REMEDIATION UPDATE REPORT
FOR
AUGUST 5, 2004 TO FEBRUARY 25, 2005

FLINT HILLS RESOURCES, LP
NORTH TERMINAL
3325 RIVER ROAD
WILMINGTON, NORTH CAROLINA

JUNE 15, 2005

PREPARED FOR:

REISS REMEDIATION, LLC
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EULESS, TEXAS 76040

ON BEHALF OF:

FLINT HILS RESOURCES, LP

CATLIN PROJECT NO. 201-125

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June 15, 2005

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JUN 17 2005

North Carolina Department of Environment
and Natural Resources
Division of Water Quality
Attn: Dr. Charles L. Stehman, P.G.
127 Cardinal Drive Extension
Wilmington, North Carolina 28405-3845

Re: Remediation Update Report for August 2004 to February 2005
Flint Hills Resources, LP - North Terminal
Wilmington, North Carolina
CATLIN Project No. 201-125

Dear Dr. Stehman:

On behalf of Reiss Remediation, LLC for Flint Hills Resources, LP (FHR), attached is the Remediation Update Report concerning the above-referenced site.

Upon your review of this report, please contact Ms. Elizabeth Page at (817) 685-3424 or myself at (910) 452-5861 if you should have any questions concerning this project.

Sincerely,

Jeffery K. Becken, P.E.
Project Manager

Stephan A. Tyler
Project Geologist

Enclosure

cc: Ms. Elizabeth R. Page, P.G. - Reiss Remediation, LLC (w/ encl.)
Mr. Dan Smading - Flint Hills Resources, LP (w/ encl.)
Flint Hills Resources, LP – North Terminal Facility (w/ encl.)
Mr. H. Layton Bedsole, Jr. – North Carolina State Ports Authority (w/ encl.)
Mr. William Frederick – Groundwater & Environmental Service of North Carolina, Inc. (w/ encl.)

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1.0 INTRODUCTION

1.1 PURPOSE

CATLIN Engineers and Scientists (CATLIN) is submitting this Remediation Update Report on behalf of Reiss Remediation, LLC (Reiss) for the Flint Hills Resources, LP (FHR) North Terminal at 3325 River Road, Wilmington, North Carolina (see Figure 1).

The purpose of this report is to update the status of the subsurface soil and surficial groundwater remediation activities and to present current (August 5, 2004 to February 25, 2005) environmental findings at two areas of concern within the FHR-North Terminal. CATLIN prepared a Corrective Action Plan Addendum (CAPA) dated August 9, 2002 that evaluated the subsurface soil and groundwater remediation associated with this Remediation Update Report. North Carolina Department of Environment and Natural Resources (NCDENR), Groundwater Section (GWS) now known as the Aquifer Protection Section (APS), personnel reviewed the CAPA and submitted a Statement of General Agreement in October 2002. Subsequent to the CAPA submittal, CATLIN submitted a letter dated March 5, 2004 that presented Revised Remedial Actions for the FHR North site. NCDENR APS personnel reviewed the Revised Remedial Action and transmitted a letter stating: "The proposed revisions are both prudent and appropriate and are an acceptable modification of the overall site remedial strategy." Therefore, current remediation activities are in general accordance with the Revised Remedial Actions presented within the March 5, 2004 letter.

1.2 SITE INFORMATION

The FHR North Terminal is a bulk chemical and fuel storage and transfer facility, which occupies an area of approximately 37 acres. Thirty-three (33) of the 37 acres are located on the east side of River Road and the remaining four acres are located west of River Road. The North Terminal is subdivided into two facilities as illustrated on Figure 2. These facilities are identified as the PX Facility and the Gasoline/#2 Fuel Oil Facility. The following is a brief description of each facility:

Paraxylene Facility - The Paraxylene Facility has seven aboveground storage tanks (ASTs) and associated pipelines for the storage and transfer of Paraxylene (PX). In addition, there is a PX truck loading rack and a railcar loading rack area. This facility is still active.

Gasoline/Fuel Oil Facility – This facility consisted of seven ASTs and associated pipelines, which had been utilized for the storage and transfer of gasoline and fuel oil. Gasoline additives were stored in five additional ASTs. This facility also had a truck and railcar loading rack area. The areas of concern within the Gasoline/Fuel Oil Facility addressed in this report are referred to as the Loading Rack Area. Since April of 2001, the gasoline and fuel oil ASTs, associated pipelines and the truck/railcar loading rack areas have been inactive and no longer contain product. The ASTs and a portion of the associated pipelines were removed during January and February 2005. In addition, the truck loading rack within the Loading Rack Area was dis-assembled in the fall of 2003 allowing easier access for remedial activities.

2.0 BACKGROUND INFORMATION

2.1 PARAXYLENE FACILITY

2.1.1 Brief Incident History

Since Phillips Petroleum constructed the North Terminal facility in 1954/1955, it has been utilized to handle various gasolines, additives, #2 fuel oils and PX. Since 1954/1955, there have been several product releases at the subject site. Former and ongoing assessment, remediation and monitoring activities for product releases since 1980 have been well documented and are on file at the NCDENR Wilmington Regional Office (WiRO) APS. This report focuses on the current PX remediation efforts through February 25, 2005.

2.1.2 Contaminants of Concern

The primary contaminant of concern (as agreed upon by NCDENR) at the PX Facility is dissolved PX, one of three xylenes isomers (ortho, meta, and para). Currently, analytical laboratories do not have the technology to accurately distinguish between metaxylene and PX compounds. Since the source is known to be PX, all soil and groundwater samples are analyzed for meta/para (M/P) xylenes and the resulting concentration is assumed to be PX.

As detailed in the CAPA, the goal for surficial groundwater remediation is to reduce dissolved M/P xylene concentrations to the 15A NCAC 2L.0202 North Carolina Groundwater Quality Standard (2L GWQS) of 530 micrograms per Liter (µg/L) or for PX remediation data (graphical representation) to reach an asymptotic trend. PX Facility groundwater samples are analyzed by an independent analytical laboratory for M/P xylenes concentration in µg/L per EPA Method 602 to monitor the dissolved PX

concentrations.

2.2 LOADING RACK AREA

2.2.1 Brief Incident History

A specific event that may have caused the groundwater contamination is not known for the Loading Rack Area. However, since the surficial groundwater has been impacted with dissolved gasoline, fuel oil and paraxylene constituents, it has been assumed that historical operation and maintenance activities of the former truck and railcar loading rack areas has resulted in several minor releases. Therefore, this report focuses on the activities associated with the remediation of the contaminated subsurface soils and surficial groundwater from the historical operation of the truck/railcar loading rack areas within the Loading Rack Area.

2.2.2 Contaminants of Concern

As documented in the CAPA, the initial investigation of the Loading Rack Area shallow groundwater revealed the following gasoline, fuel oil and paraxylene compounds: Benzene, sec-Butylbenzene, Ethylbenzene, Isopropylbenzene, Naphthalene, MTBE, n-Propylbenzene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, and Total Xylene concentrations in excess of the current and interim 2L GWQS. As detailed in the CAPA, the goal for surficial groundwater remediation is to reduce the above listed dissolved compounds to within current and interim 2L GWQS. Loading Rack Area groundwater samples are analyzed for volatile compounds in µg/L per EPA Method 8260B to monitor the dissolved compound concentrations.

3.0 ADDITIONAL ASSESSMENT ACTIVITIES

3.1 PARAXYLENE FACILITY

During this reporting period, four additional monitoring wells were installed within the PX Facility to provide additional monitoring points for assessing the remedial activities discussed within this report. These monitoring wells were installed in October 2004 in general accordance with NCAC T15A:02C "Well Construction Standards" (December 1992). A copy of the North Carolina Well Construction Records is provided in the attached Appendix C. Each well was installed as a Type II monitoring well that intersected the shallow groundwater table. Well construction as-builts with soil descriptions are provided on the attached boring logs in Appendix D. Locations of these monitoring wells, identified as MW-34 to MW-37 are illustrated on Figure 3. Groundwater analytical data for these new monitoring wells has been included in Section 6.1 of this report.

3.2 LOADING RACK AREA

During this reporting period no additional assessment activities were conducted at the Loading Rack Area.

4.0 SITE REMEDIATION ACTIVITIES

4.1 PARAXYLENE FACILITY

A summary of the PX Facility remediation activities completed during the time period of August 5, 2004 to February 25, 2005 are summarized as follows:

4.1.1 Soil

As part of the initial remedial activities, a Soil Vapor Extraction (SVE) system to remove remnant PX from subsurface soils west of AST 301 was installed on March 21, 1995 and was operated continuously until January 2003. After an equipment failure, a decision was made to discontinue operation of the soil vent unit because of the minimal M/P xylene concentrations of the SVE exhaust at that time and the planned remediation activities.

4.1.2 Surficial Groundwater

4.1.2.1 Air Sparge System

Air sparging is an in-situ remediation method involving aeration of the impacted groundwater with ambient air. In this application, pressurized ambient air (+ 27 pounds per square inch) is sparged into the impacted surficial aquifer through a series of vertical injection wells. As ambient air migrates upward through the groundwater, dissolved volatile hydrocarbon compounds partition (volatilize) into the vapor phase. In addition, the air sparging increases the dissolved oxygen (DO) concentrations in the groundwater, which enhances biological degradation of petroleum hydrocarbons by indigenous microorganisms in the soil and groundwater. A discussion of the current DO data is presented in Section 6.1.2 of this report. Due to the relative proximity of the groundwater table to the ground surface and the lack of potential receptors being adversely affected by vapors, vapors are allowed to naturally vent to the atmosphere.

The air sparge system for this site is a vertical well network of deep (± 38 feet deep) and shallow (± 18 to 23 feet deep) air sparge wells. Currently, three air sparge systems are operational at this facility (Refer to Figure 3). Two operate as continuous systems (Networks A and B) and the third operates as a pulse system (Network C).

- Network A – along the northwest property boundary between monitoring wells 119 and MW-20.
- Network B – in the vicinity of the area between monitoring wells 106 and 113.

Networks A and B began operation on February 6, 1998. Four additional shallow air sparge wells were added to Network A and have been fully operational since July 2003.

Network C is operating within the dissolved PX plume along the north property boundary in the vicinity of the area near monitoring wells MW-32 and MW-33. Network C began operation in January 2003 as a Pulse Air Sparge (PAS) system. The PAS system consists of injecting a pulse of ambient air, below the contaminated zone of the impacted aquifer, through a vertical air sparge well. As air is injected into the aquifer, a de-watered sphere grows around the sparge point. This spherical volume of air continues to grow displacing groundwater until the top of the sphere is about to break through the surface of the groundwater table. Prior to "breakthrough", the air injection is terminated and the surrounding aquifer is allowed to recharge the sparged zone before the next "pulse".

The air sparge wells were regularly checked during the time period referenced within this report to ensure maximum efficiency and airflow. Any air sparge well with less than minimal airflow specifications (<1 cfm) was cleaned by using compressed air to blow out any debris from the gauges and regulators. A compressed air wand attachment was used to clean the screens of the air sparge wells in order to remove obstructions. The air sparge well screens are cleaned annually at a minimum.

The air sparge system was operational 99% (assuming 1% off time for general maintenance activities) of the time.

The air sparge system influence upon the targeted groundwater is predominantly determined by obtaining groundwater DO readings at monitoring wells up gradient and down gradient of the networks. A discussion of the current DO data is presented in Section 6.1.2 of this report.

A discussion of the current surficial groundwater PX concentration data in the vicinity of the air sparge systems is presented in Section 6.1.2 of this report.

4.1.2.2 Groundwater Recovery Operations

The FHR North Terminal has a Facility Wastewater Treatment Plant (FWTP), NPDES Permit No. NC0076732, for treatment of site surficial groundwater, well purge water, AST water bottoms and collected stormwater runoff. FHR site personnel conduct the FWTP operation, maintenance and reporting activities. During a portion of the time period referenced within this report, impacted surficial groundwater from six recovery well locations (KRW-3, KRW-4, KRW-5, KRW-6, KRW-7 and KRW-8) was pumped into the FWTP. Please note that KRW-7 and KRW-8 began operation during the time period referenced within this report in October 2004. Refer to Figure 3 for recovery well locations. A discussion of the volumes of groundwater pumped from the recovery wells to the FWTP as of February 2005 is included in Section 6.1.2 of this report.

Total flow rate to the FWTP from all of the recovery wells was maintained at a rate less than 55 gallons per minute (gpm) to ensure the 70-gpm NPDES and Air Quality permit requirements are not exceeded.

As discussed in Section 4.1.2.3 of this report, site groundwater remediation efforts include the application of a chemical oxidant. Please note that recovery wells in proximity to areas of chemical oxidant application were shut off prior to application and not re-started until one week following application.

In February 2005, elevated levels of DO were observed within the FWTP ponds. FHR submitted a correspondence dated March 22, 2005 that provided a summary of the findings and plan of action for addressing the elevated levels of DO within the FWTP ponds. The chemical oxidation remedial process discussed within Section 4.1.2.3 of this report was determined to be the likely source of the elevated DO observed within the FWTP ponds. As a result, all of the site recovery wells were turned-off in February 2005. FHR proposed within the March 22, 2005 correspondence that the recovery wells remain off pending results of bi-monthly groundwater sampling through August 2005. The representative monitoring wells located along the downgradient property boundary will be sampled during April and June to determine if there are negative impacts from having the recovery wells off. A decision and recommendation will be made following the August 2005 sampling event regarding whether the recovery wells should be permanently turned off. Subsequent to submittal of the March 22, 2005 correspondence, NCDENR-APS responded with a letter dated April 1, 2005 that stated that the APS does not object to the proposed restart and monitoring procedures. However, APS requested copies of the analytical results from the bi-

monthly sampling events of the monitoring wells along the downgradient property boundary.

4.1.2.3 Chemical Oxidation

As previously stated, a letter was submitted on March 5, 2004 that presented Revised Remedial Actions for the FHR North project site that was approved by the NCDENR-APS. The Revised Remedial Actions included the application of a chemical oxidant at the PX Facility. Reiss contracted Weston Solutions, Inc. (Weston) to provide assistance to Reiss and CATLIN with a chemical oxidation field pilot study to evaluate the use of three hydrogen peroxide based chemical oxidants.

Weston prepared a Pilot Study Report dated November 2004 that summarized the pilot test activities and findings. CATLIN submitted a copy of this report on behalf of FHR to NCDENR-APS on November 30, 2004. Subsequently, Dr. Charles Stehman with NCDENR-APS prepared a response letter stating to please proceed with full-scale implementation.

Full-scale chemical oxidation activities began in late October 2004. During the time period referenced in this report, the full-scale chemical oxidation utilizing hydrogen peroxide activities consisted of the application of hydrogen peroxide to trenches excavated in 50 feet square grids within the contaminated groundwater plume located at the PX Facility. The locations of the excavated application trenches as of February 2005 are illustrated on the attached Figure 3. The area in the vicinity of the Tank 801 is considered the Source 1 Area. A calculated volume of hydrogen peroxide was applied to each trench followed by a water "chaser" that assisted with the distribution of the hydrogen peroxide. A discussion of the current surficial groundwater PX concentration data in the vicinity of the area in which the chemical oxidant was applied is presented in Section 6.1.2 of this report.

4.1.3 Free-Phase PX

Shortly after installation of recovery well KRW-5 in November 1997, free-phase PX began to accumulate in the recovery well. At that time, a number of piezometers were installed in the vicinity of KRW-5 to delineate the PX plume. Free-phase PX accumulated in KRW-5 and the surrounding piezometers. In an attempt to determine the source, FHR personnel initiated precautionary system checks of the active PX pipelines and ASTs. All active aboveground pipelines, associated valves, pumps, etc. were inspected and hydrostatic tested. Also, all site AST PX inventory checks indicated no loss of product. During this time period, an abnormality was detected which

consisted of a low surficial groundwater table level. In completing the August 7, 2000 site Comprehensive Site Assessment (CSA) field work, it became evident that several subsurface PX smear zones remain from previous significant PX releases. The accumulation of free-phase PX appears to coincide with periods when the surficial groundwater table significantly changes by allowing the liberation of free-phase product trapped in the remnant smear zone.

Free-phase PX that has been observed in wells is manually recovered with either a sorbent or a bailer. All recovered free-phase PX is temporarily stored in a satellite drum (55 gallon) in the vicinity of the area near recovery well KRW-5. Recovered free-phase product is managed in a lawful and environmentally sound manner. Free-phase PX recovered during this monitoring period is further discussed within Section 6.1.3 of this report.

4.2 LOADING RACK AREA

A summary of the on-site soil, groundwater and free-phase product remediation activities are summarized below.

4.2.1 Soil

The Revised Remedial Actions letter dated March 5, 2004 proposed soil remediation activities. Subsequently, Reiss obtained proposals from two contractors to perform the proposed ex-situ remedial activities. Based on the risk to complete the activities within the desired 30 day time period to meet the requirements of the National Emission Standard for Hazardous Air Pollutants (NESHAP) from Site Remediation per 40 CFR 63 subpart GGGGG (also know as "Remediation MACT"), it appears that a non-vent source or an in-situ remedial approach may be warranted. The current groundwater remedial plan of action at the Loading Rack Area is chemical oxidation. Therefore, the evaluation of chemical oxidation as an in-situ soil remediation alternative to a thermal ex-situ soil remediation process is planned. A pilot study will be conducted in the near future to evaluate the use of chemical oxidation as an in-situ soil remediation process at the Loading Rack Area.

4.2.2 Surficial Groundwater

The remediation of the surficial groundwater in the Loading Rack Area was proposed in the CAPA to be completed by use of a combination of remediation systems. However, as part of the Revised Remedial Actions, surficial groundwater remediation is temporarily on-hold until the effectiveness of the soil treatment is evaluated.

4.2.3 Free-Phase Product

As was reported in the CAPA, free-phase product was initially detected in monitoring wells KWM-8, KMW-9, KMW-12 and KMW-13. Free-phase product that accumulates in these monitoring wells has been manually recovered, stored, and disposed of in the same manner discussed in Section 4.1.3. Please note that KMW-9 was abandoned in August 2004 to accommodate future soil remediation activities.

A discussion of the free-phase product recovered during this monitoring period is provided within Section 6.2.3 of this report.

5.0 MONITORING PLAN

The following sections discuss the monitoring plan that was generally followed during the time period of August 5, 2004 to February 25, 2005.

5.1 PARAXYLENE FACILITY

Please note that the chemical oxidation activities previously discussed were completed in conjunction with the following monitoring activities during the time period between October 2004 and February 2005:

Weekly

- Check and maintain operation of all recovery wells.
- Check and maintain operation of the air compressor.
- Gauge all recovery wells for depth to surficial groundwater table and possible free-phase product.
- Manually recover free-phase product, if present.

Monthly

The following monthly activities are completed in addition to the tasks performed on a weekly basis:

- Check and maintain operation of the air sparge wells.

Semi-Annual (February and August)

The following semi-annual activities are completed in addition to the tasks performed on a monthly basis:

- Obtain representative groundwater samples from selected site monitoring wells for M/P xylenes and MTBE analysis per EPA Method 602. Monitoring wells are selected to provide data concerning PX plume boundary and historical concentration high conditions.
- In order to monitor the effectiveness of the air sparge system, dissolved

oxygen concentrations are obtained from surficial groundwater of selected monitoring wells.
- Submit a semi-annual Remediation Update Report.

5.2 LOADING RACK AREA

Monthly

- Gauging of selected monitoring wells for depth to surficial groundwater table and the potential presence of free-phase product.
- Manually recover free-phase product, if present.

Semi-Annual (February and August)

The following activities are completed in addition to the tasks performed on a monthly basis:

- Obtain representative groundwater samples from selected site monitoring wells for VOC analysis per EPA Method 8260B.
- Submit a semi-annual Remediation Update Report.

6.0 SITE REMEDIATION PROGRESS

6.1 PARAXYLENE FACILITY

6.1.1 Soil

As previously discussed in Section 4.1.1, a SVE system to remove remnant PX from subsurface soils west of AST 301 was operated from March 21, 1995 through January 2003. PX vapor emitted from the SVE system was a combination of PX from remnant soil and groundwater contamination. The site Remediation Update Report for the period of April 2002 to February 2003 indicated the approximate calculated volume of PX extracted between March 21, 1995 and August 5, 2002 to be equivalent to 2,271.8 gallons.

6.1.2 Surficial Groundwater

6.1.2.1 Dissolved Oxygen Data

As previously stated, the goal of an air sparge system is to volatilize organic constituents and to maintain aerobic conditions to facilitate biodegradation of the compounds. Aerobic conditions can be assessed by monitoring the dissolved oxygen levels in surrounding monitoring wells. Aerobic conditions are generally those with dissolved oxygen levels greater than one (1) mg/L.

The latest (February 2005) DO concentration data has been summarized in Table 2 and illustrated on Figure 7. This data was

obtained through the use of an YSI multi-parameter meter. The monitoring wells selected for the measurement of DO were based on the recommendations of the previous Remediation Update Report dated December 14, 2004.

Dissolved oxygen concentrations of monitoring wells associated with the monitoring of the air sparge networks have been summarized as follows:

Network	Monitoring Wells	DO Range
A	MW-17, MW-18, MW-19, MW-20	1.16 to 10.02
B	MW-14	5.53
C	MW-32, MW-33	6.29 to 9.55
Background wells	106, 108 and 113	0.23 to 15.39

Please note that the selected network and background monitoring wells were likely influenced by the chemical oxidation activities producing elevated DO concentrations in some of the monitoring wells.

DO will continue to be monitored as necessary in all areas on a semi-annual basis while injection rates will be monitored on a monthly basis.

6.1.2.2 Surficial Groundwater Table Data

On February 18, 2005, selected monitoring wells were gauged for depth to water and potential free-phase product. The monitoring wells selected for the measurement of surfical groundwater table elevations were based on the recommendations of the previous Remediation Update Report dated December 14, 2004. Table 1 lists the water table data and interpolated water table isocontour elevations have been illustrated on Figure 5. The overall surficial groundwater migration trend appears to remain toward the northwest. This trend is consistent with historical groundwater data. Please note that the active recovery wells KRW-3, KRW-4, KRW-5, KRW-6, KRW-7 and KRW-8 were not operational during collection of surficial groundwater table data.

6.1.2.3 Surficial Groundwater Recovery Data

During the weekly site visits, CATLIN personnel record depth to water table data, potential free-phase product measurements and flow meter readings at each active recovery well (KRW-3, KRW-4, KRW-5, KRW-6, KRW-7 and KRW-8). In addition, during the semi-

annual site sampling events effluent samples are obtained from each active recovery well for dissolved M/P xylenes analysis per EPA Method 602 to evaluate the effectiveness of operating the recovery wells. On February 22nd and 23rd, 2005, CATLIN personnel obtained the latest effluent samples from recovery wells KRW-4, KRW-5, KRW-6, KRW-7 and KRW-8. Copies of the laboratory test results are provided in the attached Appendix A.

The following calculation is utilized to determine the approximate volume (gallons) of PX recovered from each recovery well between sampling events:

$$PXV = V \times \frac{3.7854\ L}{gal.} \times \frac{1\ g}{1{,}000\ mg} \times \frac{1\ lb.}{453.59\ g} \times \frac{gal.}{8.34\ lb.} \times \frac{1}{SG} \times PX\ conc.$$

PX concentration:

PXV = Volume of PX (gallons)
V = Total Removed Volume from Recovery Well Flow Meter (gallons)
PX conc. = Average of PX concentration during the selected time period (milligrams per Liter)
SG = Specific Gravity of PX = 0.861

Recovery well pumping records and analytical data has been utilized to estimate the amount of dissolved PX recovered since March 19, 1995 to the current period, February 25, 2005. The remediation progress at each site recovery well has been summarized in Table 6.

6.1.2.4 Dissolved PX Concentration Data

CATLIN personnel obtained the latest representative groundwater samples from selected monitoring wells on February 18, 21, 22 and 23, 2005. Prior to obtaining a groundwater sample, each monitoring well is first developed a minimum of three volumes utilizing either a disposable bailer or a Geopump (peristaltic). The selected monitoring wells were based on the recommendations of the previous Remediation Update Report dated December 14, 2004. All groundwater samples from the February 2005 sample event were submitted to Severn Trent Laboratory (STL) in Savannah, Georgia for analysis of dissolved M/P xylene and MTBE concentrations per EPA Method 602.

A copy of the laboratory report has been provided in Appendix A. Results of the latest, as well as historical, M/P xylene concentration data have been summarized on Table 3. The interpolated current horizontal extent of dissolved M/P xylenes within the site surficial

groundwater has been illustrated on Figure 8.

Additionally, CATLIN randomly collected groundwater samples for M/P xylene concentrations per EPA Method 602 from selected monitoring wells between November 2004 and February 2005 to evaluate the effectiveness of the chemical oxidation activities. The selected monitoring wells were based on the location of the chemical oxidation activities at the time of the sampling. This M/P xylene data has been included within a table and graphs presented within Appendix E. The data presented within Appendix E generally illustrates an initial decrease following the initiation of the chemical oxidation activities followed by a general increase as of the February 2005 sampling event. It is believed that the increase observed is related to the release of contamination from the smear zone soils. Based on the M/P xylene trends observed, CATLIN is currently evaluating alternative application methods and chemical oxidants in lieu of the use of hydrogen peroxide alone. The alternatives being evaluated, which have been discussed with the NCDENR-APS during various telephone conversations, are the use of the Fenton's Reagent as a chemical oxidant and the use of a rapid biological remediation method. This evaluation process was completed in May 2005. At that time, a meeting with NCDENR-APS to discuss the recommended modified approach was held. The modified approach was subsequently presented within a June 2005 Revised Plan of Action letter. In a letter dated June 7, 2005, NCDENR-APS indicated they had reviewed and did not object to the recommended modified approach. Further discussion of the modified approach will be presented within the next Remediation Update Report.

6.1.3 Free-Phase PX Data

As previously stated in Section 4.1.3, free-phase PX observed in wells is manually recovered. During the time period referenced within this report (August 2004 to February 2005), free-phase PX was observed in recovery wells KRW-4, and KRW-5 at the PX Facility. The quantity of free-phase PX manually recovered during this monitoring period has been provided in Table 6.

6.2 LOADING RACK AREA

6.2.1 Soil

During the time period referenced within this report, no soil remediation or monitoring activities were completed at the Loading Rack Area. However, a pilot study will be conducted in the near future to evaluate the use of chemical oxidation as an in-situ soil remediation process at the Loading Rack Area. Upon completion of this pilot study a full-scale approach will be

implemented.

6.2.2 Surficial Groundwater

6.2.2.1 Surficial Groundwater Table Data

On February 16, 2005, selected site monitoring wells were gauged for depth to water and potential free-phase product. The selected monitoring wells were based on the recommendations of the previous Remediation Update Report dated December 14, 2004. Table 4 lists the water table data and interpolated water table isocontour elevations have been illustrated on Figure 6. The relatively steep surficial groundwater table gradient across River Road observed during the February 16, 2005 site visit has been prevalent since the site monitoring wells were initially installed for the CAPA.

6.2.2.2 Dissolved Oxygen Data

Due to the previously mentioned status of the remediation activities at the Loading Rack Area, dissolved oxygen concentrations were not collected during this time period.

6.2.2.3 Dissolved Volatile Concentration Data

As previously stated, CATLIN personnel obtained representative groundwater samples from selected monitoring wells on February 16 and 17, 2005. The selected wells were first developed a minimum of three volumes utilizing either a disposable bailer or a Geopump (peristaltic). The selected monitoring wells were based on the recommendations of the previous Remediation Update Report dated December 14, 2004. All site groundwater samples were submitted to STL in Savannah, Georgia for analysis of dissolved volatile compounds per EPA Method 8260B.

A copy of the laboratory report has been provided in Appendix A. Table 5 provides a summary of the historical volatile compounds with concentrations above the 2L GWQS. Figures 9, 10, and 11 illustrate selected volatile concentrations of monitoring wells within the Loading Rack Area. In reviewing Table 5, a comparison of the last two sample events illustrates dissolved volatile concentrations within the site surficial groundwater have remained generally the same with isolated increases and decreases.

The source of the benzene contamination at AMW-6 has not been determined at this time. The Apex monitoring wells will continue to be monitored in the future for benzene concentration trends. Please note that a groundwater analytical sample was not obtained from the

monitoring well identified as AMW-4 on the Apex property (Figures 9, 10 and 11) due to the presence of free-phase product.

6.2.3 Free-Phase Product Data

During this monitoring period of August 2004 to February 2005, a low level of free-phase product was observed at monitoring wells KMW-8 (October 1, 2004 and October 6, 2004) and KMW-13 (September 10, 2004, September 24, 2004, October 1, 2004 and October 6, 2004). A total of approximately 0.54 gallons of free-phase product was manually recovered with a bailer from the abovementioned wells and stored in a satellite drum (55 gallon).

During the groundwater gauging event on February 16, 2005, 2.10 feet of free-phase product was observed in AMW-4, one of the monitoring wells on the Apex property. CATLIN personnel first observed free-phase product (0.8 feet) in monitoring well AMW-4 on August 4, 2004. CATLIN submitted in the Remediation Update Report for March 2004 to August 2004 the results of a product identification sample collected from AMW-4. These results revealed the product has characteristics of gasoline. Given that the FHR facility has not stored gasoline for a number of years and the dissolved BTEX concentrations in groundwater on the FHR property from recent sampling events have been significantly lower than the solubility of these same chemicals, it appears that this product, at AMW-4, may be from a source unrelated to the FHR facility. It is our understanding that Apex is in the process of evaluating the source of this free-phase product.

Following the observation of free-phase product within monitoring well KMW-13 in September 2004, CATLIN collected a product identification sample. The laboratory report for this product identification test is included in Appendix B. The results revealed the product has characteristics of petroleum products heavier than gasoline.

7.0 FUTURE ACTIVITIES

Monitoring and operation of the air sparge system as described within this report will continue.

The representative monitoring wells located along the downgradient property boundary will be sampled during April and June to determine if there are negative impacts from having the recovery wells off. The sampling data from these events will be submitted to NCDENR-APS. A decision and recommendation will be made following the August 2005 sampling event regarding whether the recovery wells should be permanently turned off.

As previously stated, as of this report a modified chemical oxidation approach has been implemented and will be discussed in future Remediation Update Reports.

A pilot study will be conducted in the near future at the Loading Rack Area to evaluate the use of chemical oxidation as an in-situ soil remediation process. Upon completion of this pilot study a full-scale approach will be implemented.

The following monitoring wells will be sampled during the next semi-annual sampling event in August 2005:

PX Facility
MW-1, MW-2, MW-3, MW-4, MW-5, MW-7, MW-8, MW-11, MW-12, MW-13, MW-14, MW-15, MW-17, MW-18, MW-19, MW-20, MW-28, MW-32, MW-33, MW-34, MW-35, MW-36, MW-37, 101, 102, 105, 106, 107, 108, 113, 117, 119, KRW-3, KRW-4, KRW-5, KRW-6, KRW-7 and KRW-8.

Groundwater at the following monitoring wells will be field gauged for DO:
MW-12, MW-14, MW-16, MW-17, MW-18, MW-19, MW-20, MW-32, MW-33, 106, 108, 113, 117, 120, and 121.

Loading Rack Area
KMW-1, KMW-2, KMW-3, KMW-4, KMW-5, KMW-6, KMW-7, KMW-8, KMW-9, KMW-10, KMW-11, KMW-12, KMW-13, KMW-14, AMW-1, AMW-2, AMW-3, AMW-4, AMW-5 and AMW-6.

Stephen A. Tyler
Project Scientist

Jeffery K. Becken, P.E.
Project Engineer

TABLES

TABLE 1

SUMMARY OF GROUNDWATER ELEVATIONS AT SELECTED MONITORING WELLS – FEBRUARY 18, 2005

PARAXYLENE FACILITY

FLINT HILLS RESOURCES, LP NORTH TERMINAL
WILMINGTON, NORTH CAROLINA

DATA POINT	TOP OF CASING ELEVATION (in feet)	DEPTH TO WATER (in feet)	FREE PHASE PRODUCT THICKNESS (in feet)	SPECIFIC GRAVITY ADJUSTMENT	WATER TABLE ELEVATION (IN FEET)
TYPE II MONITORING WELLS					
MW-1	39.45	9.07	NMT	--	30.38
MW-2	29.11	5.14	NMT	--	23.97
MW-3	37.84	8.83	NMT	--	29.01
MW-4	33.84	9.78	NMT	--	24.06
MW-5	39.56	8.55	NMT	--	31.01
MW-6	38.92	NM	NM	--	NM
MW-7	38.71	9.24	NMT	--	29.47
MW-8	39.85	9.02	NMT	--	30.83
MW-9	36.88	NM	NM	--	NM
MW-10	35.45	NM	NM	--	NM
MW-11	35.14	8.87	NMT	--	26.27
MW-12	35.23	8.41	NMT	--	26.82
MW-13	33.90	8.08	NMT	--	25.82
MW-14	29.39	6.31	NMT	--	23.08
MW-15	28.82	7.16	NMT	--	21.66
MW-16	28.21	NM	NM	--	NM
MW-17	25.57	5.03	NMT	--	20.54
MW-18	26.92	10.78	NMT	--	16.14
MW-19	27.59	11.67	NMT	--	15.92
MW-20	29.29	12.82	NMT	--	16.47
MW-28	36.41	7.45	NMT	--	28.96
MW-30	35.20	NM	NM	--	NM
MW-32	33.69	9.09	NMT	--	24.60
MW-33	35.16	10.07	NMT	--	25.09
MW-34	33.89	8.05	NMT	--	25.84
MW-35	28.41	4.10	NMT	--	24.31
MW-36	35.46	6.21	NMT	--	29.25
MW-37	36.26	6.15	NMT	--	30.11
101	28.88	4.71	NMT	--	24.17
102	29.88	5.64	NMT	--	24.24
104	28.10	NM	NM	--	NM
105	29.51	5.48	NMT	--	24.03
106	NA	2.71	NMT	--	NA
107	31.33	6.44	NMT	--	24.89
108	31.50	8.06	NMT	--	23.44
113	33.90	10.36	NMT	--	23.54
114	34.74	NM	NM	--	NM
117	31.33	10.29	NMT	--	21.04
119	26.68	6.06	NMT	--	20.62
121	29.20	NM	NM	--	NM
TYPE III MONITORING WELLS					
TMW-1	30.43	NM	NM	--	NM
TMW-2	35.40	NM	NM	--	NM
RECOVERY WELLS					
RW-2	36.18	Abandoned in 2003			NM
KRW-3	29.07	9.34	NMT	--	19.73
KRW-4	27.82	4.44	NMT	--	23.38
KRW-5	32.58	9.07	NMT	--	23.51
KRW-6	30.90	9.31	NMT	--	21.59
KRW-7	29.47	7.44	NMT	--	22.03
KRW-8	38.01	11.59	NMT	--	26.42
SUN PIEZOMETERS					
S-1	26.80	NM	NM	--	NM
S-2	27.46	NM	NM	--	NM
S-3	27.47	NM	NM	--	NM

Notes:
Specific gravity adjustment for para-xylene is 0.86
NMT = No Measurable Thickness
NM = Not Measured
NA = Not Available

TABLE 2

SUMMARY OF DISSOLVED OXYGEN MEASUREMENTS FROM SELECTED MONITORING WELLS FEBRUARY 2005

PARAXYLENE FACILITY

FLINT HILLS RESOURCES, LP NORTH TERMINAL
WILMINGTON, NORTH CAROLINA

WELL I.D.	DATE	DISSOLVED OXYGEN (mg/L)
106	2/21/2005	1.53
108	2/21/2005	0.23
113	2/22/2005	15.39
117	2/23/2005	0.23
MW-12	2/22/2005	1.62
MW-14	2/23/2005	5.53
MW-17	2/21/2005	10.02
MW-18	2/23/2005	4.55
MW-19	2/23/2005	2.01
MW-20	2/18/2005	1.16
MW-32	2/22/2005	6.29
MW-33	2/22/2005	9.55

TABLE 3

SUMMARY OF EPA METHOD 602 (M/P XYLENES) LABORATORY RESULTS - GROUNDWATER

PARAXYLENE FACILITY
FLINT HILL RESOURCES, LP NORTH TERMINAL
WILMINGTON, NORTH CAROLINA

WELL I.D.	DATE	M/P XYLENE (µg/L)
TYPE II MONITORING WELLS		
MW-1	12/8/1995	29,000
	2/13/1996	11,000
	6/24/1996	9,400
	1/28/1997	340
	12/4/1997	4,000
	6/13/1998	360
	1/19/1999	250
	7/14/1999	26
	2/29/2000	<1.0
	6/13/2000	470
	2/21/2001	<1.0
	7/31/2001	2.3
	4/1/2002	260
	7/31/2002	4,200
	2/24/2003	<1.0
	8/20/2003	<1.0
	2/20/2004	<1.0
	8/4/2004	<1.0
	2/22/2005	950
MW-2	2/20/2004	140,000
	8/4/2004	360,000
	2/21/2005	130,000
MW-3	12/8/1995	180,000
	6/24/1996	28,000
	1/28/1997	53,000
	12/4/1997	100,000
	6/13/1998	35,000
	1/19/1999	49,000
	7/14/1999	20,000
	2/29/2000	37,000
	6/13/2000	63,000
	2/21/2001	120,000
	7/31/2001	110,000
	4/1/2002	81,000
	7/31/2002	96,000
	2/24/2003	120,000
	8/19/2003	96,000
	2/20/2004	110,000
	8/4/2004	89,000
	2/22/2005	130,000

TABLE 3

SUMMARY OF EPA METHOD 602 (M/P XYLENES) LABORATORY RESULTS - GROUNDWATER

PARAXYLENE FACILITY
FLINT HILL RESOURCES, LP NORTH TERMINAL
WILMINGTON, NORTH CAROLINA

WELL I.D.	DATE	M/P XYLENE (µg/L)
MW-4	12/8/1995	1,600,000
	2/13/1996	140,000
	6/24/1996	140,000
	1/28/1997	190,000
	12/4/1997	220,000
	6/13/1998	180,000
	1/19/1999	190,000
	7/14/1999	300,000
	2/29/2000	100,000
	6/13/2000	45,000
	2/20/2004	66,000
	8/4/2004	80,000
	2/21/2005	36,000
MW-5	2/13/1996	9,800
	6/24/1996	2,500
	1/28/1997	1,400
	12/4/1997	790
	6/13/1998	7,800
	1/19/1999	2,400
	7/14/1999	4,900
	2/29/2000	2,100
	6/13/2000	2,800
	7/31/2001	12,000
	4/1/2002	2,000
	7/31/2002	<5.0
	2/24/2003	1,200
	8/20/2003	630
	2/20/2004	1,400
	8/4/2004	390
	2/22/2005	34
MW-7	10/15/1999	150,000
	2/29/2000	130,000
	2/21/2001	150,000
	7/31/2001	120,000
	4/2/2002	140,000
	2/24/2003	400,000
	8/20/2003	2,200,000
	2/20/2004	570,000 D
	8/4/2004	3,100,000
	8/6/2004	110,000
	2/22/2005	120,000

TABLE 3

SUMMARY OF EPA METHOD 602 (M/P XYLENES) LABORATORY RESULTS - GROUNDWATER

PARAXYLENE FACILITY
FLINT HILL RESOURCES, LP NORTH TERMINAL
WILMINGTON, NORTH CAROLINA

WELL I.D.	DATE	M/P XYLENE (µg/L)
MW-8	10/5/1999	4,400
	2/29/2000	12,000
	2/21/2001	5,500
	7/31/2001	8,500
	4/2/2002	17,000
	2/24/2003	15,000
	8/20/2003	16,000
	2/20/2004	6,800
	8/4/2004	5,800
	2/22/2005	20,000
MW-9	2/29/2000	<1
	2/24/2003	<1.0
	8/20/2003	<1.0
	2/20/2004	<1.0
MW-10	2/29/2000	96,000
	2/21/2001	89,000
	7/31/2001	110,000
MW-11	2/29/2000	110,000
	7/31/2001	100,000
	4/1/2002	63,000
	2/24/2003	130,000
	8/20/2003	110,000
	2/20/2004	53,000
	8/4/2004	53,000
	2/22/2005	79,000
MW-12	2/29/2000	56,000
	2/21/2001	170,000
	7/31/2001	140,000
	7/31/2002	140,000
	2/24/2003	86,000
	8/20/2003	17,000
	2/20/2004	92,000
	8/4/2004	35,000
	2/22/2005	100,000
MW-13	2/29/2000	85,000
	2/21/2001	43,000
	7/31/2001	41,000
	4/1/2002	76,000
	7/31/2002	30,000
	2/24/2003	99
	8/19/2003	7,900
	2/20/2004	6,000
	8/4/2004	13,000
	2/22/2005	54,000

TABLE 3

SUMMARY OF EPA METHOD 602 (M/P XYLENES) LABORATORY RESULTS - GROUNDWATER

PARAXYLENE FACILITY
FLINT HILL RESOURCES, LP NORTH TERMINAL
WILMINGTON, NORTH CAROLINA

WELL I.D.	DATE	M/P XYLENE (µg/L)
MW-14	2/29/2000	270,000
	7/31/2001	110,000
	4/1/2002	160,000
	7/31/2002	180,000
	2/24/2003	240,000
	8/19/2003	140,000
	2/20/2004	180000 D
	8/4/2004	190,000
	2/23/2005	250,000
MW-15	2/29/2000	49,000
	6/13/2000	57,000
	2/21/2001	80,000
	7/31/2001	23,000
	7/30/2002	97,000
	2/24/2003	130,000
	8/19/2003	76,000
	2/20/2004	75,000 D
	8/4/2004	110,000
	2/23/2005	86,000
MW-16	2/29/2000	79,000
	6/13/2000	62,000
	2/21/2001	47,000
	7/31/2001	21,000
	4/1/2002	8,700
	7/30/2002	4,300
	2/25/2003	17,000
	8/19/2003	30,000
	2/20/2004	27,000
MW-17	2/29/2000	24,000
	6/13/2000	2,400
	2/21/2001	3,100
	8/1/2001	290
	4/1/2002	170
	7/30/2002	2,600
	2/24/2003	<1.0
	8/19/2003	3.7
	2/20/2004	4,600
	8/4/2004	2,100
	2/21/2005	160
MW-18	2/29/2000	13,000
	6/13/2000	21
	2/21/2001	29,000
	7/31/2001	6,400
	4/1/2002	510
	7/30/2002	<10
	2/25/2003	670
	8/19/2003	110
	2/20/2004	<1.0
	2/23/2005	1,300

TABLE 3

SUMMARY OF EPA METHOD 602 (M/P XYLENES) LABORATORY RESULTS - GROUNDWATER

PARAXYLENE FACILITY
FLINT HILL RESOURCES, LP NORTH TERMINAL
WILMINGTON, NORTH CAROLINA

WELL I.D.	DATE	M/P XYLENE (µg/L)
MW-19	2/29/2000	1,400
	6/13/2000	430
	2/21/2001	1,000
	7/31/2001	260
	4/1/2002	11,000
	7/30/2002	5,700
	2/25/2003	27,000
	8/19/2003	9,700
	2/20/2004	5,800
	2/23/2005	1,600
MW-20	2/29/2000	7,900
	6/13/2000	110,000
	2/21/2001	47,000
	7/31/2001	70,000
	4/2/2002	7,900
	7/31/2002	15,000
	2/25/2003	5,000
	8/19/2003	2,600
	2/20/2004	14,000
	8/3/2004	3,200
	2/18/2005	50,000
MW-28	4/94	2,240
	2/13/1996	370
	6/24/1996	740
	1/28/1997	14
	12/4/1997	2,300
	6/13/1998	59
	7/14/1999	<1
	3/1/2000	<1
	6/13/2000	<1
	2/21/2001	4
	7/31/2001	<1.0
	2/25/2003	22
	8/20/2003	<1.0
	2/20/2004	530
	8/3/2004	30
	2/18/2005	<0.31
MW-30	1/19/1999	<1
	7/14/1999	<1
	3/1/2000	<1
	6/13/2000	<1
	2/21/2001	<1

TABLE 3

SUMMARY OF EPA METHOD 602 (M/P XYLENES) LABORATORY RESULTS - GROUNDWATER

PARAXYLENE FACILITY
FLINT HILL RESOURCES, LP NORTH TERMINAL
WILMINGTON, NORTH CAROLINA

WELL I.D.	DATE	M/P XYLENE (µg/L)
MW-32	4/1/2002	110,000
	7/31/2002	89,000
	2/25/2003	110,000
	8/19/2003	1,700
	2/20/2004	5,700
	8/4/2004	14,000
	2/22/2005	570
MW-33	4/1/2002	15,000
	7/31/2002	21,000
	2/25/2003	22,000
	8/19/2003	22,000
	2/20/2004	3,600
	8/4/2004	13,000
	2/22/2005	2,500
MW-34	2/22/2005	63,000
MW-35	2/21/2005	1,400
MW-36	2/22/2005	130,000
MW-37	2/22/2005	1,900
PTW-1	8/6/2004	2,800
PTW-2	8/6/2004	7,400
PTW-3	8/6/2004	660
PTW-4	8/6/2004	22,000
PTW-5	8/6/2004	46,000
PTW-6	8/6/2004	4,800
PTW-7	8/6/2004	1,200
PTW-8	8/6/2004	40,000
PTW-9	8/6/2004	45,000
101	2/24/2003	1,300
	8/19/2003	3,900
	2/20/2004	12,000
	8/4/2004	2,200
	2/21/2005	7,700
102	12/8/1995	800
	6/24/1996	200
	1/28/1997	1,100
	12/4/1997	26
	6/13/1998	270
	1/19/1999	49
	7/14/1999	760
	2/29/2000	1,300
	6/13/2000	230
	2/21/2001	100
	8/1/2001	9.1
	4/2/2002	<5.0
	7/30/2002	<10
	2/24/2003	21
	8/19/2003	5.3
	2/20/2004	150
	8/4/2004	35
	2/21/2005	34

TABLE 3

SUMMARY OF EPA METHOD 602 (M/P XYLENES) LABORATORY RESULTS - GROUNDWATER

PARAXYLENE FACILITY
FLINT HILL RESOURCES, LP NORTH TERMINAL
WILMINGTON, NORTH CAROLINA

WELL I.D.	DATE	M/P XYLENE (µg/L)
104	7/30/2002	<50
	2/20/2004	860
105	7/30/2002	<50
	8/4/2004	26
	2/21/2005	5.1
106	12/8/1995	350,000
	6/24/1996	<10
	1/28/1997	120,000
	6/13/1998	No Data
	1/19/1999	140,000
	7/14/1999	29,000
	3/1/2000	130,000
	6/13/2000	87,000
	2/21/2001	97,000
	8/1/2001	35,000
	8/19/2003	180,000
	2/20/2004	87,000
	8/4/2004	46,000
	2/21/2005	120,000
107	6/13/2000	96,000
	7/31/2002	240,000
	8/19/2003	160,000
	2/20/2004	88,000
	8/4/2004	66,000
	2/21/2005	120,000
108	4/1/2002	130,000
	2/24/2003	150,000
	8/19/2003	97,000
	2/20/2004	120,000
	8/4/2004	120,000
	2/21/2005	140,000
113	1/19/1999	11
	7/14/1999	BQL
	2/29/2000	370
	6/13/2000	460
	2/21/2001	<1
	7/31/2001	71
	4/1/2002	3.5
	7/31/2002	<1.0
	2/25/2003	2.2
	8/19/2003	1.6
	2/20/2004	<1.0
	8/4/2004	<1.0
	2/22/2005	0.85
114	6/13/1998	42

TABLE 3

SUMMARY OF EPA METHOD 602 (M/P XYLENES) LABORATORY RESULTS - GROUNDWATER

PARAXYLENE FACILITY
FLINT HILL RESOURCES, LP NORTH TERMINAL
WILMINGTON, NORTH CAROLINA

WELL I.D.	DATE	M/P XYLENE (µg/L)
117	12/8/1995	86,000
	6/24/1996	59,000
	1/28/1997	80,000
	12/4/1997	46,000
	6/13/1998	130,000
	1/19/1999	120,000
	7/14/1999	140,000
	2/29/2000	78,000
	6/13/2000	100,000
	2/21/2001	81,000
	7/31/2001	45,000
	4/1/2002	39,000
	7/30/2002	16,000
	2/25/2003	55,000
	8/19/2003	7,100
	2/20/2004	110,000 D
	8/4/2004	57,000
	2/23/2005	34,000
119	6/24/1996	<2
	1/28/1997	1,500
	12/4/1997	15
	6/13/1998	3,000
	1/19/1999	390
	7/14/1999	420
	2/29/2000	4,900
	6/13/2000	1,300
	2/21/2001	37
	7/31/2001	1,800
	4/1/2002	320
	7/30/2002	<100
	2/24/2003	9,000
	8/19/2003	<100
	2/20/2004	48
	8/4/2004	590
	2/23/2005	2,300
120	12/8/1995	1,600
	6/24/1996	600
	1/28/1997	4,300
	12/4/1997	1,500
	6/13/1998	1,500
	1/19/1999	1,000
	7/14/1999	400
	WELL WAS DAMAGED	
	6/13/2000	800
	2/21/2001	1,200
	8/1/2001	2,300
	4/1/2002	33,000

TABLE 3

SUMMARY OF EPA METHOD 602 (M/P XYLENES) LABORATORY RESULTS - GROUNDWATER

PARAXYLENE FACILITY
FLINT HILL RESOURCES, LP NORTH TERMINAL
WILMINGTON, NORTH CAROLINA

WELL I.D.	DATE	M/P XYLENE (µg/L)
121	12/8/1995	300,000
	6/24/1996	100,000
	1/28/1997	100,000
	12/4/1997	140,000
	6/13/1998	160,000
	1/19/1999	110,000
	7/14/1999	140,000
	3/1/2000	190,000
	2/24/2003	140,000
D-O	12/8/1995	160,000
	6/24/1996	62,000
	1/28/1997	3,400
	WELL HAS BEEN PERMANENTLY ABANDONED	
TYPE III MONITORING WELLS		
TMW-1	12/8/1995	220
	2/29/2000	300
TMW-2	2/29/2000	4.2
RECOVERY WELLS		
RW-2	12/4/1997	8,100
	6/13/1998	14,000
	1/19/1999	8,200
	7/14/1999	9,200
	3/1/2000	26,000
	4/1/2002	17,000
	7/31/2002	13,000
KRW-3	12/4/1997	87,000
	6/13/1998	120,000
	1/19/1999	67,000
	7/14/1999	86,000
	2/29/2000	17,000
	6/13/2000	85,000
	2/21/2001	100,000
	7/31/2001	140,000
	4/1/2002	47,000
	7/31/2002	57,000
	2/25/2003	45,000
	8/19/2003	93,000
	2/20/2004	53,000 D
	8/4/2004	58,000

TABLE 3

SUMMARY OF EPA METHOD 602 (M/P XYLENES) LABORATORY RESULTS - GROUNDWATER

PARAXYLENE FACILITY
FLINT HILL RESOURCES, LP NORTH TERMINAL
WILMINGTON, NORTH CAROLINA

WELL I.D.	DATE	M/P XYLENE (µg/L)
KRW-4	12/4/1997	27,000
	6/13/1998	60,000
	1/19/1999	18,000
	7/14/1999	86,000
	2/29/2000	61,000
	6/13/2000	29,000
	2/21/2001	15,000
	8/1/2001	13,000
	4/1/2002	11,000
	7/31/2002	16,000
	2/24/2003	11,000
	8/19/2003	15,000
	2/20/2004	18,000
	8/4/2004	13,000
	2/23/2005	2,400
KRW-5	12/4/1997	180,000
	6/13/1998	130,000
	1/19/1999	84,000
	7/14/1999	390,000
	2/29/2000	150,000
	6/13/2000	100,000
	2/21/2001	FP
	7/31/2001	79,000
	4/1/2002	170,000
	7/31/2002	60,000
	2/24/2003	66,000
	8/19/2003	210,000
	2/20/2004	77,000
	8/4/2004	180,000
	2/22/2005	77,000
KRW-6	2/21/2001	64,000
	7/31/2001	95,000
	4/1/2002	93,000
	7/31/2002	53,000
	2/25/2003	60,000
	8/19/2003	72,000
	2/20/2004	120,000
	8/4/2004	92,000
	2/23/2005	69,000
KRW-7	8/21/2003	21,000
	8/4/2004	63,000
	2/23/2005	31,000
KRW-8	8/21/2003	100,000
	8/4/2004	14,000
	2/22/2005	72,000

TABLE 3

SUMMARY OF EPA METHOD 602 (M/P XYLENES) LABORATORY RESULTS - GROUNDWATER

PARAXYLENE FACILITY
FLINT HILL RESOURCES, LP NORTH TERMINAL
WILMINGTON, NORTH CAROLINA

WELL I.D.	DATE	M/P XYLENE (µg/L)
TEMPORARY MONITORING WELLS *		
HP-1	4/94	11,900
HP-2	4/94	11,500
303TW-1	3/28/03	480
303TW-2	3/28/2003	1
303TW-3	3/28/2003	2,200
303TW-4	3/28/2003	31,000

FP = Free Product
* Temporary wells have been permanently abandoned
D - The reported result is from a secondary dilution.

TABLE 4

SUMMARY OF GROUNDWATER ELEVATIONS AT SELECTED MONITORING WELLS – FEBRUARY 16, 2005

LOADING RACK AREA

FLINT HILLS RESOURCES, LP NORTH TERMINAL
WILMINGTON, NORTH CAROLINA

DATA POINT	TOP OF CASING ELEVATION (in feet)	DEPTH TO WATER (in feet)	FREE PHASE PRODUCT THICKNESS (in feet)	SPECIFIC GRAVITY ADJUSTMENT	WATER TABLE ELEVATION (in feet)
TYPE II MONITORING WELLS					
KMW-1	19.62	7.54	NMT	--	12.08
KMW-2	17.28	7.48	NMT	--	9.80
KMW-3	14.63	6.08	NMT	--	8.55
KMW-4	20.15	11.01	NMT	--	9.14
KMW-5	16.29	3.20	NMT	--	13.09
KMW-6	24.90	3.14	NMT	--	21.76
KMW-7	25.11	2.69	NMT	--	22.42
KMW-8	25.86	3.18	NMT	--	22.68
KMW-9	25.73	KMW-9 was abandoned on August 11, 2004.			
KMW-10	24.92	3.05	NMT	--	21.87
KMW-11	27.34	3.51	NMT	--	23.83
KMW-12	24.19	12.18	NMT	--	12.01
KMW-13	23.84	11.74	NMT	--	12.10
KMW-14	23.31	11.07	NMT	--	12.24
FHR TYPE II MONITORING WELLS WITHIN APEX TERMINAL					
AMW-1	23.42	11.65	NMT	--	11.77
AMW-2	23.35	11.54	NMT	--	11.81
AMW-3	21.72	11.37	NMT	--	10.35
AMW-4	15.16	9.40	2.10	0.77	7.38
AMW-5	10.38	5.40	NMT	--	4.98
AMW-6	11.97	7.69	NMT	--	4.28

Notes:
Specific gravity adjustment for gasoline is 0.77.
NMT = No Measurable Thickness

TABLE 5

SUMMARY OF GROUNDWATER DISSOLVED VOLATILES DATA
EPA METHOD 8260B

LOADING RACK AREA

FLINT HILLS RESOURCES, LP NORTH TERMINAL
WILMINGTON, NORTH CAROLINA

WELL ID	DATE	Benzene	n-Butylbenzene	sec-Butylbenzene	Ethylbenzene	Isopropylbenzene	MTBE	Naphthalene	n-Propylbenzene	Toluene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	m/p-Xylenes	o-Xylene	All Other 8260B Analytes
T15A NCAC 2L.0202 Groundwater Standards		**1**	**70**	**70**	**29**	**70**	**200**	**21**	**70**	**1,000**	**350**	**350**	**530**		**Varies**
T-1**	8/1/2001	-	-	-	-	-	-	-	-	-	-	-	**1,100**	-	-
T-2**	8/1/2001	-	-	-	-	-	-	-	-	-	-	-	4.9*	-	-
T-3**	8/24/2001	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	210	<5.0	ND
T-4**	8/24/2001	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	44	<5.0	ND
T-5**	8/24/2001	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	**34,000**	<500	ND
T-6**	8/24/2001	**8,300**	<500	<500	<500	<500	**48,000**	**830**	<500	**4,100**	**1,700**	<500	**11,000**	**860**	ND
T-8**	8/24/2001	20	<5.0	<5.0	<5.0	<5.0	21	<5.0	<5.0	18	<5.0	<5.0	22	<5.0	ND
KMW-1	4/94	-	-	-	-	-	-	-	-	-	-	-	**7,900***	-	-
	2/10/99	-	-	-	-	-	-	-	-	-	-	-	**780***	-	-
	2/24/00	-	-	-	-	-	-	-	-	-	-	-	66.9*	-	-
	9/21/00	-	-	-	-	-	-	-	-	-	-	-	128*	-	-
	2/14/01	-	-	-	-	-	-	-	-	-	-	-	**16,000***	-	-
	7/10/01	-	-	-	-	-	-	-	-	-	-	-	**7,600***	<500	-
	8/1/01	-	-	-	-	-	-	-	-	-	-	-	**4,900***	-	-
	8/24/01	<500	<500	<500	**3,400**	<500	<500	<500	<500	<500	<500	<500	**4,500**	<500	ND
	9/18/01	<50	<50	**81**	<50	<50	<50	<50	<50	<50	340	170	**3,000**	<50	BQL
	1/3/02	<5.0	<5.0	37	<5.0	<5.0	<5.0	5.5	9	<5.0	39	<5.0	<10	<5.0	ND
	2/27/02	<5.0	5.7	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	51	43	<10	<5.0	ND
	2/28/03	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	**540**	<50	ND
	9/16/03	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	53	40	22	<5.0	ND
	2/19/04	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<5.0	<1.0	<1.0	26	27	2.6	<1.0	ND
	8/5/04	<0.36	7.7	0.81J	<0.34	0.27J	<0.31	1.9J	0.85J	<0.54	52	60	<0.40	<0.35	ND
	2/17/05	<0.54	<0.38	3.2	<0.62	<0.66	<0.45	<0.12	<0.45	<0.62	69	100	<1.6 (Total Xylenes)		1.3
KMW-2	4/94	-	-	-	-	-	-	-	-	-	-	-	**19,000***	-	-
	2/10/99	-	-	-	-	-	-	-	-	-	-	-	5*	-	-
	2/17/05	<1.1	1.1J	<1.2	<1.2	<1.3	<0.90	6.7J	1.4J	<1.2	3.6	1.8J	**580 (Total Xylenes)**		ND

All results in micrograms per Liter - µg/l
- = No data
Bold figure indicates concentration level exceeds applicable 2L Groundwater Standard limit.
Refer to laboratory reports for other 8260B analytes detected.

ND = Not detected
BQL = Below Quantitation Limits

* = Determined with EPA Method 602 analysis
** = Temporary wells have been permanently abandoned
J = Value is estimated concentration that is less than PQL, but greater than or equal to the MDL.
E = The reported result exceeded the calibration range of the instrument.

TABLE 5

SUMMARY OF GROUNDWATER DISSOLVED VOLATILES DATA
EPA METHOD 8260B

LOADING RACK AREA

FLINT HILLS RESOURCES, LP NORTH TERMINAL
WILMINGTON, NORTH CAROLINA

WELL ID	DATE	Benzene	n-Butylbenzene	sec-Butylbenzene	Ethylbenzene	Isopropylbenzene	MTBE	Naphthalene	n-Propylbenzene	Toluene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	m/p-Xylenes	o-Xylene	All Other 8260B Analytes
T15A NCAC 2L.0202 Groundwater Standards		**1**	**70**	**70**	**29**	**70**	**200**	**21**	**70**	**1,000**	**350**	**350**	**530**		**Varies**
KMW-3	4/94	-	-	-	-	-	-	-	-	-	-	-	6.5*	-	-
	2/10/99	-	-	-	-	-	-	-	-	-	-	-	96*	-	-
	2/14/01	-	-	-	-	-	-	-	-	-	-	-	62*	-	-
	8/24/01	<5.0	<5.0	<5.0	**33**	<5.0	13	6.7	5.7	<5.0	17	<5.0	59	<5.0	ND
	9/18/01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	BQL
	1/3/02	<5.0	<5.0	**99**	17	13	<5.0	16	48	<5.0	110	38	32	<5.0	ND
	2/27/02	<5.0	8.4	<5.0	12	<5.0	<5.0	5.3	44	<5.0	48	29	23	<5.0	ND
	2/28/03	<5.0	<5.0	<5.0	12	<5.0	<5.0	<5.0	<5.0	<5.0	37	11	38	<5.0	**ND[2]**
	9/16/03	<5.0	<5.0	<5.0	**120**	<5.0	<5.0	8.1	9.4	<5.0	74	32	250	<5.0	ND
	2/19/04	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
	8/5/04	<0.36	<0.31	<0.24	<0.34	<0.25	<0.31	<0.44	<0.32	<0.54	0.23J	<0.21	<0.40	<0.35	ND
	2/17/05	**3.8**	<0.38	<0.60	**82**	39	<0.45	**61**	**95**	1.3	**640**	93	110 (Total Xylenes)		8.9J
KMW-4	4/94	-	-	-	-	-	-	-	-	-	-	-	**28,000***	-	-
	2/24/00	-	-	-	-	-	-	-	-	-	-	-	9.4*	-	-
	9/21/00	-	-	-	-	-	-	-	-	-	-	-	198*	-	-
	2/14/01	-	-	-	-	-	-	-	-	-	-	-	110*	-	-
	8/24/01	<5.0	<5.0	<5.0	<5.0	<5.0	**210**	7.1	<5.0	<5.0	7.7	<5.0	<10	<5.0	ND
	9/17/01	1	1	1	<1	8	17	8	12	<1	12	10	28	<1	BQL
	1/3/02	<5.0	<5.0	<5.0	**41**	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	52	<5.0	ND
	2/27/02	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	ND
	2/28/03	<5.0	<5.0	<5.0	<5.0	<5.0	9	<5.0	<5.0	<5.0	15	11	<5.0	<5.0	ND
	9/16/03	<5.0	<5.0	<5.0	<5.0	<5.0	12	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	ND
	2/19/04	<1.0	<1.0	<1.0	<1.0	<1.0	17	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
	8/5/04	<0.36	<0.31	<0.24	<0.34	<0.25	1.1J	0.50J	<0.32	<0.54	0.38J	0.24J	<0.40	<0.35	ND
	2/17/05	<0.54	<0.38	<0.60	<0.62	1.2	6.0J	1.2J	1.2	<0.62	10	1.2	71 (Total Xylenes)		ND
KMW-5	9/17/01	<20	<20	<20	<20	<20	<20	**33**	26	<20	210	56	**800**	<20	BQL
	1/3/02	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	ND
	2/27/02	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	**ND[1]**
	2/28/03	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	**78,000**	<500	ND
	9/16/03	<120	<120	<120	<120	<120	<120	<120	<120	<120	<120	<120	**13,000**	<120	ND
	2/19/04	<500	<500	<500	<500	<500	<5,000	<2,500	<500	<500	<500	<500	**15,000**	<500	ND
	8/5/04	<36	<31	<24	<34	<25	<31	<44	<32	<54	<19	<21	**25,000**	<35	ND
	2/17/05	<54	<38	<60	<62	<66	<45	<12	<45	<62	<44	<49	**46,000 (Total Xylenes)**		ND

All results in micrograms per Liter - µg/l
- = No data
Bold figure indicates concentration level exceeds applicable 2L Groundwater Standard limit.
Refer to laboratory reports for other 8260B analytes detected.

ND = Not detected
BQL = Below Quantitation Limits

* = Determined with EPA Method 602 analysis
** = Temporary wells have been permanently abandoned
J = Value is estimated concentration that is less than PQL, but greater than or equal to the MDL.
E = The reported result exceeded the calibration range of the instrument.

TABLE 5

SUMMARY OF GROUNDWATER DISSOLVED VOLATILES DATA
EPA METHOD 8260B

LOADING RACK AREA

FLINT HILLS RESOURCES, LP NORTH TERMINAL
WILMINGTON, NORTH CAROLINA

WELL ID	DATE	Benzene	n-Butylbenzene	sec-Butylbenzene	Ethylbenzene	Isopropylbenzene	MTBE	Naphthalene	n-Propylbenzene	Toluene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	m/p-Xylenes	o-Xylene	All Other 8260B Analytes
T15A NCAC 2L.0202 Groundwater Standards		1	70	70	29	70	200	21	70	1,000	350	350	530		Varies
KMW-6	9/17/01	<4.4	<8.4	<6.2	**410**	<7.4	<9.3	<14	<7.1	66	<9.7	<7.4	**160,000**	**270**	50
	1/3/02	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	**19,000**	<250	ND
	2/27/02	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	**37,000**	<500	ND
	2/28/03	**67**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	**6,300**	<50	ND
	9/16/03	<120	<120	<120	<120	<120	<120	<120	<120	<120	<120	<120	**14,000**	<120	ND
	2/19/04	<1,000	<1,000	<1,000	<1,000	<1,000	<10,000	<5,000	<1,000	<1,000	<1,000	<1,000	**31,000**	<1,000	ND
	8/5/2004	<36	<31	<24	<34	<25	<31	**73J**	<32	<54	36J	<21	**51,000**	**75**	ND
	2/17/05	<54	<38	<60	<62	<66	54J	**110J**	<45	<62	77J	<49	**8,100 (Total Xylenes)**		ND
KMW-7	9/17/01	**370**	<10	<10	**88**	<10	**330**	**48**	12	450	120	36	**570**	**330**	BQL
	1/3/02	**160**	5.4	<5.0	24	<5.0	94	19	<5.0	44	20	7.1	100	16	ND
	2/27/02	**270**	<5.0	32	**41**	<5.0	110	**41**	5.5	210	33	31	180	140	ND
	2/28/03	**120**	<5.0	<5.0	**74**	<5.0	5.4	**32**	7.8	31	40	33	180	20	ND
	9/16/03	**300**	<5.0	<5.0	**180**	12	<5.0	**150**	22	14	170	62	**560**	8.2	ND
	2/19/04	**110**	<10	<10	**120**	12	<100	**190**	26	<10	**410**	110	**600**	12	ND
	8/5/2004	**140**	<1.6	<1.2	**140**	10	<1.6	**200**	19	5.8	150	34	330	28	ND
	2/17/05	**96**	6.5	2.4	**180**	16	<0.45	**200**	30	6.8	170	24	350 (Total Xylenes)		ND
KMW-8	9/17/01	**3,400**	<200	**450**	**840**	<200	**6,300**	**530**	<200	600	**2,300**	580	12,000	650	BQL
	1/3/02	**1,300**	<100	<100	**190**	<100	**3,700**	**180**	130	<100	**390**	130	**930**	<100	ND
	2/27/02	**0.17' FREE-PHASE PRODUCT**													
	2/28/03	**1,400**	<250	<250	**550**	<250	**1,400**	**320**	<250	<250	**1,700**	**630**	**8,000**	340	ND
	9/16/03	**1,900**	<250	<250	**670**	<250	**1,600**	**480**	<250	680	**1,200**	**390**	**5,900**	450	ND
	2/19/04	**2,600**	<100	<100	**990**	<100	<1,000	**680**	**110**	820	**1,400**	**380**	**8,800**	**670**	ND
	8/5/2004	**560**	<31	<24	**430**	40J	**200J**	**560**	60J	200	**1,200**	310	**5,500**	**580**	ND
	2/17/05	**620**	<7.6	14J	**480**	68	**330**	**690**	**130**	82	**860**	240	**2,100 (Total Xylenes)**		ND
KMW-9	9/17/01	**6,200**	<200	**260**	**2,800**	<200	**3,900**	**540**	**360**	**1,100**	**1,000**	<200	**3,700**	**440**	BQL
	1/3/02	**0.21' FREE-PHASE PRODUCT**													
	2/27/02	**0.12' FREE-PHASE PRODUCT**													
	2/28/03	**NOT MEASURED, WELL DAMAGED/WELL WAS REPLACED ON 7/2/03**													
	9/16/03	**1,200**	<250	<250	**2,000**	<250	**540**	**660**	**340**	**1,200**	**2,700**	**830**	**10,000**	**1,200**	ND
	2/19/04	**560**	<200	<200	**830**	<200	<2,000	<1,000	<200	310	**1,400**	**330**	**6,900**	**640**	ND
	8/5/04	**600**	45J	<24	**930**	**89J**	100J	**550**	**170**	280	**1,500**	**350**	**5900**	**510**	ND
	2/17/05	**NOT SAMPLED, WELL ABANDONED**													

All results in micrograms per Liter - µg/l
- = No data
Bold figure indicates concentration level exceeds applicable 2L Groundwater Standard limit.
Refer to laboratory reports for other 8260B analytes detected.

ND = Not detected
BQL = Below Quantitation Limits

* = Determined with EPA Method 602 analysis
** = Temporary wells have been permanently abandoned
J = Value is estimated concentration that is less than PQL, but greater than or equal to the MDL.
E = The reported result exceeded the calibration range of the instrument.

TABLE 5

SUMMARY OF GROUNDWATER DISSOLVED VOLATILES DATA
EPA METHOD 8260B

LOADING RACK AREA

FLINT HILLS RESOURCES, LP NORTH TERMINAL
WILMINGTON, NORTH CAROLINA

WELL ID	DATE	Benzene	n-Butylbenzene	sec-Butylbenzene	Ethylbenzene	Isopropylbenzene	MTBE	Naphthalene	n-Propylbenzene	Toluene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	m/p-Xylenes	o-Xylene	All Other 8260B Analytes
T15A NCAC 2L.0202 Groundwater Standards		1	70	70	29	70	200	21	70	1,000	350	350	530		Varies
KMW-10	9/17/01	**88**	<20	<20	<20	<20	**750**	<20	<20	<20	<20	<20	<40	<20	BQL
	1/3/02	**37**	<10	<10	12	<10	120	15	<10	18	12	<10	37	18	ND
	2/27/02	**32**	<10	<10	<10	<10	69	10	<10	<10	<10	<10	<20	<10	ND
	2/28/03	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND
	9/16/03	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	ND
	2/19/04	**440**	<10	<10	**190**	19	<100	**140**	30	28	190	38	260	<10	ND
	8/5/04	**36**	5.3	2.2	**29**	9.3	2.4J	**94**	20	3.2	77	9.6	17	0.69 J	6.29 J
	2/17/05	<0.54	1	0.62J	<0.62	1.6	<0.45	6.5	1.4	<0.62	0.45J	<0.49	<1.6 (Total Xylenes)		ND
KMW-11	9/17/01	**110**	<80	<80	**610**	<80	<80	**89**	<80	**2,000**	**650**	130	**2,500**	**1,200**	BQL
	1/3/02	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	19	11	ND
	2/27/02	**6**	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	32	5.2	<5.0	81	<5.0	ND
	2/28/03	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND
	9/16/03	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	ND
	2/19/04	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
	8/5/04	<0.36	<0.31	<0.24	<0.34	<0.25	<0.31	<0.44	<0.32	<0.54	<0.19	<0.21	<0.4	<0.3	ND
	2/17/05	<0.54	<0.38	<0.60	<0.62	<0.66	<0.45	<0.12	<0.45	<0.62	<0.44	<0.49	<1.6 (Total Xylenes)		ND
KMW-12	1/3/02	**0.30' FREE-PHASE PRODUCT**													
	2/27/02	**1,400**	<5.0	14	**190**	**77**	**670**	**200**	**160**	39	**760**	130	**1,800**	**47**	Varies
	2/28/03	**3,500**	<250	<250	**730**	<250	**990**	**340**	<250	<250	**1,100**	**360**	**5,800**	<250	ND
	9/16/03	**2,000**	<250	<250	**680**	<250	<250	**370**	<250	<250	**950**	290	**4,400**	<250	ND
	2/19/04	**2,400**	<500	<500	**1,600**	<500	<5,000	<2,500	<500	<500	**2,700**	**670**	**13,000**	<500	ND
	8/5/04	**1,800**	<77	<60	**1,500**	**170J**	160J	**1,300**	**340**	220J	**3,400**	**860**	**12,000**	**120 J**	ND
	2/17/05	**1,600**	<76	52	**810**	**180**	150J	**940**	**380**	64	**2,100**	**510**	**2,000 (Total Xylenes)**		ND
KMW-13	1/3/02	**2.51' FREE PHASE PRODUCT**													
	2/27/02	**690**	<5.0	<5.0	**140**	24	**1,800**	**160**	46	34	100	38	**35,000**	**74**	ND
	2/28/03	**690**	<1,200	<1,200	<1,200	<1,200	**1,100 J**	<1,200	<1,200	<1,200	210 J	<1,200	**19,000**	<1,200	ND
	9/16/03	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	**20,000**	<1,000	ND
	2/19/04	<1,000	<1,000	<1,000	<1,000	<1,000	<10,000	<5,000	<1,000	<1,000	<1,000	<1,000	**71,000**	<1,000	ND
	8/5/04	<180	<160	<120	<170	<120	<160	<220	<160	<270	<95	<100	**68,000**	<180	ND
	2/17/05	**920**	<76	<120	<120	<130	120J	**240J**	<90	<120	270	<98	**57,000 (Total Xylenes)**		ND

All results in micrograms per Liter - µg/l
- = No data
Bold figure indicates concentration level exceeds applicable 2L Groundwater Standard limit.
Refer to laboratory reports for other 8260B analytes detected.

ND = Not detected
BQL = Below Quantitation Limits

* = Determined with EPA Method 602 analysis
** = Temporary wells have been permanently abandoned
J = Value is estimated concentration that is less than PQL, but greater than or equal to the MDL.
E = The reported result exceeded the calibration range of the instrument.

TABLE 5

SUMMARY OF GROUNDWATER DISSOLVED VOLATILES DATA
EPA METHOD 8260B

LOADING RACK AREA

FLINT HILLS RESOURCES, LP NORTH TERMINAL
WILMINGTON, NORTH CAROLINA

WELL ID	DATE	Benzene	n-Butylbenzene	sec-Butylbenzene	Ethylbenzene	Isopropylbenzene	MTBE	Naphthalene	n-Propylbenzene	Toluene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	m/p-Xylenes	o-Xylene	All Other 8260B Analytes
T15A NCAC 2L.0202 Groundwater Standards		**1**	**70**	**70**	**29**	**70**	**200**	**21**	**70**	**1,000**	**350**	**350**	**530**		**Varies**
KMW-14	1/3/02	**8.5**	<5.0	<5.0	<5.0	<5.0	38	<5.0	<5.0	<5.0	<5.0	<5.0	**2,900**	<5.0	ND
	2/27/02	**6.9**	<5.0	<5.0	**66**	5	27	13	<5.0	<5.0	25	11	**30,000**	**59**	ND
	2/28/03	<120		<120	<120	<120	<120	<120	<120	<120	<120	<120	**23,000**	<120	ND
	9/16/03	<500	<500	<500	**45,000**	<500	<500	<500	<500	<500	<500	<500	**38,000**	<500	ND
	2/19/04	<1,000	<1,000	<1,000	<1,000	<1,000	<10,000	<5,000	<1,000	<1,000	<1,000	<1,000	**62,000**	<1,000	ND
	8/5/04	<180	<160	<120	<170	<120	<160	**400J**	<160	<270	140J	<100	**50,000**	<180	ND
	2/17/05	<54	<38	<60	<62	<66	<45	**42J**	<45	<62	<44	<49	**21,000 (Total Xylenes)**		ND
AMW-1	12/22/03	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.6	2.7	<2.0	<1.0	2.2
	2/19/04	<1.0	<1.0	<1.0	<1.0	<1.0	<10.0	<5.0	<1.0	<1.0	<1.0	4.3	<1.0	<1.0	35
	8/5/04	<0.36	<0.3	<0.24	<0.34	<0.25	<0.31	<0.44	<0.32	<0.54	<0.19	1.2	<0.40	<0.35	ND
	2/16/05	<0.54	2.5	<0.60	1.0	<0.66	3.0J	<0.12	<0.45	<0.62	3.3	4.7	<1.6 (Total Xylenes)		14.07
AMW-2	12/22/03	**1,700**	<1.0	<1.0	**1,400**	**130**	**300**	**660**	**390**	**1,100**	**2,500**	**710**	**27,000**	**680**	5.2
	2/19/04	**2,200**	<200	<200	**1,700**	<200	<2,000	<1,000	**300**	**2,000**	**2,200**	**600**	**39,000**	**940**	ND
	8/5/04	**2,300**	<62	<48	**2,000**	**140J**	**440J**	**750J**	**260**	**1,900**	**2,100**	**560**	**40,000**	**970**	ND
	2/16/05	**1,200**	<38	<60	**1,300**	**130**	130J	**840**	**260**	**1,700**	**2,100**	**490**	**35,000 (Total Xylenes)**		ND
AMW-3	12/22/03	**220**	<1.0	<1.0	**30**	25	10	**56**	39	12	89	23	**1,600**	**8.5**	7.2
	2/19/04	**170**	<50	<50	**50**	<50	<500	<250	<50	<50	100	<50	**2,800**	**<50**	ND
	8/5/04	**230**	10	4.8J	**70**	43	4.6J	**170**	69	13	94	29	**670**	**5.8**	ND
	2/16/05	**360**	<19	<30	**130**	42J	<23	**160J**	59	34J	250	58	**9,200 (Total Xylenes)**		ND
AMW-4	12/22/03	**200**	15	18	11	14	**240**	**26**	26	2.8	140	110	68	<1.0	36
	2/19/04	**420**	<10	13	21	28	**110**	<50	34	17	200	93	98	<10	ND
	8/5/04	**0.8' FREE- PHASE PRODUCT PRESENT IN AMW-4**													
	2/16/05	**2.10' FREE- PHASE PRODUCT PRESENT IN AMW-4**													
AMW-5	12/22/03	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	ND
	2/19/04	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.3
	8/5/04	<0.36	<0.31	<0.24	<0.34	<0.25	<0.31	<0.44	<0.32	<0.54	<0.19	<0.21	0.90 J	<0.35	ND
	2/16/05	<0.54	<0.38	<0.60	<0.62	<0.66	<0.45	0.44J	<0.45	<0.62	<0.44	<0.49	<1.6 (Total Xylenes)		ND

All results in micrograms per Liter - µg/l
- = No data
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Bold figure indicates concentration level exceeds applicable 2L Groundwater Standard limit.
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* = Determined with EPA Method 602 analysis
** = Temporary wells have been permanently abandoned
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E = The reported result exceeded the calibration range of the instrument.

TABLE 5

SUMMARY OF GROUNDWATER DISSOLVED VOLATILES DATA
EPA METHOD 8260B

LOADING RACK AREA

FLINT HILLS RESOURCES, LP NORTH TERMINAL
WILMINGTON, NORTH CAROLINA

WELL ID	DATE	Benzene	n-Butylbenzene	sec-Butylbenzene	Ethylbenzene	Isopropylbenzene	MTBE	Naphthalene	n-Propylbenzene	Toluene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	m/p-Xylenes	o-Xylene	All Other 8260B Analytes
T15A NCAC 2L.0202 Groundwater Standards		**1**	**70**	**70**	**29**	**70**	**200**	**21**	**70**	**1,000**	**350**	**350**	**530**		**Varies**
AMW-6	12/22/03	**76**	<1.0	2.7	5.3	4.1	24	<1.0	1.1	1.1	3.4	<1.0	11	<1.0	ND
	2/19/04	**66**	2.6	4.2	3.5	5.5	24	5.7	1.8	2.2	17	<5.0	23	2.2	ND
	8/5/04	**210E**	3.2	5.5	1.9	6	59	1.1J	2.4	3.5	23	8.5	20	2.6	ND
	2/16/05	**82**	3.2	3.4	2.8	12	70	11	3.8	2.2	35	6.9	240 (Total Xylenes)		1.7J

All results in micrograms per Liter - µg/l
- = No data
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BQL = Below Quantitation Limits
Bold figure indicates concentration level exceeds applicable 2L Groundwater Standard limit.
Refer to laboratory reports for other 8260B analytes detected.

* = Determined with EPA Method 602 analysis
** = Temporary wells have been permanently abandoned
J = Value is estimated concentration that is less than PQL, but greater than or equal to the MDL.
E = The reported result exceeded the calibration range of the instrument.

TABLE 6

SURFICIAL GROUNDWATER RECOVERY DATA
FOR PERIOD AUGUST 3, 2004 to FEBRUARY 25, 2005

PARAXYLENE FACILITY
FLINT HILLS RESOURCES, LP NORTH TERMINAL
WILMINGTON, NORTH CAROLINA

WELL I.D.	CURRENT PERIOD (8/3/2004 to 2/25/2005)		TO DATE	
	Volume of Groundwater Recovered (gal.)	Approx. Volume of PX Removed* (gal.)	Volume of Groundwater Recovered (gal.)	Approx. Volume of PX Removed (gal.)
RW-2 (Operated from 3/21/95 to 1/03)	0	0/0	4,249,488	46
KRW-3 (Operating since prior to March 19, 1995 event)	563,500	38/0	19,129,072	970
KRW-4 (Operating since November 3, 1997)	4,524,671	12.6/14.5	35,264,700	652.1
KRW-5 (Operating since November 3, 1997)	2,517,854	225.3/0.13	30,373,273	4,207.9
KRW-6 (Operating since January 17, 2001)	1,479,716	118.7/0	6,900,346	624.2
KRW-7 (Operating since October 7, 2004)	876,633	31.6/0	876,633	31.6
KRW-8 (Operating since October 7, 2004)	141,030	11.8/0	141,030	11.8

NOTE: RW-2 has been permanently turned off since October of 2000 due to low water table elevation.

Dissolved PX removed calculations are provided in Section 6.1.2.3 of the report text.

* Dissolved PX removed/PX manually removed

TABLE 7

HISTORICAL MTBE DATA - SURFICIAL GROUNDWATER

PARAXYLENE FACILITY
FLINT HILL RESOURCES, LP NORTH TERMINAL
WILMINGTON, NORTH CAROLINA

WELL I.D.	DATE	MTBE Concentration (µg/L)
TYPE II MONITORING WELLS		
MW-1	Jun-98	<20
	Feb-04	<10
	Aug-04	<10
	Feb-05	<21
MW-2	Feb-04	<40,000
	Aug-04	<200
	Feb-05	<84
MW-3	Jun-98	<2,000
	Feb-04	<40,000
	Aug-04	<200
	Feb-05	<84
MW-4	Jun-98	<10,000
	Feb-04	<10,000
	Aug-04	<200
	Feb-05	<84
MW-5	Jun-98	<1,000
	Feb-04	<500
	Aug-04	<200
	Feb-05	<0.42
MW-7	Feb-04	<25,000
	Aug-04	<200
	Feb-05	<84
MW-8	Feb-04	<1,000
	Aug-04	<200
	Feb-05	<84
MW-9	Feb-04	<10
MW-11	Feb-04	<10,000
	Aug-04	<200
	Feb-05	<84
MW-12	Feb-04	<10,000
	Aug-04	<200
	Feb-05	<84
MW-13	Feb-04	<1,000
	Aug-04	<200
	Feb-05	<84

TABLE 7

HISTORICAL MTBE DATA - SURFICIAL GROUNDWATER

PARAXYLENE FACILITY
FLINT HILL RESOURCES, LP NORTH TERMINAL
WILMINGTON, NORTH CAROLINA

WELL I.D.	DATE	MTBE Concentration (µg/L)
MW-14	Feb-04	<10,000
	Aug-04	<200
	Feb-05	<84
MW-15	Feb-04	<5,000
	Aug-04	<200
	Feb-05	<84
MW-16	Jul-03	1,100
	Aug-03	<500
	Feb-04	<5,000
MW-17	Jul-03	2,100
	Aug-03	5.9
	Feb-04	<1,200
	Aug-04	<200
	Feb-05	<4.2
MW-18	Feb-04	<10
	Feb-05	<21
MW-19	Feb-04	<1,000
	Feb-05	<21
MW-20	Feb-04	<5,000
	Aug-04	<200
	Feb-05	<84
MW-28	Jun-98	<2
	Feb-04	<100
	Aug-04	<50
	Feb-05	<0.42
MW-30	Jun-98	<1
MW-32	Feb-04	<1,000
	Aug-04	<200
	Feb-05	<10
MW-33	Feb-04	<1,000
	Aug-04	<200
	Feb-05	<42
MW-34	Feb-05	<84
MW-35	Feb-05	250

TABLE 7

HISTORICAL MTBE DATA - SURFICIAL GROUNDWATER

PARAXYLENE FACILITY
FLINT HILL RESOURCES, LP NORTH TERMINAL
WILMINGTON, NORTH CAROLINA

WELL I.D.	DATE	MTBE Concentration (µg/L)
MW-36	Feb-05	<84
MW-37	Feb-05	<42
101	Jul-03	<100
	Aug-03	<50
	Feb-04	8,500
	Aug-04	920
	Feb-05	3,300
102	Jun-96	1,100
	Jun-98	420
	Jan-99	150
	Jul-03	310
	Aug-03	200
	Feb-04	290
	Aug-04	<100
	Feb-05	830
104	Jul-02	5,100
	Feb-04	<500
105	Aug-02	390
	Aug-04	20
	Feb-05	19
106	Jun-96	420
	Aug-02	1,000
	Aug-03	<5,000
	Feb-04	<25000
	Aug-04	<200
	Feb-05	<84
107	Jul-02	<500
	Aug-02	<500
	Aug-03	<5,000
	Feb-04	<10000
	Aug-04	<200
	Feb-05	<110
108	Aug-03	<5,000
	Feb-04	<40000
	Aug-04	<200
	Feb-05	<84

TABLE 7

HISTORICAL MTBE DATA - SURFICIAL GROUNDWATER

PARAXYLENE FACILITY
FLINT HILL RESOURCES, LP NORTH TERMINAL
WILMINGTON, NORTH CAROLINA

WELL I.D.	DATE	MTBE Concentration (µg/L)
113	Jan-99	<2
	Feb-04	<10
	Aug-04	<10
	Feb-05	0.42
114	Jun-98	18
117	Jul-96	<5,000
	Jun-98	<20,000
	Feb-04	<10,000
	Aug-04	<200
	Feb-05	<84
119	Jun-96	14
	Jun-98	<100
	Apr-02	2,900
	Jul-02	6,400
	Aug-03	2,200
	Feb-04	990
	Aug-04	280
	Feb-05	<42
120	Jun-96	38
	Jun-98	160
	Jan-99	210
	Apr-02	1,300
121	Jun-96	<1,000
	Jun-98	<10,000
TEMPORARY WELLS		
M-1	Aug-02	1,500
M-2	Aug-02	<50

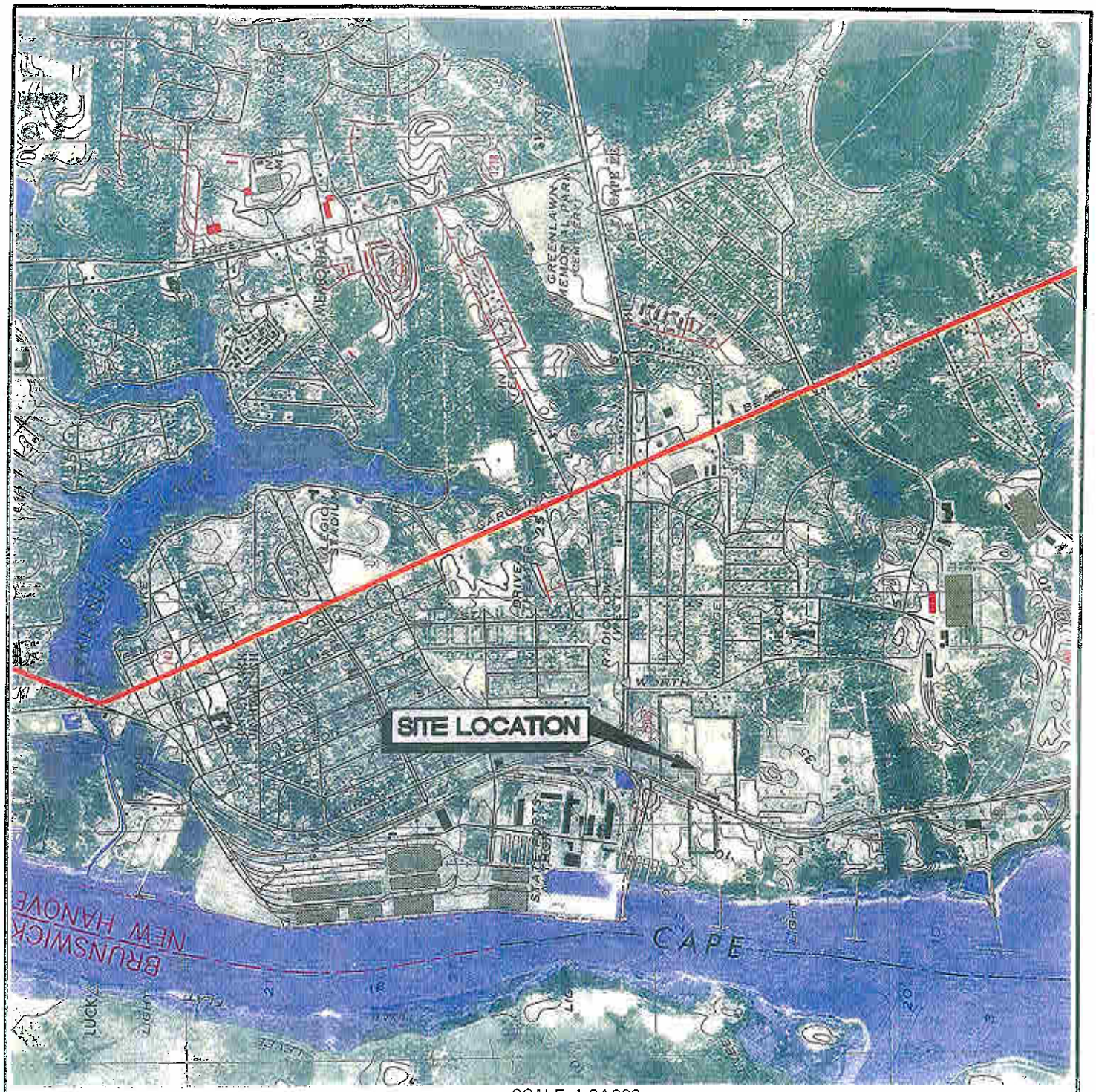
TABLE 7

HISTORICAL MTBE DATA - SURFICIAL GROUNDWATER

PARAXYLENE FACILITY
FLINT HILL RESOURCES, LP NORTH TERMINAL
WILMINGTON, NORTH CAROLINA

WELL I.D.	DATE	MTBE Concentration (µg/L)
RECOVERY WELLS		
RW-2	Jun-98	<1,000
	Apr-02	<500
	Jul-02	<500
KRW-3	Feb-04	<5,000
	Aug-04	<200
KRW-4	Jun-98	<4,000
	Apr-02	5,900
	Jul-02	2,900
	Aug-03	2,700
	Feb-04	<5,000
	Aug-04	670
	Feb-05	<42
KRW-5	Feb-04	<10,000
	Aug-04	<200
	Feb-05	<84
KRW-6	Feb-04	<10,000
	Aug-04	<200
	Feb-05	<84
KRW-7	Aug-04	<200
	Feb-05	<84
KRW-8	Aug-04	<200
	Feb-05	<84
GASOLINE/FUEL OIL AST AREA MONITORING WELLS		
2	Apr-02	<5

FIGURES



SCALE 1:24000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

MN GN 1°39′ 29 MILS 5½° 98 MILS

UTM GRID AND 1979 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

CONTOUR INTERVAL 5 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
DEPTH CURVES AND SOUNDINGS IN FEET—DATUM IS MEAN LOW WATER
THE RELATIONSHIP BETWEEN THE TWO DATUMS IS VARIABLE
THE MEAN RANGE OF TIDE IS APPROXIMATELY 3.6 FEET

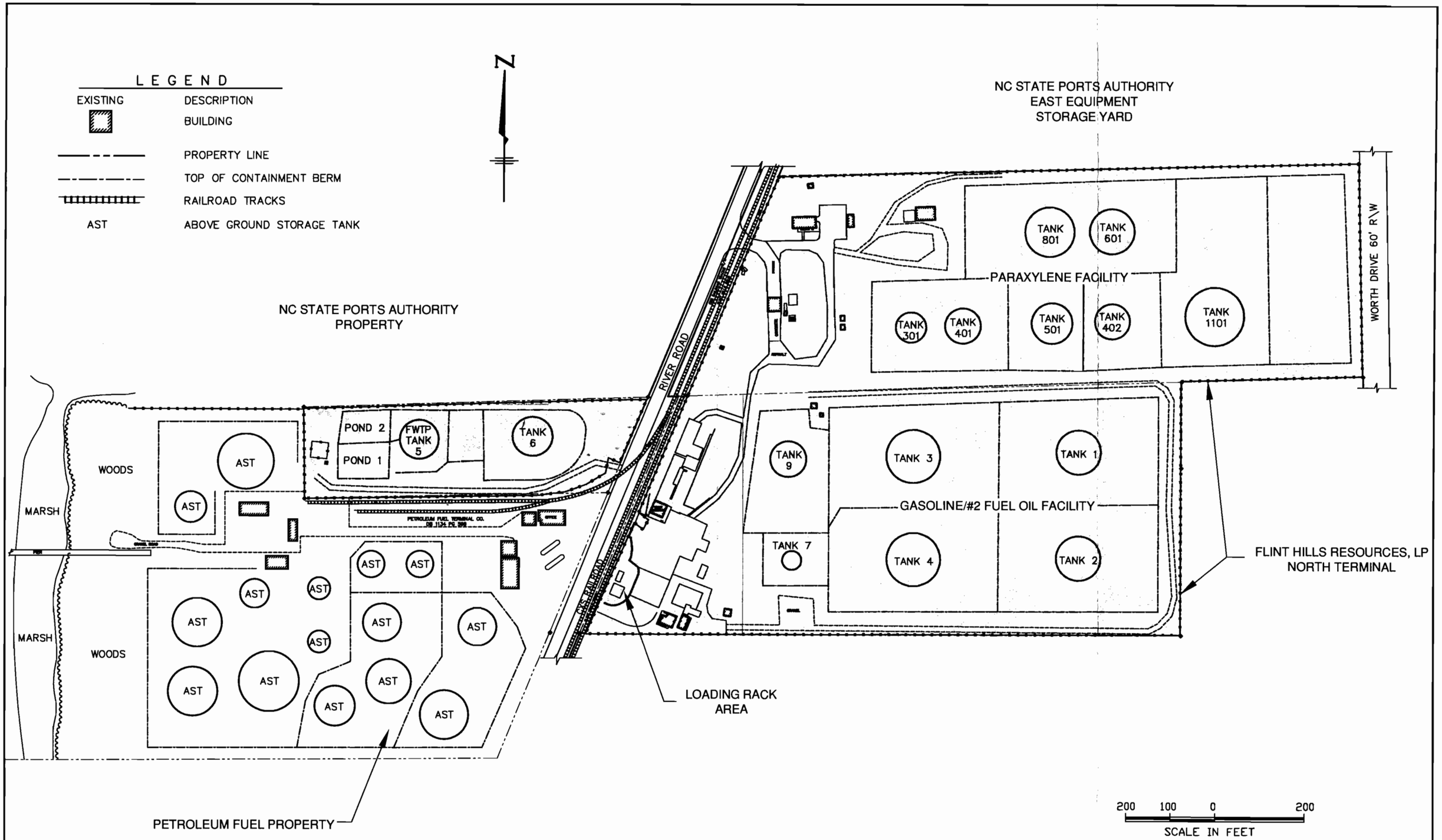
QUADRANGLE LOCATION

CALIN ENGINEERS and SCIENTISTS
WILMINGTON, NORTH CAROLINA

PROJECT	TITLE	FIGURE
FLINT HILLS RESOURCES, LP NORTH TERMINAL RIVER ROAD WILMINGTON, N.C.	GENERAL LOCATION USGS TOPOGRAPHIC QUADRANGLE	1

JOB NO:	DATE:	SCALE:	DRAWN BY:	CHECKED BY:
201-125	MAR 2005	AS SHOWN	HCS	JKB

201125-MR-MAR05-01



NOTE:
1. MAP PROVIDED BY ROBERT H. GOSLEE & ASSOCIATES, P.A. JULY 2004.
2. PROPERTY LINES NOT SURVEYED.
3. PETROLEUM FUEL PROPERTY BASED ON AERIAL PHOTOGRAPHS.

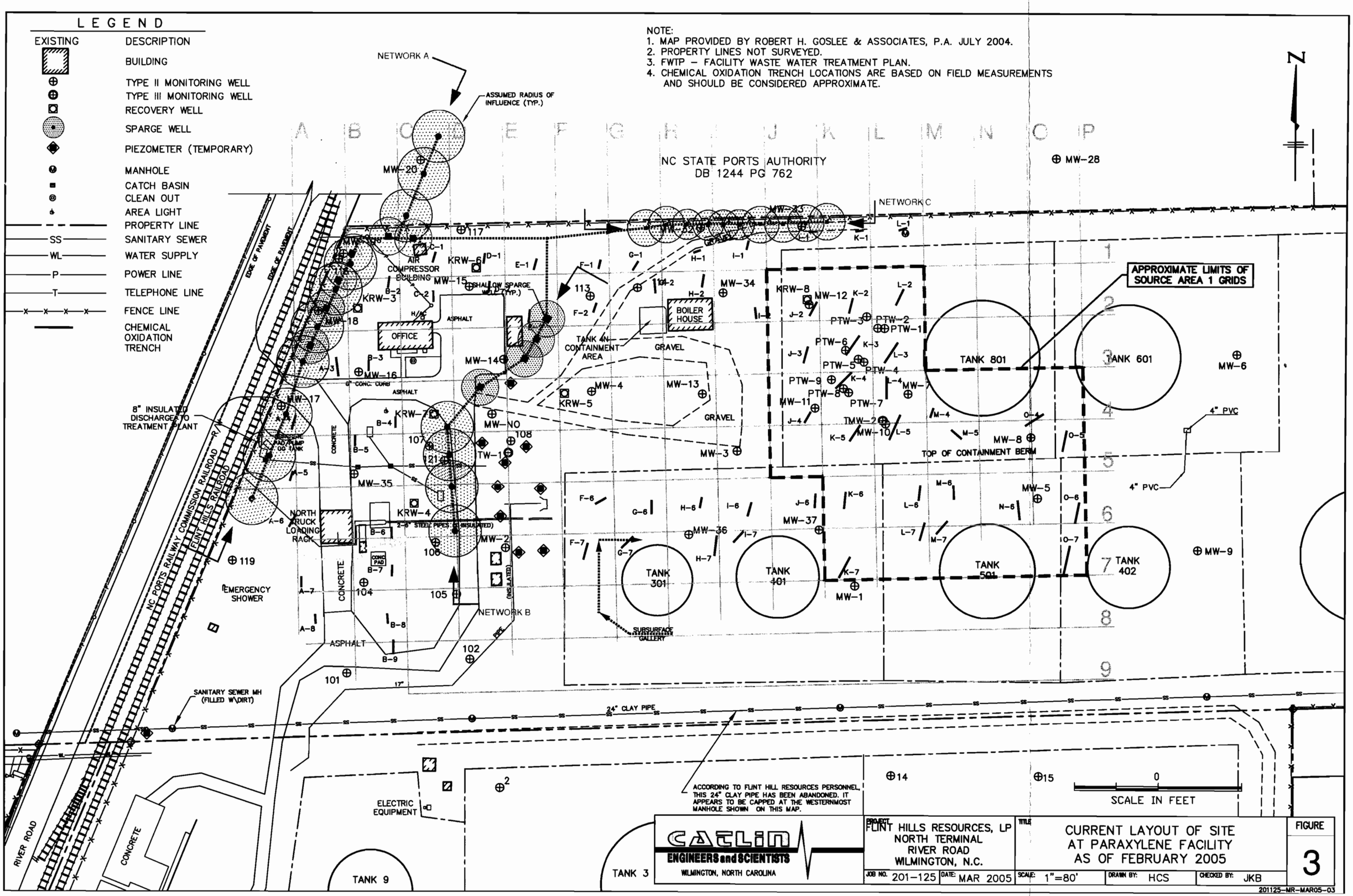
CATLIN ENGINEERS and SCIENTISTS, WILMINGTON, NORTH CAROLINA	PROJECT: FLINT HILLS RESOURCES, LP NORTH TERMINAL RIVER ROAD WILMINGTON, N.C.	TITLE: SITE MAP			FIGURE 2
	JOB NO. 201-125	DATE: MAR 2005	SCALE: 1"=200'	DRAWN BY: HCS	CHECKED BY: JKB

201125-MR-MAR05-02

LEGEND

EXISTING	DESCRIPTION
	BUILDING
	TYPE II MONITORING WELL
	TYPE III MONITORING WELL
	RECOVERY WELL
	SPARGE WELL
	PIEZOMETER (TEMPORARY)
	MANHOLE
	CATCH BASIN
	CLEAN OUT
	AREA LIGHT
	PROPERTY LINE
SS	SANITARY SEWER
WL	WATER SUPPLY
P	POWER LINE
T	TELEPHONE LINE
	FENCE LINE
	CHEMICAL OXIDATION TRENCH

NOTE:
1. MAP PROVIDED BY ROBERT H. GOSLEE & ASSOCIATES, P.A. JULY 2004.
2. PROPERTY LINES NOT SURVEYED.
3. FWTP – FACILITY WASTE WATER TREATMENT PLAN.
4. CHEMICAL OXIDATION TRENCH LOCATIONS ARE BASED ON FIELD MEASUREMENTS AND SHOULD BE CONSIDERED APPROXIMATE.

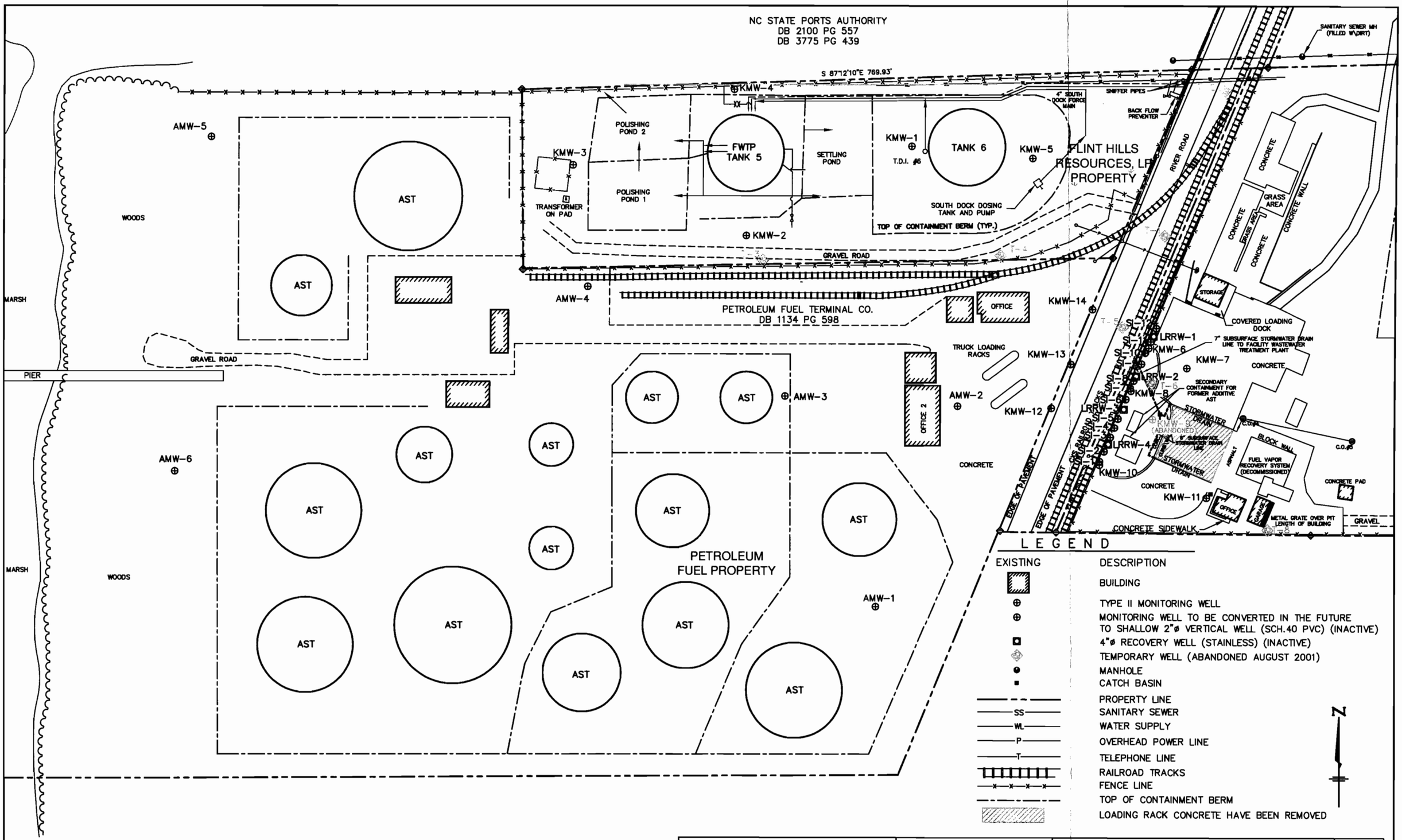


ACCORDING TO FLINT HILL RESOURCES PERSONNEL, THIS 24" CLAY PIPE HAS BEEN ABANDONED. IT APPEARS TO BE CAPPED AT THE WESTERNMOST MANHOLE SHOWN ON THIS MAP.

CATLIN ENGINEERS and SCIENTISTS
WILMINGTON, NORTH CAROLINA

PROJECT: FLINT HILLS RESOURCES, LP NORTH TERMINAL RIVER ROAD WILMINGTON, N.C.	TITLE: CURRENT LAYOUT OF SITE AT PARAXYLENE FACILITY AS OF FEBRUARY 2005		FIGURE 3
JOB NO. 201-125	DATE: MAR 2005	SCALE: 1"=80'	DRAWN BY: HCS	CHECKED BY: JKB

201125-MR-MAR05-03



NOTE:
1. THE FHR PORTION OF THIS MAP PROVIDED BY ROBERT H. GOSLEE & ASSOCIATES, P.A. JULY 2004.
2. PROPERTY LINES NOT SURVEYED.
3. PETROLEUM FUEL PROPERTY BASED ON AERIAL PHOTOGRAPHS.
4. AST – ABOVE GROUND STORAGE TANK.
5. FWTP – FACILITY WASTE WATER TREATMENT PLAN.

100 50 0 100
SCALE IN FEET

CATLIN ENGINEERS and SCIENTISTS
WILMINGTON, NORTH CAROLINA

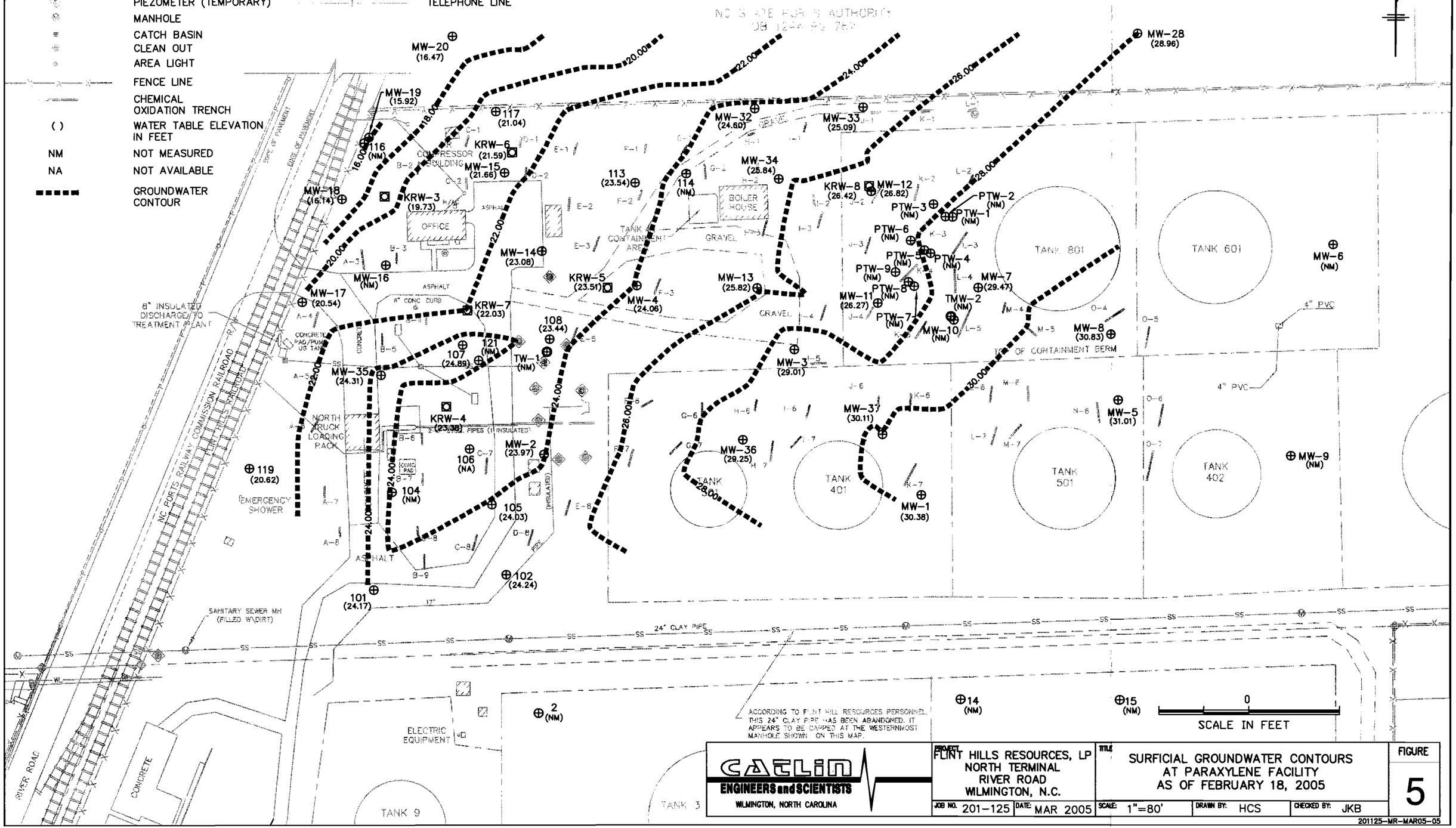
PROJECT: FLINT HILLS RESOURCES, LP NORTH TERMINAL RIVER ROAD WILMINGTON, N.C.	TITLE: CURRENT LAYOUT OF SITE AT LOADING RACK AREA AS OF FEBRUARY 2005		FIGURE 4
JOB NO. 201-125 / DATE: MAR 2005	SCALE: 1"=100'	DRAWN BY: HCS	CHECKED BY: JKB

201125-MR-MAR05-04

LEGEND

EXISTING	DESCRIPTION	EXISTING	DESCRIPTION
	BUILDING		PROPERTY LINE
			SANITARY SEWER
⊕	TYPE II MONITORING WELL		WATER SUPPLY
⊕	TYPE III MONITORING WELL		POWER LINE
	RECOVERY WELL		TELEPHONE LINE
	PIEZOMETER (TEMPORARY)		
	MANHOLE		
	CATCH BASIN		
	CLEAN OUT		
	AREA LIGHT		
	FENCE LINE		
	CHEMICAL OXIDATION TRENCH		
( )	WATER TABLE ELEVATION IN FEET		
NM	NOT MEASURED		
NA	NOT AVAILABLE		
	GROUNDWATER CONTOUR		

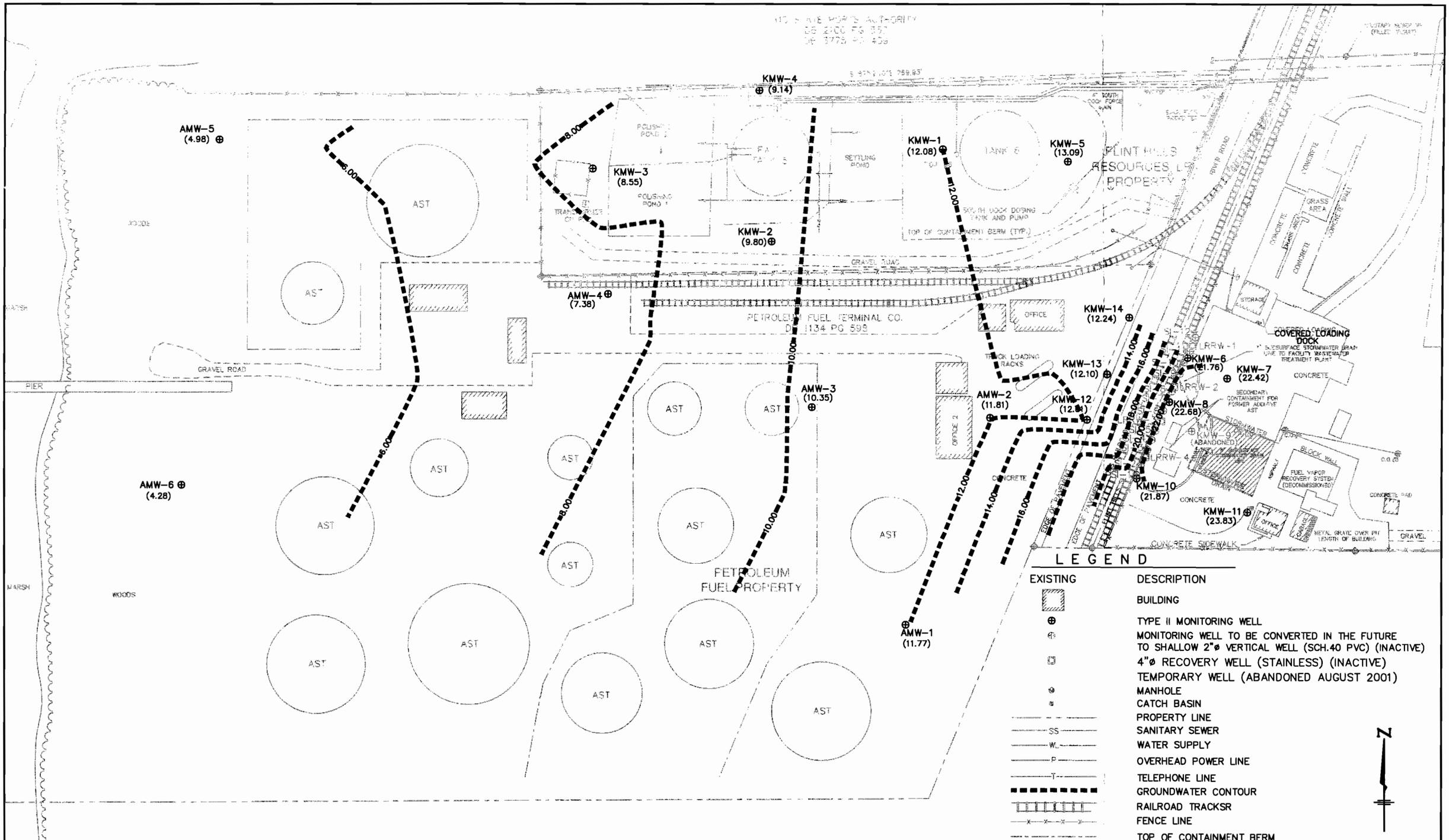
NOTE:
1. MAP PROVIDED BY ROBERT H. GOSLEE & ASSOCIATES, P.A. JULY 2004.
2. PROPERTY LINES NOT SURVEYED.
3. FWTP – FACILITY WASTE WATER TREATMENT PLAN.
4. CHEMICAL OXIDATION TRENCH LOCATIONS ARE BASED ON FIELD MEASUREMENTS AND SHOULD BE CONSIDERED APPROXIMATE.
5. CONTOUR INTERVAL = 2.0 FEET



CATLIN ENGINEERS and SCIENTISTS
WILMINGTON, NORTH CAROLINA

PROJECT: FLINT HILLS RESOURCES, LP NORTH TERMINAL RIVER ROAD WILMINGTON, N.C.	TITLE: SURFICIAL GROUNDWATER CONTOURS AT PARAXYLENE FACILITY AS OF FEBRUARY 18, 2005		FIGURE 5
JOB NO. 201-125	DATE: MAR 2005	SCALE: 1"=80'	DRAWN BY: HCS	CHECKED BY: JKB

201125-MR-MAR05-05



NOTE:
1. THE FHR PORTION OF THIS MAP PROVIDED BY ROBERT H. GOSLEE & ASSOCIATES, P.A. JULY 2004.
2. PROPERTY LINES NOT SURVEYED.
3. PETROLEUM FUEL PROPERTY BASED ON AERIAL PHOTOGRAPHS.
4. AST – ABOVE GROUND STORAGE TANK.
5. FWTP – FACILITY WASTE WATER TREATMENT PLAN.
6. CONTOUR INTERVAL = 2.0 FEET
7. ( ) = GROUNDWATER ELEVATION IN FEET.

CATLIN ENGINEERS and SCIENTISTS
WILMINGTON, NORTH CAROLINA

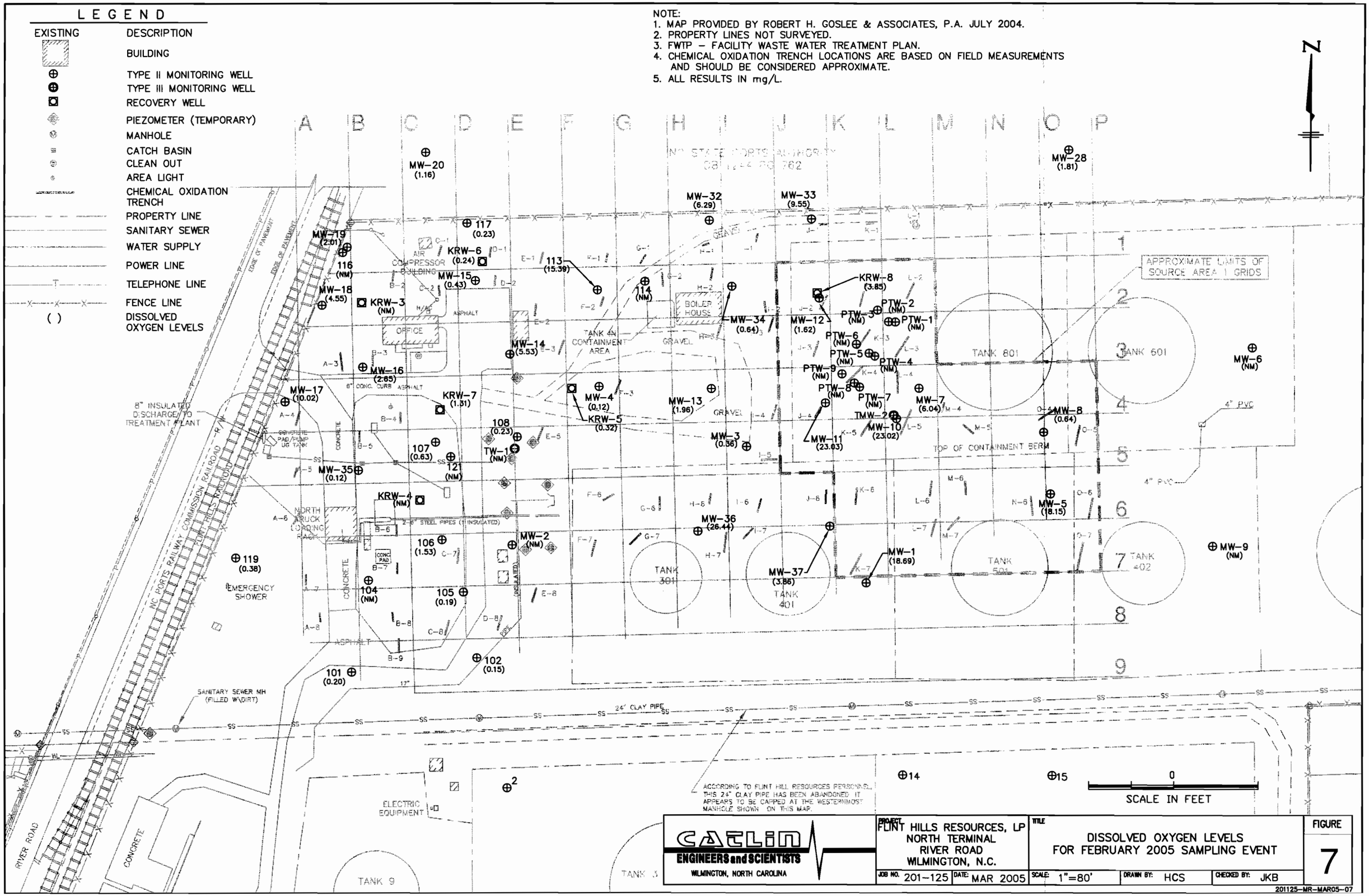
PROJECT: FLINT HILLS RESOURCES, LP NORTH TERMINAL RIVER ROAD WILMINGTON, N.C.	TITLE: SURFICIAL GROUNDWATER CONTOURS AT LOADING RACK AREA AS OF FEBRUARY 16, 2005		FIGURE 6
JOB NO. 201-125 / DATE: MAR 2005	SCALE: 1"=100'	DRAWN BY: HCS	CHECKED BY: JKB

201125-MR-MAR05-06

LEGEND

EXISTING	DESCRIPTION
	BUILDING
⊕	TYPE II MONITORING WELL
⊕	TYPE III MONITORING WELL
◘	RECOVERY WELL
	PIEZOMETER (TEMPORARY)
	MANHOLE
	CATCH BASIN
	CLEAN OUT
	AREA LIGHT
	CHEMICAL OXIDATION TRENCH
	PROPERTY LINE
	SANITARY SEWER
	WATER SUPPLY
	POWER LINE
	TELEPHONE LINE
	FENCE LINE
( )	DISSOLVED OXYGEN LEVELS

NOTE:
1. MAP PROVIDED BY ROBERT H. GOSLEE & ASSOCIATES, P.A. JULY 2004.
2. PROPERTY LINES NOT SURVEYED.
3. FWTP – FACILITY WASTE WATER TREATMENT PLAN.
4. CHEMICAL OXIDATION TRENCH LOCATIONS ARE BASED ON FIELD MEASUREMENTS AND SHOULD BE CONSIDERED APPROXIMATE.
5. ALL RESULTS IN mg/L.



CATLIN ENGINEERS and SCIENTISTS
WILMINGTON, NORTH CAROLINA

PROJECT	TITLE	FIGURE
FLINT HILLS RESOURCES, LP NORTH TERMINAL RIVER ROAD WILMINGTON, N.C.	DISSOLVED OXYGEN LEVELS FOR FEBRUARY 2005 SAMPLING EVENT	7

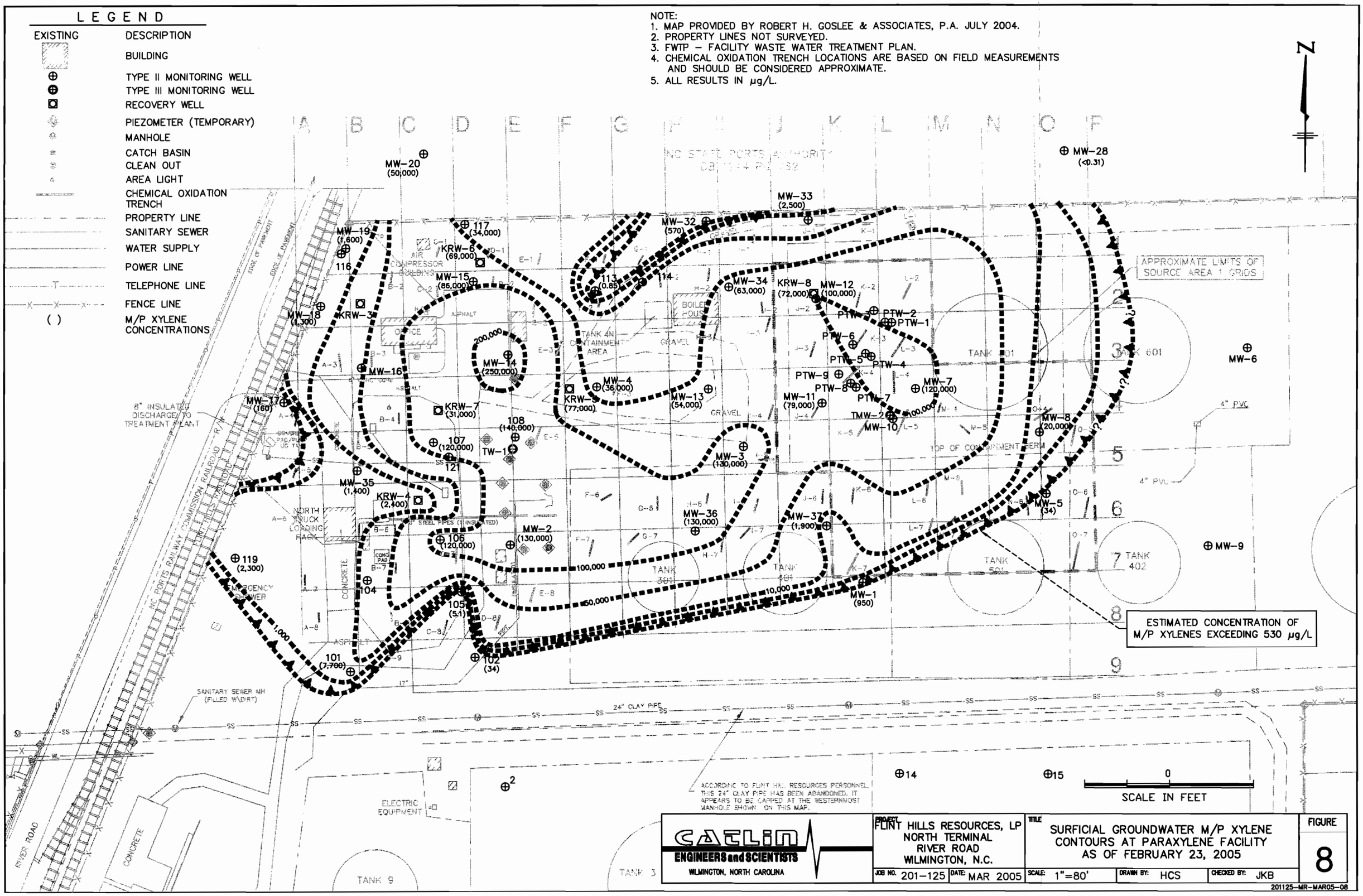
JOB NO.	DATE	SCALE	DRAWN BY	CHECKED BY
201-125	MAR 2005	1"=80'	HCS	JKB

201125-MR-MAR05-07

LEGEND

EXISTING	DESCRIPTION
	BUILDING
⊕	TYPE II MONITORING WELL
⊕	TYPE III MONITORING WELL
◘	RECOVERY WELL
	PIEZOMETER (TEMPORARY)
	MANHOLE
	CATCH BASIN
	CLEAN OUT
	AREA LIGHT
	CHEMICAL OXIDATION TRENCH
	PROPERTY LINE
	SANITARY SEWER
	WATER SUPPLY
	POWER LINE
	TELEPHONE LINE
	FENCE LINE
( )	M/P XYLENE CONCENTRATIONS

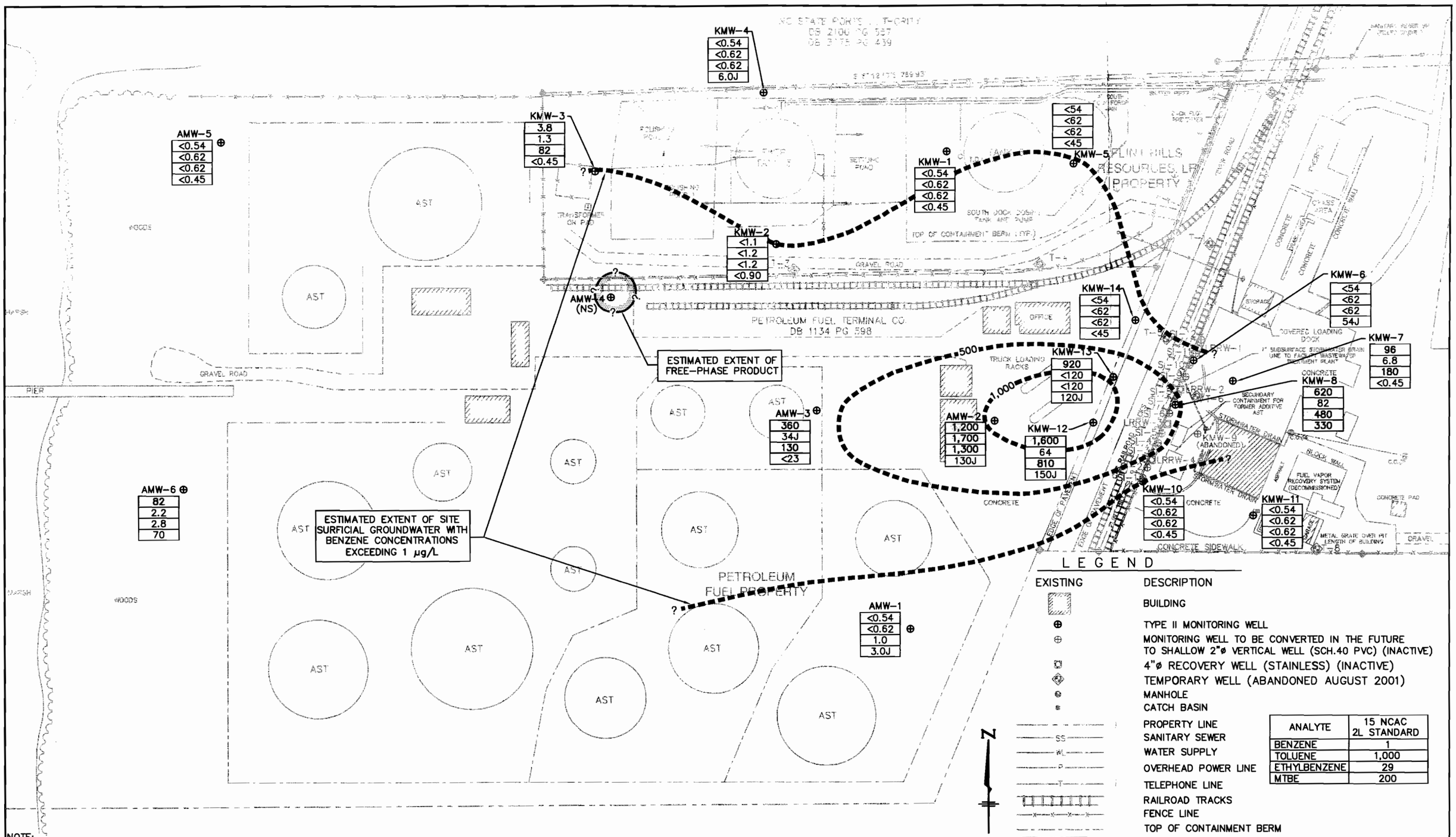
NOTE:
1. MAP PROVIDED BY ROBERT H. GOSLEE & ASSOCIATES, P.A. JULY 2004.
2. PROPERTY LINES NOT SURVEYED.
3. FWTP – FACILITY WASTE WATER TREATMENT PLAN.
4. CHEMICAL OXIDATION TRENCH LOCATIONS ARE BASED ON FIELD MEASUREMENTS AND SHOULD BE CONSIDERED APPROXIMATE.
5. ALL RESULTS IN μg/L.



CATLIN ENGINEERS and SCIENTISTS
WILMINGTON, NORTH CAROLINA

PROJECT: FLINT HILLS RESOURCES, LP NORTH TERMINAL RIVER ROAD WILMINGTON, N.C.	TITLE: SURFICIAL GROUNDWATER M/P XYLENE CONTOURS AT PARAXYLENE FACILITY AS OF FEBRUARY 23, 2005		FIGURE 8
JOB NO. 201-125 / DATE: MAR 2005	SCALE: 1"=80'	DRAWN BY: HCS	CHECKED BY: JKB

201125-MR-MAR05-08



ANALYTE	15 NCAC 2L STANDARD
BENZENE	1
TOLUENE	1,000
ETHYLBENZENE	29
MTBE	200

NOTE:
1. THE FHR PORTION OF THIS MAP PROVIDED BY ROBERT H. GOSLEE & ASSOCIATES, P.A. JULY 2004.
2. PROPERTY LINES NOT SURVEYED.
3. PETROLEUM FUEL PROPERTY BASED ON AERIAL PHOTOGRAPHS.
4. AST – ABOVE GROUND STORAGE TANK.
5. FWTP – FACILITY WASTE WATER TREATMENT PLAN.
6. SHADED CONCENTRATIONS EXCEED CORRESPONDING STANDARD.
7. J = ESTIMATED CONCENTRATION.
8. NS = NOT SAMPLED.
9. ALL RESULTS µg/L.

CATLIN ENGINEERS and SCIENTISTS
WILMINGTON, NORTH CAROLINA

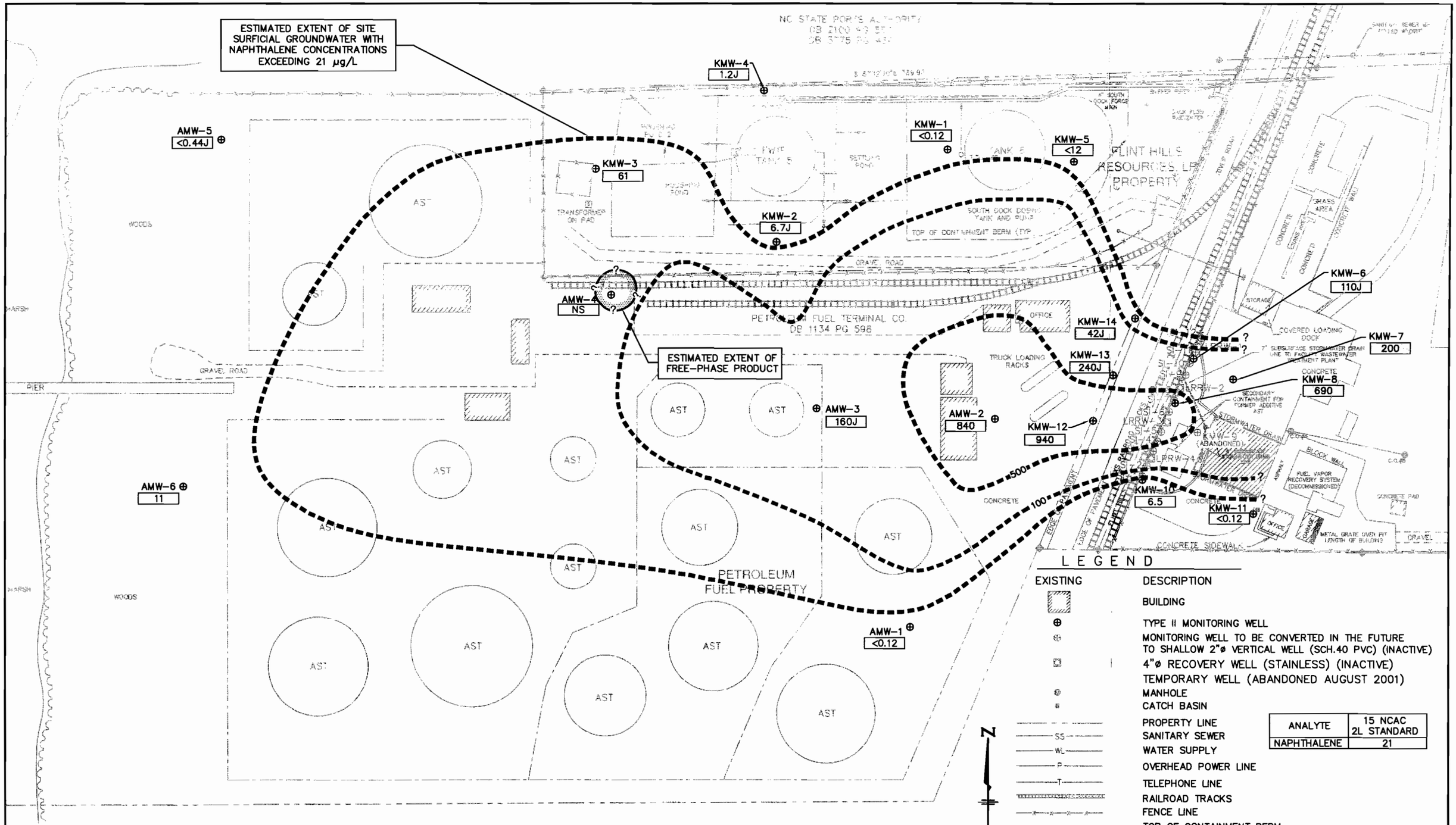
PROJECT: FLINT HILLS RESOURCES, LP NORTH TERMINAL RIVER ROAD WILMINGTON, N.C.

TITLE: SURFICIAL GROUNDWATER BTE AND MTBE DATA AT LOADING RACK AREA AS OF FEBRUARY 2005

FIGURE 9

JOB NO. 201-125 | DATE: MAR 2005 | SCALE: 1"=100' | DRAWN BY: HCS | CHECKED BY: JKB

201125-MR-MAR05-09



ANALYTE	15 NCAC 2L STANDARD
NAPHTHALENE	21

NOTE:
1. THE FHR PORTION OF THIS MAP PROVIDED BY ROBERT H. GOSLEE & ASSOCIATES, P.A. JULY 2004.
2. PROPERTY LINES NOT SURVEYED.
3. PETROLEUM FUEL PROPERTY BASED ON AERIAL PHOTOGRAPHS.
4. AST – ABOVE GROUND STORAGE TANK.
5. FWTP – FACILITY WASTE WATER TREATMENT PLAN.
6. SHADED CONCENTRATIONS EXCEED 2L STANDARD OF 21 µg/L.
7. J = ESTIMATED CONCENTRATION.
8. NS = NOT SAMPLED.
9. ALL RESULTS IN µg/L.

CATLIN ENGINEERS and SCIENTISTS
WILMINGTON, NORTH CAROLINA

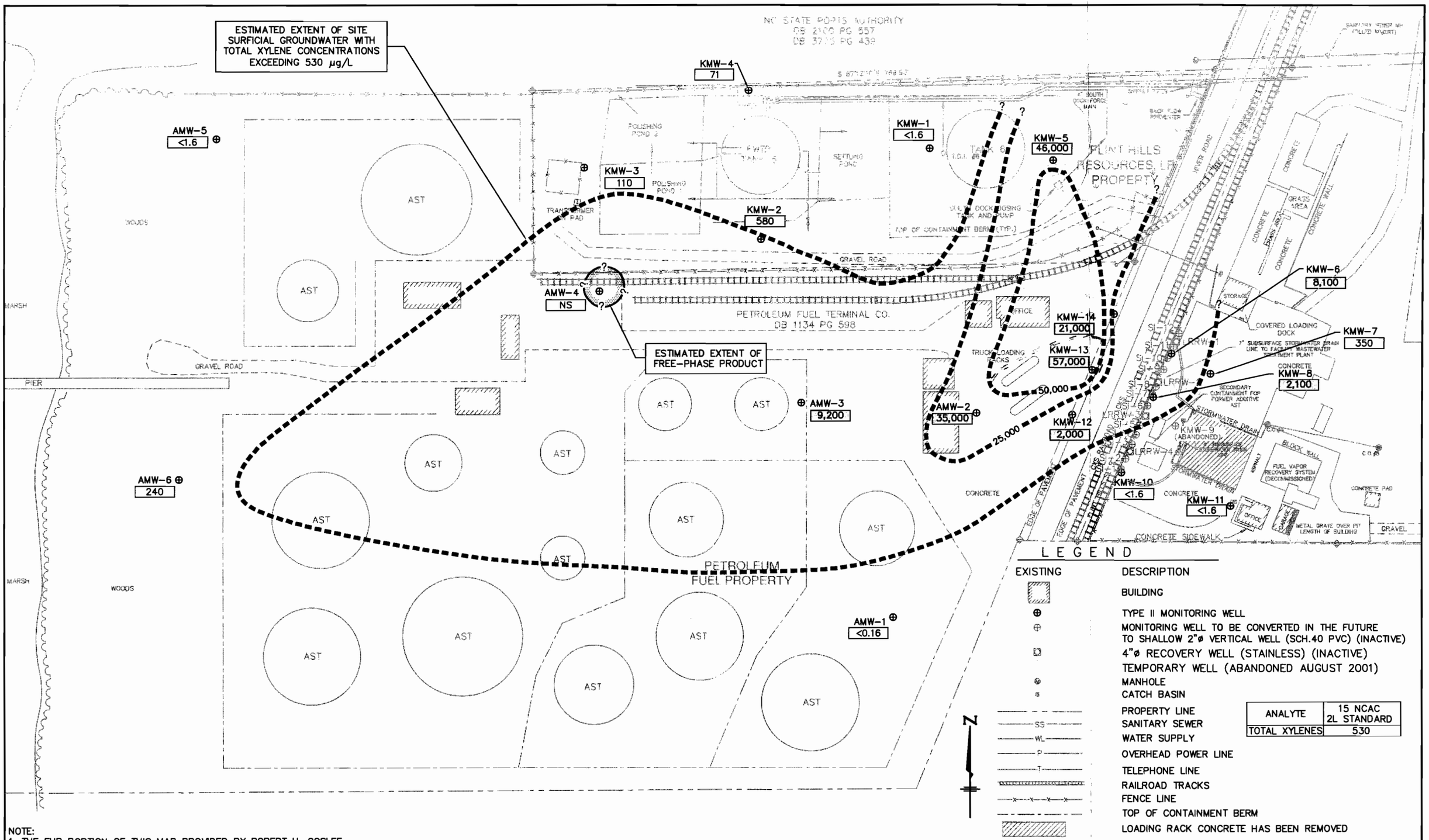
PROJECT: FLINT HILLS RESOURCES, LP
NORTH TERMINAL
RIVER ROAD
WILMINGTON, N.C.

TITLE: SURFICIAL GROUNDWATER NAPHTHALENE DATA AT LOADING RACK AREA AS OF FEBRUARY 2005

FIGURE 10

JOB NO. 201-125 | DATE: MAR 2005 | SCALE: 1"=100' | DRAWN BY: HCS | CHECKED BY: JKB

201125-MR-MAR05-10



ANALYTE	15 NCAC 2L STANDARD
TOTAL XYLENES	530

NOTE:
1. THE FHR PORTION OF THIS MAP PROVIDED BY ROBERT H. GOSLEE & ASSOCIATES, P.A. JULY 2004.
2. PROPERTY LINES NOT SURVEYED.
3. PETROLEUM FUEL PROPERTY BASED ON AERIAL PHOTOGRAPHS.
4. AST – ABOVE GROUND STORAGE TANK.
5. FWTP – FACILITY WASTE WATER TREATMENT PLAN.
6. SHADED CONCENTRATIONS EXCEED 2L STANDARD OF 530 µg/L.
7. ALL RESULTS IN µg/L.
8. NS = NOT SAMPLED.

CATLIN ENGINEERS and SCIENTISTS
WILMINGTON, NORTH CAROLINA

PROJECT: FLINT HILLS RESOURCES, LP NORTH TERMINAL RIVER ROAD WILMINGTON, N.C.

TITLE: SURFICIAL GROUNDWATER TOTAL XYLENES DATA AT LOADING RACK AREA AS OF FEBRUARY 2005

FIGURE 11

JOB NO. 201-125 | DATE: MAR 2005 | SCALE: 1"=100' | DRAWN BY: HCS | CHECKED BY: JKB

201125-MR-MAR05-11

APPENDIX A

ANALYTICAL LABORATORY REPORTS AND CHAIN-OF-CUSTODY RECORDS

ANALYTICAL REPORT

Job Number: 680-761.1

Job Description: FHR North PX Terminal

For:

Catlin Engineers and Scientists
220 Old Dairy Road
Wilmington, NC 28405

Attention: Mr. Jeff Becken

Angie Weimerskirk
Project Manager I
aweimerskirk@stl-inc.com

03/10/2005

Severn Trent Laboratories, Inc.
STL Savannah 5102 LaRoche Avenue, Savannah, GA 31404
Tel 912-3547858 Fax 912-3513673 www stl-inc com

METHOD SUMMARY

Client: Catlin Engineers and Scientists

Job Number: 680-761.1

Job Description: FHR North PX Terminal

Description	Method	Preparation Method
Matrix: Water		
Purgeable Aromatics in Wastewater by GC	40CFR136A	602

REFERENCES

40CFR136A - "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

SAMPLE SUMMARY

Client: Catlin Engineers and Scientists

Job Number: 680-761.1

Job Description: FHR North PX Terminal

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-761-1	MW-14	Water	02/23/2005 1045	02/24/2005 1000
680-761-2	MW-15	Water	02/23/2005 1100	02/24/2005 1000
680-761-3	KRW-6	Water	02/23/2005 1115	02/24/2005 1000
680-761-4	117	Water	02/23/2005 1140	02/24/2005 1000
680-761-5	MW-19	Water	02/23/2005 1200	02/24/2005 1000
680-761-6	MW-18	Water	02/23/2005 1215	02/24/2005 1000
680-761-7	KRW-7	Water	02/23/2005 1330	02/24/2005 1000
680-761-8	119	Water	02/23/2005 1415	02/24/2005 1000
680-761-9	KRW-4	Water	02/23/2005 1430	02/24/2005 1000
680-761-10	Trip Blank 419F	Water	02/23/2005 0000	02/24/2005 1000

SAMPLE RESULTS

Client: Catlin Engineers and Scientists

Job Number: 680-761.1

Client Sample ID: **MW-14**

Lab Sample ID: 680-761-1
Client Matrix: Water

Date Sampled: 02/23/2005 1045
Date Received: 02/24/2005 1000

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 10,000
Date Analyzed: 03/02/2005 2331
Date Prepared: N/A

Analysis Batch: 680-3047

Instrument ID: GC Volatiles - D PID
Lab File ID: MA02D17.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	4200	U	4200	100000
m-Xylene & p-Xylene	250000		3100	10000

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	117		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-761.1

Client Sample ID: **MW-14**

Lab Sample ID: 680-761-1
Client Matrix: Water

Date Sampled: 02/23/2005 1045
Date Received: 02/24/2005 1000

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 200
Date Analyzed: 03/03/2005 0239
Date Prepared: N/A

Analysis Batch: 680-3047

Instrument ID: GC Volatiles - D PID
Lab File ID: MA02D23.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	84	U	84	2000
m-Xylene & p-Xylene	130000	E	62	200

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Client: Catlin Engineers and Scientists

Job Number: 680-761.1

Client Sample ID: **MW-15**

Lab Sample ID: 680-761-2
Client Matrix: Water

Date Sampled: 02/23/2005 1100
Date Received: 02/24/2005 1000

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 4,000
Date Analyzed: 03/02/2005 1824
Date Prepared: N/A

Analysis Batch: 680-3047

Instrument ID: GC Volatiles - D PID
Lab File ID: MA02D9.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	1700	U	1700	40000
m-Xylene & p-Xylene	86000		1200	4000

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	107		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-761.1

Client Sample ID: **MW-15**

Lab Sample ID: 680-761-2
Client Matrix: Water

Date Sampled: 02/23/2005 1100
Date Received: 02/24/2005 1000

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 200
Date Analyzed: 03/03/2005 0311
Date Prepared: N/A

Analysis Batch: 680-3047

Instrument ID: GC Volatiles - D PID
Lab File ID: MA02D24.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	84	U	84	2000
m-Xylene & p-Xylene	86000	E	62	200

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	114		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-761.1

Client Sample ID: **KRW-6**

Lab Sample ID: 680-761-3
Client Matrix: Water

Date Sampled: 02/23/2005 1115
Date Received: 02/24/2005 1000

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 200
Date Analyzed: 03/02/2005 1855
Date Prepared: N/A

Analysis Batch: 680-3047

Instrument ID: GC Volatiles - D PID
Lab File ID: MA02D10.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	84	U	84	2000
m-Xylene & p-Xylene	66000	E	62	200

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	107		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-761.1

Client Sample ID: **KRW-6**

Lab Sample ID: 680-761-3
Client Matrix: Water

Date Sampled: 02/23/2005 1115
Date Received: 02/24/2005 1000

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 2,000
Date Analyzed: 03/03/2005 0002
Date Prepared: N/A

Analysis Batch: 680-3047

Instrument ID: GC Volatiles - D PID
Lab File ID: MA02D18.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	840	U	840	20000
m-Xylene & p-Xylene	69000		620	2000

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	106		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-761.1

Client Sample ID: 117

Lab Sample ID: 680-761-4
Client Matrix: Water

Date Sampled: 02/23/2005 1140
Date Received: 02/24/2005 1000

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 200
Date Analyzed: 03/02/2005 1927
Date Prepared: N/A

Analysis Batch: 680-3047

Instrument ID: GC Volatiles - D PID
Lab File ID: MA02D11.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	84	U	84	2000
m-Xylene & p-Xylene	34000	E	62	200

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	110		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-761.1

Client Sample ID: 117

Lab Sample ID: 680-761-4
Client Matrix: Water

Date Sampled: 02/23/2005 1140
Date Received: 02/24/2005 1000

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 1,000
Date Analyzed: 03/03/2005 0033
Date Prepared: N/A

Analysis Batch: 680-3047

Instrument ID: GC Volatiles - D PID
Lab File ID: MA02D19.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	420	U	420	10000
m-Xylene & p-Xylene	34000		310	1000

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	123		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-761.1

Client Sample ID: **MW-19**

Lab Sample ID: 680-761-5
Client Matrix: Water

Date Sampled: 02/23/2005 1200
Date Received: 02/24/2005 1000

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 50
Date Analyzed: 03/03/2005 0105
Date Prepared: N/A

Analysis Batch: 680-3047

Instrument ID: GC Volatiles - D PID
Lab File ID: MA02D20.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	21	U	21	500
m-Xylene & p-Xylene	1600		16	50

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	117		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-761.1

Client Sample ID: **MW-18**

Lab Sample ID: 680-761-6
Client Matrix: Water

Date Sampled: 02/23/2005 1215
Date Received: 02/24/2005 1000

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 50
Date Analyzed: 03/03/2005 0136
Date Prepared: N/A

Analysis Batch: 680-3047

Instrument ID: GC Volatiles - D PID
Lab File ID: MA02D21.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	21	U	21	500
m-Xylene & p-Xylene	1300		16	50

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	119		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-761.1

Client Sample ID: **KRW-7**

Lab Sample ID: 680-761-7
Client Matrix: Water

Date Sampled: 02/23/2005 1330
Date Received: 02/24/2005 1000

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 1,000
Date Analyzed: 03/02/2005 2101
Date Prepared: N/A

Analysis Batch: 680-3047

Instrument ID: GC Volatiles - D PID
Lab File ID: MA02D14.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	420	U	420	10000
m-Xylene & p-Xylene	31000		310	1000

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	117		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-761.1

Client Sample ID: KRW-7

Lab Sample ID: 680-761-7
Client Matrix: Water

Date Sampled: 02/23/2005 1330
Date Received: 02/24/2005 1000

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 200
Date Analyzed: 03/03/2005 0342
Date Prepared: N/A

Analysis Batch: 680-3047

Instrument ID: GC Volatiles - D PID
Lab File ID: MA02D25.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	84	U	84	2000
m-Xylene & p-Xylene	35000	E	62	200

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	112		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-761.1

Client Sample ID: **119**

Lab Sample ID: 680-761-8
Client Matrix: Water

Date Sampled: 02/23/2005 1415
Date Received: 02/24/2005 1000

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 100
Date Analyzed: 03/03/2005 0757
Date Prepared: N/A

Analysis Batch: 680-3047

Instrument ID: GC Volatiles - D PID
Lab File ID: MA02D30.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	42	U	42	1000
m-Xylene & p-Xylene	2300		31	100

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	119		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-761.1

Client Sample ID: **KRW-4**

Lab Sample ID: 680-761-9
Client Matrix: Water

Date Sampled: 02/23/2005 1430
Date Received: 02/24/2005 1000

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 100
Date Analyzed: 03/02/2005 2302
Date Prepared: N/A

Analysis Batch: 680-3047

Instrument ID: GC Volatiles - D PID
Lab File ID: MA02D16.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	42	U	42	1000
m-Xylene & p-Xylene	2400		31	100

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	121		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-761.1

Client Sample ID: **Trip Blank 419F**

Lab Sample ID: 680-761-10
Client Matrix: Water

Date Sampled: 02/23/2005 0000
Date Received: 02/24/2005 1000

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 1.0
Date Analyzed: 03/02/2005 1649
Date Prepared: N/A

Analysis Batch: 680-3047

Instrument ID: GC Volatiles - D PID
Lab File ID: MA02D6.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	0.42	U	0.42	10
m-Xylene & p-Xylene	0.31	U	0.31	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	109		68 - 129

STL Savannah

DATA REPORTING QUALIFIERS

Client: Catlin Engineers and Scientists

Job Number: 680-761.1

Lab Section	Qualifier	Description
GC VOA		
	U	Analyte was not detected at or above the reporting limit.
	E	Result exceeded calibration range, secondary dilution required.

QUALITY CONTROL RESULTS

Client: Catlin Engineers and Scientists

Job Number: 680-761 1

Job Description: FHR North PX Terminal

QC Association Summary

Lab Sample ID	Client Sample ID	Client Matrix	Method	Prep Batch
GC VOA				
Analysis Batch:680-3047				
LCS 680-3047/9	Lab Control Spike	Water	602	
MB 680-3047/15	Method Blank	Water	602	
680-761-A-1	MW-14	Water	602	
680-761-A-2	MW-15	Water	602	
680-761-A-3	KRW-6	Water	602	
680-761-A-4	117	Water	602	
680-761-A-5	MW-19	Water	602	
680-761-A-6	MW-18	Water	602	
680-761-A-7	KRW-7	Water	602	
680-761-A-8	119	Water	602	
680-761-A-9	KRW-4	Water	602	
680-761-A-10	Trip Blank 419F	Water	602	

Client: Catlin Engineers and Scientists

Job Number: 680-761.1

602 Purgeable Aromatics in Wastewater by GC

Method Blank - Batch: 680-3047

Lab ID: MB 680-3047/15
Matrix: Water

Date Analyzed: 03/02/2005 1617
Units: ug/L

Dilution: 1.0

Analyte	Result	Qualifier	MDL	RL
Methyl tert-butyl ether	0.42	U	0.42	10
m-Xylene & p-Xylene	0 31	U	0 31	1.0

Laboratory Control Sample - Batch: 680-3047

Lab ID: LCS 680-3047/9
Matrix: Water

Date Analyzed: 03/02/2005 1441
Units: ug/L

Dilution: 1 0

Analyte	Spike Amount	Result	% Rec.	Recovery Limits	Qualifier
Methyl tert-butyl ether	20 0	22	108	40 - 140	
m-Xylene & p-Xylene	40 0	42	104	54 - 125	

Calculations are performed before rounding to avoid round-off errors in calculated results.

ANALYTICAL REPORT

Job Number: 680-669.1

Job Description: FHR North PX Terminal

For:

Catlin Engineers and Scientists
220 Old Dairy Road
Wilmington, NC 28405

Attention: Mr. Jeff Becken

Angie Weimerskirk
Project Manager I
aweimerskirk@stl-inc.com

03/10/2005

Severn Trent Laboratories, Inc.
STL Savannah 5102 LaRoche Avenue, Savannah, GA 31404
Tel 912-3547858 Fax 912-3513673 www.stl-inc.com

METHOD SUMMARY

Client: Catlin Engineers and Scientists

Job Number: 680-669.1

Job Description: FHR North PX Terminal

Description	Method	Preparation Method
Matrix: Water		
Purgeable Aromatics in Wastewater by GC	40CFR136A	602

REFERENCES

40CFR136A - "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

SAMPLE SUMMARY

Client: Catlin Engineers and Scientists

Job Number: 680-669.1

Job Description: FHR North PX Terminal

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-669-1	101	Water	02/21/2005 1015	02/22/2005 1100
680-669-2	102	Water	02/21/2005 1100	02/22/2005 1100
680-669-3	105	Water	02/21/2005 1120	02/22/2005 1100
680-669-4	MW-2	Water	02/21/2005 1140	02/22/2005 1100
680-669-5	106	Water	02/21/2005 1150	02/22/2005 1100
680-669-6	MW-35	Water	02/21/2005 1320	02/22/2005 1100
680-669-7	107	Water	02/21/2005 1340	02/22/2005 1100
680-669-8	MW-17	Water	02/21/2005 1400	02/22/2005 1100
680-669-9	MW-20	Water	02/18/2005 1230	02/22/2005 1100
680-669-10	MW-28	Water	02/18/2005 1250	02/22/2005 1100
680-669-11	108	Water	02/21/2005 1430	02/22/2005 1100
680-669-12	MW-4	Water	02/21/2005 1445	02/22/2005 1100
680-669-13	Trip Blank 450E	Water	02/21/2005 0000	02/22/2005 1100

SAMPLE RESULTS

Client: Catlin Engineers and Scientists

Job Number: 680-669 1

Client Sample ID: **101**

Lab Sample ID: 680-669-1
Client Matrix: Water

Date Sampled: 02/21/2005 1015
Date Received: 02/22/2005 1100

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 200
Date Analyzed: 02/25/2005 2013
Date Prepared: N/A

Analysis Batch: 680-2056

Instrument ID: GC Volatiles - D PID
Lab File ID: FE25D10.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	3300		84	2000
m-Xylene & p-Xylene	7700		62	200

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	109		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-669.1

Client Sample ID: **102**

Lab Sample ID: 680-669-2
Client Matrix: Water

Date Sampled: 02/21/2005 1100
Date Received: 02/22/2005 1100

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 25
Date Analyzed: 02/26/2005 0306
Date Prepared: N/A

Analysis Batch: 680-2056

Instrument ID: GC Volatiles - D PID
Lab File ID: FE25D23.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	830		11	250
m-Xylene & p-Xylene	34		7.8	25

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	118		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-669.1

Client Sample ID: **105**

Lab Sample ID: 680-669-3
Client Matrix: Water

Date Sampled: 02/21/2005 1120
Date Received: 02/22/2005 1100

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 1 0
Date Analyzed: 02/26/2005 0204
Date Prepared: N/A

Analysis Batch: 680-2056

Instrument ID: GC Volatiles - D PID
Lab File ID: FE25D21.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	19		0.42	10
m-Xylene & p-Xylene	5.1		0.31	1 0

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	116		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-669.1

Client Sample ID: **MW-2**

Lab Sample ID: 680-669-4
Client Matrix: Water

Date Sampled: 02/21/2005 1140
Date Received: 02/22/2005 1100

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 4,000
Date Analyzed: 02/25/2005 2148
Date Prepared: N/A

Analysis Batch: 680-2056

Instrument ID: GC Volatiles - D PID
Lab File ID: FE25D13.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	1700	U	1700	40000
m-Xylene & p-Xylene	130000		1200	4000

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	109		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-669.1

Client Sample ID: **MW-2**

Lab Sample ID: 680-669-4
Client Matrix: Water

Date Sampled: 02/21/2005 1140
Date Received: 02/22/2005 1100

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 200
Date Analyzed: 02/26/2005 0512
Date Prepared: N/A

Analysis Batch: 680-2056

Instrument ID: GC Volatiles - D PID
Lab File ID: FE25D27.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	84	U	84	2000
m-Xylene & p-Xylene	82000	E	62	200

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	115		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-669.1

Client Sample ID: **106**

Lab Sample ID: 680-669-5
Client Matrix: Water

Date Sampled: 02/21/2005 1150
Date Received: 02/22/2005 1100

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 200
Date Analyzed: 02/26/2005 0338
Date Prepared: N/A

Analysis Batch: 680-2056

Instrument ID: GC Volatiles - D PID
Lab File ID: FE25D24.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	84	U	84	2000
m-Xylene & p-Xylene	80000	E	62	200

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	114		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-669.1

Client Sample ID: **106**

Lab Sample ID: 680-669-5

Client Matrix: Water

Date Sampled: 02/21/2005 1150

Date Received: 02/22/2005 1100

602 Purgeable Aromatics in Wastewater by GC

Method: 602

Analysis Batch: 680-2420

Instrument ID: GC Volatiles - D PID

Preparation: N/A

Lab File ID: FE28D22.d

Dilution: 4,000

Initial Weight/Volume: 20 mL

Date Analyzed: 03/01/2005 0259

Final Weight/Volume: 20 mL

Date Prepared: N/A

Injection Volume:

Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	1700	U	1700	40000
m-Xylene & p-Xylene	120000		1200	4000

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	115		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-669.1

Client Sample ID: **MW-35**

Lab Sample ID: 680-669-6
Client Matrix: Water

Date Sampled: 02/21/2005 1320
Date Received: 02/22/2005 1100

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 50
Date Analyzed: 02/26/2005 0849
Date Prepared: N/A

Analysis Batch: 680-2056

Instrument ID: GC Volatiles - D PID
Lab File ID: FE25D29.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	250		21	500
m-Xylene & p-Xylene	1400		16	50

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	120		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-669.1

Client Sample ID: 107

Lab Sample ID: 680-669-7
Client Matrix: Water

Date Sampled: 02/21/2005 1340
Date Received: 02/22/2005 1100

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 250
Date Analyzed: 02/26/2005 0921
Date Prepared: N/A

Analysis Batch: 680-2056

Instrument ID: GC Volatiles - D PID
Lab File ID: FE25D30.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	110	U	110	2500
m-Xylene & p-Xylene	96000	E	78	250

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	108		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-669.1

Client Sample ID: **107**

Lab Sample ID: 680-669-7
Client Matrix: Water

Date Sampled: 02/21/2005 1340
Date Received: 02/22/2005 1100

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 4,000
Date Analyzed: 02/26/2005 1019
Date Prepared: N/A

Analysis Batch: 680-2056

Instrument ID: GC Volatiles - D PID
Lab File ID: FE25D32.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	1700	U	1700	40000
m-Xylene & p-Xylene	120000		1200	4000

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	119		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-669.1

Client Sample ID: **MW-17**

Lab Sample ID: 680-669-8
Client Matrix: Water

Date Sampled: 02/21/2005 1400
Date Received: 02/22/2005 1100

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 10
Date Analyzed: 02/26/2005 0948
Date Prepared: N/A

Analysis Batch: 680-2056

Instrument ID: GC Volatiles - D PID
Lab File ID: FE25D31.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	4.2	U	4.2	100
m-Xylene & p-Xylene	160		3.1	10

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	117		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-669 1

Client Sample ID: **MW-20**

Lab Sample ID: 680-669-9
Client Matrix: Water

Date Sampled: 02/18/2005 1230
Date Received: 02/22/2005 1100

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 2,000
Date Analyzed: 02/26/2005 0235
Date Prepared: N/A

Analysis Batch: 680-2056

Instrument ID: GC Volatiles - D PID
Lab File ID: FE25D22.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	840	U	840	20000
m-Xylene & p-Xylene	50000		620	2000

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	115		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-669.1

Client Sample ID: **MW-20**

Lab Sample ID: 680-669-9

Client Matrix: Water

Date Sampled: 02/18/2005 1230

Date Received: 02/22/2005 1100

602 Purgeable Aromatics in Wastewater by GC

Method: 602

Analysis Batch: 680-2056

Instrument ID: GC Volatiles - D PID

Preparation: N/A

Lab File ID: FE25D26.d

Dilution: 200

Initial Weight/Volume: 20 mL

Date Analyzed: 02/26/2005 0441

Final Weight/Volume: 20 mL

Date Prepared: N/A

Injection Volume:

Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	84	U	84	2000
m-Xylene & p-Xylene	64000	E	62	200

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	112		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-669.1

Client Sample ID: **MW-28**

Lab Sample ID: 680-669-10
Client Matrix: Water

Date Sampled: 02/18/2005 1250
Date Received: 02/22/2005 1100

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 1.0
Date Analyzed: 02/26/2005 0132
Date Prepared: N/A

Analysis Batch: 680-2056

Instrument ID: GC Volatiles - D PID
Lab File ID: FE25D20.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	0.42	U	0.42	10
m-Xylene & p-Xylene	0.31	U	0.31	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	113		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-669.1

Client Sample ID: **108**

Lab Sample ID: 680-669-11
Client Matrix: Water

Date Sampled: 02/21/2005 1430
Date Received: 02/22/2005 1100

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 4,000
Date Analyzed: 02/26/2005 0029
Date Prepared: N/A

Analysis Batch: 680-2056

Instrument ID: GC Volatiles - D PID
Lab File ID: FE25D18.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	1700	U	1700	40000
m-Xylene & p-Xylene	140000		1200	4000

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	113		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-669.1

Client Sample ID: **108**

Lab Sample ID: 680-669-11
Client Matrix: Water

Date Sampled: 02/21/2005 1430
Date Received: 02/22/2005 1100

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 200
Date Analyzed: 03/01/2005 2012
Date Prepared: N/A

Analysis Batch: 680-2931

Instrument ID: GC Volatiles - D PID
Lab File ID: MA01D6.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: SECONDARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	84	U	84	2000
m-Xylene & p-Xylene	110000	E	62	200

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	108		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-669.1

Client Sample ID: **MW-4**

Lab Sample ID: 680-669-12
Client Matrix: Water

Date Sampled: 02/21/2005 1445
Date Received: 02/22/2005 1100

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 1,000
Date Analyzed: 02/26/2005 0101
Date Prepared: N/A

Analysis Batch: 680-2056

Instrument ID: GC Volatiles - D PID
Lab File ID: FE25D19.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	420	U	420	10000
m-Xylene & p-Xylene	36000		310	1000

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	112		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-669.1

Client Sample ID: **MW-4**

Lab Sample ID: 680-669-12
Client Matrix: Water

Date Sampled: 02/21/2005 1445
Date Received: 02/22/2005 1100

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 200
Date Analyzed: 03/01/2005 2044
Date Prepared: N/A

Analysis Batch: 680-2931

Instrument ID: GC Volatiles - D PID
Lab File ID: MA01D7.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: SECONDARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	84	U	84	2000
m-Xylene & p-Xylene	37000	E	62	200

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	111		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-669 1

Client Sample ID: **Trip Blank 450E**

Lab Sample ID: 680-669-13
Client Matrix: Water

Date Sampled: 02/21/2005 0000
Date Received: 02/22/2005 1100

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 1.0
Date Analyzed: 02/25/2005 1838
Date Prepared: N/A

Analysis Batch: 680-2056

Instrument ID: GC Volatiles - D PID
Lab File ID: FE25D7.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	0.42	U	0.42	10
Methyl tert-butyl ether	0.42	U	0.42	10
m-Xylene & p-Xylene	0.31	U	0.31	1.0
m-Xylene & p-Xylene	0.31	U	0.31	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	113		68 - 129
a,a,a-Trifluorotoluene			

DATA REPORTING QUALIFIERS

Client: Catlin Engineers and Scientists

Job Number: 680-669.1

Lab Section	Qualifier	Description
GC VOA		
	U	Analyte was not detected at or above the reporting limit.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
	E	Result exceeded calibration range, secondary dilution required.

QUALITY CONTROL RESULTS

Client: Catlin Engineers and Scientists

Job Number: 680-669.1

Job Description: FHR North PX Terminal

QC Association Summary

Lab Sample ID	Client Sample ID	Client Matrix	Method	Prep Batch
GC VOA				
Analysis Batch:680-2056				
LCS 680-2056/11	Lab Control Spike	Water	602	
MB 680-2056/14	Method Blank	Water	602	
680-669-A-1	101	Water	602	
680-669-A-2	102	Water	602	
680-669-A-3	105	Water	602	
680-669-A-4	MW-2	Water	602	
680-669-A-5	106	Water	602	
680-669-A-6	MW-35	Water	602	
680-669-A-7	107	Water	602	
680-669-A-8	MW-17	Water	602	
680-669-A-9	MW-20	Water	602	
680-669-A-10	MW-28	Water	602	
680-669-A-11	108	Water	602	
680-669-A-12	MW-4	Water	602	
680-669-A-13	Trip Blank 450E	Water	602	
Analysis Batch:680-2420				
680-669-A-5	106	Water	602	
Analysis Batch:680-2931				
680-669-A-11	108	Water	602	
680-669-A-12	MW-4	Water	602	

Client: Catlin Engineers and Scientists

Job Number: 680-669.1

602 Purgeable Aromatics in Wastewater by GC

Method Blank - Batch: 680-2056

Lab ID: MB 680-2056/14
Matrix: Water

Date Analyzed: 02/25/2005 1807
Units: ug/L

Dilution: 1.0

Analyte	Result	Qualifier	MDL	RL
Methyl tert-butyl ether	0.42	U	0.42	10
m-Xylene & p-Xylene	0.31	U	0.31	1.0

Laboratory Control Sample - Batch: 680-2056

Lab ID: LCS 680-2056/11
Matrix: Water

Date Analyzed: 02/25/2005 1416
Units: ug/L

Dilution: 1.0

Analyte	Spike Amount	Result	% Rec.	Recovery Limits	Qualifier
Methyl tert-butyl ether	20.0	25	125	40 - 140	
m-Xylene & p-Xylene	40.0	46	116	54 - 125	

Calculations are performed before rounding to avoid round-off errors in calculated results

ANALYTICAL REPORT

Job Number: 680-706.1

Job Description: FHR North PX Terminal

For:

Catlin Engineers and Scientists
220 Old Dairy Road
Wilmington, NC 28405

Attention: Mr. Jeff Becken

Angie Weimerskirk

Angie Weimerskirk
Project Manager I
aweimerskirk@stl-inc.com

03/10/2005

Severn Trent Laboratories, Inc.
STL Savannah 5102 LaRoche Avenue, Savannah, GA 31404
Tel 912-3547858 Fax 912-3513673 www stl-inc com

METHOD SUMMARY

Client: Catlin Engineers and Scientists

Job Number: 680-706.1

Job Description: FHR North PX Terminal

Description	Method	Preparation Method
Matrix: Water		
Purgeable Aromatics in Wastewater by GC	40CFR136A	602

REFERENCES

40CFR136A - "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

SAMPLE SUMMARY

Client: Catlin Engineers and Scientists

Job Number: 680-706.1

Job Description: FHR North PX Terminal

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-706-1	MW-3	Water	02/22/2005 0915	02/23/2005 0940
680-706-2	MW-5	Water	02/22/2005 1000	02/23/2005 0940
680-706-3	MW-8	Water	02/22/2005 1015	02/23/2005 0940
680-706-4	MW-7	Water	02/22/2005 1030	02/23/2005 0940
680-706-5	MW-12	Water	02/22/2005 1045	02/23/2005 0940
680-706-6	MW-11	Water	02/22/2005 1110	02/23/2005 0940
680-706-7	MW-1	Water	02/22/2005 1120	02/23/2005 0940
680-706-8	MW-37	Water	02/22/2005 1140	02/23/2005 0940
680-706-9	MW-36	Water	02/22/2005 1200	02/23/2005 0940
680-706-10	KRW-8	Water	02/22/2005 1215	02/23/2005 0940
680-706-11	MW-34	Water	02/22/2005 1330	02/23/2005 0940
680-706-12	MW-33	Water	02/22/2005 1400	02/23/2005 0940
680-706-13	MW-32	Water	02/22/2005 1415	02/23/2005 0940
680-706-14	KRW-5	Water	02/22/2005 1430	02/23/2005 0940
680-706-15	113	Water	02/22/2005 1445	02/23/2005 0940
680-706-16	MW-13	Water	02/22/2005 1500	02/23/2005 0940
680-706-17	Trip Blank	Water	02/22/2005 0000	02/23/2005 0940

SAMPLE RESULTS

Client: Catlin Engineers and Scientists

Job Number: 680-706.1

Client Sample ID: **MW-3**

Lab Sample ID: 680-706-1

Client Matrix: Water

Date Sampled: 02/22/2005 0915

Date Received: 02/23/2005 0940

602 Purgeable Aromatics in Wastewater by GC

Method: 602

Analysis Batch: 680-2975

Instrument ID: GC Volatiles - D PID

Preparation: N/A

Lab File ID: FE25D50.d

Dilution: 4,000

Initial Weight/Volume: 20 mL

Date Analyzed: 02/26/2005 2137

Final Weight/Volume: 20 mL

Date Prepared: N/A

Injection Volume:

Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	1700	U	1700	40000
m-Xylene & p-Xylene	130000		1200	4000

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	114		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-706.1

Client Sample ID: **MW-3**

Lab Sample ID: 680-706-1

Client Matrix: Water

Date Sampled: 02/22/2005 0915

Date Received: 02/23/2005 0940

602 Purgeable Aromatics In Wastewater by GC

Method: 602

Analysis Batch: 680-2931

Instrument ID: GC Volatiles - D PID

Preparation: N/A

Lab File ID: MA01D8.d

Dilution: 200

Initial Weight/Volume: 20 mL

Date Analyzed: 03/01/2005 2115

Final Weight/Volume: 20 mL

Date Prepared: N/A

Injection Volume:

Column ID: SECONDARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	84	U	84	2000
m-Xylene & p-Xylene	67000	E	62	200

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	109		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-706.1

Client Sample ID: **MW-5**

Lab Sample ID: 680-706-2

Client Matrix: Water

Date Sampled: 02/22/2005 1000

Date Received: 02/23/2005 0940

602 Purgeable Aromatics in Wastewater by GC

Method: 602

Analysis Batch: 680-2420

Instrument ID: GC Volatiles - D PID

Preparation: N/A

Lab File ID: FE28D37.d

Dilution: 1.0

Initial Weight/Volume: 20 mL

Date Analyzed: 03/01/2005 1258

Final Weight/Volume: 20 mL

Date Prepared: N/A

Injection Volume:

Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	0.42	U	0.42	10
m-Xylene & p-Xylene	34		0.31	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	96		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-706.1

Client Sample ID: **MW-8**

Lab Sample ID: 680-706-3

Client Matrix: Water

Date Sampled: 02/22/2005 1015

Date Received: 02/23/2005 0940

602 Purgeable Aromatics in Wastewater by GC

Method: 602

Analysis Batch: 680-2420

Instrument ID: GC Volatiles - D PID

Preparation: N/A

Lab File ID: FE28D9.d

Dilution: 2,000

Initial Weight/Volume: 20 mL

Date Analyzed: 02/28/2005 2008

Final Weight/Volume: 20 mL

Date Prepared: N/A

Injection Volume:

Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	840	U	840	20000
m-Xylene & p-Xylene	20000		620	2000

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	109		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-706.1

Client Sample ID: **MW-8**

Lab Sample ID: 680-706-3
Client Matrix: Water

Date Sampled: 02/22/2005 1015
Date Received: 02/23/2005 0940

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 200
Date Analyzed: 03/01/2005 2147
Date Prepared: N/A

Analysis Batch: 680-2931

Instrument ID: GC Volatiles - D PID
Lab File ID: MA01D9.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: SECONDARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	84	U	84	2000
m-Xylene & p-Xylene	18000		62	200

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	113		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-706.1

Client Sample ID: **MW-7**

Lab Sample ID: 680-706-4
Client Matrix: Water

Date Sampled: 02/22/2005 1030
Date Received: 02/23/2005 0940

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 10,000
Date Analyzed: 02/28/2005 2039
Date Prepared: N/A

Analysis Batch: 680-2420

Instrument ID: GC Volatiles - D PID
Lab File ID: FE28D10.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	4200	U	4200	100000
m-Xylene & p-Xylene	120000		3100	10000

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	110		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-706.1

Client Sample ID: MW-7

Lab Sample ID: 680-706-4
Client Matrix: Water

Date Sampled: 02/22/2005 1030
Date Received: 02/23/2005 0940

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 200
Date Analyzed: 03/01/2005 2218
Date Prepared: N/A

Analysis Batch: 680-2931

Instrument ID: GC Volatiles - D PID
Lab File ID: MA01D10.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: SECONDARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	84	U	84	2000
m-Xylene & p-Xylene	100000	E	62	200

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	112		68 - 129

Analytical Data

Client: Catlin Engineers and Scientists

Job Number: 680-706.1

Client Sample ID: MW-12

Lab Sample ID: 680-706-5
Client Matrix: Water

Date Sampled: 02/22/2005 1045
Date Received: 02/23/2005 0940

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 5,000
Date Analyzed: 02/28/2005 2111
Date Prepared: N/A

Analysis Batch: 680-2420

Instrument ID: GC Volatiles - D PID
Lab File ID: FE28D11.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	2100	U	2100	50000
m-Xylene & p-Xylene	100000		1600	5000

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	109		68 - 129

Analytical Data

Client: Catlin Engineers and Scientists

Job Number: 680-706 1

Client Sample ID: **MW-12**

Lab Sample ID: 680-706-5

Client Matrix: Water

Date Sampled: 02/22/2005 1045

Date Received: 02/23/2005 0940

602 Purgeable Aromatics in Wastewater by GC

Method: 602

Analysis Batch: 680-2931

Instrument ID: GC Volatiles - D PID

Preparation: N/A

Lab File ID: MA01D11.d

Dilution: 200

Initial Weight/Volume: 20 mL

Date Analyzed: 03/01/2005 2250

Final Weight/Volume: 20 mL

Date Prepared: N/A

Injection Volume:

Column ID: SECONDARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	84	U	84	2000
m-Xylene & p-Xylene	86000	E	62	200

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	110		68 - 129

Analytical Data

Client: Catlin Engineers and Scientists

Job Number: 680-706.1

Client Sample ID: MW-11

Lab Sample ID: 680-706-6
Client Matrix: Water

Date Sampled: 02/22/2005 1110
Date Received: 02/23/2005 0940

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 10,000
Date Analyzed: 03/01/2005 0433
Date Prepared: N/A

Analysis Batch: 680-2420

Instrument ID: GC Volatiles - D PID
Lab File ID: FE28D25.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	4200	U	4200	100000
m-Xylene & p-Xylene	79000		3100	10000

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	116		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-706.1

Client Sample ID: **MW-11**

Lab Sample ID: 680-706-6

Client Matrix: Water

Date Sampled: 02/22/2005 1110

Date Received: 02/23/2005 0940

602 Purgeable Aromatics in Wastewater by GC

Method: 602

Analysis Batch: 680-2931

Instrument ID: GC Volatiles - D PID

Preparation: N/A

Lab File ID: MA01D12.d

Dilution: 200

Initial Weight/Volume: 20 mL

Date Analyzed: 03/01/2005 2321

Final Weight/Volume: 20 mL

Date Prepared: N/A

Injection Volume:

Column ID: SECONDARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	84	U	84	2000
m-Xylene & p-Xylene	64000	E	62	200

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	114		68 - 129

Analytical Data

Client: Severn Trent Laboratories, Inc

Client Sample ID:	MW-1	Job Number:	680-706.1
Lab Sample ID:	680-706-7		
Client Matrix:	Water	Date Sampled:	02/22/2005 1120
		Date Received:	02/23/2005 0940

602 Purgeable Aromatics in Wastewater by GC

Method:	602	Analysis Batch: 680-2420	Instrument ID:	GC Volatiles - D-PID
Preparation:	N/A		Lab File ID:	FE28D26
Dilution:	50		Initial Weight/Volume:	20 mL
Date Analyzed:	03/01/2005 2052		Final Weight/Volume:	20 mL
Date Prepared:	N/A		Injection Volume:	
			Column ID:	Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	21	U	21	500
m-Xylene & p-Xylene	950		16	50

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	117		68-129

Client: Catlin Engineers and Scientists

Job Number: 680-706.1

Client Sample ID: MW-37

Lab Sample ID: 680-706-8

Client Matrix: Water

Date Sampled: 02/22/2005 1140

Date Received: 02/23/2005 0940

602 Purgeable Aromatics in Wastewater by GC

Method: 602

Analysis Batch: 680-2420

Instrument ID: GC Volatiles - D PID

Preparation: N/A

Lab File ID: FE28D27.d

Dilution: 100

Initial Weight/Volume: 20 mL

Date Analyzed: 03/01/2005 0536

Final Weight/Volume: 20 mL

Date Prepared: N/A

Injection Volume:

Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	42	U	42	1000
m-Xylene & p-Xylene	1900		31	100

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	117		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-706.1

Client Sample ID: MW-36

Lab Sample ID: 680-706-9
Client Matrix: Water

Date Sampled: 02/22/2005 1200
Date Received: 02/23/2005 0940

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 200
Date Analyzed: 02/28/2005 2317
Date Prepared: N/A

Analysis Batch: 680-2420

Instrument ID: GC Volatiles - D PID
Lab File ID: FE28D15.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	84	U	84	2000
m-Xylene & p-Xylene	99000	E	62	200

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	104		68 - 129

Analytical Data

Client: Catlin Engineers and Scientists

Job Number: 680-706.1

Client Sample ID: MW-36

Lab Sample ID: 680-706-9
Client Matrix: Water

Date Sampled: 02/22/2005 1200
Date Received: 02/23/2005 0940

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 10,000
Date Analyzed: 03/01/2005 1051
Date Prepared: N/A

Analysis Batch: 680-2420

Instrument ID: GC Volatiles - D PID
Lab File ID: FE28D33.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	4200	U	4200	100000
m-Xylene & p-Xylene	130000		3100	10000

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	102		68 - 129

Analytical Data

Client: Catlin Engineers and Scientists

Job Number: 680-706.1

Client Sample ID: **KRW-8**

Lab Sample ID: 680-706-10

Client Matrix: Water

Date Sampled: 02/22/2005 1215

Date Received: 02/23/2005 0940

602 Purgeable Aromatics in Wastewater by GC

Method: 602

Analysis Batch: 680-2420

Instrument ID: GC Volatiles - D PID

Preparation: N/A

Lab File ID: FE28D34.d

Dilution: 4,000

Initial Weight/Volume: 20 mL

Date Analyzed: 03/01/2005 1123

Final Weight/Volume: 20 mL

Date Prepared: N/A

Injection Volume:

Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	1700	U	1700	40000
m-Xylene & p-Xylene	72000		1200	4000

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	104		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-706.1

Client Sample ID: KRW-8

Lab Sample ID: 680-706-10
Client Matrix: Water

Date Sampled: 02/22/2005 1215
Date Received: 02/23/2005 0940

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 200
Date Analyzed: 03/01/2005 2353
Date Prepared: N/A

Analysis Batch: 680-2931

Instrument ID: GC Volatiles - D PID
Lab File ID: MA01D13.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: SECONDARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	84	U	84	2000
m-Xylene & p-Xylene	82000	E	62	200

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	112		68 - 129

Analytical Data

Client: Catlin Engineers and Scientists

Job Number: 680-706.1

Client Sample ID: MW-34

Lab Sample ID: 680-706-11

Client Matrix: Water

Date Sampled: 02/22/2005 1330

Date Received: 02/23/2005 0940

602 Purgeable Aromatics in Wastewater by GC

Method: 602

Analysis Batch: 680-2420

Instrument ID: GC Volatiles - D PID

Preparation: N/A

Lab File ID: FE28D35.d

Dilution: 4,000

Initial Weight/Volume: 20 mL

Date Analyzed: 03/01/2005 1155

Final Weight/Volume: 20 mL

Date Prepared: N/A

Injection Volume:

Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	1700	U	1700	40000
m-Xylene & p-Xylene	63000		1200	4000

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	103		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-706.1

Client Sample ID: **MW-34**

Lab Sample ID: 680-706-11

Client Matrix: Water

Date Sampled: 02/22/2005 1330

Date Received: 02/23/2005 0940

602 Purgeable Aromatics in Wastewater by GC

Method: 602

Analysis Batch: 680-2931

Instrument ID: GC Volatiles - D PID

Preparation: N/A

Lab File ID: MA01D24.d

Dilution: 200

Initial Weight/Volume: 20 mL

Date Analyzed: 03/02/2005 1257

Final Weight/Volume: 20 mL

Date Prepared: N/A

Injection Volume:

Column ID: SECONDARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	84	U	84	2000
m-Xylene & p-Xylene	65000	E	62	200

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	108		68 - 129

Analytical Data

Client: Severn Trent Laboratories, Inc.

Client Sample ID:	MW-33	Job Number:	680-706.1
Lab Sample ID:	680-706-12		
Client Matrix:	Water	Date Sampled:	02/22/2005 1400
		Date Received:	02/23/2005 0940

602 Purgeable Aromatics in Wastewater by GC

Method:	602	Analysis Batch: 680-2420	Instrument ID:	GC Volatiles - D-PID
Preparation:	N/A		Lab File ID:	FE28D36
Dilution:	100		Initial Weight/Volume:	20 mL
Date Analyzed:	03/01/2005 2000		Final Weight/Volume:	20 mL
Date Prepared:	N/A		Injection Volume:	
			Column ID:	Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	42	U	42	1000
m-Xylene & p-Xylene	2500		32	100

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	113		68-129

Client: Catlin Engineers and Scientists

Job Number: 680-706.1

Client Sample ID: **MW-32**

Lab Sample ID: 680-706-13

Client Matrix: Water

Date Sampled: 02/22/2005 1415

Date Received: 02/23/2005 0940

602 Purgeable Aromatics in Wastewater by GC

Method: 602

Analysis Batch: 680-2420

Instrument ID: GC Volatiles - D PID

Preparation: N/A

Lab File ID: FE28D36.d

Dilution: 25

Initial Weight/Volume: 20 mL

Date Analyzed: 03/01/2005 1226

Final Weight/Volume: 20 mL

Date Prepared: N/A

Injection Volume:

Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	10	U	11	250
m-Xylene & p-Xylene	570		7.8	25

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	103		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-706.1

Client Sample ID: KRW-5

Lab Sample ID: 680-706-14
Client Matrix: Water

Date Sampled: 02/22/2005 1430
Date Received: 02/23/2005 0940

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 4,000
Date Analyzed: 03/01/2005 0155
Date Prepared: N/A

Analysis Batch: 680-2420

Instrument ID: GC Volatiles - D PID
Lab File ID: FE28D20.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	1700	U	1700	40000
m-Xylene & p-Xylene	77000		1200	4000

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	110		68 - 129

Client: Catlin Engineers and Scientists

Job Number: 680-706.1

Client Sample ID: KRW-5

Lab Sample ID: 680-706-14
Client Matrix: Water

Date Sampled: 02/22/2005 1430
Date Received: 02/23/2005 0940

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 200
Date Analyzed: 03/02/2005 0024
Date Prepared: N/A

Analysis Batch: 680-2931

Instrument ID: GC Volatiles - D PID
Lab File ID: MA01D14.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: SECONDARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	84	U	84	2000
m-Xylene & p-Xylene	80000	E	62	200

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	110		68 - 129

Analytical Data

Client: Catlin Engineers and Scientists

Job Number: 680-706.1

Client Sample ID: **113**

Lab Sample ID: 680-706-15
Client Matrix: Water

Date Sampled: 02/22/2005 1445
Date Received: 02/23/2005 0940

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 1.0
Date Analyzed: 02/28/2005 1904
Date Prepared: N/A

Analysis Batch: 680-2420

Instrument ID: GC Volatiles - D PID
Lab File ID: FE28D7.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	0.42		0.42	10
m-Xylene & p-Xylene	0.85		0.31	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	125		68 - 129

Analytical Data

Client: Severn Trent Laboratories, Inc.

Client Sample ID:	MW-13	Job Number:	680-706.1
Lab Sample ID:	680-706-16		
Client Matrix:	Water	Date Sampled:	02/22/2005 1500
		Date Received:	02/23/2005 0940

602 Purgeable Aromatics in Wastewater by GC

Method:	602	Analysis Batch: 680-2420	Instrument ID:	GC Volatiles - D-PID
Preparation:	N/A		Lab File ID:	MA01D15
Dilution:	2000		Initial Weight/Volume:	20 mL
Date Analyzed:	03/02/2005 0230		Final Weight/Volume:	20 mL
Date Prepared:	N/A		Injection Volume:	
			Column ID:	Primary

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	840	U	840	20000
m-Xylene & p-Xylene	54000		640	2000

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	110		68-129

Analytical Data

Client: Catlin Engineers and Scientists

Job Number: 680-706.1

Client Sample ID: MW-13

Lab Sample ID: 680-706-16
Client Matrix: Water

Date Sampled: 02/22/2005 1500
Date Received: 02/23/2005 0940

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 200
Date Analyzed: 03/02/2005 0056
Date Prepared: N/A

Analysis Batch: 680-2931

Instrument ID: GC Volatiles - D PID
Lab File ID: MA01D15.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	84	U	84	2000
m-Xylene & p-Xylene	51000	E	62	200

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	112		68 - 129

Analytical Data

Client: Catlin Engineers and Scientists

Job Number: 680-706.1

Client Sample ID: **Trip Blank**

Lab Sample ID: 680-706-17
Client Matrix: Water

Date Sampled: 02/22/2005 0000
Date Received: 02/23/2005 0940

602 Purgeable Aromatics in Wastewater by GC

Method: 602
Preparation: N/A
Dilution: 1.0
Date Analyzed: 02/26/2005 1608
Date Prepared: N/A

Analysis Batch: 680-2975

Instrument ID: GC Volatiles - D PID
Lab File ID: FE25D43.d
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL
Injection Volume:
Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methyl tert-butyl ether	0.42		0.42	10
m-Xylene & p-Xylene	0.31		0.31	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	108		68 - 129

DATA REPORTING QUALIFIERS

ient: Catlin Engineers and Scientists

Job Number: 680-706.1

Lab Section	Qualifier	Description
GC VOA		
	U	Analyte was not detected at or above the reporting limit.
	E	Result exceeded calibration range, secondary dilution required.

QUALITY CONTROL RESULTS

Client: Catlin Engineers and Scientists

Job Number: 680-706.1

Job Description: FHR North PX Terminal

QC Association Summary

Lab Sample ID	Client Sample ID	Client Matrix	Method	Prep Batch
GC VOA				
Analysis Batch:680-2420				
680-706-A-2	MW-5	Water	602	
680-706-A-3	MW-8	Water	602	
680-706-A-4	MW-7	Water	602	
680-706-A-5	MW-12	Water	602	
680-706-A-6	MW-11	Water	602	
680-706-A-8	MW-37	Water	602	
680-706-A-9	MW-36	Water	602	
680-706-A-10	KRW-8	Water	602	
680-706-A-11	MW-34	Water	602	
680-706-A-13	MW-32	Water	602	
680-706-A-14	KRW-5	Water	602	
680-706-A-15	113	Water	602	
Analysis Batch:680-2931				
680-706-A-1	MW-3	Water	602	
680-706-A-3	MW-8	Water	602	
680-706-A-4	MW-7	Water	602	
680-706-A-5	MW-12	Water	602	
680-706-A-6	MW-11	Water	602	
680-706-A-10	KRW-8	Water	602	
680-706-A-11	MW-34	Water	602	
680-706-A-14	KRW-5	Water	602	
680-706-A-16	MW-13	Water	602	
Analysis Batch:680-2975				
LCS 680-2975/3	Lab Control Spike	Water	602	
MB 680-2975/1	Method Blank	Water	602	
680-706-A-1	MW-3	Water	602	
680-706-A-17	Trip Blank	Water	602	

Client: Catlin Engineers and Scientists

Job Number: 680-706.1

602 Purgeable Aromatics in Wastewater by GC

Method Blank - Batch: 680-2975

Lab ID: MB 680-2975/1
Matrix: Water

Date Analyzed: 02/26/2005 1537
Units: ug/L

Dilution: 1.0

Analyte	Result	Qualifier	MDL	RL
Methyl tert-butyl ether	0.42		0.42	10
m-Xylene & p-Xylene	0.31		0.31	1.0

Laboratory Control Sample - Batch: 680-2975

Lab ID: LCS 680-2975/3
Matrix: Water

Date Analyzed: 02/26/2005 2003
Units: ug/L

Dilution: 1.0

Analyte	Spike Amount	Result	% Rec.	Recovery Limits	Qualifier
Methyl tert-butyl ether	20.0	26	132	40 - 140	
m-Xylene & p-Xylene	40.0	44	111	54 - 125	

Calculations are performed before rounding to avoid round-off errors in calculated results.

ANALYTICAL REPORT

Job Number: 680-552.1

Job Description: FHR North Loading Rack

For:

Catlin Engineers and Scientists
220 Old Dairy Road
Wilmington, NC 28405

Attention: Mr. Jeff Becken

Angie Weimerskirk
Project Manager I
aweimerskirk@stl-inc.com

03/02/2005

Severn Trent Laboratories, Inc.
STL Savannah 5102 LaRoche Avenue, Savannah, GA 31404
Tel 912-3547858 Fax 912-3513673 www.stl-inc.com

METHOD SUMMARY

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Job Description: FHR North Loading Rack

Description	Method	Preparation Method
Matrix: Water		
Volatile Organic Compounds by GC/MS	SW846 8260B	
Purge-and-Trap		SW846 5030B

REFERENCES

SW846 - "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

SAMPLE SUMMARY

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Job Description: FHR North Loading Rack

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-552-1	AMW-2	Water	02/16/2005 1105	02/18/2005 1000
680-552-2	AMW-1	Water	02/16/2005 1125	02/18/2005 1000
680-552-3	AMW-3	Water	02/16/2005 1150	02/18/2005 1000
680-552-4	AMW-5	Water	02/16/2005 1235	02/18/2005 1000
680-552-5	AMW-6	Water	02/16/2005 1300	02/18/2005 1000
680-552-6	PURGE H2O-APEX	Water	02/16/2005 1315	02/18/2005 1000
680-552-7	KMW-14	Water	02/17/2005 0945	02/18/2005 1000
680-552-8	KMW-13	Water	02/17/2005 1000	02/18/2005 1000
680-552-9	KMW-12	Water	02/17/2005 1015	02/18/2005 1000
680-552-10	KMW-10	Water	02/17/2005 1030	02/18/2005 1000
680-552-11	KMW-8	Water	02/17/2005 1030	02/18/2005 1000
680-552-12	KMW-6	Water	02/17/2005 1045	02/18/2005 1000
680-552-13	KMW-7	Water	02/17/2005 1115	02/18/2005 1000
680-552-14	KMW-11	Water	02/17/2005 1130	02/18/2005 1000
680-552-15	KMW-1	Water	02/17/2005 1210	02/18/2005 1000
680-552-16	KMW-2	Water	02/17/2005 1220	02/18/2005 1000
680-552-17	KMW-4	Water	02/17/2005 1225	02/18/2005 1000
680-552-18	KMW-3	Water	02/17/2005 1235	02/18/2005 1000
680-552-19	LOADING RACK-PURGE H2O	Water	02/17/2005 1250	02/18/2005 1000
680-552-20	KMW-5	Water	02/17/2005 1200	02/18/2005 1000

SAMPLE RESULTS

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **AMW-2**

Lab Sample ID: 680-552-1
Client Matrix: Water

Date Sampled: 02/16/2005 1105
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS

Method: 8260B
Preparation: 5030B
Dilution: 50
Date Analyzed: 02/22/2005 1301
Date Prepared: N/A

Analysis Batch: 680-1468

Instrument ID: GC/MS Volatiles - P
Lab File ID: p4309.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloromethane	28	J D	27	50
Bromomethane	47	U	47	50
Vinyl chloride	46	U	46	50
Chloroethane	45	U	45	50
Methylene Chloride	22	U	22	50
Acetone	370	U	370	1300
Carbon disulfide	38	U	38	50
1,1-Dichloroethene	47	U	47	50
1,1-Dichloroethane	28	U	28	50
cis-1,2-Dichloroethene	28	U	28	50
trans-1,2-Dichloroethene	40	U	40	50
n-Butylbenzene	19	U	19	50
Chloroform	26	U	26	50
sec-Butylbenzene	30	U	30	50
1,2-Dichloroethane	14	U	14	50
Methyl Ethyl Ketone	36	U	36	500
1,1,1-Trichloroethane	40	U	40	50
Carbon tetrachloride	46	U	46	50
Dichlorobromomethane	21	U	21	50
1,1,2,2-Tetrachloroethane	11	U	11	50
1,2-Dichloropropane	13	U	13	50
trans-1,3-Dichloropropene	18	U	18	50
Trichloroethene	36	U	36	50
Chlorodibromomethane	20	U	20	50
1,1,2-Trichloroethane	19	U	19	50
Benzene	1200	D	27	50
cis-1,3-Dichloropropene	21	U	21	50
Bromoform	18	U	18	50
2-Hexanone	20	U	20	500
methyl isobutyl ketone	23	U	23	500
Tetrachloroethene	38	U	38	50
Toluene	1900	D	31	50
Chlorobenzene	21	U	21	50
Ethylbenzene	1300	D	31	50

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **AMW-2**

Lab Sample ID: 680-552-1
Client Matrix: Water

Date Sampled: 02/16/2005 1105
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B
Preparation: 5030B
Dilution: 50
Date Analyzed: 02/22/2005 1301
Date Prepared: N/A

Analysis Batch: 680-1468

Instrument ID: GC/MS Volatiles - P
Lab File ID: p4309.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Styrene	21	U	21	50
Xylenes, Total	35000	E	80	100
Isopropylbenzene	130	D	33	50
Methyl tert-butyl ether	81	J D	23	500
Naphthalene	650	D	6.0	250
N-Propylbenzene	240	D	23	50
1,2,4-Trimethylbenzene	2000	D	22	50
1,3,5-Trimethylbenzene	460	D	25	50

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8	100		79 - 122
4-Bromofluorobenzene	95		77 - 120
Dibromofluoromethane	101		75 - 123

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **AMW-2**

Lab Sample ID: 680-552-1
Client Matrix: Water

Date Sampled: 02/16/2005 1105
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS

Method: 8260B
Preparation: 5030B
Dilution: 100
Date Analyzed: 02/22/2005 1911
Date Prepared: N/A

Analysis Batch: 680-1468

Instrument ID: GC/MS Volatiles - P
Lab File ID: p4335 d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloromethane	53	U	53	100
Bromomethane	93	U	93	100
Vinyl chloride	92	U	92	100
Chloroethane	89	U	89	100
Methylene Chloride	44	U	44	100
Acetone	730	U	730	2500
Carbon disulfide	75	U	75	100
1,1-Dichloroethene	93	U	93	100
1,1-Dichloroethane	56	U	56	100
cis-1,2-Dichloroethene	55	U	55	100
trans-1,2-Dichloroethene	80	U	80	100
n-Butylbenzene	38	U	38	100
Chloroform	52	U	52	100
sec-Butylbenzene	60	U	60	100
1,2-Dichloroethane	28	U	28	100
Methyl Ethyl Ketone	72	U	72	1000
1,1,1-Trichloroethane	79	U	79	100
Carbon tetrachloride	91	U	91	100
Dichlorobromomethane	42	U	42	100
1,1,2,2-Tetrachloroethane	21	U	21	100
1,2-Dichloropropane	26	U	26	100
trans-1,3-Dichloropropene	36	U	36	100
Trichloroethene	71	U	71	100
Chlorodibromomethane	40	U	40	100
1,1,2-Trichloroethane	37	U	37	100
Benzene	1200	D	54	100
cis-1,3-Dichloropropene	41	U	41	100
Bromoform	36	U	36	100
2-Hexanone	39	U	39	1000
methyl isobutyl ketone	45	U	45	1000
Tetrachloroethene	75	U	75	100
Toluene	1700	D	62	100
Chlorobenzene	41	U	41	100
Ethylbenzene	1300	D	62	100

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **AMW-2**

Lab Sample ID: 680-552-1
Client Matrix: Water

Date Sampled: 02/16/2005 1105
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B
Analysis Batch: 680-1468
Instrument ID: GC/MS Volatiles - P
Preparation: 5030B
Lab File ID: p4335.d
Dilution: 100
Initial Weight/Volume: 5 mL
Date Analyzed: 02/22/2005 1911
Final Weight/Volume: 5 mL
Date Prepared: N/A

Styrene	42	U	42	100
Xylenes, Total	35000	D	160	200
Isopropylbenzene	130	D	66	100
Methyl tert-butyl ether	130	J D	45	1000
Naphthalene	840	D	12	500
N-Propylbenzene	260	D	45	100
1,2,4-Trimethylbenzene	2100	D	44	100
1,3,5-Trimethylbenzene	490	D	49	100

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8	92		79 - 122
4-Bromofluorobenzene	98		77 - 120
Dibromofluoromethane	102		75 - 123

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **AMW-1**

Lab Sample ID: 680-552-2
Client Matrix: Water

Date Sampled: 02/16/2005 1125
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS

Method: 8260B
Preparation: 5030B
Dilution: 1.0
Date Analyzed: 02/22/2005 1329
Date Prepared: N/A

Analysis Batch: 680-1468

Instrument ID: GC/MS Volatiles - P
Lab File ID: p4311.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloromethane	0.53	U	0.53	1.0
Bromomethane	0.93	U	0.93	1.0
Vinyl chloride	0.92	U	0.92	1.0
Chloroethane	0.89	U	0.89	1.0
Methylene Chloride	0.44	U	0.44	1.0
Acetone	8.9	J	7.3	25
Carbon disulfide	0.75	U	0.75	1.0
1,1-Dichloroethene	0.93	U	0.93	1.0
1,1-Dichloroethane	0.56	U	0.56	1.0
cis-1,2-Dichloroethene	0.55	U	0.55	1.0
trans-1,2-Dichloroethene	0.80	U	0.80	1.0
Chloroform	0.52	U	0.52	1.0
n-Butylbenzene	2.5		0.38	1.0
sec-Butylbenzene	0.60	U	0.60	1.0
1,2-Dichloroethane	0.28	U	0.28	1.0
Methyl Ethyl Ketone	4.5	J	0.72	10
1,1,1-Trichloroethane	0.79	U	0.79	1.0
Carbon tetrachloride	0.91	U	0.91	1.0
Dichlorobromomethane	0.42	U	0.42	1.0
1,1,2,2-Tetrachloroethane	0.21	U	0.21	1.0
1,2-Dichloropropane	0.26	U	0.26	1.0
trans-1,3-Dichloropropene	0.36	U	0.36	1.0
Trichloroethene	0.71	U	0.71	1.0
Chlorodibromomethane	0.40	U	0.40	1.0
1,1,2-Trichloroethane	0.37	U	0.37	1.0
Benzene	0.54	U	0.54	1.0
cis-1,3-Dichloropropene	0.41	U	0.41	1.0
Bromoform	0.36	U	0.36	1.0
2-Hexanone	0.39	U	0.39	10
methyl isobutyl ketone	0.67	J	0.45	10
Tetrachloroethene	0.75	U	0.75	1.0
Toluene	0.62	U	0.62	1.0
Chlorobenzene	0.41	U	0.41	1.0
Ethylbenzene	1.0	D	0.62	1.0

STL Savannah

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **AMW-1**

Lab Sample ID: 680-552-2
Client Matrix: Water

Date Sampled: 02/16/2005 1125
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B
Analysis Batch: 680-1468
Instrument ID: GC/MS Volatiles - P
Preparation: 5030B
Lab File ID: p4311.d
Dilution: 1.0
Initial Weight/Volume: 5 mL
Date Analyzed: 02/22/2005 1329
Final Weight/Volume: 5 mL
Date Prepared: N/A

Styrene	0.42	U	0.42	1 0
Xylenes, Total	1.6	U	1.6	2.0
Isopropylbenzene	0.66	U	0.66	1.0
Methyl tert-butyl ether	3.0	J	0.45	10
Naphthalene	0.12	U	0.12	5.0
N-Propylbenzene	0.45	U	0.45	1.0
1,2,4-Trimethylbenzene	3.3		0.44	1.0
1,3,5-Trimethylbenzene	4.7		0.49	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8	104		79 - 122
4-Bromofluorobenzene	88		77 - 120
Dibromofluoromethane	104		75 - 123

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **AMW-3**

Lab Sample ID: 680-552-3
Client Matrix: Water

Date Sampled: 02/16/2005 1150
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS

Method: 8260B
Analysis Batch: 680-1468
Preparation: 5030B
Dilution: 50
Date Analyzed: 02/22/2005 1358
Date Prepared: N/A

Instrument ID: GC/MS Volatiles - P
Lab File ID: p4313.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloromethane	27	U	27	50
Bromomethane	47	U	47	50
Vinyl chloride	46	U	46	50
Chloroethane	45	U	45	50
Methylene Chloride	22	U	22	50
Acetone	370	U	370	1300
Carbon disulfide	38	U	38	50
1,1-Dichloroethene	47	U	47	50
1,1-Dichloroethane	28	U	28	50
cis-1,2-Dichloroethene	28	U	28	50
trans-1,2-Dichloroethene	40	U	40	50
Chloroform	26	U	26	50
n-Butylbenzene	19	U	19	50
sec-Butylbenzene	30	U	30	50
1,2-Dichloroethane	14	U	14	50
Methyl Ethyl Ketone	36	U	36	500
1,1,1-Trichloroethane	40	U	40	50
Carbon tetrachloride	46	U	46	50
Dichlorobromomethane	21	U	21	50
1,1,2,2-Tetrachloroethane	11	U	11	50
1,2-Dichloropropane	13	U	13	50
trans-1,3-Dichloropropene	18	U	18	50
Trichloroethene	36	U	36	50
Chlorodibromomethane	20	U	20	50
1,1,2-Trichloroethane	19	U	19	50
Benzene	360	D	27	50
cis-1,3-Dichloropropene	21	U	21	50
Bromoform	18	U	18	50
2-Hexanone	20	U	20	500
methyl isobutyl ketone	23	U	23	500
Tetrachloroethene	38	U	38	50
Toluene	34	J D	31	50
Chlorobenzene	21	U	21	50
Ethylbenzene	130	D	31	50

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **AMW-3**

Lab Sample ID: 680-552-3
Client Matrix: Water

Date Sampled: 02/16/2005 1150
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B
Analysis Batch: 680-1468
Instrument ID: GC/MS Volatiles - P
Preparation: 5030B
Lab File ID: p4313.d
Dilution: 50
Initial Weight/Volume: 5 mL
Date Analyzed: 02/22/2005 1358
Final Weight/Volume: 5 mL
Date Prepared: N/A

Styrene	21	U	21	50
Xylenes, Total	9200	D	80	100
Isopropylbenzene	42	J D	33	50
Methyl tert-butyl ether	23	U	23	500
Naphthalene	160	J D	6.0	250
N-Propylbenzene	59	D	23	50
1,2,4-Trimethylbenzene	250	D	22	50
1,3,5-Trimethylbenzene	58	D	25	50

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8	106		79 - 122
4-Bromofluorobenzene	95		77 - 120
Dibromofluoromethane	100		75 - 123

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **AMW-5**

Lab Sample ID: 680-552-4
Client Matrix: Water

Date Sampled: 02/16/2005 1235
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS

Method: 8260B
Analysis Batch: 680-1468
Preparation: 5030B
Dilution: 1.0
Date Analyzed: 02/22/2005 1426
Date Prepared: N/A

Instrument ID: GC/MS Volatiles - P
Lab File ID: p4315.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloromethane	0.53	U	0.53	1.0
Bromomethane	0.93	U	0.93	1.0
Vinyl chloride	0.92	U	0.92	1.0
Chloroethane	0.89	U	0.89	1.0
Methylene Chloride	0.44	U	0.44	1.0
Acetone	7.3	U	7.3	25
Carbon disulfide	0.75	U	0.75	1.0
1,1-Dichloroethene	0.93	U	0.93	1.0
1,1-Dichloroethane	0.56	U	0.56	1.0
cis-1,2-Dichloroethene	0.55	U	0.55	1.0
trans-1,2-Dichloroethene	0.80	U	0.80	1.0
n-Butylbenzene	0.38	U	0.38	1.0
Chloroform	0.52	U	0.52	1.0
sec-Butylbenzene	0.60	U	0.60	1.0
1,2-Dichloroethane	0.28	U	0.28	1.0
Methyl Ethyl Ketone	0.72	U	0.72	10
1,1,1-Trichloroethane	0.79	U	0.79	1.0
Carbon tetrachloride	0.91	U	0.91	1.0
Dichlorobromomethane	0.42	U	0.42	1.0
1,1,2,2-Tetrachloroethane	0.21	U	0.21	1.0
1,2-Dichloropropane	0.26	U	0.26	1.0
trans-1,3-Dichloropropene	0.36	U	0.36	1.0
Trichloroethene	0.71	U	0.71	1.0
Chlorodibromomethane	0.40	U	0.40	1.0
1,1,2-Trichloroethane	0.37	U	0.37	1.0
Benzene	0.54	U	0.54	1.0
cis-1,3-Dichloropropene	0.41	U	0.41	1.0
Bromoform	0.36	U	0.36	1.0
2-Hexanone	0.39	U	0.39	10
methyl isobutyl ketone	0.45	U	0.45	10
Tetrachloroethene	0.75	U	0.75	1.0
Toluene	0.62	U	0.62	1.0
Chlorobenzene	0.41	U	0.41	1.0
Ethylbenzene	0.62	U	0.62	1.0

STL Savannah

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **AMW-5**

Lab Sample ID: 680-552-4
Client Matrix: Water

Date Sampled: 02/16/2005 1235
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B
Analysis Batch: 680-1468
Instrument ID: GC/MS Volatiles - P
Preparation: 5030B
Lab File ID: p4315.d
Dilution: 1.0
Initial Weight/Volume: 5 mL
Date Analyzed: 02/22/2005 1426
Final Weight/Volume: 5 mL
Date Prepared: N/A

Styrene	0.42	U	0.42	1.0
Xylenes, Total	1.6	U	1.6	2.0
Isopropylbenzene	0.66	U	0.66	1.0
Methyl tert-butyl ether	0.45	U	0.45	10
Naphthalene	0.44	J	0.12	5.0
N-Propylbenzene	0.45	U	0.45	1.0
1,2,4-Trimethylbenzene	0.44	U	0.44	1.0
1,3,5-Trimethylbenzene	0.49	U	0.49	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8	103		79 - 122
4-Bromofluorobenzene	92		77 - 120
Dibromofluoromethane	100		75 - 123

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **AMW-6**

Lab Sample ID: 680-552-5
Client Matrix: Water

Date Sampled: 02/16/2005 1300
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS

Method: 8260B
Preparation: 5030B
Dilution: 1.0
Date Analyzed: 02/22/2005 1455
Date Prepared: N/A

Analysis Batch: 680-1468

Instrument ID: GC/MS Volatiles - P
Lab File ID: p4317.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloromethane	0.53	U	0.53	1.0
Bromomethane	0.93	U	0.93	1.0
Vinyl chloride	0.92	U	0.92	1.0
Chloroethane	0.89	U	0.89	1.0
Methylene Chloride	0.44	U	0.44	1.0
Acetone	7.3	U	7.3	25
Carbon disulfide	0.75	U	0.75	1.0
1,1-Dichloroethene	0.93	U	0.93	1.0
1,1-Dichloroethane	0.56	U	0.56	1.0
cis-1,2-Dichloroethene	0.55	U	0.55	1.0
trans-1,2-Dichloroethene	0.80	U	0.80	1.0
Chloroform	0.52	U	0.52	1.0
n-Butylbenzene	3.2		0.38	1.0
1,2-Dichloroethane	0.28	U	0.28	1.0
sec-Butylbenzene	3.4		0.60	1.0
Methyl Ethyl Ketone	1.7	J	0.72	10
1,1,1-Trichloroethane	0.79	U	0.79	1.0
Carbon tetrachloride	0.91	U	0.91	1.0
Dichlorobromomethane	0.42	U	0.42	1.0
1,1,2,2-Tetrachloroethane	0.21	U	0.21	1.0
1,2-Dichloropropane	0.26	U	0.26	1.0
trans-1,3-Dichloropropene	0.36	U	0.36	1.0
Trichloroethene	0.71	U	0.71	1.0
Chlorodibromomethane	0.40	U	0.40	1.0
1,1,2-Trichloroethane	0.37	U	0.37	1.0
Benzene	82		0.54	1.0
cis-1,3-Dichloropropene	0.41	U	0.41	1.0
Bromoform	0.36	U	0.36	1.0
2-Hexanone	0.39	U	0.39	10
methyl isobutyl ketone	0.45	U	0.45	10
Tetrachloroethene	0.75	U	0.75	1.0
Toluene	2.2		0.62	1.0
Chlorobenzene	0.41	U	0.41	1.0
Ethylbenzene	2.8		0.62	1.0

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **AMW-6**

Lab Sample ID: 680-552-5
Client Matrix: Water

Date Sampled: 02/16/2005 1300
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B
Analysis Batch: 680-1468
Instrument ID: GC/MS Volatiles - P
Preparation: 5030B
Lab File ID: p4317.d
Dilution: 1.0
Initial Weight/Volume: 5 mL
Date Analyzed: 02/22/2005 1455
Final Weight/Volume: 5 mL
Date Prepared: N/A

Styrene	0.42	U	0.42	1.0
Xylenes, Total	240		1.6	2.0
Isopropylbenzene	12		0.66	1.0
Methyl tert-butyl ether	70		0.45	10
Naphthalene	11		0.12	5.0
N-Propylbenzene	3.8		0.45	1.0
1,2,4-Trimethylbenzene	35		0.44	1.0
1,3,5-Trimethylbenzene	6.9		0.49	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8	104		79 - 122
4-Bromofluorobenzene	96		77 - 120
Dibromofluoromethane	103		75 - 123

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: PURGE H2O-APEX

Lab Sample ID: 680-552-6
Client Matrix: Water

Date Sampled: 02/16/2005 1315
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS

Method: 8260B
Analysis Batch: 680-1468
Preparation: 5030B
Dilution: 20
Date Analyzed: 02/22/2005 1940
Date Prepared: N/A

Instrument ID: GC/MS Volatiles - P
Lab File ID: p4337.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloromethane	11	U	11	20
Bromomethane	19	U	19	20
Vinyl chloride	18	U	18	20
Chloroethane	18	U	18	20
Methylene Chloride	8.8	U	8.8	20
Acetone	150	U	150	500
Carbon disulfide	15	U	15	20
1,1-Dichloroethene	19	U	19	20
1,1-Dichloroethane	11	U	11	20
cis-1,2-Dichloroethene	11	U	11	20
trans-1,2-Dichloroethene	16	U	16	20
n-Butylbenzene	7.6	U	7.6	20
Chloroform	10	U	10	20
sec-Butylbenzene	12	U	12	20
1,2-Dichloroethane	5.6	U	5.6	20
Methyl Ethyl Ketone	14	U	14	200
1,1,1-Trichloroethane	16	U	16	20
Carbon tetrachloride	18	U	18	20
Dichlorobromomethane	8.4	U	8.4	20
1,1,2,2-Tetrachloroethane	4.2	U	4.2	20
1,2-Dichloropropane	5.2	U	5.2	20
trans-1,3-Dichloropropene	7.2	U	7.2	20
Trichloroethene	14	U	14	20
Chlorodibromomethane	8.0	U	8.0	20
1,1,2-Trichloroethane	7.4	U	7.4	20
Benzene	120	D	11	20
cis-1,3-Dichloropropene	8.2	U	8.2	20
Bromoform	7.2	U	7.2	20
2-Hexanone	7.8	U	7.8	200
methyl isobutyl ketone	9.0	U	9.0	200
Tetrachloroethene	15	U	15	20
Toluene	76	D	12	20
Chlorobenzene	8.2	U	8.2	20
Ethylbenzene	70	D	12	20

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **PURGE H2O-APEX**

Lab Sample ID: 680-552-6
Client Matrix: Water

Date Sampled: 02/16/2005 1315
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B
Analysis Batch: 680-1468
Instrument ID: GC/MS Volatiles - P
Preparation: 5030B
Lab File ID: p4337.d
Dilution: 20
Initial Weight/Volume: 5 mL
Date Analyzed: 02/22/2005 1940
Final Weight/Volume: 5 mL
Date Prepared: N/A

Styrene	8.4	U	8.4	20
Xylenes, Total	2400	D	32	40
Isopropylbenzene	15	J D	13	20
Methyl tert-butyl ether	21	J D	9.0	200
Naphthalene	80	J D	2.4	100
N-Propylbenzene	22	D	9.0	20
1,2,4-Trimethylbenzene	170	D	8.8	20
1,3,5-Trimethylbenzene	39	D	9.8	20

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8	96		79 - 122
4-Bromofluorobenzene	95		77 - 120
Dibromofluoromethane	104		75 - 123

Client: Catlin Engineers and Scientists

Job Number: 680-552 1

Client Sample ID: **KMW-14**

Lab Sample ID: 680-552-7
Client Matrix: Water

Date Sampled: 02/17/2005 0945
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS

Method: 8260B
Preparation: 5030B
Dilution: 100
Date Analyzed: 02/22/2005 1552
Date Prepared: N/A

Analysis Batch: 680-1468

Instrument ID: GC/MS Volatiles - P
Lab File ID: p4321.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloromethane	53	U	53	100
Bromomethane	93	U	93	100
Vinyl chloride	92	U	92	100
Chloroethane	89	U	89	100
Methylene Chloride	44	U	44	100
Acetone	730	U	730	2500
Carbon disulfide	75	U	75	100
1,1-Dichloroethene	93	U	93	100
1,1-Dichloroethane	56	U	56	100
cis-1,2-Dichloroethene	55	U	55	100
trans-1,2-Dichloroethene	80	U	80	100
n-Butylbenzene	38	U	38	100
Chloroform	52	U	52	100
sec-Butylbenzene	60	U	60	100
1,2-Dichloroethane	28	U	28	100
Methyl Ethyl Ketone	72	U	72	1000
1,1,1-Trichloroethane	79	U	79	100
Carbon tetrachloride	91	U	91	100
Dichlorobromomethane	42	U	42	100
1,1,2,2-Tetrachloroethane	21	U	21	100
1,2-Dichloropropane	26	U	26	100
trans-1,3-Dichloropropene	36	U	36	100
Trichloroethene	71	U	71	100
Chlorodibromomethane	40	U	40	100
1,1,2-Trichloroethane	37	U	37	100
Benzene	54	U	54	100
cis-1,3-Dichloropropene	41	U	41	100
Bromoform	36	U	36	100
2-Hexanone	39	U	39	1000
methyl isobutyl ketone	45	U	45	1000
Tetrachloroethene	75	U	75	100
Toluene	62	U	62	100
Chlorobenzene	41	U	41	100
Ethylbenzene	62	U	62	100

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **KMW-14**

Lab Sample ID: 680-552-7
Client Matrix: Water

Date Sampled: 02/17/2005 0945
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B
Analysis Batch: 680-1468
Instrument ID: GC/MS Volatiles - P
Preparation: 5030B
Lab File ID: p4321.d
Dilution: 100
Initial Weight/Volume: 5 mL
Date Analyzed: 02/22/2005 1552
Final Weight/Volume: 5 mL
Date Prepared: N/A

Styrene	42	U	42	100
Xylenes, Total	21000	D	160	200
Isopropylbenzene	66	U	66	100
Methyl tert-butyl ether	45	U	45	1000
Naphthalene	42	J D	12	500
N-Propylbenzene	45	U	45	100
1,2,4-Trimethylbenzene	44	U	44	100
1,3,5-Trimethylbenzene	49	U	49	100

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8	106		79 - 122
4-Bromofluorobenzene	97		77 - 120
Dibromofluoromethane	103		75 - 123

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **KMW-13**

Lab Sample ID: 680-552-8
Client Matrix: Water

Date Sampled: 02/17/2005 1000
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS

Method: 8260B
Preparation: 5030B
Dilution: 100
Date Analyzed: 02/22/2005 1621
Date Prepared: N/A

Analysis Batch: 680-1468

Instrument ID: GC/MS Volatiles - P
Lab File ID: p4323.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloromethane	53	U	53	100
Bromomethane	93	U	93	100
Vinyl chloride	92	U	92	100
Chloroethane	89	U	89	100
Methylene Chloride	44	U	44	100
Acetone	730	U	730	2500
Carbon disulfide	75	U	75	100
1,1-Dichloroethene	93	U	93	100
1,1-Dichloroethane	56	U	56	100
cis-1,2-Dichloroethene	55	U	55	100
trans-1,2-Dichloroethene	80	U	80	100
n-Butylbenzene	38	U	38	100
Chloroform	52	U	52	100
sec-Butylbenzene	60	U	60	100
1,2-Dichloroethane	28	U	28	100
Methyl Ethyl Ketone	72	U	72	1000
1,1,1-Trichloroethane	79	U	79	100
Carbon tetrachloride	91	U	91	100
Dichlorobromomethane	42	U	42	100
1,1,2,2-Tetrachloroethane	21	U	21	100
1,2-Dichloropropane	26	U	26	100
trans-1,3-Dichloropropene	36	U	36	100
Trichloroethene	71	U	71	100
Chlorodibromomethane	40	U	40	100
1,1,2-Trichloroethane	37	U	37	100
Benzene	890	D	54	100
cis-1,3-Dichloropropene	41	U	41	100
Bromoform	36	U	36	100
2-Hexanone	39	U	39	1000
methyl isobutyl ketone	45	U	45	1000
Tetrachloroethene	75	U	75	100
Toluene	62	J D	62	100
Chlorobenzene	41	U	41	100
Ethylbenzene	62	U	62	100

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **KMW-13**

Lab Sample ID: 680-552-8
Client Matrix: Water

Date Sampled: 02/17/2005 1000
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B
Analysis Batch: 680-1468
Instrument ID: GC/MS Volatiles - P
Preparation: 5030B
Lab File ID: p4323.d
Dilution: 100
Initial Weight/Volume: 5 mL
Date Analyzed: 02/22/2005 1621
Final Weight/Volume: 5 mL
Date Prepared: N/A

Styrene	42	U	42	100
Xylenes, Total	52000	E D	160	200
Isopropylbenzene	66	U	66	100
Methyl tert-butyl ether	110	J D	45	1000
Naphthalene	170	J D	12	500
N-Propylbenzene	45	U	45	100
1,2,4-Trimethylbenzene	220	D	44	100
1,3,5-Trimethylbenzene	68	J D	49	100

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8	103		79 - 122
4-Bromofluorobenzene	91		77 - 120
Dibromofluoromethane	100		75 - 123

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **KMW-13**

Lab Sample ID: 680-552-8
Client Matrix: Water

Date Sampled: 02/17/2005 1000
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS

Method: 8260B
Preparation: 5030B
Dilution: 200
Date Analyzed: 02/22/2005 2008
Date Prepared: N/A

Analysis Batch: 680-1468

Instrument ID: GC/MS Volatiles - P
Lab File ID: p4339.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloromethane	110	U	110	200
Bromomethane	190	U	190	200
Vinyl chloride	180	U	180	200
Chloroethane	180	U	180	200
Methylene Chloride	88	U	88	200
Acetone	1500	U	1500	5000
Carbon disulfide	150	U	150	200
1,1-Dichloroethene	190	U	190	200
1,1-Dichloroethane	110	U	110	200
cis-1,2-Dichloroethene	110	U	110	200
trans-1,2-Dichloroethene	160	U	160	200
n-Butylbenzene	76	U	76	200
Chloroform	100	U	100	200
sec-Butylbenzene	120	U	120	200
1,2-Dichloroethane	56	U	56	200
Methyl Ethyl Ketone	140	U	140	2000
1,1,1-Trichloroethane	160	U	160	200
Carbon tetrachloride	180	U	180	200
Dichlorobromomethane	84	U	84	200
1,1,2,2-Tetrachloroethane	42	U	42	200
1,2-Dichloropropane	52	U	52	200
trans-1,3-Dichloropropene	72	U	72	200
Trichloroethene	140	U	140	200
Chlorodibromomethane	80	U	80	200
1,1,2-Trichloroethane	74	U	74	200
Benzene	920	D	110	200
cis-1,3-Dichloropropene	82	U	82	200
Bromoform	72	U	72	200
2-Hexanone	78	U	78	2000
methyl isobutyl ketone	90	U	90	2000
Tetrachloroethene	150	U	150	200
Toluene	120	U	120	200
Chlorobenzene	82	U	82	200
Ethylbenzene	120	U	120	200

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: KMW-13

Lab Sample ID: 680-552-8
Client Matrix: Water

Date Sampled: 02/17/2005 1000
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B
Analysis Batch: 680-1468
Instrument ID: GC/MS Volatiles - P
Preparation: 5030B
Lab File ID: p4339.d
Dilution: 200
Initial Weight/Volume: 5 mL
Date Analyzed: 02/22/2005 2008
Final Weight/Volume: 5 mL
Date Prepared: N/A

Styrene	84	U	84	200
Xylenes, Total	57000	D	320	400
Isopropylbenzene	130	U	130	200
Methyl tert-butyl ether	120	J D	90	2000
Naphthalene	240	J D	24	1000
N-Propylbenzene	90	U	90	200
1,2,4-Trimethylbenzene	270	D	88	200
1,3,5-Trimethylbenzene	98	U	98	200

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8	94		79 - 122
4-Bromofluorobenzene	99		77 - 120
Dibromofluoromethane	104		75 - 123

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **KMW-12**

Lab Sample ID: 680-552-9
Client Matrix: Water

Date Sampled: 02/17/2005 1015
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS

Method: 8260B
Preparation: 5030B
Dilution: 20
Date Analyzed: 02/22/2005 2036
Date Prepared: N/A

Analysis Batch: 680-1468

Instrument ID: GC/MS Volatiles - P
Lab File ID: p4341.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloromethane	11	U	11	20
Bromomethane	19	U	19	20
Vinyl chloride	18	U	18	20
Chloroethane	18	U	18	20
Methylene Chloride	8.8	U	8.8	20
Acetone	150	U	150	500
Carbon disulfide	15	U	15	20
1,1-Dichloroethene	19	U	19	20
1,1-Dichloroethane	11	U	11	20
cis-1,2-Dichloroethene	11	U	11	20
trans-1,2-Dichloroethene	16	U	16	20
n-Butylbenzene	7.6	U	7.6	20
Chloroform	10	U	10	20
1,2-Dichloroethane	5.6	U	5.6	20
sec-Butylbenzene	52	D	12	20
Methyl Ethyl Ketone	14	U	14	200
1,1,1-Trichloroethane	16	U	16	20
Carbon tetrachloride	18	U	18	20
Dichlorobromomethane	8.4	U	8.4	20
1,1,2,2-Tetrachloroethane	4.2	U	4.2	20
1,2-Dichloropropane	5.2	U	5.2	20
trans-1,3-Dichloropropene	7.2	U	7.2	20
Trichloroethene	14	U	14	20
Chlorodibromomethane	8.0	U	8.0	20
1,1,2-Trichloroethane	7.4	U	7.4	20
Benzene	1600	D	11	20
cis-1,3-Dichloropropene	8.2	U	8.2	20
Bromoform	7.2	U	7.2	20
2-Hexanone	7.8	U	7.8	200
methyl isobutyl ketone	9.0	U	9.0	200
Tetrachloroethene	15	U	15	20
Toluene	64	D	12	20
Chlorobenzene	8.2	U	8.2	20
Ethylbenzene	810	D	12	20

Client: Catlin Engineers and Scientists

Job Number: 680-552 1

Client Sample ID: **KMW-12**

Lab Sample ID: 680-552-9
Client Matrix: Water

Date Sampled: 02/17/2005 1015
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B
Preparation: 5030B
Dilution: 20
Date Analyzed: 02/22/2005 2036
Date Prepared: N/A

Analysis Batch: 680-1468

Instrument ID: GC/MS Volatiles - P
Lab File ID: p4341.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Styrene	8.4	U	8.4	20
Xylenes, Total	2000	D	32	40
Isopropylbenzene	180	D	13	20
Methyl tert-butyl ether	150	J D	9.0	200
Naphthalene	940	D	2.4	100
N-Propylbenzene	380	D	9.0	20
1,2,4-Trimethylbenzene	2100	D	8.8	20
1,3,5-Trimethylbenzene	510	D	9.8	20

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8	93		79 - 122
4-Bromofluorobenzene	96		77 - 120
Dibromofluoromethane	103		75 - 123

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **KMW-10**

Lab Sample ID: 680-552-10
Client Matrix: Water

Date Sampled: 02/17/2005 1030
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS

Method: 8260B
Analysis Batch: 680-1468
Instrument ID: GC/MS Volatiles - P
Preparation: 5030B
Lab File ID: p4327.d
Dilution: 1.0
Initial Weight/Volume: 5 mL
Date Analyzed: 02/22/2005 1718
Final Weight/Volume: 5 mL
Date Prepared: N/A

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloromethane	0.53	U	0.53	1.0
Bromomethane	0.93	U	0.93	1.0
Vinyl chloride	0.92	U	0.92	1.0
Chloroethane	0.89	U	0.89	1.0
Methylene Chloride	0.44	U	0.44	1.0
Acetone	7.3	U	7.3	25
Carbon disulfide	0.75	U	0.75	1.0
1,1-Dichloroethene	0.93	U	0.93	1.0
1,1-Dichloroethane	0.56	U	0.56	1.0
cis-1,2-Dichloroethene	0.55	U	0.55	1.0
trans-1,2-Dichloroethene	0.80	U	0.80	1.0
Chloroform	0.52	U	0.52	1.0
n-Butylbenzene	1.0		0.38	1.0
1,2-Dichloroethane	0.28	U	0.28	1.0
sec-Butylbenzene	0.62	J	0.60	1.0
Methyl Ethyl Ketone	0.72	U	0.72	10
1,1,1-Trichloroethane	0.79	U	0.79	1.0
Carbon tetrachloride	0.91	U	0.91	1.0
Dichlorobromomethane	0.42	U	0.42	1.0
1,1,2,2-Tetrachloroethane	0.21	U	0.21	1.0
1,2-Dichloropropane	0.26	U	0.26	1.0
trans-1,3-Dichloropropene	0.36	U	0.36	1.0
Trichloroethene	0.71	U	0.71	1.0
Chlorodibromomethane	0.40	U	0.40	1.0
1,1,2-Trichloroethane	0.37	U	0.37	1.0
Benzene	0.54	U	0.54	1.0
cis-1,3-Dichloropropene	0.41	U	0.41	1.0
Bromoform	0.36	U	0.36	1.0
2-Hexanone	0.39	U	0.39	10
methyl isobutyl ketone	0.45	U	0.45	10
Tetrachloroethene	0.75	U	0.75	1.0
Toluene	0.62	U	0.62	1.0
Chlorobenzene	0.41	U	0.41	1.0
Ethylbenzene	0.62	U	0.62	1.0

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **KMW-10**

Lab Sample ID: 680-552-10
Client Matrix: Water

Date Sampled: 02/17/2005 1030
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B
Analysis Batch: 680-1468
Instrument ID: GC/MS Volatiles - P
Preparation: 5030B
Lab File ID: p4327.d
Dilution: 1.0
Initial Weight/Volume: 5 mL
Date Analyzed: 02/22/2005 1718
Final Weight/Volume: 5 mL
Date Prepared: N/A

Styrene	0.42	U	0.42	1.0
Xylenes, Total	1.6	U	1.6	2.0
Isopropylbenzene	1.6		0.66	1.0
Methyl tert-butyl ether	0.45	U	0.45	10
Naphthalene	6.5		0.12	5.0
N-Propylbenzene	1.4		0.45	1.0
1,2,4-Trimethylbenzene	0.45	J	0.44	1.0
1,3,5-Trimethylbenzene	0.49	U	0.49	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8	108		79 - 122
4-Bromofluorobenzene	103		77 - 120
Dibromofluoromethane	107		75 - 123

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **KMW-8**

Lab Sample ID: 680-552-11
Client Matrix: Water

Date Sampled: 02/17/2005 1030
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS

Method: 8260B
Analysis Batch: 680-1556
Preparation: 5030B
Dilution: 20
Date Analyzed: 02/23/2005 1331
Date Prepared: N/A

Instrument ID: GC/MS Volatiles - P
Lab File ID: p4351.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloromethane	11	U	11	20
Bromomethane	19	U	19	20
Vinyl chloride	18	U	18	20
Chloroethane	18	U	18	20
Methylene Chloride	8.8	U	8.8	20
Acetone	150	U	150	500
Carbon disulfide	15	U	15	20
1,1-Dichloroethene	19	U	19	20
1,1-Dichloroethane	11	U	11	20
cis-1,2-Dichloroethene	11	U	11	20
trans-1,2-Dichloroethene	16	U	16	20
n-Butylbenzene	7.6	U	7.6	20
Chloroform	10	U	10	20
1,2-Dichloroethane	5.6	U	5.6	20
sec-Butylbenzene	14	J D	12	20
Methyl Ethyl Ketone	14	U	14	200
1,1,1-Trichloroethane	16	U	16	20
Carbon tetrachloride	18	U	18	20
Dichlorobromomethane	8.4	U	8.4	20
1,1,2,2-Tetrachloroethane	4.2	U	4.2	20
1,2-Dichloropropane	5.2	U	5.2	20
trans-1,3-Dichloropropene	7.2	U	7.2	20
Trichloroethene	14	U	14	20
Chlorodibromomethane	8.0	U	8.0	20
1,1,2-Trichloroethane	7.4	U	7.4	20
Benzene	620	D	11	20
cis-1,3-Dichloropropene	8.2	U	8.2	20
Bromoform	7.2	U	7.2	20
2-Hexanone	7.8	U	7.8	200
methyl isobutyl ketone	9.0	U	9.0	200
Tetrachloroethene	15	U	15	20
Toluene	82	D	12	20
Chlorobenzene	8.2	U	8.2	20
Ethylbenzene	480	D	12	20

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **KMW-8**

Lab Sample ID: 680-552-11
Client Matrix: Water

Date Sampled: 02/17/2005 1030
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B
Analysis Batch: 680-1556
Instrument ID: GC/MS Volatiles - P
Preparation: 5030B
Lab File ID: p4351.d
Dilution: 20
Initial Weight/Volume: 5 mL
Date Analyzed: 02/23/2005 1331
Final Weight/Volume: 5 mL
Date Prepared: N/A

Styrene	8.4	U	8.4	20
Xylenes, Total	2100	D	32	40
Isopropylbenzene	68	D	13	20
Methyl tert-butyl ether	330	D	9.0	200
Naphthalene	690	D	2.4	100
N-Propylbenzene	130	D	9.0	20
1,2,4-Trimethylbenzene	860	D	8.8	20
1,3,5-Trimethylbenzene	240	D	9.8	20

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8	98		79 - 122
4-Bromofluorobenzene	97		77 - 120
Dibromofluoromethane	104		75 - 123

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: KMW-6

Lab Sample ID: 680-552-12
Client Matrix: Water

Date Sampled: 02/17/2005 1045
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS

Method: 8260B
Analysis Batch: 680-1468
Preparation: 5030B
Dilution: 100
Date Analyzed: 02/22/2005 1815
Date Prepared: N/A

Instrument ID: GC/MS Volatiles - P
Lab File ID: p4331.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloromethane	53	U	53	100
Bromomethane	93	U	93	100
Vinyl chloride	92	U	92	100
Chloroethane	89	U	89	100
Methylene Chloride	44	U	44	100
Acetone	730	U	730	2500
Carbon disulfide	75	U	75	100
1,1-Dichloroethene	93	U	93	100
1,1-Dichloroethane	56	U	56	100
cis-1,2-Dichloroethene	55	U	55	100
trans-1,2-Dichloroethene	80	U	80	100
n-Butylbenzene	38	U	38	100
Chloroform	52	U	52	100
sec-Butylbenzene	60	U	60	100
1,2-Dichloroethane	28	U	28	100
Methyl Ethyl Ketone	72	U	72	1000
1,1,1-Trichloroethane	79	U	79	100
Carbon tetrachloride	91	U	91	100
Dichlorobromomethane	42	U	42	100
1,1,2,2-Tetrachloroethane	21	U	21	100
1,2-Dichloropropane	26	U	26	100
trans-1,3-Dichloropropene	36	U	36	100
Trichloroethene	71	U	71	100
Chlorodibromomethane	40	U	40	100
1,1,2-Trichloroethane	37	U	37	100
Benzene	54	U	54	100
cis-1,3-Dichloropropene	41	U	41	100
Bromoform	36	U	36	100
2-Hexanone	39	U	39	1000
methyl isobutyl ketone	45	U	45	1000
Tetrachloroethene	75	U	75	100
Toluene	62	U	62	100
Chlorobenzene	41	U	41	100
Ethylbenzene	62	U	62	100

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **KMW-6**

Lab Sample ID: 680-552-12
Client Matrix: Water

Date Sampled: 02/17/2005 1045
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B
Preparation: 5030B
Dilution: 100
Date Analyzed: 02/22/2005 1815
Date Prepared: N/A

Analysis Batch: 680-1468

Instrument ID: GC/MS Volatiles - P
Lab File ID: p4331.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Styrene	42	U	42	100
Xylenes, Total	8100	D	160	200
Isopropylbenzene	66	U	66	100
Methyl tert-butyl ether	54	J D	45	1000
Naphthalene	110	J D	12	500
N-Propylbenzene	45	U	45	100
1,2,4-Trimethylbenzene	77	J D	44	100
1,3,5-Trimethylbenzene	49	U	49	100

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8	103		79 - 122
4-Bromofluorobenzene	95		77 - 120
Dibromofluoromethane	100		75 - 123

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **KMW-7**

Lab Sample ID: 680-552-13
Client Matrix: Water

Date Sampled: 02/17/2005 1115
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS

Method: 8260B
Preparation: 5030B
Dilution: 1.0
Date Analyzed: 02/23/2005 1303
Date Prepared: N/A

Analysis Batch: 680-1556

Instrument ID: GC/MS Volatiles - P
Lab File ID: p4349.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloromethane	0.53	U	0.53	1.0
Bromomethane	0.93	U	0.93	1.0
Vinyl chloride	0.92	U	0.92	1.0
Chloroethane	0.89	U	0.89	1.0
Methylene Chloride	0.44	U	0.44	1.0
Acetone	7.3	U	7.3	25
Carbon disulfide	0.75	U	0.75	1.0
1,1-Dichloroethene	0.93	U	0.93	1.0
1,1-Dichloroethane	0.56	U	0.56	1.0
cis-1,2-Dichloroethene	0.55	U	0.55	1.0
trans-1,2-Dichloroethene	0.80	U	0.80	1.0
Chloroform	0.52	U	0.52	1.0
n-Butylbenzene	6.5		0.38	1.0
1,2-Dichloroethane	0.28	U	0.28	1.0
sec-Butylbenzene	2.4		0.60	1.0
Methyl Ethyl Ketone	0.72	U	0.72	10
1,1,1-Trichloroethane	0.79	U	0.79	1.0
Carbon tetrachloride	0.91	U	0.91	1.0
Dichlorobromomethane	0.42	U	0.42	1.0
1,1,2,2-Tetrachloroethane	0.21	U	0.21	1.0
1,2-Dichloropropane	0.26	U	0.26	1.0
trans-1,3-Dichloropropene	0.36	U	0.36	1.0
Trichloroethene	0.71	U	0.71	1.0
Chlorodibromomethane	0.40	U	0.40	1.0
1,1,2-Trichloroethane	0.37	U	0.37	1.0
Benzene	96		0.54	1.0
cis-1,3-Dichloropropene	0.41	U	0.41	1.0
Bromoform	0.36	U	0.36	1.0
2-Hexanone	0.39	U	0.39	10
methyl isobutyl ketone	0.45	U	0.45	10
Tetrachloroethene	0.75	U	0.75	1.0
Toluene	6.8		0.62	1.0
Chlorobenzene	0.41	U	0.41	1.0
Ethylbenzene	180		0.62	1.0

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **KMW-7**

Lab Sample ID: 680-552-13
Client Matrix: Water

Date Sampled: 02/17/2005 1115
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B
Analysis Batch: 680-1556
Instrument ID: GC/MS Volatiles - P
Preparation: 5030B
Lab File ID: p4349.d
Dilution: 1.0
Initial Weight/Volume: 5 mL
Date Analyzed: 02/23/2005 1303
Final Weight/Volume: 5 mL
Date Prepared: N/A

Styrene	0.42	U	0.42	1.0
Xylenes, Total	350		1.6	2.0
Isopropylbenzene	16		0.66	1.0
Methyl tert-butyl ether	0.45	U	0.45	10
Naphthalene	200		0.12	5.0
N-Propylbenzene	30		0.45	1.0
1,2,4-Trimethylbenzene	170		0.44	1.0
1,3,5-Trimethylbenzene	24		0.49	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8	90		79 - 122
4-Bromofluorobenzene	101		77 - 120
Dibromofluoromethane	105		75 - 123

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **KMW-11**

Lab Sample ID: 680-552-14
Client Matrix: Water

Date Sampled: 02/17/2005 1130
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS

Method: 8260B
Analysis Batch: 680-1469
Preparation: 5030B
Dilution: 1.0
Date Analyzed: 02/22/2005 1538
Date Prepared: N/A

Instrument ID: GC/MS Volatiles - P
Lab File ID: p4320.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloromethane	0.53	U	0.53	1.0
Bromomethane	0.93	U	0.93	1.0
Vinyl chloride	0.92	U	0.92	1.0
Chloroethane	0.89	U	0.89	1.0
Methylene Chloride	0.44	U	0.44	1.0
Acetone	7.3	U	7.3	25
Carbon disulfide	0.75	U	0.75	1.0
1,1-Dichloroethene	0.93	U	0.93	1.0
1,1-Dichloroethane	0.56	U	0.56	1.0
cis-1,2-Dichloroethene	0.55	U	0.55	1.0
trans-1,2-Dichloroethene	0.80	U	0.80	1.0
n-Butylbenzene	0.38	U	0.38	1.0
Chloroform	0.52	U	0.52	1.0
sec-Butylbenzene	0.60	U	0.60	1.0
1,2-Dichloroethane	0.28	U	0.28	1.0
Methyl Ethyl Ketone	0.72	U	0.72	10
1,1,1-Trichloroethane	0.79	U	0.79	1.0
Carbon tetrachloride	0.91	U	0.91	1.0
Dichlorobromomethane	0.42	U	0.42	1.0
1,1,2,2-Tetrachloroethane	0.21	U	0.21	1.0
1,2-Dichloropropane	0.26	U	0.26	1.0
trans-1,3-Dichloropropene	0.36	U	0.36	1.0
Trichloroethene	0.71	U	0.71	1.0
Chlorodibromomethane	0.40	U	0.40	1.0
1,1,2-Trichloroethane	0.37	U	0.37	1.0
Benzene	0.54	U	0.54	1.0
cis-1,3-Dichloropropene	0.41	U	0.41	1.0
Bromoform	0.36	U	0.36	1.0
2-Hexanone	0.39	U	0.39	10
methyl isobutyl ketone	0.45	U	0.45	10
Tetrachloroethene	0.75	U	0.75	1.0
Toluene	0.62	U	0.62	1.0
Chlorobenzene	0.41	U	0.41	1.0
Ethylbenzene	0.62	U	0.62	1.0

Client: Catlin Engineers and Scientists

Job Number: 680-552 1

Client Sample ID: **KMW-11**

Lab Sample ID: 680-552-14
Client Matrix: Water

Date Sampled: 02/17/2005 1130
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B
Analysis Batch: 680-1469
Instrument ID: GC/MS Volatiles - P
Preparation: 5030B
Lab File ID: p4320.d
Dilution: 1.0
Initial Weight/Volume: 5 mL
Date Analyzed: 02/22/2005 1538
Final Weight/Volume: 5 mL
Date Prepared: N/A

Styrene	0.42	U	0.42	1.0
Xylenes, Total	1.6	U	1.6	2.0
Isopropylbenzene	0.66	U	0.66	1.0
Methyl tert-butyl ether	0.45	U	0.45	10
Naphthalene	0.12	U	0.12	5.0
N-Propylbenzene	0.45	U	0.45	1.0
1,2,4-Trimethylbenzene	0.44	U	0.44	1.0
1,3,5-Trimethylbenzene	0.49	U	0.49	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8	104		79 - 122
4-Bromofluorobenzene	96		77 - 120
Dibromofluoromethane	101		75 - 123

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **KMW-1**

Lab Sample ID: 680-552-15
Client Matrix: Water

Date Sampled: 02/17/2005 1210
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS

Method: 8260B
Preparation: 5030B
Dilution: 1.0
Date Analyzed: 02/22/2005 1606
Date Prepared: N/A

Analysis Batch: 680-1469

Instrument ID: GC/MS Volatiles - P
Lab File ID: p4322.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloromethane	0.53	U	0.53	1.0
Bromomethane	0.93	U	0.93	1.0
Vinyl chloride	0.92	U	0.92	1.0
Chloroethane	0.89	U	0.89	1.0
Methylene Chloride	0.44	U	0.44	1.0
Acetone	7.3	U	7.3	25
Carbon disulfide	0.75	U	0.75	1.0
1,1-Dichloroethene	0.93	U	0.93	1.0
1,1-Dichloroethane	0.56	U	0.56	1.0
cis-1,2-Dichloroethene	0.55	U	0.55	1.0
trans-1,2-Dichloroethene	0.80	U	0.80	1.0
n-Butylbenzene	0.38	U	0.38	1.0
Chloroform	0.52	U	0.52	1.0
1,2-Dichloroethane	0.28	U	0.28	1.0
sec-Butylbenzene	3.2		0.60	1.0
Methyl Ethyl Ketone	0.72	U	0.72	10
1,1,1-Trichloroethane	0.79	U	0.79	1.0
Carbon tetrachloride	0.91	U	0.91	1.0
Dichlorobromomethane	0.42	U	0.42	1.0
1,1,2,2-Tetrachloroethane	1.3		0.21	1.0
1,2-Dichloropropane	0.26	U	0.26	1.0
trans-1,3-Dichloropropene	0.36	U	0.36	1.0
Trichloroethene	0.71	U	0.71	1.0
Chlorodibromomethane	0.40	U	0.40	1.0
1,1,2-Trichloroethane	0.37	U	0.37	1.0
Benzene	0.54	U	0.54	1.0
cis-1,3-Dichloropropene	0.41	U	0.41	1.0
Bromoform	0.36	U	0.36	1.0
2-Hexanone	0.39	U	0.39	10
methyl isobutyl ketone	0.45	U	0.45	10
Tetrachloroethene	0.75	U	0.75	1.0
Toluene	0.62	U	0.62	1.0
Chlorobenzene	0.41	U	0.41	1.0
Ethylbenzene	0.62	U	0.62	1.0

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **KMW-1**

Lab Sample ID: 680-552-15
Client Matrix: Water

Date Sampled: 02/17/2005 1210
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B
Analysis Batch: 680-1469
Instrument ID: GC/MS Volatiles - P
Preparation: 5030B
Lab File ID: p4322.d
Dilution: 1.0
Initial Weight/Volume: 5 mL
Date Analyzed: 02/22/2005 1606
Final Weight/Volume: 5 mL
Date Prepared: N/A

Styrene	0.42	U	0.42	1.0
Xylenes, Total	1.6	U	1.6	2.0
Isopropylbenzene	0.66	U	0.66	1.0
Methyl tert-butyl ether	0.45	U	0.45	10
Naphthalene	0.12	U	0.12	5.0
N-Propylbenzene	0.45	U	0.45	1.0
1,2,4-Trimethylbenzene	69		0.44	1.0
1,3,5-Trimethylbenzene	100		0.49	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8	107		79 - 122
4-Bromofluorobenzene	93		77 - 120
Dibromofluoromethane	102		75 - 123

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **KMW-2**

Lab Sample ID: 680-552-16
Client Matrix: Water

Date Sampled: 02/17/2005 1220
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS

Method: 8260B
Preparation: 5030B
Dilution: 2.0
Date Analyzed: 02/22/2005 1857
Date Prepared: N/A

Analysis Batch: 680-1469

Instrument ID: GC/MS Volatiles - P
Lab File ID: p4334.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloromethane	1.1	U	1.1	2.0
Bromomethane	1.9	U	1.9	2.0
Vinyl chloride	1.8	U	1.8	2.0
Chloroethane	1.8	U	1.8	2.0
Methylene Chloride	0.88	U	0.88	2.0
Acetone	15	U	15	50
Carbon disulfide	1.5	U	1.5	2.0
1,1-Dichloroethene	1.9	U	1.9	2.0
1,1-Dichloroethane	1.1	U	1.1	2.0
cis-1,2-Dichloroethene	1.1	U	1.1	2.0
trans-1,2-Dichloroethene	1.6	U	1.6	2.0
Chloroform	1.0	U	1.0	2.0
n-Butylbenzene	1.1	J D	0.76	2.0
1,2-Dichloroethane	0.56	U	0.56	2.0
sec-Butylbenzene	1.2	U	1.2	2.0
Methyl Ethyl Ketone	1.4	U	1.4	20
1,1,1-Trichloroethane	1.6	U	1.6	2.0
Carbon tetrachloride	1.8	U	1.8	2.0
Dichlorobromomethane	0.84	U	0.84	2.0
1,1,2,2-Tetrachloroethane	0.42	U	0.42	2.0
1,2-Dichloropropane	0.52	U	0.52	2.0
trans-1,3-Dichloropropene	0.72	U	0.72	2.0
Trichloroethene	1.4	U	1.4	2.0
Chlorodibromomethane	0.80	U	0.80	2.0
1,1,2-Trichloroethane	0.74	U	0.74	2.0
Benzene	1.1	U	1.1	2.0
cis-1,3-Dichloropropene	0.82	U	0.82	2.0
Bromoform	0.72	U	0.72	2.0
2-Hexanone	0.78	U	0.78	20
methyl isobutyl ketone	0.90	U	0.90	20
Tetrachloroethene	1.5	U	1.5	2.0
Toluene	1.2	U	1.2	2.0
Chlorobenzene	0.82	U	0.82	2.0
Ethylbenzene	1.2	U	1.2	2.0

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **KMW-2**

Lab Sample ID: 680-552-16
Client Matrix: Water

Date Sampled: 02/17/2005 1220
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B
Analysis Batch: 680-1469
Instrument ID: GC/MS Volatiles - P
Preparation: 5030B
Lab File ID: p4334.d
Dilution: 2.0
Initial Weight/Volume: 5 mL
Date Analyzed: 02/22/2005 1857
Final Weight/Volume: 5 mL
Date Prepared: N/A

Styrene	0.84	U	0.84	2.0
Xylenes, Total	580	D	3.2	4.0
Isopropylbenzene	1.3	U	1.3	2.0
Methyl tert-butyl ether	0.90	U	0.90	20
Naphthalene	6.7	J D	0.24	10
N-Propylbenzene	1.4	J D	0.90	2.0
1,2,4-Trimethylbenzene	3.6	D	0.88	2.0
1,3,5-Trimethylbenzene	1.8	J D	0.98	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8	105		79 - 122
4-Bromofluorobenzene	94		77 - 120
Dibromofluoromethane	105		75 - 123

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: KMW-4

Lab Sample ID: 680-552-17
Client Matrix: Water

Date Sampled: 02/17/2005 1225
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS

Method: 8260B
Preparation: 5030B
Dilution: 1.0
Date Analyzed: 02/22/2005 1925
Date Prepared: N/A

Analysis Batch: 680-1469

Instrument ID: GC/MS Volatiles - P
Lab File ID: p4336.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloromethane	0.53	U	0.53	1.0
Bromomethane	0.93	U	0.93	1.0
Vinyl chloride	0.92	U	0.92	1.0
Chloroethane	0.89	U	0.89	1.0
Methylene Chloride	0.44	U	0.44	1.0
Acetone	7.3	U	7.3	25
Carbon disulfide	0.75	U	0.75	1.0
1,1-Dichloroethene	0.93	U	0.93	1.0
1,1-Dichloroethane	0.56	U	0.56	1.0
cis-1,2-Dichloroethene	0.55	U	0.55	1.0
trans-1,2-Dichloroethene	0.80	U	0.80	1.0
n-Butylbenzene	0.38	U	0.38	1.0
Chloroform	0.52	U	0.52	1.0
sec-Butylbenzene	0.60	U	0.60	1.0
1,2-Dichloroethane	0.28	U	0.28	1.0
Methyl Ethyl Ketone	0.72	U	0.72	10
1,1,1-Trichloroethane	0.79	U	0.79	1.0
Carbon tetrachloride	0.91	U	0.91	1.0
Dichlorobromomethane	0.42	U	0.42	1.0
1,1,2,2-Tetrachloroethane	0.21	U	0.21	1.0
1,2-Dichloropropane	0.26	U	0.26	1.0
trans-1,3-Dichloropropene	0.36	U	0.36	1.0
Trichloroethene	0.71	U	0.71	1.0
Chlorodibromomethane	0.40	U	0.40	1.0
1,1,2-Trichloroethane	0.37	U	0.37	1.0
Benzene	0.54	U	0.54	1.0
cis-1,3-Dichloropropene	0.41	U	0.41	1.0
Bromoform	0.36	U	0.36	1.0
2-Hexanone	0.39	U	0.39	10
methyl isobutyl ketone	0.45	U	0.45	10
Tetrachloroethene	0.75	U	0.75	1.0
Toluene	0.62	U	0.62	1.0
Chlorobenzene	0.41	U	0.41	1.0
Ethylbenzene	0.62	U	0.62	1.0

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **KMW-4**

Lab Sample ID: 680-552-17
Client Matrix: Water

Date Sampled: 02/17/2005 1225
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B
Analysis Batch: 680-1469
Instrument ID: GC/MS Volatiles - P
Preparation: 5030B
Lab File ID: p4336.d
Dilution: 1.0
Initial Weight/Volume: 5 mL
Date Analyzed: 02/22/2005 1925
Final Weight/Volume: 5 mL
Date Prepared: N/A

Styrene	0.42	U	0.42	1.0
Xylenes, Total	71		1.6	2.0
Isopropylbenzene	1.2		0.66	1.0
Methyl tert-butyl ether	6.0	J	0.45	10
Naphthalene	1.2	J	0.12	5.0
N-Propylbenzene	1.2		0.45	1.0
1,2,4-Trimethylbenzene	10		0.44	1.0
1,3,5-Trimethylbenzene	1.2		0.49	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8	106		79 - 122
4-Bromofluorobenzene	94		77 - 120
Dibromofluoromethane	102		75 - 123

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: KMW-3

Lab Sample ID: 680-552-18
Client Matrix: Water

Date Sampled: 02/17/2005 1235
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS

Method: 8260B
Analysis Batch: 680-1469
Instrument ID: GC/MS Volatiles - P
Preparation: 5030B
Lab File ID: p4328.d
Dilution: 1.0
Initial Weight/Volume: 5 mL
Date Analyzed: 02/22/2005 1732
Final Weight/Volume: 5 mL
Date Prepared: N/A

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloromethane	0.53	U	0.53	1.0
Bromomethane	0.93	U	0.93	1.0
Vinyl chloride	0.92	U	0.92	1.0
Chloroethane	0.89	U	0.89	1.0
Methylene Chloride	0.44	U	0.44	1.0
Acetone	7.3	U	7.3	25
Carbon disulfide	0.75	U	0.75	1.0
1,1-Dichloroethene	0.93	U	0.93	1.0
1,1-Dichloroethane	0.56	U	0.56	1.0
cis-1,2-Dichloroethene	0.55	U	0.55	1.0
trans-1,2-Dichloroethene	0.80	U	0.80	1.0
n-Butylbenzene	0.38	U	0.38	1.0
Chloroform	0.52	U	0.52	1.0
sec-Butylbenzene	0.60	U	0.60	1.0
1,2-Dichloroethane	0.28	U	0.28	1.0
Methyl Ethyl Ketone	8.9	J	0.72	10
1,1,1-Trichloroethane	0.79	U	0.79	1.0
Carbon tetrachloride	0.91	U	0.91	1.0
Dichlorobromomethane	0.42	U	0.42	1.0
1,1,2,2-Tetrachloroethane	0.21	U	0.21	1.0
1,2-Dichloropropane	0.26	U	0.26	1.0
trans-1,3-Dichloropropene	0.36	U	0.36	1.0
Trichloroethene	0.71	U	0.71	1.0
Chlorodibromomethane	0.40	U	0.40	1.0
1,1,2-Trichloroethane	0.37	U	0.37	1.0
Benzene	3.8		0.54	1.0
cis-1,3-Dichloropropene	0.41	U	0.41	1.0
Bromoform	0.36	U	0.36	1.0
2-Hexanone	0.39	U	0.39	10
methyl isobutyl ketone	0.45	U	0.45	10
Tetrachloroethene	0.75	U	0.75	1.0
Toluene	1.3		0.62	1.0
Chlorobenzene	0.41	U	0.41	1.0
Ethylbenzene	82		0.62	1.0

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **KMW-3**

Lab Sample ID: 680-552-18
Client Matrix: Water

Date Sampled: 02/17/2005 1235
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B
Analysis Batch: 680-1469
Instrument ID: GC/MS Volatiles - P
Preparation: 5030B
Lab File ID: p4328.d
Dilution: 1.0
Initial Weight/Volume: 5 mL
Date Analyzed: 02/22/2005 1732
Final Weight/Volume: 5 mL
Date Prepared: N/A

Styrene	0.42	U	0.42	1.0
Xylenes, Total	110		1.6	2.0
Isopropylbenzene	39		0.66	1.0
Methyl tert-butyl ether	0.45	U	0.45	10
Naphthalene	61		0.12	5.0
N-Propylbenzene	95		0.45	1.0
1,2,4-Trimethylbenzene	640		0.44	1.0
1,3,5-Trimethylbenzene	93		0.49	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8	107		79 - 122
4-Bromofluorobenzene	94		77 - 120
Dibromofluoromethane	102		75 - 123

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: LOADING RACK-PURGE H2O

Lab Sample ID: 680-552-19
Client Matrix: Water

Date Sampled: 02/17/2005 1250
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS

Method: 8260B
Analysis Batch: 680-1469
Preparation: 5030B
Dilution: 100
Date Analyzed: 02/22/2005 1801
Date Prepared: N/A

Instrument ID: GC/MS Volatiles - P
Lab File ID: p4330.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloromethane	53	U	53	100
Bromomethane	93	U	93	100
Vinyl chloride	92	U	92	100
Chloroethane	89	U	89	100
Methylene Chloride	44	U	44	100
Acetone	730	U	730	2500
Carbon disulfide	75	U	75	100
1,1-Dichloroethene	93	U	93	100
1,1-Dichloroethane	56	U	56	100
cis-1,2-Dichloroethene	55	U	55	100
trans-1,2-Dichloroethene	80	U	80	100
n-Butylbenzene	38	U	38	100
Chloroform	52	U	52	100
sec-Butylbenzene	60	U	60	100
1,2-Dichloroethane	28	U	28	100
Methyl Ethyl Ketone	72	U	72	1000
1,1,1-Trichloroethane	79	U	79	100
Carbon tetrachloride	91	U	91	100
Dichlorobromomethane	42	U	42	100
1,1,2,2-Tetrachloroethane	21	U	21	100
1,2-Dichloropropane	26	U	26	100
trans-1,3-Dichloropropene	36	U	36	100
Trichloroethene	71	U	71	100
Chlorodibromomethane	40	U	40	100
1,1,2-Trichloroethane	37	U	37	100
Benzene	110	D	54	100
cis-1,3-Dichloropropene	41	U	41	100
Bromoform	36	U	36	100
2-Hexanone	39	U	39	1000
methyl isobutyl ketone	45	U	45	1000
Tetrachloroethene	75	U	75	100
Toluene	62	U	62	100
Chlorobenzene	41	U	41	100
Ethylbenzene	62	U	62	100

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **LOADING RACK-PURGE H2O**

Lab Sample ID: 680-552-19
Client Matrix: Water

Date Sampled: 02/17/2005 1250
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B
Analysis Batch: 680-1469
Instrument ID: GC/MS Volatiles - P
Preparation: 5030B
Lab File ID: p4330.d
Dilution: 100
Initial Weight/Volume: 5 mL
Date Analyzed: 02/22/2005 1801
Final Weight/Volume: 5 mL
Date Prepared: N/A

Styrene	42	U	42	100
Xylenes, Total	16000	D	160	200
Isopropylbenzene	66	U	66	100
Methyl tert-butyl ether	82	J D	45	1000
Naphthalene	140	J D	12	500
N-Propylbenzene	45	U	45	100
1,2,4-Trimethylbenzene	190	D	44	100
1,3,5-Trimethylbenzene	50	J D	49	100

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8	105		79 - 122
4-Bromofluorobenzene	96		77 - 120
Dibromofluoromethane	105		75 - 123

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: **KMW-5**

Lab Sample ID: 680-552-20
Client Matrix: Water

Date Sampled: 02/17/2005 1200
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS

Method: 8260B
Preparation: 5030B
Dilution: 100
Date Analyzed: 02/22/2005 1829
Date Prepared: N/A

Analysis Batch: 680-1469

Instrument ID: GC/MS Volatiles - P
Lab File ID: p4332.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloromethane	53	U	53	100
Bromomethane	93	U	93	100
Vinyl chloride	92	U	92	100
Chloroethane	89	U	89	100
Methylene Chloride	44	U	44	100
Acetone	730	U	730	2500
Carbon disulfide	75	U	75	100
1,1-Dichloroethene	93	U	93	100
1,1-Dichloroethane	56	U	56	100
cis-1,2-Dichloroethene	55	U	55	100
trans-1,2-Dichloroethene	80	U	80	100
n-Butylbenzene	38	U	38	100
Chloroform	52	U	52	100
sec-Butylbenzene	60	U	60	100
1,2-Dichloroethane	28	U	28	100
Methyl Ethyl Ketone	72	U	72	1000
1,1,1-Trichloroethane	79	U	79	100
Carbon tetrachloride	91	U	91	100
Dichlorobromomethane	42	U	42	100
1,1,2,2-Tetrachloroethane	21	U	21	100
1,2-Dichloropropane	26	U	26	100
trans-1,3-Dichloropropene	36	U	36	100
Trichloroethene	71	U	71	100
Chlorodibromomethane	40	U	40	100
1,1,2-Trichloroethane	37	U	37	100
Benzene	54	U	54	100
cis-1,3-Dichloropropene	41	U	41	100
Bromoform	36	U	36	100
2-Hexanone	39	U	39	1000
methyl isobutyl ketone	45	U	45	1000
Tetrachloroethene	75	U	75	100
Toluene	62	U	62	100
Chlorobenzene	41	U	41	100
Ethylbenzene	62	U	62	100

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Client Sample ID: KMW-5

Lab Sample ID: 680-552-20
Client Matrix: Water

Date Sampled: 02/17/2005 1200
Date Received: 02/18/2005 1000

8260B Volatile Organic Compounds by GC/MS (Continued)

Method: 8260B
Analysis Batch: 680-1469
Instrument ID: GC/MS Volatiles - P
Preparation: 5030B
Lab File ID: p4332.d
Dilution: 100
Initial Weight/Volume: 5 mL
Date Analyzed: 02/22/2005 1829
Final Weight/Volume: 5 mL
Date Prepared: N/A

Styrene	42	U	42	100
Xylenes, Total	46000	D	160	200
Isopropylbenzene	66	U	66	100
Methyl tert-butyl ether	45	U	45	1000
Naphthalene	12	U	12	500
N-Propylbenzene	45	U	45	100
1,2,4-Trimethylbenzene	44	U	44	100
1,3,5-Trimethylbenzene	49	U	49	100

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8	105		79 - 122
4-Bromofluorobenzene	91		77 - 120
Dibromofluoromethane	101		75 - 123

DATA REPORTING QUALIFIERS

Client: Catlin Engineers and Scientists

Job Number: 680-552 1

Lab Section	Qualifier	Description
GC/MS VOA		
	U	Analyte was not detected at or above the reporting limit.
	*	LCS, LCSD, MS, MSD, MD, or Surrogate exceeds the control limits
	E	Result exceeded calibration range, secondary dilution required.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
	D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution will be flagged with a

QUALITY CONTROL RESULTS

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

Job Description: FHR North Loading Rack

QC Association Summary

Lab Sample ID	Client Sample ID	Client Matrix	Method	Prep Batch
GC/MS VOA				
Analysis Batch:680-1468				
LCS 680-1468/14	Lab Control Spike	Water	8260B	
MB 680-1468/15	Method Blank	Water	8260B	
680-552-A-1	AMW-2	Water	8260B	
680-552-A-2	AMW-1	Water	8260B	
680-552-A-3	AMW-3	Water	8260B	
680-552-A-4	AMW-5	Water	8260B	
680-552-A-5	AMW-6	Water	8260B	
680-552-A-6	PURGE H2O-APEX	Water	8260B	
680-552-A-7	KMW-14	Water	8260B	
680-552-A-8	KMW-13	Water	8260B	
680-552-A-9	KMW-12	Water	8260B	
680-552-A-10	KMW-10	Water	8260B	
680-552-A-12	KMW-6	Water	8260B	
Analysis Batch:680-1469				
LCS 680-1469/13	Lab Control Spike	Water	8260B	
MB 680-1469/14	Method Blank	Water	8260B	
680-552-A-14	KMW-11	Water	8260B	
680-552-A-15	KMW-1	Water	8260B	
680-552-A-16	KMW-2	Water	8260B	
680-552-A-17	KMW-4	Water	8260B	
680-552-A-18	KMW-3	Water	8260B	
680-552-A-19	LOADING RACK-PURGE H2O	Water	8260B	
680-552-A-20	KMW-5	Water	8260B	
Analysis Batch:680-1556				
LCS 680-1556/14	Lab Control Spike	Water	8260B	
MB 680-1556/15	Method Blank	Water	8260B	
680-552-B-11	KMW-8	Water	8260B	
680-552-B-13	KMW-7	Water	8260B	

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

8260B Volatile Organic Compounds by GC/MS

Method Blank - Batch: 680-1468

Lab ID: MB 680-1468/15
Matrix: Water

Date Analyzed: 02/22/2005 1228
Units: ug/L

Dilution: 1.0

Analyte	Result	Qualifier	MDL	RL
Chloromethane	0.53	U	0.53	1.0
Bromomethane	0.93	U	0.93	1.0
Vinyl chloride	0.92	U	0.92	1.0
Chloroethane	0.89	U	0.89	1.0
Methylene Chloride	0.44	U	0.44	1.0
Acetone	7.3	U	7.3	25
Carbon disulfide	0.75	U	0.75	1.0
1,1-Dichloroethene	0.93	U	0.93	1.0
1,1-Dichloroethane	0.56	U	0.56	1.0
cis-1,2-Dichloroethene	0.55	U	0.55	1.0
trans-1,2-Dichloroethene	0.80	U	0.80	1.0
n-Butylbenzene	0.38	U	0.38	1.0
Chloroform	0.52	U	0.52	1.0
sec-Butylbenzene	0.60	U	0.60	1.0
1,2-Dichloroethane	0.28	U	0.28	1.0
Methyl Ethyl Ketone	0.72	U	0.72	10
1,1,1-Trichloroethane	0.79	U	0.79	1.0
Carbon tetrachloride	0.91	U	0.91	1.0
Dichlorobromomethane	0.42	U	0.42	1.0
1,1,2,2-Tetrachloroethane	0.21	U	0.21	1.0
1,2-Dichloropropane	0.26	U	0.26	1.0
trans-1,3-Dichloropropene	0.36	U	0.36	1.0
Trichloroethene	0.71	U	0.71	1.0
Chlorodibromomethane	0.40	U	0.40	1.0
1,1,2-Trichloroethane	0.37	U	0.37	1.0
Benzene	0.54	U	0.54	1.0
cis-1,3-Dichloropropene	0.41	U	0.41	1.0
Bromoform	0.36	U	0.36	1.0
2-Hexanone	0.39	U	0.39	10
methyl isobutyl ketone	0.45	U	0.45	10
Tetrachloroethene	0.75	U	0.75	1.0
Toluene	0.62	U	0.62	1.0
Chlorobenzene	0.41	U	0.41	1.0
Ethylbenzene	0.62	U	0.62	1.0
Styrene	0.42	U	0.42	1.0
Xylenes, Total	1.6	U	1.6	2.0
Isopropylbenzene	0.66	U	0.66	1.0
Methyl tert-butyl ether	0.45	U	0.45	10
Naphthalene	0.61	J	0.12	5.0
N-Propylbenzene	0.45	U	0.45	1.0
1,2,4-Trimethylbenzene	0.44	U	0.44	1.0
1,3,5-Trimethylbenzene	0.49	U	0.49	1.0

Calculations are performed before rounding to avoid round-off errors in calculated results

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

8260B Volatile Organic Compounds by GC/MS

Laboratory Control Sample - Batch: 680-1468

Lab ID: LCS 680-1468/14
Matrix: Water

Date Analyzed: 02/22/2005 1102
Units: ug/L

Dilution: 1.0

Analyte	Spike Amount	Result	% Rec.	Recovery Limits	Qualifier
Chloromethane	50.0	40	79	51 - 133	
Bromomethane	50.0	44	89	21 - 176	
Vinyl chloride	50.0	47	93	59 - 136	
Chloroethane	50.0	50	100	40 - 171	
Methylene Chloride	50.0	52	105	67 - 128	
Acetone	100	180	175	20 - 183	
Carbon disulfide	50.0	49	98	60 - 130	
1,1-Dichloroethene	50.0	50	100	64 - 132	
1,1-Dichloroethane	50.0	47	94	70 - 127	
cis-1,2-Dichloroethene	50.0	47	93	69 - 126	
trans-1,2-Dichloroethene	50.0	45	90	67 - 130	
Chloroform	50.0	47	94	74 - 124	
n-Butylbenzene	50.0	53	107	47 - 130	
1,2-Dichloroethane	50.0	53	106	68 - 130	
sec-Butylbenzene	50.0	52	105	53 - 125	
Methyl Ethyl Ketone	100	140	139	51 - 142	
1,1,1-Trichloroethane	50.0	52	103	70 - 132	
Carbon tetrachloride	50.0	52	103	64 - 137	
Dichlorobromomethane	50.0	52	103	74 - 128	
1,1,2,2-Tetrachloroethane	50.0	58	115	71 - 127	
1,2-Dichloropropane	50.0	51	103	74 - 123	
trans-1,3-Dichloropropene	50.0	53	105	75 - 126	
Trichloroethene	50.0	50	101	75 - 122	
Chlorodibromomethane	50.0	56	113	75 - 126	
1,1,2-Trichloroethane	50.0	51	101	75 - 122	
Benzene	50.0	49	99	74 - 122	
cis-1,3-Dichloropropene	50.0	52	103	76 - 126	
Bromoform	50.0	63	125	64 - 132	
2-Hexanone	100	140	136	58 - 139	
methyl isobutyl ketone	100	110	115	62 - 130	
Tetrachloroethene	50.0	54	107	70 - 133	
Toluene	50.0	46	92	75 - 122	
Chlorobenzene	50.0	50	99	75 - 123	
Ethylbenzene	50.0	48	96	77 - 123	
Styrene	50.0	50	100	75 - 125	
Xylenes, Total	150	140	96	77 - 121	
Isopropylbenzene	50.0	49	98	62 - 122	
Methyl tert-butyl ether	100	96	96	70 - 130	
Naphthalene	50.0	53	107	58 - 143	
N-Propylbenzene	50.0	50	100	53 - 125	
1,2,4-Trimethylbenzene	50.0	51	101	53 - 142	
1,3,5-Trimethylbenzene	50.0	50	101	50 - 127	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Catlin Engineers and Scientists

Job Number: 680-552 1

8260B Volatile Organic Compounds by GC/MS

Method Blank - Batch: 680-1469

Lab ID: MB 680-1469/14
Matrix: Water

Date Analyzed: 02/22/2005 1242
Units: ug/L

Dilution: 1 0

Analyte	Result	Qualifier	MDL	RL
Chloromethane	0.53	U	0.53	1.0
Bromomethane	0.93	U	0.93	1.0
Vinyl chloride	0.92	U	0.92	1 0
Chloroethane	0.89	U	0.89	1.0
Methylene Chloride	0.44	U	0.44	1.0
Acetone	7.3	U	7.3	25
Carbon disulfide	0.75	U	0.75	1.0
1,1-Dichloroethene	0.93	U	0.93	1.0
1,1-Dichloroethane	0.56	U	0.56	1.0
cis-1,2-Dichloroethene	0.55	U	0.55	1.0
trans-1,2-Dichloroethene	0.80	U	0.80	1.0
n-Butylbenzene	0.38	U	0.38	1.0
Chloroform	0.52	U	0.52	1.0
sec-Butylbenzene	0.60	U	0.60	1.0
1,2-Dichloroethane	0.28	U	0.28	1.0
Methyl Ethyl Ketone	0.72	U	0.72	10
1,1,1-Trichloroethane	0.79	U	0.79	1.0
Carbon tetrachloride	0.91	U	0.91	1.0
Dichlorobromomethane	0.42	U	0.42	1 0
1,1,2,2-Tetrachloroethane	0.21	U	0.21	1 0
1,2-Dichloropropane	0.26	U	0.26	1.0
trans-1,3-Dichloropropene	0.36	U	0.36	1.0
Trichloroethene	0.71	U	0.71	1.0
Chlorodibromomethane	0.40	U	0.40	1.0
1,1,2-Trichloroethane	0.37	U	0.37	1.0
Benzene	0.54	U	0.54	1.0
cis-1,3-Dichloropropene	0.41	U	0.41	1 0
Bromoform	0.36	U	0 36	1.0
2-Hexanone	0.39	U	0.39	10
methyl isobutyl ketone	0.45	U	0.45	10
Tetrachloroethene	0.75	U	0.75	1.0
Toluene	0.62	U	0.62	1.0
Chlorobenzene	0.41	U	0.41	1.0
Ethylbenzene	0.62	U	0.62	1.0
Styrene	0 42	U	0.42	1 0
Xylenes, Total	1.6	U	1.6	2.0
Isopropylbenzene	0.66	U	0.66	1.0
Methyl tert-butyl ether	0.45	U	0.45	10
Naphthalene	0.12	U	0.12	5.0
N-Propylbenzene	0.45	U	0.45	1 0
1,2,4-Trimethylbenzene	0.44	U	0.44	1.0
1,3,5-Trimethylbenzene	0.49	U	0.49	1.0

Calculations are performed before rounding to avoid round-off errors in calculated results

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

8260B Volatile Organic Compounds by GC/MS

Laboratory Control Sample - Batch: 680-1469

Lab ID: LCS 680-1469/13
Matrix: Water

Date Analyzed: 02/22/2005 1116
Units: ug/L

Dilution: 1.0

Analyte	Spike Amount	Result	% Rec.	Recovery Limits	Qualifier
Chloromethane	50.0	37	74	51 - 133	
Bromomethane	50.0	42	83	21 - 176	
Vinyl chloride	50.0	40	81	59 - 136	
Chloroethane	50.0	40	81	40 - 171	
Methylene Chloride	50.0	45	91	67 - 128	
Acetone	100	97	97	20 - 183	
Carbon disulfide	50.0	42	84	60 - 130	
1,1-Dichloroethene	50.0	45	90	64 - 132	
1,1-Dichloroethane	50.0	46	93	70 - 127	
cis-1,2-Dichloroethene	50.0	48	96	69 - 126	
trans-1,2-Dichloroethene	50.0	44	87	67 - 130	
Chloroform	50.0	47	95	74 - 124	
n-Butylbenzene	50.0	52	104	47 - 130	
1,2-Dichloroethane	50.0	52	104	68 - 130	
sec-Butylbenzene	50.0	49	99	53 - 125	
Methyl Ethyl Ketone	100	110	113	51 - 142	
1,1,1-Trichloroethane	50.0	52	104	70 - 132	
Carbon tetrachloride	50.0	50	101	64 - 137	
Dichlorobromomethane	50.0	53	107	74 - 128	
1,1,2,2-Tetrachloroethane	50.0	51	103	71 - 127	
1,2-Dichloropropane	50.0	51	102	74 - 123	
trans-1,3-Dichloropropene	50.0	54	107	75 - 126	
Trichloroethene	50.0	50	100	75 - 122	
Chlorodibromomethane	50.0	54	108	75 - 126	
1,1,2-Trichloroethane	50.0	52	104	75 - 122	
Benzene	50.0	49	98	74 - 122	
cis-1,3-Dichloropropene	50.0	51	102	76 - 126	
Bromoform	50.0	50	100	64 - 132	
2-Hexanone	100	110	113	58 - 139	
methyl isobutyl ketone	100	120	116	62 - 130	
Tetrachloroethene	50.0	48	96	70 - 133	
Toluene	50.0	49	98	75 - 122	
Chlorobenzene	50.0	49	98	75 - 123	
Ethylbenzene	50.0	50	99	77 - 123	
Styrene	50.0	50	101	75 - 125	
Xylenes, Total	150	150	98	77 - 121	
Isopropylbenzene	50.0	49	98	62 - 122	
Methyl tert-butyl ether	100	97	97	70 - 130	
Naphthalene	50.0	59	118	58 - 143	
N-Propylbenzene	50.0	50	100	53 - 125	
1,2,4-Trimethylbenzene	50.0	52	105	53 - 142	
1,3,5-Trimethylbenzene	50.0	52	105	50 - 127	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

8260B Volatile Organic Compounds by GC/MS

Method Blank - Batch: 680-1556

Lab ID: MB 680-1556/15
Matrix: Water

Date Analyzed: 02/23/2005 1231
Units: ug/L

Dilution: 1.0

Analyte	Result	Qualifier	MDL	RL
Chloromethane	0.53	U	0.53	1.0
Bromomethane	0.93	U	0.93	1.0
Vinyl chloride	0.92	U	0.92	1.0
Chloroethane	0.89	U	0.89	1.0
Methylene Chloride	0.44	U	0.44	1.0
Acetone	7.3	U	7.3	25
Carbon disulfide	0.75	U	0.75	1.0
1,1-Dichloroethene	0.93	U	0.93	1.0
1,1-Dichloroethane	0.56	U	0.56	1.0
cis-1,2-Dichloroethene	0.55	U	0.55	1.0
trans-1,2-Dichloroethene	0.80	U	0.80	1.0
n-Butylbenzene	0.38	U	0.38	1.0
Chloroform	0.52	U	0.52	1.0
sec-Butylbenzene	0.60	U	0.60	1.0
1,2-Dichloroethane	0.28	U	0.28	1.0
Methyl Ethyl Ketone	0.72	U	0.72	10
1,1,1-Trichloroethane	0.79	U	0.79	1.0
Carbon tetrachloride	0.91	U	0.91	1.0
Dichlorobromomethane	0.42	U	0.42	1.0
1,1,2,2-Tetrachloroethane	0.21	U	0.21	1.0
1,2-Dichloropropane	0.26	U	0.26	1.0
trans-1,3-Dichloropropene	0.36	U	0.36	1.0
Trichloroethene	0.71	U	0.71	1.0
Chlorodibromomethane	0.40	U	0.40	1.0
1,1,2-Trichloroethane	0.37	U	0.37	1.0
Benzene	0.54	U	0.54	1.0
cis-1,3-Dichloropropene	0.41	U	0.41	1.0
Bromoform	0.36	U	0.36	1.0
2-Hexanone	0.39	U	0.39	10
methyl isobutyl ketone	0.45	U	0.45	10
Tetrachloroethene	0.75	U	0.75	1.0
Toluene	0.62	U	0.62	1.0
Chlorobenzene	0.41	U	0.41	1.0
Ethylbenzene	0.62	U	0.62	1.0
Styrene	0.42	U	0.42	1.0
Xylenes, Total	1.6	U	1.6	2.0
Isopropylbenzene	0.66	U	0.66	1.0
Methyl tert-butyl ether	0.45	U	0.45	10
Naphthalene	1.1	J	0.12	5.0
N-Propylbenzene	0.45	U	0.45	1.0
1,2,4-Trimethylbenzene	0.44	U	0.44	1.0
1,3,5-Trimethylbenzene	0.49	U	0.49	1.0

Calculations are performed before rounding to avoid round-off errors in calculated results

Client: Catlin Engineers and Scientists

Job Number: 680-552.1

8260B Volatile Organic Compounds by GC/MS

Laboratory Control Sample - Batch: 680-1556

Lab ID: LCS 680-1556/14
Matrix: Water

Date Analyzed: 02/23/2005 1107
Units: ug/L

Dilution: 1.0

Analyte	Spike Amount	Result	% Rec.	Recovery Limits	Qualifier
Chloromethane	50.0	37	74	51 - 133	
Bromomethane	50.0	38	77	21 - 176	
Vinyl chloride	50.0	50	100	59 - 136	
Chloroethane	50.0	61	121	40 - 171	
Methylene Chloride	50.0	56	112	67 - 128	
Acetone	100	170	174	20 - 183	
Carbon disulfide	50.0	47	94	60 - 130	
1,1-Dichloroethene	50.0	47	94	64 - 132	
1,1-Dichloroethane	50.0	46	91	70 - 127	
cis-1,2-Dichloroethene	50.0	45	90	69 - 126	
trans-1,2-Dichloroethene	50.0	44	87	67 - 130	
Chloroform	50.0	45	90	74 - 124	
n-Butylbenzene	50.0	62	123	47 - 130	
1,2-Dichloroethane	50.0	53	107	68 - 130	
sec-Butylbenzene	50.0	57	114	53 - 125	
Methyl Ethyl Ketone	100	130	127	51 - 142	
1,1,1-Trichloroethane	50.0	51	102	70 - 132	
Carbon tetrachloride	50.0	52	104	64 - 137	
Dichlorobromomethane	50.0	52	105	74 - 128	
1,1,2,2-Tetrachloroethane	50.0	62	123	71 - 127	
1,2-Dichloropropane	50.0	52	103	74 - 123	
trans-1,3-Dichloropropene	50.0	55	109	75 - 126	
Trichloroethene	50.0	50	100	75 - 122	
Chlorodibromomethane	50.0	63	127	75 - 126	*
1,1,2-Trichloroethane	50.0	52	103	75 - 122	
Benzene	50.0	49	98	74 - 122	
cis-1,3-Dichloropropene	50.0	52	104	76 - 126	
Bromoform	50.0	66	133	64 - 132	*
2-Hexanone	100	140	139	58 - 139	
methyl isobutyl ketone	100	100	104	62 - 130	
Tetrachloroethene	50.0	55	111	70 - 133	
Toluene	50.0	41	82	75 - 122	
Chlorobenzene	50.0	50	100	75 - 123	
Ethylbenzene	50.0	49	98	77 - 123	
Styrene	50.0	53	105	75 - 125	
Xylenes, Total	150	150	100	77 - 121	
Isopropylbenzene	50.0	52	105	62 - 122	
Methyl tert-butyl ether	100	91	91	70 - 130	
Naphthalene	50.0	64	128	58 - 143	
N-Propylbenzene	50.0	53	106	53 - 125	
1,2,4-Trimethylbenzene	50.0	59	117	53 - 142	
1,3,5-Trimethylbenzene	50.0	58	115	50 - 127	

Calculations are performed before rounding to avoid round-off errors in calculated results

Serial Number 50476

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

SEVERN TRENT **STL**

☒ STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

○ Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: FAR NORTH LOADING RACK	PROJECT NO.: 201-125	PROJECT LOCATION (STATE): NC
STL (LAB) PROJECT MANAGER: ANGIE WEIMERSKIRK	P.O. NUMBER:	CONTRACT NO.:
CLIENT (SITE) PM: JEFF BECKEN	CLIENT PHONE: 910-452-5861	CLIENT FAX: 910-452-7563
CLIENT NAME: RE CATLIN	CLIENT E-MAIL: jeff.becken@catlinusa.com	
CLIENT ADDRESS: 220 OLD DAIRY ROAD, WILMINGTON NC 28405		
COMPANY CONTRACTING THIS WORK (if applicable): REISS		

PAGE 1 OF 2

STANDARD REPORT DELIVERY ☒

DATE DUE SEE BELOW

EXPEDITED REPORT DELIVERY (SURCHARGE) ○

DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

REQUIRED ANALYSIS: VOC PER EPA 8260B

NUMBER OF CONTAINERS SUBMITTED: HCL

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT...)	VOC PER EPA 8260B	REMARKS
16FEB05	1105	AMW-2	G	X				X	
	1125	AMW-1	G	X				X	RESULTS
	1150	AMW-3	G	X				X	DUE BY
	1235	AMW-5	G	X				X	MARCH 3RD
	1300	AMW-6	G	X				X	
	1315	PURGE H_2O - APEX	G	X				X	
17FEB05	0945	KMW-14	G	X				X	
	1000	KMW-13	G	X				X	
	1015	KMW-12	G	X				X	
	1030	KMW-10	G	X				X	
	1030	KMW-8	G	X				X	
	1045	KMW-6	G	X				X	

TEMP 1.2

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	17FEB05	1500						
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	2/18/05	1000	YES ○ NO ○		680-552	

STL8240-680 (12/02)

Serial Number 3/141

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

SEVERN TRENT **STL**

(X) STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

( ) Alternate Laboratory Name/Location
Phone:
Fax:

PROJECT REFERENCE: FHR NORTH LOADING RACK	PROJECT NO.: 201-125	PROJECT LOCATION (STATE): NC	PAGE 2 OF 2
STL (LAB) PROJECT MANAGER: ANGIE WEIMERSKIRK	P.O. NUMBER:	CONTRACT NO.:	STANDARD REPORT DELIVERY (X)
CLIENT (SITE) PM: JEFF BECKEN	CLIENT PHONE: 910-452-5861	CLIENT FAX: 910-452-7563	DATE DUE: SEE BELOW
CLIENT NAME: CATLIN	CLIENT E-MAIL: jeff.becken@catlinusa.com		EXPEDITED REPORT DELIVERY (SURCHARGE) ( )
CLIENT ADDRESS: 220 OLD DAIRY ROAD WILMINGTON NC 28405			DATE DUE:
COMPANY CONTRACTING THIS WORK (if applicable): RELSS			NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT,...)	VOC PER 8260B	HCL	REMARKS
17FEB05	1115	KMW-7	G	X				X		
	1130	KMW-11	G	X				X		RESULTS DUE BY MARCH 3RD
		[illegible] PT	G	X				X		
	1210	KMW-1	G	X				X		
	1220	KMW-2	G	X				X		
	1225	KMW-4	G	X				X		
	1235	KMW-3	G	X				X		
17FEB05	1250	LOADING RACK - PURGE H_2O	G	X				X		
17FEB05	1200	KMW-5								

TEMP. 1.2

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	17FEB05	1500						
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	2/18/05	1000	YES ( ) NO ( )		L80-552	

STL8240-680 (12/02)

APPENDIX B

PRODUCT IDENTIFICATION LABORATORY REPORT AND CHAIN-OF-CUSTODY RECORD

Southern Petroleum Laboratory, Inc.
Hydrocarbon Laboratory
8880 Interchange Drive
Houston TX 77054
(713) 660-0901 Main Phone
(713) 660-8975 Main Fax
(713) 660-6035 Hydrocarbon Fax

FACSIMILE TRANSMITTAL SHEET

TO: Jeff Backen

FROM: Angie

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DATE: 9/28/04

COMPANY:

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SENDER'S E-MAIL ADDRESS

☐ URGENT ☐ FOR REVIEW ☐ PLEASE COMMENT ☐ PLEASE REPLY ☐ PLEASE RECYCLE

NOTES/COMMENTS:

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Certificate of Analysis

HOUSTON LABORATORIES
8820 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Analysis Number: 04090196-001A

Sample ID:	KMW-13	**Date of Sample:**	09/16/04
Project #:	201-125	**Time Sampled:**	9:30
Project Name:	FHR N. Terminal Loading Rack Area	**Date Sample Analyzed:**	09/21/04
Client	Catlin & Associates	**Contact(s):**	Jeff Becken
Address	PO Box 10279		
Suite / Department	0		
City	Wilmington	**State**	NC **Zip** 28404-0279
Phone	(910) 452-5861 **Ext**		
Fax	(910) 452-7563		

Color:	Very Dark	**Odor:**	Waste Oil
***Specific Gravity @ 60° F.**	0.8568	***API @ 60° F.**	33.64
Carbon Range	C_5 - C_{22}	**Major Range**	C_{12} - C_{15}

Paraffin	78.704	wt%	**N-Hexane**	0.024	wt%
Isoparaffins	6.313	wt%	**Benzene**	ND	wt%
Naphthenics	2.971	wt%	**Ethyl Benzene**	0.058	wt%
Aromatics	7.339	wt%	**Toluene**	ND	wt%
Olefins	1.341	wt%	**Meta-Xylene**	0.503	wt%
Unknowns	3.333	wt%	**Para-Xylene**	ND	wt%
2,2,4-Tri Methylpentane	ND	wt%	**Ortho-Xylene**	0.034	wt%
			Xylenes	0.537	wt%
Calculated Research Octane	89.47		**EDB**	N/A	ppm
Lead/Manganese	N/A	ppm	**EDC**	N/A	ppm
Oxygnates	N/A	wt%	**Ethanol/Meoh**	N/A	wt%
C_{17}	4.153	wt%	**C_{18}**	3.205	wt%
Pristane	2.455	wt%	**Phytane**	0.878	wt%
Naphthalene	ND	wt%	**2-Methyl Naphthalene**	0.361	wt%
1-Methyl Naphthalene	0.237	wt%			

Gasoline Range: C_4-C_{13} Indicators: 2,2,4-TMP; MTBE; Olefins, Lead
Diesel Range: C_7-C_{22} Indicators: No Olefins, Pristane, Phytane
Crude/Condensate Range: C_2 - C_{25+}: Indicators: No Olefins, Light & Heavies
Heavy Oil: C_{20+} waxy, strong n-parrafins

Comments:

Bob Rannals
Hydrocarbon Lab Manager

P.I.A.N.O. ANALYSIS
SOUTHERN PETROLEUM LABORATORIES, INC.

Sample: 090196-001A KMW-13
File: CAP9U1
Calibration File: KMW13_LI

Analyzed on: 09-21-2004
Normalized to 100.00%
Processed 174 Peaks

Composite Report

Hydrocarbon Totals by Group Type

Type	Wt %	Vol %	Mol %
Total Paraffins:	78.704	79.421	72.713
Total Iso-paraffins:	6.313	6.618	8.145
Total Naphthenes:	2.971	2.903	4.382
Total Aromatics:	7.339	6.319	9.799
Total Olefins:	1.341	1.432	2.432
Total C26 PLUS	0.000	0.000	0.000
Total Unknowns:	3.333	3.307	2.529
Total:	100.000	100.000	100.000

Totals by Carbon Number

Group	Wt %	Vol %	Mol %	Ave. Mw.	Ave. Sp Gr.
Methane	0.000	0.000	0.000	0.000	0.000
Ethane	0.000	0.000	0.000	0.000	0.000
Propane	0.000	0.000	0.000	0.000	0.000
Butanes:	0.000	0.000	0.000	0.000	0.000
Pentanes:	0.056	0.069	0.143	72.151	0.622
Hexanes:	0.304	0.343	0.657	85.603	0.683
Heptanes:	1.837	1.969	3.369	100.971	0.720
Octanes:	1.419	1.374	2.391	109.864	0.796
Nonanes:	1.821	1.758	2.703	124.748	0.799
Decanes:	5.783	5.498	7.763	137.939	0.811
C11's:	6.447	6.338	7.765	153.726	0.784
C12's:	11.600	11.562	12.721	168.844	0.774
C13's:	15.653	15.969	15.712	184.470	0.756
C14's:	16.258	16.433	15.174	198.390	0.763
C15's:	18.935	18.990	16.505	212.420	0.769
C16's:	6.191	6.177	5.062	226.448	0.773
C17's:	4.153	4.122	3.198	240.475	0.777
C18's:	3.205	3.178	2.332	254.500	0.778
C19's:	1.187	1.160	0.818	268.529	0.789
C20's:	0.892	0.860	0.585	282.556	0.800
C21's:	0.656	0.632	0.410	296.000	0.800
C22's:	0.270	0.260	0.161	310.000	0.800
C23's:	0.000	0.000	0.000	0.000	0.000
C24's:	0.000	0.000	0.000	0.000	0.000
C25's:	0.000	0.000	0.000	0.000	0.000
C26's:	0.000	0.000	0.000	0.000	0.000
C26 PLUS	0.000	0.000	0.000		
Unknowns:	3.333	3.307	2.529		
Total:	100.000	100.000	100.000	185.461	0.746

P.I.A.N.O. ANALYSIS
SOUTHERN PETROLEUM LABORATORIES, INC.

Sample: 090196-001A KMW-13
File: CAP9U1
Calibration File: KMW13_LI

Analyzed on: 09-21-2004
Normalized to 100.00%
Processed 174 Peaks

Types by Carbon Number

Paraffins:	C1	0.000	0.000	0.000
	C2	0.000	0.000	0.000
	C3	0.000	0.000	0.000
	C4	0.000	0.000	0.000
	C5	0.019	0.023	0.048
	C6	0.024	0.028	0.051
	C7	0.018	0.020	0.032
	C8	0.069	0.076	0.112
	C9	0.126	0.135	0.182
	C10	0.160	0.169	0.208
	C11	2.902	3.008	3.437
	C12	7.987	8.181	8.684
	C13	15.653	15.969	15.712
	C14	16.258	16.433	15.174
	C15	18.935	18.990	16.505
	C16	6.191	6.177	5.062
	C17	4.153	4.122	3.198
	C18	3.205	3.178	2.332
	C19	1.187	1.160	0.818
	C20	0.892	0.860	0.585
	C21	0.656	0.632	0.410
	C22	0.270	0.260	0.161
	C23	0.000	0.000	0.000
	C24	0.000	0.000	0.000
	C25	0.000	0.000	0.000
	C26	0.000	0.000	0.000
Iso-paraffins:	C4	0.000	0.000	0.000
	C5	0.037	0.046	0.095
	C6	0.195	0.228	0.419
	C7	0.278	0.312	0.514
	C8	0.192	0.210	0.312
	C9	0.335	0.353	0.480
	C10	1.948	2.048	2.535
	C11	1.736	1.791	2.060
	C12	1.590	1.629	1.729
	C13	0.000	0.000	0.000
	C14	0.000	0.000	0.000
	C15	0.000	0.000	0.000
	C16	0.000	0.000	0.000
	C17	0.000	0.000	0.000
	C18	0.000	0.000	0.000
	C19	0.000	0.000	0.000
	C20	0.000	0.000	0.000
	C21	0.000	0.000	0.000
	C22	0.000	0.000	0.000
	C23	0.000	0.000	0.000
	C24	0.000	0.000	0.000
	C25	0.000	0.000	0.000
	C26	0.000	0.000	0.000
Aromatics:	C6	0.000	0.000	0.000
	C7	0.000	0.000	0.000
	C8	0.594	0.530	1.037
	C9	0.563	0.483	0.872
	C10	2.722	2.373	3.762
	C11	1.437	1.180	1.821
	C12	2.022	1.753	2.308
	C13	0.000	0.000	0.000
	C14	0.000	0.000	0.000
	C15	0.000	0.000	0.000
	C16	0.000	0.000	0.000
	C17	0.000	0.000	0.000
	C18	0.000	0.000	0.000

	C20	0.000	0.000	0.000
	C21	0.000	0.000	0.000
	C22	0.000	0.000	0.000
	C23	0.000	0.000	0.000
	C24	0.000	0.000	0.000
	C25	0.000	0.000	0.000
	C26	0.000	0.000	0.000
Naphthenes:	C5	0.000	0.000	0.000
	C6	0.085	0.087	0.188
	C7	0.262	0.267	0.494
	C8	0.501	0.496	0.826
	C9	0.797	0.786	1.169
	C10	0.953	0.908	1.258
	C11	0.372	0.359	0.447
	C12	0.000	0.000	0.000
	C13	0.000	0.000	0.000
	C14	0.000	0.000	0.000
	C15	0.000	0.000	0.000
	C16	0.000	0.000	0.000
	C17	0.000	0.000	0.000
	C18	0.000	0.000	0.000
	C19	0.000	0.000	0.000
	C20	0.000	0.000	0.000
	C21	0.000	0.000	0.000
	C22	0.000	0.000	0.000
	C23	0.000	0.000	0.000
	C24	0.000	0.000	0.000
	C25	0.000	0.000	0.000
	C26	0.000	0.000	0.000
Olefins:	C4	0.000	0.000	0.000
	C5	0.000	0.000	0.000
	C6	0.000	0.000	0.000
	C7	1.279	1.370	2.328
	C8	0.062	0.062	0.104
	C9	0.000	0.000	0.000

P.I.A.N.O. ANALYSIS
SOUTHERN PETROLEUM LABORATORIES, INC.

Sample: 090196-001A KMW-13
File: CAP9U1
Calibration File: KMW13_LI

Analyzed on: 09-21-2004
Normalized to 100.00%
Processed 174 Peaks

Components Listed in Chromatographic Order

pk#	Min.	Index	Component	Area	Wt%	Vol%	Mol%	Shift
1	11.25	473.7	i-Pentane	1490	0.037	0.046	0.095	0.01
2	12.10	500.0	n-Pentane	746	0.019	0.023	0.048	0.00
3	13.72	536.7	2,2-Dimethylbutane	619	0.015	0.018	0.032	0.34
4	15.50	566.3	2,3-Dimethylbutane	1312	0.031	0.036	0.066	0.35
5	15.78	570.3	2-Methylpentane	3220	0.078	0.092	0.167	0.05
6	16.83	583.9	3-Methylpentane	2919	0.072	0.083	0.154	0.04
7	18.27	600.0	n-Hexane	982	0.024	0.028	0.051	0.04
8	20.83	629.0	Methylcyclopentane	2424	0.060	0.061	0.131	0.16
9	21.23	633.0	2,4-Dimethylpentane	1452	0.034	0.039	0.063	0.03
10	24.10	658.4	3,3-Dimethylpentane	657	0.016	0.018	0.029	0.46
11	24.55	662.0	Cyclohexane	1105	0.026	0.025	0.057	0.40
12	25.68	670.6	2-Methylhexane	2191	0.053	0.060	0.097	0.16
13	25.90	672.1	2,3-Dimethylpentane	2998	0.070	0.077	0.129	0.03
14	26.25	674.6	1,1-Dimethylcyclopentane	404	0.009	0.010	0.018	0.37
15	26.82	678.6	3-Methylhexane	3581	0.087	0.097	0.160	0.32
16	27.65	684.2	1c,3-Dimethylcyclopentane	883	0.020	0.021	0.038	0.03
17	28.03	686.7	1t,3-Dimethylcyclopentane	814	0.020	0.020	0.037	0.16
18	28.18	687.6	3-Ethylpentane	778	0.019	0.021	0.035	0.02
19	28.40	689.0	1t,2-Dimethylcyclopentane	1715	0.040	0.041	0.075	0.31
20	28.58	690.2	Heptene-1	18363	0.441	0.488	0.831	0.55
21	30.22	700.0	n-Heptane	733	0.018	0.020	0.032	0.02
22	32.93	719.5	1c,2-Dimethylcyclopentane	1060	0.025	0.027	0.048	0.05
23	33.07	720.3	Methylcyclohexane	3381	0.078	0.079	0.148	0.25
24	33.53	723.5	2,2-Dimethylhexane	591	0.014	0.016	0.023	0.44
25	34.83	731.8	032	513	0.012	0.013	0.023	0.04
26	35.00	732.9	035	1751	0.042	0.044	0.079	0.02
27	35.17	733.9	036	1284	0.031	0.032	0.058	0.02
28	35.28	734.6	Ethylcyclopentane	2996	0.069	0.070	0.131	0.24
29	36.18	740.1	037	1282	0.031	0.032	0.058	0.41
30	36.40	741.4	3,3-Dimethylhexane	770	0.018	0.020	0.030	0.20
31	37.37	747.0	1t,2c,3-Trimethylcyclopentane	1197	0.028	0.028	0.046	0.26
32	37.83	749.7	039	10420	0.250	0.264	0.472	0.40
33	38.55	753.7	040	11414	0.274	0.289	0.517	0.01
34	39.77	760.3	2,3-Dimethylhexane	1796	0.045	0.049	0.073	0.43
35	40.88	766.1	2-Methylheptane	1905	0.046	0.051	0.074	0.02
36	41.17	767.5	3,4-Dimethylhexane	946	0.023	0.024	0.037	0.17
37	42.32	773.3	3-Methylheptane	1926	0.046	0.051	0.075	0.04
38	42.60	774.6	1t,3-Dimethylcyclohexane	2245	0.054	0.055	0.089	0.26
39	44.10	781.8	048	659	0.016	0.017	0.030	0.02
40	44.50	783.6	1,1-Dimethylcyclohexane	4502	0.108	0.107	0.178	0.37

File: CAP9U1 (090196-001A KMW-13) P- 2

	Min.	Index	Component	Area	Wt%	Vol%	Mol%	Shift
41	45.55	788.4	1,4-Octadiene	814	0.020	0.020	0.033	0.30
42	46.63	793.2	1,1-Methylethylcyclopentane	1804	0.043	0.043	0.071	0.42
43	48.23	800.0	n-Octane	2939	0.069	0.076	0.112	0.00
44	49.33	806.0	I2	1271	0.031	0.032	0.044	0.35
45	51.90	819.6	c-Octene-2	1220	0.029	0.031	0.048	0.37
46	53.92	829.7	2,2,3-Trimethylhexane	2263	0.054	0.057	0.078	0.05
47	55.30	836.3	N3	2301	0.055	0.055	0.091	0.20
48	55.60	837.7	n-Propylcyclopentane	1588	0.038	0.038	0.063	0.02
49	56.63	842.5	N4	3719	0.089	0.088	0.147	0.04
50	57.22	845.2	Ethylcyclohexane	3528	0.085	0.083	0.140	0.61
51	57.85	848.1	1c,3c,5-Trimethylcyclohexane	649	0.016	0.016	0.023	0.28
52	58.13	849.3	2,6-Dimethylheptane	637	0.015	0.017	0.022	0.25
53	59.78	856.6	Ethylbenzene	2556	0.058	0.052	0.101	0.49
54	60.17	858.3	1,1,4-Trimethylcyclohexane	2619	0.063	0.063	0.092	0.34
55	61.80	865.2	m-Xylene	22037	0.503	0.449	0.877	0.03
56	62.90	869.7	4-Ethylheptane	1738	0.042	0.044	0.060	0.10
57	63.55	872.3	I4	2701	0.065	0.069	0.094	0.54
58	63.77	873.2	2,5-Dimethylhexadiene-2,4	1766	0.042	0.043	0.071	0.31
59	64.83	877.5	N11	2083	0.050	0.049	0.073	0.04
60	65.10	878.5	3-Ethylheptane	1975	0.047	0.050	0.068	0.01
61	66.18	882.7	3,3-Diethylpentane	728	0.017	0.018	0.025	0.58
62	66.67	884.6	o-Xylene	1467	0.034	0.030	0.059	0.27
63	67.22	886.7	I7	1576	0.038	0.040	0.055	0.16
64	67.45	887.5	N12	2619	0.063	0.062	0.092	0.04
65	67.88	889.2	N13	3547	0.085	0.084	0.125	0.27
66	69.70	895.9	2,5,5-Trimethylheptane	1079	0.026	0.027	0.034	0.04
67	70.13	897.4	N16	1956	0.047	0.046	0.069	0.07
68	70.37	898.3	c-Nonene-3	1433	0.034	0.036	0.050	0.07
69	70.85	900.0	n-Nonane	5377	0.126	0.135	0.182	0.00
70	71.33	903.7	1,1-Methylethylcyclohexane	1850	0.044	0.046	0.065	0.65
71	72.63	913.3	i-Propylbenzene	3729	0.077	0.069	0.119	0.05
72	73.00	916.0	c-Nonene-2	1172	0.028	0.029	0.041	0.05
73	73.22	917.6	N19	1977	0.047	0.046	0.070	0.04
74	73.55	920.1	I10	2853	0.069	0.072	0.089	0.22
75	73.92	922.7	i-Propylcyclohexane	1163	0.028	0.027	0.041	0.04
76	74.45	926.6	2,4-Dimethyloctane	3160	0.076	0.081	0.099	0.19
77	74.72	928.5	N21	7029	0.169	0.165	0.248	0.00
78	74.95	930.2	2,6-Dimethyloctane	2991	0.072	0.076	0.093	0.13
79	75.37	933.1	2,5-Dimethyloctane	3095	0.074	0.078	0.097	0.03
80	75.53	934.3	n-Propylcyclohexane	4442	0.107	0.104	0.156	0.41
81	76.08	938.2	I12	10616	0.255	0.269	0.332	0.02
82	76.25	939.3	n-Butylcyclopentane	3271	0.079	0.077	0.115	0.05
83	76.53	941.3	I13	1090	0.026	0.028	0.034	0.02
84	76.87	943.6	N23	1114	0.027	0.026	0.035	0.36
85	77.20	945.9	I14	6412	0.154	0.163	0.200	0.04
86	77.42	947.4	3,3-Dimethyloctane	480	0.012	0.012	0.015	0.16
87	77.82	950.2	3,6-Dimethyloctane	2057	0.049	0.052	0.064	0.42
88	78.22	952.9	N25	3471	0.083	0.080	0.110	0.20
89	78.90	957.5	1-Methyl-4-ethylbenzene	6929	0.146	0.130	0.224	0.03
90	79.13	959.1	N26	3280	0.079	0.076	0.104	0.01

File: CAF9U1 (090196-001A KMW-13) p. 3

#	Min.	Index	Component	Area	Wt%	Vol%	Mol%	Shift
91	79.28	960.1	2,3-Dimethyloctane	2954	0.071	0.074	0.092	0.10
92	79.57	962.0	I15	840	0.020	0.021	0.026	0.61
93	79.80	963.5	N27	1708	0.041	0.040	0.054	0.05
94	79.92	964.3	I16	3540	0.085	0.089	0.111	0.08
95	80.17	966.0	I17	5328	0.128	0.133	0.166	0.38
96	80.30	966.9	5-Methylnonane	7535	0.181	0.191	0.235	0.14
97	80.55	968.5	4-Methylnonane	2019	0.048	0.051	0.063	0.50
98	80.68	969.4	1-Methyl-2-ethylbenzene	1173	0.025	0.022	0.038	0.02
99	81.42	974.2	2-Methylnonane	4945	0.119	0.126	0.155	0.03
100	81.82	976.8	3-Methylnonane	4517	0.108	0.114	0.141	0.14
101	82.02	978.0	N29	2045	0.049	0.047	0.065	0.05
102	82.22	979.3	I18	1016	0.024	0.025	0.032	0.06
103	82.57	981.6	I19	2633	0.063	0.066	0.082	0.01
104	82.82	983.2	t-Butylbenzene	6047	0.128	0.114	0.176	0.18
105	83.05	984.7	1,2,4-Trimethylbenzene	2747	0.058	0.051	0.089	0.57
106	83.18	985.5	I20	6591	0.158	0.165	0.206	0.22
107	83.50	987.5	I22	1934	0.046	0.048	0.060	0.18
108	83.65	988.5	I23	1248	0.030	0.031	0.039	0.03
109	83.82	989.5	N30	1420	0.034	0.033	0.045	0.02
110	84.37	993.0	1-Decene	3774	0.091	0.094	0.120	0.63
111	84.58	994.3	I24	1872	0.045	0.047	0.058	0.48
112	85.03	997.1	I25	1410	0.034	0.035	0.044	0.01
113	85.17	997.9	sec-Butylbenzene	3669	0.076	0.068	0.105	0.26
114	85.50	1000.0	n-Decane	6826	0.160	0.169	0.208	0.00
115	85.92	1004.0	i-Butylbenzene	721	0.015	0.014	0.021	0.33
[illegible]	86.18	1006.5	I26	876	0.021	0.022	0.025	0.01
[illegible]	86.33	1007.9	N31	1221	0.029	0.028	0.035	0.23
118	86.48	1009.3	1,2,3-Trimethylbenzene	3587	0.076	0.065	0.117	0.05
119	86.80	1012.3	N32	4147	0.100	0.096	0.119	0.24
120	87.18	1015.9	1-Methyl-4-i-propylbenzene	3708	0.080	0.072	0.111	0.24
121	87.58	1019.7	I27	7066	0.170	0.177	0.201	0.02
122	87.70	1020.8	I28	4732	0.114	0.118	0.135	0.03
123	87.82	1021.8	I29	10998	0.264	0.275	0.313	0.35
124	88.05	1024.0	2,3-Dihydroindene	7567	0.182	0.145	0.285	0.48
125	88.17	1025.1	sec-Butylcyclohexane	26654	0.640	0.606	0.845	0.50
126	89.18	1034.4	3-Ethylnonane	1354	0.033	0.034	0.039	0.15
127	89.95	1041.4	I32	9736	0.234	0.225	0.281	0.52
128	90.17	1043.4	1,3-Diethylbenzene	1567	0.033	0.030	0.046	0.38
129	90.65	1047.7	1,4-Diethylbenzene	5337	0.113	0.101	0.156	0.13
130	90.87	1049.7	n-Butylbenzene	4736	0.100	0.090	0.138	0.73
131	91.17	1052.3	1,3-Dimethyl-5-ethylbenzene	7009	0.151	0.133	0.209	0.55
132	91.50	1055.3	1,2-Diethylbenzene	27293	0.524	0.460	0.723	0.62
133	92.10	1060.6	N35	10128	0.243	0.234	0.292	0.17
134	92.42	1063.4	I35	3047	0.073	0.076	0.087	0.72
135	92.67	1065.6	I36	1422	0.034	0.036	0.040	0.11
136	92.83	1067.1	I38	4681	0.112	0.117	0.133	0.53
137	93.07	1069.1	1,3,Dimethyl-4-ethylbenzene	12641	0.264	0.232	0.364	0.21
138	93.23	1070.6	s-C5Bz / 1,3-DM-4-EtBz	2033	0.044	0.039	0.055	0.24
139	93.75	1075.1	1,4-Dimethyl-2-ethylbenzene	33396	0.707	0.624	0.976	0.15
140	94.28	1079.7	1,2-Dimethyl-4-ethylbenzene	7533	0.159	0.138	0.220	0.65

File: CAP9U1 (090196-001A KMW-13) p. 4

#	Min.	Index	Component	Area	Wt%	Vol%	Mol%	Shift
141	94.48	1081.4	I41	14115	0.339	0.353	0.401	0.14
142	94.97	1085.5	I42	14283	0.343	0.357	0.406	0.70
143	96.47	1098.2	1-Ethyl-2-i-propylbenzene	6068	0.131	0.114	0.164	0.42
144	96.68	1100.0	n-Undecane	124965	2.902	3.008	3.437	0.00
145	97.00	1103.6	1-Ethyl-4-i-propylbenzene	986	0.021	0.018	0.027	0.06
146	97.55	1109.7	1,2,3,5-Tetramethylbenzene	2972	0.063	0.054	0.087	0.02
147	97.97	1114.3	1-t-Butyl-2-methylbenzene	4491	0.094	0.082	0.118	0.45
148	98.68	1122.3	A2	1484	0.032	0.028	0.040	0.68
149	99.50	1131.3	I43	43825	1.011	1.036	1.099	0.05
150	99.70	1133.4	A3	14258	0.301	0.261	0.376	0.27
151	101.17	1149.3	1,3-Di-i-propylbenzene	6474	0.137	0.119	0.156	0.68
152	101.72	1155.2	n-Pentylbenzene	6991	0.148	0.128	0.185	0.37
153	102.18	1160.1	1-Methyl-2-n-butylbenzene	3187	0.067	0.058	0.084	0.23
154	102.67	1165.3	1,2,3,4-Tetrahydronaphthalene	14587	0.308	0.245	0.432	0.35
155	103.53	1174.3	I44	3566	0.082	0.084	0.089	0.45
156	104.28	1182.2	I47	21532	0.497	0.509	0.540	0.27
157	105.00	1189.6	1,3-Di-n-propylbenzene	50257	1.062	0.920	1.212	0.72
158	106.02	1200.0	n-Dodecane	346146	7.987	8.181	8.684	0.00
159	109.73	1244.5	1-Methyl-4-n-pentylbenzene	18430	0.398	0.345	0.454	0.70
160	110.65	1255.2	n-Hexylbenzene	19769	0.425	0.369	0.485	0.18
161	111.62	1266.4	2-Methylnaphthalene	15035	0.361	0.273	0.467	0.03
162	112.52	1276.8	1-Methylnaphthalene	9858	0.237	0.179	0.306	0.53
163	114.57	1300.0	n-Tridecane	651927	15.653	15.969	15.712	0.00
164	121.45	1400.0	C14	677091	16.258	16.433	15.174	0.00
165	127.50	1500.0	C15	788585	18.935	18.990	16.505	0.00
[illegible]	132.15	1600.0	C16	257837	6.191	6.177	5.062	0.00
167	136.52	1700.0	C17	172959	4.153	4.122	3.198	0.00
168	136.93	1709.5	?	102248	2.455	2.437	1.890	UNK
169	140.95	1800.0	C18	133497	3.205	3.178	2.332	0.00
170	141.17	1806.6	?	36558	0.878	0.870	0.639	UNK
171	144.28	1900.0	C19	49432	1.187	1.160	0.818	0.00
172	148.15	2000.0	C20	37157	0.892	0.860	0.585	0.00
173	151.92	2100.0	C21	27319	0.656	0.632	0.410	0.00
174	156.33	2200.0	C22	11251	0.270	0.260	0.161	0.00

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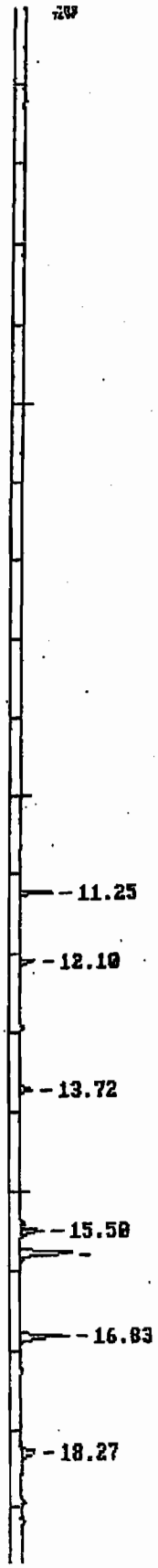

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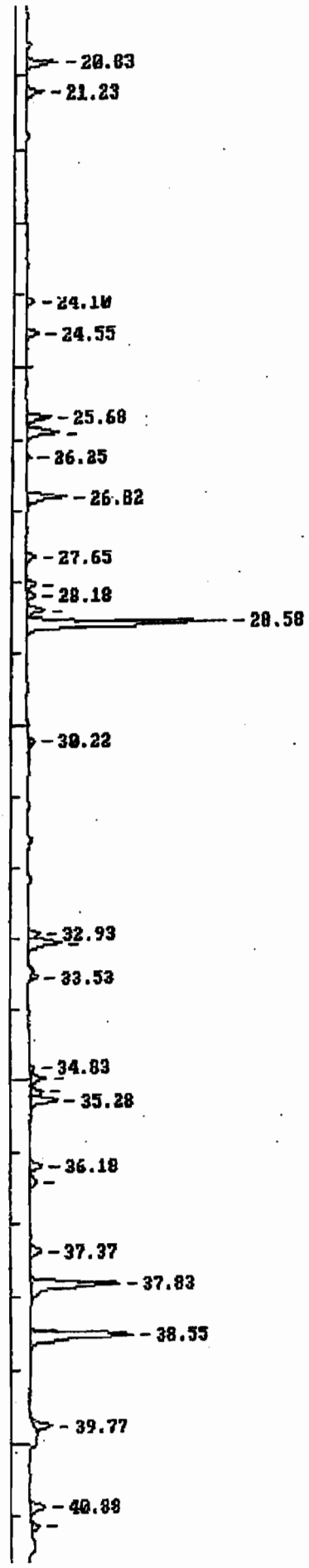
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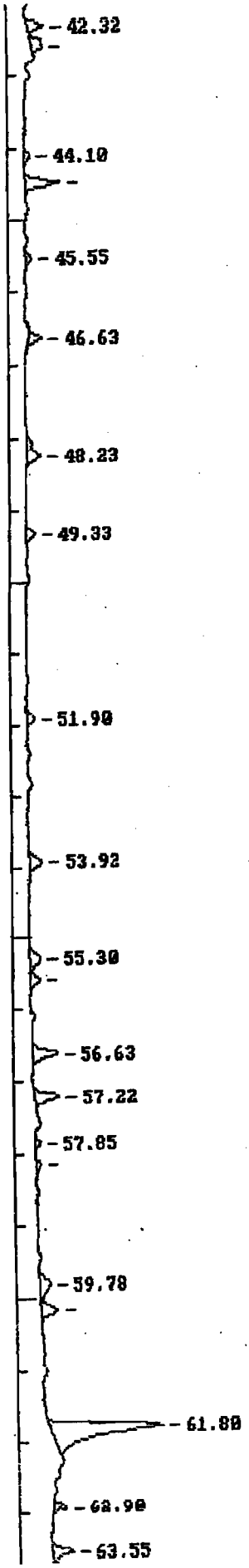
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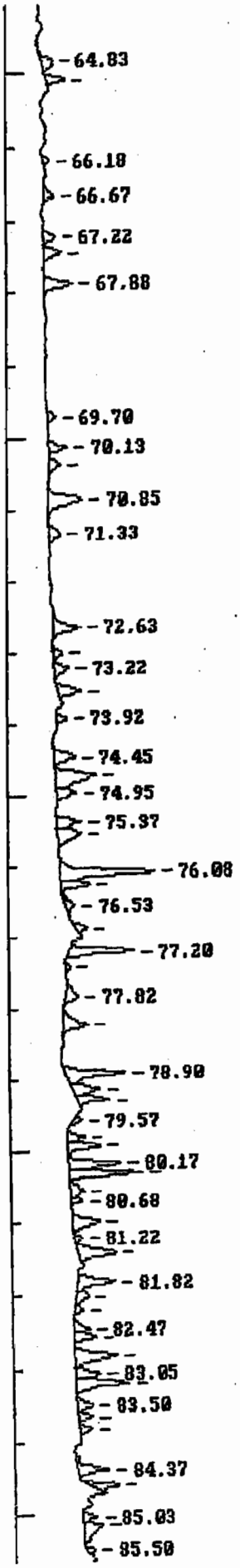
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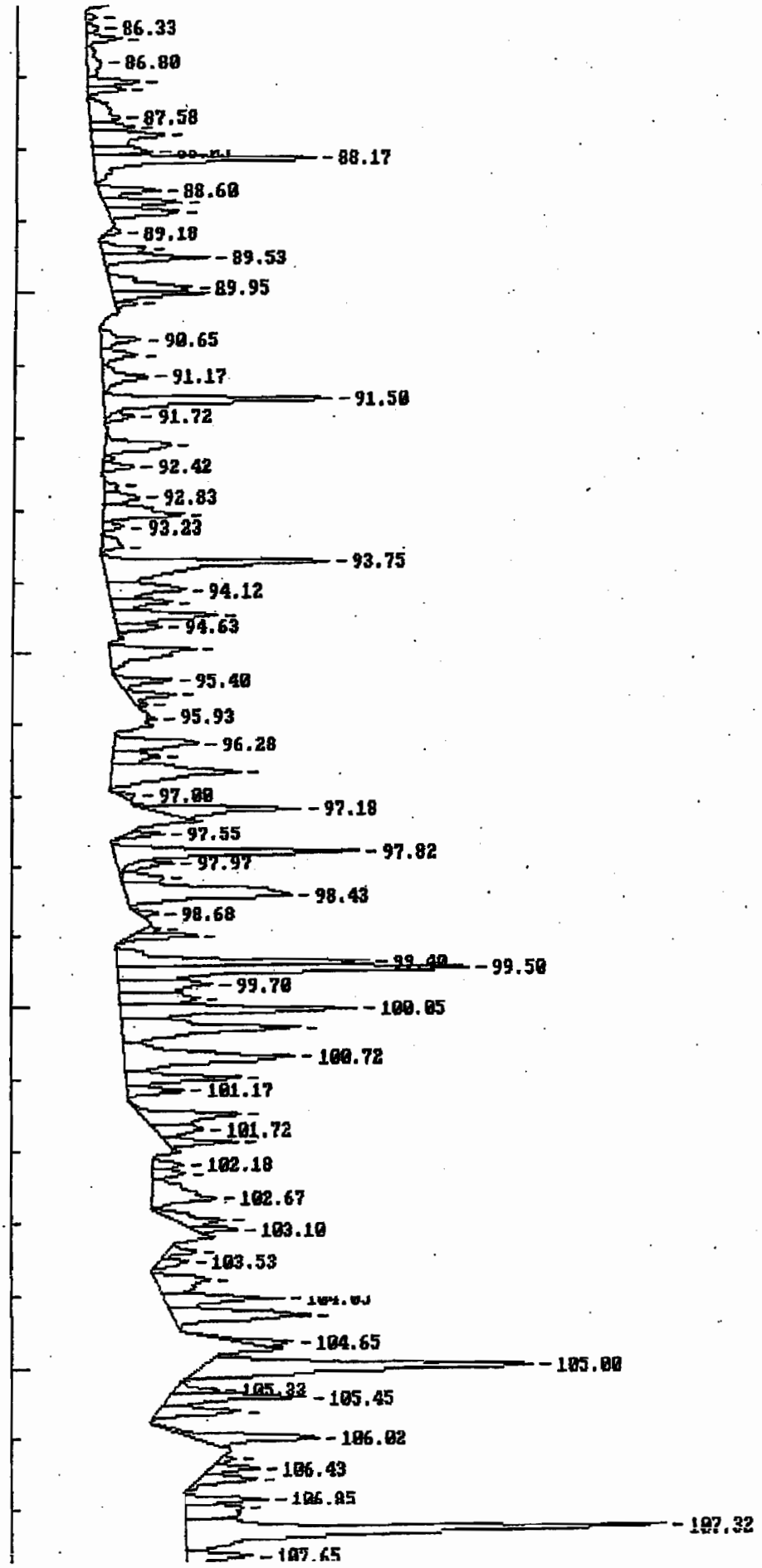
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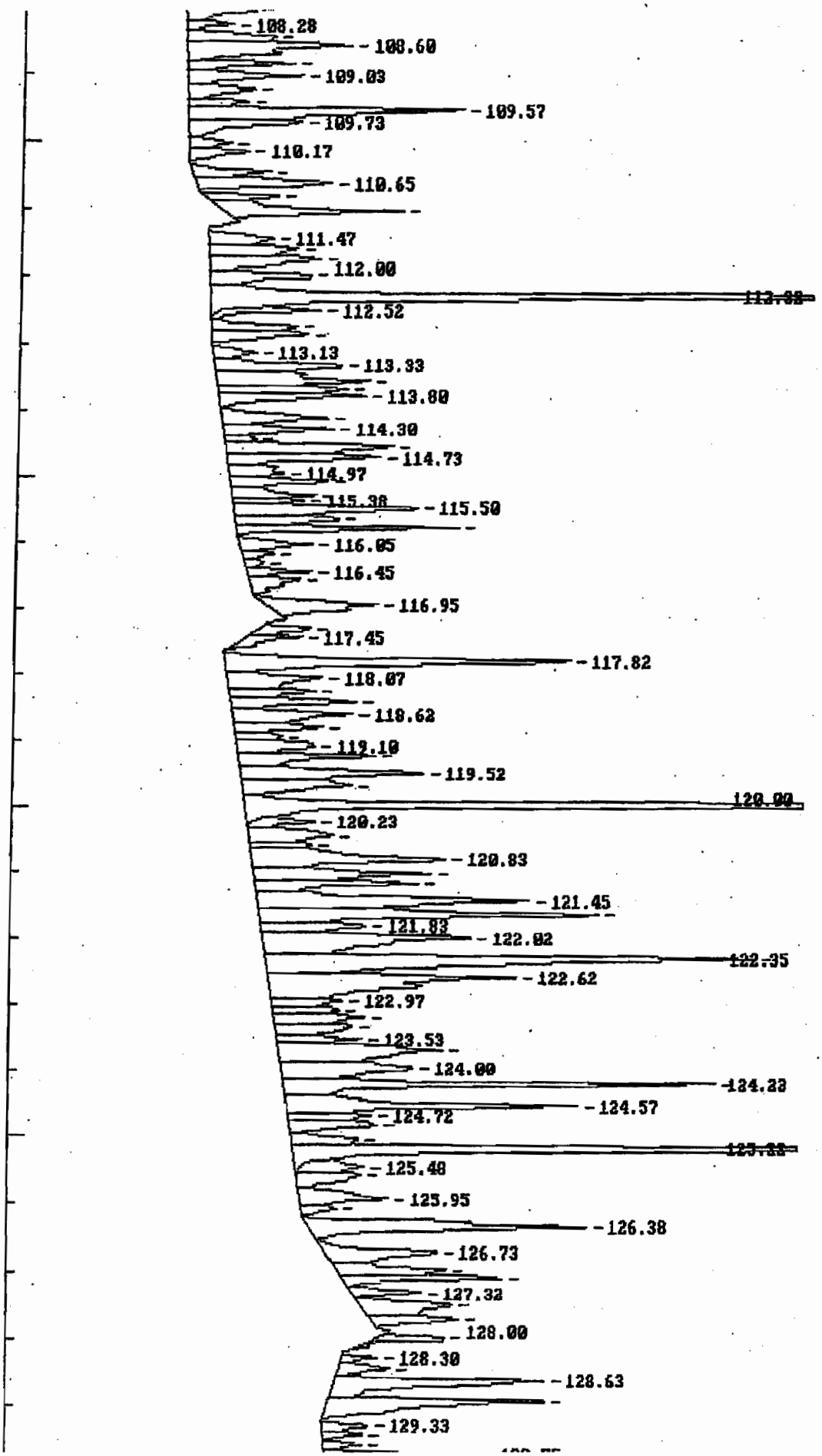
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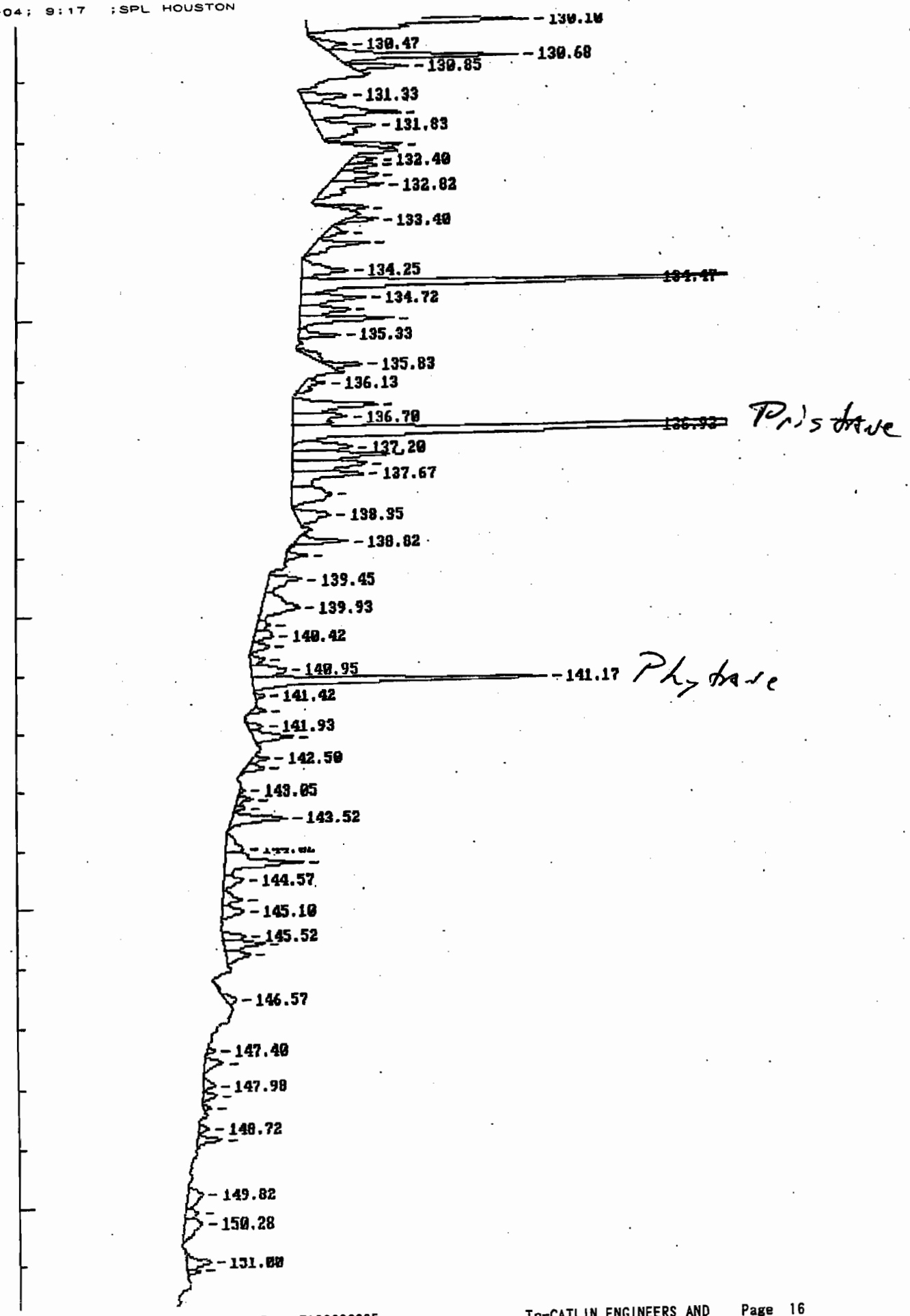
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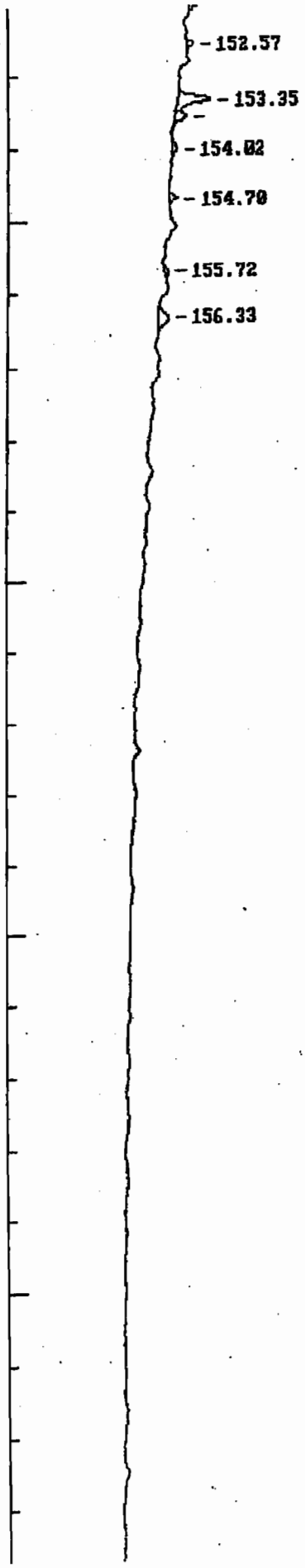


9

SPL, Inc.
Analysis Request Chain of Custody Record

SPL

SPL Work Order No.:	SPL Work Order No.:	Acct. Male Code:	Dept. Code	SPL Page 1 of 1

Report To:
(Company Name): CATLIN ENGINEERS & SCIENTISTS
Address: 220 OLD DAIRY ROAD
City/State/Zip: WILMINGTON, NC 28405
Contact: JEFF BECKEN
Phone: (910) 452-5861 Fax: (910) 452-7563

Project/Station Name: FHR NORTH TERMINAL LOADING RACK AREA
Project/Station Number: 201-125
Project/Station Location: FHR NORTH TERMINAL LOADING RACK AREA

Special Instructions: ATTN: HYDROCARBONS LAB

Requested TAT:
- [ ] 24hr *
- [ ] 48hr *
- [ ] 72hr *
- [x] Standard
- [ ] Other Indicate Below

Invoice To: SHEILA SMITH
(Company Name): CATLIN ENGINEERS & SCIENTISTS
Address: SAME AS ABOVE (S.A.A)
City/State/Zip: S.A.A
Contact:
Phone: S.A.A Fax: S.A.A
PO / Ref. No.: 240916-4
Contract/Proposal #:

Indicate Billing Type: Net 30 day Acct. [ ] Check # Cash Recv'd $ Credit Card [ ] Contact SPL, Inc for CC payment arrangements.

* Terms: Cylinders will be rented for $10/cyl. All cylinders checked out are to be returned within 21 days, whether they contain sample or not. Cylinders not returned after 30 days will be considered lost and will be billed at current replacement cost.

Requested Analysis

Sample ID & Point	Sample Date	Sample Time	Sample Type (Gas/Liq. Solid)	Duplicate	Composite	Spot GRAB	Cylinder Tracking Info * Cylinder #	Date Out	Date In	PRODUCT I.D. Diesel Test	[illegible]	[illegible]										Comments
KMW-13	16 SEP 04	0930	L			X				X												

* Surcharges May Apply

Sampled By-Print Name: DIMITRI TALBERT
Signature: [signature]
Company Name: CATLIN ENGINEERS & SCIENTISTS

Relinquished By-Print Name	Date	Time	Received By-Print Name	Date	Time
DIMITRI TALBERT	20 SEP 04	0700	[signature]	9-21-04	1000

- [x] 8820 Interchange Dr. Houston, TX 77054 (713) 660-0901
- [ ] 9221 Highway 23 Belle Chasse, LA 70037 (504) 391-1337
- [ ] P.O. Box 3079 Laurel, MS 39442 (601) 428-0842
- [ ] 500 Ambassador Caffery Pkwy. Scott, LA 70583 (337) 237-4775
- [ ] 1595 US 79 South Carthage, TX 75633 (903) 693-6242
- [ ] 459 Hughes Dr. Traverse City, MI 49686 (616) 947-5777

Note - As a convenience to our clients, this form is available in an electronic format. Please contact one of our offices above for the form to be e-mailed to you.

APPENDIX C

WELL CONSTRUCTION RECORDS FOR NEW MONITORING WELLS

WELL CONSTRUCTION RECORD

North Carolina - Department of Environment and Natural Resources - Division of Water Quality - Groundwater Section

WELL CONTRACTOR (INDIVIDUAL) NAME (print) William Miller **CERTIFICATION #** 2927

WELL CONTRACTOR COMPANY NAME CATLIN Engineers & Scientists **PHONE #** (910) 452-5861

STATE WELL CONSTRUCTION PERMIT # (if applicable) 2927 **ASSOCIATED WQ PERMIT #** (if applicable) N/A

MW-34

1. WELL USE (Check Applicable Box): Residential ☐ Municipal/Public ☐ Industrial ☐ Agricultural ☐ Monitoring ☒ Recovery ☐ Heat Pump Water Injection ☐ Other ☐ If Other, List Use _____

2. WELL LOCATION: (Show sketch of the location below)
Nearest Town: Wilmington County: New Hanover
3334 River Rd.
(Road Name and Numbers, Community, Subdivision, Lot No., Zip Code)

Topographic/Land Setting
☐ Ridge ☐ Slope ☐ Valley ☒ Flat
(check appropriate box)
Northing/Easting of well location
161766.704/2318176.564
NCSP NAD 83 (ft)
Latitude/longitude source: ☒ GPS ☐ Topo. map
(check box)

3. OWNER: FLINT HILLS RESOURCES, LP
Address: 3334 River Road
(Street or Route No.)
Wilmington (City or Town) NC (State) 28412 (Zip Code)
(910) 799-0180
Area code - Phone number

DEPTH From	To	DRILLING LOG Formation Description

4. DATE DRILLED: 10/4/2004
5. TOTAL DEPTH: 14
6. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒
7. STATIC WATER LEVEL Below Top of Casing _____ FT.
(Use "+" if Above Top of Casing)
8. TOP OF CASING IS 0 FT. Above Land Surface*
* Top of casing terminated at/or below land surface requires a variance in accordance with 15A NCAC 2C.0118

SEE ATTACHED

9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): Surficial Aquifer
12. DISINFECTION: Type N/A Amount N/A
13. CASING:

Depth From	To	Diameter	Wall Thickness or Weight/Ft.	Material
0	4 ft.	2 in.	Sch. 40	PVC
	ft.	in.		
	ft.	in.		

14. GROUT:

Depth From	To	Material	Method
0	1 ft.	Concrete	Surface Pour
1	3 ft.	Bent. Pellets	Surface Pour

15. SCREEN:

Depth From	To	Diameter	Slot Size	Material
4	14 ft.	2 in.	Slot .010 in.	PVC
	ft.	in.	in.	

16. SAND/GRAVEL PACK:

Depth From	To	Size	Material
3	14 ft.	#2 Medium	Torpedo Sand
	ft.		

LOCATION SKETCH
Show direction and distance in miles from at least two State Roads or County Roads. Include road numbers and common road names.

SEE ATTACHED

17. REMARKS: _____

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF PERSON CONSTRUCTING THE WELL — DATE 11/29/04

Submit original to Division of Water Quality, Groundwater Section, 1636 Mail Service Center - Raleigh, NC 27699-1636 Phone No. (919) 733-3221, within 30 days.

Modified from GW-1 REV.07/200

WELL CONSTRUCTION RECORD

North Carolina - Department of Environment and Natural Resources - Division of Water Quality - Groundwater Section

WELL CONTRACTOR (INDIVIDUAL) NAME (print) William Miller **CERTIFICATION #** 2927
WELL CONTRACTOR COMPANY NAME CATLIN Engineers & Scientists **PHONE #** (910) 452-5861
STATE WELL CONSTRUCTION PERMIT # (if applicable) 2927 **ASSOCIATED WQ PERMIT #** (if applicable) N/A

MW-35

1. WELL USE (Check Applicable Box): Residential ☐ Municipal/Public ☐ Industrial ☐ Agricultural ☐ Monitoring ☒ Recovery ☐ Heat Pump Water Injection ☐ Other ☐ If Other, List Use _____
2. WELL LOCATION: (Show sketch of the location below)
   Nearest Town: Wilmington County: New Hanover
   3334 River Rd.
   (Road Name and Numbers, Community, Subdivision, Lot No., Zip Code)
3. OWNER: FLINT HILLS RESOURCES, LP
   Address: 3334 River Road (Street or Route No.)
   Wilmington (City or Town) NC (State) 28412 (Zip Code)
   (910) 799-0180 (Area code - Phone number)
4. DATE DRILLED: 10/4/2004
5. TOTAL DEPTH: 12
6. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒
7. STATIC WATER LEVEL Below Top of Casing _____ FT. (Use "+" if Above Top of Casing)
8. TOP OF CASING IS 0 FT. Above Land Surface*
   * Top of casing terminated at/or below land surface requires a variance in accordance with 15A NCAC 2C.0118
9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): Surficial Aquifer
12. DISINFECTION: Type N/A Amount N/A
13. CASING:

Depth From	To	Diameter	Wall Thickness or Weight/Ft.	Material
0	2 ft.	2 in.	Sch. 40	PVC
	ft.	in.		
	ft.	in.		

14. GROUT:

Depth From	To	Material	Method
0	0.5 ft.	Concrete	Surface Pour
0.5	1 ft.	Bent. Pellets	Surface Pour

15. SCREEN:

Depth From	To	Diameter	Slot Size	Material
2	12 ft.	2 in.	Slot .010 in.	PVC
	ft.	in.	in.	

16. SAND/GRAVEL PACK:

Depth From	To	Size	Material
1	12 ft.	#2 Medium	Torpedo Sand
	ft.		

17. REMARKS:

Topographic/Land Setting
☐ Ridge ☐ Slope ☐ Valley ☒ Flat (check appropriate box)
Northing/Easting of well location
161593.145/2317822.374
NCSP NAD 83 (ft)
Latitude/longitude source: ☒ GPS ☐ Topo. map (check box)

DEPTH From To — DRILLING LOG Formation Description

SEE ATTACHED

LOCATION SKETCH
Show direction and distance in miles from at least two State Roads or County Roads. Include road numbers and common road names.

SEE ATTACHED

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF PERSON CONSTRUCTING THE WELL — DATE 11/29/04

Submit original to Division of Water Quality, Groundwater Section, 1636 Mail Service Center - Raleigh, NC 27699-1636 Phone No. (919) 733-3221, within 30 days.

Modified from: GW-1 REV.07/2001

WELL CONSTRUCTION RECORD

North Carolina - Department of Environment and Natural Resources - Division of Water Quality - Groundwater Section

WELL CONTRACTOR (INDIVIDUAL) NAME (print) William Miller **CERTIFICATION #** 2927

WELL CONTRACTOR COMPANY NAME CATLIN Engineers & Scientists **PHONE #** (910) 452-5861

STATE WELL CONSTRUCTION PERMIT # (if applicable) 2927 **ASSOCIATED WQ PERMIT #** (if applicable) N/A

MW-36

1. WELL USE (Check Applicable Box): Residential ☐ Municipal/Public ☐ Industrial ☐ Agricultural ☐
   Monitoring ☒ Recovery ☐ Heat Pump Water Injection ☐ Other ☐ If Other, List Use _____
2. WELL LOCATION: (Show sketch of the location below)
   Nearest Town: Wilmington County: New Hanover
   3334 River Rd.
   (Road Name and Numbers, Community, Subdivision, Lot No., Zip Code)
3. OWNER: FLINT HILLS RESOURCES, LP
   Address: 3334 River Road (Street or Route No.)
   Wilmington (City or Town) NC (State) 28412 (Zip Code)
   (910) 799-0180 (Area code - Phone number)
4. DATE DRILLED: 10/5/2004
5. TOTAL DEPTH: 13
6. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒
7. STATIC WATER LEVEL Below Top of Casing 5.2 FT. (Use "+" if Above Top of Casing)
8. TOP OF CASING IS 2 FT. Above Land Surface*
   * Top of casing terminated at/or below land surface requires a variance in accordance with 15A NCAC 2C.0118
9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): Surficial Aquifer

Topographic/Land Setting
☐ Ridge ☐ Slope ☐ Valley ☒ Flat
(check appropriate box)

Northing/Easting of well location
161540.02/2318142.32
NCSP NAD 83 (ft)

Latitude/longitude source: ☒ GPS ☐ Topo. map (check box)

DEPTH From	DEPTH To	DRILLING LOG Formation Description

SEE ATTACHED

12. DISINFECTION: Type N/A Amount N/A
13. CASING:

Depth From	Depth To	Diameter	Wall Thickness or Weight/Ft.	Material
-2	3 ft.	2 in.	Sch. 40	PVC
	ft.	in.		
	ft.	in.		

14. GROUT:

Depth From	Depth To	Material	Method
	ft.		
0	1 ft.		

15. SCREEN:

Depth From	Depth To	Diameter	Slot Size	Material
3	13 ft.	2 in.	Slot .010 in.	PVC
	ft.	in.	in.	

16. SAND/GRAVEL PACK:

Depth From	Depth To	Size	Material
1	13 ft.	#2 Medium	Torpedo Sand
	ft.		

LOCATION SKETCH
Show direction and distance in miles from at least two State Roads or County Roads. Include road numbers and common road names.

SEE ATTACHED

17. REMARKS: _____

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF PERSON CONSTRUCTING THE WELL — DATE 11/29/04

Submit original to Division of Water Quality, Groundwater Section, 1636 Mail Service Center - Raleigh, NC 27699-1636 Phone No. (919) 733-3221, within 30 days.

Modified from: GW-1 REV.07/2001

WELL CONSTRUCTION RECORD

North Carolina - Department of Environment and Natural Resources - Division of Water Quality - Groundwater Section

WELL CONTRACTOR (INDIVIDUAL) NAME (print) William Miller **CERTIFICATION #** 2927

WELL CONTRACTOR COMPANY NAME CATLIN Engineers & Scientists **PHONE #** (910) 452-5861

STATE WELL CONSTRUCTION PERMIT # (if applicable) 2927 **ASSOCIATED WQ PERMIT #** (if applicable) N/A

MW-37

1. WELL USE (Check Applicable Box): Residential ☐ Municipal/Public ☐ Industrial ☐ Agricultural ☐ Monitoring ☒ Recovery ☐ Heat Pump Water Injection ☐ Other ☐ If Other, List Use _____

2. WELL LOCATION: (Show sketch of the location below)
Nearest Town: Wilmington County: New Hanover
3334 River Rd.
(Road Name and Numbers, Community, Subdivision, Lot No., Zip Code)

Topographic/Land Setting
☐ Ridge ☐ Slope ☐ Valley ☒ Flat
(check appropriate box)
Northing/Easting of well location
161538.916/2318269.611
NCSP NAD 83 (ft)
Latitude/longitude source: ☒ GPS ☐ Topo. map
(check box)

3. OWNER: FLINT HILLS RESOURCES, LP
Address: 3334 River Road
(Street or Route No.)
Wilmington (City or Town) NC (State) 28412 (Zip Code)
(910) 799-0180
Area code - Phone number

DEPTH From	To	DRILLING LOG Formation Description

4. DATE DRILLED: 10/5/2004
5. TOTAL DEPTH: 7
6. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒
7. STATIC WATER LEVEL Below Top of Casing 5.02 FT.
(Use "+" if Above Top of Casing)
8. TOP OF CASING IS 3 FT. Above Land Surface*
* Top of casing terminated at/or below land surface requires a variance in accordance with 15A NCAC 2C.0118

SEE ATTACHED

9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): Surficial Aquifer
12. DISINFECTION: Type N/A Amount N/A
13. CASING:

Depth From	To	Diameter	Wall Thickness or Weight/Ft.	Material
-3	2 ft.	2 in.	Sch. 40	PVC
	ft.	in.		
	ft.	in.		

14. GROUT:

Depth From	To	Material	Method
	ft.		
0	0.5 ft.	Bent.	Surface Pour

15. SCREEN:

Depth From	To	Diameter	Slot Size	Material
2	7 ft.	2 in.	Slot .010 in.	PVC
	ft.	in.	in.	

16. SAND/GRAVEL PACK:

Depth From	To	Size	Material
0.5	7 ft.	#2 Medium	Torpedo Sand
	ft.		

LOCATION SKETCH
Show direction and distance in miles from at least two State Roads or County Roads. Include road numbers and common road names.

SEE ATTACHED

17. REMARKS:

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF PERSON CONSTRUCTING THE WELL — DATE 11/29/04

Submit original to Division of Water Quality, Groundwater Section, 1636 Mail Service Center - Raleigh, NC 27699-1636 Phone No. (919) 733-3221, within 30 days.

Modified from: GW-1 REV.07/2001

APPENDIX D

BORING LOGS
FOR NEW MONITORING WELLS

WELL LOG

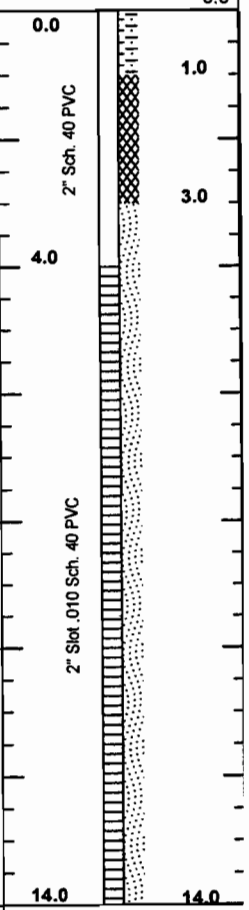
CATLIN ENGINEERS and SCIENTISTS
Wilmington, North Carolina

SHEET 1 OF 1

PROJECT NO.: 201-125	STATE: NC	COUNTY: New Hanover	LOCATION: Wilmington
PROJECT NAME: FHR North Terminal		LOGGED BY: Jeff Becken	WELL ID: MW-34
		DRILLER: William Miller	
NORTHING: 161,766.7	EASTING: 2,318,176.6	CREW: Dimitri Talbert	
SYSTEM: NCSP NAD 83 (ft)	BORING LOCATION: See Map		T.O.C. ELEV.: 33.89
DRILL MACHINE: CME 45B ATV	METHOD: HSA	0 HOUR DTW:	BORING DEPTH: 14.0
START DATE: 10/04/04	FINISH DATE: 10/04/04	24 HOUR DTW:	WELL DEPTH: 14.0

DEPTH	BLOW COUNT 6in	6in	6in	6in	OVA (ppm)	LAB.	USCS	LOG	SOIL AND ROCK DESCRIPTION	DEPTH	ELEVATION
									LAND SURFACE	0.0	33.9
							SP		Light brown/gray, fine SAND with some silt.	3.0	30.9
3.0	2	4	4	8			SP		White/light brown, fine to med. SAND with some silt.	5.0	28.9
										8.0	25.9
8.0	1	1	3	4			SM		Light to dark gray, silty, fine to med. SAND.	10.0	23.9
									Boring Terminated at Elevation 19.9 ft		

WELL DETAIL



Portland Cement | Bentonite Pellets | #2 Medium Sand

CATLIN BORING LOG 201-125.GPJ CATLIN.GDT 11/23/04

WELL LOG

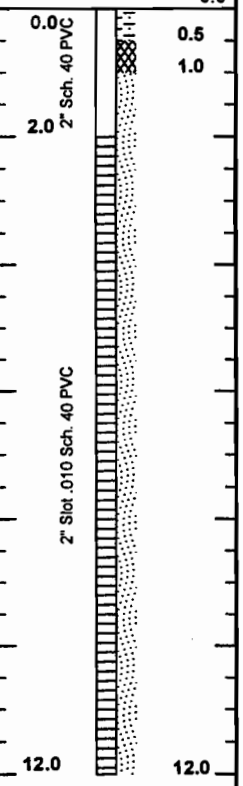
CATLIN ENGINEERS and SCIENTISTS
Wilmington, North Carolina

SHEET 1 OF 1

PROJECT NO.: 201-125	STATE: NC	COUNTY: New Hanover	LOCATION: Wilmington
PROJECT NAME: FHR North Terminal		LOGGED BY: Jeff Becken	WELL ID: MW-35
		DRILLER: William Miller	
NORTHING: 161,593.1	EASTING: 2,317,822.4	CREW: Dimitri Talbert	
SYSTEM: NCSP NAD 83 (ft)	BORING LOCATION: See Map		T.O.C. ELEV.: 28.41
DRILL MACHINE: CME 45B ATV	METHOD: HSA	0 HOUR DTW:	BORING DEPTH: 14.0
START DATE: 10/04/04	FINISH DATE: 10/04/04	24 HOUR DTW:	WELL DEPTH: 12.0

DEPTH	BLOW COUNT 6in	6in	6in	6in	OVA (ppm)	LAB.	USCS	LOG	SOIL AND ROCK DESCRIPTION (DEPTH – ELEVATION)
									0.0 LAND SURFACE 28.4
							SM		Brown, gray, silty, fine to med. SAND. 2.0 – 26.4
3.0	1	2	4	9			SM		Gray, silty, fine to med. SAND. 9.0 – 19.4
8.0	woh	woh	woh	1					
10.0	woh	woh	woh	woh			SM		Black, silty, fine to med. SAND. Maybe old organic layer. 12.5 – 15.9
12.0	woh	woh	woh	woh			SM		Gray, silty, fine to med. SAND. 14.0 – 14.4
									Boring Terminated at Elevation 14.4 ft

WELL DETAIL



Portland Cement | Bentonite Pellets | #2 Medium Sand

CATLIN BORING LOG 201-125.GPJ CATLIN.GDT 11/23/04

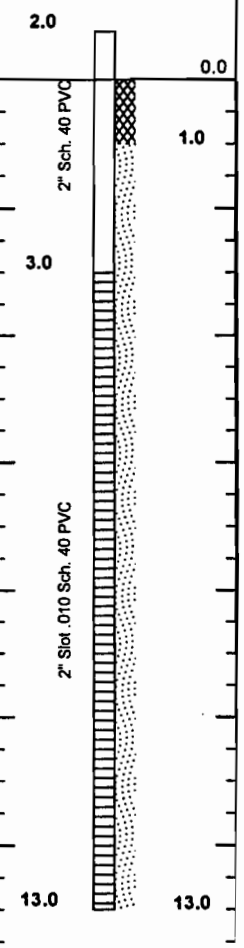
WELL LOG

CATLIN ENGINEERS and SCIENTISTS
Wilmington, North Carolina

PROJECT NO.: 201-125	STATE: NC	COUNTY: New Hanover	LOCATION: Wilmington
PROJECT NAME: FHR North Terminal		LOGGED BY: Steve Tyler	WELL ID: MW-36
		DRILLER: William Miller	
NORTHING: 161,540.0	EASTING: 2,318,142.3	CREW: Dimitri Talbert	
SYSTEM: NCSP NAD 83 (ft)	BORING LOCATION: See Map		T.O.C. ELEV.: 35.46
DRILL MACHINE: CME 45B ATV	METHOD: HSA	0 HOUR DTW: 5.2	BORING DEPTH: 14.0
START DATE: 10/05/04	FINISH DATE: 10/05/04	24 HOUR DTW:	WELL DEPTH: 13.0

DEPTH	BLOW COUNT 6in	6in	6in	6in	OVA (ppm)	LAB.	USCS	LOG	SOIL AND ROCK DESCRIPTION	DEPTH	ELEVATION
									LAND SURFACE	0.0	33.5
							SP		Tan, fine to med. SAND.	4.0	29.5
4.0	3	5	6	9	2722		SP		Dark olive, black fine to med. SAND with few fines. HC odor. (Px solvents). Dry.	6.0	27.5
										9.0	24.5
9.0	4	5	5	4	55.8		SP		Brown, fine to med. SAND with few fines, slight HC odor. (Solvents-hydrogen sulfide). Wet.	11.0	22.5
										12.0	21.5
12.0	2	3	7	14	40.5		SP		S.A.A.	14.0	19.5
									Boring Terminated at Elevation 19.5 ft		

WELL DETAIL



Bentonite Pellets #2 Medium Sand

CATLIN BORING LOG ...125.GPJ CATLIN.GDT 11/30/04

WELL LOG

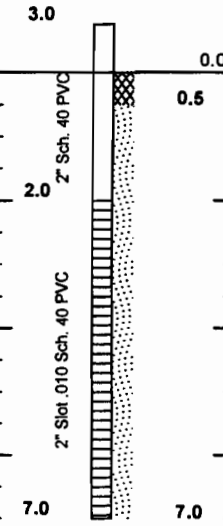
CATLIN ENGINEERS and SCIENTISTS
Wilmington, North Carolina

SHEET 1 OF 1

PROJECT NO.: 201-125	STATE: NC	COUNTY: New Hanover	LOCATION: Wilmington
PROJECT NAME: FHR North Terminal		LOGGED BY: Steve Tyler	WELL ID: MW-37
		DRILLER: William Miller	
NORTHING: 161,538.9	EASTING: 2,318,269.6	CREW: Dimitri Talbert	
SYSTEM: NCSP NAD 83 (ft)	BORING LOCATION: See Map		T.O.C. ELEV.: 36.26
DRILL MACHINE: CME 45B ATV	METHOD: HSA	0 HOUR DTW: 5.02	BORING DEPTH: 11.0
START DATE: 10/05/04	FINISH DATE: 10/05/04	24 HOUR DTW:	WELL DEPTH: 7.0

DEPTH	BLOW COUNT 6in	6in	6in	6in	OVA (ppm)	LAB.	USCS	LOG	SOIL AND ROCK DESCRIPTION	DEPTH	ELEVATION
									LAND SURFACE	0.0	33.3
							SP		Tan/brown, fine to med. SAND with few gravels (LS fill). No HCO. Dry.	4.0	29.3
4.0	2	3	10	12	4.8		SP		Dark olive/brown, fine to med. SAND with few fines. No HCO. Wet.	6.0	27.3
										9.0	24.3
9.0	2	10	14	14	574		SP		S.A.A. Slight Px odor. Wet.	11.0	22.3
									Boring Terminated at Elevation 22.3 ft		

WELL DETAIL



Bentonite Pellets #2 Medium Sand

CATLIN BORING LOG 25.GPJ CATLIN.GDT 11/30/04

APPENDIX E

LABORATORY DATA ASSOCIATED WITH THE CHEMICAL OXIDATION ACTIVITIES

M/P-XYLENE CONCENTRATIONS VS TIME - SELECTED WELLS
FOR
FULL-SCALE HYDROGEN PEROXIDE CHEMICAL OXIDATION APPLICATION

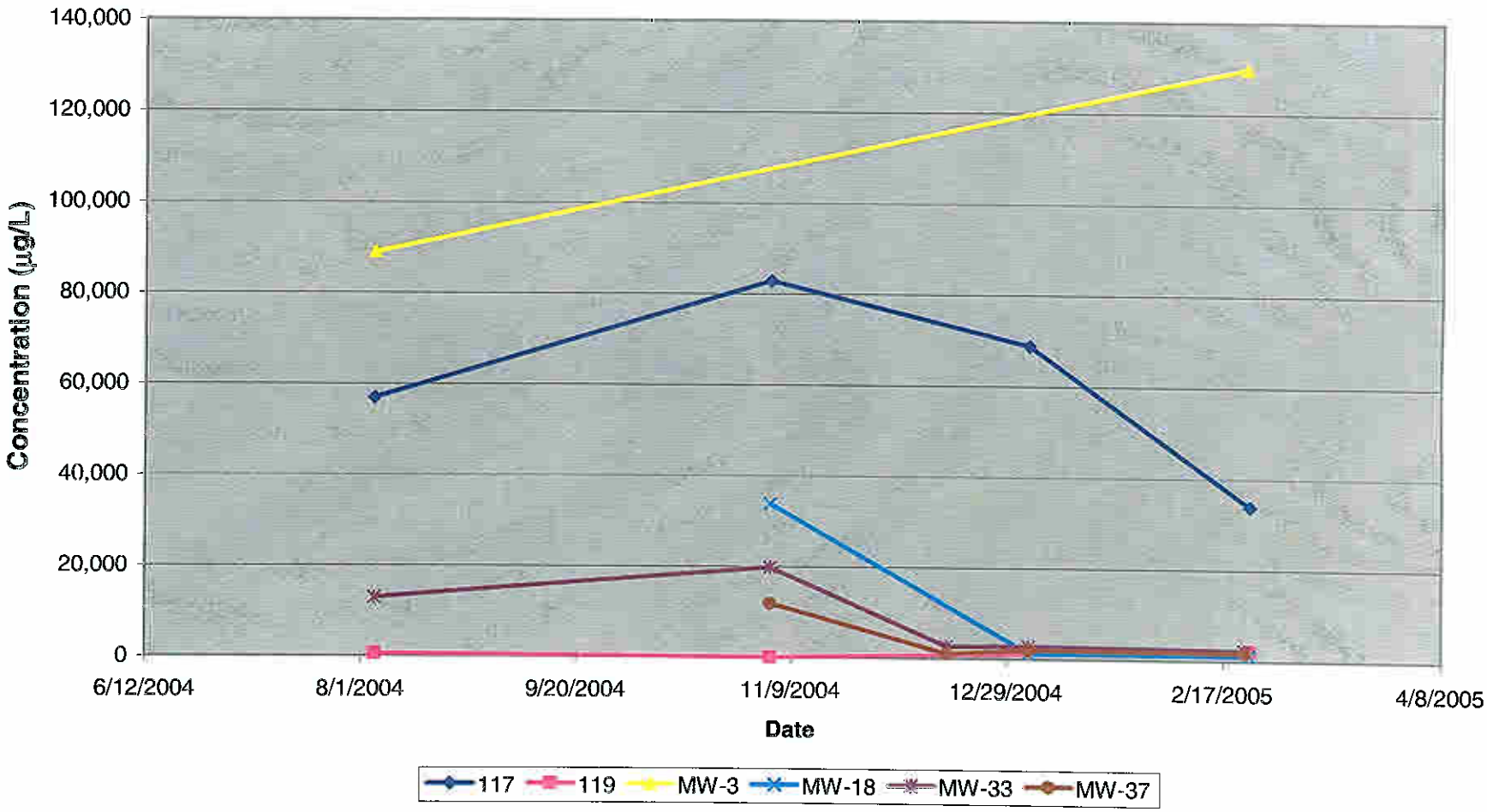
Subject Site: FHR North Terminal **Project No:** 201-125

Monitoring Well ID	Sample Date	mp-Xylene Concentration (mg/L)	Incremental Percent Reduction
117	8/4/2004	57,000	
	11/4/2004	83,000	-45.61%
	1/3/2005	69,000	16.87%
	2/23/2005	34,000	50.72%
119	8/4/2004	590	
	11/4/2004	91	84.58%
	2/23/2005	2,300	-2427.47%
MW-3	8/4/2004	89,000	
	2/22/2005	130,000	-46.07%
MW-5	8/4/2004	390	
	11/24/2004	800	-105.13%
	12/15/2004	63	92.13%
	1/3/2005	330	-423.81%
	2/22/2005	34	89.70%
MW-7	8/4/2004	3,100,000	
	11/24/2004	190,000	93.87%
	12/15/2004	130,000	31.58%
	1/3/2005	120,000	7.69%
	1/11/2005	98,100	18.25%
	2/22/2005	120,000	-22.32%
MW-8	8/4/2004	5,800	
	11/24/2004	2,100	63.79%
	12/15/2004	1,200	42.86%
	1/3/2005	550	54.17%
	2/22/2005	20,000	-3536.36%
MW-10	11/24/2004	170,000	
	12/15/2004	170,000	0.00%
	1/3/2005	140,000	17.65%
	1/11/2005	101,000	27.86%
	1/25/2005	232,000	-129.70%
	1/31/2005	148,000	36.21%
MW-11	8/4/2004	53,000	
	11/24/2004	37,000	30.19%
	12/15/2004	40,000	-8.11%
	1/3/2005	19,000	52.50%
	1/11/2005	40,000	-110.53%
	1/25/2005	56,320	-40.80%
	1/31/2005	47,200	16.19%
	2/22/2005	79,000	-67.37%
MW-12	8/4/2004	35,000	
	11/24/2004	55,000	-57.14%
	12/15/2004	17,000	69.09%
	1/3/2005	21,000	-23.53%
	2/22/2005	100,000	-376.19%
MW-18	11/4/2004	34,000	
	1/3/2005	1,400	95.88%
	2/23/2005	1,300	7.14%
MW-33	8/4/2004	13,000	
	11/4/2004	20,000	-53.85%
	12/15/2004	2,800	86.00%
	1/3/2005	2,900	-3.57%
	2/22/2005	2,500	13.79%
MW-37	11/4/2004	12,000	
	12/15/2004	1,200	90.00%
	1/3/2005	2,100	-75.00%
	2/22/2005	1,900	9.52%

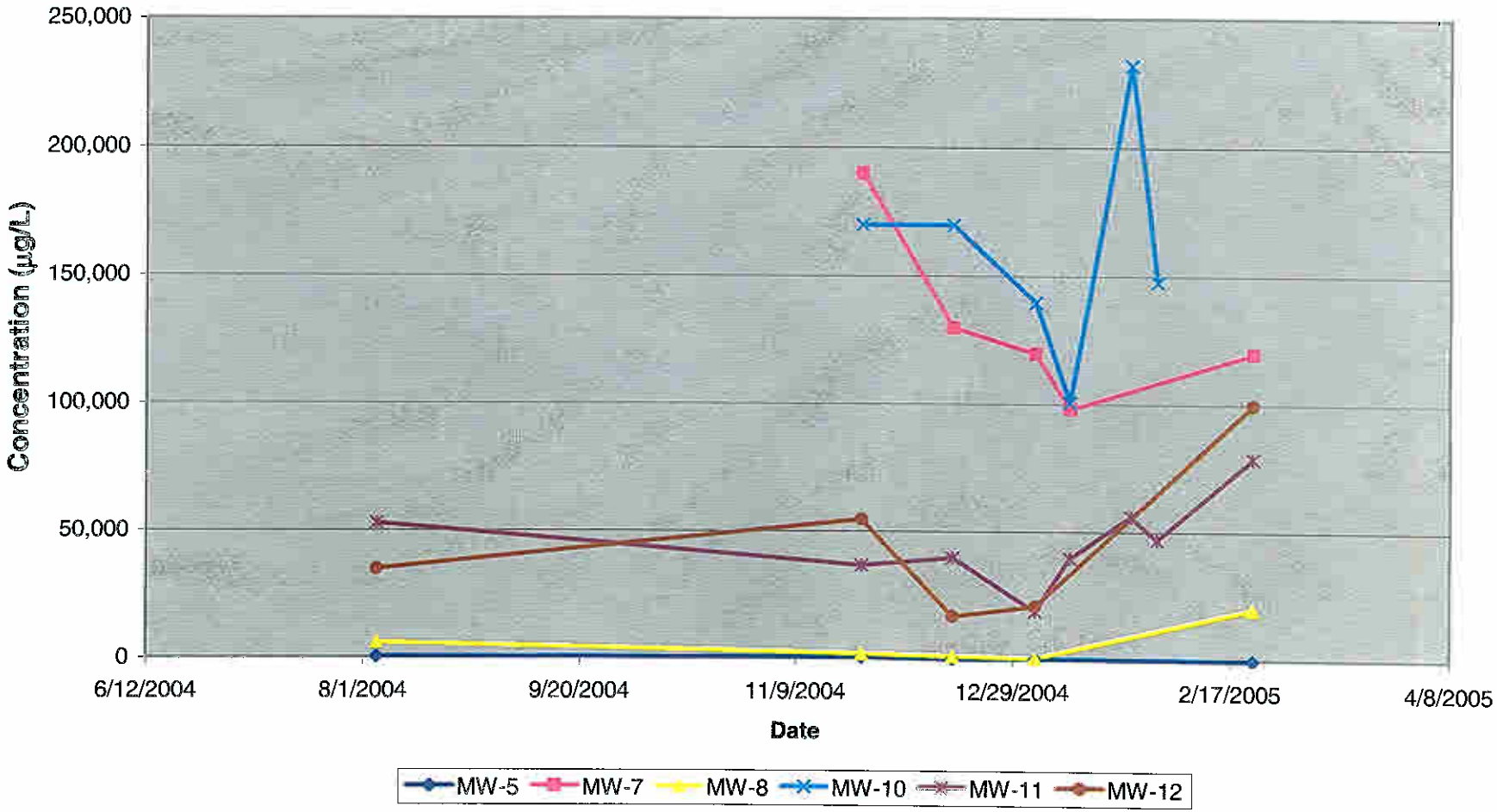
CHEMICAL OXIDATION APPLICATION

m/p-Xylene Concentrations vs. Time

Non-Source 1 Area Wells



CHEMICAL OXIDATION APPLICATION

m/p-Xylene Concentrations vs. Time

Source 1 Area Wells