## FOURTH QUARTER 2005 GROUNDWATER MONITORING REPORT

Con-Way Western Express Facility 2200 Claremont Court Hayward, California

Prepared for:

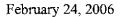
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Subject:

Fourth Quarter 2005 Groundwater Monitoring Report

Con-Way Western Express Facility

2200 Claremont Court Hayward, California Project No. 22872

Mr. Amir Gholami,

On behalf of CNF Inc. (CNF), Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) has prepared this report to address the results of the Fourth Quarter 2005 groundwater monitoring event at the Con-Way Western Express (CWX) facility located at 2200 Claremont Court, in Hayward, California (Site). On December 2, 2005, Burns & McDonnell performed quarterly well-gauging activities at 12 monitoring wells (GT-1 through GT-6, MW-1 through MW-5, and MW-7) and quarterly sampling activities at seven monitoring wells (GT-1, GT-2, GT-4, GT-6, MW-1, MW-2, and MW-7). In addition this report includes a plot of light non-aqueous phase liquid (LNAPL) thickness over time in well GT-1 and a graph to show petroleum hydrocarbon concentrations over time, as compared to groundwater elevations in wells GT-1, GT-2, GT-4, GT-6, and MW-2. Following a brief discussion of these results is a section on project summary and status, which includes recommendations for the 2006 calendar year.

#### 1.0 SITE DESCRIPTION

The Site is located within an industrial-zoned area at the intersection of Interstate Highway 880 and Industrial Boulevard, which is approximately 4 miles east of San Francisco Bay, as shown on Figure 1. The Site is relatively flat and is covered by asphalt pavement. An office building and loading docks are present within the central portion of the Site. A shop building is present within the northwest corner of

the Site. Former underground storage tanks (USTs) existed along the north and northeast sides of the shop building. The USTs were installed in 1969 and operations ceased in 1991. The USTs were taken out of service in 1991 and removed from the Site in 1994. New USTs were installed adjacent to the southwest corner of the shop building in 1992. The layout of the Site is shown on Figure 2.

The Site is currently being operated as a trucking/freight distribution and maintenance facility by CWX. The perimeter of the Site is used for facility operations and semi-trailer storage.

#### 2.0 SITE BACKGROUND

Since 1985, several phases of investigation, groundwater monitoring, and remedial activities have been performed at the Site. Investigation activities consisted of drilling and sampling programs, monitoring well installation, and laboratory analyses. Remedial activities consisted of the operation of a dual pump recovery system for light non-aqueous phase liquid (LNAPL) removal, UST removals, and the operation of an air sparging system.

In 1985, corrosion in a diesel fuel line resulted in a release of diesel into the subsurface (Blymyer Engineers, Inc., 1998). The diesel fuel line was replaced and a subsurface investigation was conducted. Kaldveer and Associates conducted the investigation, which included the installation of three monitoring wells (W-1 through W-3). The wells were installed adjacent to the USTs along the north side of the shop building. A LNAPL layer about 5 feet thick was observed in the wells.

In April 1985, Groundwater Technology Inc. (GTI) installed seven monitoring wells (GT-1 through GT-7), an extraction (recovery) well (RW-1), and a dual pump recovery system for LNAPL removal. The locations for wells GT-1 through GT-6 are shown on Figure 2. Between July 1985 and December 1989, the dual pump recovery system operated continuously and removed approximately 5,500 gallons of diesel.

In June 1988, GTI conducted a subsurface investigation to define the vertical and lateral extent of petroleum hydrocarbons in soil at the Site. Eight soil borings (B-1 through B-8) were drilled to depths of approximately 8 feet below ground surface (bgs) and soil samples were obtained for laboratory analyses.

In 1990, the LNAPL recovery system was shut down and repaired by Environmental Science and Engineering (ESE). Recovery system operations continued between July and December 1990. During September 1990, ESE also performed groundwater monitoring. Analytical results from the monitoring showed well GT-1 having total petroleum hydrocarbons as diesel (TPH-d) and benzene at concentrations of 1,000,000 micrograms per liter ( $\mu$ g/L) and 5.3  $\mu$ g/L, respectively. The groundwater flow direction was to the west. Less than one inch (0.06 feet) of LNAPL was observed in well GT-1.

In 1991, Blymyer drilled seven soil borings (SB-1 through SB-6 and SB-A) in preparation for the installation of a new UST system. The borings were advanced along the southwest side of the shop building. The USTs, located along the north side of the shop building, were emptied and taken out of service.

In 1992, a new UST system was installed adjacent to the southwest corner of the shop building. The LNAPL recovery system along the north side of the shop building was taken out of service.

In 1993, EA Engineering Science and Technology (EA) conducted a subsurface investigation to delineate the extent of impacted soil and groundwater beneath the Site. Twenty-eight soil borings (ESB-1 through ESB-28) were drilled to a depth of about 8.5 feet bgs. Five monitoring wells (MW-1 through MW-5) were installed to a depth of 20 feet bgs. These well locations are shown on Figure 2. Analytical results from this investigation indicated that impacted soil was present at depths between 4 and 9 feet bgs at concentrations up to 3,800 milligrams per kilogram (mg/kg) within a 100-foot radius around the north end of the shop building. The northernmost extent of impacted soil was reportedly undefined. Groundwater analytical results of the five monitoring wells showed the presence of dissolved petroleum hydrocarbons at concentrations up to 18,000  $\mu g/L$ . LNAPL was encountered in wells W-1, GT-1, and RW-1, with a maximum observed thickness of 0.04 feet. Groundwater flow was to the west and northwest.

In 1994, the seven USTs along the north and northeast sides of the shop building were removed. Upon excavation of two tank pits containing the USTs, five of the USTs were observed to have noticeable leaks and were stained with hydrocarbon product (Hydro-Environmental Technologies, Inc., 1994). LNAPL was observed within the tank excavations. Soil samples were obtained from two UST excavation sidewalls. Groundwater samples were obtained at locations within the tank pits where LNAPL was least observed. Analytical results showed the presence of TPH-d and oil and grease in soil and groundwater. Prior to backfilling the excavations, three air sparging wells (SW-1 through SW-3), two vapor extraction wells (VE-1 and VE-2), and one monitoring well (MW-6) were installed. The location for well MW-6 is shown on Figure 2. Wells RW-1, GT-7, and W-1 through W-3 were also demolished during this time frame.

Operation of the air sparging system commenced in December 1994. Dissolved oxygen measurements were obtained from the wells during monitoring events conducted in December 1994, June 1995, and August 1995. Groundwater samples were obtained from the wells and analyzed for TPH-d and benzene, toluene, ethylbenzene, and total xylenes (BTEX), as well as for nitrogen, phosphorus, and biological oxygen demand (BOD) to determine the amount of nutrients and oxygen available for aerobic metabolism and breakdown of the petroleum hydrocarbons. Analytical results showed that the TPH-d concentrations have decreased with time. Analytical results for nitrogen, phosphorus, and BOD also indicated that aerobic degradation might be inhibited due to the lack of nutrients and poor oxygen distribution in the subsurface. LNAPL was not observed in the wells.

In 1996, Clearwater Group, Inc. (CGI) prepared a *Workplan for Low Risk Site Classification*, which proposed shutdown of the air sparging system, as well as various other tasks. To establish the low risk classification for the Site, other tasks included a soil and groundwater investigation to confirm the remediation of LNAPL, monitoring groundwater conditions for indicators of natural attenuation, and performing a risk assessment relative to human health and the environment.

In January 1997, CGI discontinued operation of the air sparging system. In February 1997, the soil and groundwater investigation was conducted to establish baseline Site characteristics in order to demonstrate that the Site should be classified as low risk. The investigation consisted of drilling five soil borings

(CSB-1 through CSB-5) near well MW-2 and soil borings B-5, ESB-5, ESB-11, and ESB-13 (where the highest TPH-d concentrations in soil were detected) and performing groundwater sampling at existing monitoring wells. Soil samples were analyzed for TPH-d and polynuclear aromatics (PNAs). Groundwater samples were analyzed for the same constituents as those for soil, as well as for natural attenuation parameters. CGI requested that the Site be classified as low risk based upon the results of their investigation.

Quarterly monitoring activities were performed during 1997. Analytical results from the September and December 1997 events (after the air sparging system was shut down) showed that dissolved petroleum hydrocarbon concentrations may have increased in some of the wells (Blymyer, 1998).

CGI also conducted a sensitive receptor survey and risk assessment. The results of the risk assessment were presented in CGI's *Site Assessment Report*, dated May 29, 1997. The risk assessment was based upon the analytical data obtained while the air sparging system was still in operation (Blymyer, 1998).

In September 1998, Blymyer retained Blaine Tech Services, Inc. to conduct quarterly monitoring and sampling of twelve wells, including wells MW-1 through MW-6 and GT-1 through GT-6. Groundwater samples from the wells were analyzed for TPH-d. Wells GT-1 and GT-4 were also sampled for PNA analyses. A petroleum-hydrocarbon sheen was noted in five of the monitoring wells. No measurable thickness of LNAPL was noted in any of the wells. Analytical results showed the presence of TPH-d in seven wells at concentrations ranging between 87 and 32,000 µg/L. PNAs were detected in well GT-1 only. Groundwater flow was to the northwest.

In early 2002, Burns & McDonnell initiated groundwater monitoring activities at the Site. Over the course of several groundwater monitoring events, a thin layer (i.e. <0.1 feet) of LNAPL petroleum was measured in well GT-1 (Figure 2). In a letter dated November 12, 2002, the ACHCSA requested analyses of future groundwater samples for BTEX and methyl tert-butyl ether (MTBE) until trends could be established for these compounds. As a result, an amendment to the groundwater monitoring program was made to include analyses for BTEX and MTBE in historically hydrocarbon-impacted monitoring wells only. The ACHCSA also indicated that wells that were historically free of detectable petroleum

hydrocarbon compounds could be excluded from future monitoring events. Additionally, the ACHCSA requested the implementation of interim measures to mitigate the limited LNAPL previously detected in GT-1.

In a letter dated November 3, 2002, the ACHCSA provided comments on the groundwater monitoring efforts that occurred up to that date and the project status.

In early 2003, Burns & McDonnell deployed a passive LNAPL absorbent pad in GT-1. At the end of each quarter-year interval, LNAPL recovery and thickness data are evaluated to determine if shorter or longer maintenance intervals are warranted. Currently, the LNAPL absorbent pad is replaced on a quarter-year interval, and, as a result, LNAPL has not been measured in GT-1 since February 2003. As proposed in the *Fourth Quarter 2004 Groundwater Monitoring Report* (Burns & McDonnell, March 2005), Burns & McDonnell has requested that the use of the LNAPL absorbent pad be discontinued.

In May 2003, Burns & McDonnell supervised the installation of an additional monitoring well (MW-7) located downgradient of GT-1. Analysis of groundwater samples from MW-7 indicates that the downgradient extent of the dissolved-phase diesel plume is adequately delineated.

#### 3.0 FIELD ACTIVITIES

#### 3.1 Groundwater Monitoring Program

In accordance with the ACHCSA letter dated November 12, 2002, Burns & McDonnell included BTEX and MTBE analyses for groundwater samples. Additionally, Burns & McDonnell proposed to reduce the monitoring frequency of wells where contaminant analyses have historically been below detectable levels. However, TPH-d was detected in well MW-1 in February 2003 and also in February 2004 at concentrations of 210  $\mu$ g/L and 170  $\mu$ g/L, respectively. As a result, MW-1 has been included in ongoing quarterly groundwater sampling since the Third Quarter 2003 sampling event. The following table summarizes the revised groundwater monitoring schedule:

#### **GROUND WATER MONITORING SCHEDULE**

Well	First Quarter '05	Second Quarter '05	Third Quarter '05	Fourth Quarter '05	Notes
GT-1	DTW, TPHd,	DTW, TPHd,	DTW, TPHd,	DTW, TPHd,	Diesel impacted well
	BTEX, MTBE, PNAs	BTEX, MTBE, PNAs	BTEX, MTBE, PNAs	BTEX, MTBE, PNAs	
GT-2	DTW, TPHd,	DTW, TPHd,	DTW, TPHd,	DTW, TPHd,	Diesel impacted well
	BTEX, MTBE	BTEX, MTBE	BTEX, MTBE	BTEX, MTBE	
GT-3	DTW, TPHd,	DTW	DTW	DTW	Well historically free
	BTEX, MTBE				of diesel impact
GT-4	DTW, TPHd,	DTW, TPHd,	DTW, TPHd,	DTW, TPHd,	Diesel impacted well
	BTEX, MTBE, PNAs	BTEX, MTBE, PNAs	BTEX, MTBE, PNAs	BTEX, MTBE, PNAs	
GT-5	DTW, TPHd,	DTW	DTW	DTW	Well historically free
	BTEX, MTBE				of diesel impact
GT-6	DTW, TPHd,	DTW, TPHd,	DTW, TPHd,	DTW, TPHd,	Diesel impacted well
	BTEX, MTBE	BTEX, MTBE	BTEX, MTBE	BTEX, MTBE	
MW-1	DTW, TPHd,	DTW, TPHd,	DTW, TPHd,	DTW, TPHd,	Will be monitored for
	BTEX, MTBE	BTEX, MTBE	BTEX, MTBE	BTEX, MTBE	trends
MW-2	DTW, TPHd,	DTW, TPHd,	DTW, TPHd,	DTW, TPHd,	Diesel impacted well
	BTEX, MTBE	BTEX, MTBE	BTEX, MTBE	BTEX, MTBE	
MW-3	DTW, TPHd,	DTW	DTW	DTW	Well historically free
	BTEX, MTBE				of diesel impact
MW-4	DTW, TPHd,	DTW	DTW	DTW	Well historically free
	BTEX, MTBE				of diesel impact
MW-5	DTW, TPHd,	DTW	DTW	DTW	Well historically free
	BTEX, MTBE				of diesel impact
MW-7	DTW, TPHd,	DTW, TPHd,	DTW, TPHd,	DTW, TPHd,	Diesel impacted well.
	BTEX, MTBE	BTEX, MTBE	BTEX, MTBE	BTEX, MTBE	

DTW = depth to water measurement

TPHd = total petroleum hydrocarbons as diesel by EPA Method 8015M (reanalyzed after silica-gel clean-up if initially detected)

BTEX = benzene, toluene, ethyl-benzene, and xylenes by EPA Method 8021B

 $MTBE = methyl \ tent-butyl \ ether \ by \ EPA \ Method \ 8021B \ (confirmed \ by \ EPA \ Method \ 8260B \ if \ needed).$ 

PNAs = polynuclear aromatic compounds by EPA Method 8310.

#### 3.2 Groundwater Level Measurements

On December 2, 2005, static groundwater level measurements were obtained at 12 monitoring wells (wells GT-1 through GT-6, MW-1 through MW-5, and MW-7). Prior to obtaining groundwater level measurements, the well caps from each wellhead were removed in order for the water levels to reach static equilibrium. For well GT-1, the SoakEase<sup>TM</sup> absorbent pad was removed and the static water level was allowed to equilibrate prior to measurement. For each well, the depth to groundwater and LNAPL, if present, were measured from a reference point at the top of each well casing using an electronic interface probe. Measurements were recorded to the nearest 0.01 feet. Prior to measuring groundwater levels in the monitoring wells, the measuring tape of the interface probe was washed in an Alconox/water solution and rinsed with deionized water. Groundwater level measurements and LNAPL, if present, were recorded on the Groundwater Monitoring Field Data Sheet and Groundwater Sampling Forms, which are provided in Appendix A.

#### 3.3 Groundwater Purging and Sampling

On December 2, 2005, groundwater sampling activities were performed at seven monitoring wells (GT-1, GT-2, GT3, GT-6, MW-1, MW-2 and MW-7).

Prior to groundwater purging, the volume of standing water inside each monitoring well was calculated using the groundwater level measurements and measured well depths. The monitoring wells were purged using new, disposable, polyethylene bailers. During purging, water quality parameters; including pH, electrical conductivity, and temperature, were monitored and recorded on the Groundwater Sampling Forms (Appendix A). Water quality parameters were measured after each well purge volume was removed.

Groundwater samples were collected after a minimum of three well volumes was purged, and the water quality parameters had stabilized to within allowable ranges during the well purging process. Groundwater samples were collected using the disposable polyethylene bailers and a representative aliquot was then dispensed into laboratory-supplied sample containers. The sample containers were

labeled and placed on crushed ice inside an insulated ice chest for transport to the analytical laboratory. Chain-of-custody documentation was prepared and accompanied the samples to the analytical laboratory. A duplicate sample, designated DUP-1 was also collected from well GT-4 as a quality assurance / quality control sample (QA/QC).

Field measurements and observations noted during sampling were recorded on the Groundwater Sampling Forms (Appendix A). Purged groundwater was placed into 55-gallon barrels, which were then labeled, sealed, and stored along the north side of the shop building awaiting transportation and disposal at an appropriate facility.

#### 3.4 Laboratory Analyses

Groundwater samples were analyzed by Curtis and Tompkins, Ltd. of Berkeley, California, a California-state certified laboratory. All groundwater samples were analyzed for TPH-d by EPA Method 8015M, as well as BTEX and MTBE by EPA Method 8260B. If TPH-d was detected, the silica gel clean-up procedure (EPA Method 3630C) was used to remove naturally occurring polarized organic compounds from the sample prior to TPH-d quantitation, and the sample was re-analyzed for TPH-d. Additionally, the samples designated GT-1, GT-4, and DUP-1 were analyzed for PNAs by EPA Method 8310. Chain-of-custody documentation and laboratory analytical reports are provided in Appendix B.

#### 3.5 Removal & Replacement of LNAPL Sorbent Pad in GT-1

On December 2, 2005, Burns & McDonnell removed a used passive LNAPL collection absorbent pad (SoakEase<sup>TM</sup> brand) in GT-1. The SoakEase<sup>TM</sup> system consists of a three-foot long stainless steel screened container, which holds a hydrophobic LNAPL absorbent pad. Each pad has a total LNAPL capacity of approximately 3 liters (according to supplier product data sheets).

The SoakEase<sup>TM</sup> canister is suspended from the top of the well such that the lower half of the canister intersects the LNAPL layer, if present. During each monitoring event, the SoakEase<sup>TM</sup> unit is removed from GT-1, the static water level in the well is allowed sufficient time to equilibrate, and the depth to

LNAPL, if present, and groundwater is measured accurate to within  $\pm 0.01$ -foot. The absorbent pad is then visibly evaluated for collection of LNAPL and replaced with a new SoakEase<sup>TM</sup> unit, as needed, in the same manner described above.

The used LNAPL collection absorbent pad is placed in a 30-gallon steel drum contained by a protective steel overpack drum, which is then labeled, sealed, and stored along with the purge water drums for transport and disposal at an appropriate facility.

#### 4.0 FINDINGS

#### 4.1 Hydrogeologic Conditions

Groundwater level measurement data were used to assess the flow direction and gradient for monitoring wells screened within the uppermost water-bearing zone beneath the Site. Groundwater elevation data are presented in Table 1. Groundwater elevation contours (as measured on December 2, 2005) are shown on Figure 3.

During the December 2, 2005 monitoring event, the depth to groundwater ranged between 6.35 and 7.19 feet below the top of casing (TOC) at each wellhead. Groundwater elevations ranged from -0.53 feet to 0.21 feet relative to mean sea level, showing a difference in elevation of about 0.74 feet across the Site. Groundwater flow this quarter was generally toward the northwest, at an average gradient of 0.002 feet per foot.

#### 4.2 Groundwater Analytical Results

Following use of the silica-gel clean-up procedure, TPH-d was detected in five of the seven groundwater samples analyzed this quarter. Detectable TPH-d concentrations ranged from 420  $\mu$ g/L (MW-2) to 24,000  $\mu$ g/L (GT-4). The BTEX compounds ethylbenzene and xylene were detected at concentrations of 12  $\mu$ g/L and 11  $\mu$ g/L, respectively in GT-1. Both results were flagged with a "C" qualifier, indicating presence of the compound was confirmed in the sample, but the actual concentration is a laboratory

estimate. No other BTEX or MTBE compounds were detected in any of the samples in concentrations exceeding the method reporting limit.

Groundwater samples from wells GT-1 and GT-4 were also analyzed for concentrations of PNAs. Thirteen PNA compounds were detected in the GT-1 sample, including acenaphthene at a concentration of 11 µg/L, fluorene at a concentration of 14 µg/L, phenanthrene at a concentration of 36 µg/L, anthracene at a concentration of 1.1 µg/L, fluoranthene at a concentration of 1.5 µg/L, pyrene at a concentration of 5.4 µg/L, benzo (a) anthracene at a concentration of 3.7 µg/L, chrysene at a concentration of 4.9 µg/L, benzo (k) fluoranthene at a concentration of 0.18 µg/L, benzo (a) pyrene at a concentration of 0.18 µg/L, dibenz (a,h) anthracene at a concentration of 0.23 µg/L, benzo (g,h,i) perylene at a concentration of 0.25 µg/L, and indeno (1,2,3-cd) pyrene at a concentration of 0.13 µg/L. No other PNA constituents were detected in the sample at concentrations exceeding the method reporting limit.

Eleven compounds were detected in the GT-4 sample, including acenaphthene at a concentration of 4.9  $\mu$ g/L, fluorene at a concentration of 8.7  $\mu$ g/L, phenanthrene at a concentration of 5.3  $\mu$ g/L, anthracene at a concentration of 1.1  $\mu$ g/L, fluoranthene at a concentration of 10  $\mu$ g/L, pyrene at a concentration of 7.0  $\mu$ g/L, benzo (a) anthracene at a concentration of 2.3  $\mu$ g/L, chrysene at a concentration of 3.5  $\mu$ g/L, benzo (b) fluoranthene at a concentration of 0.33  $\mu$ g/L, benzo (k) fluoranthene at a concentration of 0.16  $\mu$ g/L, dibenz (a,h) anthracene at a concentration of 0.38  $\mu$ g/L. No other PNA constituents were detected in the sample at concentrations exceeding the method reporting limit.

TPH-d concentrations were detected in wells GT-4, GT-1, GT-6, GT-2, and MW-2 located on the northwest and northeast sides of the shop building, as shown on Figure 4. The extent of TPH-d impact to groundwater is also illustrated on Figure 4 and shows that the chief impact to groundwater appears localized to the former source area and that the downgradient edge of the petroleum hydrocarbon plume extends toward MW-1, MW-2, and MW-7. TPH-d and PNA analytical results are shown in Tables 1 and 2, respectively. Copies of the laboratory analytical results for groundwater samples are provided in Appendix B.

Following removal of the absorbent pad, no LNAPL was measured in GT-1 during the December 2, 2005 monitoring event using the electronic oil/water interface probe. However, petroleum-hydrocarbon sheens were observed within monitoring wells GT-2 and GT-4, and small amounts of floating product were observed within monitoring wells GT-1 and GT-6 during well-gauging and sampling activities. The used SoakEase<sup>TM</sup> unit for December 2, 2005 monitoring event was discolored and had absorbed approximately 50 ml of LNAPL.

#### 5.0 LNAPL & CONSTITUENT CONCENTRATION TRENDS

Since its initial deployment in February 2003, the SoakEase<sup>TM</sup> absorbent pad seems to have successfully mitigated LNAPL in GT-1. As Figure 5 shows, measured LNAPL thickness in GT-1 has been reduced from 0.05 feet (November 2002) to no measurable thickness over the last thirteen consecutive monitoring events. As requested by the ACHCSA, a passive technology (i.e. passive skimmer or absorbent-pad) will be deployed in well GT-1 until LNAPL has been successfully reduced to <0.01 feet of measurable thickness. Since no measurable LNAPL has been recorded in GT-1 for the past three years (except for a light sheen), Burns & McDonnell suggests that the LNAPL has been successfully remediated at the Site, and recommends that use of the passive skimmer be discontinued. Should measurable LNAPL reappear in GT-1, the passive skimmer will be immediately re-deployed in order to mitigate the LNAPL.

Groundwater at the Site has been analyzed for TPH-d, BTEX, and one fuel oxygenate: MTBE. TPH-d and BTEX chemical constituent analyses have been performed on groundwater samples collected from Site monitoring wells intermittently since August 1990. For 2005, TPH-d analysis was completed on all 12 monitoring wells for the First Quarter groundwater sampling event of the year, and seven wells for the second, third, and fourth quarters. Likewise, BTEX and MTBE analyses were also completed on the same number of monitoring wells for each of these groundwater sample events.

For the most part, groundwater elevations plotted from December 1, 1996 through December 2, 2005 show peaks and valleys that appear consistent with seasonal fluctuations for precipitation (over the course of an average year in the Bay Area). In general, groundwater elevations are highest in the spring/early summer months and lowest in the fall/early winter months. Figure 6 shows an average groundwater

elevation of the key wells, noting that the highest groundwater elevation occurred in the Second Quarter of 2005 and the lowest groundwater elevations were noted in the Fourth Quarter of 2002. As also illustrated on Figures 6, concentrations of TPHd for wells MW-1 and MW-2, when compared to groundwater elevations measured in these wells on the same day as for the groundwater sampling, have both shown generally consistent trends. This trend is expected to continue or decline slightly in 2006. In addition, the possible relationship between fuel concentrations and groundwater elevations will be monitored for future trends in the upcoming year.

Historically, BTEX compounds have been sporadically detected in groundwater samples from wells GT-1, GT-2, GT-4, GT-6, and MW-2. For 2005, only one well (GT-1) had detectable levels in one quarter (December 2005) with concentrations (for total BTEX) at 23 μg/L. As reported previously, however, no benzene detections have occurred since April 1993 (well GT-4), suggesting that in-situ biodegradation has likely occurred in the subsurface and seems to have effectively removed any benzene compounds.

MTBE analysis of groundwater was initiated at all the monitoring wells in February 2003, with MTBE detections occurring in only one well, MW-2, at concentrations ranging from 3.3  $\mu$ g/L (February and June, 2004) to 1.8  $\mu$ g/L (May 2003). Consistent with previous years, MTBE was detected in MW-2 in February 2005 at a concentration of 2.1  $\mu$ g/L. Since that time, MTBE has not been detected at the Site.

Of the analytes tested, TPH-d is the predominant constituent of concern that is consistently detected, followed to a far lesser degree by PNAs, MTBE, and BTEX compounds. Figure 6 highlights concentration trends of TPH-d over time and groundwater fluctuations, in wells that have had historical detections, including MW-2, GT-1, GT-2, GT-4, and GT-6. As indicated on Figure 6, some data gaps are present since the Site monitoring wells were not sampled between the summer of 1995 and the winter of 1997 and between the fall of 1998 and the winter of 2002. As stated earlier, well GT-1 was not sampled between June 2002 and February 2003 due to the presence of measurable LNAPL.

Despite these data gaps, lines can be extrapolated between concentration data points, allowing for an interpretation of concentration trends vs. time (Figure 6). 2004 results did show a slight increase of TPH-d concentrations (as compared to the previous year) for wells GT-1, GT-2, and GT-4. However in 2005,

concentrations appeared to be declining again, with the exception of GT-1. MW-2 has continued to show a steady declining trend.

As Figure 6 shows, the historically most-impacted monitoring well at the Site, GT-1, had TPH-d concentrations that dropped from a peak of 240,000 μg/L (December 1997) to a low of 4,200 μg/L (November 2003). Prior to 1997, the highest concentration in GT-1 was 1,000,000 μg/L, as detected in September 1990. In 2005, the TPH-d concentrations in GT-1 appeared to be on the downward trend with a new low of 3,400 μg/L (February 2005). Although qualified as an estimate, TPH-d spiked to a near historical high in May 2005 at a concentration of 190,000 μg/L. Since the second quarter though, concentrations have been dropping steadily to pre-2004 levels with a concentration of 5,900 μg/L by December 2005.

For GT-2, the TPH-d concentration rose slightly in 2005 from 5,700  $\mu$ g/L (February 2005) to 12,000  $\mu$ g/L by the later part of the year (December 2005). Overall these concentrations have decressed as compared to 2004 and still fall well below the peak concentration of 55,000  $\mu$ g/L, detected in December 1997.

TPH-d concentrations in GT-4 ranged from 2,800  $\mu$ g/L (February 2005) to 24,000  $\mu$ g/L (December 2005), showing a decrease in comparison to 2004, which reported the second highest historical detection at 44,000  $\mu$ g/L (February 2004). The highest TPH-d detection for GT-4 was 55,200  $\mu$ g/L, as detected in March 2002.

For GT-6, TPH-d concentrations for 2005 appear to be holding steady in comparison to 2004, with concentrations ranging from 2,800  $\mu$ g/L (February 2005) to 12,000  $\mu$ g/L (May 2005). The recent monitoring event reported a concentration of TPH-d for GT-6 at 4,600  $\mu$ g/L. These concentrations show a significant decrease from a peak of 180,000  $\mu$ g/L (December 1997) detected in GT-6. Well MW-2 reported TPH-d concentrations of 210  $\mu$ g/L (February 2005) to 70  $\mu$ g/L (August 2005). The recent monitoring event reported a rise in concentration of TPH-d to 420  $\mu$ g/L, which is below the December 1997 high of 860  $\mu$ g/L.

In addition, since February 1997, groundwater samples from wells GT-1 and GT-4 have been analyzed for PNAs, with detections specifically of naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, benzo(b)fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(b)fluoranthene, dibenz(a,h)anthracene, and benzo(g,h,i)perylene. In general, the distribution of PNA compounds detected in well GT-1 from 1997 to present are as follows:

- Napthalene detections have ranged from 360 μg/L (September 1997) to non-detect (all of 2005);
- Fluorene detections have ranged from 330 μg/L (September 1997) to 1.7 μg/L (May 2005);
- Fluoranthene detections have ranged from 820 μg/L (September 1997) to 0.74 μg/L (May 2005);
- Pyrene detections have ranged from 1,900 μg/L (September 1997) to 0.96 μg/L (May 2005);
- Phenanthrene detections have ranged from 700 μg/L (September 1997) to 1.7 μg/L (February 2005);
- Benzo(a)anthracene detections have ranged from 380 μg/L (April 1997) to non-detect (September 2005);
- Chrysene detections have ranged from 300 μg/L (April 1997) to non-detect (September 2005);
- Benzo(b)fluoranthene detections have ranged from 6.7 μg/L (March 2002) to non-detect (December 2005);
- Benzo(k)fluoranthene detections have ranged from 20 μg/L (March 2002) to non-detect (September 2005);
- Benzo(a)pyrene detections have ranged from 0.11 μg/L (August 2003) to non-detect (February 2005);
- Dibenz(a,h)anthracene detections have ranged from 0.24 μg/L (August 2003) to non-detect (February 2005);
- Anthracene detections have shown up more recently and have ranged from a concentration of 1.5 μg/L (September 2004) to 0.16 μg/L (May 2005); and
- Benzo(g,h,i)perylene detections have shown up more recently and have ranged from a concentration
   0.26 μg/L (November 2004) to 0.20 μg/L (September 2005).

Acenaphthylene has been detected once only in GT-1, at a concentration of 140  $\mu$ g/L (August 1997). Acenaphthene has been detected three times, at a concentration of 2.0  $\mu$ g/L (February 1997), 5.4  $\mu$ g/L (March 2002), and 11  $\mu$ g/L (December 2005). Indeno(1,2,3-cd)pyrene has as been detected once only at

a concentration of  $0.13 \mu g/L$  (December 2005). Measurable LNAPL (>0.01 feet) was detected in well GT-1 from June 2002 to February 2003, therefore no groundwater analytical data was collected during this period.

For well GT-4, the distribution of PNAs detected in groundwater from 1997 to present is as follows:

- Fluorene detections have ranged from 17 μg/L (September 1997) to 0.41 μg/L (May 2003);
- Phenanthrene detections have ranged from 10 μg/L (September 1997) to 0.29 μg/L (May 2003);
- Acenaphthene detections have ranged from 1 μg/L (November 2002) to 4.9 μg/L (December 2005);
- Anthracene detections have ranged from 18 μg/L (September 1997) to 0.12 μg/L (December 2005);
- Fluoranthene detections have ranged from 23 μg/L (April 1997) to 0.19 μg/L (May 2003);
- Pyrene detections have ranged from 34 μg/L (September 1997) to 0.23 μg/L (May 2003);
- Benzo(a)anthracene detections have ranged from 24 μg/L (September 1997) to 0.21 μg/L (September 2004);
- Chrysene detections have ranged from 4 μg/L (September 1997) to 0.18 μg/L (August 2005);
- Benzo(b)fluoranthene detections have ranged from 3 μg/L (April 1997) to 0.23 μg/L (November 2003);
- Benzo(k)fluoranthene detections have ranged from 0.25 μg/L (August 2002) to 0.16 μg/L (December 2005); and
- Dibenz(a,h)anthracene have ranged from 0.35 μg/L (August 2003) to 1.20 μg/L (February 2004).

Acenaphthylene has been detected twice only in GT-4, at a concentration of 3.2 μg/L (March 2002) and 3.3 μg/L (February 2003). Benzo(a)pyrene has been detected once only, at a concentration of 0.10 μg/L (November 2002). Benzo(g,h,i)perylene have been detected once only, at a concentration of 0.29 μg/L (February 2004). No naphthalene or indeno(1,2,3-cd)pyrene has ever been detected in GT-4.

#### 6.0 SUMMARY AND PROJECT STATUS

Due to a very low volume of LNAPL within the SoakEase™ absorbent pad and no measurable LNAPL thickness within GT-1 over the last twelve quarterly sampling events, Burns & McDonnell proposed to

discontinue using the absorbent pad over the next calendar year in the *Fourth Quarter 2004 Groundwater Monitoring Report* (Burns & McDonnell, March 2005). The SoakEase<sup>TM</sup> absorbent pad will be removed from GT-1 in the First Quarter 2006 sampling event. If during any quarterly monitoring event, measurable product is noted in the GT-1, GT-2, GT-4 and GT-6 wells, absorbent pads may be added to mitigate LNAPL petroleum.

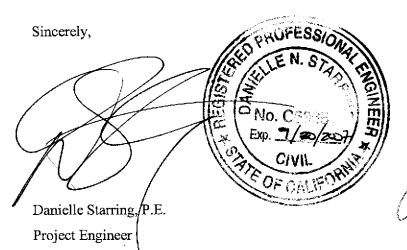
Results from the 2005 groundwater sampling events have shown a little change since 2004 in dissolved phase petroleum-hydrocarbons in the wells monitored with the exception of GT-1 (highest level since December 1997), while PNA concentrations increased in GT-4 and GT-1. Of notable observation, groundwater elevations in 2005 reached historical highs (May 2005) and lows over the Site, including a drop of nearly a foot for all twelve monitoring points during the August/September 2005 sampling event. These extreme changes have likely caused the groundwater to interact with TPH-d impacted soil in the vadose zone released a slug of TPH-d, leading to the increase of TPH-d concentrations. PNA concentrations have decreased by two to four orders of magnitude since 1997, reflecting the overall decline in chemical concentrations in groundwater at the Site. Slight fluctuations in the various constituent concentrations are believed to be attributable to chemical degradation and natural attenuation.

Groundwater monitoring of the Site monitoring wells will continue on a quarterly basis for 2006 as defined in the revised groundwater monitoring schedule that was implemented beginning with the 2004 calendar year. The SoakEase<sup>TM</sup> absorbent pad will be removed from GT-1, but LNAPL thickness will continue to be monitored.

#### 7.0 REFERENCES

- Blymyer Engineers, Inc., 1998, Groundwater Monitoring Report, Third Quarter 1998, report prepared for CNF Transportation, Inc. dated December 2, 1998.
- Clearwater Group, Inc., 1996, Workplan for Low-Risk Site Classification, report prepared for Blymyer Engineers, Inc. dated August 1, 1996.
- Clearwater Group, Inc., 1997, Soil and Groundwater Investigation, report prepared for Blymyer Engineers, Inc. dated June 17, 1997.
- Clearwater Group, Inc., 1997, Groundwater/Natural Attenuation Monitoring Report, Third Quarter 1997, report prepared for Blymyer Engineers, Inc. dated December 3, 1997.
- Clearwater Group, Inc., 1998, Groundwater and Natural Attenuation Monitoring Report, Fourth Quarter 1997, report prepared for Blymyer Engineers, Inc. dated February 28, 1998.
- EA Engineering, Science, and Technology, 1993, Report of Soil and Groundwater Investigation, Con-Way Western Express, 2200 Claremont Court, Hayward, California, report prepared for Con-Way Western Express, c/o Blymyer Engineers, Inc. dated June 1993.
- Hydro-Environmental Technologies, Inc., 1994, Soil and Groundwater Sampling and Well Installation Report for Underground Storage Tank Removal, report prepared for Con-Way Western Express dated October 20, 1994.
- Hydro-Environmental Technologies, Inc., 1995, Quarterly Monitoring Report for Second Quarter 1995, report prepared for Con-Way Western Express dated October 3, 1995.

If you have any questions or comments regarding this report, please call any of the undersigned at (650) 871-2926.



Gary P. Messerotes, P.G.

Program Manager

#### Attachments:

Table 1	Summary of Groundwater Elevations and TPH-d, BTEX, and MTBE Data
Table 2	Summary of Groundwater PNA Data
Figure 1	Site Location Map
Figure 2	Site Plan
Figure 3	Groundwater Elevations – Fourth Quarter 2005
Figure 4	Extent of TPH as Diesel in Groundwater – Fourth Quarter 2005
Figure 5	Measured Thickness of LNAPL in Well GT-1 vs. Time
Figure 6	Concentrations of TPH-d in Wells MW-2, GT-1, GT-2, GT-4, and GT-6 vs. Time
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Appendix A	Groundwater Monitoring Field Data Sheet and Groundwater Sampling Forms
Appendix B	Chain of Custody Documentation and Analytical Reports
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cc:

Greg Tonkin, CNF Inc. Burns & McDonnell File Copy

Well <u>No.</u>	Sample <u>Date</u>	TOC (ft MSL)	DTW (ft)	GWE (ft.MSL)	LNAPL (feet)	TPHd (#g/L)	В ( <u>µalL)</u>	(# <b>a</b> / <b>r</b> )	E (#g/L)	Χ (μg/L)	MTBE (µg/L)
W-1	09/12/90	100.92	7.70	93.22		-	_	_		-	-
	04/09/93	100.92	5.50	95.42	-	-	-	-	-	-	-
	04/30/93	100.92	5.83	95.09	-	-	-	-	-	-	-
					-	-	-	-	-	-	•
W-2	09/12/90	101.01	7.80	93.21	-	-	-	-	-	-	-
	04/09/93 04/30/93	101.01 101.01	5.54 5.88	95.47 95.13	-	-	-	-	-	_	-
	04/00/30	101.01	5.00	85.15	-	-	-	_	_	-	
W-3	09/12/90	101.04	7.89	93.15	-	-	-	-	-	-	-
	04/09/93	101.04	5.56	95.48	-	-	-	-	-	-	-
	04/30/93	101.04	5.90	95.14	-	-	-	-	-	-	•
GT-1	09/12/90	100.00	6.80	93.20	0.06	1,000,000	5.3	<0.5	<0.5	<0.5	-
	04/09/93	100.00	4.48	95.52	0.04	-		-	-	-	-
	04/30/93	100.00	4.94	95.06	0.04			-	-	-	-
	06/29/95	100.00	5.38	94.62	0.00	8,700	<0.5	<0.5	<0.5	<0.5	-
	02/25/97	100.00	4.71	95.29	0.00	22,000	<0.5	<0.5	< 0.5	<0.5	-
	04/24/97	100.00	5.39	94.61	0.00	-	-	-	-	-	-
	08/27/97	100.00	6.04	93.96	0.00	-	-	-	•	-	-
	12/04/97	100.00	5.25	94.75	0.00	-	<1.0	<1.0	- <1.0	<4.0	-
	12/05/97 09/29/98	100.00 100.00	6.75	93.25	0.00	240,000 32,000	<0.5	<0.5	<0.5	<0.5	
	03/07/02	100.00	5.32	94.68	-	47,600	-0.0	-0.0	-	-	_
	06/03/02	5.89	6.03	-0.081	0.07	-	_	-	-	-	_
	08/12/02	5.89	6.27	-0.35 <sup>1</sup>	0.04	-	-		-	-	-
	11/04/02	5.89	6.70	-0.81 <sup>1</sup>	0.05	-	-	-	-	-	-
	02/03/03	5.89	5.50	0.371	0.02	-	-	-	-	-	-
	05/13/03	5.89	5.02	0.87	0.00	15,000*	<0.5	<0.5	<0.5	<0.5	<0.5**
	08/05/03	5.89	6.01	-0.12	0.00	9,100*	<0.5	<0.5	<0.5	<0.5	<0.5**
	11/05/03 02/24/04	5.89 5.89	6.50 5.07	-0.61 0.82	0.00 00.0	4,200* 36,000*	<1 <0.5	<1 <0.5	<1 <0.5	<1 5.9 C	<2.0** <2.0**
	05/26/04	5.89	6.09	-0.20	Sheen	30,000	-0.5	~0.0	~0.0	-	-20
	06/24/04	5.89	6.31	-0.42	Sheen	52,000°	<0.5	<0.5	<0.5	<0.5	<2.0
	08/31/04	5.89	6.50	-0.61	Sheen	28,000*	< 0.5	<0.5	<0.5	<0.5	<2.0
	11/03/04	5.89	5.66	0.23	Sheen	42,000*	<1	<1	<1	<1	<2.0**
	02/23/05	5.89	4.46	1.43	Sheen	3,400*	<0.5	<0.5	<0.5	<0.5	<2.0
	05/09/05	5.89	5.16	0.73	Sheen	190,000*J	<0.5	<0.5	<0.5	<0.5	<2.0
	08/31/05	5.89	6.38	-0.49	Sheen	14,000° J	<0.5	<0.5	< 0.5	<0.5	<2.0
	12/02/05	5.89	6.42	-0.53	Sheen	5,900*	<0.5	<0.5	12 C	11 C	<2.0
GT-2	09/12/90	100.88	7.60	93.28	Sheen	13,000	<0.5	<0.5	<0.5	<0.5	-
	04/09/93	100.88	5.35	95.53	0.00	2,400	<0.5	0.9	<0.5	<0.5	-
	04/30/93 06/30/95	100.88 100.88	5.61 5.87	95.27 95.01	0.00	3,900 Y	- <0.5	- <0.5	- <0.5	- <0.5	•
	08/27/97	100.88	6.56	94.32	0.00	4,540 1	-0.5	-0.0	-0.0	-0.5	-
	12/04/97	100.88	5.66	95.22	0.00	55,000	-	_	-	-	-
	09/29/98	100.88	6.91	93.97	-	1,900	<0.5	<0.5	<0.5	<0.5	-
	03/06/02	100.88	-	-	0.00	-	-	-	-	-	-
	06/03/02	6.74	6.37	0.37	0.00	46,000* H	٠	-	-	-	-
	08/12/02	6.74	6.67	0.07	0.00	8,100*	-	-	-	-	-
	11/04/02	6.74	7.15	-0.41	0.00	8,200*H	-0.5	-0.5	-0.5	-0.5	<2.0
	02/03/03 05/13/03	6.74 6.74	5.82 5.54	0.92 1.20	0.00 0.00	8,700* 3,500*	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5**
	08/05/03	6.74	6.60	0.14	0.00	7,700*H	<0.5	<0.5	<0.5	<0.5	<2.0
	11/05/03	6.74	7.02	-0.28	0.00	390*Y	<1	<1	<1	<1	<2.0**
	02/24/04	6.74	5.53	1.21	0.00	2,300*	<0.5	<0.5	<0.5	<0.5	<2.0**
	05/26/04	6.74	6.54	0.20	0.00	2,300*	-	-	-	-	-
	06/24/04	6.74	6.72	0.02	0.00	22,000* H	<0.5	<0.5	0.92 C	<0.5	<0.5**
	08/31/04	6.74	6.97	-0.23	Sheen	12,000° H	<0.5	<0.5	<0.5	<0.5	<2.0
	11/02/04	6.74	6.22	0.52	Sheen	24,000*	<1	<1 -0.5	<1 <0.5	<1 <0.5	<2.0**
	02/23/05	6.74 8.74	4.82 5.43	1.92	0.00 Sheen	5,700 H* 5,200*	<0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5** <2.0
	05/09/05 08/31/05	6.74 6.74	5.43 6.53	1.31 0.21	Sheen Sheen	8,700* H	<0.5 <0.5	<0.5	<0.5	<0.5	<2.0
	12/02/05	6.74	6.75	-0.01	Sheen	12,000* H	<0.5	<0.5	<0.5	<0.5	<2.0
				<del>-</del> -		''					

Well	Sample	тос	DTW	GWE	LNAPL	TPHd	В	т	E	x	MTBE
No.	Date	(ft MSL)	(ft)	(ft MSL)	(feet)	(µ g/L)	(µg/L)	( <u>µg/L)</u>	(µg/L)	(µg/L)	(µg/L)
GT-3	09/12/90	100.23	6.87	93.36	0.00	-	-	-	-	-	-
	04/09/93	100.23	4.88	95.35	0.00	<50	<0.5	<0.5	<0.5	<0.5	-
	04/30/93	100.23	5.00	95.23	0.00			-	-		-
	06/30/95 02/25/97	100.23	5.20	95.03	0.00	420 Y	<0.5	<0.5	<0.5	<0.5	-
	04/24/97	100.23 100.23	5.01 5.43	95.22 94.80	0.00 0.00	<50 -	<0.5	<0.5	<0.5 -	<0.5 -	-
	08/27/97	100.23	5.85	94.38	0.00	-	_	_	-	-	_
	12/04/97	100.23	5.08	95.15	0.00	1,200	<0.5	<0.5	<0.5	<2.0	-
	09/29/98	100.23	6.20	94.03	0.00	<50	-	-	-	-	-
	03/06/02	100.23	5.17	95.06	0.00	<50	-	-	-	-	-
	06/03/02	6.23	5.63	0.60	0.00	150* HY	-	-	-	-	-
	08/12/02	6.23	5.95	0.28	0.00	<50*	-	-	-	-	-
	11/04/02	6.23	6.38	-0.15	0.00	<50*					
	02/03/03	6.23	5.24	0.99	0.00	<50*	<0.5	<0.5	<0.5	<0.5	<2.0
	05/13/03	6.23	5.02	1.21	0.00	-	-	-	-	-	-
	08/05/03 11/05/03	6.23 6.23	5.89 6.26	0.34 -0.03	0.00 0.00	-	-	-	-	_	-
	02/24/04	6.23	5.02	1.21	0.00	<50*	<0.5	<0.5	<0.5	<0.5	<2.0**
	05/26/04	6.23	5.83	0.40	0.00	-		-		-	
	08/31/04	6.23	6.23	0.00	0.00	-	-	-	-	-	-
	11/02/04	6.23	5.53	0.70	0.00	-	-	-	-	-	-
	02/23/05	6.23	4.66	1.57	0.00	<50	<0.5	<0.5	<0.5	<0.5	<0.50**
	05/09/05	6.23	4.93	1.30	0.00	<50	<0.5	<0.5	<0.5	<0.5	<2.0
	08/31/05	6.23	5.88	0.35	0.00	-	-	-	-	-	-
	12/02/05	6.23	6.02	0.21	0.00	-	-	-	-	-	-
GT-4	09/12/90	100.49	7.28	93.21	0.00	<50	< 0.5	<0.5	<0.5	<0.5	-
	04/09/93	100.49	5.16	95.33	0.00	16,000	0.9	8.0	<0.5	< 0.5	-
	04/30/93	100.49	5.49	95.00	0.01	<50	-	-	-	-	-
	06/30/95	100.49	5.78	94.71	0.00	2,600 Y	<0.5	<0.5	<0.5	<0.5	-
	02/25/97	100.49	5.22	95.27	0.00	8,300	<0.5	<0.5	<0.5	<0.5	-
	04/24/97	100.49	5.91	94.58	0.00	-	-	-	-	-	-
	08/27/97	100.49	6.42	94.07	0.00	-	-0.5		-0.5	-0.5	-
	12/05/97 09/29/98	100.49 100.49	5.73 6.91	94.76	0.00 0.00	23,000 4,400	<0.5	<0.5 -	<0.5	<0.5	-
	03/07/02	100.49	5.70	93.58 94.79	0.00	55,200	Ĵ	-	-	-	-
	06/04/02	6.55	6.26	0.29	0.00	37,000* H	_	_	_	_	-
	08/12/02	6.55	6.53	0.02	0.00	26,000*	_	_	_	-	-
	11/04/02	6.55	6.98	-0.43	0.00	9,500*	-	-	-	-	-
	02/03/03	6.55	5.79	0.76	0.00	7,700*	<0.5	<0.5	<0.5	<0.5	<2.0
	05/13/03	6.55	5.46	1.09	0.00	2,100*	<0.5	<0.5	<0.5	<0.5	<0.5**
	08/05/03	6.55	6.38	0.17	0.00	9,800*	<0.5	<0.5	<0.5	<0.5	<2.0
	11/05/03	6.55	6.74	-0.19	0.00	1,600*	<1 -0.5	<1	<1	<1 -0.5	<2.0**
	02/24/04 05/26/04	6.55	5.54 6.38	1.01 0.17	0.00	44,000*	<0.5	<0.5	<0.5	<0.5 -	<2.0**
	05/26/04	6.55 6.55	6.53	0.02	0.00 0.00	43,000*	<0.5	<0.5	<0.5	<0.5	<2.0
	08/31/04	6.55	6.75	-0.20	Sheen	2,300*	<0.5	<0.5	<0.5	<0.5	<2.0
	11/02/04	6.55	6.12	0.43	0.00	18,000* J	<1	<1	<1	<1	<2.0**
	02/23/05	6.55	5.08	1.47	0.00	2,800*	<0.5	<0.5	<0.5	<0.5	<2.0
	05/09/05	6.55	5.42	1.13	Sheen	20,000* J	<0.5	<0.5	<0.5	<0.5	<2.0
	08/31/05	6.55	6.43	0.12	Sheen	19,000*	<0.5	<0.5	<0.5	<0.5	<2.0
	12/02/05	6.55	6.55	0.00	Sheen	24,000*	<0.5	<0.5	<0.5	<0.5	<2.0
GT-5	09/12/90	100.55	7.26	93.29	0.00	<50	<0.5	<0.5	<0.5	<0.5	-
	04/09/93	100.55	5.15	95.40	0.00	<50	<0.5	< 0.5	< 0.5	<0.5	-
	04/30/93	100.55	5.46	95.09	0.00	-	-	-	-	-	-
	06/30/95	100.55	5.85	94.70	0.00	90 Y	<0.5	<0.5	<0.5	<0.5	-
	02/25/97	100.55	5.32	95.23	0.00	70	-	-	-	-	-
	04/24/97	100.55	5.89	94.66	0.00	•	-	-	-	-	-
	08/27/97	100.55	6.43	94.12	0.00		-	-	-	-	-
	12/04/97 09/29/98	100.55	5.77	94.78	0.00	320	-	-	-	-	-
	03/06/02	100.55 100.55	7.04 5.75	93.51 94.80	0.00	87 <50	-	-	-	-	
	06/04/02	6.43	6.34	0.09	0.00	<50*	-	-	-	-	-
	08/12/02	6.43	6.64	-0.21	0.00	81*	-	_	-	-	-
	11/04/02	6.43	7.01	-0.58	0.00	160*H Y	-	-	-	-	
	02/03/03	6.43	5.96	0.47	0.00	<50	<0.5	<0.5	<0.5	<0.5	<2.0
	05/13/03	6.43	5.49	0.94	0.00	-	-	-	-	-	-
	08/05/03	6.43	6.37	0.05	0.00	-	-	-	-	-	-

Well	Sample	TOC	DTW	GWE	LNAPL	TPHd	В	т	E	x	MTBE
No.	Date	(ft_MSL)	<u>(ft)</u>	(ft MSL)	(feet)	(ħāĮŗ)	(μ <u>g/L)</u>	(μ <u>g/L)</u>	<u>(μg/L)</u>	(#g/L)	(µg/L)
GT-5	11/04/03	6.43	6.80	-0.37	0.00	-	-		-		
(cont'd)	02/24/04	6.43	5.55	88.0	0.00	<50*	<0.5	<0.5	<0.5	<0.5	<2.0**
	05/26/04	6.43	6.42	0.01	0.00	~	-	-	-	-	-
	08/31/04	6.43	6.72	-0.29	0.00	-	-	-	-	-	-
	11/02/04	6.43	6.11	0.32	0.00	-	-	-	-	-	-0.0
	02/23/05	6.43	5.05	1.38	0.00	<50 -50*	<0.5	< 0.5	<0.5	<0.5	<2.0
	05/09/05 08/31/05	6.43 6.43	5.50 6.49	0.93 -0.06	0.00 0.00	<50* -	<0.5 -	<0.5	<0.5	<0.5	<2.0
	12/02/05	6.43	6.55	-0.12	0.00	-	-	-	-	-	-
GT-6	09/12/90	100.48	7.28	93.20	0.01	4,800	<0.5	<0.5	<0.5	<0.5	_
01-0	04/09/93	100.48	5.00	95.48	0.00	930	<0.5	<0.5	<0.5	<0.5	_
	04/30/93	100.48	5.36	95.12	0.00	-	-	-	-	-	
	06/30/95	100.48	5.75	94.73	0.00	2,800 Y	<0.5	<0.5	< 0.5	< 0.5	-
	02/25/97	100.48	5.14	95.34	0.00	1,300	-	-	-	-	-
	04/24/97	100.48	5.85	94.63	0.00	-	-	-	-	-	-
	08/27/97	100.48	6.44	94.04	0.00	-	-	-	-	-	-
	12/04/97	100.48	5.80	94.68	0.00	180,000	-	-	-	-	-
	09/29/98	100.48	7.02	93.46	-	2,500	-	-	-	-	-
	03/07/02	100.48	5.72	94.76	0.00	25,900	-	-	-	-	-
	06/04/02 08/12/02	6.36	6.35	0.01	0.00	33,000* H	-	-	-	:	-
	11/04/02	6.36 6.36	6.62 7.04	-0.26 -0.68	0.00 0.00	12,000* 23,000*	-	-	-	-	-
	02/03/03	6.36	5.89	0.47	0.00	4,100* J	<0.5	<0.5	<0.5	<0.5	<2.0
	05/13/03	6.36	5.43	0.93	0.00	790*	<0.5	<0.5	<0.5	<0.5	<0.5**
	08/05/03	6.36	6.40	-0.04	0.00	17,000*	<0.5	<0.5	<0.5	<0.5	<0.5**
	11/05/03	6.36	6.82	-0.46	0.00	2,000*	<1	<1	<1	<1	<2.0**
	02/24/04	6.36	5.50	0.86	0.00	8,600*	<0.5	<0.5	< 0.5	0.82 C	<2.0**
	05/26/04	6.36	6.45	-0.09	Sheen	-	-	-	-	-	-
	06/24/04	6.36	6.59	-0.23	Sheen	4,800*	<0.5	<0.5	<0.5	<0.5	<0.5**
	08/31/04	6.36	6.78	-0.42	Sheen	3,700*	<0.5	<0.5	<0.5	<0.5	<2.0
	11/03/04	6.36	6.10	0.26	Sheen	3,900*	<1	<1	<1	<1	<2.0**
	02/23/05	6.36	4.96	1.40	Sheen	2,800*	<0.5	<0.5	<0.5	<0.5	<2.0
	05/09/05	6.36	5.42	0.94	Sheen	12,000*	<0.5	<0.5	<0.5	<0.5	<2.0 <2.0
	08/31/05 12/02/05	6.36 6.36	6.50 6.64	-0.14 -0.28	Sheen Sheen	7,100* 4,600*	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<2.0
GT-7	09/12/90	100.66	7.46	93.20	0.01	2,200		_	_	_	_
<b>5</b> 1-7	04/09/93	100.66	5.15	95.51	0.00	580	0.7	0.6	<0.5	<0.5	-
	04/30/93	100.66	5.43	95.23	-	-	-	•	+	-	-
RW	09/12/90	103.72	10.99	92.73	_	_		۰	_	_	
	04/09/93	103.72	8.98	94.74	-	-	_	-	-		-
	04/30/93	103.72	8.02	95.70	-	-	-	-	-	-	۳
MW-1	04/30/93	100.22	5.19	95.03	0.00	<50	<0.5	<0.5	<0.5	<0.5	-
	06/29/95	100.22	5.51	94.71	0.00	60 L	<0.5	<0.5	<0.5	<0.5	-
	02/25/97	100.22	5.03	95.19	0.00	<50	-	-	-	-	-
	04/24/97	100.22	5.63	94.59	0.00	-	-	-	-	-	-
	08/27/97	100.22	6.23	93.99	0.00		-	-	-	-	-
	12/04/97	100.22	5.48	94.74	0.00	<50	-	-	-	-	-
	09/29/98	100.22	6.82	93.40	- 0.05	<50	-	-	-	-	-
	03/07/02 06/04/02	100.22 6.08	5.47 6.12	94.75 -0.04	0.00 0.00	<50 <50	-	-	-	-	-
	08/12/02	6.08	6.40	-0.32	0.00	<50	-	-	-	-	-
	11/04/02	6.08	6.79	-0.71	0.00	<50	-	-	-	-	-
	02/03/03	6.08	5.70	0.38	0.00	210* LYZ	<0.5	<0.5	<0.5	<0.5	<2.0
	05/13/03	6.08	5.22	0.86	0.00	-	-	-	-	-	-
	08/05/03	6.08	6.09	-0.01	0.00	<50*	<0.5	<0.5	<0.5	<0.5	<2.0
	11/04/03	6.08	6.51	-0.43	0.00	<50	<1	<1	<1	<1	<2.0**
	02/24/04	6.08	5.24	0.84	0.00	170* Y	<0.5	<0.5	<0.5	<0.5	<2.0**
	05/26/04	6.08	6.19	-0.11	0.00		-	-	-		-
	06/24/04	6.08	6.33	-0.25	0.00	<50*	<0.5	<0.5	<0.5	<0.5	<0.5**
	08/31/04	6.08	6.43	-0.35	0.00	<50*	<0.5	<0.5	< 0.5	<0.5	<2.0
	11/02/04	6.08	5.86	0.22	0.00	<50	<1	<1 <0.5	<1	<1 <0.5	<2.0** <0.5**
	02/23/05 05/09/05	6.08 6.08	4.73 5.52	1.35	0.00	88 Y*	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5** <2.0
	05/09/05	6.08 6.08	5.52 6.27	0.56 -0.19	0.00 0.00	<50 <50	<0.5	<0.5	<0.5	<0.5	<2.0
	12/02/05	6.08	6.35	-0.19	0.00	<50 <50	<0.5	<0.5	<0.5	<0.5	<2.0
		0.00	0.00	J.Z.	0.00	- 50	-0.0	.0.0	0.0	0.0	

Well	Sample	TOC	DTW	GWE	LNAPL	TPHd	В	т	E	x	MTBE
No.	Date	(ft MSL)	(ft)	(ft MSL)	(feet)	(ug/L)	(Halt)	( <u>µg/</u> L)	<u>(μg/L)</u>	(µg/L)	(µg/L)
MW-2	04/30/93	100.88	5.86	95.02	0.00	800	<0.5	<0.5	0.8	3.8	-
	06/29/95	100.88	6.30	94.58	0.00	2,800 Y	<0.5	<0.5	<0.5	<0.5	
	02/25/97	100.88	5.63	95.25	0.00	360	<0.5	<0.5	<0.5	<2.0	-
	04/24/97	100.88	6.31	94.57	0.00		-	-		-	-
	08/27/97	100.88	6.98	93.90	0.00	-	_	-	-	-	
	12/04/97	100.88	6.11	94.77	0.00	860	< 0.5	<0.5	< 0.5	<2.0	-
	09/29/98	100.88	7.52	93.36	-	240	_	-	-	_	-
	03/07/02	100.88	6.26	94.62	0.00	<50	-	-	-		-
	06/04/02	6.74	6.92	-0.18	0.00	330* HY	_	-		-	-
	08/12/02	6.74	7.18	-0.44	0.00	130* Y	-	-	-	-	-
	11/04/02	6.74	7.59	-0.85	0.00	120* Y	-	-	-	-	-
	02/03/03	6.74	6.41	0.33	0.00	290* JY	< 0.5	<0.5	<0.5	<0.5	2.2**
	05/13/03	6.74	5.94	0.80	0.00	150* Y	< 0.5	<0.5	<0.5	< 0.5	1.8**
	08/05/03	6.74	6.98	-0.24	0.00	110* Y	< 0.5	<0.5	< 0.5	<0.5	2.6**
	11/05/03	6.74	7.36	-0.62	0.00	300 Y	<1	<1	<1	<1	2.5**
	02/24/04	6.74	5.90	0.84	0.00	68* Y	<0.5	<0.5	<0.5	<0.5	3.3**
	05/26/04	6.74	7.02	-0.28	0.00	-	-	-	-	-	-
	06/24/04	6.74	7.15	-0.41	0.00	54* Y	<0.5	< 0.5	<0.5	<0.5	3.3**
	08/31/04	6.74	7.32	-0.58	0.00	59* Y	<0.5	<0.5	<0.5	<0.5	<2.0
	11/02/04	6.74	6.55	0.19	0.00	<50*	<1	<1	<1	<1	2.8**
	02/23/05	6.74	5.24	1.50	0.00	210 H*	<0.5	<0.5	< 0.5	<0.5	2.1**
	05/09/05	6.74	5.88	0.86	0.00	230*	<0.5	<0.5	<0.5	<0.5	<2.0
	08/31/05	6.74	7.06	-0.32	0.00	70* Y	<0.5	<0.5	<0.5	<0.5	<2.0
	12/02/05	6.74	7.17	-0.43	0.00	420*	<0.5	<0.5	<0.5	<0.5	<2.0
MW-3	04/30/93	100.84	5.52	95.32	0.00	<50	<0.5	<0.5	<0.5	<0.5	-
	06/30/95	100.84	-	-		-	_	-	-	-	-
	02/25/97	100.84	5.37	95.47	0.00	<50	-	-	-	-	-
	04/24/97	100.84	6.05	94.79	0.00	-	-	-	-	-	-
	08/27/97	100.84	6.58	94.26	0.00	-	-	-	-	-	-
	12/04/97	100.84	5.49	95.35	0.00	100	-	-	-	-	-
	09/29/98	100.84	6.95	93.89	-	-	-	-	-	-	-
	03/07/02	100.84	5.76	95.08	0.00	<50	-	-	-	-	-
	06/03/02	6.67	6.41	0.26	0.00	h <del>-</del>	-	-	-	-	-
	08/12/02	6.67	DRY	DRY	0.00	-	-	-	-	-	-
	11/04/02	6.67	DRY	DRY	0.00	-	-	-	-	-	-
	02/03/03	6.67	5.85	0.82	0.00	<50 <b>*</b> J	<0.5	<0.5	<0.5	<0.5	<2.0
	05/13/03	6.67	5.56	1.11	0.00	~	-	-	-	-	-
	08/05/03	6.67	DRY	DRY	0.00	-	-	-	-	-	-
	11/04/03	6.67	DRY	DRY	0.00	-	-	-	-	-	-
	02/24/04	6.67	5.40	1.27	0.00	<50	<0.5	<0.5	<0.5	<0.5	<2.0**
	05/26/04	6.67	DRY	DRY	0.00	-	-		-	-	-
	08/31/04	6.67	DRY	DRY	0.00	-	-	-	-	-	•
	11/02/04	6.67	6.19	0.48	0.00	-	-	-	-	-	
	02/23/05	6.67	3.43	3.24	0.00	<50*	<0.5	<0.5	<0.5	<0.5	<2.0
	05/09/05	6.67	5.34	1.33	0.00	<50⁺	<0.5	<0.5	<0.5	<0.5	<2.0
	08/31/05	6.67	6.53	0.14	0.00	-	-	-	-	-	-
	12/02/05	6.67	DRY	DRY	0.00	-	-	-	•	-	-
MW-4	04/30/93	100.92	5.48	95.44	0.00	<50	<0.5	<0.5	<0.5	<0.5	-
	06/29/95	100.92	6.77	94.15	0.00	110 Y	<0.5	<0.5	<0.5	<0.5	-
	02/25/97	100.92	5.38	95.54	0.00	<50	<0.5	<0.5	<0.5	<2.0	-
	04/24/97	100.92	5.99	94.93	0.00	-	-	-	-	-	-
	08/27/97	100.92	6.46	94.46	0.00	-		-	-	-	-
	12/04/97	100.92	5.41	95.51	0.00	<50	<0.5	<0.5	<0.5	<2.0	-
	09/29/98	100.92	6.76	94.16	-	<50	-	-	-	-	-
	03/07/02	100.92	5.68	95.24	0.00	<50	-	-	-	-	-
	06/03/02	6.78	6.25	0.53	0.00	<50	-	-	-	-	-
	08/12/02	6.78	6.55	0.23	0.00	<50	-	-	-	-	-
	11/04/02	6.78	7.00	-0.22	0.00	<50	-	-			
	02/03/03	6.78	5.76	1,02	0.00	<50*	<0.5	<0.5	<0.5	<0.5	<2.0
	05/13/03	6.78	5.50	1.28	0.00	-	-	-	-	-	-
	08/05/03	6.78	6.51	0.27	0.00		-	-	-	-	-
	11/04/03	6.78	6.91	-0.13	0.00	-				-	
	02/24/04	6.78	5.44	1.34	0.00	<50	<0.5	<0.5	<0.5	<0.5	<2.0**
	05/26/04	6.78	6.45	0.33	0.00	-	-	-	-	-	-
	08/31/04	6.78	6.87	-0.09	0.00	-	-	-	-	-	-
	11/02/04	6.78	6.08	0.70	0.00		- -0 E	-D E	-O E	-0 E	-20
	02/23/05	6.78	4.75	2.03	0.00	<50*	<0.5	<0.5	<0.5 <0.5	<0.5 <0.5	<2.0
	05/09/05	6.78 6.78	5.33 6.46	1.45	0.00	<50*	<0.5	<0.5	- vu.5		<2.0
	08/31/05 12/02/05	6.78 6.78	6.46 6.68	0.32 0.10	0.00	-	-	-	-	-	-
	12702703	0.70	0.00	0.10	0.00	-	-	-	-	-	-

#### TABLE 1

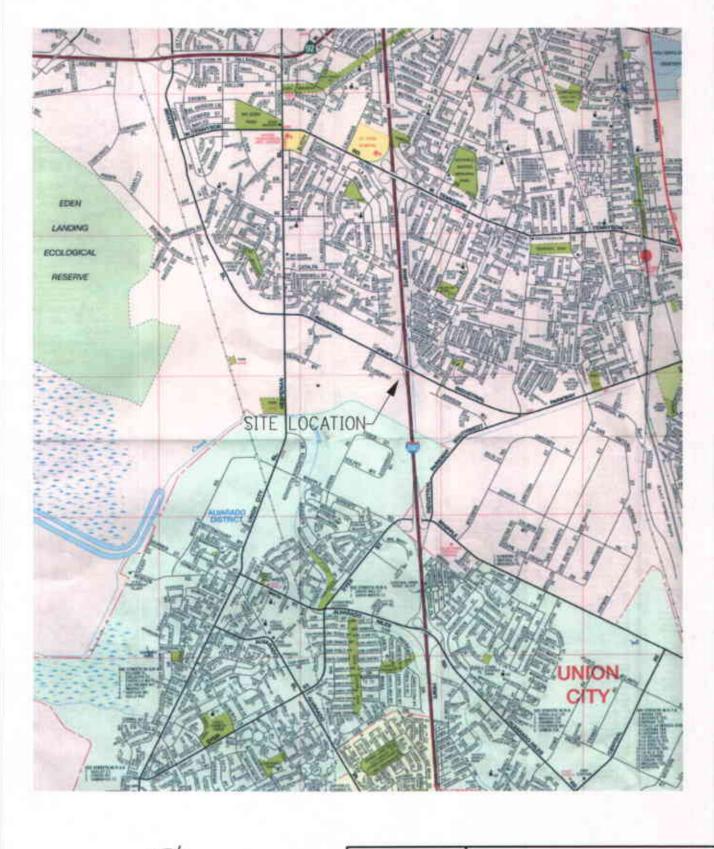
Well	Sample	TOC	DTW	GWE	LNAPL	TPHd	В	т	E	x	MTBE
No.	Date	(ft MSL)	(ft)	(ft MSL)	(feet)	(# <u>9/</u> L)	(μg/L)	(µg/L)	(µg/L)	(µg/L)	( <u>#g/L</u> )
MW-5	04/30/93	100.60	5.60	95.00	0.00	<50	<0.5	<0.5	<0.5	<0.5	-
	06/29/95	100.60	5.78	94.82	0.00	180 Y	<0.5	<0.5	<0.5	<0.5	
	02/25/97	100.60	5.62	94.98	0.00	<50	-	-	-	-	_
	04/24/97	100.60	5.86	94.74	0.00	-	-		_	_	
	08/27/97	100.60	6.21	94.39	0.00	_	н	_	_	_	-
	12/04/97	100.60	5.70	94.90	0.00	_	_	_	_	_	_
	09/29/98	100.60	6.41	94.19	-	<50	_		-	-	_
	03/06/02	100.60	5.77	94.83	0.00	<50	-	_	-	-	-
	06/03/02	6.46	6.10	0.36	0.00	<50*	_	-	_	_	_
	08/12/02	6.46	6.34	0.12	0.00	<50*	_	_	-	-	-
	11/04/02	6.46	6.78	-0.32	0.00	<50*	_	_	-	-	_
	02/03/03	6.46	5.86	0.60	0.00	<50*	<0.5	<0.5	<0.5	<0.5	<2.0
	05/13/03	6.46	5.64	0.82	0.00		_	-	-	-	-
	08/05/03	6.46	6.20	0.26	0.00	-	-	_	-	-	
	11/04/03	6.46	6.55	-0.09	0.00		-	_	-	-	-
	02/24/04	6.46	5.68	0.78	0.00	<50*	<0.5	< 0.5	<0.5	<0.5	<2.0**
	05/26/04	6.46	6.19	0.27	0.00	-	-	-	-	-	-
	08/31/04	6.46	6.55	-0.09	0.00	_	-	-	-	-	_
	11/02/04	6.46	6.05	0.41	0.00	_	_	-	-	-	-
	02/23/05	6.46	5.39	1.07	0.00	<50*	<0.5	<0.5	< 0.5	< 0.5	<2.0
	05/09/05	6.46	5.54	0.92	0.00	<50*	<0.5	< 0.5	<0.5	<0.5	<2.0
	08/31/05	6.46	6.24	0.22	0.00		_	-	-	-	-
	12/02/05	6.46	6.35	0.11	0.00	-	-	-	-	-	-
MW-6	08/25/95	-	6.95		0.00	1,500	<0.5	<0.5	<0.5	<0.5	_
	02/25/97	_	5.65	_	0.00	7,500	-0.0	-0.5	-		-
	04/24/97	_	5.65	_	0.00	-	_	_	<b>H</b>		_
	08/27/97	_	7.07	_	0.00	_	_	_	_	_	_
	12/04/97	_	6.41	_	0.00	-	_	_	_	_	_
	09/29/98	_	5.97	_	-	7,000	_		-	_	_
	03/06/02	-	-	-	-	-	-	-	-	-	-
MW-7	05/13/03	6.79	5.99	0.80	0.00	78* Y	<0.5	<0.5	<0.5	<0.5	<0.5**
11174-7	08/05/03	6.79	6.94	-0.15	0.00	83*Y	<0.5	<0.5	<0.5	<0.5	<0.5**
	11/04/03	6.79	7.32	-0.13	0.00	<50*	· <1	<1	<1	<1	<2.0**
	02/24/04	6.79	6.08	0.71	0.00	<50*	<0.5	<0.5	<0.5	<0.5	<2.0**
	05/26/04	6.79	7.02	-0.23	0.00	-	-0.0	-0.0	-0.5	-0.5	-2.0
	06/24/04	6.79	7.15	-0.36	0.00	<50*	<0.5	<0.5	<0.5	<0.5	<0.5**
	08/31/04	6.79	7.28	-0.49	0.00	<50*	<0.5	<0.5	<0.5	<0.5	<2.0
	11/02/04	6.79	6.60	0.19	0.00	<50*	<1	<1	<1	<1	<2.0**
	02/23/05	6.79	5.39	1.40	0.00	<50*	<0.5	<0.5	<0.5	<0.5	<2.0
	05/09/05	6.79	5.99	0.80	0.00	<50*	<0.5	<0.5	<0.5	<0.5	<2.0
	08/31/05	6.79	7.09	-0.30	0.00	<50*	<0.5	<0.5	<0.5	<0.5	<2.0
	12/02/05	6.79	7.19	-0.40	0.00	<50*	<0.5	<0.5	<0.5	<0.5	<2.0
	12/02/03	0.75	1.10	70.740	0.00	-50	~0.5	-0.0	~0.0	-0.0	-1.0

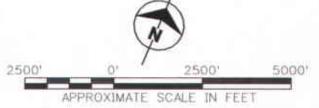
Notes:	
TOC	Top of casing relative to feet above mean sea level (feet MSL).
DTW	Depth to groundwater, below top of casing, in feet.
GWE	Groundwater elevation (TOC-DTW) in feet MSL.
LNAPL	Light Non-Aqueous Phase Liquid petroluem hydrocarbons.
TPHd	Total petroleum hydrocarbons as diesel range by EPA Method 8015 M.
BTEX	Benzene, toluene, ethylbenzene, and xylenes by EPA Method 8021B.
MTBE	Methyl tert-butyl ether by EPA Method 8021B.
μg/L	Micrograms per liter.
Н	Heavier hydrocarbons contributed to the quantitation.
L	Lighter hydrocarbons contributed to the quantitation.
Y	Sample exhibits fuel pattern which does not resemble standard.
Z	Sample exhibits unknown single peak or peaks.
J	Qualified as an estimate following BMcD laboratory data QA/QC review.
С	Presence confirmed, but confirmation concentration differed by more than a factor of tw
CO	Hydrocarbon response in gasoline range not resembling gas.
<###	Not detected at or above indicated reporting limit.
-	No data for the cell, indicates "not measured" or "not analyzed for this constituent".
•	SGCU, Silical Gel Clean-up, EPA Method 3620C.
**	Indicates MTBE confirmation by EPA Method 8260B.
1	Groundwater elevation at GT-1 includes LNAPL correction:
	GWE = TOC - [DTW (ft) - (Specific Gravity of Diesel (0.865) * LNAPL Thickness (ft))].
Sheen	Sheen visible when sampling

TABLE 2 Summary of Groundwater PNA Data Con-Way Western Express Facility 2200 Claremont Ct. Hayward, California

Well ID	Date Sampled	Naphthalene (µg/L)	Acenaphthylene (μg/L)	Acenaphthane (μg/L)	Fluorene (µg/L)	Phenanthrene (μg/L)	Anthracene (µg/L)	Fluoranthene (µg/L)	Pyrene (µg/L)	Benzo(a) anthracene (µ g/L)	Chrysens {µg/L}	Benzo(b) fluoranthene (µg/L)	Benzo(k) fluoranthene (μg/L)	Benzo(s) pyrene (μg/L)	Dibenz(a,h) anthracene (μg/L)	Benzo(g,h,l) perylene (μg/L)	indeno(1,2,3-cd) pyrene (μg/L)
GT-1	02/25/97	<1,0	<1,0	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	1	<1.0	<1.D	<1.0	<1.0	<1.0	<1.0	<1.0
01-1	04/24/97	<1.0	<1.0	<1.0	120	210	<1.0	580	1.100	380	300	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	D9/D9/97	360	140	<50	330	700	<50	820	1,900	300	<50	<50	<50	<50	<50	<50	<50
	12/05/07	64	<1.0	<5.0	36	51	<1.0	160	12	<1.0	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	09/29/98	<5	<1.0	<1.0	29	<0.5	<0.5	<1.0	39	32	3.8	4.4	<0.5	< 0.5	<2	<2	<0.5
	03/07/02	20	<2.0	5.4	20	<2.0	<2.0	6.7	<2.0	1.6	<2.0	6.7	20	<2.0	<2.0	<2.0	<2.0
	06/03/02	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL
	08/12/02	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPI.	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL
	11/04/02	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL
	02/03/03	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL
	05/13/03	<0.96	<1.0	<0.97	4.8	4.2	<0.10	1.2	0.80	0.48	0.43	0.21	<0.10	<0.10	< 0.19	< 0.19	<0.10
	08/05/03	<0.98	<2.0	<0.98	5.2	4.6	<0.10	< 0.20	0.87	0.81	1.50	0.29	<0.10	0.11	0.24	< 0.20	<0.10
	11/05/03	<0.99	<2.0	<0.99	11	16	<0.10	< 0.20	2.30	1.7	1.1	0.63	0.27	0.24	0.42	< 0.20	<0.10
	02/25/04	<4.8	<9.5	<4.8	18	38	<0.48	14	6.10	< 0.48	<0.48	<0.95	<0.48	< 0.48	< 0.95	< 0.95	<0.48
	06/24/04	<0.98	<2.0	<0.98	9	15	<0.10	2.6	1.8	1.1	0.79	0.3	<0.10	< 0.17	< 0.20	< 0.20	<0.10
	09/01/04	3.9	<2.0	<0.98	17	40	1.5	8.2	4.5	0.87	1.8	0.74	0.23	0.40	1.5	0.25	<0.10
	11/03/04	<0.98	<2.0	<0.98	21	51	<0.10	10	4.5	0.88	< 0.10	0.70	0.22	0.45	< 0.20	0.26	<0.10
	02/24/05	<1.0	<1.0	<1.0	2.0	1.7	<1.0	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 0.20	<1.0	<1.0	<1.0
	05/10/05	<0.97	<1.9	<0.97	1.7	2.1	0.16	0.74	0.96	1.9	<0.10	2.20	0.31	0.32	0.37	<0.19	<0.10
	09/20/05	<0.94	<1.0	<0.94 J	4.4 J	5.5 J	<0.09 J	1.9 J	1.7 J	<0.9 J	<0.9 J	0.44	< 0.09	0.13	0.27	0.20	<0.09
	12/02/05	<0.95	<1.0	11 J	14 J	36 J	1.1 J	15 J	5.4 J	3.7 J	4.9 J	<0.19	D.18 J	0.18 J	0.23 J	0.25 J	9.13 J
GT-4	02/25/07	<1.0	<1.0	2	2	<1.0	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.D	<1.0	<1.0	<1.0	<1.0
01.4	04/24/97	<1.0	<1.0	<1.0	4	7	8	23	<1.0	<1.0	<1.0	3	<1.0	<1.0	<1.0	<1.0	<1.0
	09/09/97	<1.0	<1.0	<1.0	17	10	18	8	34	24	4	≺1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/05/97	<0,50	<1.0	<0.50	4.4	1.7	<1.0	15	2.8	0,6	0.7	<0.10	<0.10	<0.10	<0.10	< 0.10	<1,0
	09/29/98	<5.0	<1.0	<1.0	<1.0	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<1.0	< 0.50	< 0.50	<2.0	<2.0	<0.50
	03/07/02	<1.0	3.2	<1.0	5.2	1.8	<1.0	<1.0	8.4	3.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	06/04/02	<0.98	<2.0	<0.98	1.8	0.47	0.43	0.33	1.3	<0.10	0.59	< 0.20	<0.10	<0.10	< 0.20	< 0.20	<0,10
	08/12/02	<0.98	<2.0	<0.98	0.47	<0.10	<0.10	0.95	3.4	3,4	2.4	0.86	0.25	<0.10	<0.10	< 0.20	<0.10
	11/04/02	<0.94	<1.9	1.00	1.40	1.40	0.30	0.65	1.1	1.1	0.85	0.48	0.17	0.10	<0.19	< 0.19	< 0.09
	02/03/03	<0.98	3.3	<0.98	1.8	<0.10	<0.10	0.59	1.5	1,6	2.00	0.56	0.21	< 0.10	< 0.20	0.25	< 0.10
	05/14/03	<0.96	<1.9	<0.96	0.41	0.29	<0.10	0,19	0.23	0.17	0.23	<0.19	<0.10	< 0.10	<0.19	<0.19	<0.10
	08/05/03	<0.99	<2.0	<0.89	1.40	<0.10	<0.10	0.35	1.40	1.80	2.80	1.40	0.22	< 0.10	0.35	< 0.20	< 0.10
	11/05/03	< 0.99	<2.0	<0.89	0.63	<0.10	<0.10	<0.20	0.44	0.38	<0.10	0.23	<0.10	< 0.10	< 0.20	< 0.20	<0.10
	02/25/04	<0.98	<1.9	4.00	6.80	3.60	0.93	2.90	5.80	3.10	< 0.10	0.49	<0.10	< 0.10	1.20	0.29	<0.10
	06/24/04	<0.99	<2.0	<0.89	1.4	0.93	<0.10	0.6	2.2	1.7	<0.10	0.27	<0.10	<0.10	<0.20	< 0.20	<0.10
	09/01/04	<0.97	<1.9	<0.97	D.56	<0.10	<0.10	0.20	0.34	0.21	<0.10	<0.19	< 0.10	<0.10	< 0.19	<0.19	<0.10
	11/02/04	<0.98	<2.0	<0.08	0.95 J	0.84	0.13 J	0.37 J	2 J	0.27 J	<0.10	< 0.20	< 0.10	<0.10	0.41 J	<0.20	< 0.10
	02/24/05	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.20	<1.0	<1.0	<1.0
	05/10/05	<0.97	<1.9	<0.97	1.4	0.65	0.15	0.30	0.86	1.3	<0.10	0.38	<0.10	<0.10	<0.19	< 0.19	< 0.10
	08/31/05	<1.0	<2.0	<1.0	0.88	0.59	0.12	1.1	0.98	0.55	0.18	<2.0	<1.0	<1.0	<2.0	<2.0	<1.0
	12/02/05	<0.98	<2.0	4.9	8.7	5.3	1.1	10	7.0	2.3	3.5	0.33	0.16	<0.10	0.38	<0.20	<0.10

Notes:

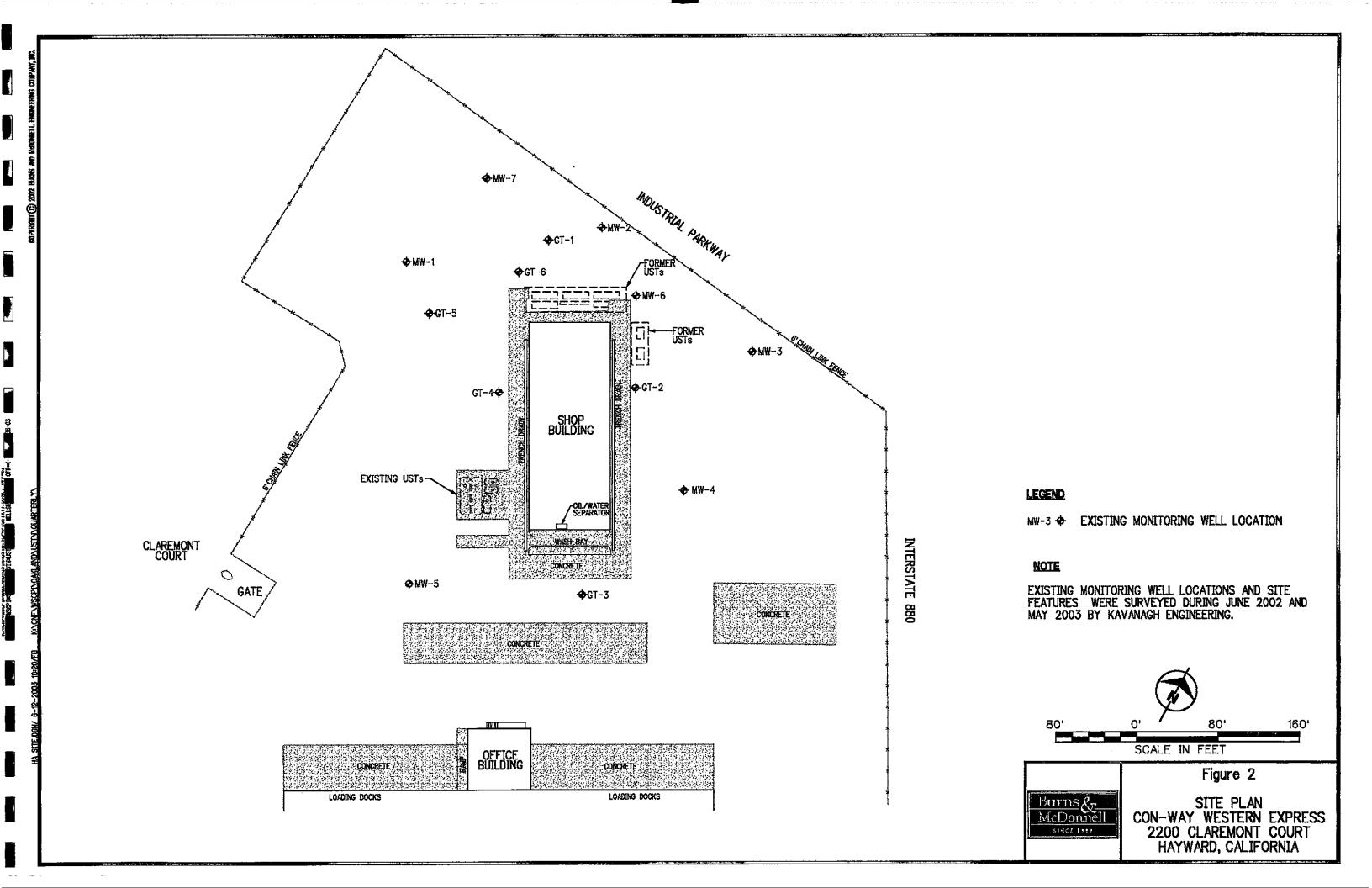


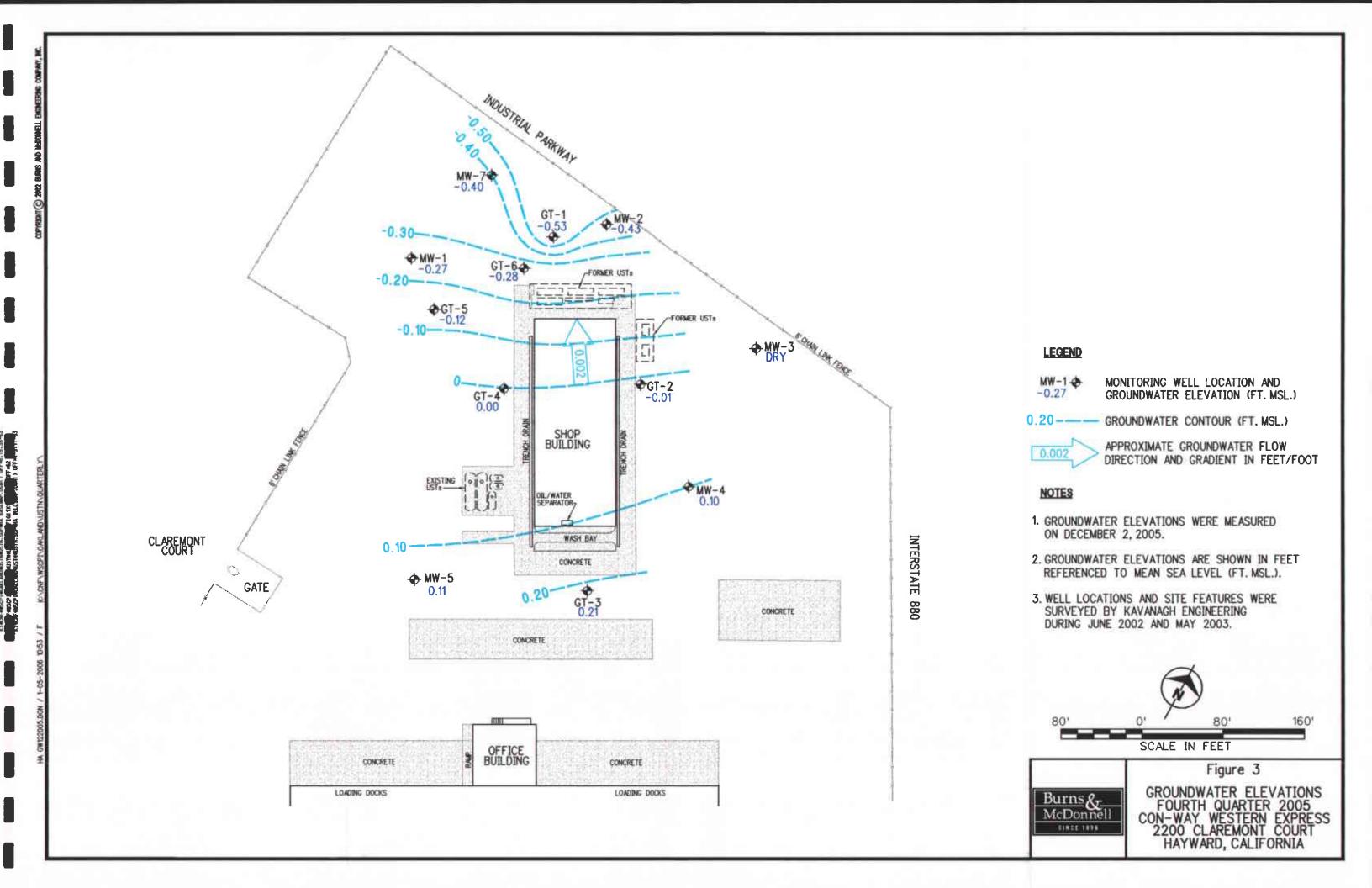




## Figure 1

SITE LOCATION MAP CON-WAY WESTERN EXPRESS 2200 CLAREMONT COURT HAYWARD, CALIFORNIA





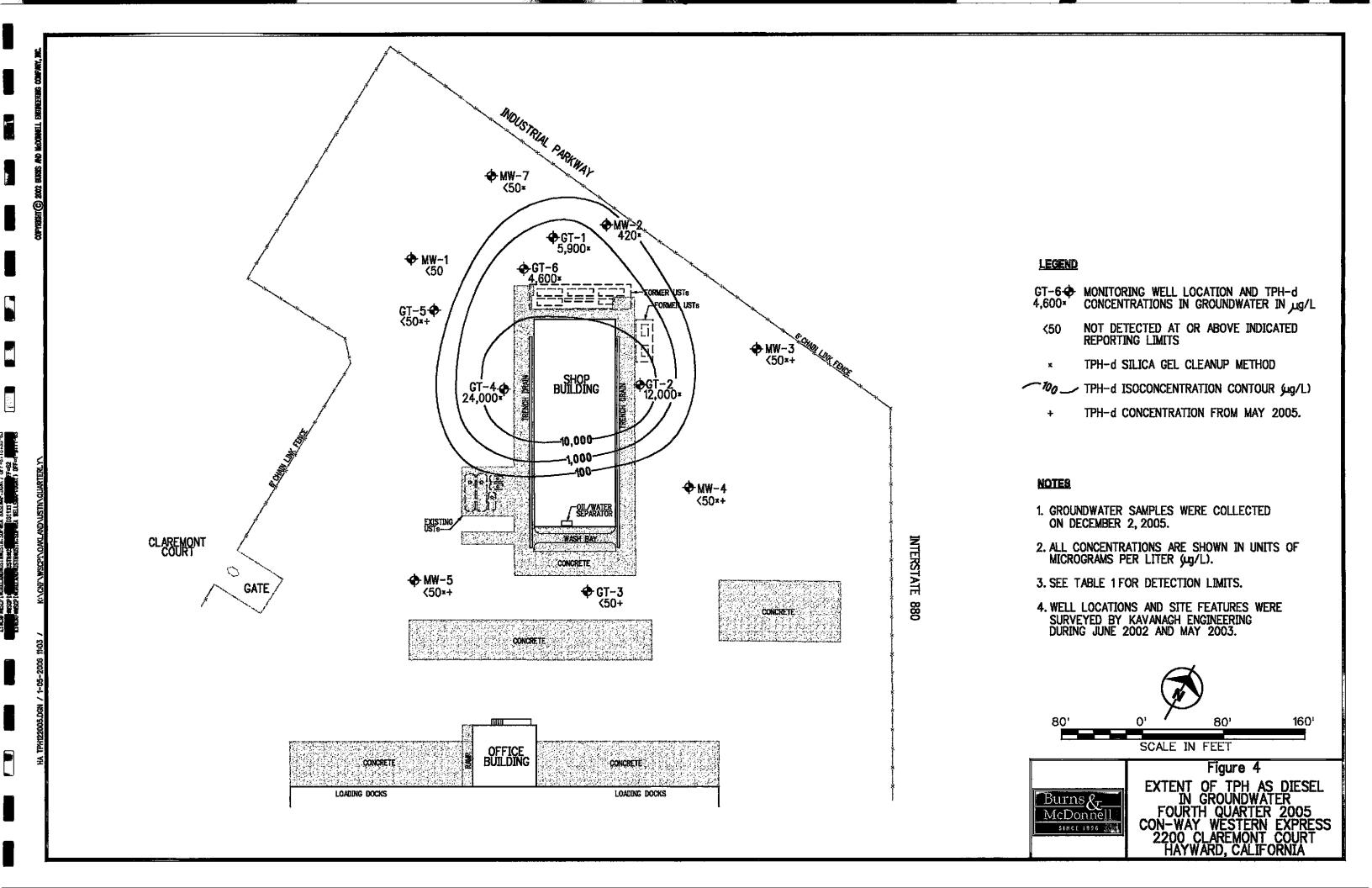


Figure 5
Measured Thickness of LNAPL in Well GT-1 vs. Time
Con-Way Western Express Facility
Hayward, California

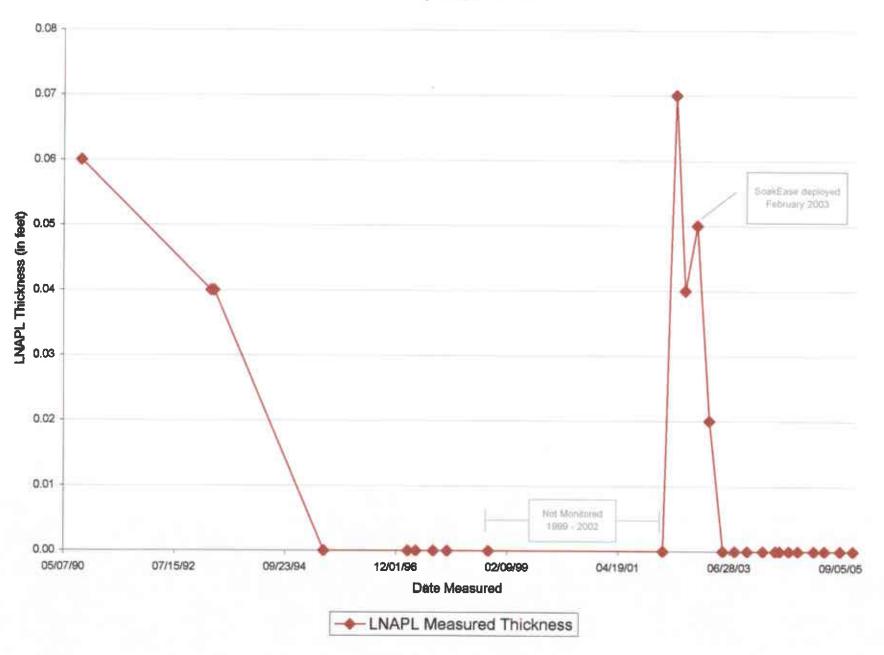
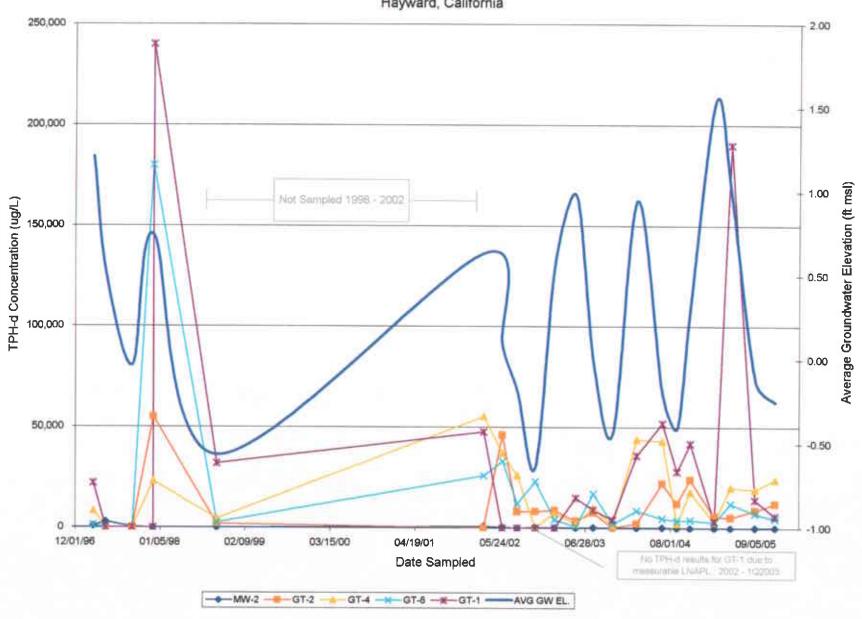


Figure 6
Concentrations of TPH-d and Average Groundwater Elevation in Wells MW-2, GT-1, GT-2, GT-4, and GT-6 vs. Time
Con-Way Western Express Facility

Con-Way Western Express Facility Hayward, California



### APPENDIX A

GROUNDWATER MONITORING FIELD DATA SHEET & GROUNDWATER SAMPLING FORMS



### GROUNDWATER SAMPLING FORM

Site Name: WS	CPI Oaklai	nd			We	ell Number: MV	<b>V</b> -1		
Project Number:	22872		4th Qtr 2006	;	We	ell Type: Monit	tor Extraction	Other: Monitor	10 / 5
Recorded By:	<u> </u>	<u> </u>			Da	te: 12-3	2-05-	Sample Tirne:	<u> </u>
Purge Method	d				<u>P</u> 1	ırge Volume			
Bailer-Type: Dis	posable				Ca	sing Diameter	(D in inches):	2 46/	: <i>C</i> 4
Pumping Method	d:				То	tal Depth of Ca	asing (TD in fe	eet BTOC):	7 - (
Other-Type:						ater Level Dept			5-
Purge Volume	e Calcula	tion:							
(19.49)-(	6.35	X (2")2	x <u>3</u>	X 0.040	08 = 25.	<del>?</del> .			
TD (feet) WL	(feet)	D (inches)	#Vols		Purge Volu	me (gallons)			
Total Volume	Generate	ed (gallons	): 26						
Start Time: 1	15		Stop Time:						
Field Paramet	ter Meas	urements	<del></del>		· · · · · ·				
Time	Volume	Temp	. pH	Conductivity			Re	marks	·
II	ηŤ	73.1	6.93	1913	elocar	بهوا، خلاب	<u>ပောင်း</u>	Vellowish	
	7.57	74.0	2.45	1984		5A/-			
	17.13	72.0	217	1426		SAA			
II		- 7		ファバフ	P	<del>ا</del>			

Notes: Temperature is measured in degrees Celsius

Volume units are in gallons

Conductivity units are in microslemens per centimeter (mS/cm)

Sample Point	Sample Designator	# of Containers	Preservatives	Analysis/Comments
		2 1L amber	None	8015M TPHd
		3 40ml VOA	нсг	8021B STEX/MTBE



## GROUNDWATER SAMPLING FORM

Site Name: WSCPI Oakland	Weil Number: MW-2
Project Number: 22872 4th Qtr 2000	Well Type: Monitor Extraction Other: Monitor 13
Recorded By: SS	Date: 12-2-05 Sample Time: 195
Purge Method	Purge Volume
Bailer-Type: Disposable	Casing Diameter (D in Inches): 2
Pumping Method:	Total Depth of Casing (TD in feet BTOC):
Other-Type:	Water Level Depth (WL in feet BTOC): 7.12
Purge Volume Calculation:	X 0.0408 = 17.8 Ú, 4,7  Purge Volume (gallons)
Total Volume Generated (gallons): 140	•
Start Time: 1338 Stop Time: 13	55

Field Parar	neter Meas	urements			
Time	Volume	Temp .	pН	Conductivity	Remarks
1333	Int	68.7	647	1979	cleer faint odor
1339	5-9	69.9	6.91	2078	clear Stiers fuel odor
	11.87	_			
	17.8				
1333	int	6.8.7	6.97	1979	Clear faint eder
1339	5.4	69-9	69.1	2078	Clear Strong food order
1343	13,	67.7	7.00	7/4/	SAA
135°	14.0	63.9	6.97	2176	5/5/-
	<del> </del>	<del> </del>			
	_	<del></del>			

Notes:

Temperature is measured in degrees Celsius

Volume units are in gallons

Conductivity units are in microsiemens per centimeter (mS/cm)

Sample Point	Sample Designator	# of Containers		Preservatives	Analysis/Comments	
		2	1L amber	None	8015M	TPHd
		3	40ml VOA	HCL	8021B	BTEX/MTBE
<u> </u>						



### GROUNDWATER SAMPLING FORM

Site Name: WSCPI Oakland  Project Number: 22872 4th Qtr 2  Recorded By: 5 3	Well Number: MW-7  Well Type: Monitor Extraction Other: Monitor  Date: 12.2-65 Sample Time: 12.70
Purge Method  Bailer-Type: Disposable  Pumping Method:  Other-Type:	Purge Volume  Casing Diameter (D in inches): 2  Total Depth of Casing (TD in feet BTOC): 15.73  Water Level Depth (WL in feet BTOC): 219
Purge Volume Calculation:  (18.73) - (-7.19) × (2") <sup>2</sup> ×	
Total Volume Generated (gailons): 2	<u>2. 7</u>
Start Time: 1218 Stop Tir	ne:
Einid Dawnster Managements	<del></del>

 Time	Volume	Temp	рН	Conductivity	Remarks
219	int	62.8	2-0	2127	clear no odor
228	ج. ج	765	7.0	2/45	cloudy yollowish
23 g	15	735-	7.06	2045	SAA
1248	22.5	71.4	7.02	2070	
~					

Notes:

Temperature is measured in degrees Celsius

Volume units are in gallons

Conductivity units are in microsiemens per centimeter (mS/cm)

Sample Point	Sample Designator	# of Containers		Preservatives	Analysis/Comments	
		2	1L amber	None	8015M	TPHd
		3	40ml VOA	нсг	8021B	8TEX/MTBE
				-		



Site Name: WSCPI Oakland		Weil Number: GT-1
Project Number: 22872	4th Qtr 2006	Well Type: Monitor Extraction Other: Monitor
Recorded By:		Date: 12-2-05 Sample Time: 16/1
Purge Method		Purge Volume
Bailer-Type: <u>Disposable</u>		Casing Diameter (D in inches): 4
Pumping Method:		Total Depth of Casing (TD in feet BTOC): 22.6)
Other-Type:		Water Level Depth (WL in feet BTOC): 6 . ム ヱ
Purge Volume Calculation:  (27.6) - (6.42) X (4")² TD (feet) WL (feet) D (inches)  Total Volume Generated (gallons)  Start Time:	#Vols Purgi	31,7 Volume (gallons)
Field Parameter Measurements		
Time Volume Temp	pH Conductivity	Remarks
15.49 0 71.0	7.08 1870 CL	MA-PRODUCT STROKE ODOR
035 11 767	686 2289 bat	FAMSH- SAME AS ABOVE

īme	Volume	Temp	ρΗ	Conductivity	Remarks
15.49	E	71.0	7.08	1870	CLEMA- PRODUCT STREAK OBOR
(5.55	Į (	71.7	626	2289	GREAKSH- SAME AS ABOVE
16-00	22	747	6.76	24 75	t u
(6-05	35	74.8	6.74	2367	Le Le
	_				
_					
					-
_					

Notes:

Temperature is measured in degrees Celsius

Volume units are in gallons

Conductivity units are in microsiemens per centimeter (mS/cm)

Sample Point	Sample Designator	# nf C	ontainers	Preservatives	Analysis/Con	nments
Sample Form	Sample Designator	2	1L amber	None	8015M	TPHd
		3	40mi VOA	HCL	8021B	BTEX/MTBE
		2	1L amber	None	8310	PNA's



Site Name: WSCPI Oakland Project Number: 22872 Recorded By:	4th Qtr 2006 —	Well Number: GT-2  Well Type: Monitor Extraction Other: Monitor  Date: 12-2-05 Sample Time: 1420
Purge Method Bailer-Type: Disposable Pumping Method: Other-Type:		Purge Volume  Casing Diameter (D in inches):  Total Depth of Casing (TD in feet BTOC): 23.73  Water Level Depth (WL in feet BTOC): 6.75
Purge Volume Calculation:  (23.75) - (6-75) X (4")  TD (feet) WL (feet) D (inches		= <u>33.3</u> Purge Volume (gailons)
Total Volume Generated (gallo	ns): <u>23.</u>	
Start Time: 1400	Stop Time: 1425	

Volume	Temp	pН	Conductivity	Remarks
Int	67.4	2.70	1169	Clear Strong Vededor Sheen
il-t	64.0	7.40	1470	higher sheen
	68.8	7,40	1555	highly sheen cloudy graunish gamy
33.3	65.4	7.56	1587	SAA.
	1			
	<del> </del>			
		<u> </u>	-	
	- 4	1nt 67.4 11.1 69.0 22.2 68.8	1NT 67.4 7.70 11.1 69.0 7.40 22.2 68.8 7.40	1NT 67.4 7.70 1169 11.1 64.0 7.40 1470 12.2 68.8 740 1555

Temperature is measured in degrees Celsius

Volume units are in gallons

Conductivity units are in microslemens per centimeter (mS/cm)

Sample Point	Sample Designator	# af C	ontainers	Preservatives	Analysis/Con	nments
Ć i		2	1L amber	None	8015M	TPHd
		3	40mi VOA	HCL	8021B	втехимтве



Site Name: V	VSCPI Oakina	ad	4th Qtr 2008	3		Weil Numbe	r: GT-4 + Dt	ıp-1		
Project Numb	er: 22872	_ مر				Weil Type: 1	Monitor Extra	ction Oth	er: Monitor	<i></i>
Recorded By:	:	<u>.</u> B				Date: j	2-2-0:	<b>-</b>	Sample Time: 170	<u></u>
						•				
Purge Meth	<u>iod</u>					Purge Vol	<u>ume</u>			
Bailer-Type: [	<u>Disposable</u>					Casing Dian	neter (D in incl	nes): 4	1900	
Pumping Meth	hod:					Total Depth	of Casing (TD	in feet B	roc): 19.58 c): 6.55	
Other-Type: _		<del></del>				Water Level	Depth (WL in	feet BTO	c): <u>6.55</u>	
Purge Volu	me Calcula	<u>tion:</u>								
<u>(19,58</u> )-	(6.55)	X (4") <sup>2</sup>	x3	X 0.040	08 = <u>2</u> 5	5.5				
TD (f <del>ee</del> t) V	VL (feet)	D (inches)	# Vois		Purge \	/olume (gallon	s)			
Total Volum	ne Generati	ed (gallons	): <u>26</u>							
Start Time: 1	435		Stop Time:				· ——————	<del></del>		
ield Param	neter Measi	urements	т	T	<del>-</del>					
Time	Volume .	Temp	pН	Conductivity	2			Remarks		
(433	int	21.3	7.36	1183	<u> </u>	dy	Stiens 1	د روان د	products	Sheen
luul	85	Ziel	7.25				-		Very starri	2 3 cy S 4.
1452		71.1	7.25	1792	<u> </u>	SAA			ve s h	
1459	25.5	19.8	3.3	1775		5 A	<del>^</del>	914	mish	
<u> </u>				<u></u>	<del> </del>			_		
					<u> </u>	<u></u>	<del>-</del>	_	<u> </u>	
		ļ <u>-</u>					<del></del>			
		<u> </u>		<u></u>						
Notes: Femperature is	measured in d	iegrees Celsius	5							
√olume units a	re in gallons	-			The state of					
Conductivity un	nits are in micro	osiemens per c	entimeter (mS	/cm)	¥"					
Sampling Ir	nformation			· #						
Sample		Sample D	esignator	# of Cor	ntainers	Presen	vatives A	nalysis/Cor	nments	
GTI-4 / DUP-1	- :		بر بسب	2/2	1L amber	None		8015M	TPHd	
2.1. 1.7 301 11		<del>                                     </del>		3/3	40ml VOA	HCL		8021B	BTEX/MTBE	
		<u> </u>				None		8310	PNA's	
		<del> </del>		2/2	1L amber	None		40.10		



ou Name MOOD! Oakland		Well Number: GT-6
Site Name: WSCPI Oakland		
Project Number: 22872	4th Qtr 2006	Well Type: Monitor Extraction Other: Monitor  Date: 12.0 Sample Time:
Recorded By: 5B	-	Date: 12-2-65 Sample Time:
Purge Method		Purge Volume
Bailer-Type: <u>Disposable</u>		Casing Diameter (D in inches): 4
Pumping Method:	_	Total Depth of Casing (TD in feet BTOC): 27.75
Other-Type;	-	Water Level Depth (WL in feet BTOC): 6:64
	·.	
Purge Volume Calculation:		
(22.75)-(664) × (4")2	. 3	316
$(22.75) - (664) \times (4")^2$	X X 0.04	08 =
TD (feet) WL (feet) D (inches)	# Vols	Purge Volume (gallons)
Total Volume Generated (gallon	s):	
1 5 2 m	_	
Start Time: (\$20	Stop Time:	
Field Parameter Measurements		
	pH Conductivity	Remarks
Time Volume Temp	<del></del>	
52R 10:5 73.4	7.0 2054	
(\$ 30, 11. 73 )	6.85 -2199	
	27.7.	
5.37 31.3 72.9	6.89 2215	

Notes

Temperature is measured in degrees Celsius

Volume units are in gallons

Conductivity units are in microsiemens per centimeter (mS/cm)

Sample Point	Sample Designator	# of C	ontainers	Preservatives	Analysis/Сол	nments
<u>.</u> .	·	2	1L amber	None	8015M	TPHd
		3	40mi VOA	HCL	80218	BTEX/MTBE
			<u>.</u> .			



Site Name:	WSCPI Oakla	nd			Well Num	ber: MW - 3				
Project Nur	mber: 22872		4th Qtr 2006	3	Weil Type	Well Type: Monitor Extraction Other: Monitor				
Recorded E	Ву:				Date:	7-2-05	Sample Time:			
ourge Me	ethod				Purge V	<u>olume</u>				
Bailer-Type	e: <u>Disposable</u>				_	ameter (D in inches				
Pumping M	Method:				Total Depth of Casing (TD in feet BTOC):					
Other-Type	a:				Water Lev	rel Depth (WL in fee	et BTOC): <u>6 : 6 5</u>			
Purge Vo	olume Calcula	tion:								
(	) - ()	) X (2") <sup>2</sup> .	x	X 0.0408	=					
TD (feet)	WL (feet)	D (inches)	#Vols		Purge Volume (gai	lons)				
Total Vol	ume Generat	ed (gallons	):							
Start Time:	:		Stop Time:	<del></del>						
Field Par	ameter Meas	urements								
Time	Valume	Тетр	рН	Conductivity	<u> </u>	F	Remarks			
		<u> </u>			<del></del>					
		-		<u> </u>	<del>_</del>	<u> </u>				
		<u> </u>	-	-	·					
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				-						
	-		-			-				
		<del> </del>								
				<del>   </del>	, <del></del>					
			5							
Temperatur Volume unit	re is measured in ts are in gallons y units are in micr			i/cm)						
Temperatur Volume unit Conductivity	ts are in gallons	osiemens per o		S/cm)						
Temperatur Volume unit Conductivity Sampline	ts are in gallons y units are in micr	osiemens per c		# of Conta	iners Pre:	servatives Anal	ysis/Comments			
Temperatur Volume unit Conductivity Sampline	ts are in gallons y units are in micr g information	osiemens per c	centimeter (mS	<u> </u>	iners Pre	servatives Anal	ysis/Comments			
Volume unit Conductivity Sampline	ts are in gallons y units are in micr g information	osiemens per c	centimeter (mS	<u> </u>	iners Pre:	servatives Anal	ysis/Comments			
Temperatur Volume unit Conductivity Sampline	ts are in gallons y units are in micr g information	osiemens per c	centimeter (mS	<u> </u>	iners Pre-	servatives Anal	ysis/Comments			



TD (feet) WL (fee  Total Volume Ge  Start Time:  Field Parameter	Calculation:  (a) X (in the content of the content	: (2") <sup>2</sup> X _ inches) gallons): _	# Vols	X 0.040#	Purge	Water Level Depth (WL	Sample Time:
Purge Method Bailer-Type: Disposa Pumping Method: _ Other-Type:  Purge Volume Ca  () - (  TD (feet) WL (feet)  Total Volume Get  Start Time:  Field Parameter  Time Volume  Notes:	Calculation:  D (in the property of the proper	: ( 2*) <sup>2</sup> X _ inches) gallons): _	# Vols		Purge	Purge Volume Casing Diameter (D in in International Depth of Casing (*) Water Level Depth (WL	nches): 2 TD in feet BTOC): in feet BTOC):
Bailer-Type: Disposi Pumping Method: _ Other-Type:  Purge Volume C:  () - (  TD (feet) WL (fee  Total Volume Ge  Slart Time:  Field Parameter  Time Vol	alculation:  (a) X (b) (iii) (	: ( 2") <sup>2</sup> X _ inches) gallons): _	# Vols		Purge	Casing Diameter (D in in Total Depth of Casing (Total Depth of Casing (Total Depth (WL Water Level Depth (WL Volume (gallons)	TD in feet BTOC): in feet BTOC): 6.68
Pumping Method:Other-Type:	alculation:  (a) X (b) (iii) (	: ( 2") <sup>2</sup> X _ inches) gallons): _	# Vols		Purge	Total Depth of Casing (*) Water Level Depth (WL	TD in feet BTOC): in feet BTOC): 6.68
Other-Type:  Purge Volume Ca  (	Calculation:  (a) X (a) (ii) (iii) (	: ( 2") <sup>2</sup> X _ inches) gallons): _	# Vols		Purge	Water Level Depth (WL	in feet BTOC): <u>6.68</u>
Purge Volume Ca  () - (	Ealculation:  (a) X (b) D (li  (b) D (li  (c) Measurem	(2") <sup>2</sup> X _inches)  gallons): _	# Vols		Purge	Volume (gallons)	
Total Volume Ge Start Time:  Field Parameter Time Vol	et) X (in the contract of the	(2") <sup>2</sup> X inches) gallons):	# Vols		Purge	Volume (gallons)	Remarks
TD (feet) WL (feet)  Total Volume Get  Start Time:  Field Parameter  Time Vol	et) D (ii enerated (g	gallons): . St	# Vols		Purge	Volume (gallons)	Remarks
Total Volume Ge Start Time:  Field Parameter  Time Vol	enerated (g	gallons): St	top Time:				Remarks
Start Time:  Field Parameter  Time Vol	Measurem	St nents	top Time:				Remarks
Time Vol			Нq	Conductivity			Remarks
Notes:							
	,			i :			
		j					
						<u></u>	
		<u> </u>					
						<del>_</del>	
				<u> </u>			
Volume units are in ga Conductivity units are	allons		timeter (mS/	/cm)			
Sampling Inform	nation						
Sample Point	<del>  </del>	Sample Desi	ignator	# of Cont	ainers	Preservatives	Analysis/Comments
				•		1	t .



Site Name: W	SCPI Qakiar	nd			Well Number: MW-5				
Project Numbe	r. 22872		4th Qtr 200	3	Well Type: Monitor Extraction Other: Monitor				
Recorded By:					Date: Sample Time:				
Purge Metho	ad				Purge Volume				
Bailer-Type: <u>D</u> i					Casing Diameter (D in inches): 2				
Pumping Meth	od:				Total Depth of Casing (TD in feet BTOC):				
Other-Type: _					Water Level Depth (WL in feet BTOC): 6.35				
Purge Volum	ne Calcula	tion:							
() - (		X (2") <sup>2</sup> )	<	X 0.0408	. =				
TD (feet) WL (feet) 0 (inches)			#Vals		Purge Volume (gallons)				
Start Time:		- <u> </u>	Stop Time:						
Time	Volume	Тетр	pН	Conductivity	Remarks				
_									
			<u></u>						
-									
Notes:				<u> </u>					
Temperature is r Volume units are		egrees Celsius	i.						
Conductivity unit		siemens per ce	entimeter (mS	/cm)					
Sampling In	formation			<del></del>					
		Sample D	esignator	# of Contain	iners Preservatives Analysis/Comments				
Sample	r-oint	омпрів О	colditatol	# OI COIRE	1100 11001100 1100100				
	<u>-</u>			<del></del>					
		<u>.                                    </u>	-						



Site Name: WSCP! Oakland						Well Number: GT-5			
Project Number: 22872		4th Qtr 2008	6		Well Type: Monitor E	xtraction O			
Recorded By:						Date: 12-2-63	5	Sample Time: _	
Purge Me	thod					Purge Volume			
Bailer-Type	: <u>Disposable</u>					Casing Diameter (D in	inches): 4		
Pumping M	ethod:					Total Depth of Casing	(TD in feet	BTOC):	
Other-Type:						Water Level Depth (W	L in feet BT	(00): <u>6-55</u>	
<u>Purge Vo</u>	lume Calcul	ation:							
	· (	) X (4") <sup>2</sup> .	x	X 0.040	8 =				
TD (feet)	WL (feet)	D (inches)	#Vois		Purge \	Volume (gallons)			
	ume Genera	ted (gallons	):Stop Time:						
Field Para	meter Meas	urements	T	<u> </u>					
Time	Valume	Temp	pН	Conductivity			Remar	rks	
	<del></del>					<u> </u>	<del></del>		
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									·
Volume units	are in gallons	degrees Celsius		/cm)					
Sampling	Information	1							<del></del>
Sam	ple Point	Sample 0	Designator	# of Conta	ziners	Preservatives	Analysis/C	omments	<u> </u>
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						ļ	<del> </del>		
						_			
-							1		



Site Name: V	VSCPI Oakia	nd				Well Number: GT-3		
Project Numb			4th Qtr 200	6		Well Type: Monitor E	ktraction Other: Monitor	
Recorded By:				_		Date: 12-2-0		
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						(- 2 0	, ,	
Purge Meth	od					Purge Volume		
Bailer-Type: [						Casing Diameter (D in	inches): 4	
Pumping Method:						Total Depth of Casing (	(TD in feet BTOC): 22,20	
Other-Type: _							in feet BTOC): 6.02	
Purge Volu	me Calcula	ition:		•				
212	. ( .2 .		. 2	X 0.040	. 21	9		
				X 0.040				
TD (feet) V	VL (feet)	D (inches)	# Vois		Purge \	/olume (gallons)		
Start Time: _	······································		Stop Time:					<del></del>
ield Param	neter Meas	urements			•		<del></del>	<del></del>
Time	Volume	Тетр	pΗ	Conductivity			Remarks	
<del></del>	<del> </del>							
	<u>.</u>					·		
						<u> </u>		
								_
			-					
							,	
/olume units ar	re in gallons	legrees Celsius osiemens per ce		/cm)				
Sampling In	nformation							
Sample		Sample D	esignator	# of Cont	tainers	Preservatives	Analysis/Comments	
	-							
	_			l				

### APPENDIX B

CHAIN OF CUSTODY DOCUMENTATION AND ANALYTICAL REPORTS



# Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 9471O, Phone (51O) 486-0900

#### ANALYTICAL REPORT

Prepared for:

Burns & McDonnell 393 East Grand Avenue Suite J South San Francisco, CA 94080

Date: 21-DEC-05

Lab Job Number: 183610 Project ID: 22872

Location: CNF Oakland

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

Reviewed by:

Reviewed by:

perations Manager

This package may be reproduced only in its entirety.

NELAP # 01107CA

Page 1 of \_\_\_\_\_



#### CASE NARRATIVE

Laboratory number:

183610

Client:

Burns & McDonnell

Project:

22872

Location:

CNF Oakland

Request Date:

12/02/05

Samples Received:

12/02/05

This hardcopy data package contains sample and QC results for eight water samples, requested for the above referenced project on 12/02/05. The samples were received cold and intact.

#### TPH-Purgeables and/or BTXE by GC (EPA 8021B):

No analytical problems were encountered.

#### TPH-Extractables by GC (EPA 8015B):

No analytical problems were encountered.

#### Polynuclear Aromatics by HPLC (EPA 8310):

Low recovery was observed for benzo(k) fluoranthene in the MS for batch 108404; the parent sample was not a project sample, and the LCS was within limits. High RPD was also observed for benzo(k) fluoranthene in the MS/MSD for batch 108404. High surrogate recoveries were observed for 1-methylnaphthalene (F) and 1-methylnaphthalene (UV) in GT-1 (lab # 183610-008). No other analytical problems were encountered.

Burns & McDonnel				Request	for Che	mical A	nalysis	and Cl	hain d	of Cus	stody	Reco	ord							
	onnell Enginee		Labora	atory: Cu	rtis & Tor	nokins						Doc	ume	nt Co	ontro	No	.: ]	2-	2-05	
	d Avenue, Suite ncisco, CA 9408			dress: 2323 5th Street						Lab	. Ref	eren	ce N	lo. o	r Epis	sode	No.: 183610			
	871-2926 Fax:		353			· · · · · ·										7	7	7	////	
Attention: D	City/State/Zip: Berkeley, CA  Telephone: (510) 486-0900							\ \ \/\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\												
Project Number: 22 872 Sample Type					er of iners		3/8/	ئے/	\$\S		$\frac{9}{m}$	7 / /								
	BmeD								h	Matrix		Number of Containers of Contai								
	Sample Numbe		Samp	ole Event		Depth		mple	70	73			/		ر مر	7.4( ?v/	\ \bar{\chi}	7	/ /	
Group or SMWU Name	Sample Point	Sample Designator	Round	Year	(in f	eer) To	Date	Time	Liquid	Solid	Gas		Ž	3/2	*/\{	\$79	7		Remarks	
-\	mw-1		4gtr	7005			12-2	1210	人			5	X	X	X			/	<del></del>	
-2	mw-7							1250	l .			5-	Х	X	X				A Silicagel Cleanup iA detected	
-3	mw-2							1352	X			<b>ب</b>	人	¥	X				detected	
14	Gt-2							1470	×			5~	X	×	Х				1 8260B Conf.	· way
-5_	67-4							1500	X			7	X	人	<b>y</b>	Х			if doctected	
_6	1-qua								X			ک	人	乂		χ				
-1	4-6							1577	X			5	X	<b>×</b>	ኦ					
-8	9+-1			J.K.			بط	1610	人			7	X	¥	X	X				
-9	trip 6	Vank	<u> </u>									$\mathcal{A}$								
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	nBul	5	115 Pm	Yava		<u>نىك</u>	72	5:13	<u> </u>	Labor	ratory	Cém	No [ ment	sfiecei	ved	(r/c	an le			
Relinquished	By (signature):	Da	ate/Time	Received By (	signature):			Date/Tir	ne				Πâ	uid i	Äm	bjont	<b>Ž</b> U	tact		
2. <sub>3</sub>																				

051804 Form WCD-KC1-SDO-C&T



Total Extractable Hydrocarbons Lab #: 183610 Location: CNF Oakland Client: Prep: Analysis: Burns & McDonnell EPA 3520C Project#: 22872 EPA 8015B Matrix: Water Sampled: 12/02/05 Units: ug/L 12/02/05 12/05/05 Received: Batch#: 108402 Prepared:

Field ID: Type:

MW-1 SAMPLE Diln Fac: Analyzed:

1.000 12/06/05

183610-001 Lāb ID:

Analyte Result Diesel C10-C24 50

Surrogate %REC Limits Hexacosane 60-135

Field ID: Type: Lab ID:

MW-7SAMPLE 183610-002 Diln Fac:

1.000

Cleanup Method: EPA 3630C

**RL** 50 Analyte
Diesel C10-C24
Diesel C10-C24 (SGCU) Result Analyzed 99 H 12/06/05 50 12/07/05

Surrogate Hexacosane \*REC Limits Analyzed 60-135 12/06/05 12/06/05 12/07/05 Hexacosane (SGCU) 97 60-135

Field ID:

Type: Lab ID:

MW-2SAMPLE

183610-003

Diln Fac:

1.000

Cleanup Method: EPA 3630C

Analyte Analyzed Result Diesel C10-C24 Diesel C10-C24 (SGCU) 3,200 H 50 12/06/05 50 12/07/05 420

Surrogate trec Limits Analyzed 60-135 60-135 Hexacosane 12/06/05 12/07/05 100 Hexacosane (SGCU) 98

Field ID:

Type: Lab ID: GT-2 SAMPLE

183610-004

Diln Fac:

1.000

Cleanup Method: EPA 3630C

Analyte
Diesel C10-C24
Diesel C10-C24 (SGCU) **Result** 14,000 H RL. Analyzed 50 12/06/05 12,000 H 50 12/07/05

Surrogate \*REC Limits Analyzed 60-135 60-135 Hexacosane 12/06/05 12/07/05 100 Hexacosane (SGCU) 88

 $\mbox{\sc H=}$  Heavier hydrocarbons contributed to the quantitation  $\mbox{\sc NA=}$  Not Analyzed

ND= Not Detected

RL= Reporting Limit SGCU= Silica gel cleanup Page 1 of 3

Sample Name: 183610-002,108402

Data File: \Lims\gdrive\ezchrom\Projects\GC17A\Data\339a048

Sequence File: \\Lims\gdrive\ezchrom\Projects\GC17A\Sequence\339.seq

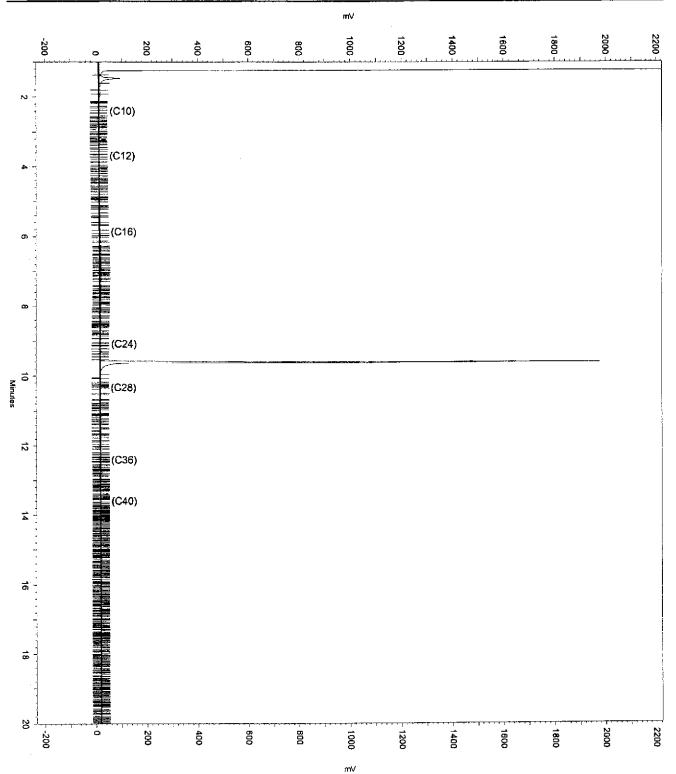
Software Version 3.1.7

Method Name: \\Lims\gdrive\ezchrom\Projects\GC17A\Method\ateh327.met

Run-Date: 12/6/2005 4:47:56 PM Analysis Date: 12/6/2005 5:54:44 PM

Instrument: GC17A (Offline) Vial: 48 Operator: Teh 3. Analyst (lims2k3\teh3)
Sample Amount: 1 Dilution Factor: 1 PDF: 1

MW-7

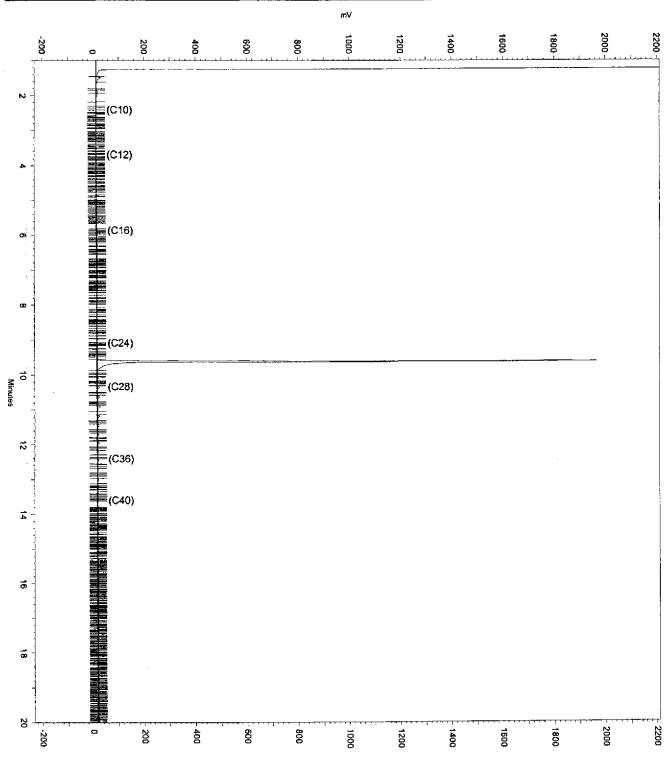


Sample Name: 183610-002sg,108402

Data File: \\Lims\gdrive\ezchrom\Projects\GC17A\Data\341a005

Sequence File: \\Lims\gdrive\ezchrom\Projects\GC17A\Sequence\341.seq Sequence File: \Lims\gdrive\exchrom\Projects\GC17A\Sequence\tag{1.seq}
Software Version 3.1.7
Method Name: \Lims\gdrive\exchrom\Projects\GC17A\Method\ateh327.met
Run Date: 12/7/2005 2:44:41 PM
Analysis Date: 12/7/2005 3:09:47 PM
Instrument: GC17A (Offline) Vial: 5 Operator: Teh 3. Analysi (lims2k3\teh3)
Sample Amount: 1 Dilution Factor: 1 PDF: 1

MW-7 SGCU



mV

Sample Name: 183610-003,108402

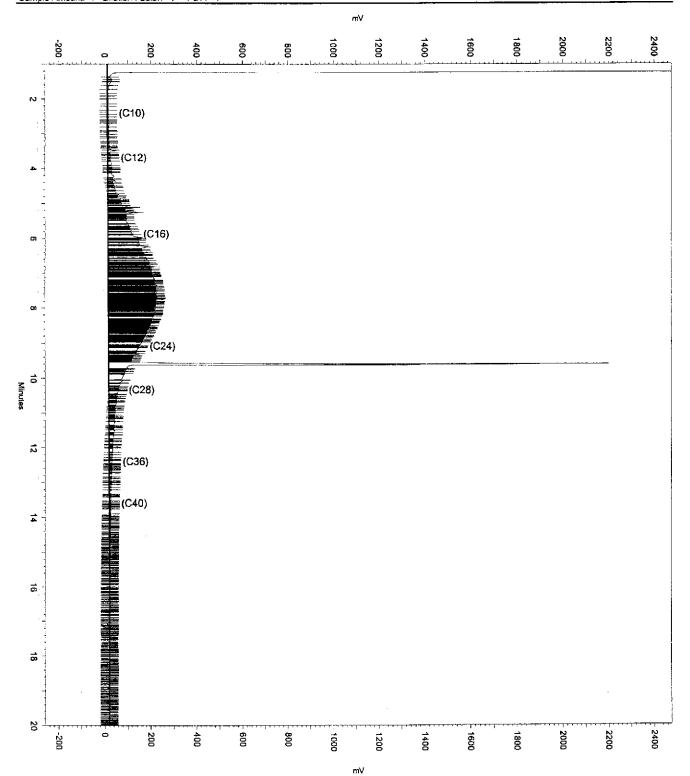
Sample Name: 183610-003,108402
Data File: \\Lims\gdrive\text{lms\gdrive\text{lcC17A\Data\339a049}}
Sequence File: \\Lims\gdrive\text{lcms\gdrive\text{lcC17A\Data\339a049}}
Sequence File: \\Lims\gdrive\text{lcms\gdrive\text{lcC17A\Sequence\339.seq}}
Software Version 3.1.7

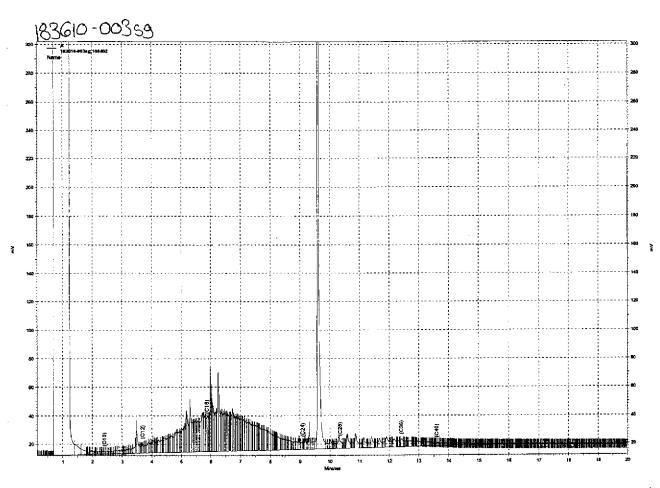
Method Name: \\Lims\gdrive\text{lcms\gdrive\text{lcC17A\Method\ateh327.met}}
Run Date: \( \frac{12/6}{2005} \) 5:15:31 PM

Analysis Date: \( \frac{12/6}{2005} \) 5:52:00 PM

Instrument: \( \frac{1C17A}{1C17} \) (Offline) \( \text{Viai: 49} \) Operator: \( \text{Teh 3. Analyst (lims2k3\teh3)} \) Sample Amount: \( \frac{1}{1} \) Dilution Factor: \( \frac{1}{1} \) \( \text{PDF: } \) 1

MW-2





\Lims\gdrive\ezchrom\Projects\GC17A\Data\341a006, A

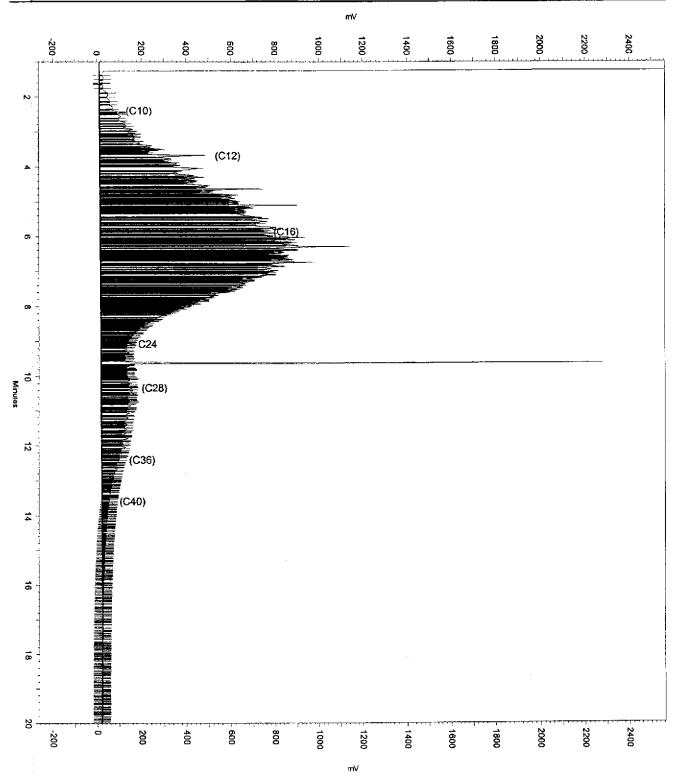
MW-2 SACU

Sample Name: 183610-004,108402
Data File: \\Lims\gdrive\eachrom\Projects\GC17A\Data\339a050
Sequence File: \\Lims\gdrive\eachrom\Projects\GC17A\Sequence\339.seq

Software Version 3.1.7

Method Name: \Lims\gdrive\ezchrom\Projects\GC17A\Method\ateh327.met
Run Date: 12/6/2005 5:42:39 PM
Analysis Date: 12/6/2005 6:10:59 PM
Instrument: GC17A (Offline) Vial: 50 Operator: Teh 3. Analyst (lims2k3\teh3)
Sample Amount: 1 Dilution Factor: 1 PDF: 1

GT-2



Page 2 of 2 (2)

Sample Name: 183610-004sg,108402

Data File: \\Lims\gdrive\eachrom\Projects\GC17A\Data\341a007 Sequence File: \\Lims\gdrive\eachrom\Projects\GC17A\Sequence\341.seq

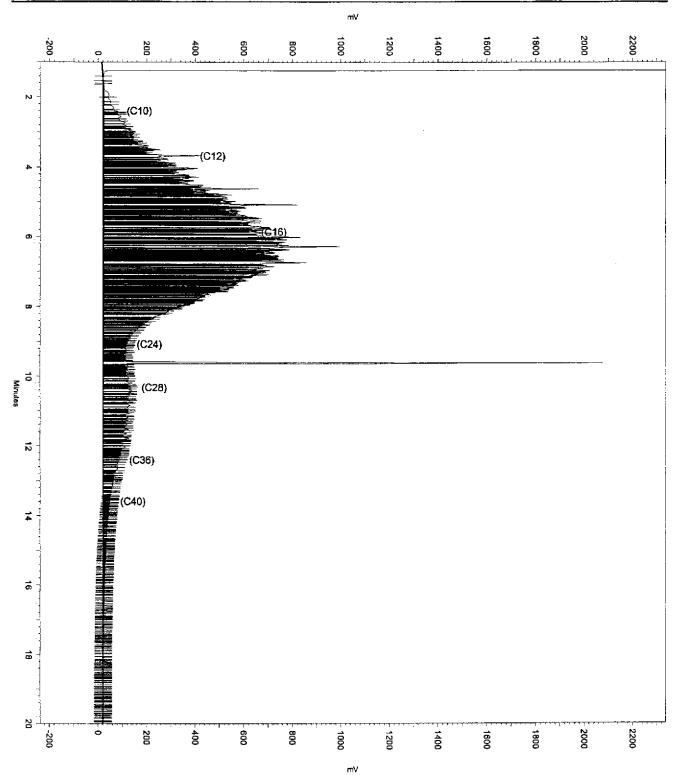
Software Version 3.1.7

Method Name: \\Lims\gdrive\ezchrom\Projects\GC17A\Method\ateh327.met Run Date: 12/7/2005 3:39:50 PM

Analysis Date: 12/7/2005 4:07:49 PM

Instrument: GC17A (Offline) Vial: 7 Operator: Teh 3, Analyst (lims2k3\teh3)
Sample Amount: 1 Dilution Factor: 1 PDF: 1

GT-Z SGCU





Total Extractable Hydrocarbons Lab #: 183610 Location: CNF Oakland Client: Burns & McDonnell EPA 3520C Prep: Project#: EPA 8015B 12/02/05 Analysis: Sampled: 22872 Matrix: Water ug/L 108402 12/02/05 12/05/05 Units: Received: Batch#: Prepared:

Field ID:

GT-4

Lab ID:

183610-005

Type:

SAMPLE

Cleanup Method: EPA 3630C

Analyte	Result	RL	Diln Fa	c Analyzed
Diesel C10-C24	27,000	100	2.000	12/08/05
Diesel C10-C24 (SGCU)	24,000	50	1.000	12/07/05

Surrogate	₹RE	C Limits Di	n Fac Analyzed	
Hexacosane	92	60-135 2.0	00 12/08/05	
Hexacosane (SGCU)	97	60-135 1.0	00 12/07/05	•

Field ID:

DUP-1

Lab ID:

183610-006

Type:

SAMPLE

Cleanup Method: EPA 3630C

Analyte	Result	RL	Diln Fac	n Analyzed
Diesel C10-C24	49,000	150	3.000	12/08/05
Diesel C10-C24 (SGCU)	42,000	250	5.000	12/07/05

Surrogate	%RBC	Limite	Diln F	ac Analyzed	
Hexacosane	100	60-135	3.000	12/08/05	
Hexacosane (SGCU)	99	60-135	5.000	12/07/05	

Field ID:

GT-6

SAMPLE

Diln Fac:

1.000

Type: Lab ID:

183610-007

Cleanup Method: EPA 3630C

Analyte	Result	RL	
Diesel C10-C24	5,700	50	12/06/05
Diesel C10-C24 (SGCU	4,600	50	12/07/05

Surrogate				
Surrogate	*KK!	Limits	Analyzed	
Hexacosane	108	60-135	12/06/05	
Hexacosane (SGCU)	100	60-135	12/07/05	

Field ID:

SAMPLE

Diln Fac:

1.000

Cleanup Method: EPA 3630C

Type: Lab ID: 183610-008

Analyte	Result		Analyzed	
Diesel C10-C24	6,300	50	12/06/05	
Diesel C10-C24 (SGCU)	5,900	50	12/07/05	

Surrogate	%REC	Limits	Analyzed
Hexacosane	100	60-135	12/06/05
Hexacosane (SGCU)	104	60-135	12/07/05

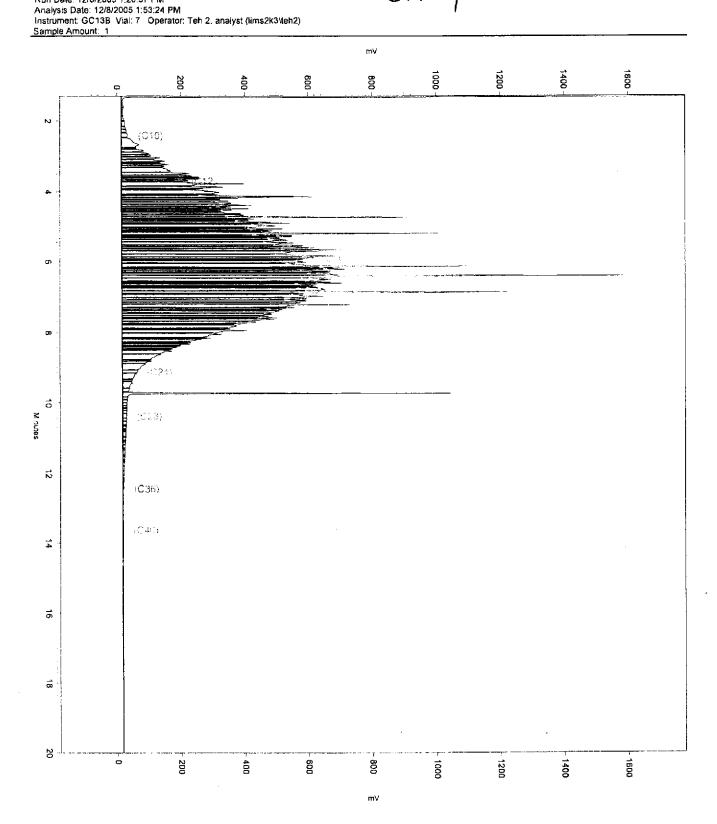
H= Heavier hydrocarbons contributed to the quantitation

NA= Not Analyzed ND= Not Detected

RL= Reporting Limit SGCU= Silica gel cleanup Page 2 of 3

Sample Name: 183610-005,108402,2x
Data File: \\Lims\gdrive\ezchrom\Projects\GC13B\Data\342b007
Sequence File: \\Lims\gdrive\ezchrom\Projects\GC13B\Sequence\342,seq
Software Version 3.1.7
Method Name: \\Lims\gdrive\ezchrom\Projects\GC13B\Method\bteh339.met
Run Date: 12/8/2005 1:20:37 PM

GT-4



Sample Name: 183610-005sg,108402

Data File: \\Lims\gdrive\ezchrom\Projects\GC17A\Data\341a008

Sequence File: \\Lims\gdrive\ezchrom\Projects\GC17A\Sequence\341.seq

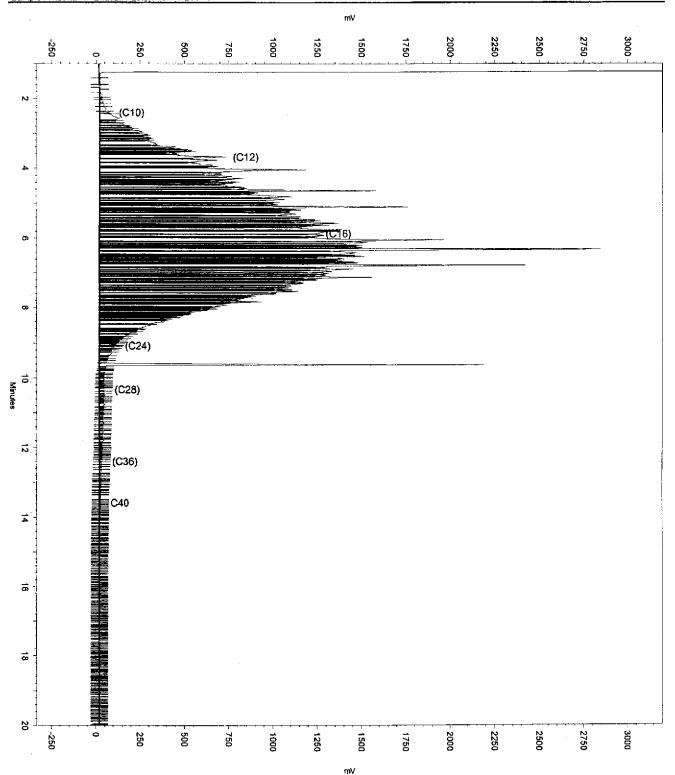
Software Version 3.1.7

Method Name: \Lims\gdrive\ezchrom\Projects\GC17A\Method\ateh327.met

Run Date: 12/7/2005 4:07:02 PM

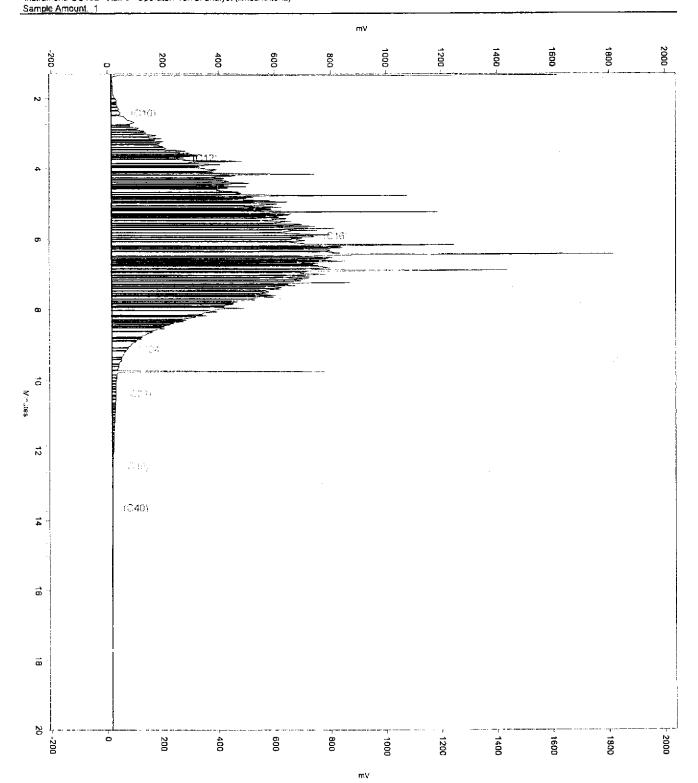
Analysis Date: 12/7/2005 4:45:20 PM
Instrument: GC17A (Offline) Vial: 8 Operator: Teh 3. Analyst (lims2k3\teh3)
Sample Amount: 1 Dilution Factor: 1 PDF: 1

GT-4 SGC4

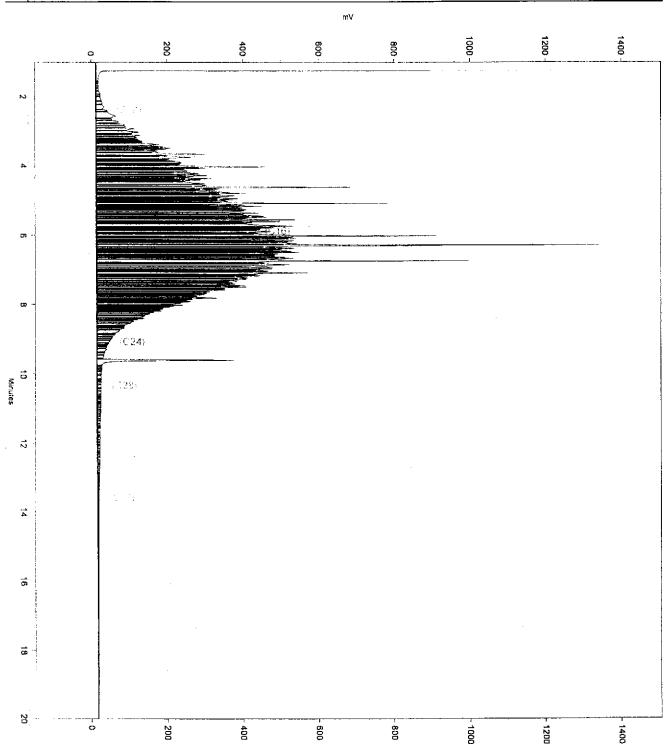


Sample Name: 183610-006,108402,3x
Data File: \\Lims\gdrive\ezchrom\Projects\GC13B\Data\342b006
Sequence File: \\Lims\gdrive\ezchrom\Projects\GC13B\Sequence\342.seq
Software Version 3.1.7
Method Name: \\Lims\gdrive\ezchrom\Projects\GC13B\Method\bteh339.met
Run Date: \12/8/2005 \12:52:56 PM
Analysis Date: \12/8/2005 \1:52:56 PM
Instrument: GC13B Vial: 6 Operator: Teh 2. analyst (lims2k3\teh2)

DUP-1



DUP-1 SGCU



m٧

Sample Name: 183610-007,108402

Data File: \\Lims\gdrive\ezchrom\Projects\GC17A\Data\339a053

Sequence File: \\Lims\gdrive\ezchrom\Projects\GC17A\Sequence\339.seq

Software Version 3.1.7

Method Name: \\Lims\gdrive\ezchrom\Projects\GC17A\Method\ateh327.met

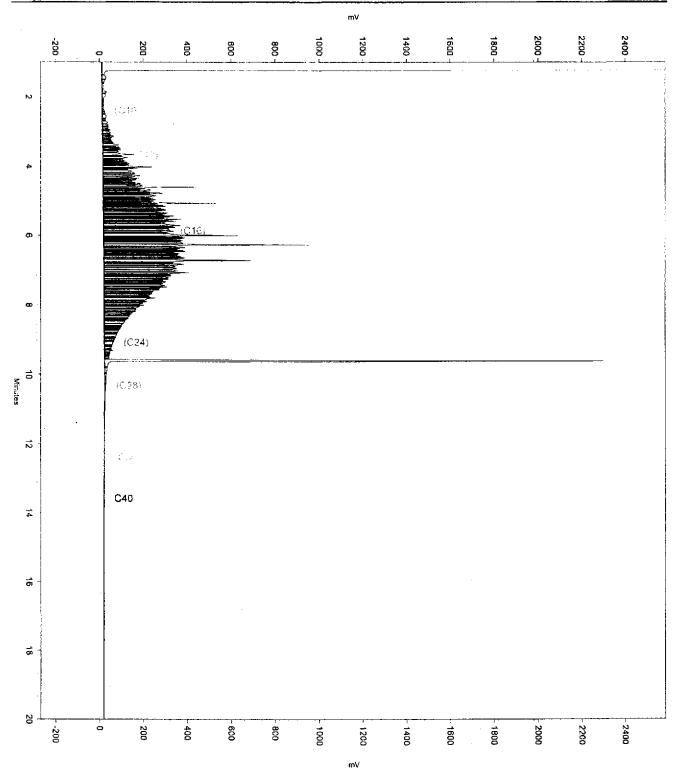
Run Date: 12/6/2005 7:05:09 PM

Analysis Date: 12/7/2005 9:32:38 AM

Instrument: GC17A (Offline) Vial: 53 Operator. Teh 2. analyst (lims2k3\teh2)

Sample Amount: 1 Dilution Factor: 1 PDF: 1





Page 2 of 2 (6)

Sample Name: 183610-007sg,108402

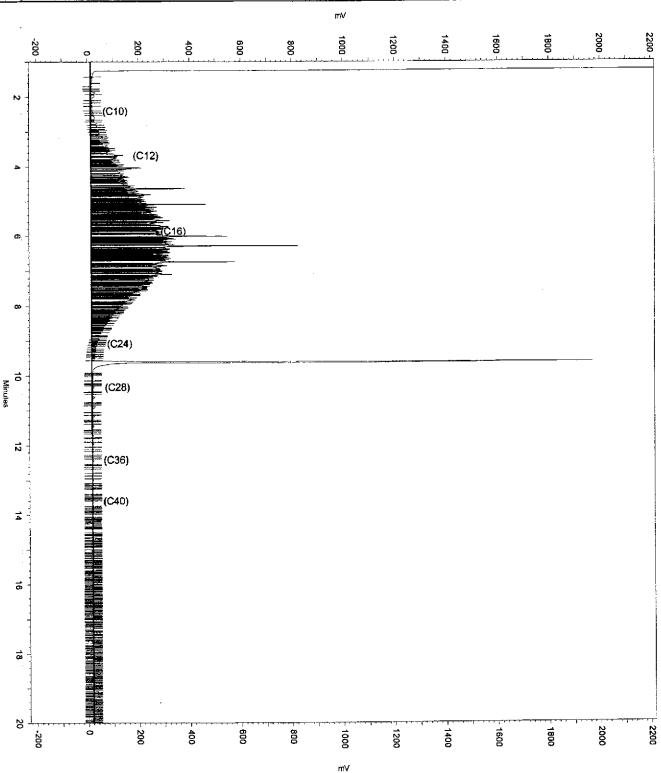
Data File: \Lims\gdrive\ezchrom\Projects\GC17A\Data\341a010
Sequence File: \Lims\gdrive\ezchrom\Projects\GC17A\Sequence\341.seq

Software Version 3.1.7

Method Name: \Lims\gdrive\ezchrom\Projects\GC17A\Method\ateh327.met Run Date: 12/7/2005 5:02:22 PM

Analysis Date: 12/7/2005 5:23:35 PM
Instrument: GC17A (Offline) Vial: 10 Operator: Teh 3. Analyst (lims2k3\teh3)
Sample Amount: 1 Dilution Factor: 1 PDF: 1





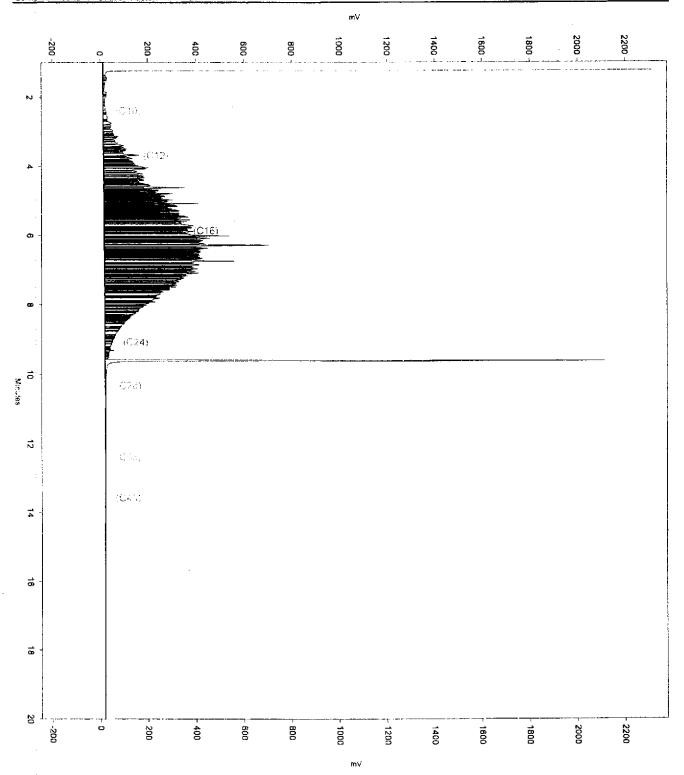
Sample Name: 183610-008,108402 Data File: \\Lims\gdrive\ezchrom\Projects\GC17A\Data\339a054 Sequence File: \\Lims\gdrive\ezchrom\Projects\GC17A\Sequence\339.seq Software Version 3.1.7

Method Name: \Limstgdrive\ezchrom\Projects\GC17A\Method\ateh327,met Run Date: 12/6/2005 7:32:28 PM

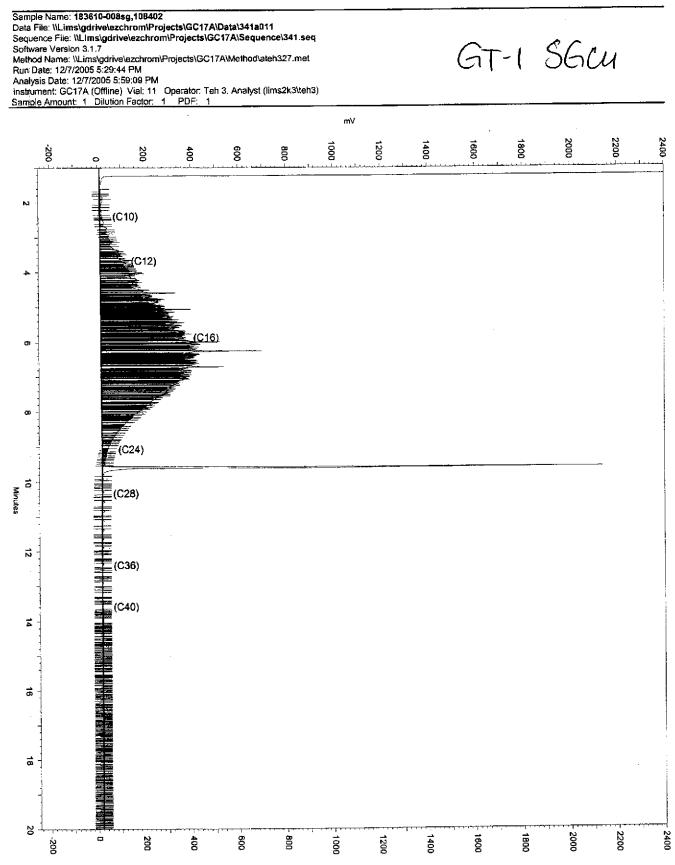
Analysis Date: 12/7/2005 9:33:15 AM

Instrument: GC17A (Offline) Vial: 54 Operator: Teh 2. analyst (lims2k3\teh2)
Sample Amount: 1 Dilution Factor: 1 PDF: 1

GT-1 Bass



GT-1 SGCU



mV

Sample Name: ccv,s1960,dsi\_500
Data File: \\Lims\gdrive\ezchrom\Projects\GC11A\Data\339a003
Sequence File: \\Lims\gdrive\ezchrom\Projects\GC11A\Sequence\339.seq
Software Version 3.1.7
Method Name: \\Lims\gdrive\ezchrom\Projects\GC11A\Method\ateh311.met
Run Date: 12/5/2005 12:26:55 PM
Analysis Date: 12/5/2005 3:34:08 PM
Instrument: GC11A \Vial: 3 Operator: Teh 1. Analyst (tims2k3\teh1)
Sample Amount: 1 Diesel Sample Amount: 1 m٧ ĝ (C24)Minutes C.3 ស € 36 (C40) ᄚ 귫 -200

mV



	Total Ext	actable Hydrocar	bons
Lab #:	183610	Location:	CNF Oakland
Client:	Burns & McDonnell	Prep:	EPA 3520C
Project#:	22872 Water	Analysis: Sampled:	EPA 8015B
Units:	ug/L	Received:	12/02/05
Batch#:	108402	Prepared:	12/05/05

Type: Lab ID: Diln Fac:

BLANK OC319826 1.000

Analyzed: 12/06/05 Cleanup Method: EPA 3630C

	yte	Result	RL
Diesel Cl0-C24	NA		
Diesel C10-C24 (	(SCCII)	dī)	50

Surrogat	e Result	*REC	Limits	
Hexacosane	NA			
Hexacosane (SGCU)		94	60-135	

H= Heavier hydrocarbons contributed to the quantitation NA= Not Analyzed ND= Not Detected RL= Reporting Limit SGCU= Silica gel cleanup Page 3 of 3



		ractable Hydrocar	rbons
Lab #:	183610	Location:	CNF Oakland
Client:	Burns & McDonnell	Prep:	EPA 3520C
Project#:	22872	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC319827	Batch#:	108402
Matrix:	Water	Prepared:	12/05/05
Units:	ug/L	Analyzed:	12/06/05

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	#REC	C Limits
Diesel C10-C24		NA		
Diesel C10-C24 (SGCU)	2,500	2,143	86	53-138

5	urrogate Resi	ilt %REC	Limits	
Hexacosane	, NA			
Hexacosane	(SGCU)	94	60-135	



	Total Ext	ractable Hydrocar	fbons
Lab #:	183610	Location:	CNF Oakland
Client:	Burns & McDonnell	Prep:	EPA 3520C
Project#:	22872	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZ	Batch#:	108402
MSS Lab ID:	183555-010	Sampled:	11/30/05
Matrix:	Water	Received:	12/01/05
Units:	ug/L	Prepared:	12/05/05
Diln Fac:	1.000	Analyzed:	12/06/05

Type:

MS

Cleanup Method: EPA 3630C

Lab ID:

QC319828

Analyte	MSS Result	Spiked	Result		Limits
Diesel C10-C24			AK		
Diesel C10-C24 (SGCU)	20.97	2,500	2,042	81	55-133

Surrog	ate Result	&REC :	Limits
Hexacosane	NA	-	
Hexacosane (SGCU	8	9	60-135

Type:

MSD

Lab ID:

QC319829

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPI	Lim
Diesel C10-C24	•	NA				
Diesel C10-C24 (SGCU)	2,500	2,054	81	55-133	1	33

Surrogate	Result	%REC	Limits	
Hexacosane	NA			
Hexacosane (SGCU)		89	60-135	 

NA= Not Analyzed

RPD= Relative Percent Difference

SGCU= Silica gel cleanup

Page 1 of 1



Lab #: 183610 Location: CNF Oakland EPA 5030B EPA 8021B 12/02/05 Client: Prep: Analysis: Burns & McDonnell Project#: 22872 Matrix: Water Sampled: Units: Diln Fac: ug/L 1.000 Received: 12/02/05 12/04/05 Analyzed: Batch#: 108356

Field ID:

MW-1

Lab ID:

183610-001

Type:

SAMPLE

Analyte	Result	RL	
MTBE	ND ,	2.0	
Benzene	ND	0.50	
Toluene	ND	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes	ND	0.50	
o-Xylene	ND	0.50	

Surrogate	*REC	Limits
Trifluorotoluene (PID)	88	67-127
Bromofluorobenzene (PID)	100	80~122

Field ID:

MW - 7

Lab ID: 183610-002

Type:

SAMPLE

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%RE	C Limits	
Trifluorotoluene (PID)	83	67-127	
Bromofluorobenzene (PID)	93	80-122	

Field ID:

Type:

MW - 2

SAMPLE

Lab ID:

183610-003

Analyte	Result	RL	
MTBE	ND	2.0	
Benzene	ND	0.50	
Toluene	ИD	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes	ND	0.50	
o-Xylene	ND	0.50	

Surrogate	%R	EC Limits
Trifluorotoluene (PID)	86	67-127
Bromofluorobenzene (PID)	94	80-122

C= Presence confirmed, but RPD between columns exceeds 40% ND= Not Detected

RL= Reporting Limit Page 1 of 3



Lab #:	183610	Location:	CNF Oakland
Client:	Burns & McDonnell	Prep:	EPA 5030B
Project#:	22872	Analysis:	EPA 8021B
Matrix:	Water	Sampled:	12/02/05
Units:	ug/L	Received:	12/02/05
Diln Fac:	1.000	Analyzed:	12/04/05
Batch#:	108356		, ,

Field ID: GT-2 Type: SAMPLE

Lab ID: 183610-004

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0,50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%RI	EC Limits
Trifluorotoluene (PID)	84	67-127
Bromofluorobenzene (PID)	92	80-122

Field ID: GT-4 Type:

SAMPLE

Lab ID: 183610-005

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND ND	0.50

Surrogate	%REC	Limits	
Trifluorotoluene (PID)	85	67-127	
Bromofluorobenzene (PID)	94	80-122	

Field ID: DUP-1 Type:

SAMPLE

Lab ID: 183610-006

Analyte	Result	RL	0.000
MTBE	ND ·	2.0	
Benzene	ND	0.50	
Toluene	ND	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes	ND	0.50	
o-Xylene	ND	0.50	

Surrogate	%RE	C Limits	
Trifluorotoluene (PID)	89	67-127	
Bromofluorobenzene (PID)	94	80-122	

C= Presence confirmed, but RPD between columns exceeds 40% ND= Not Detected RL= Reporting Limit Page 2 of 3



Lab #: 183610 Location: CNF Oakland Client: Burns & McDonnell EPA 5030B Prep: Analysis: EPA 8021B 12/02/05 12/02/05 12/04/05 Project#: 22872 Water Matrix: Sampled: ug/L 1.000 Units: Received: Diln Fac: Analyzed: Batch#: 108356

Field ID:

GT-6

Lab ID:

183610-007

Type:

SAMPLE

Analyte	Result	RL	
MTBE	ND	2.0	
Benzene	ND	0.50	
Toluene	ND	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes	ND	0.50	
o-Xylene	ND	0.50	

Surrogate	<b>488</b>	C Limits
Trifluorotoluene (PID)	B5	67-127
Bromofluorobenzene (PID)	94	80-122

Field ID.

GT-1

Lab ID:

183610-008

Fiera	TD:
Type:	

SAMPLE

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	12 C	0.50
m,p-Xylenes	ND	0.50
o-Xylene	11 C	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	87	67-127
Bromofluorobenzene (PID)	115	80-122

Type:

BLANK

Lab ID:

QC319621

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%RB(	C Limits	
Trifluorotoluene (PID)	86	67-127	
Bromofluorobenzene (PID)	92	80-122	

C= Presence confirmed, but RPD between columns exceeds 40% ND= Not Detected RL= Reporting Limit Page 3 of 3



Lab #:	183610	Location:	CNF Oakland
Client:	Burns & McDonnell	Prep:	EPA 5030B
Project#:	22872	Analysis:	EPA 8021B
Type:	BS	Diln Fac:	1.000
Lab ID:	QC319622	Batch#:	108356
Matrix:	Water	Analyzed:	12/04/05
Units:	ug/L	•	•

Analyte	Spiked	Result	%REC	'Limits
MTBE	20.00	19.31	97	72-124
Benzene	20.00	20.44	102	80-120
Toluene	20.00	19.57	98	80-120
Ethylbenzene	20.00	20.64	103	80-120
m,p-Xylenes	20.00	19.89	99	80-120
o-Xylene	20.00	20.37	102	80-120

Surrogate	%RE	C Limits
Trifluorotoluene (PID)	88	67-127
Bromofluorobenzene (PID)	92	80-122



Lab #:	183610	Location:	CNF Oakland
Client:	Burns & McDonnell	Prep:	EPA 5030B
Project#:	22872	Analysis:	EPA 8021B
Type:	BSD	Diln Fac:	1.000
Lab ID:	QC319624	Batch#:	108356
Matrix:	Water	Analyzed:	12/04/05
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	20.00	18.92	95	72-124	2	27
Benzene	20.00	18.73	94	80-120	9	20
Toluene	20.00	18.33	92	80-120	7	20
Ethylbenzene	20.00	19.35	97	80-120	6	20
m,p-Xylenes	20.00	18.49	92	80-120	7	20
o-Xylene	20.00	19.80	99	80-120	3	20

Surrogate	%REC	Limits	
Trifluorotoluene (PID)	83	67-127	
Bromofluorobenzene (PID)	92	80-122	



	Polynucle	ar Aromatics by F	IPLC
Lab #:	183610	Location:	CNF Oakland
Client:	Burns & McDonnell	Prep:	EPA 3520C
Project#:	22872	Analysis:	EPA 8310
Field ID:	GT-4	Batch#:	108404
Lab ID:	183610-005	Sampled:	12/02/05
Matrix:	Water	Received:	12/02/05
Units:	ug/L	Prepared:	12/05/05
Diln Fac:	1.000	Analyzed:	12/08/05

Analyte	Result	RL	
Naphthalene	ND	0.98	
Acenaphthylene	ND '	2.0	
Acenaphthene	4.9	0.98	
Fluorene	8.7	0.20	
Phenanthrene	5.3	0.10	
Anthracene	1.1	0.10	
Fluoranthene	10	0.20	
Pyrene	7.0	0.10	
Benzo(a)anthracene	2.3	0.10	
Chrysene	3.5	0.10	
Benzo(b)fluoranthene	0.33	0.20	
Benzo(k)fluoranthene	0.16	0.10	
Benzo(a)pyrene	ND	0.10	
Dibenz(a,h)anthracene	0.38	0.20	
Benzo(g,h,i)perylene	ND	0.20	
Indeno(1,2,3-cd)pyrene	ND	0.10	

Surrogate		%REC	Limits	
1-Methylnaphthalene	(UV)	104	64-122	
1-Methylnaphthalene	(F)	101	61-125	



	Polynucle	ar Aromatics by F	IPLC
Lab #:	183610	Location:	CNF Oakland
Client:	Burns & McDonnell	Prep:	EPA 3520C
Project#:	22872	Analysis:	EPA 8310
Field ID:	DUP-1	Batch#:	108404
Lab ID:	183610-006	Sampled:	12/02/05
Matrix:	Water	Received:	12/02/05
Units:	ug/L	Prepared:	12/05/05
Diln Fac:	1.000	Analyzed:	12/08/05

Analyte	Result	PL
Naphthalene	ND	0.97
Acenaphthylene	ND	1.9
Acenaphthene	2.6	0.97
Fluorene	4.7	0.19
Phenanthrene	3.0	0.10
Anthracene	0.58	0.10
Fluoranthene	5.3	0.19
Pyrene	4.1	0.10
Benzo(a)anthracene	1.0	0.10
Chrysene	1.5	0.10
Benzo(b)fluoranthene	ND	0.19
Benzo(k)fluoranthene	ND	0.10
Benzo(a)pyrene	ND	0.10
Dibenz(a,h)anthracene	ND	0.19
Benzo(g,h,i)perylene	ND	0.19
Indeno(1,2,3-cd)pyrene	ND	0.10

Surrogate	%REC	Limits		
1-Methylnaphthalene (UV)	107	64-122		
1-Methylnaphthalene (F)	104	61-125		
			· · · · · · · · · · · · · · · · · · ·	

ND= Not Detected RL= Reporting Limit Page 1 of 1



	Polynucle	ar Aromatics by I	IPLC
Lab #:	183610	Location:	CNF Oakland
Client:	Burns & McDonnell	Prep:	EPA 3520C
Project#:	22872	Analysis:	EPA 8310
Field ID:	GT-1	Sampled:	12/02/05
Lab ID:	183610-008	Received:	12/02/05
Matrix:	Water	Prepared:	12/05/05
Units:	ug/L	Analyzed:	12/08/05
Batch#:	108404		,,

Analyte	Result	RL	Diln Fac
Naphthalene	ND	0.95	1.000
Acenaphthylene	ND	1.9	1.000
Acenaphthene	11	0.95	1.000
Fluorene	14	0.19	1.000
Phenanthrene	36	0.48	5.000
Anthracene	1.1	0.10	1.000
Fluoranthene	15	0.95	5.000
Pyrene	5.4	0.10	1.000
Benzo(a) anthracene	3.7	0.10	1.000
Chrysene	4.9	0.10	1.000
Benzo(b)fluoranthene	ND	0.19	1.000
Benzo(k)fluoranthene	0.18	0.10	1.000
Benzo(a)pyrene	0.18	0.10	1.000
Dibenz(a,h)anthracene	0.23	0.19	1.000
Benzo(g,h,i)perylene	0.25	0.19	1.000
Indeno(1,2,3-cd)pyrene	0.13	0.10	1.000

1-Methylnaphthalene	(F)	141	*	61-125	1.000
1-Methylnaphthalene	(UV)	167	*	64-122	1.000
Surrogate		4RI	C.	Limits	Diln Fac

<sup>\*=</sup> Value outside of QC limits; see narrative ND= Not Detected RL= Reporting Limit



	Polymucle	er Aromatics by F	IPLC
Lab #:	183610	Location:	CNF Oakland
Client:	Burns & McDonnell	Prep:	EPA 3520C
Project#:	22872	Analysis:	EPA 8310
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC319834	Batch#:	108404
Matrix:	Water	Prepared:	12/05/05
Units:	ug/L	Analyzed:	12/07/05

Analyte	Result	RL
Naphthalene	ND	1.0
Acenaphthylene	ND	2.0
Acenaphthene	ND	1.0
Fluorene	ND	0.20
Phenanthrene	ND	0.10
Anthracene	ND	0.10
Fluoranthene	ND	0.20
Pyrene	ND	0.10
Benzo(a)anthracene	ND	0.10
Chrysene	ND.	0.10
Benzo(b)fluoranthene	ND	0.20
Benzo(k)fluoranthene	ND	0.10
Benzo(a)pyrene	ND	0.10
Dibenz(a,h)anthracene	ND	0.20
Benzo(g,h,i)perylene	ND	0.20
Indeno(1,2,3-cd)pyrene	ND	0.10

1-Methylnaphthalene	(F)	94	61-125
1-Methylnaphthalene	(UV)	95	64-122
Surrogate		%REC	

ND= Not Detected RL= Reporting Limit Page 1 of 1



	Polymucle	ar Aromatics by I	HPEC
Lab #:	183610	Location:	CNF Oakland
Client:	Burns & McDonnell	Prep:	EPA 3520C
Project#:	22872	Analysis:	EPA 8310
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC319835	Batch#:	108404
Matrix:	Water	Prepared:	12/05/05
Units:	ug/L	Analyzed:	12/07/05

Analyte	Spiked	Result	%REC	: Limits
Naphthalene	10.00	9.598	96	69-120
Acenaphthylene	20.00	19.28	96	73-120
Acenaphthene	10.00	9.584	96	65-127
Fluorene	2.000	1.950	98	70-121
Phenanthrene	1.000	0.9880	99	68-120
Anthracene	1.000	0.9337	93	68-120
Benzo(k)fluoranthene	1.000	1.015	101	71-121
Indeno(1,2,3-cd)pyrene	1.000	0.9701	97	70-122

1-Methylnaphthalene (UV)		%RE	C Limits
1-Methylnaphthalene (F) 92 61-125	1-Methylnaphthalene (UV)	93	
	1-Methylnaphthalene (F)	92	61-125



	Polynucle:	ar Aromatics by H	IPLC
Lab #:	183610	Location:	CNF Oakland
Client:	Burns & McDonnell	Prep:	EPA 3520C
Project#:	22872	Analysis:	EPA 8310
Field ID:	ZZZZZZZZZ	Batch#:	108404
MSS Lab ID:	183555-010	Sampled:	11/30/05
Matrix:	Water	Received:	12/01/05
Units:	$\mathtt{ug}/\mathtt{L}$	Prepared:	12/05/05
Diln Fac:	1.000	Analyzed:	12/07/05

Type:

MS

Lab ID: QC319836

Analyte	MSS Result	Spiked	Result	*REC	Limits
Naphthalene	<0.07025	9.709	9.318	96	1-171
Acenaphthylene	<0.09185	19.42	18.77	97	7-172
Acenaphthene	<0.06250	9.709	9.082	94	1-186
Fluorene	<0.01498	1.942	1.911	98	15-173
Phenanthrene	<0.008593	0.9709	0.8926	92	67-167
Anthracene	<0.007922	0.9709	0.8235	85	47-168
Benzo(k)fluoranthene	<0.005005	0.9709	0.3841	40 *	44-122
Indeno(1,2,3-cd)pyrene	<0.006209	0.9709	0.3513	36	23-172

Surrogate	%RB(	. Limite	
1-Methylnaphthalene (UV)	94	64-122	
1-Methylnaphthalene (F)	92	61-125	·

Type:

MSD

Lab ID:

QC319837

Analyte	Spiked	Result	9.RE	C Limits	RPD	Lim
Naphthalene	9.709	9.256	95	1-171	1	46
Acenaphthylene	19.42	18.71	96	7-172	0	32
Acenaphthene	9.709	9.173	94	1-186	1	46
Fluorene	1.942	1.904	98	15-173	0	32
Phenanthrene	0.9709	0.9444	97	67-167	6	30
Anthracene	0.9709	0.8782	90	47-168	6	39
Benzo(k)fluoranthene	0.9709	0.5035	52	44-122	27	* 20
Indeno(1,2,3-cd)pyrene	0.9709	0.3573	37	23-172	2	25

Surrogate		FREC	Limits
1-Methylnaphthalene	(UV)	94	64-122
1-Methylπaphthalene	(F)	92	61-125

\*= Value outside of QC limits; see narrative RPD= Relative Percent Difference Page 1 of 1



	Polynucle	ar Aromatics by H	IPLC
Lab #:	183610	Location:	CNF Oakland
Client:	Burns & McDonnell	Prep:	EPA 3520C
Project#:	22872	Analysis:	EPA 8310
Field ID:	ZZZZZZZZZ	Batch#:	108404
MSS Lab ID:	183555-015	Sampled:	11/30/05
Matrix:	Water	Received:	12/01/05
Units:	ug/L	Prepared:	12/05/05
Diln Fac:	1.000	Analyzed:	12/07/05

Type:

MS

Lab ID: QC319838

Analyte	MSS Result	Spiked	Result	%REC	Limits
Naphthalene	<0.07025	9.709	8.693	90	1-171
Acenaphthylene	<0.09185	19.42	17.18	88	7-172
Acenaphthene	<0.06250	9.709	8.520	88	1-186
Fluorene	<0.01498	1.942	1.746	90	15-173
Phenanthrene	<0.008593	0.9709	0.8810	91	67-167
Anthracene	<0.007922	0.9709	0.8178	84	47-168
Benzo(k)fluoranthene	<0.005005	0.9709	0.8800	91	44-122
Indeno(1,2,3-cd)pyrene	<0.006209	0.9709	0.8512	88	23-172

Surrogate		*REC	Limits
1-Methylnaphthalene	(UV)	85	64-122
1-Methylnaphthalene	(F)	83	61-125

Type:

MSD

Lab ID: QC319839

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Naphthalene	9.709	9.534	98	1-171	9	46
Acenaphthylene	19.42	19.02	98	7-172	10	32
Acenaphthene	9.709	9.336	96	1-186	9	46
Fluorene	1.942	1.934	100	15-173	10	32
Phenanthrene	0.9709	0.9424	97	67-167	7	30
Anthracene	0.9709	0.8932	92	47-168	9	39
Benzo(k)fluoranthene	0.9709	0.9478	98	44-122	7	20
Indeno(1,2,3-cd)pyrene	0.9709	0.9067	93	23-172	6	25

Surrogate		*REC	Limits	
1-Methylnaphthalene	(UV)	96	64-122	
1-Methylnaphthalene	(F)	94	61-125	i