrocarbons (TPH)-extractable, TPH-purgeable, total recoverable petroleum hydrocarbons (TRPH), volatile organic compounds (VOCs) including methyl tert-butyl ether (MTBE) and other oxygenates, polynuclear aromatic hydrocarbons (PAHs), and several parameters used to monitor natural attenuation.

1.2 SITE BACKGROUND

The 13 Area sites are located in the eastern portion of MCB Camp Pendleton (Figure 1-1) and include multiple former underground storage tank (UST) sites, including Sites 1, 5, 6, 7, 8, 9, and 17. The 13 Area sites have been combined into three groups based on proximity. The groups include Site 1, Site 5/8/9/17, and Site 6/7 (Figure 1-2).

Site 1, located near former Building 13171 (a gas station canopy structure), contained a 10,000-gallon metal UST used to store gasoline for a former fueling station. Site 5/8/9/17, located near former Buildings 13161 and 13162, includes the former locations of three USTs and a pipeline connecting two of the USTs. Site 5 was a 1,500-gallon underground concrete tank and Site 8 was a 200-gallon underground metal tank; both were used to store diesel fuel for heating. Site 9 was a 650-gallon underground concrete tank used to store waste oil. Site 17 was a 1-inch pipeline that connected USTs at Sites 5 and 8. Site 6/7, located north of former Building 13162, contained both a former 350-gallon underground concrete tank and a former 500-gallon underground concrete tank. Both tanks were used to store oily waste from a motor pool wash pad.

1.3 SITE HYDROGEOLOGY

Groundwater beneath Site 1 is present at approximately 20 feet below ground surface (bgs) at elevations ranging from 306 to 313 feet above mean sea level. Groundwater flows generally to the west and south, and is primarily present within relatively low permeability sediments including sands rich in clays. The saturated thickness of the water-bearing zone, referred to as the shallow aquifer, is estimated to range from 5 to 20 feet (Parsons, 1999).

Two aquifers have been identified at Sites 5/8/9/17 and Site 6/7. Groundwater within the shallow aquifer at Sites 5/8/9/17 and 6/7 is encountered at depths ranging from approximately 11 to 29 feet bgs. Groundwater in the shallow aquifer flows to the west and north, and is primarily present within silts and clays. The average thickness of the shallow aquifer is estimated to be 5 feet or less (Parsons, 1999).

The deeper aquifer at Sites 5/8/9/17 and 6/7 is encountered at approximately 50 to 60 feet bgs. Groundwater in the deep aquifer flows to the southwest, and is present within fine- to medium-grained, weakly cemented sands. The average thickness of the deeper aquifer is at least 5 to 10 feet (Parsons, 1999).

2.0 FIELD ACTIVITIES

Monitoring activities at 13 Area included measuring of groundwater and PSH levels, and groundwater sampling and analysis. The second semiannual monitoring event was conducted between July 17, 2001 and July 27, 2001, during which 23 wells were sampled.

2.1 WATER LEVEL MEASUREMENTS

Prior to groundwater sampling, the depth to water and the total depth to the bottom of each sampled well were measured and recorded on a water-level log and well development/sampling log form (Appendix A). The depths were measured to the top of the surveyed casing in each well. Table 2-1 is a record of current groundwater elevation data, and Table 2-2 summarizes historical groundwater elevations. Groundwater elevation contour maps for the shallow and deep aquifers were prepared based on the recorded water levels (Figures 2-1 and 2-2). Groundwater was not sampled in the following wells in which PSH or product recovery devices (PRDs) were observed: S5/8/9/17-MW15, S5/8/9/17-MW38, S5/8/9/17-MW40, S5/8/9/17-MW48, S6/7-MW15, and S6/7-MW18. Historical PSH thickness and removal from Well S5/8/9/17-MW40, the well historically with the most PSH, are summarized on Table 2-3 and Figure 2-3. PSH had not been observed in deep aquifer Well S5/8/9/17-MW15 prior to this monitoring event. Well S6/7-MW18 is obstructed by a PRD at approximately 15.5 feet bgs, and attempts to remove the PRD have not been successful. PSH is currently present only as a sheen in the other wells listed.

2.2 FIELD PROCEDURES

Groundwater samples were collected in accordance with the sampling procedures described in the *Groundwater Sampling Plan for Multiple 12 and 13 Area Sites* (FWENC, 2001b). Prior to groundwater sampling, each well was purged of stale casing and borehole water. Monitoring wells were purged either by hand using a disposable bailer or using a portable, submersible pump. Field data sheets, presented in Appendix A, indicate the purge method and purge volume for each well. Temperature, pH, electrical conductivity, turbidity, oxidation/reduction potential (ORP) and dissolved oxygen (DO) were monitored during purging activities (see Appendix A). All non-disposable downhole equipment was decontaminated between wells.

Groundwater samples were collected with disposable polyethylene bailers that were lowered into each well with a nylon string. A new bailer and string were used for each monitoring well to prevent cross-contamination of samples. All sample containers were completely filled, labeled, and placed in a cooler with ice immediately after sample collection for delivery to the laboratory.

2.3 CONTAMINANT SAMPLE ANALYSES

Groundwater from 13 Area wells was analyzed for some or all of the following analytical parameters for contaminants of concern:

- TPH-purgeable as gasoline by U.S. Environmental Protection Agency (EPA) Method 8015B
- TPH-extractable as diesel by EPA Method 8015B
- TRPH by EPA Method 418.1
- VOCs by EPA Method 8260B, including MTBE and other oxygenates
- PAHs by EPA Method 8310

2.4 NATURAL ATTENUATION SAMPLE ANALYSES

To evaluate natural attenuation of contaminants at the 13 Area sites, groundwater from all wells was also analyzed for several additional parameters. In the field, pH, temperature, conductivity, ORP, and DO were measured using field instruments. Ferrous iron analyses were performed on samples from select wells using a Hach® IR-18C field test kit. Groundwater analyses were also performed at a fixed laboratory for the parameters listed below.

- Nitrate, sulfate, and chloride by EPA Method 300.0
- Alkalinity by EPA Method 310.1
- Total organic carbon (TOC) by EPA Method 9060
- Methane, ethane, and ethene (dissolved gases) by Method RSK-175

It is noted that because chlorinated VOC concentrations are orders of magnitude lower than natural chloride concentrations in groundwater at 13 Area, chloride data is not expected to be useful in evaluating the extent of reductive dechlorination. However, because chloride is included in EPA Method 300.0, it is reported because it may provide useful information to help verify whether or not groundwater samples are of common origin.

2.5 WASTE MANAGEMENT

All equipment decontamination water and groundwater generated from well purging and sampling was contained in a liquid waste storage tank located in 13 Area, MCB Camp Pendleton. Analytical results from previous groundwater monitoring events were used for waste profiling. All waste water was transported to Onyx Environmental Services in Azusa, California for disposal. No wastes were present on site longer than 60 days. A copy of the non-hazardous waste manifest is included as Appendix C.

3.0 GROUNDWATER MONITORING RESULTS

The following sections primarily describe the results of the second semiannual (July) 2001 groundwater monitoring event at 13 Area. Results from the first semiannual (February) 2001 groundwater monitoring event were previously described (FWENC, 2001).

3.1 GROUNDWATER FLOW DIRECTION

Both shallow and deep aquifers are monitored at 13 Area, however, only the shallow aquifer is encountered below Site 1. Groundwater elevations and flow directions for the shallow and deep aquifers in 13 Area are presented in Figures 2-1 and 2-2, respectively. A summary of groundwater and PSH elevation data is presented in Table 2-1.

During July 2001, shallow aquifer groundwater was encountered at depths ranging from 10.68 feet bgs at Well S5/8/9/17-MW47 to 52.95 feet bgs at Well S1-MW21, which is located approximately 500 feet away at a higher ground surface elevation. Shallow aquifer groundwater elevations have changed little, generally less than 1 foot, from the last monitoring event in February 2001 (Table 2-2). Based on the July 2001 groundwater elevation measurements, shallow aquifer groundwater flow is generally to the west and south; however, flow is to the north from Site 5/8/9/17 toward Site 6/7 (Figure 2-1). Groundwater gradients are relatively flat near both Site 1 and Site 5/8/9/17, and are steeper near Site 6/7, and between Site 1 and Site 5/8/9/17. Groundwater gradients average between 0.01 foot/foot (ft/ft) and 0.02 ft/ft across 13 Area, and have not changed substantially during the past year.

Deep aquifer groundwater (Figure 2-2), was encountered at depths ranging from 43.57 feet bgs at Well S6/7-MW12 to 60.83 feet bgs at Well S5/8/9/17-MW36. Deep aquifer groundwater elevations and gradients also have not changed substantially since the last monitoring event in February 2001, with changes ranging up to an increase in elevation of approximately 0.5 feet. On average, deep aquifer groundwater elevations have risen slightly since the February monitoring event, following a general slight decrease in groundwater elevations which occurred between the August 2000 and February 2001 monitoring events. Based on the July 2001 groundwater elevation measurements, deep aquifer groundwater flow is generally to the west (Figure 2-2), with a gradient averaging approximately 0.006 ft/ft.

3.2 CONTAMINANT ANALYTICAL RESULTS

Contaminant analytical results from the July 2001 semiannual sampling event and previous events are summarized in Tables 3-1, 3-2, and 3-3. The results from the July 2001 event are also shown in Figures 3-1, 3-2, and 3-3. The laboratory analytical reports are included in Appendix B.

3.2.1 Shallow Aquifer Analytical Results

The second semiannual 2001 monitoring event detected TPH-purgeable, TPH-extractable, or VOCs exceeding water quality objectives (WQOs), as specified in the *San Diego Regional Water Quality Board* (RWQCB) *Basin Plan* (RWQCB, 1994), in 17 shallow aquifer wells. Shallow aquifer wells with contaminants exceeding WQOs are shown on Figures 3-1 and 3-2, and are also summarized on Tables 3-1, 3-2. During the July 2001 monitoring event, specific contaminants found in excess of WQO's were: TPH-purgeable [(WQO 0.05 milligrams per liter (mg/L)]; TPH-extractable (WQO 1.0 mg/L); benzene [(WQO 1.0 micrograms per liter (μg/L)]; toluene (WQO 150 μg/L); trichloroethene (TCE) (WQO 5 μg/L); carbon tetrachloride (WQO 0.5 μg/L); 1,2-dichloroethane (1,2-DCA) (WQO 0.5 μg/L); and 1,1-dichloroethane (WQO 5 μg/L).

The highest level of TPH-purgeable contamination encountered in the shallow aquifer was in Well S1-MW22, at 110 mg/L (Figure 3-1). This well is located adjacent to former Well S1-MW13171-1, slightly southwest of the former gasoline UST tank cavity at Site 1. The plume of TPH-purgeable extends southward past Wells S1-MW16 and S5/8/9/17-MW50 (7.0 mg/L and 6.9 mg/L TPH-purgeable, respectively). During the February 2001 monitoring event, TPH-purgeable was detected farther south in Well S1-MW19 (0.11 mg/L). Although no TPH-purgeable was detected in Well S1-MW19 during the July 2001 monitoring event, the edge of the TPH-purgeable plume likely extends to near this well, based on the groundwater flow direction and elevated benzene concentrations (60 μg/L) in this well. Significant concentrations of fuel oxygenates, previously detected in wells near the former tank cavity at Site 1, were not detected during this event, however a high sample dilution factor (1000 times) by the laboratory for the sample from Well S1-MW22 may partially account for this change. Contaminant levels in Wells S1-MW8, and S1-MW21 are similar to those measured during the February 2001 monitoring event, indicating there has been no additional plume migration to the south or east. During the July 2001 monitoring event, a low level of TPH-purgeable (0.22 mg/L) was detected for the first time in Well S1-MW17, located north of 16th Street. To the west, benzene was detected in excess of the WQO for the first time in well S1-MW15.

The highest concentration of TPH-extractable in the shallow aquifer was detected in Well S5/8/9/17-MW41 (29 mg/L). Due to the presence of PSH over a large area in the vicinity of Sites 5/8/9/17 and Site 6/7, as indicated on Figure 2-1, several wells were not sampled. Active product removal (manual bailing) has been performed at the site from Well S5/8/9/17-MW40. The plume of TPH-extractable in excess of the WQO extends from Well S1-MW16, to the west, to Well S6/7-MW16, to the north, and to Well S6/7-MW17 to the northeast. Figure 3-1 depicts specific concentrations of TPH-extractable in the shallow wells.

The concentration of TCE was highest (120 μg/L) in Well S5/8/9/17-MW50, and was detected in most wells in the central and eastern portions of the monitored area (Figure 3-2).

With the exception of the detection of TPH-purgeable in Well S1-MW17, the results for shallow groundwater at 13 Area are consistent with results from the previous sampling event (FWENC,

2001a) and the results from the last Annual Groundwater Monitoring Report [Navy Public Works Center (PWC), 2000].

3.2.2 Deep Aquifer Analytical Results

Contaminants with concentrations exceeding WQOs (see Section 3.2.1) in the deep aquifer at 13 Area during the July 2001 monitoring event were TPH-extractable, benzene, and 1,2-DCA. Deep aquifer wells with contaminants exceeding WQOs are shown on Figure 3-3, and are also summarized on Tables 3-1, 3-2, and 3-3. TPH-extractable exceeded the WQO in three of the six deep aquifer wells sampled, with the maximum concentration detected at Well S5/8/9/17-MW37 (0.72 mg/L). Benzene exceeded the WQO in only one of the six deep aquifer wells, S6/7-MW7, at 1.1 μg/L. Concentrations of 1,2-DCA exceeded the WQO in two of the six deep aquifer wells, with the maximum concentrations occurring in Well S6/7-MW7 (0.63 μg/L) and S6/7-MW16 (2.8 μg/L). It is important to note that deep aquifer Well S5/8/9/17-MW15 was not sampled due to the presence of 0.97 foot of PSH in the well.

With the notable exception of the presence of PSH in Well S5/8/9/17-MW15, the results for the deep aquifer groundwater at 13 Area are generally consistent with previous monitoring event in February 2001, although this prior event also detected TCE in concentrations slightly exceeding the WQO (5 μg/L). During the July 2001 monitoring event, TCE was detected in concentrations less than the WQO in 5 of the 6 deep aquifer wells.

3.3 NATURAL ATTENUATION PARAMETERS ANALYTICAL RESULTS

Groundwater parameters analyzed in both the shallow and deep aquifer wells for the assessment of natural attenuation at 13 Area are presented in Tables 3-4, 3-5, and 3-6, and the sample collection logs in Appendix A. Results from this semiannual monitoring event for chloride, sulfate, nitrate, ferrous iron, TOC, alkalinity, and dissolved gases (methane, ethane, and ethene), along with previous analytical results, are summarized in Table 3-2. Field-recorded values of DO and ORP are also included on Tables 3-4, 3-5, and 3-6. Field forms with results of temperature, conductivity, pH, ORP, and DO for each well are included in Appendix A. This discussion focuses on biodegradation of contaminants, which is generally the major contaminant removal mechanism in natural attenuation.

3.3.1 Evaluation of Natural Attenuation Parameter Results

Groundwater at 13 Area contains contaminants that are subject to biodegradation through both oxidative and reductive processes. TPH and non-chlorinated VOCs (i.e., benzene) may be oxidized by microbes if sufficient electron acceptors and nutrients are present, while chlorinated VOCs (i.e., TCE) may be degraded through microbial reductive dechlorination processes in the presence of an oxidizable substrate.

Although the contaminant sources at the former UST locations remain in place, the areal extent of the contaminant plumes and contaminant concentrations have remained relatively stable for

several years, indicating that natural attenuation is likely occurring in both shallow and deep groundwater at 13 Area (excluding the recent discovery of PSH in deep aquifer Well S5/8/9/17-MW15). As shown by the DO and ORP data (Tables 3-4, 3-5, and 3-6), in general, reduced oxygen levels and reduced ORP are recorded near the downgradient edges of the shallow aquifer plume (i.e., Wells S1-MW16 and S5/8/9/17-MW50). These data suggest that oxidation of TPH is occurring, and has consumed available oxygen. Under these conditions oxidation of TPH may still occur at a much slower rate, with alternative compounds, such as nitrate, sulfate, and (potentially) chlorinated VOCs, serving as terminal electron acceptors. Downgradient wells located beyond most of the groundwater contamination contain significantly higher DO and ORP values (i.e., S1-MW20 and S1-MW21). It is noted, however, that in many cases low DO and ORP levels do not correspond with high TPH, as expected for biodegradation processes. This is likely due to a combination of natural variability within the aquifer, sample collection methods, and measurement uncertainties.

Well S5/8/9/17-MW50, located in the area of highest TCE contamination, appears to show trends indicative of reductive dechlorination of TCE, including low DO and ORP, and the presence of low levels of dechlorination daughter products 1,1-dichloroethene, ethane, and ethene.

Other natural attenuation parameter analyses (nitrate, sulfate, ferrous iron, TOC, and dissolved gasses methane, ethane, and ethene) do not, however, show significant trends indicative of natural attenuation at 13 Area. Future analysis of dissolved gas results should monitor the recent substantial increases in methane concentrations in Well S1-MW14.

4.0 QUALITY ASSURANCE AND QUALITY CONTROL

Groundwater samples were collected and preserved in accordance with the San Diego County Department of Environmental Health (DEH), *Site Assessment and Mitigation Manual 2000* (DEH, 2000), and were delivered to the analytical laboratory within 24 hours of sample collection. The groundwater samples were prepared and analyzed within the method-specified analytical holding times. EMAX Laboratories Incorporated, a state of California-certified and Naval Facility Engineering Service Center-evaluated laboratory, performed the analytical work. This section summarizes quality assurance and quality control (QA/QC) results for the February and July 2001 sampling events. February 2001 (first semiannual) QA/QC results are presented herein because these were unavailable at the time of submission of that monitoring report.

4.1 FIELD BLANKS

For each monitoring event, equipment rinsate samples were collected and analyzed to determine the effectiveness of the decontamination procedure and potential cross-contamination that may be introduced during the well purging process using submersible pumps. For the first and second semiannual 2001 monitoring events, no VOC's, TPH-purgeable, TPH-extractable, TRPH, or PAHs were detected in equipment rinsate samples above analyte reporting limits with the exception of TPH-extractable in samples 0026-082 (1.5 mg/L) and 0026-118 (0.41 mg/L) during the February 2001 sampling event. Analysis of sample results prior to, and subsequent from, the collection of these equipment rinsate samples do not clearly demonstrate that cross-contamination between wells occurred, therefore no results are qualified based on these results. It should be noted that equipment rinsate samples were collected from the submersible pumps used to purge the wells prior to sampling with disposable bailers.

Trip blanks, which pertain only to volatile organic samples, were prepared and analyzed to determine potential cross-contamination that may occur during sample transport to the laboratory. For both the February and July 2001 monitoring events, no VOCs were detected in any trip blanks above analyte reporting limits, except for sample 0026-065 during the February sampling. Trip blank 0026-065 contained benzene, ethylbenzene, and toluene above reporting limits (11 μg/L, 1.6 μg/L, and 0.71 μg/L, respectively); samples collected concurrently with this trip blank are noted on Table 3-1.

4.2 FIELD DUPLICATES

In each sampling event, a duplicate groundwater sample pair was collected from one well and analyzed to assess the system-level precision, which includes the effects (variability) of sample collection, handling, processing, and analysis. Variability is measured in terms of relative percent difference (RPD).

For both the February 2001 and July 2001 monitoring events, approximately 85 percent of the RPDs are within project precision criteria. Most of the apparent RPD exceedances are associated with low analyte concentrations. It must be noted that as the duplicate concentrations approach the detection limits, a high RPD value is expected because large relative errors commonly occur near these levels. In this case, because results for the sample and duplicate were near the detection limits, precision is considered acceptable.

4.3 LABORATORY QA/QC SAMPLES

In accordance with the analytical method and the Quality Assurance Project Plan (QAPP) specifications, method blanks, surrogate spikes, and laboratory control samples (LCSs) were analyzed to assess method accuracy and precision. Matrix spike (MS) and matrix spike duplicate (MSD) samples were provided to the laboratory for both the February and July 2001 sampling events at 5 percent frequency.

All method blanks for contaminants of concern were free of background contamination at reporting limits. During both the February and July monitoring events, methane was detected in method blanks for RSK-175M analyses, requiring qualifiers for some dissolved methane results. Percent recoveries in LCSs, surrogates, MS/MSD, and RPDs were also within project-specified QC acceptance limits.

In accordance with the QAPP, a level III/IV validation of the analytical data was performed by a qualified, third-party validator. Except for the results noted above, no sample results for the constituents of interest required validation qualifiers.

5.0 SUMMARY AND RECOMMENDATIONS

Comparison of the groundwater results for 13 Area, from the February 2001 to the July 2001 monitoring events indicates that the groundwater contamination plumes have apparently migrated to the north, with low concentrations of TPH-purgeable detected in Well S1-MW17, and contaminants have migrated into the deep aquifer the in vicinity of Well S5/8/9/17-MW15, where approximately 1 foot of PSH was measured during the July monitoring event. The southwestern and eastern edges of the TPH and benzene plumes appear to be relatively stable in both contaminant concentrations and areal extent. Benzene concentrations greater than the WQO were detected for the first time in well S1-MW15, indicating the contaminant plume may be migrating westward in this area. TCE concentrations for the July monitoring event are similar to the results from both the February 2001 and August 2000 monitoring events in both the shallow and deep aquifer.

It is recommended that future monitoring events continue sampling a representative subset of the monitoring wells in each aquifer, similar to those wells sampled during the July 2001 monitoring event. Well S2-MW3, although not accessible for sampling during the July 2001 event, should be included in the routine monitoring program to determine if the southwestern edge of the TPH and benzene plume remains stable. The continued presence of PSH in several wells indicates that continued active removal of PSH from Well S5/8/9/17-MW40 should be continued, and that other wells containing PSH should be monitored regularly for PSH levels, and product removal activities commenced if PSH thickness is significant.

Continued semiannual monitoring of natural attenuation parameters is recommended for a representative subset of both deep and shallow aquifer wells, similar to those wells sampled during the July 2001 monitoring event. All sampled wells in the 13 Area will continue to be monitored for all field-tested natural attenuation parameters (pH, temperature, conductivity, ORP, and DO).

6.0 REFERENCES

California Regional Water Quality Control Board (RWQCB). 1994. *Water Quality Control Plan for the San Diego Basin)(amended).*

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Navy Public Works Center (PWC), San Diego. 2000. *Semiannual Groundwater Monitoring Report for April 2000 to September 2000, 12 and 13 Areas, MCB Camp Pendleton, California*. October.

San Diego County, Department of Environmental Health (DEH), Land and Water Quality Division. *San Diego County Site Assessment and Mitigation (SAM) Manual 2000.*

TABLES

Table 2-1
Groundwater Elevations, 13 Area, July 2001, MCB Camp Pendleton

Well Identification	Date Sounded	Screen Interval Depth (ft bgs)	Top of Casing Elevation (ft msl)	Depth to Water (ft btoc)	Groundwater Elevation (1) (ft msl)	Comments
S1-MW8	7/16/01	14 - 35	328.60	19.01	309.59	(2)
S1-MW14	7/16/01	16.5 - 32.5	333.93	21.04	312.89	
S1-MW15	7/16/01	20 - 36	334.85	23.11	311.74	
S1-MW16	7/16/01	26 -42.5	339.60	29.69	309.91	
S1-MW17	7/16/01	11 - 32	321.89	10.81	311.08	water level above screen
S1-MW19	7/16/01	33.5 - 50	345.02	36.84	308.18	
S1-MW20	7/16/01	31 - 61	354.15	47.18	306.97	
S1-MW21	7/16/01	30 - 60	359.21	52.95	306.26	(2)
S1-MW22	7/16/01	18 - 33	329.46	19.01	310.45	(2)
S5/8/9/17-MW1 (deep)	7/16/01	43 - 64	337.80	53.31	284.49	
S5/8/9/17-MW4 (deep)	7/16/01	43.5 - 64.5	337.67	52.82	284.85	
S5/8/9/17-MW15 (deep)	7/16/01	57 - 78	341.62	57.57	284.05	PSH; water at 58.54
S5/8/9/17-MW36 (deep)	7/16/01	52 - 73	343.90	60.83	283.07	
S5/8/9/17-MW37 (deep)	7/16/01	50 - 66	336.72	53.10	283.62	
S5/8/9/17-MW38	7/16/01	12 - 28	331.22	15.50	315.72	PSH; water at 16.09
S5/8/9/17-MW40	7/16/01	19 - 34	337.62	18.28	319.34	PSH; water at 19.49
S5/8/9/17-MW41	7/16/01	19 - 35	336.21	19.41	316.80	
S5/8/9/17-MW44	7/16/01	17 - 33	337.03	17.21	319.82	
S5/8/9/17-MW46	7/16/01	14 - 30	330.88	15.10	315.78	
S5/8/9/17-MW47	7/16/01	14 - 30	328.03	10.68	317.35	water level above screen
S5/8/9/17-MW48	7/16/01	13 - 34	338.33	21.09	317.24	PSH sheen
S5/8/9/17-MW50	7/16/01	19 - 35	340.64	29.41	311.23	
S6/7-MW7 (deep)	7/16/01	40 - 56	332.09	46.97	285.12	
S6/7-MW12 (deep)	7/16/01	38 - 59	328.68	43.57	285.11	
S6/7-MW13	7/16/01	16 - 32	332.53	16.96	315.57	
S6/7-MW15	7/16/01	14 - 30	332.24	16.49	315.75	PSH; water at 16.59
S6/7-MW16	7/16/01	13 - 28	327.83	15.71	312.12	
S6/7-MW17	7/16/01	18 - 33	332.57	20.01	312.56	
S6/7-MW18	7/16/01	8 - 28	333.20	14.73	318.47	PSH; well obstructed at 15.5

deep - Denotes that well is located in the next deeper aquifer below the shallow aquifer.

ft msl - Feet above mean sea level.

ft btoc - Feet below top of well casing.

PSH - Phase-separated hydrocarbon.

(1) - Groundwater elevation or elevation to top of PSH

(2) - Well recently installed or resurveyed; casing elevation adjusted -1.67 feet for datum normalization to National Geodetic Verical Datum 1929.

Ta. 2-2
Summary of Historical Groundwater Elevations, 13 Area
MCB Camp Pendleton

Well Identification	Well Elevation (toc)	Screened Interval (ft msl) Top Bottom	Aug-95 (Baseline)	Nov-95	Feb-96	May-96	Aug-96	Oct-96	Apr-97	Jul-97	Apr-98	Dec-98	Mar-00	Aug-00	Feb-01	Jul-01
S1-MW4	326.78	313.78 - 297.78	312.37	311.65	310.88	311.51	311.32	311.02	311.66	311.23	311.51	310.75	311.99	312.03	312.02	--
S1-MW8	328.60	314.60 - 293.60	311.46	311.73	311.04	310.98	311.32	311.33	--	310.96	310.37	310.94	310.55	311.04	310.65	309.59
S1-MW13	340.17	316.17 - 300.17	309.29	309.38	309.17	309.27	309.33	309.36	309.38	309.11	308.91	309.05	309.28	309.60	309.81	--
S1-MW14	333.93	317.43 - 301.43	313.39	313.49	313.15 b	313.08 b	313.30	313.40	313.04	312.94	312.84	313.41	312.94	313.76	313.04	312.89
S1-MW15	334.85	314.85 - 298.85	311.43	311.08	310.42	310.84	310.75	310.57	310.94	310.59	310.52	310.24	311.25	311.40	311.40	311.74
S1-MW16	339.60	313.60 - 297.10	309.49	309.35	309.08	309.34	309.25	309.27	309.37	309.18	308.91	308.98	309.66	309.91	309.80	309.91
S1-MW17	321.89	310.89 - 289.89	311.37	311.01	310.03	310.82	310.81	310.53	310.82	--	--	--	310.29	310.89	310.03	311.08
S1-MW18	322.40	315.40 - 293.90	311.82	310.81	310.08	310.93	310.73	310.30	--	--	--	--	311.01	311.11	310.70	
S1-MW19	345.02	311.52 - 295.02	307.90	307.87	307.70	307.88	307.91	307.93	308.00	307.78	306.82	307.60	307.87	308.20	308.22	308.18
S1-MW20	354.15	323.15 - 293.15	--	--	306.85	306.78	306.77	306.76	306.88	306.63	--	306.63	306.66	307.02	307.03	306.97
S1-MW21	359.21	329.21 - 299.21	--	--	--	--	--	--	--	--	--	--	--	--	306.38	306.26
S1-MW22	329.46	311.46 - 296.46	dne	dne	dne	dne	dne	dne	dne	dne	dne	dne	dne	dne	309.66	310.45
S1-MW23	327.52	313.52 - 293.52	dne	dne	dne	dne	dne	dne	dne	dne	dne	dne	dne	dne	310.09	--
S1-MW13171-1	330.46	305.46 - 290.46	308.61	306.92 b	306.74 c	306.13 b	307.31 b	308.14	PSH	308.38	307.05	305.70	306.21	307.69	Destroyed	--
S1-MW13171-2	327.48	307.48 - 292.48	310.59 c	310.76 c	309.65 c	310.34 b	310.51 b	310.27	PSH	310.19	prd	309.57	310.19	310.67	Destroyed	--
S1-MW13171-3	328.14	308.14 - 293.14	310.99	310.98	310.11	310.44	310.67	310.55		310.47		310.11	310.29	310.78	Destroyed	--
S2-MW1	340.66	315.16 - 299.16	a	a	a	a	a	a	a	a	a	a	a	a	311.54	--
S2-MW3	345.28	318.28 - 297.28	a	a	a	a	a	a	a	a	a	a	a	a	307.89	--
S2-MW5	337.89	317.89 - 296.89	a	a	a	a	a	a	a	a	a	a	a	a	311.75	--
S5/8/9/17-MW1 (deep)	337.80	294.80 - 273.80	283.74	283.76	283.64	283.74	283.93	283.86	283.98	284.08	283.79	283.93	284.23	284.49	284.28	284.49
S5/8/9/17-MW4 (deep)	337.67	294.17 - 273.17	284.32	284.21	284.05	284.22	284.35	284.36	284.33	284.53	284.27	284.30	284.67	284.91	284.59	284.85
S5/8/9/17-MW7 (deep)	336.52	293.52 - 272.52	283.42	282.66	283.51	283.62	283.83	283.84	283.77	283.86	283.78	284.02	284.06	284.29	284.17	--
S5/8/9/17-MW10 (deep)	330.72	286.72 - 273.72	283.61	283.90	284.06	284.39	284.45	284.05	283.97	284.27	285.16	284.32	284.68	284.99	284.80	--
S5/8/9/17-MW15 (deep)	341.62	284.62 - 263.62	283.06	283.07	282.94	283.12	283.33	283.36	283.25	283.44	283.20	283.30	283.64	283.79	283.62	284.05 c
S5/8/9/17-MW23 (deep)	346.49	286.49 - 265.49	282.75	282.80	282.74	282.83	283.00	282.95	282.92	283.03	283.19	283.03	283.36	283.56	283.57	--
S5/8/9/17-MW25 (deep)	337.49	288.49 - 272.49	284.29	284.21	284.05	284.25	284.38	284.32	284.28	283.95	--	284.35	--	284.95	284.69	--
S5/8/9/17-MW31 (deep)	337.41	288.41 - 272.41	284.54	284.51	284.28	284.63	284.67	284.61	--	284.68	284.55	284.62	285.53	285.15	284.95	--
S5/8/9/17-MW34 (deep)	347.98	294.98 - 273.98	284.42	284.54	284.41	284.53	284.71	284.58	284.53	284.58	284.33	284.63	284.96	285.23	284.88	--
S5/8/9/17-MW36 (deep)	343.90	291.90 - 270.90	282.35	282.22	282.08	282.34	282.39	282.44	279.23	282.64	282.42	282.47	282.78	283.02	283.00	283.07
S5/8/9/17-MW37 (deep)	336.72	286.72 - 270.72	282.68	282.67	282.57	282.76	282.88	282.81	282.84	283.04	--	--	283.22	283.46	283.45	283.62
S5/8/9/17-MW38	331.22	319.22 - 303.22	316.99	316.14	315.78	315.87	315.71	314.48	315.66	316.07	--	--	314.74	315.43	314.86	315.72 c
S5/8/9/17-MW39	331.13	316.13 - 300.13	318.52	317.78	318.44	318.09	318.60	318.76	318.40	318.26	--	--	318.13	318.40	318.25	--
S5/8/9/17-MW40	337.62	293.62 - 272.62	304.20 c	304.09 c	308.43 c	312.67 c	315.27 c	315.90	317.50	319.01	--	--	--	315.85	318.30	319.34 c
S5/8/9/17-MW41	336.21	317.21 - 301.21	316.70 b	317.06	316.87	316.70	316.93	317.10	316.65	316.73	--	--	316.63	316.74	316.64	316.80
S5/8/9/17-MW44	337.03	320.03 - 304.03	313.38	318.19	317.63	317.17	318.36	318.82	--	316.81	--	--	318.91	319.43	318.68	319.82
S5/8/9/17-MW46	330.88	316.88 - 300.88	316.12	316.23	315.91	315.85	316.09	315.22	315.84	315.88	--	--	315.75	316.03	315.78	315.78
S5/8/9/17-MW47	328.03	314.03 - 298.03	317.84	317.83	317.63	317.35	317.32	317.46	317.36	317.46	--	--	317.32	317.51	317.17	317.35
S5/8/9/17-MW48	338.33	325.33 - 304.33	316.54	317.03 b	317.74 b	316.94 b	317.48 c	316.08	317.38	317.17	--	--	316.63	317.80	317.87	317.24 c
S5/8/9/17-MW50	340.64	321.64 - 305.64	--	--	310.30	310.27	310.47	310.61	310.70	310.79	--	--	311.09	311.31	311.48	311.23

Table 2-2

Ta -2

Summary of Historical Groundwater Elevations, 13 Area
MCB Camp Pendleton

Well Identification	Well Elevation (toc)	Screened Interval (ft msl) Top Bottom	Aug-95 (Baseline)	Nov-95	Feb-96	May-96	Aug-96	Oct-96	Apr-97	Jul-97	Apr-98	Dec-98	Mar-00	Aug-00	Feb-01	Jul-01
S6/7-MW7 (deep)	332.09	292.09 - 276.09	284.58	284.63	284.44	284.59	284.86	285.81	284.66	284.66	--	--	285.14	285.43	285.09	285.12
S6/7-MW12 (deep)	328.68	290.68 - 269.68	284.73	284.64	284.43	284.66	284.82	284.72	284.70	284.92	--	--	285.11	285.31	285.04	285.11
S6/7-MW13	332.53	316.53 - 300.53	315.69 d	315.49	315.50	315.45	315.42	315.36	315.40	315.56	--	--	315.07	315.43	314.68	315.57
S6/7-MW15	332.24	318.24 - 302.24	316.94 c	315.85 c	315.65 c	315.75 c	315.60 c	PSH	315.01	PSH	--	--	--	--	PSH	315.75 c
S6/7-MW16	327.83	-- - 299.83	--	--	309.79	312.50	312.22	312.39	312.35	312.46	--	--	312.03	312.20	312.13	312.12
S6/7-MW17	332.57	-- - 299.57	--	--	312.40	312.93	312.85	312.87	313.10	314.39	--	--	312.71	312.48	312.17	312.56
S6/7-MW18	333.20	-- - 305.20	--	--	305.31 c	313.58 c	311.97 c	311.95		307.48	--	--	--	--	PRD	318.47 c

Notes:

a - Well used only to calculate groundwater gradients
b - Indication of free product from paste placed on water-level meter probe
c - PSH reported, probably affecting water level
d - Well not developed at time of groundwater level measurement
e - Well considered dry and therefore not developed
All groundwater elevations are shown in feet above mean sea level (ft msl)

-- Not measured, or data not available
dne - well did not exist
deep - denotes that well is located in the next deeper aquifer below the shallow aquifer
PSH - phase separated hydrocarbons
PRD - PSH recovery device in well
toc - top of surveyed casing

Table 2-3
Summary of Historical Phase-Separated Hydrocarbon Thickness, Well S5/8/9/17-MW40

Well Location	Date	Depth to Water (feet)	Depth to Free Product (feet)	Free Product Thickness (feet)
S5/8/9/17-MW40	2/2/96	33.61	17.61	16.0
S5/8/9/17-MW40	2/7/96	29.16	23.45	5.71
S5/8/9/17-MW40	2/14/96	29.73	26.56	3.17
S5/8/9/17-MW40	2/21/96	30.38	28.57	1.81
S5/8/9/17-MW40	2/28/96	27.46	25.17	2.29
S5/8/9/17-MW40	3/6/96	26.34	23.86	2.48
S5/8/9/17-MW40	3/13/96	26.15	23.61	2.54
S5/8/9/17-MW40	3/20/96	24.85	22.35	2.50
S5/8/9/17-MW40	3/26/96	24.44	22.03	2.41
S5/8/9/17-MW40	4/3/96	24.24	21.60	2.56
S5/8/9/17-MW40	4/10/96	23.06	20.36	2.70
S5/8/9/17-MW40	4/17/96	23.86	21.34	2.52
S5/8/9/17-MW40	4/24/96	19.29	NM	NM
S5/8/9/17-MW40	4/30/96	19.94	NM	NM
S5/8/9/17-MW40	5/7/96	22.38	19.48	2.90
S5/8/9/17-MW40	5/15/96	22.83	20.32	2.51
S5/8/9/17-MW40	5/22/96	22.04	19.30	2.74
S5/8/9/17-MW40	5/29/96	21.63	19.00	2.63
S5/8/9/17-MW40	6/4/96	22.30	18.97	3.33
S5/8/9/17-MW40	6/12/96	23.21	18.86	4.35
S5/8/9/17-MW40	6/19/96	22.38	18.71	3.67
S5/8/9/17-MW40	6/26/96	22.11	18.69	3.42
S5/8/9/17-MW40	7/3/96	22.68	18.61	4.07
S5/8/9/17-MW40	7/10/96	23.28	18.71	4.57
S5/8/9/17-MW40	7/17/96	23.85	18.65	5.20
S5/8/9/17-MW40	7/24/96	22.67	18.57	4.10
S5/8/9/17-MW40	7/31/96	22.84	18.41	4.43
S5/8/9/17-MW40	8/8/96	22.31	18.38	3.93
S5/8/9/17-MW40	8/14/96	22.46	18.43	4.03
S5/8/9/17-MW40	8/21/96	22.52	18.35	4.17
S5/8/9/17-MW40	8/28/96	22.25	18.45	3.80
S5/8/9/17-MW40	9/4/96	22.57	18.80	3.77
S5/8/9/17-MW40	9/11/96	22.03	18.13	3.90
S5/8/9/17-MW40	9/18/96	22.55	18.55	4.00
S5/8/9/17-MW40	9/25/96	22.09	18.60	3.49
S5/8/9/17-MW40	10/3/96	21.80	18.15	3.65
S5/8/9/17-MW40	10/9/96	21.63	18.12	3.51
S5/8/9/17-MW40	10/16/96	21.68	18.40	3.28
S5/8/9/17-MW40	10/23/96	21.86	17.95	3.91
S5/8/9/17-MW40	10/30/96	20.56	18.11	2.45
S5/8/9/17-MW40	11/6/96	20.07	18.24	1.83
S5/8/9/17-MW40	11/15/96	20.80	19.12	1.68
S5/8/9/17-MW40	11/20/96	20.77	19.00	1.77
S5/8/9/17-MW40	12/12/96	21.35	18.80	2.55
S5/8/9/17-MW40	12/18/96	21.45	19.64	1.81
S5/8/9/17-MW40	12/5/96	22.96	18.24	4.72
S5/8/9/17-MW40	2/12/97	23.13	18.25	4.88
S5/8/9/17-MW40	2/19/97	23.45	18.23	5.22
S5/8/9/17-MW40	2/26/97	22.10	18.70	3.40

Table 2-3
Summary of Historical Phase-Separated Hydrocarbon Thickness, Well S5/8/9/17-MW40

Well Location	Date	Depth to Water (feet)	Depth to Free Product (feet)	Free Product Thickness (feet)
S5/8/9/17-MW40	3/6/97	23.23	18.91	2.32
S5/8/9/17-MW40	3/12/97	23.28	19.07	2.21
S5/8/9/17-MW40	3/27/97	20.28	18.67	1.61
S5/8/9/17-MW40	4/4/97	20.33	18.97	1.36
S5/8/9/17-MW40	4/16/97	20.95	18.85	2.10
S5/8/9/17-MW40	4/23/97	20.27	18.42	1.85
S5/8/9/17-MW40	5/21/97	20.88	18.56	2.32
S5/8/9/17-MW40	6/5/97	21.54	18.49	3.05
S5/8/9/17-MW40	6/18/97	21.40	18.60	2.80
S5/8/9/17-MW40	7/2/97	20.45	18.05	2.40
S5/8/9/17-MW40	7/16/97	20.28	18.05	2.23
S5/8/9/17-MW40	7/30/97	20.48	18.00	2.48
S5/8/9/17-MW40	8/13/97	19.98	17.86	2.12
S5/8/9/17-MW40	8/29/97	21.63	18.80	3.83
S5/8/9/17-MW40	9/10/97	21.50	18.91	2.59
S5/8/9/17-MW40	9/26/97	21.67	17.55	4.12
S5/8/9/17-MW40	10/8/97	21.20	17.48	3.72
S5/8/9/17-MW40	10/22/97	20.34	17.57	2.77
S5/8/9/17-MW40	11/5/97	20.31	17.65	2.66
S5/8/9/17-MW40	12/3/97	20.53	17.36	3.17
S5/8/9/17-MW40	12/17/97	19.88	17.46	4.42
S5/8/9/17-MW40	12/13/00	29.95	17.85	12.1
S5/8/9/17-MW40	12/28/00	23.24	17.66	5.58
S5/8/9/17-MW40	1/4/01	23.51	17.44	6.07
S5/8/9/17-MW40	1/11/01	20.42	17.71	2.71
S5/8/9/17-MW40	1/17/01	19.63	18.12	1.51
S5/8/9/17-MW40	2/9/01	20.00	19.32	0.68
S5/8/9/17-MW40	3/1/01	20.23	19.32	0.91
S5/8/9/17-MW40	4/3/01	21.15	19.61	1.54
S5/8/9/17-MW40	4/23/01	21.75	20.38	1.37
S5/8/9/17-MW40	5/8/01	20.16	18.43	1.73
S5/8/9/17-MW40	6/27/01	20.2	18.31	1.89

TABLE 3-1
Summary of Historical Groundwater Analytical Results, Site 1, 13 Area
MCB Camp Pendleton
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Well Location	Date Sampled / Sample ID †	TPH Extractable mg/L	TPH Purgeable mg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes (total) µg/L	Trichloroethene µg/L	Carbon Tetrachloride µg/L	1,2-Dichloroethane µg/L	Tetrachloroethene µg/L	Chloroform µg/L	1,2,4-Trimethylbenzene µg/L	1,2-Dichlorobenzene µg/L	1,3,5-Trimethylbenzene µg/L	1,4-Dichlorobenzene µg/L	Isopropylbenzene µg/L	n-Propylbenzene µg/L	p-Isopropyltoluene µg/L	sec-Butylbenzene µg/L	Naphthalene µg/L	Lead µg/L	Other µg/L
Water Quality Objectives:		**0.1**	**0.05**	**1**	**150**	**680**	**1750**	**5**	**0.5**	**0.5**	**5**	**100**	(1)	**10**(2)	(1)	**5**	(1)	(1)	(1)	(1)	(1)	(1)	
Laboratory Reporting Limit (3)		**0.1**	**0.05**	**0.5**	**0.5**	**0.5**	**1.5**	**5**	**0.5**	**0.5**	**5**	**5**	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	**10**	**5**	
S1-MW4	8/1/1995	na	na	--	0.53	--	--	--	--	--	--	--	na	--	na	na	na	na	na	na	na	na	
	6/1/1996	na	na	--	--	--	--	--	--	--	--	--	na	--	na	na	na	na	na	na	na	na	
	4/28/1998	na	na	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	
	2/15/2001 0026-066	na	--	0.46 J *	--	--	--	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	Methylene Chloride: 0.37 J *
S1-MW8	8/9/1995	na	na	--	--	--	--	--	--	--	--	--	na	--	na	na	na	na	na	na	na	na	
	11/22/1995	na	na	--	--	--	--	--	--	--	--	--	na	--	na	na	na	na	na	na	na	na	
	2/27/1996	na	na	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	5/21/1996	na	na	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	6/1/1996	na	na	--	--	--	--	--	**1.1**	**1.1**	--	2.6	na	--	na	na	na	na	na	na	na	na	
	8/1/1996	na	na	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	8/27/1996	na	na	--	--	--	--	--	--	--	--	--	na	--	na	na	na	na	na	na	na	na	
	10/23/1996	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	1/9/1997	na	na	--	--	--	--	--	--	**1.0**	--	2.00	--	--	--	--	--	--	--	--	--	na	
	4/3/1997	na	na	--	--	--	--	--	--	--	--	2.00	--	--	--	--	--	--	--	--	--	na	
	7/15/1997	na	na	--	--	--	--	--	--	--	--	2.00	--	--	--	--	--	--	--	--	--	na	
	10/7/1997	na	na	--	--	--	--	--	**1.0**	--	--	2.00	--	--	--	--	--	--	--	--	--	na	
	4/30/1998	na	na	--	--	--	--	1.4	**0.66 NJ**	--	--	--	--	--	--	--	--	--	--	--	--	na	
	12/10/1998	na	na	--	--	--	--	2.0	**1.6**	**1.6**	--	3.4	--	--	--	--	--	--	--	--	--	na	
	3/15/2000	na	na	--	1.2	--	--	1.7	**0.51 J**	**0.72 J**	--	2.2	--	--	--	--	--	--	--	--	--	na	
	8/9/2000	na	na	--	--	--	--	2.0	**0.75 J**	**0.66 J**	--	2.2	--	--	--	--	--	--	--	--	--	na	
	2/15/2001 0026-067	na	--	0.37 J *	0.41 J *	--	--	3.6 J	**1.1**	**1.1**	--	3.2 J	na	na	na	na	na	na	na	na	na	na	1,2-Dichloropropane: 0.4 J
	7/23/2001 0026-211	na	--	--	--	--	--	2.5J	**0.71**	**0.83**	--	2.2J	na	na	na	na	na	na	na	na	na	na	
S1-MW13	8/1/1995	na	na	**6.25**	0.68	0.80	1.14	**30.6**	--	**5.87**	--	2.33	na	--	na	na	na	na	na	na	na	na	
	6/1/1996	na	na	**4.80**	--	--	--	**34**	--	**4.90**	--	2.00	na	--	na	na	na	na	na	na	na	na	
	2/20/2001 0026-083	**0.59**	**0.21**	**8.9**	--	--	2.2	**40 ***	**0.55 J**	--	0.76 J	1.8 J **	na	na	na	na	na	na	na	na	na	na	Methylene Chloride: 1.1 J ** 1,1-Dichloroethane 1.3 J DIPE: 1.6 J, TRPH: --
S1-MW14	8/8/1995	na	**0.86**	**3.33**	1.58	1.63	14.87	**20**	--	--	--	--	--	--	--	--	--	--	--	--	--	na	
	5/22/1996	**0.21**	**0.82**	0.4	1.0	1.0	13	**16**	--	--	--	--	--	--	--	--	--	--	--	--	--	na	
	6/1/1996	na	na	--	--	2.0	17	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	8/28/1996	**4.14**	**0.96**	--	--	1.5	19	**28**	--	--	--	--	--	--	--	--	--	--	--	--	--	na	
	10/1/1996	na	**0.6**	**1.0**	--	1.0	16	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	12/16/1996	na	**0.6**	**1.0**	--	1.5	16	**40**	--	--	--	--	--	5.00	--	--	--	--	--	--	--	na	
	1/7/1997	na	--	**1.0**	--	0.7	11	**30**	--	--	2.0	--	8.0	3.0	7.0	3.0	2.0	2.0	3.0	1.0	8.0	na	n-Butylbenzene: 3.0

TABLE 3-1
Summary of Historical Groundwater Analytical Results, Site 1, 13 Area
MCB Camp Pendleton

Well Location	Date Sampled / Sample ID †	TPH Extractable mg/L	TPH Purgeable mg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes (total) µg/L	Trichloroethene µg/L	Carbon Tetrachloride µg/L	1,2-Dichloroethane µg/L	Tetrachloroethene µg/L	Chloroform µg/L	1,2,4-Trimethylbenzene µg/L	1,2-Dichlorobenzene µg/L	1,3,5-Trimethylbenzene µg/L	1,4-Dichlorobenzene µg/L	Isopropylbenzene µg/L	n-Propylbenzene µg/L	p-Isopropyltoluene µg/L	sec-Butylbenzene µg/L	Naphthalene µg/L	Lead µg/L	Other µg/L
Water Quality Objectives:		**0.1**	**0.05**	**1**	**150**	**680**	**1750**	**5**	**0.5**	**0.5**	**5**	**100**	(1)	**10**(2)	(1)	**5**	(1)	(1)	(1)	(1)	(1)	(1)	
Laboratory Reporting Limit (3)		**0.1**	**0.05**	**0.5**	**0.5**	**0.5**	**1.5**	**5**	**0.5**	**0.5**	**5**	**5**	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	**10**	**5**	
S1-MW14 (continued)	4/3/1997	na	--	0.9	--	0.7	14	**29**	--	--	--	--	5.0	3.0	4.0	2.0	2.0	2.0	2.0	1.0	7.0	na	
	7/15/1997	na	--	**1.2**	--	3.1	19	**32**	--	--	--	--	10	3.0	3.0	2.0	2.0	2.0	2.0	1.0	13 B	na	n-Butylbenzene: 2.0
	10/7/1997	na	**0.7**	**2.8**	--	1.0	17	**29**	--	--	1.0	--	9.0	4.0	3.0	2.0	3.0	2.0	3.0	2.0	9.0	na	Carbon Disulfide: 6.0
	12/18/1998	**6.20**	--	--	--	--	7	**20**	--	--	2.0	--	1.0	4.0	1.0	1.0	2.0	2.0	2.0	2.0	--	na	n-Butylbenzene: 1.0
	3/16/2000	na	--	--	--	--	5.5	**22**	--	--	--	--	2.0	2.0	--	--	1.3	--	--	--	--	na	Acetone: 14 , Bromodichloromethane: 1.6
	8/10/2000	na	--	--	--	--	6.7	**23**	--	--	1.1	--	2.7	3.9	--	1.9	2.0	1.1	1.5	1.3	2.8	na	Acetone: 15 , n-Butylbenzene: 1.1
	2/20/2001 0026-086	**5.5**	**0.14**	**0.48 J**	--	--	6.2	**22 ***	--	--	1.0J	--	na	na	na	na	na	na	na	na	na	na	Acetone: 12 J *, TPRH: 4.1 mg/L Methylene Chloride: 0.38 J *
	7/20/2001 0026-210	**2.7**	**0.30**	**2.5**	1.90	0.35J	8.7	**18**	--	--	1J	--	na	na	na	na	na	na	na	na	na	na	TRPH: --
S1-MW15	8/8/1995	na	--	--	--	--	--	--	--	--	--	--	na	--	na	na	na	na	na	na	na	na	
	11/22/1995	na	--	--	--	--	--	--	--	--	--	--	na	--	na	na	na	na	na	na	na	na	
	2/27/1995	na	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	5/23/1996	na	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	6/1/1996	na	--	--	--	--	--	--	--	--	--	--	na	--	na	na	na	na	na	na	na	na	
	8/27/1996	na	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	10/23/1996	na	--	--	--	--	--	--	--	--	--	--	na	--	na	na	na	na	na	na	na	na	
	1/7/1997	na	--	--	--	--	--	--	--	--	--	--	na	--	na	na	na	na	na	na	na	na	
	4/3/1997	na	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	7/15/1997	na	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	10/8/1997	na	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	Carbon Disulfide: 15 TB
	4/29/1998	na	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	Bromoform: 0.41 NJ
	12/10/1998	na	--	--	--	--	--	--	0.3 J	--	--	0.3 J	--	--	--	--	--	--	--	--	--	na	
	3/15/2000	na	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	
	8/8/2000	na	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	
	2/16/2001 0026-075	na	--	--	--	--	--	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	
	7/20/2001 0026-208	na	0.027J	**7.70**	4.50	0.58	3.20	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	
S1-MW16	8/1/1995	na	**7.0**	**4,553**	**1,519**	186	1,020	--	--	**541**	--	--	na	--	na	na	na	na	na	na	na	na	
	6/1/1996	na	na	**5,960**	**1,840**	240	1,600	--	--	**570**	--	--	na	--	na	na	na	na	na	na	na	na	
	2/16/2001 0026-076	na	**7.9**	**2,800**	**630**	79	610	--	**0.53**	**250**	--	1.2J	na	na	na	na	na	na	na	na	na	na	Acetone: 28 J DIPE: 2.7 J
	7/20/2001 0026-207	0.88	**7.0**	**4,000**	**1,200**	120	950	--	--	**270**	--	--	na	na	na	na	na	na	na	na	na	na	TBA: 120J, TRPH: --

TABLE 3-1
Summary of Historical Groundwater Analytical Results, Site 1, 13 Area
MCB Camp Pendleton
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Well Location	Date Sampled / Sample ID †	TPH Extractable mg/L	TPH Purgeable mg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes (total) µg/L	Trichloroethene µg/L	Carbon Tetrachloride µg/L	1,2-Dichloroethane µg/L	Tetrachloroethene µg/L	Chloroform µg/L	1,2,4-Trimethylbenzene µg/L	1,2-Dichlorobenzene µg/L	1,3,5-Trimethylbenzene µg/L	1,4-Dichlorobenzene µg/L	Isopropylbenzene µg/L	n-Propylbenzene µg/L	p-Isopropyltoluene µg/L	sec-Butylbenzene µg/L	Naphthalene µg/L	Lead µg/L	Other µg/L
Water Quality Objectives:		**0.1**	**0.05**	**1**	**150**	**680**	**1750**	**5**	**0.5**	**0.5**	**5**	**100**	**(1)**	**10(2)**	**(1)**	**5**	**(1)**	**(1)**	**(1)**	**(1)**	**(1)**	**(1)**	
Laboratory Reporting Limit (3)		**0.1**	**0.05**	**0.5**	**0.5**	**0.5**	**1.5**	**5**	**0.5**	**0.5**	**5**	**5**	**(4)**	**(4)**	**(4)**	**(4)**	**(4)**	**(4)**	**(4)**	**(4)**	**10**	**5**	
S1-MW17	8/9/1995	na	--	--	--	--	--	1.0	--	--	--	--	--	--	--	--	--	--	--	--	--	na	
	11/22/1995	na	--	--	--	--	--	--	--	--	--	--	na	--	na	na	na	na	na	na	na	na	
	2/28/1996	na	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	5/21/1996	na	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	6/1/1996	na	na	--	--	--	--	1.4	--	--	--	--	na	--	na	na	na	na	na	na	na	na	
	8/27/1996	na	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	10/23/1996	na	--	--	--	--	--	--	--	--	--	--	na	--	na	na	na	na	na	na	na	na	
	1/8/1997	na	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	4/7/1997	na	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	7/16/1997	na	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	10/8/1997	na	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	Carbon Disulfide: 5.0 *
	12/10/1998	na	--	--	--	--	--	0.9 J	--	--	--	--	--	--	--	--	--	--	--	--	--	na	Carbon Disulfide: 3.1
	3/15/2000	na	na	--	1.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	
	8/8/2000	na	--	--	--	--	--	1.0	--	--	--	--	--	--	--	--	--	--	--	--	--	na	
	2/15/2001 0026-070	na	--	--	0.48 J *	--	--	1.2J	--	--	--	--	na	na	na	na	na	na	na	na	na	na	
	7/23/2001 0026-214	na	**0.22**	--	--	--	--	1.1J	--	--	--	--	na	na	na	na	na	na	na	na	na	na	
S1-MW18	8/1/1995	--	--	--	--	--	--	--	na	na	--	--	na	--	na	na	na	na	na	na	na	na	
	6/1/1996	na	na	--	--	--	--	--	na	na	--	--	na	--	na	na	na	na	na	na	na	na	
	2/15/2001 0026-069	na	--	--	--	--	--	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	Methylene Chloride: 0.44 J *
S1-MW19	8/8/1995	na	**0.6**	**185**	0.72	5.51	15.51	--	--	**139**	--	5.7	--	--	--	--	--	--	--	--	--	na	
	11/22/1995	na	**0.51**	**507**	--	6.95	14.25	--	--	**188**	--	9.28	--	--	--	--	--	--	--	--	--	--	
	2/1/1996	na	na	**240**	--	6.7	11.0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	5/21/1996	na	**0.54**	**280**	1.0	4.0	8.2	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	6/1/1996	na	na	**350**	--	10.0	26.0	1.1	--	**160**	--	6.80	na	--	na	na	na	na	na	na	na	na	
	8/27/1996	na	**0.85**	**350**	1.60	9.2	19.0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	10/23/1996	na	**1**	**450**	--	10	40	--	--	**140**	--	8.0	--	--	--	--	--	--	--	--	--	--	
	1/8/1997	na	**0.5**	**190**	1.0	20	30	2.0	**1.0**	**100**	--	8.0	16	--	4.0	--	1.0	2.0	--	10.00	5.0	--	2-Hexanone: 4.0
	4/7/1997	na	--	**137**	0.8	7	18	2.0	--	**72**	--	6.0	9.0	--	2.0	--	--	--	--	--	2.0	--	
	7/15/1997	na	**0.56**	**243**	1.1	11	31	2.0	--	**76**	--	8.0	13.0	--	3.0	--	1.0	1.0	--	--	5 B	--	
	10/8/1997	na	--	**67**	--	3	12	3.0	**1.0**	**55**	--	8.0	5.0	--	--	--	--	--	--	--	2.0	--	
	5/4/1998	na	--	--	--	--	--	4.8	**0.65 NJ**	**27**	--	6.0	--	--	--	--	--	--	--	--	--	na	
	12/11/1998	na	--	**56.1J**	0.6 J	2.7	3.4	3.9	**1.0 J**	**53.6 J**	0.9 J	6.6	0.7 J	--	--	--	0.3 J	--	--	--	1.6	na	1,2-Dichloropropane: 0.2 J Methylene chloride: 0.4 J
	3/16/2000	na	--	--	--	--	--	**6.5**	**0.61 J**	**18**	--	5.4	--	--	--	--	--	--	--	--	--	na	
	8/10/2000	na	--	**42**	--	--	2.1	4.8	**0.77 J**	**34**	--	5.4	--	--	--	--	--	--	--	--	--	na	Tert butyl alcohol: 36

TABLE 3-1
Summary of Historical Groundwater Analytical Results,
Site 1, 13 Area
MCB Camp Pendleton
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Well Location	Date Sampled / Sample ID †	TPH Extractable mg/L	TPH Purgeable mg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes (total) µg/L	Trichloroethene µg/L	Carbon Tetrachloride µg/L	1,2-Dichloroethane µg/L	Tetrachloroethene µg/L	Chloroform µg/L	1,2,4-Trimethylbenzene µg/L	1,2-Dichlorobenzene µg/L	1,3,5-Trimethylbenzene µg/L	1,4-Dichlorobenzene µg/L	Isopropylbenzene µg/L	n-Propylbenzene µg/L	p-Isopropyltoluene µg/L	sec-Butylbenzene µg/L	Naphthalene µg/L	Lead µg/L	Other µg/L
Water Quality Objectives:		**0.1**	**0.05**	**1**	**150**	**680**	**1750**	**5**	**0.5**	**0.5**	**5**	**100**	(1)	**10**(2)	(1)	**5**	(1)	(1)	(1)	(1)	(1)	(1)	
Laboratory Reporting Limit (3)		**0.1**	**0.05**	**0.5**	**0.5**	**0.5**	**1.5**	**5**	**0.5**	**0.5**	**5**	**5**	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	**10**	**5**	
S1-MW19 (continued)	2/16/2001 0026-079	**1.3**	**0.11**	**48**	--	--	2.2	**7**	**0.6**	**53**	--	6.9	na	na	na	na	na	na	na	na	na	na	1,1-Dichloroethane: 0.64 J Methylene Chloride: 0.45 J*, DIPE: 1.2 J, TBA: 62, TRPH: --
	7/23/2001 0026-213	--	--	**60**	--	--	2.1	4.5J	**0.5**	**48**	0.22J	4.9J	na	na	na	na	na	na	na	na	na	na	1,1-DCA: 0.53J, TBA: 58J DIPE: 1.1J, TRPH: --
S1-MW20	2/28/1996	na	--	--	--	--	--	--	--	**58.55**	--	5.38	--	--	--	--	--	--	--	--	--	na	
	5/22/1996	na	--	--	--	--	--	--	--	**34**	--	4.0	--	--	--	--	--	--	--	--	--	na	
	6/1/1996	na	--	--	--	--	na	--	**1.80**	**51**	--	5.3	na	--	na	na	na	na	na	na	na	na	
	8/28/1996	na	--	--	--	--	--	--	--	**55**	--	7.0	--	--	--	--	--	--	--	--	--	na	
	10/23/1996	na	--	--	--	--	--	--	--	**49**	--	6.0	--	--	--	--	--	--	--	--	--	na	
	1/8/1997	na	--	**4.0**	--	--	3.00	1.0	**2.0**	**40**	--	5.0	--	--	--	--	--	--	--	--	--	na	
	4/7/1997	na	--	**2.7**	--	--	--	--	**2.0**	**28**	--	4.0	--	--	--	--	--	--	--	--	--	na	
	7/15/1997	na	--	--	--	--	--	1.0	**2.0**	**23**	--	5.0	--	--	--	--	--	--	--	--	--	na	
	10/8/1997	na	--	**2.0**	--	--	--	1.0	**2.0**	**29**	--	6.0	--	--	--	--	--	--	--	--	--	na	
	5/4/1998	na	--	**12**	--	--	--	1.5	**1.5 NJ**	**19**	--	4.2	--	--	--	--	--	--	--	--	--	na	
	12/11/1998	na	--	--	--	--	--	2.2	**1.7**	**15.0**	--	4.6	--	--	--	--	--	--	--	--	--	na	
	3/16/2000	na	--	--	--	--	--	**5.4**	**1.8**	**7.8**	--	3.9	--	--	--	--	--	--	--	--	--	na	
	8/9/2000	na	--	--	--	--	--	4.5	**1.6**	**9.7**	--	3.7	--	--	--	--	--	--	--	--	--	na	
	2/15/2001 0026-072	na	--	--	--	--	--	**8.8**	**2.8**	**16**	--	5.5	na	na	na	na	na	na	na	na	na	na	1,1-Dichloroethane: 036 J; TRPH: --
	7/27/01 0026-226	--	--	--	--	--	--	**9.3**	**2.1**	**12**	--	3.7J	na	na	na	na	na	na	na	na	na	na	1,1-Dichloroethane: 0.35 J; 1,2-Dichloropropane: 0.39J; TRPH; --
S1-MW21	5/27/1997	na	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	10/8/1997	na	--	0.60	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	5/1/1998	na	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	
	12/11/1998	na	--	--	--	--	--	--	--	**1.4**	--	0.4 J	--	--	--	--	--	--	--	--	--	na	Bromoform: 1.4
	3/16/2000	na	--	--	--	--	--	--	--	**2.3**	--	--	--	--	--	--	--	--	--	--	--	na	
	8/9/2000	na	--	--	--	--	--	--	--	**4.4**	--	--	--	--	--	--	--	--	--	--	--	na	Tert butyl alcohol: 6.4
	2/15/2001 0026-071	na	--	--	--	--	--	--	--	**10**	--	1.7 J	na	na	na	na	na	na	na	na	na	na	
	7/27/2001 0026-225	--	--	--	--	--	--	0.26J	0.45J	**9.4**	--	1.8J	na	na	na	na	na	na	na	na	na	na	TRPH: --

TABLE 3-1
Summary of Historical Groundwater Analytical Results, Site 1, 13 Area
MCB Camp Pendleton
(Page 5 of 5)

Well Location	Date Sampled / Sample ID †	TPH Extractable mg/L	TPH Purgeable mg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes (total) µg/L	Trichloroethene µg/L	Carbon Tetrachloride µg/L	1,2-Dichloroethane µg/L	Tetrachloroethene µg/L	Chloroform µg/L	1,2,4-Trimethylbenzene µg/L	1,2-Dichlorobenzene µg/L	1,3,5-Trimethylbenzene µg/L	1,4-Dichlorobenzene µg/L	Isopropylbenzene µg/L	n-Propylbenzene µg/L	p-Isopropyltoluene µg/L	sec-Butylbenzene µg/L	Naphthalene µg/L	Lead µg/L	Other µg/L
Water Quality Objectives:		**0.1**	**0.05**	**1**	**150**	**680**	**1750**	**5**	**0.5**	**0.5**	**5**	**100**	(1)	**10**(2)	(1)	**5**	(1)	(1)	(1)	(1)	(1)	(1)	
Laboratory Reporting Limit (3)		**0.1**	**0.05**	**0.5**	**0.5**	**0.5**	**1.5**	**5**	**0.5**	**0.5**	**5**	**5**	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	**10**	**5**	
S1-MW22	2/14/2001 0026-061	na	**81**	**15,000**	**14,000**	330	**4,400**	0.94 J	0.46 J	**2,500**	--	--	na	na	na	na	na	na	na	na	na	na	1,1-Dichloroethane: 5.4 Methyl Ethyl Ketone: 140 J DIPE: 200 J Chloroethane: 3 J
	7/20/2001 0026-209	na	**110**	**15,000**	**17,000**	950	**5,400**	--	--	**1,700**	--	--	na	na	na	na	na	na	na	na	na	na	
S1-MW23	2/14/2001 0026-062	na	**21**	**5,300**	**1,900**	440	1,200	--	--	**550**	--	--	na	na	na	na	na	na	na	na	na	na	1,1-Dichloroethane: 2.3 J Chlorethane: 2.3 J TBA: 830 J DIPE: 110 J
S1-MW13171-1	8/10/1995	na	**18**	**>1,384**	**13,898**	**1,824**	**6,297**	--	na	**2,632**	na	--	na	--	na	na	na	na	na	na	na	130	
	5/28/1996	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	240	
	8/20/1996	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	195	
	10/1/1997	PSH	PSH	PSH	PSH	PSH	PSH	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	5/1/1998	PSH	PSH	PSH	PSH	PSH	PSH	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	3/21/2000	na	**48**	**8,300**	**8,100**	600	**2,430**	--	--	**840**	--	--	410	--	--	--	--	--	--	--	200	na	1,2-Dibromoethane: 88, Methylene chloride: 87 B
	8/10/2000	na	**69**	**10,000**	**11,000**	**910**	**3,800**	--	--	**940**	--	--	650	--	170	--	--	--	--	--	--	na	1,2-Dibromoethane: 83 J, **MTBE: 840**, DIPE: 210
S1-MW13171-3	8/1/1995	na	**9.1**	**2,993**	**186**	**815**	553	--	--	**445**	--	--	na	--	na	na	na	na	na	na	na	na	
	6/1/1996	na	na	**1,940**	30	**890**	320	--	--	**470**	--	--	na	--	na	na	na	na	na	na	na	na	
	5/4/1998	na	na	**430**	3.0	21	1.2	--	--	**170**	--	0.37	--	--	3.30	--	3.3	1.4	--	0.41 NJ	1.9	na	1,2-Dichloropropane: 1.5, Bromoform: 0.27 NJ
S2-MW1	2/16/2001 0026-078	na	--	--	--	--	--	0.62 J	**1.2**	--	--	1.3 J	na	na	na	na	na	na	na	na	na	na	
S2-MW3	2/16/2001 0026-081	na	--	--	--	--	--	--	**1.4**	--	--	0.83 J	na	na	na	na	na	na	na	na	na	na	
S2-MW5	2/16/2001 0026-077	na	--	--	--	--	--	--	--	--	--	0.57 J	na	na	na	na	na	na	na	na	na	na	

Notes:

Values in **bold** are in excess of established water quality objectives.
-- Not detected above method detection limit
na - Not analyzed
(1) No established Water Quality Objective
(2) Secondary Maximum Contaminant Level
(3) Reporting limits are effective beginning February 2001; previous reporting limits may have varied from these values. Reporting limits shown are for undiluted analyses.
(4) Not analyzed as part of this monitoring event.

† Sample ID numbers are shown only for year 2001 samples.
NJ - Tentatively identified
J - Estimated value; result is above method detection limit and below reporting limit.
B - Compound reported in method blank
* - Compound reported in trip blank
** - Compound reported in equipment rinsate sample
mg/L milligrams per liter
µg/L micrograms per liter

TPH - Total petroleum hydrocarbons
TRPH - Total recoverable petroleum hydrocarbons
PSH - Phase-separated hydrocarbons noted in well
MTBE - Methyl tertiary butyl ether
DIPE - diisopropyl ether
TBA - tert-butyl alcohol

TABLE 3-2
Summary of Historical Groundwater Analytical Results
Site 5/8/9/17, 13 Area, MCB Camp Pendleton, California
(Page 1 of 6)

Well Location	Date Sampled / Sample ID †	TPH Extractable mg/L	TRPH mg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes (total) µg/L	MTBE µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2,4-Trimethylbenzene µg/L	1,2-Dibromoethane µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L	1,2-Dichloropropane µg/L	1,3,5-Trimethylbenzene µg/L	1,3-Dichlorobenzene µg/L	1,4-Dichlorobenzene µg/L	Acetone µg/L	Carbon tetrachloride µg/L	Chlorobenzene µg/L	Chloroform µg/L	cis-1,2-Dichloroethene µg/L	Isopropylbenzene µg/L	Methyl Isobutyl Ketone µg/L	Methylene Chloride µg/L	n-Butylbenzene µg/L	n-Propylbenzene µg/L	p-Isopropyltoluene µg/L	sec-Butylbenzene µg/L	Tetrachloroethene µg/L	Trichloroethene µg/L	Naphthalene µg/L	Lead mg/L	Other µg/L
Water Quality Objectives:		**0.1**	(1)	**1**	**150**	**680**	**1750**	**13**	**5**	**6**	(1)	(1)	**10**(2)	**0.5**	**5**	(1)	**600**	**5**	(1)	**0.5**	**30**	**100**	**6**	(1)	(1)	**5**	(1)	(1)	(1)	(1)	**5**	**5**	(1)	(1)	
Laboratory Reporting Limits: (3)		**0.1**	**1**	**0.5**	**0.5**	**0.5**	**1.5**	**1**	**5**	**5**	(4)	(4)	(4)	**0.5**	**5**	(4)	(4)	(4)	**50**	**0.5**	**5**	**5**	**5**	(4)	**50**	**5**	(4)	(4)	(4)	(4)	**5**	**5**	**10**	**5**	
S5/8/9/17-MW1 (deep)	8/15/1995	--	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	11/20/1995	--	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	3/4/1996	0.09	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	5/24/1996	--	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	8/21/1996	--	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	10/28/1996	--	na	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	1/9/1997	--	0.65	--	--	--	--	na	--	na	--	--	--	**1.0**	--	--	na	--	--	na	--	1.0	--	--	--	--	--	--	--	--	--	2.0	--	na	
	4/7/1997	--	--	--	--	--	--	na	--	na	--	--	--	--	--	--	na	--	--	na	--	--	--	--	--	--	--	--	--	--	--	1.0	--	na	
	7/16/1997	--	--	--	--	--	--	na	--	na	--	1.0	--	--	--	--	na	--	--	na	--	1.0	--	--	--	--	--	--	--	--	--	2.0	--	na	
	10/9/1997	--	--	--	--	--	--	--	--	na	--	--	--	--	--	--	na	--	--	na	--	2.0	--	--	--	--	--	--	--	--	--	2.0	--	na	
	4/30/1998	--	na	--	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	--	--	--	--	--	--	2.9	--	na	
	12/15/1998	--	--	--	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	--	--	2.2	--	--	--	--	--	--	--	--	--	2.9	--	na	bromoform: 1.4
	3/22/2000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.4	--	--	--	--	--	--	--	--	--	3.1	--	na	
	8/14/2000	--	--	**3.3**	4.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.6	--	--	--	--	--	--	--	--	--	2.8	--	na	
	2/22/2001 0026-114	**0.15**	--	--	--	--	--	--	--	--	na	na	na	--	--	na	na	na	--	--	--	4.3 J	--	na	na	0.37 J *	na	na	na	na	--	**5.1**	na	na	bromoform: 0.44 J
	7/25/01 0026-220	--	--	--	--	--	--	--	--	--	na	na	na	--	--	na	na	na	--	--	--	3.5J	--	na	--	--	na	na	na	na	--	4.1J	na	na	
S5/8/9/17-MW4 (deep)	8/15/1995	--	1.2	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	11/16/1995	**0.93**	2.6	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	3/4/1996	**2.7**	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	5/28/1996	**0.38**	3.0	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	8/20/1996	0.074	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	10/28/1996	--	na	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	1/9/1997	**0.6 J**	0.51	--	--	--	--	na	--	na	--	--	--	--	--	--	na	--	--	na	--	--	--	--	--	--	--	--	--	--	--	1.03	--	na	
	4/7/1997	--	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	7/16/1997	--	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	10/9/1997	**0.7 J**	--	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	5/5/1998	--	--	--	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	--	--	--	--	--	--	1.4	--	na	
	12/15/1998	--	--	--	--	--	--	na	--	--	--	--	--	0.3 J	0.3 J	--	--	--	--	--	--	0.4 J	--	--	--	--	--	--	--	--	--	0.9 J	--	na	
	3/22/2000	--	0.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	
	8/15/2000	--	--	--	1.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	
	2/22/2001 0026-109	**0.23**	--	--	--	--	--	--	--	--	na	na	na	--	0.52 J	na	na	na	10 J **	--	--	0.74 J	--	na	na	0.43 J *	na	na	na	na	--	1.0 J	na	na	
	7/25/01 0026-217	--	--	--	--	--	--	--	--	--	na	na	na	0.34J	0.45J	na	na	na	--	--	--	0.51J	--	na	--	--	na	na	na	na	--	0.73J	na	na	

TABLE 3-2
Summary of Historical Groundwater Analytical Results
Site 5/8/9/17, 13 Area, MCB Camp Pendleton, California
(Page 2 of 6)

Well Location	Date Sampled / Sample ID †	TPH Extractable mg/L	TRPH mg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes (total) µg/L	MTBE µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2,4-Trimethylbenzene µg/L	1,2-Dibromoethane µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L	1,2-Dichloropropane µg/L	1,3,5-Trimethylbenzene µg/L	1,3-Dichlorobenzene µg/L	1,4-Dichlorobenzene µg/L	Acetone µg/L	Carbon tetrachloride µg/L	Chlorobenzene µg/L	Chloroform µg/L	cis-1,2-Dichloroethene µg/L	Isopropylbenzene µg/L	Methyl Isobutyl Ketone µg/L	Methylene Chloride µg/L	n-Butylbenzene µg/L	n-Propylbenzene µg/L	p-Isopropyltoluene µg/L	sec-Butylbenzene µg/L	Tetrachloroethene µg/L	Trichloroethene µg/L	Naphthalene µg/L	Lead mg/L	Other µg/L
Water Quality Objectives:		**0.1**	(1)	**1**	**150**	**680**	**1750**	**13**	**5**	**6**	(1)	(1)	**10**(2)	**0.5**	**5**	(1)	**600**	**5**	(1)	**0.5**	**30**	**100**	**6**	(1)	(1)	**5**	(1)	(1)	(1)	(1)	**5**	**5**	(1)	(1)	
Laboratory Reporting Limits: (3)		**0.1**	**1**	**0.5**	**0.5**	**0.5**	**1.5**	**1**	**5**	**5**	(4)	(4)	(4)	**0.5**	**5**	(4)	(4)	(4)	**50**	**0.5**	**5**	**5**	**5**	(4)	**50**	**5**	(4)	(4)	(4)	(4)	**5**	**5**	**10**	**5**	
S5/8/9/17-MW7 (deep)	8/1/1995	--	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	6/1/1996	na	na	--	--	--	--	na	--	na	--	--	--	--	--	--	na	--	--	na	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	
	4/29/1998	na	na	--	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	--	--	--	--	--	--	0.37 NJ	--	na	
	2/22/2001 0026-111	**0.28**	--	--	--	--	--	--	--	--	na	na	na	**0.71**	0.61 J	na	na	na	7.8 J **	--	--	--	--	na	na	0.63 J *	na	na	na	na	--	0.69 J	na	na	
S5/8/9/17-MW10 (deep)	8/1/1995	--	na	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	6/1/1996	na	na	--	--	--	--	na	--	na	--	--	--	--	--	--	na	--	--	na	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	
	2/21/2001 0026-093	**0.72**	--	--	--	--	--	--	--	--	na	na	na	**1.1**	0.93 J	na	na	na	--	--	--	--	--	na	na	--	na	na	na	na	--	0.99 J	na	na	
S5/8/9/17-MW15 (deep)	8/21/1995	--	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	11/20/1995	--	--	**1.1**	6.9	1.5	12	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	3/4/1996	**0.45**	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	5/24/1996	--	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	8/22/1996	--	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	10/29/1996	**0.6**	na	--	0.6	--	2.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	1/10/1997	--	0.53	--	--	--	na	na	--	na	--	--	--	--	--	--	na	--	--	na	--	5.0	--	--	--	--	--	--	--	--	--	**7.0**	--	na	
	4/8/1997	--	--	--	--	--	--	na	--	na	--	--	--	--	--	--	na	--	--	na	--	5.0	--	--	--	--	--	--	--	--	--	**6.0**	--	na	
	7/16/1997	--	--	--	--	--	--	na	--	na	--	--	--	--	--	--	na	--	--	na	--	8.0	--	--	--	--	--	--	--	--	--	**9.0**	--	na	
	10/9/1997	--	--	--	--	--	--	--	--	na	--	--	--	--	--	--	na	--	--	na	--	7.0	--	--	--	--	--	--	--	--	--	**6.0**	--	na	
	5/5/1998	--	--	--	--	--	0.32NJ	na	--	na	--	--	--	--	--	--	na	--	--	na	na	5.5	--	--	na	--	--	--	--	--	--	**7.2**	--	na	
	12/17/1998	--	--	--	--	--	0.8 J	na	--	--	--	--	--	--	--	--	--	--	--	0.2 J	--	5.1	--	--	--	--	--	--	--	--	0.8 J	**5.8**	--	na	
	3/23/2000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.5	--	--	--	--	--	--	--	--	--	**4.3**	--	na	
	8/17/2000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.2	--	--	--	--	--	--	--	--	--	**5.7**	--	na	TBA: 17
	2/26/2001 0026-128	**0.14**	--	--	--	--	--	--	--	--	na	na	na	--	--	na	na	na	--	0.3 J	--	6.8 *	na	na	na	0.42 *	na	na	na	na	--	**7.6**	na	na	1,1,2,2-tetrachloroethane: 0.55 J
S5/8/9/17-MW23 (deep)	8/1/1995	--	na	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	6/1/1996	na	na	--	--	--	--	na	--	na	--	--	--	--	--	--	na	--	--	na	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	
	4/28/1998	na	na	--	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	--	--	--	--	--	--	0.6	--	na	
	2/23/2001 0026-122	0.072 J	--	--	--	--	--	--	--	--	na	na	na	--	--	na	na	na	10 J **	--	--	0.68 J	--	na	na	--	na	na	na	na	--	1.5 J	na	na	bromoform: 0.31 J
S5/8/9/17-MW25 (deep)	8/1/1995	--	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	2/26/2001 0026-127	--	--	--	--	--	--	--	--	--	na	na	na	--	--	na	na	na	6.6 J **	--	--	2.8 J *	--	na	na	--	na	na	na	na	--	3.8 J	na	na	
S5/8/9/17-MW31 (deep)	8/1/1995	--	na	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	6/1/1996	na	na	--	--	--	--	na	--	na	--	--	--	--	--	--	na	--	--	na	--	1.2	--	--	--	--	--	--	--	--	--	1.8	--	na	
	4/30/1998	na	na	--	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	--	--	3.3	--	--	na	0.57	--	--	--	--	--	3.8	--	na	
	2/21/2001 0026-094	**0.55**	--	--	--	--	--	--	--	--	na	na	na	--	--	na	na	na	--	--	--	2.7 J	--	na	na	0.73 J *	na	na	na	na	--	3.3 J	na	na	

TABLE 3-2
Summary of Historical Groundwater Analytical Results
Site 5/8/9/17, 13 Area, MCB Camp Pendleton, California
(Page 3 of 6)

Well Location	Date Sampled / Sample ID †	TPH Extractable mg/L	TRPH mg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes (total) µg/L	MTBE µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2,4-Trimethylbenzene µg/L	1,2-Dibromoethane µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L	1,2-Dichloropropane µg/L	1,3,5-Trimethylbenzene µg/L	1,3-Dichlorobenzene µg/L	1,4-Dichlorobenzene µg/L	Acetone µg/L	Carbon tetrachloride µg/L	Chlorobenzene µg/L	Chloroform µg/L	cis-1,2-Dichloroethene µg/L	Isopropylbenzene µg/L	Methyl Isobutyl Ketone µg/L	Methylene Chloride µg/L	n-Butylbenzene µg/L	n-Propylbenzene µg/L	p-Isopropyltoluene µg/L	sec-Butylbenzene µg/L	Tetrachloroethene µg/L	Trichloroethene µg/L	Naphthalene µg/L	Lead mg/L	Other µg/L
Water Quality Objectives:		**0.1**	(1)	**1**	**150**	**680**	**1750**	**13**	**5**	**6**	(1)	(1)	**10**(2)	**0.5**	**5**	(1)	**600**	**5**	(1)	**0.5**	**30**	**100**	**6**	(1)	(1)	**5**	(1)	(1)	(1)	(1)	**5**	**5**	(1)	(1)	
Laboratory Reporting Limits: (3)		**0.1**	**1**	**0.5**	**0.5**	**0.5**	**1.5**	**1**	**5**	**5**	(4)	(4)	(4)	**0.5**	**5**	(4)	(4)	(4)	**50**	**0.5**	**5**	**5**	**5**	(4)	**50**	**5**	(4)	(4)	(4)	(4)	**5**	**5**	**10**	**5**	
S5/8/9/17-MW34 (deep)	8/1/1995	--	na	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	--	
	6/1/1996	na	na	--	--	--	--	na	--	na	--	--	--	--	--	--	na	--	--	na	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	4/28/1998	na	na	--	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	--	--	0.31	--	--	na	--	--	--	--	--	--	0.7	--	--	
	2/26/2001 0026-126	**0.44**	--	--	--	--	--	--	--	--	na	na	na	--	--	na	na	na	8.6 J **	--	--	--	--	na	na	0.31 J *	na	na	na	na	--	0.98 J	na	na	bromoform: 0.31 J
S5/8/9/17-MW36 (deep)	4/28/1998	na	na	--	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	--	--	--	--	--	--	--	na	na	
	7/25/01 0026-221	--	--	--	--	--	--	--	--	--	na	na	na	**0.56**	0.48J	na	na	na	--	--	--	--	--	na	--	0.29J	na	na	na	na	--	0.43J	na	na	
S5/8/9/17-MW37 (deep)	8/15/1995	--	na	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	3/1/1996	**0.54**	na	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	5/22/1996	--	na	--	--	--	--	na	--	na	--	--	--	**0.60**	--	--	na	--	--	na	--	--	--	--	2.00	0.90	2.0	--	--	--	--	--	--	na	2-Hexanone: 2
	8/26/1996	**0.51**	na	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	10/28/1996	**0.85J**	na	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	1/10/1997	**0.7J**	0.67	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	4/7/1997	--	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	7/16/1997	--	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	10/9/1997	--	--	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	4/30/1998	**0.75**	--	--	--	--	--	na	--	--	--	--	--	--	0.68	--	--	--	--	--	--	--	--	--	na	--	--	--	--	--	--	--	--	na	
	12/17/1998	--	--	--	--	--	--	na	--	--	--	--	--	0.4 J	0.4 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	
	3/22/2000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	
	8/17/2000	--	--	--	1.0	--	--	--	--	--	--	--	--	**0.60 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	
	2/23/2001 0026-123	**0.41**	--	--	--	--	--	--	--	--	na	na	na	**0.62**	0.49 J	na	na	na	11 J**	--	--	--	--	na	na	0.32 J *	na	na	na	na	--	--	na	na	
	7/19/2001 0026-205	**0.72**	--	--	--	--	--	--	--	--	na	na	na	--	--	na	na	na	--	--	--	--	--	na	--	--	na	na	na	na	--	--	na	na	
S5/8/9/17-MW38	2/21/2001 0026-092	**3.1**	3.2 J	**14**	17	4.4	18	--	--	--	na	na	na	--	--	na	na	na	20 J	--	--	--	0.5 J	na	na	0.74 J *	na	na	na	na	--	**7.2**	na	na	DIPE: 1.2 J
S5/8/9/17-MW39	2/22/2001 0026-112	**3.6**	--	**1.1**	--	--	--	--	--	--	na	na	na	**3.5 J**	--	na	na	na	47 J **	--	0.62 J	--	**90**	na	na	--	na	na	na	na	--	4.4 J	na	na	TBA: 18 J, DIPE: 2.7 J
S5/8/9/17-MW40	11/1/1995	PSH	na	PSH	PSH	PSH	PSH	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	2/6/1996	**660**	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	

TABLE 3-2
Summary of Historical Groundwater Analytical Results
Site 5/8/9/17, 13 Area, MCB Camp Pendleton, California
(Page 4 of 6)

Well Location	Date Sampled / Sample ID †	TPH Extractable mg/L	TRPH mg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes (total) µg/L	MTBE µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2,4-Trimethylbenzene µg/L	1,2-Dibromoethane µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L	1,2-Dichloropropane µg/L	1,3,5-Trimethylbenzene µg/L	1,3-Dichlorobenzene µg/L	1,4-Dichlorobenzene µg/L	Acetone µg/L	Carbon tetrachloride µg/L	Chlorobenzene µg/L	Chloroform µg/L	cis-1,2-Dichloroethene µg/L	Isopropylbenzene µg/L	Methyl Isobutyl Ketone µg/L	Methylene Chloride µg/L	n-Butylbenzene µg/L	n-Propylbenzene µg/L	p-Isopropyltoluene µg/L	sec-Butylbenzene µg/L	Tetrachloroethene µg/L	Trichloroethene µg/L	Naphthalene µg/L	Lead mg/L	Other µg/L
Water Quality Objectives:		**0.1**	(1)	**1**	**150**	**680**	**1750**	**13**	**5**	**6**	(1)	(1)	**10**(2)	**0.5**	**5**	(1)	**600**	**5**	(1)	**0.5**	**30**	**100**	**6**	(1)	(1)	**5**	(1)	(1)	(1)	(1)	**5**	**5**	(1)	(1)	
Laboratory Reporting Limits: (3)		**0.1**	**1**	**0.5**	**0.5**	**0.5**	**1.5**	**1**	**5**	**5**	(4)	(4)	(4)	**0.5**	**5**	(4)	(4)	(4)	**50**	**0.5**	**5**	**5**	**5**	(4)	**50**	**5**	(4)	(4)	(4)	(4)	**5**	**5**	**10**	**5**	
S5/8/9/17-MW41	8/18/1995	**5.5**	5.6	**5.29**	15.90	--	63.19	na	--	na	--	--	--	**1.71**	--	--	na	--	7.54	na	--	--	--	--	--	--	--	--	--	--	--	--	**43**	--	na	
	3/1/1996	**4.1**	na	**1.3**	--	9.3	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	5/29/1996	**7.0**	na	**3.4**	--	3.0	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	8/22/1996	**25**	na	**6.6**	1.9	5.9	2.6	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	10/29/1996	**15**	na	**5.2**	3.4	12	5.4	na	--	na	--	--	--	--	--	--	na	--	--	na	--	--	--	--	--	--	--	--	--	--	--	--	**53**	--	na	acenaphthene: 5.0, fluorene: 10, naphthalene: 60, phenathrene: 10, 2-methylphenathrene: 90
	1/13/1997	**64**	12	**5.0**	1.0	8.0	3.0	na	--	na	30	--	6.0	**2.0**	--	6.0	na	2.0	--	na	1.0	--	--	2.0	--	--	--	2.0	3.0	1.0	1.0	**45**	160	na	naphthalene: 53, phenanthrene: 5.0
	4/10/1997	**9.3**	6.1	**6.7**	2.8	5.2	6.1	na	--	na	20	--	5.0	**2.0**	--	5.0	na	2.0	5.0	na	--	--	1.0	--	--	--	--	--	3.0	--	--	**42**	72	--	
	7/18/1997	**81**	20	**4.6**	2.3	3.8	3.9	na	--	na	36	--	6.1	**2.2**	--	10	na	2.0	--	na	--	--	--	1.6	--	--	--	1.8	3.2	1.1	1.4	**48**	105	--	benzo(a)pyrene: 0.62, fluorene: 27, naphthalene: 7.0, phenanthrene: 31.3, carbon disulfide: 5.1
	10/16/1997	**8.1**	10	**4.3**	1.9	5.8	6.1	--	--	na	28	--	6.0	**2.0**	--	2.0	na	2.0	--	na	--	--	--	2.0	--	--	--	1.0	4.0	1.0	1.0	**39**	60	--	fluorene: 5.2, naphthalene: 25, phenanthrene: 4.5
	12/17/1998	**55.8**	27	**2.2**	0.8 J	6.3	1.7	na	0.7 J	--	3.0	--	6.0	--	--	2.0	--	--	--	--	1.0	0.2 J	0.6 J	1.8	--	--	--	2.6	1.7	2.1	1.7	**42**	--	na	styrene: 0.9 J
	3/23/2000	**0.85**	0.8	**2.3**	3.0	1.3	2.6	--	--	--	2.2	--	2.8	**1.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**29**	51.0	na	
	8/17/2000	--	1.8	**4.6**	5.6	7.4	3.3	--	1.3	--	3.8	--	5.9	**2.9**	--	2.4	--	1.7	9.7	--	1.0	--	1.1	2.0	--	--	3.7	2.5	1.8	1.4	1.0	**46**	92	na	DIPE: 1.3, Carbon Disulfide: 9.7
	2/20/2001 0026-089	**12**	36J	**4.3**	1.6	8.6	2.1	--	1.2 J	0.31 J	na	na	na	**4.4**	--	na	na	na	14 J *	--	1.1 J	--	2.5 J	na	--	1.5 J *	na	na	na	na	1.2 J	**48 ***	120 J	na	fluorene: 13 J,phenanthrene: 16 J DIPE: 1.9 J
	7/19/01 0026-204	**29**	47.8J	**2.7**	0.83	6.2	2.9	--	0.66J	--	na	na	na	**2.1**	--	na	na	na	--	--	0.87J	--	2J	--	--	--	na	na	na	na	1.1J	**39**	71	na	DIPE: 1J, phenanthrene: 11, pyrene: 0.51
S5/8/9/17-MW44	8/22/1995	--	na	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	11/20/1995	--	na	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	3/5/1996	0.09	na	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	5/29/1996	--	na	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	8/21/1996	--	na	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	10/29/1996	--	na	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	1/13/1997	--	--	--	--	--	--	na	--	na	--	--	--	--	--	--	na	--	--	na	--	--	--	--	--	--	--	--	--	--	--	3.0	5.0	na	
	4/9/1997	--	--	**1.0**	2.0	1.4	7.4	na	--	na	2.0	--	--	--	--	--	na	--	--	na	--	--	2.0	--	--	--	--	--	--	--	--	4.0	1.0	na	
	7/17/1997	--	--	--	--	--	--	na	--	na	--	--	--	--	--	--	na	--	--	na	--	--	--	--	--	--	--	--	--	--	--	2.1	--	na	
	10/15/1997	--	--	--	--	--	--	--	--	na	--	--	--	--	--	--	na	--	--	na	--	--	--	--	--	--	--	--	--	--	--	2.0	--	na	
	4/29/1998	na	--	--	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	--	--	--	--	--	--	1.7	--	na	
	12/18/1998	--	--	--	--	0.6 J	1.8 J	na	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 J	--	--	--	--	--	--	--	--	1.1	2.4	--	na	
	3/22/2000	--	--	--	2.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.0	--	na	
	8/15/2000	--	--	**12**	16	--	41	--	--	--	--	--	--	**0.55 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.6	--	na	
	2/21/2001 0026-096	**2.1**	--	--	--	--	--	--	--	--	na	na	na	--	--	na	na	na	7.2 J **	--	--	--	--	na	na	--	na	na	na	na	--	2.2 J	na	na	
	7/25/2001 0026-219	--	--	--	--	--	--	--	--	--	na	na	na	--	--	na	na	na	--	--	--	--	--	na	--	--	na	na	na	na	0.39J	2J	na	na	

TABLE 3-2
Summary of Historical Groundwater Analytical Results
Site 5/8/9/17, 13 Area, MCB Camp Pendleton, California

Well Location	Date Sampled / Sample ID †	TPH Extractable mg/L	TRPH mg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes (total) µg/L	MTBE µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2,4-Trimethylbenzene µg/L	1,2-Dibromoethane µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L	1,2-Dichloropropane µg/L	1,3,5-Trimethylbenzene µg/L	1,3-Dichlorobenzene µg/L	1,4-Dichlorobenzene µg/L	Acetone µg/L	Carbon tetrachloride µg/L	Chlorobenzene µg/L	Chloroform µg/L	cis-1,2-Dichloroethene µg/L	Isopropylbenzene µg/L	Methyl Isobutyl Ketone µg/L	Methylene Chloride µg/L	n-Butylbenzene µg/L	n-Propylbenzene µg/L	p-Isopropyltoluene µg/L	sec-Butylbenzene µg/L	Tetrachloroethene µg/L	Trichloroethene µg/L	Naphthalene µg/L	Lead mg/L	Other µg/L
Water Quality Objectives:		**0.1**	(1)	**1**	**150**	**680**	**1750**	**13**	**5**	**6**	(1)	(1)	**10**(2)	**0.5**	**5**	(1)	**600**	**5**	(1)	**0.5**	**30**	**100**	**6**	(1)	(1)	**5**	(1)	(1)	(1)	(1)	**5**	**5**	(1)	(1)	
Laboratory Reporting Limits: (3)		**0.1**	**1**	**0.5**	**0.5**	**0.5**	**1.5**	**1**	**5**	**5**	(4)	(4)	(4)	**0.5**	**5**	(4)	(4)	(4)	**50**	**0.5**	**5**	**5**	**5**	(4)	**50**	**5**	(4)	(4)	(4)	(4)	**5**	**5**	**10**	**5**	
S5/8/9/17-MW46	8/21/1995	**0.8**	na	**4.5**	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	3/5/1996	**0.51**	na	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	5/29/1996	**0.35**	na	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	8/22/1996	**1.0**	na	2.4	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	10/28/1996	**2.0**	na	--	--	--	2.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	1/10/1997	**0.8 J**	0.86	--	--	--	--	na	--	na	--	--	--	--	--	--	na	--	--	na	--	--	--	--	--	--	--	--	--	--	--	1.0	--	na	
	4/8/1997	--	--	0.5	--	--	--	na	--	na	--	--	--	--	--	--	na	--	--	na	--	--	--	--	--	--	--	--	--	--	--	1.0	--	na	
	7/17/1997	--	--	--	--	--	--	na	--	na	--	--	--	--	--	--	na	--	--	na	--	--	--	--	--	--	--	--	--	--	--	1.3	--	na	
	10/15/1997	**1.6 J**	1.2	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	5/3/1998	**0.54**	na	--	--	--	--	na	--	--	--	--	--	--	--	0.53	--	--	--	--	--	--	--	--	na	--	--	--	--	--	--	1.2	2.4	na	
	12/15/1998	--	--	--	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3 J	--	--	--	--	--	--	--	1.3	--	na	
	3/21/2000	--	--	1.9	5.0	--	2.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.3B	--	--	--	--	--	--	--	na	
	8/14/2000	--	--	8.3	17	1.2	4.9	--	--	--	--	--	--	**0.53 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	
	2/22/2001 0026-115	**1.3**	--	--	--	--	--	--	--	--	na	na	na	--	--	na	na	na	10 J **	--	--	--	--	na	na	0.49 J *	na	na	na	na	--	1.8 J	na	na	
	7/19/01 0026-203	**0.35**	--	--	--	--	--	--	--	--	na	na	na	--	--	na	na	na	--	--	--	--	--	na	--	--	na	na	na	na	--	0.99 J	na	na	
S5/8/9/17-MW47	8/14/1995	--	na	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	11/20/1995	**0.59**	na	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	3/5/1996	--	na	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	5/29/1996	--	na	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	8/22/1996	--	na	--	--	--	3.2	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	10/28/1996	--	na	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	1/10/1997	--	--	--	--	--	--	na	2.0	na	--	--	--	--	--	--	na	--	--	na	--	--	--	--	--	--	--	--	--	--	--	--	--	na	
	4/8/1997	--	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	7/17/1997	--	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	10/15/1997	--	--	--	--	--	--	--	--	na	--	--	--	--	--	--	na	--	--	na	--	--	--	--	--	--	--	--	--	--	--	1	--	na	
	4/29/1998	**0.4**	--	--	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	--	--	--	--	--	--	1	--	na	
	12/15/1998	--	--	0.4 J	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 J	--	--	--	--	0.9 J	1	--	na	
	3/21/2000	--	--	**3.8**	10	1.2	6	--	--	--	1.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.9B	--	--	--	--	--	--	--	na	
	8/14/2000	--	--	**4.4**	9.7	--	1.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	
	2/26/2001 0026-130	--	--	--	0.56	0.7	3.3	--	--	--	na	na	na	--	--	na	na	na	8.6 J **	na	na	--	--	na	--	--	na	na	na	na	--	1.8 J	na	na	bromoform: 0.63 J, dibromochloromethane: 0.44 J
	7/19/2001 0026-202	--	--	--	--	--	--	--	--	--	na	na	na	--	--	na	na	nn	--	--	--	--	--	na	--	--	na	na	na	na	--	0.6J	na	na	
5/8/9/17-MW48	11/1/1995	PSH	na	PSH	PSH	PSH	PSH	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	2/6/1996	**86**	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	5/22/1996	na	na	**41**	3.0	19.0	3.0	na	4.0	na	--	--	--	**30**	--	--	na	--	22	na	3.0	--	**170**	--	17	0.9	--	--	--	--	--	**8.0**	--	na	
	10/31/1996	**30**	15	**56**	3.2	12	8.4	na	na	na	na	na	na	**na**	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	1/13/1997	**140**	61	**50**	--	13	43	na	**5.0**	na	8.0	--	7.0	**50**	1.0	--	na	4.0	--	na	2.0	1.0	**180**	4.0	40	--	5.0	5.0	5.0	3.0	--	**10.0**	50	na	
	4/8/1997	**41**	100	**62**	2.7	16	7.5	na	**5.0**	na	4.0	--	7.0	**42**	--	2.0	na	4.0	--	na	2.0	--	**226***	3.0	15	--	3.0	5.0	2.0	2.0	--	**5.0**	42	na	

TABLE 3-2
Summary of Historical Groundwater Analytical Results
Site 5/8/9/17, 13 Area, MCB Camp Pendleton, California

Well Location	Date Sampled / Sample ID †	TPH Extractable mg/L	TRPH mg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes (total) µg/L	MTBE µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2,4-Trimethylbenzene µg/L	1,2-Dibromoethane µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L	1,2-Dichloropropane µg/L	1,3,5-Trimethylbenzene µg/L	1,3-Dichlorobenzene µg/L	1,4-Dichlorobenzene µg/L	Acetone µg/L	Carbon tetrachloride µg/L	Chlorobenzene µg/L	Chloroform µg/L	cis-1,2-Dichloroethene µg/L	Isopropylbenzene µg/L	Methyl Isobutyl Ketone µg/L	Methylene Chloride µg/L	n-Butylbenzene µg/L	n-Propylbenzene µg/L	p-Isopropyltoluene µg/L	sec-Butylbenzene µg/L	Tetrachloroethene µg/L	Trichloroethene µg/L	Naphthalene µg/L	Lead mg/L	Other µg/L
Water Quality Objectives:		**0.1**	(1)	**1**	**150**	**680**	**1750**	**13**	**5**	**6**	(1)	(1)	**10**(2)	**0.5**	**5**	(1)	**600**	**5**	(1)	**0.5**	**30**	**100**	**6**	(1)	(1)	**5**	(1)	(1)	(1)	(1)	**5**	**5**	(1)	(1)	
Laboratory Reporting Limits: (3)		**0.1**	**1**	**0.5**	**0.5**	**0.5**	**1.5**	**1**	**5**	**5**	(4)	(4)	(4)	**0.5**	**5**	(4)	(4)	(4)	**50**	**0.5**	**5**	**5**	**5**	(4)	**50**	**5**	(4)	(4)	(4)	(4)	**5**	**5**	**10**	**5**	
S5/8/9/17-MW50	3/8/1996	**1.6**	na	**3.0**	--	--	--	na	na	na	na	na	na	**na**	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	5/29/1996	**2.7**	na	**3.1**	--	--	4.2	na	na	na	na	na	na	**na**	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	8/21/1996	**1.4**	na	**4.5**	0.91	--	5.1	na	na	na	na	na	na	**na**	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	10/29/1996	**4.0**	na	**3.9**	2.3	1.6	15	na	na	na	na	na	na	**na**	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	1/13/1997	**1.5**	1.0	**6.0**	1.0	1.0	7.0	na	3.0	na	6.0	--	2.0	**15**	2.0	1.0	na	3.0	--	na	2.0	3.0	3.0	--	--	2.0	--	--	--	--	2.0	**100**	10	na	
	4/9/1997	**1.7**	1.6	**6.7**	1.4	0.9	11	na	3.0	na	--	--	2.0	**16**	1.0	1.0	na	2.0	--	na	1.0	2.0	3.0	--	--	2.0	--	--	--	--	1.0	**87**	3.0	na	
	7/17/1997	**2.0**	--	**8.0**	2.0	1.1	16	na	**5.2**	na	5.6	--	2.9	**20**	1.9	1.4	na	3.2	--	na	1.9	3.7	--	--	--	3.1	--	--	--	--	2.2	**143**	--	na	
	5/4/1998	**6.6**	--	--	1.9	--	9.2	na	2.1	--	1.9	--	0.42	**12**	--	--	--	--	--	--	--	1.6	--	--	na	1.5	--	--	--	--	--	**38**	4.0	na	Carbon disulfide: 0.24NJ
	12/17/1998	**4.8 J**	--	**11.5**	1.8	1.1	31.6	na	4.9	0.6 J	11.1	--	5.9	**20.2**	1.8	2.6	0.4 J	3.3	--	--	2.3	3.1	0.7 J	1.1	--	3.4	0.7 J	0.9 J	--	0.5 J	2.1	**150**	26.4 B	na	
	3/23/2000	**0.74 J**	1.3	**9.2**	3.9	--	17	--	3.7	--	6.2	--	2.2	**13.0**	1.6	1.2	--	1.1	--	--	1.2	2.6	--	--	--	2.9B	--	--	--	--	--	**91**	14.0	na	
	8/17/2000	**2.0**	4.9	**15**	17	2.1	28	--	4.8	--	8.4	--	4.3	**18**	2.0	2.1	--	2.3	--	--	1.8	2.9	--	1.2	--	3.1	--	--	--	--	1.6	**140**	21	na	TBA: 15, DIPE: 13
	2/20/2001 0026-088	**2.5**	--	**13**	1.4	0.91 J	28	--	**6.4 J**	0.82 J	na	na	na	**29**	2.5 J	na	na	na	--	--	2.5 J	4.4 J **	--	na	na	4.7 J **	na	na	na	na	2.7 J	**200 ***	na	na	DIPE: 16
	7/25/01 0026-222	**6.9**	--	**9.4**	1.3	1.2	30	--	4.1J	0.56J	na	na	na	**18**	1.6J	na	na	na	--	--	2.2J	2.9J	0.57J	na	--	3.1J	na	na	na	na	2.1J	**120**	na	na	diisopropyl ether: 9.4

Notes:

Values in **bold** are in excess of established water quality objectives.
-- Not detected above method detection limit
na - Not analyzed
(1) No established Water Quality Objective
(2) Secondary Maximum Contaminant Level
(3) Reporting limits are effective beginning February 2001; previous reporting limits may have varied from these values. Reporting limits shown are for undiluted analyses.
(4) Not analyzed as part of this monitoring event.

† Sample ID numbers are shown only for year 2001 samples.
NJ - Tentatively identified
J - Estimated value; results is above method detection limit and below reporting limit.
B - Compound reported in method blank
* - Compound reported in trip blank
** - Compound reported in equipment rinsate sample
mg/L milligrams per liter
µg/L micrograms per liter

Deep - Deep aquifer well
TPH - Total petroleum hydrocarbons
TRPH - Total recoverable petroleum hydrocarbons
PSH - Phase separated hydrocarbons noted in well
DIPE - diisopropyl ether
TBA - tert-butyl alcohol

TABLE 3-3
Summary of Historical Groundwater Analytical Results, Site 6/7, 13 Area, MCB Camp Pendleton, California
(Page 1 of 3)

Well Location	Date Sampled / Sample ID †	TPH Extractable mg/L	TRPH mg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes (total) µg/L	MTBE µg/L	1,1-Dichloroethane µg/L	1,2-Dichloroethane µg/L	Trichloroethene µg/L	1,2-Dichlorobenzene µg/L	1,2,4-Trimethylbenzene µg/L	1,3,5-Trimethylbenzene µg/L	Methylene Chloride µg/L	cis-1,2-Dichloroethene µg/L	Isopropylbenzene µg/L	n-Butylbenzene µg/L	n-Propylbenzene µg/L	p-Isopropyltoluene µg/L	sec-Butylbenzene µg/L	Acetone µg/L	Naphthalene µg/L	Other µg/L
Water Quality Objectives:		**0.1**	(1)	**1**	**150**	**680**	**1,750**	**13**	**5**	**0.5**	**5**	**10**(2)	(1)	(1)	**5**	**6**	(1)	(1)	(1)	(1)	(1)	(1)	(1)	
Laboratory Reporting Limits: (3)		**0.1**	**1**	**0.5**	**0.5**	**0.5**	**1.5**	**1**	**5**	**0.5**	**5**	(4)	(4)	(4)	**5**	**5**	(4)	(4)	(4)	(4)	(4)	**50**	**10**	
S6/7-MW7 (deep)	7/26/1995	na	3.9	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	11/14/1995	na	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	3/6/1996	na	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	5/28/1996	na	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	8/20/1996	na	--	**1.1**	--	--	2.9	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	1/22/1997	--	1.5	--	--	--	2	na	--	--	--	--	1.0	--	--	--	--	--	--	--	--	--	--	
	4/9/1997	--	--	**1.0**	--	0.6	3.5	na	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	7/17/1997	--	--	**1.3**	1.2	0.9	4.4	na	--	**1.3**	1.3	--	1.1	--	1.2	--	--	--	--	--	--	34	1.3	
	10/15/1997	--	--	0.9	--	0.6	3.7	--	na	**1.0**	na	na	na	na	1.0	na	na	na	na	na	na	na	na	
	5/1/1998	na	--	0.91	--	--	2.13	na	--	--	0.71	--	0.70 NJ	--	1.0	--	--	--	--	--	--	--	0.84	
	12/18/1998	--	--	**1.0**	--	0.9 J	3.8	na	--	--	0.9 J	--	1.1	1.0	0.8 J	--	0.3 J	--	1.0 J	--	--	--	--	Chloroform: 0.2J, 1,2-Dichloropropane: 0.4J
	3/27/2000	--	--	--	--	--	1.1	--	--	**0.53J**	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/23/2000	--	--	--	1.5	--	1.5	--	--	**0.64 J**	--	--	--	--	3.2 B	--	--	--	--	--	--	--	--	
	2/20/2001 0026-083	**0.31**	--	0.99	--	0.61	3	--	--	**1.1**	1.4 J *	na	na	na	1.4 J *	--	na	na	na	na	na	10 J *	na	1,2-Dichloropropane: 0.51J
	7/17/01 0026-194	**0.25**	--	**1.1**	--	0.56	3.1	--	--	**0.63**	0.67J	na	na	na	0.79J	--	na	na	na	na	na	--	na	
S6/7-MW12 (deep)	8/1/1995	na	3.9	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	2/23/2001 0026-119	**0.14**	--	--	--	--	--	--	--	**0.96**	0.94J	na	na	na	0.34J *	--	na	na	na	na	na	10 J **	na	1,2-Dichloropropane: 0.57J
	7/19/01 0026-198	**0.12**	--	--	--	--	--	--	-	0.45J	0.66J	na	na	na	--	--	na	na	na	na	na	--	na	1,2-Dichloropropane: 0.39J
S6/7-MW13	8/10/1995	na	--	**3.3**	14	11	62	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	11/14/1995	na	--	**6.7**	21.45	13.89	83.04	na	2.42	**2.03**	**5.45**	na	na	-	2.76	na	na	na	na	na	na	14.38	na	Methyl Isobutyl Ketone: 14.37 2-Butanone: 15.62
	10/31/1996	na	0.72	**6.6**	19	16	72	na	--	--	**10**	--	na	-	--	na	na	na	na	na	na	--	na	
	1/14/1997	--	1.3	**4.0**	13	9	43	na	1.0	**2.0**	**8.0**	--	31	8.0	--	1.0	3.0	--	4.0	2.0	--	15	59	Methyl Isobutyl Ketone: 5
	4/9/1997	**1.0 J**	--	**6.0**	16	12	58	na	1.0	**2.0**	**8.0**	--	25	6.0	--	3.0	2.0	--	3.0	1.0	--	7	26	Methyl Isobutyl Ketone: 5
	7/17/1997	**0.9**	--	**6.5**	21	17	81	na	1.4	**1.2**	**8.1**	1.3	44	9.9	--	--	3.3	--	4.9	1.6	1.3	10	66	
	10/15/1997	**2.2 J**	0.64	**6.9**	20	13	70	--	1.0	**1.0**	**9.0**	2.0	40	4.0	1.0	na	4.0	na	5.0	3	1.0	na	61	
	5/14/1998	na	--	**2.4**	9.3	4.3	24	na	1.8	--	**6.0**	0.36	6.5	1.8	1.1	--	--	0.22NJ	0.79	--	--	9.9 NJ	25	2-Butanone: 5.7NJ
	12/21/1998	**0.5 J**	--	**8.0**	8.1	20.1	109.1	na	1.4	--	**8.9**	1.4	37.5	8.9	0.5 J	1.2	3.5	--	4.6	--	--	--	96.0 JB	TCE: 0.3J Chloroform: 0.1J
	3/27/2000	--	1.2	**10**	12	24	102	--	--	**0.78J**	**8.5**	1.3	68	12	--	--	4.8	4.9	7.5	2.3	1.4	5.2	140	
	8/23/2000	--	2.7	**8.3**	15	17	90	--	--	**0.81 J**	**5.9**	1.2	34	6.8	--	--	2.2	--	3.6	1.2	--	--	64	Carbon Disulfide: 1.5
	2/26/2001 0026-130	**1.5**	--	**9.4**	20	21	110	--	1.3J	--	**8.6 J**	na	na	na	1.3 J *	--	na	na	na	na	na	--	na	
	7/17/01 0026-195	**1.6**	--	**7.9**	17	16	93	--	0.62J	--	**6.3**	na	na	na	0.49J	0.39J	na	na	na	na	na	--	na	MIBK: 1.7J, chlorobenzene: 0.23J, PCE:0.28J, DIPE:0.4J

TABLE 3-3
Summary of Historical Groundwater Analytical Results, Site 6/7, 13 Area, MCB Camp Pendleton, California
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Well Location	Date Sampled / Sample ID †	TPH Extractable mg/L	TRPH mg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes (total) µg/L	MTBE µg/L	1,1-Dichloroethane µg/L	1,2-Dichloroethane µg/L	Trichloroethene µg/L	1,2-Dichlorobenzene µg/L	1,2,4-Trimethylbenzene µg/L	1,3,5-Trimethylbenzene µg/L	Methylene Chloride µg/L	cis-1,2-Dichloroethene µg/L	Isopropylbenzene µg/L	n-Butylbenzene µg/L	n-Propylbenzene µg/L	p-Isopropyltoluene µg/L	sec-Butylbenzene µg/L	Acetone µg/L	Naphthalene µg/L	Other µg/L
Water Quality Objectives:		**0.1**	(1)	**1**	**150**	**680**	**1,750**	**13**	**5**	**0.5**	**5**	**10**(2)	(1)	(1)	**5**	**6**	(1)	(1)	(1)	(1)	(1)	(1)	(1)	
Laboratory Reporting Limits: (3)		**0.1**	**1**	**0.5**	**0.5**	**0.5**	**1.5**	**1**	**5**	**0.5**	**5**	(4)	(4)	(4)	**5**	**5**	(4)	(4)	(4)	(4)	(4)	**50**	**10**	
S6/7-MW15	8/14/1995	na	69	**29.33**	84.35	34.36	172.75	na	--	**4.53**	**21.24**	--	na	na	--	na	na	na	na	na	na	35.33	na	2-Butanone: 21.45
	2/6/1996	**35,000**	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	1/14/1997	**25**	7.3	**38**	48	26	120	na	--	**8.0**	**30**	2.0	100	35	--	--	10	8.0	15	8.0	5.0	--	140	TCE: 1
	2/13/2001	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	
	7/16/2001	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	PSH	
S6/7-MW16	3/14/1996	na	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	5/28/1996	na	--	**1.7**	2.9	--	2.8	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	8/21/1996	na	--	**6.1**	12	3.2	15	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	10/31/1996	na	0.9	**9.4**	14	6.3	27	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	1/22/1997	**1.1**	1.3	**17**	10	8.0	37	na	--	**3.0**	**12**	--	18	4.0	--	--	2.0	--	2.0	--	--	4.0 B	26	fluoranthene: 0.2, fluorene: 0.5J, naphthalene: 67, phenanthrene: 0.4J
	4/10/1997	**0.8**	0.5	**9.9**	15	8.8	31	na	--	--	**15**	--	16	4.0	--	--	1.0	--	2.0	--	--	--	9.0	Lead: 0.01
	7/18/1997	**0.6**	0.5	**17**	3.9	10	43	na	--	**2.4**	**12**	--	15	3.8	--	--	1.5	--	2.1	--	--	--	23	naphthalene:15 , Lead: --
		na	na	**na**	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	pyrene: 0.45
	10/16/1997	**0.7 J**	1.1	**14**	4	6.3	28	--	--	**3.0**	**11**	--	13	1.0	--	--	1.0	--	1.0	--	--	--	16	phenanthrene: 0.3J, Lead: --
	5/13/1998	na	--	**2.6**	2.0	2.1	4.5	na	--	--	**9.6**	--	0.84 NJ	--	--	--	--	--	--	--	--	--	1.5	
	12/18/1998	**1.2 J**	--	**32.2**	8.7	10.7	67.3	na	0.2 J	--	**14.4**	0.7 J	22.0	4.8	0.5 J	--	1.9	0.9 J	2.5	1.1	0.7 J	--	42.9	TCE: 0.4J, Chloromethane: 0.7J, Chloroform: 0.4J
	3/27/2000	--	1.2	**21**	8.7	5.3	40	--	--	**1.5**	**9.9**	--	18	4.2	--	--	1.6	--	1.6	--	--	--	28	
	8/23/2000	--	--	**26**	12	10	61	--	--	**2.1**	**14**	--	19	4.7	--	--	1.9	--	2.2	--	--	--	31	
	2/20/2001 0026-087	**1.5**	--	**25**	2.9	7.8	53	--	--	**3.3**	**14 ***	na	na	na	0.79 J *	0.41J	na	na	na	na	na	12 J *	29J	TCE: 0.49J DIPE: 1.2J Fluorene 1.2J
	7/19/01 0026-199	**7.1**	18.3	**34**	13	14	92	--	0.22J	**2.8**	**16**	na	na	na	0.67J	0.24J	na	na	na	na	na	--	39	PCE:0.49J, DIPE: 1.2J, Phenanthrene: 2.7, benzo(B)Flouranthene: 0.12J,

TABLE 3-3
Summary of Historical Groundwater Analytical Results, Site 6/7, 13 Area, MCB Camp Pendleton, California
(Page 3 of 3)

Well Location	Date Sampled / Sample ID †	TPH Extractable mg/L	TRPH mg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes (total) µg/L	MTBE µg/L	1,1-Dichloroethane µg/L	1,2-Dichloroethane µg/L	Trichloroethene µg/L	1,2-Dichlorobenzene µg/L	1,2,4-Trimethylbenzene µg/L	1,3,5-Trimethylbenzene µg/L	Methylene Chloride µg/L	cis-1,2-Dichloroethene µg/L	Isopropylbenzene µg/L	n-Butylbenzene µg/L	n-Propylbenzene µg/L	p-Isopropyltoluene µg/L	sec-Butylbenzene µg/L	Acetone µg/L	Naphthalene µg/L	Other µg/L
Water Quality Objectives:		**0.1**	(1)	**1**	**150**	**680**	**1,750**	**13**	**5**	**0.5**	**5**	**10**(2)	(1)	(1)	**5**	**6**	(1)	(1)	(1)	(1)	(1)	(1)	(1)	
Laboratory Reporting Limits: (3)		**0.1**	**1**	**0.5**	**0.5**	**0.5**	**1.5**	**1**	**5**	**0.5**	**5**	(4)	(4)	(4)	**5**	**5**	(4)	(4)	(4)	(4)	(4)	**50**	**10**	
S6/7-MW17	3/12/1996	-	--	--	--	--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	5/28/1996	-	--	--	1.7	2.2	11	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	8/20/1996	-	--	--	0.78	1.5	6.3	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	10/31/1996	-	0.3	--	0.9	0.7	4.1	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	1/14/1997	**1.1**	2.3	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
	3/5/1997	-	-	--	--	--	na	na	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	4/9/1997	--	--	0.6	0.7	0.6	3.6	na	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	7/22/1997	--	--	--	0.8	0.7	3.8	na	--	--	--	--	1.9	--	--	--	--	--	--	--	--	--	2.1	
	10/16/1997	--	--	--	1	1.3	6.6	--	--	--	--	--	6	--	--	--	--	--	--	--	--	--	4.0	Chloromethane: 1
	5/13/1998	na	--	--	--	0.63	3.1	na	--	--	--	--	2.7	1.4	0.72 NJ	--	--	0.72 NJ	0.85	1.0 NJ	0.76 NJ	6.4 NJ	2.1	Chloromethane: 0.84NJ
	12/18/1998	**0.6 J**	--	--	1.2	0.9 J	5.4	na	--	--	--	--	7.9	2.4	--	--	0.4 J	1.9	1.4	--	0.9 J	--	7.6	Chloromethane: 0.5J
	3/27/2000	--	0.65	--	1.8	--	5.2	--	--	--	--	--	7.5	1.8	--	--	--	--	1.2	1.1	--	--	6.5	
	8/23/2000	--	--	--	3.1	--	43	--	--	--	--	--	2.8	--	--	--	--	--	--	--	--	--	5.3	
	2/22/2001 0026-097	**0.54**	--	--	0.96	0.76	3.6	--	--	--	--	na	na	na	--	--	na	na	na	na	na	7.7 J **	na	
	7/17/01 0026-196	**0.71**	--	--	1.9	1.2	6.7	--	--	--	0.27 J	na	na	na	--	--	na	na	na	na	na	--	na	

Notes:

Values in **bold** are in excess of established water quality objectives.
-- Not detected above method detection limit
na - Not analyzed
(1) No established Water Quality Objective
(2) Secondary Maximum Contaminant Level
(3) Reporting limits are effective beginning February 2001; previous reporting limits may have varied from these values. Reporting limits shown are for undiluted analyses.
(4) Not analyzed as part of this monitoring event.

† Sample ID numbers are shown only for year 2001 samples.
NJ - Tentatively identified
J - Estimated value; results is above method detection limit and below reporting limit.
B - Compound reported in method blank
* - Compound reported in trip blank
** - Compound reported in equipment rinsate sample
mg/L milligrams per liter
µg/L micrograms per liter

Deep - Deep aquifer well
TPH - Total petroleum hydrocarbons
TRPH - Total recoverable petroleum hydrocarbons
PCE - Tetrachloroethene
PSH - Phase separated hydrocarbons noted in well

TABLE 3-4
Summary of Historical Groundwater Natural Attenuation Parameter Analytical Results, Site 1, 13 Area, MCB Camp Pendleton

Well Location	Date Sampled / Sample ID †	Nitrate (a) mg/L	Sulfate (b) mg/L	Sulfide (c) mg/L	TOC (d) mg/L	Mn (e) mg/L	Fe II (f) mg/L	Fe III (g) mg/L	Total Fe (h) mg/L	Methane (i) µg/L	Ethane (j) µg/L	Ethene (k) µg/L	Alkalinity (l) mg/L	Chloride (m) mg/L	Dissolved Oxygen (n) mg/L	ORP (p) mV
S1-MW4	4/28/98	15.5	391	na	25.8	na	na	na	na	0.7	--	--	200	1710	2.5	
S1-MW8	1/9/97	20	701	--	11	0.10	--	1.57	1.57	--	--	--	na	na		
	4/3/97	20	693	--	19	0.05	--	1.64	1.64	9.2	--	--	na	na		
	7/15/97	17	555	--	40	0.06	--	1.27	1.27	--	--	--	na	na		
	10/7/97	18	579	0.14	14	0.06	--	0.477	0.477	--	--	--	na	na		
	4/30/98	18.8	606	na	3.0	na	0.8	na	0.080	0.22	--	--	60	5840		
	12/10/98	19	540	na	17	na	na	na	na	--	--	--	86	4700		
	3/15/00	17	600	na	3.1	0.0368	--	na	--	--	--	--	84	na		
	8/9/00	13	258	na	10.0	0.0233	--	na	--	--	--	--	130	4280		
	2/15/2001 0026-067	19.3	737	na	--	na	-- (q)	na	na	0.76J	--	--	50.1	5190	4.5	
	7/23/2001 0026-211	18.6	586	na	12.7	na	-- (q)	na	na	--	--	--	115	3810	4.5	160
S1-MW14	1/7/97	12	425	--	27	0.50	--	--	--	3	--	--	na	na		
	4/3/97	19	430	--	64	0.60	--	0.217	0.217	31.3	--	--	na	na		
	7/15/97	14	369	--	44	0.51	--	0.433	0.433	3.4	--	--	na	na		
	10/7/97	14	443	--	37	0.43	--	--	--	6.1	--	--	na	na		
	3/16/00	10	330	na	10.3	0.424	--	na	--	71	--	--	238	2500		
	8/10/00	11.3	186	na	19.0	0.459	--	na	0.120	--	--	--	290	2390		
	2/20/2001 0026-086	8.71	404	na	20.9	na	0.6 (q)	na	na	96	--	--	185	4020	1.2	
	7/20/2001 0026-210	11.5	727	na	15.9	na	-- (q)	na	na	270	--	--	215	2410	2	90
S1-MW15	1/7/97	7.8	196	--	19	0.14	--	--	--	23.3	--	--	na	na		
	4/3/97	4.9	201	--	34	0.13	--	0.298	0.298	1.7	--	--	na	na		
	7/15/97	9.2	194	--	30	0.12	--	0.368	0.368	31.0	--	--	na	na		
	10/8/97	9.4	187	--	12	0.12	--	2.19	2.19	36	--	--	na	na		
	4/29/98	9.3	203	na	2.1	na	0.4	na	0.07	57	--	--	26	na		
	12/10/98	9	190	na	8	na	na	na	na	15	--	--	32	6200		
	3/15/00	7.9	250	na	1.9	0.118	--	na	--	--	--	--	32	na		
	8/8/00	5.7	175	na	5.8	0.137	--	na	0.254	15	--	--	32	6290		
	2/16/2001 0026-075	10.1	226	na	5.9	na	-- (q)	na	na	1.4	--	--	27.5	5910	4.5	
	7/20/2001 0026-208	0.2	688	na	11	na	-- (q)	na	na	8.9	--	--	40.1	5210	4.9	190
S1-MW16	2/16/2001 0026-076	7.16	84.4	na	9.4	na	0.2 (q)	na	na	0.76J	1.0	0.98J	30	6020	1.70	
	7/20/2001 0026-207	12.4	753	na	10.7	na	0.2 (q)	na	na	0.66J	1.4	1.0	35.1	2440	0.5	-10

TA . 3-4
Summary of Historical Groundwater Natural Attenuation Parameter Analytical Results, Site 1, 13 Area, MCB Camp Pendleton

Well Location	Date Sampled / Sample ID †	Nitrate (a) mg/L	Sulfate (b) mg/L	Sulfide (c) mg/L	TOC (d) mg/L	Mn (e) mg/L	Fe II (f) mg/L	Fe III (g) mg/L	Total Fe (h) mg/L	Methane (i) µg/L	Ethane (j) µg/L	Ethene (k) µg/L	Alkalinity (l) mg/L	Chloride (m) mg/L	Dissolved Oxygen (n) mg/L	ORP (p) mV
S1-MW17	1/8/97	58	310	0.15	39	0.02	--	0.244	0.244	20.6	--	--	na	na		
	4/7/97	56	322	--	58	--	--	0.381	0.381	1.9	--	--	na	na		
	7/16/97	63	303	--	67	--	--	0.969	0.969	0.6	--	--	na	na		
	10/8/97	64	308	--	30	--	--	0.225	0.225	1.7	--	--	na	na		
	12/10/98	50	270	na	32	na	na	na	na	1.5	--	--	500	1500		
	3/15/00	42	300	na	13.9	0.0169	--	na	0.789	--	--	--	474	na		
	8/8/00	37.1	179	na	16.0	0.0128	--	na	0.463	--	--	--	465	1690		
	2/15/2001 0026-070	39.6	278	na	7.6	na	-- (q)	na	na	--	--	--	105	1670	4.1	
	7/23/2001 0026-214	64.7	291	na	--	--	-- (q)	na	na	0.5J	--	--	466	1560	4.8	120
S1-MW19	1/8/97	10	250	--	17	0.27	--	--	--	1	--	--	na	na		
	4/7/97	10	259	--	45	0.29	--	0.504	0.504	1.1	--	--	na	na		
	7/15/97	6	231	--	36	0.23	--	0.165	0.165	0.9	--	--	na	na		
	10/8/97	12	267	--	30	0.25	--	0.151	0.151	1.0	--	--	na	na		
	5/4/98	13.8	326	na	2.8	na	0.8	na	0.100	1.2	--	--	68	4130		
	12/11/98	11	200	na	13	na	na	na	na	--	--	--	64	5900		
	3/16/00	12	350	na	2.8	0.127	--	na	0.146	--	--	--	62	4700		
	8/10/00	9.5	257	na	9.4	0.103	--	na	--	--	--	--	65	5410		
	2/16/2001 0026-079	13	360	na	9.8	na	-- (q)	na	na	0.83J	--	--	65.1	5300	0.7	
	7/23/01 0026-213	12.8	359	na	8.7	na	-- (q)	na	na	0.88J	--	--	65.1	5150	2.4	210
S1-MW20	1/8/97	10	200	--	16	0.06	--	0.238	0.238	0.5	--	--	na	na		
	4/7/97	10	192	--	41	0.05	--	0.712	0.712	0.6	--	--	na	na		
	7/15/97	11	192	--	27	0.04	--	1.190	1.190	0.7	--	--	na	na		
	10/8/97	11	192	--	23	0.03	--	0.353	0.353	1.0	--	--	na	na		
	5/4/98	11.6	205	na	1.8	na	1.2	na	0.260	0.69	--	--	44	5310		
	12/11/98	13	250	na	13	na	na	na	na	--	--	--	50	6200		
	3/16/00	10	240	na	1.8	0.0228	--	na	0.404	--	--	--	47	4600		
	8/9/00	9.3	233	na	6.3	0.0145	--	na	0.631	--	--	--	50	4950		
	2/15/2001 0026-072	10.6	245	na	--	na	-- (q)	na	na	--	--	0.69J	50.1	5150	4.3	
	7/27/2001 0026-226	10.9	253	na	7.3	na	-- (q)	na	na	0.6J	--	--	55.1	4150	6.2	110

TABLE 3-4

Summary of Historical Groundwater Natural Attenuation Parameter Analytical Results, Site 1, 13 Area, MCB Camp Pendleton

Well Location	Date Sampled / Sample ID †	Nitrate (a) mg/L	Sulfate (b) mg/L	Sulfide (c) mg/L	TOC (d) mg/L	Mn (e) mg/L	Fe II (f) mg/L	Fe III (g) mg/L	Total Fe (h) mg/L	Methane (i) µg/L	Ethane (j) µg/L	Ethene (k) µg/L	Alkalinity (l) mg/L	Chloride (m) mg/L	Dissolved Oxygen (n) mg/L	ORP (p) mV
S1-MW21	10/8/97	8.8	137	0.42	23	0.31	--	2.72	2.72	1.7	--	--	na	na		
	5/1/98	8.0	127	na	1.5	na	5.1	na	3.77	0.24	--	--	121	3740		
	12/11/98	9	110	na	7	na	na	na	na	--	--	--	145	4300		
	3/16/00	8.2	130	na	1.7	0.999	--	na	73.6	--	--	--	138	4000		
	8/9/00	7.8	142	na	5.2	0.128	--	na	7.17	--	--	--	110	4580		
	2/15/2001 0026-071	8.66	136	na	na	na	-- (q)	na	na	--	0.29J	--	105	4910	4.9	
	7/27/01 0026-225	8.56	139	na	--	na	-- (q)	na	na	0.43J	--	--	108	4080	6	150
S1-MW22	2/14/2001 0026-061	--	137	na	28.1	na	na	na	na	3.5	7.8	7	270	4550	1.6	
	7/20/2001 0024-209	0.087J	360J	na	87.6	na	-- (q)	na	na	2.9	11	8.3	220	4510	4.2	20
S1-MW13171-1	3/21/00	1.4	150	na	10.0	4.54	4.8	na	5.24	2	48	38	174	5500		
	8/10/00	--	111	na	na	4.00	5.0	na	7.29	4.4	12	3.5	170	6150		

Notes

Values in **bold** are in excess of established water quality objectives.

-- Not detected above reporting limit

na Not analyzed

† Sample ID numbers are shown only for year 2001 samples.

J Analyte detected above method detection limit but below reporting limit

mg/L milligrams per liter

µg/L micrograms per liter

mV millivolts

(a) Nitrate as N by EPA Method 300.0

(b) Sulfate by EPA Method 300.0

(c) Sulfides, total by EPA Method 9030

(d) Total organic carbon by EPA Method 9060

(e) Manganese by EPA Method 6010A

(f) Ferrous Iron by Method SM 3500-Fe D (except where noted otherwise)

(g) Ferric Iron by Method SM 3500-Fe D

(h) Total Iron by EPA Method 6010A

(i) Methane by EPA Method 3810 prior to 2001; RSK 175M for 2001 data

(j) Ethane by EPA Method 3810 prior to 2001; RSK 175M for 2001 data

(k) Ethene by EPA Method 3810 prior to 2001; RSK 175M for 2001 data

(l) Alkalinity by SM 2320B

(m) Chloride by EPA Method 300.0

(n) Dissolved oxygen by field instrument. Values are approximated from field data. Field data prior to February 2001 are not summarized.

(p) Oxidation/reduction potential (ORP) by field instrument. Values are approximated from field data. Values are positive unless otherwise indicated. ORP data from February 2001 are not presented because of suspected instrumentation errors. Field data prior to February 2001 are not summarized.

(q) Ferrous iron by Hach IR-18C field test kit

TABLE 3-5
Summary of Historical Groundwater Natural Attenuation Parameter Analytical Results, Site 5/8/9/17, 13 Area, MCB Camp Pendleton

Well Location	Date Sampled / Sample ID †	Nitrate (a) mg/L	Sulfate (b) mg/L	Sulfide (c) mg/L	TOC (d) mg/L	Mn (e) mg/L	Fe II (f) mg/L	Fe III (g) mg/L	Total Fe (h) mg/L	Methane (i) µg/L	Ethane (j) µg/L	Ethene (k) µg/L	Alkalinity (l) mg/L	Chloride (m) mg/L	Dissolved Oxygen (q) mg/L	ORP (p) mV
S5/8/9/17-MW1	1/9/97	6.4	2130	--	25	0.08	--	3.62	3.62	--	--	--	na	na		
	4/7/97	6.4	1990	--	27	0.08	--	1.69	1.69	0.6	--	--	na	na		
	7/16/97	6.9	2050	--	32	0.06	--	5.14	5.14	--	--	--	na	na		
	10/9/97	7.0	2030	0.14	21	0.05	--	1.21	1.21	--	--	--	na	na		
	4/30/98	7.8	2040	na	4.5	na	0.0	na	0.33	0.18	--	--	50	3530		
	12/15/98	7	1700	na	10	na	na	na	na	--	--	--	60	4200		
	3/22/00	5.5	1800	na	3.4	4.09	--	na	4.49	--	--	--	62	4000		
	8/14/00	5.0	79	na	6.5	2.66	--	na	0.393	--	--	--	128	3920		
	2/22/2001 0026-114	7.05	1810	na	--	na	-- (q)	na	na	0.4 J	--	--	60.1	4150	1.8	
	7/25/01 0026-220	6.26	2000	na	5.6	na	-- (q)	na	na	0.3J	--	--	90.2	468	1.3	200
S5/8/9/17-MW4	1/9/97	4.3	2030	--	37	1.80	--	3.64	3.64	--	--	--	na	na		
	4/7/97	3.8	1890	--	33	1.50	--	0.63	0.628	0.8	--	--	na	na		
	7/16/97	4.8	2080	--	46	1.70	--	2.30	2.30	--	--	--	na	na		
	10/9/97	4.6	2010	--	17	1.50	--	0.800	0.800	0.6	--	--	na	na		
	5/5/98	6.2	1810	na	3.7	na	0.1	na	0.800	0.23	--	--	104	3620		
	12/15/98	7	1900	na	14	na	na	na	na	1.1	--	--	140	4400		
	3/22/00	6.9	1900	na	5.2	2.47	--	na	14.4	--	--	--	92	3700		
	8/15/00	4.5	80	na	10	2.77	--	na	0.176	--	--	--	140	3690		
	2/22/2001 0026-109	7.6	2360	na	--	na	-- (q)	na	na	0.45 JB	--	--	115	3430	0.9	
	7/25/01 0026-217	7.1	1880	na	12.7	na	-- (q)	na	na	0.62J	--	--	140	3270	0.8	150
S5/8/9/17-MW7	4/28/98	7.9	2490	na	6.4	na	na	na	na	na	--	--	40	3130	0.4	
S5/8/9/17-MW15	1/10/97	5.8	1890	--	17	0.03	--	2.79	2.79	--	--	--	na	na		
	4/8/97	5.4	1790	--	20	0.02	--	1.01	1.01	0.6	--	--	na	na		
	7/16/97	6.1	1900	--	36	0.03	--	1.25	1.25	--	--	--	na	na		
	10/9/97	6.5	1850	--	17	0.02	--	1.07	1.07	--	--	--	na	na		
	5/5/98	6.9	1760	na	2.2	na	0.4	na	0.08	0.43	--	--	92	3710		
	12/17/98	7	1700	na	10	na	na	na	na	--	--	--	120	4700		
	3/23/00	6	1700	na	3.4	0.0479	--	na	5.76	--	--	--	90	3600		
	8/17/00	3.7	12.7	na	7.4	0.0289	--	na	1.43	--	--	--	80	4190		
	2/26/2001 0026-128	7.3	1660	na	7.0	na	-- (q)	na	na	7.7	--	--	89.7	4020	1.7	

TABLE 3-5
Summary of Historical Groundwater Natural Attenuation Parameter Analytical Results, Site 5/8/9/17, 13 Area, MCB Camp Pendleton

Well Location	Date Sampled / Sample ID †	Nitrate (a) mg/L	Sulfate (b) mg/L	Sulfide (c) mg/L	TOC (d) mg/L	Mn (e) mg/L	Fe II (f) mg/L	Fe III (g) mg/L	Total Fe (h) mg/L	Methane (i) µg/L	Ethane (j) µg/L	Ethene (k) µg/L	Alkalinity (l) mg/L	Chloride (m) mg/L	Dissolved Oxygen (q) mg/L	ORP (p) mV
S5/8/9/17-MW23	4/28/98	2.0	853	na	1.4	na	na	na	na	380	--	--	63	2330	1.4	
S5/8/9/17-MW31	4/28/98	8.1	1900	na	4.2	na	na	na	na	--	--	--	50	3870	1.6	
S5/8/9/17-MW34	4/28/98	1.4	507	na	0.7	na	na	na	na	16	--	--	160	1030	1.3	
S5/8/9/17-MW36	4/28/98	10.6	1680	na	3.4	na	na	na	na	0.60	--	--	67	3240		
	7/25/01 0026-221	8.87	1940	na	--	na	3.4 (q)	na	na	--	--	--	170	2420	1.2	200
S5/8/9/17-MW37	1/10/97	1.2	1310	0.09	26	1.40	--	1.31	1.31	1.2	--	--	na	na		
	4/7/97	1.1	1350	--	34	1.50	--	0.570	0.570	1.3	--	--	na	na		
	7/16/97	1.3	1340	--	44	1.50	--	1.160	1.160	0.9	--	--	na	na		
	10/9/97	1.1	1260	--	22	1.50	--	0.703	0.703	0.9	--	--	na	na		
	4/30/98	1.4	1190	na	11.2	na	0.0	na	0.010	1.3	--	--	215	1390		
	12/17/98	2	1200	na	19	na	na	na	na	7.6	10	5.8	240	1400		
	3/22/00	1.9	1100	na	10.6	1.44	--	na	3.86	--	--	--	195	1100		
	8/17/00	1.3	3.8	na	13.0	1.30	--	na	0.362	1.5	--	--	196	1350		
	2/23/2001 0026-123	2.4	1280	na	--	na	-- (q)	na	na	2	--	--	164	1340	0.2	
	7/19/01 0026-205	0.6	1800	na	15.1	na	-- (q)	na	na	1.5 B	--	--	203	1250	1.2	170
S5/8/9/17-MW38	2/21/2001 0026-092	4.68	2690	na	na	na	na	na	na	na	na	na	22.9	4300	2	
S5/8/9/17-MW41	1/13/97	--	39	0.09	69	0.33	1.73	3.02	4.75	1.3	--	--	na	na		
	4/10/97	--	54	--	53	0.29	0.264	2.18	2.44	1.4	--	--	na	na		
	7/18/97	--	71	0.11	95	0.25	--	3.28	3.28	5.4	0.7	--	na	na		
	10/16/97	--	52	0.07	45	0.21	0.713	1.97	2.68	6.2	--	--	na	na		
	12/17/98	--	40	na	35	na	na	na	na	45	--	--	560	900		
	3/23/00	--	19	na	29.2	0.307	0.69	na	3.57	129	--	--	557	980		
	8/17/00	--	--	na	34.0	0.224	0.39	na	1.16	339	--	--	525	1030		
	2/20/2001 0026-089	--	10.4	na	31.1	na	0.2 (q)	na	na	660	--	--	565	1270	0.9	
	7/19/2001 0026-204	0.13	8.2	na	41.0	na	-- (q)	na	na	830	--	0.32J	613	790	0.1	-250
S5/8/9/17-MW44	1/13/97	2.2	445	--	25	0.07	--	0.673	0.673	1.1	--	--	na	na		
	4/9/97	2.4	449	--	50	0.06	--	0.446	0.446	0.9	--	--	na	na		
	7/17/97	3.1	458	--	25	0.05	--	8.880	8.880	--	--	--	na	na		
	10/15/97	4.3	433	--	31	0.04	--	0.295	0.295	2.4	--	--	na	na		

TABLE 3-5
Summary of Historical Groundwater Natural Attenuation Parameter Analytical Results, Site 5/8/9/17, 13 Area, MCB Camp Pendleton

Well Location	Date Sampled / Sample ID †	Nitrate (a) mg/L	Sulfate (b) mg/L	Sulfide (c) mg/L	TOC (d) mg/L	Mn (e) mg/L	Fe II (f) mg/L	Fe III (g) mg/L	Total Fe (h) mg/L	Methane (i) µg/L	Ethane (j) µg/L	Ethene (k) µg/L	Alkalinity (l) mg/L	Chloride (m) mg/L	Dissolved Oxygen (q) mg/L	ORP (p) mV
S5/8/9/17-MW44 (continued)	4/29/98	3.4	1410	na	3.9	na	na	na	na	0.7	--	--	22	8620		
	12/18/98	6	420	na	11	na	na	na	na	--	--	--	296	9000		
	3/22/00	3.7	480	na	5.1	0.0285	0.32	na	1.54	--	--	--	214	7800		
	8/15/00	--	85	na	15.0	0.0229	--	na	1.13	--	--	--	241	8920		
	2/21/2001 0026-096	3.32	460	na	--	na	0.6 (q)	na	na	0.33 JB	--	--	210	7770	2.4	
	7/25/01 0026-219	4.91	501	na	7.4	na	na	na	na	0.43 J	--	--	241	9680	2.6	140
S5/8/9/17-MW46	1/10/97	4.1	658	--	12	0.15	--	0.897	0.897	26.0	--	--	na	na		
	4/8/97	3.0	629	--	40	0.22	0.224	0.748	0.972	2.5	--	--	na	na		
	7/17/97	3.5	616	--	51	0.24	--	0.716	0.716	--	--	--	na	na		
	10/15/97	3.7	580	--	16	0.21	0.490	0.050	0.540	28.5	--	--	na	na		
	5/3/98	4.8	509	na	1.3	na	0.980	na	0.080	18	--	--	123	6950		
	12/15/98	4	440	na	14	na	na	na	na	120	--	--	230	8400		
	3/21/00	2.4	580	na	2.7	0.169	--	na	0.584	94	--	--	104	7700		
	8/14/00	1.2	73	na	7.0	0.106	--	na	0.184	--	--	--	90	7730		
	2/22/2001 0026-115	1.29	471	na	9.0	na	-- (q)	na	na	260	--	--	140	6930	1.7	
	7/19/01 0026-203	0.64	924	na	10.2	na	-- (q)	na	na	77	--	--	156	6910	3.1	0
S5/8/9/17-MW47	1/10/97	11	877	0.07	23	0.23	--	12.7	12.7	1.1	--	--	na	na		
	4/8/97	11	825	--	51	0.17	--	0.567	0.567	1.1	--	--	na	na		
	7/17/97	14	857	--	42	0.16	--	1.620	1.620	0.7	--	--	na	na		
	10/15/97	14	780	--	50	0.14	--	--	--	0.9	--	--	na	na		
	4/29/98	10.1	777	na	5.0	na	0.8	na	0.01	0.6	--	--	134	6810		
	12/15/98	12	700	na	17	na	na	na	na	1.4	--	--	144	7200		
	3/21/00	2.7	800	na	5.2	0.203	--	na	0.226	--	--	--	166	6400		
	8/14/00	2.6	43.9	na	14.0	0.111	--	na	0.452	--	--	--	150	6230		
	2/26/2001 0026-130	1.77	773	na	15.6	na	-- (q)	na	na	0.84 J	--	--	149	6490	0.2	
	7/19/01 0026-202	4.09	781	na	13.5	na	-- (q)	na	na	0.49 JB	--	--	147	5920	0.2	150
S5/8/9/17-MW48	1/13/97	--	161	0.34	149	4.20	1.18	382	383	23.4	--	--	na	na		
	4/8/97	--	110	--	199	8.60	--	354	354	67	--	--	na	na		

TABLE 3-5
Summary of Historical Groundwater Natural Attenuation Parameter Analytical Results, Site 5/8/9/17, 13 Area, MCB Camp Pendleton

Well Location	Date Sampled / Sample ID †	Nitrate (a) mg/L	Sulfate (b) mg/L	Sulfide (c) mg/L	TOC (d) mg/L	Mn (e) mg/L	Fe II (f) mg/L	Fe III (g) mg/L	Total Fe (h) mg/L	Methane (i) µg/L	Ethane (j) µg/L	Ethene (k) µg/L	Alkalinity (l) mg/L	Chloride (m) mg/L	Dissolved Oxygen (q) mg/L	ORP (p) mV
S5/8/9/17-MW50	1/13/97	4.3	363	--	26	0.10	1.79	0.060	1.85	1.5	--	--	na	na		
	4/9/97	3.0	361	--	47	0.12	2.29	2.15	4.44	0.9	--	--	na	na		
	7/17/97	3.6	366	--	42	0.14	0.319	3.87	4.19	1.2	2.0	--	na	na		
	5/4/98	3.6	351	na	7.9	na	0.910	na	0.40	0.74	--	--	126.0	5590		
	12/17/98	3	330	na	28	na	na	na	na	5.5	4.5	--	120	6500		
	3/23/00	1.6	360	na	10.4	0.194	--	na	2.77	--	16	--	152	4100		
	8/17/00	1.0	--	na	24.0	0.219	9.5	na	9.06	2.3	--	--	130	5300		
	2/20/01	1.54	358	na	22.0	na	2.0 (q)	na	na	1.5	--	1.9	158	5410	1.1	
	7/25/01 0026-222	1.24	347	na	21.0	na	na	na	na	4.3	4.2	0.3J	175	4700	0.5	50

Notes

-- Not detected above reporting limit.
na - Not analyzed
† Sample ID numbers are shown only for year 2001 samples.
J Analyte detected above method detection limit but below reporting limit
B Analyte detected in method blank
mg/L milligrams per liter
µg/L micrograms per liter
mV millivolts
(a) Nitrate as N by EPA Method 300.0
(b) Sulfate by EPA Method 300.0
(c) Sulfides, total by EPA Method 9030
(d) Total organic carbon by EPA Method 9060
(e) Manganese by EPA Method 6010A
(f) Ferrous Iron by Method SM 3500-Fe D (except where noted otherwise)
(g) Ferric Iron by Method SM 3500-Fe D
(h) Total Iron by EPA Method 6010A
(i) Methane by EPA Method 3810 prior to 2001; RSK 175M for 2001 data
(j) Ethane by EPA Method 3810 prior to 2001; RSK 175M for 2001 data
(k) Ethene by EPA Method 3810 prior to 2001; RSK 175M for 2001 data
(l) Alkalinity by SM 2320B
(m) Chloride by EPA Method 300.0
(n) Dissolved oxygen by field instrument. Values are approximated from field data. Field data prior to February 2001 are not summarized.
(p) Oxidation/reduction potential (ORP) by field instrument. Values are approximated from field data. Values are positive unless otherwise indicated. ORP data from February 2001 are not presented because of suspected instrumentation errors. Field data prior to February 2001 are not summarized.
(q) Ferrous iron by Hach IR-18C field test kit

TABLE 3-6
Summary of Historical Groundwater Natural Attenuation Parameter Analytical Results, Site 6/7, 13 Area, MCB Camp Pendleton

Well Location	Date Sampled / Sample ID †	Nitrate (a) mg/L	Sulfate (b) mg/L	Sulfide (c) mg/L	TOC (d) mg/L	Mn (e) mg/L	Fe II (f) mg/L	Fe III (g) mg/L	Total Fe (h) mg/L	Methane (i) µg/L	Ethane (j) µg/L	Ethene (k) µg/L	Alkalinity (l) mg/L	Chloride (m) mg/L	Dissolved Oxygen (q) mg/L	ORP (p) mV
S6/7-MW7	1/22/97	6.6	3000	--	59	10	0.276	4.36	4.67	1.1	--	--	na	na		
	4/9/97	6.3	2830	--	47	13	--	0.16	0.157	11.9	--	--	na	na		
	7/17/97	7.2	3120	--	38	13	--	0.46	0.464	19	--	--	na	na		
	10/15/97	7.4	2880	--	42	13	--	0.420	0.420	32.2	--	--	na	na		
	5/1/98	7.9	2870	na	8.3	na	0.240	na	0.080	35.0	--	--	24	2700		
	12/18/98	9	2800	na	18	na	na	na	na	54	--	--	29	3500		
	3/23/00	7.6	2700	na	8.2	12.3	--	na	0.128	20	--	--	22	2300		
	8/23/00	--	55	na	12.0	12.0	--	na	--	2.5	--	--	12	2620		
	2/20/2001 0026-083	7.68	3910	na	12.8	na	-- (q)	na	na	31.0	--	--	11	2780	1.3	
	7/17/01 0026-194	10.20	4240	na	12.1	na	-- (q)	na	na	42.0	--	--	--	2460	1.1	150
S6/7-MW12	7/19/01 0026-198	9.63	2930	na	20.5	na	-- (q)	na	na	0.63 JB	--	--	63.7	2120	0.2	260
S6/7-MW13	1/14/97	2.2	4260	0.08	25	19	9.14	4.06	13.2	52.7	--	--	na	na		
	4/9/97	1.9	4140	--	43	23	10.4	1.70	12.1	14.1	--	--	na	na		
	7/17/97	3.0	4430	--	30	25	13.1	1.96	15.0	15.4	--	--	na	na		
	10/15/97	3.7	4090	--	28	26	14.6	--	14.6	27.7	--	--	na	na		
	5/14/98	3	3990	na	9.9	na	13.6	na	14.0	9.0	--	--	--	3170		
	12/21/98	4	3800	na	21	na	na	na	na	75	--	--	--	3800		
	3/27/00	2.4	4000	na	6.5	18.3	17.0	na	18.3	71	--	--	--	4700		
	8/23/00	--	63	12.0	na	19.1	14	na	14.5	23	--	--	na	5010		
	2/26/2001 0026-130	2.28	4050	na	15.9	na	13 (q)	na	na	16	--	--	--	4930	0.2	
	7/17/2001 0026-195	3.39	5250	na	11.4	na	7.3 (q)	na	na	12	--	--	--	4660	1.3	210
S6/7-MW15	1/14/97	5.4	2650	--	25	12	38.1	--	31.3	18.5	--	--	na	na		
S6/7/-MW16	1/22/97	4.4	4030	0.08	27	14	23.4	74.8	98.2	14.6	0.8	--	na	na		
	4/10/97	4.5	3420	--	30	18	19.5	--	15.5	11.7	--	--	na	na		
	7/18/97	3.5	3780	--	34	19	19.6	1.6	21.2	14	--	--	na	na		
	10/16/97	3.6	3500	--	20	17	24.3	--	24.3	12.3	1.2	--	na	na		
	5/13/98	4.6	3780	na	9.2	na	16.9	na	17.6	10	--	--	--	3560		
	12/18/98	5	3000	na	17	na	na	na	na	23	--	--	--	3500		
	3/27/00	1.2	3400	na	8.7	38.1	32.0	na	46.0	12	--	--	--	3900		
S6/7/-MW16 (continued)	8/23/00	--	98	na	16.0	15.2	21	na	22.2	10	--	--	na	4060		
	2/20/2001 0026-087	1.0	4270	na	14.2	na	-- (q)	na	na	9.6	--	0.78J	--	4080	1.7	
	7/19/01 0026-199	2.01	4930	na	19.2	na	5.8 (q)	na	na	8.3	--	0.33J	--	3570	0.4	310

TABLE 3-6
Summary of Historical Groundwater Natural Attenuation Parameter Analytical Results, Site 6/7, 13 Area, MCB Camp Pendleton

Well Location	Date Sampled / Sample ID †	Nitrate (a) mg/L	Sulfate (b) mg/L	Sulfide (c) mg/L	TOC (d) mg/L	Mn (e) mg/L	Fe II (f) mg/L	Fe III (g) mg/L	Total Fe (h) mg/L	Methane (i) µg/L	Ethane (j) µg/L	Ethene (k) µg/L	Alkalinity (l) mg/L	Chloride (m) mg/L	Dissolved Oxygen (q) mg/L	ORP (p) mV
S6/7-MW17	1/14/97	12	3910	0.07	28	24	24.2	--	14.9	209	--	--	na	na		
	4/9/97	12	3710	--	65	31	9.82	--	8.01	1.4	--	--	na	na		
	7/22/97	11	4160	--	23	34	21.50	--	19.70	0.6	--	--	na	na		
	10/16/97	10	4110	--	18	31	23.2	--	23.2	1.7	--	--	na	na		
	5/13/98	15.2	4700	na	6.7	na	na	na	na	0.95	--	--	--	6830		
	12/18/98	18	3300	na	18	na	na	na	na	5.2	--	--	--	8400		
	3/27/00	1.9	3700	na	5.7	15.3	38.0	na	33.5	2	--	--	--	6700		
	08/23/00	--	58	na	14.0	29.0	36	na	36.7	3.1	--	--	na	6440		
	2/22/2001 0026-097	--	4920	na	5.1	na	16.2 (q)	na	na	2	--	--	--	6730	1.1	
	7/17/01 0026-196	6.23	6510	na	16.1	na	na	na	na	1.8	--	--	--	6330	1.2	340

Notes

-- Not detected above reporting limit.
na - Not analyzed
† Sample ID numbers are shown only for year 2001 samples.
J Analyte detected above method detection limit but below reporting limit
B Analyte present in method blank, not detected above concentration shown
mg/L milligrams per liter
µg/L micrograms per liter
mV millivolts
(a) Nitrate as N by EPA Method 300.0
(b) Sulfate by EPA Method 300.0
(c) Sulfides, total by EPA Method 9030
(d) Total organic carbon by EPA Method 9060
(e) Manganese by EPA Method 6010A
(f) Ferrous Iron by Method SM 3500-Fe D (except where noted otherwise)
(g) Ferric Iron by Method SM 3500-Fe D
(h) Total Iron by EPA Method 6010A
(i) Methane by EPA Method 3810 prior to 2001; RSK 175M for 2001 data
(j) Ethane by EPA Method 3810 prior to 2001; RSK 175M for 2001 data
(k) Ethene by EPA Method 3810 prior to 2001; RSK 175M for 2001 data
(l) Alkalinity by SM 2320B
(m) Chloride by EPA Method 300.0
(n) Dissolved oxygen by field instrument. Values are approximated from field data. Field data prior to February 2001 are not summarized.
(p) Oxidation/reduction potential (ORP) by field instrument. Values are approximated from field data. Values are positive unless otherwise indicated. ORP data from February 2001 are not presented because of suspected instrumentation errors. Field data prior to February 2001 are not summarized.
(q) Ferrous iron by Hach IR-18C field test kit

FIGURES

DRAWN BY: MD	CHECKED BY: JO	APPROVED BY: MC	DCN: FWSD-RAC-01-0748	DRAWING NO: 01074811.DWG
DATE: 09/24/01	REV: REVISION 0		CTO #0026	

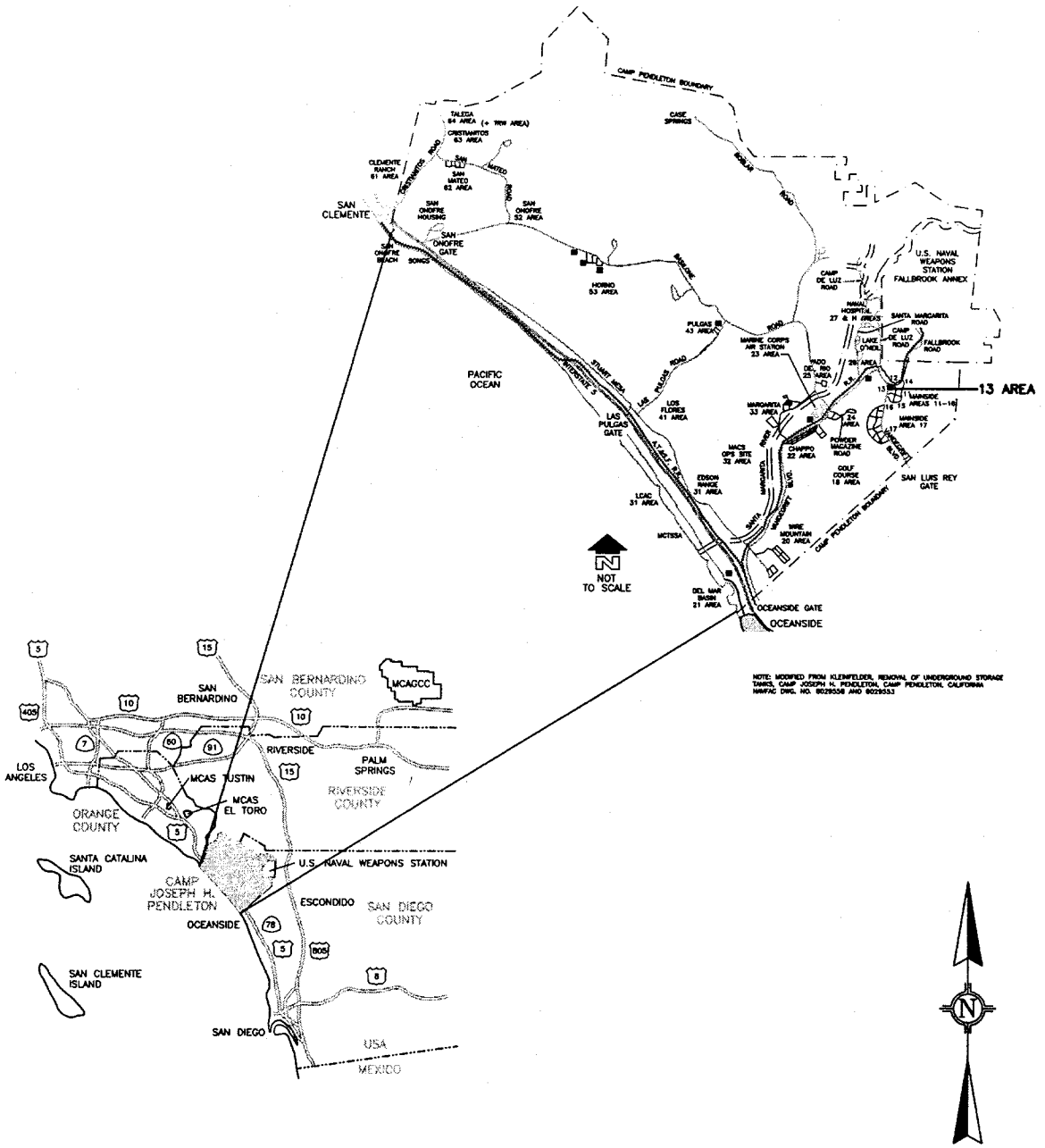

Figure 1-1

VICINITY MAP

MCB CAMP PENDLETON

FOSTER WHEELER ENVIRONMENTAL CORPORATION

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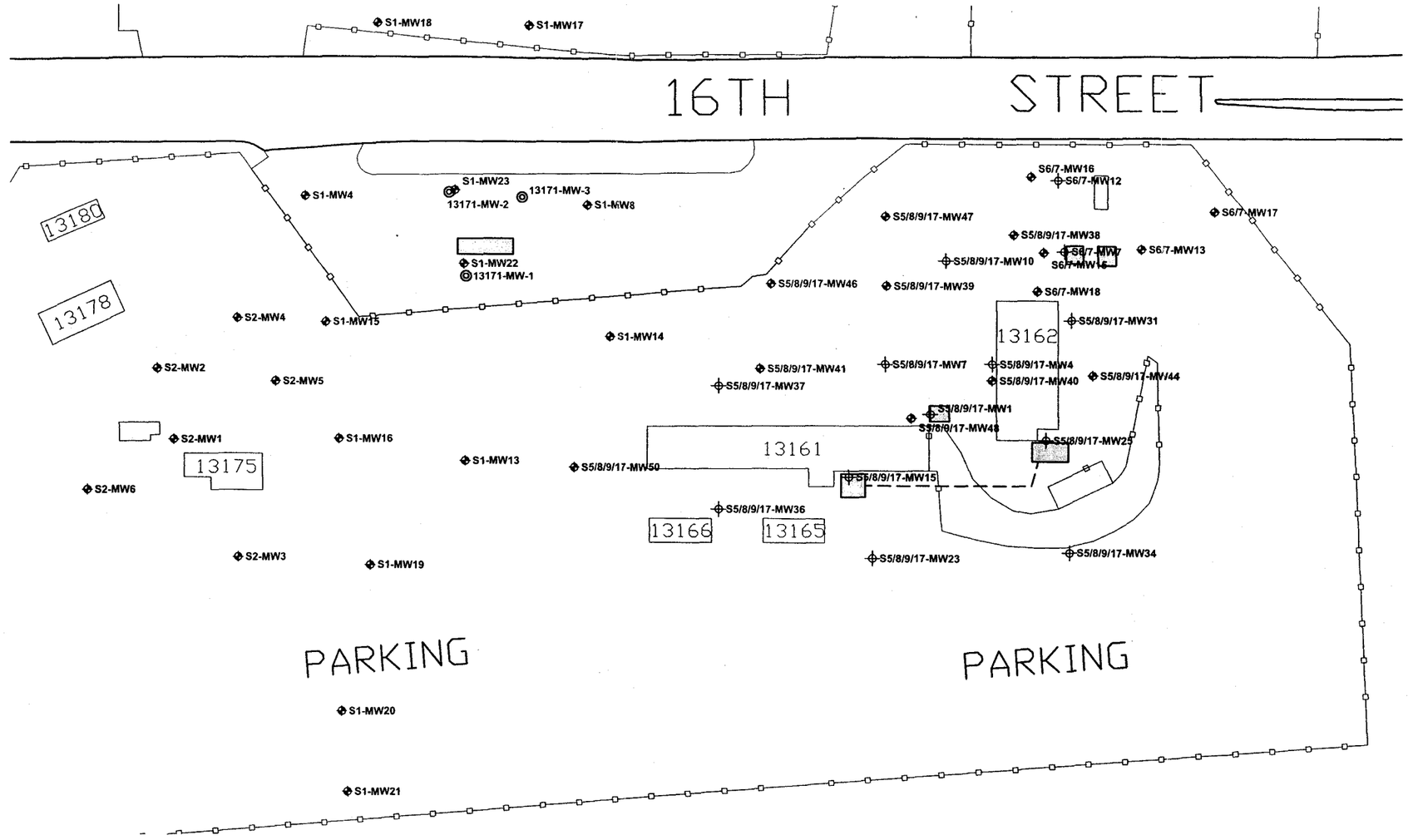

LEGEND:

S5/8/9/17-MW23 — DEEP AQUIFER GROUNDWATER MONITORING WELL AND IDENTIFICATION

S1-MW21 — SHALLOW AQUIFER GROUNDWATER MONITORING WELL AND IDENTIFICATION

WELL DESTROYED, FEBRUARY 2001

FORMER UST

LOCATION OF FORMER BLDG..

LOCATION OF FORMER PIPELINE

FENCE LINE

100 50 0 100

SCALE IN FEET

N

Figure 1-2
WELL LOCATION MAP
13 AREA

MCB CAMP PENDLETON

FOSTER WHEELER ENVIRONMENTAL CORPORATION

DRAWING NO: 01074812.DWG

DCN: FWSD-RAC-01-0748 CTO #0026

APPROVED BY: MC

CHECKED BY: JO REV: REVISION 0

DRAWN BY: MD DATE: 09/24/01

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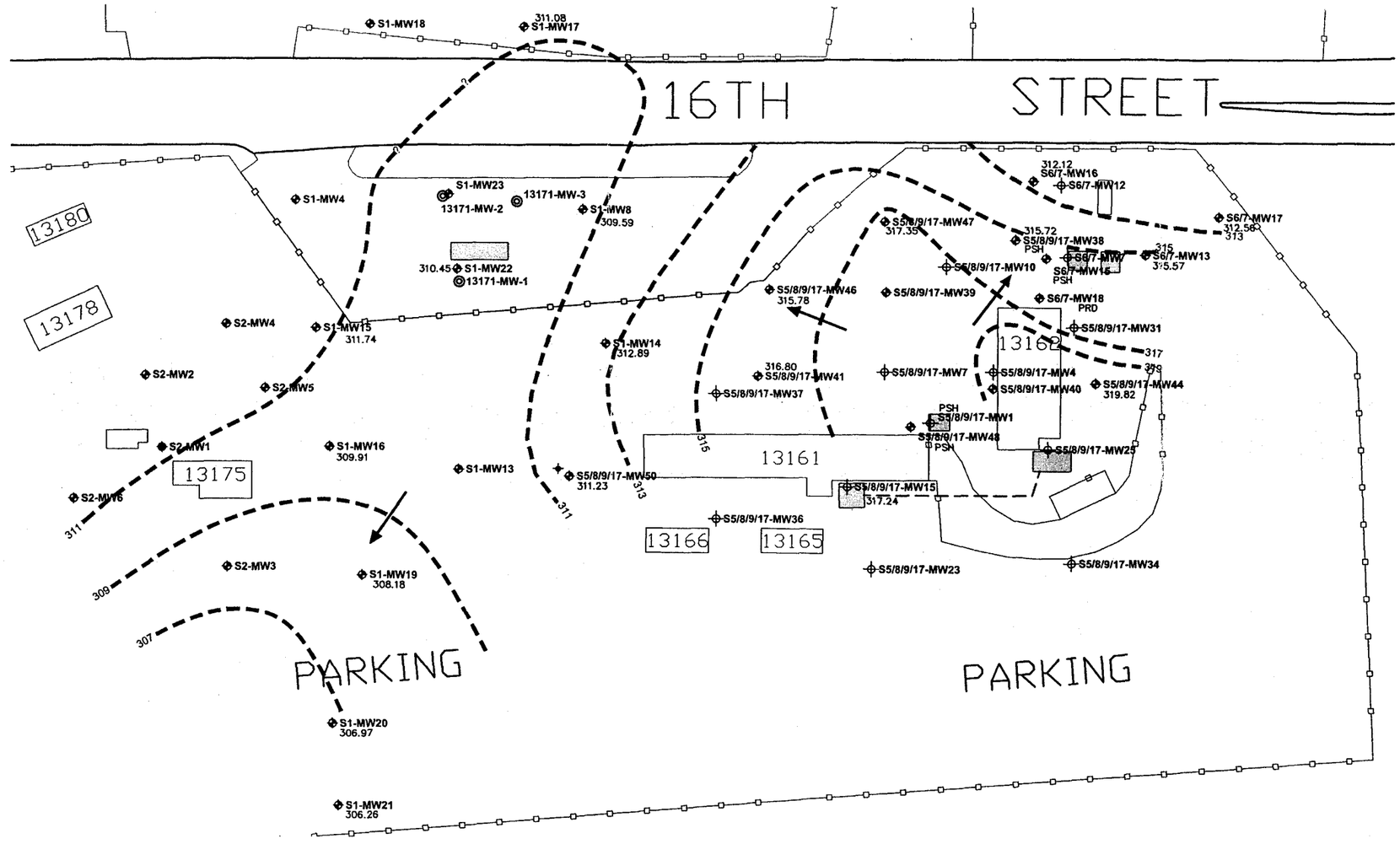

LEGEND:

S5/8/9/17-MW23 — DEEP AQUIFER GROUNDWATER MONITORING WELL AND IDENTIFICATION

S1-MW21 — SHALLOW AQUIFER GROUNDWATER MONITORING WELL AND IDENTIFICATION

WELL DESTROYED, FEBRUARY 2001

FORMER UST

LOCATION OF FORMER BLDG.

LOCATION OF FORMER PIPELINE

FENCE LINE

321 — SHALLOW AQUIFER GROUNDWATER ELEVATION CONTOUR (FT MSL)

(321.23) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL (MSL); DEPTH TO PSH IF PRESENT

APPROXIMATE GROUNDWATER FLOW DIRECTION

PSH — PHASE SEPARATED HYDROCARBONS IN WELL

PRD — PSH RECOVERY DEVICE IN WELL

100 50 0 100
SCALE IN FEET

N

Figure 2-1
SHALLOW AQUIFER GROUNDWATER MAP
13 AREA, JULY 2001

MCB CAMP PENDLETON

FOSTER WHEELER ENVIRONMENTAL CORPORATION

DRAWING NO: 01074821.DWG
DCN: FWSD-RAC-01-0748 CTO #0026
APPROVED BY: MC
CHECKED BY: JO REV: REVISION 0
DRAWN BY: MD DATE: 09/24/01

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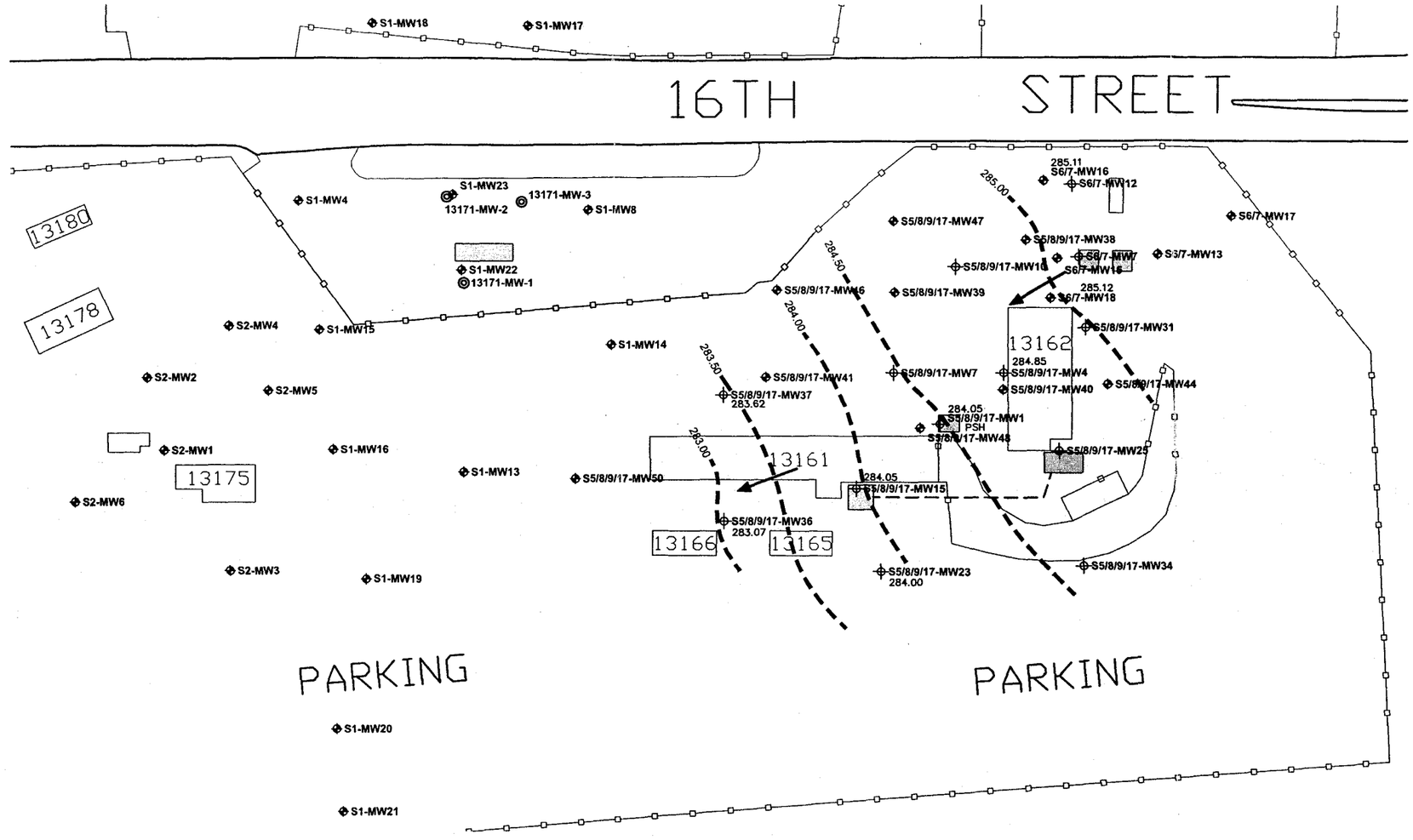

LEGEND:

S5/8/9/17-MW23 — DEEP AQUIFER GROUNDWATER MONITORING WELL AND IDENTIFICATION

S1-MW21 — SHALLOW AQUIFER GROUNDWATER MONITORING WELL AND IDENTIFICATION

WELL DESTROYED, FEBRUARY 2001

FORMER UST

LOCATION OF FORMER BLDG.

LOCATION OF FORMER PIPELINE

FENCE LINE

321 — SHALLOW AQUIFER GROUNDWATER ELEVATION CONTOUR (FT MSL)

321.23 — GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL (MSL)

APPROXIMATE GROUNDWATER FLOW DIRECTION

100 50 0 100
SCALE IN FEET

N

Figure 2-2
DEEP AQUIFER GROUNDWATER MAP
13 AREA, JULY 2001

MCB CAMP PENDLETON

FOSTER WHEELER ENVIRONMENTAL CORPORATION

DRAWING NO: 01074822.DWG
DCN: FWSD-RAC-01-0748 CTO #0026
APPROVED BY: MC
CHECKED BY: JO
REV: REVISION 0
DRAWN BY: MD
DATE: 09/24/01

I:\1990-RAC\CTO-0026\13 AREA\010748 2001 ANNUAL GWMR, 13 AREA, SEPT 01\DWGS\01074822.DWG
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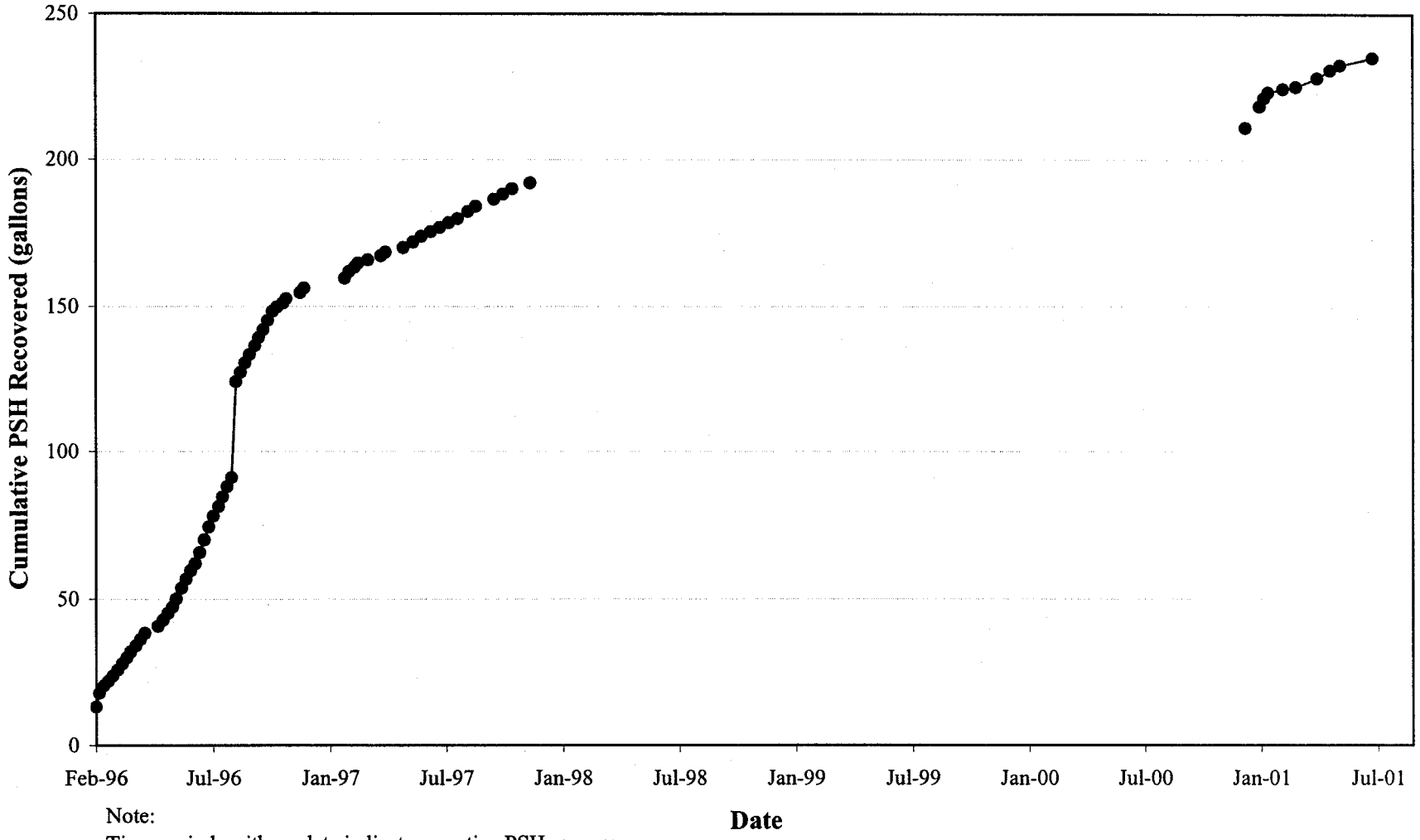
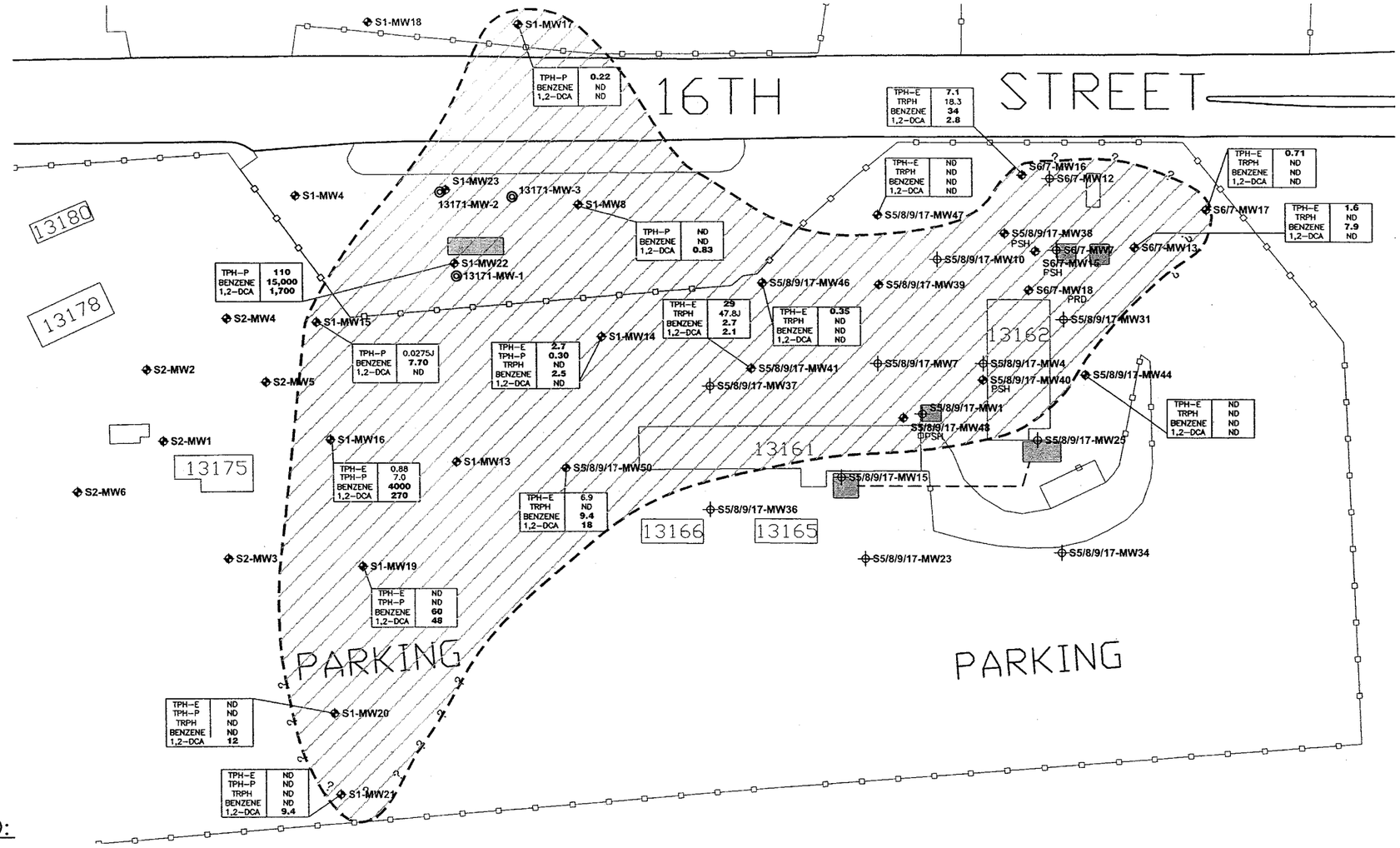
Figure 2-3
Phase-Separated Hydrocarbon (PSH) Recovery from Well S5/8/9/17-MW40



Note:
Time periods with no data indicate no active PSH recovery.



LEGEND:

S5/8/9/17-MW23 — DEEP AQUIFER GROUNDWATER MONITORING WELL AND IDENTIFICATION

S1-MW21 — SHALLOW AQUIFER GROUNDWATER MONITORING WELL AND IDENTIFICATION

WELL DESTROYED, FEBRUARY 2001

FORMER UST

LOCATION OF FORMER BLDG.

LOCATION OF FORMER PIPELINE

FENCE LINE

TPH–E	TOTAL EXTRACTABLE PETROLEUM HYDROCARBON IN MILLIGRAMS PER LITER (mg/L)
TPH–P	TOTAL PURGEABLE PETROLEUM HYDROCARBON (mg/L)
BENZENE	BENZENE CONCENTRATION IN MICROGRAMS PER LITER (ug/L)
1,2–DCA	1,2 DICHLOROETHANE (ug/L)
TRPH	TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (mg/L)
ND	NOT DETECTED ABOVE REPORTING LIMIT
J	COMPOUND PRESENT ABOVE METHOD DETECTION LIMIT (MDL) BUT BELOW REPORTING LIMIT
	APPROXIMATE AREAL EXTENT OF TPH–P, TPH–E, BENZENE AND 1,2–DCA IN SHALLOW AQUIFER GROUNDWATER >WQOs
PSH	PHASE–SEPARATED HYDROCARBONS IN WELL
PRD	PSH RECOVERY DEVICE IN WELL

NOTE:

RESULTS SHOWN IN BOLD ARE ABOVE THE RESPECTIVE ANALYTE'S WATER QUALITY OBJECTIVE.

100 50 0 100
SCALE IN FEET

N

Figure 3–1
DISTRIBUTION OF TPH, BENZENE AND 1,2–DCA IN SHALLOW AQUIFER GROUNDWATER, 13 AREA
JULY 2001

MCB CAMP PENDLETON

FOSTER WHEELER ENVIRONMENTAL CORPORATION

DRAWING NO: 01074831.DWG
DCN: FWSD–RAC–01–0748
CTO #0026
APPROVED BY: MC
CHECKED BY: JO
REV: REVISION 0
DRAWN BY: MD
DATE: 09/24/01

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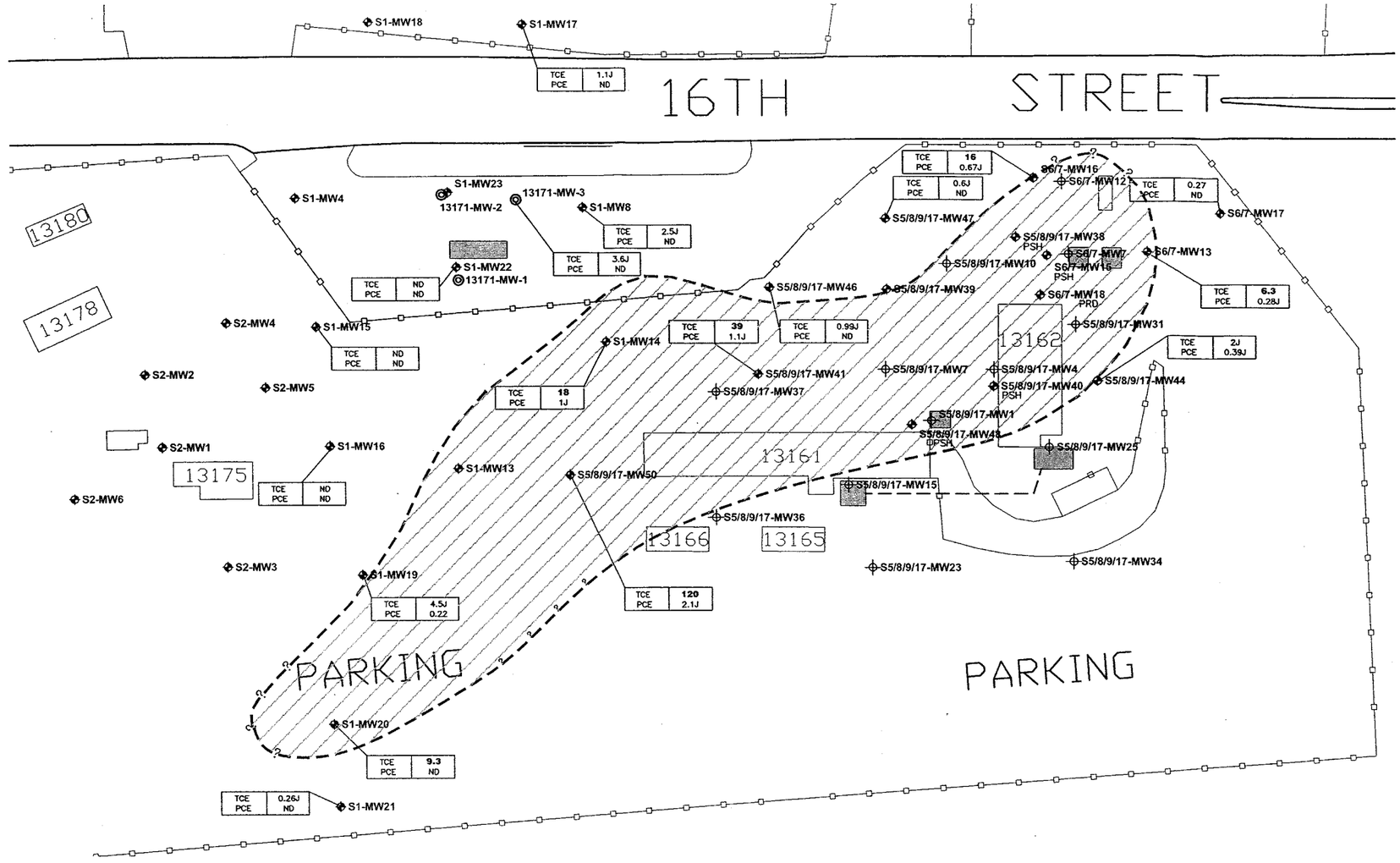

LEGEND:

S5/8/9/17-MW23 — DEEP AQUIFER GROUNDWATER MONITORING WELL AND IDENTIFICATION

S1-MW21 — SHALLOW AQUIFER GROUNDWATER MONITORING WELL AND IDENTIFICATION

WELL DESTROYED, FEBRUARY 2001

FORMER UST

LOCATION OF FORMER BLDG.

LOCATION OF FORMER PIPELINE

FENCE LINE

TCE	TRICHLOROETHENE IN MICROGRAMS PER LITER (ug/L)
PCE	TETRACHLOROETHYLENE (ug/L)
ND	NOT DETECTED ABOVE REPORTING LIMIT
J	COMPOUND PRESENT ABOVE METHOD DETECTION LIMIT (MDL) BUT BELOW REPORTING LIMIT
PSH	PHASE-SEPARATED HYDROCARBONS IN WELL
PRD	PSH RECOVERY DEVICE IN WELL

APPROXIMATE AREAL EXTENT OF TCE IN SHALLOW AQUIFER GROUNDWATER > WQO

NOTE:

RESULTS SHOWN IN BOLD ARE ABOVE THE RESPECTIVE ANALYTE'S WATER QUALITY OBJECTIVE.

100 50 0 100

SCALE IN FEET

N

Figure 3-2
DISTRIBUTION OF TCE AND PCE IN SHALLOW AQUIFER GROUNDWATER, 13 AREA
JULY 2001

MCB CAMP PENDLETON

FOSTER WHEELER ENVIRONMENTAL CORPORATION

DRAWING NO: 01074832.DWG

DCN: FWSD-RAC-01-0748 | CTO #0026

APPROVED BY: MC | CHECKED BY: JO

DRAWN BY: MD | REV: REVISION 0

DATE: 09/24/01

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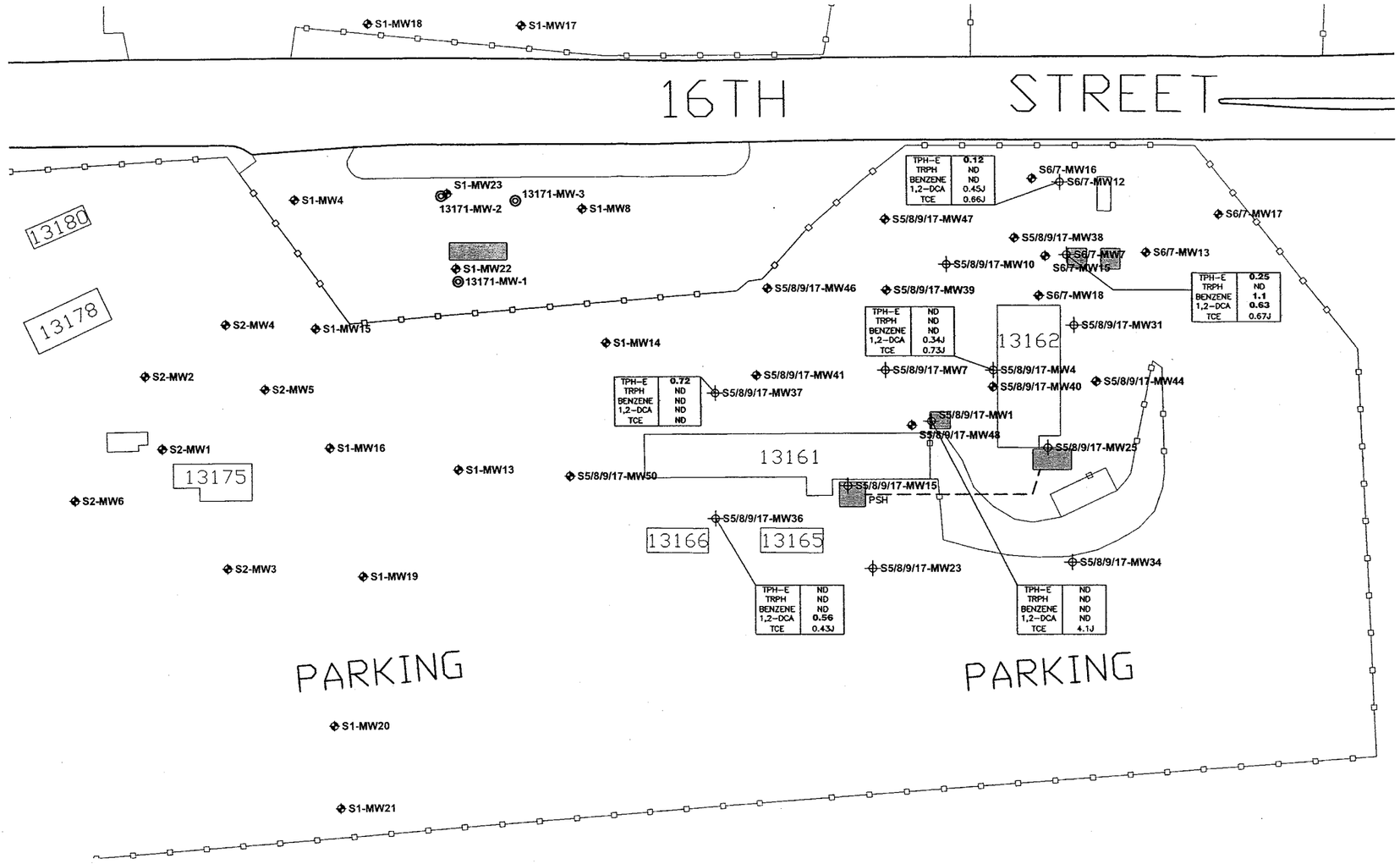

LEGEND:

S5/8/9/17-MW23 — DEEP AQUIFER GROUNDWATER MONITORING WELL AND IDENTIFICATION

S1-MW21 — SHALLOW AQUIFER GROUNDWATER MONITORING WELL AND IDENTIFICATION

WELL DESTROYED, FEBRUARY 2001

FORMER UST

LOCATION OF FORMER BLDG.

LOCATION OF FORMER PIPELINE

FENCE LINE

PSH	PHASE-SEPARATED HYDROCARBONS IN WELL
TPH-E	TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS IN MILLIGRAMS PER LITER
TPH-P	TOTAL PURGEABLE PETROLEUM HYDROCARBONS IN MILLIGRAMS PER LITER
1,2-DCA	1,2-DICHLOROETHANE IN MICROGRAMS PER LITER
TCE	TRICHLOROETHENE IN MICROGRAMS PER LITER
TRPH	TOTAL RECOVERABLE PETROLEUM HYDROCARBONS IN MILLIGRAMS PER LITER
ND	NOT DETECTED ABOVE REPORTING LIMIT
J	COMPOUND PRESENT ABOVE METHOD DETECTION LIMIT (MCL) BUT BELOW REPORTING LIMIT

NOTE:

RESULTS SHOWN IN BOLD ARE ABOVE THE RESPECTIVE ANALYTE'S WATER QUALITY OBJECTIVE.

100 50 0 100
SCALE IN FEET

N

Figure 3-3
DISTRIBUTION OF TPH, BENZENE, 1,2-DCA, AND TCE IN DEEP AQUIFER GROUNDWATER,13 AREA
JULY 2001

MCB CAMP PENDLETON

FOSTER WHEELER ENVIRONMENTAL CORPORATION

DRAWING NO: 01074833.DWG
DCN: FWSD-RAC-01-0748
CTO #0026
APPROVED BY: MC
CHECKED BY: JO
REV: REVISION 0
DRAWN BY: MD
DATE: 09/24/01

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APPENDIX A

GROUNDWATER SAMPLE COLLECTION LOGS AND LIQUID LEVEL MEASUREMENTS

FOSTER WHEELER ENVIRONMENTAL CORPORATION

Field Water Level Measurements

Date: 7/16/01

Personnel: TTK, ML, ML

Weather: CLEAR, WARM

Project Name: UST SITE 1

Project OFS: 1990.026D

Measurement Device: SOLONIST

Comments:

Well I.D.	Depth to Water from Measuring Point (feet)	Depth to Sediment from Measuring Point (feet)	Comments
S1-MW22	19.01	32.84	strong hydrocarbon odor
S1-MW8	17.81	35.61	~~[illegible]~~
S1-MW15	23.11	35.92	
S1-MW16	~~29.85~~ 29.69TOC	42.33	
S1-MW14	21.04	31.91	
S1-MW19	36.84	49.50	
S1-MW17	10.81'	31.85'	
S1-MW20	47.18	60.54	
S1-MW21	52.93	60.18	
S2-MW3			WELL OBSTRUCTED - (NO ACCESS)

F:\forms\logs\H2Olevels.xls

FOSTER WHEELER ENVIRONMENTAL CORPORATION

WELL DEVELOPMENT LOG / WELL SAMPLING LOG

Site Name: UST SITE 1
Project Number: 1990.026D
Date: 7/23/01
Site Personnel: TK/m

Well Number: MW 8
Sample ID: 0026-211/212
Purge Method: Pump Bail
Sampling Method: Pump Bail

	Before Purging	After Purging
Depth to Water (ft btoc)	17.81	34.83
Depth to Sediment (ft btoc)	35.61	
Water Column Height (ft)	17.80	

Borehole Volume (gals) = $(7.48\pi/4)[CD^2 + \text{Porosity}(BD^2 - CD^2)]$(Water Column Height) = 26.7
CD= 4" and BD= 10"; then BV = 1.5*(water column height)
CD= 4" and BD= 8"; then BV = 1.1*(water column height)
CD= 2" and BD= 9"; then BV = 0.95*(water column height)
(Porosity = 0.25 for sand filter pack)

Total Volume Purged (gals) 30 gal Borehole Volumes Purged 1.11

Time	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (oC)	ORP (mV)	Comments
1021							PUMP ON
1025	5.79	12.0	∅	5.09	23.50	163	5 gal clear no odor
1032	5.96	10.1	3.2	3.38	23.65	152	15 gal " "
1040	5.92	10.6	3.3	3.85	23.64	152	20 gal " "
1044	5.84	12.0	4.3	4.08	23.68	156	25 gal clear no odor
1049	5.79	12.4	2.0	4.30	23.97	159	~~30~~ 28 gal WC = 34.83 DRY
1135							pump ON
1137	5.89	12.1	8.9	4.77	23.93	157	30 gal; clear no odor
							~~48~~ gal; clear no odor

Notes: (14-24') 80% R'chg = 21.37' btoc

		Time	WC
1139	32.05	1049	34.83 1
	31.05	1054	33.83 2
		1058	32.83 4
		1108	30.83 6
		1141	28.83
		SLOW	

Ferrous Iron = 0.0 **mg/L**

CD Casing Diameter btoc Below Top of Casing
BD Borehole Diameter

F:\forms\logs\wellsampling.xls

FOSTER WHEELER ENVIRONMENTAL CORPORATION

WELL DEVELOPMENT LOG / WELL SAMPLING LOG

Site Name: UST SITE 1
Project Number: 1990.026D
Date: 7/29/01
Site Personnel: TTK/MC

Well Number: MW14
Sample ID: 0026-210
Purge Method: (Pump) Bail
Sampling Method: Pump (Bail)

	Before Purging	After Purging
Depth to Water (ft btoc)	21.04	30.40
Depth to Sediment (ft btoc)	31.91	
Water Column Height (ft)	10.87	

Borehole Volume (gals) = $(7.48\pi/4)[CD^2 + \text{Porosity}\,(BD^2 - CD^2)]$(Water Column Height) = ~~16.3~~ 15
CD= 4" and BD= 10"; then BV = 1.5*(water column height)
CD= 4" and BD= 8"; then BV = 1.1*(water column height)
CD= 2" and BD= 9"; then BV = 0.95*(water column height)
(Porosity = 0.25 for sand filter pack)

Total Volume Purged (gals) 23 Borehole Volumes Purged 1.53

Time	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (oC)	ORP (mV)	Comments
1427							pump on
1431	6.10	10.0	Ø	0.80	24.26	21	4 gal pumped
1437	6.02	8.19	Ø	0.70	24.05	-108	10 gal pumped
1438	5.98	8.04	Ø	0.63	24.75	~~-83~~ 41	15 gal pumped dry ORP
1439							WL = 30.35'
1532							pump on fast well
1533	5.95	7.57	Ø	1.39	26.94	109	16 gal
1535	6.10	7.48	0.2	2.11	24.19	87	18 gal
1537	6.05	7.80	Ø	2.15	24.06	83	20 gal
1539	6.10	7.46	0.6	1.81	24.11	98	23 gal DRY pump off

Notes: (8.69') 80% recov = 23.21' btoc

1546	30.40	1439	30.33
1459	29.40	1452	29.35
	28.40	1501	28.35
		1511	27.35
		1522	26.35
			25.35

Ferrous Iron = 0.0 mg/L

CD Casing Diameter btoc Below Top of Casing
BD Borehole Diameter

F:\forms\logs\wellsampling.xls

FOSTER WHEELER ENVIRONMENTAL CORPORATION

WELL DEVELOPMENT LOG / WELL SAMPLING LOG

Site Name: UST SITE 1
Project Number: 1990
Date: 7/20/01
Site Personnel: TJC/MC

Well Number: MW 15
Sample ID: 0026-208
Purge Method: (Pump) Bail
Sampling Method: Pump (Bail)

	Before Purging	After Purging
Depth to Water (ft btoc)	23.11	34.12
Depth to Sediment (ft btoc)	35.92	
Water Column Height (ft)	12-81	

Borehole Volume (gals) = $(7.48\pi/4)[CD^2 + \text{Porosity}\ (BD^2 - CD^2)](\text{Water Column Height})$ = 19.2

CD= 4" and BD= 10"; then BV = 1.5*(water column height)
CD= 4" and BD= 8"; then BV = 1.1*(water column height)
CD= 2" and BD= 9"; then BV = 0.95*(water column height)
(Porosity = 0.25 for sand filter pack)

Total Volume Purged (gals) 30 Borehole Volumes Purged 1.56

Time	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (oC)	ORP (mV)	Comments
1013							pump on
1030	5.47	26.3	18.7	4.77	26.93	201	5 gal purged clear no odor
1052	5.45	26.2	40.2	4.58	27.36	196	8 gal purged
1142							Restart after pump failed
1143	5.41	25.2	51.1	5.32	24.87	185	10 GAL
1148	5.42	24.9	42.1	5.33	24.87	181	20 GAL
1153	5.42	25.0	45.6	4.99	24.97	194	25 gal
1200	5.44	24.4	55.4	4.84	25.09	189	30 gal clear no odor
							pump off WL = 34.12' btoc

Notes: (10.24') 80% recha = 25.67' btoc

Time	WL
1201	34.12'
1206	33.12
1209	32.12
1213	31.12
1325	25.67

Ferrous Iron = 0.0 mg/L

CD Casing Diameter btoc Below Top of Casing
BD Borehole Diameter

F:\forms\logs\wellsampling.xls

FOSTER WHEELER ENVIRONMENTAL CORPORATION

WELL DEVELOPMENT LOG / WELL SAMPLING LOG

Site Name: UST SITE 1
Project Number: 1990.0260
Date: 7/20/01
Site Personnel: TK/mc

Well Number: MW16
Sample ID: 0026-20~~7~~
Purge Method: (Pump) Bail
Sampling Method: Pump (Bail)

	Before Purging	After Purging
Depth to Water (ft btoc)	29.69	41.39
Depth to Sediment (ft btoc)	42.33	
Water Column Height (ft)	12.64	

Borehole Volume (gals) = $(7.48\pi/4)[CD^2 + \text{Porosity}\ (BD^2 - CD^2)]$(Water Column Height) = 19.0

CD= 4" and BD= 10"; then BV = 1.5*(water column height)
CD= 4" and BD= 8"; then BV = 1.1*(water column height)
CD= 2" and BD= 9"; then BV = 0.95*(water column height)
(Porosity = 0.25 for sand filter pack)

Total Volume Purged (gals) 32 Borehole Volumes Purged 1.68

Time	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (oC)	ORP (mV)	Comments
1016							pump on
1022	5.27	14.2	0	1.43	24.70	104	5 gal; clear no odor
1028	5.37	14.4	1.5	1.62	24.75	16	12 gal clear no odor
1032	5.40	14.7	Ø	1.06	24.82	+8	17 gal clear no odor
1035	5.45	15.1	Ø	0.36	24.89	-10	20 gal clear no odor
1040	5.54	15.5	Ø	0.41	24.92	-40	24 gal clear no odor
1044	5.57	15.6	Ø	0.52	24.94	-39	28 gal clear no odor
1048	5.58	15.6	0.7	0.59	24.95	-6	32 gal clear no odor
							parameters stable WL=41.39
							will collect @ 80%
							RECHARGE

TIME	WL	ft
1048	41.39	
1049	40.39	1
1053	38.39	3
1058	36.39	5
1107	34.39	7
	~~32.32~~	
	31.98	

Notes (10.11) 80% recha = 32.22' btoc

Ferrous Iron = 0.2 **mg/L**

CD Casing Diameter btoc Below Top of Casing
BD Borehole Diameter

F:\forms\logs\wellsampling.xls

FOSTER WHEELER ENVIRONMENTAL CORPORATION

WELL DEVELOPMENT LOG / WELL SAMPLING LOG

Site Name: UST SITE 1
Project Number: 1990.026D
Date: 7/23/01
Site Personnel: TTK/MM

Well Number: MW17
Sample ID: 0026-214
Purge Method: (Pump) Bail
Sampling Method: Pump (Bail)

	Before Purging	After Purging
Depth to Water (ft btoc)	10.81	25.9'
Depth to Sediment (ft btoc)	31.85	
Water Column Height (ft)	21.04	

Borehole Volume (gals) = $(7.48\pi/4)[CD^2 + \text{Porosity}\,(BD^2 - CD^2)]$(Water Column Height) = 31.56

CD= 4" and BD= 10"; then BV = 1.5*(water column height)
CD= 4" and BD= 8"; then BV = 1.1*(water column height)
CD= 2" and BD= 9"; then BV = 0.95*(water column height)
(Porosity = 0.25 for sand filter pack)

Total Volume Purged (gals) ~~30~~ 51 Borehole Volumes Purged ~~1.1~~ 1.61

Time	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (oC)	ORP (mV)	Comments
1324							pump on
1332	6.73	6.82	15.9	5.37	25.44	116	5gal; clear no odor
1351	6.85	6.47	4.3	4.81	25.76	111	15gal; clear no odor
1400	6.90	7.33	0.7	5.01	24.83	110	25gal adjusted pump rate clear no odor
1406	6.81	~~8.07~~ 7.59	2.3	4.74	24.63	110	30gal clear no odor
1409	6.73	7.32	2.5	4.76	24.53	113	35gal clear no odor
1413	6.65	7.04	1.7	4.84	24.49	116	40gal clear no odor
1417	6.63	6.59	2.7	4.76	24.48	118	45gal; clear no odor
1422	6.66	6.61	2.6	4.96	24.47	118	50gal; clear no odor
							parameters stable
1423							pump off WL 25.9' btoc
							51gal purged

Notes: (16.83) 80% RECHG = 15.01' btoc

TIME	WL
1423	25.9'
1425	24.9
1429	22.9
1435	20.9
1443	18.9
1450	16.9
	15.01

Ferrous Iron = 0.0 **mg/L**

CD Casing Diameter btoc Below Top of Casing
BD Borehole Diameter

F:\forms\logs\wellsampling.xls

FOSTER WHEELER ENVIRONMENTAL CORPORATION

WELL DEVELOPMENT LOG / WELL SAMPLING LOG

Site Name: UST SITE 1
Project Number: 1990-0260
Date: 7/23/01
Site Personnel: TTC/MM

Well Number: ~~002~~ MW19
Sample ID: 0026-213
Purge Method: (Pump) Bail
Sampling Method: Pump (Bail)

	Before Purging	After Purging	Time
Depth to Water (ft btoc)	36.84	39.05	1409
Depth to Sediment (ft btoc)	49.50	38.05	1423
Water Column Height (ft)	12.66		

Borehole Volume (gals) = (7.48π/4)[CD² + Porosity (BD² - CD²)](Water Column Height) = 19.0
CD= 4" and BD= 10"; then BV = 1.5*(water column height)
CD= 4" and BD= 8"; then BV = 1.1*(water column height)
CD= 2" and BD= 9"; then BV = 0.95*(water column height)
(Porosity = 0.25 for sand filter pack)

Total Volume Purged (gals) 38 Borehole Volumes Purged 2.0

Time	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (oC)	ORP (mV)	Comments
1302							start Hand bailing
1310	5.74	24.0	1.9	1.01	24.91	214	3 GAL Clear, No odor, No Sheen
1321	5.76	24.4	1.7	1.37	24.95	220	10 GAL " " "
1332	5.74	24.6	3.3	1.26	24.71	209	19 GAL " " "
1348	5.79	24.7	15.6	1.89	24.76	208	cloudy, 25 GAL No odor, No Sheen
1357	5.81	25.0	12.2	2.21	24.30	206	30 GAL
1408	5.81	24.8	11.5	2.48	24.64	204	38 GAL

Notes: (10.13') 80% recharge = 29.37' btoc
sample collected at 1425

Ferrous Iron = 0.0 mg/L

CD Casing Diameter btoc Below Top of Casing
BD Borehole Diameter

F:\forms\logs\wellsampling.xls

FOSTER WHEELER ENVIRONMENTAL CORPORATION

WELL DEVELOPMENT LOG / WELL SAMPLING LOG

Site Name: UST SITE 1 | Well Number: MW20
Project Number: 1990.0260 | Sample ID: 0026-226
Date: 7/27/01 | Purge Method: (Pump) Bail
Site Personnel: TTK/MC | Sampling Method: Pump (Bail)

	Before Purging	After Purging
Depth to Water (ft btoc)	47.18	58.85
Depth to Sediment (ft btoc)	60.54	
Water Column Height (ft)	13.36	

Borehole Volume (gals) = $(7.48\pi/4)[CD^2 + \text{Porosity}\,(BD^2 - CD^2)]$(Water Column Height) = 20.04

CD= 4" and BD= 10"; then BV = 1.5*(water column height)
CD= 4" and BD= 8"; then BV = 1.1*(water column height)
CD= 2" and BD= 9"; then BV = 0.95*(water column height)
(Porosity = 0.25 for sand filter pack)

Total Volume Purged (gals) 37 | Borehole Volumes Purged 1.84

Time	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (oC)	ORP (mV)	Comments
1002							pump on
1006	6.01	12.0	2.8	5.31	24.89	55	5 gal pumped, clear no odor
1010	6.05	12.7	2.4	4.98	25.89	90	10 gal pumped, " "
1015	6.04	12.7	3.1	4.83	26.66	97	15 gal pumped, clear no odor
1023	6.02	12.9	3.9	4.78	26.80	102	20 gal pumped, clear no odor
1034	6.04	13.00	0.0	4.69	26.85	103	25 gal pumped clear no odor pump off for recharge
1046							pump on
1047	6.09	13.0	0.0	4.05	26.83	103	27 gal need to allow more recharge
1143	6.09	16.8	1.8	4.93	26.63	93	pump on 27.5 gal, clear no odor
1145	6.12	16.3	0.0	6.46	26.49	113	29 gal pumped, clear no odor
1148	6.12	16.4	0.7	6.21	26.14	107	33 gal pumped, clear no odor
1150	6.11	16.3	1.1	6.18	26.22	108	35 gal pumped, " "
1152	6.12	16.3	0.6	6.20	26.31	108	37 gal pumped " "
							WILL COLLECT @ 80%

Notes: 80% recov = 49.85' btoc

Time	WL	time	WL
1152	58.85	1111	57.2
1218	56.85	1129	56.2
1308	~~52.85~~ 53.6	1138	55.2
1322 SLOW	52.85'	FAST (MARGINAL) SLOW ?	

Ferrous Iron = 0.0 **mg/L**

CD Casing Diameter | btoc Below Top of Casing
BD Borehole Diameter

F:\forms\logs\wellsampling.xls

FOSTER WHEELER ENVIRONMENTAL CORPORATION

WELL DEVELOPMENT LOG / WELL SAMPLING LOG

Site Name: UST SITE 1
Project Number: 1990.026D
Date: 7/23/01
Site Personnel: TLe/mc

Well Number: MW21
Sample ID: 0026-225
Purge Method: (Pump) Bail
Sampling Method: Pump (Bail)

	Before Purging	After Purging
Depth to Water (ft btoc)	52.95	59.22
Depth to Sediment (ft btoc)	60.18	
Water Column Height (ft)	7.23 2"Ø	

Borehole Volume (gals) = $(7.48\pi/4)[CD^2 + \text{Porosity}\ (BD^2 - CD^2)]$(Water Column Height) = ~~10.85~~ 6.87
CD= 4" and BD= 10"; then BV = 1.5*(water column height)
CD= 4" and BD= 8"; then BV = 1.1*(water column height)
CD= 2" and BD= 9"; then BV = 0.95*(water column height) CD=2"
(Porosity = 0.25 for sand filter pack)

Total Volume Purged (gals) 7.5 Borehole Volumes Purged 1.09

Time	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (oC)	ORP (mV)	Comments Hand bailing 2" bailer (New)
1016	6.63	20.5	4.3	4.64	23.28	160	clear, No odor, No sheen 1 GAL
1024	6.69	20.7	6.1	5.14	22.99	162	slightly cloudy, No odor, No sheen, 2 GAL
1038	6.71	20.7	7.2	5.34	23.27	149	" " " 4 GAL
1103	6.74	20.6	218	7.03	23.14	157	" " " 7 gal
1105							bailed ~~to~~ dry 7.5 gal

Notes: (5.78') 80% recov = 54.39' btoc	DTW	Time
	59.22	1106
	59.32 ~~58.22~~	1141

Ferrous Iron = 0.0 mg/L

CD Casing Diameter btoc Below Top of Casing
BD Borehole Diameter

F:\forms\logs\wellsampling.xls

FOSTER WHEELER ENVIRONMENTAL CORPORATION

WELL DEVELOPMENT LOG / WELL SAMPLING LOG

Site Name: UST SITE 1
Project Number: 1990.026D
Date: 7/20/01
Site Personnel: TK/ar

Well Number: MW22
Sample ID: 0026-LOG
Purge Method: Pump (Bail)
Sampling Method: Pump (Bail)

	Before Purging	After Purging	
Depth to Water (ft btoc)	19.01	32.15	1235
Depth to Sediment (ft btoc)	32.88	28.	1302
Water Column Height (ft)	13.87	25.20	1326

~~Fast~~

Borehole Volume (gals) = $(7.48\pi/4)[CD^2 + \text{Porosity}\,(BD^2 - CD^2)](\text{Water Column Height})$ = 20.8

CD= 4" and BD= 10"; then BV = 1.5*(water column height)
CD= 4" and BD= 8"; then BV = 1.1*(water column height)
CD= 2" and BD= 9"; then BV = 0.95*(water column height)
(Porosity = 0.25 for sand filter pack)

Total Volume Purged (gals) 21.5 Borehole Volumes Purged 1.03

Time	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (oC)	ORP (mV)	Comments
1210	6.52	2.36	12.5	.77	23.70	-14	start hand bailing 2.5 GAL
1220	6.15	11.8	26.5	1.21	23.42	81	10 GAL cloudy, strong odor, slight sheen
1226	6.06	13.9	63.7	.74	23.59	81	15 GAL
1234							18.5 GAL Bailed Dry
1328							Restart hand bailing
1330	6.22	13.9	13.5	4.46	23.35	106	20 GAL Cloudy, odor No sheen
1340	6.21	14.0	64.9	4.24	23.12	21	26 GAL " " "
1343							28 gal bailed DRY
1540							WL = 21.50'
							SLOW RECHARGE

Notes: sheen on bailer possible free product
(11.09') 80% = 28.79' btoc

Ferrous Iron = 0.0 mg/L

CD Casing Diameter btoc Below Top of Casing
BD Borehole Diameter

F:\forms\logs\wellsampling.xls

FOSTER WHEELER ENVIRONMENTAL CORPORATION

Field Water Level Measurements

Date: ~~X~~ 7/16/01
Personnel: TTK/ML/MC
Weather: SUNNY, WARM

Project Name: UST SITE 5/8/9/7
Project OFS: 1990.026 D
Measurement Device: Solomis UL/OIL WATER
Comments: —

Well I.D.	Depth to Water from Measuring Point (feet)	Depth to Sediment from Measuring Point (feet)	Comments
MW1	53.31	63.95	
MW4	52.82	65.87	
* MW8	—	—	—
* MW15	PSH 57.57 ~~58.61~~ WL 58.54	— 77.63	
MW37	53.10	67.10	
MW36	60.83	73.48	
* MW38	PSH 15.5/16.09 WL	28.34	PSH
* MW40	18.28/19.49	36.21	
MW41	19.41	33.16	
MW44	17.21	30.08	
MW46	15.10	30.27	
MW47	10.68	34.14	
* MW48	21.09 ~~18.28/19.49~~ TTK	34.70	NO MEAS. PSH
MW50	29.41	34.98	

F:\forms\logs\H2Olevels.xls

FOSTER WHEELER ENVIRONMENTAL CORPORATION

WELL DEVELOPMENT LOG / WELL SAMPLING LOG

Site Name: UST 5/8/9/17
Project Number: 1990.026D
Date: 7/25/01
Site Personnel: TTC

Well Number: MW 1
Sample ID: 0026-220
Purge Method: (Pump) Bail
Sampling Method: Pump (Bail)

	Before Purging	After Purging
Depth to Water (ft btoc)	53.46	54.81
Depth to Sediment (ft btoc)	63.95	
Water Column Height (ft)	10.49	

Borehole Volume (gals) = $(7.48\pi/4)[CD^2 + \text{Porosity}\ (BD^2 - CD^2)](\text{Water Column Height})$ = 15.74

CD= 4" and BD= 10"; then BV = 1.5*(water column height)
CD= 4" and BD= 8"; then BV = 1.1*(water column height)
CD= 2" and BD= 9"; then BV = 0.95*(water column height)
(Porosity = 0.25 for sand filter pack)

Total Volume Purged (gals) 27 Borehole Volumes Purged 1.71

Time	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (oC)	ORP (mV)	Comments
1226							pump on
1233	5.58	15.0	10.7	2.25	25.13	241	7gal clear no odor
1237	5.75	14.2	8.2	1.58	25.01	225	10gal clear no odor
1240	5.81	14.00	6.3	1.66	25.08	213	13gal clear no odor
1245	5.76	14.20	6.5	1.45	25.09	207	20gal
1252	5.72	14.6	6.2	1.33	25.09	201	25gal
1255	5.71	14.8	6.6	1.30	25.10	200	27gal pump off
							WL=54.81 will
							collect sample

Notes: (8.32) 80% recto = 55.59

Ferrous Iron = 0.0 mg/L

CD Casing Diameter btoc Below Top of Casing
BD Borehole Diameter

F:\forms\logs\wellsampling.xls

FOSTER WHEELER ENVIRONMENTAL CORPORATION

WELL DEVELOPMENT LOG / WELL SAMPLING LOG

Site Name: S 5/8/9/17
Project Number: 1990.026D
Date: 7/25/01
Site Personnel: TTK

Well Number: MW4
Sample ID: 0026-217/218
Purge Method: (Pump) Bail
Sampling Method: Pump (Bail)

	Before Purging	After Purging
Depth to Water (ft btoc)	52.90	53.80
Depth to Sediment (ft btoc)	65.87	
Water Column Height (ft)	12.97	

Borehole Volume (gals) = $(7.48\pi/4)[CD^2 + \text{Porosity}\ (BD^2 - CD^2)]$(Water Column Height) = 19.46

CD= 4" and BD= 10"; then BV = 1.5*(water column height)
CD= 4" and BD= 8"; then BV = 1.1*(water column height)
CD= 2" and BD= 9"; then BV = 0.95*(water column height)
(Porosity = 0.25 for sand filter pack)

Total Volume Purged (gals) 34 Borehole Volumes Purged 1.75

Time	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (oC)	ORP (mV)	Comments
0927							pump on
0936	5.67	13.9	0.0	1.42	24.21	151	5 gal pumped clear no odor
0941							pump off adjust hoses
1001							pump on
1002	5.80	14.7	9.4	2.66	25.75	153	10 gal clear no odor
1005	5.73	14.2	0.7	1.53	24.50	156	13 gal clear no odor
1008	5.71	13.4	0.0	1.37	24.28	153	16 gal clear no odor
1012	5.72	13.9	0.0	1.06	24.39	151	20 gal " "
1016	5.72	13.9	0.0	0.87	24.50	148	25 gal clear no odor
1023	5.73	14.0	0.0	0.80	24.60	147	30 gal clear no odor
1027	5.72	13.9	0.0	0.80	24.65	147	34 gal clear no odor
							pump OFF WL=53.80'
							will collect sample

Notes: (10.38') 80% RECHG = 55.49' btoc

Ferrous Iron = 0.0 **mg/L**

CD Casing Diameter btoc Below Top of Casing
BD Borehole Diameter

F:\forms\logs\wellsampling.xls

FOSTER WHEELER ENVIRONMENTAL CORPORATION

WELL DEVELOPMENT LOG / WELL SAMPLING LOG

Site Name: SITE 5/8/9/17
Project Number: 1990.0260
Date: 7/25/01
Site Personnel: TTC/[illegible]

Well Number: ~~00~~ MW36
Sample ID: 0026-221
Purge Method: (Pump) Bail
Sampling Method: Pump (Bail)

	Before Purging	After Purging
Depth to Water (ft btoc)	60.81	61.30'
Depth to Sediment (ft btoc)	73.48	
Water Column Height (ft)	12.67	

Borehole Volume (gals) = $(7.48\pi/4)[CD^2 + \text{Porosity}\ (BD^2 - CD^2)]$(Water Column Height) = 19.00

CD= 4" and BD= 10"; then BV = 1.5*(water column height)
CD= 4" and BD= 8"; then BV = 1.1*(water column height)
CD= 2" and BD= 9"; then BV = 0.95*(water column height)
(Porosity = 0.25 for sand filter pack)

Total Volume Purged (gals) 32 Borehole Volumes Purged 1.68

Time	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (oC)	ORP (mV)	Comments
1400							pump on.
1405	5.64	11.7	15.7	1.60	25.82	209	5gal clear no odor
1409	5.60	11.5	8.6	1.10	25.02	207	10 gal " "
1415	5.61	11.5	5.5	1.15	25.00	201	15 gal " "
~~1424~~ 1420	5.62	11.5	7.2	1.19	24.97	196	22 gal " "
1424	5.62	11.5	4.6	1.17	24.97	195	28 gal " "
1428	5.63	11.5	5.2	1.18	25.02	193	32 gal pump off
							WL = 61.30' btoc
							will collect samples

Notes: (13.34') 80% recharge = 67.34' btoc

Ferrous Iron = 3.4 **mg/L**

CD Casing Diameter btoc Below Top of Casing
BD Borehole Diameter

F:\forms\logs\wellsampling.xls

FOSTER WHEELER ENVIRONMENTAL CORPORATION

WELL DEVELOPMENT LOG / WELL SAMPLING LOG

Site Name: UST SITE 5/8/9/17
Project Number: 1990.0260
Date: 7/19/01
Site Personnel: TK/MC

Well Number: MW37
Sample ID: 0026-205
Purge Method: (Pump) Bail
Sampling Method: Pump (Bail)

	Before Purging	After Purging
Depth to Water (ft btoc)	53.18	53.60
Depth to Sediment (ft btoc)	67.10	
Water Column Height (ft)	13.92	

Borehole Volume (gals) = $(7.48\pi/4)[CD^2 + \text{Porosity}\,(BD^2 - CD^2)](\text{Water Column Height})$ = 20.88

CD= 4" and BD= 10"; then BV = 1.5*(water column height)
CD= 4" and BD= 8"; then BV = 1.1*(water column height)
CD= 2" and BD= 9"; then BV = 0.95*(water column height)
(Porosity = 0.25 for sand filter pack)

Total Volume Purged (gals) 38 Borehole Volumes Purged 1.82

Time	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (oC)	ORP (mV)	Comments
1358							pump on
1359	6.12	6.94	1.3	6.71	25.72	107	2 GAL
1406	6.03	6.53	16.4	1.75	26.60	133	7 GAL
1414	6.00	4.84	26.5	1.34	27.30	134	14 GAL
1419	6.01	6.05	37.4	0.20	26.22	130	20 gal clear no odor
1426	6.01	6.32	40.9	.06	25.58	130	25 gal pump shut down
1440	6.06	6.69	11.5	1.23	26.15	170	30 gal clear no odor
							~~35 gal clear no odor~~
							pump shut down
							38 gal ~~bailed~~ pumped
							will collect sample

Notes: 80% R'CHG = 55.96 WL = 53.60
(11.14 ft in 2hrs)

Ferrous Iron = 0.0 mg/L

CD Casing Diameter btoc Below Top of Casing
BD Borehole Diameter

F:\forms\logs\wellsampling.xls

FOSTER WHEELER ENVIRONMENTAL CORPORATION

WELL DEVELOPMENT LOG / WELL SAMPLING LOG

Site Name: 5/8/9/17
Project Number: 1990 026D
Date: 7/19/01
Site Personnel: TJK / MTL

Well Number: MW41
Sample ID: 0026-204
Purge Method: (Pump) Bail
Sampling Method: Pump (Bail)

	Before Purging	After Purging
Depth to Water (ft btoc)	19.41	31.96
Depth to Sediment (ft btoc)	33.16	
Water Column Height (ft)	13.75	

Borehole Volume (gals) = $(7.48\pi/4)[CD^2 + \text{Porosity}\,(BD^2 - CD^2)](\text{Water Column Height})$ = 20.63

CD= 4" and BD= 10"; then BV = 1.5*(water column height)
CD= 4" and BD= 8"; then BV = 1.1*(water column height)
CD= 2" and BD= 9"; then BV = 0.95*(water column height)
(Porosity = 0.25 for sand filter pack)

Total Volume Purged (gals) 19 gal Borehole Volumes Purged 0.92

Time	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (oC)	ORP (mV)	Comments
1320	6.43	4.09	2.6	.05	24.51	-279	Start pumping 2 GAL
1332	6.47	3.03	11.5	.03	24.26	-258	10 GAL, clear, ~~[illegible]~~ odor
1343	6.42	3.96	0	.36	24.50	-253	17 GAL slight odor
1351	6.43	3.85	12.9	.08	24.88	-254	18.5 GAL
1352							pump Dry 19.0 GAL
							DEFINATE ODOR
							SLT SHEEN

Time	WL
1355	31.96
1417	30.96
1521	29.60

SLOW RECHARGE

Notes: 80% RECHG = 22.16
11 ft

Ferrous Iron = 0.0 mg/L

CD Casing Diameter btoc Below Top of Casing
BD Borehole Diameter

F:\forms\logs\wellsampling.xls

FOSTER WHEELER ENVIRONMENTAL CORPORATION

WELL DEVELOPMENT LOG / WELL SAMPLING LOG

Site Name: UST SITE 5/8/9/17
Project Number: 1990.026D
Date: 7/25/01
Site Personnel: TTC

Well Number: MW44
Sample ID: 0026-219
Purge Method: (Pump) Bail
Sampling Method: Pump (Bail)

	Before Purging	After Purging
Depth to Water (ft btoc)	17.15	30.06
Depth to Sediment (ft btoc)	30.08	
Water Column Height (ft)	12.93	

Borehole Volume (gals) = $(7.48\pi/4)[CD^2 + \text{Porosity}\ (BD^2 - CD^2)](\text{Water Column Height})$ = 19.40

CD= 4" and BD= 10"; then BV = 1.5*(water column height)
CD= 4" and BD= 8"; then BV = 1.1*(water column height)
CD= 2" and BD= 9"; then BV = 0.95*(water column height)
(Porosity = 0.25 for sand filter pack)

Total Volume Purged (gals) 20 Borehole Volumes Purged 1.03

Time	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (oC)	ORP (mV)	Comments
0937							pump on
0943	6.12	23.6	0.0	3.51	23.16	140	5 gal, clear no odor
0947	6.21	23.7	3.8	2.77	23.08	135	12 gal, clear no odor
0950	6.26	24.3	1.6	2.54	23.12	134	18 gal, clear no odor
0953	6.20	24.3	0.0	2.58	23.17	134	20 gal DRY WL = 30.06'

Notes: (10.31') 80% RECHG = 19.74' btoc

TIME	WL
0953	30.06
1003	28.90
1128	27.61
1hr 35min	2.45'

SLOW RECHARGE

Ferrous Iron = N/A mg/L

CD Casing Diameter btoc Below Top of Casing
BD Borehole Diameter

F:\forms\logs\wellsampling.xls

FOSTER WHEELER ENVIRONMENTAL CORPORATION

WELL DEVELOPMENT LOG / WELL SAMPLING LOG

Site Name: Site 5/8/9/17
Project Number: 1990.626D
Date: 7/19/01
Site Personnel: TK/mc

Well Number: MW 46
Sample ID: 0026-203
Purge Method: Pump Bail
Sampling Method: Pump Bail

	Before Purging	After Purging
Depth to Water (ft btoc)	15.10	28.3
Depth to Sediment (ft btoc)	30.27	
Water Column Height (ft)	15.17	

Borehole Volume (gals) = $(7.48\pi/4)[CD^2 + \text{Porosity}\,(BD^2 - CD^2)]$(Water Column Height) = 22.75
CD= 4" and BD= 10"; then BV = 1.5*(water column height)
CD= 4" and BD= 8"; then BV = 1.1*(water column height)
CD= 2" and BD= 9"; then BV = 0.95*(water column height)
(Porosity = 0.25 for sand filter pack)

Total Volume Purged (gals) 20.5 Borehole Volumes Purged 0.90

Time	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (oC)	ORP (mV)	Comments
1315							start + pump
1321	6.13	28.9	331.0	.53	24.67	-148	6 Gal No odor, No sheen
1330	6.11	32.2	13.2	.16	24.56	-137	20 Gal, Clear, No odor, No sheen
1331							20.5 Gal pump Dry
1504	6.34	31.6	0	2.71	25.36	-6	restart
1506	6.29	31.3	0	3.43	24.73	43	28 gal

Time	WL
1340	28.3
1405	27.3
14.43	26.26

Notes: 80% recho = 18.13' btoc
12.14 ft

SLOW RECHARGE

Ferrous Iron = 0.0 mg/L

CD Casing Diameter btoc Below Top of Casing
BD Borehole Diameter

F:\forms\logs\wellsampling.xls

FOSTER WHEELER ENVIRONMENTAL CORPORATION

WELL DEVELOPMENT LOG / WELL SAMPLING LOG

Site Name: SITE 5/8/9/17
Project Number: 1990.026D
Date: 7/19/01
Site Personnel: TTK/ML

Well Number: MW 47
Sample ID: 0026-202
Purge Method: Pump Bail
Sampling Method: Pump Bail

	Before Purging	After Purging
Depth to Water (ft btoc)	10.68	33.4 11:06
Depth to Sediment (ft btoc)	34.14	
Water Column Height (ft)	23.46	

Borehole Volume (gals) = $(7.48\pi/4)[CD^2 + \text{Porosity}(BD^2 - CD^2)]$(Water Column Height) = 35.19
CD= 4" and BD= 10"; then BV = 1.5*(water column height)
CD= 4" and BD= 8"; then BV = 1.1*(water column height)
CD= 2" and BD= 9"; then BV = 0.95*(water column height)
(Porosity = 0.25 for sand filter pack)

Total Volume Purged (gals) 38.5 Borehole Volumes Purged 1.09

Time	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (oC)	ORP (mV)	Comments
1000	6.21	28.1	25	.34	23.91	150	4GAL clear, No odor, No sheen
1006	6.04	26.0	27.5	1.16	24.60	152	10GAL " , " , "
1013	6.10	27.9	29.6	.20	24.26	148	20GAL " , " , "
1017	6.21	28.5	1.1	.02	24.25	175	25GAL " , " , "
1020	→						Pump Dry at 26GAL
1104	Restart		Pump Repaired.				~~28~~ GAL
1106	6.30	27.5	21.1	1.13	24.70	156	28 GAL, clear, No odor, No sheen
~~1110~~ 1110	6.41	28.7	-0.1	.21	24.47	146	37GAL
~~1113~~ 1113	→						pump dry + 38.5 GAL
							time WL

Notes: 80% RICHG = 15.37' btoc

1035 28.61
1049 27.98
1100 27.95

Ferrous Iron = 0.0 mg/L

CD Casing Diameter btoc Below Top of Casing
BD Borehole Diameter

F:\forms\logs\wellsampling.xls

FOSTER WHEELER ENVIRONMENTAL CORPORATION

WELL DEVELOPMENT LOG / WELL SAMPLING LOG

Site Name: Site 5/8/9/17 Well Number: MW50
Project Number: 1990.0260 Sample ID: 0026-222
Date: 7/25/01 Purge Method: (Pump) Bail
Site Personnel: TTE/mc Sampling Method: Pump Bail

	Before Purging	After Purging
Depth to Water (ft btoc)	29.46	34.22
Depth to Sediment (ft btoc)	34.98	
Water Column Height (ft)	5.52	

Borehole Volume (gals) = $(7.48\pi/4)[CD^2 + \text{Porosity}\ (BD^2 - CD^2)](\text{Water Column Height})$ = 8.28
CD= 4" and BD= 10"; then BV = 1.5*(water column height)
CD= 4" and BD= 8"; then BV = 1.1*(water column height)
CD= 2" and BD= 9"; then BV = 0.95*(water column height)
(Porosity = 0.25 for sand filter pack)

Total Volume Purged (gals) 8.5 Borehole Volumes Purged 1.03

Time	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (oC)	ORP (mV)	Comments
1404							Start Pumping
1410	6.09	22.7	1.0	0.46	25.24	110	5GAL Clear, No odor, No sheen
1414	6.09	22.5	.4	0.13	25.12	88	7GAL " " "
1415							Pump Dry 8.0 GAL
15:36	6.19	23.2	0.6	2.11	24.68	45	After Recharge of 1.92'
							.5 GAL Removed

Notes: (4.42') 80% recho = 30.57' btoc DTW After purging = 34.22
@ 1417 Reading @ 1523 DTW = 32.30 1.92' in 66 mins
slow Recharging 1530 Sampled See CCC for data

Ferrous Iron = N/A mg/L

CD Casing Diameter btoc Below Top of Casing
BD Borehole Diameter

F:\forms\logs\wellsampling.xls

FOSTER WHEELER ENVIRONMENTAL CORPORATION

Field Water Level Measurements

Date: 7/16/01

Personnel: TTK/MCL/MC

Weather: Sunny WARM

Project Name: UST SITE 6/7

Project OFS: 1990.026D

Measurement Device: SOLONIST WL METER/OIL/WATER

Comments: —

Well I.D.	Depth to Water from Measuring Point (feet)	Depth to Sediment from Measuring Point (feet)	Comments
MW7	46.97	56.41	
MW13	16.96	32.21	
MW12	43.57	58.77	
MW16	15.71	27.77	
MW17	20.01	32.4	
* MW15	DSH 16.49 / WL 16.59	30.47	
* MW18	PSH 14.73 /	—	WELL OBSTRUCTED @ 15.5'

F:\forms\logs\H2Olevels.xls

FOSTER WHEELER ENVIRONMENTAL CORPORATION

WELL DEVELOPMENT LOG / WELL SAMPLING LOG

Site Name: UST Site 6/7
Project Number: 1990.0260
Date: 7/17/01
Site Personnel: TK/ML

Well Number: MW 7
Sample ID: 0026-194
Purge Method: (Pump) Bail
Sampling Method: Pump (Bail)

	Before Purging	After Purging
Depth to Water (ft btoc)	46.97	47.38
Depth to Sediment (ft btoc)	56.41	
Water Column Height (ft)	9.44	

Borehole Volume (gals) = $(7.48\pi/4)[CD^2 + \text{Porosity}\ (BD^2 - CD^2)](\text{Water Column Height})$ = 14.16

CD= 4" and BD= 10"; then BV = 1.5*(water column height)
CD= 4" and BD= 8"; then BV = 1.1*(water column height)
CD= 2" and BD= 9"; then BV = 0.95*(water column height)
(Porosity = 0.25 for sand filter pack)

Total Volume Purged (gals) 24 gal Borehole Volumes Purged 1.69

Time	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (oC)	ORP (mV)	Comments
1007							pump on
1010	4.66	10.2	15	0.95	24.2	30.8	3 gal ~~bailed~~ pumped
1016	4.65	11.0	15	0.69	25.6	38.6	7 gal clear no odor
1026	4.62	11.3	3	0.99	26.2	54.0	12 gal clear no odor
1029							Dry 15 gal purged
							WL = 49.46
1042							pump ON PROBLEM w/ PUMP WELL NOT DRY
1043	4.60	11.3	3	1.00	28.3	—	17 gal purged
1052	4.59	11.2	3	1.12	27.7	149.8	21 gal purged clear no odor
~~110~~							pump CUTTING OUT; TRYING TO IDENTIFY PROB
1104	4.54	11.1	3	1.15	29.6	150.4	ON. 24 gal
							WILL COLLECT SAMPLE
1129							WL = 47.38 80% ✓
							*

Notes: 80% RECHG = 48.86

Time	WL	Time	WL
1129	47.38	1029	49.46
		1036	48.46

Ferrous Iron = 0.0 **mg/L**

CD Casing Diameter btoc Below Top of Casing
BD Borehole Diameter

F:\forms\logs\wellsampling.xls

FOSTER WHEELER ENVIRONMENTAL CORPORATION

WELL DEVELOPMENT LOG / WELL SAMPLING LOG

Site Name: UST SITE 6/7
Project Number: 1990.0269
Date: 7/19/01
Site Personnel: TK/mL

Well Number: MW12
Sample ID: 0026-198
Purge Method: ~~Pump~~ Bail
Sampling Method: ~~Pump~~ Bail

	Before Purging	After Purging
Depth to Water (ft btoc)	43.57	44.5
Depth to Sediment (ft btoc)	58.77	
Water Column Height (ft)	15.20	

Borehole Volume (gals) = $(7.48\pi/4)[CD^2 + \text{Porosity}\,(BD^2 - CD^2)]$(Water Column Height) = 22.8

CD= 4" and BD= 10"; then BV = 1.5*(water column height)
CD= 4" and BD= 8"; then BV = 1.1*(water column height)
CD= 2" and BD= 9"; then BV = 0.95*(water column height)
(Porosity = 0.25 for sand filter pack)

Total Volume Purged (gals) 40 Borehole Volumes Purged 1.75

Time	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (oC)	ORP (mV)	Comments
0947							pump on (pump 280 mA)
0957	5.12	11.1	37.7	0.95	26.78	196	5 gal no odor (pump 315 mA)
1001	5.06	11.0	26.3	0.71	26.14	240	10 gal no odor
1006	5.04	11.3	12.8	0.67	25.80	259	15 gal no odor
1011	5.05	11.6	5.8	0.43	25.82	258	20 gal no odor
1118	4.99	11.8	5.2	0.35	25.57	271	25 gal no odor
1022	5.05	11.7	41.8	0.18	25.54	260	30 gal no odor WL sample ~44 btoc
1026	5.06	11.6	17.9	0.15	25.51	256	35 gal no odor
1030	5.07	11.4	20.1	0.12	25.53	252	40 gal no odor pump off
1031							WL = 44.5
							parameters stable
							will collect sample
							@ 80% recht

Notes: 80% recht = 46.61' btoc

Ferrous Iron = 0.0 **mg/L**

CD Casing Diameter btoc Below Top of Casing
BD Borehole Diameter

F:\forms\logs\wellsampling.xls

FOSTER WHEELER ENVIRONMENTAL CORPORATION

WELL DEVELOPMENT LOG / WELL SAMPLING LOG

Site Name: UST SITE 36/7TTC Well Number: MW13
Project Number: 1990.026D Sample ID: 0026-195
Date: 7/17/01 Purge Method: Pump Bail
Site Personnel: TTK/MC Sampling Method: Pump Bail

	Before Purging	After Purging
Depth to Water (ft btoc)	16.96	31.77
Depth to Sediment (ft btoc)	32.21	
Water Column Height (ft)	15.25	

Borehole Volume (gals) = $(7.48\pi/4)[CD^2 + \text{Porosity}(BD^2 - CD^2)]$(Water Column Height) = 22.89
CD= 4" and BD= 10"; then BV = 1.5*(water column height)
CD= 4" and BD= 8"; then BV = 1.1*(water column height)
CD= 2" and BD= 9"; then BV = 0.95*(water column height)
(Porosity = 0.25 for sand filter pack)

Total Volume Purged (gals) 23.5 Borehole Volumes Purged 1.02

Time	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (oC)	ORP (mV)	Comments
1013							pump on
1017	3.75	16.8	1	0.59	23.4	105.4	~4 gal clear no odor
1024	4.19	13.6	1	0.93	23.8	127.3	10 gal "
1032	4.24	13.7	5	1.02	24.1	268.0	15 gal "
1038	3.83	15.8	1	1.21	24.0	~~268.0~~ 250.5	18 gal "
1048	3.70	16.4	22	1.30	24.5	209.4	23 gal "
1049							23.5 DRY

Notes: 80% = 20.01

T	WL
1050	31.77
1059	30.77
1202	27.25

SLOW RICHA

Ferrous Iron = 7.3 **mg/L**

CD Casing Diameter btoc Below Top of Casing
BD Borehole Diameter

F:\forms\logs\wellsampling.xls

FOSTER WHEELER ENVIRONMENTAL CORPORATION

WELL DEVELOPMENT LOG / WELL SAMPLING LOG

Site Name: UST SITE 6/7
Project Number: 1990.026D
Date: 7/19/01
Site Personnel: TTK/mL

Well Number: MW 16
Sample ID: 0026-~~198~~/199
Purge Method: Pump Bail
Sampling Method: Pump Bail

	Before Purging	After Purging
Depth to Water (ft btoc)	15.71	26.26
Depth to Sediment (ft btoc)	27.77	
Water Column Height (ft)	12.06	

Borehole Volume (gals) = $(7.48\pi/4)[CD^2 + \text{Porosity}\ (BD^2 - CD^2)]$(Water Column Height) = 18.09
CD= 4" and BD= 10"; then BV = 1.5*(water column height)
CD= 4" and BD= 8"; then BV = 1.1*(water column height)
CD= 2" and BD= 9"; then BV = 0.95*(water column height)
(Porosity = 0.25 for sand filter pack)

Total Volume Purged (gals) 20 Borehole Volumes Purged 1.1

Time	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (oC)	ORP (mV)	Comments
0952	—	—	—	—	—	—	pump on
0957	3.81	14.3	6.2	0.71	23.78	302	5gal ~~bailed~~ pump no odor
1003	3.71	14.1	3.2	0.76	24.07	306	12gal clear no odor
1007	3.80	14.2	1.7	0.42	23.83	303	18gal clear no odor
1014	3.80	14.4	0.3	0.30	24.02	311	20gal DRY WL=26.26

TIME	WL
1014	26.26
	~~25.26~~
1124	25.39

Notes: 80% recharge = 18.12 'btoc

Ferrous Iron = 5.8 mg/L 10 ml sample 15 m DI SLOW

CD Casing Diameter btoc Below Top of Casing
BD Borehole Diameter

F:\forms\logs\wellsampling.xls

FOSTER WHEELER ENVIRONMENTAL CORPORATION

WELL DEVELOPMENT LOG / WELL SAMPLING LOG

Site Name: UST SITE 6/7
Project Number: 1990.026D
Date: 7/17/01
Site Personnel: TTK/MC

Well Number: MW17
Sample ID: 0026-196
Purge Method: (Pump) Bail
Sampling Method: Pump (Bail)

	Before Purging	After Purging
Depth to Water (ft btoc)	20.01	31.80
Depth to Sediment (ft btoc)	32.40	
Water Column Height (ft)	12.39	

Borehole Volume (gals) = $(7.48\pi/4)[CD^2 + \text{Porosity}\,(BD^2 - CD^2)]$(Water Column Height) = 18.59

CD= 4" and BD= 10"; then BV = 1.5*(water column height)
CD= 4" and BD= 8"; then BV = 1.1*(water column height)
CD= 2" and BD= 9"; then BV = 0.95*(water column height)
(Porosity = 0.25 for sand filter pack)

1BV = .15 gal

Total Volume Purged (gals) 25 Borehole Volumes Purged 1.35

Time	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (oC)	ORP (mV)	Comments
1018							pump
1020	3.58	20.3	1	0.72	23.5	258.9	4 gal
1027	3.53	19.0	20	0.62	23.7	309.3	15 gal, DRY
1126	3.52	20.1	28	1.16	24.4	355.5	17 gal pump on
~~1134~~							~~pump off~~
1137	3.55	20.3	2	1.33	23.6	~~268.4~~ 338.4	24 gal clear no odor
1141							25 gal dry WL=31.80

Notes: 80% RCHG = 22.49

T	WL	Time	WL
1247	27.31	1030	25.80
1312	26.31	1042	24.80
	~~25.31~~	1107	23.80
1330	25.53		22.80

SLOW RCHG

Ferrous Iron = N/A mg/L

CD Casing Diameter btoc Below Top of Casing
BD Borehole Diameter

F:\forms\logs\wellsampling.xls

APPENDIX B

LABORATORY REPORTS AND CHAIN-OF-CUSTODY FORMS

FOSTER WHEELER ENVIRONMENTAL CORPORATION
1230 Columbia Stree 40 San Diego, CA 92101 (619) 234-8696

NUMBER 02725

CHAIN-OF-CUSTODY R ORD

PROJECT NAME: UST SITE 1	PURCHASE ORDER NO.: 020848 TASK 4
PROJECT LOCATION: CAMPENDLETON	PROJECT NO.: 1990.0EGD
SAMPLER NAME: TANIA TURPYN KEASLER	SAMPLER SIGNATURE: [signature]
PROJECT CONTACT: SEVDA ALECKSON	AIRBILL NUMBER: COURIER

LABORATORY NAME: EMAY

LABORATORY ID (FOR LABORATORY): 01G124

Project Information Section Do not submit to Laboratory

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B	TPH-D	TPH-C	EPA 418.1 (TRPH)	EPA 300.0 (NITRATE SULFATE CHLORIDE)	RSK175M (ETHENE ETHANE METHANE)	EPA 310.1 (ALKALINITY)	EPA 9060 (TOC)			COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
0026-206	7/20/01	0940	2	X		W	10 day	X											SITE 1 TRIP BLANK	–	–	TB
0026-207	7/20/01	1245	14	X		W	10 day	X	X	X	X	X	X	X	X				SITE 1 MW16	–	–	REG
0026-208	7/20/01	1330	12	X		W	10 day	X	X	~~X~~	~~X~~	X	X	X	X				SITE 1 MW15	–	–	REG
0026-209	7/20/01	1540	12	X		W	10 day	X	X			X	X	X	X				SITE 22 MW22	–	–	REG
0026-210	7/20/01	1630	14	X	X	W	10 day	X	X	X	X	X	X	X	X				SITE 22 MW14	–	–	REG

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	7/20/01	[signature]
COMPANY: FW ENC	TIME: 1640	COMPANY: EMAX
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT: 3rd Qtr GW SAMPLING

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

6915C1

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDELTON, CTO 26, SITE 1

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

SDG#: 01G124

2000

CASE NARRATIVE

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO 26, UST SITE 1
SDG: 01G124

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Five (5) water samples were received on 07/20/01 for Volatile Organic Analyses by Method 8260B in accordance with USEPA SW846, 3rd ed. (1997).

1. Holding Time: Analytical holding time was met.

2. Tuning and Calibration: Tuning and calibration were carried out at 12 hour interval. All QC requirements were met.

3. Method Blank: Method blanks were free of contamination at reporting limit.

4. Lab Control Sample/Lab Control Sample Duplicate: All recoveries were within QC limit.

5. Surrogate Recovery: Recoveries were within QC limit.

6. Matrix Spike/Matrix Spike Duplicate: No sample was designated for spike.

7. Sample Analysis: Samples were analyzed according to the prescribed QC procedures. All requirements were met.

   Sample G124-02 was initially diluted and analyzed at DF 10. Benzene and 1,2-Dichloroethane in the initial analysis were saturated and detailed chromatogram showed that the peaks were abruptly cut off due to high saturation. The sample was further diluted and re-analyzed at DF 100. Results of both analytes should be evaluated and used from the re-analysis.

Revised Report

2001

LAB CHRONICLE
SW8260

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CT026

SDG NO. : 01G124
Instrument ID : T-005

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	DCC Data FN	Prep. Batch	Notes
MBLK1W	V005G62Q	1	NA	07/28/0102:30	07/28/0102:30	RGQ831	RGQ827	V005G62	Method Blank
LCS1W	V005G62L	1	NA	07/28/0100:42	07/28/0100:42	RGQ828	RGQ827	V005G62	Lab Control Sample (LCS)
LCD1W	V005G62C	1	NA	07/28/0101:18	07/28/0101:18	RGQ829	RGQ827	V005G62	LCS Duplicate
0026-206	G124-01	1	NA	07/28/0103:06	07/28/0103:06	RGQ832	RGQ827	V005G62	Field Sample
0026-208	G124-03	1	NA	07/28/0106:06	07/28/0106:06	RGQ837	RGQ827	V005G62	Field Sample
0026-207	G124-02	10	NA	07/28/0106:43	07/28/0106:43	RGQ838	RGQ827	V005G62	Field Sample
0026-210	G124-05	1	NA	07/28/0107:56	07/28/0107:56	RGQ840	RGQ827	V005G62	Field Sample
MBLK2W	V005G66Q	1	NA	08/01/0101:35	08/01/0101:35	RGQ877	RGQ871	V005G66	Method Blank
LCS2W	V005G66L	1	NA	07/31/0123:08	07/31/0123:08	RGQ873	RGQ871	V005G66	Lab Control Sample (LCS)
LCD2W	V005G66C	1	NA	07/31/0123:45	07/31/0123:45	RGQ874	RGQ871	V005G66	LCS Duplicate
0026-207DL	G124-02T	100	NA	08/01/0102:12	08/01/0102:12	RGQ878	RGQ871	V005G66	Diluted Sample
0026-209	G124-04	1000	NA	08/01/0102:48	08/01/0102:48	RGQ879	RGQ871	V005G66	Field Sample

FN - Filename
DCC - Daily Continuing Calibration
% Moist - Percent Moisture

SAMPLE RESULTS

2003

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

lient	: FOSTER WHEELER	Date Collected:	07/20/01
roject	: CAMP PENDLETON, CTO26	Date Received:	07/20/01
atch No.	: 01G124	Date Extracted:	07/28/01 03:06
ample ID:	0026-206	Date Analyzed:	07/28/01 03:06
ab Samp ID:	G124-01	Dilution Factor:	1
ab File ID:	RGQ832	Matrix :	WATER
xt Btch ID:	VO05G62	% Moisture :	NA
alib. Ref.:	RGQ827	Instrument ID :	T-005

ARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
,1,1-TRICHLOROETHANE	ND	5	.42
,1,2,2-TETRACHLOROETHANE	ND	1	.19
,1,2-TRICHLOROETHANE	ND	5	.17
,1-DICHLOROETHANE	ND	5	.16
,1-DICHLOROETHENE	ND	5	.1
,2-DICHLOROETHANE	ND	.5	.21
,2-DICHLOROPROPANE	ND	5	.14
IETHYL ETHYL KETONE	ND	50	2.1
!-HEXANONE	ND	50	1
›-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
\CETONE	ND	50	2.7
3ENZENE	ND	.5	.15
3ROMODICHLOROMETHANE	ND	5	.17
3ROMOFORM	ND	5	.12
3ROMOMETHANE	ND	5	.18
:ARBON TETRACHLORIDE	ND	.5	.091
:HLOROBENZENE	ND	5	.14
:HLOROETHANE	ND	5	.43
:HLOROFORM	ND	5	.41
:HLOROMETHANE	ND	5	.24
:IS-1,2-DICHLOROETHENE	ND	5	.16
:IS-1,3-DICHLOROPROPENE	ND	.5	.21
)IBROMOCHLOROMETHANE	ND	5	.14
:THYLBENZENE	ND	.5	.12
\YLENES	ND	1.5	.27
1TBE	ND	1	.22
1ETHYLENE CHLORIDE	.4J	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	ND	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	89	62-139
TOLUENE-D8	96	75-125
BROMOFLUOROBENZENE	89	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

ient	: FOSTER WHEELER	Date Collected:	07/20/01
oject	: CAMP PENDLETON, CTO26	Date Received:	07/20/01
atch No.	: 01G124	Date Extracted:	07/28/01 06:43
ample ID:	0026-207	Date Analyzed:	07/28/01 06:43
ab Samp ID:	G124-02	Dilution Factor:	10
ab File ID:	RGQ838	Matrix	: WATER
ct Btch ID:	VO05G62	% Moisture	: NA
alib. Ref.:	RGQ827	Instrument ID	: T-005

ARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
,1,1-TRICHLOROETHANE	ND	50	4.2
,1,2,2-TETRACHLOROETHANE	ND	10	1.9
,1,2-TRICHLOROETHANE	ND	50	1.7
,1-DICHLOROETHANE	ND	50	1.6
,1-DICHLOROETHENE	ND	50	1
,2-DICHLOROETHANE	72	5	2.1
,2-DICHLOROPROPANE	ND	50	1.4
ETHYL ETHYL KETONE	ND	500	21
-HEXANONE	ND	500	10
-METHYL-2-PENTANONE (MIBK)	ND	500	12
CETONE	ND	500	27
ENZENE	380 E	5	1.5
ROMODICHLOROMETHANE	ND	50	1.7
ROMOFORM	ND	50	1.2
ROMOMETHANE	ND	50	1.8
ARBON TETRACHLORIDE	ND	5	.91
HLOROBENZENE	ND	50	1.4
HLOROETHANE	ND	50	4.3
HLOROFORM	ND	50	4.1
HLOROMETHANE	ND	50	2.4
IS-1,2-DICHLOROETHENE	ND	50	1.6
IS-1,3-DICHLOROPROPENE	ND	5	2.1
IBROMOCHLOROMETHANE	ND	50	1.4
THYLBENZENE	120	5	1.2
YLENES	950	15	2.7
TBE	ND	10	2.2
ETHYLENE CHLORIDE	ND	50	2.2
TYRENE	ND	50	1.5
ETRACHLOROETHYLENE	ND	50	1.4
OLUENE	580E	5	1.4
RANS-1,2-DICHLOROETHENE	ND	50	1.8
RANS-1,3-DICHLOROPROPENE	ND	5	2.3
RICHLOROETHENE	ND	50	1.5
INYL ACETATE	ND	500	3.2
INYL CHLORIDE	ND	5	2
ERT-BUTYL ALCOHOL	120J	200	23
IISOPROPYL ETHER	ND	50	3.9
THYL TERT-BUTYL ETHER	ND	50	8.8
ERT-AMYL METHYL ETHER	ND	50	12

URROGATE PARAMETERS	% RECOVERY	QC LIMIT
,2-DICHLOROETHANE-D4	89	62-139
OLUENE-D8	93	75-125
ROMOFLUOROBENZENE	85	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

2005

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

lient	: FOSTER WHEELER	Date Collected:	07/20/01
roject	: CAMP PENDLETON, CTO26	Date Received:	07/20/01
atch No.	: 01G124	Date Extracted:	08/01/01 02:12
ample ID:	0026-207DL	Date Analyzed:	08/01/01 02:12
ab Samp ID:	G124-02T	Dilution Factor:	100
ab File ID:	RGQ878	Matrix :	WATER
xt Btch ID:	V005G66	% Moisture :	NA
alib. Ref.:	RGQ871	Instrument ID :	T-005

'ARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
,1,1-TRICHLOROETHANE	ND	500	42
,1,2,2-TETRACHLOROETHANE	ND	100	19
,1,2-TRICHLOROETHANE	ND	500	17
,1-DICHLOROETHANE	ND	500	16
,1-DICHLOROETHENE	ND	500	10
,2-DICHLOROETHANE	270	50	21
,2-DICHLOROPROPANE	ND	500	14
1ETHYL ETHYL KETONE	ND	5000	210
2-HEXANONE	ND	5000	100
4-METHYL-2-PENTANONE (MIBK)	ND	5000	120
ACETONE	ND	5000	270
3ENZENE	4000	50	15
3ROMODICHLOROMETHANE	ND	500	17
3ROMOFORM	ND	500	12
3ROMOMETHANE	ND	500	18
CARBON TETRACHLORIDE	ND	50	9.1
CHLOROBENZENE	ND	500	14
CHLOROETHANE	ND	500	43
CHLOROFORM	ND	500	41
CHLOROMETHANE	ND	500	24
CIS-1,2-DICHLOROETHENE	ND	500	16
CIS-1,3-DICHLOROPROPENE	ND	50	21
DIBROMOCHLOROMETHANE	ND	500	14
ETHYLBENZENE	130	50	12
XYLENES	1100	150	27
MTBE	ND	100	22
METHYLENE CHLORIDE	ND	500	22
STYRENE	ND	500	15
TETRACHLOROETHYLENE	ND	500	14
TOLUENE	1200	50	14
TRANS-1,2-DICHLOROETHENE	ND	500	18
TRANS-1,3-DICHLOROPROPENE	ND	50	23
TRICHLOROETHENE	ND	500	15
VINYL ACETATE	ND	5000	32
VINYL CHLORIDE	ND	50	20
TERT-BUTYL ALCOHOL	ND	2000	230
DIISOPROPYL ETHER	ND	500	39
ETHYL TERT-BUTYL ETHER	ND	500	88
TERT-AMYL METHYL ETHER	ND	500	120

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	88	62-139
TOLUENE-D8	95	75-125
BROMOFLUOROBENZENE	88	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

lient	: FOSTER WHEELER	Date Collected:	07/20/01
roject	: CAMP PENDLETON, CTO26	Date Received:	07/20/01
atch No.	: 01G124	Date Extracted:	07/28/01 06:06
ample ID:	0026-208	Date Analyzed:	07/28/01 06:06
ab Samp ID:	G124-03	Dilution Factor:	1
ab File ID:	RGQ837	Matrix :	WATER
xt Btch ID:	VO05G62	% Moisture :	NA
alib. Ref.:	RGQ827	Instrument ID :	T-005

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	ND	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	7.7	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	.58	.5	.12
XYLENES	3.2	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	ND	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	4.5	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	ND	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	93	62-139
TOLUENE-D8	95	75-125
BROMOFLUOROBENZENE	89	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	07/20/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/20/01
Batch No.	: 01G124	Date Extracted:	08/01/01 02:48
Sample ID:	0026-209	Date Analyzed:	08/01/01 02:48
Lab Samp ID:	G124-04	Dilution Factor:	1000
Lab File ID:	RGQ879	Matrix :	WATER
Ext Btch ID:	VO05G66	% Moisture :	NA
Calib. Ref.:	RGQ871	Instrument ID :	T-005

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5000	420
1,1,2,2-TETRACHLOROETHANE	ND	1000	190
1,1,2-TRICHLOROETHANE	ND	5000	170
1,1-DICHLOROETHANE	ND	5000	160
1,1-DICHLOROETHENE	ND	5000	100
1,2-DICHLOROETHANE	1700	500	210
1,2-DICHLOROPROPANE	ND	5000	140
METHYL ETHYL KETONE	ND	50000	2100
2-HEXANONE	ND	50000	1000
4-METHYL-2-PENTANONE (MIBK)	ND	50000	1200
ACETONE	ND	50000	2700
BENZENE	15000	500	150
BROMODICHLOROMETHANE	ND	5000	170
BROMOFORM	ND	5000	120
BROMOMETHANE	ND	5000	180
CARBON TETRACHLORIDE	ND	500	91
CHLOROBENZENE	ND	5000	140
CHLOROETHANE	ND	5000	430
CHLOROFORM	ND	5000	410
CHLOROMETHANE	ND	5000	240
CIS-1,2-DICHLOROETHENE	ND	5000	160
CIS-1,3-DICHLOROPROPENE	ND	500	210
DIBROMOCHLOROMETHANE	ND	5000	140
ETHYLBENZENE	950	500	120
XYLENES	5400	1500	270
MTBE	ND	1000	220
METHYLENE CHLORIDE	ND	5000	220
STYRENE	ND	5000	150
TETRACHLOROETHYLENE	ND	5000	140
TOLUENE	17000	500	140
TRANS-1,2-DICHLOROETHENE	ND	5000	180
TRANS-1,3-DICHLOROPROPENE	ND	500	230
TRICHLOROETHENE	ND	5000	150
VINYL ACETATE	ND	50000	320
VINYL CHLORIDE	ND	500	200
TERT-BUTYL ALCOHOL	ND	20000	2300
DIISOPROPYL ETHER	ND	5000	390
ETHYL TERT-BUTYL ETHER	ND	5000	880
TERT-AMYL METHYL ETHER	ND	5000	1200

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	84	62-139
TOLUENE-D8	94	75-125
BROMOFLUOROBENZENE	87	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

;ient	: FOSTER WHEELER	Date Collected:	07/20/01
·oject	: CAMP PENDLETON, CTO26	Date Received:	07/20/01
atch No.	: 01G124	Date Extracted:	07/28/01 07:56
ample ID:	0026-210	Date Analyzed:	07/28/01 07:56
ab Samp ID:	G124-05	Dilution Factor:	1
ab File ID:	RGQ840	Matrix :	WATER
xt Btch ID:	VO05G62	% Moisture :	NA
alib. Ref.:	RGQ827	Instrument ID :	T-005

ARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
,1,1-TRICHLOROETHANE	ND	5	.42
,1,2,2-TETRACHLOROETHANE	ND	1	.19
,1,2-TRICHLOROETHANE	ND	5	.17
,1-DICHLOROETHANE	ND	5	.16
,1-DICHLOROETHENE	ND	5	.1
,2-DICHLOROETHANE	ND	.5	.21
,2-DICHLOROPROPANE	ND	5	.14
ETHYL ETHYL KETONE	ND	50	2.1
-HEXANONE	ND	50	1
-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
CETONE	ND	50	2.7
ENZENE	2.5	.5	.15
ROMODICHLOROMETHANE	ND	5	.17
ROMOFORM	ND	5	.12
ROMOMETHANE	ND	5	.18
ARBON TETRACHLORIDE	ND	.5	.091
HLOROBENZENE	ND	5	.14
HLOROETHANE	ND	5	.43
HLOROFORM	ND	5	.41
HLOROMETHANE	ND	5	.24
IS-1,2-DICHLOROETHENE	ND	5	.16
IS-1,3-DICHLOROPROPENE	ND	.5	.21
IBROMOCHLOROMETHANE	ND	5	.14
THYLBENZENE	.35J	.5	.12
YLENES	8.7	1.5	.27
TBE	ND	1	.22
ETHYLENE CHLORIDE	ND	5	.22
TYRENE	ND	5	.15
ETRACHLOROETHYLENE	1J	5	.14
OLUENE	1.9	.5	.14
RANS-1,2-DICHLOROETHENE	ND	5	.18
RANS-1,3-DICHLOROPROPENE	ND	.5	.23
RICHLOROETHENE	18	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	90	62-139
TOLUENE-D8	96	75-125
BROMOFLUOROBENZENE	82	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

QC SUMMARY

2020

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	NA
Project	: CAMP PENDLETON, CTO26	Date Received:	07/28/01
Batch No.	: 01G124	Date Extracted:	07/28/01 02:30
Sample ID:	MBLK1W	Date Analyzed:	07/28/01 02:30
Lab Samp ID:	V005G62Q	Dilution Factor:	1
Lab File ID:	RGQ831	Matrix :	WATER
Ext Btch ID:	V005G62	% Moisture :	NA
Calib. Ref.:	RGQ827	Instrument ID :	T-005

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	ND	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	ND	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	ND	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	90	62-139
TOLUENE-D8	95	75-125
BROMOFLUOROBENZENE	89	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G124
METHOD: SW 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	V005G62Q	V005G62L	V005G62C		
LAB FILE ID:	RGQ831	RGQ828	RGQ829		
DATE EXTRACTED:	07/28/0102:30	07/28/0100:42	07/28/0101:18	DATE COLLECTED:	NA
DATE ANALYZED:	07/28/0102:30	07/28/0100:42	07/28/0101:18	DATE RECEIVED:	07/28/01
PREP. BATCH:	V005G62	V005G62	V005G62		
CALIB. REF:	RGQ827	RGQ827	RGQ827		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX (%
1,1-Dichloroethene	ND	10	8.2	82	10	8.23	82	0	75-125	
Benzene	ND	10	8.83	88	10	8.9	89	1	75-125	
Chlorobenzene	ND	10	9.16	92	10	9.17	92	0	75-125	
Toluene	ND	10	8.99	90	10	8.94	89	1	75-125	
Trichloroethene	ND	10	9.09	91	10	9	90	1	75-125	

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10	8.57	86	10	8.66	87	62-139
Toluene-d8	10	9.61	96	10	9.6	96	75-125
Bromofluorobenzene	10	8.72	87	10	8.76	88	75-125

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	NA
Project	: CAMP PENDLETON, CTO26	Date Received:	08/01/01
Batch No.	: 01G124	Date Extracted:	08/01/01 01:35
Sample ID:	MBLK2W	Date Analyzed:	08/01/01 01:35
Lab Samp ID:	V005G66Q	Dilution Factor:	1
Lab File ID:	RGQ877	Matrix :	WATER
Ext Btch ID:	V005G66	% Moisture :	NA
Calib. Ref.:	RGQ871	Instrument ID :	T-005

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	ND	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	ND	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	ND	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	89	62-139
TOLUENE-D8	98	75-125
BROMOFLUOROBENZENE	90	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G124
METHOD: SW 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK2W				
LAB SAMP ID:	V005G66Q	V005G66L	V005G66C		
LAB FILE ID:	RGQ877	RGQ873	RGQ874		
DATE EXTRACTED:	08/01/0101:35	07/31/0123:08	07/31/0123:45	DATE COLLECTED:	NA
DATE ANALYZED:	08/01/0101:35	07/31/0123:08	07/31/0123:45	DATE RECEIVED:	07/31/01
PREP. BATCH:	V005G66	V005G66	V005G66		
CALIB. REF:	RGQ871	RGQ871	RGQ871		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX (%
1,1-Dichloroethene	ND	10	9.55	95	10	9.48	95	1	75-125	
Benzene	ND	10	9.92	99	10	9.78	98	1	75-125	
Chlorobenzene	ND	10	9.79	98	10	9.72	97	1	75-125	
Toluene	ND	10	9.79	98	10	9.85	99	1	75-125	
Trichloroethene	ND	10	10.1	101	10	10.1	101	1	75-125	

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10	8.6	86	10	8.85	89	62-139
Toluene-d8	10	9.88	99	10	10	100	75-125
Bromofluorobenzene	10	8.94	89	10	8.96	90	75-125

691507

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO 26, UST SITE 1

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

SDG#: 01G124

4000

CASE NARRATIVE

CLIENT : FOSTER WHEELER

PROJECT : CAMP PENDLETON, CTO26

SDG : 01G124

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE &TRAP

Samples received on 07/20/01 included four(4) water for Total Petroleum Hydrocarbons by Purge & Trap Analysis by method 5030B/M8015 in accordance with USEPA SW846 and Leaking Underground Fuel Tank (LUFT) Field Manual, SWRCB, Dept. of Health Services, CA (1988).

1. Holding Time

   Samples were analyzed within holding time.

2. Calibration

   A seven-point Initial Calibration curve was performed. Continuing Calibrations were carried out at 10-sample interval. All QC requirements were met.

3. Method Blank

   Method blank was free of contamination at the reporting level.

4. Surrogate Recovery

   All surrogate recoveries were within QC limit.

5. Lab Control Sample/ Lab Control Sample Duplicate

   All recoveries were within QC limits.

6. Matrix Spike/Matrix Spike Duplicate

   No MS/MSD was analyzed in this SDG.

7. Sample Analysis

   Samples were analyzed according to the prescribed QC procedures. All QC criteria were met. Sample was quantitated from C6-C10.

LAB CHRONICLE
M8015V

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CT026

SDG NO. : 01G124
Instrument ID : GCT039

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	WATER Analysis DateTime	Extraction DateTime	Sample Data FN	DCC Data FN	Prep. Batch	Notes
MBLK1W	VA39G24B	1	NA	07/24/0114:35	07/24/0114:35	EG11004A	EG11002A	VA39G24	Method Blank
LCS1W	VA39G24L	1	NA	07/24/0115:09	07/24/0115:09	EG11005A	EG11002A	VA39G24	Lab Control Sample (LCS)
LCD1W	VA39G24C	1	NA	07/24/0115:42	07/24/0115:42	EG11006A	EG11002A	VA39G24	LCS Duplicate
0026-207DL	G124-02T	10	NA	07/24/0118:29	07/24/0118:29	EG11011A	EG11002A	VA39G24	Diluted Sample
0026-208	G124-03	1	NA	07/24/0116:49	07/24/0116:49	EG11008A	EG11002A	VA39G24	Field Sample
0026-209DL	G124-04T	200	NA	07/24/0119:03	07/24/0119:03	EG11012A	EG11002A	VA39G24	Diluted Sample
0026-210	G124-05	1	NA	07/24/0117:56	07/24/0117:56	EG11010A	EG11002A	VA39G24	Field Sample

FN - Filename
DCC - Daily Continuing Calibration
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 8015B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : O1G124

Matrix : WATER
Instrument ID : GCT039

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	SURR (%)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	VA39G24B	ND	83	1	NA	.05	.012	07/24/0114:35	07/24/0114:35	EG11004A	EG11002A	VA39G24	NA	07/24/01
LCS1W	VA39G24L	.523	115	1	NA	.05	.012	07/24/0115:09	07/24/0115:09	EG11005A	EG11002A	VA39G24	NA	07/24/01
LCD1W	VA39G24C	.594	114	1	NA	.05	.012	07/24/0115:42	07/24/0115:42	EG11006A	EG11002A	VA39G24	NA	07/24/01
0026-207DL	G124-02T	7	107	10	NA	.5	.12	07/24/0118:29	07/24/0118:29	EG11011A	EG11002A	VA39G24	07/20/01	07/20/01
0026-208	G124-03	.027J	91	1	NA	.05	.012	07/24/0116:49	07/24/0116:49	EG11008A	EG11002A	VA39G24	07/20/01	07/20/01
0026-209DL	G124-04T	110	91	200	NA	10	2.4	07/24/0119:03	07/24/0119:03	EG11012A	EG11002A	VA39G24	07/20/01	07/20/01
0026-210	G124-05	.3	114	1	NA	.05	.012	07/24/0117:56	07/24/0117:56	EG11010A	EG11002A	VA39G24	07/20/01	07/20/01

RL : Reporting Limit
* : Out of QC limit due to matrix interference

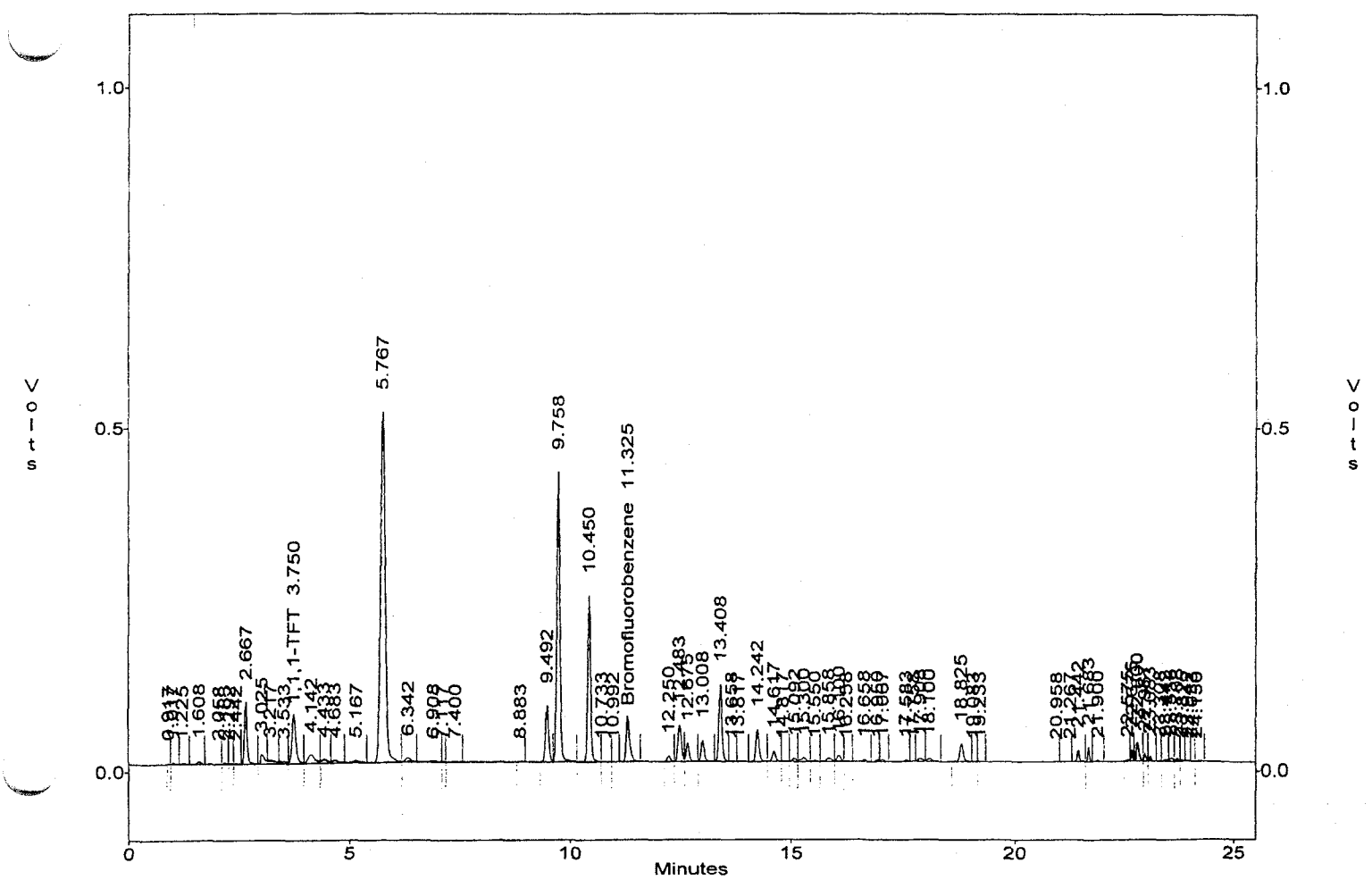
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\eg11\EG11.011
Method : c:\ezchrom\methods\vgr39g17.met
ple ID : 01G124-02T .5/10X
uired : Jul 24, 2001 18:29:44 DF = 10
Printed : Jul 25, 2001 09:12:57
User : LUCY

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
13	1,1,1-TFT	3.750	427847.0	22518.4	19.00
29	Bromofluorobenzene	11.325	345202.0	16199.2	21.31/20
G1	GRO C6-C10		9512270.0	13611.4	698.85

c:\ezchrom\chrom\eg11\EG11.011 -- Channel A



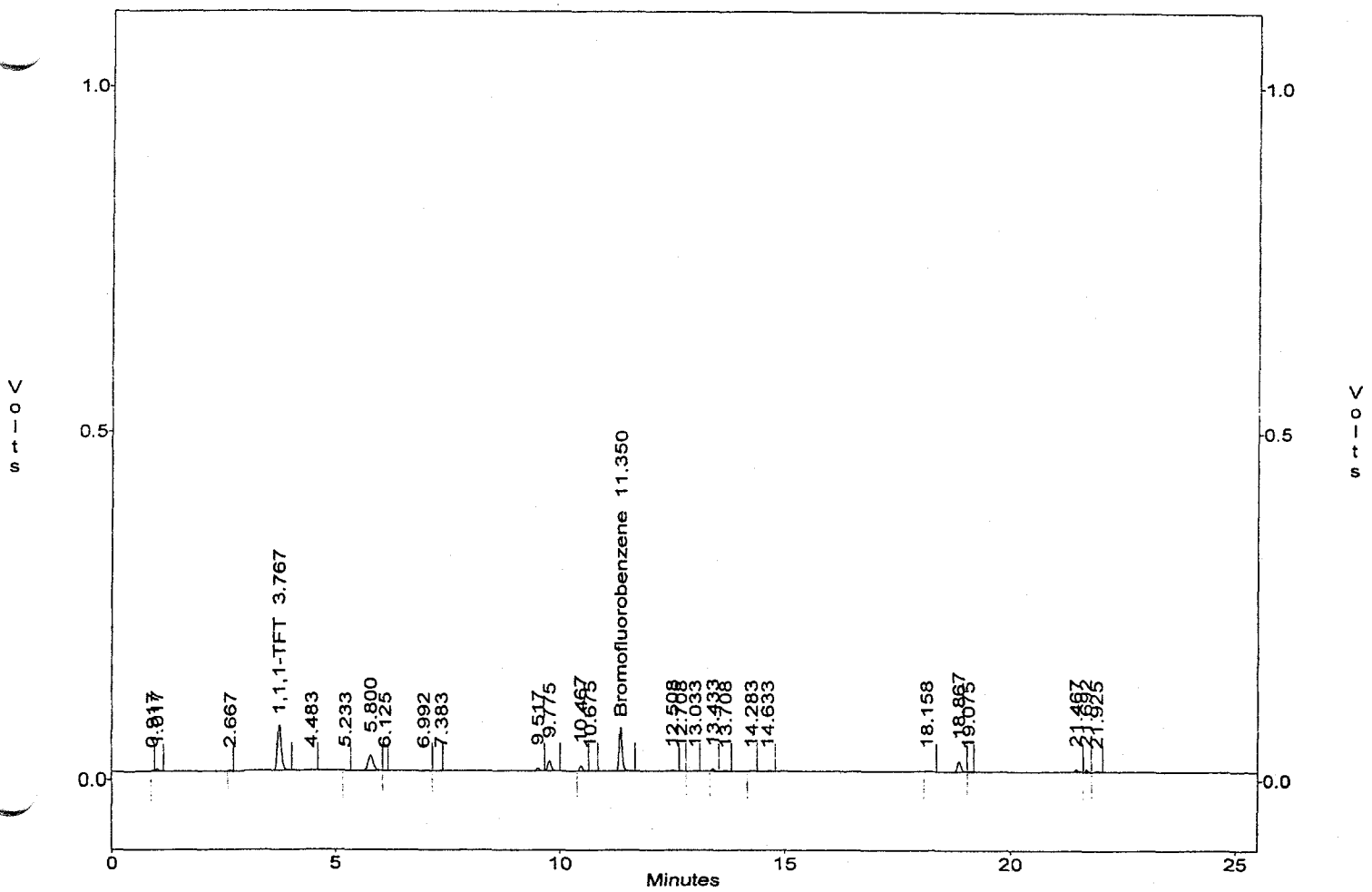
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\eg11\EG11.008
Method : c:\ezchrom\methods\vgr39g17.met
Sample ID : 01G124-03 5.0ML W
Acquired : Jul 24, 2001 16:49:22
Printed : Jul 25, 2001 09:12:48
User : LUCY

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
4	1,1,1-TFT	3.767	400418.0	22518.4	17.78
15	Bromofluorobenzene	11.350	293504.0	16199.2	18.12
G1	GRO C6-C10		370330.0	13611.4	27.21

c:\ezchrom\chrom\eg11\EG11.008 -- Channel A



4006

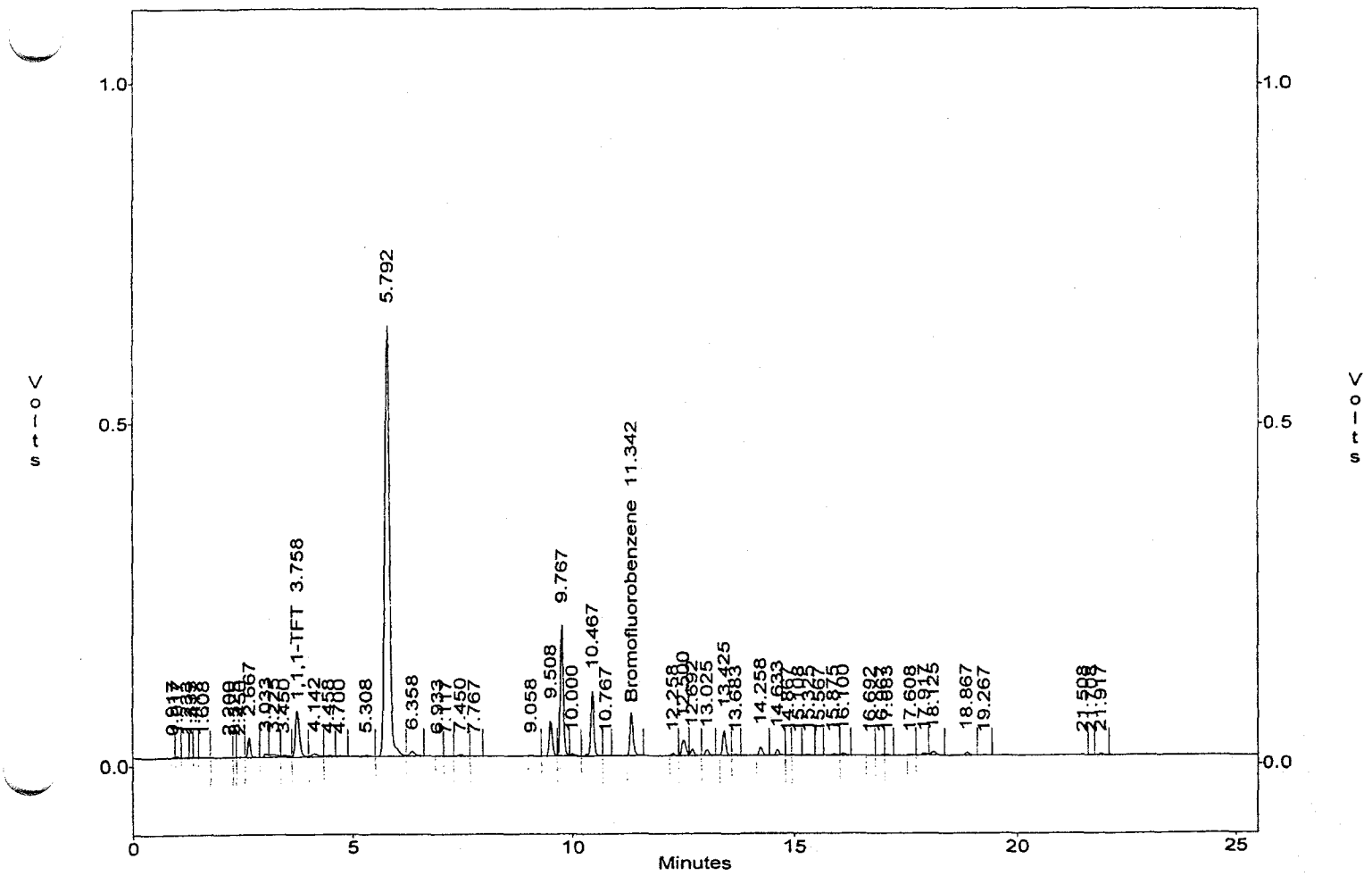
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\eg11\EG11.012
Method : c:\ezchrom\methods\vgr39g17.met
Sample ID : 01G124-04T 25UL/200
Acquired : Jul 24, 2001 19:03:01
Printed : Jul 25, 2001 09:12:59 DF = 200
User : LUCY

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
14	1,1,1-TFT	3.758	424626.0	22518.4	18.86
31	Bromofluorobenzene	11.342	293440.0	16199.2	18.11
G1	GRO C6-C10		7447540.0	13611.4	547.16

c:\ezchrom\chrom\eg11\EG11.012 -- Channel A



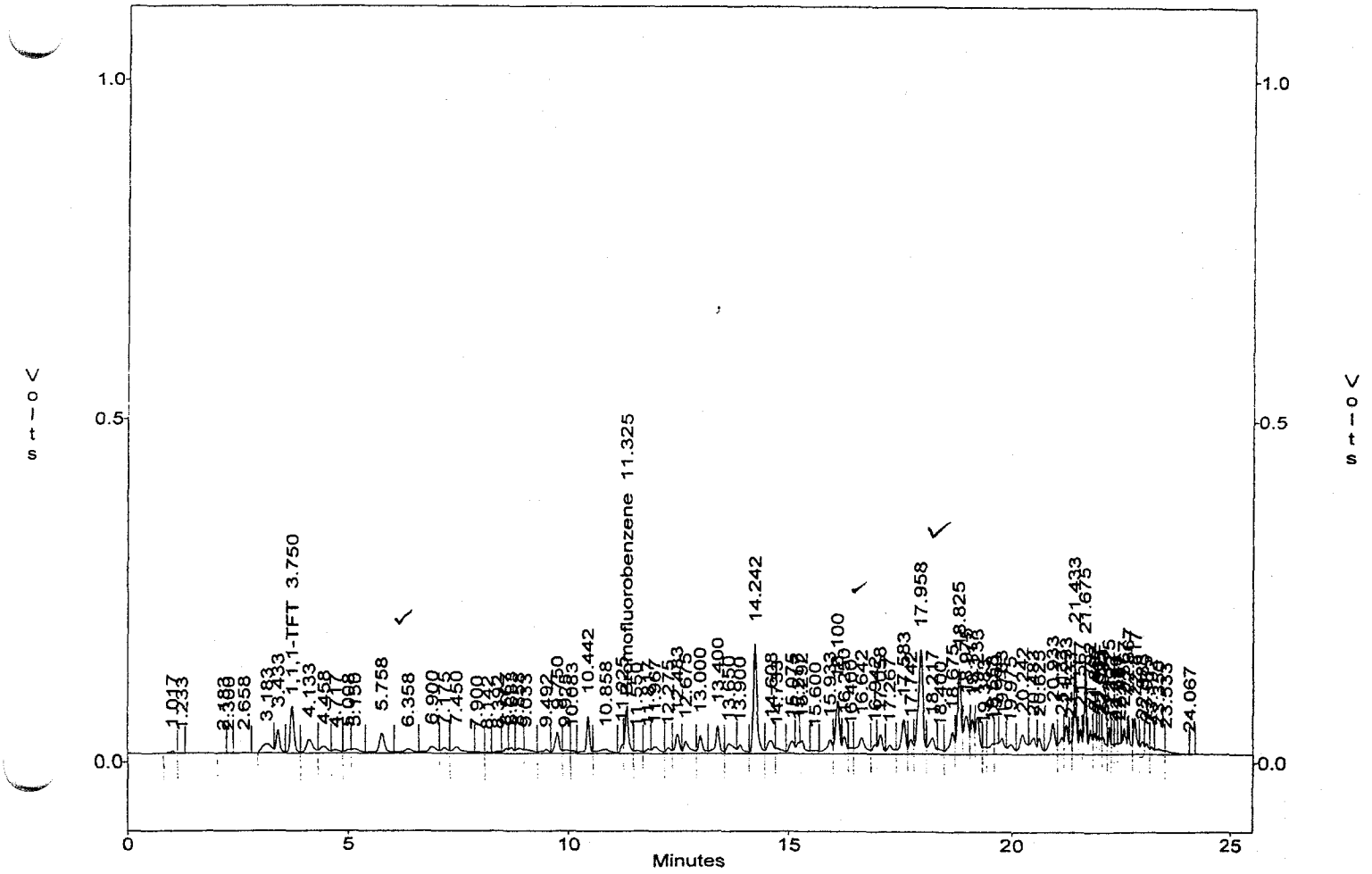
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\eg11\EG11.010
Method : c:\ezchrom\methods\vgr39g17.met
Sample ID : 01G124-05 5.0ML W
Acquired : Jul 24, 2001 17:56:20
Printed : Jul 25, 2001 09:12:54
User : LUCY

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
8	1,1,1-TFT	3.750	427303.0	22518.4	18.98
33	Bromofluorobenzene	11.325	370388.0	16199.2	22.86
G1	GRO C6-C10		4059507.0	13611.4	298.24

c:\ezchrom\chrom\eg11\EG11.010 -- Channel A



QC SUMMARY

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
B' ' NO.: 01G124
M): METHOD 5030B/M8015

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	VA39G24B	VA39G24L	VA39G24C		
LAB FILE ID:	EG11004A	EG11005A	EG11006A		
DATE EXTRACTED:	07/24/0114:35	07/24/0115:09	07/24/0115:42	DATE COLLECTED:	NA
DATE ANALYZED:	07/24/0114:35	07/24/0115:09	07/24/0115:42	DATE RECEIVED:	07/24/01
PREP. BATCH:	VA39G24	VA39G24	VA39G24		
CALIB. REF:	EG11002A	EG11002A	EG11002A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Gasoline	ND	.55	.523	95	.55	.594	108	13	65-135	30

SURROGATE PARAMETER	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	QC LIMIT (%)
Bromofluorobenzene	.02	.023	115	.02	.0228	114	65-135

6915 C8

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO 26, UST SITE 1

METHOD 3520/M8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 01G124

5000

CASE NARRATIVE

CLIENT: FOSTER WHEELER

PROJECT: CAMP PENDLETON, CT026

SDG: 01G124

METHOD 3520/M8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Two (2) water samples were received on 07/20/01 to be analyzed for Total Petroleum Hydrocarbons by Method 3520/M8015B in accordance with SW846 and Leaking Underground Fuel Tank (LUFT) Field Manual, SWRCB, Dept. of Health Service, CA (1988).

1. Holding Time

Analytical holding time was met.

2. Method Blank

There was no contamination detected at reporting level.

3. Lab Control Sample/Lab Control Sample Duplicate

All recoveries were within QC limits.

4. Surrogate Recovery

All recoveries were within QC limits.

5. Matrix Spike/Matrix Spike Duplicate

No sample was analyzed for MS/MSD from this SDG.

6. Calibration

Initial calibration was seven points. Continue calibrations were carried out at 10 sample intervals. All QC requirements were met.

7. Sample Analysis

Samples were analyzed according to the prescribed QC procedures. Samples were quantified from C10-C24.

LAB CHRONICLE
M8015D

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26

SDG NO. : 01G124
Instrument ID : GCT050

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	WATER Analysis DateTime	Extraction DateTime	Sample Data FN	DCC Data FN	Prep. Batch	Notes
MBLK1W	DSG023WB	1	NA	07/25/0102:03	07/24/0112:00	TG08016A	TG08014A	DSG023W	Method Blank
LCS1W	DSG023WL	1	NA	07/25/0102:52	07/24/0112:00	TG08017A	TG08014A	DSG023W	Lab Control Sample (LCS)
LCD1W	DSG023WC	1	NA	07/25/0103:40	07/24/0112:00	TG08018A	TG08014A	DSG023W	LCS Duplicate
0026-207	G124-02	.95	NA	07/25/0106:55	07/24/0112:00	TG08022A	TG08014A	DSG023W	Field Sample
0026-210	G124-05	.94	NA	07/25/0107:44	07/24/0112:00	TG08023A	TG08014A	DSG023W	Field Sample

FN - Filename
DCC - Daily Continuing Calibration
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 8020/M8015B
TOTAL PETROLEUM CARBONS BY EXTRACTION

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G124

Matrix : WATER
Instrument ID : GCT050

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	SURR (%)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	DSG023WB	ND	93	1	NA	.1	.067	07/25/0102:03	07/24/0112:00	TG08016A	TG08014A	DSG023W	NA	07/24/01
LCS1W	DSG023WL	3.78	93	1	NA	.1	.067	07/25/0102:52	07/24/0112:00	TG08017A	TG08014A	DSG023W	NA	07/24/01
LCD1W	DSG023WC	3.96	96	1	NA	.1	.067	07/25/0103:40	07/24/0112:00	TG08018A	TG08014A	DSG023W	NA	07/24/01
0026-207*	G124-02	.88	96	.95	NA	.095	.064	07/25/0106:55	07/24/0112:00	TG08022A	TG08014A	DSG023W	07/20/01	07/20/01
0026-210	G124-05	2.7	97	.94	NA	.094	.063	07/25/0107:44	07/24/0112:00	TG08023A	TG08014A	DSG023W	07/20/01	07/20/01

RL : Reporting Limit
SUR1 : Hexacosane

Parameter	H-C Range
JP5	C7 -C18
Diesel	C10-C24
Motor Oil	C18-C34
Gas	C6 -C12

* : Presence of lighter HC pattern, quantitated against Diesel calibration factor

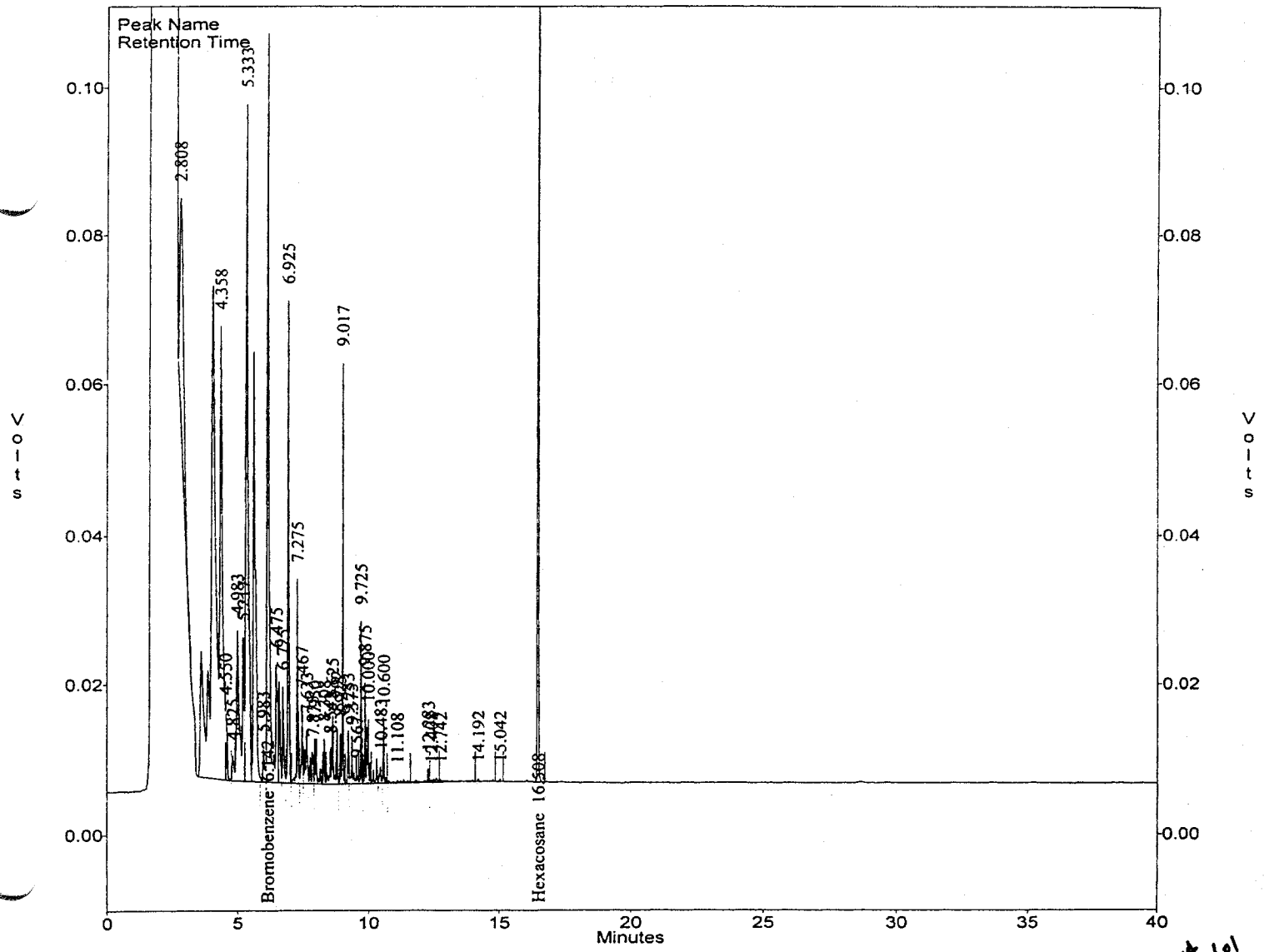
EPA METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\tg08\tg08.022
Method : c:\ezchrom\methods\ds50f25.met
Sample ID : 01G124-02
Acquired : Jul 25, 2001 06:55:34
Printed : Jul 25, 2001 10:29:50
User : SHAWN

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
9	Bromobenzene	6.142	447567	4743.9	94.3
38	Hexacosane	16.508	383766	16045.0	23.9
G1	Diesel (C_{10} - C_{24})		884836	9582.9	92.3 × $\frac{10}{1050}$ = .88

c:\ezchrom\chrom\tg08\tg08.022 -- Channel A



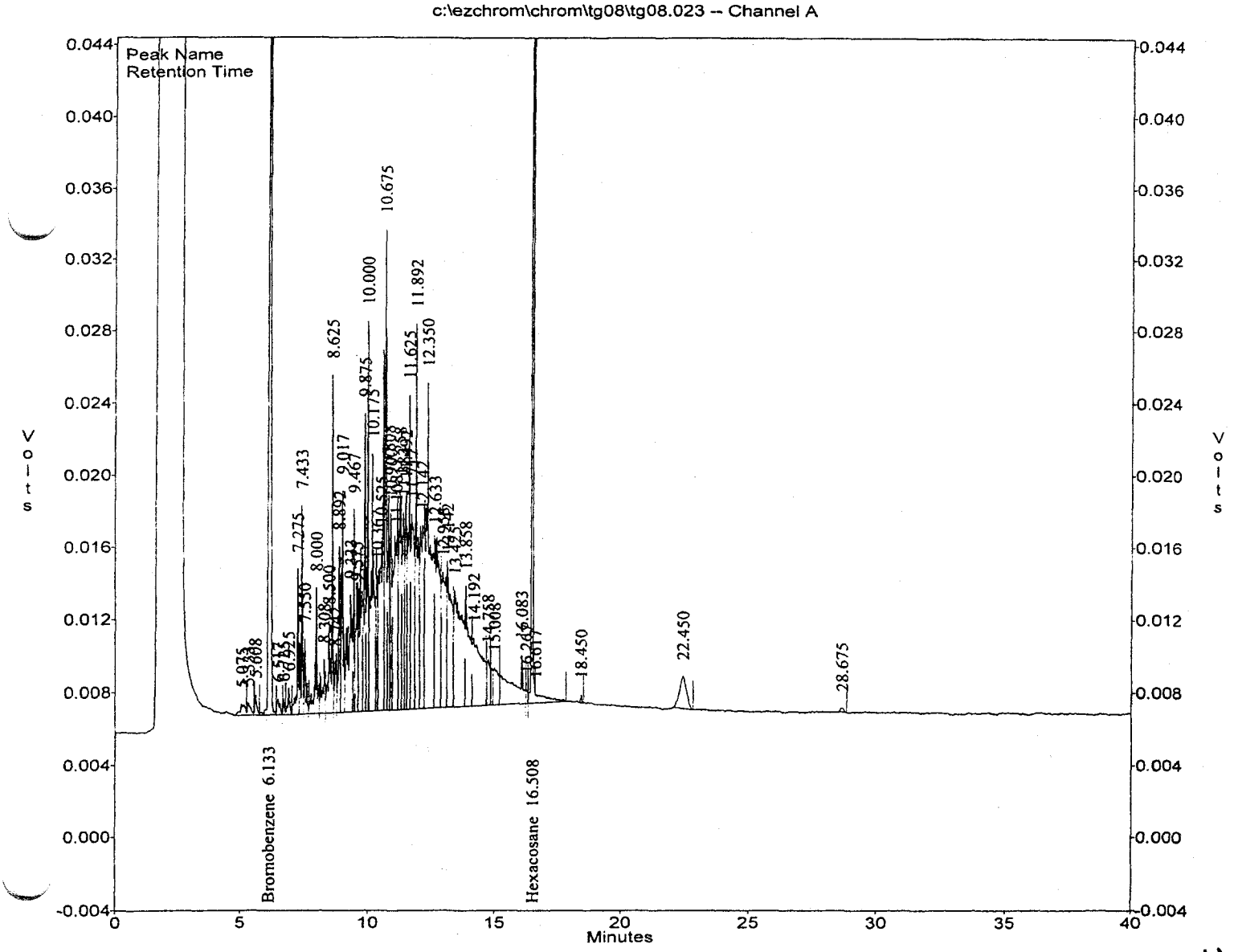
5905 7/25/01

EPA METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\tg08\tg08.023
Method : c:\ezchrom\methods\ds50f25.met
Sample ID : 01G124-05
Acquired : Jul 25, 2001 07:44:13
Printed : Jul 25, 2001 10:30:54
User : SHAWN

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
4	Bromobenzene	6.133	401878	4743.9	84.7
48	Hexacosane	16.508	388414	16045.0	24.2
G1	Diesel (C_{10} - C_{24})		2713411	9582.9	283.2 $\times \frac{10}{1060} = 2.67$



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SA 7/25/01

QC DATA

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G124
METHOD: METHOD 3520/M8015B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DSG023WB	DSG023WL	DSG023WC		
LAB FILE ID:	TG08016A	TG08017A	TG08018A		
DATE EXTRACTED:	07/24/0112:00	07/24/0112:00	07/24/0112:00	DATE COLLECTED:	NA
DATE ANALYZED:	07/25/0102:03	07/25/0102:52	07/25/0103:40	DATE RECEIVED:	07/24/01
PREP. BATCH:	DSG023W	DSG023W	DSG023W		
CALIB. REF:	TG08014A ✓	TG08014A	TG08014A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Diesel	ND	5	3.78	76	5	3.96	79	5	65-135	30

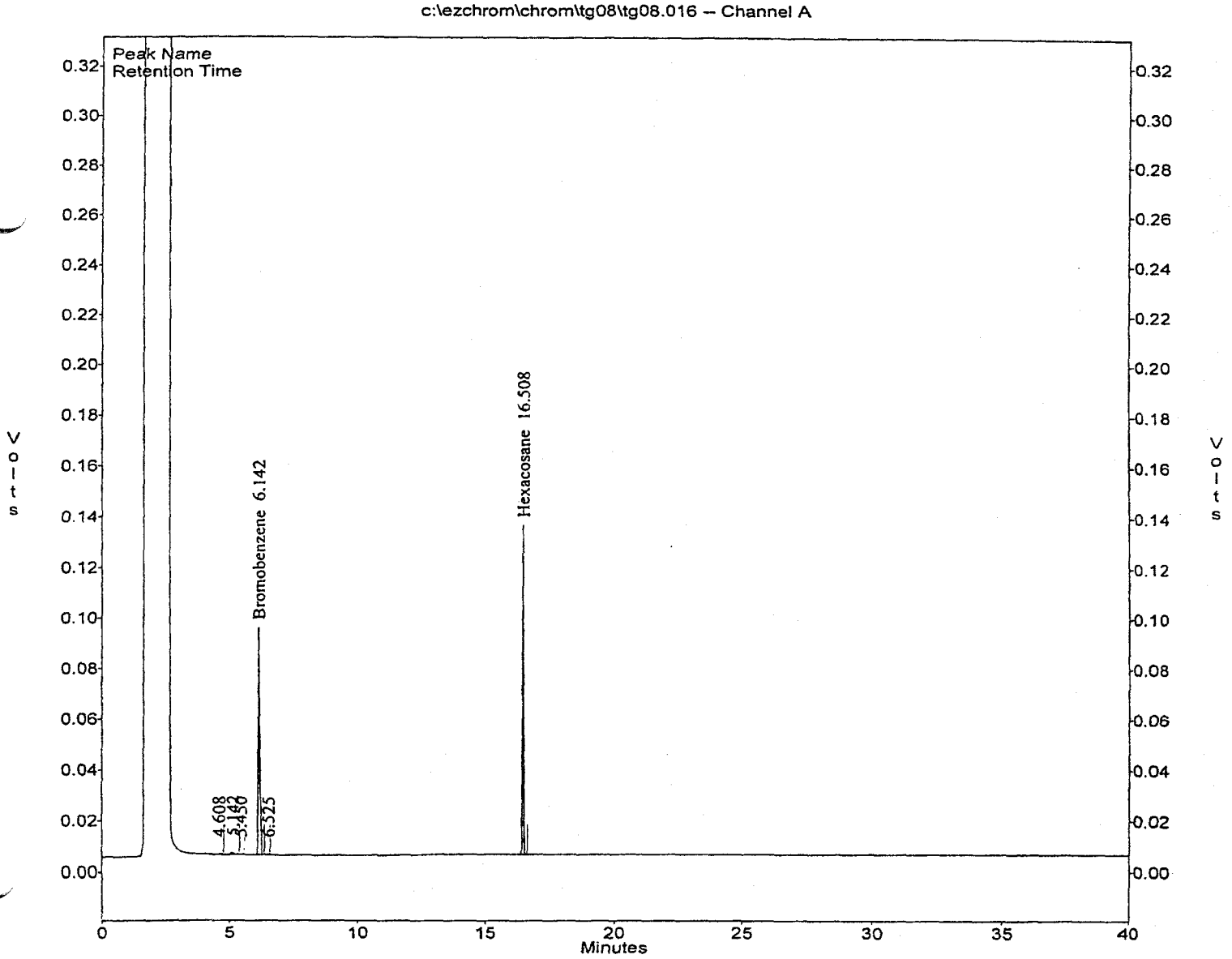
SURROGATE PARAMETER	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	QC LIMIT (%)
Hexacosane	.25	.232	93	.25	.239	96	65-135

EPA METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\tg08\tg08.016
Method : c:\ezchrom\methods\ds50f25.met
Sample ID : DSG023WB
Acquired : Jul 25, 2001 02:03:22
Printed : Jul 25, 2001 09:53:46
User : SHAWN

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
4	Bromobenzene	6.142	406151	4743.9	85.6
6	Hexacosane	16.508	373413	16045.0	23.3
G1	Diesel	**	1556	9582.9	0.2



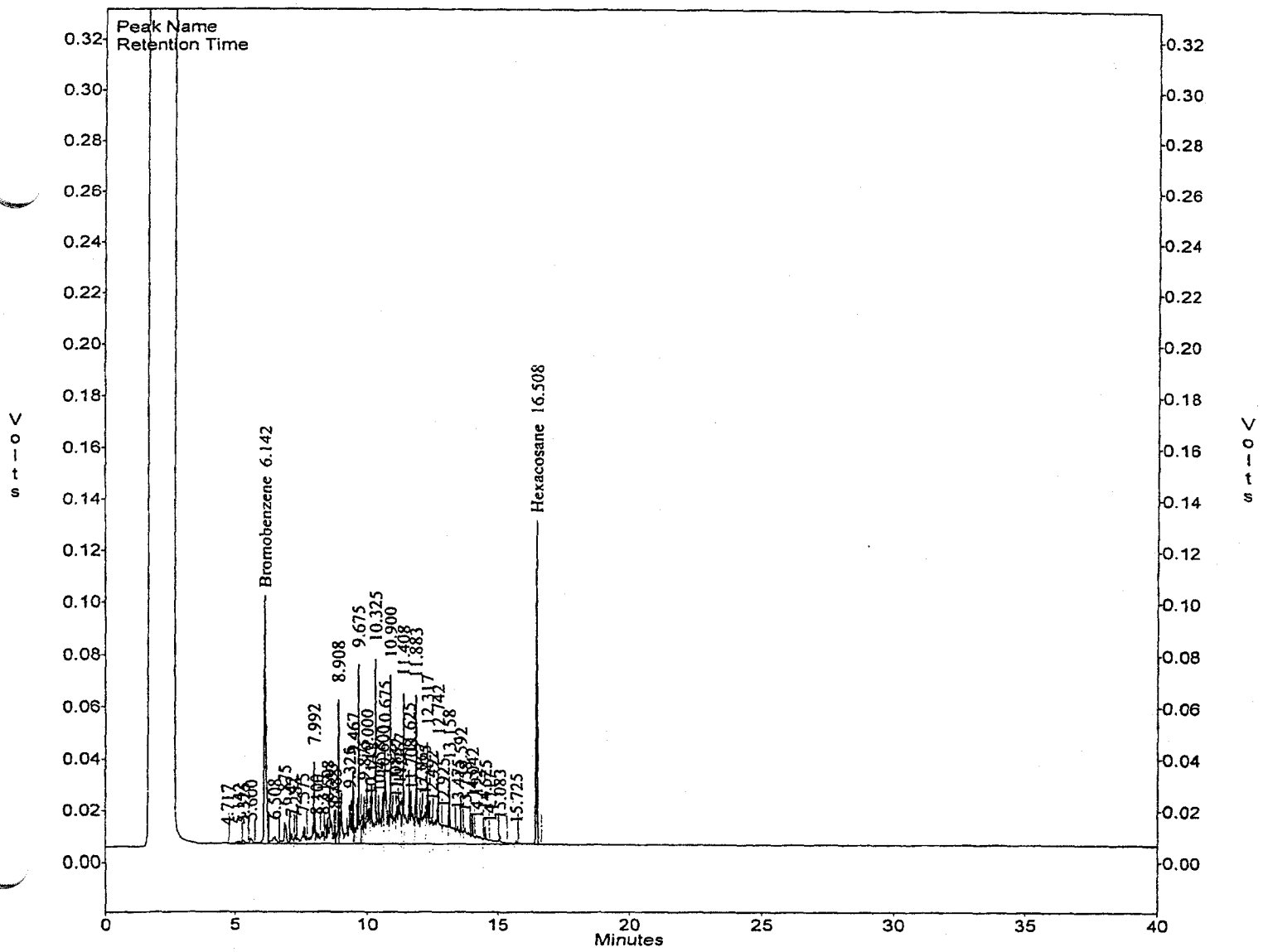
EPA METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\tg08\tg08.017
Method : c:\ezchrom\methods\ds50f25.met
Sample ID : DSG023WL
Acquired : Jul 25, 2001 02:52:06
Printed : Jul 25, 2001 09:54:44
User : SHAWN

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
5	Bromobenzene	6.142	447524	4743.9	94.3
52	Hexacosane	16.508	371622	16045.0	23.2
G1	Diesel		3622701	9582.9	378.0

c:\ezchrom\chrom\tg08\tg08.017 -- Channel A



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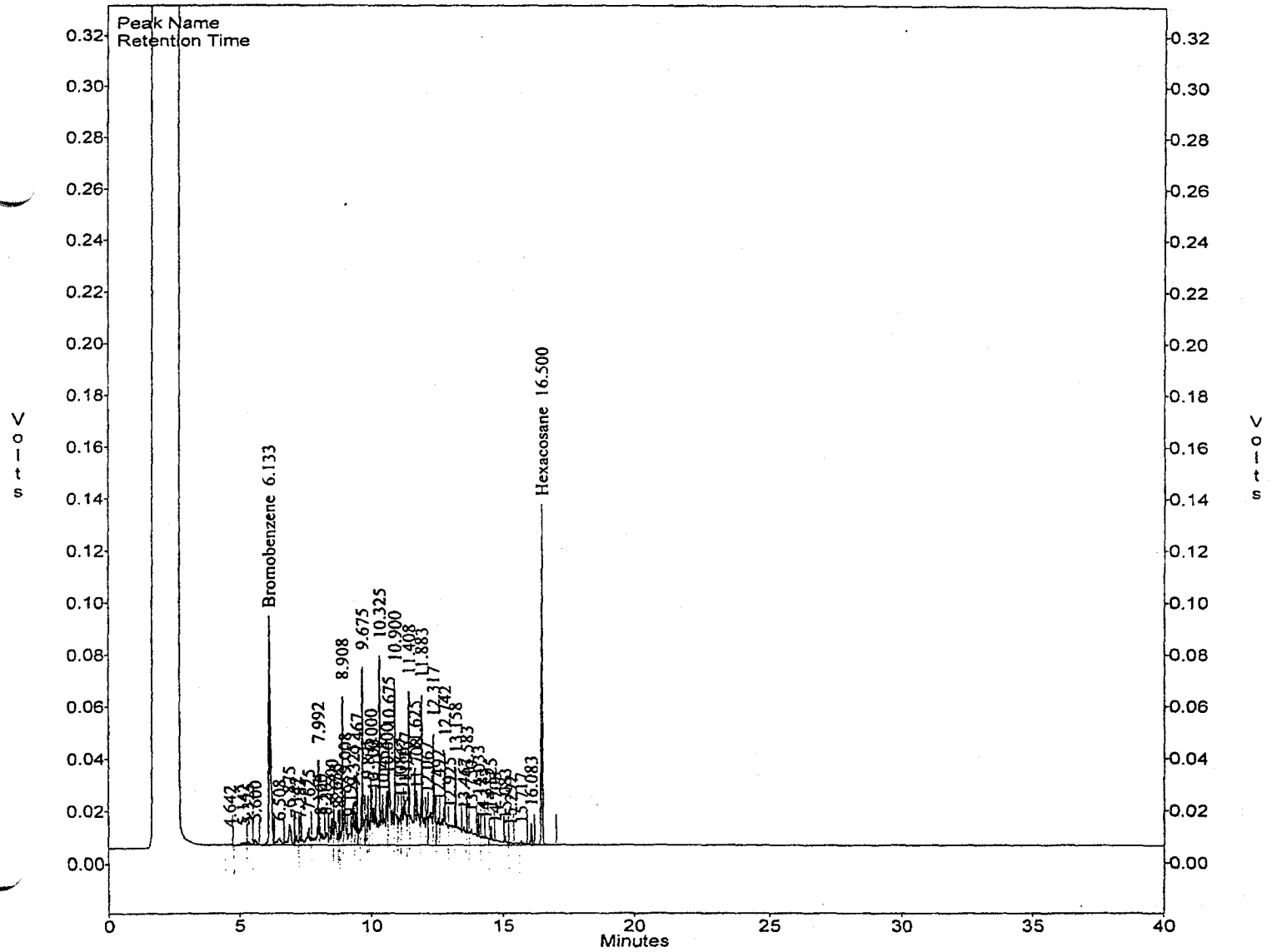
EPA METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\tg08\tg08.018
Method : c:\ezchrom\methods\ds50f25.met
Sample ID : DSG023WC
Acquired : Jul 25, 2001 03:40:45
Printed : Jul 25, 2001 09:55:24
User : SHAWN

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
5	Bromobenzene	6.133	411354	4743.9	86.7
56	Hexacosane	16.500	383133	16045.0	23.9
G1	Diesel		3795592	9582.9	396.1

c:\ezchrom\chrom\tg08\tg08.018 -- Channel A



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LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDELTON, CTO 26, UST SITE 1

METHOD 418.1
TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

SDG#: 01G124

5044

CASE NARRATIVE

CLIENT: FOSTER WHEELER

PROJECT: CAMP PENDLETON, CTO 26, UST SITE 1

SDG: 01G124

METHOD 418.1
TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Two (2) water samples were received on 07/20/01 for total recoverable petroleum hydrocarbons analysis by Method 418.1 in accordance with "Methods for Chemical Analysis of Water & Wastewater", USEPA 600-79-020, 1983.

1. Holding Time

   Analysis met the holding time criteria.

2. Method Blank

   Method blank was free of contamination at reporting limit level.

3. Matrix Spike

   No matrix sample was analyzed for this SDG.

4. Lab Control Sample/Lab Control Sample Duplicate

   Lab control results were within the control limit.

5. Sample Analysis

   Sample analyses were performed within the QC requirements.

METHO .1
TOTAL RECOVERABLE PE EUM HYDROCARBONS

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CT026
Batch No. : 01G124

Matrix : WATER
Instrument ID : I061

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	TRG007WB	ND	1	NA	10	.558	08/01/0111:40	07/31/0115:30	TRH001-03	TRH001CC	TRG007W	NA	07/31/01
LCS1W	TRG007WL	5.82	1	NA	10	.558	08/01/0111:45	07/31/0115:30	TRH001-04	TRH001CC	TRG007W	NA	07/31/01
LCD1W	TRG007WC	5.82	1	NA	10	.558	08/01/0111:50	07/31/0115:30	TRH001-05	TRH001CC	TRG007W	NA	07/31/01
0026-207	G124-02	ND	.98	NA	9.8	.547	08/01/0112:40	07/31/0115:30	TRH001-15	TRH002CC	TRG007W	07/20/01	07/20/01
0026-210	G124-05	ND	.95	NA	9.5	.53	08/01/0112:45	07/31/0115:30	TRH001-16	TRH002CC	TRG007W	07/20/01	07/20/01

RL: Reporting Limit

5046

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
METHOD: METHOD 418.1
MATRIX: WATER
% MOISTURE: NA

BATCH NO.: 01G124
SAMPLE ID: LCS1W/LCD1W
CONTROL NO.: TRG007WL/C

DATE RECEIVED: 07/31/01
DATE EXTRACTED: 07/31/01 15:30
DATE ANALYZED: 08/01/01 11:45/11:50

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD %	QC LIMIT %	RPD LIMIT %
TRPH	ND	6	5.82	97	6	5.82	97	0	80-120	20

5047

6915 C51

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO 26, UST SITE 1

RSK- 175
DISSOLVED GASES

SDG#: 01G124

6000

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO 26**

SDG: **01G124**

RSK-175
DISSOLVED GASES

Samples received on 07/20/01 for this SDG include four (4) water to be analyzed for Dissolved Gases (Methane, Ethylene, Ethane) in accordance to EMAX SOP AP 2050.

1. **Holding Time**

   All samples received were unpreserved. Analytical holding time was met.

2. **Calibration**

   A 6-point Initial calibration was performed. All QC requirements were met. Continuing calibration were carried out at 10-sample interval, and mean recovery of closing DCC were within 85-115%.

3. **Method Blank**

   No analytes were detected above RL.

4. **Lab Control Sample/Lab Control Duplicate**

   All recoveries were within QC limits

5. **Matrix Spike/Matrix Spike Duplicate**

   No sample was designated for MS/MSD with this SDG.

6. **Sample Analysis**

   All samples were analyzed within QC requirements.

LAB CHRONICL
RSK175

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26

SDG NO. : 01G124
Instrument ID : GCT010

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	DCC Data FN	Prep. Batch	Notes
MBLK1W	DG10G07B	1	NA	07/24/0110:48	07/24/0110:45	FG07003A	FG07002A	DG10G07	Method Blank
LCS1W	DG10G07L	1	NA	07/24/0111:00	07/24/0110:45	FG07004A	FG07002A	DG10G07	Lab Control Sample (LCS)
LCD1W	DG10G07C	1	NA	07/24/0111:14	07/24/0110:45	FG07005A	FG07002A	DG10G07	LCS Duplicate
0026-207	G124-02	1	NA	07/24/0111:29	07/24/0110:45	FG07006A	FG07002A	DG10G07	Field Sample
0026-208	G124-03	1	NA	07/24/0111:41	07/24/0110:45	FG07007A	FG07002A	DG10G07	Field Sample
0026-209	G124-04	1	NA	07/24/0111:54	07/24/0110:45	FG07008A	FG07002A	DG10G07	Field Sample
0026-210	G124-05	1	NA	07/24/0112:07	07/24/0110:45	FG07009A	FG07002A	DG10G07	Field Sample
0026-210DL	G124-05T	10	NA	07/24/0112:24	07/24/0110:45	FG07010A	FG07002A	DG10G07	Diluted Sample

FN - Filename
DCC - Daily Continuing Calibration
% Moist - Percent Moisture

SAMPLE RESULTS

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/20/01
P ct	: CAMP PENDLETON, CTO26	Date Received:	07/20/01
L No.	: 01G124	Date Extracted:	07/24/01 10:45
Sample ID:	0026-207	Date Analyzed:	07/24/01 11:29
Lab Samp ID:	G124-02	Dilution Factor:	1
Lab File ID:	FG07006A	Matrix	: WATER
Ext Btch ID:	DG10G07	% Moisture	: NA
Calib. Ref.:	FG07002A	Instrument ID	: GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	1.4	1	.26
ETHYLENE	1	1	.18
METHANE	.66J	1	.26

RL: Reporting Limit

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/20/01
Project	: CAMP PENDLETON, CT026	Date Received:	07/20/01
Lab No.	: 01G124	Date Extracted:	07/24/01 10:45
Sample ID	: 0026-208	Date Analyzed:	07/24/01 11:41
Lab Samp ID	: G124-03	Dilution Factor:	1
Lab File ID	: FG07007A	Matrix	: WATER
Ext Btch ID	: DG10G07	% Moisture	: NA
Calib. Ref.	: FG07002A	Instrument ID	: GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	ND	1	.18
METHANE	8.9	1	.26

RL: Reporting Limit

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/20/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/20/01
No.	: 01G124	Date Extracted:	07/24/01 10:45
Sample ID	: 0026-209	Date Analyzed:	07/24/01 11:54
Lab Samp ID	: G124-04	Dilution Factor:	1
Lab File ID	: FG07008A	Matrix	: WATER
Ext Btch ID	: DG10G07	% Moisture	: NA
Calib. Ref.	: FG07002A	Instrument ID	: GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	11	1	.26
ETHYLENE	8.3	1	.18
METHANE	2.9	1	.26

RL: Reporting Limit

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/20/01
P ct	: CAMP PENDLETON, CTO26	Date Received:	07/20/01
No.	: 01G124	Date Extracted:	07/24/01 10:45
Sample ID:	0026-210	Date Analyzed:	07/24/01 12:07
Lab Samp ID:	G124-05	Dilution Factor:	1
Lab File ID:	FG07009A	Matrix :	WATER
Ext Btch ID:	DG10G07	% Moisture :	NA
Calib. Ref.:	FG07002A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	ND	1	.18
METHANE	140E	1	.26

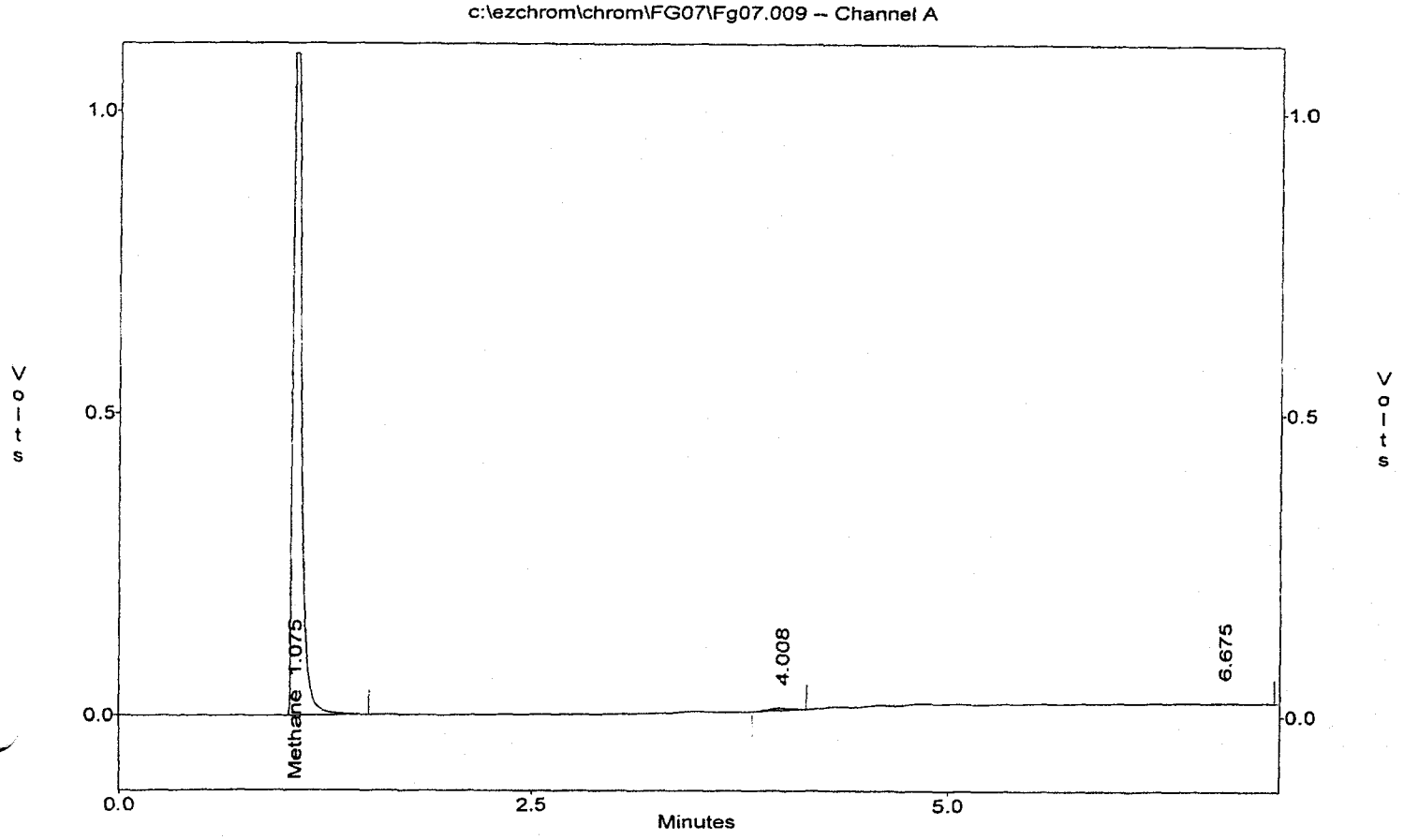
RL: Reporting Limit
E : Exceeded calibration range

EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\FG07\Fg07.009
Method : c:\ezchrom\methods\Dg10f15.met
Sample ID : 01G124-05
Acquired : Jul 24, 2001 12:07:06
Printed : Jul 24, 2001 12:14:07
User : SHAWN

Channel A Results

#	Peak Name	Ret. Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	1.075	4092971.0	30300.31	135.08
--	Ethylene	2.683	0.0	0.00	0.00
--	Ethane	3.175	0.0	0.00	0.00
--	Propane	6.258	0.0	0.00	0.00



6008

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/20/01
Project	: CAMP PENDLETON, CT026	Date Received:	07/20/01
Batch No.	: 01G124	Date Extracted:	07/24/01 10:45
Sample ID	: 0026-210DL	Date Analyzed:	07/24/01 12:24
Lab Samp ID	: G124-05T	Dilution Factor:	10
Lab File ID	: FG07010A	Matrix	: WATER
Ext Btch ID	: DG10G07	% Moisture	: NA
Calib. Ref.	: FG07002A	Instrument ID	: GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	10	2.6
ETHYLENE	ND	10	1.8
METHANE	270	10	2.6

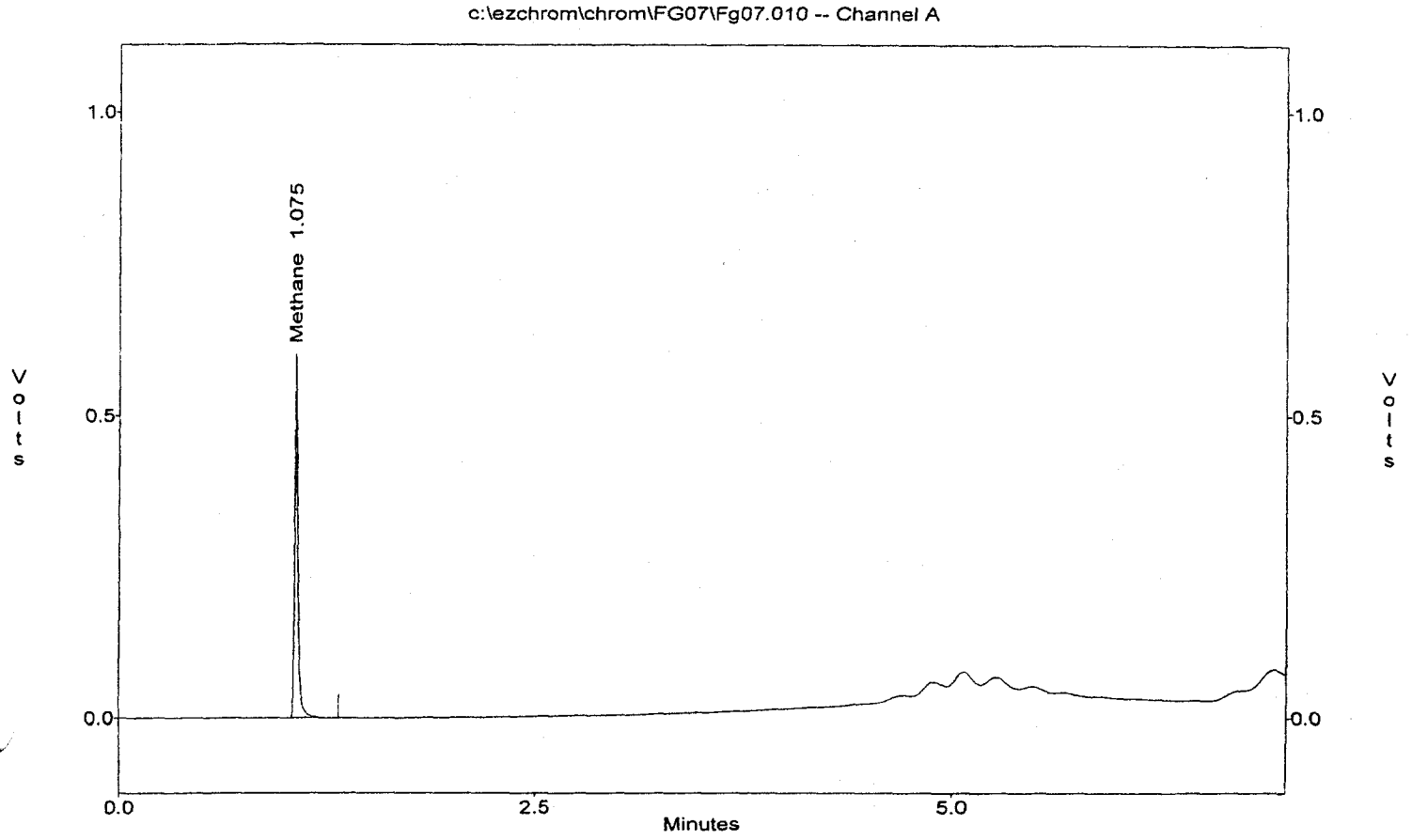
RL: Reporting Limit

EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\FG07\Fg07.010
Method : c:\ezchrom\methods\Dg10f15.met
Sample ID : 01G124-05T DF=10
Acquired : Jul 24, 2001 12:24:33
Printed : Jul 24, 2001 12:31:35
User : SHAWN

Channel A Results

#	Peak Name	Ret. Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	1.075	821252.0	30300.31	271.04
--	Ethylene	2.683	0.0	0.00	0.00
--	Ethane	3.175	0.0	0.00	0.00
--	Propane	6.258	0.0	0.00	0.00



6010

QC DATA

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	NA
P ct	: CAMP PENDLETON, CTO26	Date Received:	07/24/01
No.	: 01G124	Date Extracted:	07/24/01 10:45
Sample ID:	MBLK1W	Date Analyzed:	07/24/01 10:48
Lab Samp ID:	DG10G07B	Dilution Factor:	1
Lab File ID:	FG07003A	Matrix :	WATER
Ext Btch ID:	DG10G07	% Moisture :	NA
Calib. Ref.:	FG07002A	Instrument ID :	GCTO10

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	ND	1	.18
METHANE	.33J	1	.26

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
[illegible] NO.: 01G124
[illegible]D: RSK-175

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DG10G07B	DG10G07L	DG10G07C		
LAB FILE ID:	FG07003A	FG07004A	FG07005A		
DATE EXTRACTED:	07/24/0110:45	07/24/0110:45	07/24/0110:45	DATE COLLECTED:	NA
DATE ANALYZED:	07/24/0110:48	07/24/0111:00	07/24/0111:14	DATE RECEIVED:	07/24/01
PREP. BATCH:	DG10G07	DG10G07	DG10G07		
CALIB. REF:	FG07002A	FG07002A	FG07002A		

ACCESSION:

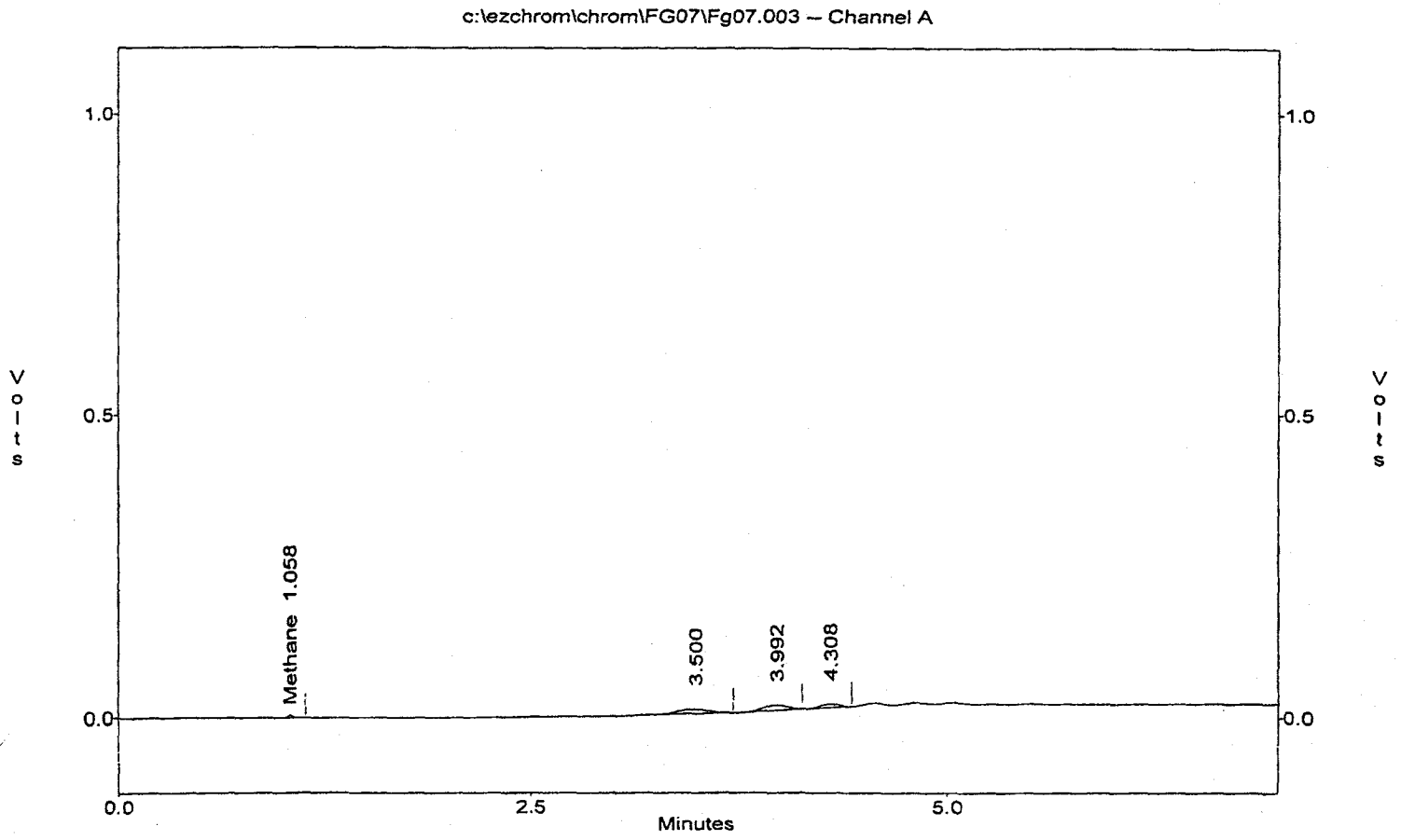
PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethane	ND	25.2	27.8	111	25.2	27.7	110	0	50-150	20
Ethylene	ND	23.6	24.8	105	23.6	25	106	1	50-150	20
Methane	.333J	13.6	12.8	92	13.6	12.7	91	0	50-150	20

EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\FG07\Fg07.003
Method : c:\ezchrom\methods\Dg10f15.met
Sample ID : DG10G07B
Acquired : Jul 24, 2001 10:48:08
Printed : Jul 24, 2001 10:55:09
User : SHAWN

Channel A Results

#	Peak Name	Ret. Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	1.058	10081.0	30300.31	0.33
--	Ethylene	2.683	0.0	0.00	0.00
--	Ethane	3.175	0.0	0.00	0.00
--	Propane	6.258	0.0	0.00	0.00

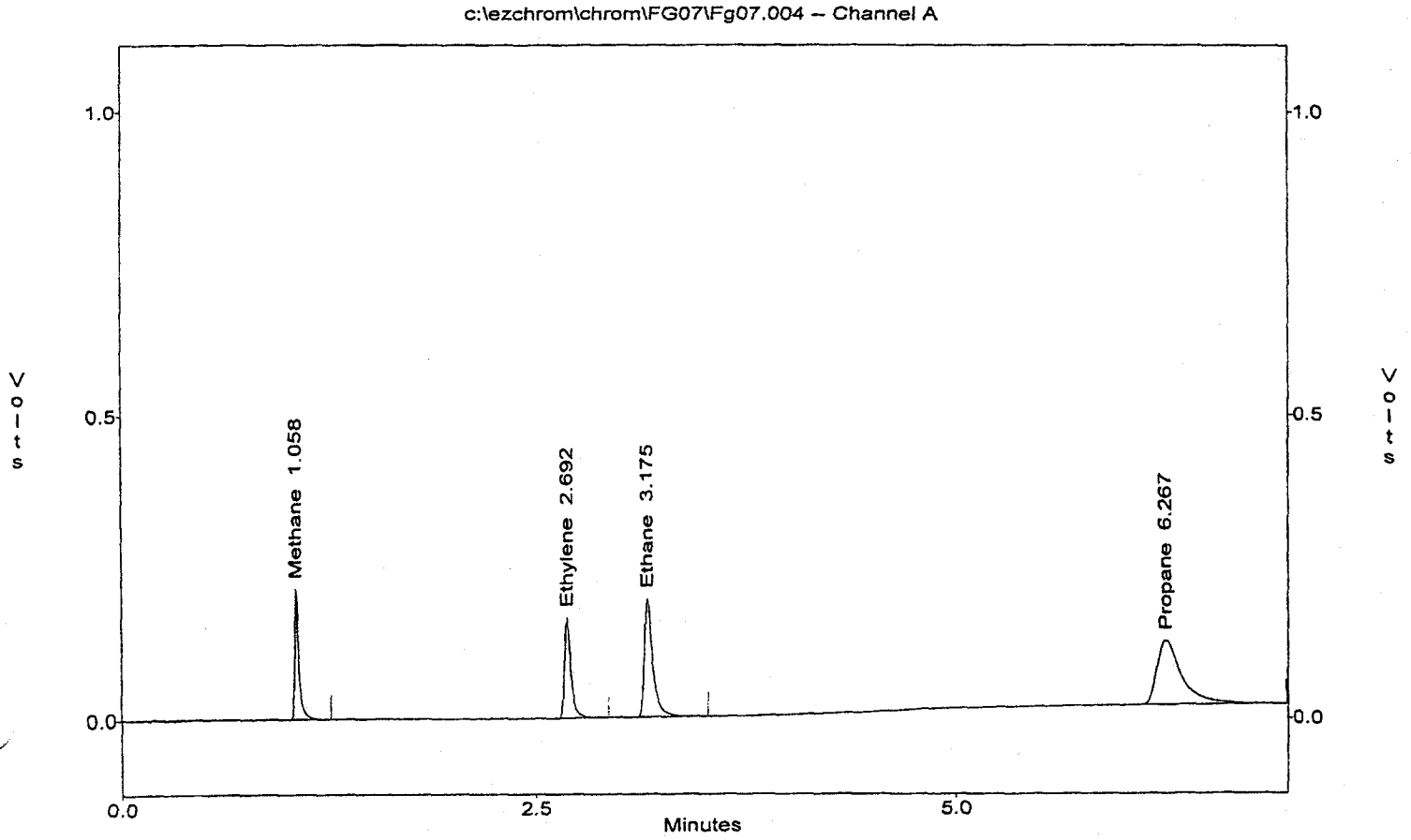


EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\FG07\Fg07.004
Method : c:\ezchrom\methods\Dg10f15.met
Sample ID : DG10G07L
Acquired : Jul 24, 2001 11:00:42
Printed : Jul 24, 2001 11:07:44
User : SHAWN

Channel A Results

#	Peak Name	Ret. Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	1.058	387229.0	30300.31	12.78
2	Ethylene	2.692	438720.0	17664.74	24.84
3	Ethane	3.175	693432.0	24901.01	27.85
4	Propane	6.267	1094646.0	25357.20	43.17

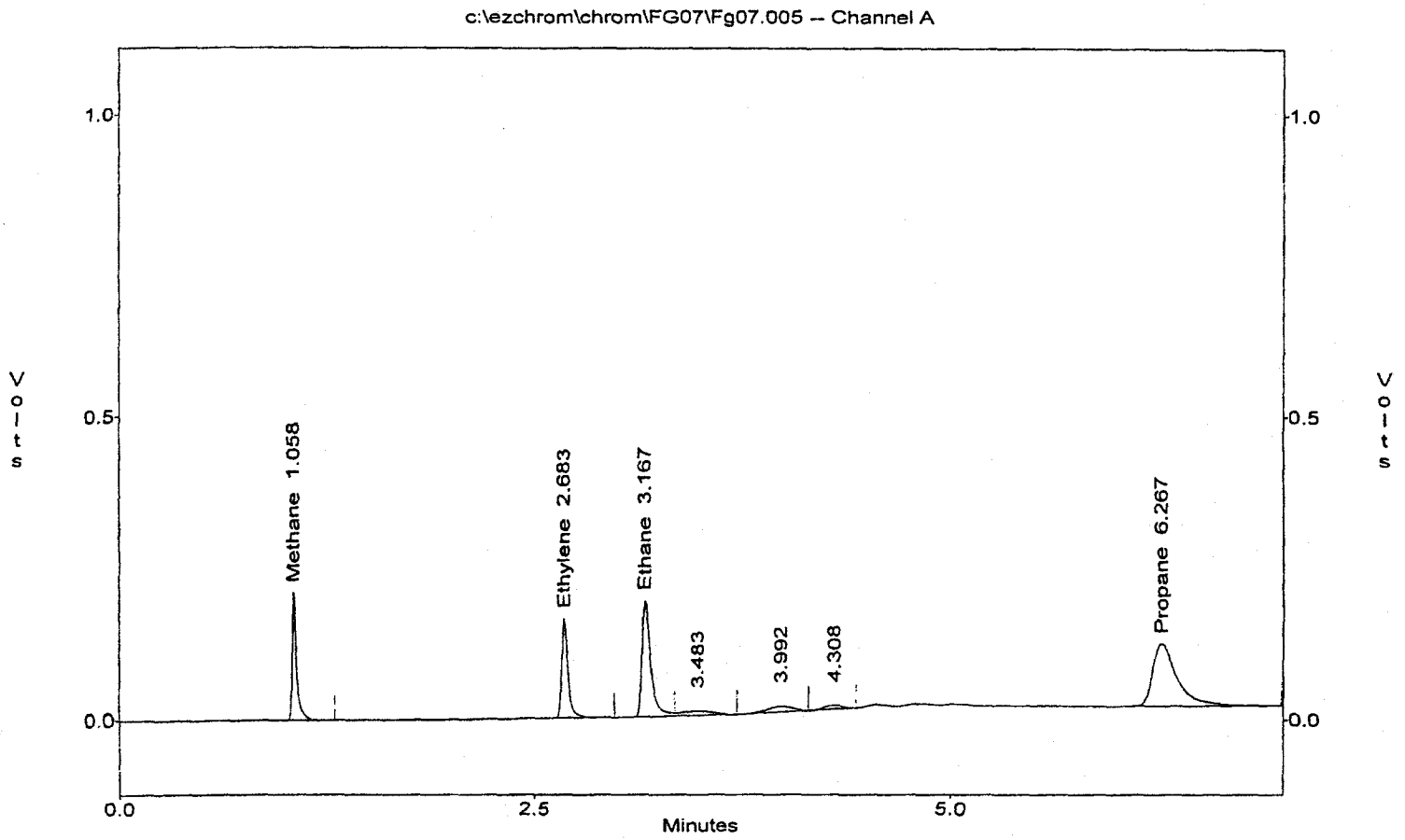


EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\FG07\Fg07.005
Method : c:\ezchrom\methods\Dg10f15.met
Sample ID : DG10G07C
Acquired : Jul 24, 2001 11:14:44
Printed : Jul 24, 2001 11:21:46
User : SHAWN

Channel A Results

#	Peak Name	Ret. Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	1.058	386186.0	30300.31	12.75
2	Ethylene	2.683	441540.0	17664.74	25.00
3	Ethane	3.167	690353.0	24901.01	27.72
7	Propane	6.267	1077359.0	25357.20	42.49



LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDELTON, CTO 26, SITE 1

WET CHEMICAL ANALYSES

SDG#: 01G124

8000

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO 26, UST SITE 1**

SDG: **01G124**

METHOD 310.1
TOTAL ALKALINITY

Four (4) water samples were received on 07/20/01 for Alkalinity analysis by Method 310.1 in accordance with "Methods for Chemical Analysis of Water & Wastewater", EPA 600/4-79-020, 1983.

1. Holding Time

   Analysis met holding time criteria.

2. Method Blank

   Method blank was free of contamination at reporting limit.

3. Lab Control Sample/Lab Control Sample Duplicate

   Lab control results were within the QC limit.

4. Duplicate

   No duplicate sample was analyzed for this SDG.

5. Matrix Spike

   No matrix spike sample was analyzed for this SDG.

6. Sample Analysis

   Sample analyses were performed within QC requirements. All requirements were met.

METH( ).1
TOTAL A. ..INITY

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G124

Matrix : WATER
Instrument ID : I53

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ALGO16WB	ND	1	NA	5	.469	07/31/0113:00	NA	ALGO16W-1	NA	ALGO16W	NA	NA
LCS1W	ALGO16WL	120	1	NA	5	.469	07/31/0113:05	NA	ALGO16W-2	NA	ALGO16W	NA	NA
LCD1W	ALGO16WC	118	1	NA	5	.469	07/31/0113:10	NA	ALGO16W-3	NA	ALGO16W	NA	NA
0026-207	G124-02	35.1	1	NA	5	.469	07/31/0113:15	NA	ALGO16W-4	NA	ALGO16W	07/20/01	07/20/01
0026-208	G124-03	40.1	1	NA	5	.469	07/31/0113:20	NA	ALGO16W-5	NA	ALGO16W	07/20/01	07/20/01
0026-209	G124-04	220	1	NA	5	.469	07/31/0113:25	NA	ALGO16W-6	NA	ALGO16W	07/20/01	07/20/01
0026-210	G124-05	215	1	NA	5	.469	07/31/0113:30	NA	ALGO16W-7	NA	ALGO16W	07/20/01	07/20/01

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CT026
METHOD: METHOD 310.1
MATRIX: WATER
% MOISTURE: NA

BATCH NO.: 01G124
SAMPLE ID: LCS1W/LCD1W
CONTROL NO.: ALG016WL/C

DATE RECEIVED: NA
DATE EXTRACTED: NA
DATE ANALYZED: 07/31/01 13:05/13:10

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD %	QC LIMIT %	RPD LIMIT %
Alkalinity	ND	118	120	102	118	118	100	2	80-120	20

8003

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO 26, UST SITE 1**

SDG: **01G124**

METHOD 9060
TOTAL ORGANIC CARBON

Four (4) water samples were received on 07/20/01 for TOC analysis by Method 9060 in accordance with "Test Method for Evaluating Solid Waste, Physical/Chemical Method" SW846 3rd ed.

1. Holding Time

   Analysis met holding time criteria.

2. Method Blank

   Method blank was free of contamination at reporting limit.

3. Lab Control Sample/Lab Control Sample Duplicate

   Lab control results were within the QC limit.

4. Duplicate

   No duplicate sample was analyzed for this SDG.

5. Matrix Spike

   No matrix spike sample was analyzed for this SDG.

6. Sample Analysis

   Sample analyses were performed within QC requirements. All requirements were met.

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CT026
Batch No. : 01G124

Matrix : WATER
Instrument ID : I026

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	TCG006WB	ND	1	NA	5	.551	08/06/0115:30	NA	TCG006W-7	TCG006W-5	TCG006W	NA	NA
LCS1W	TCG006WL	18.8	1	NA	5	.551	08/06/0115:40	NA	TCG006W-8	TCG006W-5	TCG006W	NA	NA
0026-207	G124-02	10.7	1	NA	5	.551	08/06/0115:50	NA	TCG006W-9	TCG006W-5	TCG006W	07/20/01	07/20/01
0026-208	G124-03	11	1	NA	5	.551	08/06/0116:00	NA	TCG006W-10	TCG006W-5	TCG006W	07/20/01	07/20/01
0026-209	G124-04	87.6	2	NA	10	1.1	08/06/0116:10	NA	TCG006W-11	TCG006W-5	TCG006W	07/20/01	07/20/01
0026-210	G124-05	15.9	1	NA	5	.551	08/06/0116:20	NA	TCG006W-12	TCG006W-5	TCG006W	07/20/01	07/20/01

RL : Reporting Limit

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
METHOD: METHOD 9060
MATRIX: WATER
% MOISTURE: NA

==========

BATCH NO.: 01G124
SAMPLE ID: LCS1W
CONTROL NO.: TCG006WL

DATE RECEIVED: NA
DATE EXTRACTED: NA
DATE ANALYZED: 08/06/01 15:40

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	LCS RSLT (mg/L)	LCS % REC	QC LIMIT (%)
TOC	ND	20	18.8	94	80-120

8007

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO26 UST SITE 1**

SDG: **01G124**

METHOD 300.0
ANIONS

Four (4) water samples were received on 07/20/01 for Anions analysis by Method 300.0 in accordance with "Methods for Determination of Inorganic Anions by Ion Chromatography" EPA 600/84-017.

1. Holding Time

   Analyses met holding time criteria.

2. Method Blank

   Method blanks were free of contamination at reporting limit.

3. Lab Control Sample

   Lab control results were within QC limit.

4. Duplicate

   Duplicate sample was not analyzed in this SDG.

5. Matrix Spike

   Matrix sample was not analyzed in this SDG.

6. Sample Analysis

   Sample analyses were performed within QC requirements. All requirements were met. Nitrate result was reported as nitrogen concentration.

SAMPLE RESULTS

8010

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Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G124

Matrix : WATER
Instrument ID : TI006

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICG042WB	ND	1	NA	.2	.047	08/06/0116:44	NA	AH06003A	AH06001A	ICG042W	NA	NA
LCS1W	ICG042WL	5.03	1	NA	.2	.047	08/06/0117:01	NA	AH06004A	AH06001A	ICG042W	NA	NA
0026-207	G124-02	2440	1000	NA	200	47	08/06/0120:46	NA	AH06017A	AH06013A	ICG042W	07/20/01	07/20/01
0026-208	G124-03	5210	1000	NA	200	47	08/06/0121:03	NA	AH06018A	AH06013A	ICG042W	07/20/01	07/20/01
0026-209	G124-04	4510	1000	NA	200	47	08/06/0121:20	NA	AH06019A	AH06013A	ICG042W	07/20/01	07/20/01
0026-210	G124-05	2410	1000	NA	200	47	08/06/0121:37	NA	AH06020A	AH06013A	ICG042W	07/20/01	07/20/01

RL : Reporting Limit

METHO .0
NITR -N

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G124

Matrix : WATER
Instrument ID : TI006

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICG025WB	ND	1	NA	.1	.0206	07/21/0100:34	NA	AG21025A	AG21001A	ICG025W	NA	NA
LCS1W	ICG025WL	2.21	1	NA	.1	.0206	07/21/0100:51	NA	AG21026A	AG21001A	ICG025W	NA	NA
0026-207	G124-02	12.4	5	NA	.5	.103	07/21/0102:50	NA	AG21033A	AG21027A	ICG025W	07/20/01	07/20/01
0026-208	G124-03	.213	1	NA	.1	.0206	07/21/0101:59	NA	AG21030A	AG21027A	ICG025W	07/20/01	07/20/01
0026-209	G124-04	.087J	1	NA	.1	.0206	07/21/0102:16	NA	AG21031A	AG21027A	ICG025W	07/20/01	07/20/01
0026-210	G124-05	11.5	5	NA	.5	.103	07/21/0103:24	NA	AG21035A	AG21027A	ICG025W	07/20/01	07/20/01

RL: Reporting Limit

METHO[illegible]0.0
SU[illegible]

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G124

Matrix : WATER
Instrument ID : TI006

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICG042WB	ND	1	NA	.5	.101	08/06/0116:44	NA	AH06003A	AH06001A	ICG042W	NA	NA
LCS1W	ICG042WL	10.7	1	NA	.5	.101	08/06/0117:01	NA	AH06004A	AH06001A	ICG042W	NA	NA
0026-207	G124-02	753	1000	NA	500	101	08/06/0120:46	NA	AH06017A	AH06013A	ICG042W	07/20/01	07/20/01
0026-208	G124-03	688	1000	NA	500	101	08/06/0121:03	NA	AH06018A	AH06013A	ICG042W	07/20/01	07/20/01
0026-209	G124-04	360J	1000	NA	500	101	08/06/0121:20	NA	AH06019A	AH06013A	ICG042W	07/20/01	07/20/01
0026-210	G124-05	727	1000	NA	500	101	08/06/0121:37	NA	AH06020A	AH06013A	ICG042W	07/20/01	07/20/01

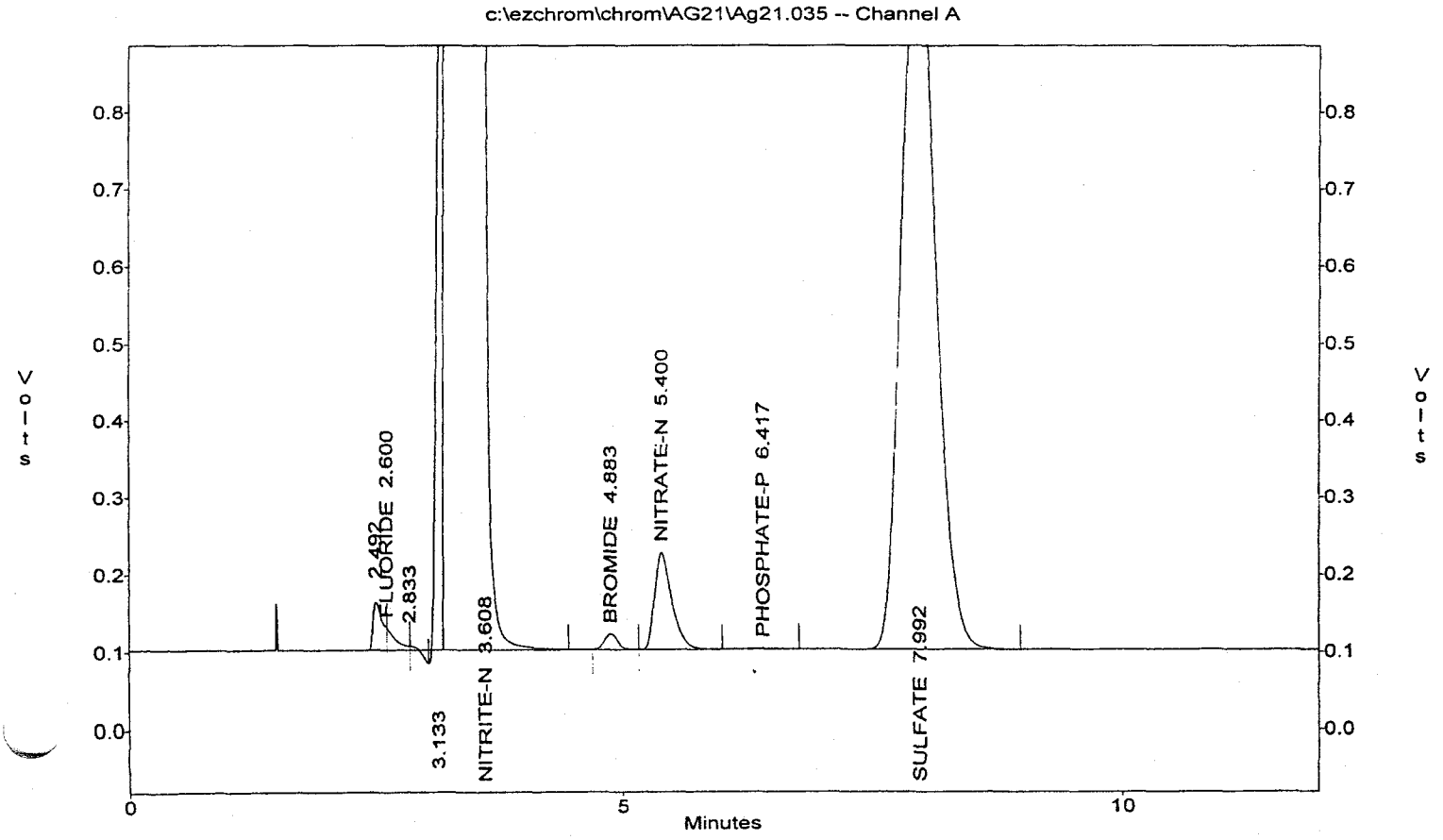
RL : Reporting Limit

EPA METHOD 300.0 by IC
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\AG21\Ag21.035
Method : c:\ezchrom\methods\Ic22g03.met
Sample ID : G124-05 DF=5
Acquired : Jul 21, 2001 03:24:31
Printed : Jul 21, 2001 03:41:33
User : HOA

Channel A Results

#	Peak Name	Ret.Time(min)	Height	Ave. CF	ESTD Conc.(ppm)
2	FLUORIDE	2.60	28609	91871.969	1.358
--	CHLORIDE	3.30	0	0.000	0.000
5	NITRITE-N	3.61	998818	91761.969	47.864
6	BROMIDE	4.88	20234	13496.300	7.254
7	NITRATE-N	5.40	125582	50027.531	11.476 ✓
8	PHOSPHATE-P	6.42	1247	13033.267	0.473
9	SULFATE	7.99	944756	8860.100	548.519



8014

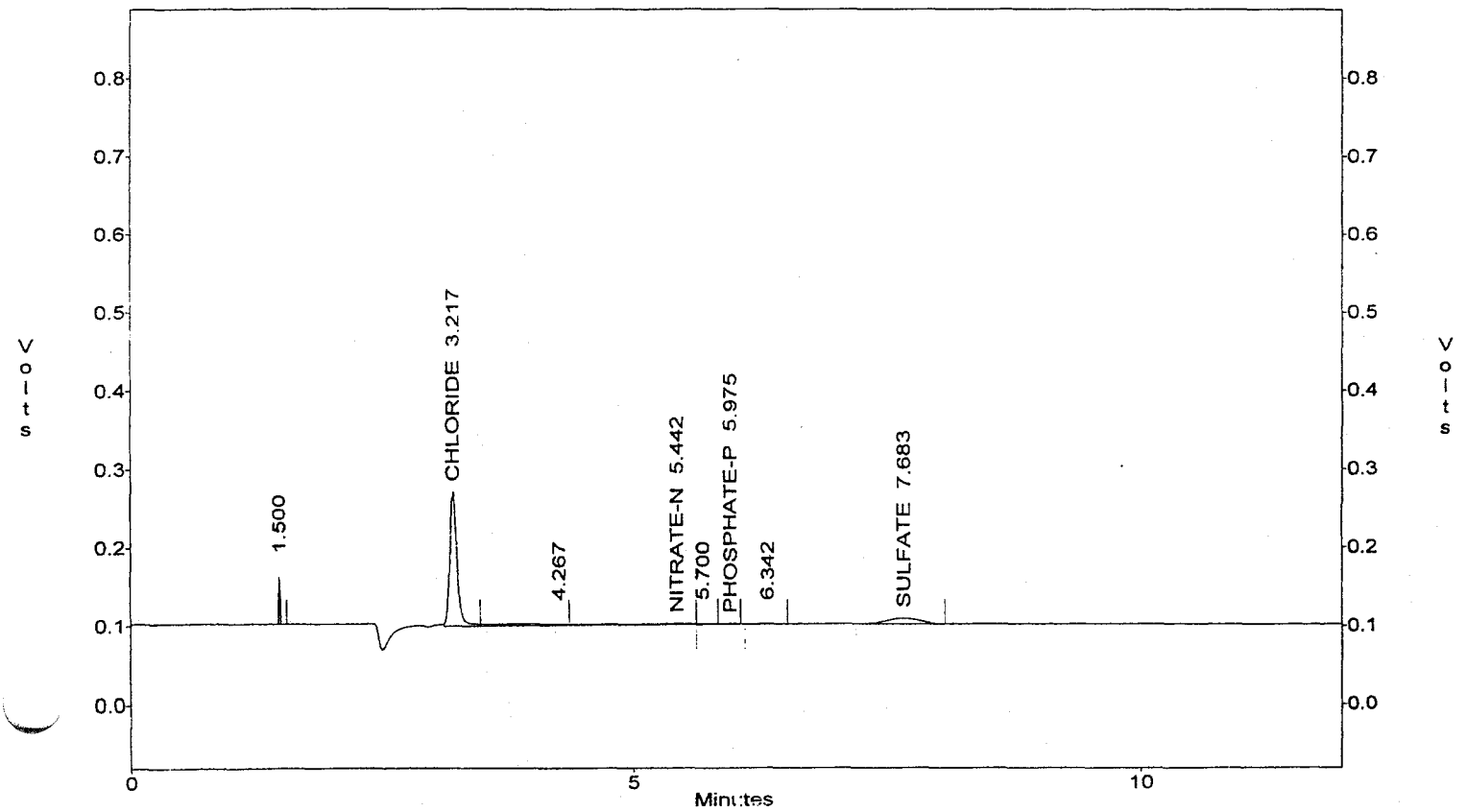
EPA METHOD 300.0 by IC
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\Ah06\Ah06.020
hod : c:\ezchrom\methods\Ic22g05.met
ample ID : G124-05 DF=1000
Acquired : Aug 06, 2001 21:37:21
Printed : Aug 06, 2001 21:54:23
User : ANNA

Channel A Results

#	Peak Name	Ret.Time(min)	Height	Ave. CF	ESTD Conc.(ppm)	
--	FLUORIDE	2.60	0	0.000	0.000	
2	CHLORIDE	3.22	170859	71575.219	2410.031	✓
--	NITRITE-N	3.60	0	0.000	0.000	
--	BROMIDE	4.80	0	0.000	0.000	
4	NITRATE-N	5.44	1570	66497.602	24.765	
6	PHOSPHATE-P	5.97	616	14479.667	41.396	
8	SULFATE	7.68	7081	9758.033	726.592	✓

c:\ezchrom\chrom\Ah06\Ah06.020 -- Channel A



8015

QC SUMMARY

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

ENT: FOSTER WHEELER
JECT: CAMP PENDLETON, CTO26
CH NO.: 01G124
HOD: METHOD 300.0

==========

TRIX: WATER % MOISTURE: NA
LUTION FACTOR: 1 1
PLE ID: MBLK1W
B SAMP ID: ICG042WB ICG042WL
B FILE ID: AH06003A AH06004A
TE EXTRACTED: NA NA DATE COLLECTED: NA
TE ANALYZED: 08/06/0116:44 08/06/0117:01 DATE RECEIVED: NA
EP. BATCH: ICG042W ICG042W
LIB. REF: AH06001A AH06001A

CESSION:

RAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	QC LIMIT (%)
loride-Cl	ND	5	5.03	101	80-120

8017

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

IENT: FOSTER WHEELER
OJECT: CAMP PENDLETON, CTO26
ICH NO.: 01G124
THOD: METHOD 300.0

==========

TRIX: WATER % MOISTURE: NA
LUTION FACTOR: 1 1
MPLE ID: MBLK1W
B SAMP ID: ICG025WB ICG025WL
B FILE ID: AG21025A AG21026A
TE EXTRACTED: NA NA DATE COLLECTED: NA
TE ANALYZED: 07/21/0100:34 07/21/0100:51 DATE RECEIVED: NA
EP. BATCH: ICG025W ICG025W
LIB. REF: AG21001A AG21001A

CESSION:

RAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	QC LIMIT (%)
trate-N	ND	2	2.21	110	80-120

8018

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

IENT: FOSTER WHEELER
OJECT: CAMP PENDLETON, CTO26
TCH NO.: 01G124
THOD: METHOD 300.0

==========

TRIX: WATER % MOISTURE: NA
LUTION FACTOR: 1 1
MPLE ID: MBLK1W
B SAMP ID: ICG042WB ICG042WL
B FILE ID: AH06003A AH06004A
TE EXTRACTED: NA NA DATE COLLECTED: NA
TE ANALYZED: 08/06/0116:44 08/06/0117:01 DATE RECEIVED: NA
EP. BATCH: ICG042W ICG042W
LIB. REF: AH06001A AH06001A

CESSION:

RAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	QC LIMIT (%)
lfate	ND	10	10.7	107	80-120

8019

FOSTER WHEELER ENVIRONMENTAL CORPORATION
1230 Columbia Stre 540 San Diego, CA 92101 (619) 234-8696

NUMBER 02726

CHAIN-OF-CUSTODY R ORD

PROJECT NAME: VST SITE 1
PURCHASE ORDER NO.: 020848 TASK 4
PROJECT LOCATION: CAMP PENDLETON
PROJECT NO.: 1990.0260
SAMPLER NAME: TANIA TURPIN-KEASLER
SAMPLER SIGNATURE: [signature]
PROJECT CONTACT: SEVOR ALERKSON
AIRBILL NUMBER: COURIER
LABORATORY NAME: EMAX
LABORATORY ID (FOR LABORATORY): 01G130

Project Information Section
Do not submit to Laboratory

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B	TPH-D	EPA 300.0 (NITRATE)	RSK 175M (ETHANE, ETHENE, METHANE)	EPA 310.1 (ALKALINITY)	EPA 9060 (TOC)	TPH-G	EPA 418.1 (TRPH)	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
0026-210A	~~7/23/01~~ 1030	1030	3	X		W	10 day	X									SITE 1 TRIP BLANK	-	-	TB
0026-211	7/23/01	1145	12	X		W	10 day	X	X	X	X	X	X				SITE 1 MW8	-	-	REG
~~0026~~ 0026-212	7/23/01	1205	12	~~X~~	X	W	10 day	X	X	X	X	X	X				SITE 1 MW8	-	-	FD
0026-213	7/23/01	1410	~~12~~ 12	X		W	10 day	X	X	X	X	X	X	X	X	RUN MS/MSD ALL ANALYSES	SITE 1 MW19	-	-	REG
0026-214	7/23/01	1500	12	X		W	10 day	X	X	X	X	X	X				SITE 1 MW17	-	-	REG
0026-215	7/23/01	1600	14	X		W	10 day	X	X	X	X	X	X	X	X		SITE 1 ER	-	-	ER

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	7/23/01	[signature]
COMPANY: FWENC	TIME: 1650	COMPANY: EMAX
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: ____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:
3rd QUARTER
GW SAMPLING

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

695LA7

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO 26, UST SITE 1

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

SDG#: 01G130

4000

CASE NARRATIVE

CLIENT : FOSTER WHEELER

PROJECT : CAMP PENDLETON

SDG : 01G130

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE &TRAP

Sample received on 07/23/01 included five (5) water for Total Petroleum Hydrocarbons by Purge & Trap Analysis by method 5030B/M8015 in accordance with USEPA SW846 and Leaking Underground Fuel Tank (LUFT) Field Manual, SWRCB, Dept. of Health Services, CA (1988).

1. Holding Time

   Samples were analyzed within holding time.

2. Calibration

   A seven-point Initial Calibration curve was performed. Continuing Calibrations were carried out at 10-sample interval. All QC requirements were met.

3. Method Blank

   Method blank was free of contamination at reporting limit level.

4. Surrogate Recovery

   All surrogate recoveries were within QC limit.

5. Lab Control Sample/ Lab Control Sample Duplicate

   All recoveries were within QC limits.

6. Matrix Spike/Matrix Spike Duplicate

   Sample G130-04 was analyzed for MS/MSD. All recoveries were within QC limit.

7. Sample Analysis

   Samples were analyzed according to the prescribed QC procedures. All QC criteria were met. Sample was quantified from C6-C10.

LAB CHRONICLE
M8015V

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26

SDG NO. : 01G130
Instrument ID : GCT039

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	WATER Analysis DateTime	Extraction DateTime	Sample Data FN	DCC Data FN	Prep. Batch	Notes
MBLK1W	VA39G24B	1	NA	07/24/0114:35	07/24/0114:35	EG11004A	EG11002A	VA39G243	Method Blank
LCS1W	VA39G24L	1	NA	07/24/0115:09	07/24/0115:09	EG11005A	EG11002A	VA39G243	Lab Control Sample (LCS)
LCD1W	VA39G24C	1	NA	07/24/0115:42	07/24/0115:42	EG11006A	EG11002A	VA39G243	LCS Duplicate
0026-211	G130-02	1	NA	07/24/0122:23	07/24/0122:23	EG11018A	EG11015A	VA39G243	Field Sample
0026-212	G130-03	1	NA	07/24/0122:57	07/24/0122:57	EG11019A	EG11015A	VA39G243	Field Sample
0026-213	G130-04	1	NA	07/24/0123:30	07/24/0123:30	EG11020A	EG11015A	VA39G243	Field Sample
0026-214	G130-05	1	NA	07/25/0101:10	07/25/0101:10	EG11023A	EG11015A	VA39G243	Field Sample
0026-215	G130-06	1	NA	07/25/0101:43	07/25/0101:43	EG11024A	EG11015A	VA39G243	Field Sample
0026-213MS	G130-04M	1	NA	07/25/0100:03	07/25/0100:03	EG11021A	EG11015A	VA39G243	Matrix Spike Sample (MS)
0026-213MSD	G130-04S	1	NA	07/25/0100:37	07/25/0100:37	EG11022A	EG11015A	VA39G243	MS Duplicate (MSD)

FN - Filename
DCC - Daily Continuing Calibration
% Moist - Percent Moisture

SAMPLE RESULTS

METH 030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G130

Matrix : WATER
Instrument ID : GCT039

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	SURR (%)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	VA39G24B	ND	83	1	NA	.05	.012	07/24/0114:35	07/24/0114:35	EG11004A	EG11002A	VA39G243	NA	07/24/01
LCS1W	VA39G24L	.523	115	1	NA	.05	.012	07/24/0115:09	07/24/0115:09	EG11005A	EG11002A	VA39G243	NA	07/24/01
LCD1W	VA39G24C	.594	114	1	NA	.05	.012	07/24/0115:42	07/24/0115:42	EG11006A	EG11002A	VA39G243	NA	07/24/01
0026-211	G130-02	ND	82	1	NA	.05	.012	07/24/0122:23	07/24/0122:23	EG11018A	EG11015A	VA39G243	07/23/01	07/23/01
0026-212	G130-03	ND	82	1	NA	.05	.012	07/24/0122:57	07/24/0122:57	EG11019A	EG11015A	VA39G243	07/23/01	07/23/01
0026-213	G130-04	ND	86	1	NA	.05	.012	07/24/0123:30	07/24/0123:30	EG11020A	EG11015A	VA39G243	07/23/01	07/23/01
0026-214	G130-05	.22	84	1	NA	.05	.012	07/25/0101:10	07/25/0101:10	EG11023A	EG11015A	VA39G243	07/23/01	07/23/01
0026-215	G130-06	ND	78	1	NA	.05	.012	07/25/0101:43	07/25/0101:43	EG11024A	EG11015A	VA39G243	07/23/01	07/23/01
0026-213MS	G130-04M	.601	111	1	NA	.05	.012	07/25/0100:03	07/25/0100:03	EG11021A	EG11015A	VA39G243	07/23/01	07/23/01
0026-213MSD	G130-04S	.591	111	1	NA	.05	.012	07/25/0100:37	07/25/0100:37	EG11022A	EG11015A	VA39G243	07/23/01	07/23/01

RL : Reporting Limit

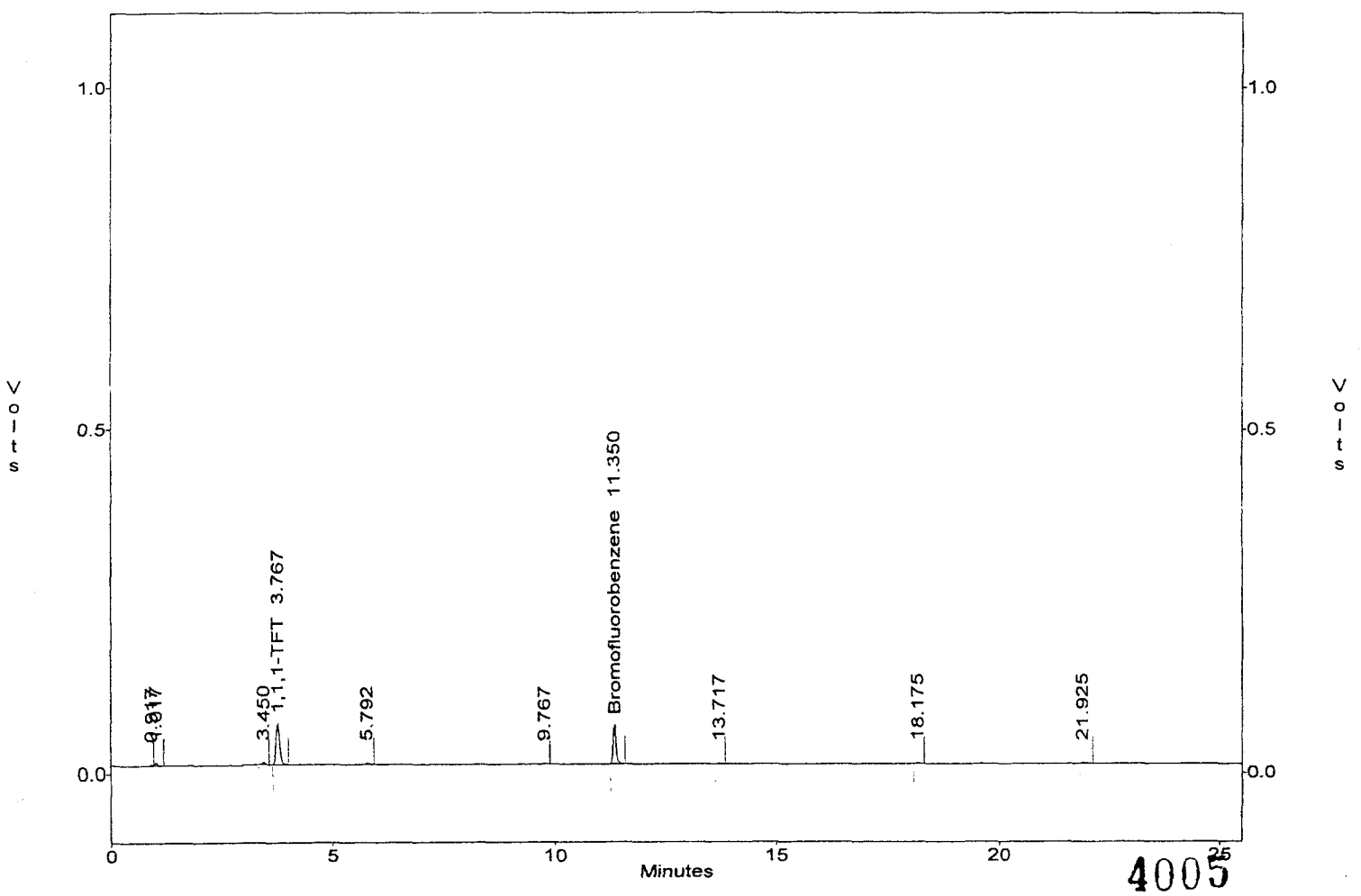
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\eg11\EG11.018
Method : c:\ezchrom\methods\vgr39g17.met
ple ID : 01G130-02 5.0ML W
uired : Jul 24, 2001 22:23:32
Printed : Jul 25, 2001 09:19:19
User : LUCY

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
4	1,1,1-TFT	3.767	364904.0	22518.4	16.20
7	Bromofluorobenzene	11.350	264295.0	16199.2	16.32
G1	GRO C6-C10		39830.0	13611.4	2.93

c:\ezchrom\chrom\eg11\EG11.018 -- Channel A

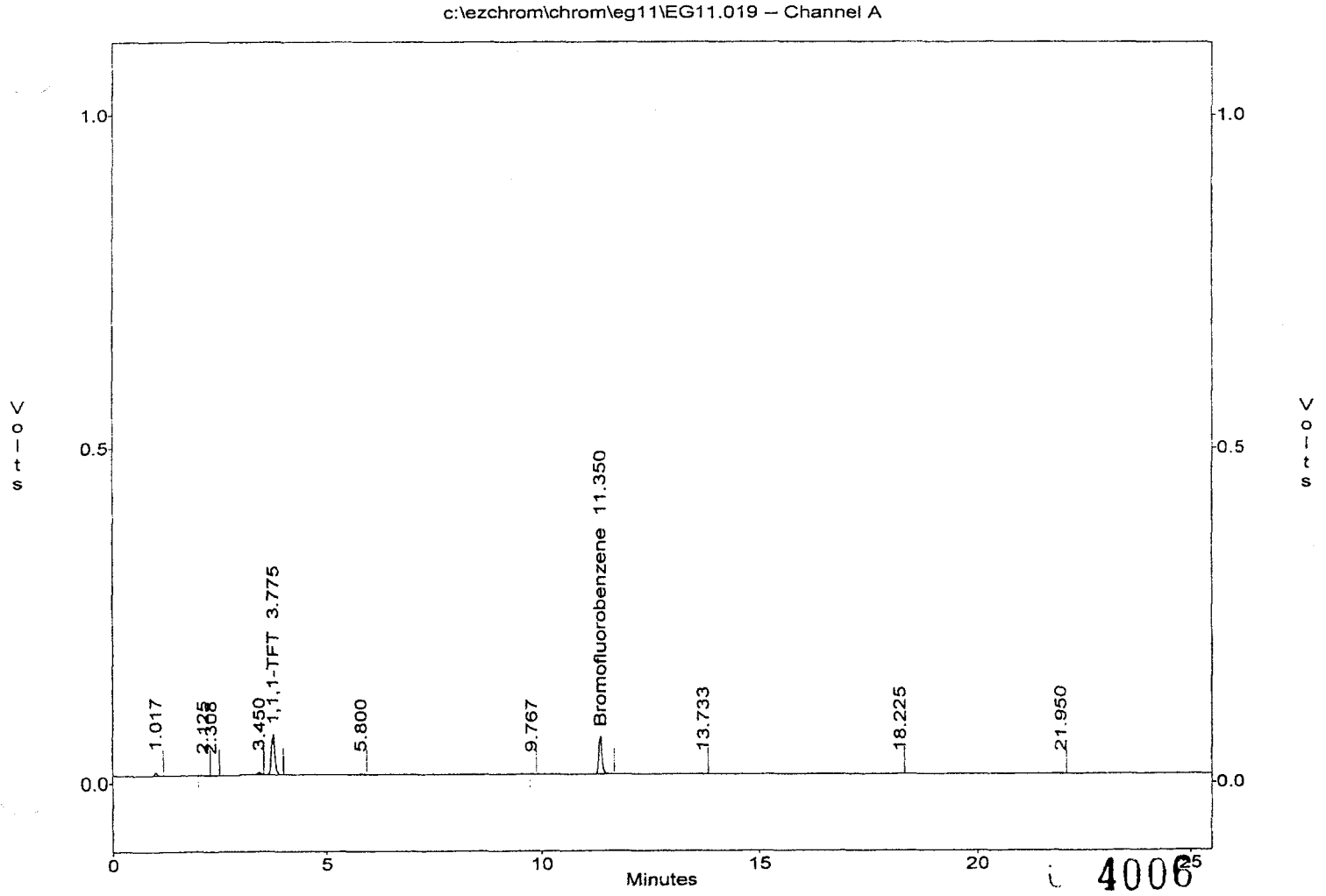


EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\eg11\EG11.019
Method : c:\ezchrom\methods\vgr39g17.met
Sample ID : 01G130-03 5.0ML W
Acquired : Jul 24, 2001 22:57:05
Printed : Jul 25, 2001 09:19:22
User : LUCY

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
5	1,1,1-TFT	3.775	357413.0	22518.4	15.87
8	Bromofluorobenzene	11.350	264308.0	16199.2	16.32
G1	GRO C6-C10		41241.0	13611.4	3.03



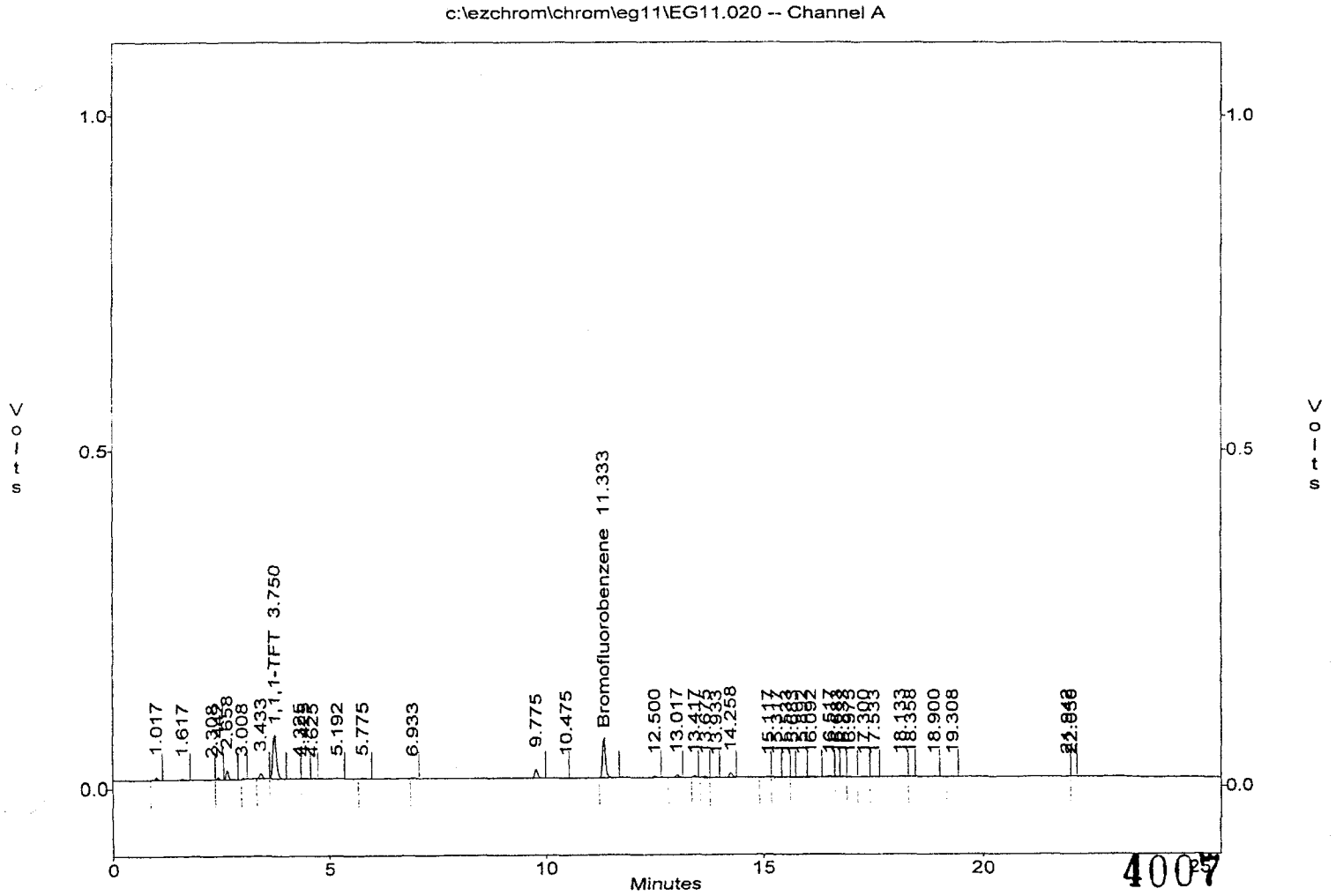
4006

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\eg11\EG11.020
Method : c:\ezchrom\methods\vgr39g17.met
Sample ID : 01G130-04 5.0ML W
Acquired : Jul 24, 2001 23:30:32
Printed : Jul 25, 2001 09:19:24
User : LUCY

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
8	1,1,1-TFT	3.750	388354.0	22518.4	17.25
17	Bromofluorobenzene	11.333	279887.0	16199.2	17.28
G1	GRO C6-C10		293720.0	13611.4	21.58



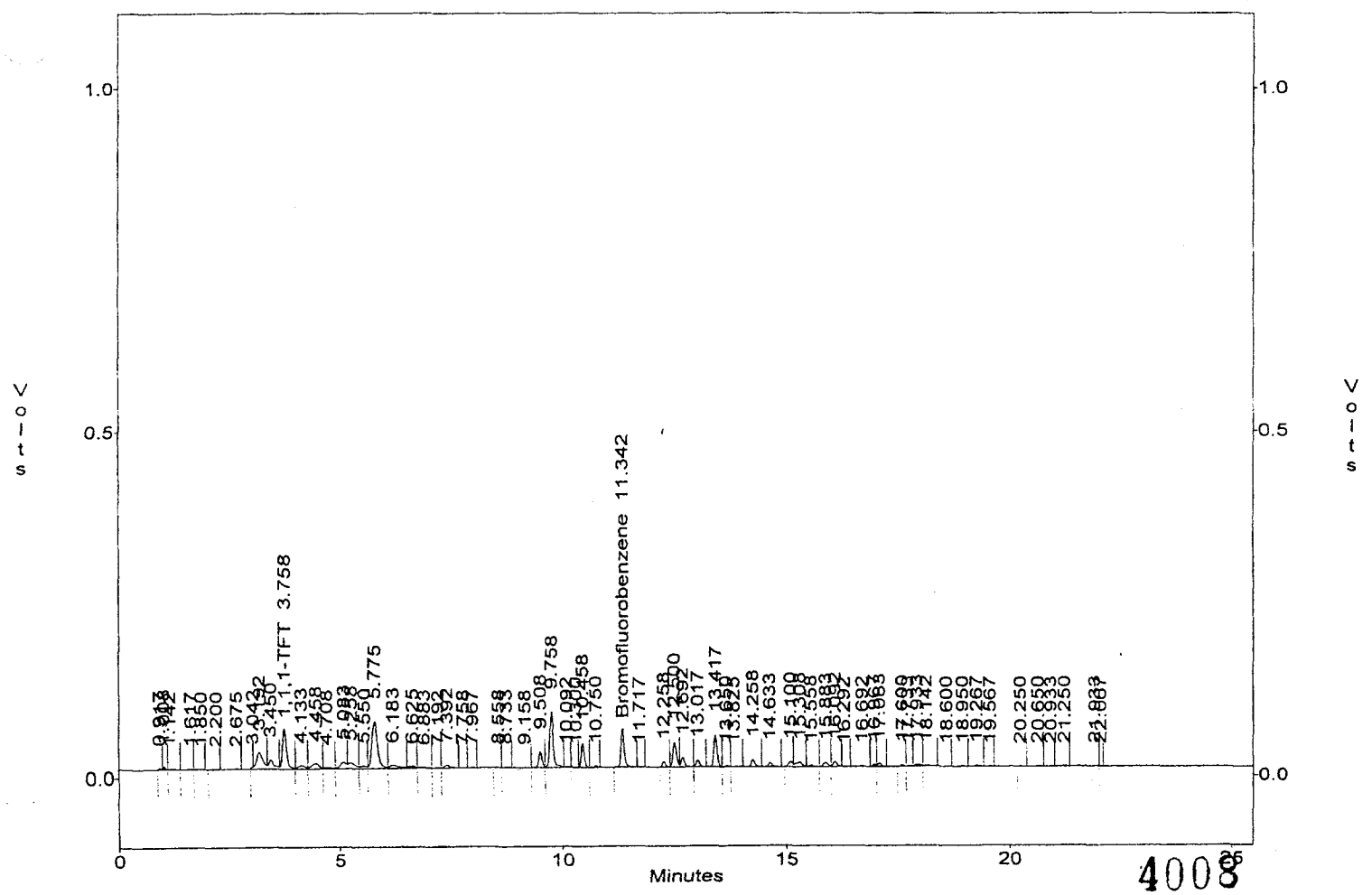
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\eg11\EG11.023
Method : c:\ezchrom\methods\vgr39g17.met
Sample ID : 01G130-05 5.0ML W
Acquired : Jul 25, 2001 01:10:22
Printed : Jul 25, 2001 09:19:32
User : LUCY

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
11	1,1,1-TFT	3.758	392815.0	22518.4	17.44
35	Bromofluorobenzene	11.342	273554.0	16199.2	16.89
G1	GRO C6-C10		2996204.0	13611.4	220.13

c:\ezchrom\chrom\eg11\EG11.023 -- Channel A



4008

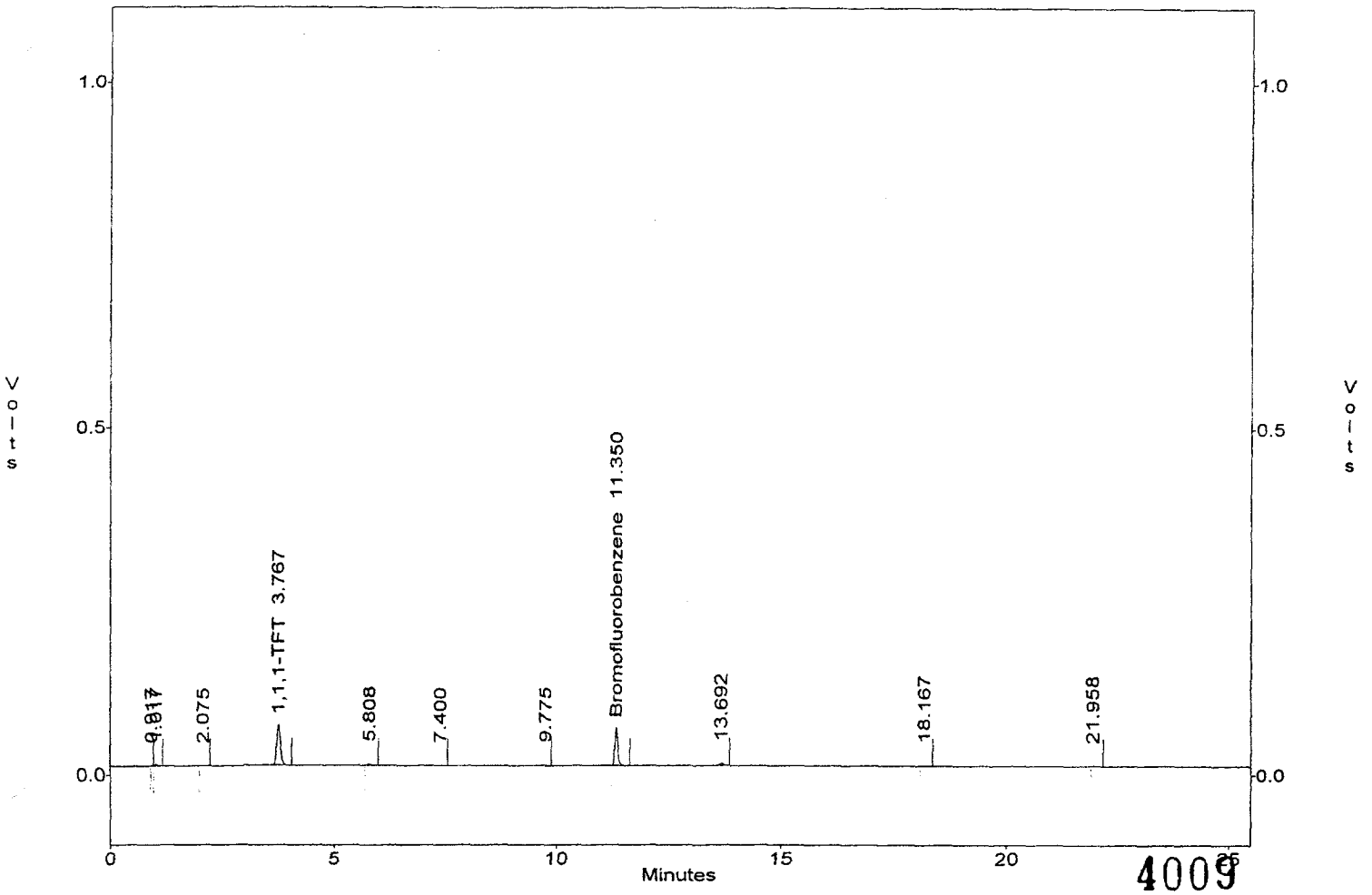
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\eg11\EG11.024
Method : c:\ezchrom\methods\vgr39g17.met
ple ID : 01G130-06 5.0ML W
uired : Jul 25, 2001 01:43:49
Printed : Jul 25, 2001 09:19:34
User : LUCY

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
4	1,1,1-TFT	3.767	350377.0	22518.4	15.56
8	Bromofluorobenzene	11.350	254158.0	16199.2	15.69
G1	GRO C6-C10		51888.0	13611.4	3.81

c:\ezchrom\chrom\eg11\EG11.024 -- Channel A



4009

QC SUMMARY

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BA[illegible] NO.: 01G130
M[illegible]: METHOD 5030B/M8015

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	VA39G24B	VA39G24L	VA39G24C		
LAB FILE ID:	EG11004A	EG11005A	EG11006A		
DATE EXTRACTED:	07/24/0114:35	07/24/0115:09	07/24/0115:42	DATE COLLECTED:	NA
DATE ANALYZED:	07/24/0114:35	07/24/0115:09	07/24/0115:42	DATE RECEIVED:	07/24/01
PREP. BATCH:	VA39G243	VA39G243	VA39G243		
CALIB. REF:	EG11002A✓	EG11002A	EG11002A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Gasoline	ND	.55	.523	95	.55	.594	108	13	65-135	30

SURROGATE PARAMETER	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	QC LIMIT (%)
Bromofluorobenzene	.02	.023	115	.02	.0228	114	65-135

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

ENT: FOSTER WHEELER
JECT: CAMP PENDLETON, CTO26
CH NO.: 01G130
HOD: METHOD 5030B/M8015

RIX:	WATER			% MOISTURE:	NA
UTION FACTOR:	1	1	1		
PLE ID:	0026-213				
SAMP ID:	G130-04	G130-04M	G130-04S		
FILE ID:	EG11020A	EG11021A	EG11022A		
E EXTRACTED:	07/24/0123:30	07/25/0100:03	07/25/0100:37	DATE COLLECTED:	07/23/01
E ANALYZED:	07/24/0123:30	07/25/0100:03	07/25/0100:37	DATE RECEIVED:	07/23/01
P. BATCH:	VA39G243	VA39G243	VA39G243		
IB. REF:	EG11015A	EG11015A	EG11015A		

CESSION:

RAMETER	SMPL RSLT (mg/L)	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	SPIKE AMT (mg/L)	MSD RSLT (mg/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
soline	.0216J	.55	.601	105	.55	.591	104	2	65-135	30

RROGATE PARAMETER	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	SPIKE AMT (mg/L)	MSD RSLT (mg/L)	MSD % REC	QC LIMIT (%)
omofluorobenzene	.02	.0223	111	.02	.0223	111	65-135

4012

6956AB

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO26, UST SITE 1

METHOD 3520/M8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 01G130

5008

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CT026**

SDG: **01G130**

METHOD 3520/M8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Two (2) water samples were received on 07/23/01 to be analyzed for Total Petroleum Hydrocarbons by Method 3520/M8015B in accordance with SW846 and Leaking Underground Fuel Tank (LUFT) Field Manual, SWRCB, Dept. of Health Service, CA (1988).

1. Holding Time

Analytical holding time was met.

2. Method Blank

There was no contamination detected at reporting level.

3. Lab Control Sample/Lab Control Sample Duplicate

All recoveries were within QC limits.

4. Surrogate Recovery

All recoveries were within QC limits.

5. Matrix Spike/Matrix Spike Duplicate

Sample G130-04 was analyzed for MS/MSD from this SDG. All recoveries were within QC limits.

6. Calibration

Initial calibration was seven points. Continue calibrations were carried out at 10 sample intervals. All QC requirements were met.

7. Sample Analysis

Samples were analyzed according to the prescribed QC procedures. Samples were quantified from C10-C24.

LAB CHRONICLE
M8015D

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CT026

SDG NO. : 01G130
Instrument ID : GCT050

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	WATER Analysis DateTime	Extraction DateTime	Sample Data FN	DCC Data FN	Prep. Batch	Notes
MBLK1W	DSG024WB	1	NA	07/25/0119:09	07/25/0115:00	TG08037A	TG08036A	DSG024W	Method Blank
LCS1W	DSG024WL	1	NA	07/25/0119:57	07/25/0115:00	TG08038A	TG08036A	DSG024W	Lab Control Sample (LCS)
LCD1W	DSG024WC	1	NA	07/25/0120:46	07/25/0115:00	TG08039A	TG08036A	DSG024W	LCS Duplicate
0026-213	G130-04	.94	NA	07/25/0122:24	07/25/0115:00	TG08041A	TG08036A	DSG024W	Field Sample
0026-213MS	G130-04M	.94	NA	07/25/0123:12	07/25/0115:00	TG08042A	TG08036A	DSG024W	Matrix Spike Sample (MS)
0026-213MSD	G130-04S	.94	NA	07/26/0100:01	07/25/0115:00	TG08043A	TG08036A	DSG024W	MS Duplicate (MSD)
0026-215	G130-06	.95	NA	07/26/0100:50	07/25/0115:00	TG08044A	TG08036A	DSG024W	Field Sample

FN - Filename
DCC - Daily Continuing Calibration
% Moist - Percent Moisture

SAMPLE RESULTS

METH 20/M8015B
TOTAL PETROLEUM CARBONS BY EXTRACTION

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CT026
Batch No. : 01G130

Matrix : WATER
Instrument ID : GCT050

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	SURR (%)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	DSG024WB	ND	94	1	NA	.1	.067	07/25/0119:09	07/25/0115:00	TG08037A	TG08036A	DSG024W	NA	07/25/01
LCS1W	DSG024WL	3.81	94	1	NA	.1	.067	07/25/0119:57	07/25/0115:00	TG08038A	TG08036A	DSG024W	NA	07/25/01
LCD1W	DSG024WC	3.85	93	1	NA	.1	.067	07/25/0120:46	07/25/0115:00	TG08039A	TG08036A	DSG024W	NA	07/25/01
0026-213	G130-04	ND	88	.94	NA	.094	.063	07/25/0122:24	07/25/0115:00	TG08041A	TG08036A	DSG024W	07/23/01	07/23/01
0026-213MS	G130-04M	3.64	88	.94	NA	.094	.063	07/25/0123:12	07/25/0115:00	TG08042A	TG08036A	DSG024W	07/23/01	07/23/01
0026-213MSD	G130-04S	3.85	90	.94	NA	.094	.063	07/26/0100:01	07/25/0115:00	TG08043A	TG08036A	DSG024W	07/23/01	07/23/01
0026-215	G130-06	ND	89	.95	NA	.095	.064	07/26/0100:50	07/25/0115:00	TG08044A	TG08036A	DSG024W	07/23/01	07/23/01

RL : Reporting Limit
SUR1 : Hexacosane

Parameter	H-C Range
JP5	C7 -C18
Diesel	C10-C24
Motor Oil	C18-C34
Gas	C6 -C12

5012

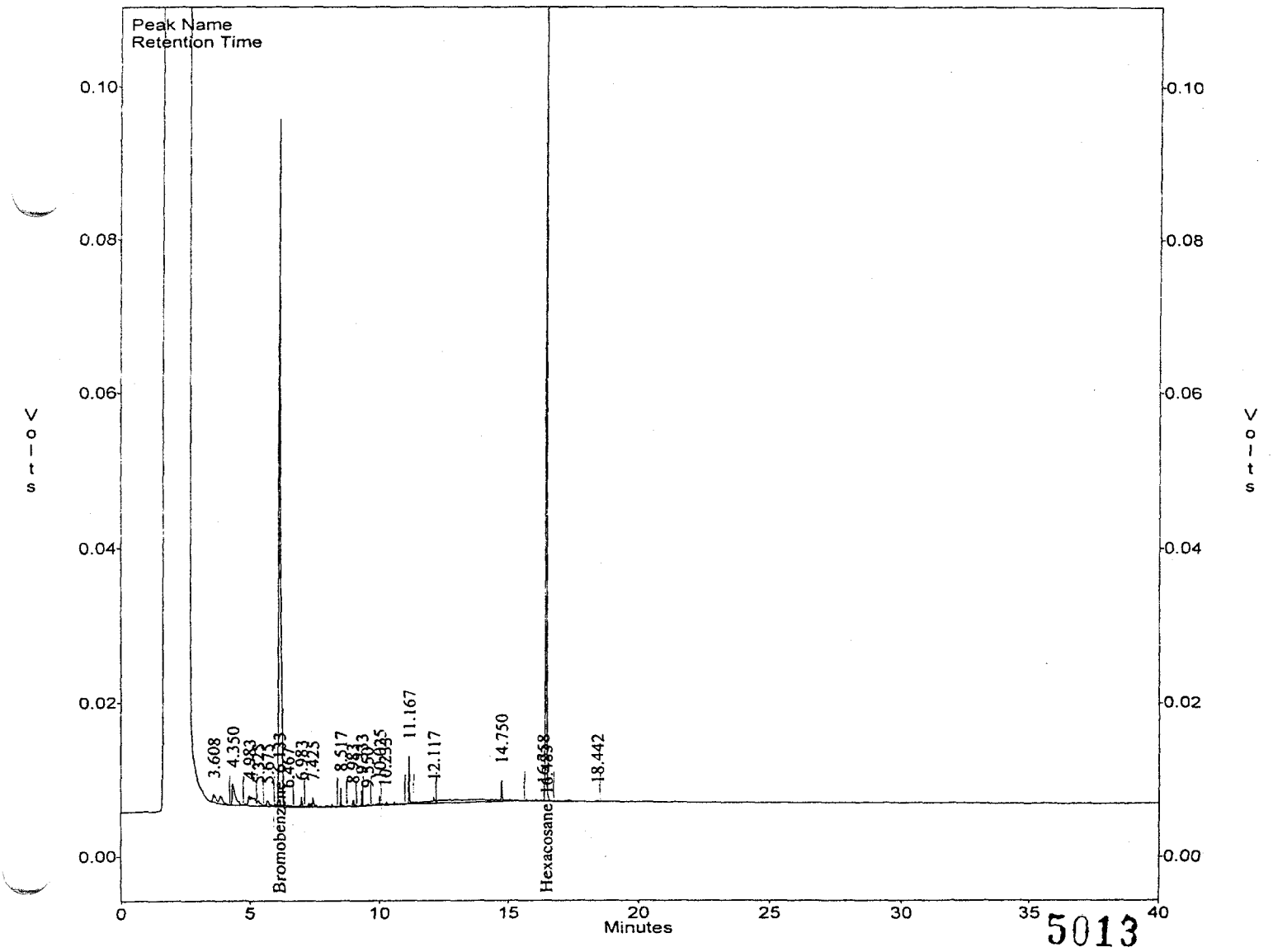
EPA METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\tg08\tg08.041
Method : c:\ezchrom\methods\ds50f25.met
Sample ID : 01G130-04
uired : Jul 25, 2001 22:24:03
nted : Aug 01, 2001 14:00:12
User : SHAWN

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
6	Bromobenzene	6.133	397766	4743.9	83.8
20	Hexacosane	16.483	352952	16045.0	22.0
G1	Diesel		73060	9582.9	7.6

c:\ezchrom\chrom\tg08\tg08.041 -- Channel A



5013

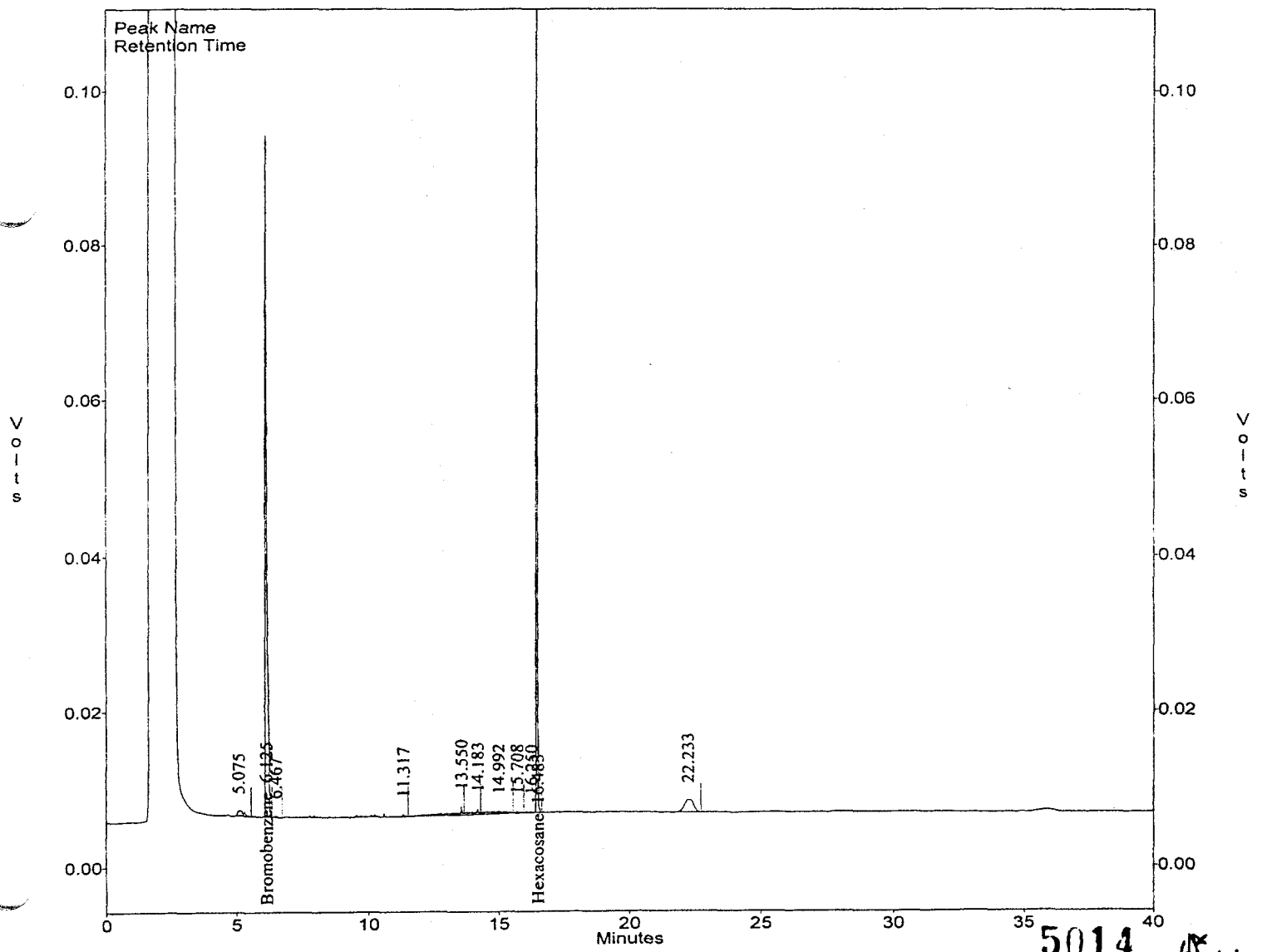
EPA METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\tg08\tg08.044
Method : c:\ezchrom\methods\ds50f25.met
Sample ID : 01G130-06
quired : Jul 26, 2001 00:50:12
inted : Aug 01, 2001 13:55:18
User : SHAWN

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
2	Bromobenzene	6.125	384985	4743.9	81.2
10	Hexacosane	16.483	355513	16045.0	22.2
G1	Diesel		46222	9582.9	4.8

c:\ezchrom\chrom\tg08\tg08.044 -- Channel A



5014

8/1/01

QC SUMMARY

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G130
METHOD: METHOD 3520/M8015B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DSG024WB	DSG024WL	DSG024WC		
LAB FILE ID:	TG08037A	TG08038A	TG08039A		
DATE EXTRACTED:	07/25/0115:00	07/25/0115:00	07/25/0115:00	DATE COLLECTED:	NA
DATE ANALYZED:	07/25/0119:09	07/25/0119:57	07/25/0120:46	DATE RECEIVED:	07/25/01
PREP. BATCH:	DSG024W	DSG024W	DSG024W		
CALIB. REF:	TG08036A	TG08036A	TG08036A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Diesel	ND	5	3.81	76	5	3.85	77	1	65-135	30

SURROGATE PARAMETER	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	QC LIMIT (%)
Hexacosane	.25	.235	94	.25	.232	93	65-135

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CT026
BATCH NO.: 01G130
D: METHOD 3520/M8015B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	.94	.94	.94		
SAMPLE ID:	0026-213				
LAB SAMP ID:	G130-04	G130-04M	G130-04S		
LAB FILE ID:	TG08041A	TG08042A	TG08043A		
DATE EXTRACTED:	07/25/0115:00	07/25/0115:00	07/25/0115:00	DATE COLLECTED:	07/23/01
DATE ANALYZED:	07/25/0122:24	07/25/0123:12	07/26/0100:01	DATE RECEIVED:	07/23/01
PREP. BATCH:	DSG024W	DSG024W	DSG024W		
CALIB. REF:	TG08036A	TG08036A	TG08036A		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	SPIKE AMT (mg/L)	MSD RSLT (mg/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Diesel	ND	4.72	3.64	77	4.72	3.85	82	6	65-135	30

SURROGATE PARAMETER	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	SPIKE AMT (mg/L)	MSD RSLT (mg/L)	MSD % REC	QC LIMIT (%)
Hexacosane	.236	.207	88	.236	.211	90	65-135

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO 26, UST SITE 1

METHOD 418.1
TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

6956A6

SDG#: 01G130

5000

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO 26, UST SITE 1**

SDG: **01G130**

METHOD 418.1
TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Two (2) water samples were received on 07/23/01 for total recoverable petroleum hydrocarbons analysis by Method 418.1 in accordance with "Methods for Chemical Analysis of Water & Wastewater", USEPA 600-79-020, 1983.

1. Holding Time

   Analysis met the holding time criteria.

2. Method Blank

   Method blank was free of contamination at reporting limit level.

3. Matrix Spike/Matrix Spike Duplicate

   G130-04 was spiked. Recoveries were within QC limit.

4. Lab Control Sample/Lab Control Sample Duplicate

   Lab control results were within QC limit.

5. Sample Analysis

   Sample analyses were performed within the QC requirements.

METHO 8.1
TOTAL RECOVERABLE LEUM HYDROCARBONS

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CT026
Batch No. : 01G130

Matrix : WATER
Instrument ID : I061

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	TRG007WB	ND	1	NA	10	.558	08/01/0111:40	07/31/0115:30	TRH001-03	TRH001CC	TRG007W	NA	07/31/01
LCS1W	TRG007WL	5.82J	1	NA	10	.558	08/01/0111:45	07/31/0115:30	TRH001-04	TRH001CC	TRG007W	NA	07/31/01
LCD1W	TRG007WC	5.82J	1	NA	10	.558	08/01/0111:50	07/31/0115:30	TRH001-05	TRH001CC	TRG007W	NA	07/31/01
0026-213	G130-04	ND	.96	NA	9.6	.536	08/01/0113:00	07/31/0115:30	TRH001-19	TRH002CC	TRG007W	07/23/01	07/23/01
0026-213MS	G130-04M	5.66J	.95	NA	9.5	.53	08/01/0113:05	07/31/0115:30	TRH001-20	TRH002CC	TRG007W	07/23/01	07/23/01
0026-213MSD	G130-04S	5.80J	.95	NA	9.5	.53	08/01/0113:10	07/31/0115:30	TRH001-21	TRH002CC	TRG007W	07/23/01	07/23/01
0026-215	G130-06	ND	.95	NA	9.5	.53	08/01/0113:15	07/31/0115:30	TRH001-22	TRH002CC	TRG007W	07/23/01	07/23/01

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
METHOD: METHOD 418.1
MATRIX: WATER
% MOISTURE: NA

BATCH NO.: 01G130
SAMPLE ID: LCS1W/LCD1W
CONTROL NO.: TRG007WL/C

DATE RECEIVED: 07/31/01
DATE EXTRACTED: 07/31/01 15:30
DATE ANALYZED: 08/01/01 11:45/11:50

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD %	QC LIMIT %	RPD LIMIT %
TRPH	ND	6	5.82J	97	6	5.82J	97	0	80-120	20

5003

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
METHOD: METHOD 418.1
MATRIX: WATER
% MOISTURE: NA

BATCH NO.: 01G130
SAMPLE ID: 0026-213MS/MSD
CONTROL NO.: G130-04M/S

DATE RECEIVED: 07/23/01
DATE EXTRACTED: 07/31/01 15:30
DATE ANALYZED: 08/01/01 13:05/13:10

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	SPIKE AMT (mg/L)	MSD RSLT (mg/L)	MSD % REC	RPD %	QC LIMIT %	RPD LIMIT %
TRPH	ND	6	5.66J	94	6	5.80J	97	2	80-120	20

5004

6956 A1

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO26, UST SITE 1

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

SDG#: 01G130

2000

CASE NARRATIVE

CLIENT: FOSTER WHEELER

PROJECT: CAMP PENDLETON, CTO 26, UST SITE 1

SDG: 01G130

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Six (6) water samples were received on 07/23/01 for Volatile Organic Analyses by Method 8260B in accordance with USEPA SW846, 3rd ed.

1. Holding Time

Analytical holding time was met.

2. Tuning and Calibration

Tuning and calibration were carried out at 12-hour interval. All QC requirements were met.

3. Method Blank

Method blanks were free of contamination at reporting limit level.

4. Lab Control Sample/Lab Control Sample Duplicate

All recoveries were within QC limits.

5. Surrogate Recovery

Recoveries were within QC limits.

6. Matrix Spike/Matrix Spike Duplicate

Sample G130-04 was spiked. Recoveries were within QC limit except Toluene and Trichloroethene in G130-04M; Benzene and Trichloroethene in G130-04S. Both MS/MSD were reanalyzed at DF 5 and only recovery of Trichloroethene in MS (G130-04U) was out of the limit.

7. Sample Analysis

Samples were analyzed according to the prescribed QC procedures. All requirements were met with the aforementioned exception.

Sample G130-04 and its MS/MSD were reanalyzed at DF 5 due to out of calibration range of 1,2-dichloroethane, benzene and T-butanol. All initial and dilution results were reported.

LAB CHRONIC
SW8260

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26

SDG NO. : 01G130
Instrument ID : T-003

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	DCC Data FN	Prep. Batch	Notes
MBLK1W	VO03G45Q	1	NA	07/30/0113:51	07/30/0113:51	RGB762	RGB757	VO03G45	Method Blank
LCS1W	VO03G45L	1	NA	07/30/0111:29	07/30/0111:29	RGB758	RGB757	VO03G45	Lab Control Sample (LCS)
LCD1W	VO03G45C	1	NA	07/30/0112:04	07/30/0112:04	RGB759	RGB757	VO03G45	LCS Duplicate
0026-210A	G130-01	1	NA	07/30/0114:27	07/30/0114:27	RGB763	RGB757	VO03G45	Field Sample
0026-211	G130-02	1	NA	07/30/0115:03	07/30/0115:03	RGB764	RGB757	VO03G45	Field Sample
0026-212	G130-03	1	NA	07/30/0115:38	07/30/0115:38	RGB765	RGB757	VO03G45	Field Sample
0026-213	G130-04	1	NA	07/30/0116:14	07/30/0116:14	RGB766	RGB757	VO03G45	Field Sample
0026-214	G130-05	1	NA	07/30/0116:57	07/30/0116:57	RGB767	RGB757	VO03G45	Field Sample
0026-215	G130-06	1	NA	07/30/0117:33	07/30/0117:33	RGB768	RGB757	VO03G45	Field Sample
0026-213MS	G130-04M	1	NA	07/30/0120:31	07/30/0120:31	RGB773	RGB757	VO03G45	Matrix Spike Sample (MS)
0026-213MSD	G130-04S	1	NA	07/30/0121:06	07/30/0121:06	RGB774	RGB757	VO03G45	MS Duplicate (MSD)
MBLK2W	VO03G47Q	1	NA	07/31/0122:11	07/31/0122:11	RGB807	RGB802	VO03G47	Method Blank
LCS2W	VO03G47L	1	NA	07/31/0119:49	07/31/0119:49	RGB803	RGB802	VO03G47	Lab Control Sample (LCS)
LCD2W	VO03G47Y	1	NA	07/31/0121:00	07/31/0121:00	RGB805	RGB802	VO03G47	LCS Duplicate
0026-213DL	G130-04T	5	NA	07/31/0122:46	07/31/0122:46	RGB808	RGB802	VO03G47	Diluted Sample
0026-213MS	G130-04U	5	NA	08/01/0103:30	08/01/0103:30	RGB816	RGB802	VO03G47	Matrix Spike Sample (MS)
0026-213MSD	G130-04V	5	NA	08/01/0104:06	08/01/0104:06	RGB817	RGB802	VO03G47	MS Duplicate (MSD)

FN - Filename
DCC - Daily Continuing Calibration
% Moist - Percent Moisture

Revised Report

2002

SAMPLE RESULTS

2003

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	07/23/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/23/01
Batch No.	: 01G130	Date Extracted:	07/30/01 14:27
Sample ID:	0026-210A	Date Analyzed:	07/30/01 14:27
Lab Samp ID:	G130-01	Dilution Factor:	1
Lab File ID:	RGB763	Matrix :	WATER
Ext Btch ID:	V003G45	% Moisture :	NA
Calib. Ref.:	RGB757	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	ND	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS [illegible]-DICHLOROETHENE	ND	5	.16
CIS [illegible]-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	2J	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	ND	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	87	62-139
TOLUENE-D8	96	75-125
BROMOFLUOROBENZENE	86	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

Revised Report

2004

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

lient	: FOSTER WHEELER	Date Collected:	07/23/01
roject	: CAMP PENDLETON, CT026	Date Received:	07/23/01
atch No.	: 01G130	Date Extracted:	07/30/01 15:03
ample ID:	0026-211	Date Analyzed:	07/30/01 15:03
ab Samp ID:	G130-02	Dilution Factor:	1
ab File ID:	RGB764	Matrix :	WATER
xt Btch ID:	V003G45	% Moisture :	NA
alib. Ref.:	RGB756	Instrument ID :	T-003

ARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
,1,1-TRICHLOROETHANE	ND	5	.42
,1,2,2-TETRACHLOROETHANE	ND	1	.19
,1,2-TRICHLOROETHANE	ND	5	.17
,1-DICHLOROETHANE	ND	5	.16
,1-DICHLOROETHENE	ND	5	.1
,2-DICHLOROETHANE	.83	.5	.21
,2-DICHLOROPROPANE	ND	5	.14
ETHYL ETHYL KETONE	ND	50	2.1
-HEXANONE	ND	50	1
-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
CETONE	ND	50	2.7
ENZENE	ND	.5	.15
ROMODICHLOROMETHANE	ND	5	.17
ROMOFORM	ND	5	.12
ROMOMETHANE	ND	5	.18
ARBON TETRACHLORIDE	.71	.5	.091
HLOROBENZENE	ND	5	.14
HLOROETHANE	ND	5	.43
HLOROFORM	2.2J	5	.41
HLOROMETHANE	ND	5	.24
IS-1,2-DICHLOROETHENE	ND	5	.16
IS-1,3-DICHLOROPROPENE	ND	.5	.21
IBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	ND	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	2.5J	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	90	62-139
TOLUENE-D8	96	75-125
BROMOFLUOROBENZENE	83	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

.ient	: FOSTER WHEELER	Date Collected:	07/23/01
·oject	: CAMP PENDLETON, CT026	Date Received:	07/23/01
atch No.	: 01G130	Date Extracted:	07/30/01 15:38
ample ID:	0026-212	Date Analyzed:	07/30/01 15:38
ab Samp ID:	G130-03	Dilution Factor:	1
ab File ID:	RGB765	Matrix :	WATER
xt Btch ID:	V003G45	% Moisture :	NA
alib. Ref.:	RGB756	Instrument ID :	T-003

ARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
,1,1-TRICHLOROETHANE	ND	5	.42
,1,2,2-TETRACHLOROETHANE	ND	1	.19
,1,2-TRICHLOROETHANE	ND	5	.17
,1-DICHLOROETHANE	ND	5	.16
,1-DICHLOROETHENE	ND	5	.1
,2-DICHLOROETHANE	.84	.5	.21
,2-DICHLOROPROPANE	ND	5	.14
ETHYL ETHYL KETONE	ND	50	2.1
-HEXANONE	ND	50	1
-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
CETONE	ND	50	2.7
ENZENE	ND	.5	.15
ROMODICHLOROMETHANE	ND	5	.17
ROMOFORM	ND	5	.12
ROMOMETHANE	ND	5	.18
ARBON TETRACHLORIDE	.69	.5	.091
HLOROBENZENE	ND	5	.14
HLOROETHANE	ND	5	.43
HLOROFORM	2.2J	5	.41
HLOROMETHANE	ND	5	.24
IS-1,2-DICHLOROETHENE	ND	5	.16
IS-1,3-DICHLOROPROPENE	ND	.5	.21
IBROMOCHLOROMETHANE	ND	5	.14
THYLBENZENE	ND	.5	.12
YLENES	ND	1.5	.27
TBE	ND	1	.22
ETHYLENE CHLORIDE	ND	5	.22
TYRENE	ND	5	.15
ETRACHLOROETHYLENE	ND	5	.14
OLUENE	ND	.5	.14
RANS-1,2-DICHLOROETHENE	ND	5	.18
RANS-1,3-DICHLOROPROPENE	ND	.5	.23
RICHLOROETHENE	2.5J	5	.15
INYL ACETATE	ND	50	.32
INYL CHLORIDE	ND	.5	.2
ERT-BUTYL ALCOHOL	ND	20	2.3
IISOPROPYL ETHER	ND	5	.39
THYL TERT-BUTYL ETHER	ND	5	.88
ERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	91	62-139
TOLUENE-D8	94	75-125
BROMOFLUOROBENZENE	83	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\01G30\RGB765.D
Acq On : 30 Jul 2001 3:38 pm
Sample : 01G130-03
Misc : 25ML
MS Integration Params: 524INT.P
Quant Time: Aug 2 16:54 2001

Vial: 11
Operator:
Inst : T003
Multiplr: 1.00
Quant Results File: VO03G03A.R

Quant Method : C:\HPCHEM\1\METHODS\VO03G03A.M (RTE Integrator)
Title : METHOD 8260
Last Update : Thu Aug 02 13:14:12 2001
Response via : Initial Calibration
DataAcq Meth : VO03G03

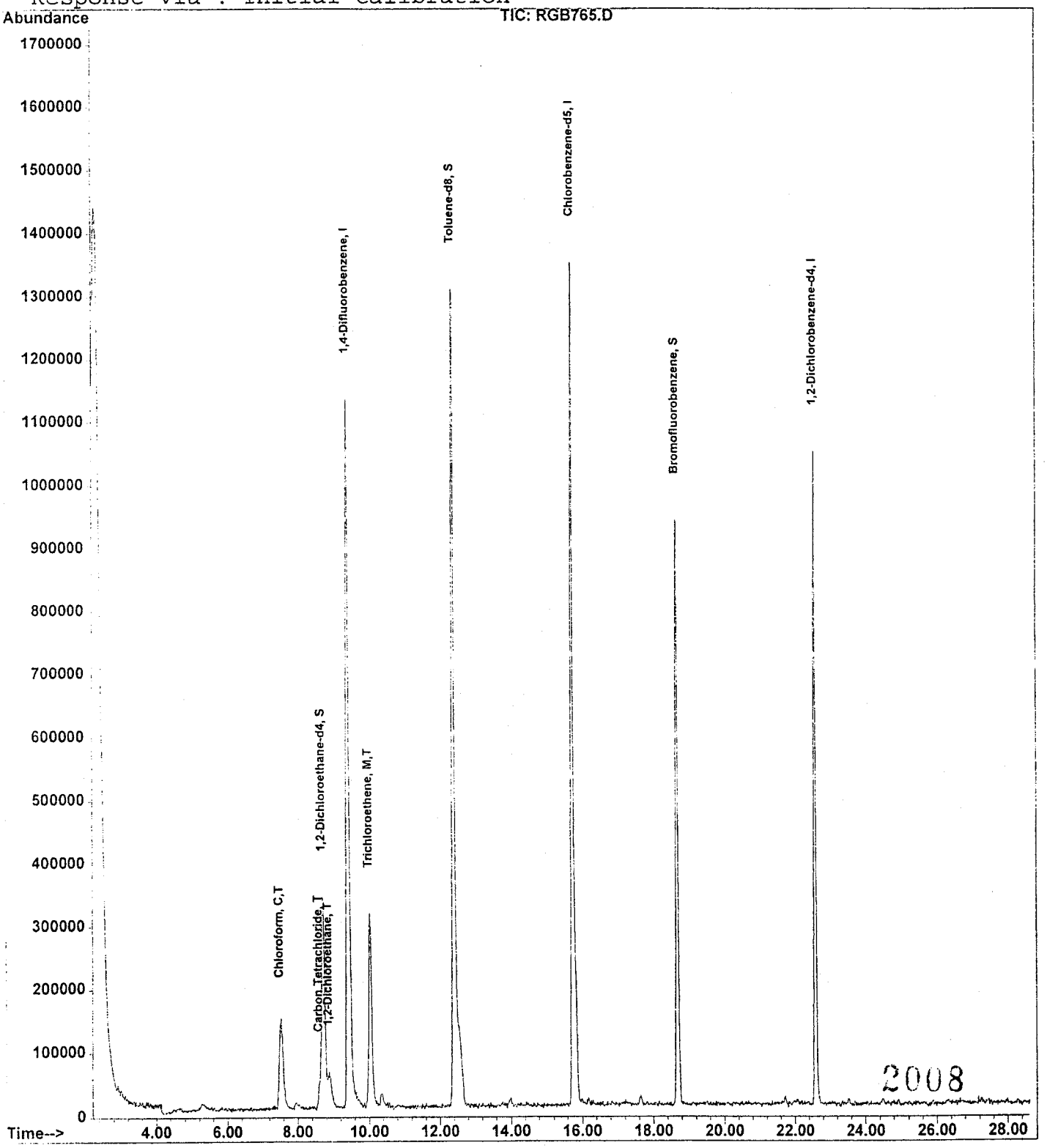
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Difluorobenzene	9.43	114	2326736	10.00 ug/l	0.00
31) Chlorobenzene-d5	15.75	117	1760368	10.00 ug/l	0.00
60) 1,2-Dichlorobenzene-d4	22.59	152	521471	10.00 ug/l	0.00
System Monitoring Compounds					
30) 1,2-Dichloroethane-d4	8.71	65	763920	9.11 ug/l	0.00
Spiked Amount 10.000			Recovery	= 91.10%	
43) Toluene-d8	12.40	98	2281311	9.44 ug/l	-0.02
Spiked Amount 10.000			Recovery	= 94.40%	
64) Bromofluorobenzene	18.68	95	627001	8.34 ug/l	0.01
Spiked Amount 10.000			Recovery	= 83.40%	
Target Compounds					Qvalue
26) Chloroform	7.52	83	370015	2.24 ug/l	96
33) Carbon Tetrachloride	8.62	119	100551	0.69 ug/l	91
34) 1,2-Dichloroethane	8.89	62	77247	0.84 ug/l	98
36) Trichloroethene	10.04	130	255873	2.49 ug/l	97

2007

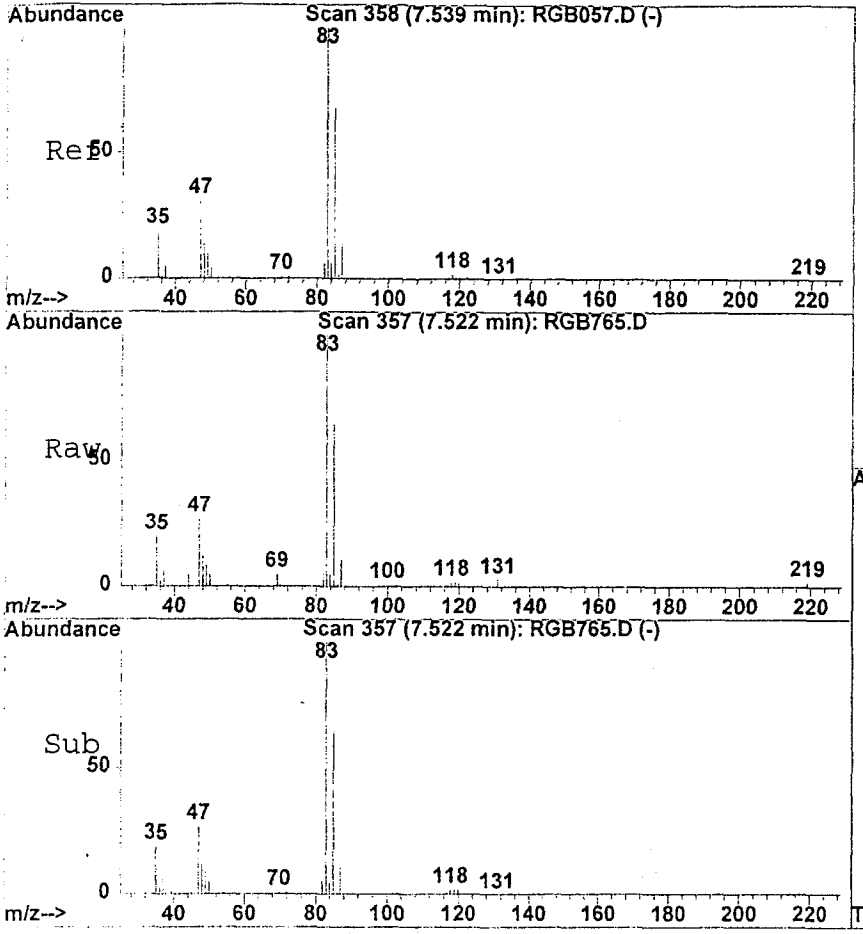
(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\01G30\RGB765.D Vial: 11
Acq On : 30 Jul 2001 3:38 pm Operator:
Sample : 01G130-03 Inst : T003
Misc : 25ML Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Aug 2 16:54 2001 Quant Results File: VO03G03A.R

Method : C:\HPCHEM\1\METHODS\VO03G03A.M (RTE Integrator)
Title : METHOD 8260
Last Update : Thu Aug 02 13:15:03 2001
Response via : Initial Calibration



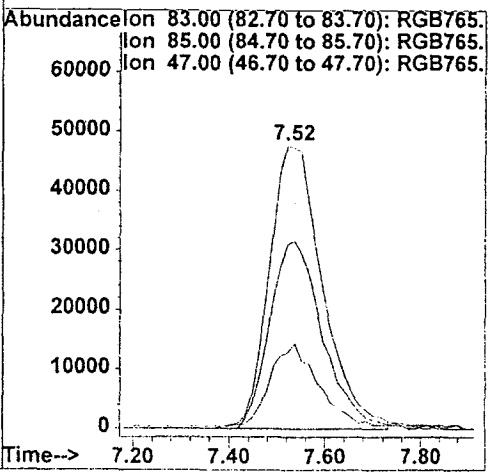
2008

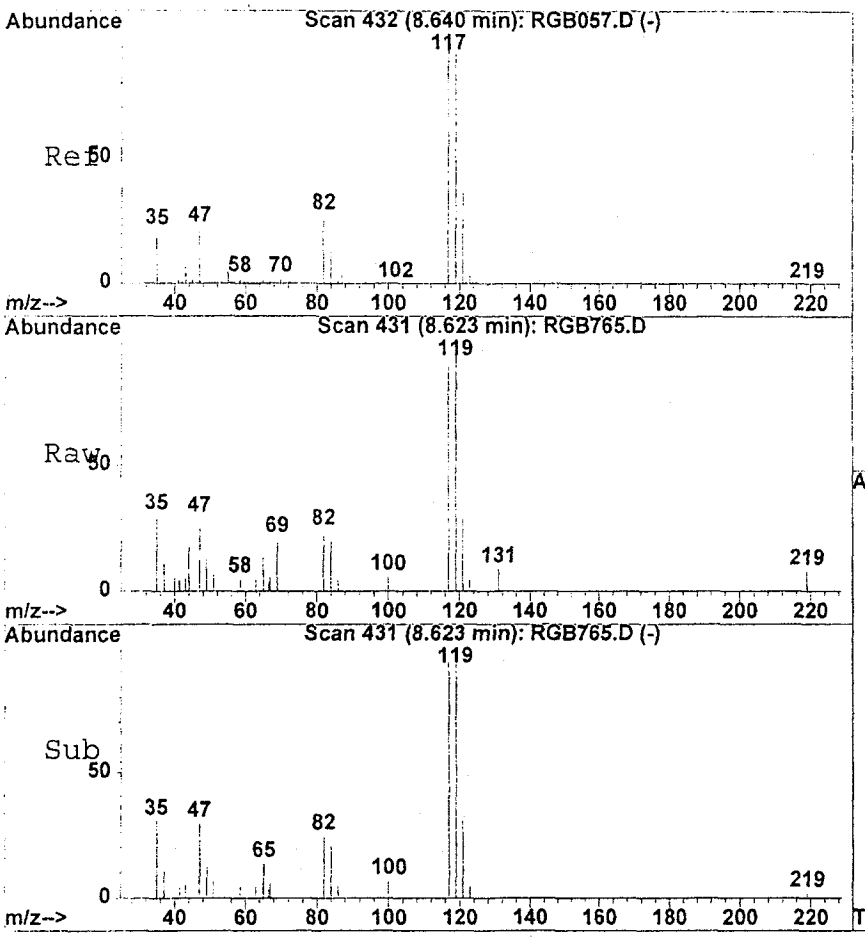


#26
Chloroform
Concen: 2.24 ug/l
RT: 7.52 min Scan# 357
Delta R.T. -0.02 min
Lab File: RGB765.D
Acq: 30 Jul 2001 3:38 pm

Tgt Ion: 83 Resp: 370015

Ion	Ratio	Lower	Upper
83	100		
85	65.8	40.2	100.2
47	28.7	0.0	58.5

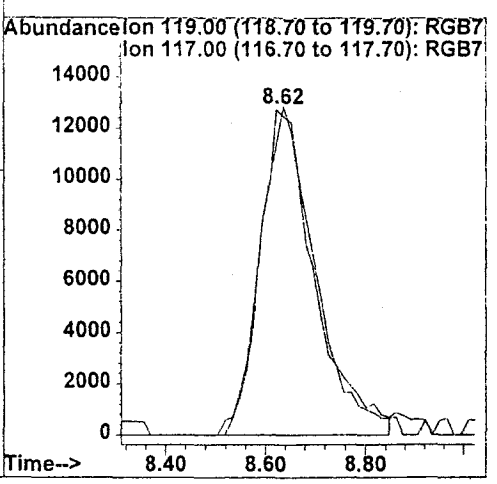




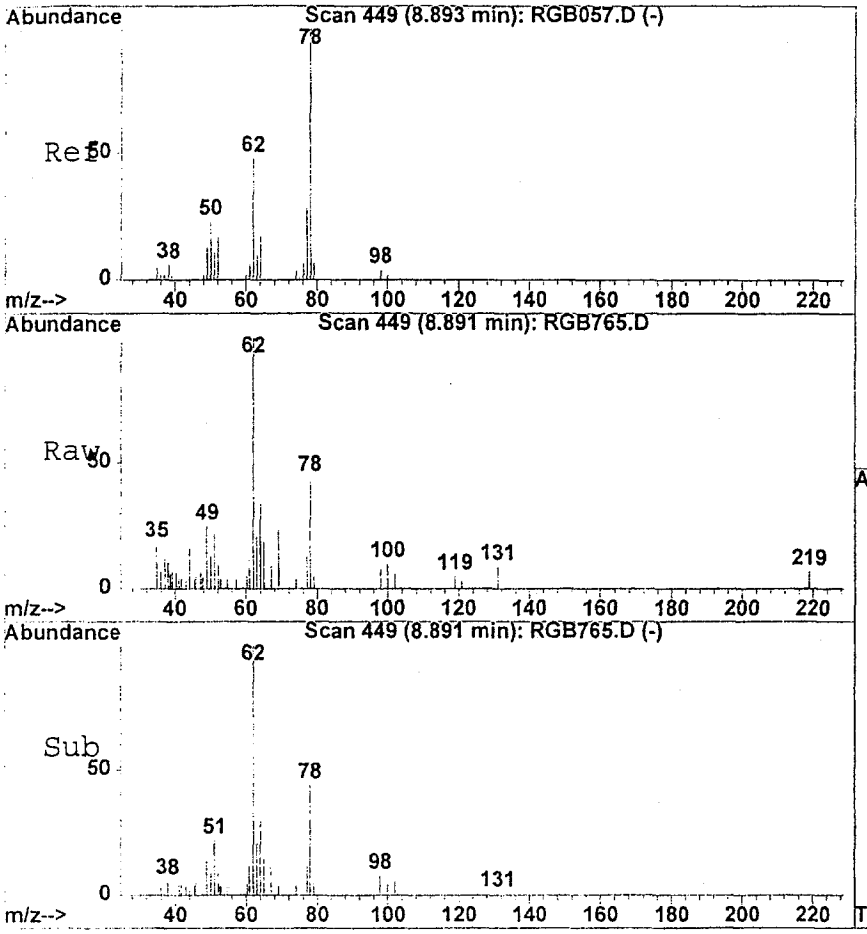
#33
Carbon Tetrachloride
Concen: 0.69 ug/l
RT: 8.62 min Scan# 431
Delta R.T. -0.02 min
Lab File: RGB765.D
Acq: 30 Jul 2001 3:38 pm

Tgt Ion:119 Resp: 100551

Ion	Ratio	Lower	Upper
119	100		
117	94.2	73.4	133.4



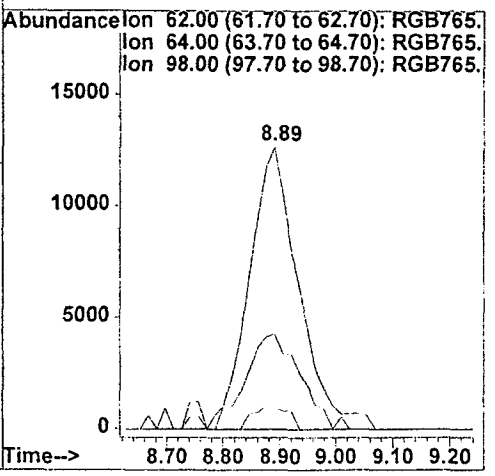
2009

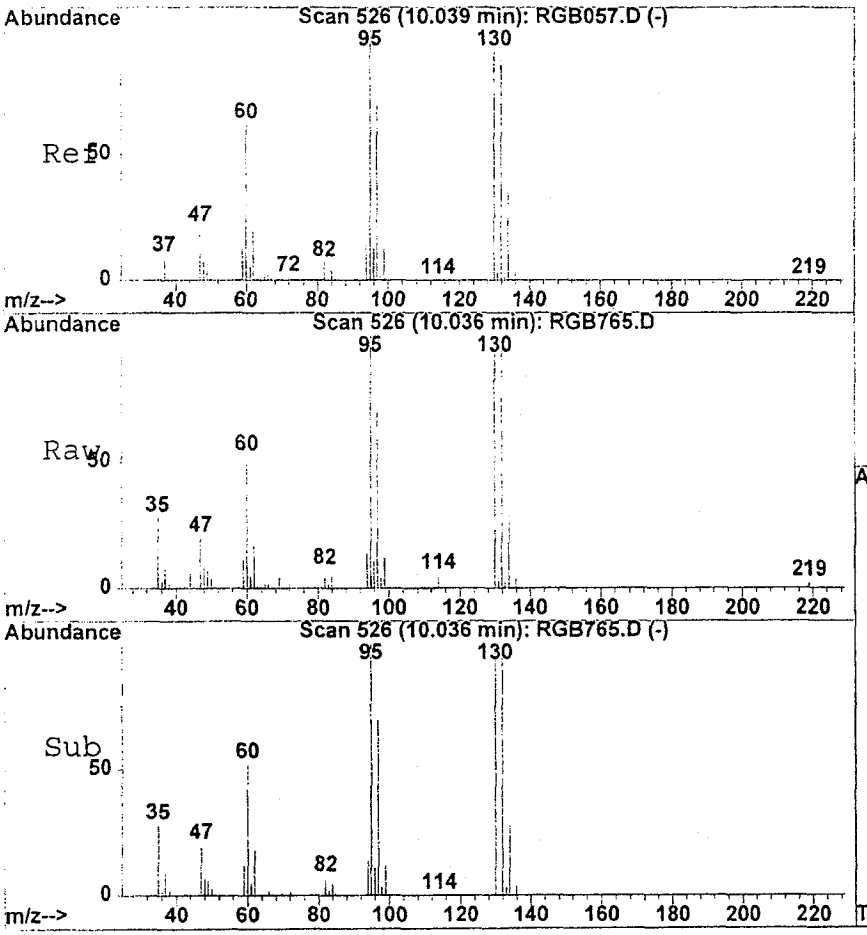


#34
1,2-Dichloroethane
Concen: 0.84 ug/l
RT: 8.89 min Scan# 449
Delta R.T. -0.00 min
Lab File: RGB765.D
Acq: 30 Jul 2001 3:38 pm

Tgt Ion: 62 Resp: 77247

Ion	Ratio	Lower	Upper
62	100		
64	37.1	6.0	66.0
98	5.9	0.0	37.2

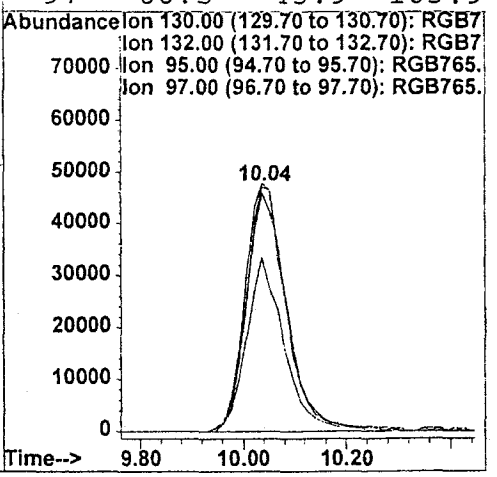




#36
Trichloroethene
Concen: 2.49 ug/l
RT: 10.04 min Scan# 526
Delta R.T. -0.00 min
Lab File: RGB765.D
Acq: 30 Jul 2001 3:38 pm

Tgt Ion:130 Resp: 255873

Ion	Ratio	Lower	Upper
130	100		
132	98.2	67.4	127.4
95	102.5	74.1	134.1
97	66.5	43.9	103.9



2010

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

lient	: FOSTER WHEELER	Date Collected:	07/23/01
roject	: CAMP PENDLETON, CTO26	Date Received:	07/23/01
atch No.	: 01G130	Date Extracted:	07/30/01 16:14
ample ID:	0026-213	Date Analyzed:	07/30/01 16:14
ab Samp ID:	G130-04	Dilution Factor:	1
ab File ID:	RGB766	Matrix :	WATER
xt Btch ID:	V003G45	% Moisture :	NA
alib. Ref.:	RGB756	Instrument ID :	T-003

ARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
,1,1-TRICHLOROETHANE	ND	5	.42
,1,2,2-TETRACHLOROETHANE	ND	1	.19
,1,2-TRICHLOROETHANE	ND	5	.17
,1-DICHLOROETHANE	.53J	5	.16
,1-DICHLOROETHENE	ND	5	.1
,2-DICHLOROETHANE	41E	.5	.21
,2-DICHLOROPROPANE	ND	5	.14
IETHYL ETHYL KETONE	ND	50	2.1
!-HEXANONE	ND	50	1
-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
IENZENE	48E	.5	.15
IROMODICHLOROMETHANE	ND	5	.17
IROMOFORM	ND	5	.12
IROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	.51	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	4.9J	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	ND	.5	.12
XYLENES	2.1	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	ND	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	.22J	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	4.5J	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	56E	20	2.3
DIISOPROPYL ETHER	1.1J	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	89	62-139
TOLUENE-D8	93	75-125
BROMOFLUOROBENZENE	83	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

lient	: FOSTER WHEELER	Date Collected:	07/23/01
roject	: CAMP PENDLETON, CTO26	Date Received:	07/23/01
atch No.	: 01G130	Date Extracted:	07/31/01 22:46
ample ID:	0026-213DL	Date Analyzed:	07/31/01 22:46
ab Samp ID:	G130-04T	Dilution Factor:	5
ab File ID:	RGB808	Matrix :	WATER
xt Btch ID:	VO03G47	% Moisture :	NA
alib. Ref.:	RGB802	Instrument ID :	T-003

ARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
,1,1-TRICHLOROETHANE	ND	25	2.1
,1,2,2-TETRACHLOROETHANE	ND	5	.96
,1,2-TRICHLOROETHANE	ND	25	.86
,1-DICHLOROETHANE	ND	25	.79
,1-DICHLOROETHENE	ND	25	.51
,2-DICHLOROETHANE	48	2.5	1
,2-DICHLOROPROPANE	ND	25	.71
IETHYL ETHYL KETONE	ND	250	11
?-HEXANONE	ND	250	5.1
,-METHYL-2-PENTANONE (MIBK)	ND	250	6.1
\CETONE	ND	250	14
3ENZENE	60	2.5	.74
3ROMODICHLOROMETHANE	ND	25	.87
3ROMOFORM	ND	25	.62
3ROMOMETHANE	ND	25	.92
CARBON TETRACHLORIDE	ND	2.5	.45
CHLOROBENZENE	ND	25	.7
CHLOROETHANE	ND	25	2.2
CHLOROFORM	5.9J	25	2
CHLOROMETHANE	ND	25	1.2
CIS-1,2-DICHLOROETHENE	ND	25	.81
CIS-1,3-DICHLOROPROPENE	ND	2.5	1.1
DIBROMOCHLOROMETHANE	ND	25	.71
ETHYLBENZENE	ND	2.5	.6
XYLENES	2.1J	7.5	1.4
MTBE	ND	5	1.1
METHYLENE CHLORIDE	ND	25	1.1
STYRENE	ND	25	.77
TETRACHLOROETHYLENE	ND	25	.68
TOLUENE	ND	2.5	.69
TRANS-1,2-DICHLOROETHENE	ND	25	.92
TRANS-1,3-DICHLOROPROPENE	ND	2.5	1.1
TRICHLOROETHENE	4.8J	25	.78
VINYL ACETATE	ND	250	1.6
VINYL CHLORIDE	ND	2.5	1
TERT-BUTYL ALCOHOL	58J	100	12
DIISOPROPYL ETHER	ND	25	1.9
ETHYL TERT-BUTYL ETHER	ND	25	4.4
TERT-AMYL METHYL ETHER	ND	25	6.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	92	62-139
TOLUENE-D8	82	75-125
BROMOFLUOROBENZENE	77	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	07/23/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/23/01
Batch No.	: 01G130	Date Extracted:	07/30/01 16:57
Sample ID:	0026-214	Date Analyzed:	07/30/01 16:57
Lab Samp ID:	G130-05	Dilution Factor:	1
Lab File ID:	RGB767	Matrix :	WATER
Ext Btch ID:	V003G45	% Moisture :	NA
Calib. Ref.:	RGB756	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	ND	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	ND	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	1.1J	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	87	62-139
TOLUENE-D8	95	75-125
BROMOFLUOROBENZENE	85	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	07/23/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/23/01
Batch No.	: 01G130	Date Extracted:	07/30/01 17:33
Sample ID:	0026-215	Date Analyzed:	07/30/01 17:33
Lab Samp ID:	G130-06	Dilution Factor:	1
Lab File ID:	RGB768	Matrix :	WATER
Ext Btch ID:	V003G45	% Moisture :	NA
Calib. Ref.:	RGB756	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	ND	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	ND	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	ND	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	90	62-139
TOLUENE-D8	97	75-125
BROMOFLUOROBENZENE	82	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

.ab Name: EMAX Inc — Contract: CAMP PENDLETON, CTO26
ab EMXT Case No.: — SAS No.: SDG No.: 01G130
.ab ID: RGB755 — BFB Injection Date : 07/30/01
.nstrument ID: T-003 — BFB Injection Time : 09:49
;C Column: DB5-MS ID: 0.25 (mm) — Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.44
75	30.0 - 60.0% of mass 95	47.47
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	7.06
173	Less than 2.0% of mass 174	0.40(0.4)1
174	Greater than 50% of mass 95	91.94
175	5.0 - 9.0% of mass 174	7.11(7.7)1
176	95.0 - 101.0% of mass 174	90.31(98.2)1
177	5.0 - 9.0% of mass 176	6.21(6.9)2

1-Value is % mass 174 2-Value is % mass 176

'HIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD010	VSTD010	RGB757	07/30/01	10:53
2	MBLK1W	VO03G45Q	RGB762	07/30/01	13:51
3	LCS1W	VO03G45L	RGB758	07/30/01	11:29
4	LCD1W	VO03G45C	RGB759	07/30/01	12:04
5	0026-210A	G130-01	RGB763	07/30/01	14:27
6	00[illegible]-211	G130-02	RGB764	07/30/01	15:03
7	0[illegible]12	G130-03	RGB765	07/30/01	15:38
8	00[illegible]213	G130-04	RGB766	07/30/01	16:14
9	0026-214	G130-05	RGB767	07/30/01	16:57
10	0026-215	G130-06	RGB768	07/30/01	17:33
11	0026-213MS	G130-04M	RGB773	07/30/01	20:31
12	0026-213MSD	G130-04S	RGB774	07/30/01	21:06

FORM V VOA OLM02.0

Revised Report

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

ab Name: EMAX Inc
ab C: EMXT
ab ID: RGB756
nsti t ID: T-003
C Column: DB5-MS ID: 0.25 (mm)

Project:CAMP PENDLETON, CTO26
SDG No.: 01G130
Date Analyzed: 07/30/01
Time Analyzed: 10:17
Heated Purge: (Y/N)

		IS1(DBF)		IS2(CBZ)		IS3(DCB)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	2484197	9.41	1835037	15.75	542207	22.60
	UPPER LIMIT	4968394	9.91	3670074	16.25	1084414	23.10
	LOWER LIMIT	1242099	8.91	917519	15.25	271104	22.10
	SAMPLE ID						
1	MBLK1W	2300539	9.43	1714408	15.74	520431	22.60
2	LCS1W	2514113	9.43	1907348	15.75	570476	22.60
3	LCD1W	2565083	9.43	1919541	15.74	572298	22.60
4	0026-210A	2212600	9.44	1568730	15.77	462939	22.61
5	0026-211	2295207	9.43	1707276	15.75	517778	22.59
6	0026-212	2326736	9.43	1760368	15.75	521471	22.59
7	0026-213	2295775	9.43	1760956	15.76	528522	22.60
8	0026-214	2242974	9.43	1635091	15.75	492920	22.60
9	0026-215	2184876	9.43	1624230	15.75	509515	22.60
0	0026-213MS	2204579	9.43	1701598	15.75	539829	22.60
1	0026-213MSD	2298593	9.43	1788229	15.75	555128	22.59

IS1 (DFB) = 1,4-Difluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,2-Dichlorobenzene-d4

AREA UPPER LIMIT = + 100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
AREA R LIMIT = + 50% of surrogate area
AREA R LIMIT = - 50% of surrogate area

Column used to flag internal standard area values with an asterisk
* Values outside of QC limits.

FORM VIII VOA-8260 1/2000

Revised Report

2114

QC SUMMARY

2015

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

lient	: FOSTER WHEELER	Date Collected:	NA
roject	: CAMP PENDLETON, CTO26	Date Received:	07/30/01
atch No.	: 01G130	Date Extracted:	07/30/01 13:51
ample ID:	MBLK1W	Date Analyzed:	07/30/01 13:51
ab Samp ID:	V003G45Q	Dilution Factor:	1
ab File ID:	RGB762	Matrix :	WATER
xt Btch ID:	V003G45	% Moisture :	NA
alib. Ref.:	RGB756	Instrument ID :	T-003

ARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
,1,1-TRICHLOROETHANE	ND	5	.42
,1,2,2-TETRACHLOROETHANE	ND	1	.19
,1,2-TRICHLOROETHANE	ND	5	.17
,1-DICHLOROETHANE	ND	5	.16
,1-DICHLOROETHENE	ND	5	.1
,2-DICHLOROETHANE	ND	.5	.21
,2-DICHLOROPROPANE	ND	5	.14
ETHYL ETHYL KETONE	ND	50	2.1
-HEXANONE	ND	50	1
-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
CETONE	ND	50	2.7
ENZENE	ND	.5	.15
ROMODICHLOROMETHANE	ND	5	.17
ROMOFORM	ND	5	.12
ROMOMETHANE	ND	5	.18
ARBON TETRACHLORIDE	ND	.5	.091
HLOROBENZENE	ND	5	.14
HLOROETHANE	ND	5	.43
HLOROFORM	ND	5	.41
HLOROMETHANE	ND	5	.24
IS-1,2-DICHLOROETHENE	ND	5	.16
IS-1,3-DICHLOROPROPENE	ND	.5	.21
IBROMOCHLOROMETHANE	ND	5	.14
THYLBENZENE	ND	.5	.12
YLENES	ND	1.5	.27
TBE	ND	1	.22
ETHYLENE CHLORIDE	ND	5	.22
TYRENE	ND	5	.15
ETRACHLOROETHYLENE	ND	5	.14
OLUENE	ND	.5	.14
RANS-1,2-DICHLOROETHENE	ND	5	.18
RANS-1,3-DICHLOROPROPENE	ND	.5	.23
RICHLOROETHENE	ND	5	.15
INYL ACETATE	ND	50	.32
INYL CHLORIDE	ND	.5	.2
ERT-BUTYL ALCOHOL	ND	20	2.3
IISOPROPYL ETHER	ND	5	.39
THYL TERT-BUTYL ETHER	ND	5	.88
ERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	88	62-139
TOLUENE-D8	98	75-125
BROMOFLUOROBENZENE	86	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

.IENT: FOSTER WHEELER
:OJECT: CAMP PENDLETON, CTO26
.TCH NO.: 01G130
:THOD: SW 5030B/8260B

\TRIX:	WATER			% MOISTURE:	NA
:LUTION FACTOR:	1	1	1		
\MPLE ID:	MBLK1W				
\B SAMP ID:	V003G45Q	V003G45L	V003G45C		
\B FILE ID:	RGB762	RGB758	RGB759		
\TE EXTRACTED:	07/30/0113:51	07/30/0111:29	07/30/0112:04	DATE COLLECTED:	NA
\TE ANALYZED:	07/30/0113:51	07/30/0111:29	07/30/0112:04	DATE RECEIVED:	07/30/01
\EP. BATCH:	V003G45	V003G45	V003G45		
\LIB. REF:	RGB757	RGB757	RGB757		

:CESSION:

\RAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
,1-Dichloroethene	ND	10	9.09	91	10	9.09	91	0	75-125	20
enzene	ND	10	9.28	93	10	9.3	93	0	75-125	20
hlorobenzene	ND	10	9.95	100	10	10.1	101	2	75-125	20
oluene	ND	10	8.58	86	10	8.91	89	4	75-125	20
richloroethene	ND	10	8.94	89	10	9.22	92	3	75-125	20

URROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
,2-Dichloroethane-d4	10	9.36	94	10	9.19	92	62-139
oluene-d8	10	9.83	98	10	9.85	99	75-125
romofluorobenzene	10	8.84	88	10	8.97	90	75-125

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

.ient	: FOSTER WHEELER	Date Collected:	NA
·oject	: CAMP PENDLETON, CTO26	Date Received:	07/31/01
atch No.	: 01G130	Date Extracted:	07/31/01 22:11
ample ID:	MBLK2W	Date Analyzed:	07/31/01 22:11
ab Samp ID:	V003G47Q	Dilution Factor:	1
ab File ID:	RGB807	Matrix :	WATER
xt Btch ID:	V003G47	% Moisture :	NA
alib. Ref.:	RGB802	Instrument ID :	T-003

ARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
,1,1-TRICHLOROETHANE	ND	5	.42
,1,2,2-TETRACHLOROETHANE	ND	1	.19
,1,2-TRICHLOROETHANE	ND	5	.17
,1-DICHLOROETHANE	ND	5	.16
,1-DICHLOROETHENE	ND	5	.1
,2-DICHLOROETHANE	ND	.5	.21
,2-DICHLOROPROPANE	ND	5	.14
ETHYL ETHYL KETONE	ND	50	2.1
-HEXANONE	ND	50	1
-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
CETONE	ND	50	2.7
ENZENE	ND	.5	.15
ROMODICHLOROMETHANE	ND	5	.17
ROMOFORM	ND	5	.12
ROMOMETHANE	ND	5	.18
ARBON TETRACHLORIDE	ND	.5	.091
HLOROBENZENE	ND	5	.14
HLOROETHANE	ND	5	.43
HLOROFORM	ND	5	.41
HLOROMETHANE	ND	5	.24
IS-1,2-DICHLOROETHENE	ND	5	.16
IS-1,3-DICHLOROPROPENE	ND	.5	.21
IBROMOCHLOROMETHANE	ND	5	.14
THYLBENZENE	ND	.5	.12
YLENES	ND	1.5	.27
ITBE	ND	1	.22
IETHYLENE CHLORIDE	ND	5	.22
TYRENE	ND	5	.15
ETRACHLOROETHYLENE	ND	5	.14
OLUENE	ND	.5	.14
RANS-1,2-DICHLOROETHENE	ND	5	.18
RANS-1,3-DICHLOROPROPENE	ND	.5	.23
RICHLOROETHENE	ND	5	.15
INYL ACETATE	ND	50	.32
INYL CHLORIDE	ND	.5	.2
ERT-BUTYL ALCOHOL	ND	20	2.3
IISOPROPYL ETHER	ND	5	.39
THYL TERT-BUTYL ETHER	ND	5	.88
ERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	96	62-139
TOLUENE-D8	102	75-125
BROMOFLUOROBENZENE	93	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

LIENT: FOSTER WHEELER
ROJECT: CAMP PENDLETON, CTO26
ATCH NO.: 01G130
ETHOD: SW 5030B/8260B

ATRIX:	WATER			% MOISTURE:	NA
ILUTION FACTOR:	1	1	1		
AMPLE ID:	MBLK2W				
AB SAMP ID:	V003G47Q	V003G47L	V003G47Y		
AB FILE ID:	RGB807	RGB803	RGB805		
ATE EXTRACTED:	07/31/0122:11	07/31/0119:49	07/31/0121:00	DATE COLLECTED:	NA
ATE ANALYZED:	07/31/0122:11	07/31/0119:49	07/31/0121:00	DATE RECEIVED:	07/31/01
REP. BATCH:	V003G47	V003G47	V003G47		
ALIB. REF:	RGB802	RGB802	RGB802		

CCESSION:

ARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1-Dichloroethene	ND	10	10.1	101	10	9.84	98	3	75-125	20
enzene	ND	10	9.98	100	10	9.84	98	1	75-125	20
hlorobenzene	ND	10	9.74	97	10	9.45	94	3	75-125	20
oluene	ND	10	9.88	99	10	9.68	97	2	75-125	20
richloroethene	ND	10	8.18	82	10	8.17	82	0	75-125	20

URROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10	9.19	92	10	9.03	90	62-139
oluene-d8	10	9.41	94	10	9.07	91	75-125
romofluorobenzene	10	8.83	88	10	8.8	88	75-125

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

.IENT: FOSTER WHEELER
ROJECT: CAMP PENDLETON, CTO26
ATCH NO.: 01G130
ETHOD: SW 5030B/8260B

ATRIX:	WATER			% MOISTURE:	NA
ILUTION FACTOR:	1	1	1		
AMPLE ID:	0026-213				
AB SAMP ID:	G130-04	G130-04M	G130-04S		
AB FILE ID:	RGB766	RGB773	RGB774		
ATE EXTRACTED:	07/30/0116:14	07/30/0120:31	07/30/0121:06	DATE COLLECTED:	07/23/01
ATE ANALYZED:	07/30/0116:14	07/30/0120:31	07/30/0121:06	DATE RECEIVED:	07/23/01
REP. BATCH:	VO03G45	VO03G45	VO03G45		
ALIB. REF:	RGB757	RGB757	RGB757		

CCESSION:

ARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX R (%)
,1-Dichloroethene	ND	10	7.65	77	10	8.28	83	8	75-125	2
enzene	48.1	10	57.6	95	10	44.7	-34*	25*	75-125	2
hlorobenzene	ND	10	8.6	86	10	9.26	93	7	75-125	2
oluene	ND	10	7.4	74*	10	7.99	80	8	75-125	2
richloroethene	4.5J	10	11.5	70*	10	10.8	63*	6	75-125	2

URROGATE PARAMETER	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	QC LIMIT (%)
,2-Dichloroethane-d4	10	9.23	92	10	8.85	88	62-139
oluene-d8	10	9.35	93	10	9.23	92	75-125
romofluorobenzene	10	8.26	83	10	8.14	81	75-125

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

.IENT: FOSTER WHEELER
ROJECT: CAMP PENDLETON, CTO26
ATCH NO.: 01G130
ETHOD: SW 5030B/8260B

ATRIX:	WATER			% MOISTURE:	NA
ILUTION FACTOR:	5	5	5		
AMPLE ID:	0026-213DL				
AB SAMP ID:	G130-04T	G130-04U	G130-04V		
AB FILE ID:	RGB808	RGB816	RGB817		
ATE EXTRACTED:	07/31/0122:46	08/01/0103:30	08/01/0104:06	DATE COLLECTED:	07/23/01
ATE ANALYZED:	07/31/0122:46	08/01/0103:30	08/01/0104:06	DATE RECEIVED:	07/23/01
REP. BATCH:	V003G47	V003G47	V003G47		
ALIB. REF:	RGB802	RGB802	RGB802		

CCESSION:

ARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX R (%)
,1-Dichloroethene	ND	50	43.8	88	50	46.9	94	7	75-125	2
enzene	59.6	50	98.6	78	50	104	88	5	75-125	2
hlorobenzene	ND	50	47.4	95	50	47.3	95	0	75-125	2
oluene	ND	50	44.4	89	50	47.7	95	7	75-125	2
richloroethene	4.76J	50	41.4	73*	50	45.3	81	9	75-125	2

SURROGATE PARAMETER	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	50	55.8	112	50	49.2	98	62-139
oluene-d8	50	45.4	91	50	48.3	97	75-125
3romofluorobenzene	50	42.9	86	50	44.9	90	75-125

CASE NARRATIVE

CLIENT: FOSTER WHEELER

PROJECT: CAMP PENDLETON, CTO26

SDG: 01G130

METHOD 300.0
NITRATE/CHLORIDE/SULFATE

Five (5) water samples were received on 07/23/01 to be analyzed for Nitrate-N, chloride, and sulfate by Method 300.0 in accordance with "Method for Determination of Inorganic Anions by Chromatography" EPA 600/84-017".

1. **Holding Time**

   Analysis met holding time criteria.

2. **Blank**

   All blanks were free of contamination at reporting limit.

3. **Duplicate**

   Duplicate sample G130-04 was only analyzed for chloride. %RPD was within QC limit.

4. **Matrix Spike/Matrix Spike Duplicate**

   Sample G130-04 was spiked for MS/MSD. All recoveries were within QC limit.

5. **Lab Control Sample**

   Lab control results were within QC limit.

6. **Sample Analyses**

   All samples were analyzed according to the prescribed QC procedures.

   Nitrate result was reported as nitrogen concentration.

SAMPLE RESULTS

METH 0.0
CHLO ·Cl

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G130

Matrix : WATER
Instrument ID : TI006

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICG026WB	ND	1	NA	.2	.047	07/24/0119:42	NA	AG24010A	AG24008A	ICG027W	NA	NA
LCS1W	ICG026WL	123	25	NA	5	1.18	07/24/0119:59	NA	AG24011A	AG24008A	ICG027W	NA	NA
0026-215	G130-06	.066J	1	NA	.2	.047	07/25/0105:04	NA	AG24043A	AG24033A	ICG027W	07/23/01	07/23/01
MBLK2W	ICG037WB	ND	1	NA	.2	.047	07/30/0122:20	NA	AG30027A	AG30001A	ICG037W	NA	NA
LCS2W	ICG037WL	5.02	1	NA	.2	.047	07/30/0122:37	NA	AG30028A	AG30001A	ICG037W	NA	NA
0026-211	G130-02	3810	1000	NA	200	47	07/31/0103:27	NA	AG30045A	AG30037A	ICG037W	07/23/01	07/23/01
0026-212	G130-03	3800	1000	NA	200	47	07/31/0103:44	NA	AG30046A	AG30037A	ICG037W	07/23/01	07/23/01
0026-213	G130-04	5150	1000	NA	200	47	07/31/0104:01	NA	AG30047A	AG30037A	ICG037W	07/23/01	07/23/01
0026-213DUP	G130-04D	5200	1000	NA	200	47	07/31/0104:18	NA	AG30048A	AG30037A	ICG037W	07/23/01	07/23/01
MBLK3W	ICG038WB	ND	1	NA	.2	.047	07/31/0110:10	NA	AG30051A	AG30037A	ICG038W	NA	NA
LCS3W	ICG038WL	4.98	1	NA	.2	.047	07/31/0110:27	NA	AG30052A	AG30037A	ICG038W	NA	NA
0026-213MS	G130-04M	7350	1000	NA	200	47	07/31/0110:44	NA	AG30053A	AG30037A	ICG038W	07/23/01	07/23/01
0026-213MSD	G130-04S	7310	1000	NA	200	47	07/31/0111:01	NA	AG30054A	AG30037A	ICG038W	07/23/01	07/23/01
0026-214	G130-05	1560	1000	NA	200	47	07/31/0111:18	NA	AG30055A	AG30037A	ICG038W	07/23/01	07/23/01

RL : Reporting Limit

METH(`0.0
NI(-N

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G130

Matrix : WATER
Instrument ID : TI006

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICG027WB	ND	1	NA	.1	.0206	07/24/0123:23	NA	AG24023A	AG24020A	ICG027W	NA	NA
LCS1W	ICG027WL	15.3	5	NA	.5	.103	07/24/0123:58	NA	AG24025A	AG24020A	ICG027W	NA	NA
0026-211	G130-02	18.6	5	NA	.5	.103	07/25/0103:22	NA	AG24037A	AG24033A	ICG027W	07/23/01	07/23/01
0026-212	G130-03	18.2	5	NA	.5	.103	07/25/0103:39	NA	AG24038A	AG24033A	ICG027W	07/23/01	07/23/01
0026-213	G130-04	12.8	5	NA	.5	.103	07/25/0103:56	NA	AG24039A	AG24033A	ICG027W	07/23/01	07/23/01
0026-215	G130-06	ND	1	NA	.1	.0206	07/25/0105:04	NA	AG24043A	AG24033A	ICG027W	07/23/01	07/23/01
0026-213MS	G130-04M	25.2	5	NA	.5	.103	07/25/0104:13	NA	AG24040A	AG24033A	ICG027W	07/23/01	07/23/01
0026-213MSD	G130-04S	21.6	5	NA	.5	.103	07/25/0104:30	NA	AG24041A	AG24033A	ICG027W	07/23/01	07/23/01
MBLK2W	ICG028WB	ND	1	NA	.1	.0206	07/25/0112:47	NA	AG25004A	AG25001A	ICG028W	NA	NA
LCS2W	ICG028WL	2.19	1	NA	.1	.0206	07/25/0113:04	NA	AG25005A	AG25001A	ICG028W	NA	NA
0026-214	G130-05	64.7	25	NA	2.5	.515	07/25/0114:44	NA	AG25006A	AG25001A	ICG028W	07/23/01	07/23/01

RL: Reporting Limit

METHO 0.0
SU

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G130

Matrix : WATER
Instrument ID : TI006

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICG026WB	ND	1	NA	.5	.101	07/24/0119:42	NA	AG24010A	AG24008A	ICG027W	NA	NA
LCS1W	ICG026WL	17.7	2	NA	1	.202	07/24/0120:16	NA	AG24012A	AG24008A	ICG027W	NA	NA
0026-215	G130-06	ND	1	NA	.5	.101	07/25/0105:04	NA	AG24043A	AG24032A	ICG027W	07/23/01	07/23/01
MBLK2W	ICG033WB	ND	1	NA	.5	.101	07/27/0119:20	NA	AG27025A	AG27013A	ICG033W	NA	NA
LCS2W	ICG033WL	9.89	1	NA	.5	.101	07/27/0120:11	NA	AG27028A	AG27013A	ICG033W	NA	NA
0026-211	G130-02	586	100	NA	50	10.1	07/27/0122:45	NA	AG27037A	AG27027A	ICG033W	07/23/01	07/23/01
0026-212	G130-03	557	100	NA	50	10.1	07/27/0123:36	NA	AG27040A	AG27038A	ICG033W	07/23/01	07/23/01
0026-213	G130-04	359	100	NA	50	10.1	07/27/0123:53	NA	AG27041A	AG27038A	ICG033W	07/23/01	07/23/01
0026-213MS	G130-04M	837	100	NA	50	10.1	07/28/0100:10	NA	AG27042A	AG27038A	ICG033W	07/23/01	07/23/01
0026-213MSD	G130-04S	838	100	NA	50	10.1	07/28/0100:27	NA	AG27043A	AG27038A	ICG033W	07/23/01	07/23/01
0026-214	G130-05	291	100	NA	50	10.1	07/28/0100:44	NA	AG27044A	AG27038A	ICG033W	07/23/01	07/23/01

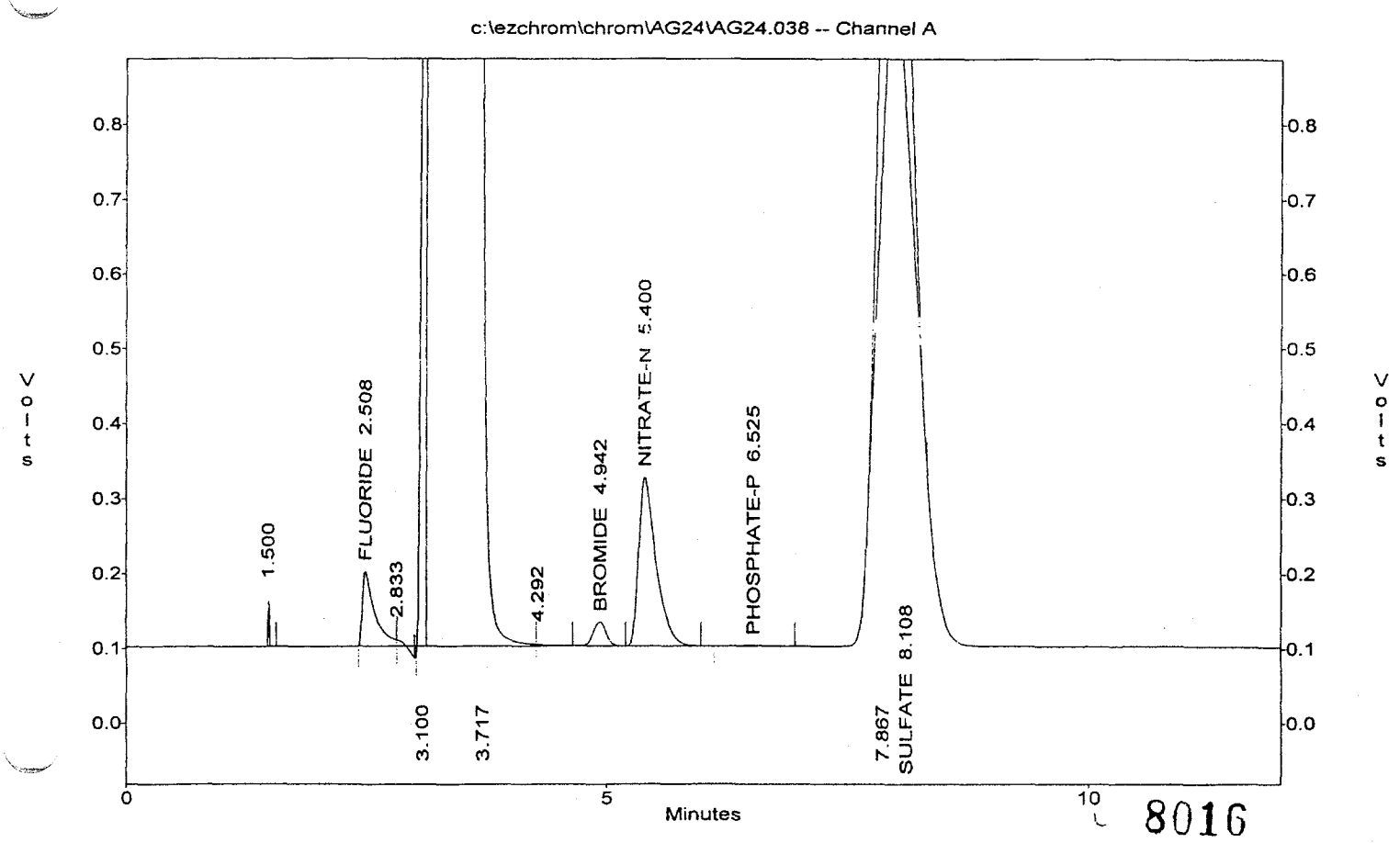
RL : Reporting Limit

EPA METHOD 300.0 by IC
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\AG24\AG24.038
Method : c:\ezchrom\methods\ic22g04.met
Sample ID : G130-03 DF=5
Acquired : Jul 25, 2001 03:39:21
Printed : Jul 26, 2001 08:17:00
User : ANNA

Channel A Results

#	Peak Name	Ret.Time(min)	Height	Ave. CF	ESTD Conc.(ppm)
2	FLUORIDE	2.51	99973	91509.133	4.569
--	CHLORIDE	3.30	0	0.000	0.000
--	NITRITE-N	3.60	0	0.000	0.000
7	BROMIDE	4.94	32422	11271.167	11.105
8	NITRATE-N	5.40	224956	54795.629	18.165 ✓
9	PHOSPHATE-P	6.53	1631	11347.133	0.533
11	SULFATE	8.11	289100	7633.383	146.508



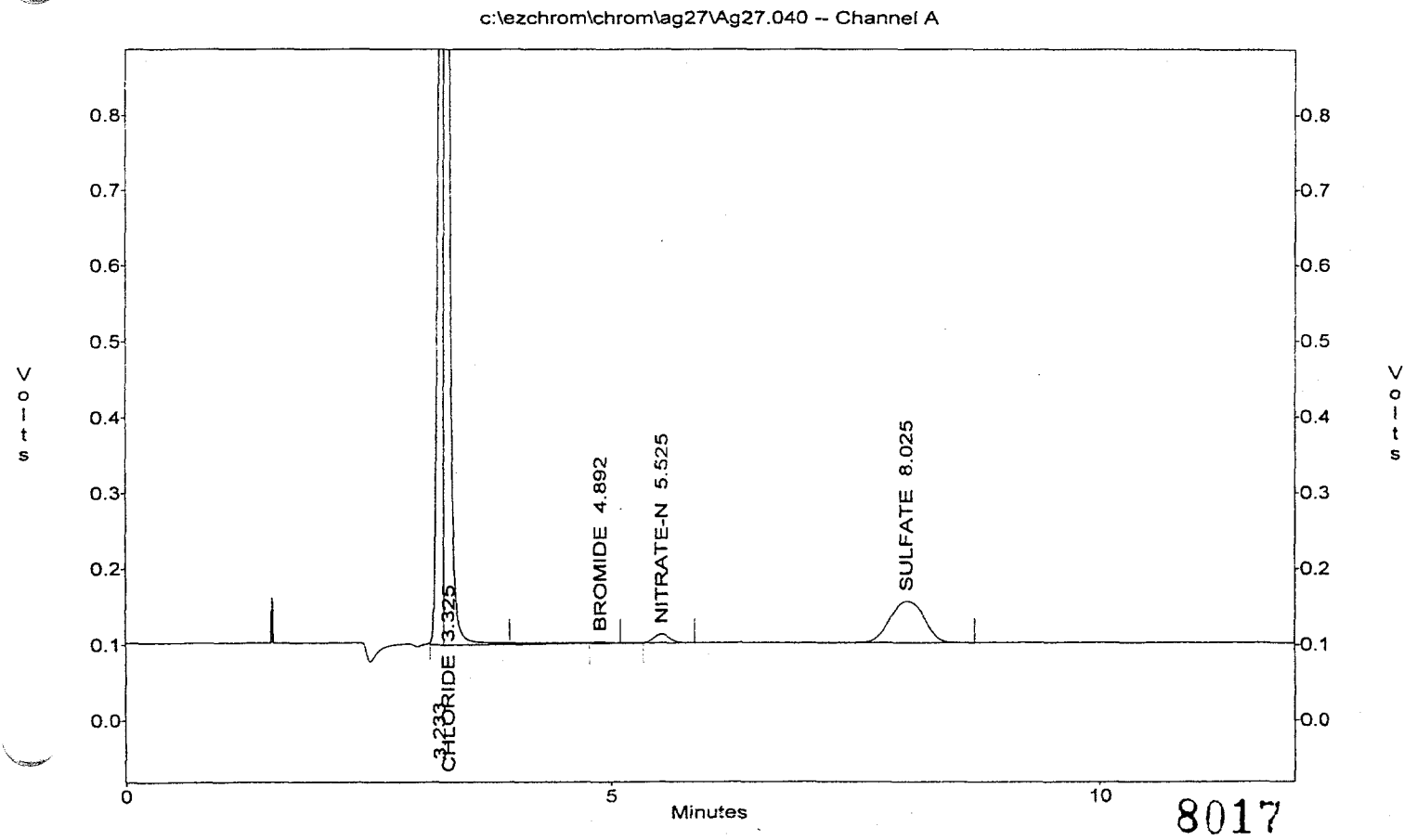
8016

EPA METHOD 300.0 by IC
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ag27\Ag27.040
Method : c:\ezchrom\methods\Ic22g05.met
Sample ID : G130-03 CS DF=100
Acquired : Jul 27, 2001 23:36:13
Printed : Jul 27, 2001 23:53:14
User : ANNA

Channel A Results

#	Peak Name	Ret.Time(min)	Height	Ave. CF	ESTD Conc.(ppm)
--	FLUORIDE	2.60	0	0.000	0.000
2	CHLORIDE	3.33	1001402	71575.219	1412.516
--	NITRITE-N	3.60	0	0.000	0.000
3	BROMIDE	4.89	2652	14984.367	17.816
4	NITRATE-N	5.53	11554	66497.602	18.225
--	PHOSPHATE-P	6.40	0	0.000	0.000
5	SULFATE	8.02	54278	9758.033	556.955



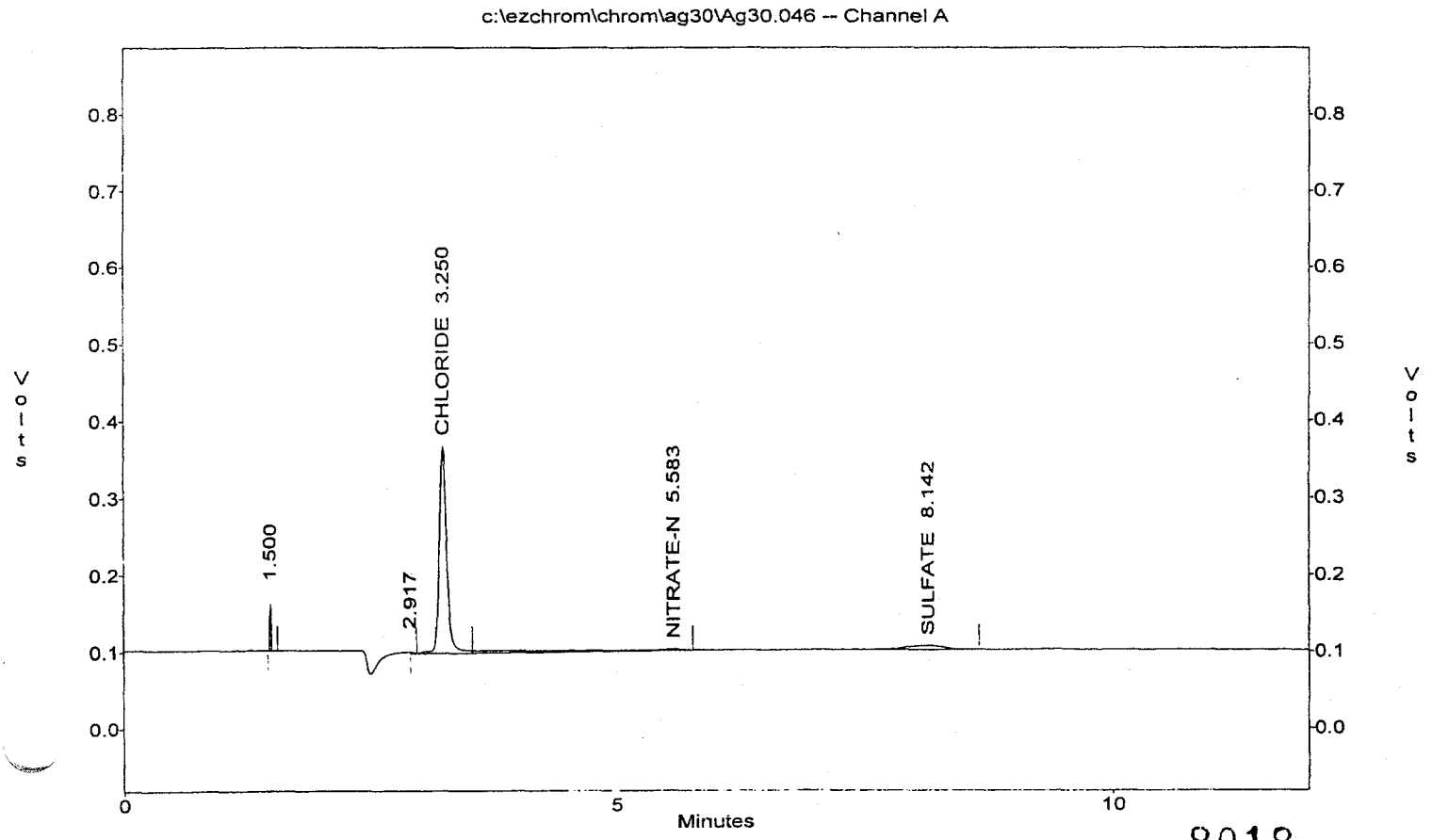
8017

EPA METHOD 300.0 by IC
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ag30\Ag30.046
Method : c:\ezchrom\methods\Ic22g05.met
Sample ID : G130-03 C DF=1000
Acquired : Jul 31, 2001 03:44:35
Printed : Jul 31, 2001 04:01:36
User : ANNA

Channel A Results

#	Peak Name	Ret.Time(min)	Height	Ave. CF	ESTD Conc.(ppm)
--	FLUORIDE	2.60	0	0.000	0.000
3	CHLORIDE	3.25	269136	71575.219	3796.266
--	NITRITE-N	3.60	0	0.000	0.000
--	BROMIDE	4.80	0	0.000	0.000
4	NITRATE-N	5.58	1769	66497.602	27.904
--	PHOSPHATE-P	6.40	0	0.000	0.000
5	SULFATE	8.14	5638	9758.033	578.524



8018

QC SUMMARY

8019

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G130
METHOD: METHOD 300.0

==========

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	5		
SAMPLE ID:	MBLK1W			
LAB SAMP ID:	ICG026WB	ICG026WL		
LAB FILE ID:	AG24010A	AG24011A		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	07/24/0119:42	07/24/0119:59	DATE RECEIVED:	NA
PREP. BATCH:	ICG027W	ICG027W		
CALIB. REF:	AG24008A	AG24008A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	QC LIMIT (%)
Chloride-Cl	ND	124	123	99	80-120

8020

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G130
METHOD: METHOD 300.0

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MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 5
SAMPLE ID: MBLK1W
LAB SAMP ID: ICG027WB ICG027WL
LAB FILE ID: AG24023A AG24025A
DATE EXTRACTED: NA NA DATE COLLECTED: NA
DATE ANALYZED: 07/24/0123:23 07/24/0123:58 DATE RECEIVED: NA
PREP. BATCH: ICG027W ICG027W
CALIB. REF: AG24020A AG24020A

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	QC LIMIT (%)
Nitrate-N	ND	15.6	15.3	98	80-120

8021

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G130
METHOD: METHOD 300.0

==========

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	5		
SAMPLE ID:	MBLK1W			
LAB SAMP ID:	ICG026WB	ICG026WL		
LAB FILE ID:	AG24010A	AG24012A		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	07/24/0119:42	07/24/0120:16	DATE RECEIVED:	NA
PREP. BATCH:	ICG027W	ICG027W		
CALIB. REF:	AG24008A	AG24008A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	QC LIMIT (%)
Sulfate	ND	18.6	17.7	95	80-120

8022

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G130
METHOD: METHOD 300.0

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MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	1		
SAMPLE ID:	MBLK2W			
LAB SAMP ID:	ICG037WB	ICG037WL		
LAB FILE ID:	AG30027A	AG30028A		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	07/30/0122:20	07/30/0122:37	DATE RECEIVED:	NA
PREP. BATCH:	ICG037W	ICG037W		
CALIB. REF:	AG30001A	AG30001A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	QC LIMIT (%)
Chloride-Cl	ND	5	5.02	100	80-120

8023

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G130
METHOD: METHOD 300.0

==========

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	1		
SAMPLE ID:	MBLK2W			
LAB SAMP ID:	ICG033WB	ICG033WL		
LAB FILE ID:	AG27025A	AG27027A		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	07/27/0119:20	07/27/0119:54	DATE RECEIVED:	NA
PREP. BATCH:	ICG033W	ICG033W		
CALIB. REF:	AG27013A	AG27013A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	QC LIMIT (%)
Sulfate	ND	10	9.89	99	80-120

8024

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G130
METHOD: METHOD 300.0

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MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	1		
SAMPLE ID:	MBLK3W			
LAB SAMP ID:	ICG038WB	ICG038WL		
LAB FILE ID:	AG30051A	AG30052A		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	07/31/0110:10	07/31/0110:27	DATE RECEIVED:	NA
PREP. BATCH:	ICG038W	ICG038W		
CALIB. REF:	AG30037A	AG30037A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	QC LIMIT (%)
Chloride-Cl	ND	5	4.98	100	80-120

8025

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G130
METHOD: METHOD 300.0

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1000	1000	1000		
SAMPLE ID:	0026-213				
LAB SAMP ID:	G130-04	G130-04M	G130-04S		
LAB FILE ID:	AG30047A	AG30053A	AG30054A		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	07/23/01
DATE ANALYZED:	07/31/0104:01	07/31/0110:44	07/31/0111:01	DATE RECEIVED:	07/23/01
PREP. BATCH:	ICG037W	ICG038W	ICG038W		
CALIB. REF:	AG30037A	AG30037A	AG30037A		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	SPIKE AMT (mg/L)	MSD RSLT (mg/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Chloride-Cl	5150	2000	7350	110	2000	7310	108	1	80-120	20

8026

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G130
METHOD: METHOD 300.0

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	5	5	5		
SAMPLE ID:	0026-213				
LAB SAMP ID:	G130-04	G130-04M	G130-04S		
LAB FILE ID:	AG24039A	AG24040A	AG24041A		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	07/23/01
DATE ANALYZED:	07/25/0103:56	07/25/0104:13	07/25/0104:30	DATE RECEIVED:	07/23/01
PREP. BATCH:	ICG027W	ICG027W	ICG027W		
CALIB. REF:	AG2032A	AG24032A	AG24032A		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	SPIKE AMT (mg/L)	MSD RSLT (mg/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Nitrate-N	12.8	10	25.2	124*	10	21.6	88	16	80-120	20

8027

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G130
METHOD: METHOD 300.0

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	100	100	100		
SAMPLE ID:	0026-213				
LAB SAMP ID:	G130-04	G130-04M	G130-04S		
LAB FILE ID:	AG27041A	AG27042A	AG27043A		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	07/23/01
DATE ANALYZED:	07/27/0123:53	07/28/0100:10	07/28/0100:27	DATE RECEIVED:	07/23/01
PREP. BATCH:	ICG033W	ICG033W	ICG033W		
CALIB. REF:	AG27038A	AG27038A	AG27038A		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	SPIKE AMT (mg/L)	MSD RSLT (mg/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Sulfate	359	500	837	95	500	838	96	0	80-120	20

8023

EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G130
METHOD: METHOD 300.0

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1000	1000		
SAMPLE ID:	0026-213	0026-213DUP		
EMAX SAMP ID:	G130-04	G130-04D		
LAB FILE ID:	AG30047A	AG30048A		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	07/23/01
DATE ANALYZED:	07/31/0104:01	07/31/0104:18	DATE RECEIVED:	07/23/01
PREP. BATCH:	ICG037W	ICG037W		
CALIB. REF:	AG30037A	AG30037A		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	DUPL RSLT (mg/L)	RPD RSLT %	QC LIMIT (%)
Chloride-Cl	5150	5200	1	20

8029

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO26, UST SITE 1

WET CHEMICAL ANALYSES

SDG#: 01G130

8000

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO 26**

SDG: **01G130**

METHOD 310.1
ALKALINITY

Five (5) water samples were received on 07/23/01 for Alkalinity analysis by method 310.1 in accordance with "Method for Chemical Analysis of Water and Wastewater" EPA 600/4-79-020 (1983)

1. Holding Time

   Analysis met holding time criteria.

2. Blank

   Method blank was free of contamination at reporting limit level.

3. Lab Control Sample/ Lab Control Sample Duplicate

   Lab control results were within the control limit.

4. Duplicate

   Sample G130-04 was analyzed for duplicate. %RPD was within QC limit.

5. Sample Analysis

   Sample analysis was performed within QC requirements.

METH 0.1
TOTAL .INITY

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CT026
Batch No. : 01G130

Matrix : WATER
Instrument ID :

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ALG016WB	ND	1	NA	5	.469	07/31/0113:00	NA	ALG016W-01	NA	ALG016W	NA	NA
LCS1W	ALG016WL	120	1	NA	5	.469	07/31/0113:05	NA	ALG016W-02	NA	ALG016W	NA	NA
LCD1W	ALG016W	118	1	NA	5	.469	07/31/0113:10	NA	ALG016W-03	NA	ALG016W	NA	NA
0026-211	G130-02	115	1	NA	5	.469	07/31/0113:35	NA	ALG016W-08	NA	ALG016W	07/23/01	07/23/01
0026-212	G130-03	118	1	NA	5	.469	07/31/0113:40	NA	ALG016W-09	NA	ALG016W	07/23/01	07/23/01
0026-213	G130-04	65.1	1	NA	5	.469	07/31/0113:45	NA	ALG016W-10	NA	ALG016W	07/23/01	07/23/01
0026-213DUP	G130-04D	67.6	1	NA	5	.469	07/31/0113:50	NA	ALG016W-11	NA	ALG016W	07/23/01	07/23/01
0026-214	G130-05	466	1	NA	5	.469	07/31/0113:55	NA	ALG016W-12	NA	ALG016W	07/23/01	07/23/01
0026-215	G130-06	ND	1	NA	5	.469	07/31/0114:00	NA	ALG016W-13	NA	ALG016W	07/23/01	07/23/01

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
METHOD: METHOD 310.1
MATRIX: WATER
% MOISTURE: NA

BATCH NO.: 01G130
SAMPLE ID: LCS1W/LCD1W
CONTROL NO.: ALG016WL/C

DATE RECEIVED: NA
DATE EXTRACTED: NA
DATE ANALYZED: 07/31/01 13:05/13:10

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD %	QC LIMIT %	RPD LIMIT %
Alkalinity	ND	118	120	102	118	118	100	2	80-120	20

EMAX QUALITY CONTROL DATA
DUPLICATE ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
METHOD: METHOD 310.1
MATRIX: WATER
% MOISTURE: NA

BATCH NO.: 01G130
SAMPLE ID: 0026-213DUP
CONTROL NO.: G130-04D

DATE RECEIVED: 07/23/01
DATE EXTRACTED: NA
DATE ANALYZED: 07/31/01 13:50

ACCESSION:

PARAMETER	SAMPLE (mg/L)	DUP. SAMPLE (mg/L)	RPD (%)	RPD LIMIT (%)
Alkalinity	65.1	67.6	4	20

8004

6956A51

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO 26 UST SITE 1

RSK-175
DISSOLVED GASES

SDG#: 01G130

4042

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO 26**

SDG: **01G130**

RSK-175
DISSOLVED GASES

Samples received on 07/23/01 for this SDG include five (5) waters to be analyzed for Dissolved Gases (Methane, Ethylene, Ethane) in accordance to EMAX SOP AP 2050.

1. Holding Time

All samples received were unpreserved. Analytical holding time was met.

2. Calibration

A 6-point Initial calibration was performed. All QC requirements were met. Continuing calibration were carried out at 10-sample interval, and recovery of DCCs were within 85-115%.

3. Method Blank

No analytes were detected above RL.

4. Lab Control Sample/Lab Control Duplicate

All recoveries were within QC limits

5. Matrix Spike/Matrix Spike Duplicate

Sample G130-04 was designated for MS/MSD with this SDG. All recoveries were within QC limits.

6. Sample Analysis

All samples were analyzed within QC requirements.

LAB CHRONIC
RSK175

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26

SDG NO. : 01G130
Instrument ID : GCT010

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	DCC Data FN	Prep. Batch	Notes
MBLK1W	DG10G08B	1	NA	07/25/0113:10	07/25/0112:30	FG08003A	FG08002A	DG10G08	Method Blank
LCS1W	DG10G08L	1	NA	07/25/0113:22	07/25/0112:30	FG08004A	FG08002A	DG10G08	Lab Control Sample (LCS)
LCD1W	DG10G08C	1	NA	07/25/0113:37	07/25/0112:30	FG08005A	FG08002A	DG10G08	LCS Duplicate
0026-211	G130-02	1	NA	07/25/0113:56	07/25/0112:30	FG08006A	FG08002A	DG10G08	Field Sample
0026-212	G130-03	1	NA	07/25/0114:14	07/25/0112:30	FG08007A	FG08002A	DG10G08	Field Sample
0026-213	G130-04	1	NA	07/25/0115:03	07/25/0112:30	FG08008A	FG08002A	DG10G08	Field Sample
0026-214	G130-05	1	NA	07/25/0115:49	07/25/0112:30	FG08011A	FG08002A	DG10G08	Field Sample
0026-215	G130-06	1	NA	07/25/0116:02	07/25/0112:30	FG08012A	FG08002A	DG10G08	Field Sample
0026-213MS	G130-04M	1	NA	07/25/0115:18	07/25/0112:30	FG08009A	FG08002A	DG10G08	Matrix Spike Sample (MS)
0026-213MSD	G130-04S	1	NA	07/25/0115:31	07/25/0112:30	FG08010A	FG08002A	DG10G08	MS Duplicate (MSD)

FN - Filename
DCC - Daily Continuing Calibration
% Moist - Percent Moisture

SAMPLE RESULTS

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/23/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/23/01
No.	: 01G130	Date Extracted:	07/25/01 12:30
Sample ID	: 0026-211	Date Analyzed:	07/25/01 13:56
Lab Samp ID	: G130-02	Dilution Factor:	1
Lab File ID	: FG08006A	Matrix :	WATER
Ext Btch ID	: DG10G08	% Moisture :	NA
Calib. Ref.	: FG08002A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	ND	1	.18
METHANE	ND	1	.26

RL: Reporting Limit

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/23/01
P[illegible]t	: CAMP PENDLETON, CTO26	Date Received:	07/23/01
B[illegible] No.	: 01G130	Date Extracted:	07/25/01 12:30
Sample ID:	0026-212	Date Analyzed:	07/25/01 14:14
Lab Samp ID:	G130-03	Dilution Factor:	1
Lab File ID:	FG08007A	Matrix :	WATER
Ext Btch ID:	DG10G08	% Moisture :	NA
Calib. Ref.:	FG08002A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	ND	1	.18
METHANE	ND	1	.26

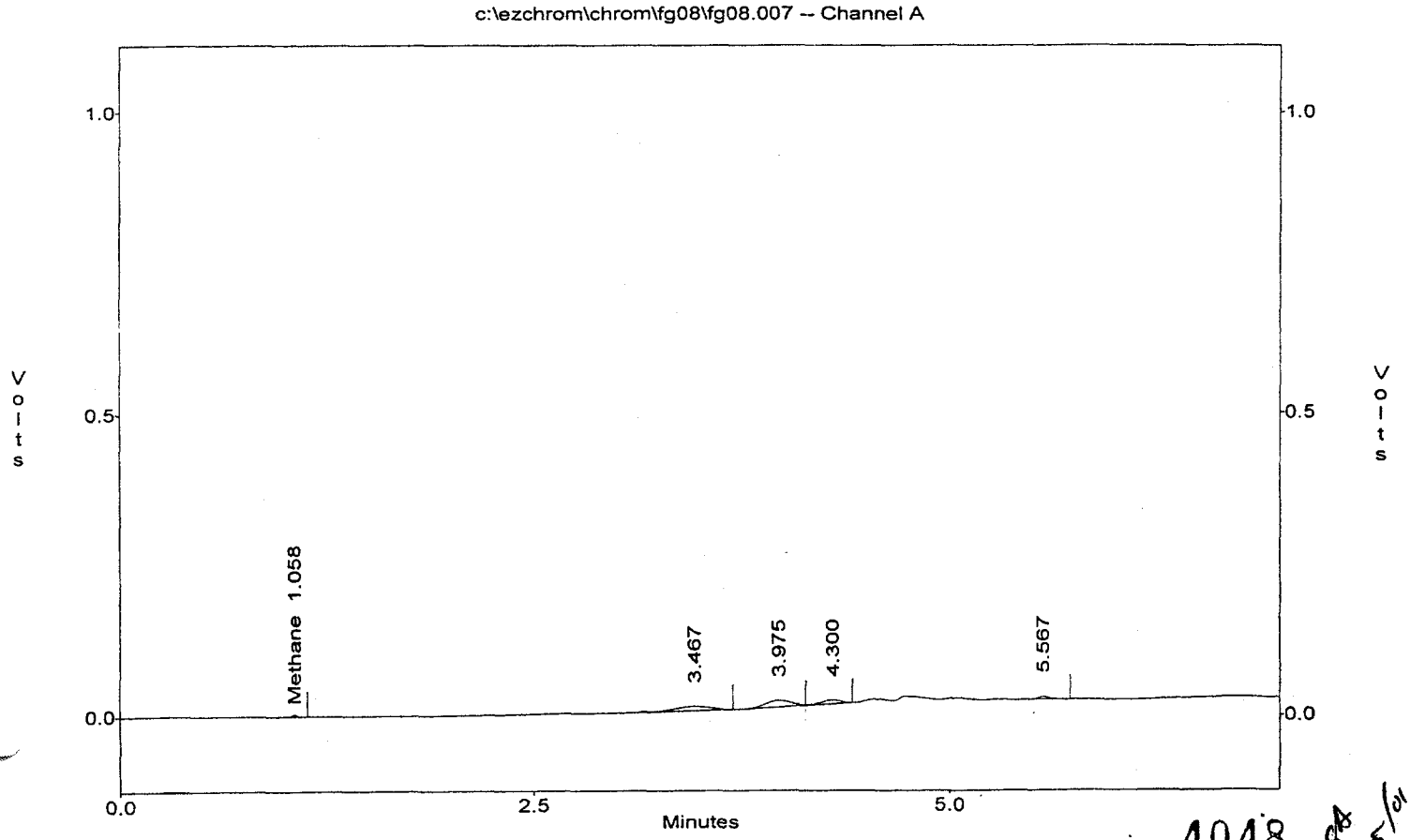
RL: Reporting Limit

EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\fg08\fg08.007
Method : c:\ezchrom\methods\dg10f15.met
Sample ID : 01G130-03
Acquired : Jul 25, 2001 14:14:46
Printed : Jul 25, 2001 15:10:15
User : SHAWN

Channel A Results

#	Peak Name	Ret. Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	1.058	7273.0	30300.31	0.24
--	Ethylene	2.683	0.0	0.00	0.00
--	Ethane	3.175	0.0	0.00	0.00
--	Propane	6.258	0.0	0.00	0.00



4048 7/25/01

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/23/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/23/01
No.	: 01G130	Date Extracted:	07/25/01 12:30
Sample ID	: 0026-213	Date Analyzed:	07/25/01 15:03
Lab Samp ID	: G130-04	Dilution Factor:	1
Lab File ID	: FG08008A	Matrix	: WATER
Ext Btch ID	: DG10G08	% Moisture	: NA
Calib. Ref.	: FG08002A	Instrument ID	: GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	ND	1	.18
METHANE	.88J	1	.26

RL: Reporting Limit

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/23/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/23/01
Batch No.	: 01G130	Date Extracted:	07/25/01 12:30
Sample ID:	0026-214	Date Analyzed:	07/25/01 15:49
Lab Samp ID:	G130-05	Dilution Factor:	1
Lab File ID:	FG08011A	Matrix :	WATER
Ext Btch ID:	DG10G08	% Moisture :	NA
Calib. Ref.:	FG08002A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	ND	1	.18
METHANE	.5J	1	.26

RL: Reporting Limit

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/23/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/23/01
Batch No.	: 01G130	Date Extracted:	07/25/01 12:30
Sample ID	: 0026-215	Date Analyzed:	07/25/01 16:02
Lab Samp ID	: G130-06	Dilution Factor:	1
Lab File ID	: FG08012A	Matrix	: WATER
Ext Btch ID	: DG10G08	% Moisture	: NA
Calib. Ref.	: FG08002A	Instrument ID	: GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	ND	1	.18
METHANE	.35J	1	.26

RL: Reporting Limit

QC SUMMARY

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	NA
P ct	: CAMP PENDLETON, CTO26	Date Received:	07/25/01
L No.	: 01G130	Date Extracted:	07/25/01 12:30
Sample ID:	MBLK1W	Date Analyzed:	07/25/01 13:10
Lab Samp ID:	DG10G08B	Dilution Factor:	1
Lab File ID:	FG08003A	Matrix :	WATER
Ext Btch ID:	DG10G08	% Moisture :	NA
Calib. Ref.:	FG08002A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	ND	1	.18
METHANE	.31J	1	.26

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
P[illegible] NO.: 01G130
[illegible]D: RSK-175

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DG10G08B	DG10G08L	DG10G08C		
LAB FILE ID:	FG08003A	FG08004A	FG08005A		
DATE EXTRACTED:	07/25/0112:30	07/25/0112:30	07/25/0112:30	DATE COLLECTED:	NA
DATE ANALYZED:	07/25/0113:10	07/25/0113:22	07/25/0113:37	DATE RECEIVED:	07/25/01
PREP. BATCH:	DG10G08	DG10G08	DG10G08		
CALIB. REF:	FG08002A	FG08002A	FG08002A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethane	ND	25.2	28.7	114	25.2	28.8	114	0	50-150	20
Ethylene	ND	23.6	26.8	114	23.6	25.6	108	5	50-150	20
Methane	.31J	13.6	13.3	96	13.6	13.5	97	1	50-150	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
B' ' NO.: 01G130
M: RSK-175

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	0026-213				
LAB SAMP ID:	G130-04	G130-04M	G130-04S		
LAB FILE ID:	FG08008A	FG08009A	FG08010A		
DATE EXTRACTED:	07/25/0112:30	07/25/0112:30	07/25/0112:30	DATE COLLECTED:	07/23/01
DATE ANALYZED:	07/25/0115:03	07/25/0115:18	07/25/0115:31	DATE RECEIVED:	07/23/01
PREP. BATCH:	DG10G08	DG10G08	DG10G08		
CALIB. REF:	FG08002A	FG08002A	FG08002A		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethane	ND	25.2	23.2	92	25.2	23.2	92	0	50-150	20
Ethylene	ND	23.6	20.3	86	23.6	20.8	88	2	50-150	20
Methane	.882J	13.6	11.1	75	13.6	11	75	1	50-150	20

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO 26**

SDG: **01G130**

METHOD 9060
TOTAL ORGANIC CARBON

Five (5) water samples were received on 07/23/01 for TOC analysis by method 9060 in accordance with "Test Method for Evaluating Solid Waste, Physical/Chemical Method" SW846 3rd.

1. Holding Time

   Analysis met holding time criteria.

2. Blank

   Method blank was free of contamination at reporting limit level.

3. Lab Control Sample

   Lab control result was within QC limit.

4. Duplicate

   No duplicate sample was analyzed in this SDG.

5. Matrix Spike/Matrix Spike Recovery

   Sample G130-04 was spiked. Recoveries were within QC limit.

6. Sample Analysis

   Sample analyses were performed within QC requirements. All requirements were met.

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G130

Matrix : WATER
Instrument ID : I026

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	TCG006WB	ND	1	NA	5	.551	08/06/0115:30	NA	TCG006W-7	TCG006W-5	TCG006W	NA	NA
LCS1W	TCG006WL	18.8	1	NA	5	.551	08/06/0115:40	NA	TCG006W-8	TCG006W-5	TCG006W	NA	NA
0026-211	G130-02	12.7	1	NA	5	.551	08/06/0116:30	NA	TCG006W-13	TCG006W-5	TCG006W	07/23/01	07/23/01
0026-212	G130-03	33.7	1	NA	5	.551	08/06/0116:40	NA	TCG006W-14	TCG006W-5	TCG006W	07/23/01	07/23/01
0026-213	G130-04	8.7	1	NA	5	.551	08/06/0116:50	NA	TCG006W-15	TCG006W-5	TCG006W	07/23/01	07/23/01
0026-213MS	G130-04M	60	1	NA	5	.551	08/06/0117:00	NA	TCG006W-16	TCG006W-17	TCG006W	07/23/01	07/23/01
0026-213MSD	G130-04S	62.5	1	NA	5	.551	08/06/0117:30	NA	TCG006W-19	TCG006W-17	TCG006W	07/23/01	07/23/01
0026-214	G130-05	ND	1	NA	5	.551	08/06/0117:40	NA	TCG006W-20	TCG006W-17	TCG006W	07/23/01	07/23/01
0026-215	G130-06	ND	1	NA	5	.551	08/06/0117:50	NA	TCG006W-21	TCG006W-17	TCG006W	07/23/01	07/23/01

RL : Reporting Limit

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CT026
METHOD: METHOD 9060
MATRIX: WATER
% MOISTURE: NA

==========

BATCH NO.: 01G130
SAMPLE ID: LCS1W
CONTROL NO.: TCG006WL

DATE RECEIVED: NA
DATE EXTRACTED: NA
DATE ANALYZED: 08/06/01 15:40

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	LCS RSLT (mg/L)	LCS % REC	QC LIMIT (%)
TOC	ND	20	18.8	94	80-120

8003

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CT026
METHOD: METHOD 9060
MATRIX: WATER
% MOISTURE: NA

BATCH NO.: 01G130
SAMPLE ID: 0026-213MS/MSD
CONTROL NO.: G130-04M/S

DATE RECEIVED: 07/23/01
DATE EXTRACTED: NA
DATE ANALYZED: 08/06/01 17:00/17:30

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	SPIKE AMT (mg/L)	MSD RSLT (mg/L)	MSD % REC	RPD %	QC LIMIT %	RPD LIMIT %
TOC	8.70	50	60	103	50	62.5	108	5	80-120	20

6008

FOSTER WHEELER ENVIRONMENTAL CORPORATION
1230 Columbia Street, Suite 1010, San Diego, CA 92101 (619) 234-8696

NUMBER 02731

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	UST SIE 1
PURCHASE ORDER NO.	020848 TASK 4
PROJECT LOCATION	CAMP PENDLETON
PROJECT NO.	1990.0260
SAMPLER NAME	TANIA TURPIJN-KEASLER
SAMPLER SIGNATURE	Tan Turpijn-Keasler
PROJECT CONTACT	SEVDA ALECKSON
AIRBILL NUMBER	COURIER
LABORATORY NAME	EMAX
LABORATORY ID (FOR LABORATORY)	01G173

Project Information Section Do not submit to Laboratory

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	CAM 8260B	TPH-Purgeable	TPH-Extractable	EPA 418.1 (TRPH)	EPA 300.0 (Nitrate Sulfate Chloride)	RSK 175M (Ethane Ethene Methane)	EPA 310.1 (Alkalinity)	EPA 9060 (TOC)	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
0026-224	7/27/01	1000	3	X		W	10 day	X									SITE 1 TRIP BLANK	-	-	TB
0026-225	7/27/01	1245	14	X		W	10 day	X	X	X	X	X	X	X	X		SITE 1 MW21	-	-	REG
0026-226	7/27/01	1330	14	X		W	10 day	X	X	X	X	X	X	X	X		SITE 1 MW 20	-	-	REG

RELINQUISHED BY (Signature)	Tan Turpijn-Keasler	DATE	7/27/01
COMPANY	FWENC	TIME	1545
RELINQUISHED BY (Signature)	LaStrada M	DATE	7/27/01
COMPANY	FWENC	TIME	4:35pm
RELINQUISHED BY (Signature)		DATE	7/27
COMPANY		TIME	

RECEIVED BY (Signature)	LaStrada M
COMPANY	FWENC
RECEIVED BY (Signature)	[illegible]
COMPANY	Roadrunner
RECEIVED BY (Signature)	
COMPANY	

LABORATORY INSTRUCTIONS/COMMENTS
PLEASE PRESERVE SAMPLES FOR EPA 418.1 (TRPH) ANALYSIS UPON RECEIPT

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:
3rd QTR GW SAMPLING

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO26, UST SITE 1

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE & TRAP

SDG#: 01G173

CASE NARRATIVE

CLIENT : FOSTER WHEELER

PROJECT : CAMP PENDLETON, CTO26, UST SITE 1

SDG : 01G173

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE &TRAP

Samples received on 07/27/01 included two (2) water for Total Petroleum Hydrocarbons by Purge & Trap Analysis by method 5030B/M8015 in accordance with USEPA SW846 and Leaking Underground Fuel Tank (LUFT) Field Manual, SWRCB, Dept. of Health Services, CA (1988).

1. Holding Time

   Samples were analyzed within holding time.

2. Calibration

   A seven-point Initial Calibration curve was performed. Continuing Calibrations were carried out at 10-sample interval. All QC requirements were met.

3. Method Blank

   Method blank was free of contamination at the reporting level.

4. Surrogate Recovery

   All surrogate recoveries were within QC limit.

5. Lab Control Sample/ Lab Control Sample Duplicate

   All recoveries were within QC limits.

6. Matrix Spike/Matrix Spike Duplicate

   No MS/MSD was analyzed in this sample.

7. Sample Analysis

   Samples were analyzed according to the prescribed QC procedures. All QC criteria were met. Results were quantified with C6-C10 calibration factor.

LAB CHRONICLE
M8015V

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26

SDG NO. : 01G173
Instrument ID : GCT039

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	WATER Analysis DateTime	Extraction DateTime	Sample Data FN	DCC Data FN	Prep. Batch	Notes
MBLK1W	VA39G31Q	1	NA	07/30/0123:40	07/30/0123:40	EG15025A	EG15015A	VA39G31	Method Blank
LCS1W	VA39G31L	1	NA	07/30/0122:33	07/30/0122:33	EG15023A	EG15015A	VA39G31	Lab Control Sample (LCS)
LCD1W	VA39G31C	1	NA	07/30/0123:06	07/30/0123:06	EG15024A	EG15015A	VA39G31	LCS Duplicate
0026-225	G173-02	1	NA	07/31/0102:59	07/31/0102:59	EG15031A	EG15027A	VA39G31	Field Sample
0026-226	G173-03	1	NA	07/31/0103:33	07/31/0103:33	EG15032A	EG15027A	VA39G31	Field Sample

FN - Filename
DCC - Daily Continuing Calibration
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 5[illegible]/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CT026
Batch No. : 01G173

Matrix : WATER
Instrument ID : GCT039

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	SURR (%)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	VA39G31Q	ND	82	1	NA	.05	.012	07/30/0123:40	07/30/0123:40	EG15025A	EG15015A	VA39G31	NA	07/30/01
LCS1W	VA39G31L	558	107	1	NA	.05	.012	07/30/0122:33	07/30/0122:33	EG15023A	EG15015A	VA39G31	NA	07/30/01
LCD1W	VA39G31C	605	106	1	NA	.05	.012	07/30/0123:06	07/30/0123:06	EG15024A	EG15015A	VA39G31	NA	07/30/01
0026-225	G173-02	ND	86	1	NA	.05	.012	07/31/0102:59	07/31/0102:59	EG15031A	EG15027A	VA39G31	07/27/01	07/27/01
0026-226	G173-03	ND	89	1	NA	.05	.012	07/31/0103:33	07/31/0103:33	EG15032A	EG15027A	VA39G31	07/27/01	07/27/01

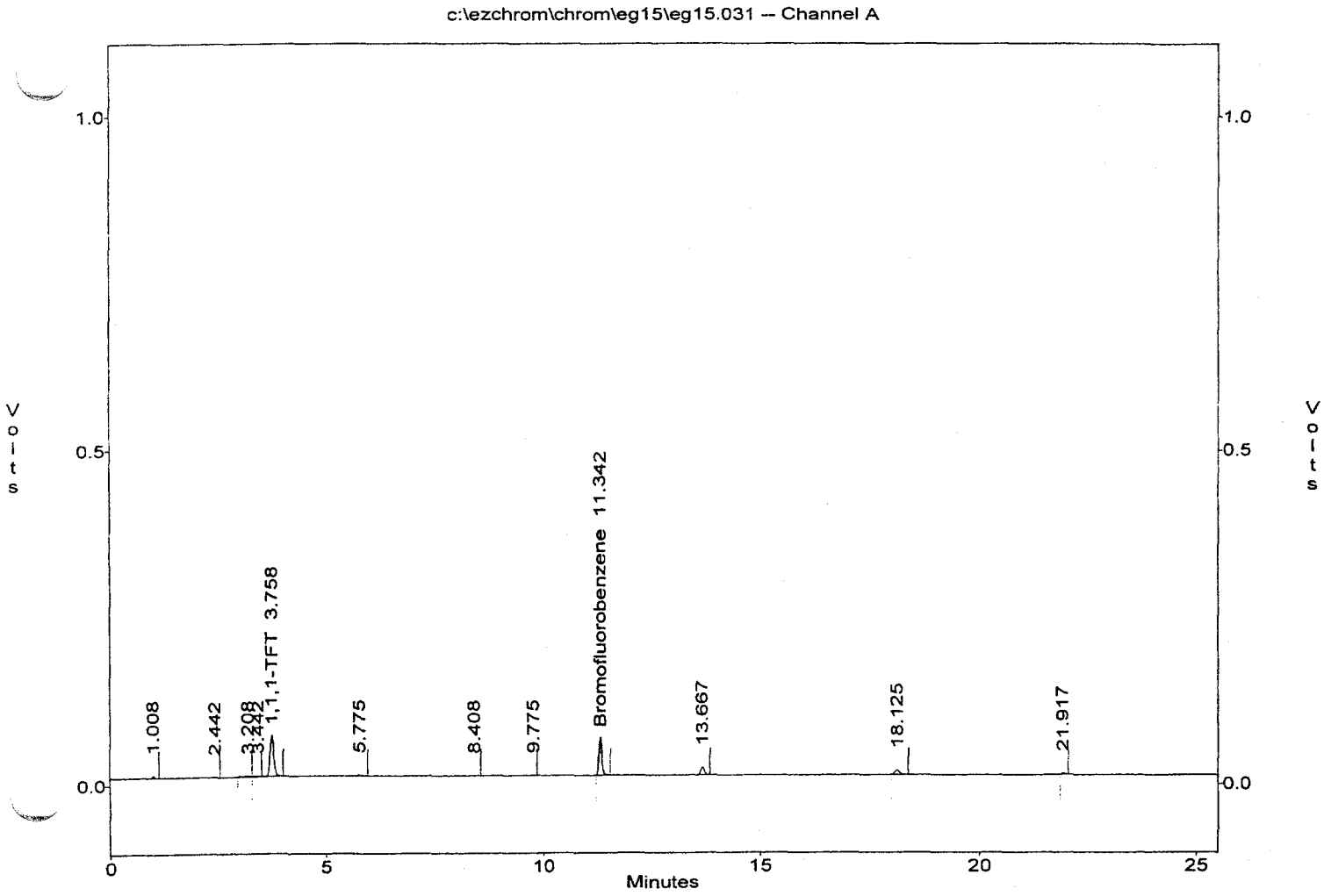
RL : Reporting Limit

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\eg15\eg15.031
Method : c:\ezchrom\methods\vg39g26.met
Sample ID : 01G173-02 5.0ML W
Acquired : Jul 31, 2001 02:59:55
Printed : Jul 31, 2001 09:14:30
User : LUCY

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
5	1,1,1-TFT	3.758	370477.0	21178.1	17.49
9	Bromofluorobenzene	11.342	259938.0	15135.7	17.17
G1	GASOLINE		196841.0	14103.6	13.96
G2	GRO(C6-C10)		134337.0	11395.7	11.79
G3	GRO(2MP-124TMB)		64968.0	11404.4	5.70

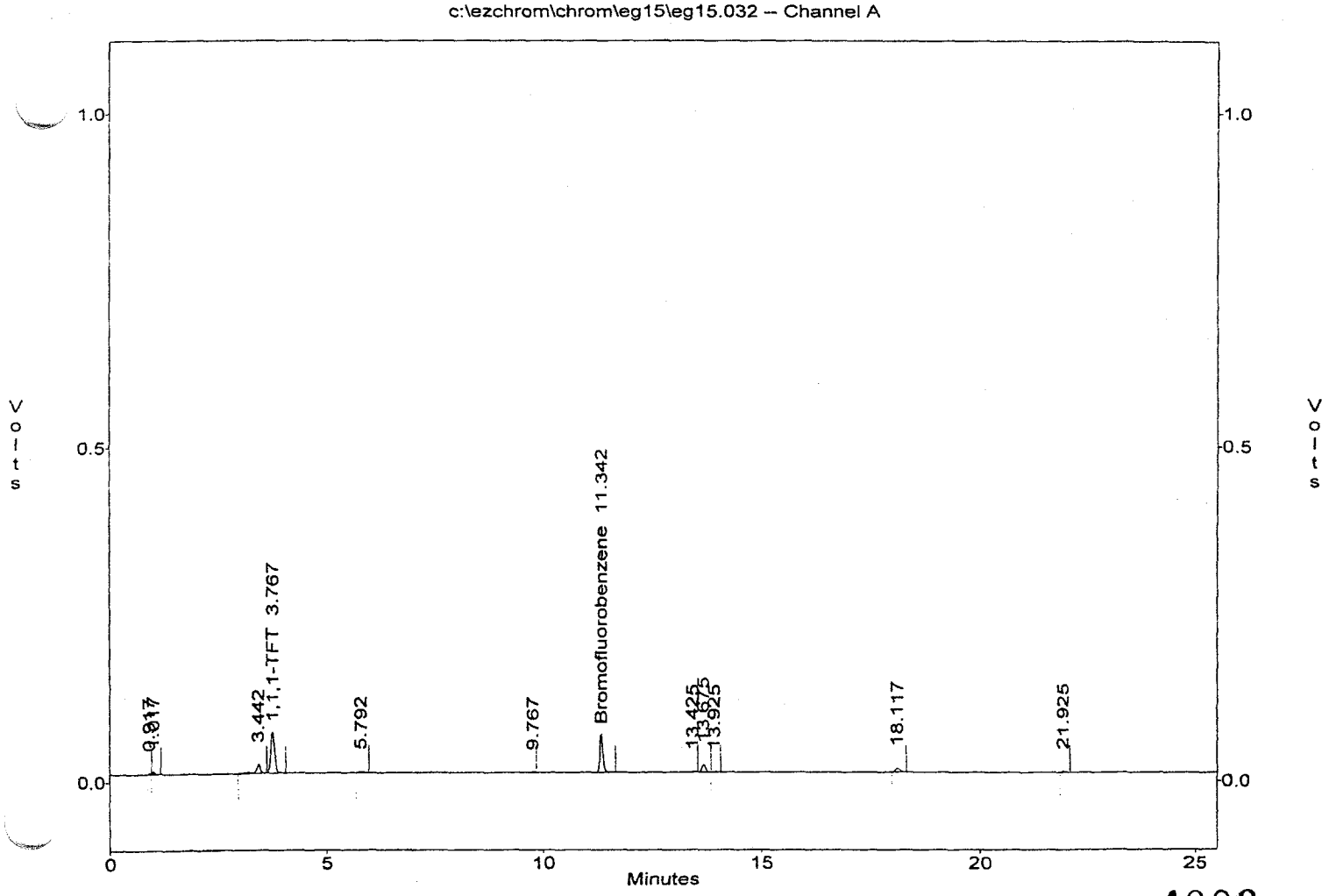


EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\eg15\eg15.032
Method : c:\ezchrom\methods\vg39g26.met
Sample ID : 01G173-03 5.0ML W
Acquired : Jul 31, 2001 03:33:11
Printed : Jul 31, 2001 09:14:40
User : LUCY

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
4	1,1,1-TFT	3.767	378160.0	21178.1	17.86
7	Bromofluorobenzene	11.342	268628.0	15135.7	17.75
G1	GASOLINE		251313.0	14103.6	17.82
G2	GRO(C6-C10)		194995.0	11395.7	17.11
G3	GRO(2MP-124TMB)		125364.0	11404.4	10.99



4006

QC SUMMARY

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

:NT: FOSTER WHEELER
)ECT: CAMP PENDLETON, CTO26
:H NO.: 01G173
IOD: METHOD 5030B/M8015

==========

RIX: WATER % MOISTURE: NA

JTION FACTOR:	1	1	1
PLE ID:	MBLK1W		
SAMP ID:	VA39G31Q	VA39G31L	VA39G31C
FILE ID:	EG15025A	EG15023A	EG15024A
E EXTRACTED:	07/30/0123:40	07/30/0122:33	07/30/0123:06
E ANALYZED:	07/30/0123:40	07/30/0122:33	07/30/0123:06
P. BATCH:	VA39G31	VA39G31	VA39G31
IB. REF:	EG15015A	EG15015A	EG15015A

DATE COLLECTED: NA
DATE RECEIVED: 07/30/01

ESSION:

AMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
oline	ND	.55	.558	101	.55	.605	110	9	65-135	30

==========

ROGATE PARAMETER	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	QC LIMIT (%)
mofluorobenzene	.02	.0213	107	.02	.0213	106	65-135

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO26, UST SITE 1

METHOD 3520/M8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 01G173

5000

CASE NARRATIVE

CLIENT: FOSTER WHEELER

PROJECT: CAMP PENDLETON, CT026, UST SITE 1

SDG: 01G173

METHOD 3520/M8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Two (2) water samples were received on 07/27/01 to be analyzed for Total Petroleum Hydrocarbons by Method 3520/M8015B in accordance with SW846 and Leaking Underground Fuel Tank (LUFT) Field Manual, SWRCB, Dept. of Health Service, CA (1988).

1. **Holding Time**

   Analytical holding time was met.

2. **Method Blank**

   There was no contamination detected at reporting level.

3. **Lab Control Sample/Lab Control Sample Duplicate**

   All recoveries were within QC limits.

4. **Surrogate Recovery**

   All recoveries were within QC limits.

5. **Matrix Spike/Matrix Spike Duplicate**

   No sample was analyzed for MS/MSD from this SDG.

6. **Calibration**

   Initial calibration was seven points. Continue calibrations were carried out at 10 sample intervals. All QC requirements were met.

7. **Sample Analysis**

   Samples were analyzed according to the prescribed QC procedures. Samples were quantified from C10-C24.

LAB CHRONICLE
M8015D

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26

SDG NO. : 01G173
Instrument ID : GCT050

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	WATER Analysis DateTime	Extraction DateTime	Sample Data FN	DCC Data FN	Prep. Batch	Notes
MBLK1W	DSG030WB	1	NA	08/02/0112:33	08/01/0111:00	TG11060A	TG11059A	DSG030W	Method Blank
LCS1W	DSG030WL	1	NA	08/02/0113:21	08/01/0111:00	TG11061A	TG11059A	DSG030W	Lab Control Sample (LCS)
LCD1W	DSG030WC	1	NA	08/03/0102:23	08/01/0111:00	TG11077A	TG11070A	DSG030W	LCS Duplicate
0026-225	G173-02	1	NA	08/03/0107:15	08/01/0111:00	TG11083A	TG11081A	DSG030W	Field Sample
0026-226	G173-03	.94	NA	08/03/0108:04	08/01/0111:00	TG11084A	TG11081A	DSG030W	Field Sample

FN - Filename
DCC - Daily Continuing Calibration
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD)/M8015B
TOTAL PETROLEUM H ARBONS BY EXTRACTION

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G173

Matrix : WATER
Instrument ID : GCT050

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	SURR (%)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	DSG030WB	ND	104	1	NA	.1	.067	08/02/0112:33	08/01/0111:00	TG11060A	TG11059A	DSG030W	NA	08/01/01
LCS1W	DSG030WL	4.34	115	1	NA	.1	.067	08/02/0113:21	08/01/0111:00	TG11061A	TG11059A	DSG030W	NA	08/01/01
LCD1W	DSG030WC	4.23	102	1	NA	.1	.067	08/03/0102:23	08/01/0111:00	TG11077A	TG11070A	DSG030W	NA	08/01/01
0026-225	G173-02	ND	112	1	NA	.1	.067	08/03/0107:15	08/01/0111:00	TG11083A	TG11081A	DSG030W	07/27/01	07/27/01
0026-226	G173-03	ND	108	.94	NA	.094	.063	08/03/0108:04	08/01/0111:00	TG11084A	TG11081A	DSG030W	07/27/01	07/27/01

RL : Reporting Limit
SUR1 : Hexacosane

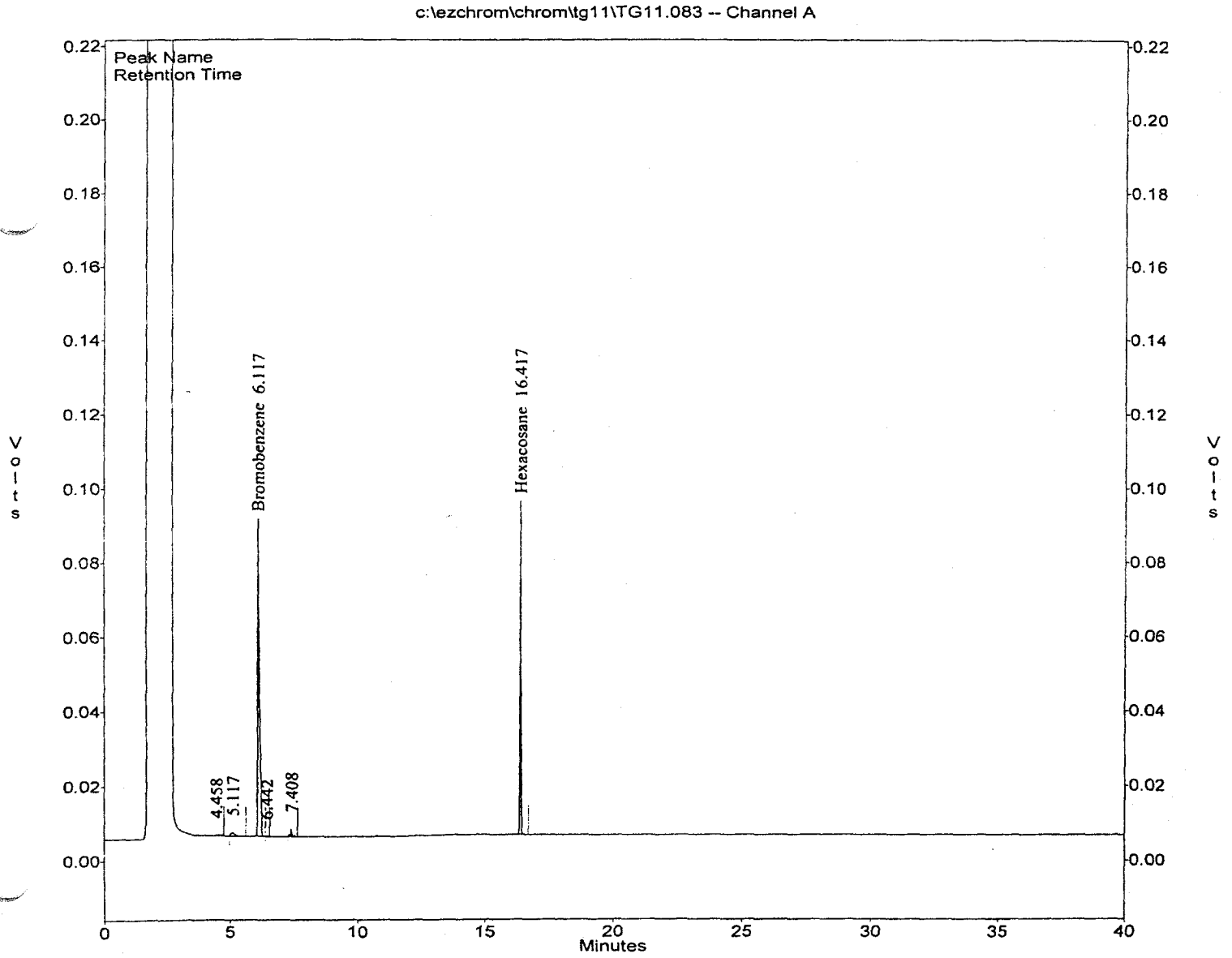
Parameter	H-C Range
JP5	C7 -C18
Diesel	C10-C24
Motor Oil	C18-C34
Gas	C6 -C12

EPA METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\tg11\TG11.083
Method : c:\ezchrom\methods\ds50g31.met
Sample ID : 01G173-02 W
Acquired : Aug 03, 2001 07:15:49
Printed : Aug 03, 2001 11:24:02
User : SHAWN

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
3	Bromobenzene	6.117	393610	4270.5	92.2
6	Hexacosane	16.417	230764	8254.7	28.0
G1	Diesel(TOTAL)		20414	8010.7	2.5
G2	Diesel(C10-C24)		7736	7827.2	1.0
G3	Diesel(C10-C28)		7736	7835.9	1.0

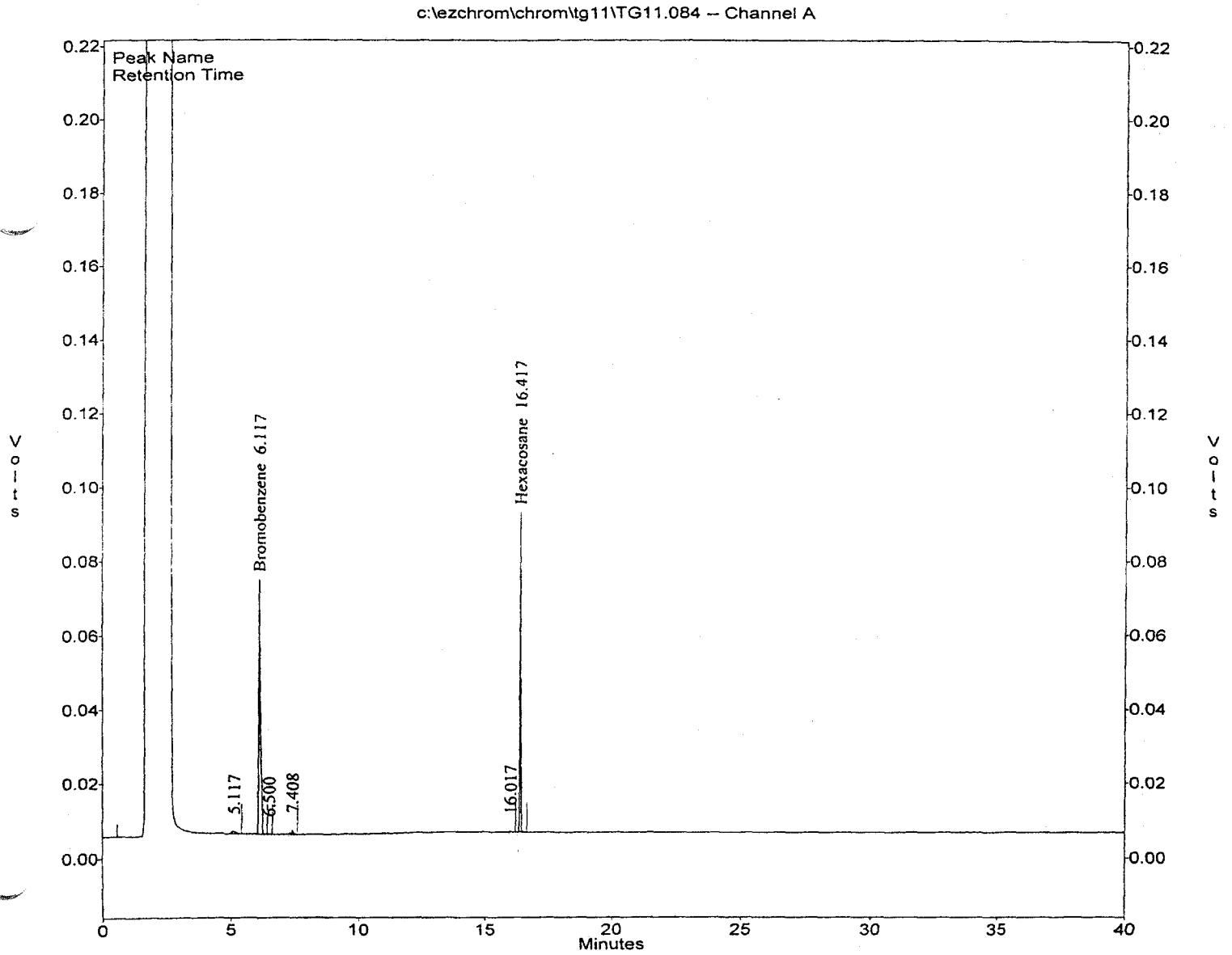


EPA METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\tg11\TG11.084
Method : c:\ezchrom\methods\ds50g31.met
Sample ID : 01G173-03 W
Acquired : Aug 03, 2001 08:04:37
Printed : Aug 03, 2001 11:24:03
User : SHAWN

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
2	Bromobenzene	6.117	329819	4270.5	77.2
6	Hexacosane	16.417	222643	8254.7	27.0
G1	Diesel(TOTAL)		15042	8010.7	1.9
G2	Diesel(C10-C24)		5177	7827.2	0.7
G3	Diesel(C10-C28)		6351	7835.9	0.8



QC SUMMARY

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
B' NO.: 01G173
M: METHOD 3520/M8015B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DSG030WB	DSG030WL	DSG030WC		
LAB FILE ID:	TG11060A	TG11061A	TG11077A		
DATE EXTRACTED:	08/01/0111:00	08/01/0111:00	08/01/0111:00	DATE COLLECTED:	NA
DATE ANALYZED:	08/02/0112:33	08/02/0113:21	08/03/0102:23	DATE RECEIVED:	08/01/01
PREP. BATCH:	DSG030W	DSG030W	DSG030W		
CALIB. REF:	TG11059A	TG11059A	TG11070A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Diesel	ND	5	4.34	87	5	4.23	85	3	65-135	30

SURROGATE PARAMETER	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	QC LIMIT (%)
Hexacosane	.25	.288	115	.25	.254	102	65-135

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO 26, UST SITE 1

METHOD 418.1
TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

SDG#: 01G173

CASE NARRATIVE

CLIENT: FOSTER WHEELER

PROJECT: CAMP PENDLETON, CTO 26, UST SITE 1

SDG: 01G173

METHOD 418.1
TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Two (2) water samples were received on 07/27/01 for total recoverable petroleum hydrocarbons analysis by Method 418.1 in accordance with "Methods for Chemical Analysis of Water & Wastewater", USEPA 600-79-020, 1983.

1. Holding Time

   Analysis met the holding time criteria.

2. Method Blank

   Method blank was free of contamination at reporting limit level.

3. Matrix Spike

   No matrix sample was analyzed for this SDG.

4. Lab Control Sample/Lab Control Duplicate

   Lab control results were within the control limit.

5. Sample Analysis

   Sample analyses were performed within the QC requirements.

METHOD 1
TOTAL RECOVERABLE PE UM HYDROCARBONS

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G173

Matrix : WATER
Instrument ID : I061

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	TRG007WB	ND	1	NA	10	.558	08/01/0111:40	07/31/0115:30	TRH001-03	TRH001CC	TRG007W	NA	07/31/01
LCS1W	TRG007WL	5.82J	1	NA	10	.558	08/01/0111:45	07/31/0115:30	TRH001-04	TRH001CC	TRG007W	NA	07/31/01
LCD1W	TRG007WC	5.82J	1	NA	10	.558	08/01/0111:50	07/31/0115:30	TRH001-05	TRH001CC	TRG007W	NA	07/31/01
0026-225	G173-02	ND	1	NA	10	.558	08/01/0112:50	07/31/0115:30	TRH001-17	TRH002CC	TRG007W	07/27/01	07/27/01
0026-226	G173-03	ND	.95	NA	9.5	.53	08/01/0112:55	07/31/0115:30	TRH001-18	TRH002CC	TRG007W	07/27/01	07/27/01

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
METHOD: METHOD 418.1
MATRIX: WATER
% MOISTURE: NA

BATCH NO.: 01G173
SAMPLE ID: LCS1W/LCD1W
CONTROL NO.: TRG007WL/C

DATE RECEIVED: 07/31/01
DATE EXTRACTED: 07/31/01 15:30
DATE ANALYZED: 08/01/01 11:45/11:50

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD %	QC LIMIT %	RPD LIMIT %
TRPH	ND	6	5.82J	97	6	5.82J	97	0	80-120	20

5029

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO26, UST SITE 1

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

SDG#: 01G173

2000

CASE NARRATIVE

CLIENT: FOSTER WHEELER

PROJECT: CAMP PENDLETON, CTO26 UST SITE 1

SDG: 01G173

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Three (3) water samples were received on 07/27/01 for Volatile Organic Analyses by Method 8260B in accordance with USEPA SW846, 3rd ed.

1. **Holding Time**

   Analytical holding time was met.

2. **Tuning and Calibration**

   Tuning and calibration were carried out at 12-hour interval. All QC requirements were met.

3. **Method Blank**

   Method blank was free of contamination at reporting limit level.

4. **Lab Control Sample/Lab Control Sample Duplicate**

   All recoveries were within QC limits.

5. **Surrogate Recovery**

   Recoveries were within QC limits.

6. **Matrix Spike/Matrix Spike Duplicate**

   No MS/MSD was analyzed for this SDG.

7. **Sample Analysis**

   Samples were analyzed according to the prescribed QC procedures. All requirements were met.

LAB CHRONICLE
SW8260

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26

SDG NO. : 01G173
Instrument ID : T-003

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	DCC Data FN	Prep. Batch	Notes
MBLK1W	V003G48Q	1	NA	08/01/0111:52	08/01/0111:52	RGB830	RGB825	V003G48	Method Blank
LCS1W	V003G48L	1	NA	08/01/0109:25	08/01/0109:25	RGB826	RGB825	V003G48	Lab Control Sample (LCS)
LCD1W	V003G48Y	1	NA	08/01/0114:17	08/01/0114:17	RGB834	RGB825	V003G48	LCS Duplicate
0026-224	G173-01	1	NA	08/01/0116:39	08/01/0116:39	RGB838	RGB825	V003G48	Field Sample
0026-225	G173-02	1	NA	08/01/0117:15	08/01/0117:15	RGB839	RGB825	V003G48	Field Sample
0026-226	G173-03	1	NA	08/01/0117:50	08/01/0117:50	RGB840	RGB825	V003G48	Field Sample

FN - Filename
DCC - Daily Continuing Calibration
% Moist - Percent Moisture

SAMPLE RESULTS

2003

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	07/27/01
Project	: CAMP PENDLETON, CT026	Date Received:	07/27/01
Batch No.	: 01G173	Date Extracted:	08/01/01 16:39
Sample ID:	0026-224	Date Analyzed:	08/01/01 16:39
Lab Samp ID:	G173-01	Dilution Factor:	1
Lab File ID:	RGB838	Matrix :	WATER
Ext Btch ID:	V003G48	% Moisture :	NA
Calib. Ref.:	RGB825	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	ND	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	2.1J	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	ND	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	97	62-139
TOLUENE-D8	101	75-125
BROMOFLUOROBENZENE	87	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	07/27/01
Project	: CAMP PENDLETON, CT026	Date Received:	07/27/01
Batch No.	: 01G173	Date Extracted:	08/01/01 17:15
Sample ID	: 0026-225	Date Analyzed:	08/01/01 17:15
Lab Samp ID	: G173-02	Dilution Factor:	1
Lab File ID	: RGB839	Matrix	: WATER
Ext Btch ID	: VO03G48	% Moisture	: NA
Calib. Ref.	: RGB825	Instrument ID	: T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	9.4	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	.45J	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	1.8J	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	ND	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	.26J	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	98	62-139
TOLUENE-D8	100	75-125
BROMOFLUOROBENZENE	87	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	07/27/01
Project	: CAMP PENDLETON, CT026	Date Received:	07/27/01
Batch No.	: 01G173	Date Extracted:	08/01/01 17:50
Sample ID:	0026-226	Date Analyzed:	08/01/01 17:50
Lab Samp ID:	G173-03	Dilution Factor:	1
Lab File ID:	RGB840	Matrix	: WATER
Ext Btch ID:	V003G48	% Moisture	: NA
Calib. Ref.:	RGB825	Instrument ID	: T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	.35J	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	12	.5	.21
1,2-DICHLOROPROPANE	.39J	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	2.1	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	3.7J	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
IBROMOCHLOROMETHANE	ND	5	.14
THYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	ND	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	9.3	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	97	62-139
TOLUENE-D8	113	75-125
BROMOFLUOROBENZENE	83	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

QC SUMMARY

2007

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	NA
oject	: CAMP PENDLETON, CTO26	Date Received:	08/01/01
tch No.	: 01G173	Date Extracted:	08/01/01 11:52
Sample ID:	MBLK1W	Date Analyzed:	08/01/01 11:52
Lab Samp ID:	V003G48Q	Dilution Factor:	1
Lab File ID:	RGB830	Matrix :	WATER
Ext Btch ID:	V003G48	% Moisture :	NA
Calib. Ref.:	RGB825	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	ND	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
IBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	ND	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	ND	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	93	62-139
TOLUENE-D8	100	75-125
BROMOFLUOROBENZENE	90	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CT026
TCH NO.: 01G173
METHOD: SW 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	V003G48Q	V003G48L	V003G48Y		
LAB FILE ID:	RGB830	RGB826	RGB834		
DATE EXTRACTED:	08/01/0111:52	08/01/0109:25	08/01/0114:17	DATE COLLECTED:	NA
DATE ANALYZED:	08/01/0111:52	08/01/0109:25	08/01/0114:17	DATE RECEIVED:	08/01/01
PREP. BATCH:	V003G48	V003G48	V003G48		
CALIB. REF:	RGB825	RGB825	RGB825		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1-Dichloroethene	ND	10	10.5	105	10	10.6	106	1	75-125	20
Benzene	ND	10	10.7	107	10	10.4	104	3	75-125	20
Chlorobenzene	ND	10	9.81	98	10	9.81	98	0	75-125	20
Toluene	ND	10	9.35	93	10	9.28	93	1	75-125	20
Trichloroethene	ND	10	9.7	97	10	9.11	91	6	75-125	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10	9.37	94	10	8.56	86	62-139
Toluene-d8	10	9.56	96	10	8.88	89	75-125
Bromofluorobenzene	10	8.77	88	10	8.53	85	75-125

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO26, UST SITE 1

WET CHEMICAL ANALYSES

SDG#: 01G173

8000

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO 26, UST SITE 1**

SDG: **01G173**

METHOD 300.0
ANIONS

Two (2) water samples were received on 07/27/01 for Anions analysis by Method 300.0 in accordance with "Methods for Chemical Analysis of Water & Wastewater", USEPA 600-79-020, 1983.

1. Holding Time

   Analysis met the holding time criteria.

2. Method Blank

   Method blanks were free of contamination at reporting limit level.

3. Lab Control Sample/Lab Control Duplicate

   Lab control results were within QC limit.

4. Duplicate

   No duplicate sample was analyzed for this SDG.

5. Matrix Spike

   No matrix spike was analyzed for this SDG.

6. Sample Analysis

   Sample analyses were performed within the QC requirements. All requirements were met.

SAMPLE RESULTS

METHOD 0
SULF

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G173

Matrix : WATER
Instrument ID : TI006

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICG038WB	ND	1	NA	.5	.101	07/31/0110:10	NA	AG30051A	AG30049A	ICG038W	NA	NA
LCS1W	ICG038WL	9.64	1	NA	.5	.101	07/31/0110:27	NA	AG30052A	AG30049A	ICG038W	NA	NA
0026-225	G173-02	139	100	NA	50	10.1	07/31/0111:52	NA	AG30057A	AG30049A	ICG038W	07/27/01	07/27/01
0026-226	G173-03	253	100	NA	50	10.1	07/31/0112:26	NA	AG30059A	AG30049A	ICG038W	07/27/01	07/27/01

RL : Reporting Limit

METHOD 0
CHLORIDE Cl

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : O1G173

Matrix : WATER
Instrument ID : TI006

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICHO04WB	ND	1	NA	.2	.047	08/10/0118:37	NA	AH10003A	AH10001A	ICHO04W	NA	NA
LCS1W	ICHO04WL	5.06	1	NA	.2	.047	08/10/0118:54	NA	AH10004A	AH10001A	ICHO04W	NA	NA
LCD1W	ICHO04WC	5.04	1	NA	.2	.047	08/10/0119:11	NA	AH10005A	AH10001A	ICHO04W	NA	NA
0026-225	G173-02	4080	2000	NA	400	94	08/10/0119:29	NA	AH10006A	AH10001A	ICHO04W	07/27/01	07/27/01
0026-226	G173-03	4150	2000	NA	400	94	08/10/0119:46	NA	AH10007A	AH10001A	ICHO04W	07/27/01	07/27/01

RL : Reporting Limit

METHOD 0
NITRA... N

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G173

Matrix : WATER
Instrument ID : TI006

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICG035WB	ND	1	NA	.1	.0206	07/28/0109:15	NA	AG27075A	AG27073A	ICG035W	NA	NA
LCS1W	ICG035WL	2.27	1	NA	.1	.0206	07/28/0109:32	NA	AG27076A	AG27073A	ICG035W	NA	NA
0026-225	G173-02	8.56	5	NA	.5	.103	07/28/0114:04	NA	AG27092A	AG27085A	ICG035W	07/27/01	07/27/01
0026-226	G173-03	10.9	5	NA	.5	.103	07/28/0114:21	NA	AG27093A	AG27085A	ICG035W	07/27/01	07/27/01

RL: Reporting Limit

QC SUMMARY

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G173
METHOD: METHOD 300.0

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	ICH004WB	ICH004WL	ICH004WC		
LAB FILE ID:	AH10003A	AH10004A	AH10005A		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	08/10/0118:37	08/10/0118:54	08/10/0119:11	DATE RECEIVED:	NA
PREP. BATCH:	ICH004W	ICH004W	ICH004W		
CALIB. REF:	AH10001A	AH10001A	AH10001A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Chloride-Cl	ND	5	5.06	101	5	5.04	101	0	80-120	20

8007

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G173
METHOD: METHOD 300.0

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MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	1		
SAMPLE ID:	MBLK1W			
LAB SAMP ID:	ICG038WB	ICG038WL		
LAB FILE ID:	AG30051A	AG30052A		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	07/31/0110:10	07/31/0110:27	DATE RECEIVED:	NA
PREP. BATCH:	ICG038W	ICG038W		
CALIB. REF:	AG30049A	AG30049A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	QC LIMIT (%)
Sulfate	ND	10	9.64	96	80-120

8008

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G173
METHOD: METHOD 300.0

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MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	1		
SAMPLE ID:	MBLK1W			
LAB SAMP ID:	ICG035WB	ICG035WL		
LAB FILE ID:	AG27075A	AG27076A		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	07/28/0109:15	07/28/0109:32	DATE RECEIVED:	NA
PREP. BATCH:	ICG035W	ICG035W		
CALIB. REF:	AG27073A	AG27073A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	QC LIMIT (%)
Nitrate-N	ND	2	2.27	114	80-120

6008

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO 26, UST SITE 1**

SDG: **01G173**

METHOD 310.1
TOTAL ALKALINITY

Two (2) water samples were received on 07/27/01 for Alkalinity analysis by Method 310.1 in accordance with "Methods for Chemical Analysis of Water & Wastewater", USEPA 600-79-020, 1983.

1. Holding Time

   Analysis met the holding time criteria.

2. Method Blank

   Method blank was free of contamination at reporting limit level.

3. Lab Control Sample/Lab Control Duplicate

   Lab control results were within the control limit.

4. Duplicate

   No duplicate sample was analyzed for this SDG.

5. Sample Analysis

   Sample analyses were performed within the QC requirements. All requirements were met.

METHO[illegible].1
TOTAL A[illegible]NITY

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CT026
Batch No. : 01G173

Matrix : WATER
Instrument ID : I53

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ALG016WB	ND	1	NA	5	.469	07/31/0113:00	NA	ALG016W-1	NA	ALG016W	NA	NA
LCS1W	ALG016WL	120	1	NA	5	.469	07/31/0113:05	NA	ALG016W-2	NA	ALG016W	NA	NA
LCD1W	ALG016WC	118	1	NA	5	.469	07/31/0113:10	NA	ALG016W-3	NA	ALG016W	NA	NA
0026-225	G173-02	108	1	NA	5	.469	07/31/0114:40	NA	ALG016W-21	NA	ALG016W	07/27/01	07/27/01
0026-226	G173-03	55.1	1	NA	5	.469	07/31/0114:45	NA	ALG016W-22	NA	ALG016W	07/27/01	07/27/01

RL: Reporting Limit

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/27/01
Project	: CAMP PENDLETON, CT026	Date Received:	07/27/01
Batch No.	: D1G173	Date Extracted:	07/30/01 15:05
Sample ID:	0026-225	Date Analyzed:	07/30/01 16:34
Lab Samp ID:	G173-02	Dilution Factor:	1
Lab File ID:	FG10006A	Matrix :	WATER
Ext Btch ID:	DG10G10	% Moisture :	NA
Calib. Ref.:	FG10002A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	ND	1	.18
METHANE	.43J	1	.26

RL: Reporting Limit

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Phone #	Phone #	
Fax #	Fax #	

4025

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/27/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/27/01
Batch No.	: 01G173	Date Extracted:	07/30/01 15:05
Sample ID:	0026-226	Date Analyzed:	07/30/01 16:49
Lab Samp ID:	G173-03	Dilution Factor:	1
Lab File ID:	FG10007A	Matrix :	WATER
Ext Btch ID:	DG10G10	% Moisture :	NA
Calib. Ref.:	FG10002A	Instrument ID :	GCTD10

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	ND	1	.18
METHANE	.6J	1	.26

RL: Reporting Limit

4026

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO 26, UST SITE 1**

SDG: **01G173**

METHOD 9060
TOTAL ORGANIC CARBON

Two (2) water samples were received on 07/27/01 for TOC analysis by method 9060 in accordance with "Method for Chemical Analysis of Water and Wastewater" EPA 600/4-79-020 (1983)

1. Holding Time

   Analysis met holding time criteria.

2. Blank

   Method blank was free of contamination at reporting limit level.

3. Lab Control Sample/ Lab Control Sample Duplicate

   Lab control results were within the control limit.

4. Duplicate

   No duplicate sample was analyzed in this SDG.

5. Matrix Spike

   No MS sample was analyzed in this SDG.

6. Sample Analysis

   Sample analyses were performed within QC requirements. All requirements were met.

METH 50
TC

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G173

Matrix : WATER
Instrument ID :

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	TCH009WB	ND	1	NA	5	.551	08/13/0110:30	NA	TCH009W-07	TCH009W-05	TCH009W	NA	NA
LCS1W	TCH009WL	21.3	1	NA	5	.551	08/13/0110:45	NA	TCH009W-08	TCH009W-05	TCH009W	NA	NA
LCD1W	TCH009WC	22.0	1	NA	5	.551	08/13/0111:00	NA	TCH009W-09	TCH009W-05	TCH009W	NA	NA
0026-225	G173-02	ND	1	NA	5	.551	08/13/0115:30	NA	TCH009W-21	TCH009W-17	TCH009W	07/27/01	07/27/01
0026-226	G173-03	7.30	1	NA	5	.551	08/13/0115:55	NA	TCH009W-22	TCH009W-17	TCH009W	07/27/01	07/27/01

RL : Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CT026
METHOD: METHOD 9060
MATRIX: WATER
% MOISTURE: NA

BATCH NO.: 01G173
SAMPLE ID: LCS1W/LCD1W
CONTROL NO.: TCH009WL/C

DATE RECEIVED: NA
DATE EXTRACTED: NA
DATE ANALYZED: 08/13/01 10:45/11:00

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD %	QC LIMIT %	RPD LIMIT %
TOC	ND	20	21.3	106	20	22	110	3	80-120	20

8045

FOSTER WHEELER ENVIRONMENTAL CORPORATION
1230 Columbia Street, S San Diego, CA 92101 (619) 234-8696

NUMBER 02724

CHAIN-OF-CUSTODY REC RD

PROJECT NAME: UST 5/8/9/17	PURCHASE ORDER NO.: 010848 TASK 4
PROJECT LOCATION: CAMP PENDLETON	PROJECT NO.: 1990.026D
SAMPLER NAME: Tania Turpin-Kersten	SAMPLER SIGNATURE: [signature]
PROJECT CONTACT: Senda Alexson	AIRBILL NUMBER: COURIER

LABORATORY NAME:

LABORATORY ID (FOR LABORATORY): 01G108

Project Information Section Do not submit to Laboratory

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	8260B	TPH-C	EPA418.1 (TPH)	EPA8310 (PAH)	EPA 300.0 (Nitrate Sulfate Chloride)	RSK 175 m (Ethane Ethene Methane)	EPA 3/01 Alkalinity	EPA 9060 TOC	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
0026-202	7/19/01	1300	11	X		W	10 day	X	X	X		X	X	X	X		SITE 5/8/9/17 MW 47	—	—	REG
0026-203	7/19/01	1450	11		X	W	10 day	X	X	X		X	X	X	X		SITE 5/8/9/17 MW 46	—	—	REG
0026-204	7/19/01	1525	14	X		W	10 day	X	X	X	X	X	X	X	X	RUN MS/MSD ON PAHS	SITE 5/8/9/17 MW 41	—	—	REG
0026-205	7/19/01	1600	33	X		W	10 day	X	X	X		X	X	X	X	RUN MS/MSD ON ALL	SITE 5/8/9/17 MW 37	—	—	REG

RELINQUISHED BY (Signature): [signature]	DATE: 7/19/01	RECEIVED BY (Signature): [signature]	LABORATORY INSTRUCTIONS/COMMENTS
COMPANY: Foster	TIME: 1710	COMPANY: EMAX	
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)	COMPOSITE DESCRIPTION
COMPANY	TIME	COMPANY	
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)	SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
COMPANY	TIME	COMPANY	TEMPERATURE: ____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT: 3rd Qtr Sampling

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

6915B8

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO26, UST SITE 5/8/9/17

METHOD 3520/M8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 01G108

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CT026**

SDG: **01G108**

METHOD 3520/M8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Four (4) water samples were received on 07/19/01 to be analyzed for Total Petroleum Hydrocarbons by Method 3520/M8015B in accordance with SW846 and Leaking Underground Fuel Tank (LUFT) Field Manual, SWRCB, Dept. of Health Service, CA (1988).

1. Holding Time

Analytical holding time was met.

2. Method Blank

There was no contamination detected at reporting level.

3. Lab Control Sample/Lab Control Sample Duplicate

All recoveries were within QC limits.

4. Surrogate Recovery

All recoveries were within QC limits.

5. Matrix Spike/Matrix Spike Duplicate

Sample G108-04 was analyzed for MS/MSD from this SDG. All recoveries were within QC limits.

6. Calibration

Initial calibration was seven points. Continue calibrations were carried out at 10 sample intervals. All QC requirements were met.

7. Sample Analysis

Samples were analyzed according to the prescribed QC procedures. Samples were quantified from C10-C24.

LAB CHRONICLE
M8015D

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26

SDG NO. : 01G108
Instrument ID : GCT050

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	WATER Analysis DateTime	Extraction DateTime	Sample Data FN	DCC Data FN	Prep. Batch	Notes
MBLK1W	DSG023WB	1	NA	07/25/0102:03	07/24/0112:00	TG08016A	TG08014A	DSG023W	Method Blank
LCS1W	DSG023WL	1	NA	07/25/0102:52	07/24/0112:00	TG08017A	TG08014A	DSG023W	Lab Control Sample (LCS)
LCD1W	DSG023WC	1	NA	07/25/0103:40	07/24/0112:00	TG08018A	TG08014A	DSG023W	LCS Duplicate
0026-202	G108-01	.96	NA	07/25/0108:32	07/24/0112:00	TG08024A	TG08014A	DSG023W	Field Sample
0026-203	G108-02	.94	NA	07/25/0109:21	07/24/0112:00	TG08025A	TG08014A	DSG023W	Field Sample
0026-204	G108-03T	9.4	NA	07/25/0117:31	07/24/0112:00	TG08035A	TG08026A	DSG023W	Field Sample
0026-205	G108-04	.94	NA	07/25/0111:49	07/24/0112:00	TG08028A	TG08026A	DSG023W	Field Sample
0026-205MS	G108-04M	.94	NA	07/25/0112:37	07/24/0112:00	TG08029A	TG08026A	DSG023W	Matrix Spike Sample (MS)
0026-205MSD	G108-04S	.94	NA	07/25/0113:27	07/24/0112:00	TG08030A	TG08026A	DSG023W	MS Duplicate (MSD)

FN - Filename
DCC - Daily Continuing Calibration
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 3520/M8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G108

Matrix : WATER
Instrument ID : GCT050

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	SURR (%)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	DSG023WB	ND	93	1	NA	.1	.067	07/25/0102:03	07/24/0112:00	TG08016A	TG08014A	DSG023W	NA	07/24/01
LCS1W	DSG023WL	3.78	93	1	NA	.1	.067	07/25/0102:52	07/24/0112:00	TG08017A	TG08014A	DSG023W	NA	07/24/01
LCD1W	DSG023WC	3.96	96	1	NA	.1	.067	07/25/0103:40	07/24/0112:00	TG08018A	TG08014A	DSG023W	NA	07/24/01
0026-202	G108-01	ND	91	.96	NA	.096	.064	07/25/0108:32	07/24/0112:00	TG08024A	TG08014A	DSG023W	07/19/01	07/19/01
0026-203	G108-02	.35	96	.94	NA	.094	.063	07/25/0109:21	07/24/0112:00	TG08025A	TG08014A	DSG023W	07/19/01	07/19/01
0026-204	G108-03T	29	DO	9.4	NA	.94	.63	07/25/0117:31	07/24/0112:00	TG08035A	TG08026A	DSG023W	07/19/01	07/19/01
0026-205*	G108-04	.72	90	.94	NA	.094	.063	07/25/0111:49	07/24/0112:00	TG08028A	TG08026A	DSG023W	07/19/01	07/19/01
0026-205MS*	G108-04M	4.73	98	.94	NA	.094	.063	07/25/0112:37	07/24/0112:00	TG08029A	TG08026A	DSG023W	07/19/01	07/19/01
0026-205MSD*	G108-04S	4.47	100	.94	NA	.094	.063	07/25/0113:27	07/24/0112:00	TG08030A	TG08026A	DSG023W	07/19/01	07/19/01

RL : Reporting Limit
SUR1 : Hexacosane

Parameter	H-C Range
JP5	C7 -C18
Diesel	C10-C24
Motor Oil	C18-C34
Gas	C6 -C12

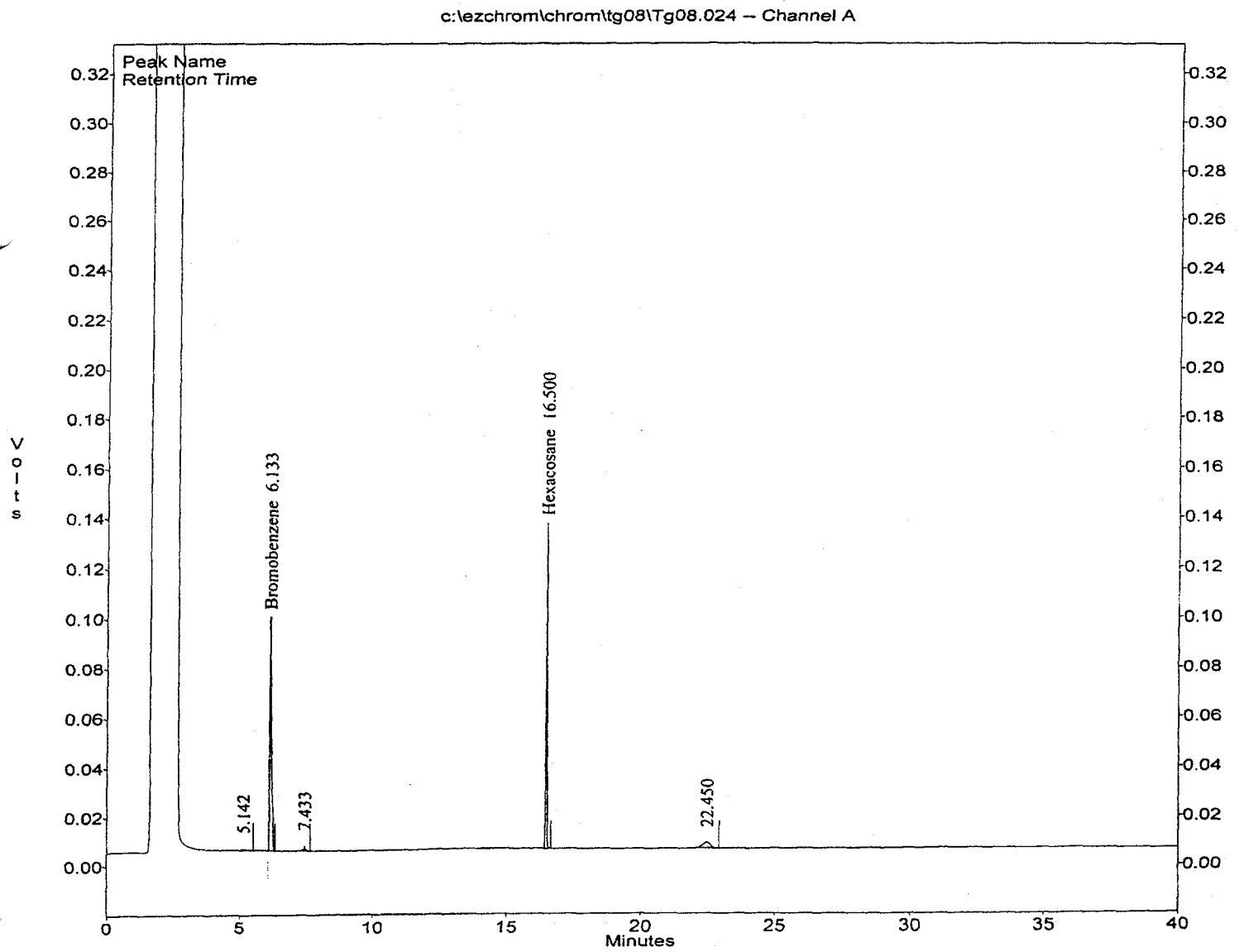
* : Presence of Motor Oil-like pattern, quantitated against Diesel calibration factor

EPA METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\tg08\Tg08.024
Method : c:\ezchrom\methods\Ds50f25.met
Sample ID : 01G108-01
Acquired : Jul 25, 2001 08:32:56
Printed : Jul 25, 2001 09:12:56
User : SHAWN

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
2	Bromobenzene	6.133	431223	4743.9	90.9
4	Hexacosane	16.500	365835	16045.0	22.8
G1	Diesel		7351	9582.9	0.8

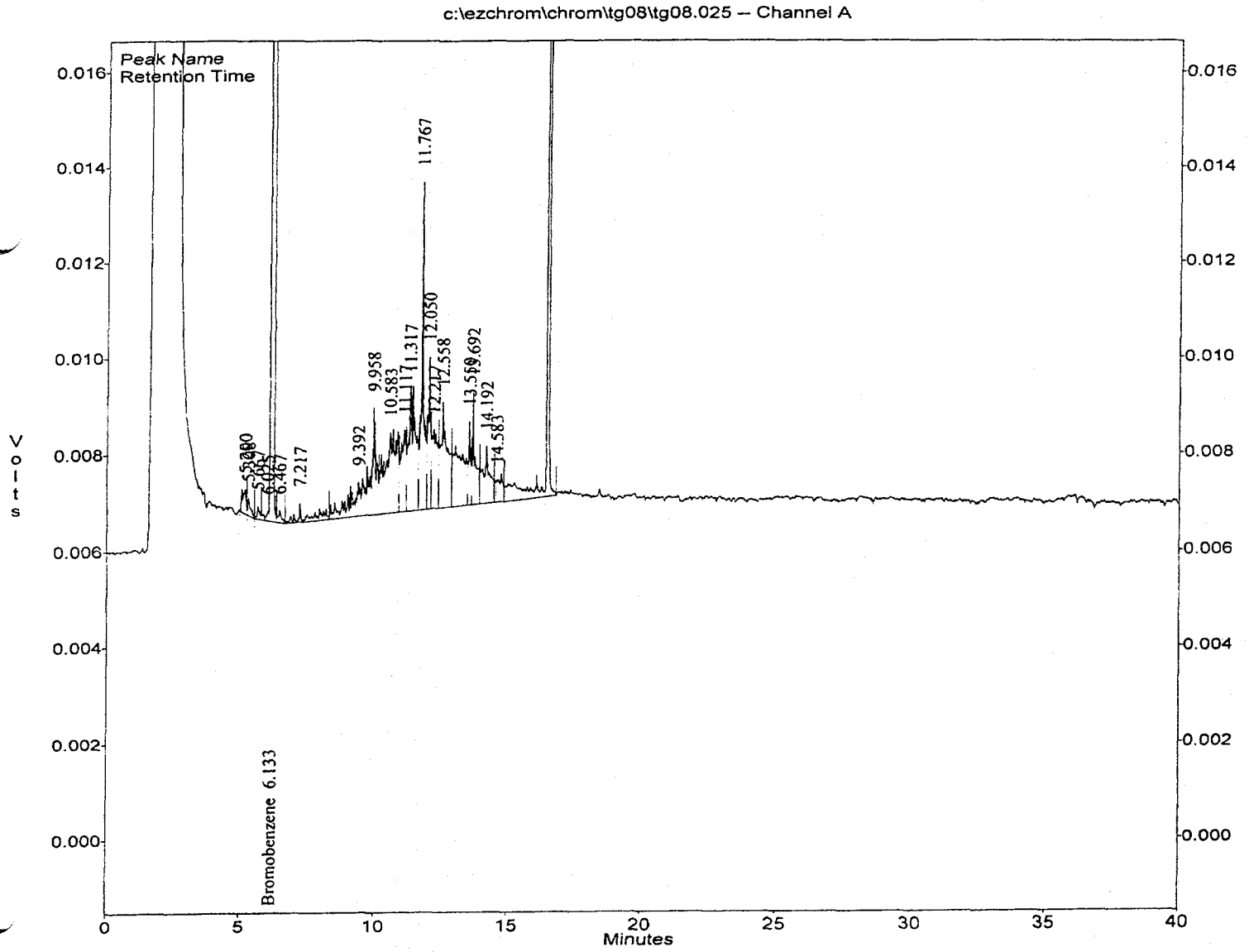


EPA METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\tg08\tg08.025
Method : c:\ezchrom\methods\ds50f25.met
Sample ID : 01G108-02
Acquired : Jul 25, 2001 09:21:41
Printed : Jul 25, 2001 10:33:14
User : SHAWN

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
5	Bromobenzene	6.133	458495	4743.9	96.6
21	Hexacosane	16.500	386636	16045.0	24.1
G1	Diesel		354133	9582.9	37.0



5014

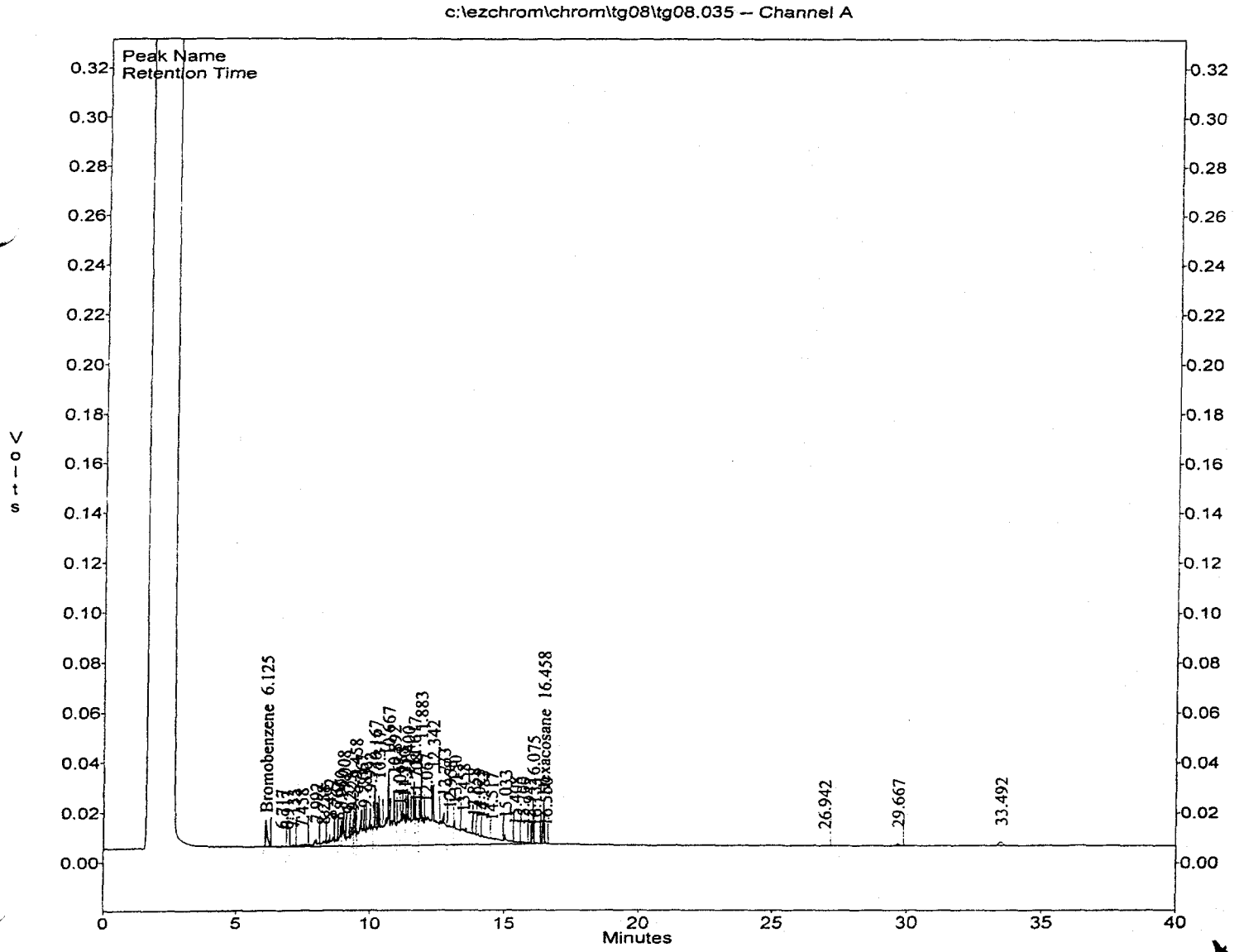
EPA METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\tg08\tg08.035
Method : c:\ezchrom\methods\ds50f25.met
Sample ID : 01G108-03T DF=10
Acquired : Jul 25, 2001 17:31:13
Printed : Jul 26, 2001 12:47:57
User : SHAWN

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
1	Bromobenzene	6.125	46732	4743.9	9.9
45	Hexacosane	16.458	41631	16045.0	2.6
G1	Diesel		2990170	9582.9	312.0

x 10 x 10 / 1000



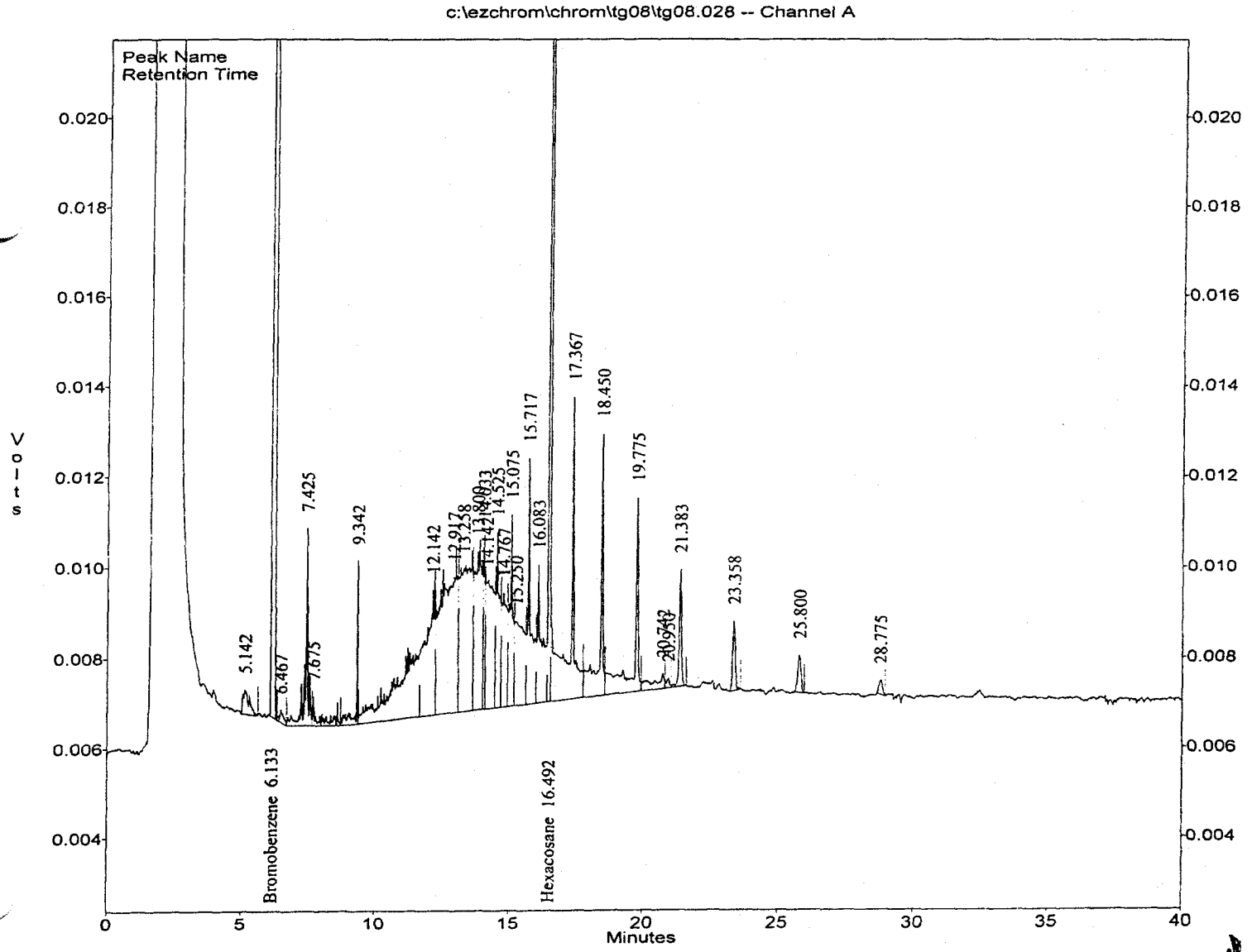
5015

EPA METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\tg08\tg08.028
Method : c:\ezchrom\methods\ds50f25.met
Sample ID : 01G108-04
Acquired : Jul 25, 2001 11:49:12
Printed : Jul 26, 2001 12:42:41
User : SHAWN

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
2	Bromobenzene	6.133	400430	4743.9	84.4
19	Hexacosane	16.492	361683	16045.0	22.5
G1	Diesel		727276	9582.9	75.9



5016

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO 26, UST SITE 5/ 8/ 9/ 17

METHOD 418.1
TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

SDG#: 01G108

5000

CASE NARRATIVE

CLIENT: FOSTER WHEELER

PROJECT: CAMP PENDLETON, CTO 26, SITE 5/8/9/17

SDG: 01G108

METHOD 418.1
TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Four (4) water samples were received on 0719/01 for total recoverable petroleum hydrocarbons analysis by Method 418.1 in accordance with "Methods for Chemical Analysis of Water & Wastewater", USEPA 600-79-020, 1983.

1. Holding Time

   Analysis met the holding time criteria.

2. Method Blank

   Method blank was free of contamination at reporting limit level.

3. Matrix Spike/Matrix Spike Duplicate

   Sample G108-04 was spiked. All recoveries were within QC limit.

4. Lab Control Sample/Lab Control Sample Duplicate

   Lab control results were within the control limit.

5. Sample Analysis

   Sample analyses were performed within the QC requirements.

METHOD 1
TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G108

Matrix : WATER
Instrument ID : I061

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	TRG008WB	ND	1	NA	10	.558	08/01/0113:40	07/31/0116:30	TRH004-03	TRH004CC	TRG008W	NA	07/31/01
LCS1W	TRG008WL	5.68J	1	NA	10	.558	08/01/0113:45	07/31/0116:30	TRH004-04	TRH004CC	TRG008W	NA	07/31/01
LCD1W	TRG008WC	5.54J	1	NA	10	.558	08/01/0113:50	07/31/0116:30	TRH004-05	TRH004CC	TRG008W	NA	07/31/01
0026-202	G108-01	ND	.99	NA	9.9	.552	08/01/0114:15	07/31/0116:30	TRH004-10	TRH004CC	TRG008W	07/19/01	07/19/01
0026-203	G108-02	ND	.94	NA	9.4	.525	08/01/0114:20	07/31/0116:30	TRH004-11	TRH004CC	TRG008W	07/19/01	07/19/01
0026-204	G108-03	47.8J	9.6	NA	96	5.36	08/01/0114:40	07/31/0116:30	TRH004-15	TRH004CC	TRG008W	07/19/01	07/19/01
0026-205	G108-04	ND	.94	NA	9.4	.525	08/01/0114:45	07/31/0116:30	TRH004-16	TRH004CC	TRG008W	07/19/01	07/19/01
0026-205MS	G108-04M	5.27J	.94	NA	9.4	.525	08/01/0114:50	07/31/0116:30	TRH004-17	TRH004CC	TRG008W	07/19/01	07/19/01
0026-205MSD	G108-04S	5.74J	.94	NA	9.4	.525	08/01/0114:55	07/31/0116:30	TRH004-18	TRH004CC	TRG008W	07/19/01	07/19/01

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
METHOD: METHOD 418.1
MATRIX: WATER
% MOISTURE: NA

BATCH NO.: 01G108
SAMPLE ID: LCS1W/LCD1W
CONTROL NO.: TRG008WL/C

DATE RECEIVED: 07/31/01
DATE EXTRACTED: 07/31/01 16:30
DATE ANALYZED: 08/01/01 13:45/13:50

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD %	QC LIMIT %	RPD LIMIT %
TRPH	ND	6	5.68J	95	6	5.54J	92	2	80-120	20

5003

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
METHOD: METHOD 418.1
MATRIX: WATER
% MOISTURE: NA

BATCH NO.: 01G108
SAMPLE ID: 0026-205MS/MSD
CONTROL NO.: G108-04M/S

DATE RECEIVED: 07/19/01
DATE EXTRACTED: 07/31/01 16:30
DATE ANALYZED: 08/01/01 14:50/14:55

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	SPIKE AMT (mg/L)	MSD RSLT (mg/L)	MSD % REC	RPD %	QC LIMIT %	RPD LIMIT %
TRPH	ND	6	5.27J	88	6	5.74J	96	9	80-120	20

5004

EMAX Laboratories Inc.

CALIBRATION

INITIAL CALIBRATION					07.21.99
No.	Standard ID	Conc.(ppm)	% Trans.	Abs.	RF
1	SS3C-04-01-1	10		0.015000	666.67
2	SS3C-04-01-2	30		0.042000	714.29
3	SS3C-04-01-3	50		0.072000	694.44
4	SS3C-04-02-1	100		0.140000	714.29
5	SS3C-04-02-2	200		0.282000	709.22
6	SS3C-04-02-3	300		0.423000	709.22
Average Response Factor (ARF)					701.35
Percent Relative Standard Deviation (%RSD)					3%

Initia Ca. Check TV = 150 mg/L	% Trans.	Abs.	Result	% Rec.	%Diff
		0.2030	142	95%	5%

Continuing Calibration				DATE:
DCC	True Value	Result	% Difference	Notes
SS3C-04-03-1	150	136.76	8.8	TRH004-CC
↓	150	136.76	8.8	TRH005-CC
	150	136.76	8.8	TRH006-CC

QC Criteria:

ANALYSIS LOG FOR TRPH/TROG

Method ☑ 418.1 ☐ 413.2 Instrument No: 061 Starting Date 08.01.01 Time 13:30 Ending Date 08.01.01 Time 15:05 Book # A18-002

Data File Name	Preparative Batch	Analytical Batch	Lab Sample ID	Time	DF	Matrix S	Matrix W	% Trans	Abs.	Result (mg/L) | (mg/Kg)	Notes Final reported,
TRH004-01	TRG008W	TRH004C	TRH004-CB	13:30	1	☐	☐		0.000	ND	mg/L
TRH004-02	TRG008W	TRH004C	TRH004-CC	13:35	1	☐	☐		0.195	136.76	
TRH004-03	TRG008W	TRH004C	TRG008-WB	13:40	1	☐	☑		0.000	ND	ND
TRH004-04	TRG008W	TRH004C	TRG008-WL	13:45	1	☐	☑		0.081	5.68	
TRH004-05	TRG008W	TRH004C	TRG008-WC	13:50	1	☐	☑		0.079	5.54	
TRH004-06	TRG008W	TRH004C	01G107-02	13:55	0.96	☐	☑		0.001	ND	
TRH004-07	TRG008W	TRH004C	01G107-03	14:00	0.97	☐	☑		0.269	18.30	
TRH004-08	TRG008W	TRH004C	01G107-04	14:05	0.98	☐	☑		0.382	26.26	
TRH004-09	TRG008W	TRH004C	01G107-05	14:10	0.94	☐	☑		0.000	ND	
TRH004-10	TRG008W	TRH004C	01G108-01	14:15	0.99	☐	☑		0.000	ND	ND
TRH004-11	TRG008W	TRH004C	01G108-02	14:20	0.94	☐	☑		0.003	ND	ND
TRH004-12	TRG008W	TRH004C	01G108-03	14:25	0.96	☐	☑		0.668	44.98	over-range
TRH004-13	TRG008W	TRH005C	TRH005-CB	14:30	1	☐	☐		0.000	ND	
TRH004-14	TRG008W	TRH005C	TRH005-CC	14:35	1	☐	☐		0.195	136.76	
TRH004-15	TRG008W	TRH005C	01G108-03	14:40	9.6	☐	☑		0.071	47.80	47.8
TRH004-16	TRG008W	TRH005C	01G108-04	14:45	0.94	☐	☑		0.000	ND	ND
TRH004-17	TRG008W	TRH005C	01G108-04M	14:50	0.94	☐	☑		0.080	5.27	
TRH004-18	TRG008W	TRH005C	01G108-04S	14:55	0.94	☐	☑		0.087	5.74	
TRH004-19	TRG008W	TRH006C	TRH006-CB	15:00	1	☐	☐		0.000	ND	
TRH004-20	TRG008W	TRH006C	TRH006-CC	15:05	1	☐	☐		0.195	136.76	
						☐	☐				
						☐	☐				
						☐	☐				

INITIAL CALIBRATION REFERENCE				
Date	06-30-01			
ICAL ID	SS3B-04-01-1			
ARF	701.35			
Continuing Calibration				
ID	TV	Result	% Rec	% Diff.
TRH004-CC	150	136.76	91.2	8.8
TRH005-CC	150	136.76	91.2	8.8
TRH006-CC	150	136.76	91.2	8.8
QC Results				
Lab Sample ID	TV	Result	%Rec	
TRG008-WL	6	5.68	94.7	
TRG008-WC	6	5.54	92.3	
01G108-04M	6	5.27	87.8	
01G108-04S	6	5.74	95.7	
Standards				
DCC Std. ID	SS3C-04-03-1			
LCS/MS Std.ID	SS3C-04-03-2			
Freon 113 ID	SW1A-02-690			

Analyzed By: SC

Checked By: ML

Date 8/01/01

5006

EXTRACTION LOG FOR TRG...

SOP ☐ MAX-3580 ☐ EMAX-3510 ☐ EMAX-413.2 ☐ EMAX-3520 ☐ EMAX-3550 ☑ EMAX-418.1

Matrix water Date 7-31-01 Time 12:00 End Date 7-31-01 Time 16:30 Book # ETR-002

PREPARATION BATCH # TRG008

Sample Prep ID	Lab Sample ID	Sample Amount (g | ml)	Extract Volume (ml)	Notes
*01	TRG008- WB	1000	100	
*02	-WL	1000	100	
*03	-WC	1000	100	
*04	01G107- 02	1040	100	
*05	-03	1030	100	
*06	-04	1020	100	
*07	-05	1060	100	
*08	01G108 - 01	1010	100	
*09	-02	1060	100	
*10	-03	1040	100	
*11	-04	1060	100	
*12	-04M	1060	100	
*13	-04S	1060	100	
*14				
*15				
*16				
*17				
*18				
*19			SC	
*20			7-31-01	
*21				
*22				
*23				
*24				
*25				
*26				

Standards	ID	Amount Added (ml)
LCS/MS	S13C-04-03-2	2.0

Reagent	Lot# / ID
Freon 113	SW1A-02-690
Na_2SO_4	005399
HCl	SW1A-02-671
Silica Gel	SW1A-02-704

SDG #	Extract Location
	SE06

Comments:

Prepared By: SC

Standard Added By: SC

Witnessed By: ML

Checked By: ML

Extract Location SE06

5007

EMAX LABORATORIES, INC., 1835 205th Street, Torrance, CA 90501

6915B1

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO 26, UST SITE 5/ 8/ 9/ 17

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

SDG#: 01G108

2000

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO26, UST SITE 5/8/9/17**

SDG: **01G108**

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Four (4) water samples were received on 07/19/01 for Volatile Organic Analyses by Method 8260B in accordance with USEPA SW846, 3rd ed. (1997).

1. Holding Time: Analytical holding time was met.

2. Tuning and Calibration: Tuning and calibration were carried out at 12 hour interval. All QC requirements were met.

3. Method Blank: Method blank was free of contamination at reporting limit.

4. Lab Control Sample/Lab Control Sample Duplicate: All recoveries were within QC limit.

5. Surrogate Recovery: Recoveries were within QC limit.

6. Matrix Spike/Matrix Spike Duplicate: Sample G108-04 was spiked. All recoveries were within QC limit.

7. Sample Analysis: Samples were analyzed according to the prescribed QC procedures. All requirements were met.

LAB CHRONICLE
SW8260

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26

SDG NO. : 01G108
Instrument ID : T-005

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	DCC Data FN	Prep. Batch	Notes
MBLK1W	VO05G59B	1	NA	07/26/0119:29	07/26/0119:29	RGQ778	RGQ774	VO05G59	Method Blank
LCS1W	VO05G59L	1	NA	07/26/0118:16	07/26/0118:16	RGQ776	RGQ774	VO05G59	Lab Control Sample (LCS)
LCD1W	VO05G59C	1	NA	07/26/0118:52	07/26/0118:52	RGQ777	RGQ774	VO05G59	LCS Duplicate
0026-202	G108-01	1	NA	07/27/0101:28	07/27/0101:28	RGQ788	RGQ774	VO05G59	Field Sample
0026-203	G108-02	1	NA	07/27/0102:04	07/27/0102:04	RGQ789	RGQ774	VO05G59	Field Sample
0026-204	G108-03	1	NA	07/27/0102:40	07/27/0102:40	RGQ790	RGQ774	VO05G59	Field Sample
0026-205	G108-04	1	NA	07/27/0103:16	07/27/0103:16	RGQ791	RGQ774	VO05G59	Field Sample
0026-205MS	G108-04M	1	NA	07/27/0103:51	07/27/0103:51	RGQ792	RGQ774	VO05G59	Matrix Spike Sample (MS)
0026-205MSD	G108-04S	1	NA	07/27/0104:27	07/27/0104:27	RGQ793	RGQ774	VO05G59	MS Duplicate (MSD)

FN - Filename
DCC - Daily Continuing Calibration
% Moist - Percent Moisture

SAMPLE RESULTS

2003

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	07/19/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/19/01
Batch No.	: 01G108	Date Extracted:	07/27/01 01:28
Sample ID	: 0026-202	Date Analyzed:	07/27/01 01:28
Lab Samp ID	: G108-01	Dilution Factor:	1
Lab File ID	: RGQ788	Matrix	: WATER
Ext Btch ID	: V005G59	% Moisture	: NA
Calib. Ref.	: RGQ774	Instrument ID	: T-005

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	ND	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	ND	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	.6J	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	90	62-139
TOLUENE-D8	96	75-125
BROMOFLUOROBENZENE	90	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	07/19/01
Project	: CAMP PENDLETON, CT026	Date Received:	07/19/01
tch No.	: 01G108	Date Extracted:	07/27/01 02:04
mple ID:	0026-203	Date Analyzed:	07/27/01 02:04
Lab Samp ID:	G108-02	Dilution Factor:	1
Lab File ID:	RGQ789	Matrix :	WATER
Ext Btch ID:	V005G59	% Moisture :	NA
Calib. Ref.:	RGQ774	Instrument ID :	T-005

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	ND	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
IBROMOCHLOROMETHANE	ND	5	.14
THYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	ND	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	.99J	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	89	62-139
TOLUENE-D8	96	75-125
BROMOFLUOROBENZENE	88	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\01G26\RGQ789.D
Acq On : 27 Jul 2001 2:04 am
Sample : 01G108-02 25mL
Misc : DF=1.0
MS Integration Params: 524TAIL.P
Quant Time: Jul 27 9:19 2001

Vial: 17
Operator: CR
Inst : T005
Multiplr: 1.00
Quant Results File: VO05G10.RE

Quant Method : C:\HPCHEM\1\METHODS\VO05G10.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Jul 11 09:38:50 2001
Response via : Initial Calibration
DataAcq Meth : VO05G10

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Difluorobenzene	9.69	114	3164354	10.00 ug/l	-0.02
31) Chlorobenzene-d5	15.76	117	2377609	10.00 ug/l	-0.02
60) 1,2-Dichlorobenzene-d4	22.15	152	888004	10.00 ug/l	0.00
System Monitoring Compounds					
30) 1,2-Dichloroethane-d4	8.98	65	910888	8.87 ug/l	-0.02
Spiked Amount 10.000			Recovery	= 88.70%	
43) Toluene-d8	12.60	98	3898206	9.61 ug/l	-0.02
Spiked Amount 10.000			Recovery	= 96.10%	
64) Bromofluorobenzene	18.50	95	1263395	8.79 ug/l	-0.02
Spiked Amount 10.000			Recovery	= 87.90%	
Target Compounds					Qvalue
15) Carbon Disulfide	5.38	76	281732	0.84 ug/l	96
36) Trichloroethene	10.27	130	101143	0.99 ug/l	98

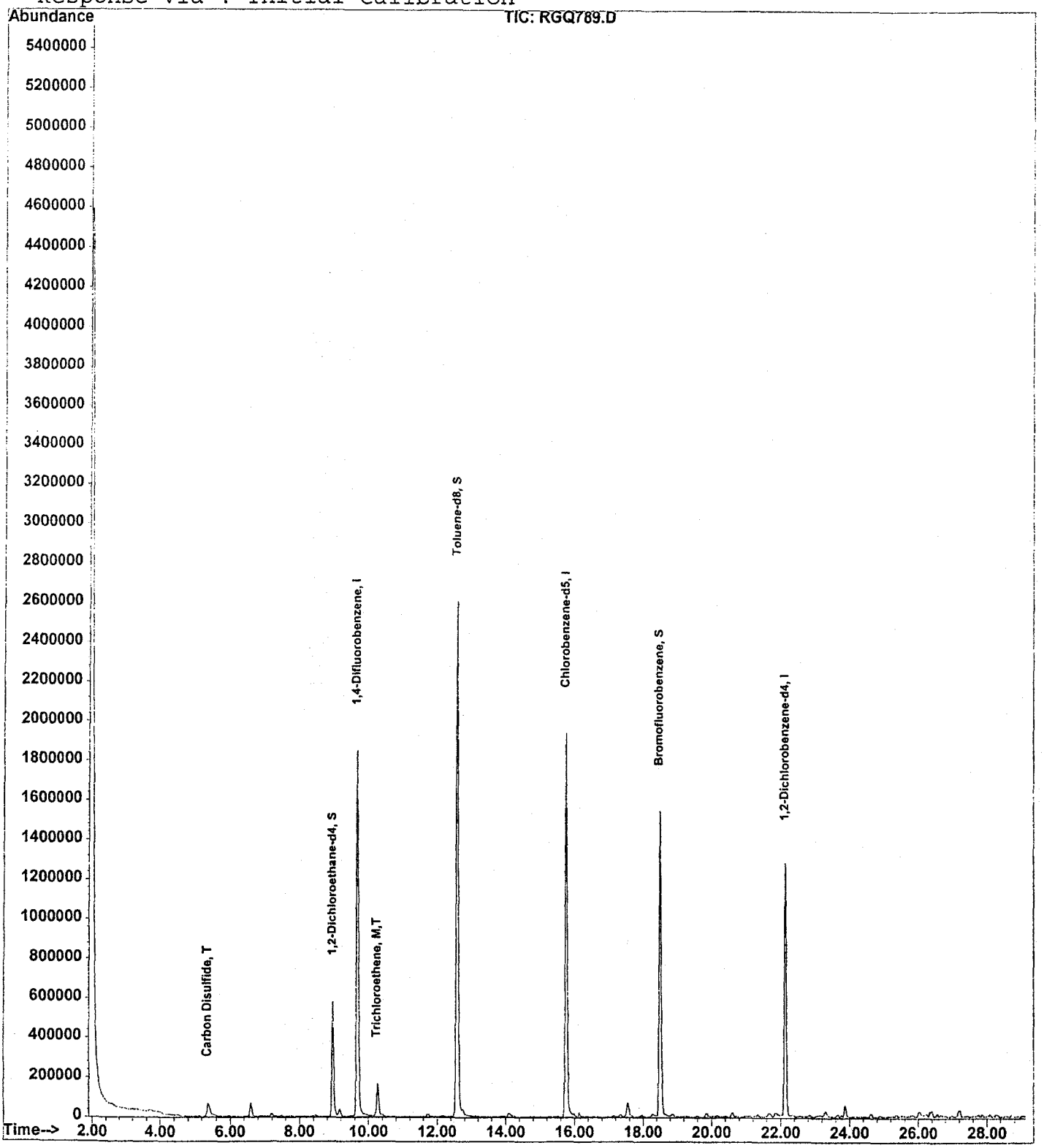
(#) = qualifier out of range (m) = manual integration

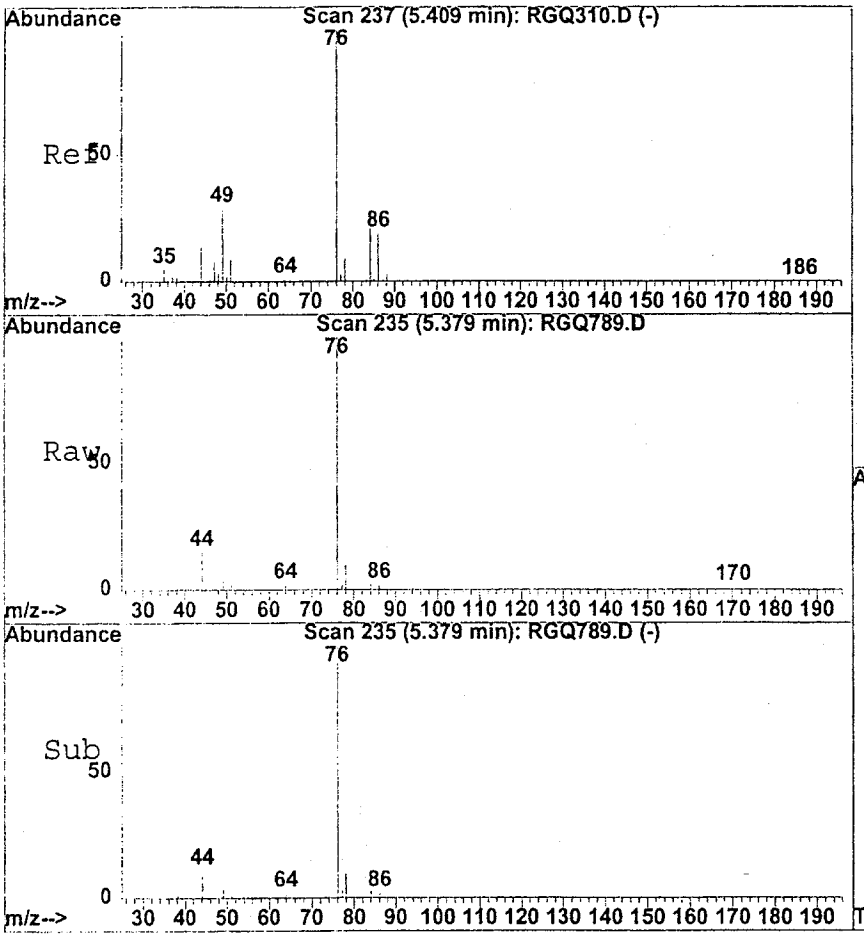
Data File : C:\HPCHEM\1\DATA\01G26\RGQ789.D
Acq On : 27 Jul 2001 2:04 am
Sample : 01G108-02 25mL
Misc : DF=1.0
MS Integration Params: 524TAIL.P
Quant Time: Jul 27 9:19 2001

Vial: 17
Operator: CR
Inst : T005
Multiplr: 1.00

Quant Results File: VO05G10.RE

Method : C:\HPCHEM\1\METHODS\VO05G10.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Jul 11 09:38:50 2001
Response via : Initial Calibration

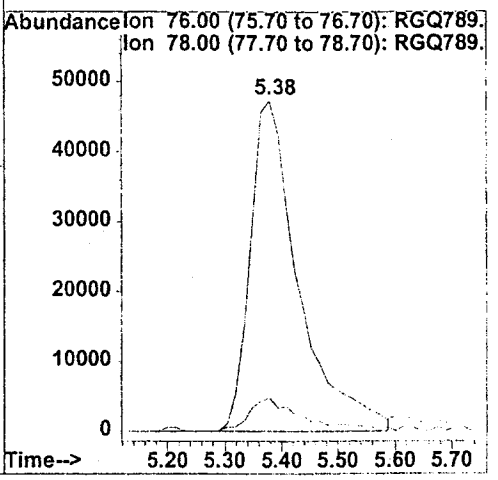


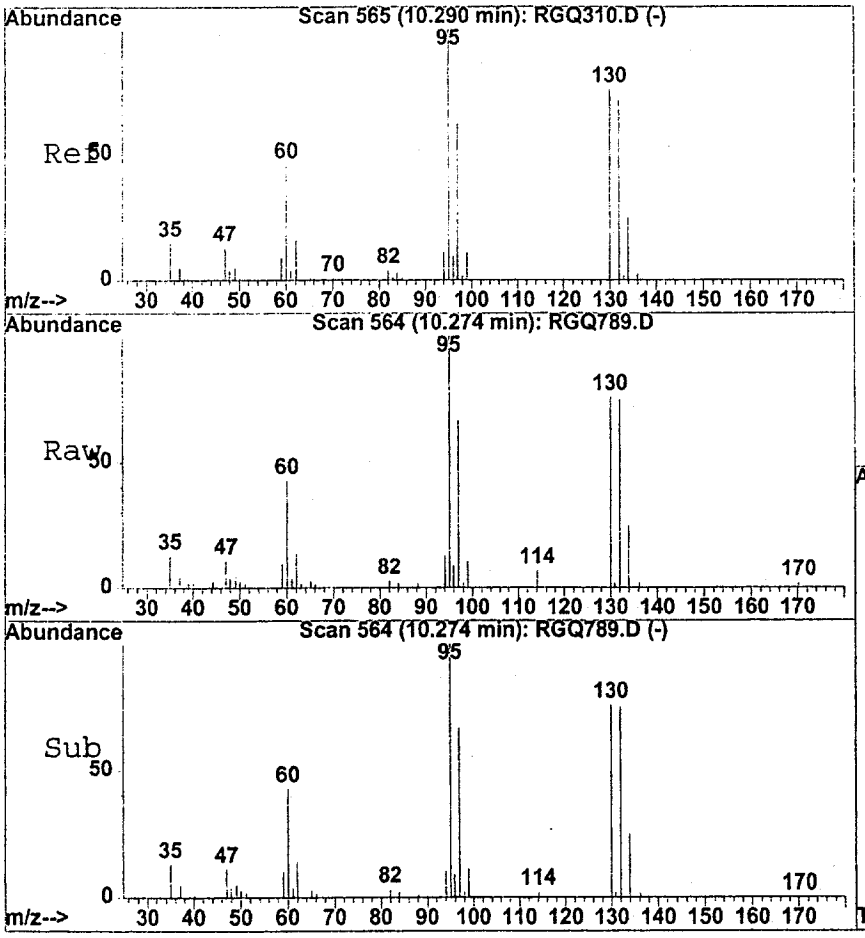


#15
Carbon Disulfide
Concen: 0.84 ug/l
RT: 5.38 min Scan# 235
Delta R.T. -0.03 min
Lab File: RGQ789.D
Acq: 27 Jul 2001 2:04 am

Tgt Ion: 76 Resp: 281732

Ion	Ratio	Lower	Upper
76	100		
78	10.9	0.0	39.3

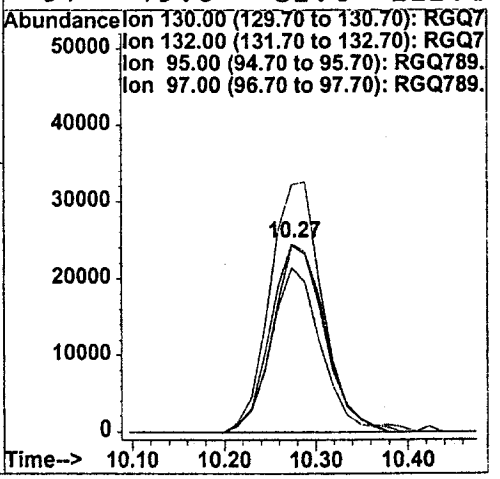




#36
Trichloroethene
Concen: 0.99 ug/l
RT: 10.27 min Scan# 564
Delta R.T. -0.02 min
Lab File: RGQ789.D
Acq: 27 Jul 2001 2:04 am

Tgt Ion:130 Resp: 101143

Ion	Ratio	Lower	Upper
130	100		
132	94.6	66.5	126.5
95	128.4	98.2	158.2
97	79.6	52.4	112.4



SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	07/19/01
Project	: CAMP PENDLETON, CT026	Date Received:	07/19/01
atch No.	: 01G108	Date Extracted:	07/27/01 02:40
ample ID	: 0026-204	Date Analyzed:	07/27/01 02:40
Lab Samp ID	: G108-03	Dilution Factor:	1
Lab File ID	: RGQ790	Matrix	: WATER
Ext Btch ID	: V005G59	% Moisture	: NA
Calib. Ref.	: RGQ774	Instrument ID	: T-005

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	.66J	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	2.1	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	2.7	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	.87J	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	2J	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	6.2	.5	.12
XYLENES	2.9	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	ND	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	1.1J	5	.14
TOLUENE	.83	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	39	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	1J	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	90	62-139
TOLUENE-D8	96	75-125
BROMOFLUOROBENZENE	80	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	07/19/01
Project	: CAMP PENDLETON, CT026	Date Received:	07/19/01
tch No.	: 01G108	Date Extracted:	07/27/01 03:16
mple ID:	0026-205	Date Analyzed:	07/27/01 03:16
Lab Samp ID:	G108-04	Dilution Factor:	1
Lab File ID:	RGQ791	Matrix :	WATER
Ext Btch ID:	V005G59	% Moisture :	NA
Calib. Ref.:	RGQ774	Instrument ID :	T-005

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	ND	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
BROMOCHLOROMETHANE	ND	5	.14
THYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	ND	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	ND	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	90	62-139
TOLUENE-D8	95	75-125
BROMOFLUOROBENZENE	87	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

QC SUMMARY

2011

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	NA
Project	: CAMP PENDLETON, CTO26	Date Received:	07/26/01
Batch No.	: 01G108	Date Extracted:	07/26/01 19:29
Sample ID	: MBLK1W	Date Analyzed:	07/26/01 19:29
Lab Samp ID	: V005G59B	Dilution Factor:	1
Lab File ID	: RGQ778	Matrix	: WATER
Ext Btch ID	: V005G59	% Moisture	: NA
Calib. Ref.	: RGQ774	Instrument ID	: T-005

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	ND	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	ND	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	ND	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	87	62-139
TOLUENE-D8	92	75-125
BROMOFLUOROBENZENE	86	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G108
ETHOD: SW 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	V005G59B	V005G59L	V005G59C		
LAB FILE ID:	RGQ778	RGQ776	RGQ777		
DATE EXTRACTED:	07/26/0119:29	07/26/0118:16	07/26/0118:52	DATE COLLECTED:	NA
DATE ANALYZED:	07/26/0119:29	07/26/0118:16	07/26/0118:52	DATE RECEIVED:	07/26/01
PREP. BATCH:	V005G59	V005G59	V005G59		
CALIB. REF:	RGQ774	RGQ774	RGQ774		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1-Dichloroethene	ND	10	11.2	112	10	11.1	111	1	75-125	20
Benzene	ND	10	10.6	106	10	10.2	102	4	75-125	20
Chlorobenzene	ND	10	10.6	106	10	10.5	105	1	75-125	20
Toluene	ND	10	10.6	106	10	10.5	105	2	75-125	20
Trichloroethene	ND	10	10.8	108	10	10.6	106	2	75-125	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10	8.52	85	10	8.49	85	62-139
Toluene-d8	10	9.45	95	10	9.16	92	75-125
Bromofluorobenzene	10	8.61	86	10	8.74	87	75-125

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G108
METHOD: SW 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	0026-205				
LAB SAMP ID:	G108-04	G108-04M	G108-04S		
LAB FILE ID:	RGQ791	RGQ792	RGQ793		
DATE EXTRACTED:	07/27/0103:16	07/27/0103:51	07/27/0104:27	DATE COLLECTED:	07/19/01
DATE ANALYZED:	07/27/0103:16	07/27/0103:51	07/27/0104:27	DATE RECEIVED:	07/19/01
PREP. BATCH:	V005G59	V005G59	V005G59		
CALIB. REF:	RGQ774	RGQ774	RGQ774		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX R (%
1,1-Dichloroethene	ND	10	7.88	79	10	8.35	84	6	75-125	2
Benzene	ND	10	8.77	88	10	9.14	91	4	75-125	2
Chlorobenzene	ND	10	9.03	90	10	9.14	91	1	75-125	2
Toluene	ND	10	8.89	89	10	9.13	91	3	75-125	2
Trichloroethene	ND	10	8.74	87	10	9.01	90	3	75-125	2

SURROGATE PARAMETER	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10	8.71	87	10	8.72	87	62-139
Toluene-d8	10	9.69	97	10	9.68	97	75-125
Bromofluorobenzene	10	8.79	88	10	8.99	90	75-125

6915B9

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO26, UST SITE 5/8/9/17

SW 3520C/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

SDG#: 01G108

6047

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO26**

EMAX SDG: **01G108**

SW3520C/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

One (1) water sample was received on 07/19/01 for PAH analyses by EPA Method 8310 in accordance with EPA SW846 and EMAX SOP AP-2043.

1. Holding Time

   Analytical holding time was met.

2. Surrogate recovery

   Surrogate recoveries of G108-03, 03T and MS/MSD were out of QC limit, due to matrix interference.

3. Matrix Spike/Matrix Spike Duplicate

   Sample G108-03 was designated for MS/MSD. Most of the recoveries were out of QC due to matrix interference.

4. Lab Control Sample

   All recoveries were within QC limit.

5. Method Blank

   Method blank was free of contamination at the reporting level.

6. Calibration

   Initial calibration was 5 point. All continuing calibrations were carried out at 10 samples interval and mean recoveries were within 85-115%.

7. Sample Analysis
   All sample analyses were within QC requirements.

LAB CHRONICLE
SW8310

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26

SDG NO. : 01G108
Instrument ID : LCT002

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	DCC Data FN	Prep. Batch	Notes
MBLK1W	PAG015WB	1	NA	07/25/0113:25	07/24/0112:00	RG25004A	RG25002A	PAG005W	Method Blank
LCS1W	PAG015WL	1	NA	07/25/0113:47	07/24/0112:00	RG25005A	RG25002A	PAG005W	Lab Control Sample (LCS)
0026-204	G108-03	.94	NA	07/25/0115:12	07/24/0112:00	RG25009A	RG25002A	PAG005W	Field Sample
0026-204MS	G108-03M	.94	NA	07/25/0115:33	07/24/0112:00	RG25010A	RG25002A	PAG005W	Matrix Spike Sample (MS)
0026-204MSD	G108-03S	.94	NA	07/25/0115:54	07/24/0112:00	RG25011A	RG25002A	PAG005W	MS Duplicate (MSD)
0026-204DL	G108-03T	4.7	NA	07/25/0116:15	07/24/0112:00	RG25012A	RG25002A	PAG005W	Diluted Sample

FN - Filename
DCC - Daily Continuing Calibration
% Moist - Percent Moisture

SAMPLE RESULTS

6050

SW 3520C/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

Client	: FOSTER WHEELER	Date Collected:	07/19/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/19/01
Batch No.	: 01G108	Date Extracted:	07/24/01 12:00
Sample ID:	0026-204	Date Analyzed:	07/25/01 15:12
Lab Samp ID:	G108-03	Dilution Factor:	.94
Lab File ID:	RG25009A	Matrix :	WATER
Ext Btch ID:	PAG005W	% Moisture :	NA
Calib. Ref.:	RG25002A	Instrument ID :	LCT002

PARAMETERS	RESULTS (ug/L)		RL (ug/L)	MDL (ug/L)	
NAPHTHALENE	(68E)	20	1.9	.35	.34
ACENAPHTHYLENE	(ND)	NA	3.8	1.5	NA
ACENAPHTHENE	(ND)	ND	1.9	.34	.44
FLUORENE	11E	(ND)	.38	.11	.11
PHENANTHRENE	(10E)	46E	.19	.049	.096
ANTHRACENE	(ND)	.36	.19	.049	.046
FLUORANTHENE	(ND)	ND	.38	.11	.26
PYRENE	(.51)	.38	.19	.058	.052
BENZO(A)ANTHRACENE	(ND)	ND	.19	.052	.058
CHRYSENE	(ND)	ND	.19	.051	.066
BENZO(B)FLUORANTHENE	(ND)	.12J	.38	.087	.082
BENZO(K)FLUORANTHENE	(ND)	ND	.19	.046	.049
BENZO(A)PYRENE	(ND)	ND	.19	.052	.077
DIBENZO(A,H)ANTHRACENE	.22J	(ND)	.38	.13	.095
BENZO(G,H,I)PERYLENE	.14J	(ND)	.38	.083	.19
INDENO(1,2,3-CD)PYRENE	.1J	(ND)	.19	.037	.075

SURROGATE PARAMETERS	% RECOVERY		QC LIMIT
P-TERPHENYL-D14	(170*)	236*	25-157

RL: Reporting Limit
Left of | is related to UV detector; Right of | related to FL detector
( ) included the reported data
* : Out of QC limit due to matrix interference.
E : Exceeding calibration range.

SW 3520C/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

Client	: FOSTER WHEELER	Date Collected:	07/19/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/19/01
Batch No.	: 01G108	Date Extracted:	07/24/01 12:00
Sample ID:	0026-204DL	Date Analyzed:	07/25/01 16:15
Lab Samp ID:	G108-03T	Dilution Factor:	4.7
Lab File ID:	RG25012A	Matrix :	WATER
Ext Btch ID:	PAG005W	% Moisture :	NA
Calib. Ref.:	RG25002A	Instrument ID :	LCT002

PARAMETERS	RESULTS (ug/L)		RL (ug/L)	MDL (ug/L)	
NAPHTHALENE	(71)	58	9.4	1.8	1.7
ACENAPHTHYLENE	(ND)	NA	19	7.5	NA
ACENAPHTHENE	(ND)	ND	9.4	1.7	2.2
FLUORENE	11	(ND)	1.9	.54	.54
PHENANTHRENE	(11)	53E	.94	.24	.48
ANTHRACENE	(ND)	.39J	.94	.24	.23
FLUORANTHENE	(ND)	ND	1.9	.55	1.3
PYRENE	(.51J)	.42J	.94	.29	.26
BENZO(A)ANTHRACENE	(ND)	ND	.94	.26	.29
CHRYSENE	(ND)	ND	.94	.25	.33
BENZO(B)FLUORANTHENE	(ND)	ND	1.9	.44	.41
BENZO(K)FLUORANTHENE	(ND)	ND	.94	.23	.24
BENZO(A)PYRENE	(ND)	ND	.94	.26	.39
DIBENZO(A,H)ANTHRACENE	(ND)	ND	1.9	.64	.47
BENZO(G,H,I)PERYLENE	(ND)	ND	1.9	.41	.94
INDENO(1,2,3-CD)PYRENE	(ND)	ND	.94	.18	.38

SURROGATE PARAMETERS	% RECOVERY		QC LIMIT
P-TERPHENYL-D14	(178*)	349*	25-157

RL: Reporting Limit
Left of | is related to UV detector; Right of | related to FL detector
( ) included the reported data
* : Out of QC limit due to matrix interference.
E : Exceeding calibration range.

QC SUMMARY

SW 3520C/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

Client	: FOSTER WHEELER	Date Collected:	NA
Project	: CAMP PENDLETON, CTO26	Date Received:	07/24/01
Batch No.	: 01G108	Date Extracted:	07/24/01 12:00
Sample ID:	MBLK1W	Date Analyzed:	07/25/01 13:25
Lab Samp ID:	PAG015WB	Dilution Factor:	1
Lab File ID:	RG25004A	Matrix :	WATER
Ext Btch ID:	PAG005W	% Moisture :	NA
Calib. Ref.:	RG25002A	Instrument ID :	LCT002

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
NAPHTHALENE	(ND)|ND	2	.37|.36
ACENAPHTHYLENE	(ND)|NA	4	1.6|NA
ACENAPHTHENE	(ND)|ND	2	.36|.47
FLUORENE	(ND)|ND	.4	.12|.11
PHENANTHRENE	(ND)|ND	.2	.052|.1
ANTHRACENE	(ND)|ND	.2	.052|.049
FLUORANTHENE	(ND)|ND	.4	.12|.27
PYRENE	(ND)|ND	.2	.062|.055
BENZO(A)ANTHRACENE	(ND)|ND	.2	.055|.062
CHRYSENE	(ND)|ND	.2	.054|.07
BENZO(B)FLUORANTHENE	(ND)|ND	.4	.093|.087
BENZO(K)FLUORANTHENE	(ND)|ND	.2	.049|.052
BENZO(A)PYRENE	(ND)|ND	.2	.055|.082
DIBENZO(A,H)ANTHRACENE	(ND)|ND	.4	.14|.1
BENZO(G,H,I)PERYLENE	(ND)|ND	.4	.088|.2
INDENO(1,2,3-CD)PYRENE	(ND)|ND	.2	.039|.08

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
P-TERPHENYL-D14	(106)|108	25-157

RL: Reporting Limit
Left of | is related to UV detector; Right of | related to FL detector
( ) included the reported data

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G108
METHOD: SW 3520C/8310

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	1		
SAMPLE ID:	MBLK1W			
LAB SAMP ID:	PAG015WB	PAG015WL		
LAB FILE ID:	RG25004A	RG25005A		
DATE EXTRACTED:	07/24/0112:00	07/24/0112:00	DATE COLLECTED:	NA
DATE ANALYZED:	07/25/0113:25	07/25/0113:47	DATE RECEIVED:	07/24/01
PREP. BATCH:	PAG005W	PAG005W		
CALIB. REF:	RG25002A	RG25002A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	QC LIMIT (%)
Naphthalene	(ND)|ND	10	(7.1)|7.51	(71)|75	43-125
Acenaphthylene	(ND)|NA	20	(15.3)|NA	(76)|NA	49-125
Acenaphthene	(ND)|ND	10	(8.03)|8.74	(80)|87	43-130
Fluorene	(ND)|ND	2	(1.78)|1.68	(89)|84	53-125
Phenanthrene	(ND)|ND	1	(.919)|.913	(92)|91	52-129
Anthracene	(ND)|ND	1	(.834)|.782	(83)|78	54-125
Fluoranthene	(ND)|ND	2	(1.82)|1.93	(91)|96	42-125
Pyrene	(ND)|ND	1	(.904)|.791	(90)|79	55-125
Benzo(a)anthracene	(ND)|ND	1	(.911)|.893	(91)|89	39-135
Chrysene	(ND)|ND	1	(.939)|.918	(94)|92	59-134
Benzo(b)fluoranthene	(ND)|ND	2	(1.91)|1.83	(96)|92	31-137
Benzo(k)fluoranthene	(ND)|ND	1	(1.01)|.941	(101)|94	60-129
Benzo(a)pyrene	(ND)|ND	1	(.936)|.85	(94)|85	52-125
Dibenzo(a,h)anthracene	(ND)|ND	2	(1.89)|1.76	(94)|88	51-125
Benzo(g,h,i)perylene	(ND)|ND	2	(1.79)|1.7	(90)|85	53-125
Indeno(1,2,3-cd)pyrene	(ND)|ND	1	(.946)|.891	(95)|89	55-125

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	QC LIMIT (%)
p-Terphenyl-d14	5	(5.64)|5.65	(113)|113	25-157

0055

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G108
METHOD: SW 3520C/8310

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	.94	.94	.94		
SAMPLE ID:	0026-204				
LAB SAMP ID:	G108-03	G108-03M	G108-03S		
LAB FILE ID:	RG25009A	RG25010A	RG25011A		
DATE EXTRACTED:	07/24/0112:00	07/24/0112:00	07/24/0112:00	DATE COLLECTED:	07/19/01
DATE ANALYZED:	07/25/0115:12	07/25/0115:33	07/25/0115:54	DATE RECEIVED:	07/19/01
PREP. BATCH:	PAG005W	PAG005W	PAG005W		
CALIB. REF:	RG25002A	RG25002A	RG25002A		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Naphthalene	(68E) | 20	10	(85.8E) | 15.5	(178*) | -45*	10	(111E) | 19.1	(430*) | -9*	(26) | 21	43-125	30
Acenaphthylene	(ND) | NA	20	(31.7) | NA	(158*) | NA	20	(38.7) | NA	(194*) | NA	(20) | 0	49-125	30
Acenaphthene	(ND) | ND	10	(8.93) | 460E	(89) | 4600*	10	(5.58) | 595E	(56) | 5950*	(46*) | 26	43-130	30
Fluorene	11E | (ND)	2	(16.4E) | 11.5E	(270*) | 575*	2	(30E) | 21.9E	(950*) | 1095*	(59*) | 62*	53-125	30
Phenanthrene	(10E) | 46E	1	(19.5E) | 77.1E	(950*) | 3110*	1	(47.7E) | 135E	(3770*) | 8900*	(84*) | 55*	52-129	30
Anthracene	(ND) | .36	1	(7.11E) | 1.01	(711*) | 65	1	(18.9E) | 1.9	(1890*) | 154*	(91*) | 61*	54-125	30
Fluoranthene	(ND) | 12E	2	(14.5E) | 27.6E	(725*) | 780*	2	(43.3E) | 62.4E	(2165*) | 2520*	(100*) | 77*	42-125	30
Pyrene	(.51) | .38	1	(.865) | 1.41	(36*) | 103	1	(1.56) | 2.83	(105) | 245*	(57*) | 67*	55-125	30
Benzo(a)anthracene	(ND) | ND	1	(2.6) | .101J	(260*) | 10*	1	(9.47E) | 1.68	(947*) | 168*	(114*) | 177*	39-135	30
Chrysene	(ND) | ND	1	(2.76) | 1.63	(276*) | 163*	1	(7.78E) | 4.61E	(778*) | 461*	(95*) | 96*	59-134	30
Benzo(b)fluoranthene	(ND) | .12J	2	(2.46) | 1.88	(123) | 88	2	(4.16) | 2.39	(208*) | 114	(51*) | 24	31-137	30
Benzo(k)fluoranthene	(ND) | ND	1	(3.5) | 1.07	(350*) | 107	1	(8.03E) | .871	(803*) | 87	(79*) | 21	60-129	30
Benzo(a)pyrene	(ND) | ND	1	(1.03) | 1.03	(103) | 103	1	(1.08) | 1.84	(108) | 184*	(5) | 56*	52-125	30
Dibenzo(a,h)anthracene	.22J | (ND)	2	(2.25) | 1.57	(102) | 78	2	(3.56) | 1.4	(167*) | 70	(45*) | 11	51-125	30
Benzo(g,h,i)perylene	.14J | (ND)	2	(1.85) | 1.6	(86) | 80	2	(2.73) | 1.57	(130*) | 78	(38*) | 2	53-125	30
Indeno(1,2,3-cd)pyrene	.1J | (ND)	1	(1.29) | .834	(119) | 83	1	(.82) | .909	(72) | 91	(45*) | 9	55-125	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	QC LIMIT (%)
p-Terphenyl-d14	5	(14.1) | 25.5	(300*) | 543*	5	(40.2) | 53.1	(855*) | 1130*	25-157

E: Exceeding calibration range.
*: Out of QC limit due to matrix interference.

6056

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO 26, UST 5/8/9/17**

SDG: **01G108**

METHOD 300.0
NITRATE/CHLORIDE/SULFATE

Four (4) water samples were received on 07/19/01 for Nitrate-N, Chloride-Cl and Sulfate analysis by Method 300.0 in accordance with "Method for Determination of Inorganic Anions by Chromatography" EPA 600/84-017.

1. Holding Time

   Analysis met holding time criteria.

2. Blank

   All blanks were free of contamination at reporting limit.

3. Duplicate

   Duplicate sample G108-04 was analyzed for sulfate and chloride, all %RPDs were within QC limit. Duplicate analysis for nitrate-N was not analyzed in this SDG.

4. Matrix Spike/Matrix Spike Duplicate

   Sample G108-04 was spiked for MS/MSD. All recoveries were within QC limit except Sulfate in MS.

5. Lab Control Sample

   Lab control results were within QC limit.

6. Sample Analyses

   All samples were analyzed according to the prescribed QC procedures.

   Nitrate result was reported as nitrogen concentration.

SAMPLE RESULTS

METHOD 300.0
CHLORIDE-Cl

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G108

Matrix : WATER
Instrument ID : TI006

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICG024WB	ND	1	NA	.2	.047	08/06/0116:44	NA	AH06003A	AH06001A	ICG024W	NA	NA
LCS1W	ICG024WL	5.03	1	NA	.2	.047	08/06/0117:01	NA	AH06004A	AH06001A	ICG024W	NA	NA
0026-202	G108-01	5920	1000	NA	200	47	08/06/0118:09	NA	AH06008A	AH06001A	ICG024W	07/19/01	07/19/01
0026-203	G108-02	6910	1000	NA	200	47	08/06/0118:29	NA	AH06009A	AH06001A	ICG024W	07/19/01	07/19/01
0026-204	G108-03	790	1000	NA	200	47	08/06/0118:47	NA	AH06010A	AH06001A	ICG024W	07/19/01	07/19/01
0026-205	G108-04	1250	1000	NA	200	47	08/06/0119:04	NA	AH06011A	AH06001A	ICG024W	07/19/01	07/19/01
0026-205DUP	G108-04D	1240	1000	NA	200	47	08/06/0119:21	NA	AH06012A	AH06001A	ICG024W	07/19/01	07/19/01
0026-205MS	G108-04M	6530	1000	NA	200	47	08/06/0120:12	NA	AH06015A	AH06013A	ICG024W	07/19/01	07/19/01
0026-205MSD	G108-04S	6620	1000	NA	200	47	08/06/0120:29	NA	AH06016A	AH06013A	ICG024W	07/19/01	07/19/01

RL : Reporting Limit

METHOD 300.0
NITRATE-N

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G108

Matrix : WATER
Instrument ID : TI006

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICG024WB	.022J	1	NA	.1	.0206	07/20/0117:57	NA	AG21003A	AG21001A	ICG024W	NA	NA
LCS1W	ICG024WL	2.21	1	NA	.1	.0206	07/20/0118:36	NA	AG21004A	AG21001A	ICG024W	NA	NA
0026-202	G108-01	4.09	5	NA	.5	.103	07/20/0120:01	NA	AG21009A	AG21001A	ICG024W	07/19/01	07/19/01
0026-203	G108-02	.642	1	NA	.1	.0206	07/20/0120:18	NA	AG21010A	AG21001A	ICG024W	07/19/01	07/19/01
0026-204	G108-03	.131	1	NA	.1	.0206	07/20/0123:26	NA	AG21021A	AG21015A	ICG024W	07/19/01	07/19/01
0026-205	G108-04	.598	5	NA	.5	.103	07/20/0120:52	NA	AG21012A	AG21001A	ICG024W	07/19/01	07/19/01
0026-205MS	G108-04M	2.54	5	NA	.5	.103	07/20/0121:10	NA	AG21013A	AG21001A	ICG024W	07/19/01	07/19/01
0026-205MSD	G108-04S	2.68	5	NA	.5	.103	07/20/0121:27	NA	AG21014A	AG21001A	ICG024W	07/19/01	07/19/01

RL: Reporting Limit

METHOD 300.0
SULFATE

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G108

Matrix : WATER
Instrument ID : TI006

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICG024WB	ND	1	NA	.5	.101	07/20/0117:57	NA	AG21003A	AG21001A	ICG024W	NA	NA
LCS1W	ICG024WL	10.7	1	NA	.5	.101	07/20/0118:36	NA	AG21004A	AG21001A	ICG024W	NA	NA
0026-204	G108-03	8.23	5	NA	2.5	.505	07/20/0120:35	NA	AG21011A	AG21001A	ICG024W	07/19/01	07/19/01
MBLK2W	ICG029WB	ND	1	NA	.5	.101	07/25/0120:58	NA	AG25029A	AG25027A	ICG029W	NA	NA
LCS2W	ICG029WL	9.36	1	NA	.5	.101	07/25/0121:15	NA	AG25030A	AG25027A	ICG029W	NA	NA
0026-202	G108-01	781	100	NA	50	10.1	07/25/0123:31	NA	AG25038A	AG25027A	ICG029W	07/19/01	07/19/01
0026-203	G108-02	924	100	NA	50	10.1	07/25/0123:48	NA	AG25039A	AG25027A	ICG029W	07/19/01	07/19/01
MBLK3W	ICG042WB	ND	1	NA	.5	.101	08/06/0116:44	NA	AH06003A	AH06001A	ICG042W	NA	NA
LCS3W	ICG042WL	10.7	1	NA	.5	.101	08/06/0117:01	NA	AH06004A	AH06001A	ICG042W	NA	NA
0026-205	G108-04	1800	1000	NA	500	101	08/06/0119:04	NA	AH06011A	AH06001A	ICG042W	07/19/01	07/19/01
0026-205DUP	G108-04D	1870	1000	NA	500	101	08/06/0119:21	NA	AH06012A	AH06001A	ICG042W	07/19/01	07/19/01
0026-205MS	G108-04M	4340	1000	NA	500	101	08/06/0120:12	NA	AH06015A	AH06001A	ICG042W	07/19/01	07/19/01
0026-205MSD	G108-04S	3960	1000	NA	500	101	08/06/0120:29	NA	AH06016A	AH06001A	ICG042W	07/19/01	07/19/01

RL : Reporting Limit

EPA METHOD 300.0 by IC
EMAX Analytical Laboratories, Inc.

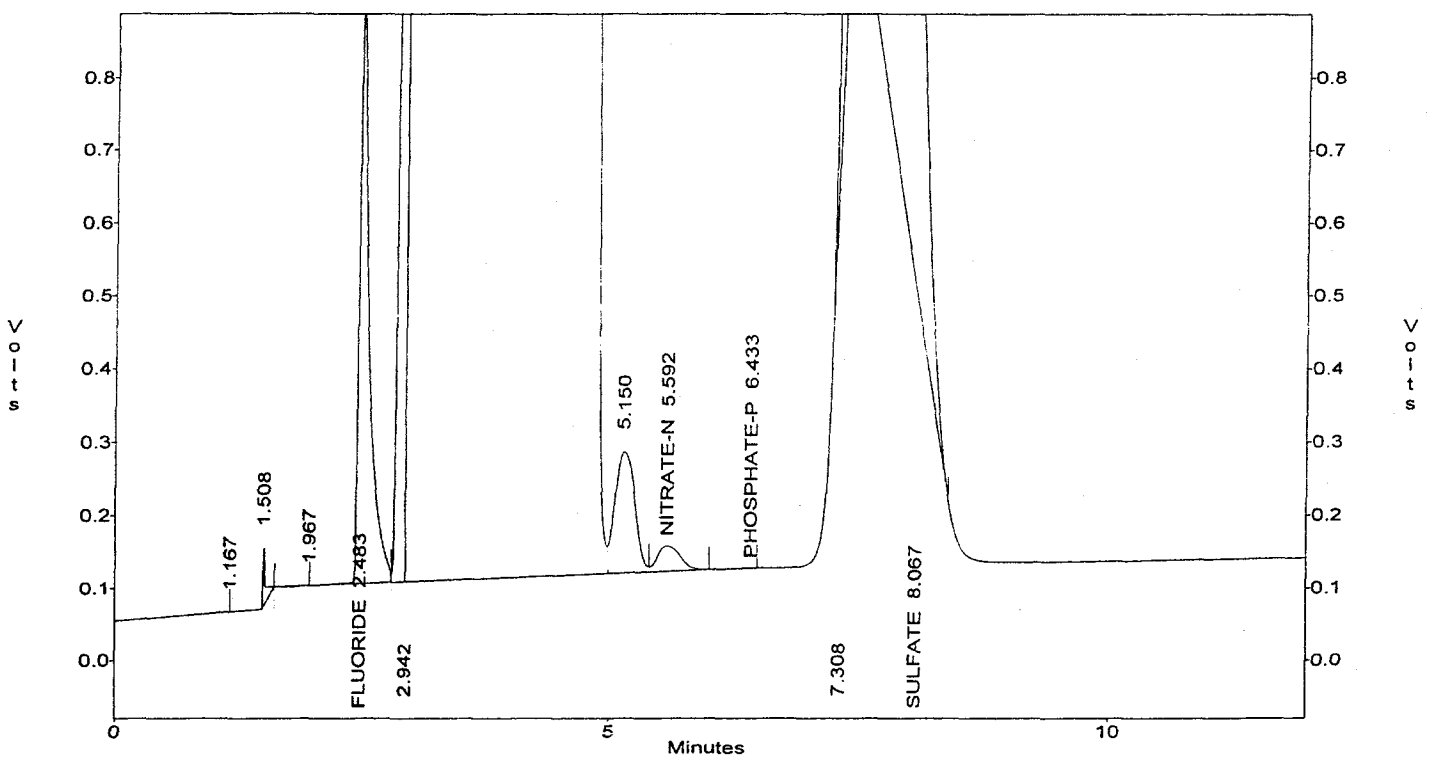
File : c:\ezchrom\chrom\ag21\ag21.010
Method : c:\ezchrom\methods\ic22g03.met
Sample ID : G108-2
Acquired : Jul 20, 2001 20:18:54
Printed : Aug 07, 2001 16:33:30
User : ANNA

Channel A Results

#	Peak Name	Ret.Time(min)	Height	Ave. CF	ESTD Conc.(ppm)
4	FLUORIDE	2.48	813600	91871.969	7.722
--	CHLORIDE	3.30	0	0.000	0.000
--	NITRITE-N	3.60	0	0.000	0.000
--	BROMIDE	4.80	0	0.000	0.000
7	NITRATE-N	5.59	35120	50027.531	0.642
8	PHOSPHATE-P	6.43	610	13033.267	0.046
10	SULFATE	8.07	594634	8860.100	69.048

A.F 8/7/01

c:\ezchrom\chrom\ag21\ag21.010 -- Channel A



8016

QC SUMMARY

8017

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G108
METHOD: METHOD 300.0

==========

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	1		
SAMPLE ID:	MBLK1W			
LAB SAMP ID:	ICG024WB	ICG024WL		
LAB FILE ID:	AH06003A	AH06004A		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	08/06/0116:44	08/06/0117:01	DATE RECEIVED:	NA
PREP. BATCH:	ICG024W	ICG024W		
CALIB. REF:	AH06001A	AH06001A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	QC LIMIT (%)
Chloride-Cl	ND	5	5.03	101	80-120

8018

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G108
METHOD: METHOD 300.0

==========

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	1		
SAMPLE ID:	MBLK1W			
LAB SAMP ID:	ICG024WB	ICG024WL		
LAB FILE ID:	AG21003A	AG21004A		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	07/20/0117:57	07/20/0118:36	DATE RECEIVED:	NA
PREP. BATCH:	ICG024W	ICG024W		
CALIB. REF:	AG21001A	AG21001A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	QC LIMIT (%)
Nitrate-N	.022J	2	2.21	110	80-120

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G108
METHOD: METHOD 300.0

==========

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	1		
SAMPLE ID:	MBLK1W			
LAB SAMP ID:	ICG024WB	ICG024WL		
LAB FILE ID:	AG21003A	AG21004A		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	07/20/0117:57	07/20/0118:36	DATE RECEIVED:	NA
PREP. BATCH:	ICG024W	ICG024W		
CALIB. REF:	AG21003A	AG21003A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	QC LIMIT (%)
Sulfate	ND	10	10.7	107	80-120

8020

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G108
METHOD: METHOD 300.0

==========

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	1		
SAMPLE ID:	MBLK2W			
LAB SAMP ID:	ICG029WB	ICG029WL		
LAB FILE ID:	AG25029A	AG25030A		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	07/25/0120:58	07/25/0121:15	DATE RECEIVED:	NA
PREP. BATCH:	ICG029W	ICG029W		
CALIB. REF:	AG25027A	AG25027A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	QC LIMIT (%)
Sulfate	ND	10	9.36	94	80-120

8021

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CT026
BATCH NO.: 01G108
METHOD: METHOD 300.0

==========

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	1		
SAMPLE ID:	MBLK3W			
LAB SAMP ID:	ICG042WB	ICG042WL		
LAB FILE ID:	AH06003A	AH06004A		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	08/06/0116:44	08/06/0117:01	DATE RECEIVED:	NA
PREP. BATCH:	ICG042W	ICG042W		
CALIB. REF:	AH06001A	AH06001A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	QC LIMIT (%)
Sulfate	ND	10	10.7	107	80-120

8022

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G108
METHOD: METHOD 300.0

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1000	1000	1000		
SAMPLE ID:	0026-205				
LAB SAMP ID:	G108-04	G108-04M	G108-04S		
LAB FILE ID:	AH06011A	AH06015A	AH06016A		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	07/19/01
DATE ANALYZED:	08/06/0119:04	08/06/0120:12	08/06/0120:29	DATE RECEIVED:	07/19/01
PREP. BATCH:	ICG024W	ICG024W	ICG024W		
CALIB. REF:	AH06001A	AH06013A	AH06013A		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	SPIKE AMT (mg/L)	MSD RSLT (mg/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Chloride-Cl	1250	5000	6530	106	5000	6620	107	1	80-120	20

8023

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CT026
BATCH NO.: 01G108
METHOD: METHOD 300.0

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	5	5	5		
SAMPLE ID:	0026-205				
LAB SAMP ID:	G108-04	G108-04M	G108-04S		
LAB FILE ID:	AG21012A	AG21013A	AG21014A		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	07/19/01
DATE ANALYZED:	07/20/0120:52	07/20/0121:10	07/20/0121:27	DATE RECEIVED:	07/19/01
PREP. BATCH:	ICG024W	ICG024W	ICG024W		
CALIB. REF:	AG21001A	AG21001A	AG21001A		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	SPIKE AMT (mg/L)	MSD RSLT (mg/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Nitrate-N	.598	2	2.54	97	2	2.68	104	5	80-120	20

8024

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G108
METHOD: METHOD 300.0

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1000	1000	1000		
SAMPLE ID:	0026-205				
LAB SAMP ID:	G108-04	G108-04M	G108-04S		
LAB FILE ID:	AH06011A	AH06015A	AH06016A		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	07/19/01
DATE ANALYZED:	08/06/0119:04	08/06/0120:12	08/06/0120:29	DATE RECEIVED:	07/19/01
PREP. BATCH:	ICG042W	ICG042W	ICG042W		
CALIB. REF:	AH06001A	AH06001A	AH06001A		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	SPIKE AMT (mg/L)	MSD RSLT (mg/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Sulfate	1800	2000	4340	127*	2000	3960	108	9	80-120	20

8025

EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G108
METHOD: METHOD 300.0

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1000	1000		
SAMPLE ID:	0026-205	0026-205DUP		
EMAX SAMP ID:	G108-04	G108-04D		
LAB FILE ID:	AH06011A	AH06012A		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	07/19/01
DATE ANALYZED:	08/06/0119:04	08/06/0119:21	DATE RECEIVED:	07/19/01
PREP. BATCH:	ICG024W	ICG024W		
CALIB. REF:	AH06001A	AH06001A		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	DUPL RSLT (mg/L)	RPD RSLT %	QC LIMIT (%)
Chloride-Cl	1250	1240	1	20

8026

EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G108
METHOD: METHOD 300.0

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1000	1000		
SAMPLE ID:	0026-205	0026-205DUP		
EMAX SAMP ID:	G108-04	G108-04D		
LAB FILE ID:	AH06011A	AH06012A		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	07/19/01
DATE ANALYZED:	08/06/0119:04	08/06/0119:21	DATE RECEIVED:	07/19/01
PREP. BATCH:	ICG042W	ICG042W		
CALIB. REF:	AH06001A	AH06001A		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	DUPL RSLT (mg/L)	RPD RSLT %	QC LIMIT (%)
Sulfate	1800	1870	4	20

8027

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO26, UST SITE 5/8/9/17

WET CHEMICAL ANALYSES

691586

SDG#: 01G108

8000

CASE NARRATIVE

CLIENT: FOSTER WHEELER

PROJECT: CAMP PENDLETON, CTO 26

SDG: 01G108

METHOD 310.1
TOTAL ALKALINITY

Four (4) water samples were received on 07/19/01 for Alkalinity analysis by Method 310.1 in accordance with "Methods for Chemical Analysis of Water & Wastewater", EPA 600/4-79-020, 1983.

1. Holding Time

   Analysis met holding time criteria.

2. Method Blank

   Method blank was free of contamination at reporting limit.

3. Lab Control Sample/Lab Control Sample Duplicate

   Lab control results were within the QC limit.

4. Duplicate

   Sample G108-04 was analyzed for duplicate. %RPD was within QC limit.

5. Matrix Spike

   No matrix spike sample was analyzed for this SDG.

6. Sample Analysis

   Sample analyses were performed within QC requirements. All requirements were met.

METHOD 310.1
TOTAL ALKALINITY

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G108

Matrix : WATER
Instrument ID : I53

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ALG013WB	ND	1	NA	5	.469	07/25/0109:30	NA	ALG013W-1	NA	ALG013W	NA	NA
LCS1W	ALG013WL	18.9	1	NA	5	.469	07/25/0109:35	NA	ALG013W-2	NA	ALG013W	NA	NA
LCD1W	ALG013WC	18.9	1	NA	5	.469	07/25/0109:40	NA	ALG013W-3	NA	ALG013W	NA	NA
0026-202	G108-01	147	1	NA	5	.469	07/25/0110:05	NA	ALG013W-8	NA	ALG013W	07/19/01	07/19/01
0026-203	G108-02	156	1	NA	5	.469	07/25/0110:10	NA	ALG013W-9	NA	ALG013W	07/19/01	07/19/01
0026-205	G108-04	203	1	NA	5	.469	07/25/0110:20	NA	ALG013W-11	NA	ALG013W	07/19/01	07/19/01
0026-205DUP	G108-04D	205	1	NA	5	.469	07/25/0110:25	NA	ALG013W-12	NA	ALG013W	07/19/01	07/19/01
0026-204	G108-03	613	1	NA	5	.469	07/25/0110:30	NA	ALG013W-13	NA	ALG013W	07/19/01	07/19/01

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
METHOD: METHOD 310.1
MATRIX: WATER
% MOISTURE: NA

BATCH NO.: 01G108
SAMPLE ID: LCS1W/LCD1W
CONTROL NO.: ALG013WL/C

DATE RECEIVED: NA
DATE EXTRACTED: NA
DATE ANALYZED: 07/25/01 09:35/09:40

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD %	QC LIMIT %	RPD LIMIT %
Alkalinity	ND	18.3	18.9	103	18.3	18.9	103	0	80-120	20

EMAX QUALITY CONTROL DATA
DUPLICATE ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
METHOD: METHOD 310.1
MATRIX: WATER
% MOISTURE: NA

BATCH NO.: 01G108
SAMPLE ID: 0026-205DUP
CONTROL NO.: G108-04D

DATE RECEIVED: 07/19/01
DATE EXTRACTED: NA
DATE ANALYZED: 07/25/01 10:25

ACCESSION:

PARAMETER	SAMPLE (mg/L)	DUP. SAMPLE (mg/L)	RPD (%)	RPD LIMIT (%)
Alkalinity	203	205	1	20

8004

6915B51

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO26, UST SITE 5/8/9/17

RSK - 175
DISSOLVED GASES

SDG#: 01G108

6000

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO 26**

SDG: **01G108**

RSK-175
DISSOLVED GASES

Samples received on 07/19/01 for this SDG include four (4) waters to be analyzed for Dissolved Gases (Methane, Ethylene, Ethane) in accordance to EMAX SOP AP 2050.

1. **Holding Time**

   All samples received were unpreserved. Analytical holding time was met.

2. **Calibration**

   A 6-point Initial calibration was performed. All QC requirements were met. Continuing calibration were carried out at 10-sample interval, and mean recovery of closing DCC were within 85-115%.

3. **Method Blank**

   No analytes were detected above RL.

4. **Lab Control Sample/Lab Control Duplicate**

   All recoveries were within QC limits

5. **Matrix Spike/Matrix Spike Duplicate**

   Sample G108-04 was designated for MS/MSD with this SDG. All recoveries were within QC limits.

6. **Sample Analysis**

   All samples were analyzed within QC requirements.

LAB CHRONICLE
RSK175

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26

SDG NO. : 01G108
Instrument ID : GCT010

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	DCC Data FN	Prep. Batch	Notes
MBLK1W	DG10G06B	1	NA	07/23/0112:13	07/23/0112:00	FG06003A	FG06002A	DG10G06	Method Blank
LCS1W	DG10G06L	1	NA	07/23/0112:26	07/23/0112:00	FG06004A	FG06002A	DG10G06	Lab Control Sample (LCS)
LCD1W	DG10G06C	1	NA	07/23/0112:43	07/23/0112:00	FG06005A	FG06002A	DG10G06	LCS Duplicate
0026-202	G108-01	1	NA	07/23/0113:08	07/23/0112:00	FG06006A	FG06002A	DG10G06	Field Sample
0026-203	G108-02	1	NA	07/23/0113:21	07/23/0112:00	FG06007A	FG06002A	DG10G06	Field Sample
0026-203DL	G108-02T	5	NA	07/23/0115:15	07/23/0112:00	FG06014A	FG06013A	DG10G06	Diluted Sample
0026-204	G108-03	1	NA	07/23/0113:33	07/23/0112:00	FG06008A	FG06002A	DG10G06	Field Sample
0026-204DL	G108-03T	50	NA	07/23/0115:28	07/23/0112:00	FG06015A	FG06013A	DG10G06	Diluted Sample
0026-205	G108-04	1	NA	07/23/0113:46	07/23/0112:00	FG06009A	FG06002A	DG10G06	Field Sample
0026-205MS	G108-04M	1	NA	07/23/0114:13	07/23/0112:00	FG06010A	FG06002A	DG10G06	Matrix Spike Sample (MS)
0026-205MSD	G108-04S	1	NA	07/23/0114:27	07/23/0112:00	FG06011A	FG06002A	DG10G06	MS Duplicate (MSD)

FN - Filename
DCC - Daily Continuing Calibration
% Moist - Percent Moisture

SAMPLE RESULTS

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/19/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/19/01
Batch No.	: 01G108	Date Extracted:	07/23/01 12:00
Sample ID:	0026-202	Date Analyzed:	07/23/01 13:08
Lab Samp ID:	G108-01	Dilution Factor:	1
Lab File ID:	FG06006A	Matrix :	WATER
Ext Btch ID:	DG10G06	% Moisture :	NA
Calib. Ref.:	FG06002A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	ND	1	.18
METHANE	.49J	1	.26

RL: Reporting Limit

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/19/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/19/01
Batch No.	: 01G108	Date Extracted:	07/23/01 12:00
Sample ID:	0026-203	Date Analyzed:	07/23/01 13:21
Lab Samp ID:	G108-02	Dilution Factor:	1
Lab File ID:	FG06007A	Matrix :	WATER
Ext Btch ID:	DG10G06	% Moisture :	NA
Calib. Ref.:	FG06002A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	ND	1	.18
METHANE	68E	1	.26

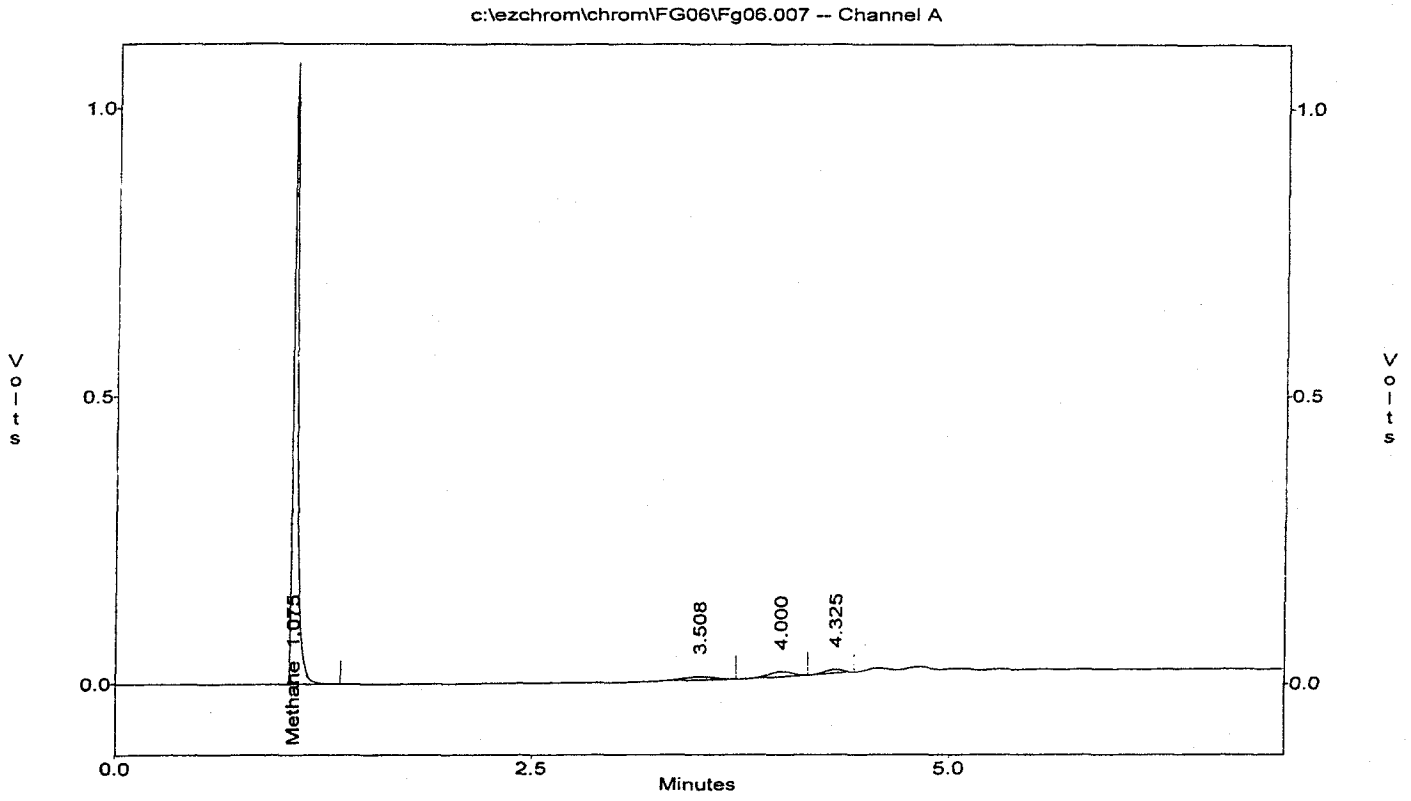
RL: Reporting Limit
E : Exceeded calibration range

EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\FG06\Fg06.007
Method : c:\ezchrom\methods\Dg10f15.met
Sample ID : 01G108-02
Acquired : Jul 23, 2001 13:21:15
Printed : Jul 23, 2001 13:28:16
User : SHAWN

Channel A Results

#	Peak Name	Ret. Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	1.075	2064815.0	30300.31	68.15
--	Ethylene	2.683	0.0	0.00	0.00
--	Ethane	3.175	0.0	0.00	0.00
--	Propane	6.258	0.0	0.00	0.00



6006

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/19/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/19/01
Batch No.	: 01G108	Date Extracted:	07/23/01 12:00
Sample ID:	0026-203DL	Date Analyzed:	07/23/01 15:15
Lab Samp ID:	G108-02T	Dilution Factor:	5
Lab File ID:	FG06014A	Matrix :	WATER
Ext Btch ID:	DG10G06	% Moisture :	NA
Calib. Ref.:	FG06013A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	5	1.3
ETHYLENE	ND	5	.89
METHANE	77	5	1.3

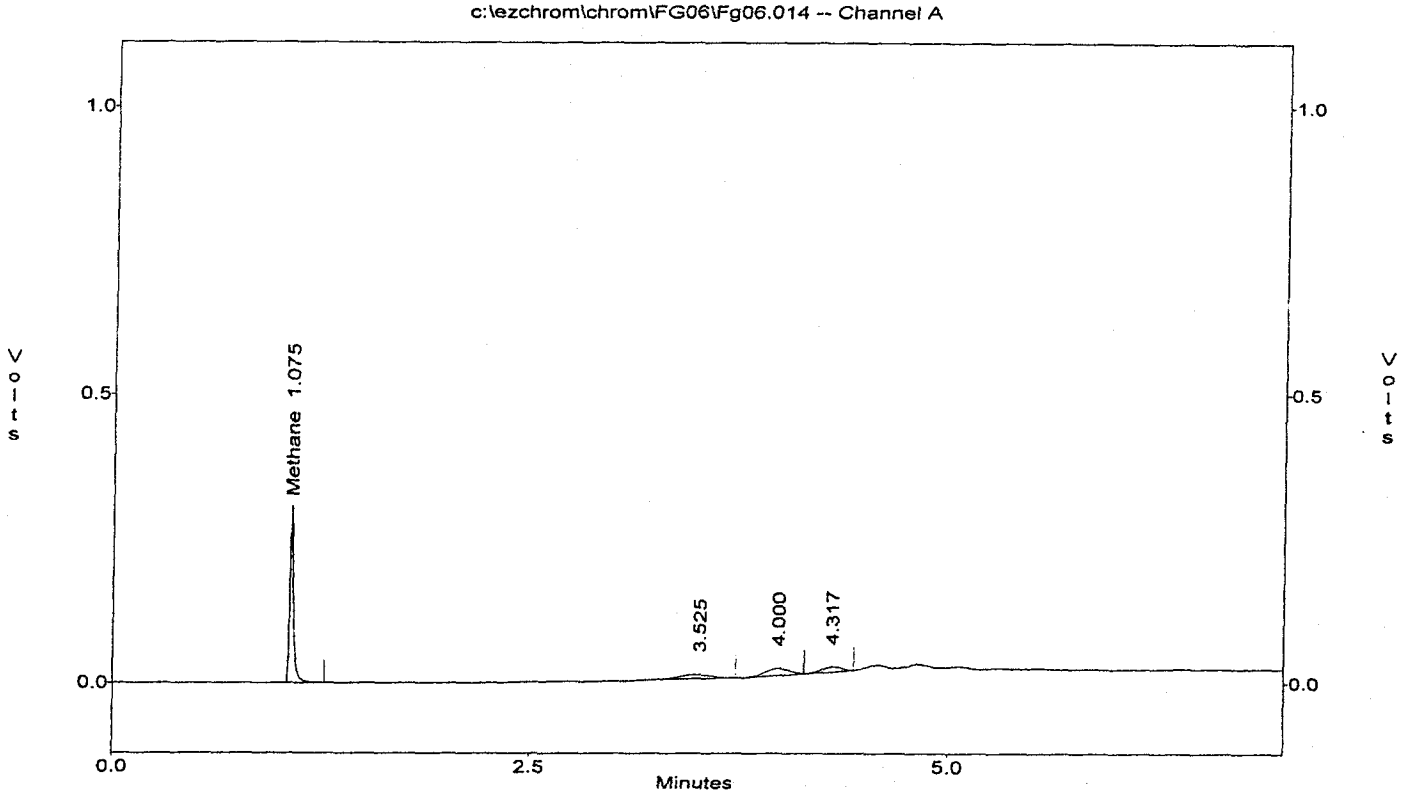
RL: Reporting Limit

EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\FG06\Fg06.014
Method : c:\ezchrom\methods\Dg10f15.met
Sample ID : 01G108-02T DF=5
Acquired : Jul 23, 2001 15:15:48
Printed : Jul 23, 2001 15:22:50
User : SHAWN

Channel A Results

#	Peak Name	Ret. Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	1.075	464721.0	30300.31	76.69
--	Ethylene	2.683	0.0	0.00	0.00
--	Ethane	3.175	0.0	0.00	0.00
--	Propane	6.258	0.0	0.00	0.00



6008

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/19/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/19/01
Batch No.	: 01G108	Date Extracted:	07/23/01 12:00
Sample ID:	0026-204	Date Analyzed:	07/23/01 13:33
Lab Samp ID:	G108-03	Dilution Factor:	1
Lab File ID:	FG06008A	Matrix :	WATER
Ext Btch ID:	DG10G06	% Moisture :	NA
Calib. Ref.:	FG06002A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	.32J	1	.18
METHANE	210E	1	.26

RL: Reporting Limit
E : Exceeded calibration range

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/19/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/19/01
Batch No.	: 01G108	Date Extracted:	07/23/01 12:00
Sample ID:	0026-204DL	Date Analyzed:	07/23/01 15:28
Lab Samp ID:	G108-03T	Dilution Factor:	50
Lab File ID:	FG06015A	Matrix :	WATER
Ext Btch ID:	DG10G06	% Moisture :	NA
Calib. Ref.:	FG06013A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	50	13
ETHYLENE	ND	50	8.9
METHANE	830	50	13

RL: Reporting Limit

6010

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/19/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/19/01
Batch No.	: 01G108	Date Extracted:	07/23/01 12:00
Sample ID:	0026-205	Date Analyzed:	07/23/01 13:46
Lab Samp ID:	G108-04	Dilution Factor:	1
Lab File ID:	FG06009A	Matrix :	WATER
Ext Btch ID:	DG10G06	% Moisture :	NA
Calib. Ref.:	FG06002A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	ND	1	.18
METHANE	1.5	1	.26

RL: Reporting Limit

QC SUMMARY

6012

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	NA
Project	: CAMP PENDLETON, CTO26	Date Received:	07/23/01
Batch No.	: 01G108	Date Extracted:	07/23/01 12:00
Sample ID:	MBLK1W	Date Analyzed:	07/23/01 12:13
Lab Samp ID:	DG10G06B	Dilution Factor:	1
Lab File ID:	FG06003A	Matrix :	WATER
Ext Btch ID:	DG10G06	% Moisture :	NA
Calib. Ref.:	FG06002A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	ND	1	.18
METHANE	.37J	1	.26

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G108
METHOD: RSK-175

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DG10G06B	DG10G06L	DG10G06C		
LAB FILE ID:	FG06003A	FG06004A	FG06005A		
DATE EXTRACTED:	07/23/0112:00	07/23/0112:00	07/23/0112:00	DATE COLLECTED:	NA
DATE ANALYZED:	07/23/0112:13	07/23/0112:26	07/23/0112:43	DATE RECEIVED:	07/23/01
PREP. BATCH:	DG10G06	DG10G06	DG10G06		
CALIB. REF:	FG06002A	FG06002A	FG06002A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethane	ND	25.2	27.3	108	25.2	28	111	3	50-150	20
Ethylene	ND	23.6	23.8	101	23.6	24.5	104	3	50-150	20
Methane	.367J	13.6	12.4	89	13.6	12.8	91	3	50-150	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G108
METHOD: RSK-175

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	0026-205				
LAB SAMP ID:	G108-04	G108-04M	G108-04S		
LAB FILE ID:	FG06009A	FG06010A	FG06011A		
DATE EXTRACTED:	07/23/0112:00	07/23/0112:00	07/23/0112:00	DATE COLLECTED:	07/19/01
DATE ANALYZED:	07/23/0113:46	07/23/0114:13	07/23/0114:27	DATE RECEIVED:	07/19/01
PREP. BATCH:	DG10G06	DG10G06	DG10G06		
CALIB. REF:	FG06002A	FG06002A	FG06002A		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethane	ND	25.2	33.2	132	25.2	35.7	142	7	50-150	20
Ethylene	ND	23.6	28.1	119	23.6	29.9	127	6	50-150	20
Methane	1.45	13.6	15.4	103	13.6	16.6	111	7	50-150	20

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO 26, UST 5/8/9/17**

SDG: **01G108**

METHOD 9060
TOC

Four (4) water samples were received on 07/19/01 for TOC analysis by Method 9060 in accordance with "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW846, 3rd edition.

1. Holding Time

   Analysis met holding time criteria.

2. Method Blank

   Method blank was free of contamination at reporting limit level.

3. Lab Control Sample

   Lab control result was within the control limit.

4. Duplicate

   No duplicate sample was analyzed for this SDG.

5. Matrix Spike/Matrix Spike Duplicate

   Sample G108-04 was spiked. All recoveries were within QC limit.

6. Sample Analysis

   Sample analyses were performed within QC requirements. All requirements were met.

METHOD
TOL

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G108

Matrix : WATER
Instrument ID : 1026

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	TCG005WB	ND	1	NA	5	.551	08/03/0116:00	NA	TCG005W-07	TCG005W-05	TCG005W	NA	NA
LCS1W	TCG005WL	18.6	1	NA	5	.551	08/03/0116:10	NA	TCG005W-08	TCG005W-05	TCG005W	NA	NA
0026-205	G108-04	15.1	1	NA	5	.551	08/03/0116:50	NA	TCG005W-12	TCG005W-05	TCG005W	07/19/01	07/19/01
0026-205MS	G108-04M	64.7	1	NA	5	.551	08/03/0117:00	NA	TCG005W-13	TCG005W-05	TCG005W	07/19/01	07/19/01
0026-205MSD	G108-04S	67.2	1	NA	5	.551	08/03/0117:10	NA	TCG005W-14	TCG005W-05	TCG005W	07/19/01	07/19/01
0026-202	G108-01	13.5	1	NA	5	.551	08/03/0117:20	NA	TCG005W-15	TCG005W-05	TCG005W	07/19/01	07/19/01
0026-203	G108-02	10.2	1	NA	5	.551	08/03/0117:30	NA	TCG005W-16	TCG005W-05	TCG005W	07/19/01	07/19/01
0026-204	G108-03	41	1	NA	5	.551	08/03/0118:20	NA	TCG005W-20	TCG005W-17	TCG005W	07/19/01	07/19/01

RL : Reporting Limit

8007

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
METHOD: METHOD 9060
MATRIX: WATER
% MOISTURE: NA

==========

BATCH NO.: 01G108 DATE RECEIVED: NA
SAMPLE ID: LCS1W DATE EXTRACTED: NA
CONTROL NO.: TCG005WL DATE ANALYZED: 08/03/01 16:10

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	LCS RSLT (mg/L)	LCS % REC	QC LIMIT (%)
TOC	ND	20	18.6	93	80-120

8008

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
METHOD: METHOD 9060
MATRIX: WATER
% MOISTURE: NA

BATCH NO.: 01G108
SAMPLE ID: 0026-205MS/MSD
CONTROL NO.: G108-04M/S

DATE RECEIVED: 07/19/01
DATE EXTRACTED: NA
DATE ANALYZED: 08/03/01 17:00/17:10

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	SPIKE AMT (mg/L)	MSD RSLT (mg/L)	MSD % REC	RPD %	QC LIMIT %	RPD LIMIT %
TOC	15.1	50	64.7	99	50	67.2	104	5	80-120	20

6008

ANALYSIS LOG FOR TOC

SOP ☑ EMAX-9060 ☐ EMAX-415.1 ☐ Start Date 8/3/01 Time 1500 Ending Date 8/3/01 Time 1938 Book # A26-003

Data File Name		Lab Sample ID	Matrix S	Matrix W	Sample Amount	Time	DF	TC mg/L	IC mg/L	TOC mg/L Notes
*	1	TC LOW			20 µl	1500		2.0		
*	2	TC HIGH				10		100		
*	3	IC LOW				20			2.0	
*	4	IC HIGH				30			100	
*	5	ICV			20 µl	40		52.4	-	52.4
*	6	ICB				1550		0.0	-	ND
*	7	TC G005 WB				1600		0.0	-	ND *
*	8	↓ WL				10		18.6	-	18.6
*	9	G080-02				20		12.1	0.0	12.1
*	0	↓ -03				30		11.4	0.0	11.4
*	1	G080-04				40		26.5	10.4	16.1
*	2	G108-04				1650		21.2	6.1	15.1 ✓
*	3	-04M				1700		64.7	0.0	64.7 ✓
*	4	-04S				10		67.2	0.0	67.2 ✓
*	5	↓ -01				20		13.5	0.0	13.5 ✓
*	6	G108-02				30		13.9	3.7	10.2 ✓
*	7	CCV1				40		49.5	-	49.5
*	8	CCB1				1750		0.0	-	ND
*	9	BLK				1800		0.7	-	ND *
*	0	G108-03				20		42.7	1.7	41 ✓
*	1	G107-02				35		47.2	26.7	20.5
*	2	-03				45		62.0	42.8	19.2
*	3	↓ -04				1855		25.8	10.2	15.6
*	4	G107-05				1910		0.0	0.0	ND
*	5	CCV2				20		50.4	-	50.4
*	6	CCB2				1930		0.0	~~0.0~~	ND
*	7									8/3/01
*	8									
*	9									
*	0									

ANALYTICAL BATCH * TC G005 W

8010

Instrument No.	026

Standards		
Name	ID	Conc. (mg/L)
TC High	SW10B-01-12	100
TC Low	-13	2.0
IC High	-09	100
IC Low	-10	2.0
ICV/CCV	-15	50
MS/MSD	-14	50
LCS	SW10B-01--16	20

Calibration		
Standard	High	Low
TC	1556 1	668
IC	1651 7	783

Comments: Results are based on:

Dry Wt. ☐ Wet Wt. ☐

* Power shutdown, gas off, Turned on equipment, analyze blank, result ND machine is OK 8/3/01

Analyzed By: [illegible]

This page is checked during the data review process

FOSTER WHEELER ENVIRONMENTAL CORPORATION
1230 Columbia Street 0 San Diego, CA 92101 (619) 234-8696

NUMBER 02727

CHAIN-OF-CUSTODY RECORD

PROJECT NAME: UST Site 5/8/9/17
PURCHASE ORDER NO.: 020848 TASK 4
PROJECT LOCATION: CAMP PENDLETON
PROJECT NO.: 1990.026D
SAMPLER NAME: TANIA TURPIJN-KEASLER
SAMPLER SIGNATURE: [signature]
PROJECT CONTACT: SEVDA ALERKSON
AIRBILL NUMBER: COURIER
LABORATORY NAME: EMIAX
LABORATORY ID (FOR LABORATORY): 01G144

Project Information Section
Do not submit to Laboratory

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	EPA 8260B	TPH-G	EPA 418.1 (TRPH)	EPA 300.0 (NITRATE SULFATE CHLORIDE)	RSK 175M (ETHENE ETHANE METHANE)	EPA 30.1 (ALKALINITY)	EPA 9060 (TOC)	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
0026-216	7/25/01	0935	3	X		W	10 day	X								SITE 5/8/9/17 TB10 BLANK	-	-	TB
0026-217	7/25/01	1040	11	X		W	10 day	X	X	X	X	X	X	X		SITE 5/8/9/17 MW4	-	-	REG
0026-218	7/25/01	1105	11		X	W	10 day	X	X	X	X	X	X	X		SITE 5/8/9/17 MW4	-	-	FD
0026-219	7/25/01	1150	11	X		W	10 day	X	X	X	X	X	X	X		SITE 5/8/9/17 MW44	-	-	REG
0026-220	7/25/01	1305	11	X		W	10 day	X	X	X	X	X	X	X		SITE 5/8/9/17 MW1	-	-	REG
0026-221	7/25/01	1445	11	X		W	10 day	X	X	X	X	X	X	X		SITE 5/8/9/17 MW36	-	-	REG
0026-~~220~~ 222	7/25/01	1530	11	X		W	10 day	X	X	X	X	X	X	X		SITE 5/8/9/17 MW50	-	-	REG
0026-223	7/25/01	1615	11	X		W	10 day	X	X	X	X	X	X	X		SITE 5/8/9/17 EM	-	-	REG EQR

TTR 7/25/01

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	7/25/01	[signature]
COMPANY: FWENC	TIME: 1655	COMPANY: EMIAX
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS: TRPH samples to be preserved in the lab SKA 7/27/01

COMPOSITE DESCRIPTION:

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT:

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO26, UST SITE 5/8/9/17

METHOD 3520/M8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 01G144

CASE NARRATIVE

CLIENT: FOSTER WHEELER

PROJECT: CAMP PENDLETON, CT026

SDG: 01G144

METHOD 3520/M8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Seven (7) water samples were received on 07/25/01 to be analyzed for Total Petroleum Hydrocarbons by Method 3520/M8015B in accordance with SW846 and Leaking Underground Fuel Tank (LUFT) Field Manual, SWRCB, Dept. of Health Service, CA (1988).

1. **Holding Time**

   Analytical holding time was met.

2. **Method Blank**

   There was no contamination detected at reporting level.

3. **Lab Control Sample/Lab Control Sample Duplicate**

   All recoveries were within QC limits.

4. **Surrogate Recovery**

   All recoveries were within QC limits.

5. **Matrix Spike/Matrix Spike Duplicate**

   No sample was analyzed for MS/MSD from this SDG.

6. **Calibration**

   Initial calibration was seven points. Continue calibrations were carried out at 10 sample intervals. All QC requirements were met.

7. **Sample Analysis**

   Samples were analyzed according to the prescribed QC procedures. Samples were quantified from C10-C24.

LAB CHRONICLE
M8015D

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26

SDG NO. : 01G144
Instrument ID : GCT050

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	WATER Analysis DateTime	Extraction DateTime	Sample Data FN	DCC Data FN	Prep. Batch	Notes
MBLK1W	DSG028WB	1	NA	07/30/0113:53	07/28/0110:45	TG10003A	TG10002A	DSG028W	Method Blank
LCS1W	DSG028WL	1	NA	07/30/0114:42	07/28/0110:45	TG10004A	TG10002A	DSG028W	Lab Control Sample (LCS)
LCD1W	DSG028WC	1	NA	07/30/0115:31	07/28/0110:45	TG10005A	TG10002A	DSG028W	LCS Duplicate
0026-217	G144-02	.95	NA	07/30/0116:19	07/28/0110:45	TG10006A	TG10002A	DSG028W	Field Sample
0026-218	G144-03	.95	NA	07/30/0117:08	07/28/0110:45	TG10007A	TG10002A	DSG028W	Field Sample
0026-219	G144-04	.96	NA	07/30/0117:57	07/28/0110:45	TG10008A	TG10002A	DSG028W	Field Sample
0026-220	G144-05	.95	NA	07/30/0118:46	07/28/0110:45	TG10009A	TG10002A	DSG028W	Field Sample
0026-221	G144-06	.94	NA	07/30/0119:35	07/28/0110:45	TG10010A	TG10002A	DSG028W	Field Sample
0026-222	G144-07	.94	NA	07/30/0120:24	07/28/0110:45	TG10011A	TG10002A	DSG028W	Field Sample
0026-223	G144-08	.96	NA	07/30/0121:12	07/28/0110:45	TG10012A	TG10002A	DSG028W	Field Sample

FN - Filename
DCC - Daily Continuing Calibration
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD : M8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G144

Matrix : WATER
Instrument ID : GCT050

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	SURR (%)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	DSG028WB	ND	94	1	NA	.1	.067	07/30/0113:53	07/28/0110:45	TG10003A	TG10002A	DSG028W	NA	07/28/01
LCS1W	DSG028WL	4.29	96	1	NA	.1	.067	07/30/0114:42	07/28/0110:45	TG10004A	TG10002A	DSG028W	NA	07/28/01
LCD1W	DSG028WC	4.11	94	1	NA	.1	.067	07/30/0115:31	07/28/0110:45	TG10005A	TG10002A	DSG028W	NA	07/28/01
0026-217	G144-02	ND	96	.95	NA	.095	.064	07/30/0116:19	07/28/0110:45	TG10006A	TG10002A	DSG028W	07/25/01	07/25/01
0026-218	G144-03	ND	91	.95	NA	.095	.064	07/30/0117:08	07/28/0110:45	TG10007A	TG10002A	DSG028W	07/25/01	07/25/01
0026-219	G144-04	ND	88	.96	NA	.096	.064	07/30/0117:57	07/28/0110:45	TG10008A	TG10002A	DSG028W	07/25/01	07/25/01
0026-220	G144-05	ND	90	.95	NA	.095	.064	07/30/0118:46	07/28/0110:45	TG10009A	TG10002A	DSG028W	07/25/01	07/25/01
0026-221	G144-06	ND	95	.94	NA	.094	.063	07/30/0119:35	07/28/0110:45	TG10010A	TG10002A	DSG028W	07/25/01	07/25/01
0026-222	G144-07	6.9	101	.94	NA	.094	.063	07/30/0120:24	07/28/0110:45	TG10011A	TG10002A	DSG028W	07/25/01	07/25/01
0026-223	G144-08	ND	99	.96	NA	.096	.064	07/30/0121:12	07/28/0110:45	TG10012A	TG10002A	DSG028W	07/25/01	07/25/01

RL : Reporting Limit
SUR1 : Hexacosane

Parameter	H-C Range
JP5	C7 -C18
Diesel	C10-C24
Motor Oil	C18-C34
Gas	C6 -C12

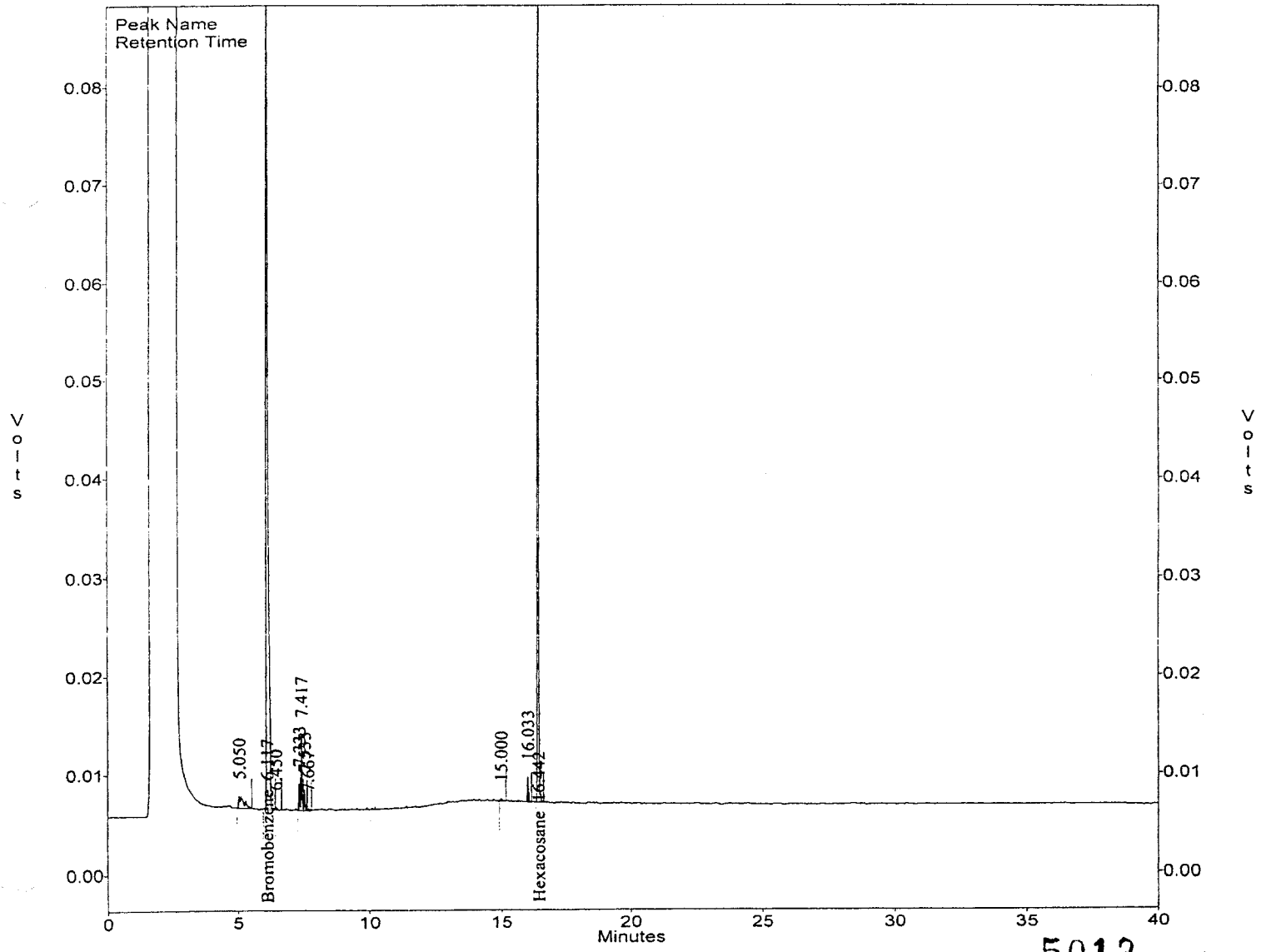
EPA METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\tg10\tg10.006
Method : c:\ezchrom\methods\ds50f25.met
Sample ID : 01G144-02
Acquired : Jul 30, 2001 16:19:59
Printed : Jul 30, 2001 17:02:33
User : SHAWN

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
2	Bromobenzene	6.117	485502	4743.9	102.3
10	Hexacosane	16.442	384211	16045.0	23.9
G1	Diesel		37794	9582.9	3.9

c:\ezchrom\chrom\tg10\tg10.006 -- Channel A



5013

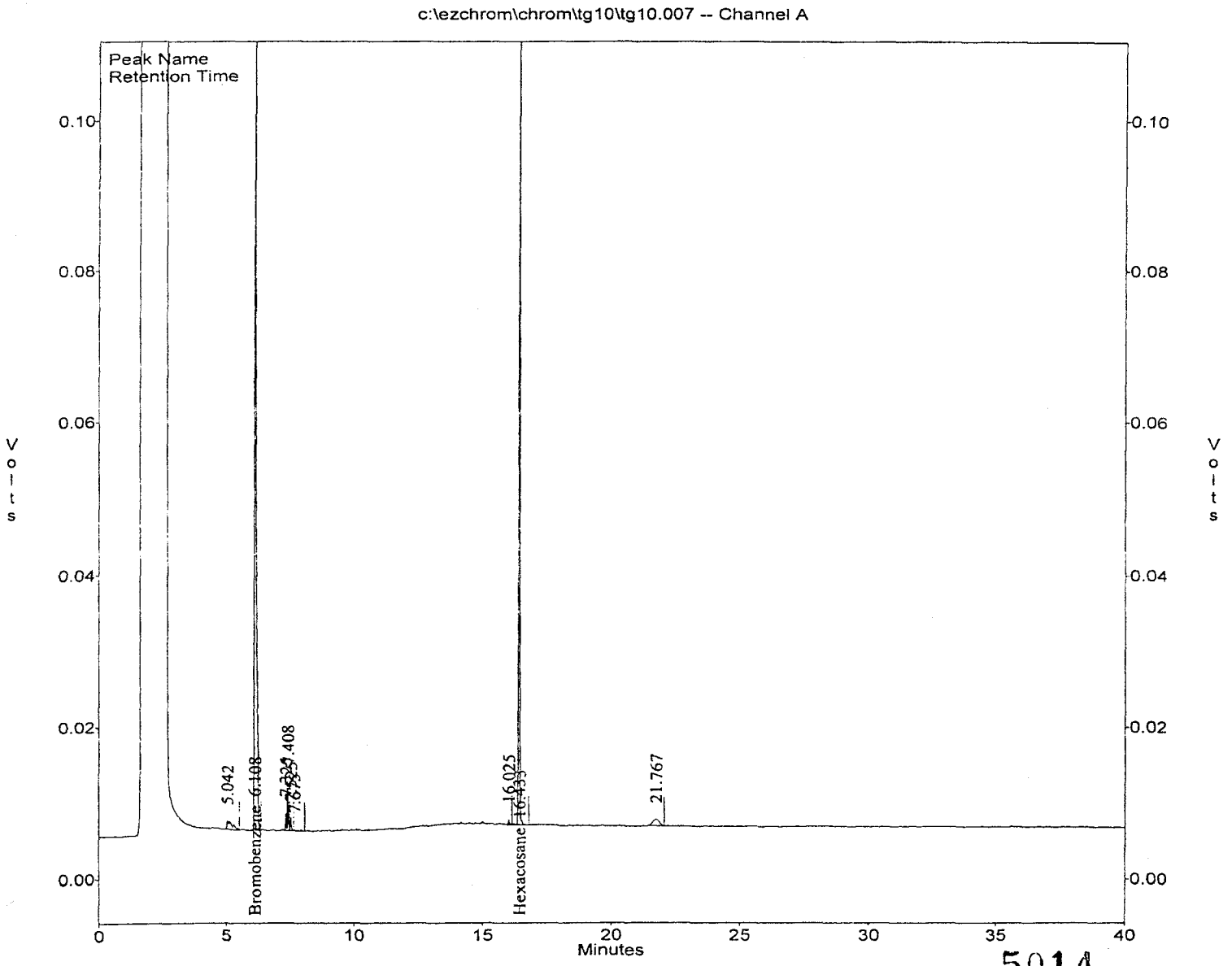
7/30/01

EPA METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\tg10\tg10.007
Method : c:\ezchrom\methods\ds50f25.met
Sample ID : 01G144-03
Acquired : Jul 30, 2001 17:08:49
Printed : Jul 31, 2001 09:31:29
User : SHAWN

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
2	Bromobenzene	6.108	479677	4743.9	101.1
8	Hexacosane	16.433	363738	16045.0	22.7
G1	Diesel		28096	9582.9	2.9



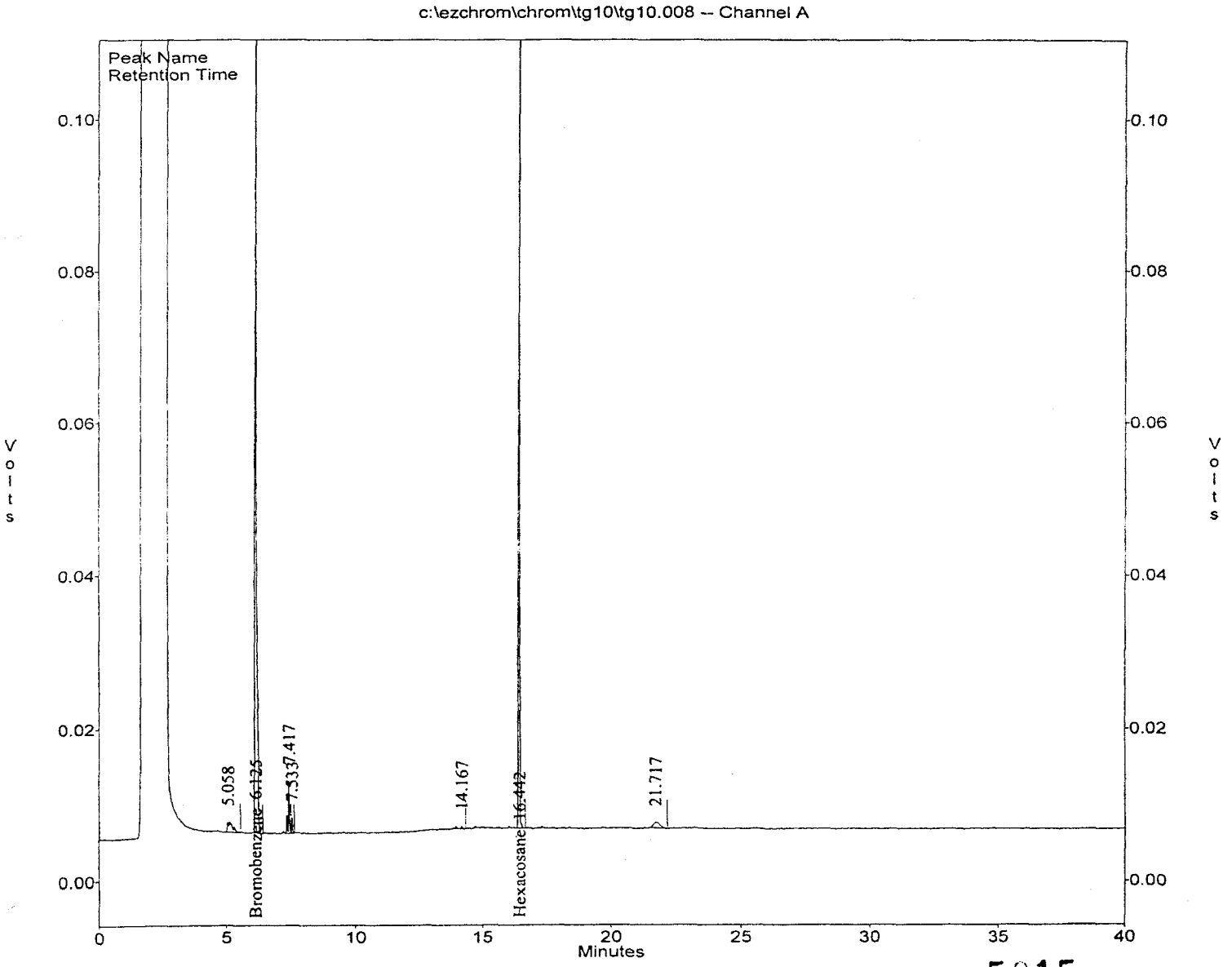
5014

EPA METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\tg10\tg10.008
Method : c:\ezchrom\methods\ds50f25.met
Sample ID : 01G144-04
Acquired : Jul 30, 2001 17:57:39
Printed : Jul 31, 2001 09:31:34
User : SHAWN

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
2	Bromobenzene	6.125	445604	4743.9	93.9
6	Hexacosane	16.442	351116	16045.0	21.9
G1	Diesel		25209	9582.9	2.6



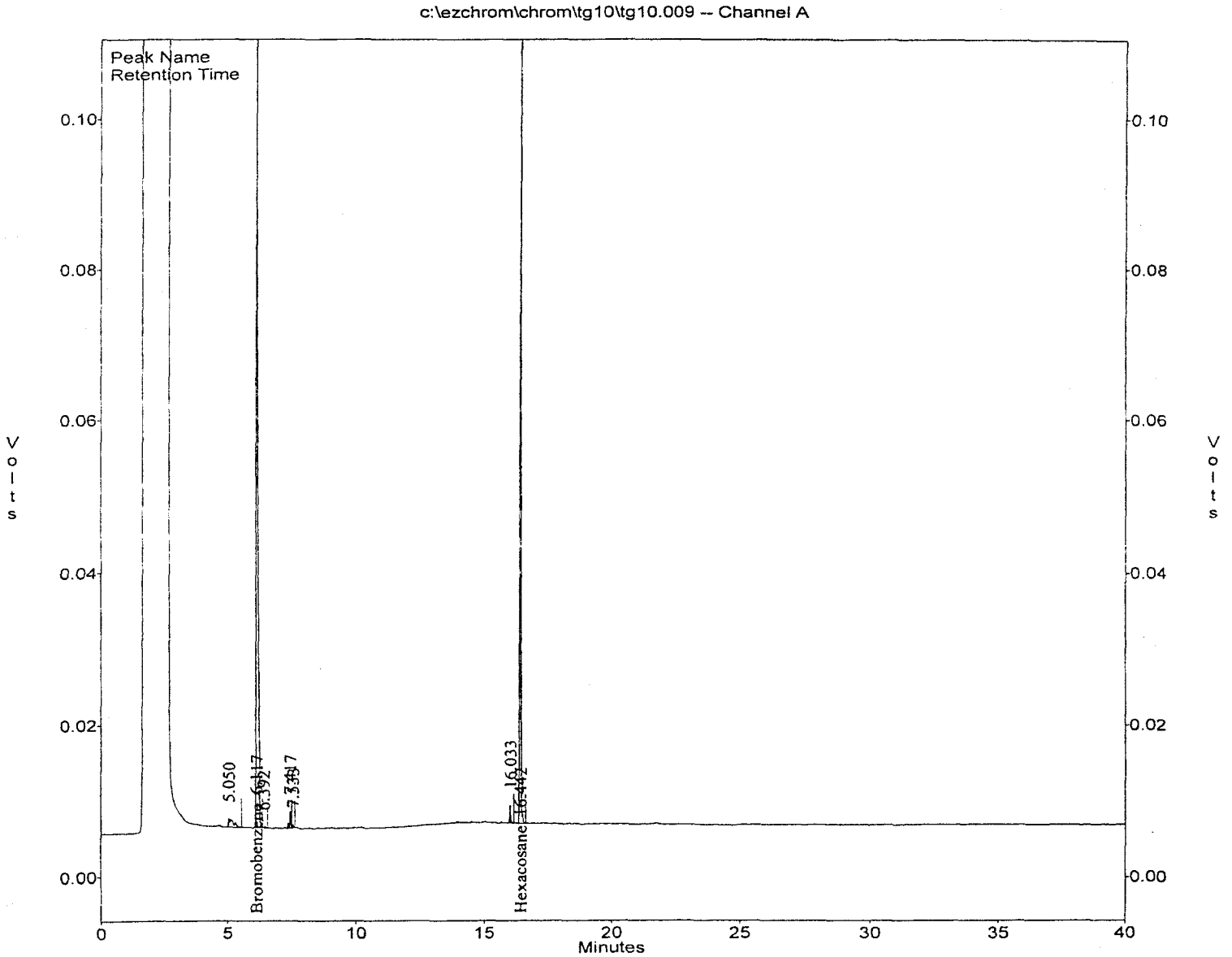
5015

EPA METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\tg10\tg10.009
Method : c:\ezchrom\methods\ds50f25.met
Sample ID : 01G144-05
Acquired : Jul 30, 2001 18:46:30
Printed : Jul 31, 2001 09:31:41
User : SHAWN

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
2	Bromobenzene	6.117	456124	4743.9	96.1
7	Hexacosane	16.442	360457	16045.0	22.5
G1	Diesel		14681	9582.9	1.5



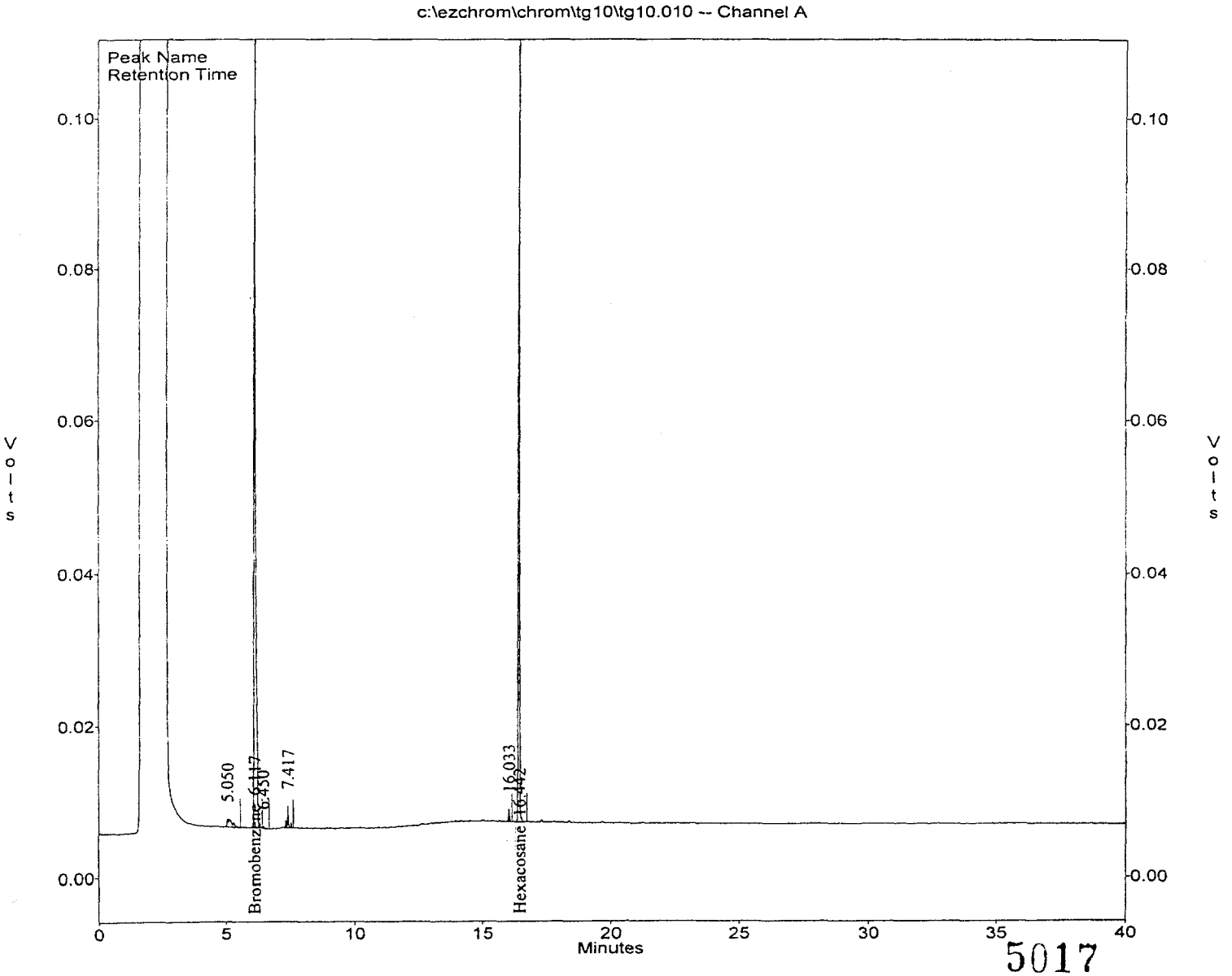
5016

EPA METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\tg10\tg10.010
Method : c:\ezchrom\methods\ds50f25.met
Sample ID : 01G144-06
Acquired : Jul 30, 2001 19:35:16
Printed : Jul 31, 2001 09:31:47
User : SHAWN

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
2	Bromobenzene	6.117	454138	4743.9	95.7
6	Hexacosane	16.442	379686	16045.0	23.7
G1	Diesel		15615	9582.9	1.6



5017

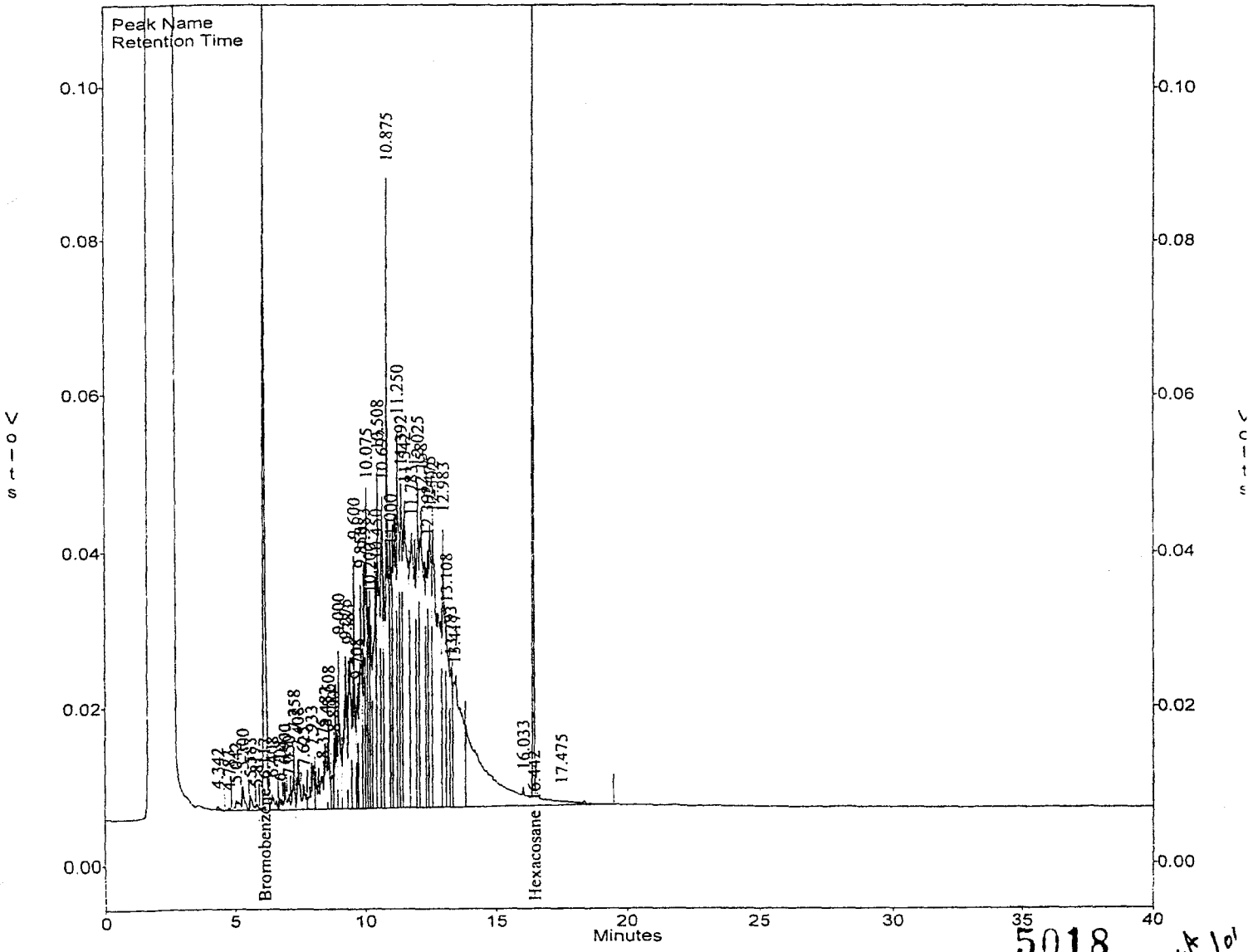
EPA METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\tg10\tg10.011
Method : c:\ezchrom\methods\ds50f25.met
Sample ID : 01G144-07
Acquired : Jul 30, 2001 20:24:05
Printed : Jul 31, 2001 09:30:59
User : SHAWN

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
7	Bromobenzene	6.117	493491	4743.9	104.0
48	Hexacosane	16.442	405123	16045.0	25.2
G1	Diesel		6990265	9582.9	729.5 × 10/1000 = 6.88

c:\ezchrom\chrom\tg10\tg10.011 -- Channel A



5018

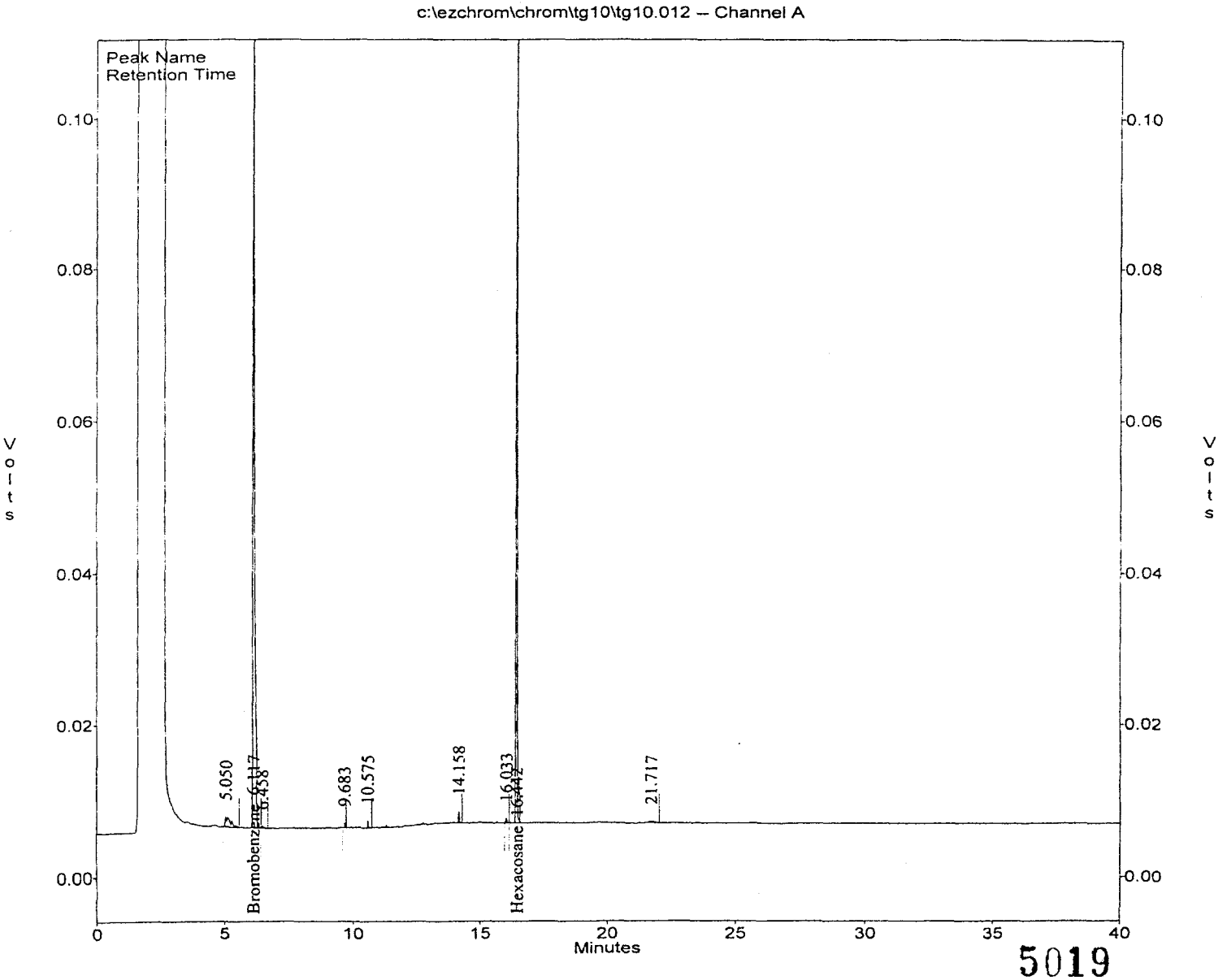
SA 7/31/01

EPA METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\tg10\tg10.012
Method : c:\ezchrom\methods\ds50f25.met
mple ID : 01G144-08
quired : Jul 30, 2001 21:12:49
Printed : Jul 31, 2001 09:31:56
User : SHAWN

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
2	Bromobenzene	6.117	488128	4743.9	102.9
8	Hexacosane	16.442	396702	16045.0	24.7
G1	Diesel		9094	9582.9	0.9



5019

QC SUMMARY

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BA[illegible]D.: 01G144
ME[illegible] METHOD 3520/M8015B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DSG028WB	DSG028WL	DSG028WC		
LAB FILE ID:	TG10003A	TG10004A	TG10005A		
DATE EXTRACTED:	07/28/0110:45	07/28/0110:45	07/28/0110:45	DATE COLLECTED:	NA
DATE ANALYZED:	07/30/0113:53	07/30/0114:42	07/30/0115:31	DATE RECEIVED:	07/28/01
PREP. BATCH:	DSG028W	DSG028W	DSG028W		
CALIB. REF:	TG10002A	TG10002A	TG10002A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Diesel	ND	5	4.29	86	5	4.11	82	4	65-135	30

SURROGATE PARAMETER	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	QC LIMIT (%)
Hexacosane	.25	.241	96	.25	.236	94	65-135

METHOD 418.1
TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CT026
Batch No. : 01G144

Matrix : WATER
Instrument ID : 1061

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLKTW	TRG007WB	ND	1	NA	10	.558	08/01/0111:40	07/31/0115:30	TRH001-03	TRH001CC	TRG007W	NA	07/31/01
LCS1W	TRG007WL	5.82	1	NA	10	.558	08/01/0111:45	07/31/0115:30	TRH001-04	TRH001CC	TRG007W	NA	07/31/01
LCD1W	TRG007WC	5.82	1	NA	10	.558	08/01/0111:50	07/31/0115:30	TRH001-05	TRH001CC	TRG007W	NA	07/31/01
0026-217	G144-02	ND	.94	NA	9.4	.525	08/01/0111:55	07/31/0115:30	TRH001-06	TRH001CC	TRG007W	07/25/01	07/25/01
0026-218	G144-03	ND	.95	NA	9.5	.53	08/01/0112:00	07/31/0115:30	TRH001-07	TRH001CC	TRG007W	07/25/01	07/25/01
0026-219	G144-04	ND	.95	NA	9.5	.53	08/01/0112:05	07/31/0115:30	TRH001-08	TRH001CC	TRG007W	07/25/01	07/25/01
0026-220	G144-05	ND	.95	NA	9.5	.53	08/01/0112:10	07/31/0115:30	TRH001-09	TRH001CC	TRG007W	07/25/01	07/25/01
0026-221	G144-06	ND	.95	NA	9.5	.53	08/01/0112:15	07/31/0115:30	TRH001-10	TRH001CC	TRG007W	07/25/01	07/25/01
0026-222	G144-07	ND	.94	NA	9.4	.525	08/01/0112:20	07/31/0115:30	TRH001-11	TRH001CC	TRG007W	07/25/01	07/25/01
0026-223	G144-08	ND	.96	NA	9.6	.536	08/01/0112:25	07/31/0115:30	TRH001-12	TRH001CC	TRG007W	07/25/01	07/25/01

RL: Reporting Limit

5/8/9/17

Post-it® Fax Note 7671

To JEFF OSLICK	Date / # of pages ▶
Co./Dept.	From LONG TAN
Phone #	Co.
Fax #	Phone #
	Fax #

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO26, UST SITE 5/8/9/17

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

SDG#: 01G144

2000

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO 26, UST SITE 1**

SDG: **01G144**

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Eight (8) water samples were received on 07/25/01 for Volatile Organic Analyses by Method 8260B in accordance with USEPA SW846, 3rd ed.

1. **Holding Time**

   Analytical holding time was met.

2. **Tuning and Calibration**

   Tuning and calibration were carried out at 12-hour interval. All QC requirements were met.

3. **Method Blank**

   Method blanks were free of contamination at reporting limit level.

4. **Lab Control Sample/Lab Control Sample Duplicate**

   All recoveries were within QC limits.

5. **Surrogate Recovery**

   Recoveries were within QC limits.

6. **Matrix Spike/Matrix Spike Duplicate**

   No MS/MSD was analyzed for this SDG.

7. **Sample Analysis**

   Samples were analyzed according to the prescribed QC procedures. All requirements were met.

   Sample G144-07 was reanalyzed at DF 5 due to exceeded calibration range of tetrachloroethene. Both initial and dilution results were reported.

LAB CHRONICLE
SW8260

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26

SDG NO. : 01G144
Instrument ID : T-003

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	DCC Data FN	Prep. Batch	Notes
MBLK1W	V003G46Q	1	NA	07/30/0113:51	07/30/0113:51	RGB762	RGB756	V003G45	Method Blank
LCS1W	V003G45L	1	NA	07/30/0111:29	07/30/0111:29	RGB758	RGB756	V003G45	Lab Control Sample (LCS)
LCD1W	V003G45C	1	NA	07/30/0112:04	07/30/0112:04	RGB759	RGB756	V003G45	LCS Duplicate
0026-216	G144-01	1	NA	07/30/0118:08	07/30/0118:08	RGB769	RGB756	V003G45	Field Sample
0026-217	G144-02	1	NA	07/30/0118:44	07/30/0118:44	RGB770	RGB756	V003G45	Field Sample
0026-218	G144-03	1	NA	07/30/0119:20	07/30/0119:20	RGB771	RGB756	V003G45	Field Sample
0026-219	G144-04	1	NA	07/30/0119:55	07/30/0119:55	RGB772	RGB756	V003G45	Field Sample
MBLK2W	V003G45Q	1	NA	07/31/0103:02	07/31/0103:02	RGB784	RGB778	V003G46	Method Blank
LCS2W	V003G46L	1	NA	07/31/0100:40	07/31/0100:40	RGB780	RGB778	V003G46	Lab Control Sample (LCS)
LCD2W	V003G46C	1	NA	07/31/0101:15	07/31/0101:15	RGB781	RGB778	V003G46	LCS Duplicate
0026-220	G144-05	1	NA	07/31/0103:37	07/31/0103:37	RGB785	RGB778	V003G46	Field Sample
0026-221	G144-06	1	NA	07/31/0104:13	07/31/0104:13	RGB786	RGB778	V003G46	Field Sample
0026-222	G144-07	1	NA	07/31/0104:48	07/31/0104:48	RGB787	RGB778	V003G46	Field Sample
MBLK3W	V003G47Q	1	NA	07/31/0122:11	07/31/0122:11	RGB807	RGB802	V003G47	Method Blank
LCS3W	V003G47L	1	NA	07/31/0119:49	07/31/0119:49	RGB803	RGB802	V003G47	Lab Control Sample (LCS)
LCD3W	V003G47Y	1	NA	07/31/0121:00	07/31/0121:00	RGB805	RGB802	V003G47	LCS Duplicate
0026-222DL	G144-07T	5	NA	07/31/0123:22	07/31/0123:22	RGB809	RGB802	V003G47	Diluted Sample
0026-223	G144-08R	1	NA	07/31/0123:57	07/31/0123:57	RGB810	RGB802	V003G47	Field Sample

FN - Filename
DCC - Daily Continuing Calibration
% Moist - Percent Moisture

2002

SAMPLE RESULTS

2003

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	07/25/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/25/01
Batch No.	: 01G144	Date Extracted:	07/30/01 18:08
Sample ID:	0026-216	Date Analyzed:	07/30/01 18:08
Lab Samp ID:	G144-01	Dilution Factor:	1
Lab File ID:	RGB769	Matrix :	WATER
Ext Btch ID:	V003G45	% Moisture :	NA
Calib. Ref.:	RGB756	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	ND	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	2J	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	ND	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	90	62-139
TOLUENE-D8	94	75-125
BROMOFLUOROBENZENE	83	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	07/25/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/25/01
Batch No.	: 01G144	Date Extracted:	07/30/01 18:44
Sample ID:	0026-217	Date Analyzed:	07/30/01 18:44
Lab Samp ID:	G144-02	Dilution Factor:	1
Lab File ID:	RGB770	Matrix :	WATER
Ext Btch ID:	VO03G45	% Moisture :	NA
Calib. Ref.:	RGB756	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	.34J	.5	.21
1,2-DICHLOROPROPANE	.45J	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	.51J	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	ND	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	.73J	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	92	62-139
TOLUENE-D8	94	75-125
BROMOFLUOROBENZENE	82	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	07/25/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/25/01
Batch No.	: 01G144	Date Extracted:	07/30/01 19:20
Sample ID:	0026-218	Date Analyzed:	07/30/01 19:20
Lab Samp ID:	G144-03	Dilution Factor:	1
Lab File ID:	RGB771	Matrix :	WATER
Ext Btch ID:	V003G45	% Moisture :	NA
Calib. Ref.:	RGB756	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	.32J	.5	.21
1,2-DICHLOROPROPANE	.48J	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	.49J	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	ND	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	.7J	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	92	62-139
TOLUENE-D8	95	75-125
BROMOFLUOROBENZENE	81	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\01G30\RGB771.D
Acq On : 30 Jul 2001 7:20 pm
Sample : 01G144-03
Misc : 25ML
MS Integration Params: 524INT.P
Quant Time: Aug 2 17:02 2001

Vial: 17
Operator:
Inst : T003
Multiplr: 1.00
Quant Results File: VO03G0

Quant Method : C:\HPCHEM\1\METHODS\VO03G03A.M (RTE Integrator)
Title : METHOD 8260
Last Update : Thu Aug 02 13:14:12 2001
Response via : Initial Calibration
DataAcq Meth : VO03G03

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(M
1) 1,4-Difluorobenzene	9.43	114	2162933	10.00 ug/l	0
31) Chlorobenzene-d5	15.75	117	1654733	10.00 ug/l	0
60) 1,2-Dichlorobenzene-d4	22.59	152	517751	10.00 ug/l	0
System Monitoring Compounds					
30) 1,2-Dichloroethane-d4	8.73	65	714983	9.18 ug/l	0
Spiked Amount 10.000			Recovery	= 91.80%	
43) Toluene-d8	12.40	98	2155904	9.49 ug/l	-0
Spiked Amount 10.000			Recovery	= 94.90%	
64) Bromofluorobenzene	18.67	95	607505	8.14 ug/l	0
Spiked Amount 10.000			Recovery	= 81.40%	
Target Compounds					Qvali
26) Chloroform	7.54	83	75682	0.49 ug/l	
34) 1,2-Dichloroethane	8.89	62	27518	0.32 ug/l	#
36) Trichloroethene	10.05	130	67583	0.70 ug/l	
37) 1,2-Dichloropropane	10.36	63	28927	0.48 ug/l	

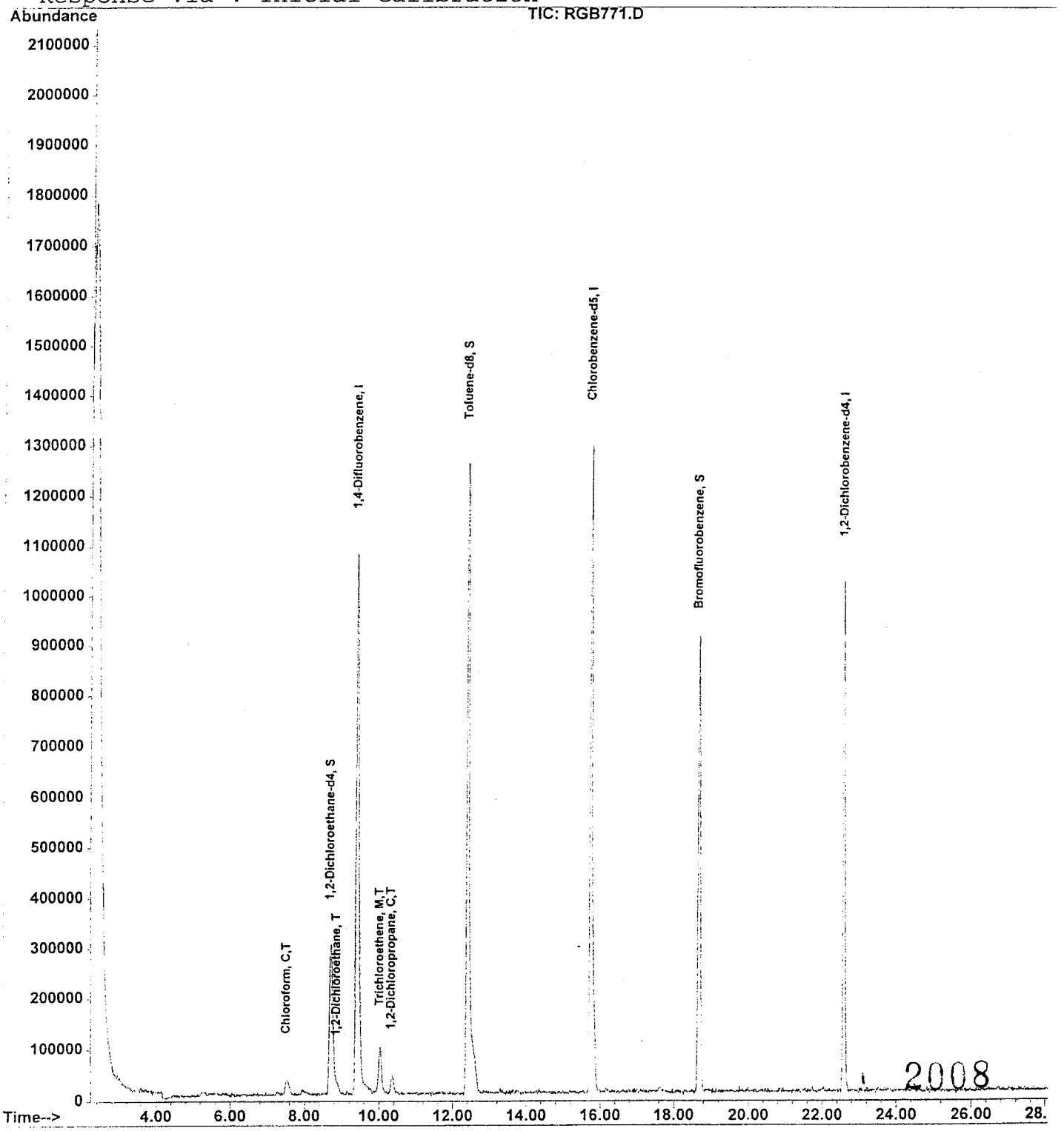
2007

(#) = qualifier out of range (m) = manual integration

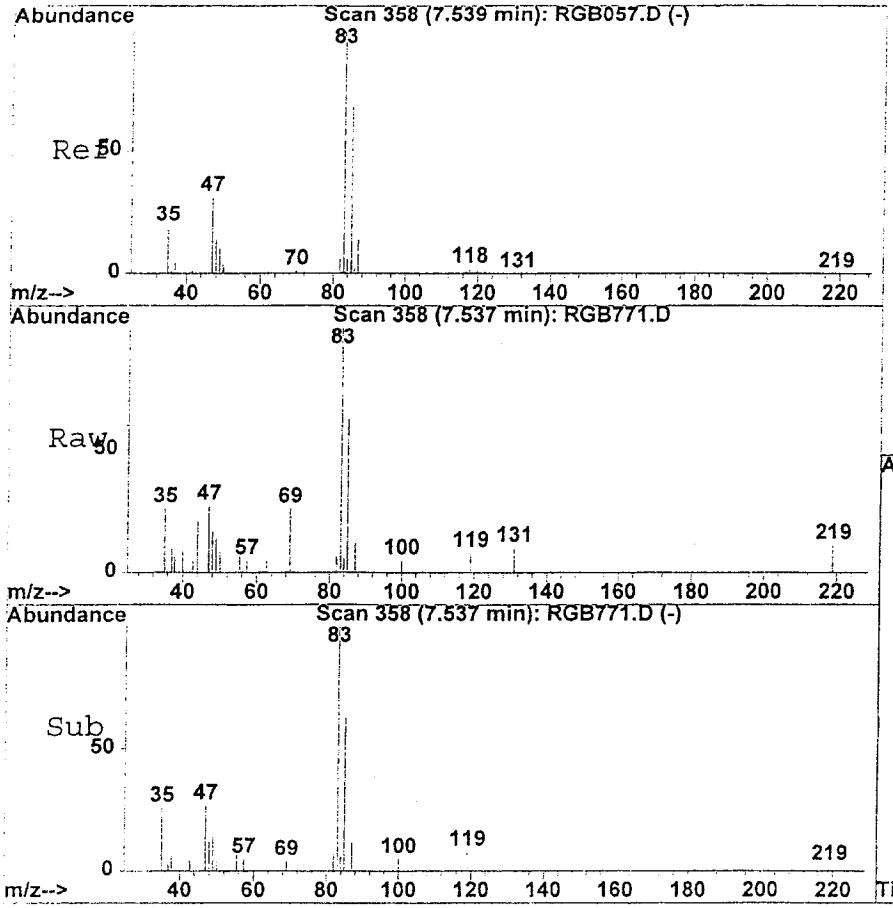
Quantitation Report

Data File : C:\HPCHEM\1\DATA\01G30\RGB771.D Vial: 17
Acq On : 30 Jul 2001 7:20 pm Operator:
Sample : 01G144-03 Inst : T003
Misc : 25ML Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Aug 2 17:02 2001 Quant Results File: VO03G0

Method : C:\HPCHEM\1\METHODS\VO03G03A.M (RTE Integrator)
Title : METHOD 8260
Last Update : Thu Aug 02 13:15:03 2001
Response via : Initial Calibration



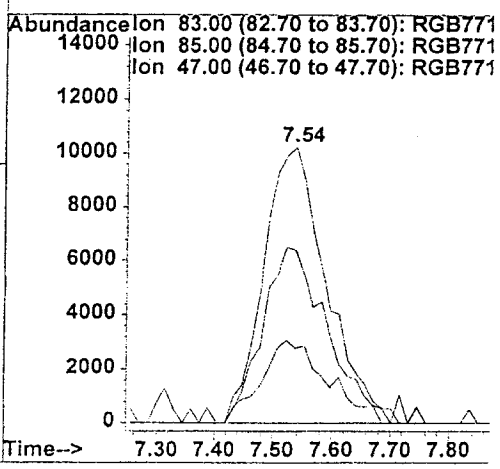
2008

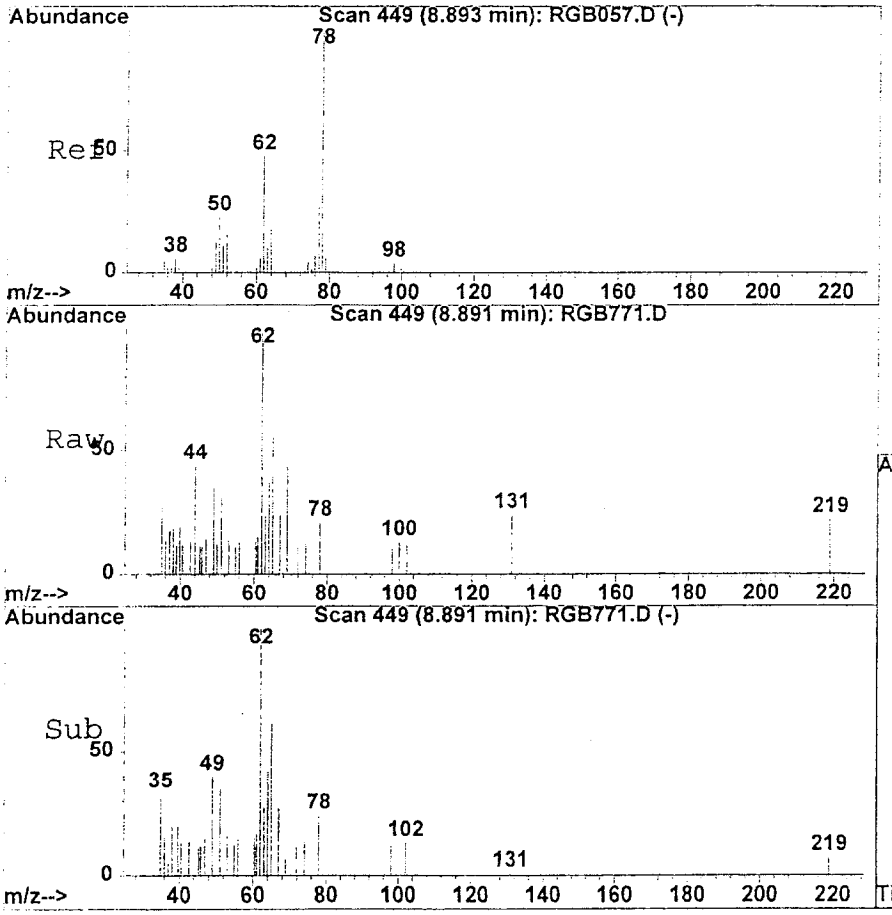


#26
Chloroform
Concen: 0.49 ug/l
RT: 7.54 min Scan# 358
Delta R.T. -0.00 min
Lab File: RGB771.D
Acq: 30 Jul 2001 7:20

Tgt Ion: 83 Resp: 756

Ion	Ratio	Lower	Uppe
83	100		
85	65.4	40.2	100.
47	31.9	0.0	58.

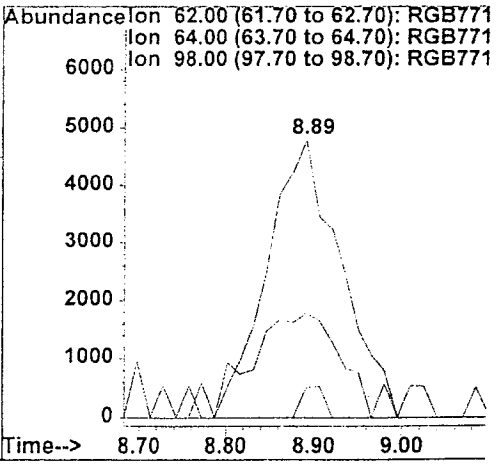




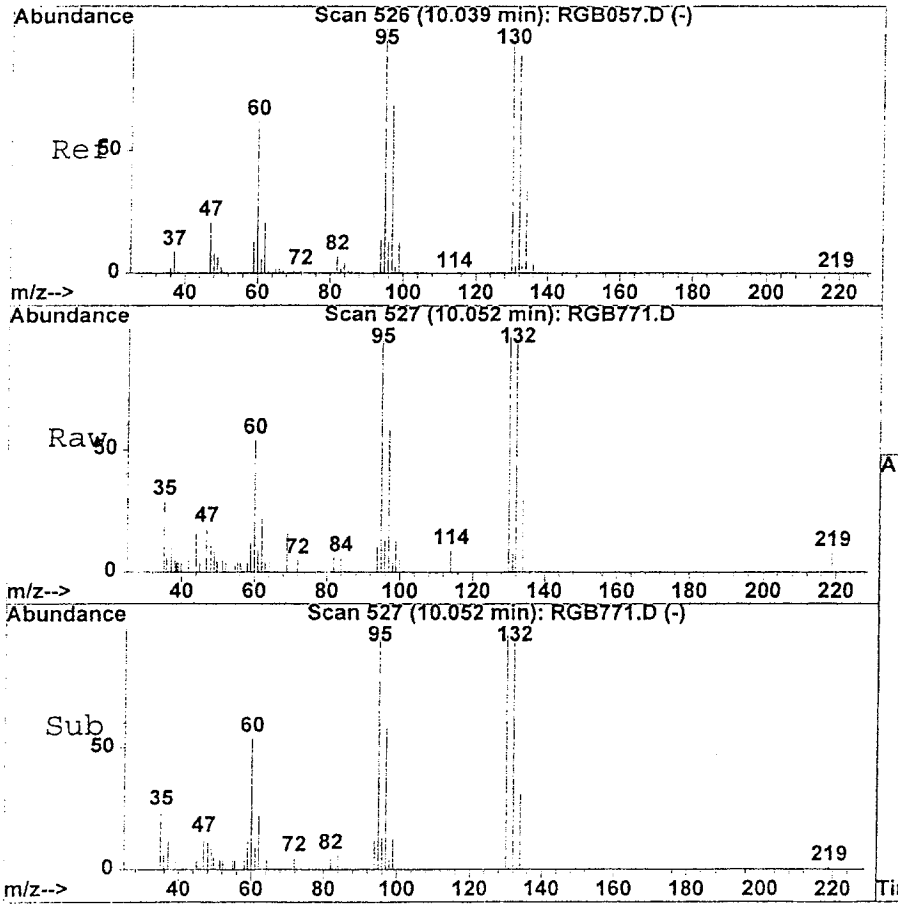
#34
1,2-Dichloroethane
Concen: 0.32 ug/l
RT: 8.89 min Scan# 449
Delta R.T. -0.00 min
Lab File: RGB771.D
Acq: 30 Jul 2001 7:20

Tgt Ion: 62 Resp: 275

Ion	Ratio	Lower	Uppe
62	100		
64	45.7	6.0	66.
98	0.0	0.0	37.



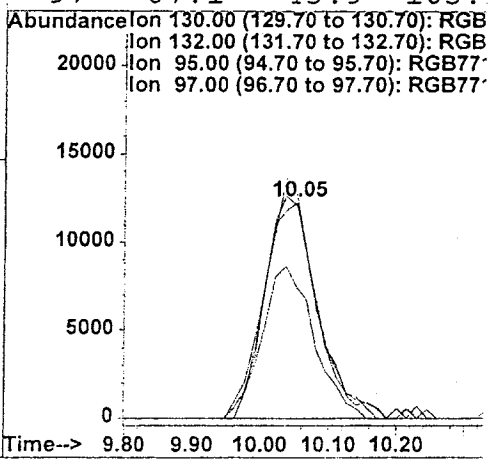
2009

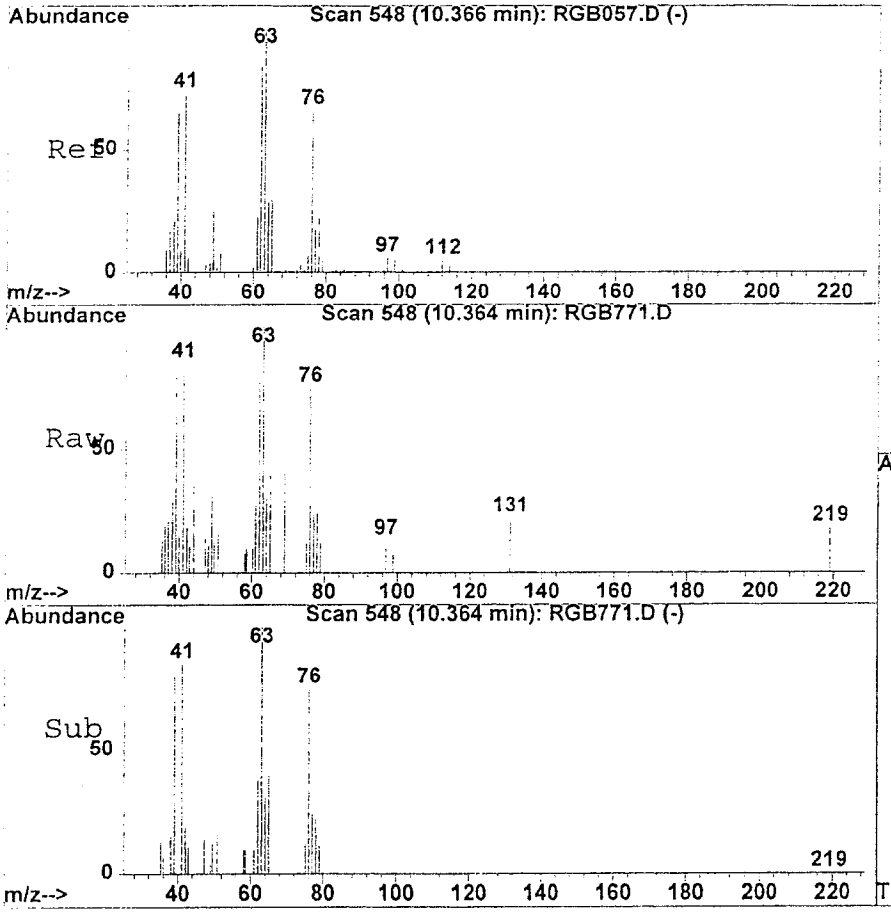


#36
Trichloroethene
Concen: 0.70 ug/l
RT: 10.05 min Scan# 52
Delta R.T. 0.01 min
Lab File: RGB771.D
Acq: 30 Jul 2001 7:20

Tgt Ion:130 Resp: 675

Ion	Ratio	Lower	Uppe
130	100		
132	101.2	67.4	127.
95	101.0	74.1	134.
97	67.1	43.9	103.

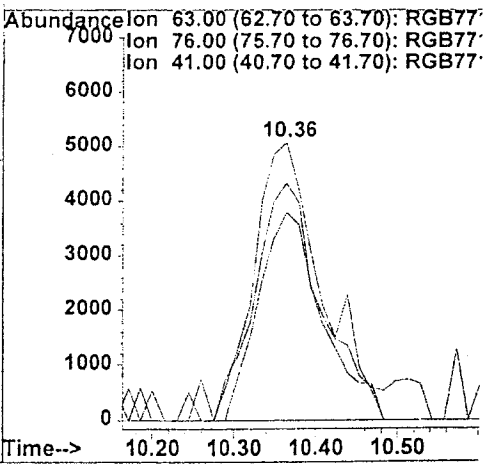




#37
1,2-Dichloropropane
Concen: 0.48 ug/l
RT: 10.36 min Scan# 54
Delta R.T. -0.00 min
Lab File: RGB771.D
Acq: 30 Jul 2001 7:20

Tgt Ion: 63 Resp: 289

Ion	Ratio	Lower	Uppe
63	100		
76	71.1	31.9	91.
41	88.7	39.2	99.



2010

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	07/25/01
Project	: CAMP PENDLETON, CT026	Date Received:	07/25/01
Batch No.	: 01G144	Date Extracted:	07/30/01 19:55
Sample ID:	0026-219	Date Analyzed:	07/30/01 19:55
Lab Samp ID:	G144-04	Dilution Factor:	1
Lab File ID:	RGB772	Matrix :	WATER
Ext Btch ID:	V003G45	% Moisture :	NA
Calib. Ref.:	RGB756	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	ND	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	ND	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	.39J	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	2J	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	89	62-139
TOLUENE-D8	94	75-125
BROMOFLUOROBENZENE	82	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	07/25/01
Project	: CAMP PENDLETON, CT026	Date Received:	07/25/01
Batch No.	: 01G144	Date Extracted:	07/31/01 03:37
Sample ID:	0026-220	Date Analyzed:	07/31/01 03:37
Lab Samp ID:	G144-05	Dilution Factor:	1
Lab File ID:	RGB785	Matrix :	WATER
Ext Btch ID:	V003G46	% Moisture :	NA
Calib. Ref.:	RGB778	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	ND	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	3.5J	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	ND	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	4.1J	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	89	62-139
TOLUENE-D8	94	75-125
BROMOFLUOROBENZENE	82	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	07/25/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/25/01
Batch No.	: 01G144	Date Extracted:	07/31/01 04:13
Sample ID:	0026-221	Date Analyzed:	07/31/01 04:13
Lab Samp ID:	G144-06	Dilution Factor:	1
Lab File ID:	RGB786	Matrix	: WATER
Ext Btch ID:	V003G46	% Moisture	: NA
Calib. Ref.:	RGB778	Instrument ID	: T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	.56	.5	.21
1,2-DICHLOROPROPANE	.48J	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	.29J	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	.43J	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	88	62-139
TOLUENE-D8	95	75-125
BROMOFLUOROBENZENE	82	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	07/25/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/25/01
Batch No.	: 01G144	Date Extracted:	07/31/01 04:48
Sample ID:	0026-222	Date Analyzed:	07/31/01 04:48
Lab Samp ID:	G144-07	Dilution Factor:	1
Lab File ID:	RGB787	Matrix	: WATER
Ext Btch ID:	V003G46	% Moisture	: NA
Calib. Ref.:	RGB778	Instrument ID	: T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	4.1J	5	.16
1,1-DICHLOROETHENE	.56J	5	.1
1,2-DICHLOROETHANE	18	.5	.21
1,2-DICHLOROPROPANE	1.6J	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	9.4	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	2.2J	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	2.9J	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	.57J	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	1.2	.5	.12
XYLENES	30	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	3.1J	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	2.1J	5	.14
TOLUENE	1.3	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	110E	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	9.4	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	96	62-139
TOLUENE-D8	93	75-125
BROMOFLUOROBENZENE	81	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	07/25/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/25/01
Batch No.	: 01G144	Date Extracted:	07/31/01 23:22
Sample ID:	0026-222DL	Date Analyzed:	07/31/01 23:22
Lab Samp ID:	G144-07T	Dilution Factor:	5
Lab File ID:	RGB809	Matrix :	WATER
Ext Btch ID:	V003G47	% Moisture :	NA
Calib. Ref.:	RGB802	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	2.1
1,1,2,2-TETRACHLOROETHANE	ND	5	.96
1,1,2-TRICHLOROETHANE	ND	25	.86
1,1-DICHLOROETHANE	5.1J	25	.79
1,1-DICHLOROETHENE	ND	25	.51
1,2-DICHLOROETHANE	23	2.5	1
1,2-DICHLOROPROPANE	2.1J	25	.71
METHYL ETHYL KETONE	ND	250	11
2-HEXANONE	ND	250	5.1
4-METHYL-2-PENTANONE (MIBK)	ND	250	6.1
ACETONE	ND	250	14
BENZENE	12	2.5	.74
BROMODICHLOROMETHANE	ND	25	.87
BROMOFORM	ND	25	.62
BROMOMETHANE	ND	25	.92
CARBON TETRACHLORIDE	ND	2.5	.45
CHLOROBENZENE	2.3J	25	.7
CHLOROETHANE	ND	25	2.2
CHLOROFORM	3.3J	25	2
CHLOROMETHANE	ND	25	1.2
CIS-1,2-DICHLOROETHENE	ND	25	.81
CIS-1,3-DICHLOROPROPENE	ND	2.5	1.1
DIBROMOCHLOROMETHANE	ND	25	.71
ETHYLBENZENE	1.2J	2.5	.6
XYLENES	30	7.5	1.4
MTBE	ND	5	1.1
METHYLENE CHLORIDE	ND	25	1.1
STYRENE	ND	25	.77
TETRACHLOROETHYLENE	2.1J	25	.68
TOLUENE	1.7J	2.5	.69
TRANS-1,2-DICHLOROETHENE	ND	25	.92
TRANS-1,3-DICHLOROPROPENE	ND	2.5	1.1
TRICHLOROETHENE	120	25	.78
VINYL ACETATE	ND	250	1.6
VINYL CHLORIDE	ND	2.5	1
TERT-BUTYL ALCOHOL	ND	100	12
DIISOPROPYL ETHER	13J	25	1.9
ETHYL TERT-BUTYL ETHER	ND	25	4.4
TERT-AMYL METHYL ETHER	ND	25	6.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	98	62-139
TOLUENE-D8	95	75-125
BROMOFLUOROBENZENE	84	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	07/25/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/25/01
Batch No.	: 01G144	Date Extracted:	07/31/01 23:57
Sample ID:	0026-223	Date Analyzed:	07/31/01 23:57
Lab Samp ID:	G144-08R	Dilution Factor:	1
Lab File ID:	RGB810	Matrix :	WATER
Ext Btch ID:	V003G47	% Moisture :	NA
Calib. Ref.:	RGB802	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	ND	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	.87J	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	ND	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	92	62-139
TOLUENE-D8	98	75-125
BROMOFLUOROBENZENE	88	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

QC SUMMARY

2017

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

lient	: FOSTER WHEELER	Date Collected:	NA
roject	: CAMP PENDLETON, CTO26	Date Received:	07/30/01
atch No.	: 01G144	Date Extracted:	07/30/01 13:51
ample ID:	MBLK1W	Date Analyzed:	07/30/01 13:51
ab Samp ID:	V003G46Q	Dilution Factor:	1
ab File ID:	RGB762	Matrix :	WATER
xt Btch ID:	V003G45	% Moisture :	NA
alib. Ref.:	RGB756	Instrument ID :	T-003

ARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
,1,1-TRICHLOROETHANE	ND	5	.42
,1,2,2-TETRACHLOROETHANE	ND	1	.19
,1,2-TRICHLOROETHANE	ND	5	.17
,1-DICHLOROETHANE	ND	5	.16
,1-DICHLOROETHENE	ND	5	.1
,2-DICHLOROETHANE	ND	.5	.21
,2-DICHLOROPROPANE	ND	5	.14
IETHYL ETHYL KETONE	ND	50	2.1
:-HEXANONE	ND	50	1
-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	ND	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	ND	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	88	62-139
TOLUENE-D8	98	75-125
BROMOFLUOROBENZENE	86	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CT026
BATCH NO.: 01G144
METHOD: SW 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	V003G46Q	V003G45L	V003G45C		
LAB FILE ID:	RGB762	RGB758	RGB759		
DATE EXTRACTED:	07/30/0113:51	07/30/0111:29	07/30/0112:04	DATE COLLECTED:	NA
DATE ANALYZED:	07/30/0113:51	07/30/0111:29	07/30/0112:04	DATE RECEIVED:	07/30/01
PREP. BATCH:	V003G45	V003G45	V003G45		
CALIB. REF:	RGB756	RGB756	RGB756		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1-Dichloroethene	ND	10	9.09	91	10	9.09	91	0	75-125	20
Benzene	ND	10	9.28	93	10	9.3	93	0	75-125	20
Chlorobenzene	ND	10	9.95	100	10	10.1	101	2	75-125	20
Toluene	ND	10	8.58	86	10	8.91	89	4	75-125	20
Trichloroethene	ND	10	8.94	89	10	9.22	92	3	75-125	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10	9.36	94	10	9.19	92	62-139
Toluene-d8	10	9.83	98	10	9.85	99	75-125
Bromofluorobenzene	10	8.84	88	10	8.97	90	75-125

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	NA
Project	: CAMP PENDLETON, CTO26	Date Received:	07/31/01
Batch No.	: 01G144	Date Extracted:	07/31/01 03:02
Sample ID	: MBLK2W	Date Analyzed:	07/31/01 03:02
Lab Samp ID	: V003G45Q	Dilution Factor:	1
Lab File ID	: RGB784	Matrix	: WATER
Ext Btch ID	: V003G46	% Moisture	: NA
Calib. Ref.	: RGB778	Instrument ID	: T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	ND	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	.44J	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	ND	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	94	62-139
TOLUENE-D8	112	75-125
BROMOFLUOROBENZENE	82	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

LIENT: FOSTER WHEELER
ROJECT: CAMP PENDLETON, CTO26
ATCH NO.: 01G144
ETHOD: SW 5030B/8260B

ATRIX:	WATER			% MOISTURE:	NA
ILUTION FACTOR:	1	1	1		
AMPLE ID:	MBLK2W				
AB SAMP ID:	V003G45Q	V003G46L	V003G46C		
AB FILE ID:	RGB784	RGB780	RGB781		
ATE EXTRACTED:	07/31/0103:02	07/31/0100:40	07/31/0101:15	DATE COLLECTED:	NA
ATE ANALYZED:	07/31/0103:02	07/31/0100:40	07/31/0101:15	DATE RECEIVED:	07/31/01
REP. BATCH:	V003G46	V003G46	V003G46		
ALIB. REF:	RGB778	RGB778	RGB778		

CCESSION:

ARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1-Dichloroethene	ND	10	8.92	89	10	8.99	90	1	75-125	20
enzene	ND	10	8.95	89	10	8.98	90	0	75-125	20
hlorobenzene	ND	10	10	100	10	9.96	100	1	75-125	20
oluene	ND	10	9.14	91	10	9.11	91	0	75-125	20
richloroethene	ND	10	10.1	101	10	10.4	104	2	75-125	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10	10.2	102	10	9.55	96	62-139
Toluene-d8	10	9.54	95	10	9.5	95	75-125
Bromofluorobenzene	10	9.07	91	10	8.86	89	75-125

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	NA
Project	: CAMP PENDLETON, CT026	Date Received:	07/31/01
Batch No.	: 01G144	Date Extracted:	07/31/01 22:11
Sample ID	: MBLK3W	Date Analyzed:	07/31/01 22:11
Lab Samp ID	: V003G47Q	Dilution Factor:	1
Lab File ID	: RGB807	Matrix	: WATER
Ext Btch ID	: V003G47	% Moisture	: NA
Calib. Ref.	: RGB802	Instrument ID	: T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	ND	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	ND	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	ND	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	96	62-139
TOLUENE-D8	102	75-125
BROMOFLUOROBENZENE	93	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

.IENT: FOSTER WHEELER
ROJECT: CAMP PENDLETON, CTO26
ATCH NO.: 01G144
ETHOD: SW 5030B/8260B

ATRIX:	WATER			% MOISTURE:	NA
ILUTION FACTOR:	1	1	1		
AMPLE ID:	MBLK3W				
AB SAMP ID:	VO03G47Q	VO03G47L	VO03G47Y		
AB FILE ID:	RGB807	RGB803	RGB805		
ATE EXTRACTED:	07/31/0122:11	07/31/0119:49	07/31/0121:00	DATE COLLECTED:	NA
ATE ANALYZED:	07/31/0122:11	07/31/0119:49	07/31/0121:00	DATE RECEIVED:	07/31/01
REP. BATCH:	VO03G47	VO03G47	VO03G47		
ALIB. REF:	RGB802	RGB802	RGB802		

CCESSION:

ARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
,1-Dichloroethene	ND	10	10.1	101	10	9.84	98	3	75-125	20
enzene	ND	10	9.98	100	10	9.84	98	1	75-125	20
hlorobenzene	ND	10	9.74	97	10	9.45	94	3	75-125	20
oluene	ND	10	9.88	99	10	9.68	97	2	75-125	20
richloroethene	ND	10	8.18	82	10	8.17	82	0	75-125	20

URROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
,2-Dichloroethane-d4	10	9.19	92	10	9.03	90	62-139
oluene-d8	10	9.41	94	10	9.07	91	75-125
romofluorobenzene	10	8.83	88	10	8.8	88	75-125

2023

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO26**

SDG: **01G144**

METHOD 300.0
NITRATE/CHLORIDE/SULFATE

Seven (7) water samples were received on 07/25/01 to be analyzed for Nitrate-N, chloride, and sulfate by Method 300.0.

1. **Holding Time**

   Analysis met holding time criteria.

2. **Blank**

   All blanks were free of contamination at reporting limit.

3. **Duplicate**

   Duplicate sample was not analyzed in this SDG.

4. **Matrix Spike**

   Matrix sample was not analyzed in this SDG.

5. **Lab Control Sample**

   Lab control results were within control limits.

6. **Sample Analyses**

   All samples were analyzed according to the prescribed QC procedures.

   Nitrate result was reported as nitrogen concentration.

SAMPLE RESULTS

METHC .0
SULFATE

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G144

Matrix : WATER
Instrument ID : TI006

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICG030WB	ND	1	NA	.5	.101	07/26/0117:07	NA	AG26010A	AG26008A	ICG030W	NA	NA
LCS1W	ICG030WL	9.48	1	NA	.5	.101	07/26/0117:24	NA	AG26011A	AG26008A	ICG030W	NA	NA
0026-223	G144-08	ND	1	NA	.5	.101	07/26/0121:59	NA	AG26027A	AG26020A	ICG030W	07/25/01	07/25/01
MBLK2W	ICG034WB	10.0	1	NA	.5	.101	07/28/0102:43	NA	AG27052A	AG27050A	ICG034W	NA	NA
LCS2W	ICG034WL	10.0	1	NA	.5	.101	07/28/0103:00	NA	AG27053A	AG27050A	ICG034W	NA	NA
0026-219	G144-04	501	100	NA	50	10.1	07/28/0106:41	NA	AG27066A	AG27050A	ICG034W	07/25/01	07/25/01
0026-222	G144-07	347	100	NA	50	10.1	07/28/0107:33	NA	AG27069A	AG27050A	ICG034W	07/25/01	07/25/01
0026-220	G144-05	2000	100	NA	50	10.1	07/28/0106:59	NA	AG27067A	AG27050A	ICG034W	07/25/01	07/25/01
MBLK3W	ICG038WB	ND	1	NA	.5	.101	07/31/0110:10	NA	AG30051A	AG30049A	ICG038W	NA	NA
LCS3W	ICG038WL	9.64	1	NA	.5	.101	07/31/0110:27	NA	AG30052A	AG30049A	ICG038W	NA	NA
0026-217	G144-02	1880	1000	NA	500	101	07/31/0112:43	NA	AG30060A	AG30049A	ICG038W	07/25/01	07/25/01
0026-218	G144-03	2230	1000	NA	500	101	07/31/0113:34	NA	AG30063A	AG30049A	ICG038W	07/25/01	07/25/01
0026-221	G144-06	1940	1000	NA	500	101	07/31/0114:09	NA	AG30065A	AG30049A	ICG038W	07/25/01	07/25/01

RL : Reporting Limit

METHO .0
NITRATE-N

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CT026
Batch No. : 01G144

Matrix : WATER
Instrument ID : TI006

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICG030WB	ND	1	NA	.1	.0206	07/26/0117:07	NA	AG26010A	AG26008A	ICG030W	NA	NA
LCS1W	ICG030WL	2.03	1	NA	.1	.0206	07/26/0117:24	NA	AG26011A	AG26008A	ICG030W	NA	NA
0026-217	G144-02	7.14	5	NA	.5	.103	07/26/0117:41	NA	AG26012A	AG26008A	ICG030W	07/25/01	07/25/01
0026-218	G144-03	7.44	5	NA	.5	.103	07/26/0117:58	NA	AG26013A	AG26008A	ICG030W	07/25/01	07/25/01
0026-219	G144-04	4.91	5	NA	.5	.103	07/26/0118:18	NA	AG26014A	AG26008A	ICG030W	07/25/01	07/25/01
0026-220	G144-05	6.26	5	NA	.5	.103	07/26/0118:35	NA	AG26015A	AG26008A	ICG030W	07/25/01	07/25/01
0026-221	G144-06	8.87	5	NA	.5	.103	07/26/0118:52	NA	AG26016A	AG26008A	ICG030W	07/25/01	07/25/01
0026-222	G144-07	1.24	5	NA	.5	.103	07/26/0119:09	NA	AG26017A	AG26008A	ICG030W	07/25/01	07/25/01
0026-223	G144-08	ND	1	NA	.1	.0206	07/26/0121:59	NA	AG26027A	AG26020A	ICG030W	07/25/01	07/25/01

RL: Reporting Limit

METHOL .0
CHLORIDE-Cl

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CT026
Batch No. : 01G144

Matrix : WATER
Instrument ID : TI006

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICG030WB	ND	1	NA	.2	.047	07/26/0117:07	NA	AG26010A	AG26008A	ICG030W	NA	NA
LCS1W	ICG030WL	4.85	1	NA	.2	.047	07/26/0117:24	NA	AG26011A	AG26008A	ICG030W	NA	NA
0026-223	G144-08	.202	1	NA	.2	.047	07/26/0121:59	NA	AG26027A	AG26020A	ICG030W	07/25/01	07/25/01
MBLK2W	ICG038WB	ND	1	NA	.2	.047	07/31/0110:10	NA	AG30051A	AG30049A	ICG038W	NA	NA
LCS2W	ICG038WL	4.98	1	NA	.2	.047	07/31/0110:27	NA	AG30052A	AG30049A	ICG038W	NA	NA
0026-217	G144-02	3270	1000	NA	200	47	07/31/0112:43	NA	AG30060A	AG30049A	ICG038W	07/25/01	07/25/01
0026-218	G144-03	3000	1000	NA	200	47	07/31/0113:34	NA	AG30063A	AG30061A	ICG038W	07/25/01	07/25/01
0026-221	G144-06	2420	1000	NA	200	47	07/31/0114:09	NA	AG30065A	AG30061A	ICG038W	07/25/01	07/25/01
0026-222	G144-07	4700	1000	NA	200	47	07/31/0114:26	NA	AG30066A	AG30061A	ICG038W	07/25/01	07/25/01
MBLK3W	ICG039WB	ND	1	NA	.2	.047	07/31/0116:18	NA	AG31003A	AG31001A	ICG039W	NA	NA
LCS3W	ICG039WL	5.03	1	NA	.2	.047	07/31/0116:35	NA	AG31004A	AG31001A	ICG039W	NA	NA
0026-219	G144-04	9680	2000	NA	400	94	07/31/0117:55	NA	AG31007A	AG31001A	ICG039W	07/25/01	07/25/01
MBLK4W	ICH003WB	ND	1	NA	.2	.047	08/09/0113:18	NA	AH09009A	AH09006A	ICH003W	NA	NA
LCS4W	ICH003WL	5	1	NA	.2	.047	08/09/0113:01	NA	AH09008A	AH09006A	ICH003W	NA	NA
LCD4W	ICH003WC	4.94	1	NA	.2	.047	08/09/0113:56	NA	AH09011A	AH09006A	ICH003W	NA	NA
0026-220	G144-05	468	1000	NA	200	47	08/09/0115:12	NA	AH09015A	AH09006A	ICH003W	07/25/01	07/25/01

RL : Reporting Limit

8015

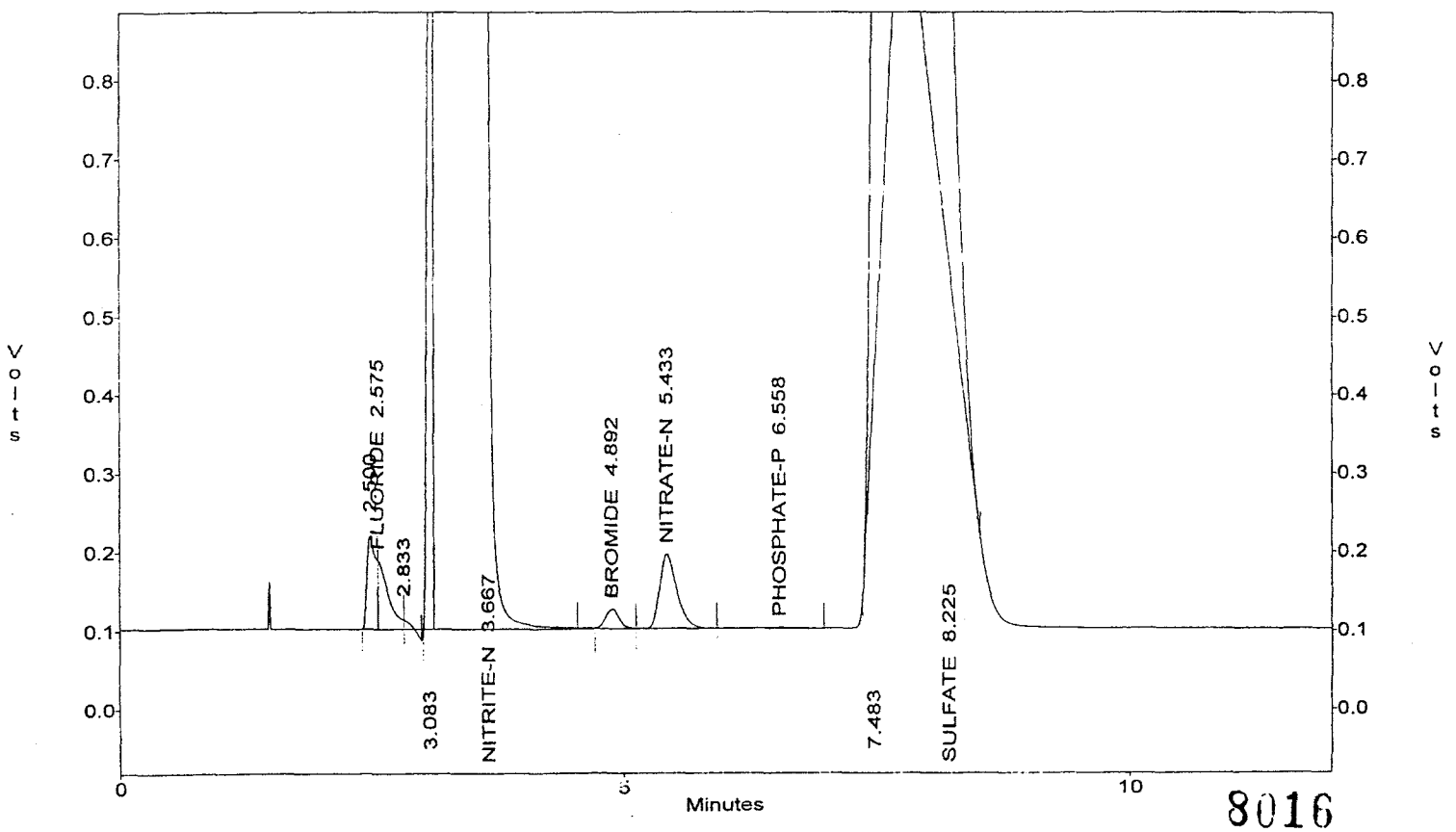
EPA METHOD 300.0 by IC
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ag26\Ag26.013
Method : c:\ezchrom\methods\Ic22g05.met
Sample ID : G144-03 DF=5
Acquired : Jul 26, 2001 17:58:49
Printed : Jul 26, 2001 18:15:51
User : ANNA

Channel A Results

#	Peak Name	Ret.Time(min)	Height	Ave. CF	ESTD Conc.(ppm)
2	FLUORIDE	2.58	87783	109411.500	4.009
--	CHLORIDE	3.30	0	0.000	0.000
5	NITRITE-N	3.67	999533	120213.898	40.503
6	BROMIDE	4.89	25117	14984.367	8.437
7	NITRATE-N	5.43	94286	66497.602	7.436 ✓
8	PHOSPHATE-P	6.56	1697	14479.667	0.570
10	SULFATE	8.23	528248	9758.033	271.022

c:\ezchrom\chrom\ag26\Ag26.013 -- Channel A



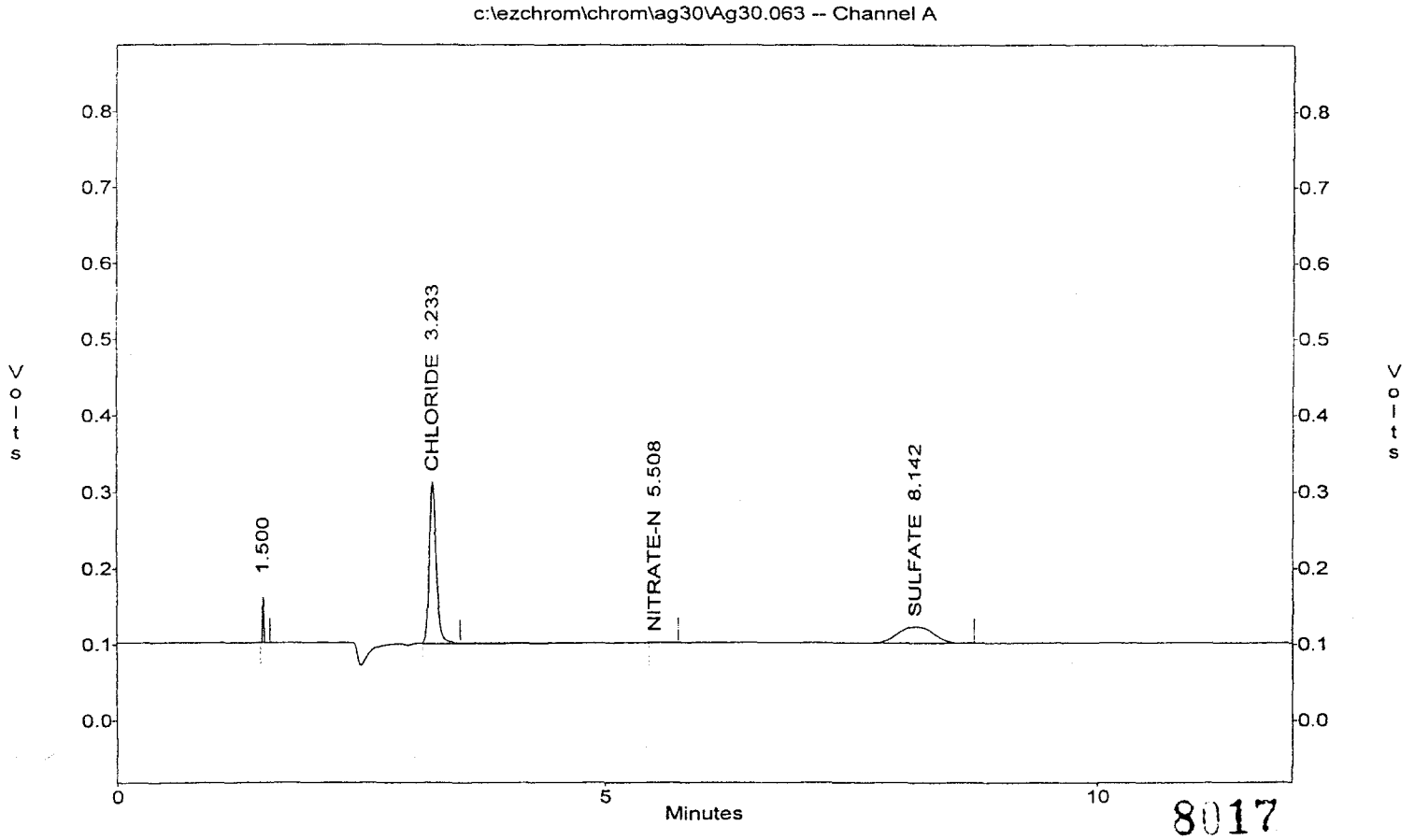
8016

EPA METHOD 300.0 by IC
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ag30\Ag30.063
Method : c:\ezchrom\methods\Ic22g05.met
Sample ID : G144-03 CS DF=1000
Acquired : Jul 31, 2001 13:34:57
Printed : Jul 31, 2001 13:51:59
User : ANNA

Channel A Results

#	Peak Name	Ret.Time(min)	Height	Ave. CF	ESTD Conc.(ppm)
--	FLUORIDE	2.60	0	0.000	0.000
2	CHLORIDE	3.23	212480	71575.219	2997.112
--	NITRITE-N	3.60	0	0.000	0.000
--	BROMIDE	4.80	0	0.000	0.000
3	NITRATE-N	5.51	622	66497.602	9.811
--	PHOSPHATE-P	6.40	0	0.000	0.000
4	SULFATE	8.14	21693	9758.033	2225.951



8017

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO26, UST SITE 5/8/9/17

WET CHEMICAL ANALYSES

SDG#: 01G144

8000

CASE NARRATIVE

CLIENT: FOSTER WHEELER

PROJECT: CAMP PENDLETON, CTO26

SDG: 01G144

METHOD 310.1
TOTAL ALKALINITY

Seven (7) water samples were received on 07/25/01 for Total Alkalinity analysis by Method 310.1 in accordance with "Methods for Chemical Analysis of Water and Wastewater" EPA 600/4-79-020 (1983).

1. Holding Time

   Analysis met holding time criteria.

2. Method Blank

   Method blank was free of contamination at reporting limit level.

3. Lab Control Sample /Lab Control Sample Duplicate

   Lab control results were within QC limits.

4. Duplicate

   No duplicate sample was analyzed for this SDG.

5. Sample Analysis

   Sample analysis was performed within QC requirements. All requirements were met.

METHOD 1
TOTAL ALK. .NITY

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : O1G144

Matrix : WATER
Instrument ID :

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ALGO16WB	ND	1	NA	5	.469	07/31/0113:00	NA	ALGO16W-1	NA	ALGO16W	NA	NA
LCS1W	ALGO16WL	120	1	NA	5	.469	07/31/0113:05	NA	ALGO16W-2	NA	ALGO16W	NA	NA
LCD1W	ALGO16WC	118	1	NA	5	.469	07/31/0113:10	NA	ALGO16W-3	NA	ALGO16W	NA	NA
0026-217	G144-02	140	1	NA	5	.469	07/31/0114:05	NA	ALGO16W-14	NA	ALGO16W	07/25/01	07/25/01
0026-218	G144-03	148	1	NA	5	.469	07/31/0114:10	NA	ALGO16W-15	NA	ALGO16W	07/25/01	07/25/01
0026-219	G144-04	241	1	NA	5	.469	07/31/0114:15	NA	ALGO16W-16	NA	ALGO16W	07/25/01	07/25/01
0026-220	G144-05	90.2	1	NA	5	.469	07/31/0114:20	NA	ALGO16W-17	NA	ALGO16W	07/25/01	07/25/01
0026-221	G144-06	170	1	NA	5	.469	07/31/0114:25	NA	ALGO16W-18	NA	ALGO16W	07/25/01	07/25/01
0026-222	G144-07	175	1	NA	5	.469	07/31/0114:30	NA	ALGO16W-19	NA	ALGO16W	07/25/01	07/25/01
0026-223	G144-08	ND	1	NA	5	.469	07/31/0114:35	NA	ALGO16W-20	NA	ALGO16W	07/25/01	07/25/01

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
METHOD: METHOD 310.1
MATRIX: WATER
% MOISTURE: NA

BATCH NO.: 01G144
SAMPLE ID: LCS1W/LCD1W
CONTROL NO.: ALG016WL/C

DATE RECEIVED: NA
DATE EXTRACTED: NA
DATE ANALYZED: 07/31/01 13:05/13:10

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD %	QC LIMIT %	RPD LIMIT %
Alkalinity	ND	118.00	120.00	102	118.00	118.00	100	2	80-120	20

8003

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO26, UST SITE 5/8/9/17

RSK-175
DISSOLVED GASES

SDG#: 01G144

4000

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO 26**

SDG: **01G144**

RSK-175
DISSOLVED GASES

Samples received on 07/25/01 for this SDG include seven (7) waters to be analyzed for Dissolved Gases (Methane, Ethylene, Ethane) in accordance to EMAX SOP AP 2050.

1. **Holding Time**

   All samples received were unpreserved. Analytical holding time was met.

2. **Calibration**

   A 6-point Initial calibration was performed. All QC requirements were met. Continuing calibration were carried out at 10-sample interval; D% met QC criteria.

3. **Method Blank**

   No analytes were detected above RL.

4. **Lab Control Sample/Lab Control Duplicate**

   All recoveries were within QC limits

5. **Matrix Spike/Matrix Spike Duplicate**

   No sample was designated for MS/MSD with this SDG.

6. **Sample Analysis**

   All samples were analyzed within QC requirements.

LAB CHRONICLE
RSK175

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26

SDG NO. : 01G144
Instrument ID : GCT010

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	DCC Data FN	Prep. Batch	Notes
MBLK1W	DG10G09B	1	NA	07/26/0114:58	07/26/0114:15	FG09003A	FG09002A	DS10G09	Method Blank
LCS1W	DG10G09L	1	NA	07/26/0115:13	07/26/0114:15	FG09004A	FG09002A	DS10G09	Lab Control Sample (LCS)
LCD1W	DG10G09C	1	NA	07/26/0115:32	07/26/0114:15	FG09005A	FG09002A	DS10G09	LCS Duplicate
0026-217	G144-02	1	NA	07/26/0115:45	07/26/0114:15	FG09006A	FG09002A	DS10G09	Field Sample
0026-218	G144-03	1	NA	07/26/0115:58	07/26/0114:15	FG09007A	FG09002A	DS10G09	Field Sample
0026-219	G144-04	1	NA	07/26/0116:12	07/26/0114:15	FG09008A	FG09002A	DS10G09	Field Sample
0026-220	G144-05	1	NA	07/26/0116:29	07/26/0114:15	FG09009A	FG09002A	DS10G09	Field Sample
0026-221	G144-06	1	NA	07/26/0116:51	07/26/0114:15	FG09010A	FG09002A	DS10G09	Field Sample
0026-222	G144-07	1	NA	07/26/0117:10	07/26/0114:15	FG09011A	FG09002A	DS10G09	Field Sample
0026-223	G144-08	1	NA	07/26/0117:23	07/26/0114:15	FG09012A	FG09002A	DS10G09	Field Sample

FN - Filename
DCC - Daily Continuing Calibration
% Moist - Percent Moisture

SAMPLE RESULTS

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/25/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/25/01
Batch No.	: 01G144	Date Extracted:	07/26/01 14:15
Sample ID	: 0026-217	Date Analyzed:	07/26/01 15:45
Lab Samp ID	: G144-02	Dilution Factor:	1
Lab File ID	: FG09006A	Matrix	: WATER
Ext Btch ID	: DS10G09	% Moisture	: NA
Calib. Ref.	: FG09002A	Instrument ID	: GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	ND	1	.18
METHANE	.62J	1	.26

RL: Reporting Limit

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/25/01
Project	: CAMP PENDLETON, CT026	Date Received:	07/25/01
Batch No.	: 01G144	Date Extracted:	07/26/01 14:15
Sample ID	: 0026-218	Date Analyzed:	07/26/01 15:58
Lab Samp ID	: G144-03	Dilution Factor:	1
Lab File ID	: FG09007A	Matrix	: WATER
Ext Btch ID	: DS10G09	% Moisture	: NA
Calib. Ref.	: FG09002A	Instrument ID	: GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	ND	1	.18
METHANE	.35J	1	.26

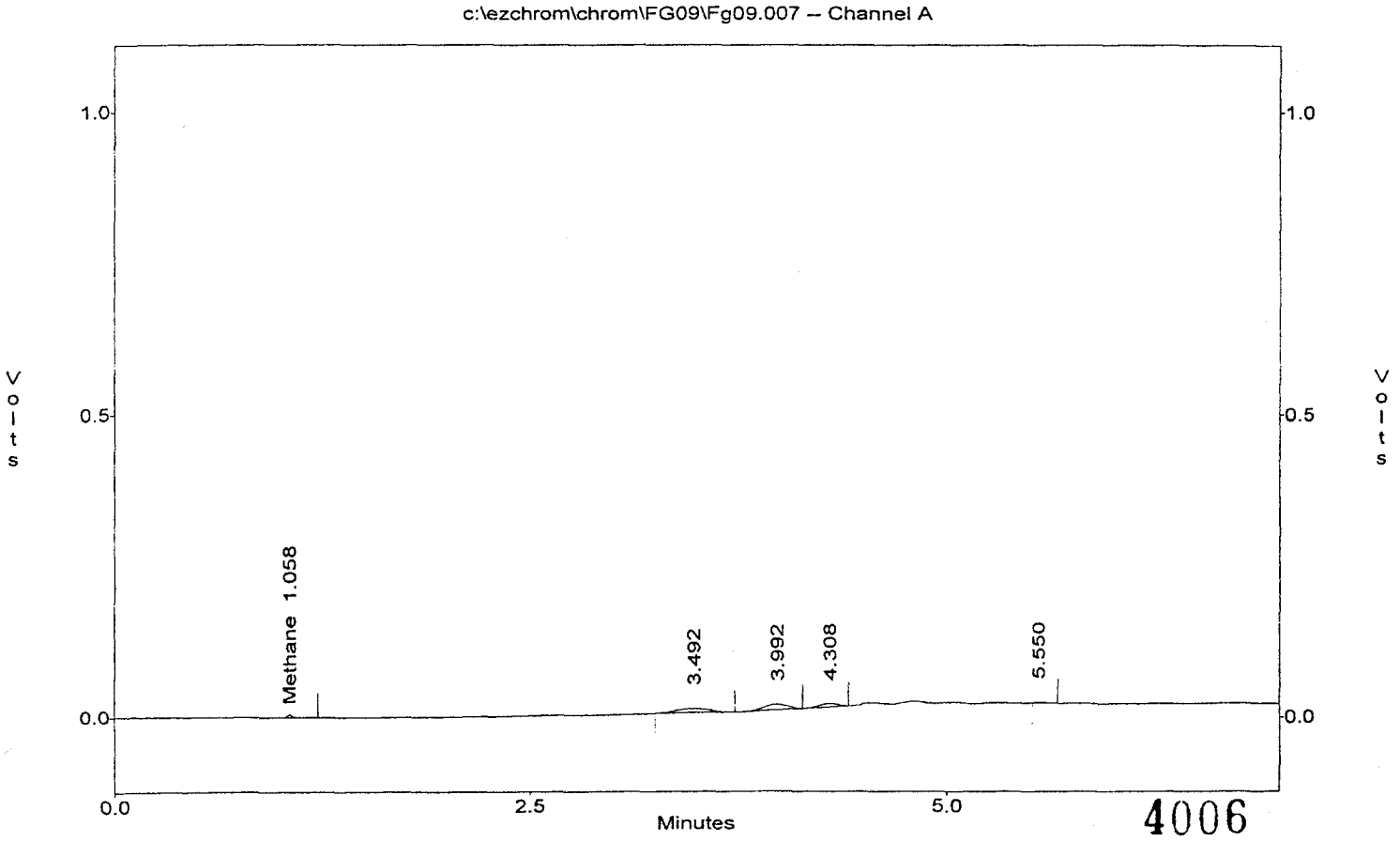
RL: Reporting Limit

EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\FG09\Fg09.007
Method : c:\ezchrom\methods\Dg10f15.met
Sample ID : 01G144-03
Acquired : Jul 26, 2001 15:58:25
Printed : Jul 26, 2001 16:05:26
User : SHAWN

Channel A Results

#	Peak Name	Ret. Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	1.058	10565.0	30300.31	0.35
--	Ethylene	2.683	0.0	0.00	0.00
--	Ethane	3.175	0.0	0.00	0.00
--	Propane	6.258	0.0	0.00	0.00



RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/25/01
P t	: CAMP PENDLETON, CTO26	Date Received:	07/25/01
B No.	: 01G144	Date Extracted:	07/26/01 14:15
Sample ID:	0026-219	Date Analyzed:	07/26/01 16:12
Lab Samp ID:	G144-04	Dilution Factor:	1
Lab File ID:	FG09008A	Matrix :	WATER
Ext Btch ID:	DS10G09	% Moisture :	NA
Calib. Ref.:	FG09002A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	ND	1	.18
METHANE	.43J	1	.26

RL: Reporting Limit

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/25/01
Pr[illegible]	: CAMP PENDLETON, CTO26	Date Received:	07/25/01
Ba[illegible]o.	: 01G144	Date Extracted:	07/26/01 14:15
Sample ID:	0026-220	Date Analyzed:	07/26/01 16:29
Lab Samp ID:	G144-05	Dilution Factor:	1
Lab File ID:	FG09009A	Matrix :	WATER
Ext Btch ID:	DS10G09	% Moisture :	NA
Calib. Ref.:	FG09002A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	ND	1	.18
METHANE	.3J	1	.26

RL: Reporting Limit

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/25/01
P ct	: CAMP PENDLETON, CTO26	Date Received:	07/25/01
E No.	: 01G144	Date Extracted:	07/26/01 14:15
Sample ID:	0026-221	Date Analyzed:	07/26/01 16:51
Lab Samp ID:	G144-06	Dilution Factor:	1
Lab File ID:	FG09010A	Matrix :	WATER
Ext Btch ID:	DS10G09	% Moisture :	NA
Calib. Ref.:	FG09002A	Instrument ID :	GCTO10

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	ND	1	.18
METHANE	ND	1	.26

RL: Reporting Limit

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/25/01
P t	: CAMP PENDLETON, CTO26	Date Received:	07/25/01
B No.	: 01G144	Date Extracted:	07/26/01 14:15
Sample ID:	0026-222	Date Analyzed:	07/26/01 17:10
Lab Samp ID:	G144-07	Dilution Factor:	1
Lab File ID:	FG09011A	Matrix :	WATER
Ext Btch ID:	DS10G09	% Moisture :	NA
Calib. Ref.:	FG09002A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	4.2	1	.26
ETHYLENE	.3J	1	.18
METHANE	4.3	1	.26

RL: Reporting Limit

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/25/01
Pr[illegible]	: CAMP PENDLETON, CTO26	Date Received:	07/25/01
Ba[illegible]o.	: 01G144	Date Extracted:	07/26/01 14:15
Sample ID:	0026-223	Date Analyzed:	07/26/01 17:23
Lab Samp ID:	G144-08	Dilution Factor:	1
Lab File ID:	FG09012A	Matrix :	WATER
Ext Btch ID:	DS10G09	% Moisture :	NA
Calib. Ref.:	FG09002A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	ND	1	.18
METHANE	.37J	1	.26

RL: Reporting Limit

QC SUMMARY

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	NA
P t	: CAMP PENDLETON, CTO26	Date Received:	07/26/01
B No.	: 01G144	Date Extracted:	07/26/01 14:15
Sample ID:	MBLK1W	Date Analyzed:	07/26/01 14:58
Lab Samp ID:	DG10G09B	Dilution Factor:	1
Lab File ID:	FG09003A	Matrix :	WATER
Ext Btch ID:	DS10G09	% Moisture :	NA
Calib. Ref.:	FG09002A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	ND	1	.18
METHANE	.38J	1	.26

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
P NO.: 01G144
M: RSK-175

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DG10G09B	DG10G09L	DG10G09C		
LAB FILE ID:	FG09003A	FG09004A	FG09005A		
DATE EXTRACTED:	07/26/0114:15	07/26/0114:15	07/26/0114:15	DATE COLLECTED:	NA
DATE ANALYZED:	07/26/0114:58	07/26/0115:13	07/26/0115:32	DATE RECEIVED:	07/26/01
PREP. BATCH:	DS10G09	DS10G09	DS10G09		
CALIB. REF:	FG09002A	FG09002A	FG09002A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethane	ND	25.2	28.1	112	25.2	27.5	109	2	50-150	20
Ethylene	ND	23.6	25.4	108	23.6	24.8	105	2	50-150	20
Methane	.377J	13.6	13.2	95	13.6	12.5	89	6	50-150	20

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO 26, UST SITE 5/8/9/17**

SDG: **01G144**

METHOD 9060
TOTAL ORGANIC CARBON

Seven (7) water samples were received on 07/25/01 for TOC analysis by method 9060 in accordance with "Method for Chemical Analysis of Water and Wastewater" EPA 600/4-79-020 (1983)

1. Holding Time

   Analysis met holding time criteria.

2. Blank

   Method blank was free of contamination at reporting limit level.

3. Lab Control Sample/ Lab Control Sample Duplicate

   Lab control results were within the control limit.

4. Duplicate

   Sample G144-06 was analyzed for duplicate. %RPD was within QC limit.

5. Matrix Spike

   Sample G144-06 was spiked. All recoveries were within QC limit.

6. Sample Analysis

   Sample analyses were performed within QC requirements. All requirements were met.

METHOD)
TC

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : O1G144

Matrix : WATER
Instrument ID :

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	TCH009WB	ND	1	NA	5	.551	08/13/0110:30	NA	TCH009W-07	TCH009W-05	TCH009W	NA	NA
LCS1W	TCH009WL	21.3	1	NA	5	.551	08/13/0110:45	NA	TCH009W-08	TCH009W-05	TCH009W	NA	NA
LCD1W	TCH009WC	22	1	NA	5	.551	08/13/0111:00	NA	TCH009W-09	TCH009W-05	TCH009W	NA	NA
0026-217	G144-02	12.7	1	NA	5	.551	08/13/0111:15	NA	TCH009W-10	TCH009W-05	TCH009W	07/25/01	07/25/01
0026-218	G144-03	10.4	1	NA	5	.551	08/13/0111:40	NA	TCH009W-11	TCH009W-05	TCH009W	07/25/01	07/25/01
0026-219	G144-04	7.4	1	NA	5	.551	08/13/0112:05	NA	TCH009W-12	TCH009W-05	TCH009W	07/25/01	07/25/01
0026-220	G144-05	5.6	1	NA	5	.551	08/13/0112:30	NA	TCH009W-13	TCH009W-05	TCH009W	07/25/01	07/25/01
0026-221	G144-06	ND	1	NA	5	.551	08/13/0112:55	NA	TCH009W-14	TCH009W-05	TCH009W	07/25/01	07/25/01
0026-221DUP	G144-06D	ND	1	NA	5	.551	08/13/0113:20	NA	TCH009W-15	TCH009W-05	TCH009W	07/25/01	07/25/01
0026-221MS	G144-06M	53.9	1	NA	5	.551	08/13/0113:45	NA	TCH009W-16	TCH009W-05	TCH009W	07/25/01	07/25/01
0026-222	G144-07	21	1	NA	5	.551	08/13/0114:40	NA	TCH009W-19	TCH009W-17	TCH009W	07/25/01	07/25/01
0026-223	G144-08	ND	1	NA	5	.551	08/13/0115:05	NA	TCH009W-20	TCH009W-17	TCH009W	07/25/01	07/25/01

RL : Reporting Limit

9008

EMAX QUALITY CONTROL DATA
DUPLICATE ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CT026
METHOD: METHOD 9060
MATRIX: WATER
% MOISTURE: NA

==========

BATCH NO.: 01G144
SAMPLE ID: 0026-221DUP
CONTROL NO.: G144-06D

DATE RECEIVED: 07/25/01
DATE EXTRACTED: NA
DATE ANALYZED: 08/13/01 13:20

ACCESSION:

PARAMETER	SAMPLE (mg/L)	DUP. SAMPLE (mg/L)	RPD (%)	RPD LIMIT (%)
TOC	ND	ND	0	20

8007

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
METHOD: METHOD 9060
MATRIX: WATER
% MOISTURE: NA

==========

BATCH NO.: 01G144
SAMPLE ID: 0026-221MS
CONTROL NO.: G144-06M

DATE RECEIVED: 07/25/01
DATE EXTRACTED: NA
DATE ANALYZED: 08/13/01 13:45

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	QC LIMIT (%)
TOC	ND	50	53.9	108	80-120

8008

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
METHOD: METHOD 9060
MATRIX: WATER
% MOISTURE: NA

BATCH NO.: 01G144
SAMPLE ID: LCS1W/LCD1W
CONTROL NO.: TCH009WL/C

DATE RECEIVED: NA
DATE EXTRACTED: NA
DATE ANALYZED: 08/13/01 10:45/11:00

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD %	QC LIMIT %	RPD LIMIT %
TOC	ND	20	21.3	106	20	22	110	3	80-120	20

6008

FOSTER WHEELER ENVIRONMENTAL CORPORATION
1230 Columbia Stre 540 San Diego, CA 92101 (619) 234-8696

NUMBER 02734

CHAIN-OF-CUSTODY RECORD

PROJECT NAME: UST SITE 6/7
PURCHASE ORDER NO.: 020848 TASK 4
PROJECT LOCATION: CAMP PENDLETON
PROJECT NO.: 1990.026D
SAMPLER NAME: TANIA PURPUR-KOASLER
SAMPLER SIGNATURE: [signature]
PROJECT CONTACT: LISA BICNKOWSKI
AIRBILL NUMBER: COURIER
LABORATORY NAME: EMAX
LABORATORY ID (FOR LABORATORY): 016080

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	TPH-extractable	EPA 8260B (MTBE & OXYGENATES)	EPA 418.1 (TPH)	EPA 300.0 (Nitrate, Sulfate, Chloride)	RSK 175M (Ethane, Ethene, Methane)	EPA 310.1 (Alkalinity)	EPA 9060 (TOC)	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
0026-193	7/17/01	1020	3	X		W	10 day		X							SITE 6/7 TRIP BLANK	—	-	TB
0026-194	7/17/01	1200	11	X		W	10 day	X	X	X	X	X	X	X		SITE 6/7 MW 7	—	-	REG
0026-195	7/17/01	1230	11		X	W	10 day	X	X	X	X	X	X	X		SITE 6/7 MW 13	—	-	REG
0026-196	7/17/01	1345	11	X		W	10 day	X	X	X	X	X	X	X		SITE 6/7 MW 17	—	-	REG

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	7/17/01	Phillip Hatch
COMPANY: FWENC	TIME: 1415	COMPANY: EMAX
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS: Please preserve samples for EPA 9060 (TOC) in 500ml amber with H_2SO_4 upon receipt

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

Project Information Section
Do not submit to Laboratory

SAMPLING COMMENT: 3rd Quarter GW Sampling

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

6915 D8

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO 26, SITE 6/7

METHOD 3520/M8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 01G080

5007

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CT026**

SDG: **01G080**

METHOD 3520/M8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Three (3) water samples were received on 07/17/01 to be analyzed for Total Petroleum Hydrocarbons by Method 3520/M8015B in accordance with SW846 and Leaking Underground Fuel Tank (LUFT) Field Manual, SWRCB, Dept. of Health Service, CA (1988).

1. **Holding Time**

   Analytical holding time was met.

2. **Method Blank**

   There was no contamination detected at reporting level.

3. **Lab Control Sample/Lab Control Sample Duplicate**

   All recoveries were within QC limits.

4. **Surrogate Recovery**

   All recoveries were within QC limits.

5. **Matrix Spike/Matrix Spike Duplicate**

   No sample was analyzed for MS/MSD from this SDG.

6. **Calibration**

   Initial calibration was seven points. Continue calibrations were carried out at 10 sample intervals. All QC requirements were met.

7. **Sample Analysis**

   Samples were analyzed according to the prescribed QC procedures. Samples were quantified from C10-C24.

LAB CHRONICLE
M8015D

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CT026

SDG NO. : 01G080
Instrument ID : GCT050

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	DCC Data FN	Prep. Batch	Notes
MBLK1W	DSG018WB	1	NA	07/19/0121:43	07/19/0113:00	TG06037A	TG06027A	DSG018W	Method Blank
LCS1W	DSG018WL	1	NA	07/19/0122:31	07/19/0113:00	TG06038A	TG06027A	DSG018W	Lab Control Sample (LCS)
LCD1W	DSG018WC	1	NA	07/19/0123:20	07/19/0113:00	TG06039A	TG06027A	DSG018W	LCS Duplicate
0026-194	G080-02	.98	NA	07/20/0101:46	07/19/0113:00	TG06042A	TG06040A	DSG018W	Field Sample
0026-195	G080-03	.94	NA	07/20/0102:34	07/19/0113:00	TG06043A	TG06040A	DSG018W	Field Sample
0026-196	G080-04	.98	NA	07/20/0103:23	07/19/0113:00	TG06044A	TG06040A	DSG018W	Field Sample

FN - Filename
DCC - Daily Continuing Calibration
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 3520/M8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G080

Matrix : WATER
Instrument ID : GCT050

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	SURR (%)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	DSG018WB	ND	86	1	NA	.1	.067	07/19/0121:43	07/19/0113:00	TG06037A	TG06027A	DSG018W	NA	07/19/01
LCS1W	DSG018WL	4.13	92	1	NA	.1	.067	07/19/0122:31	07/19/0113:00	TG06038A	TG06027A	DSG018W	NA	07/19/01
LCD1W	DSG018WC	4.3	95	1	NA	.1	.067	07/19/0123:20	07/19/0113:00	TG06039A	TG06027A	DSG018W	NA	07/19/01
0026-194*	G080-02	.25	94	.98	NA	.098	.066	07/20/0101:46	07/19/0113:00	TG06042A	TG06040A	DSG018W	07/17/01	07/17/01
0026-195*	G080-03	1.6	97	.94	NA	.094	.063	07/20/0102:34	07/19/0113:00	TG06043A	TG06040A	DSG018W	07/17/01	07/17/01
0026-196	G080-04	.71	92	.98	NA	.098	.066	07/20/0103:23	07/19/0113:00	TG06044A	TG06040A	DSG018W	07/17/01	07/17/01

RL : Reporting Limit
SUR1 : Hexacosane

Parameter	H-C Range
JP5	C7 -C18
Diesel	C10-C24
Motor Oil	C18-C34
Gas	C6 -C12

* : Presence of lighter and heavier HC patterns, quantified against Diesel calbration factor

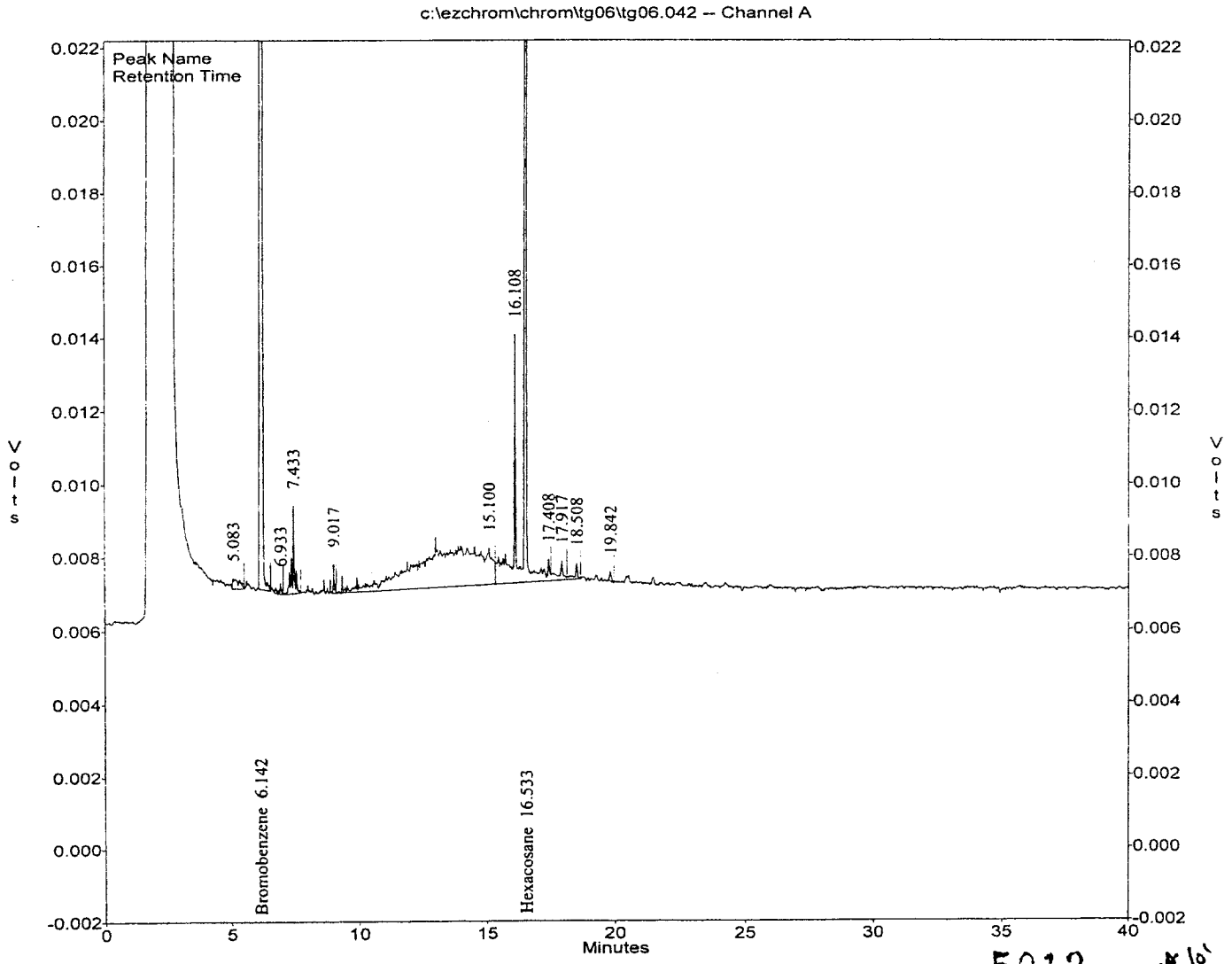
5011

EPA METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\tg06\tg06.042
Method : c:\ezchrom\methods\ds50f25.met
Sample ID : 01G080-02 W
Acquired : Jul 20, 2001 01:46:22
Printed : Jul 20, 2001 10:03:36
User : SHAWN

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
2	Bromobenzene	6.142	430484	4743.9	90.7
8	Hexacosane	16.533	376776	16045.0	23.5
G1	Diesel		246804	9582.9	25.8



5012

7/20/01

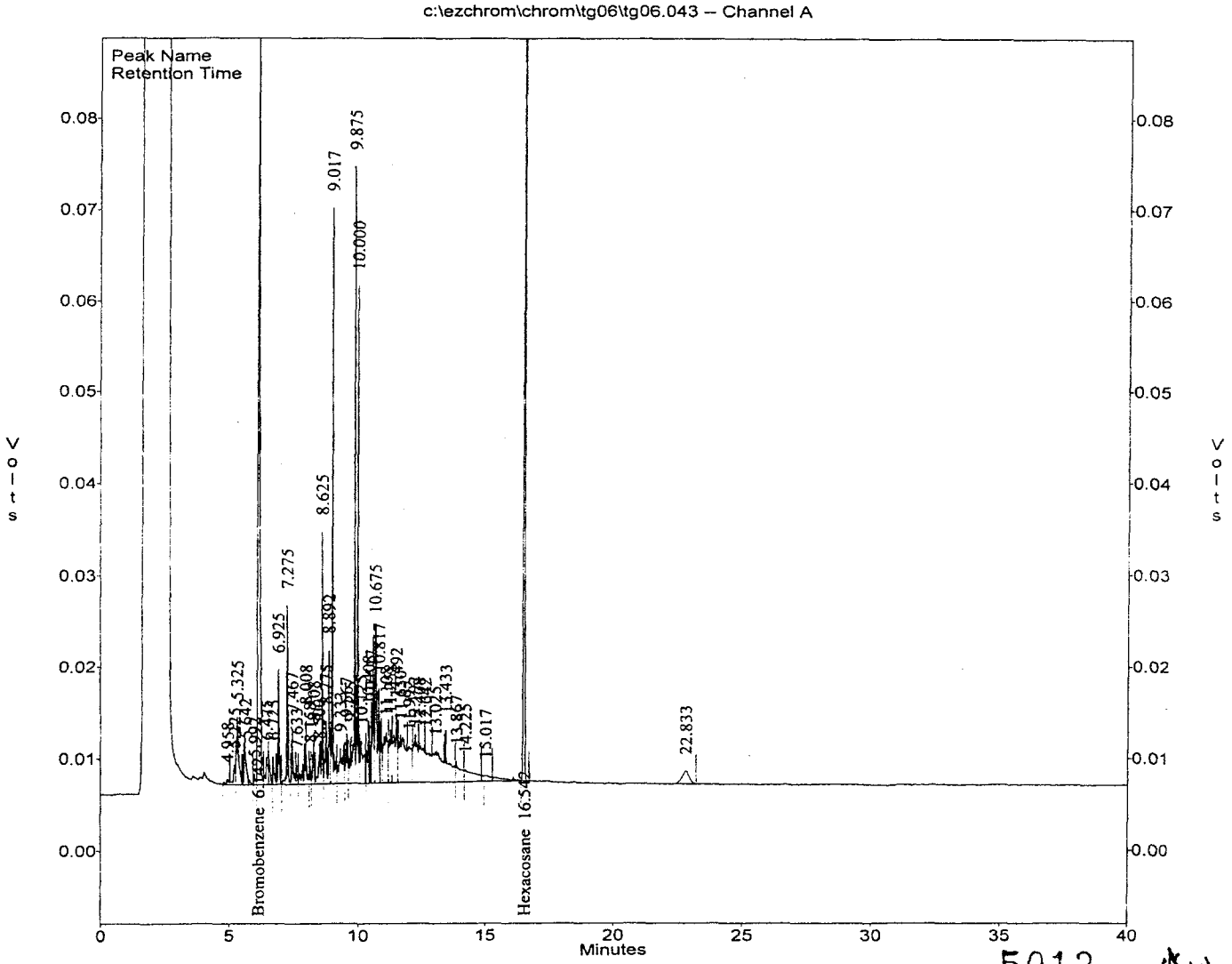
EPA METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\tg06\tg06.043
Method : c:\ezchrom\methods\ds50f25.met
Sample ID : 01G080-03 W
Acquired : Jul 20, 2001 02:34:58
Printed : Jul 20, 2001 10:02:31
User : SHAWN

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
6	Bromobenzene	6.142	432726	4743.9	91.2
44	Hexacosane	16.542	387822	16045.0	24.2
G1	Diesel		1624178	9582.9	169.5

c:\ezchrom\chrom\tg06\tg06.043 -- Channel A



5013

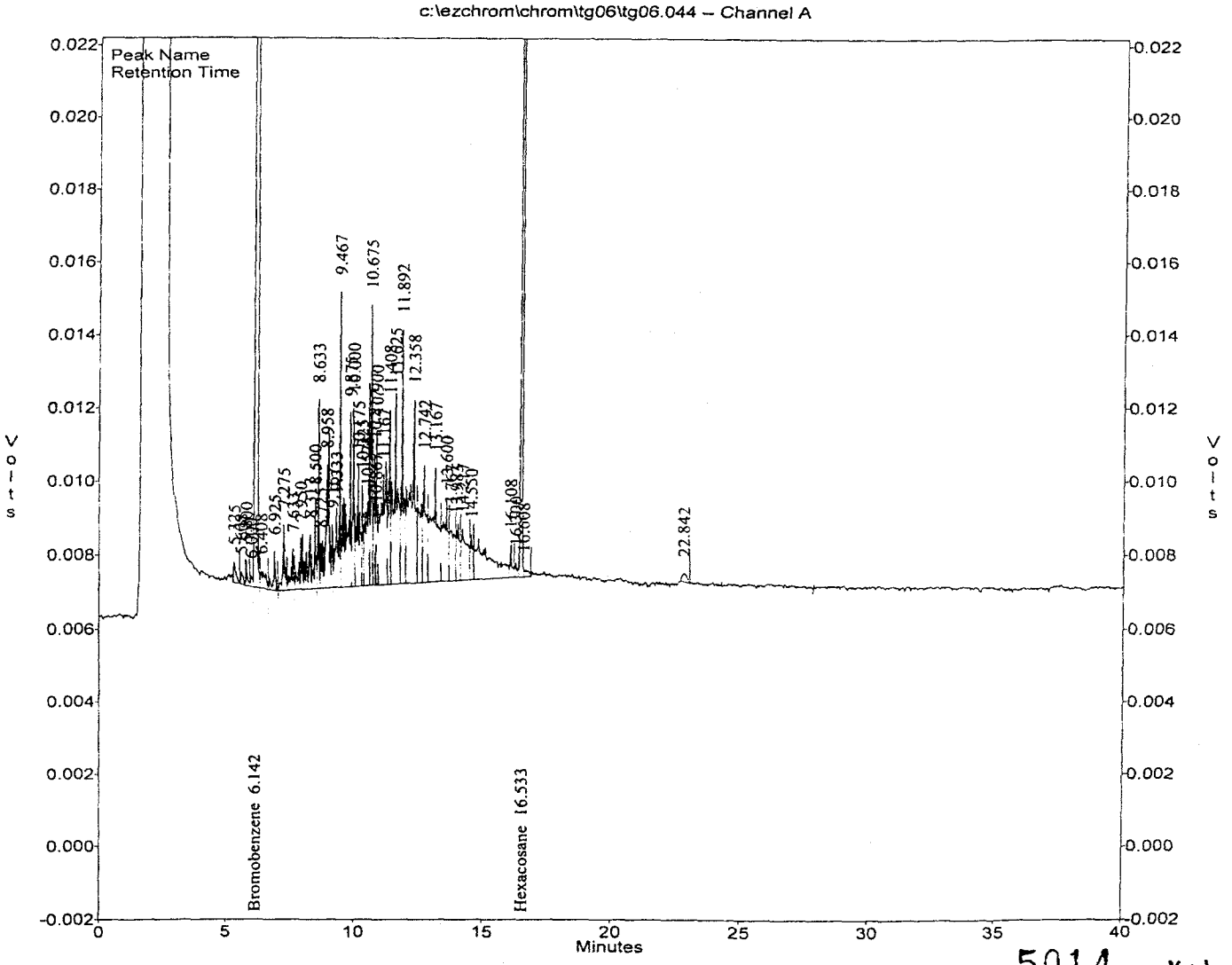
4
7/20/01

EPA METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\tg06\tg06.044
Method : c:\ezchrom\methods\ds50f25.met
Sample ID : 01G080-04 W
Acquired : Jul 20, 2001 03:23:38
Printed : Jul 20, 2001 10:06:15
User : SHAWN

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
5	Bromobenzene	6.142	462939	4743.9	97.6
42	Hexacosane	16.533	369799	16045.0	23.0
G1	Diesel		697339	9582.9	72.8



5014

SK 7/19/01

QC SUMMARY

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G080
METHOD: METHOD 3520/M8015B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DSG018WB	DSG018WL	DSG018WC		
LAB FILE ID:	TG06037A	TG06038A	TG06039A		
DATE EXTRACTED:	07/19/0113:00	07/19/0113:00	07/19/0113:00	DATE COLLECTED:	NA
DATE ANALYZED:	07/19/0121:43	07/19/0122:31	07/19/0123:20	DATE RECEIVED:	07/19/01
PREP. BATCH:	DSG018W	DSG018W	DSG018W		
CALIB. REF:	TG06027A	TG06027A	TG06027A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Diesel	ND	5	4.13	83	5	4.3	86	4	65-135	30

SURROGATE PARAMETER	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	QC LIMIT (%)
Hexacosane	.25	.231	92	.25	.238	95	65-135

691506

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO 26, SITE 6/7

METHOD 418.1
TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

SDG#: 01G080

5000

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO 26, SITE 6/7**

SDG: **01G080**

METHOD 418.1
TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Three (3) water samples were received on 07/17/01 for total recoverable petroleum hydrocarbons analysis by Method 418.1 in accordance with "Methods for Chemical Analysis of Water & Wastewater", USEPA 600-79-020, 1983.

1. Holding Time

   Analysis met the holding time criteria.

2. Method Blank

   Method blank was free of contamination at reporting limit level.

3. Matrix Spike

   No matrix sample was designated.

4. Lab Control Sample/Lab Control Duplicate

   Lab control results were within the control limit.

5. Sample Analysis

   Sample analyses were performed within the QC requirements.

METHOD 418.1
TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CT026
Batch No. : 01G080

Matrix : WATER
Instrument ID : 1061

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	TRG003WB	ND	1	NA	10	.558	07/20/0119:00	07/20/0118:40	TRG013W-03	TRG013CC	TRG013W	NA	07/20/01
LCS1W	TRG003WL	5.96	1	NA	10	.558	07/20/0119:05	07/20/0118:40	TRG013W-04	TRG013CC	TRG013W	NA	07/20/01
LCD1W	TRG003WC	5.96	1	NA	10	.558	07/20/0119:10	07/20/0118:40	TRG013W-05	TRG013CC	TRG013W	NA	07/20/01
0026-194	G080-02	ND	.96	NA	9.6	.536	07/20/0119:15	07/20/0118:40	TRG013W-06	TRG013CC	TRG013W	07/17/01	07/17/01
0026-195	G080-03	ND	.94	NA	9.4	.525	07/20/0119:20	07/20/0118:40	TRG013W-07	TRG013CC	TRG013W	07/17/01	07/17/01
0026-196	G080-04	ND	.95	NA	9.5	.53	07/20/0119:25	07/20/0118:40	TRG013W-08	TRG013CC	TRG013W	07/17/01	07/17/01

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
METHOD: METHOD 418.1
MATRIX: WATER
% MOISTURE: NA

BATCH NO.: 01G080
SAMPLE ID: LCS1W/LCD1W
CONTROL NO.: TRG003WL/C

DATE RECEIVED: 07/20/01
DATE EXTRACTED: 07/20/01 18:40
DATE ANALYZED: 07/20/01 19:05/19:10

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD %	QC LIMIT %	RPD LIMIT %
TRPH	ND	6	5.96	99	6	5.96	99	0	80-120	20

6915D1

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO26, UST 6/7

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

SDG: 01G080

2000

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**
PROJECT: **CAMP PENDLETON, CTO26, UST SITE 6/7**
SDG: **01G080**

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Four (4) water samples were received on 07/17/01 for Volatile Organic Analyses by Method 8260B in accordance with USEPA SW846, 3rd ed.

1. Holding Time: Analytical holding time was met.

2. Tuning and Calibration: Tuning and calibration were carried out at 12 hour interval. All QC requirements were met.

3. Method Blank: Method blank was free of contamination at reporting limit.

4. Lab Control Sample/Lab Control Sample Duplicate: All recoveries were within QC limit.

5. Surrogate Recovery: Recoveries were within QC limit.

6. Matrix Spike/Matrix Spike Duplicate: No sample was designated for spike.

7. Sample Analysis: Samples were analyzed according to the prescribed QC procedures. All requirements were met.

   Trace amount of target analytes found in G080-04 was confirmed by reanalysis. Only the initial analysis was reported.

LAB CHRONICLE
SW8260

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26

SDG NO. : 01G080
Instrument ID : T-005

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	DCC Data FN	Prep. Batch	Notes
MBLK1W	V005G56Q	1	NA	07/25/0119:21	07/25/0119:21	RGQ738	RGQ734	V005G56	Method Blank
LCS1W	V005G56L	1	NA	07/25/0117:29	07/25/0117:29	RGQ735	RGQ734	V005G56	Lab Control Sample (LCS)
LCD1W	V005G56C	1	NA	07/25/0118:08	07/25/0118:08	RGQ736	RGQ734	V005G56	LCS Duplicate
0026-193	G080-01	1	NA	07/25/0119:58	07/25/0119:58	RGQ739	RGQ734	V005G56	Field Sample
0026-194	G080-02	1	NA	07/25/0123:34	07/25/0123:34	RGQ745	RGQ734	V005G56	Field Sample
0026-195	G080-03	1	NA	07/26/0100:10	07/26/0100:10	RGQ746	RGQ734	V005G56	Field Sample
0026-196	G080-04	1	NA	07/26/0100:46	07/26/0100:46	RGQ747	RGQ734	V005G56	Field Sample

FN - Filename
DCC - Daily Continuing Calibration
% Moist - Percent Moisture

SAMPLE RESULTS

2003

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	07/17/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/17/01
Batch No.	: 01G080	Date Extracted:	07/25/01 19:58
Sample ID:	0026-193	Date Analyzed:	07/25/01 19:58
Lab Samp ID:	G080-01	Dilution Factor:	1
Lab File ID:	RGQ739	Matrix :	WATER
Ext Btch ID:	V005G56	% Moisture :	NA
Calib. Ref.:	RGQ734	Instrument ID :	T-005

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	ND	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	.45J	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	ND	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	87	62-139
TOLUENE-D8	94	75-125
BROMOFLUOROBENZENE	90	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	07/17/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/17/01
Batch No.	: 01G080	Date Extracted:	07/25/01 23:34
Sample ID:	0026-194	Date Analyzed:	07/25/01 23:34
Lab Samp ID:	G080-02	Dilution Factor:	1
Lab File ID:	RGQ745	Matrix :	WATER
Ext Btch ID:	V005G56	% Moisture :	NA
Calib. Ref.:	RGQ734	Instrument ID :	T-005

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	.63	.5	.21
1,2-DICHLOROPROPANE	.39J	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	1.1	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	.56	.5	.12
XYLENES	3.1	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	.79J	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	.67J	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	92	62-139
TOLUENE-D8	93	75-125
BROMOFLUOROBENZENE	90	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	07/17/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/17/01
Batch No.	: 01G080	Date Extracted:	07/26/01 00:10
Sample ID:	0026-195	Date Analyzed:	07/26/01 00:10
Lab Samp ID:	G080-03	Dilution Factor:	1
Lab File ID:	RGQ746	Matrix :	WATER
Ext Btch ID:	VO05G56	% Moisture :	NA
Calib. Ref.:	RGQ734	Instrument ID :	T-005

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	.62J	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	ND	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	1.7J	50	1.2
ACETONE	ND	50	2.7
BENZENE	7.9	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	.23J	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	.39J	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	16	.5	.12
XYLENES	93	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	.49J	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	.28J	5	.14
TOLUENE	17	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	6.3	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	.4J	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	93	62-139
TOLUENE-D8	93	75-125
BROMOFLUOROBENZENE	83	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\01G25\RGQ746.D
Acq On : 26 Jul 2001 12:10 am
Sample : 01G080-03 25mL
Misc : DF=1.0
MS Integration Params: 524TAIL.P
Quant Time: Jul 26 9:34 2001

Vial: 15
Operator: CR
Inst : T005
Multiplr: 1.00
Quant Results File: VO05G10.RES

Quant Method : C:\HPCHEM\1\METHODS\VO05G10.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Jul 11 09:38:50 2001
Response via : Initial Calibration
DataAcq Meth : VO05G10

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Difluorobenzene	9.69	114	2968781	10.00 ug/l	-0.02
31) Chlorobenzene-d5	15.76	117	2283696	10.00 ug/l	-0.02
60) 1,2-Dichlorobenzene-d4	22.14	152	937565	10.00 ug/l	0.00
System Monitoring Compounds					
30) 1,2-Dichloroethane-d4	8.97	65	896851	9.31 ug/l	-0.02
Spiked Amount 10.000			Recovery	= 93.10%	
43) Toluene-d8	12.59	98	3621472	9.29 ug/l	-0.02
Spiked Amount 10.000			Recovery	= 92.90%	
64) Bromofluorobenzene	18.51	95	1253054	8.26 ug/l	0.00
Spiked Amount 10.000			Recovery	= 82.60%	
Target Compounds					Qvalue
14) Methylene Chloride	5.37	84	51627	0.49 ug/l	91
19) DIPE	6.35	45	103101	0.40 ug/l	97
20) 1,1-Dichloroethane	6.50	63	110023	0.62 ug/l	94
25) cis-1,2-Dichloroethene	7.49	61	64796	0.39 ug/l	88
35) Benzene	9.17	78	3196746	7.88 ug/l	99
36) Trichloroethene	10.28	130	620713	6.33 ug/l	98
41) 4-Methyl-2-Pentanone	11.73	43	77919	1.73 ug/l	95
44) Toluene	12.75	92	4693684	17.44 ug/l	99
50) Tetrachloroethene	14.09	164	32975	0.28 ug/l	97
54) Chlorobenzene	15.85	112	59150	0.23 ug/l	83
56) Ethylbenzene	15.98	91	8055514	16.31 ug/l	99
57) m/p-Xylenes	16.16	91	18826693	57.46 ug/l	97
58) o-Xylene	17.13	91	11310807	35.44 ug/l	99
62) Isopropyl benzene	17.96	105	1273635	2.41 ug/l	97
67) n-Propylbenzene	18.88	120	392916	3.96 ug/l	97
70) 135-Trimethylbenzene	19.26	105	2124267	8.28 ug/l	99
73) 124-Trimethylbenzene	20.18	105	8924578	36.36 ug/l	83
74) Sec-Butylbenzene	20.59	105	384465	0.83 ug/l	97
75) p-Isopropyltoluene	20.94	119	404711	1.46 ug/l	96
79) 1,2-Dichlorobenzene	22.20	146	172629	1.23 ug/l	91
83) Naphthalene	26.81	128	4865702	91.36 ug/l	100

2007

(#) = qualifier out of range (m) = manual integration

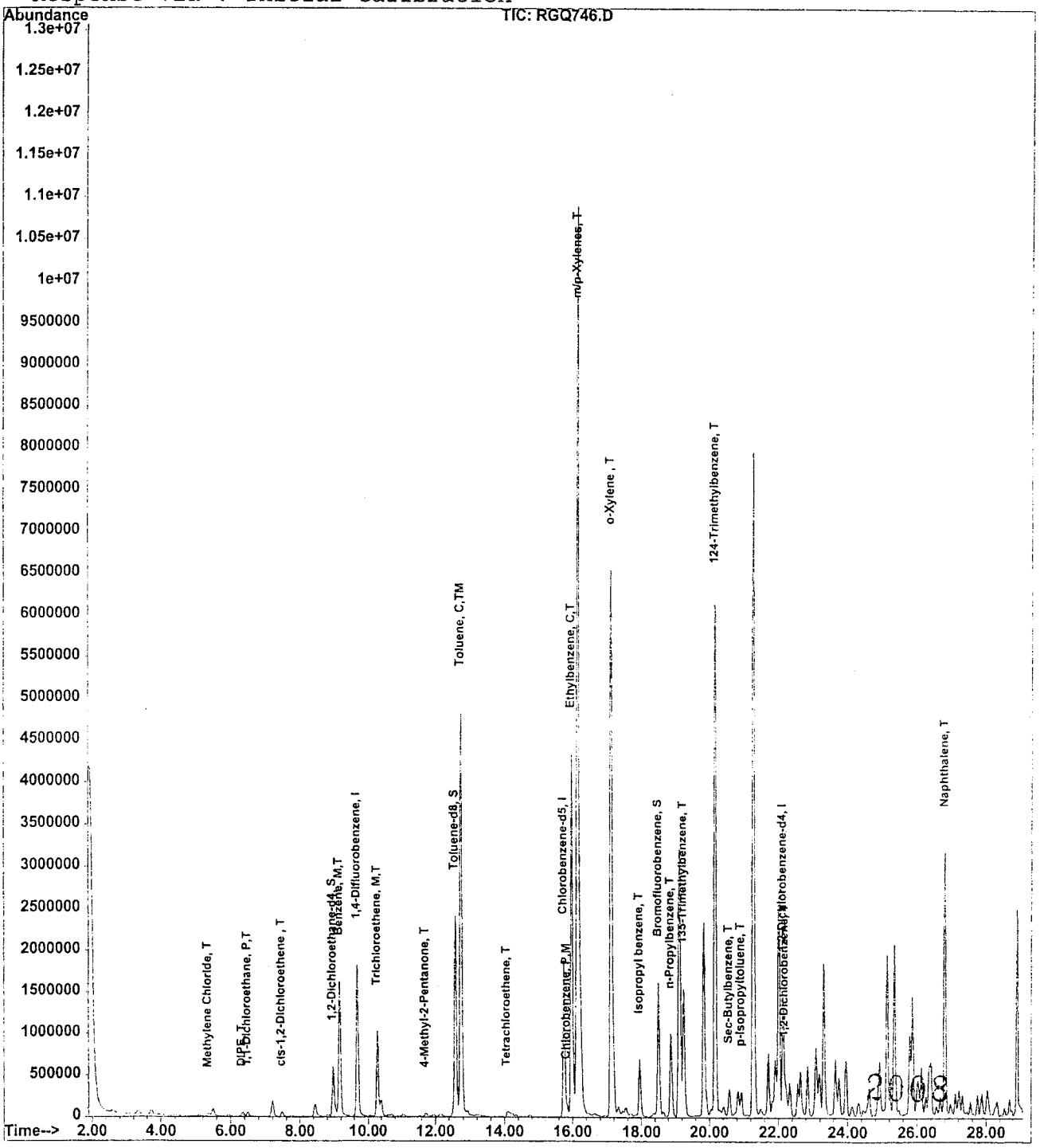
Quantitation Report

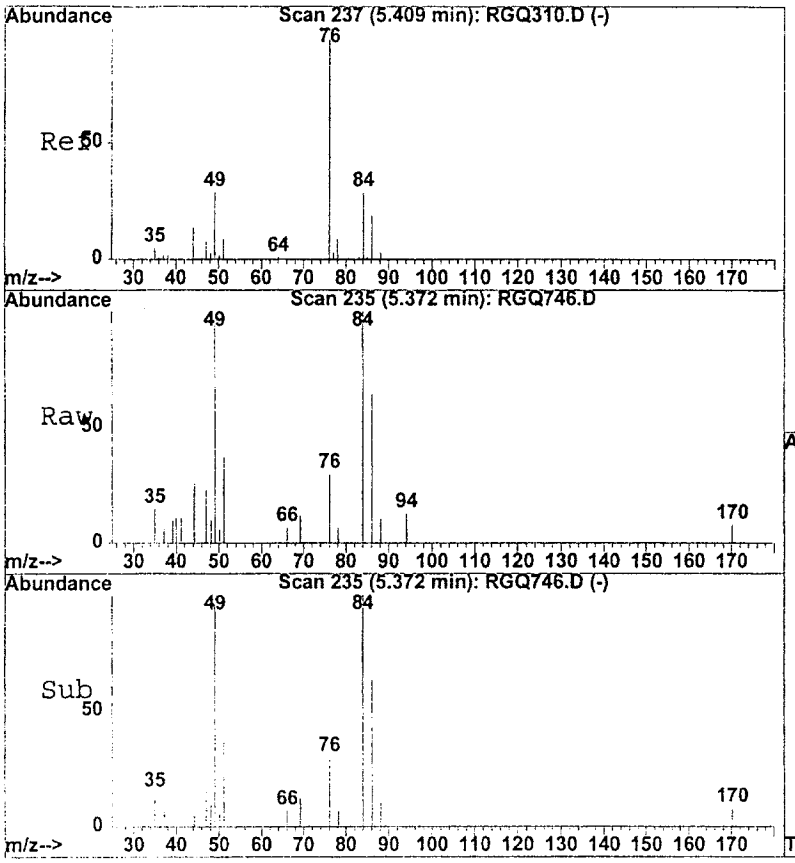
Data File : C:\HPCHEM\1\DATA\01G25\RGQ746.D
Acq On : 26 Jul 2001 12:10 am
Sample : 01G080-03 25mL
Misc : DF=1.0
MS Integration Params: 524TAIL.P
Quant Time: Jul 26 9:34 2001

Vial: 15
Operator: CR
Inst : T005
Multiplr: 1.00

Quant Results File: VO05G10.RES

Method : C:\HPCHEM\1\METHODS\VO05G10.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Jul 11 09:38:50 2001
Response via : Initial Calibration

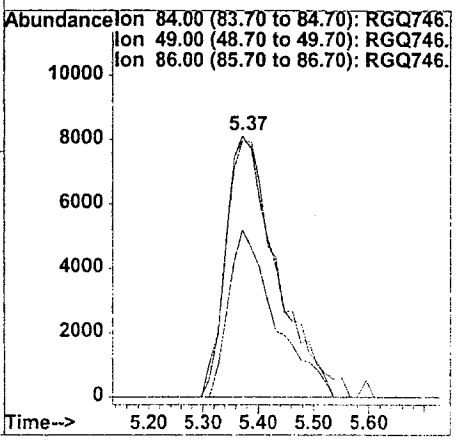


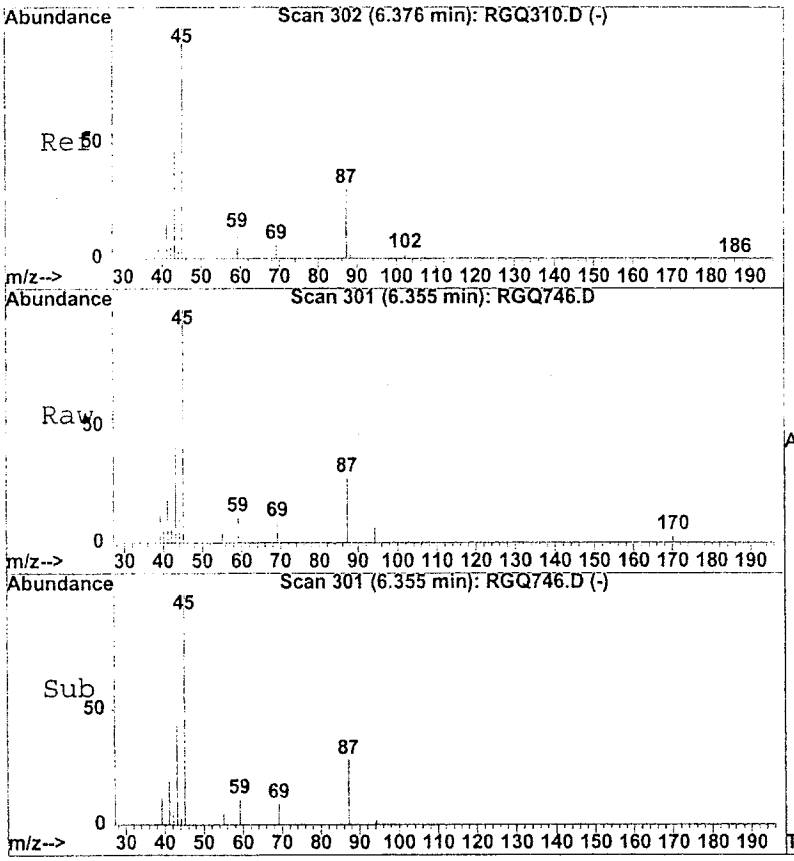


#14
Methylene Chloride
Concen: 0.49 ug/l
RT: 5.37 min Scan# 235
Delta R.T. -0.04 min
Lab File: RGQ746.D
Acq: 26 Jul 2001 12:10 am

Tgt Ion: 84 Resp: 51627

Ion	Ratio	Lower	Upper
84	100		
49	97.9	75.8	135.8
86	58.4	36.9	96.9

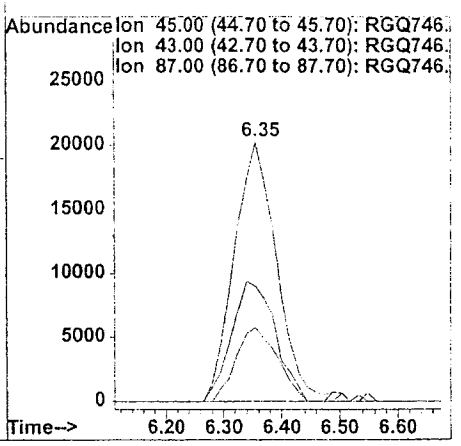




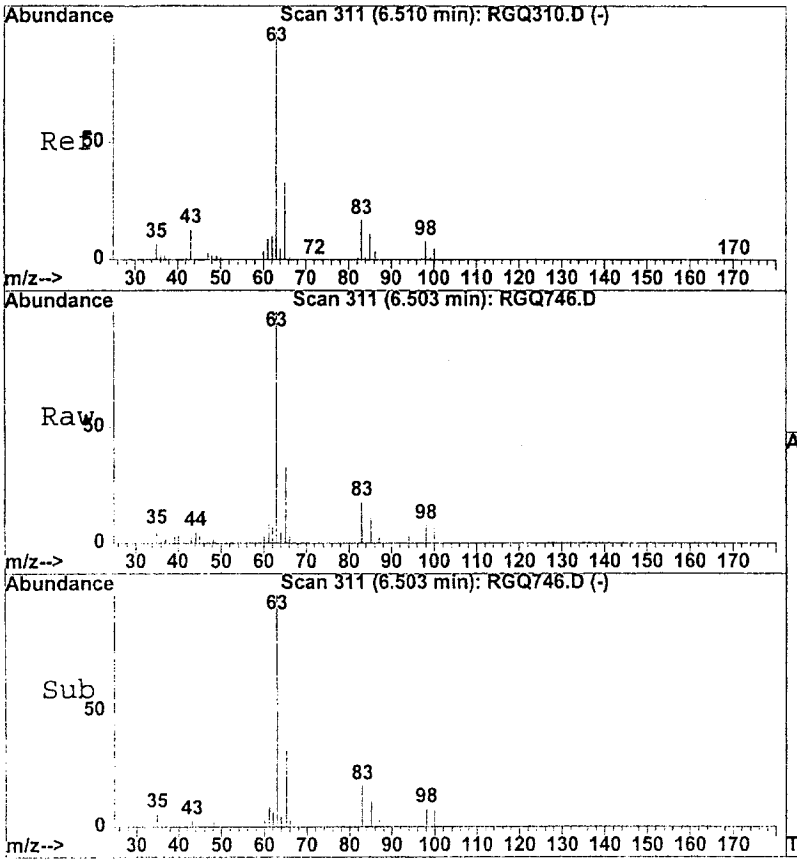
#19
DIPE
Concen: 0.40 ug/l
RT: 6.35 min Scan# 301
Delta R.T. -0.02 min
Lab File: RGQ746.D
Acq: 26 Jul 2001 12:10 am

Tgt Ion: 45 Resp: 103101

Ion	Ratio	Lower	Upper
45	100		
43	47.4	19.2	79.2
87	27.5	0.0	59.8



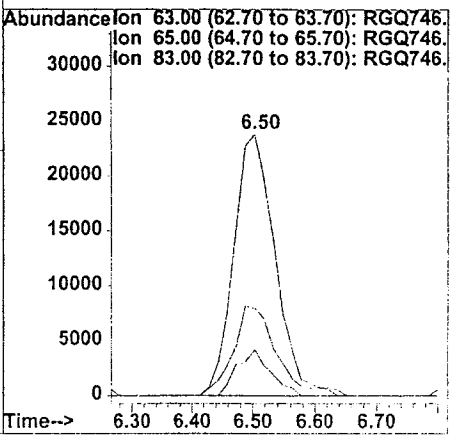
2009

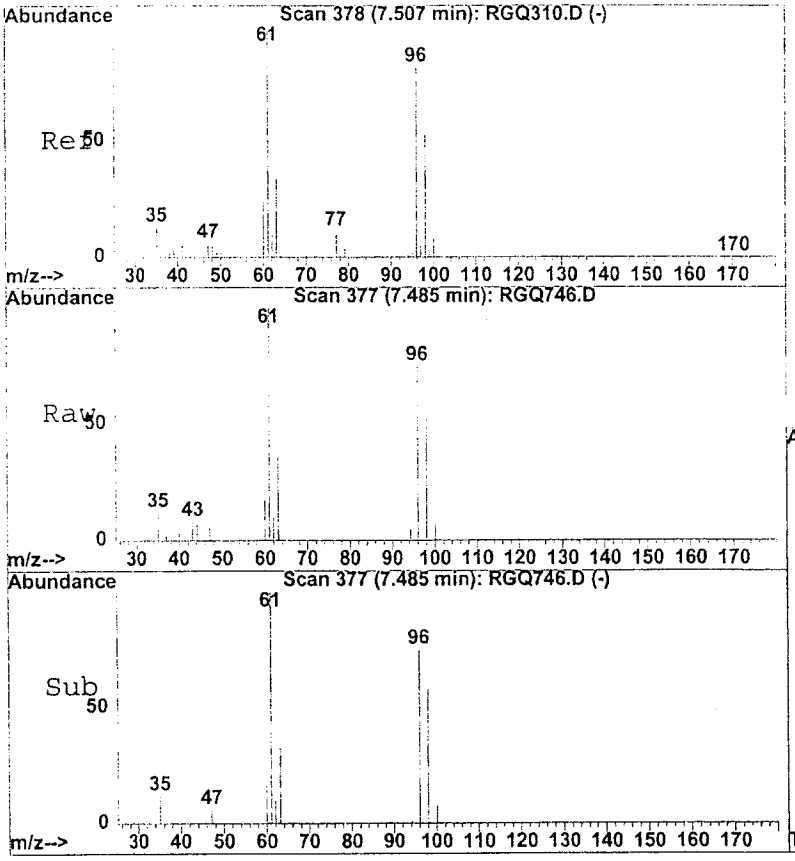


#20
1,1-Dichloroethane
Concen: 0.62 ug/l
RT: 6.50 min Scan# 311
Delta R.T. -0.01 min
Lab File: RGQ746.D
Acq: 26 Jul 2001 12:10 am

Tgt Ion: 63 Resp: 110023

Ion	Ratio	Lower	Upper
63	100		
65	35.8	2.4	62.4
83	14.2	0.0	46.4

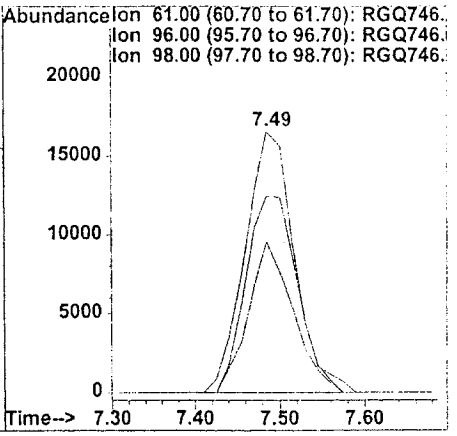




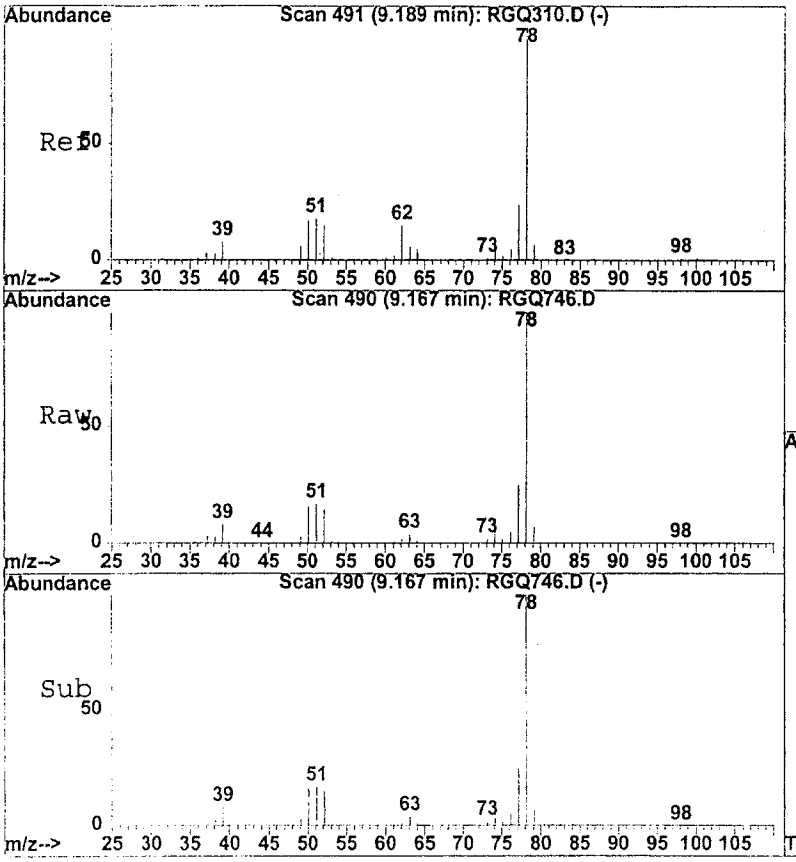
#25
cis-1,2-Dichloroethene
Concen: 0.39 ug/l
RT: 7.49 min Scan# 377
Delta R.T. -0.02 min
Lab File: RGQ746.D
Acq: 26 Jul 2001 12:10 am

Tgt Ion: 61 Resp: 64796

Ion	Ratio	Lower	Upper
61	100		
96	80.9	40.2	100.2
98	53.0	15.4	75.4



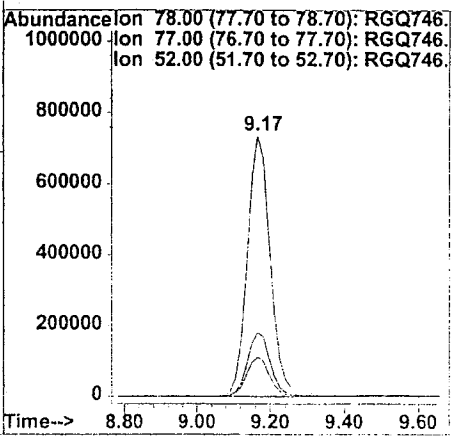
2010

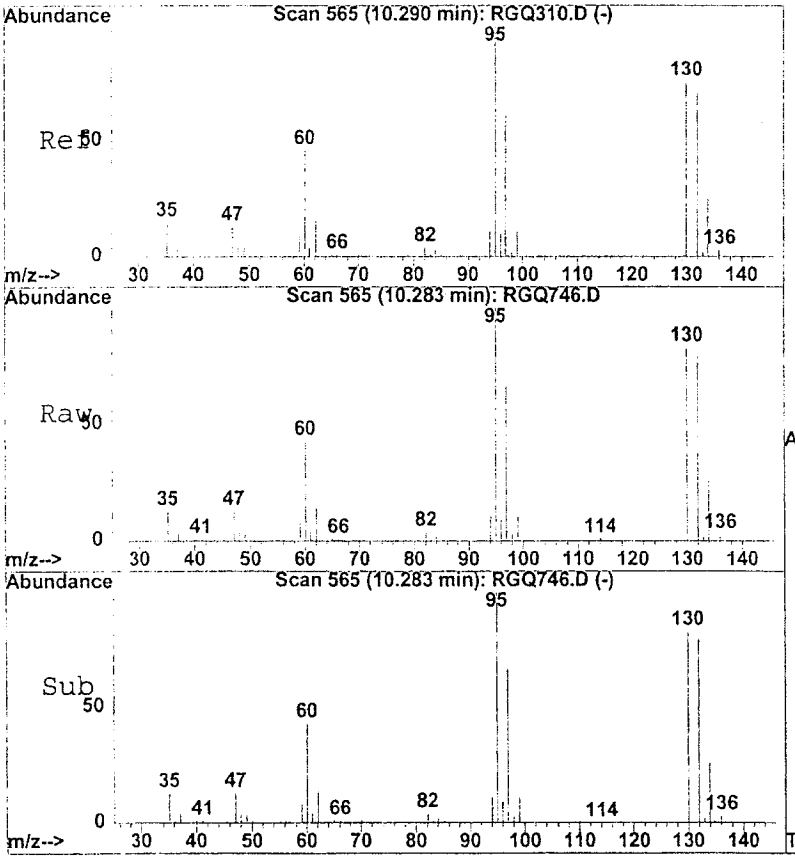


#35
Benzene
Concen: 7.88 ug/l
RT: 9.17 min Scan# 490
Delta R.T. -0.02 min
Lab File: RGQ746.D
Acq: 26 Jul 2001 12:10 am

Tgt Ion: 78 Resp: 3196746

Ion	Ratio	Lower	Upper
78	100		
77	24.5	0.0	54.2
52	15.1	0.0	45.4

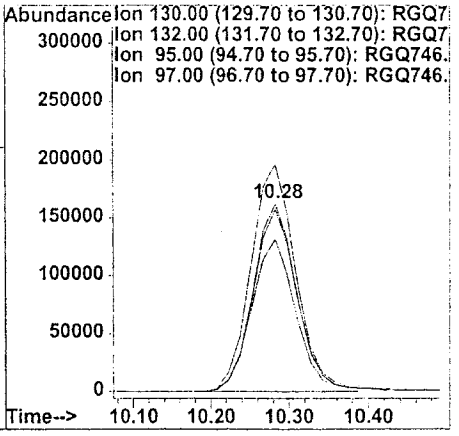




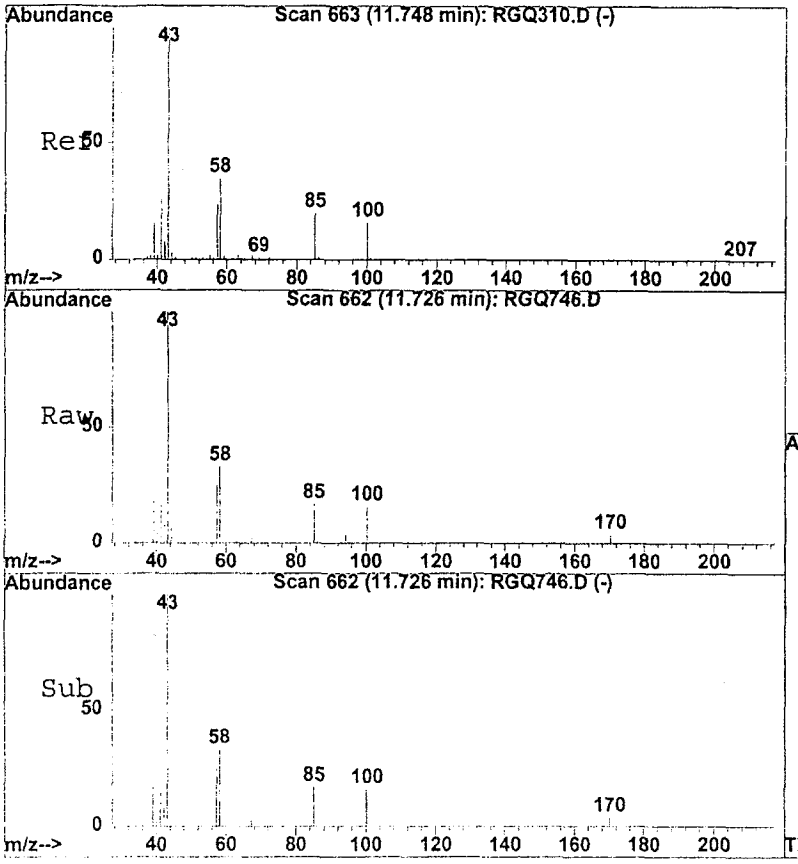
#36
Trichloroethene
Concen: 6.33 ug/l
RT: 10.28 min Scan# 565
Delta R.T. -0.01 min
Lab File: RGQ746.D
Acq: 26 Jul 2001 12:10 am

Tgt Ion:130 Resp: 620713

Ion	Ratio	Lower	Upper
130	100		
132	96.9	66.5	126.5
95	124.7	98.2	158.2
97	81.9	52.4	112.4



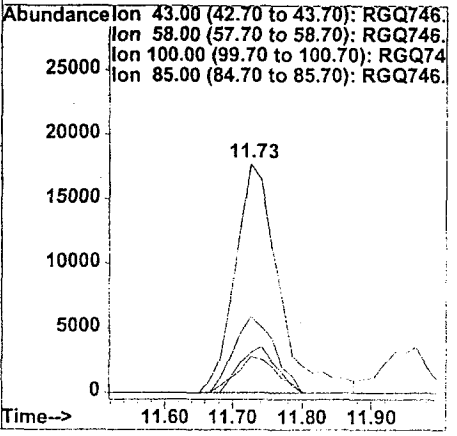
2011

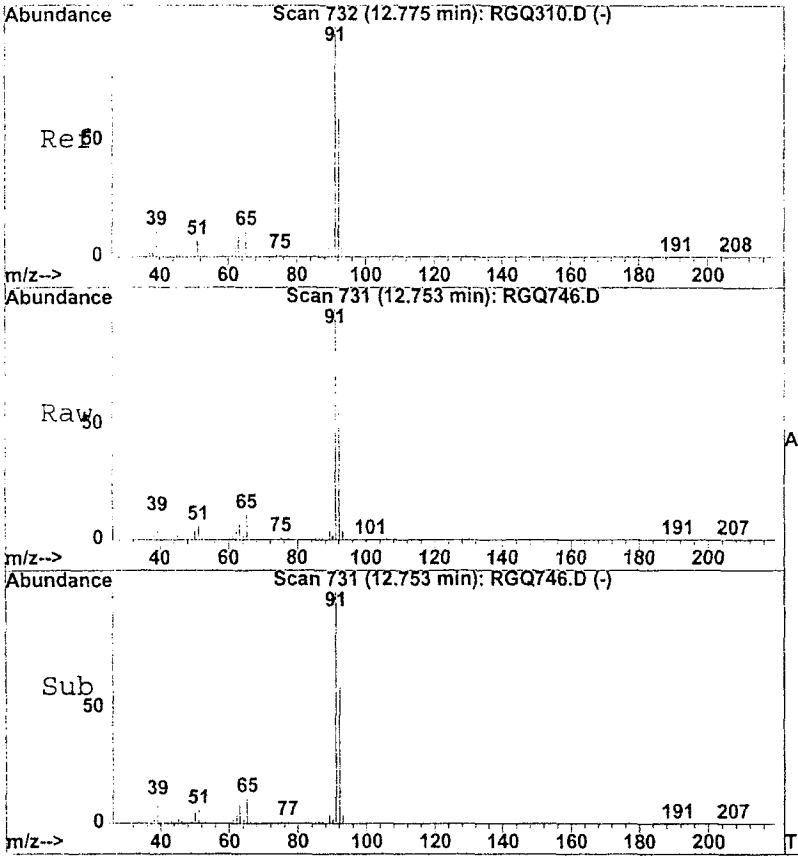


#41
4-Methyl-2-Pentanone
Concen: 1.73 ug/l
RT: 11.73 min Scan# 662
Delta R.T. -0.02 min
Lab File: RGQ746.D
Acq: 26 Jul 2001 12:10 am

Tgt Ion: 43 Resp: 77919

Ion	Ratio	Lower	Upper
43	100		
58	30.7	0.0	57.8
100	13.8	0.0	42.5
85	17.3	0.0	45.1

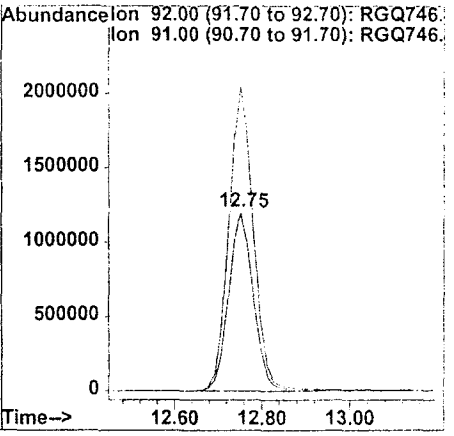




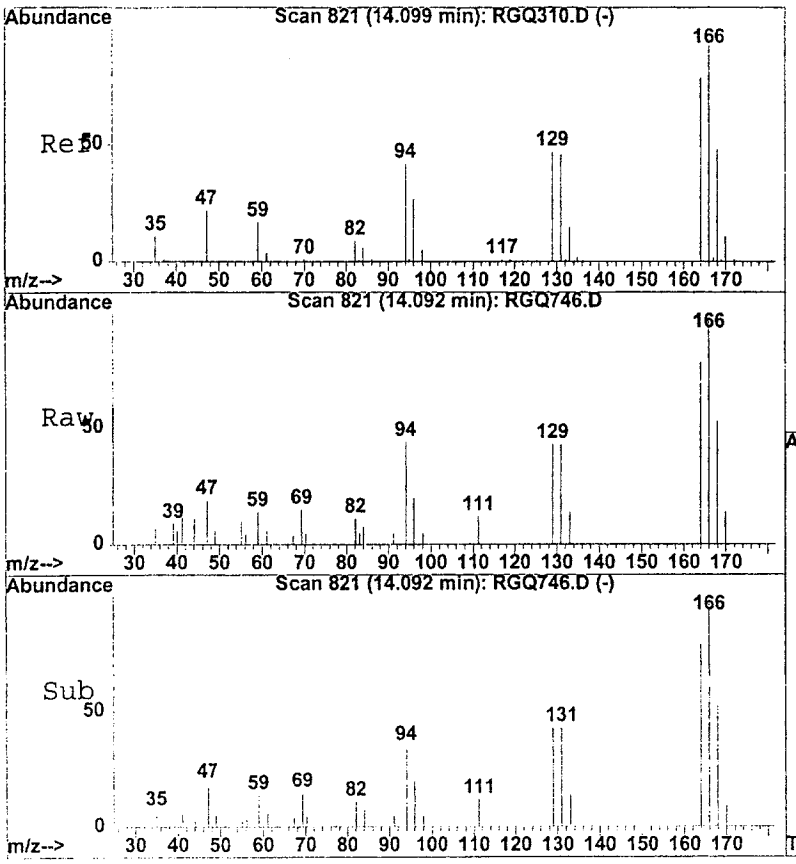
#44
Toluene
Concen: 17.44 ug/l
RT: 12.75 min Scan# 731
Delta R.T. -0.02 min
Lab File: RGQ746.D
Acq: 26 Jul 2001 12:10 am

Tgt Ion: 92 Resp: 4693684

Ion	Ratio	Lower	Upper
92	100		
91	169.7	138.1	198.1



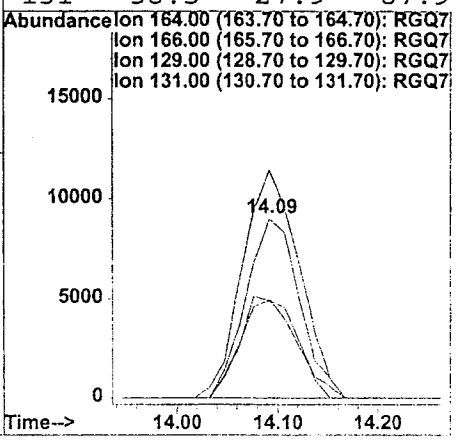
2012

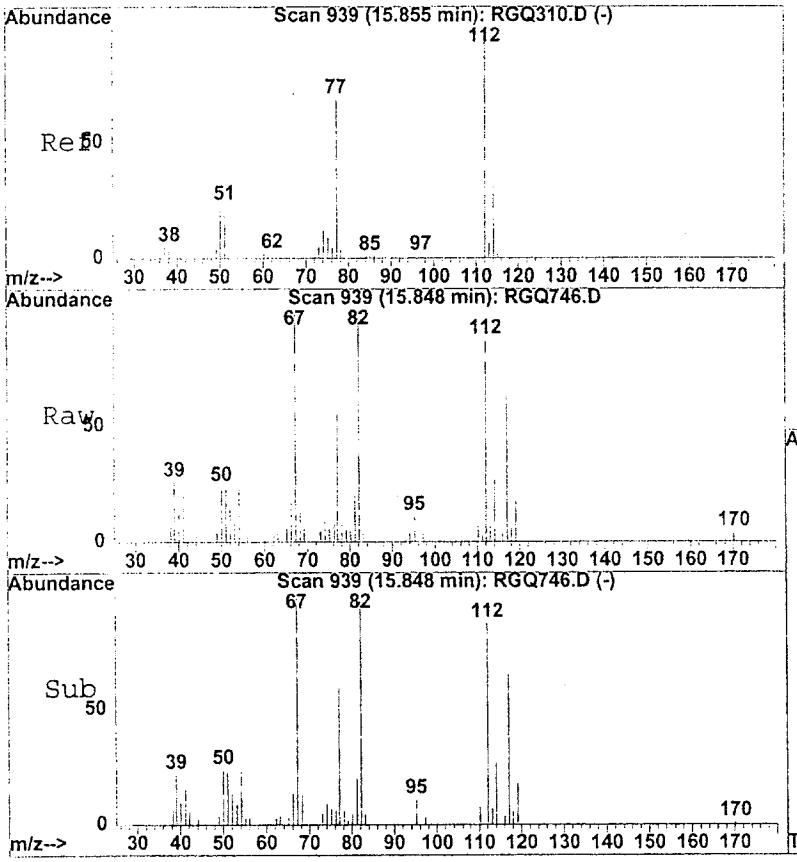


#50
Tetrachloroethene
Concen: 0.28 ug/l
RT: 14.09 min Scan# 821
Delta R.T. -0.01 min
Lab File: RGQ746.D
Acq: 26 Jul 2001 12:10 am

Tgt Ion:164 Resp: 32975

Ion	Ratio	Lower	Upper
164	100		
166	134.5	100.2	160.2
129	59.3	30.5	90.5
131	58.5	27.9	87.9

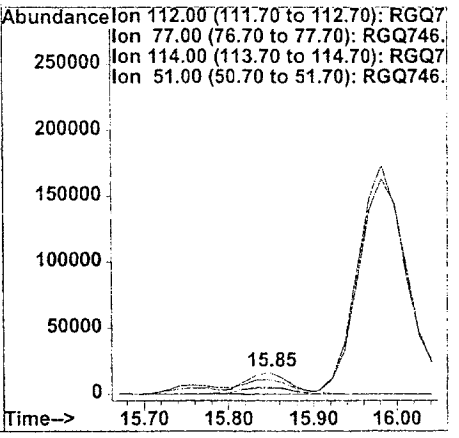




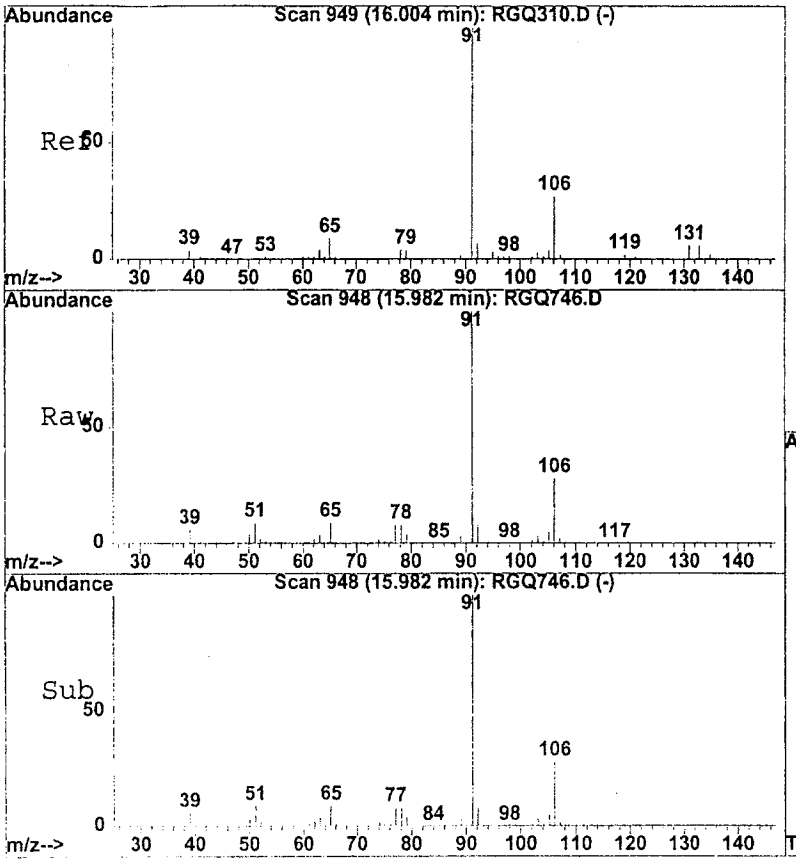
#54
Chlorobenzene
Concen: 0.23 ug/l
RT: 15.85 min Scan# 939
Delta R.T. -0.01 min
Lab File: RGQ746.D
Acq: 26 Jul 2001 12:10 am

Tgt Ion:112 Resp: 59150

Ion	Ratio	Lower	Upper
112	100		
77	45.1	38.8	98.8
114	32.9	2.3	62.3
51	22.4	0.0	53.1



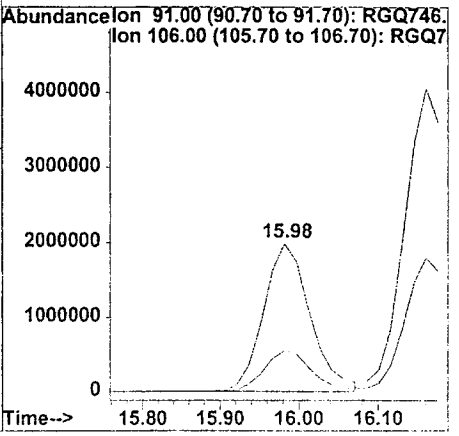
2013

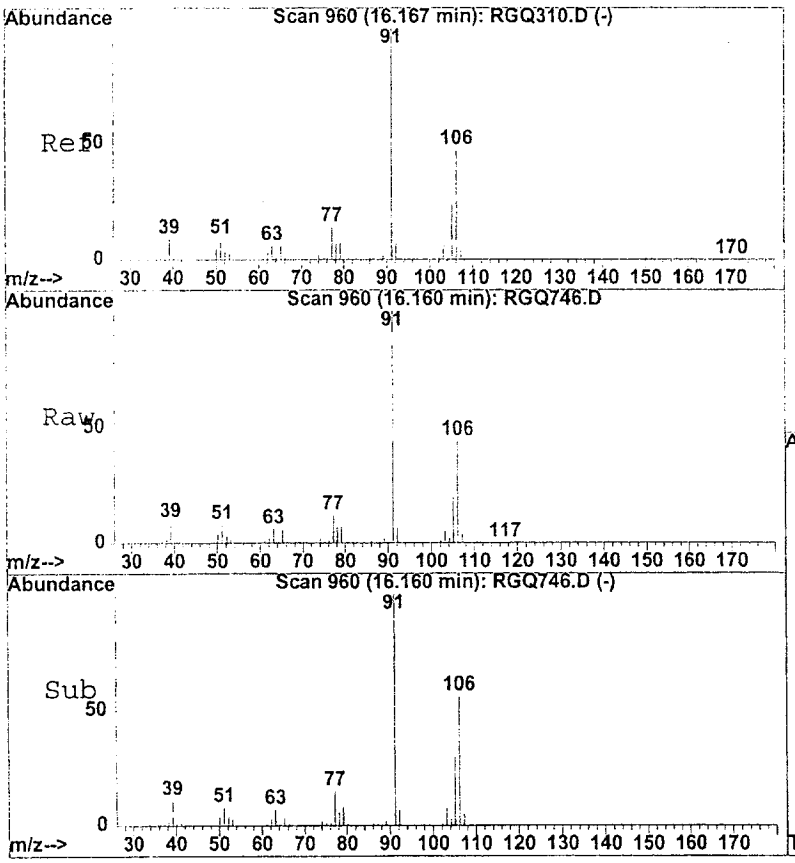


#56
Ethylbenzene
Concen: 16.31 ug/l
RT: 15.98 min Scan# 948
Delta R.T. -0.02 min
Lab File: RGQ746.D
Acq: 26 Jul 2001 12:10 am

Tgt Ion: 91 Resp: 8055514

Ion	Ratio	Lower	Upper
91	100		
106	28.2	0.0	57.6

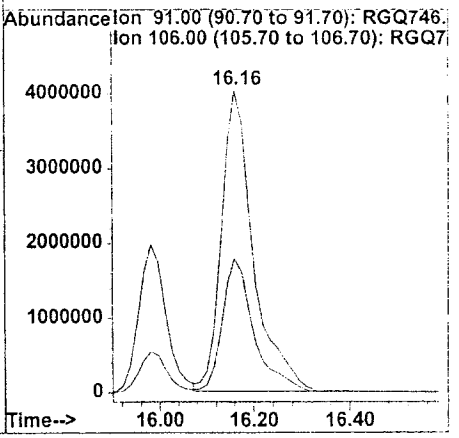




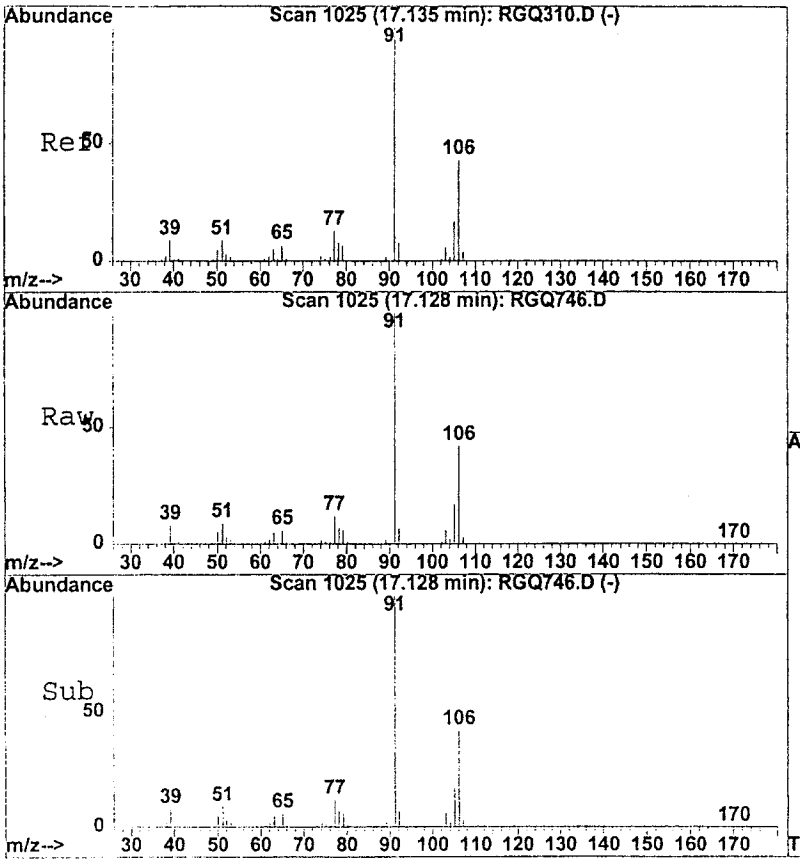
#57
m/p-Xylenes
Concen: 57.46 ug/l
RT: 16.16 min Scan# 960
Delta R.T. -0.01 min
Lab File: RGQ746.D
Acq: 26 Jul 2001 12:10 am

Tgt Ion: 91 Resp:18826693

Ion	Ratio	Lower	Upper
91	100		
106	44.5	12.6	72.6



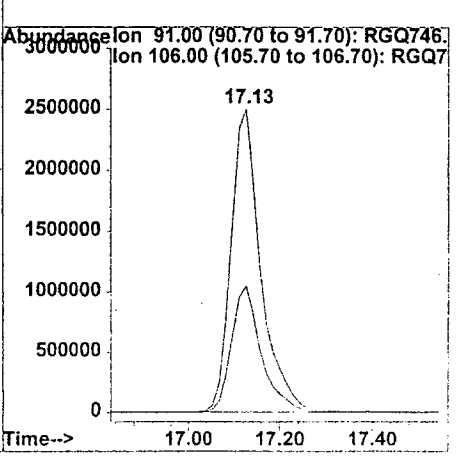
2014

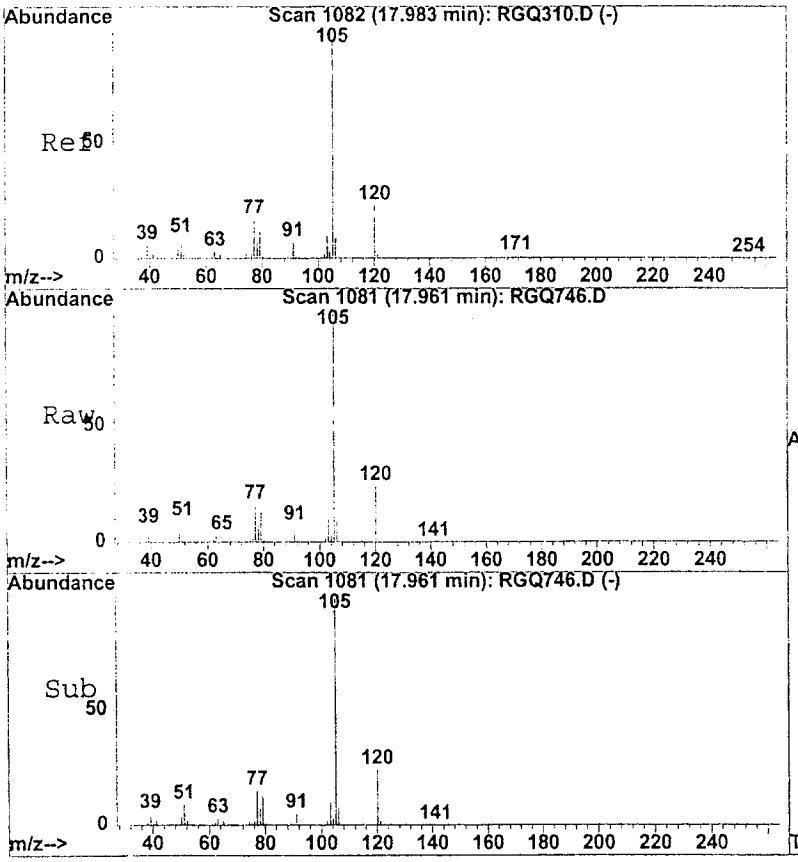


#58
o-Xylene
Concen: 35.44 ug/l
RT: 17.13 min Scan# 1025
Delta R.T. -0.01 min
Lab File: RGQ746.D
Acq: 26 Jul 2001 12:10 am

Tgt Ion: 91 Resp:11310807

Ion	Ratio	Lower	Upper
91	100		
106	42.0	11.6	71.6

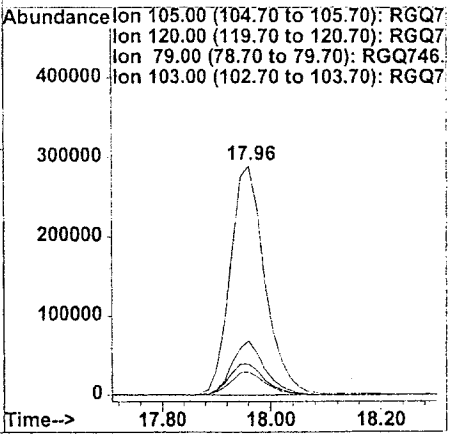




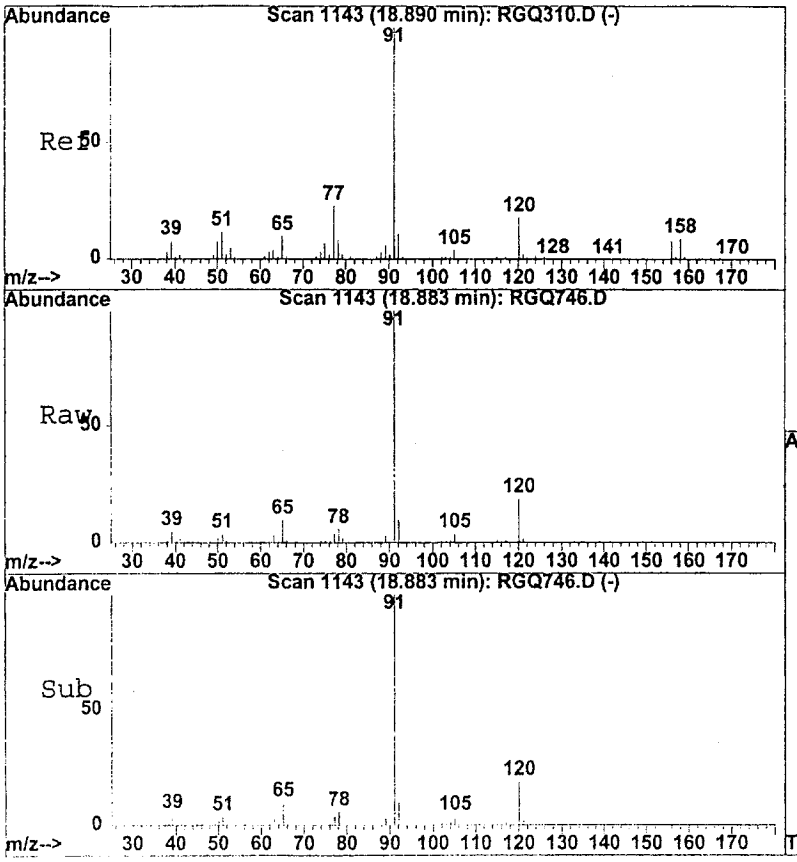
#62
Isopropyl benzene
Concen: 2.41 ug/l
RT: 17.96 min Scan# 1081
Delta R.T. -0.02 min
Lab File: RGQ746.D
Acq: 26 Jul 2001 12:10 am

Tgt Ion:105 Resp: 1273635

Ion	Ratio	Lower	Upper
105	100		
120	22.3	0.0	52.5
79	14.1	0.0	46.7
103	10.1	0.0	40.5



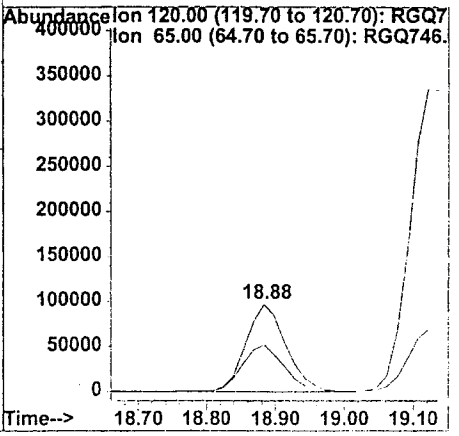
2015

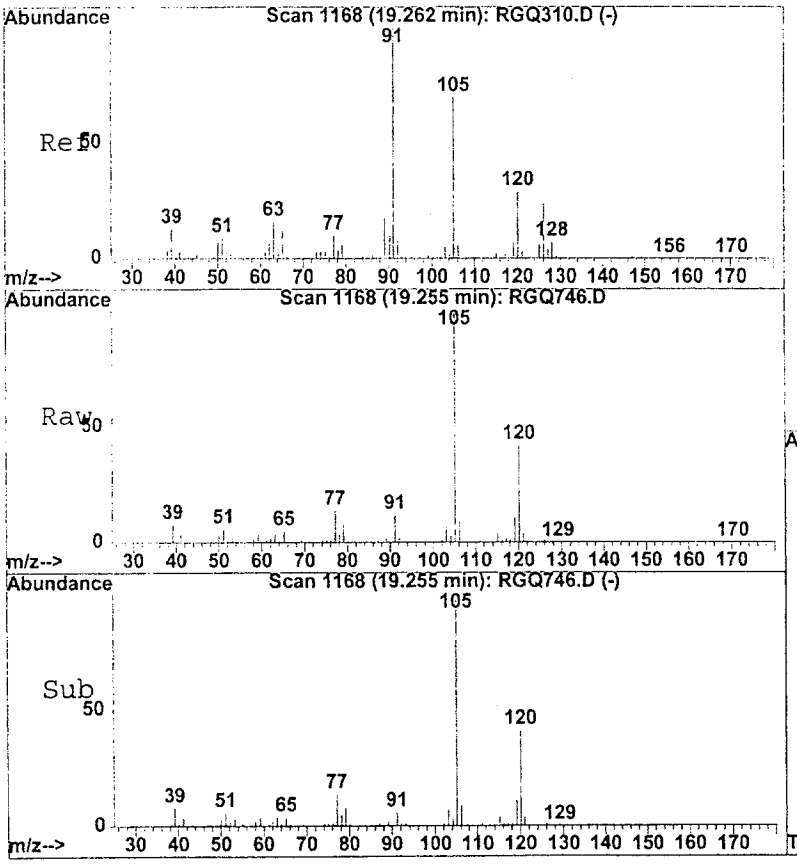


#67
n-Propylbenzene
Concen: 3.96 ug/l
RT: 18.88 min Scan# 1143
Delta R.T. -0.01 min
Lab File: RGQ746.D
Acq: 26 Jul 2001 12:10 am

Tgt Ion:120 Resp: 392916

Ion	Ratio	Lower	Upper
120	100		
65	56.0	28.6	88.6

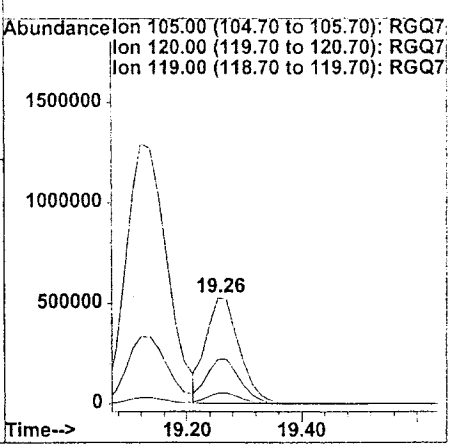




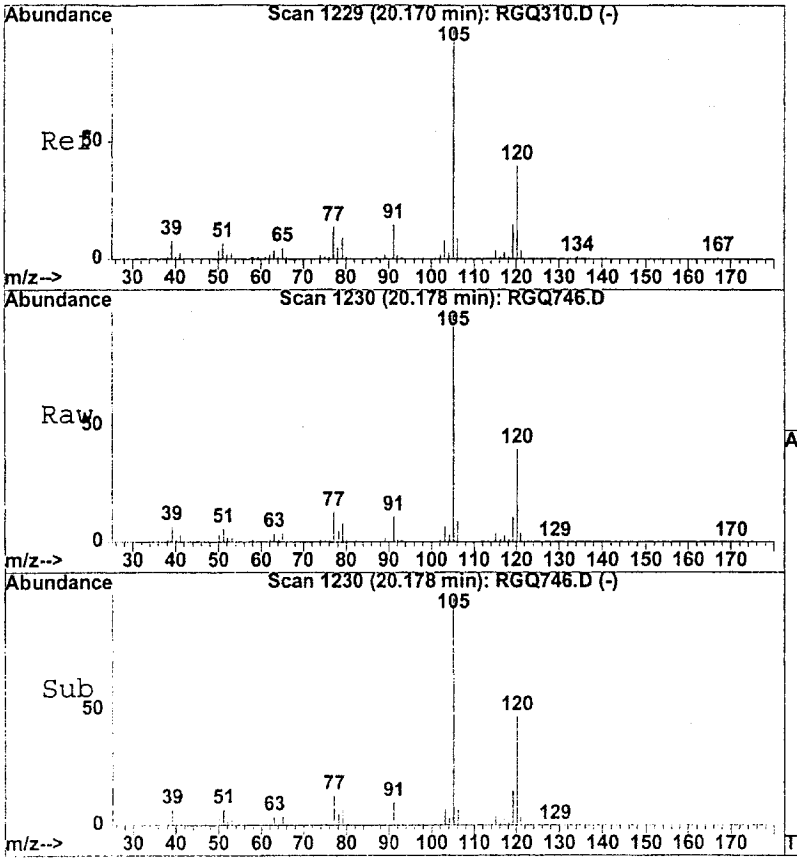
#70
135-Trimethylbenzene
Concen: 8.28 ug/l
RT: 19.26 min Scan# 1168
Delta R.T. -0.01 min
Lab File: RGQ746.D
Acq: 26 Jul 2001 12:10 am

Tgt Ion:105 Resp: 2124267

Ion	Ratio	Lower	Upper
105	100		
120	42.8	12.0	72.0
119	10.9	0.0	40.7



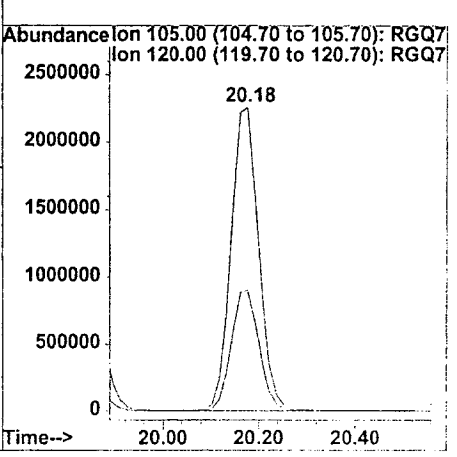
2016

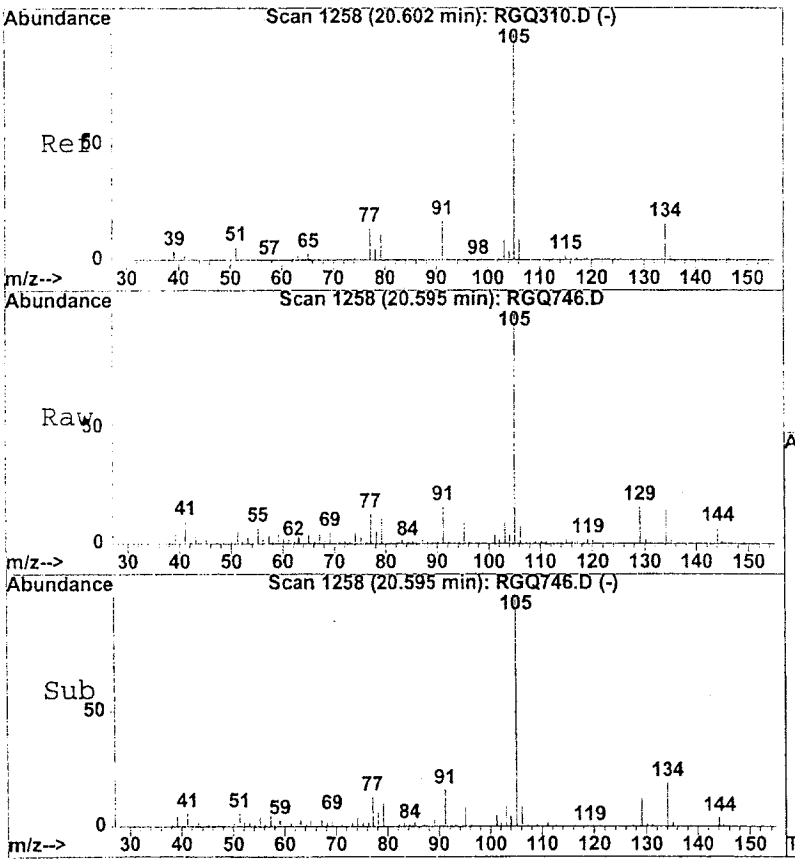


#73
124-Trimethylbenzene
Concen: 36.36 ug/l
RT: 20.18 min Scan# 1230
Delta R.T. 0.01 min
Lab File: RGQ746.D
Acq: 26 Jul 2001 12:10 am

Tgt Ion:105 Resp: 8924578

Ion	Ratio	Lower	Upper
105	100		
120	40.4	22.1	82.1

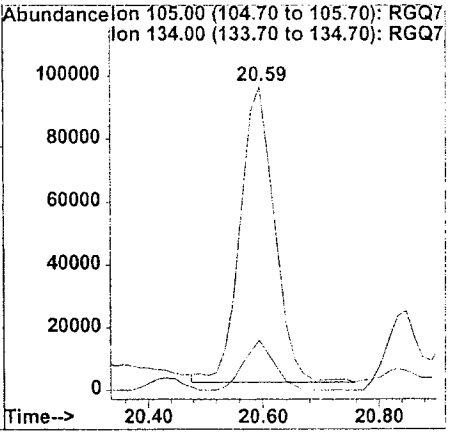




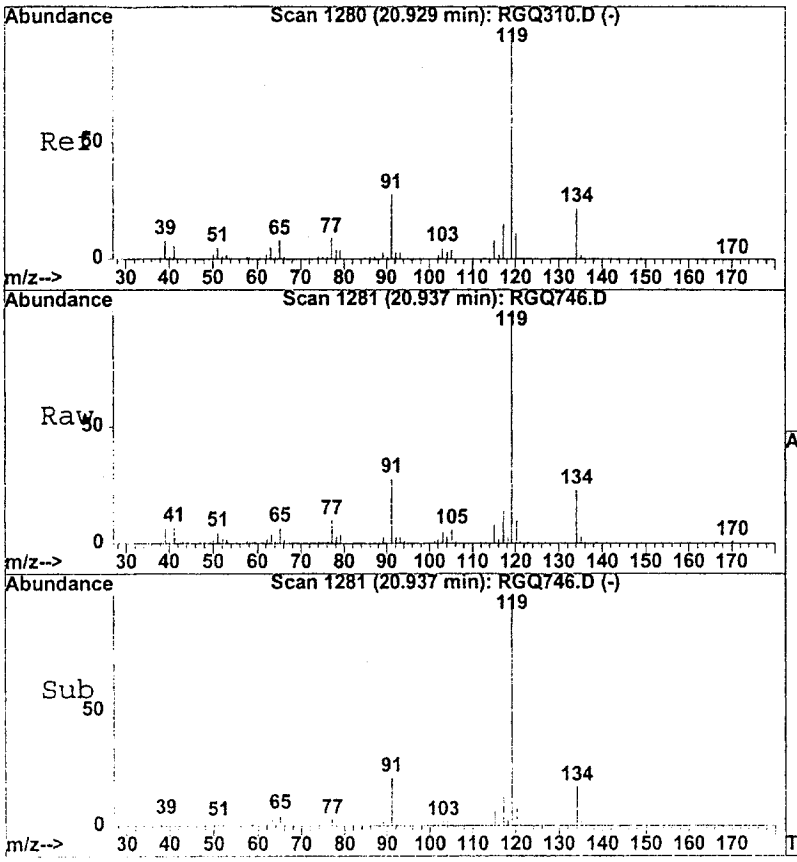
#74
Sec-Butylbenzene
Concen: 0.83 ug/l
RT: 20.59 min Scan# 1258
Delta R.T. -0.01 min
Lab File: RGQ746.D
Acq: 26 Jul 2001 12:10 am

Tgt Ion:105 Resp: 384465

Ion	Ratio	Lower	Upper
105	100		
134	14.8	0.0	46.1



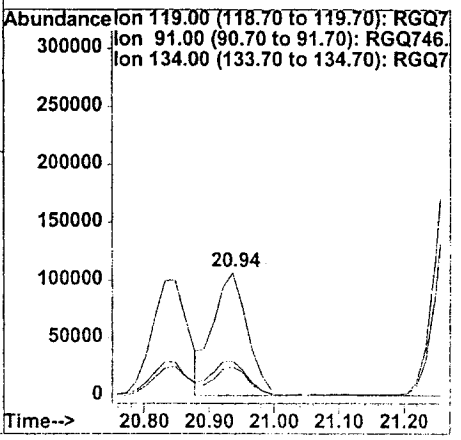
2017

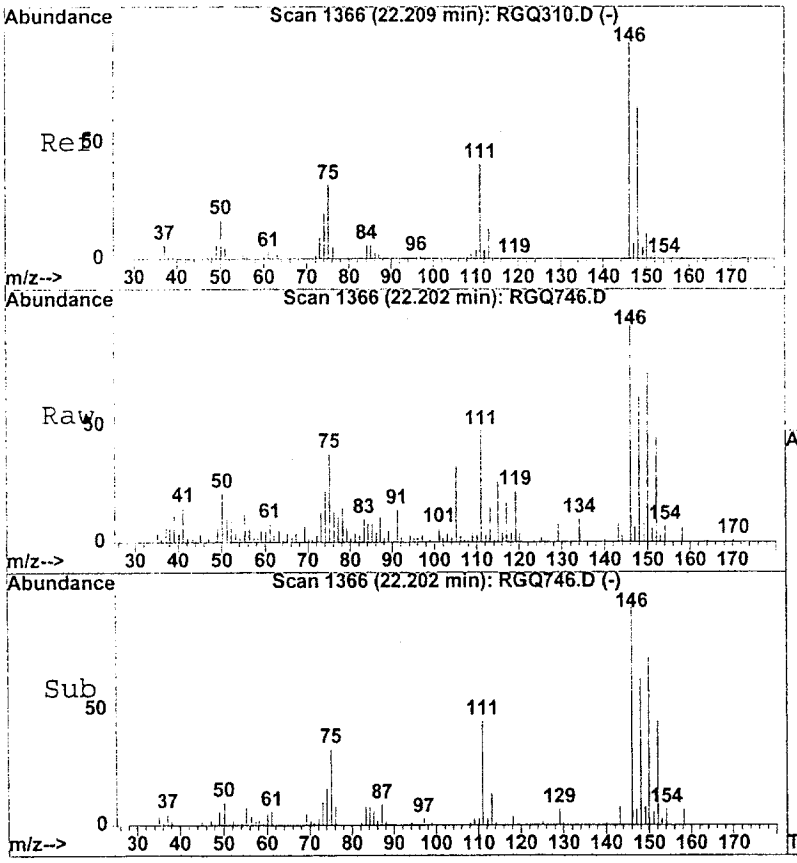


#75
p-Isopropyltoluene
Concen: 1.46 ug/l
RT: 20.94 min Scan# 1281
Delta R.T. 0.01 min
Lab File: RGQ746.D
Acq: 26 Jul 2001 12:10 am

Tgt Ion:119 Resp: 404711

Ion	Ratio	Lower	Upper
119	100		
91	27.5	0.0	59.8
134	21.2	0.0	53.3

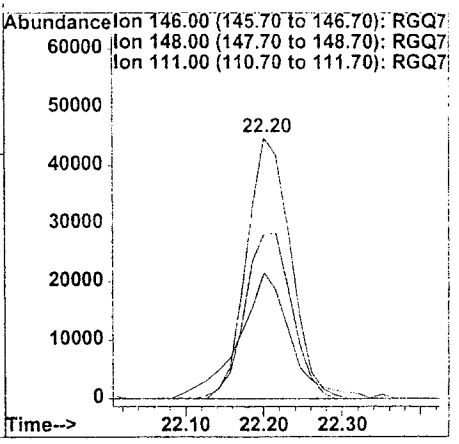




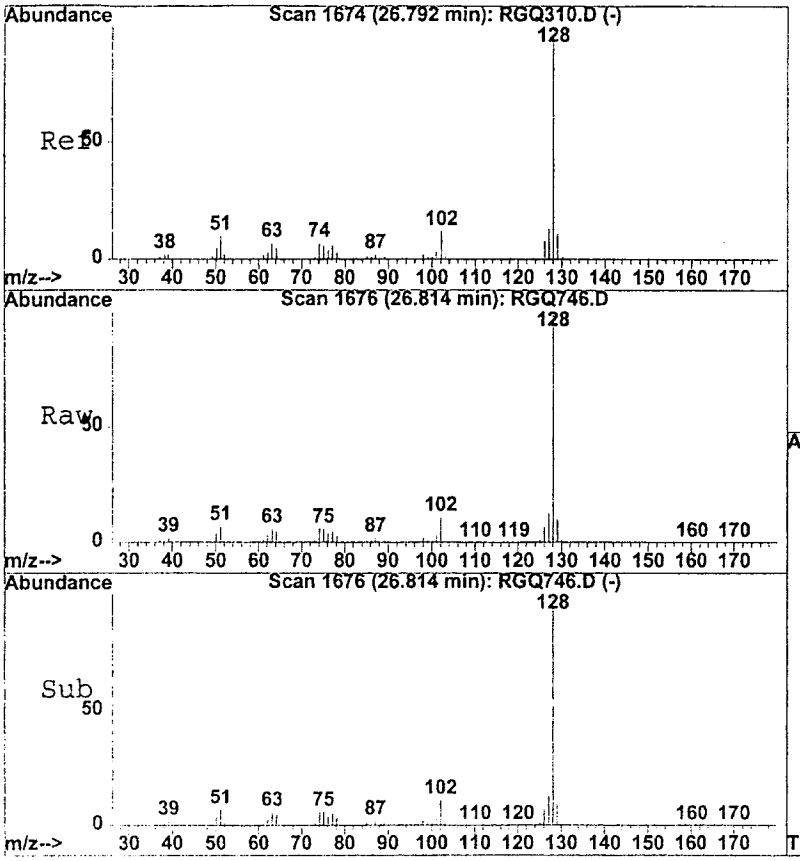
#79
1,2-Dichlorobenzene
Concen: 1.23 ug/l
RT: 22.20 min Scan# 1366
Delta R.T. -0.01 min
Lab File: RGQ746.D
Acq: 26 Jul 2001 12:10 am

Tgt Ion:146 Resp: 172629

Ion	Ratio	Lower	Upper
146	100		
148	67.9	37.1	97.1
111	57.2	14.0	74.0



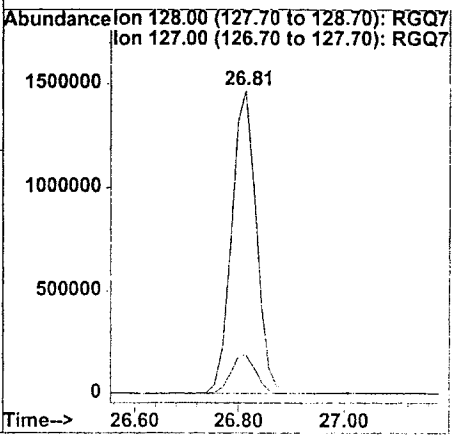
2018



#83
Naphthalene
Concen: 91.36 ug/l
RT: 26.81 min Scan# 1676
Delta R.T. 0.02 min
Lab File: RGQ746.D
Acq: 26 Jul 2001 12:10 am

Tgt Ion:128 Resp: 4865702

Ion	Ratio	Lower	Upper
128	100		
127	13.0	0.0	43.0



2019

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	07/17/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/17/01
Batch No.	: 01G080	Date Extracted:	07/26/01 00:46
Sample ID:	0026-196	Date Analyzed:	07/26/01 00:46
Lab Samp ID:	G080-04	Dilution Factor:	1
Lab File ID:	RGQ747	Matrix :	WATER
Ext Btch ID:	V005G56	% Moisture :	NA
Calib. Ref.:	RGQ734	Instrument ID :	T-005

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	ND	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	1.2	.5	.12
XYLENES	6.7	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	ND	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	1.9	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	.27J	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	92	62-139
TOLUENE-D8	92	75-125
BROMOFLUOROBENZENE	87	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

QC SUMMARY

2021

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	NA
Project	: CAMP PENDLETON, CTO26	Date Received:	07/25/01
Batch No.	: 01G080	Date Extracted:	07/25/01 19:21
Sample ID:	MBLK1W	Date Analyzed:	07/25/01 19:21
Lab Samp ID:	V005G56Q	Dilution Factor:	1
Lab File ID:	RGQ738	Matrix :	WATER
Ext Btch ID:	V005G56	% Moisture :	NA
Calib. Ref.:	RGQ734	Instrument ID :	T-005

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	ND	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	ND	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	ND	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	88	62-139
TOLUENE-D8	94	75-125
BROMOFLUOROBENZENE	89	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G080
METHOD: SW 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	V005G56Q	V005G56L	V005G56C		
LAB FILE ID:	RGQ738	RGQ735	RGQ736		
DATE EXTRACTED:	07/25/0119:21	07/25/0117:29	07/25/0118:08	DATE COLLECTED:	NA
DATE ANALYZED:	07/25/0119:21	07/25/0117:29	07/25/0118:08	DATE RECEIVED:	07/25/01
PREP. BATCH:	V005G56	V005G56	V005G56		
CALIB. REF:	RGQ734	RGQ734	RGQ734		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1-Dichloroethene	ND	10	10.9	109	10	9.93	99	10	75-125	20
Benzene	ND	10	10.3	103	10	10.2	102	1	75-125	20
Chlorobenzene	ND	10	10.2	102	10	10.1	101	1	75-125	20
Toluene	ND	10	10.2	102	10	10.2	102	1	75-125	20
Trichloroethene	ND	10	10.5	105	10	10.5	105	0	75-125	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10	8.66	87	10	8.69	87	62-139
Toluene-d8	10	9.41	94	10	9.45	95	75-125
Bromofluorobenzene	10	8.72	87	10	10.2	102	75-125

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO 26, UST SITE 6/7

WET CHEMICAL ANALYSES

SDG#: 01G080

8000

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO 26, UST SITE 6/7**

SDG: **01G080**

METHOD 300.0
NITRATE/CHLORIDE/SULFATE

Three (3) water samples were received on 07/17/01 to be analyzed for Nitrate-N, Chloride, and Sulfate by Method 300.0 in accordance with "Method for Determination of Inorganic Anions by Chromatography" EPA 600/84-017.

1. **Holding Time**

   Analysis met holding time criteria.

2. **Blank**

   Method blank was free of contamination at reporting limit.

3. **Duplicate**

   Sample G080-04 was analyzed for duplicate. All %RPDs were within QC limit.

4. **Matrix Spike**

   Sample G080-04 was spiked. Recovery of Nitrate-N was within QC limit but recoveries of Chloride and Sulfate were out of the limits.

5. **Lab Control Sample**

   Lab control result was within QC limit.

6. **Sample Analyses**

   All samples were analyzed according to the prescribed QC procedures. Nitrate result was reported as Nitrogen concentration.

SAMPLE RESULTS

METHOD 300.0
CHLORIDE-Cl

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G080

Matrix : WATER
Instrument ID : TI006

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICG018WB	ND	1	NA	.2	.047	07/17/0118:58	NA	AG18009A	AG18007A	ICG018W	NA	NA
LCS1W	ICG018WL	4.78	1	NA	.2	.047	07/17/0119:15	NA	AG18010A	AG18007A	ICG018W	NA	NA
0026-194	G080-02	2460	1000	NA	200	47	07/17/0122:56	NA	AG18023A	AG18019A	ICG018W	07/17/01	07/17/01
0026-195	G080-03	4660	1000	NA	200	47	07/17/0123:14	NA	AG18024A	AG18019A	ICG018W	07/17/01	07/17/01
0026-196	G080-04	6330	1000	NA	200	47	07/17/0123:31	NA	AG18025A	AG18019A	ICG018W	07/17/01	07/17/01
0026-196DUP	G080-04D	6340	1000	NA	200	47	07/17/0123:48	NA	AG18026A	AG18019A	ICG018W	07/17/01	07/17/01
0026-196MS	G080-04M	9110	1000	NA	200	47	07/18/0100:05	NA	AG18027A	AG18019A	ICG018W	07/17/01	07/17/01

RL : Reporting Limit

METHOD 300.0
NITRATE-N

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G080

Matrix : WATER
Instrument ID : TI006

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICG018WB	ND	1	NA	.1	.0206	07/17/0118:58	NA	AG18009A	AG18007A	ICG018W	NA	NA
LCS1W	ICG018WL	2	1	NA	.1	.0206	07/17/0119:15	NA	AG18010A	AG18007A	ICG018W	NA	NA
0026-194	G080-02	10.2	5	NA	.5	.103	07/17/0119:32	NA	AG18011A	AG18007A	ICG018W	07/17/01	07/17/01
0026-195	G080-03	3.39	5	NA	.5	.103	07/17/0119:49	NA	AG18012A	AG18007A	ICG018W	07/17/01	07/17/01
0026-196	G080-04	6.23	5	NA	.5	.103	07/17/0120:06	NA	AG18013A	AG18007A	ICG018W	07/17/01	07/17/01
0026-196DUP	G080-04D	6.45	5	NA	.5	.103	07/17/0120:23	NA	AG18014A	AG18007A	ICG018W	07/17/01	07/17/01
0026-196MS	G080-04M	16.4	5	NA	.5	.103	07/17/0120:40	NA	AG18015A	AG18007A	ICG018W	07/17/01	07/17/01

RL: Reporting Limit

METHOD 300.0
SULFATE

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G080

Matrix : WATER
Instrument ID : TI006

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICG018WB	ND	1	NA	.5	.101	07/17/0118:58	NA	AG18009A	AG18007A	ICG018W	NA	NA
LCS1W	ICG018WL	9.52	1	NA	.5	.101	07/17/0119:15	NA	AG18010A	AG18007A	ICG018W	NA	NA
0026-194	G080-02	4240	1000	NA	500	101	07/17/0122:56	NA	AG18023A	AG18019A	ICG018W	07/17/01	07/17/01
0026-195	G080-03	5250	1000	NA	500	101	07/17/0123:14	NA	AG18024A	AG18019A	ICG018W	07/17/01	07/17/01
0026-196	G080-04	6510	1000	NA	500	101	07/17/0123:31	NA	AG18025A	AG18019A	ICG018W	07/17/01	07/17/01
0026-196DUP	G080-04D	6700	1000	NA	500	101	07/17/0123:48	NA	AG18026A	AG18019A	ICG018W	07/17/01	07/17/01
0026-196MS	G080-04M	12500	1000	NA	500	101	07/18/0100:05	NA	AG18027A	AG18019A	ICG018W	07/17/01	07/17/01

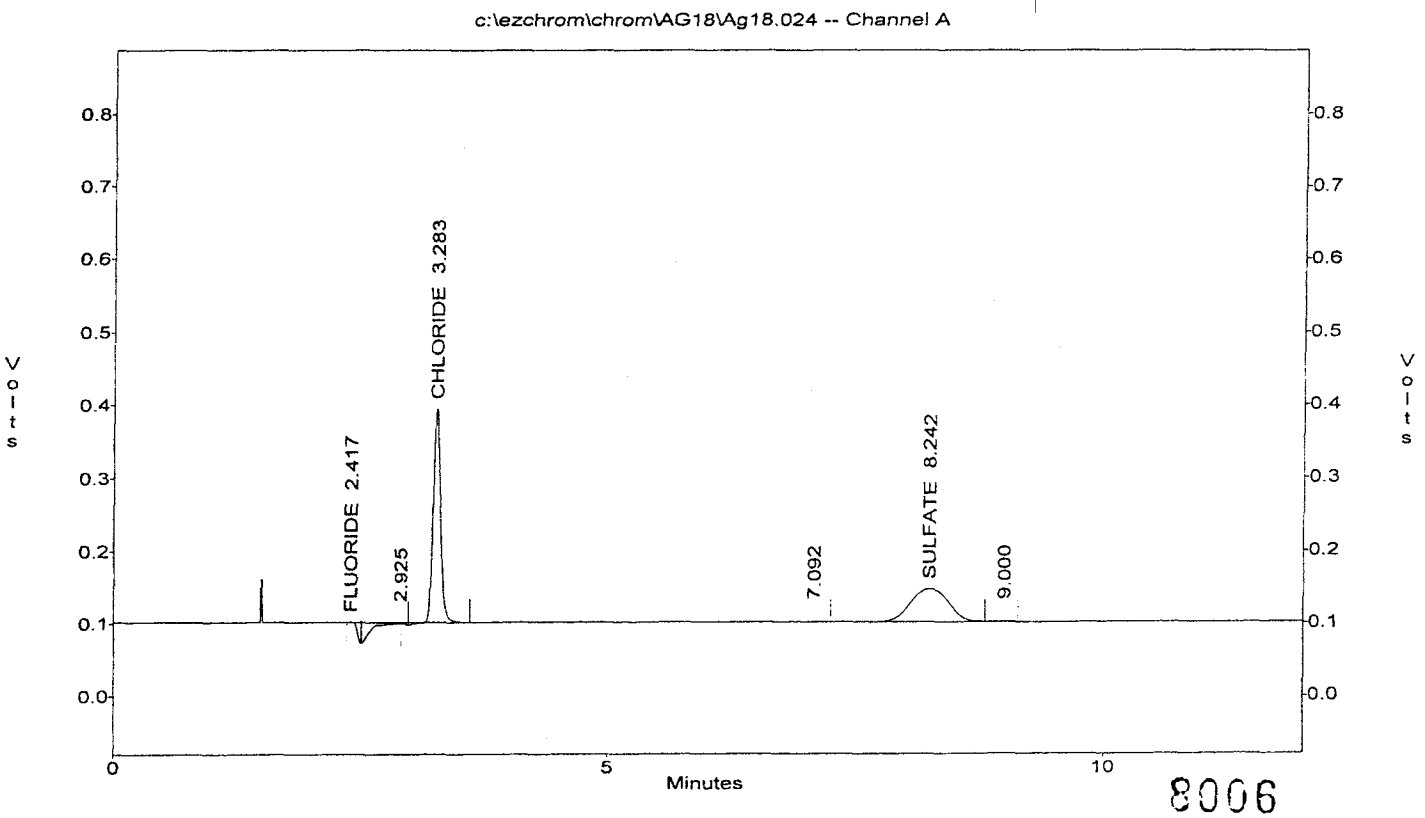
RL : Reporting Limit

EPA METHOD 300.0 by IC
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\AG18\Ag18.024
Method : c:\ezchrom\methods\Ic22g03.met
Sample ID : G080-03 DF=1000
Acquired : Jul 17, 2001 23:14:00
Printed : Jul 17, 2001 23:31:01
User : HOA

Channel A Results

#	Peak Name	Ret.Time(min)	Height	Ave. CF	ESTD Conc.(ppm)
1	FLUORIDE	2.42	314	91871.969	2.980
3	CHLORIDE	3.28	292272	62062.484	4664.646
--	NITRITE-N	3.60	0	0.000	0.000
--	BROMIDE	4.80	0	0.000	0.000
--	NITRATE-N	5.60	0	0.000	0.000
--	PHOSPHATE-P	6.50	0	0.000	0.000
5	SULFATE	8.24	45204	8860.100	5249.027



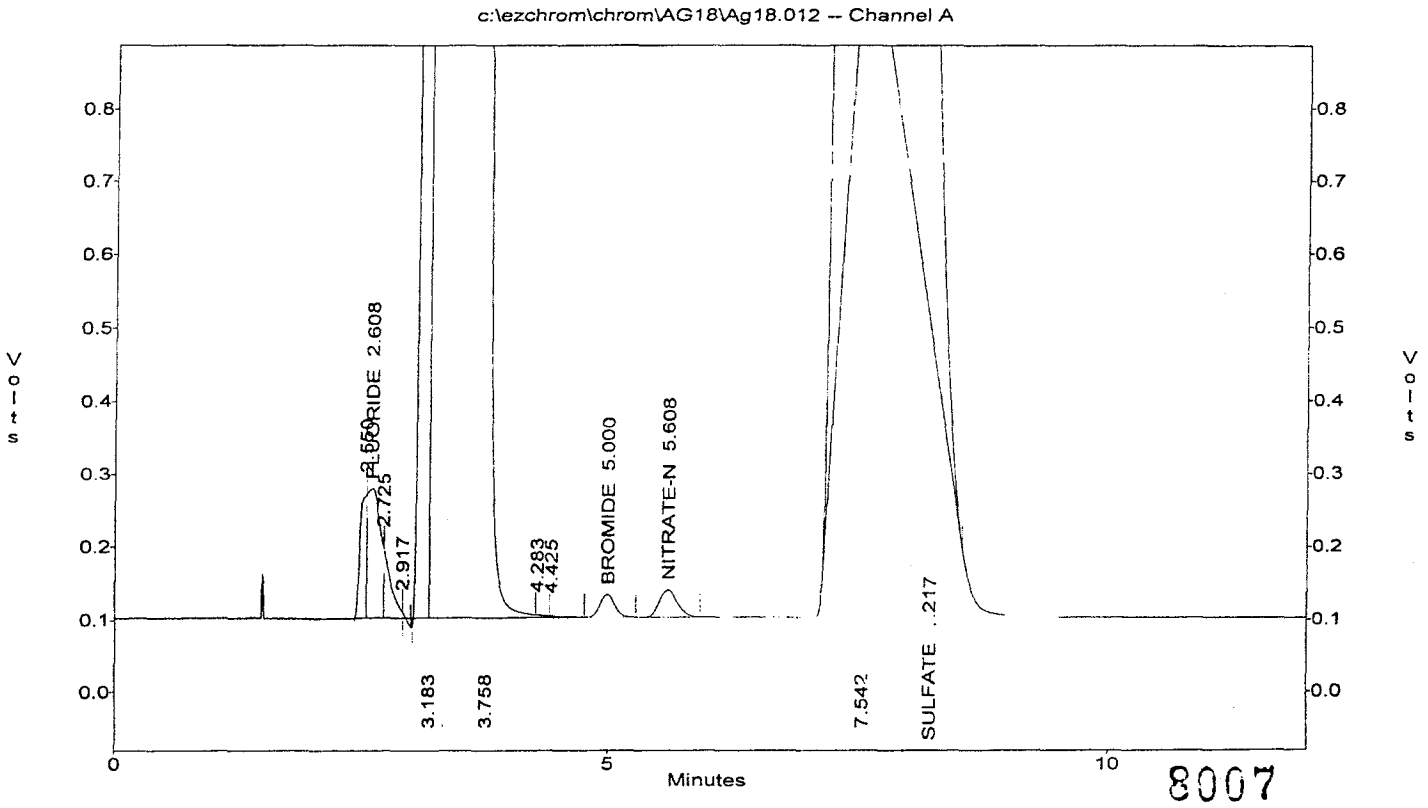
8006

EPA METHOD 300.0 by IC
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\AG18\Ag18.012
Method : c:\ezchrom\methods\Ic22g03.met
Sample ID : G080-03 DF=5
Acquired : Jul 17, 2001 19:49:38
Printed : Jul 17, 2001 20:06:39
User : HOA

Channel A Results

#	Peak Name	Ret.Time(min)	Height	Ave. CF	ESTD Conc.(ppm)
2	FLUORIDE	2.61	177148	91871.969	8.407
--	CHLORIDE	3.30	0	0.000	0.000
--	NITRITE-N	3.60	0	0.000	0.000
9	BROMIDE	5.00	30685	13496.300	11.001
10	NITRATE-N	5.61	37104	50027.531	3.391 ✓
--	PHOSPHATE-P	6.50	0	0.000	0.000
12	SULFATE	8.22	611206	8860.100	354.862



8007

QC SUMMARY

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G080
METHOD: METHOD 300.0

==========

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	1		
SAMPLE ID:	MBLK1W			
LAB SAMP ID:	ICG018WB	ICG018WL		
LAB FILE ID:	AG18009A	AG18010A		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	07/17/0118:58	07/17/0119:15	DATE RECEIVED:	NA
PREP. BATCH:	ICG018W	ICG018W		
CALIB. REF:	AG18007A	AG18007A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	QC LIMIT (%)
Chloride-Cl	ND	5	4.78	96	80-120

8009

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G080
METHOD: METHOD 300.0

==========

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	1		
SAMPLE ID:	MBLK1W			
LAB SAMP ID:	ICG018WB	ICG018WL		
LAB FILE ID:	AG18009A	AG18010A		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	07/17/0118:58	07/17/0119:15	DATE RECEIVED:	NA
PREP. BATCH:	ICG018W	ICG018W		
CALIB. REF:	AG18007A	AG18007A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	QC LIMIT (%)
Nitrate-N	ND	2	2	100	80-120

0103

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G080
METHOD: METHOD 300.0

==========

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	1		
SAMPLE ID:	MBLK1W			
LAB SAMP ID:	ICG018WB	ICG018WL		
LAB FILE ID:	AG18009A	AG18010A		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	07/17/0118:58	07/17/0119:15	DATE RECEIVED:	NA
PREP. BATCH:	ICG018W	ICG018W		
CALIB. REF:	AG18007A	AG18007A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	QC LIMIT (%)
Sulfate	ND	10	9.52	95	80-120

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G080
METHOD: METHOD 300.0

==========

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1000	1000		
SAMPLE ID:	0026-196			
LAB SAMP ID:	G080-04	G080-04M		
LAB FILE ID:	AG18025A	AG18027A		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	07/17/01
DATE ANALYZED:	07/17/0123:31	07/18/0100:05	DATE RECEIVED:	07/17/01
PREP. BATCH:	ICG018W	ICG018W		
CALIB. REF:	AG18019A	AG18019A		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	QC LIMIT (%)
Chloride-Cl	6330	2000	9110	139*	80-120

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CT026
BATCH NO.: 01G080
METHOD: METHOD 300.0

==========

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	5	5		
SAMPLE ID:	0026-196			
LAB SAMP ID:	G080-04	G080-04M		
LAB FILE ID:	AG18013A	AG18015A		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	07/17/01
DATE ANALYZED:	07/17/0120:06	07/17/0120:40	DATE RECEIVED:	07/17/01
PREP. BATCH:	ICG018W	ICG018W		
CALIB. REF:	AG18007A	AG18007A		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	QC LIMIT (%)
Nitrate-N	6.23	10	16.4	102	80-120

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G080
METHOD: METHOD 300.0

==========

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1000	1000		
SAMPLE ID:	0026-196			
LAB SAMP ID:	G080-04	G080-04M		
LAB FILE ID:	AG18025A	AG18027A		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	07/17/01
DATE ANALYZED:	07/17/0123:31	07/18/0100:05	DATE RECEIVED:	07/17/01
PREP. BATCH:	ICG018W	ICG018W		
CALIB. REF:	AG18019A	AG18019A		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	QC LIMIT (%)
Sulfate	6510	10000	12500	60*	80-120

3014

EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CT026
BATCH NO.: 01G080
METHOD: METHOD 300.0

==========

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1000	1000		
SAMPLE ID:	0026-196	0026-196DUP		
EMAX SAMP ID:	G080-04	G080-04D		
LAB FILE ID:	AG18025A	AG18026A		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	07/17/01
DATE ANALYZED:	07/17/0123:31	07/17/0123:48	DATE RECEIVED:	07/17/01
PREP. BATCH:	ICG018W	ICG018W		
CALIB. REF:	AG18019A	AG18019A		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	DUPL RSLT (mg/L)	RPD RSLT %	QC LIMIT (%)
Chloride-Cl	6330	6340	0	20

8015

EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CT026
BATCH NO.: 01G080
METHOD: METHOD 300.0

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	5	5		
SAMPLE ID:	0026-196	0026-196DUP		
EMAX SAMP ID:	G080-04	G080-04D		
LAB FILE ID:	AG18013A	AG18014A		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	07/17/01
DATE ANALYZED:	07/17/0120:06	07/17/0120:23	DATE RECEIVED:	07/17/01
PREP. BATCH:	ICG018W	ICG018W		
CALIB. REF:	AG18007A	AG18007A		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	DUPL RSLT (mg/L)	RPD RSLT %	QC LIMIT (%)
Nitrate-N	6.23	6.45	4	20

EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G080
METHOD: METHOD 300.0

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1000	1000		
SAMPLE ID:	0026-196	0026-196DUP		
EMAX SAMP ID:	G080-04	G080-04D		
LAB FILE ID:	AG18025A	AG18026A		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	07/17/01
DATE ANALYZED:	07/17/0123:31	07/17/0123:48	DATE RECEIVED:	07/17/01
PREP. BATCH:	ICG018W	ICG018W		
CALIB. REF:	AG18019A	AG18019A		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	DUPL RSLT (mg/L)	RPD RSLT %	QC LIMIT (%)
Sulfate	6510	6700	3	20

8017

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO26, SITE 6/7**

SDG: **01G080**

METHOD 310.1
TOTAL ALKALINITY

Three (3) water samples were received on 07/17/01 for total alkalinity analysis by Method 310.1 in accordance with "Methods for Chemical Analysis of Water & Wastewater", USEPA 600-79-020, 1983.

1. Holding Time

   Analysis met holding time criteria.

2. Method Blank

   Method blank was free of contamination at reporting limit level.

3. Lab Control Sample/Lab Control Sample Duplicate

   Lab control results were within the control limit.

4. Duplicate

   Sample G080-03 was analyzed for duplicate. %RPD was within QC limit.

5. Sample Analysis

   Sample analyses were performed within QC requirements.

METHOD 310.1
TOTAL ALKALINITY

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G080

Matrix : WATER
Instrument ID : TI53

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ALG009WB	ND	1	NA	5	.469	07/23/0109:30	NA	ALG009W-01	NA	ALG009W	NA	NA
LCS1W	ALG009WL	75.4	1	NA	5	.469	07/23/0109:35	NA	ALG009W-02	NA	ALG009W	NA	NA
LCD1W	ALG009WC	72.9	1	NA	5	.469	07/23/0109:40	NA	ALG009W-03	NA	ALG009W	NA	NA
0026-195	G080-03	ND	1	NA	5	.469	07/23/0109:45	NA	ALG009W-04	NA	ALG009W	07/17/01	07/17/01
0026-195DUP	G080-03D	ND	1	NA	5	.469	07/23/0109:50	NA	ALG009W-05	NA	ALG009W	07/17/01	07/17/01
0026-194	G080-02	ND	1	NA	5	.469	07/23/0109:55	NA	ALG009W-06	NA	ALG009W	07/17/01	07/17/01
0026-196	G080-04	ND	1	NA	5	.469	07/23/0110:00	NA	ALG009W-07	NA	ALG009W	07/17/01	07/17/01

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
METHOD: METHOD 310.1
MATRIX: WATER
% MOISTURE: NA

BATCH NO.: 01G080
SAMPLE ID: LCS1W/LCD1W
CONTROL NO.: ALG009WL/C

DATE RECEIVED: NA
DATE EXTRACTED: NA
DATE ANALYZED: 07/23/01 09:35/09:40

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD %	QC LIMIT %	RPD LIMIT %
Alkalinity	ND	73.0	75.4	103	73.0	72.9	100	3	80-120	20

EMAX QUALITY CONTROL DATA
DUPLICATE ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
METHOD: METHOD 310.1
MATRIX: WATER
% MOISTURE: NA

BATCH NO.: 01G080
SAMPLE ID: 0026-195DUP
CONTROL NO.: G080-03D

DATE RECEIVED: 07/17/01
DATE EXTRACTED: NA
DATE ANALYZED: 07/23/01 09:50

ACCESSION:

PARAMETER	SAMPLE (mg/L)	DUP. SAMPLE (mg/L)	RPD (%)	RPD LIMIT (%)
Alkalinity	ND	ND	0	20

3054

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO26, SITE 6/7**

SDG: **01G080**

METHOD 9060
TOTAL ORGANIC CARBON

Three (3) water samples were received on 07/17/01 for TOC analysis by Method 9060 in accordance with "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" SW846 3rd ed.

1. Holding Time

   Analysis met holding time criteria.

2. Method Blank

   Method blank was free of contamination at reporting limit level.

3. Lab Control Sample

   Lab control result was within QC limit.

4. Duplicate

   No duplicate sample was analyzed for this SDG.

5. Matrix Spike/Matrix Spike Duplicate

   No MS/MSD was analyzed for this SDG.

6. Sample Analysis

   Sample analyses were performed within QC requirements. All requirements were met.

METHOD 9060
TOC

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G080

Matrix : WATER
Instrument ID : I026

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	TCG005WB	ND	1	NA	5	.551	08/03/0116:00	NA	TCG005W-7	TCG005W-5	TCG005W	NA	NA
LCS1W	TCG005WL	18.6	1	NA	5	.551	08/03/0116:10	NA	TCG005W-8	TCG005W-5	TCG005W	NA	NA
0026-194	G080-02	12.1	1	NA	5	.551	08/03/0116:20	NA	TCG005W-9	TCG005W-5	TCG005W	07/17/01	07/17/01
0026-195	G080-03	11.4	1	NA	5	.551	08/03/0116:30	NA	TCG005W-10	TCG005W-5	TCG005W	07/17/01	07/17/01
0026-196	G080-04	16.1	1	NA	5	.551	08/03/0116:40	NA	TCG005W-11	TCG005W-5	TCG005W	07/17/01	07/17/01

RL : Reporting Limit

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
METHOD: METHOD 9060
MATRIX: WATER
% MOISTURE: NA

BATCH NO.: 01G080
SAMPLE ID: LCS1W
CONTROL NO.: TCG005WL

DATE RECEIVED: NA
DATE EXTRACTED: NA
DATE ANALYZED: 08/03/01 16:10

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	LCS RSLT (mg/L)	LCS % REC	QC LIMIT (%)
TOC	ND	20	18.6	93	80-120

8058

6915 D51

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO26, UST 6/7

RSK-175
DISSOLVED GASES

SDG: 01G080

4000

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO26, UST 6/7**

SDG: **01G080**

RSK-175
DISSOLVED GASES

Samples received on 07/17/01 for this SDG include three (3) water to be analyzed for Dissolved Gases (Methane, Ethane and Ethylene) in accordance to EMAX SOP AP 2050.

1. **Holding Time**

   All samples received were not preserved. Analytical holding time was met.

2. **Calibration**

   A 6-point Initial calibration was performed. All QC requirements were met. Continuing calibration were carried out at 10-sample interval and the recoveries were within 85-115%.

3. **Method Blank**

   No analytes were detected above RL.

4. **Lab Control Sample/Lab Control Duplicate**

   All recoveries were within QC limits

5. **Matrix Spike/Matrix Spike Duplicate**

   No sample was designated for MS/MSD with this SDG.

6. **Sample Analysis**

   All samples were analyzed within QC requirements.

LAB CHRONICLE
RSK175

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26

SDG NO. : 01G080
Instrument ID : GCT010

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	DCC Data FN	Prep. Batch	Notes
MBLK1W	DG10G05B	1	NA	07/19/0111:10	07/19/0111:05	FG05003A	FG05002A	DG10G05	Method Blank
LCS1W	DG10G05L	1	NA	07/19/0111:24	07/19/0111:05	FG05004A	FG05002A	DG10G05	Lab Control Sample (LCS)
LCD1W	DG10G05C	1	NA	07/19/0111:37	07/19/0111:05	FG05005A	FG05002A	DG10G05	LCS Duplicate
0026-194	G080-02	1	NA	07/19/0111:53	07/19/0111:05	FG05006A	FG05002A	DG10G05	Field Sample
0026-194DL	G080-02T	2	NA	07/19/0112:37	07/19/0111:05	FG05009A	FG05002A	DG10G05	Diluted Sample
0026-195	G080-03	1	NA	07/19/0112:07	07/19/0111:05	FG05007A	FG05002A	DG10G05	Field Sample
0026-196	G080-04	1	NA	07/19/0112:22	07/19/0111:05	FG05008A	FG05002A	DG10G05	Field Sample

FN - Filename
DCC - Daily Continuing Calibration
% Moist - Percent Moisture

SAMPLE RESULTS

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/17/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/17/01
Batch No.	: 01G080	Date Extracted:	07/19/01 11:05
Sample ID:	0026-194	Date Analyzed:	07/19/01 11:53
Lab Samp ID:	G080-02	Dilution Factor:	1
Lab File ID:	FG05006A	Matrix :	WATER
Ext Btch ID:	DG10G05	% Moisture :	NA
Calib. Ref.:	FG05002A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	ND	1	.18
METHANE	43E	1	.26

RL: Reporting Limit
E : Exceeded calibration limit

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/17/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/17/01
Batch No.	: 01G080	Date Extracted:	07/19/01 11:05
Sample ID:	0026-194DL	Date Analyzed:	07/19/01 12:37
Lab Samp ID:	G080-02T	Dilution Factor:	2
Lab File ID:	FG05009A	Matrix :	WATER
Ext Btch ID:	DG10G05	% Moisture :	NA
Calib. Ref.:	FG05002A	Instrument ID :	GCTO10

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2	.52
ETHYLENE	ND	2	.36
METHANE	42	2	.52

RL: Reporting Limit

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/17/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/17/01
Batch No.	: 01G080	Date Extracted:	07/19/01 11:05
Sample ID:	0026-195	Date Analyzed:	07/19/01 12:07
Lab Samp ID:	G080-03	Dilution Factor:	1
Lab File ID:	FG05007A	Matrix :	WATER
Ext Btch ID:	DG10G05	% Moisture :	NA
Calib. Ref.:	FG05002A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	ND	1	.18
METHANE	12	1	.26

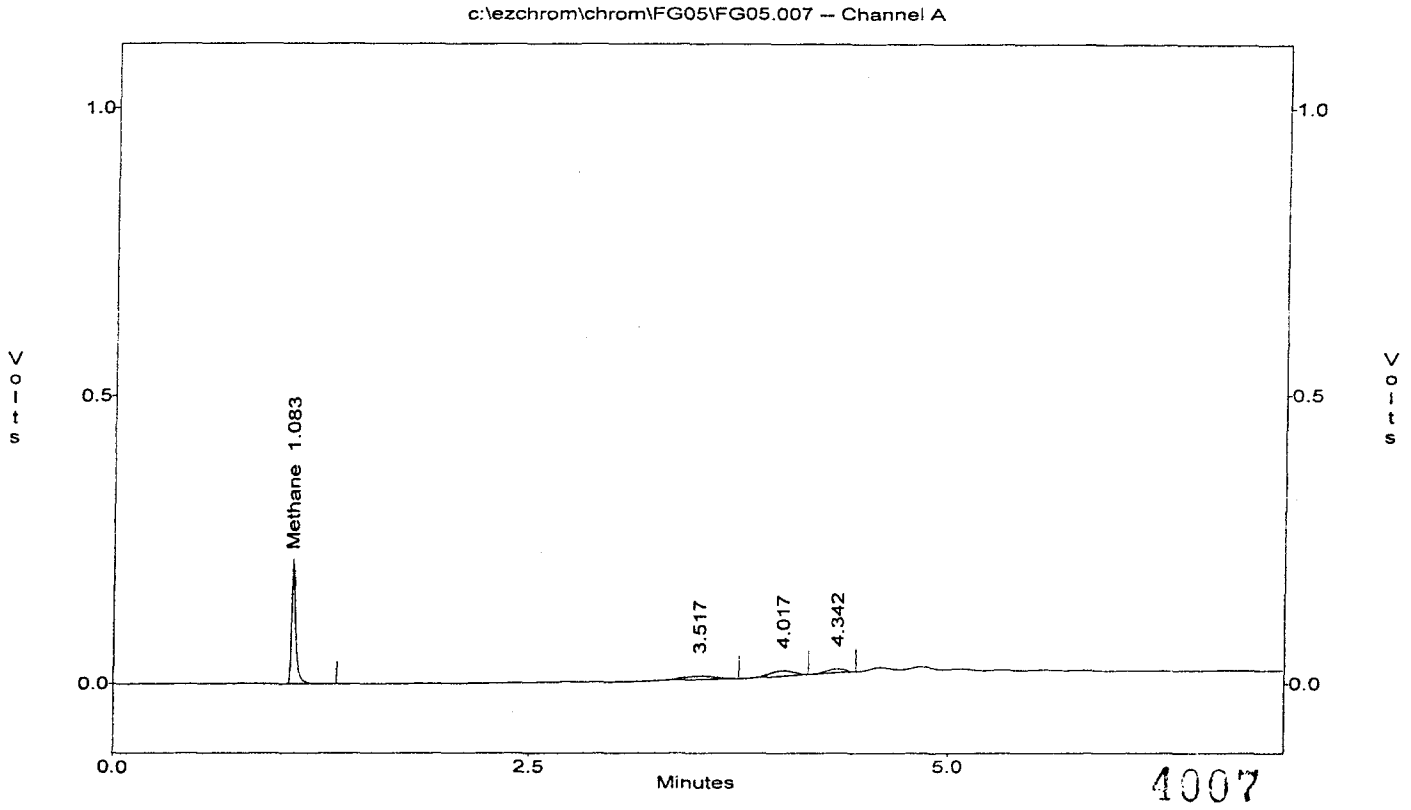
RL: Reporting Limit

EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\FG05\FG05.007
Method : c:\ezchrom\methods\dg10f15.met
Sample ID : 01G080-03
Acquired : Jul 19, 2001 12:07:30
Printed : Jul 19, 2001 18:23:58
User : SHAWN

Channel A Results

#	Peak Name	Ret. Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	1.083	372729.0	30300.31	12.30
--	Ethylene	2.683	0.0	0.00	0.00
--	Ethane	3.175	0.0	0.00	0.00
--	Propane	6.258	0.0	0.00	0.00



4007

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/17/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/17/01
Batch No.	: 01G080	Date Extracted:	07/19/01 11:05
Sample ID:	0026-196	Date Analyzed:	07/19/01 12:22
Lab Samp ID:	G080-04	Dilution Factor:	1
Lab File ID:	FG05008A	Matrix :	WATER
Ext Btch ID:	DG10G05	% Moisture :	NA
Calib. Ref.:	FG05002A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	ND	1	.18
METHANE	1.8	1	.26

RL: Reporting Limit

QC SUMMARY

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	NA
Project	: CAMP PENDLETON, CTO26	Date Received:	07/19/01
Batch No.	: 01G080	Date Extracted:	07/19/01 11:05
Sample ID:	MBLK1W	Date Analyzed:	07/19/01 11:10
Lab Samp ID:	DG10G05B	Dilution Factor:	1
Lab File ID:	FG05003A	Matrix :	WATER
Ext Btch ID:	DG10G05	% Moisture :	NA
Calib. Ref.:	FG05002A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	ND	1	.18
METHANE	.35J	1	.26

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G080
METHOD: RSK-175

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DG10G05B	DG10G05L	DG10G05C		
LAB FILE ID:	FG05003A	FG05004A	FG05005A		
DATE EXTRACTED:	07/19/0111:05	07/19/0111:05	07/19/0111:05	DATE COLLECTED:	NA
DATE ANALYZED:	07/19/0111:10	07/19/0111:24	07/19/0111:37	DATE RECEIVED:	07/19/01
PREP. BATCH:	DG10G05	DG10G05	DG10G05		
CALIB. REF:	FG05002A	FG05002A	FG05002A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethane	ND	25.2	29.6	117	25.2	28.1	111	5	50-150	20
Ethylene	ND	23.6	26.1	111	23.6	24.9	105	5	50-150	20
Methane	.345J	13.6	13.9	99	13.6	13.1	94	6	50-150	20

FOSTER WHEELER ENVIRONMENTAL CORPORATION
1230 Columbia Street, San Diego, CA 92101 (619) 234-8696

NUMBER 02733

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	UST SITE 6/7
PURCHASE ORDER NO.	020848 TASK 4
PROJECT LOCATION	CAMP PENDLETON
PROJECT NO.	1990.026D
SAMPLER NAME	TANIA TURPIJN-KEASLER
SAMPLER SIGNATURE	[signature]
PROJECT CONTACT	SEVDA ALERKSON
AIRBILL NUMBER	COURIER
LABORATORY NAME	EMAX
LABORATORY ID (FOR LABORATORY)	01G107

Project Information Section Do not submit to Laboratory

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	EPA 8260B	TPH-C	EPA 418.1 (TRPH)	EPA 8310 (PAH)	EPA 300.0 (NITRATE SULFATE CHLORIDE)	PSK 175M (THERMAL CHANGE METHANE)	EPA 310.1 ALKALINITY	EPA 9060 TOC			COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
0026-197	7/19/01	0940	3	X		W	10 day	X											SITE 6/7 ~~MW12~~ TB	—	—	~~RE~~
0026-198	7/19/01	~~1105~~ 1120	10	X		W	10 day	X	X	X	~~X~~	X	X	X	X				SITE 6/7 ~~MW16~~ MW12		-	RE
0026-199	7/19/01	~~1245~~ 1130	~~12~~ 11	X		W	10 day	X	X	X	X	X	X	X	X				SITE 6/7 ~~EQ~~ MW16	—	—	~~E~~ R
0026-200	7/19/01	1145	12	X		W	10 day	X	X	X	X	X	X	X	X				SITE 6/7 MW16	-	-	FD
0026-201	7/19/01	1245	12	X		W	10 day	X	X	X	X	X	X	X	X				EQUIP RINSE	—	-	ER

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	7/19/01	[signature]
COMPANY: FWENC	TIME: 1310	COMPANY: EMAX
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

SAMPLING COMMENT: 3rd Quart GW sampler

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

6915A8

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO 26, UST SITE 6/7

METHOD 3520/M8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 01G107

5007

CASE NARRATIVE

CLIENT: FOSTER WHEELER

PROJECT: CAMP PENDLETON, CT026

SDG: 01G107

METHOD 3520/M8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Four (4) water samples were received on 07/19/01 to be analyzed for Total Petroleum Hydrocarbons by Method 3520/M8015B in accordance with SW846 and Leaking Underground Fuel Tank (LUFT) Field Manual, SWRCB, Dept. of Health Service, CA (1988).

1. **Holding Time**

   Analytical holding time was met.

2. **Method Blank**

   There was no contamination detected at reporting level.

3. **Lab Control Sample/Lab Control Sample Duplicate**

   All recoveries were within QC limits.

4. **Surrogate Recovery**

   All recoveries were within QC limits.

5. **Matrix Spike/Matrix Spike Duplicate**

   No sample was analyzed for MS/MSD from this SDG.

6. **Calibration**

   Initial calibration was seven points. Continue calibrations were carried out at 10 sample intervals. All QC requirements were met.

7. **Sample Analysis**

   Samples were analyzed according to the prescribed QC procedures. Samples were quantified from C10-C24.

LAB CHRONICLE
M8015D

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26

SDG NO. : 01G107
Instrument ID : GCT050

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	WATER Analysis DateTime	Extraction DateTime	Sample Data FN	DCC Data FN	Prep. Batch	Notes
MBLK1W	DSG023WB	1	NA	07/25/0102:03	07/24/0112:00	TG08016A	TG08014A	DSG023W	Method Blank
LCS1W	DSG023WL	1	NA	07/25/0102:52	07/24/0112:00	TG08017A	TG08014A	DSG023W	Lab Control Sample (LCS)
LCD1W	DSG023WC	1	NA	07/25/0103:40	07/24/0112:00	TG08018A	TG08014A	DSG023W	LCS Duplicate
0026-198	G107-02	.94	NA	07/25/0114:15	07/24/0112:00	TG08031A	TG08026A	DSG023W	Field Sample
0026-199	G107-03	1	NA	07/25/0115:04	07/24/0112:00	TG08032A	TG08026A	DSG023W	Field Sample
0026-200	G107-04	1	NA	07/25/0115:53	07/24/0112:00	TG08033A	TG08026A	DSG023W	Field Sample
0026-201	G107-05	.94	NA	07/25/0116:42	07/24/0112:00	TG08034A	TG08026A	DSG023W	Field Sample

FN - Filename
DCC - Daily Continuing Calibration
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 3520/M8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CT026
Batch No. : 01G107

Matrix : WATER
Instrument ID : GCT050

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	SURR (%)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	DSG023WB	ND	93	1	NA	.1	.067	07/25/0102:03	07/24/0112:00	TG08016A	TG08014A	DSG023W	NA	07/24/01
LCS1W	DSG023WL	3.78	93	1	NA	.1	.067	07/25/0102:52	07/24/0112:00	TG08017A	TG08014A	DSG023W	NA	07/24/01
LCD1W	DSG023WC	3.96	96	1	NA	.1	.067	07/25/0103:40	07/24/0112:00	TG08018A	TG08014A	DSG023W	NA	07/24/01
0026-198*	G107-02	.12	99	.94	NA	.094	.063	07/25/0114:15	07/24/0112:00	TG08031A	TG08026A	DSG023W	07/19/01	07/19/01
0026-199	G107-03	7.1	69	1	NA	.1	.067	07/25/0115:04	07/24/0112:00	TG08032A	TG08026A	DSG023W	07/19/01	07/19/01
0026-200	G107-04	9.8	77	1	NA	.1	.067	07/25/0115:53	07/24/0112:00	TG08033A	TG08026A	DSG023W	07/19/01	07/19/01
0026-201	G107-05	ND	92	.94	NA	.094	.063	07/25/0116:42	07/24/0112:00	TG08034A	TG08026A	DSG023W	07/19/01	07/19/01

RL : Reporting Limit
SUR1 : Hexacosane

Parameter	H-C Range
JP5	C7 -C18
Diesel	C10-C24
Motor Oil	C18-C34
Gas	C6 -C12

* : Presence of lighter and heavier HC pattern, quantitated against DIesel calibration factor

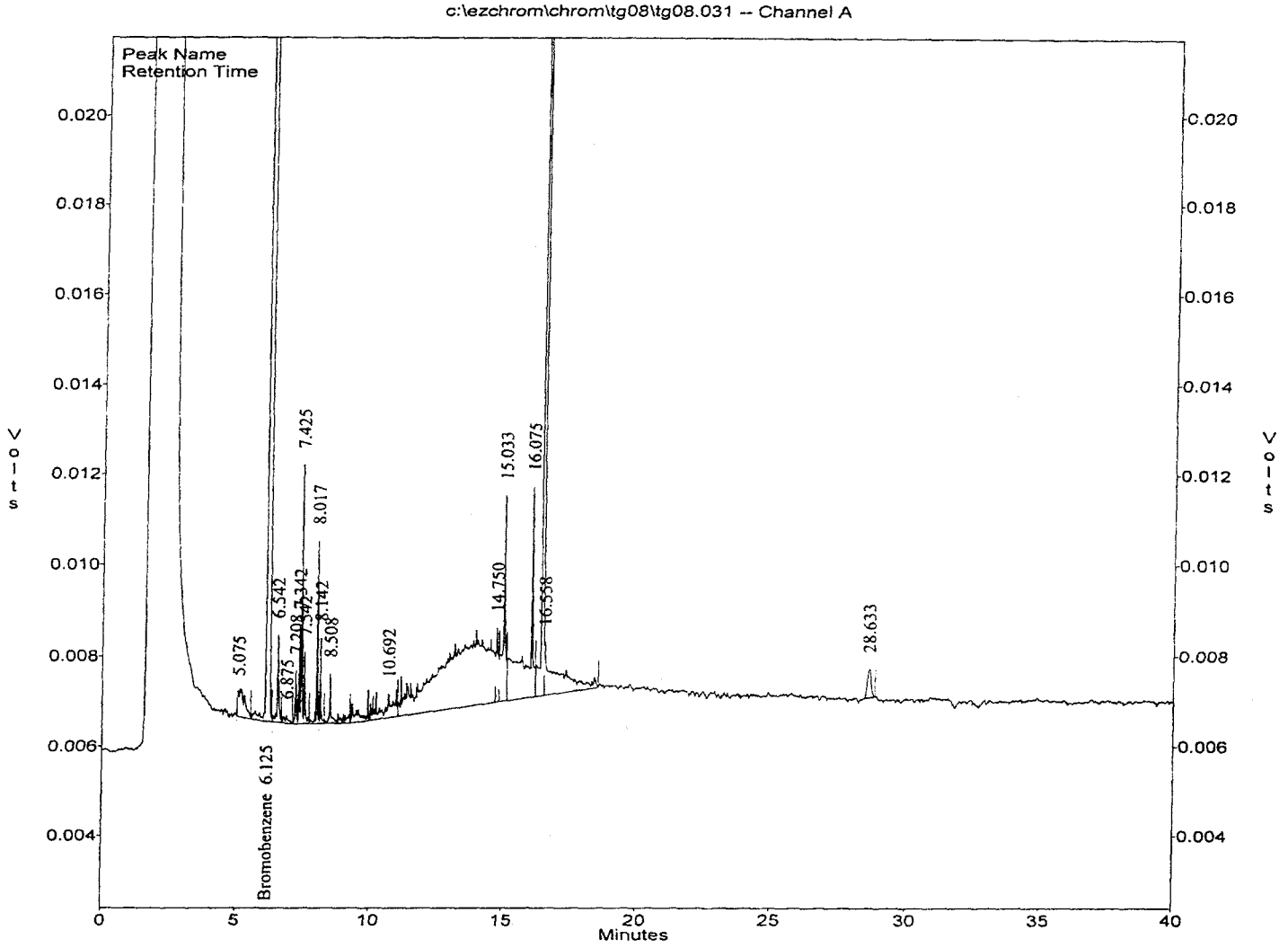
5011

EPA METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\tg08\tg08.031
Method : c:\ezchrom\methods\ds50f25.met
Sample ID : 01G107-02
Acquired : Jul 25, 2001 14:15:47
Printed : Jul 26, 2001 12:42:12
User : SHAWN

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
2	Bromobenzene	6.125	477754	4743.9	100.7
16	Hexacosane	16.483	396161	16045.0	24.7
G1	Diesel (Cw - Cm)		126709	9582.9	13.2



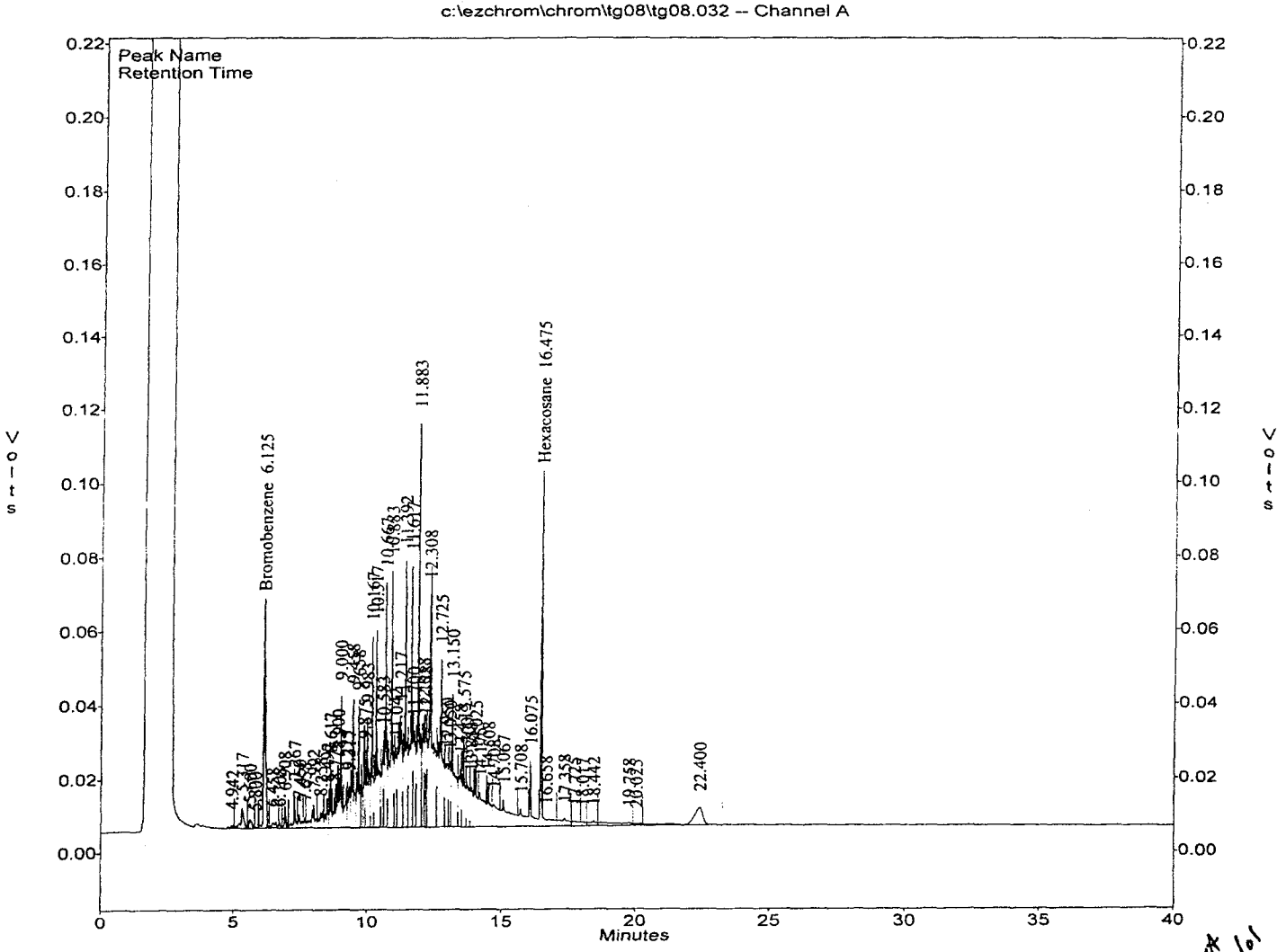
5012

EPA METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\tg08\tg08.032
Method : c:\ezchrom\methods\ds50f25.met
Sample ID : 01G107-03
Acquired : Jul 25, 2001 15:04:39
Printed : Jul 26, 2001 12:45:01
User : SHAWN

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
5	Bromobenzene	6.125	284578	4743.9	60.0
54	Hexacosane	16.475	277016	16045.0	17.3
G1	Diesel (C10-C24)		6814461	9582.9	711.1



5013 7/26/01

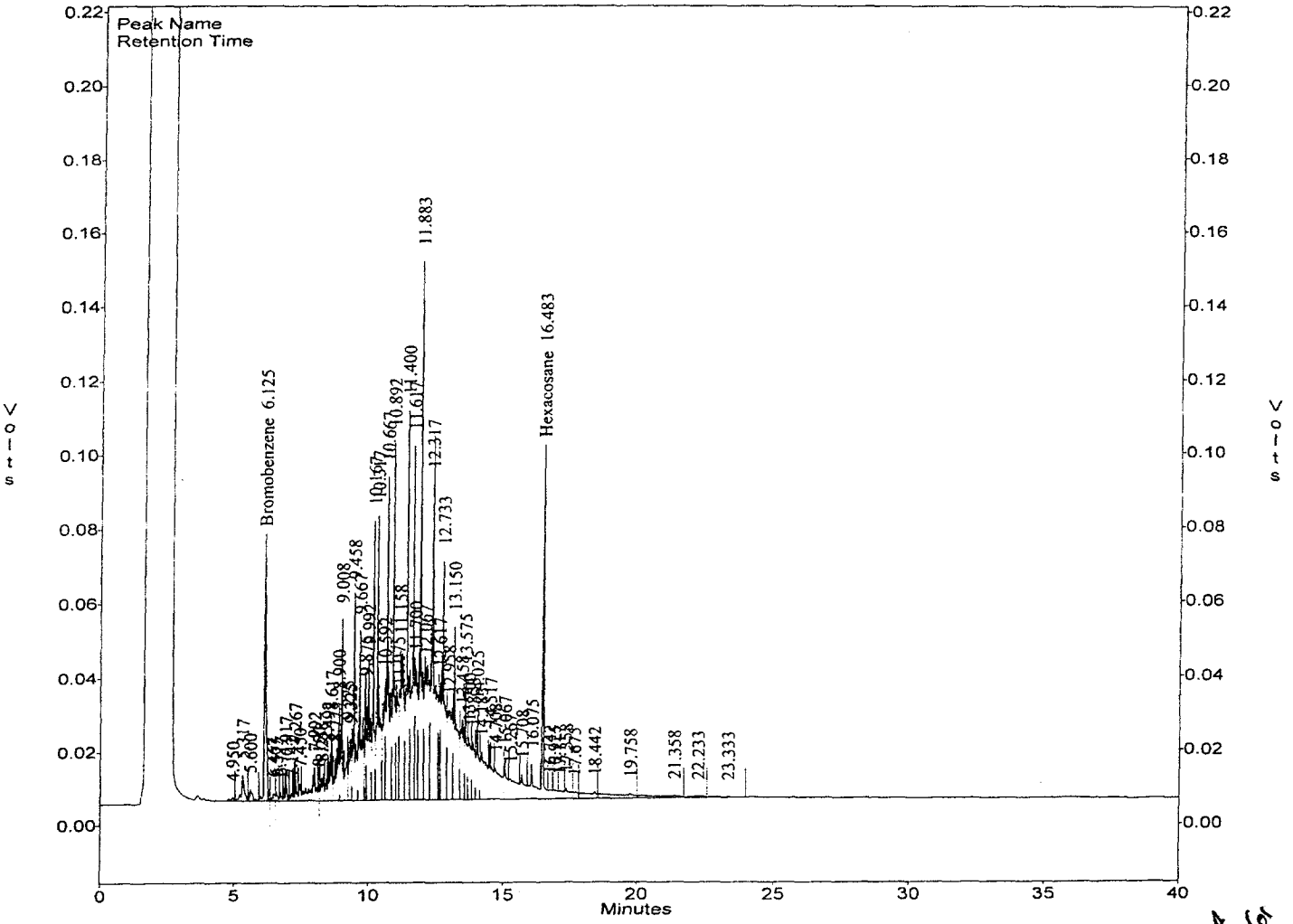
EPA METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\tg08\tg08.033
Method : c:\ezchrom\methods\ds50f25.met
Sample ID : 01G107-04
Acquired : Jul 25, 2001 15:53:44
Printed : Jul 26, 2001 12:46:02
User : SHAWN

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
4	Bromobenzene	6.125	327392	4743.9	69.0
55	Hexacosane	16.483	309321	16045.0	19.3
G1	Diesel (C10 - C24)		9390204	9582.9	979.9

c:\ezchrom\chrom\tg08\tg08.033 -- Channel A



5014

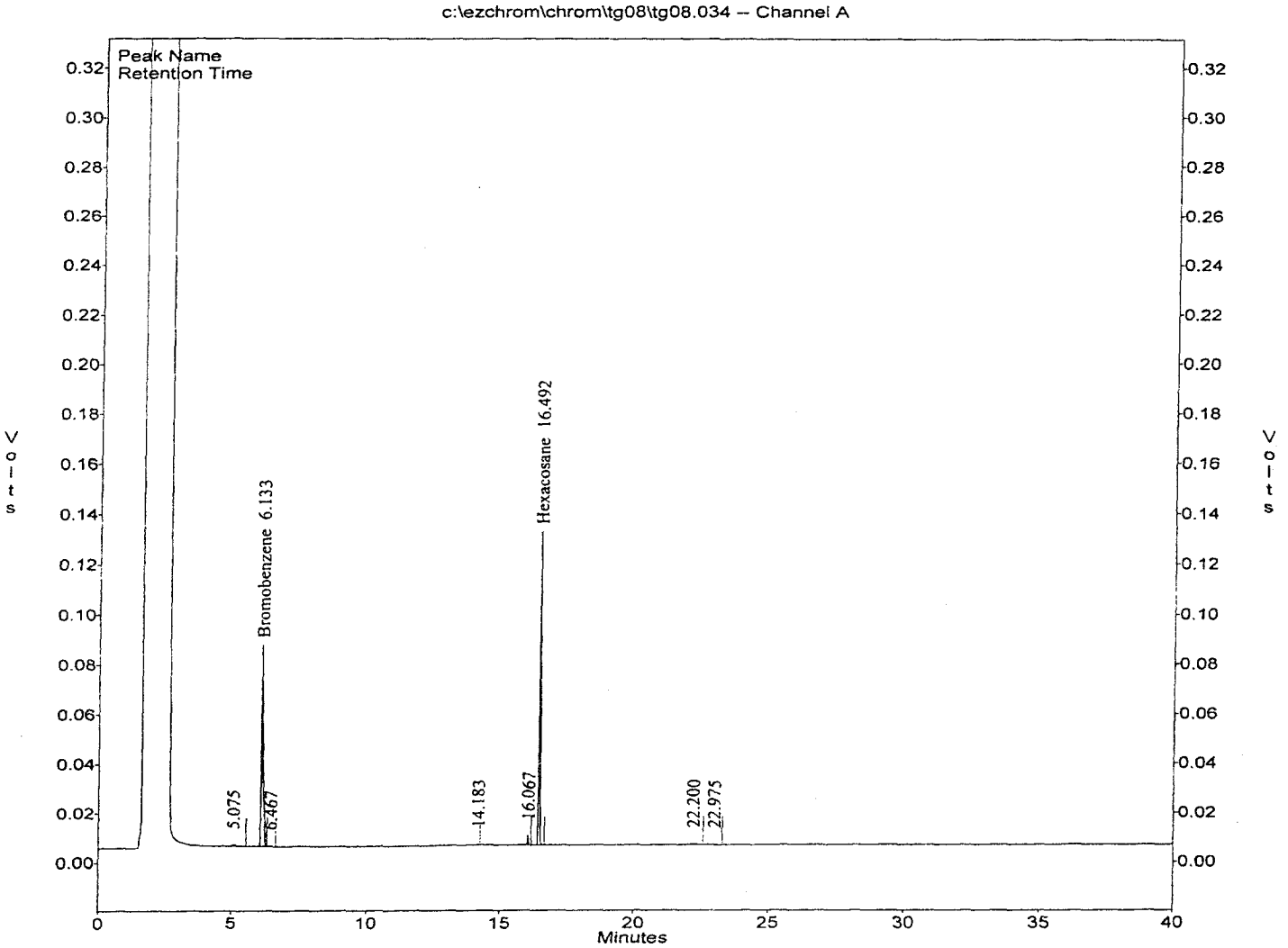
7/26/01

EPA METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\tg08\tg08.034
Method : c:\ezchrom\methods\ds50f25.met
Sample ID : 01G107-05
Acquired : Jul 25, 2001 16:42:29
Printed : Jul 26, 2001 12:46:54
User : SHAWN

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
2	Bromobenzene	6.133	368078	4743.9	77.6
6	Hexacosane	16.492	367188	16045.0	22.9
G1	Diesel (C10 - C24)		11985	9582.9	1.3



5015

7/26/01

QC SUMMARY

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G107
METHOD: METHOD 3520/M8015B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DSG023WB ✓	DSG023WL	DSG023WC		
LAB FILE ID:	TG08016A	TG08017A	TG08018A		
DATE EXTRACTED:	07/24/0112:00	07/24/0112:00	07/24/0112:00	DATE COLLECTED:	NA
DATE ANALYZED:	07/25/0102:03	07/25/0102:52	07/25/0103:40	DATE RECEIVED:	07/24/01
PREP. BATCH:	DSG023W	DSG023W	DSG023W		
CALIB. REF:	TG08014A	TG08014A	TG08014A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Diesel	ND	5	3.78	76	5	3.96	79	5	65-135	30

SURROGATE PARAMETER	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	QC LIMIT (%)
Hexacosane	.25	.232	93	.25	.239	96	65-135

6915A6

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO 26, UST SITE 6/7

METHOD 418.1
TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

SDG#: 01G107

5000

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO26, UST SITE 6/7**

SDG: **01G107**

METHOD 418.1
TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Four (4) water samples were received on 07/19/01 for total recoverable petroleum hydrocarbons analysis by Method 418.1 in accordance with "Methods for Chemical Analysis of Water & Wastewater", USEPA 600-79-020, 1983.

1. Holding Time

   Analysis met the holding time criteria.

2. Method Blank

   Method blank was free of contamination at reporting limit level.

3. Matrix Spike

   No matrix sample was analyzed for this SDG.

4. Lab Control Sample/Lab Control Sample Duplicate

   Lab control results were within the control limit.

5. Sample Analysis

   Sample analyses were performed within the QC requirements.

METHOD 418.1
TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G107

Matrix : WATER
Instrument ID : I061

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	TRG008WB	ND	1	NA	10	.558	08/01/0113:40	07/31/0116:30	TRH004-03	TRH004CC	TRG008W	NA	07/31/01
LCS1W	TRG008WL	5.68J	1	NA	10	.558	08/01/0113:45	07/31/0116:30	TRH004-04	TRH004CC	TRG008W	NA	07/31/01
LCD1W	TRG008WC	5.54J	1	NA	10	.558	08/01/0113:50	07/31/0116:30	TRH004-05	TRH004CC	TRG008W	NA	07/31/01
0026-198	G107-02	ND	.96	NA	9.6	.536	08/01/0113:55	07/31/0116:30	TRH004-06	TRH004CC	TRG008W	07/19/01	07/19/01
0026-199	G107-03	18.3	.97	NA	9.7	.541	08/01/0114:00	07/31/0116:30	TRH004-07	TRH004CC	TRG008W	07/19/01	07/19/01
0026-200	G107-04	26.3	.98	NA	9.8	.547	08/01/0114:05	07/31/0116:30	TRH004-08	TRH004CC	TRG008W	07/19/01	07/19/01
0026-201	G107-05	ND	.94	NA	9.4	.525	08/01/0114:10	07/31/0116:30	TRH004-09	TRH004CC	TRG008W	07/19/01	07/19/01

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
METHOD: METHOD 418.1
MATRIX: WATER
% MOISTURE: NA

BATCH NO.: 01G107
SAMPLE ID: LCS1W/LCD1W
CONTROL NO.: TRG008WL/C

DATE RECEIVED: 07/31/01
DATE EXTRACTED: 07/31/01 16:30
DATE ANALYZED: 08/01/01 13:45/13:50

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD %	QC LIMIT %	RPD LIMIT %
TRPH	ND	6	5.68J	95	6	5.54J	92	2	80-120	20

5003

6915A1

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO26, UST SITE 6/7

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

SDG#: 01G107

2000

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO 26, UST SITE 6/7**

SDG: **01G107**

SW 5030B/8260B
VOLATILE ORGANICS BY GC/ MS

Five (5) water samples were received on 07/19/01 for Volatile Organics Analysis by method 8260B in accordance with USEPA SW846, 3rd.ed.

1. Holding Time

   Analytical holding time was met.

2. Tuning and Calibration

   Tuning and calibration were carried out at 12- hour interval. All QC requirements were met.

3. Method Blank

   Method blanks were free of contamination at reporting limit.

4. Lab Control Sample/ Lab Control Sample Duplicate

   All recoveries were within QC limits.

5. Surrogate Recovery

   Recoveries were within QC limits.

6. Matrix Spike/ Matrix Spike Duplicate

   No sample was designated for spike.

7. Sample Analysis

   Samples were analyzed according to the prescribed QC procedures. All requirements were met.

LAB CHRONICLE
SW8260

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26

SDG NO. : 01G107
Instrument ID : T-005

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	DCC Data FN	Prep. Batch	Notes
MBLK1W	V005G59B	1	NA	07/26/0119:29	07/26/0119:29	RGQ778	RGQ774	V005G59	Method Blank
LCS1W	V005G59L	1	NA	07/26/0118:16	07/26/0118:16	RGQ776	RGQ774	V005G59	Lab Control Sample (LCS)
LCD1W	V005G59C	1	NA	07/26/0118:52	07/26/0118:52	RGQ777	RGQ774	V005G59	LCS Duplicate
0026-197	G107-01	1	NA	07/26/0120:41	07/26/0120:41	RGQ780	RGQ774	V005G59	Field Sample
0026-198	G107-02	1	NA	07/26/0123:05	07/26/0123:05	RGQ784	RGQ774	V005G59	Field Sample
0026-201	G107-05	1	NA	07/26/0123:41	07/26/0123:41	RGQ785	RGQ774	V005G59	Field Sample
MBLK2W	V005G62Q	1	NA	07/28/0102:30	07/28/0102:30	RGQ831	RGQ827	V005G62	Method Blank
LCS2W	V005G62L	1	NA	07/28/0100:42	07/28/0100:42	RGQ828	RGQ827	V005G62	Lab Control Sample (LCS)
LCD2W	V005G62C	1	NA	07/28/0101:18	07/28/0101:18	RGQ829	RGQ827	V005G62	LCS Duplicate
0026-199	G107-03	1	NA	07/28/0108:32	07/28/0108:32	RGQ841	RGQ827	V005G62	Field Sample
0026-200	G107-04	1	NA	07/28/0109:09	07/28/0109:09	RGQ842	RGQ827	V005G62	Field Sample

FN - Filename
DCC - Daily Continuing Calibration
% Moist - Percent Moisture

2002

SAMPLE RESULTS

2003

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	07/19/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/19/01
Batch No.	: 01G107	Date Extracted:	07/26/01 20:41
Sample ID:	0026-197	Date Analyzed:	07/26/01 20:41
Lab Samp ID:	G107-01	Dilution Factor:	1
Lab File ID:	RGQ780	Matrix :	WATER
Ext Btch ID:	VO05G59	% Moisture :	NA
Calib. Ref.:	RGQ774	Instrument ID :	T-005

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	ND	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	.36J	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	ND	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	87	62-139
TOLUENE-D8	95	75-125
BROMOFLUOROBENZENE	90	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	07/19/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/19/01
Batch No.	: 01G107	Date Extracted:	07/26/01 23:05
Sample ID:	0026-198	Date Analyzed:	07/26/01 23:05
Lab Samp ID:	G107-02	Dilution Factor:	1
Lab File ID:	RGQ784	Matrix :	WATER
Ext Btch ID:	V005G59	% Moisture :	NA
Calib. Ref.:	RGQ774	Instrument ID :	T-005

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	.45J	.5	.21
1,2-DICHLOROPROPANE	.39J	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	ND	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	.66J	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	90	62-139
TOLUENE-D8	95	75-125
BROMOFLUOROBENZENE	88	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	07/19/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/19/01
Batch No.	: 01G107	Date Extracted:	07/28/01 08:32
Sample ID:	0026-199	Date Analyzed:	07/28/01 08:32
Lab Samp ID:	G107-03	Dilution Factor:	1
Lab File ID:	RGQ841	Matrix :	WATER
Ext Btch ID:	VO05G62	% Moisture :	NA
Calib. Ref.:	RGQ827	Instrument ID :	T-005

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	.22J	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	2.8	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	34	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	.24J	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	14	.5	.12
XYLENES	92	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	.67J	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	.49J	5	.14
TOLUENE	13	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	16	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	1.2J	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	92	62-139
TOLUENE-D8	95	75-125
BROMOFLUOROBENZENE	87	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	07/19/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/19/01
Batch No.	: 01G107	Date Extracted:	07/28/01 09:09
Sample ID:	0026-200	Date Analyzed:	07/28/01 09:09
Lab Samp ID:	G107-04	Dilution Factor:	1
Lab File ID:	RGQ842	Matrix :	WATER
Ext Btch ID:	V005G62	% Moisture :	NA
Calib. Ref.:	RGQ827	Instrument ID :	T-005

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	.22J	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	2.7	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	31	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	.21J	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	13	.5	.12
XYLENES	86	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	.62J	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	.46J	5	.14
TOLUENE	10	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	15	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	1.1J	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	90	62-139
TOLUENE-D8	95	75-125
BROMOFLUOROBENZENE	87	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	07/19/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/19/01
Batch No.	: 01G107	Date Extracted:	07/26/01 23:41
Sample ID:	0026-201	Date Analyzed:	07/26/01 23:41
Lab Samp ID:	G107-05	Dilution Factor:	1
Lab File ID:	RGQ785	Matrix :	WATER
Ext Btch ID:	VO05G59	% Moisture :	NA
Calib. Ref.:	RGQ774	Instrument ID :	T-005

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	ND	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	ND	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	.24J	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	ND	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	88	62-139
TOLUENE-D8	96	75-125
BROMOFLUOROBENZENE	91	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

QC SUMMARY

2009

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	NA
Project	: CAMP PENDLETON, CT026	Date Received:	07/26/01
Batch No.	: 01G107	Date Extracted:	07/26/01 19:29
Sample ID:	MBLK1W	Date Analyzed:	07/26/01 19:29
Lab Samp ID:	VO05G59B	Dilution Factor:	1
Lab File ID:	RGQ778	Matrix :	WATER
Ext Btch ID:	VO05G59	% Moisture :	NA
Calib. Ref.:	RGQ774	Instrument ID :	T-005

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	ND	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	ND	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	ND	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	87	62-139
TOLUENE-D8	92	75-125
BROMOFLUOROBENZENE	86	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G107
METHOD: SW 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	V005G59B	V005G59L	V005G59C		
LAB FILE ID:	RGQ778	RGQ776	RGQ777		
DATE EXTRACTED:	07/26/0119:29	07/26/0118:16	07/26/0118:52	DATE COLLECTED:	NA
DATE ANALYZED:	07/26/0119:29	07/26/0118:16	07/26/0118:52	DATE RECEIVED:	07/26/01
PREP. BATCH:	V005G59	V005G59	V005G59		
CALIB. REF:	RGQ774	RGQ774	RGQ774		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1-Dichloroethene	ND	10	11.2	112	10	11.1	111	1	75-125	20
Benzene	ND	10	10.6	106	10	10.2	102	4	75-125	20
Chlorobenzene	ND	10	10.6	106	10	10.5	105	1	75-125	20
Toluene	ND	10	10.6	106	10	10.5	105	2	75-125	20
Trichloroethene	ND	10	10.8	108	10	10.6	106	2	75-125	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10	8.52	85	10	8.49	85	62-139
Toluene-d8	10	9.45	95	10	9.16	92	75-125
Bromofluorobenzene	10	8.61	86	10	8.74	87	75-125

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: FOSTER WHEELER	Date Collected:	NA
Project	: CAMP PENDLETON, CT026	Date Received:	07/28/01
Batch No.	: 01G107	Date Extracted:	07/28/01 02:30
Sample ID:	MBLK2W	Date Analyzed:	07/28/01 02:30
Lab Samp ID:	V005G62Q	Dilution Factor:	1
Lab File ID:	RGQ831	Matrix :	WATER
Ext Btch ID:	V005G62	% Moisture :	NA
Calib. Ref.:	RGQ827	Instrument ID :	T-005

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.42
1,1,2,2-TETRACHLOROETHANE	ND	1	.19
1,1,2-TRICHLOROETHANE	ND	5	.17
1,1-DICHLOROETHANE	ND	5	.16
1,1-DICHLOROETHENE	ND	5	.1
1,2-DICHLOROETHANE	ND	.5	.21
1,2-DICHLOROPROPANE	ND	5	.14
METHYL ETHYL KETONE	ND	50	2.1
2-HEXANONE	ND	50	1
4-METHYL-2-PENTANONE (MIBK)	ND	50	1.2
ACETONE	ND	50	2.7
BENZENE	ND	.5	.15
BROMODICHLOROMETHANE	ND	5	.17
BROMOFORM	ND	5	.12
BROMOMETHANE	ND	5	.18
CARBON TETRACHLORIDE	ND	.5	.091
CHLOROBENZENE	ND	5	.14
CHLOROETHANE	ND	5	.43
CHLOROFORM	ND	5	.41
CHLOROMETHANE	ND	5	.24
CIS-1,2-DICHLOROETHENE	ND	5	.16
CIS-1,3-DICHLOROPROPENE	ND	.5	.21
DIBROMOCHLOROMETHANE	ND	5	.14
ETHYLBENZENE	ND	.5	.12
XYLENES	ND	1.5	.27
MTBE	ND	1	.22
METHYLENE CHLORIDE	ND	5	.22
STYRENE	ND	5	.15
TETRACHLOROETHYLENE	ND	5	.14
TOLUENE	ND	.5	.14
TRANS-1,2-DICHLOROETHENE	ND	5	.18
TRANS-1,3-DICHLOROPROPENE	ND	.5	.23
TRICHLOROETHENE	ND	5	.15
VINYL ACETATE	ND	50	.32
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	2.3
DIISOPROPYL ETHER	ND	5	.39
ETHYL TERT-BUTYL ETHER	ND	5	.88
TERT-AMYL METHYL ETHER	ND	5	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	90	62-139
TOLUENE-D8	95	75-125
BROMOFLUOROBENZENE	89	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G107
METHOD: SW 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK2W				
LAB SAMP ID:	V005G62Q	V005G62L	V005G62C		
LAB FILE ID:	RGQ831	RGQ828	RGQ829		
DATE EXTRACTED:	07/28/0102:30	07/28/0100:42	07/28/0101:18	DATE COLLECTED:	NA
DATE ANALYZED:	07/28/0102:30	07/28/0100:42	07/28/0101:18	DATE RECEIVED:	07/28/01
PREP. BATCH:	V005G62	V005G62	V005G62		
CALIB. REF:	RGQ827	RGQ827	RGQ827		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1-Dichloroethene	ND	10	8.2	82	10	8.23	82	0	75-125	20
Benzene	ND	10	8.83	88	10	8.9	89	1	75-125	20
Chlorobenzene	ND	10	9.16	92	10	9.17	92	0	75-125	20
Toluene	ND	10	8.99	90	10	8.94	89	1	75-125	20
Trichloroethene	ND	10	9.09	91	10	9	90	1	75-125	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10	8.57	86	10	8.66	87	62-139
Toluene-d8	10	9.61	96	10	9.6	96	75-125
Bromofluorobenzene	10	8.72	87	10	8.76	88	75-125

6915A9

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO 26, UST SITE 6/7

SW 3520C/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

SDG#: 01G107

6025

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO26**

EMAX SDG: **01G107**

SW3520C/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

Three (3) water samples were received on 07/19/01 for PAH analyses by EPA Method 8310 in accordance with EPA SW846 and EMAX SOP AP-2043.

1. Holding Time

   Analytical holding time was met.

2. Surrogate recovery

   All surrogate recoveries in UV detection were within QC limit; however, the recoveries in FL detector for the samples were out of QC due to matrix interference.

3. Matrix Spike/Matrix Spike Duplicate

   No sample was designated for MS/MSD.

4. Lab Control Sample

   All recoveries were within QC limit.

5. Method Blank

   Method blank was free of contamination at the reporting level.

6. Calibration

   Initial calibration was 5 point. All continuing calibrations were carried out at 10 samples interval and mean recoveries were within 85-115%.

7. Sample Analysis
   All sample analyses were within QC requirements.

LAB CHRONICLE
SW8310

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26

SDG NO. : 01G107
Instrument ID : LCT002

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	DCC Data FN	Prep. Batch	Notes
MBLK1W	PAG015WB	1	NA	07/25/0113:25	07/24/0112:00	RG25004A	RG25002A	PAG005W	Method Blank
LCS1W	PAG015WL	1	NA	07/25/0113:47	07/24/0112:00	RG25005A	RG25002A	PAG005W	Lab Control Sample (LCS)
0026-199	G107-03	.99	NA	07/25/0114:29	07/24/0112:00	RG25007A	RG25002A	PAG005W	Field Sample
0026-200	G107-04	.98	NA	07/25/0114:50	07/24/0112:00	RG25008A	RG25002A	PAG005W	Field Sample
0026-201	G107-05	.94	NA	07/25/0114:08	07/24/0112:00	RG25006A	RG25002A	PAG005W	Field Sample

FN - Filename
DCC - Daily Continuing Calibration
% Moist - Percent Moisture

SAMPLE RESULTS

SW 3520C/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

Client	: FOSTER WHEELER	Date Collected:	07/19/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/19/01
Batch No.	: 01G107	Date Extracted:	07/24/01 12:00
Sample ID:	0026-199	Date Analyzed:	07/25/01 14:29
Lab Samp ID:	G107-03	Dilution Factor:	.99
Lab File ID:	RG25007A	Matrix :	WATER
Ext Btch ID:	PAG005W	% Moisture :	NA
Calib. Ref.:	RG25002A	Instrument ID :	LCT002

PARAMETERS	RESULTS (ug/L)		RL (ug/L)	MDL (ug/L)	
NAPHTHALENE	(39)	44E	2	.37	.36
ACENAPHTHYLENE	(ND)	NA	4	1.6	NA
ACENAPHTHENE	(ND)	ND	2	.36	.46
FLUORENE	1.9	(ND)	.4	.11	.11
PHENANTHRENE	(2.7)	13E	.2	.051	.1
ANTHRACENE	(ND)	ND	.2	.051	.049
FLUORANTHENE	(ND)	ND	.4	.12	.27
PYRENE	(ND)	.23	.2	.061	.054
BENZO(A)ANTHRACENE	(ND)	ND	.2	.054	.061
CHRYSENE	(ND)	.32	.2	.053	.069
BENZO(B)FLUORANTHENE	(.12J)	.1J	.4	.092	.086
BENZO(K)FLUORANTHENE	(ND)	ND	.2	.049	.051
BENZO(A)PYRENE	(ND)	ND	.2	.054	.081
DIBENZO(A,H)ANTHRACENE	.14J	(ND)	.4	.14	.10
BENZO(G,H,I)PERYLENE	.095J	(ND)	.4	.087	.2
INDENO(1,2,3-CD)PYRENE	(ND)	ND	.2	.039	.079

SURROGATE PARAMETERS	% RECOVERY		QC LIMIT
P-TERPHENYL-D14	(147)	234*	25-157

RL: Reporting Limit
Left of | is related to UV detector; Right of | related to FL detector
( ) included the reported data
E : Exceeding calibration range.
* : Out of QC limit due to matrix interference.

SW 3520C/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

Client	: FOSTER WHEELER	Date Collected:	07/19/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/19/01
Batch No.	: 01G107	Date Extracted:	07/24/01 12:00
Sample ID:	0026-200	Date Analyzed:	07/25/01 14:50
Lab Samp ID:	G107-04	Dilution Factor:	.98
Lab File ID:	RG25008A	Matrix :	WATER
Ext Btch ID:	PAG005W	% Moisture :	NA
Calib. Ref.:	RG25002A	Instrument ID :	LCT002

PARAMETERS	RESULTS (ug/L)		RL (ug/L)	MDL (ug/L)	
NAPHTHALENE	(35)	39E	2	.37	.35
ACENAPHTHYLENE	(ND)	NA	3.9	1.6	NA
ACENAPHTHENE	.85J	(ND)	2	.35	.46
FLUORENE	1.6	(ND)	.39	.11	.11
PHENANTHRENE	(2.2)	10E	.2	.051	.10
ANTHRACENE	(ND)	ND	.2	.051	.048
FLUORANTHENE	1.5	(ND)	.39	.11	.27
PYRENE	(ND)	.16J	.2	.061	.054
BENZO(A)ANTHRACENE	(ND)	ND	.2	.054	.061
CHRYSENE	(ND)	ND	.2	.053	.069
BENZO(B)FLUORANTHENE	(ND)	ND	.39	.091	.085
BENZO(K)FLUORANTHENE	(ND)	ND	.2	.048	.051
BENZO(A)PYRENE	(ND)	ND	.2	.054	.08
DIBENZO(A,H)ANTHRACENE	(ND)	ND	.39	.13	.099
BENZO(G,H,I)PERYLENE	(ND)	ND	.39	.086	.2
INDENO(1,2,3-CD)PYRENE	(ND)	ND	.2	.038	.078

SURROGATE PARAMETERS	% RECOVERY		QC LIMIT
P-TERPHENYL-D14	(121)	176*	25-157

RL: Reporting Limit
Left of | is related to UV detector; Right of | related to FL detector
( ) included the reported data
E : Exceeding calibration range.
* : Out of QC limit due to matrix interference.

SW 3520C/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

Client	: FOSTER WHEELER	Date Collected:	07/19/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/19/01
Batch No.	: 01G107	Date Extracted:	07/24/01 12:00
Sample ID:	0026-201	Date Analyzed:	07/25/01 14:08
Lab Samp ID:	G107-05	Dilution Factor:	.94
Lab File ID:	RG25006A	Matrix :	WATER
Ext Btch ID:	PAG005W	% Moisture :	NA
Calib. Ref.:	RG25002A	Instrument ID :	LCT002

PARAMETERS	RESULTS (ug/L)		RL (ug/L)	MDL (ug/L)	
NAPHTHALENE	(ND)	ND	1.9	.35	.34
ACENAPHTHYLENE	(ND)	NA	3.8	1.5	NA
ACENAPHTHENE	(ND)	ND	1.9	.34	.44
FLUORENE	(ND)	ND	.38	.11	.11
PHENANTHRENE	(ND)	ND	.19	.049	.096
ANTHRACENE	(ND)	ND	.19	.049	.046
FLUORANTHENE	(ND)	ND	.38	.11	.26
PYRENE	(ND)	ND	.19	.058	.052
BENZO(A)ANTHRACENE	(ND)	ND	.19	.052	.058
CHRYSENE	(ND)	ND	.19	.051	.066
BENZO(B)FLUORANTHENE	(ND)	ND	.38	.087	.082
BENZO(K)FLUORANTHENE	(ND)	ND	.19	.046	.049
BENZO(A)PYRENE	(ND)	ND	.19	.052	.077
DIBENZO(A,H)ANTHRACENE	(ND)	ND	.38	.13	.095
BENZO(G,H,I)PERYLENE	(ND)	ND	.38	.083	.19
INDENO(1,2,3-CD)PYRENE	(ND)	ND	.19	.037	.075

SURROGATE PARAMETERS	% RECOVERY		QC LIMIT
P-TERPHENYL-D14	(112)	112	25-157

RL: Reporting Limit
Left of | is related to UV detector; Right of | related to FL detector
( ) included the reported data

QC SUMMARY

SW 3520C/8310

POLYNUCLEAR AROMATIC HYDROCARBONS

Client : FOSTER WHEELER	Date Collected: NA
Project : CAMP PENDLETON, CTO26	Date Received: 07/24/01
Batch No. : 01G107	Date Extracted: 07/24/01 12:00
Sample ID: MBLK1W	Date Analyzed: 07/25/01 13:25
Lab Samp ID: PAG015WB	Dilution Factor: 1
Lab File ID: RG25004A	Matrix : WATER
Ext Btch ID: PAG005W	% Moisture : NA
Calib. Ref.: RG25002A	Instrument ID : LCT002

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
NAPHTHALENE	(ND)|ND	2	.37|.36
ACENAPHTHYLENE	(ND)|NA	4	1.6|NA
ACENAPHTHENE	(ND)|ND	2	.36|.47
FLUORENE	(ND)|ND	.4	.12|.11
PHENANTHRENE	(ND)|ND	.2	.052|.1
ANTHRACENE	(ND)|ND	.2	.052|.049
FLUORANTHENE	(ND)|ND	.4	.12|.27
PYRENE	(ND)|ND	.2	.062|.055
BENZO(A)ANTHRACENE	(ND)|ND	.2	.055|.062
CHRYSENE	(ND)|ND	.2	.054|.07
BENZO(B)FLUORANTHENE	(ND)|ND	.4	.093|.087
BENZO(K)FLUORANTHENE	(ND)|ND	.2	.049|.052
BENZO(A)PYRENE	(ND)|ND	.2	.055|.082
DIBENZO(A,H)ANTHRACENE	(ND)|ND	.4	.14|.1
BENZO(G,H,I)PERYLENE	(ND)|ND	.4	.088|.2
INDENO(1,2,3-CD)PYRENE	(ND)|ND	.2	.039|.08

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
P-TERPHENYL-D14	(106)|108	25-157

RL: Reporting Limit

Left of | is related to UV detector; Right of | related to FL detector

( ) included the reported data

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G107
METHOD: SW 3520C/8310

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1
SAMPLE ID: MBLK1W
LAB SAMP ID: PAG015WB PAG015WL
LAB FILE ID: RG25004A RG25005A
DATE EXTRACTED: 07/24/0112:00 07/24/0112:00 DATE COLLECTED: NA
DATE ANALYZED: 07/25/0113:25 07/25/0113:47 DATE RECEIVED: 07/24/01
PREP. BATCH: PAG005W PAG005W
CALIB. REF: RG25002A RG25002A

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	QC LIMIT (%)
Naphthalene	(ND)|ND	10	(7.1)|7.51	(71)|75	43-125
Acenaphthylene	(ND)|NA	20	(15.3)|NA	(76)|NA	49-125
Acenaphthene	(ND)|ND	10	(8.03)|8.74	(80)|87	43-130
Fluorene	(ND)|ND	2	(1.78)|1.68	(89)|84	53-125
Phenanthrene	(ND)|ND	1	(.919)|.913	(92)|91	52-129
Anthracene	(ND)|ND	1	(.834)|.782	(83)|78	54-125
Fluoranthene	(ND)|ND	2	(1.82)|1.93	(91)|96	42-125
Pyrene	(ND)|ND	1	(.904)|.791	(90)|79	55-125
Benzo(a)anthracene	(ND)|ND	1	(.911)|.893	(91)|89	39-135
Chrysene	(ND)|ND	1	(.939)|.918	(94)|92	59-134
Benzo(b)fluoranthene	(ND)|ND	2	(1.91)|1.83	(96)|92	31-137
Benzo(k)fluoranthene	(ND)|ND	1	(1.01)|.941	(101)|94	60-129
Benzo(a)pyrene	(ND)|ND	1	(.936)|.85	(94)|85	52-125
Dibenzo(a,h)anthracene	(ND)|ND	2	(1.89)|1.76	(94)|88	51-125
Benzo(g,h,i)perylene	(ND)|ND	2	(1.79)|1.7	(90)|85	53-125
Indeno(1,2,3-cd)pyrene	(ND)|ND	1	(.946)|.891	(95)|89	55-125

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	QC LIMIT (%)
p-Terphenyl-d14	5	(5.64)|5.65	(113)|113	25-157

6034

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO26 UST SITE 6/7**

SDG: **01G107**

METHOD 300.0
ANIONS

Four (4) water samples were received on 07/19/01 for Anions analysis by Method 300.0 in accordance with "Methods for Determination of Inorganic Anions by Ion Chromatography" EPA 600/84-017.

1. Holding Time

   Analyses met holding time criteria.

2. Method Blank

   Method blanks were free of contamination at reporting limit.

3. Lab Control Sample

   Lab control results were within QC limit.

4. Duplicate

   Duplicate sample was not analyzed in this SDG.

5. Matrix Spike

   No matrix sample was analyzed for this SDG.

6. Sample Analysis

   Sample analyses were performed within QC requirements. All requirements were met. Nitrate result was reported as nitrogen concentration.

SAMPLE RESULTS

8010

METHOD 300.0
CHLORIDE-Cl

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G107

Matrix : WATER
Instrument ID : TI006

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICG024WB	ND	1	NA	.2	.047	07/20/0117:57	NA	AG21003A	AG21001A	ICG024W	NA	NA
LCS1W	ICG024WL	5.47	1	NA	.2	.047	07/20/0118:36	NA	AG21004A	AG21001A	ICG024W	NA	NA
0026-201	G107-05	.069J	1	NA	.2	.047	07/20/0119:44	NA	AG21008A	AG21001A	ICG024W	07/19/01	07/19/01
MBLK2W	ICG042WB	ND	1	NA	.2	.047	08/06/0116:44	NA	AH06003A	AH06001A	ICG042W	NA	NA
LCS2W	ICG042WL	5.03	1	NA	.2	.047	08/06/0117:01	NA	AH06004A	AH06001A	ICG042W	NA	NA
0026-198	G107-02	2120	1000	NA	200	47	08/06/0117:18	NA	AH06005A	AH06001A	ICG042W	07/19/01	07/19/01
0026-199	G107-03	3570	1000	NA	200	47	08/06/0117:35	NA	AH06006A	AH06001A	ICG042W	07/19/01	07/19/01
0026-200	G107-04	3600	1000	NA	200	47	08/06/0117:52	NA	AH06007A	AH06001A	ICG042W	07/19/01	07/19/01

RL : Reporting Limit

METHOD 300.0
NITRATE-N

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CT026
Batch No. : 01G107

Matrix : WATER
Instrument ID : TI006

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICG024WB	ND	1	NA	.1	.0206	07/20/0117:57	NA	AG21003A	AG21001A	ICG024W	NA	NA
LCS1W	ICG024WL	2.21	1	NA	.1	.0206	07/20/0118:36	NA	AG21004A	AG21001A	ICG024W	NA	NA
0026-198	G107-02	9.63	5	NA	.5	.103	07/20/0118:53	NA	AG21005A	AG21001A	ICG024W	07/19/01	07/19/01
0026-199	G107-03	2.01	5	NA	.5	.103	07/20/0119:10	NA	AG21006A	AG21001A	ICG024W	07/19/01	07/19/01
0026-200	G107-04	2	5	NA	.5	.103	07/20/0119:27	NA	AG21007A	AG21001A	ICG024W	07/19/01	07/19/01
0026-201	G107-05	ND	1	NA	.1	.0206	07/20/0119:44	NA	AG21008A	AG21001A	ICG024W	07/19/01	07/19/01

RL: Reporting Limit

METHOD 300.0
SULFATE

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26
Batch No. : 01G107

Matrix : WATER
Instrument ID : TI006

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICG024WB	ND	1	NA	.5	.101	07/20/0117:57	NA	AG21003A	AG21001A	ICG024W	NA	NA
LCS1W	ICG024WL	10.7	1	NA	.5	.101	07/20/0118:36	NA	AG21004A	AG21001A	ICG024W	NA	NA
0026-201	G107-05	2.37	1	NA	.5	.101	07/20/0119:44	NA	AG21008A	AG21001A	ICG024W	07/19/01	07/19/01
MBLK2W	ICG042WB	ND	1	NA	.5	.101	08/06/0116:44	NA	AH06003A	AH06001A	ICG042W	NA	NA
LCS2W	ICG042WL	10.7	1	NA	.5	.101	08/06/0117:01	NA	AH06004A	AH06001A	ICG042W	NA	NA
0026-198	G107-02	2930	1000	NA	500	101	08/06/0117:18	NA	AH06005A	AH06001A	ICG042W	07/19/01	07/19/01
0026-199	G107-03	4930	1000	NA	500	101	08/06/0117:35	NA	AH06006A	AH06001A	ICG042W	07/19/01	07/19/01
0026-200	G107-04	5180	1000	NA	500	101	08/06/0117:52	NA	AH06007A	AH06001A	ICG042W	07/19/01	07/19/01

RL : Reporting Limit

QC SUMMARY

8014

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G107
METHOD: METHOD 300.0

==========

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	1		
SAMPLE ID:	MBLK1W			
LAB SAMP ID:	ICG024WB	ICG024WL		
LAB FILE ID:	AG21003A	AG21004A		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	07/20/0117:57	07/20/0118:36	DATE RECEIVED:	NA
PREP. BATCH:	ICG024W	ICG024W		
CALIB. REF:	AG21001A	AG21001A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	QC LIMIT (%)
Chloride-Cl	ND	5	5.47	109	80-120

8015

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CT026
BATCH NO.: 01G107
METHOD: METHOD 300.0

==========

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	1		
SAMPLE ID:	MBLK1W			
LAB SAMP ID:	ICG024WB	ICG024WL		
LAB FILE ID:	AG21003A	AG21004A		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	07/20/0117:57	07/20/0118:36	DATE RECEIVED:	NA
PREP. BATCH:	ICG024W	ICG024W		
CALIB. REF:	AG21001A	AG21001A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	QC LIMIT (%)
Nitrate-N	ND	2	2.21	111	80-120

8016

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G107
METHOD: METHOD 300.0

==========

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	1		
SAMPLE ID:	MBLK1W			
LAB SAMP ID:	ICG024WB	ICG024WL		
LAB FILE ID:	AG21003A	AG21004A		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	07/20/0117:57	07/20/0118:36	DATE RECEIVED:	NA
PREP. BATCH:	ICG024W	ICG024W		
CALIB. REF:	AG21001A	AG21001A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	QC LIMIT (%)
Sulfate	ND	10	10.7	107	80-120

80117

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G107
METHOD: METHOD 300.0

==========

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	1		
SAMPLE ID:	MBLK2W			
LAB SAMP ID:	ICG042WB	ICG042WL		
LAB FILE ID:	AH06003A	AH06004A		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	08/06/0116:44	08/06/0117:01	DATE RECEIVED:	NA
PREP. BATCH:	ICG042W	ICG042W		
CALIB. REF:	AH06001A	AH06001A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	QC LIMIT (%)
Chloride-Cl	ND	5	5.03	101	80-120

8018

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G107
METHOD: METHOD 300.0

==========

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	1		
SAMPLE ID:	MBLK2W			
LAB SAMP ID:	ICG042WB	ICG042WL		
LAB FILE ID:	AH06003A	AH06004A		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	08/06/0116:44	08/06/0117:01	DATE RECEIVED:	NA
PREP. BATCH:	ICG042W	ICG042W		
CALIB. REF:	AH06001A	AH06001A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	QC LIMIT (%)
Sulfate	ND	10	10.7	107	80-120

8019

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO26, UST SITE 6/7

WET CHEMICAL ANALYSES

6915A6

SDG#: 01G107

8000

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO 26, UST SITE 6/7**

SDG: **01G107**

METHOD 310.1
TOTAL ALKALINITY

Four (4) water samples were received on 07/19/01 for total alkalinity analysis by Method 310.1 in accordance with "Methods for Chemical Analysis of Water & Wastewater", USEPA 600-79-020, 1983.

1. Holding Time

   Analysis met holding time criteria.

2. Method Blank

   Method blank was free of contamination at reporting limit level.

3. Lab Control Sample/Lab Control Sample Duplicate

   Lab control results were within the control limit.

4. Duplicate

   No duplicate sample was analyzed for this SDG.

5. Sample Analysis

   Sample analyses were performed within QC requirements. All requirements were met.

METHOD 310.1
TOTAL ALKALINITY

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CT026
Batch No. : 01G107

Matrix : WATER
Instrument ID : TI53

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ALG013WB	ND	1	NA	5	.469	07/25/0109:30	NA	ALG013W-01	NA	ALG013W	NA	NA
LCS1W	ALG013WL	18.9	1	NA	5	.469	07/25/0109:35	NA	ALG013W-02	NA	ALG013W	NA	NA
LCD1W	ALG013WC	18.9	1	NA	5	.469	07/25/0109:40	NA	ALG013W-03	NA	ALG013W	NA	NA
0026-198	G107-02	63.7	1	NA	5	.469	07/25/0109:45	NA	ALG013W-04	NA	ALG013W	07/19/01	07/19/01
0026-199	G107-03	ND	1	NA	5	.469	07/25/0109:50	NA	ALG013W-05	NA	ALG013W	07/19/01	07/19/01
0026-200	G107-04	ND	1	NA	5	.469	07/25/0109:55	NA	ALG013W-06	NA	ALG013W	07/19/01	07/19/01
0026-201	G107-05	ND	1	NA	5	.469	07/25/0110:00	NA	ALG013W-07	NA	ALG013W	07/19/01	07/19/01

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
METHOD: METHOD 310.1
MATRIX: WATER
% MOISTURE: NA

BATCH NO.: 01G107
SAMPLE ID: LCS1W/LCD1W
CONTROL NO.: ALG013WL/C

DATE RECEIVED: NA
DATE EXTRACTED: NA
DATE ANALYZED: 07/25/01 09:35/09:40

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD %	QC LIMIT %	RPD LIMIT %
Alkalinity	ND	18.3	18.9	103	18.3	18.9	103	0	80-120	20

1915A51

LABORATORY REPORT FOR

FOSTER WHEELER

CAMP PENDLETON, CTO 26, UST SITE 6/7

RSK - 175
DISSOLVED GASES

SDG#: 01G107

6000

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO 26**

SDG: **01G107**

RSK-175
DISSOLVED GASES

Samples received on 07/19/01 for this SDG include four (4) water to be analyzed for Dissolved Gases (Methane, Ethylene, Ethane) in accordance to EMAX SOP AP 2050.

1. **Holding Time**

   All samples received were unpreserved except sample G107-04. Analytical holding time was met.

2. ***Calibration***

   A 6-point Initial calibration was performed. All QC requirements were met. Continuing calibration were carried out at 10-sample interval, and mean recovery of closing DCC were within 85-115%.

3. **Method Blank**

   No analytes were detected above RL.

4. **Lab Control Sample/Lab Control Duplicate**

   All recoveries were within QC limits

5. **Matrix Spike/Matrix Spike Duplicate**

   No sample was designated for MS/MSD with this SDG.

6. **Sample Analysis**

   All samples were analyzed within QC requirements.

LAB CHRONICLE
RSK175

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CTO26

SDG NO. : 01G107
Instrument ID : GCT010

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	DCC Data FN	Prep. Batch	Notes
MBLK1W	DG10G06B	1	NA	07/23/0112:13	07/23/0112:00	FG06003A	FG06002A	DG10G06	Method Blank
LCS1W	DG10G06L	1	NA	07/23/0112:26	07/23/0112:00	FG06004A	FG06002A	DG10G06	Lab Control Sample (LCS)
LCD1W	DG10G06C	1	NA	07/23/0112:43	07/23/0112:00	FG06005A	FG06002A	DG10G06	LCS Duplicate
0026-198	G107-02	1	NA	07/23/0115:40	07/23/0112:00	FG06016A	FG06013A	DG10G06	Field Sample
0026-199	G107-03	1	NA	07/23/0115:55	07/23/0112:00	FG06017A	FG06013A	DG10G06	Field Sample
0026-200	G107-04	1	NA	07/23/0116:08	07/23/0112:00	FG06018A	FG06013A	DG10G06	Field Sample
0026-201	G107-05	1	NA	07/23/0116:25	07/23/0112:00	FG06019A	FG06013A	DG10G06	Field Sample

FN - Filename
DCC - Daily Continuing Calibration
% Moist - Percent Moisture

SAMPLE RESULTS

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/19/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/19/01
Batch No.	: 01G107	Date Extracted:	07/23/01 12:00
Sample ID:	0026-198	Date Analyzed:	07/23/01 15:40
Lab Samp ID:	G107-02	Dilution Factor:	1
Lab File ID:	FG06016A	Matrix :	WATER
Ext Btch ID:	DG10G06	% Moisture :	NA
Calib. Ref.:	FG06013A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	ND	1	.18
METHANE	.63J	1	.26

RL: Reporting Limit

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/19/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/19/01
Batch No.	: 01G107	Date Extracted:	07/23/01 12:00
Sample ID:	0026-199	Date Analyzed:	07/23/01 15:55
Lab Samp ID:	G107-03	Dilution Factor:	1
Lab File ID:	FG06017A	Matrix :	WATER
Ext Btch ID:	DG10G06	% Moisture :	NA
Calib. Ref.:	FG06013A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	.33J	1	.18
METHANE	8.3	1	.26

RL: Reporting Limit

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/19/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/19/01
Batch No.	: 01G107	Date Extracted:	07/23/01 12:00
Sample ID:	0026-200	Date Analyzed:	07/23/01 16:08
Lab Samp ID:	G107-04	Dilution Factor:	1
Lab File ID:	FG06018A	Matrix :	WATER
Ext Btch ID:	DG10G06	% Moisture :	NA
Calib. Ref.:	FG06013A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	.37J	1	.18
METHANE	14	1	.26

RL: Reporting Limit

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	07/19/01
Project	: CAMP PENDLETON, CTO26	Date Received:	07/19/01
Batch No.	: 01G107	Date Extracted:	07/23/01 12:00
Sample ID:	0026-201	Date Analyzed:	07/23/01 16:25
Lab Samp ID:	G107-05	Dilution Factor:	1
Lab File ID:	FG06019A	Matrix :	WATER
Ext Btch ID:	DG10G06	% Moisture :	NA
Calib. Ref.:	FG06013A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	ND	1	.18
METHANE	ND	1	.26

RL: Reporting Limit

QC SUMMARY

RSK-175
DISSOLVED GASES

Client	: FOSTER WHEELER	Date Collected:	NA
Project	: CAMP PENDLETON, CTO26	Date Received:	07/23/01
Batch No.	: 01G107	Date Extracted:	07/23/01 12:00
Sample ID:	MBLK1W	Date Analyzed:	07/23/01 12:13
Lab Samp ID:	DG10G06B	Dilution Factor:	1
Lab File ID:	FG06003A	Matrix :	WATER
Ext Btch ID:	DG10G06	% Moisture :	NA
Calib. Ref.:	FG06002A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1	.26
ETHYLENE	ND	1	.18
METHANE	.37J	1	.26

RL: Reporting Limit

60034

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
BATCH NO.: 01G107
METHOD: RSK-175

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DG10G06B	DG10G06L	DG10G06C		
LAB FILE ID:	FG06003A	FG06004A	FG06005A		
DATE EXTRACTED:	07/23/0112:00	07/23/0112:00	07/23/0112:00	DATE COLLECTED:	NA
DATE ANALYZED:	07/23/0112:13	07/23/0112:26	07/23/0112:43	DATE RECEIVED:	07/23/01
PREP. BATCH:	DG10G06	DG10G06	DG10G06		
CALIB. REF:	FG06002A	FG06002A	FG06002A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethane	ND	25.2	27.3	108	25.2	28	111	3	50-150	20
Ethylene	ND	23.6	23.8	101	23.6	24.5	104	3	50-150	20
Methane	.367J	13.6	12.4	89	13.6	12.8	91	3	50-150	20

CASE NARRATIVE

CLIENT: **FOSTER WHEELER**

PROJECT: **CAMP PENDLETON, CTO 26, UST SITE 6/7**

SDG: ***01G107***

METHOD 9060
TOTAL ORGANIC CARBON

Four (4) water samples were received on 07/19/01 for TOC analysis by Method 9060 in accordance with "Test Method for Evaluating Solid Waste, Physical/Chemical Method" SW846 3rd ed.

1. Holding Time

   Analysis met holding time criteria.

2. Method Blank

   Method blank was free of contamination at reporting limit level.

3. Lab Control Sample

   Lab control result was within QC limit.

4. Duplicate

   No duplicate sample was analyzed for this SDG.

5. Sample Analysis

   Sample analyses were performed within QC requirements. All requirements were met.

METHOD 9060
TOC

Client : FOSTER WHEELER
Project : CAMP PENDLETON, CT026
Batch No. : 01G107

Matrix : WATER
Instrument ID : I026

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	TCG005WB	ND	1	NA	5	.551	08/03/0116:00	NA	TCG005W-07	TCG005W-05	TCG005W	NA	NA
LCS1W	TCG005WL	18.6	1	NA	5	.551	08/03/0116:10	NA	TCG005W-08	TCG005W-05	TCG005W	NA	NA
0026-198	G107-02	20.5	1	NA	5	.551	08/03/0118:35	NA	TCG005W-21	TCG005W-17	TCG005W	07/19/01	07/19/01
0026-199	G107-03	19.2	1	NA	5	.551	08/03/0118:45	NA	TCG005W-22	TCG005W-17	TCG005W	07/19/01	07/19/01
0026-200	G107-04	15.6	1	NA	5	.551	08/03/0118:55	NA	TCG005W-23	TCG005W-17	TCG005W	07/19/01	07/19/01
0026-201	G107-05	ND	1	NA	5	.551	08/03/0119:10	NA	TCG005W-24	TCG005W-17	TCG005W	07/19/01	07/19/01

RL : Reporting Limit

9008

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: FOSTER WHEELER
PROJECT: CAMP PENDLETON, CTO26
METHOD: METHOD 9060
MATRIX: WATER
% MOISTURE: NA

==========

BATCH NO.: 01G107
SAMPLE ID: LCS1W
CONTROL NO.: TCG005WL

DATE RECEIVED: NA
DATE EXTRACTED: NA
DATE ANALYZED: 08/03/01 16:10

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	LCS RSLT (mg/L)	LCS % REC	QC LIMIT (%)
TOC	ND	20	18.6	93	80-120

8007

APPENDIX C

NON-HAZARDOUS WASTE MANIFESTS

Please print or type
(Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CA[illegible]

Manifest Document No. [illegible]

2. Page 1 of 1

Generator's Name and Mailing Address [illegible]

4. Generator's Phone (760) 725-3360

5. Transporter 1 Company Name: M P Environmental Services

6. US EPA ID Number: CAT000622427 — 800 443 3026

7. Transporter 2 Company Name

8. US EPA ID Number

9. Designated Facility Name and Site Address: ONYX Environmental Svcs LLC, 1704 W 135th St, Azusa CA 91702

10. US EPA ID Number: CAD009202703

A. Transporter's Phone [illegible]

B. Transporter's Phone

C. Facility's Phone 626 334 4117

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. Non Hazardous Material (Non Hazardous TTW/Vol Waste)	001	TT	01750	G
b.				
c.				
d.				

Additional Descriptions for Materials Listed Above: [illegible] 11 A) 453350 (12 & 13 Area) 453240 C-171553

Please Bill MP Environmental for Disposal

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

[illegible] MP Environmental 800 443-3026

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name	Signature	Month	Day	Year
Eugene T Wood	[signature]	07	23	01

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
John T. Hart	[signature]	07	23	01

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year

GENERATOR → TRANSPORTER → FACILITY

12-BLS-C6 Rev 4/94