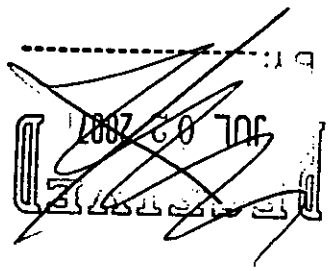


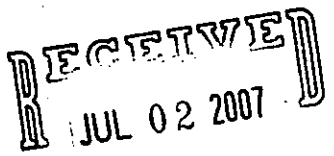
STS CONSULTANTS, LTD.

Limited Site Investigation Report for Leak 15,656 at Former Alex Exhaust

Minnesota Pollution Control Agency
Detroit Lakes, MN

STS 200606839

June 30, 2007



STS CONSULTANTS

STS Consultants, Ltd.
10900 73rd Avenue North, Suite 150
Maple Grove, Minnesota 55369

voice (763) 315-6300
fax (763) 315-1836
web www.stsconsultants.com

June 30, 2007

Ms. Arlene Furuseth
Project Leader
Minnesota Pollution Control Agency
714 Lake Avenue, Suite 220
Detroit Lakes, MN 56501

Re: Limited Site Investigation Report for Leak 15,656 at Former Alex Exhaust;
STS Project 200606839

Dear Ms. Furuseth:

The attached Limited Site Investigation Report Form (Guidance Document 4-06) was prepared by STS to document the findings of work requested by you in fiscal year 2007 for the above referenced site.

The findings of the limited site investigation indicate that the full extent of groundwater and vapor impacts has not been fully defined. The site is considered a high priority site with respect to a public water supply (City of Alexandria) and is located within a Drinking Water Source Management Area (DWSMA) and a Source Water Protection Area (SWPA).

STS recommends a remedial investigation for Leak # 15,656 including installation of permanent monitoring wells to fully define the extent and magnitude of groundwater impacts and confirm an accurate groundwater flow direction at the site. Additional soil gas sampling including sub-slab soil vapor samples is recommended at the site building and adjacent former Lloyd's Café building to evaluate the existence of a completed pathway to the interior of each structure if these buildings are not slated for demolition due to area re-development.

STS has appreciated the opportunity to provide continued service on this release in FY07. If you have questions concerning the project, we welcome the opportunity to discuss these considerations with you. You may contact Tim Grape by calling 763-315-6318 during normal office hours, or by email at: tim.grape@stsaecom.com. It would be a pleasure to hear from you.

Sincerely,

STS CONSULTANTS, LTD.

Timothy J. Grape, PG
Project Geologist

Robert L. DeGroot, PG PE
Principal Engineer

TJG/tc
Encs.

Minnesota Pollution Control Agency

Investigation Report Form

Guidance Document 4-06

Complete this form to document site investigation activities, including Limited Site Investigations (LSIs) and full Remedial Investigations (RIs). Do not revise or delete any text or questions from this report form. Include any additional information that is important for making a site cleanup decision. If only an LSI is necessary, you may skip Section 6 and Section 7 of this report form.

Refer to Minnesota Pollution Control Agency (MPCA) Guidance Document 1-01 *Petroleum Remediation Program General Policy* for the overall site investigation objectives, and to other MPCA guidance document for details on investigation methods. When a tank has been excavated, refer to Guidance Documents 3-01 *Excavation of Petroleum Contaminated Soil* and 3-02 *General Excavation Report Worksheet* for reporting requirements. Document the occurrence of free product using Guidance Document 2-02 *Free Product: Evaluation and Recovery,* and Guidance Document 2-03 *Free Product Recovery Report Worksheet.*

MPCA Site ID: Leak: **00015,656** Date: **June 30, 2007**

Responsible Party: **Referred to Fund Financed 3/15/06**

MPCA Project Leader: **Arlene Furuseth** Phone #: **(218) 846-0732**

Current Property Owner: **Ben Zacher** Phone #: **(320) 760-1712**

Property Owner Address: **901 Hwy 29 North** City: **Alexandria**

County: **Douglas** Zip Code: **56308**

Consultant: **STS Consultants, Ltd.** Consultant phone #: **(763) 315-6300**

Facility Name: **Alex Exhaust**
Facility Address: **905 3rd Avenue East** City: **Alexandria**

County: **Douglas** Zip Code: **56308**

Site Location Information: Complete Guidance Document 1-03a *Spatial Data Reporting Form* and include in Appendix G.

Section 1: Emergency and High Priority Sites

1.1 Is an existing drinking water well impacted or likely to be impacted within a two-year travel time? ☐*Yes*☒*No*

1.2 Are there any existing field-detectable vapor impacts (OVM, explosimeter, odors, etc.)? ☐*Yes*☒*No*

1.3 Is there an existing surface water impact as indicated by 1) a product sheen on the surface water or 2) a product sheen or volatile organic compounds in the part per million (ppm) range in ground water in a well located close to the surface water. ☐*Yes*☒*No*

1.4 Has the release occurred in the last 30 days? ☐*Yes*☒*No*

1.5 Has free product been detected at the site? **If *YES***, attach Guidance Document 2-03 *Free Product Recovery Report Worksheet.* ☐*Yes*☒*No*

1.6 Is a hydrogeologically sensitive aquifer impacted which is tapped by water wells within 500 feet from the release source? **If *YES***, explain: ☐*Yes*☒*No*

1.7 Has the public water supply risk assessment concluded that the site is a high priority site with respect to a public water supply well (see Guidance Document 4-18 *Public Water Supply Risk Assessment at Petroleum Remediation Sites*)? **If *YES***, provide the name of the public water supply system(s) at risk. **City of Alexandria – North Well Field** ☒*Yes*☐*No*

1.8 Did the vapor intrusion assessment detect exceedences of soil gas action levels (see Guidance Document 4-01a *Vapor Intrusion Assessments Performed during Site Investigations*)? ☒*Yes*☐*No*

If you answered *YES* to any of questions 1 through 8 above describe below the actions taken to date to reduce or eliminate the risk posed by the release.

1.7 The site is considered a high priority site with respect to a public water supply (City of Alexandria). The site is located within a Drinking Water Source Management Area (DWSMA) and Source Water Protection Area (SWPA). The water supply for Alexandria is obtained from wells set in glacial deposits. The aquifer is considered to exhibit a high susceptibility to contamination due to the local geological setting. The release site is located down gradient of the North Well Field for the City of Alexandria. It is unlikely that impacts from Leak # 15,656 would contaminate the City wells based

on the extent and magnitude of impacts at the site and its location (down-gradient) in regards to the City well field. The Source Water Assessment for Alexandria is attached in Appendix E.

1.8 Exceedences of soil gas action levels were detected in several soil gas samples collected at the site. However, the two existing buildings within 100 feet of the release site are currently vacant and are slab-on-grade construction. There does not appear to be an immediate human health risk associated with the soil gas concentrations from this release based on a lack of any inhabited receptors at the time of this report. Sub-slab soil vapor samples should be collected from the site building and adjacent former Lloyd's café building to evaluate the existence of a completed pathway to the interior of each structure if these buildings are not slated for demolition due to area development.

Section 2: Site and Release Information

2.1 Attach Table 1 - Tank Information, listing all past and present tanks. Describe the status of the other components of the tank system(s), (i.e., piping and dispensers).

STS contacted the City of Alexandria Fire Marshal (Mr. Dennis Stark) to determine if they had any records of UST removals from this property. Mr. Stark provided STS with 3 site photographs (Appendix F) documenting the removal of 4 underground storage tanks (USTs) from the site property on May 16, 1988. The tanks consisted of 1-2,000 gallon UST and 3-3,000 gallon USTs according to Mr. Stark's records. There was no record as to the UST contents or if any evidence of leakage from the tanks or analytical testing was conducted at the time of the UST removals.

2.2 Describe the land use and pertinent geographic features within 1,000 feet of the site.

Land use within 1,000 feet of the site consists of commercial properties to the west, commercial and residential properties to the south, a former trailer court now vacant property to the east and a rail road line directly north of the site beyond which lies a residential area. Lake Agnes is located approximately 2,000 feet northwest of the project site.

2.3 List other potential leak sources within 500 feet of the site.

Two leak sites are located approximately 500 feet west of the project site. Leak 2873 (Alexandria Tire and Auto) located at 801 3rd Avenue East is a petroleum leak site closed by the MPCA on January 6, 1992. Leak 12940 (Geyer Rental) located at 315 Nokomis Street is an open MPCA petroleum leak site. Alexandria Concrete Co. (901 4th Avenue E.) is located due South across 3rd Avenue (TH-27) from the release site. Alexandria Concrete Co. is a registered tank site with approximately 7 active petroleum above ground storage tanks (ASTs) and 3 removed petroleum USTs.

2.4 Identify and describe the source(s) or suspected source(s) of the release or contamination encountered, and how the release or contamination was discovered.

The suspected source of release is from a former underground storage tank (UST) fuel distribution system from a Cenex service station that according to the current site owner (Mr. Ben Zacher) operated on the property up until the early 1960's. The release was discovered on February 25, 2004 during a Phase II ESA conducted for the Minnesota Department of Transportation (Mn/DOT) trunk highway 29/27 (TH-29/27) reconstruction project.

Check all that apply: ☐ Piping, ☒ Tank, ☒ Dispenser, ☐ Pump/Turbine, ☐ Spill/Overfill

2.5 Identify the cause of the release (tank and/or piping).

Check all that apply: ☐ Corrosion, ☐ Loose Component, ☐ Puncture,

☐ Mechanical or Physical Damage, ☒ Unknown

2.6 Identify the method the release was detected.
Check all that apply: ☐Removal, ☐ Line Leak Detection, ☐ Tank Leak Detection, ☐ Visual/Olfactory, ☒ Site Assessment, **(Phase II ESA for Mn/DOT TH-29/27 reconstruction)** ☐ Other

2.7 Has the site ever, at any point had an E-85 tank? ☐ Yes, ☒ No

2.8 What was the volume of the release? (if known): **Unknown** gallons

2.9 When did the release occur? (if known): **Unknown**

2.10 Provide aerial photos and Sanborn Maps of the area for the various time periods they are available (Section 14: Figures).

An aerial photograph of the area from the Minnesota Department of Health (MDH) County Well Index website is provided as Figure 6.

Section 3: Excavated Soil Information

3.1 Include the Guidance Document 3-02 *General Excavation Report Worksheet* in Appendix A.

A Documentation Report dated December 30, 2005 was completed for the Mn/DOT TH-29/27 reconstruction project. Pertinent portions of this Documentation Report are attached in Appendix A.

3.2 Was soil excavated for off-site treatment? ☒*Yes*☐*No*

Date excavated: **Petroleum contaminated soil was excavated by Mn/DOT during TH-29/27 highway reconstruction activities in the 2004-2005 construction seasons**

Total Volume removed: **Approximately 1,200 cubic yards**

How much of the Total Volume removed was petroleum saturated: **0** cubic yards

3.3 Indicate soil treatment type:

☒land treatment
☐thermal treatment
☐composting/biopiling
☐ other ()

Name and location of treatment facility:

Approximately 1,200 cubic yards of petroleum contaminated soil was excavated from the area road right of way directly south of the Alex Exhaust site building (see Figure 2). The contaminated soil was land-spread at an MPCA approved land-spread facility located in the SW ¼ of the NE ¼ of Section 12, Township 124 North, Range 38 West, Barsness Township, Pope County, Minnesota. A Land Treatment Site Location Diagram is attached in Appendix A. A copy of the MPCA Land Treatment Approval Letter dated October 7, 2005 and the uniform load tally sheets for the contaminated soil hauled to the land treatment facility are attached in Appendix A.

Section 4: Extent and Magnitude of Soil Contamination

4.1 Were soil borings conducted in or immediately adjacent to all likely sources including: ☒ *YES* ☐ *NO*

dispensers,	☐ *yes*	☐ *no*	☒ *not present*
transfer areas,	☐ *yes*	☐ *no*	☒ *not present*
underground storage tank basins,	☒ *yes*	☐ *no*	☐ *not present* — NO?
above ground storage tank areas,	☐ *yes*	☐ *no*	☒ *not present*
piping,	☐ *yes*	☐ *no*	☒ *not present*
remote fill pipes,	☐ *yes*	☐ *no*	☒ *not present*
valves	☐ *yes*	☐ *no*	☒ *not present* ?
known spill areas	☒ *yes*	☐ *no*	☐ *not present* — ? what spill

4.2 To adequately define the vertical extent of contamination, borings should be completed at least ten feet below the deepest measurable (field screening and visual observation) contamination. If the water table is encountered, the boring should be completed a minimum of five feet below the surface of the water table. Were all soil borings completed to the required depth? ☒ *YES* ☐ *NO*

NO

4.3 To adequately evaluate site stratigraphy complete at least one boring to 20 feet below the deepest site contamination. If the water table is encountered, the boring should be completed a minimum of 5 feet below the surface of the water table. If a confining layer is present, drill the boring in an uncontaminated area. Was this done? ☒ *YES* ☒ *NO*

Deepest silt clay = 30' 30+20=50'

Boring B-1 was completed to a depth of 40 feet below ground in the vicinity of the suspected source area.

If you answered *NO* to any of the three previous questions, explain why the borings were not conducted in the required locations or to the required depths (see Guidance Document 4-01 *Soil and Ground Water Assessments Performed during Site Investigations* regarding exceptions and MPCA approval for depth of drilling):

4.4 Indicate the drilling method:

- ☒ hollow-stem auger
- ☐ sonic drilling
- ☐ push probes
- ☐ other.

Note: MPCA staff hydrologist approval is required before use of flight augers

4.5 Discuss soil borings drilled and provide rationale for their locations. Attach boring logs in Appendix D.

At the time of the STS site investigation activities (February, 2007), no knowledge as to the exact location of former UST's or fuel distribution system components had been identified for this site. Therefore, soil boring locations were selected based upon the site layout and contaminated soil location information obtained from excavation activities for the Mn/DOT TH-29/27 reconstruction. It was later determined that the former UST basin was actually located east of the site building (Figure 2). Boring B-3 was advanced Southeast of the former UST basin area.

Soil boring B-1 was advanced in the suspected release "source area" where heavy soil impacts were identified during the Mn/DOT highway reconstruction activities. This area is also a likely location for former gasoline dispensers based on the site layout and site building location. Soil borings B-2 through B-6 were advanced radially around B-1 to define the extents of soil and groundwater contamination.

4.6 Attach Table 2 - Results of Soil Headspace Screening. In Appendix C, discuss soil headspace screening method and describe any deviation from recommended and/or required methods and procedures.

Headspace screening results are summarized in Table 2 and listed on the soil boring logs.

4.7 Attach Table 3 - Analytical Results of Soil Samples. Provide analytical results in Appendix B. In Appendix C, discuss soil sampling and analytical methods used and describe any deviation from recommended and/or required methods and procedures

Analytical results of soil samples are summarized on Table 3.

4.8 Describe the vertical and horizontal extent and magnitude of soil contamination. Provide a plan-view map and two cross-sections that illustrate both soil head space and laboratory analytical results (Section 14). Not done

Contaminated soil was encountered in soil samples B-1(6'), B-4(13') and B-5(6') based on laboratory analytical results. Elevated PID headspace readings on soil samples collected at the water table interface were observed in soil borings B-2, B-3, B-4 and B-6.

Soil sample B-1(6') had an ethylbenzene concentration of 10 mg/kg which is above the Tier 1 SLV of 4.7 mg/kg. No other SLV or SRV exceedences were detected in the soil samples collected from soil borings.

4.9 Is surface soil contamination present at the site (i.e., soil in the uppermost 2 feet that is visibly stained, contaminated at greater than 10 ppm (PID) or petroleum saturated)? ☐ *Yes* ☒ *No* — no 27' sampling

If *YES*, attach site map identifying extent(s) of surface soil contamination (Section 14). If borings were used to define extent, complete Table 4.

4.10 Attach Table 5 - Other Contaminants Detected in Soils (Petroleum or Non-petroleum Derived). Discuss the possible sources of these compounds.

Soil samples from borings were analyzed for BTEX, GRO and DRO compounds only.

4.11 Is contaminated soil in contact with ground water? ☒ *Yes* ☐ *No*

If *YES* or if ground water contamination appears likely, then complete Section 5.

If *NO* (contaminated soil is not in contact with ground water), what is the distance separating the deepest contamination from the surface of the water table? Was this distance measured during site activities, referenced from geologic information, or estimated based on professional opinion during a site visit? feet

4.12 Describe observations of any evidence of a fluctuating water table and a seasonal high water table (e.g., mottling). Also, from other sources of information describe the range of natural water table fluctuations in the area.

No evidence of a seasonal high or fluctuating water table was observed during investigation activities.

4.13 In your judgment, is there a sufficient distance separating the petroleum contaminated soil (or an impacted non- aquifer) from the underlying aquifer to prevent petroleum contamination of the aquifer? Please explain in detail. In your explanation, consider the data in this section as well as the nature of the petroleum release (i.e., volume, when it occurred, petroleum product). ☒*Yes* ☐*No*

If *YES*, a ground water contamination assessment is not necessary as part of the LSI.

The deepest measured groundwater contamination based on analytical results is approximately 25.5 feet below ground surface in boring B-5. The site area stratigraphy consists mainly of clay. The City of Alexandria municipal supply wells located in the North Well Field area are screened in glacial deposits and range in depth from 110 feet to 140 feet below ground. The North Well Field area is located approximately ½ mile up-gradient of the release area. It is unlikely that impacts associated with Leak 15,656 would impact the municipal wells based on the extent of impacts, area geology and apparent groundwater flow direction.

If *NO*, a ground water contamination assessment is necessary. Complete Section 5.

Section 5: Aquifer Characteristics/Ground Water Contamination Assessment

Complete Section 5 if groundwater has been contaminated or may become contaminated. Aquifer determination is made during the LSI. It is based upon the stratigraphy and a hydraulic conductivity measurement calculated from grain size distribution analysis. The site stratigraphy gives the context within which the hydraulic conductivity measurement can be interpreted. Please refer to Guidance Document 4-01 *Soil and Ground Water Assessments Performed during Site Investigations* for methods and requirements.

5.1 Provide an average hydraulic conductivity value (K) measured:

No grain size analysis performed

K = 10^{-5} cm/s = 0.2835 ft/day
(Based on a soil type of sandy clay)

Indicate the method of measurement (i.e., Hazen, Masch and Denny, Kozeny-Carmen, etc.): Grain-size distribution approximations by method(s).

The average hydraulic conductivity was referenced from Applied Hydrogeology 3rd Edition by C.W. Fetter, 1994, based on a soil type of sandy clay. The most abundant soil type observed in the soil borings was silty clay with 2 foot to 4 foot layers of sandy clay. Although silty clay is the most abundant soil type present, the majority of the groundwater movement in this unit is likely through the more permeable sandy clay layers.

Indicate the locations and depths of soil samples submitted for grain size analyses. Provide the results of grain size analyses and other information used for the determination of K-values in Appendix F.

Not Available

Grain size analysis was not performed on the soils from this site. Grain size distribution methods such as the Hazen method are only applicable in sandy soils where the effective grain size (d_{10}) is between approximately 0.1 and 0.3 mm. The effective grain size of the silty clay and sandy clay soils encountered at this site are below the applicable grain size for usage of the grain-size distribution method for determining the K value.

5.2 Calculate a range for aquifer transmissivity (T) using the equation T = Kb, where b is the thickness of the aquifer:

T_{High} = 57 ft^2/day (b = 200 ft) - Depth to bedrock in the area is approximately 200 ft.
T_{Low} = 14 ft^2/day (b = 50 ft) – Assuming clay soils are acting as aquitards separating upper and lower hydrologic units within the glacial deposits.

Determine the aquifer thickness (b) from geologic logs of soil borings, water well logs, and available published information. Attach water well logs in Appendix D. If the

transmissivity of a contaminated hydrogeologic unit is greater than 50 ft^2/day, it is considered an aquifer (for the purpose of the Petroleum Remediation Program), and monitoring wells will be necessary.

5.3 Discuss in detail the site geology and stratigraphy, including a discussion of local and regional hydrogeology, using soil boring data and cross sections, geologic logs of near-by water wells, and available published information.

Soil types observed in the borings conducted by STS consisted mainly of silty clay with trace sand and gravel with 2 to 4 foot sandy clay layers at depths of 20 to 30 feet below ground surface. A review of local municipal well logs indicated similar stratigraphy with clay tills and intermittent layers of sand and gravel at depths of 75 to 100+ feet. Groundwater depths in the temporary well soil borings completed by STS ranged from approximately 25 feet in boring B-5 to 16 in boring B-3. The temporary wells were left in overnight in an attempt to obtain stabilized groundwater readings, however, the water levels did not appear to stabilize in the allotted twenty four hour rest period likely due to the clay soils present. Permanent monitoring wells are required to obtain an accurate groundwater flow direction at the project site. Groundwater flow direction obtained from monitoring wells associated with Leak Number 12940 located approximately 500 feet southwest of the site indicate a shallow groundwater flow direction of southwest in the area.

Bedrock underlying the quaternary soils in the area consists of meta-sedimentary rocks including greywacke, slate, conglomerate, quartzite, felsic-intermediate volcanoclastic rocks and banded iron-formation (Geologic Map of Minnesota, Bedrock Geology, by P.K. Sims, 1970). The estimated depth to bedrock in the area is greater than 200 feet based on a review of local well logs.

5.4 Attach Table 6- Water Level Measurements and Depths of Water Samples Collected from Borings. Indicate the method used to measure the water levels in borings and the depth water samples were collected from borings. Allow water levels in borings to equilibrate to static conditions and then adjust the effective screened intervals in borings to intercept the static water table prior to water sample collection. Discuss groundwater flow direction.

Temporary monitoring wells were installed and allowed to rest overnight in an attempt to collect accurate groundwater elevation data. The top of riser of the temporary wells were surveyed to a local datum. The groundwater elevation data obtained from the temporary wells did not appear to be representative of stabilized groundwater conditions likely due to the soil type present (silty clay). Permanent monitoring wells are required to obtain an accurate groundwater flow direction at the project site. Groundwater flow direction obtained from monitoring wells associated with Leak Number 12940 located approximately 500 feet southwest of the site indicate a shallow groundwater flow direction of southwest in the area.

See Table 6 – Water Level Measurements and Depths of Water Samples Collected from Borings.

5.5 Attach Table 7 - Analytical Results of Water Samples Collected from Borings. Summarize the analytical results of groundwater samples collected as part of an LSI. Discuss the extent and magnitude of groundwater contamination. Also provide a discussion on QA/QC, including information on the samples collected and laboratory analyses performed.

Benzene was detected above the established HRL for this compound (10 µg/L) in groundwater samples TW-1(150 µg/L), TW-2 (38 µg/L), TW-3 (160 µg/L) and TW-4 (26 µg/L). GRO and DRO were detected above the established HBV (200 µg/L) for these compounds in groundwater samples TW-1(11,000/2,800 µg/L), TW-2 (3,900/1,000 µg/L), TW-3 (5,800/1,200µg/L) and TW-4 (1,300/400 µg/L). DRO was also detected above the established HBV (200 µg/L) for this compound in TW-5(300 µg/L). 1,3,5-trimethylbenzene was detected above the established HBV for this compound (300 µg/L) in sample TW-1 (380 µg/L). 1,2-dichloroethane (1,2-DCA) was detected above the established HRL for this compound (4 µg/L) in sample TW-1 (370 µg/L).

No VOC, DRO or GRO compounds were detected above laboratory reporting limits in sample TW-6.

A field equipment blank (Field Blank) was analyzed for VOC, GRO and DRO for quality control/quality assurance. Tetrahydrofuran was detected in the field blank at a concentration of 12 µg/L. This compound was not detected in any of the other groundwater samples analyzed from the site. No other VOC, GRO or DRO compounds were detected above laboratory reporting limits in the Field Blank sample.

Analytical results of water samples collected from borings are summarized on Table 7.

5.6 Attach Table 8 - Other Contaminants Detected in Water Samples Collected from Borings (Petroleum or Non-petroleum Derived). Discuss the possible sources of these contaminants and provide a discussion of QA/QC information.

See Section 5.5 above for a discussion of contaminants detected in water samples collected from borings. Other contaminants detected in water samples collected from borings are summarized in Table 8.

5.7 Laboratory certification number:

Northeast Technical Services = 027-137-157
Pace Analytical = 027-053-137

Additional Ground Water Investigation

Monitoring Wells Have Not Been Installed for This Site

Complete **Section 6** only if: 1*) an aquifer has been impacted at or above Minnesota Department of Health HRLs, 2) an aquifer has been impacted below the HRLs, but the levels are likely to reach the HRLs, or 3) there is an insufficient distance separating the petroleum contaminated soil (or an impacted non- aquifer) from the underlying aquifer.* Complete **Section 7** only if remediation is anticipated. Regardless of whether you are submitting an *LSI* or a *full RI*, all sections following Section 7 must be completed.

Section 6. Extent and Magnitude of Ground Water Contamination

6.1 Discuss drilling and installation of wells, including the rationale for their locations. Attach boring logs in Appendix D.

6.2 Attach Table 9 - Monitoring Well Completion Information.

6.3 Attach Table 10 - Summary of Water Levels Measured in Wells.

6.4 Attach Table 11 - Analytical Results of Water Samples Collected from Wells. Indicate here whether samples were purged or unpurged (see Guidance Document 4-05). If purged, indicate purging method.

6.5 Attach Table 12 - Other Contaminants Detected in Water Samples Collected from Wells (Petroleum or Non-Petroleum Derived). Indicate here whether samples were purged or unpurged (see Guidance Document 4-05). If purged, indicate purging method.

6.6 Describe the extent and magnitude of the ground water contamination. Discuss the presence of non-petroleum compounds, if detected, and identify possible sources of these compounds. Also provide a discussion on QA/QC, including information on the samples collected and laboratory analyses performed.

6.7 Is there a clean or nearly clean (below HRLs) down-gradient monitoring well located along the longitudinal axis of the contaminant plume? (approximately 20 degrees plus or minus the axis) ☐*Yes* ☐*No*

6.8 Is there a worst case well completed through the source area(s) of the release? ☐*Yes* ☐*No*

If you have answered *NO* to any of the above two questions, please explain why a well was not completed in the required location.

6.9 Provide an estimate of the longitudinal length of the dissolved contaminant plume: feet

6.10 Calculate groundwater flow velocity (based on Darcy's Law) using the average K-value, average horizontal hydraulic gradient, and effective porosity. Provide documentation in Appendix F.

Hydraulic Conductivity (K) = Method
Porosity (n) = method/reference
Average horizontal gradient (dh/dl) =
Calculated GW velocity (v) = cm/s ft/day

6.11 Using the calculated groundwater flow velocity (above), is there a receptor within a five-year travel time? ☐*Yes* ☐*No*

If *YES*, provide the unique well number and identify the location of the receptor(s).

6.12 Were any deep monitoring wells completed at the site? ☐*Yes* ☐*No*

If *YES*, list them and indicate their depths:

Contact the MPCA project hydrologist before installing a deep monitoring well. A deep monitoring well may be necessary if: 1) Contamination exists more than 10 feet below the water table or 2) the impacted aquifer is a drinking water aquifer or is hydraulically connected to the aquifer(s) presently utilized by a water supply well located within 500 feet of the release source.

If contamination is present at depth in the aquifer or in deeper aquifers, additional deep wells may be required. Provide the following information if deep wells are installed:

Vertical Gradient (dv/dl)
Inferred GW Flow Direction

Provide the following information for the deep aquifer unit if it appears to be hydrogeologically distinct from the upper unit.

Porosity (n):
Hydraulic Conductivity (K)

Submit this RI report after completing a minimum of *two quarterly sampling events.* Groundwater monitoring should continue until MPCA response is received.

Section 7: Evaluation of Natural Attenuation

NATURAL ATTENUATION WAS NOT CONDUCTED AS PART OF THIS LIMITED SITE INVESTIGATION

Refer to the Guidance Document 4-03 *Assessment of Natural Attenuation at Petroleum Release Sites*. **Note**: Evaluation of natural attenuation is not required unless requested by MPCA staff.

7.1 Attach Table 13 - Natural Attenuation Parameters. Discuss the results. Specifically, compare the concentrations of the inorganic parameters inside and outside the plume.

7.2 In your judgment, is natural biodegradation occurring at this site? Please explain. ☐*Yes* ☐*No*

If active remediation is anticipated, discuss reasons why natural attenuation (including biodegradation) can not adequately remediate the contaminants to acceptable risk levels.

Section 8: Well Receptor Information/Assessment

Include in Appendix E, copies of the water supply well logs obtained from MGS, MDH, drillers, and where applicable, from County well management authorities.

8.1 Attach Table 14 - Properties Located Within 500 Feet of the Release Source. The Leak Site property must be included in Table 14. Provide a map (scale of 1inch = 50 to 100 ft.) centered on the release area, identifying the boundaries of the properties listed in Table 14, and associated pertinent features such as roads, buildings, water wells, utilities and surface water.

Table 14 summarizes properties located within 500 feet of the release source.

8.2 Were all property owners within 500 feet of the release source successfully contacted to determine if water wells are present? **If *NO***, please explain.

☐ *Yes* ☒ *No*

A walking well survey was conducted by STS on February 6, 2007 and the MDH County Well Index was reviewed to determine if water wells were present within 500 feet of the release. No water wells were identified within a 500 foot radius of the site. A list of the properties surveyed within the 500 foot site radius is summarized on Table 14 and illustrated on Figure 4. Alexandria Light and Power was contacted to verify that the properties identified within 500 feet of the release area are supplied by municipal water.

2nd ??? No documentation of ALP verification

8.3 Attach Table 15 - Water Supply Wells Located within 500 Feet of the Release Source and Municipal or Industrial Wells Within ½ Mile. All water wells within 500 ft. of the release source must be listed, even if construction information was not obtained or available. Any available water well logs or other construction documentation must be included in Appendix E.

One municipal water well (City Well # 7A – Unique # 214756) was identified within 1/2 mile of the release site. The location of this well is illustrated on Figure 4 and the water well log is attached in Appendix E. Several other City wells are located within the North Well Field for the City of Alexandria water supply. These wells are also illustrated on Figure 3 and their respective well logs (if available) are presented in Appendix E. City wells 13 (unique # 635452) and 14 (unique # 680655) were installed within the last two years and the well records were not yet available on the CWI database. City well 16 is a replacement well for City well #11 and is in the process of being installed according to Alexandria Light and Power Water Plant Superintendent Keith Avery.

8.4 Discuss the results of the ground water receptor survey and any analytical results from sampling conducted at nearby water wells. Comment on the risks to water supply wells identified within 500 feet from the release source as well as the risk posed by or to any municipal or industrial wells found within ½ mile. Specifically indicate whether water supply wells identified utilize the impacted aquifer. (Note: an impacted aquifer separated from another aquifer by a clay lens may not be considered a separate aquifer).

8.5 Is municipal water available in the area? ☒*Yes* ☐*No*

8.6 Are there any plans for ground water development in the impacted aquifer within 1/2 mile of the site, or one mile down-gradient of the site if the aquifer is fractured? Please give the name, title and telephone number of the person that was contacted for this information (below). ☒*Yes* ☐*No*

Name: **Mr. Keith Avery**
Title: **Water Plant Superintendent for Alexandria Light and Power**
Telephone **(320) 763-6501**

STS contacted Mr. Keith Avery of Alexandria Light and Power on June 20, 2007 to determine if there were any plans for groundwater development in the North Well Field Area (1/2 mile of the site). Mr. Avery indicated that they were in the process of installing a new municipal well (#16) to replace City Well # 11. The new municipal well (#16) is scheduled to be drilled to a depth of 154 feet below ground and the screen section will be set in the glacial deposits. The new municipal well will have a pumping capacity of 750 gallons per minute (gpm). Mr. Avery also indicated that City Well 7A (well closest to the release site) is still in use as a capacity supply well.

Section 9: Surface Water Risk Assessment

9.1 Are there any surface waters or wetlands located within ¼ mile of the site? ☐*Yes* ☒*No*

If *YES*, list them:

Also list any potential pathway such as ditches, drain tiles, storm sewers, etc., that may lead to the identified surface water features.

9.2 If surface water is present down-gradient of the site, is there a clean down-gradient monitoring well (temporary or permanent) located between the site and the surface water?
☐*YES*
☐*NO*
☒*N/A*

9.3 If you answered ***NO*** to question 9.2, we assume that contamination discharges to surface water. Therefore, complete the following information:

Name of receiving water:	
Receiving water classification	
ORVW?	☐*Yes* ☐*No*
Plume width, (W):	feet
Plume thickness, (H):	feet
Hydraulic conductivity, (K):	gal/day/ft^2
Horizontal gradient, (dh/dl):	(unitless)
Discharge, (Q) = H*W*K*(dh/dl)/1440	gal/min
Applicable chronic standard (7050 or 7052)	
Applicable max. standard (7050 or 7052)	
Applicable FAV (7050 or 7052)	
Contaminant concentration in ground water	

9.4 If you answered ***YES*** to question 9.2, identify the clean down-gradient boring or monitoring well, the distance to the surface water feature, and discuss the contamination risk potential.

Section 10: Field-Detectable Vapor Risk Assessment/Survey

10.1 Is there a history of vapor impacts in the vicinity of the site ? ☐*Yes*☒*No*

If *YES*, describe:

10.2 Is there any indication that free product or contaminated ground water may be traveling off-site within the utility corridors? ☐*Yes*☒*No*

If *YES*, utility backfill investigation is required (refer to Guidance Document 4-01). Discuss the investigation rationale and results.

10.3 Discuss the potential for vapor migration/accumulation near the site. Your discussion should consider: Soil types, product type, presence and distribution of free product or high concentrations of dissolved product. Also, using cross-sections to illustrate the relationship, compare the depth of contamination with the location of underground utility lines, location and depth of storm and sanitary sewers, and location of nearby basements and sumps.

The soil type present at the site (silty clay) can be conducive to vapor migration/accumulation. However, no free product has been identified at the site and approximately 1,200 cubic yards of petroleum impacted soil was removed from the site during a Mn/DOT Highway 27 reconstruction project.

Utilities including storm sewer, water line and sanitary sewer in the area are buried within 8 feet of the surface. The highest PID headspace readings were observed between 5 and 15 feet in boring B-3 and 5 to 10 feet in boring B-1. The static water table elevation at the site is assumed to be approximately 16 feet below ground based on the temporary well borings. Borings B-1 and B-3 showed the highest concentrations of groundwater impacts.

The onsite building and the nearest offsite building (903 3rd Avenue) are slab on grade construction and were vacant at the time of the investigation.

10.4 Conduct a vapor survey if the vapor risk assessment indicated a risk of vapor impacts to buildings or utilities. Ask occupants of nearby buildings if they have smelled petroleum odors. See Guidance Document 4-02 *Potential Receptor Surveys and Risk Evaluation Procedures at Petroleum Release Sites*. Identify all vapor monitoring locations on an attached site map by labeling each monitoring location with a number. Tabulate the list of vapor monitoring locations in Table 16. Vapor monitoring methods, including instruments used, must be discussed in Appendix C. Provide a detailed description of each vapor monitoring location and an interpretation of the vapor monitoring results below.

Vapor monitoring with a PID was conducted in a storm sewer manhole near the source area (see Figure 2). No elevated PID readings were observed in the storm sewer manhole.

The onsite building and nearest offsite building (903 3rd Avenue) are slab on grade construction. The buildings were vacant and STS was unable to obtain access for vapor monitoring during site investigation activities.

10.5 Attach Table 16 - Results of Vapor Monitoring.

The results of the vapor monitoring for the storm sewer manhole are summarized on Table 16.

Section 11: Soil Gas-Based Vapor Intrusion Screening Assessment

11.1 When significant contamination and receptors are present at a site, a vapor intrusion screening assessment must be conducted (See Guidance Document 4-01a *Vapor Intrusion Assessments Performed during Site Investigations*). Soil gas samples must be completed in the worst case area and at four radial points within a 100' radius. The radial points should be located near inhabited buildings, if there are four or less. If not, they should be located uniformly within the 100' radius. Was this done? ☒ *Yes** ☐ *No*

A total of four soil gas vapor probes (VP-1 through VP-4) were conducted for vapor intrusion screening. One worst case vapor probe (VP-2) was conducted near the suspected source area. One vapor probe (VP-1) was conducted near the onsite building and one vapor probe (VP-3) was conducted next to the slab on grade building at 903 3rd Avenue (former Lloyd's Café). The fourth vapor probe (VP-4) was conducted north of the onsite building.

***Additional soil gas samples should also be collected east and south of the source area to further define the extents of the soil gas cloud.**

*If **NO**, explain why.*

11.2 Do any of the soil gas samples from points located near inhabited buildings exceed the action levels found in GD 4-01a? ☒ *Yes* ☐ *No*

Vapor probes VP-1 and VP-3 conducted near vacant buildings had compounds exceeding action levels.

If *YES*, is sub-slab vapor or indoor air sampling needed for these buildings? ☐ *Yes* ☒ *No*

Both buildings are currently vacant and are slab on grade construction. The onsite building consists of a former exhaust repair shop and the offsite building (903 3rd Avenue) was previously a Café. Sub-slab soil vapor samples should be collected from the site building and adjacent former Lloyd's café building to evaluate the existence of a completed pathway to the interior of each structure if these buildings are not slated for demolition due to area development.

11.3 Has sufficient data been collected to propose a conceptual Corrective Action Design (CAD) for buildings that are likely to be impacted by elevated soil gas levels and/or field detectable vapor impacts? *Describe your justification for corrective action and proposed conceptual CAD.* ☐ *Yes* ☒ *No*

11.4 Do any of the soil gas samples from the non-building specific samples ☒ *Yes* ☐ *No*

within the 100' radius exceed action levels?

If *YES*, and there are many inhabited buildings nearby, is additional building specific soil gas sampling recommended for all these buildings? ☒*Yes* ☐*No*
Describe your proposal for additional sampling.
Sub-slab soil vapor samples should be collected from the site building and adjacent former Lloyd's café building to evaluate the existence of a completed pathway to the interior of each structure if these buildings are not slated for demolition due to area development.
***If NO**, explain.*

☐*Yes* ☒*No*

If *YES*, are additional soil gas samples recommended to assess the full extent of the soil gas cloud? *Describe your proposal for additional sampling. **If NO**, explain.* **See comments above.**

11.5 Were recommended field sampling procedures and QA/QC from Guidance Document 4-01a followed? Were required laboratory QA/QC objectives met? ☒*Yes* ☐*No*
***If NO**, explain why and discuss implications on data quality.*

11.6 Include a map (Section 14) which shows locations of all soil gas samples and buildings within and at the 100' radius and locations of all soil gas samples exceeding action levels. Include other locational information that may help in evaluating the questions above.

Soil gas sample locations and buildings are illustrated on Figure 2.

PRP does not use SLVs to make site management decisions

Section 12: Discussion

12.1 Discuss the risks associated with the remaining soil contamination:

The risks associated with the remaining soil contamination are low. Approximately 1,200 cubic yards of petroleum impacted soil were removed during Mn/DOT TH-29/27 Highway reconstruction activities in 2004-2005. Soil sample B-1(6') had an ethylbenzene concentration of 10 mg/kg which is above the Tier 1 SLV of 4.7 mg/kg. No other SLV or SRV exceedences were detected in the soil samples collected from soil borings.

12.2 Discuss the risks associated with the impacted ground water:

The public water supply risk assessment concluded that the site is a high priority site with respect to a public water supply well (City of Alexandria). The site is located within a DWSMA and SWPA. The water supply for the City of Alexandria is obtained from wells set in glacial deposits. The aquifer is considered to exhibit a high susceptibility to contamination due to the local geological setting. The release site is located down gradient of the North Well Field for the City of Alexandria. It is unlikely that impacts from Leak # 15,656 would contaminate the City wells based on the extent and magnitude of impacts at the site and the release area location (downgradient) in regards to the City well field.

A remedial investigation including installation of permanent monitoring wells is recommended to fully define the extent and magnitude of groundwater impacts and confirm an accurate groundwater flow direction at the site in accordance with MPCA Guidance Document 1-01 *Petroleum Remediation Program General Policy.*

12.3 Discuss the risks for vapor intrusion associated with any soil gas impacts detected:

Soil gas samples collected from the source area, near the Alex Exhaust building and adjacent former Lloyd's Café building had action level exceedences for numerous compounds. Sub-slab soil vapor samples should be collected from the site building and adjacent former Lloyd's Café building to evaluate the existence of a completed pathway to the interior of each structure if these buildings are not slated for demolition due to area development.

Additional soil gas samples should also be collected east and south of the source area to further define the extents of the soil gas cloud.

12.4 Discuss other concerns not mentioned above:

Concerns are discussed in Sections 12.1 through 12.3 above.

Section 13: Conclusions and Recommendations

13.1 Recommendation for site:

- ☐ site closure
- ☒ additional ground water monitoring
- ☐ additional field detectable vapor monitoring
- ☒ additional soil gas/vapor intrusion investigation
- ☐ corrective action

13.2 Base the recommendation above on Guidance Document 1-01 *Petroleum Remediation Program General Policy*. Describe below how you applied the policy to support your recommendation. If closure is recommended, please summarize significant site investigative events and describe how site specific risk issues have been adequately addressed or minimized to acceptable low risk levels.

HRL exceedences were detected in groundwater samples collected from temporary monitoring wells conducted for the Limited Site Investigation. The extent of groundwater impacts associated with this release has not been fully defined. The designation of this site as a high priority site with respect to a public water supply indicates the need to further define and monitor groundwater impacts associated with Leak # 15,6556.

13.3 If additional ground water and/or vapor monitoring is recommended, indicate the proposed monitoring schedule and frequency. Conduct quarterly monitoring until the MPCA responds to this report.

Installation of permanent monitoring wells and quarterly groundwater monitoring is recommended for Leak # 15,656.

13.4 If additional soil gas/vapor intrusion investigation is recommended, indicate whether there is risk to a specific building or whether additional soil gas definition is necessary. Provide a detailed analysis of the initial soil gas and receptor information leading to these recommendations. Provide details of proposed activities such as sub-slab vapor and/or indoor air sampling, or locations of additional borings for sampling soil gas. If vapor intrusion, or conditions indicative of a high risk of vapor intrusion, has already been established, then corrective action is required. Refer to 13.5 below.

Soil gas samples collected from the source area, near the Alex Exhaust building and the adjacent former Lloyd's Café building had action level exceedences for numerous compounds. Sub-slab soil vapor samples should be collected from the site building and adjacent former Lloyd's café building to evaluate the existence of a completed pathway to the interior of each structure if these buildings are not slated for demolition due to area development. Additional soil gas samples should also be collected east and south of the source area to further define the extents of the soil gas cloud.

13.5 If corrective action is recommended, provide a conceptual approach by completing Guidance Document 4-19 *Conceptual Corrective Action Design Worksheet* and include it as Appendix H. See Guidance Document 4-10 *Elements of the Corrective Action Design* for more information on the corrective action design process and other requirements. (Note: MPCA staff will review this report at a higher-than-normal priority to determine if corrective action is required.)

No corrective action is recommended at this time.

Section 14: Figures

Attach the following figures in order of discussion in the text:

☒ **Figure 1** - Site location map using a U.S. Geological Survey 7.5 minute quadrangle map.

☒ **Figure 2** - One or more site maps showing:

- Structures
- Locations and depths of on-site buried utilities
- All past and present petroleum storage tanks, piping, dispensers, and transfer areas.
- Extent of soil excavation
- Boring and well locations (including any drinking water wells on site)
- Horizontal extent of soil contamination
- Extent of surface soil contamination
- Soil gas sampling locations and extent of the soil gas cloud
- Horizontal extent of ground water contamination
- Location of end points for all geologic cross sections.
- Potential pathways to surface water features within ¼ mile of the site.

Distinguish sequential elements of investigations by dates, symbols, etc. in the key.

☐ Ground water gradient contour maps (for sites with monitoring wells) for each gauging event.

☒ **Figure 3** - Well receptor survey map showing 1/2 mile radius, 500 foot radius, water supply wells, other potential sources of contamination, using a U.S. Geological Survey 7.5 minute quadrangle.

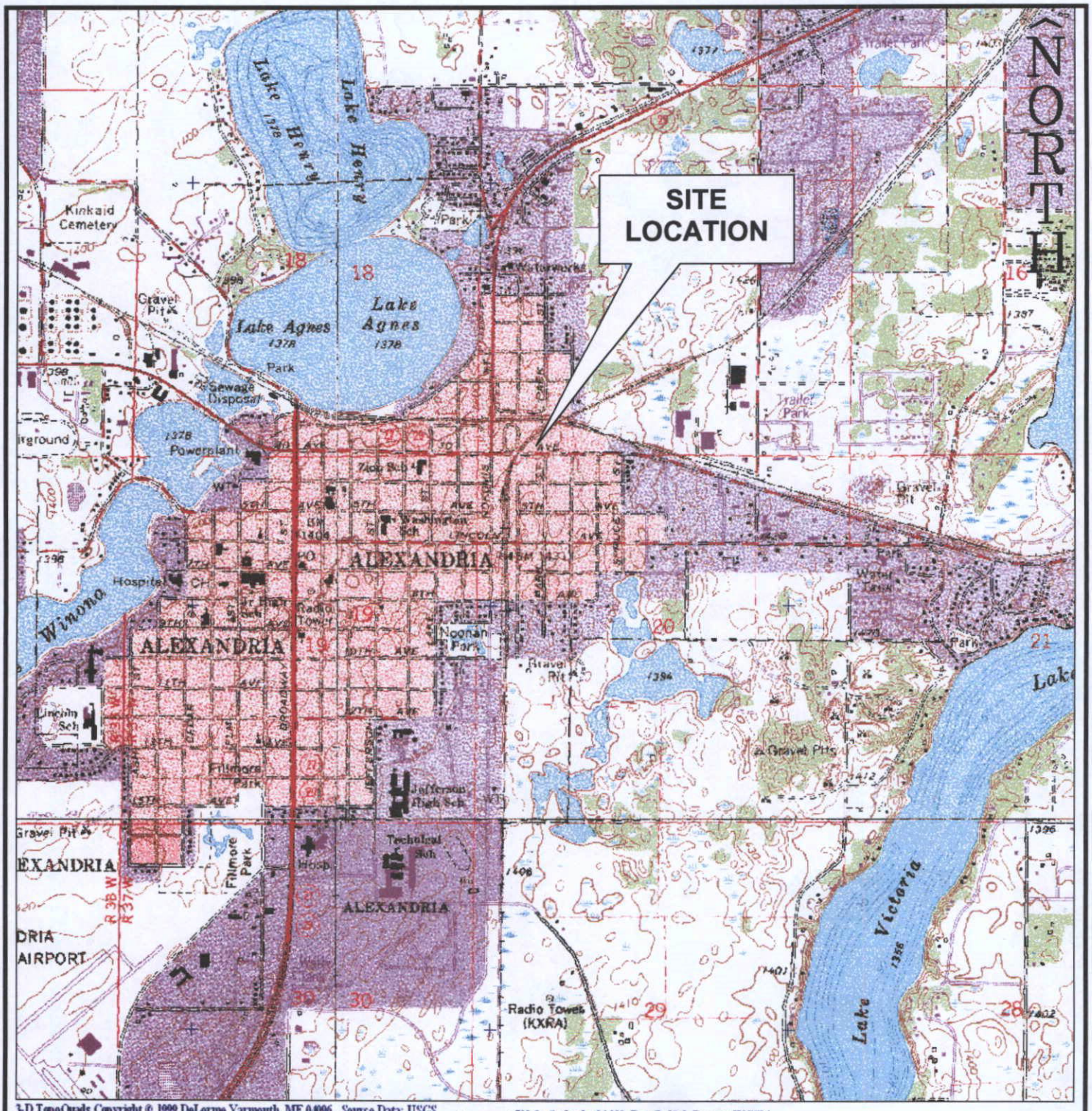
☒ **Figure 4** - Potential receptor map (scale 1 inch = 50 to 100 ft), showing property boundaries and roads, and potential receptors such as buildings, water wells, utilities (distinguish between water, storm sewer and sanitary sewer), surface waters, ditches and any other pertinent items within 500 ft of the release source.

☐ Vapor survey map showing utilities and buildings with basements and monitoring locations within 500 feet (if a survey was required).

☒ **Figures 5, 5A** - Provide at least two (2) geologic cross sections, including utilities.

☐ Vapor intrusion assessment map showing all soil gas boring locations and buildings within and at a 100 feet radius of the worst case soil gas boring

☒ **Figure 6** - Aerial Photograph.



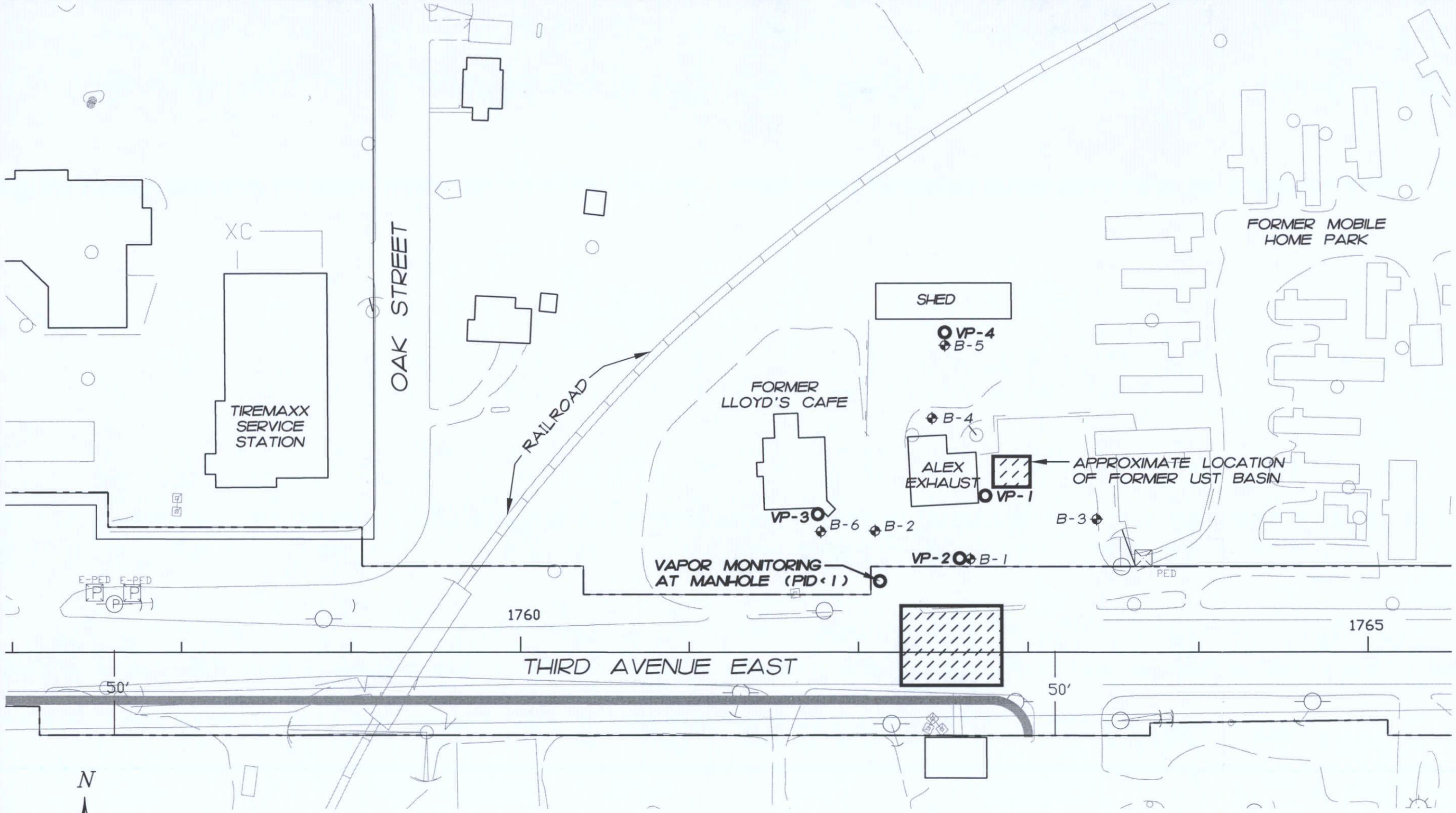
3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Data: USGS 700 ft Scale: 1 : 24,000 Detail: 13-1 Datum: WGS84

STS Consultants, Ltd.
Consulting Engineers

SITE LOCATION DIAGRAM
Alex Exhaust
MPCA Leak # 15,656
905 3rd Avenue E.
Alexandria, Minnesota

DRAWN BY	TJG
CHECKED BY	SJC
APPROVED BY	RLD
CADFILE	SCALE 1" = 2000'
STS PROJ. 200606839	FIGURE NO. 1

FIGFRAME.DOC



LEGEND

- ◆ B-# BORING LOCATION
- O VP-# SOIL GAS VAPOR PROBE LOCATION
- ▨ AREA OF IMPACTED SOIL REMOVAL FROM Mn/DOT TH-29 / 27 RECONSTRUCTION

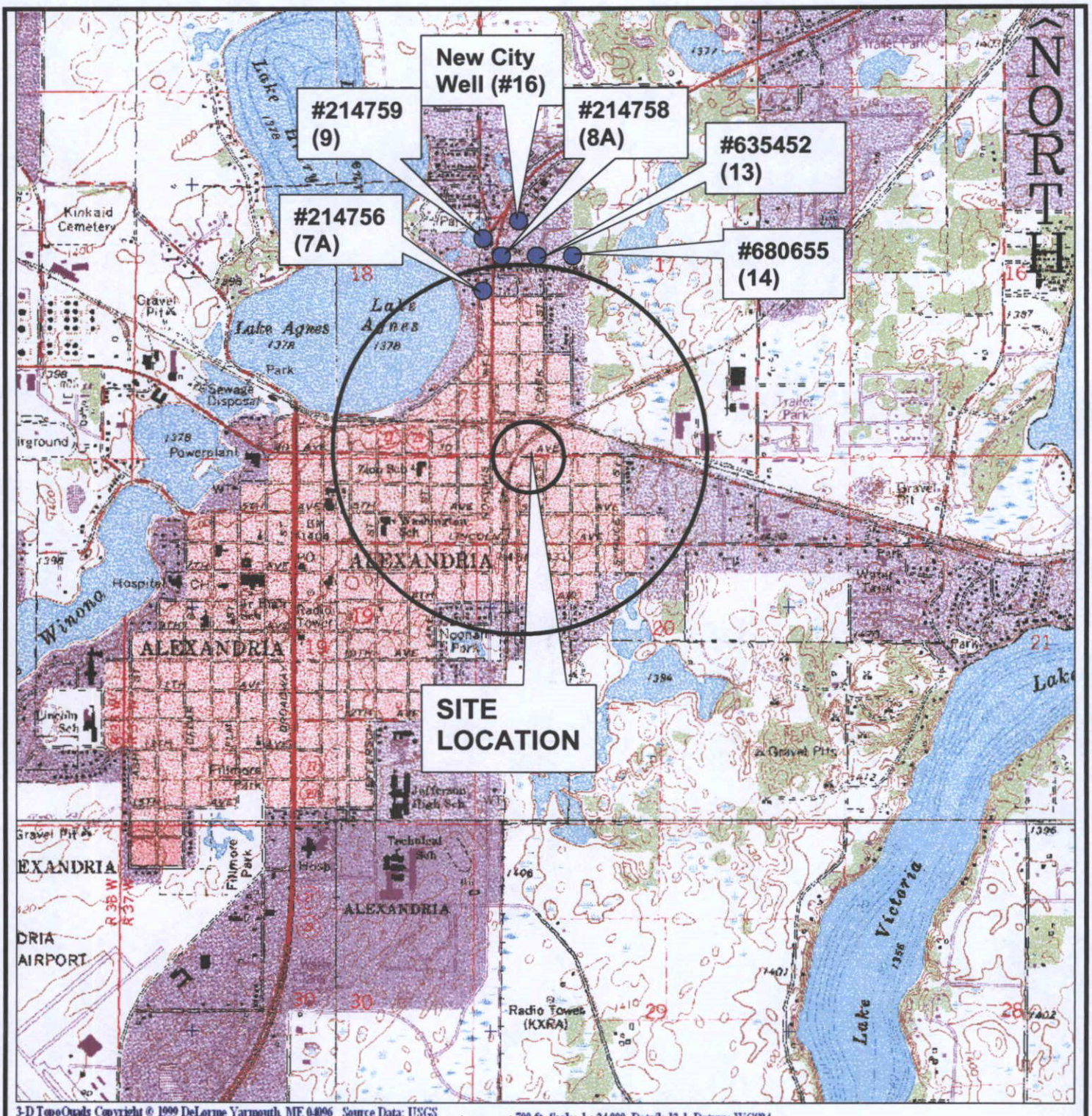
NOTE:SITE PLAN PROVIDED BY AMERICAN ENGINEERING TESTING INC.

STS CONSULTANTS
10900 73rd Ave. N., Suite 150
Maple Grove, MN 55369
763-315-6300
www.stsconsultants.com

SOIL BORING / SOIL VAPOR SAMPLING LOCATION DIAGRAM

ALEX EXHAUST
905 3rd AVENUE EAST
ALEXANDRIA, MINNESOTA
FOR: MPCA

Drawn :	TAK	6/26/2007
Checked:	TJG	6/26/2007
Approved:	RLD	6/26/2007
PROJECT NUMBER	200606839	
FIGURE NUMBER	2	



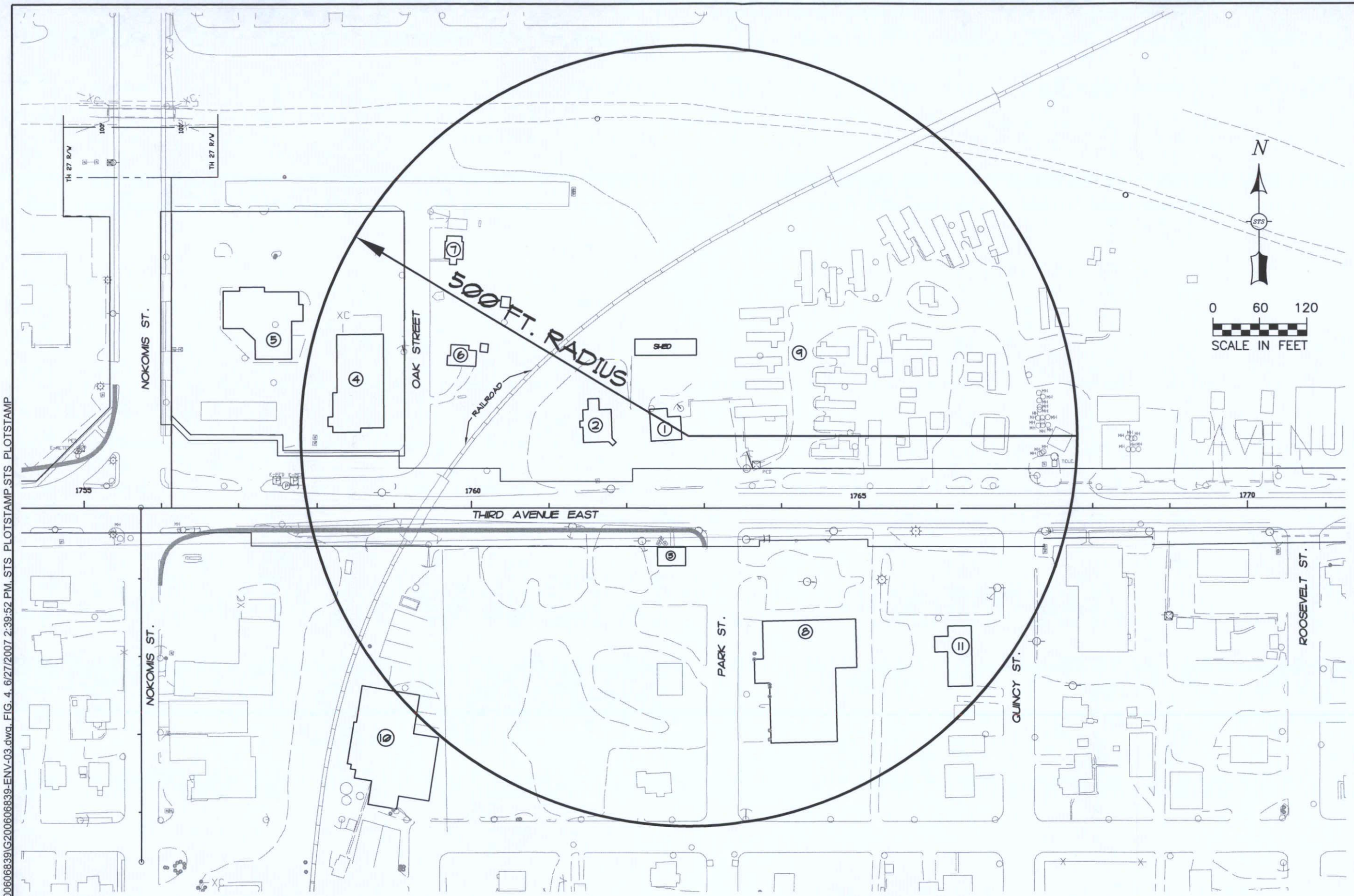
3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Data: USGS 700 ft Scale: 1 : 24,000 Detail: 13-1 Datum: WGS84

● Existing Municipal Water Well (#Unique Well Number (City of Alexandria #))

STS Consultants, Ltd.
Consulting Engineers

POTENTIAL WELL RECEPTOR SURVEY
500 Foot and ½ Mile Radius
Alex Exhaust
MPCA LEAK # 15656
905 3rd Avenue E.
Alexandria, Minnesota

DRAWN BY	TJG
CHECKED BY	SJC
APPROVED BY	RLD
CADFILE	SCALE 1" = 2000'
STS PROJ. 200606839	FIGURE NO. 3



STS CONSULTANTS
10900 73rd Ave. N., Suite 150
Maple Grove, MN 55369
763-315-6300
www.stsconsultants.com

POTENTIAL RECEPTOR MAP (500 FT. RADIUS)
ALEX EX EXHAUST
905 3rd AVENUE EAST
ALEXANDRIA, MINNESOTA
FOR: MPCA

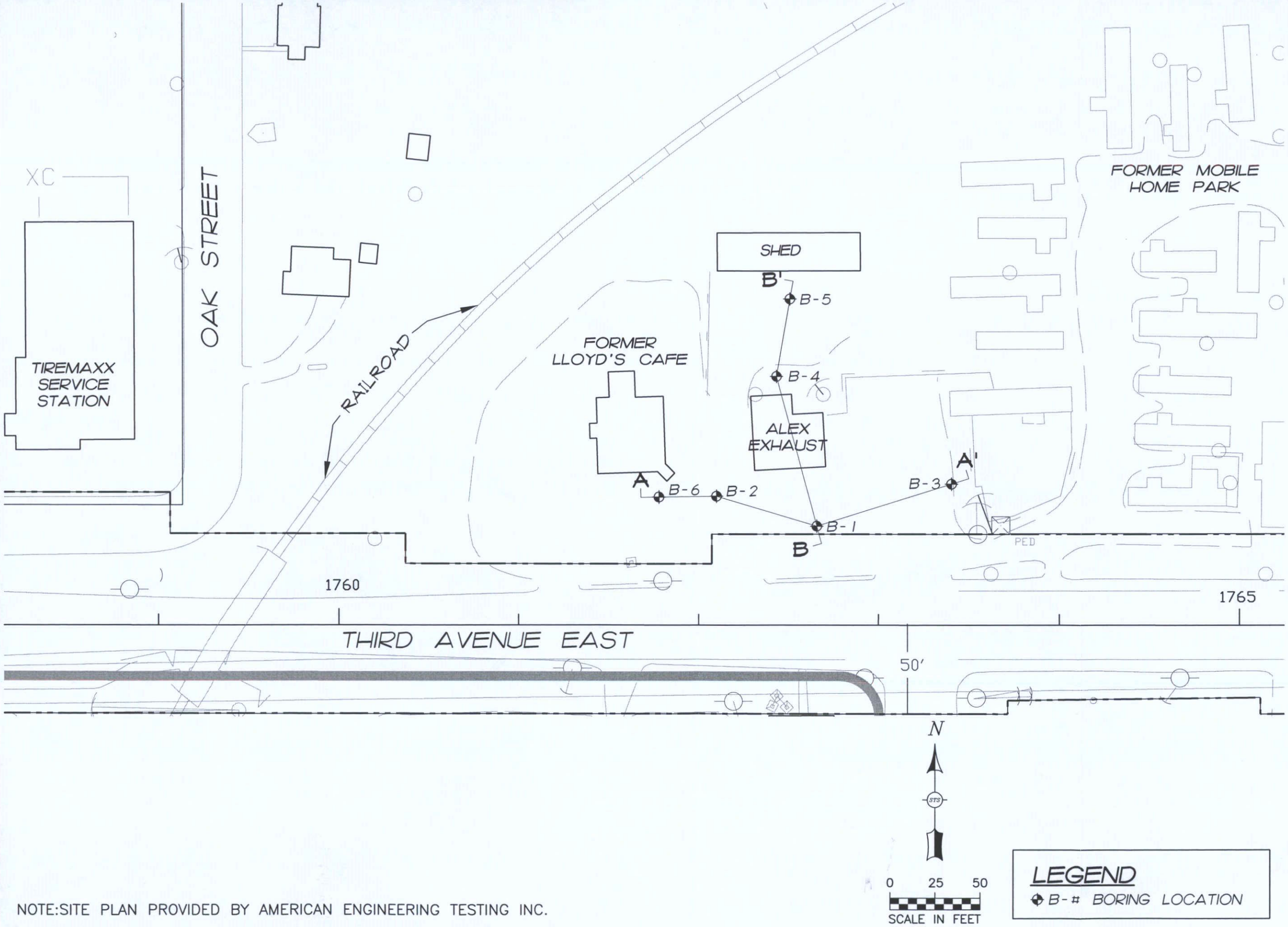
Drawn :	TAK	6/26/2007
Checked:	TJG	6/26/2007
Approved:	RLD	6/26/2007
PROJECT NUMBER	200606839	
FIGURE NUMBER	4	

LEGEND

(#) CORRESPONDS TO PROPERTIES LISTED ON TABLE 14

NOTE:SITE PLAN PROVIDED BY AMERICAN ENGINEERING TESTING INC.

X:\PROJECTS\200606839\G200606839-ENV-03.dwg, FIG. 4, 6/27/2007 2:39:52 PM, STS_PLOTSTAMP



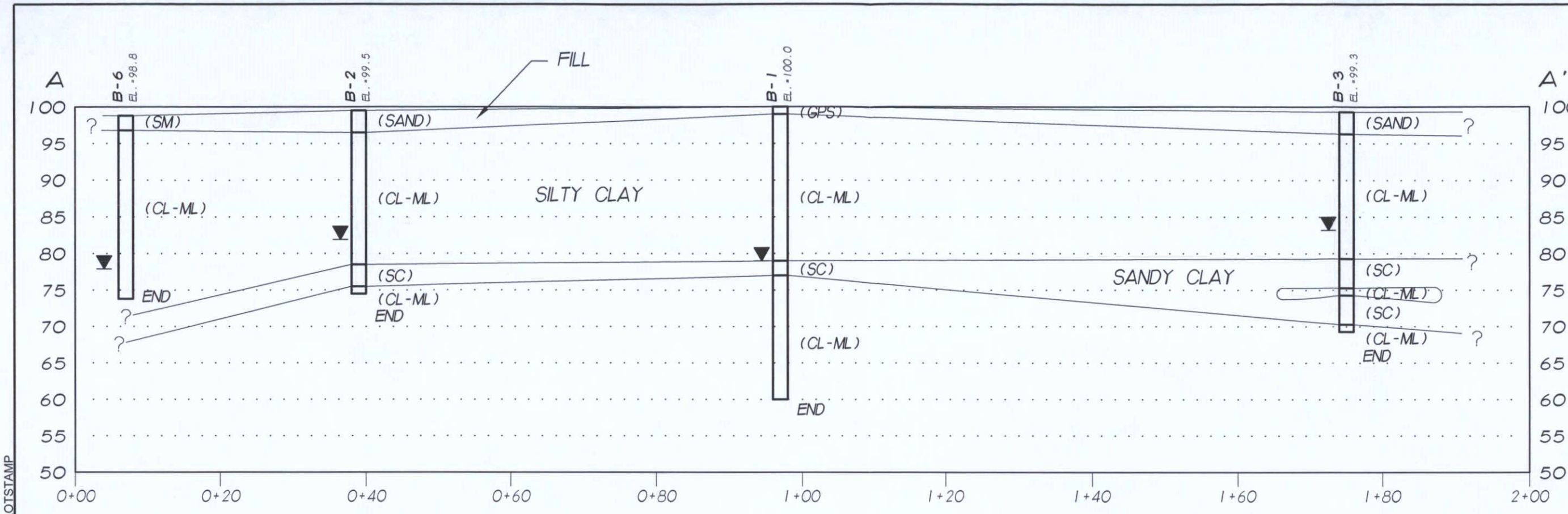
NOTE:SITE PLAN PROVIDED BY AMERICAN ENGINEERING TESTING INC.

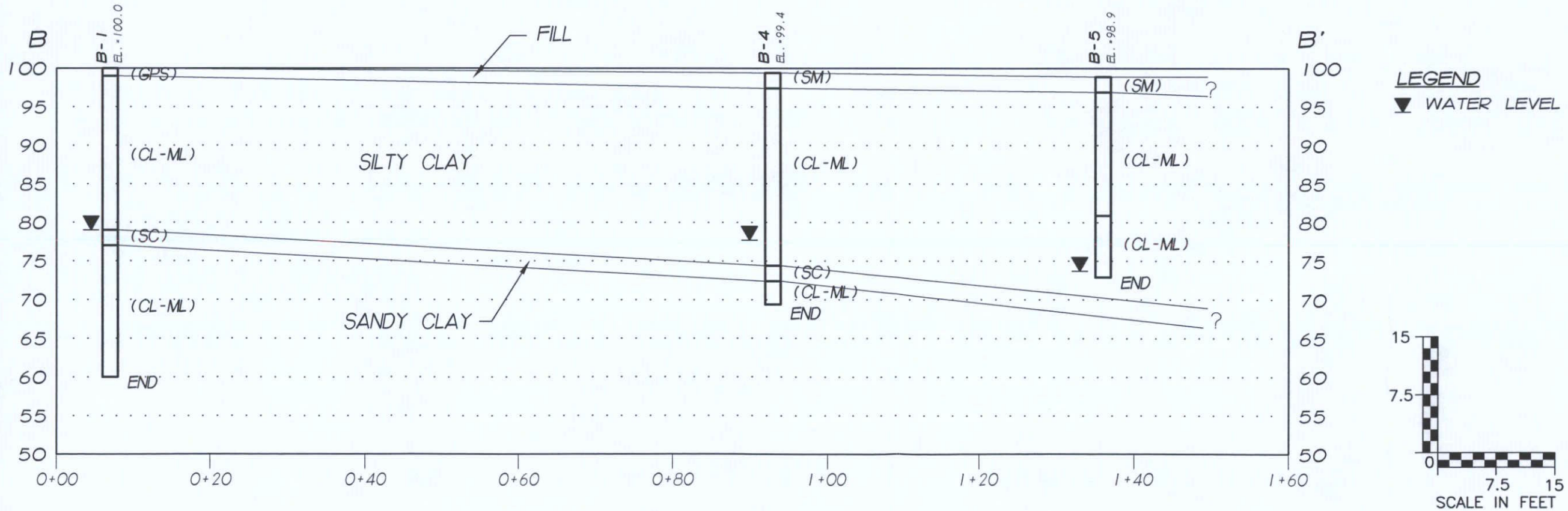
STS CONSULTANTS
10900 73rd Ave. N., Suite 150
Maple Grove, MN 55369
763-315-6300
www.stsconsultants.com

CROSS SECTION ALIGNMENT LOCATION DIAGRAM
ALEX EXHAUST
905 3rd AVENUE EAST
ALEXANDRIA, MINNESOTA
FOR: MPCA

Drawn :	TAK	6/26/2007
Checked:	TJG	6/26/2007
Approved:	RLD	6/26/2007
PROJECT NUMBER	200606839	
FIGURE NUMBER	5	

X:\PROJECTS\200606839\G200606839-ENV-03.dwg, FIG. 5, 6/27/2007 1:03:32 PM, STS_PLOTSTAMP.STS, PLOTSTAMP





LEGEND

▼ WATER LEVEL

STS CONSULTANTS
10900 73rd Ave. N., Suite 150
Maple Grove, MN 55369
763-315-6300
www.stsconsultants.com

CROSS SECTION DIAGRAM A-A' & B-B'
ALEX EXHAUST
905 3rd AVENUE EAST
ALEXANDRIA, MINNESOTA
FOR: MPCA

Drawn :	TAK	6/26/2007
Checked:	TJG	6/26/2007
Approved:	RLD	6/26/2007
PROJECT NUMBER	200606839	
FIGURE NUMBER	5A	

X:\PROJECTS\200606839\G200606839-ENV-03.dwg, FIG. 5A, 6/27/2007 1:01:30 PM, STS_PLOTSTAMP

STS Consultants, Ltd. Consulting Engineers	**AERIAL PHOTOGRAPH - MDH CWI (2003)** **Alex Exhaust** **MPCA Leak # 15,656** **905 3rd Avenue E.** **Alexandria, Minnesota**

DRAWN BY	**TJG**
CHECKED BY	**SJC**
APPROVED BY	**RLD**
CADFILE	SCALE **As Shown**
STS PROJ. **200606839**	FIGURE NO. **6**

FIGFRAME.DOC

Section 15: Tables

Table 1
Tank Information

Tank #	UST or AST	Capacity (gallons)	Contents	Year Installed	Status	Condition
1	UST	2,000	Unknown	Unknown	Removed (5/16/88)	Fair (see photographs in Appendix F)
2	UST	3,000	Unknown	Unknown	Removed (5/16/88)	Fair (see photographs in Appendix F)
3	UST	3,000	Unknown	Unknown	Removed (5/16/88)	Fair (see photographs in Appendix F)
4	UST	3,000	Unknown	Unknown	Removed (5/16/88)	Fair (see photographs in Appendix F)

Notes:
Tank data obtained from the City of Alexandria Fire Marshall

Leak 15656 Alex Exhaust
STS Project # 200606839

Table 2
Results of Soil Headspace Screening
(PID Units)

Depth (ft.)	Soil Boring					
	B-1	**B-2**	**B-3**	**B-4**	**B-5**	**B-6**
0-2.5	<1	<1	<1	<1	<1	<1
2.5-5	**52**	<1	**343**	<1	<1	<1
5-7.5	**>2000**	<1	**250**	**>2000**	**58**	<1
7.5-10	**>2000**	<1	**205**	**>2000**	**55**	<1
10-12.5	**26**	<1	**202**	**>2000**	9	<1
12.5-15	**26**	<1	**200**	**>2000**	8	<1
15-17.5	3	<1	<1	**31**	8	<1
17.5-20	3	<1	<1	**29**	<1	<1
20-22.5	<1	<1	<1	**11**	<1	<1
22.5-25	<1	**45**	<1	**10**	<1	<1
25-27.5	<1	EOB = 25'	<1	<1	<1	EOB= 25'
27.5-30	<1		**21**	<1	EOB = 26'	
30-32.5	<1		EOB = 30'	EOB = 30'		
32.5-35	<1					
35-37.5	<1					
37.5-40	<1					
	EOB = 40'					

List instruments used and discuss field methods and procedures in Appendix C.

Notes: NDE NDE NDE NDE

EOB = End of Boring

BOLD = Elevated PID Headspace (greater than 10 PID units)

Deepest Content = ≥ 30
30 + 20 = 50

Leak 15656 Alex Exhaust
STS Project # 200606839

Table 3
Analytical Results of Soil Samples
(all units expressed in mg/kg - ppm)

Sample #	Date	Benzene	Toluene	Ethyl Benzene	Xylenes	GRO	DRO	Lab Type
B-1 (6')	02/08/07	<2.4	**2.7**	**10**	**28**	**1100**	**170**	Fixed
B-1 (20')	02/08/07	<0.12	<0.12	<0.08	<0.23	<57	<10	Fixed
B-2 (18')	02/07/07	<0.11	<0.11	<0.078	<0.22	<5.5	<10	Fixed
B-3 (5')	02/07/07	<0.12	<0.12	<0.081	<0.23	<5.8	<10	Fixed
B-3 (16')	02/07/07	<0.11	<0.11	<0.078	<0.22	<5.5	<10	Fixed
B-4(13')	02/07/07	<0.12	<0.14	**1.4**	**1.5**	**71**	<10	Fixed
B-4 (22')	02/07/07	<0.11	<0.11	<0.078	<0.22	<5.6	<10	Fixed
B-5 (6')	02/07/07	<0.11	<0.11	**0.61**	<0.22	**130**	**310**	Fixed
B-5 (25')	02/07/07	<0.11	<0.11	<0.08	<0.23	<5.7	<10	Fixed
B-6 (23')	02/07/07	<0.11	<0.11	<0.079	<0.23	<5.6	<10	Fixed
Trip Blank	02/07/07	<0.10	<0.10	<0.07	<0.20	<5	NA	Fixed
SLV	*11/99 Rev.*	***0.034****	***6.4***	***4.7***	***45***	*NE*	*NE*	
SRV 1	*01/99 Rev.*	***1.5***	***107***	***200***	***110***	*NE*	*NE*	
SRV 2	*01/99 Rev.*	***4***	***305***	***200***	***348***	*NE*	*NE*	

Notes:
A less than (<) sign indicates the analytical result is below the lab's quantitation limit shown.
BOLD = Result is above detection limits.
SLV = MPCA Tier 1 Soil Leaching Value.
SRV 1= MPCA Tier 1 (Chronic, Residential Property) Soil Reference Value.
SRV 2= MPCA Tier 2 (Industrial Property) Soil Reference Value.
NE = None established.
* = Laboratory reporting limits exceed SLV.
[ ] = result is above SLV

Not applicable

Table 4
Surface Soil Assessment

No Surface Soil Samples (0'-2') had PID Headspace Readings Greater Than 10 PID Units

Sample #	Headspace > 10 ppm (Y/N)	Petroleum Saturated (Y/N)

Notes:

Table 5
Other Contaminants Detected in Soils (Petroleum or Non-petroleum Derived)

(all units expressed in mg/kg - ppm)

Soil Samples were Analyzed for BTEX, GRO and DRO Compounds Only

Boring, Depth (ft)	Date Sampled	n-Butylbenzene mg/kg	Naphthalene mg/kg	1,2,4-TMB mg/kg	1,3,5-TMB mg/kg	Lab Type
SLV	11/99 Rev.	NE	7.5	NE	NE	
SRV 1	01/99 Rev.	30	10	5	4	
SRV 2	01/99 Rev.	92	28	5	10	

Report results in mg/kg. Indicate other contaminants (either petroleum or non-petroleum derived) detected in soil collected from borings.

Notes: 1,2,4-TMB = 1,2,4-Trimethylbenzene
1,3,5-TMB = 1,3,5-Trimethylbenzene
SLV = MPCA Tier 1 Soil Leaching Value.
SRV 1= MPCA Tier 1 (Chronic, Residential Property) Soil Reference Value.
SRV 2= MPCA Tier 2 (Industrial Property) Soil Reference Value.
NE = None established.

Table 6
Water Level Measurements and Depths of Water Samples Collected from Borings

	Soil Boring					
	B-1 (TW-1)	**B-2 (TW-2)**	**B-3 (TW-3)**	**B-4 (TW-4)**	**B-5 (TW-5)**	**B-6 (TW-6)**
Static Water level depth (ft)	21	17.6	16.1	21.7	25.2	22.5
Sampled Depth (ft.)	~21	~18	~16.5	~22	~25.5	~23

Describe in Appendix C, the methods and procedures used to measure water levels in borings.
Notes:

Leak 15656 Alex Exhaust
STS Project # 200606839

Table 7
Analytical Results of Water Samples from Temporary Wells
(all units expressed in ug/l - ppb)

Well #	Date	Benzene	Toluene	Ethyl Benzene	Xylenes	MTBE	GRO	DRO	Lab Type
TW-1	02/08/07	**150**	**87**	**530**	**2,220**	<20	**11,000**	**2,800**	Fixed
TW-2	02/07/07	**38**	**18**	**700**	**387**	<1	**3,900**	**1,000**	Fixed
TW-3	02/07/07	**160**	**23**	**620**	**42**	<10	**5,800**	**1,200**	Fixed
TW-4	02/07/07	**26**	**14**	**160**	**92**	<1	**1,300**	**400**	Fixed
TW-5	02/07/07	<1	<1	**1.5**	**4.2**	<1	<100	**300**	Fixed
TW-6	02/07/07	<1	<1	<1	<3	<1	<100	<100	Fixed
Field Blank	02/08/07	<1	<1	<1	<3	<1	<100	<100	Fixed
HRL	01/96 Rev.	**10**	**1,000**	**700**	**10,000**	NA	NA	NA	
HBV	01/96 Rev.	NA	NA	NA	NA	NA	***200***	***200***	

A less than (<) sign indicates the analytical result is below the lab's quantitation limit shown
[ ] = indicates the HRL or HBV was exceeded for this compound
BOLD type indicates the concentratin exceeds the reporting limit
HRL = Minnesota Department of Health's "Health Risk Limit for drinking water
HBV = Health Based Value, based on MPCA Drinking Water Criteria (Jan. 2001revision) for "TPH"

Table 8
Other Contaminants Detected in Water Samples From Temporary Wells
(Petroleum or Non-Petroleum Derived)
(all units expressed in ug/l - ppb)

Well Number	Date Sampled	1,2,4, Trimethylbenzene	1,3,5, Trimethylbenzene	1,2 Dichlorobenzene	1,2 Dichloroethane	Naphthalene	n-Propylbenzene	Isopropylbenzene	p-Isopropyltoluene	sec-butylbenzene	Tetrahydrofuran
TW-1	02/08/07	**1200**	**380**	<20	**370**	**210**	**180**	**61**	<20	**23**	<100
TW-2	02/07/07	**200**	**150**	**2.3**	<2	**77**	**83**	**38**	**1.9**	**4.2**	<5
TW-3	02/07/07	<10	75	<10	<20	**30**	**130**	**65**	<10	**12**	<50
TW-4	02/07/07	**53**	**21**	<1	<2	**18**	**19**	**9.2**	**1.2**	**1.8**	<5
TW-5	02/07/07	**8**	**2.5**	<1	<2	<2	**1.1**	<1	<1	<1	<5
TW-6	02/07/07	<1	<1	<1	<2	<2	<1	<1	<1	<1	<5
Field Blank	02/08/07	<1	<1	<1	<2	<2	<1	<1	<1	<1	**12**
HRL (ug/l)		NE	NE	600	4	300	NE	300*	NE	NE	NE
HBV (ug/l)		NE	300	NE	NE	NE	NE	NE	NE	NE	100

Notes:

* - While a HRL was promulgated for this chemical, due to research that has become available since the HRLs were promulgated, the MDH no longer recommends the HRL value.
NE = Not Established
< = Less than laboratory Reporting Limit
BOLD = Concentration detected above laboratory Reporting Limit
[ ] = Concentration above HRL or HBV standard
HRL = Minnesota Department of Health Established Health Risk Limits Promulgated on
HBV = Minnesota Department of Health Established Health Based Values Promulgated on

Table 9
Monitoring Well Completion Information
No Monitoring Wells Have Been Installed for Leak # 15,656

Well Number	Unique Well Number	Date Installed	Surface Elevation	Top of Riser Elevation	Bottom of Well (Elevation)	Screen Interval (Elev. - Elev.)	*Well Stickup*	*Well Depth (TOC)*
1					0.0		0.00	
2					0.0		0.00	
3					0.0		0.00	
4					0.0		0.00	
5					0.0		0.00	
6					0.0		0.00	
7					0.0		0.00	
8					0.0		0.00	
9					0.0		0.00	
10					0.0		0.00	

Notes: (location and elevation of benchmark)
Hide column H&I

Table 10
Water Level Measurements in Monitoring Wells

No Monitoring Wells Have Been Installed for Leak # 15,656

Well Number (Unique Number)	Date	Depth of Water from Top of Riser	Product Thickness	Depth of Water Below Grade	Groundwater Elevation	Water Level Above Screen (Y/N)
1				0.00	0.00	
				0.00	0.00	
				0.00	0.00	
				0.00	0.00	
				0.00	0.00	
2				0.00	0.00	
				0.00	0.00	
				0.00	0.00	
				0.00	0.00	
				0.00	0.00	
3				0.00	0.00	
				0.00	0.00	
				0.00	0.00	
				0.00	0.00	
				0.00	0.00	
				0.00	0.00	

Notes: Describe methods used to measure water levels and product thickness

Table 11
Analytical Results of Water Samples Collected from Wells
(all units expressed in ug/l - ppb)

No Monitoring Wells Have Been Installed for Leak # 15,656

Well #	Date Sampled	Benzene	Toluene	Ethyl Benzene	Xylenes	MTBE	GRO	DRO	Lab Type
MW-1									
MW-2									
MW-3									
MW-4									
Trip Blank									
Field Blank									
Lab Blank									
HRL(ug/L)		**10**	**1000**	**700**	**10,000**	***HBV=70***	***HBV=200***	***HBV=200***	

Report results in ug/L. Use less than symbols to show detection limit.
Indicate mobile or fixed based in the lab type column.

Notes: A less than (<) sign indicates the analytical result is below the lab's quantitation limit shown
HRL - Minnesota Department of Health's "Health Risk Limit" for drinking water
HBV - Health Based Value, based on MPCA Drinking Water Criteria (Jan. 2001revision) for "TPH"
BOLD type indicates the HRL/HBV was exceeded
MTBE - Methyl tert-butyl ether
NS - Not sampled in accordance with the work plan or due to inability to gain access through owner

Table 12
Other Contaminants Detected in Water Samples
Collected from Wells (Petroleum or Non-petroleum Derived)
(all units expressed in ug/l - ppb)

No Monitoring Wells Have Been Installed for Leak # 15,656

Well Number	Date Sampled	1,2 DCA	EDB				
MW-1							
MW-2							
MW-3							
Field Blank							
Trip Blank							
Lab Blank							
HRL		**4**	**0.004**				

Report results in ug/L. Indicate other contaminants (either petroleum or non-petroleum derived) detected in water samples collected from the borings, temporary wells or push probes.

Notes:

Table 13
Natural Attenuation Parameters

No Monitoring Wells Have Been Installed for Leak # 15,656

Monitoring Well	Sample Date	Temp. °C	pH	Dissolved Oxygen (mg/L)	Nitrate (mg/L)	(Fe II) (mg/L)	(H_2S, HS^-) (mg/L)
MW-1							
MW-2							
MW-3							
MW-4							

In Appendix C, describe the methods and procedures used.
Notes:

Table 14
Properties Located Within 500 Feet of the Release Source

# (From Map)	Property Address	Water Well (Y or N)	How Determined*	Well Use**	Public Water Supply (Y or N)	Confirmed By City (Y or N)	Basement Or Sumps (Y or N)	Possible Petroleum Sources (Y or N)	Comments (Including Property Use)
1	905 3rd Avenue East	N	Visual/CWI	NA	Y	Y	N	Y	Former Service Station/Exhaust Repair shop
2	903 3rd Avenue East	N	Visual/CWI	NA	Y	Y	N	N	Former Lloyd's Café
3	924 3rd Avenue East	N	Visual/CWI	NA	Y	Y	N	Y	Alexandria Concrete Company, Inc.
4	801 3rd Avenue East	N	Visual/CWI	NA	Y	Y	N	Y	Alexandria Tire and Auto/TireMaxx Service Center
5	209 Nokomis Street	N	Visual/CWI	NA	Y	Y	N	Y	Gas Station/Burger King Restaurant
6	207 Oak Street	N	Visual/CWI	NA	Y	Y	Basement	N	Single Family Residence
7	203 Oak Street	N	Visual/CWI	NA	Y	Y	Basement	N	Single Family Residence
8	1102 3rd Avenue East	N	Visual/CWI	NA	Y	Y	N	N	Alexandria Beverage Company
9	1023 3rd Avenue East	N	Visual/CWI	NA	Y	Y	N	N	Former Mobile Home Park
10	901 4th Avenue East	N	Visual/CWI	NA	Y	Y	N	N	Morrelle London Aggregate, LLC
11	312 Quincy Street	N	Visual/CWI	NA	Y	Y	N	N	Commercial Building

**E.g., visual observation, personal contact, telephone, returned postcard, assumed (i.e., no postcard returned).*
***E.g., domestic, industrial, municipal, livestock, lawn/gardening, irrigation.*

Table 15
Water Supply Wells Located Within 500 Feet of the Release Source and Municipal or Industrial Wells Within ½ Mile

Unique Well #	Ground Elevation	Total Depth (ft)	Base of Casing (ft)	Static Elevation	Aquifer	Use	Owner	Distance & Direction from source
214756 (City of Alexandria # 7A)	1405	129	No Record	1367	QBAA	Municipal	City of Alexandria	Approximately 2,500 feet North

Notes:

Table 16
Results of Field Instrumented Vapor Monitoring

Location # and description	Date	PID reading (ppm)	Percent of the LEL
1 - storm sewer manhole	2/8/2007	<1	NA

Location numbers must match locations on the site map.
Provide a brief description of the monitoring point (e.g., sump, basement corner, sanitary sewer manhole, storm sewer basin, etc.).
Notes:

Leak 15656 Alex Exhaust
STS Project # 200606839

Table 17
Results of Soil Gas Sampling for Vapor Intrusion Screening

Sample Location	VP-1		Worst Case VP-2		VP-3		VP-4		Field Blank		ACTION LEVEL	
Date	2/8/2007		2/8/2007		2/8/2007		2/8/2007		2/8/2007		µg/m³	Source: HRV, ISC, or RFC
Depth (feet)	3		8		3		3		NA			
COMPOUNDS	Result	Report Limit	Result	Report Limit	Result	Report Limit	Result	Report Limit	Result	Report Limit		
Acetone	ND	312	ND	300	**48.6**	3.6	**48.4**	3.1	**5.7**	0.6	*NE*	*NE*
Benzene	**15700**	422	**33500**	406	**29.1**	0.98	**21.9**	4.2	ND	0.81	*1.3-4.5*	*HRV*
2-Butanone (MEK)	ND	390	ND	375	**11**	0.91	ND	3.9	**1.7**	0.75	*5,000*	*RFC*
Carbon Disulfide	ND	410	ND	394	**3.7**	0.95	**6.8**	4.1	ND	0.79	*700*	*HRV*
Chloromethane	ND	273	ND	262	ND	0.63	ND	2.7	**0.83**	0.52	*90*	*RFC*
Cyclohexane	**1080000**	4420	**918000**	4250	**98.5**	1.0	**27**	4.4	ND	0.85	*6000*	*RFC*
Dichlorodifluoromethane	ND	650	ND	625	**29.7**	1.5	ND	6.5	**2.2**	1.2	*NE*	*NE*
Ethylbenzene	**18400**	572	**18000**	550	**15**	1.3	**7.2**	5.7	ND	1.1	*1000*	*RFC*
4-Ethyltoluene	**4050**	1620	**5100**	1560	**11**	3.8	ND	16.2	ND	3.1	*NE*	*NE*
n-Heptane	**288000**	5400	ND	519	**36.2**	1.3	**21.1**	5.4	ND	1.0	*NE*	*NE*
n-Hexane	**540000**	4680	**829000**	4500	**42.1**	1.1	**32.5**	4.7	ND	0.9	*700*	*RFC*
Methylene Chloride	ND	462	ND	444	**2.1**	1.1	ND	4.6	ND	0.89	*20*	*HRV*
Naphthalene	ND	1760	ND	1690	**4.3**	4.1	ND	17.6	ND	3.4	*3*	*RFC*
Propylene	ND	228	ND	219	**167**	2.6	**267**	2.3	ND	0.44	*NE*	*NE*
Styrene	ND	556	ND	544	**2.9**	1.3	ND	5.7	ND	1.1	*1000*	*HRV*
Tetrachloroethene	ND	910	ND	875	**3.2**	2.1	ND	9.1	ND	1.8	*20,000*	*HRV*
Toluene	**4100**	500	**3740**	481	**39.1**	1.2	**25**	5.0	ND	0.96	*400*	*HRV*
1,2,4-Trimethylbenzene	**5930**	1620	**6970**	1560	**31.3**	3.8	ND	16.2	ND	3.1	*NE*	*NE*
1,3,5-Trimethylbenzene	**2370**	1620	**4190**	1560	**8.9**	3.8	ND	16.2	ND	3.1	*NE*	*NE*
Xylenes (Total-m,o,p)	**36380**	1712	**31360**	1650	**48.6**	4.0	**14.1**	17.1	ND	3.3	*100*	*RFC*

Report results in µg/m³. The Action Level should be indicated along with the source.
When selecting the Action Level, keep in mind the priority of sources we have requested you use.

Section 16: Appendices

Attach the following appendices.

☒	*Appendix A*	Excerpts from Documentation Report – Mn/DOT S.P. 2102-50, TH-29/27, dated December 30, 2005
☒	*Appendix B*	Laboratory Analytical Reports for Soil, Soil Gas/Sub-slab Vapor/Indoor Air/Ambient Air, and Ground Water. Include laboratory QA/QC data, Chromatograms, and laboratory certification number.
☒	*Appendix C*	Methodologies and Procedures, Including Field Screening of Soil, Other Field Analyses, Soil Boring, Soil Sampling, Soil Gas/Sub-Slab/Indoor air/Ambient Air Sampling, Well Installation, and Water Sampling.
☒	*Appendix D*	Geologic Logs of Soil Borings, Including Construction Diagrams of Temporary and Permanent Wells, and Copies of the Minnesota Department of Health Well Record.
☒	*Appendix E*	Copies of Water Supply Well Logs With Legible Unique Numbers, Source Water Assessment for Alexandria.
☒	*Appendix F*	Site Photographs of UST Removal
☒	*Appendix G*	Guidance Document 1-03a *Spatial Data Reporting Form.*
☐	*Appendix H*	Guidance Document 4-19 *Conceptual Corrective Action Design Worksheet*

APPENDIX A

Excerpts from Documentation Report – Mn/DOT S.P. 2102-50, TH-29/27, dated December 30, 2005

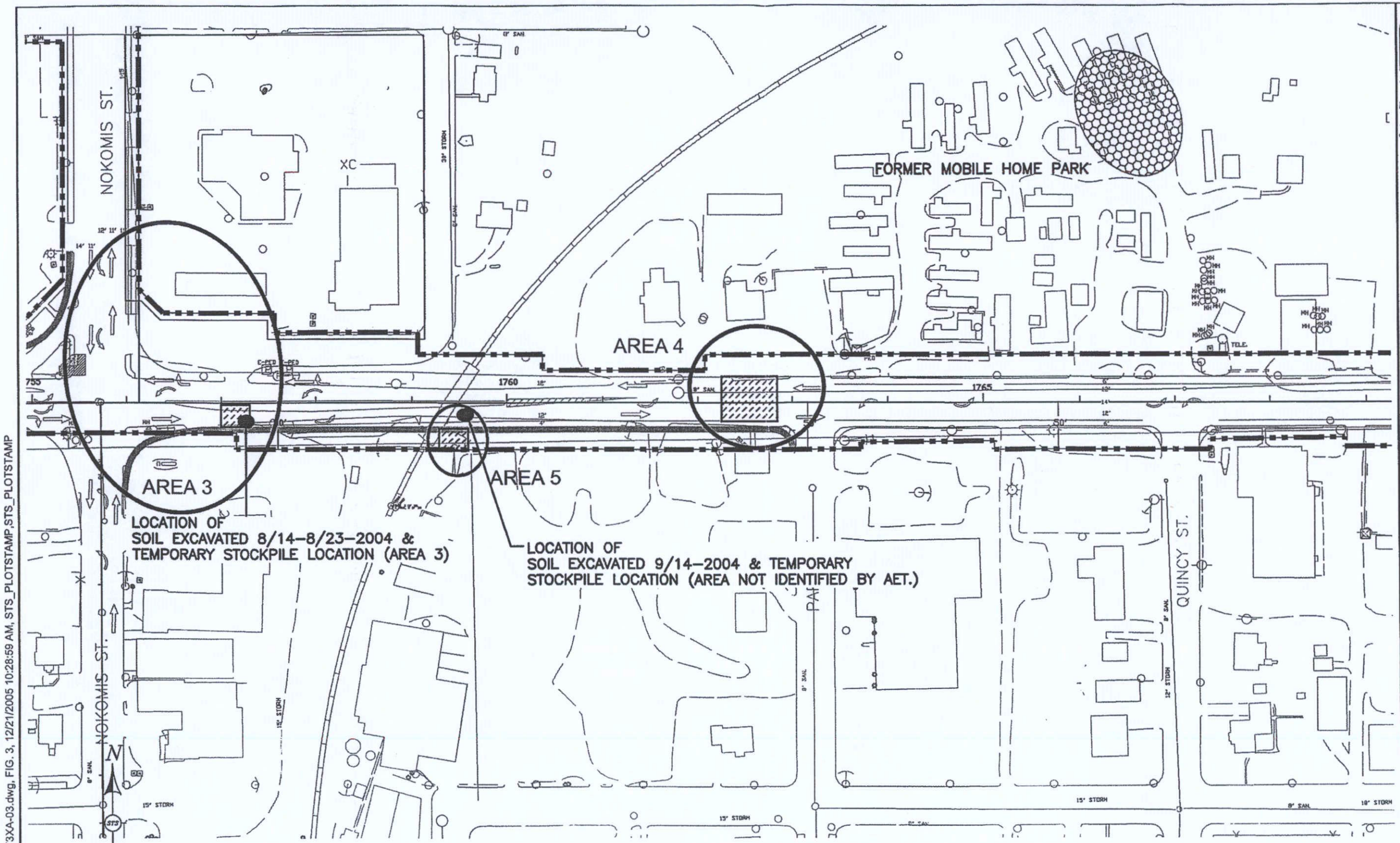
STS Consultants, Ltd.
Consulting Engineers

LANDSPREAD SITE LOCATION DIAGRAM

Mn/DOT TH-29/27 Highway Reconstruction
SW ¼, NE ¼, Section 12, T 124N, R38 W
Barsness Township
Pope County, Minnesota

DRAWN BY	TJG
CHECKED BY	WBT
APPROVED BY	RLD
CADFILE	SCALE 1" = 2000'
STS PROJ. 99473-XA	FIGURE NO. 4

FIGFRAME.DOC



NOTE:SITE PLAN PROVIDED BY AMERICAN ENGINEERING TESTING INC.

LEGEND

- AREA # — SOIL IN THE PROJECT LIMITS WERE OBSERVED BY STS FOR THE PRESENCE OF PETROLEUM IMPACTS.
- AREA OF PETROLEUM IMPACTED SOIL
- AREA OF TEMPORARY STOCKPILE LOCATION FOR AREA 4

STS CONSULTANTS
10900 73rd Ave. N., Suite 150
Maple Grove, MN 55369
763-315-6300
www.stsconsultants.com

IMPACTED SOIL MONITORING DIAGRAM
AREAS 3, 4 & 5
TRUNK HIGHWAY 29/27 CONSTRUCTION PROJECT
ALEXANDRIA, MINNESOTA
FOR: MnDOT S.P. 2102-50

Drawn:	TAK	4/22/2005
Checked:	MM	4/22/2005
Approved:	BM	4/22/2005
PROJECT NUMBER	699473XA	
FIGURE NUMBER	3	

W:\PROJECTS\699473XA\G99473XA-03.dwg, FIG. 3, 12/21/2005 10:28:59 AM, STS_PLOTSTAMP,STS_PLOTSTAMP,STS_PLOTSTAMP

WCEC
ENVIRONMENTAL CONSULTANTS

14 Green River Road, P. O. Box 594
Morris, MN 56267-0594
320-589-2039 or 800-422-8356
(320) 589-2814 (Fax)

FAX TRANSMITTAL COVER SHEET

DATE: 11-7-05 **PAGES:** 3 (With Cover Sheet)
TO: Tim **FAX #:** 763-315-1836
Company: STS Consultants
FROM: April Pilarski
RE: Riley Bros. Land Farm

PLEASE CALL IF ALL PAGES ARE NOT RECEIVED

HARD COPY TO FOLLOW: ____ YES X NO

MESSAGE:

RECEIVED OCT 11 2005

Minnesota Pollution Control Agency

October 7, 2005

Mr. Thomas Lundberg, Project Manager
Minnesota Department of Transportation
1000 Highway 10 West
Detroit Lakes, MN 56501

Mr. Joe Riley
Riley Brothers Construction, Inc.
46369 208th Street
Morris, MN 56267

RE: Land Treatment of Petroleum Contaminated Soil/Soil Corrective Action Plan Approval
Land Treatment Site: Riley Brothers Construction, Inc., Joe Riley, consisting of approximately 2.98 acres in the SW¼ of the NE¼ of Section 12, T 124 N, R 38 W, Barsness Township, Pope County.
Preapproval ID#: PRE0632
Leak Site: Alex Exhaust
Site ID#: LEAK000015656

Dear Mr. Lundberg and Mr. Riley:

The application dated September 20, 2005, to land treat approximately **1,500 cubic yards** of petroleum contaminated soil using **2.80 acres** from the above-referenced leak site at the above-referenced land treatment site is hereby approved by the Minnesota Pollution Control Agency (MPCA). This approval is based upon the MPCA staff's understanding that the appropriate county and local officials have been notified of the proposed land treatment of this soil and is subject to the conditions indicated below. The portions of Minn. R. ch. 7037 referenced in this letter are summarized in the MPCA Guidance Document 3-03 *Land Treatment of Petroleum Contaminated Soil* (April 2005). Minn. R. ch. 7037 indicates that the land treatment site owner and operator are to be responsible for the requirements listed below. However, the generator of the soil is not relieved from responsibility under Minn. Stat. § 115.061 to ensure the proper treatment of petroleum contaminated soil.

1. If soil is to be stored prior to spreading, then the conditions and limitations indicated in Minn. R. 7037.0810 must be followed for soil storage.

2. Soil must be spread to a thickness of no more than 4.0 inches and incorporated into the top four to six inches of native soil in accordance with Minn. R. 7037.2300. All other land treatment procedures and limitations described in Minn. R. 7037.2500 must be followed.

3. The MPCA Guidance Document 3-06 *Notification of Spreading Petroleum Contaminated Soil at a Land Treatment Site* (Form C) (April 2005) must be submitted to the MPCA within ten days following spreading (Minn. R. 7037.2600).

7678 College Road, Suite 105; Baxter, Minnesota 56425; Voice (218) 828-2492; Fax (218) 828-2594; TTY (651)-282-5332
St. Paul • Duluth • Brainerd • Detroit Lakes • Marshall • Rochester • Mankato • Willmar; Web Site www.pca.state.mn.us

4. The land treated soil must be sampled and reports must be submitted in accordance with Minn. R. 7037.2700 until analyses indicate 10 parts per million total petroleum hydrocarbons or lower. The MPCA Guidance Document 3-07 *Soil Monitoring Results for Land Treated Petroleum Contaminated Soil* (Form D) (April 2005) must be used for reporting.

5. The MPCA's approval of this application does not release you from any duty to comply with county or local ordinances.

6. **The preapproval for spreading of petroleum contaminated soil at this land treatment site expires November 1, 2006.**

We believe these actions will provide treatment of the excavated petroleum contaminated soil from this leak site. The MPCA reserves the right to require additional work if this is determined to be necessary to protect public health and the environment. This letter does not release any person from liability for this contamination. In addition, this letter does not address the adequacy of cleanup or investigative work completed or yet to be completed at the leak site.

In addition, the owner and operator of the land treatment site must comply with all other procedural and operational requirements established in Minn. R. ch. 7037.

Please note that this approval applies only to the process of land treatment of the petroleum contaminated soil. This approval should not be construed to constitute a finding that the volume of contaminated soil excavated at the above-referenced leak site was appropriate.

Please contact me at (218) 828-6072, if you have any questions.

Sincerely,

Steven J. Palzkill, PG
Project Manager
Brainerd Office
Remediation Division

SJP:vms

cc: Paul Anderson, Barsness Township, Starbuck
Steve Lawrence, Pope County Environmental Services Director, Glenwood
April Pilarski, West Central Environmental Consultants, Morris
Petrofund, Minnesota Department of Commerce, St. Paul
Nancy Hennen, MPCA, Marshall
File

MINNESOTA DEPARTMENT OF TRANSPORTATION

MORRIS, MINNESOTA

FACSIMILE TRANSMITTAL

DATE: 12-5-2005 NUMBER OF PAGES: 3 (INCLUDING COVER SHEET)

TO: Tim (STS) (NAME) FAX NO.: 763-315-1836

COMPANY: STS

FROM: BRAD CEGLA MNDOT FAX NO.: 320-589-7310
PHONE: 320-589-

ITEM SENT: 2 - Uniform Load Tally Sheets

NOTES:

Mn/DOT 28226 (9-77)
(formerly 2127A)

MINNESOTA DEPARTMENT OF TRANSPORTATION

UNIFORM VEHICLE LOAD TALLY SHEET

State Project No. 2102-50
Contractor Riley Bros.

Pit No. _____ Date 10/19/05
Class Mat. Conditioned Sa Shift No. _____ (1)
Course _____ Sheet No. 1 of 1
Layer _____

TRUCK NO.	CAP	(2) STATION _____ TO STATION _____ LANE _____ (3) HOUR (4)	(5) LOADS	(6) C.Y. Or TONS
321	17.36		10	173.6
323	17.36		10	173.6
320	17.36		10	173.6
318	17.36		9	156.2
324	17.36		9	156.2
313	17.36		8	138.9
315	17.36		8	138.9
316	17.36		8	138.9
				1249.9 (tns)
	Refer to Bituminous Manual 5-693.225.		(7) TOTALS 72	1250 (tns)

1250 tons = 898.5 yds³ (LV) = 740.775 yds³ (BM)

(1) Use separate sheets for each shift.
(2) Enter station numbers and lane or ramp.
(3) Enter hour over light vertical hour line.
(4) Show load delivered to nearest 15 min.
(5) Show number of loads.
(6) Show number of C.Y. or tons after calculation.
(7) Show number of loads and number of C.Y. or tons.
(8) Do not erase or overwrite.

T Tossell
FIELD CHECKER

CHECKED BY

Mn/DOT 28226 (9-77)
(formerly 2127A)

MINNESOTA DEPARTMENT OF TRANSPORTATION
UNIFORM VEHICLE LOAD TALLY SHEET

State Project No. 2102-50
Contractor Riley Bros.

Pit No. _____ Date 10-13-05 10/18/05
Class Mat. Centerline 5:1 Shift No. _____ (1)
Course _____ Sheet No. 1 of 1
Layer _____

TRUCK NO.	CAP	(2) STATION _____ TO STATION _____ LANE _____ (3) HOUR (4)	(5) LOADS	(6) C.Y. Or TONS
321	17.36		7	121.5
323	17.36		7	121.5
320	17.36		7	121.5
318	17.36		7	121.5
324	17.36		7	121.5
				607.5
321	17.36		2	34.7
323	17.36		2	34.7
~~320~~	17.36		2	34.7
318	17.36		2	34.7
324	17.36		2	34.7
				173.5
			45	781 (tons)
		(7) TOTALS	45	781 (tons)

7 8

1 ton = .714 yd^3 (LV)
1 yd^3 (LV) = .83 yd^3 (BM)
781 ton = 557.634 yd^3 (LV) = 462.8 yd^3 (BM)

Refer to Bituminous Manual 5-693.725.

(1) Use separate sheets for each shift.
(2) Enter station numbers and lane or ramp.
(3) Enter hour over light vertical hour line.
(4) Show load delivered to nearest 15 min.
(5) Show number of loads.
(6) Show number of C.Y. or tons after calculation.
(7) Show number of loads and number of C.Y. or tons.
(8) Do not erase or overwrite.

T. Riggert
FIELD CHECKER
D. Ley
CHECKED BY

Alex Exhaust – Leak 15,656
STS Project 200606839

APPENDIX B

Laboratory Analytical Reports

Northeast Technical Services
315 Chestnut Street
PO Box 1142
Virginia, MN 55792
Phone: 218-741-4290
Fax: 218-742-1010

MDH Certification: 027-137-157

Laboratory Results

NTS COC: 75269
Received: 2/12/2007
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007
Rec'd Temperature: 3.2 °C

Approved by: Renee Stone

STS Consultants
Attn: Tim Grape
10900 73rd Ave. N.
Suite 150
Maple Grove, MN 55369

NTS Sample: 143516
Description: B-2 (18)
Sample Date: 2/7/2007 1:20:00 PM

Matrix: Non-Aqueous
Sample Type: Grab

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	<10	mg/Kg	10	1	WI(95) DRO	2/15/2007	CSD
Benzene	<110	µg/Kg	110	1	EPA 8021	2/16/2007	CSD
Ethyl Benzene	<78	µg/Kg	78	1	EPA 8021	2/16/2007	CSD
GRO	<5.5	mg/Kg	5.5	1	WI(95) GRO	2/16/2007	CSD
Toluene	<110	µg/Kg	110	1	EPA 8021	2/16/2007	CSD
Xylene, Total	<220	µg/Kg	220	1	EPA 8021	2/16/2007	CSD
Solids, Total (TS)	89.5	%		1	SM 2540G	2/14/2007	TEM

NTS Sample: 143517
Description: B-3 (5)
Sample Date: 2/7/2007 11:40:00 AM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	<10	mg/Kg	10	1	WI(95) DRO	2/15/2007	CSD
Benzene	<120	µg/Kg	120	1	EPA 8021	2/16/2007	CSD
Ethyl Benzene	<81	µg/Kg	81	1	EPA 8021	2/16/2007	CSD
GRO	<5.8	mg/Kg	5.8	1	WI(95) GRO	2/16/2007	CSD
Toluene	<120	µg/Kg	120	1	EPA 8021	2/16/2007	CSD
Xylene, Total	<230	µg/Kg	230	1	EPA 8021	2/16/2007	CSD
Solids, Total (TS)	87.7	%		1	SM 2540G	2/14/2007	TEM

NTS Sample: 143518
Description: B-3 (16)
Sample Date: 2/7/2007 11:45:00 AM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	<10	mg/Kg	10	1	WI(95) DRO	2/15/2007	CSD
Benzene	<110	µg/Kg	110	1	EPA 8021	2/16/2007	CSD
Ethyl Benzene	<78	µg/Kg	78	1	EPA 8021	2/16/2007	CSD
GRO	<5.5	mg/Kg	5.5	1	WI(95) GRO	2/16/2007	CSD
Toluene	<110	µg/Kg	110	1	EPA 8021	2/16/2007	CSD
Xylene, Total	<220	µg/Kg	220	1	EPA 8021	2/16/2007	CSD
Solids, Total (TS)	90.9	%		1	SM 2540G	2/14/2007	TEM

NTS Sample: 143519
Description: B-4 (13)
Sample Date: 2/7/2007 10:10:00 AM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	<10	mg/Kg	10	1	WI(95) DRO	2/15/2007	CSD
Benzene	<120	µg/Kg	120	1	EPA 8021	2/16/2007	CSD
Ethyl Benzene	1400	µg/Kg	81	1	EPA 8021	2/16/2007	CSD
GRO	71	mg/Kg	5.8	1	WI(95) GRO	2/16/2007	CSD
Toluene	140	µg/Kg	120	1	EPA 8021	2/16/2007	CSD
Xylene, Total	1500	µg/Kg	230	1	EPA 8021	2/16/2007	CSD
Solids, Total (TS)	87.7	%		1	SM 2540G	2/14/2007	TEM

NTS Sample: 143520
Description: B-4 (22)
Sample Date: 2/7/2007 10:15:00 AM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	<10	mg/Kg	10	1	WI(95) DRO	2/15/2007	CSD
Benzene	<110	µg/Kg	110	1	EPA 8021	2/16/2007	CSD
Ethyl Benzene	<78	µg/Kg	78	1	EPA 8021	2/16/2007	CSD
GRO	<5.6	mg/Kg	5.6	1	WI(95) GRO	2/16/2007	CSD
Toluene	<110	µg/Kg	110	1	EPA 8021	2/16/2007	CSD
Xylene, Total	<220	µg/Kg	220	1	EPA 8021	2/16/2007	CSD
Solids, Total (TS)	89.6	%		1	SM 2540G	2/14/2007	TEM

NTS Sample: 143521
Description: B-5 (6)
Sample Date: 2/7/2007 4:05:00 PM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst	
DRO	310	mg/Kg	100	10	WI(95) DRO	2/16/2007	CSD	q
Benzene	<110	µg/Kg	240	2	EPA 8021	2/16/2007	CSD	
Ethyl Benzene	610	µg/Kg	170	2	EPA 8021	2/16/2007	CSD	
GRO	130	mg/Kg	12	2	WI(95) GRO	2/16/2007	CSD	
Toluene	<110	µg/Kg	240	2	EPA 8021	2/16/2007	CSD	
Xylene, Total	<220	µg/Kg	480	2	EPA 8021	2/16/2007	CSD	
Solids, Total (TS)	82.8	%		1	SM 2540G	2/14/2007	TEM	

Qualifier	Description	Note
q	Qualified Data.	Heavy hydrocarbons outside the DRO window.

NTS Sample: 143522
Description: B-5 (25)
Sample Date: 2/7/2007 4:10:00 PM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	<10	mg/Kg	10	1	WI(95) DRO	2/16/2007	CSD
Benzene	<110	µg/Kg	110	1	EPA 8021	2/16/2007	CSD
Ethyl Benzene	<80	µg/Kg	80	1	EPA 8021	2/16/2007	CSD
GRO	<5.7	mg/Kg	5.7	1	WI(95) GRO	2/16/2007	CSD
Toluene	<110	µg/Kg	110	1	EPA 8021	2/16/2007	CSD
Xylene, Total	<230	µg/Kg	230	1	EPA 8021	2/16/2007	CSD
Solids, Total (TS)	87.8	%		1	SM 2540G	2/14/2007	TEM

NTS Sample: 143523
Description: B-6 (23)
Sample Date: 2/7/2007 2:20:00 PM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	<10	mg/Kg	10	1	WI(95) DRO	2/16/2007	CSD
Benzene	<110	µg/Kg	110	1	EPA 8021	2/16/2007	CSD
Ethyl Benzene	<79	µg/Kg	79	1	EPA 8021	2/16/2007	CSD
GRO	<5.6	mg/Kg	5.6	1	WI(95) GRO	2/16/2007	CSD
Toluene	<110	µg/Kg	110	1	EPA 8021	2/16/2007	CSD
Xylene, Total	<230	µg/Kg	230	1	EPA 8021	2/16/2007	CSD
Solids, Total (TS)	89.2	%		1	SM 2540G	2/14/2007	TEM

NTS Sample: 143524
Description: MeOH Blank
Sample Date: 2/7/2007 11:05:00 AM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
Benzene	<100	µg/Kg	100	1	EPA 8021	2/16/2007	CSD
Ethyl Benzene	<70	µg/Kg	70	1	EPA 8021	2/16/2007	CSD
GRO	<5	mg/Kg	5	1	WI(95) GRO	2/16/2007	CSD
Toluene	<100	µg/Kg	100	1	EPA 8021	2/16/2007	CSD
Xylene, Total	<200	µg/Kg	200	1	EPA 8021	2/16/2007	CSD

NTS Sample: 143525
Description: B-1 (6)
Sample Date: 2/8/2007 10:00:00 AM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	170	mg/Kg	50	5	WI(95) DRO	2/16/2007	CSD
Benzene	<2400	µg/Kg	2400	20	EPA 8021	2/16/2007	CSD
Ethyl Benzene	10000	µg/Kg	1700	20	EPA 8021	2/16/2007	CSD
GRO	1100	mg/Kg	120	20	WI(95) GRO	2/16/2007	CSD
Toluene	2700	µg/Kg	2400	20	EPA 8021	2/16/2007	CSD
Xylene, Total	28000	µg/Kg	4800	20	EPA 8021	2/16/2007	CSD
Solids, Total (TS)	89.5	%		1	SM 2540G	2/14/2007	TEM

NTS Sample: 143526
Description: B-1 (20)
Sample Date: 2/8/2007 10:05:00 AM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	<10	mg/Kg	10	1	WI(95) DRO	2/16/2007	CSD
Benzene	<120	µg/Kg	120	1	EPA 8021	2/16/2007	CSD
Ethyl Benzene	<80	µg/Kg	80	1	EPA 8021	2/16/2007	CSD
GRO	<57	mg/Kg	57	1	WI(95) GRO	2/16/2007	CSD
Toluene	<120	µg/Kg	120	1	EPA 8021	2/16/2007	CSD
Xylene, Total	<230	µg/Kg	230	1	EPA 8021	2/16/2007	CSD
Solids, Total (TS)	88.7	%		1	SM 2540G	2/14/2007	TEM

NTS Sample: 143527
Description: TW-1
Sample Date: 2/8/2007 10:45:00 AM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Notes: I - Improper sample preservation noted, analysis performed. VOC pH=7

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst	
DRO	2.8	mg/L	0.1	1	WI(95) DRO	2/14/2007	CSD	i
GRO	11	mg/L	2	20	WI(95) GRO	2/14/2007	MES	i
1,1,1,2-Tetrachloroethane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,1,1-Trichloroethane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,1,2,2-Tetrachloroethane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,1,2-Trichloroethane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,1,2-Trichlorotrifluoroethane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,1-Dichloroethane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,1-Dichloroethylene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,1-Dichloropropene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,2,3-Trichlorobenzene	<40	µg/L	40	20	EPA 8260B	2/13/2007	KJD	
1,2,3-Trichloropropane	<40	µg/L	40	20	EPA 8260B	2/13/2007	KJD	
1,2,4-Trichlorobenzene	<40	µg/L	40	20	EPA 8260B	2/13/2007	KJD	
1,2,4-Trimethylbenzene	1200	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,2-Dibromo-3-chloropropane	<40	µg/L	40	20	EPA 8260B	2/13/2007	KJD	
1,2-Dibromoethane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,2-Dichlorobenzene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,2-Dichloroethane	370	µg/L	40	20	EPA 8260B	2/13/2007	KJD	
1,2-Dichloropropane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,3,5-Trimethylbenzene	380	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,3-Dichlorobenzene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,3-Dichloropropane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,4-Dichlorobenzene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
2,2-Dichloropropane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
2-Chlorotoluene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
4-Chlorotoluene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Acetone	<400	µg/L	400	20	EPA 8260B	2/13/2007	KJD	
Allyl Chloride	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Benzene	150	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Bromobenzene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Bromochloromethane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Bromodichloromethane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Bromoform	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Bromomethane	<40	µg/L	40	20	EPA 8260B	2/13/2007	KJD	
Carbon Tetrachloride	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Chlorobenzene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Chloroethane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	

Qualifier	Description	Note
i	Improper sample preservation noted, analysis performed.	DRO sample pH 7.,pH=7
n	Matrix Spike recovery not within control limits.	

NTS Sample: 143527
Description: TW-1
Sample Date: 2/8/2007 10:45:00 AM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Notes: I - Improper sample preservation noted, analysis performed. VOC pH=7

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst	
Chloroform	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Chloromethane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Cis-1,2-Dichloroethylene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Cis-1,3-Dichloropropene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Dibromochloromethane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Dibromomethane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Dichlorodifluoromethane	<40	µg/L	40	20	EPA 8260B	2/13/2007	KJD	
Dichlorofluoromethane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Ethyl Benzene	530	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Ethyl Ether	<40	µg/L	40	20	EPA 8260B	2/13/2007	KJD	
Hexachlorobutadiene	<40	µg/L	40	20	EPA 8260B	2/13/2007	KJD	
Isopropylbenzene	61	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Methyl Ethyl Ketone	<200	µg/L	200	20	EPA 8260B	2/13/2007	KJD	
Methyl Isobutyl Ketone	<200	µg/L	200	20	EPA 8260B	2/13/2007	KJD	
Methyl Tert-butyl Ether	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Methylene Chloride	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Naphthalene	210	µg/L	40	20	EPA 8260B	2/13/2007	KJD	
n-Butylbenzene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
n-Propylbenzene	180	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
p-Isopropyltoluene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
sec-Butylbenzene	23	µg/L	20	20	EPA 8260B	2/13/2007	KJD	n
Styrene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
tert-Butylbenzene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Tetrachloroethylene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Tetrahydrofuran	<100	µg/L	100	20	EPA 8260B	2/13/2007	KJD	
Toluene	87	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Trans-1,2-Dichloroethylene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Trans-1,3-Dichloropropene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Trichloroethylene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Trichlorofluoromethane	<40	µg/L	40	20	EPA 8260B	2/13/2007	KJD	
Vinyl Chloride	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Xylene, M&P	1800	µg/L	40	20	EPA 8260B	2/13/2007	KJD	
Xylene, O	420	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Surrogate 1,2-Dichloroethane-d4	99	%	20	20	EPA 8260B	2/13/2007	KJD	
Surrogate Bromofluorobenzene	103	%	20	20	EPA 8260B	2/13/2007	KJD	
Surrogate Toluene-d8	97.3	%	20	20	EPA 8260B	2/13/2007	KJD	

Qualifier	Description	Note
i	Improper sample preservation noted, analysis performed.	DRO sample pH 7.,pH=7
n	Matrix Spike recovery not within control limits.	

NTS Sample: 143528
Description: TW-2
Sample Date: 2/7/2007 2:30:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Notes: i - Improper sample preservation noted, analysis performed. VOC pH = 7.

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst	
DRO	1	mg/L	0.1	1	WI(95) DRO	2/15/2007	CSD	i
GRO	3.9	mg/L	0.5	5	WI(95) GRO	2/14/2007	MES	i
1,1,1,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1,1-Trichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1,2,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1,2-Trichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1,2-Trichlorotrifluoroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1-Dichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,2,3-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2,3-Trichloropropane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2,4-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2,4-Trimethylbenzene	200	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
1,2-Dibromo-3-chloropropane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2-Dibromoethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,2-Dichlorobenzene	2.3	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,2-Dichloroethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,3,5-Trimethylbenzene	150	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
1,3-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,3-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,4-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
2,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
2-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
4-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Acetone	<20	µg/L	20	1	EPA 8260B	2/13/2007	KJD	
Allyl Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Benzene	38	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromochloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromodichloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromoform	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromomethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
Carbon Tetrachloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Chlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Chloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	

Qualifier	Description	Note
i	Improper sample preservation noted, analysis performed.	DRO sample pH 7.,pH=7
m	Mercury detected in the field blank is in excess of the method limit.	

NTS Sample: 143528
Description: TW-2
Sample Date: 2/7/2007 2:30:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Notes: i - Improper sample preservation noted, analysis performed. VOC pH = 7.

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst	
Chloroform	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Chloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Cis-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Cis-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Dibromochloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Dibromomethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Dichlorodifluoromethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
Dichlorofluoromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Ethyl Benzene	700	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Ethyl Ether	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
Hexachlorobutadiene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
Isopropylbenzene	38	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Methyl Ethyl Ketone	<10	µg/L	10	1	EPA 8260B	2/13/2007	KJD	
Methyl Isobutyl Ketone	<10	µg/L	10	1	EPA 8260B	2/13/2007	KJD	
Methyl Tert-butyl Ether	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Methylene Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Naphthalene	77	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
n-Butylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
n-Propylbenzene	83	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
p-Isopropyltoluene	1.9	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
sec-Butylbenzene	4.2	µg/L	1	1	EPA 8260B	2/13/2007	KJD	m
Styrene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
tert-Butylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Tetrachloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Tetrahydrofuran	<5	µg/L	5	1	EPA 8260B	2/13/2007	KJD	
Toluene	18	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Trans-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Trans-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Trichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Trichlorofluoromethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
Vinyl Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Xylene, M&P	360	µg/L	20	10	EPA 8260B	2/13/2007	KJD	
Xylene, O	27	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Surrogate 1,2-Dichloroethane-d4	97.4	%	1	1	EPA 8260B	2/13/2007	KJD	
Surrogate Bromofluorobenzene	104	%	1	1	EPA 8260B	2/13/2007	KJD	
Surrogate Toluene-d8	97.8	%	1	1	EPA 8260B	2/13/2007	KJD	

Qualifier	Description	Note
i	Improper sample preservation noted, analysis performed.	DRO sample pH 7.,pH=7
m	Mercury detected in the field blank is in excess of the method limit.	

NTS Sample: 143529
Description: TW-3
Sample Date: 2/7/2007 1:00:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	1.2	mg/L	0.1	1	WI(95) DRO	2/14/2007	CSD
GRO	5.8	mg/L	1	10	WI(95) GRO	2/14/2007	MES
1,1,1,2-Tetrachloroethane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,1,1-Trichloroethane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,1,2,2-Tetrachloroethane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,1,2-Trichloroethane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,1,2-Trichlorotrifluoroethane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,1-Dichloroethane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,1-Dichloroethylene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,1-Dichloropropene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,2,3-Trichlorobenzene	<20	µg/L	20	10	EPA 8260B	2/13/2007	KJD
1,2,3-Trichloropropane	<20	µg/L	20	10	EPA 8260B	2/13/2007	KJD
1,2,4-Trichlorobenzene	<20	µg/L	20	10	EPA 8260B	2/13/2007	KJD
1,2,4-Trimethylbenzene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,2-Dibromo-3-chloropropane	<20	µg/L	20	10	EPA 8260B	2/13/2007	KJD
1,2-Dibromoethane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,2-Dichlorobenzene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,2-Dichloroethane	<20	µg/L	20	10	EPA 8260B	2/13/2007	KJD
1,2-Dichloropropane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,3,5-Trimethylbenzene	75	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,3-Dichlorobenzene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,3-Dichloropropane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,4-Dichlorobenzene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
2,2-Dichloropropane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
2-Chlorotoluene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
4-Chlorotoluene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
Acetone	<200	µg/L	200	10	EPA 8260B	2/13/2007	KJD
Allyl Chloride	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
Benzene	160	µg/L	10	10	EPA 8260B	2/13/2007	KJD
Bromobenzene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
Bromochloromethane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
Bromodichloromethane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
Bromoform	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
Bromomethane	<20	µg/L	20	10	EPA 8260B	2/13/2007	KJD
Carbon Tetrachloride	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
Chlorobenzene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
Chloroethane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD

Qualifier	Description	Note
n	Matrix Spike recovery not within control limits.	

NTS Sample: 143529
Description: TW-3
Sample Date: 2/7/2007 1:00:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst	
Chloroform	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Chloromethane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Cis-1,2-Dichloroethylene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Cis-1,3-Dichloropropene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Dibromochloromethane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Dibromomethane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Dichlorodifluoromethane	<20	µg/L	20	10	EPA 8260B	2/13/2007	KJD	
Dichlorofluoromethane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Ethyl Benzene	620	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Ethyl Ether	<20	µg/L	20	10	EPA 8260B	2/13/2007	KJD	
Hexachlorobutadiene	<20	µg/L	20	10	EPA 8260B	2/13/2007	KJD	
Isopropylbenzene	65	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Methyl Ethyl Ketone	<100	µg/L	100	10	EPA 8260B	2/13/2007	KJD	
Methyl Isobutyl Ketone	<100	µg/L	100	10	EPA 8260B	2/13/2007	KJD	
Methyl Tert-butyl Ether	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Methylene Chloride	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Naphthalene	30	µg/L	20	10	EPA 8260B	2/13/2007	KJD	
n-Butylbenzene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
n-Propylbenzene	130	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
p-Isopropyltoluene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
sec-Butylbenzene	12	µg/L	10	10	EPA 8260B	2/13/2007	KJD	n
Styrene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
tert-Butylbenzene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Tetrachloroethylene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Tetrahydrofuran	<50	µg/L	50	10	EPA 8260B	2/13/2007	KJD	
Toluene	23	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Trans-1,2-Dichloroethylene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Trans-1,3-Dichloropropene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Trichloroethylene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Trichlorofluoromethane	<20	µg/L	20	10	EPA 8260B	2/13/2007	KJD	
Vinyl Chloride	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Xylene, M&P	42	µg/L	20	10	EPA 8260B	2/13/2007	KJD	
Xylene, O	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Surrogate 1,2-Dichloroethane-d4	96.6	%	10	10	EPA 8260B	2/13/2007	KJD	
Surrogate Bromofluorobenzene	106	%	10	10	EPA 8260B	2/13/2007	KJD	
Surrogate Toluene-d8	98.9	%	10	10	EPA 8260B	2/13/2007	KJD	

Qualifier	Description	Note
n	Matrix Spike recovery not within control limits.	

NTS Sample: 143530 **Matrix: Aqueous** **NTS COC: 75269**
Description: TW-4 **Sample Type: Grab** **Client: 0605 - STS Consultants**
Sample Date: 2/7/2007 11:25:00 AM **Project: 4930 - 200600839/Alex Exhaust**
Sampled By: Client
Notes: i - Improper sample preservation noted, analysis performed. VOC pH = 6. **Report Date: 2/21/2007**

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst	
DRO	0.4	mg/L	0.1	1	WI(95) DRO	2/14/2007	CSD	i
GRO	1.3	mg/L	0.1	1	WI(95) GRO	2/14/2007	MES	i
1,1,1,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1,1-Trichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1,2,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1,2-Trichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1,2-Trichlorotrifluoroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1-Dichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,2,3-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2,3-Trichloropropane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2,4-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2,4-Trimethylbenzene	53	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,2-Dibromo-3-chloropropane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2-Dibromoethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,2-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,2-Dichloroethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,3,5-Trimethylbenzene	21	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,3-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,3-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,4-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
2,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
2-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
4-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Acetone	<20	µg/L	20	1	EPA 8260B	2/13/2007	KJD	
Allyl Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Benzene	26	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromochloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromodichloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromoform	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromomethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
Carbon Tetrachloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Chlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Chloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	

Qualifier	Description	Note
i	Improper sample preservation noted, analysis performed.	DRO sample pH 7.,pH=5
n	Matrix Spike recovery not within control limits.	

NTS Sample: 143530
Description: TW-4
Sample Date: 2/7/2007 11:25:00 AM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Notes: i - Improper sample preservation noted, analysis performed. VOC pH = 6.

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst	
Chloroform	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Chloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Cis-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Cis-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Dibromochloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Dibromomethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Dichlorodifluoromethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
Dichlorofluoromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Ethyl Benzene	160	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Ethyl Ether	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
Hexachlorobutadiene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
Isopropylbenzene	9.2	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Methyl Ethyl Ketone	<10	µg/L	10	1	EPA 8260B	2/13/2007	KJD	
Methyl Isobutyl Ketone	<10	µg/L	10	1	EPA 8260B	2/13/2007	KJD	
Methyl Tert-butyl Ether	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Methylene Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Naphthalene	18	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
n-Butylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
n-Propylbenzene	19	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
p-Isopropyltoluene	1.2	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
sec-Butylbenzene	1.8	µg/L	1	1	EPA 8260B	2/13/2007	KJD	n
Styrene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
tert-Butylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Tetrachloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Tetrahydrofuran	<5	µg/L	5	1	EPA 8260B	2/13/2007	KJD	
Toluene	14	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Trans-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Trans-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Trichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Trichlorofluoromethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
Vinyl Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Xylene, M&P	68	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
Xylene, O	24	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Surrogate 1,2-Dichloroethane-d4	96.5	%	1	1	EPA 8260B	2/13/2007	KJD	
Surrogate Bromofluorobenzene	103	%	1	1	EPA 8260B	2/13/2007	KJD	
Surrogate Toluene-d8	97.3	%	1	1	EPA 8260B	2/13/2007	KJD	

Qualifier	Description	Note
i	Improper sample preservation noted, analysis performed.	DRO sample pH 7.,pH=5
n	Matrix Spike recovery not within control limits.	

NTS Sample: 143531
Description: TW-5
Sample Date: 2/7/2007 12:05:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	0.3	mg/L	0.1	1	WI(95) DRO	2/14/2007	CSD
GRO	<0.1	mg/L	0.1	1	WI(95) GRO	2/14/2007	MES
1,1,1,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,1,1-Trichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,1,2,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,1,2-Trichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,1,2-Trichlorotrifluoroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,1-Dichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,1-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,1-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,2,3-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
1,2,3-Trichloropropane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
1,2,4-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
1,2,4-Trimethylbenzene	8	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,2-Dibromo-3-chloropropane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
1,2-Dibromoethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,2-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,2-Dichloroethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
1,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,3,5-Trimethylbenzene	2.5	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,3-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,3-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,4-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
2,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
2-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
4-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Acetone	<20	µg/L	20	1	EPA 8260B	2/13/2007	KJD
Allyl Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Benzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Bromobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Bromochloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Bromodichloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Bromoform	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Bromomethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Carbon Tetrachloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Chlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Chloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD

NTS Sample: 143531
Description: TW-5
Sample Date: 2/7/2007 12:05:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
Chloroform	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Chloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Cis-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Cis-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Dibromochloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Dibromomethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Dichlorodifluoromethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Dichlorofluoromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Ethyl Benzene	1.5	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Ethyl Ether	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Hexachlorobutadiene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Isopropylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Methyl Ethyl Ketone	<10	µg/L	10	1	EPA 8260B	2/13/2007	KJD
Methyl Isobutyl Ketone	<10	µg/L	10	1	EPA 8260B	2/13/2007	KJD
Methyl Tert-butyl Ether	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Methylene Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Naphthalene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
n-Butylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
n-Propylbenzene	1.1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
p-Isopropyltoluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
sec-Butylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Styrene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
tert-Butylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Tetrachloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Tetrahydrofuran	<5	µg/L	5	1	EPA 8260B	2/13/2007	KJD
Toluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Trans-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Trans-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Trichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Trichlorofluoromethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Vinyl Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Xylene, M&P	2.3	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Xylene, O	1.9	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Surrogate 1,2-Dichloroethane-d4	92.7	%	1	1	EPA 8260B	2/13/2007	KJD
Surrogate Bromofluorobenzene	106	%	1	1	EPA 8260B	2/13/2007	KJD
Surrogate Toluene-d8	98.2	%	1	1	EPA 8260B	2/13/2007	KJD

NTS Sample: 143532
Description: TW-6
Sample Date: 2/7/2007 3:35:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst	
DRO	<0.1	mg/L	0.1	1	WI(95) DRO	2/14/2007	CSD	i
GRO	<0.1	mg/L	0.1	1	WI(95) GRO	2/14/2007	MES	
1,1,1,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1,1-Trichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1,2,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1,2-Trichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1,2-Trichlorotrifluoroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1-Dichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,2,3-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2,3-Trichloropropane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2,4-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2,4-Trimethylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,2-Dibromo-3-chloropropane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2-Dibromoethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,2-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,2-Dichloroethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,3,5-Trimethylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,3-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,3-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,4-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
2,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
2-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
4-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Acetone	<20	µg/L	20	1	EPA 8260B	2/13/2007	KJD	
Allyl Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Benzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromochloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromodichloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromoform	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromomethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
Carbon Tetrachloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Chlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Chloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	

Qualifier	Description	Note
i	Improper sample preservation noted, analysis performed.	DRO sample pH 3.

NTS Sample: 143532
Description: TW-6
Sample Date: 2/7/2007 3:35:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
Chloroform	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Chloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Cis-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Cis-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Dibromochloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Dibromomethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Dichlorodifluoromethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Dichlorofluoromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Ethyl Benzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Ethyl Ether	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Hexachlorobutadiene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Isopropylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Methyl Ethyl Ketone	<10	µg/L	10	1	EPA 8260B	2/13/2007	KJD
Methyl Isobutyl Ketone	<10	µg/L	10	1	EPA 8260B	2/13/2007	KJD
Methyl Tert-butyl Ether	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Methylene Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Naphthalene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
n-Butylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
n-Propylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
p-Isopropyltoluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
sec-Butylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Styrene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
tert-Butylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Tetrachloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Tetrahydrofuran	<5	µg/L	5	1	EPA 8260B	2/13/2007	KJD
Toluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Trans-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Trans-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Trichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Trichlorofluoromethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Vinyl Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Xylene, M&P	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Xylene, O	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Surrogate 1,2-Dichloroethane-d4	101	%	1	1	EPA 8260B	2/13/2007	KJD
Surrogate Bromofluorobenzene	106	%	1	1	EPA 8260B	2/13/2007	KJD
Surrogate Toluene-d8	97.9	%	1	1	EPA 8260B	2/13/2007	KJD

Qualifier	Description	Note
i	Improper sample preservation noted, analysis performed.	DRO sample pH 3.

NTS Sample: 143533
Description: Field Blank
Sample Date: 2/8/2007 4:35:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	<0.1	mg/L	0.1	1	WI(95) DRO	2/14/2007	CSD
GRO	<0.1	mg/L	0.1	1	WI(95) GRO	2/14/2007	MES
1,1,1,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,1,1-Trichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,1,2,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,1,2-Trichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,1,2-Trichlorotrifluoroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,1-Dichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,1-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,1-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,2,3-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
1,2,3-Trichloropropane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
1,2,4-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
1,2,4-Trimethylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,2-Dibromo-3-chloropropane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
1,2-Dibromoethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,2-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,2-Dichloroethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
1,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,3,5-Trimethylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,3-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,3-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,4-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
2,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
2-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
4-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Acetone	<20	µg/L	20	1	EPA 8260B	2/13/2007	KJD
Allyl Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Benzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Bromobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Bromochloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Bromodichloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Bromoform	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Bromomethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Carbon Tetrachloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Chlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Chloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD

NTS Sample: 143533
Description: Field Blank
Sample Date: 2/8/2007 4:35:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
Chloroform	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Chloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Cis-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Cis-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Dibromochloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Dibromomethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Dichlorodifluoromethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Dichlorofluoromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Ethyl Benzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Ethyl Ether	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Hexachlorobutadiene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Isopropylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Methyl Ethyl Ketone	<10	µg/L	10	1	EPA 8260B	2/13/2007	KJD
Methyl Isobutyl Ketone	<10	µg/L	10	1	EPA 8260B	2/13/2007	KJD
Methyl Tert-butyl Ether	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Methylene Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Naphthalene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
n-Butylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
n-Propylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
p-Isopropyltoluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
sec-Butylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Styrene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
tert-Butylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Tetrachloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Tetrahydrofuran	12	µg/L	5	1	EPA 8260B	2/13/2007	KJD
Toluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Trans-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Trans-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Trichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Trichlorofluoromethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Vinyl Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Xylene, M&P	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Xylene, O	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Surrogate 1,2-Dichloroethane-d4	96	%	1	1	EPA 8260B	2/13/2007	KJD
Surrogate Bromofluorobenzene	104	%	1	1	EPA 8260B	2/13/2007	KJD
Surrogate Toluene-d8	98.4	%	1	1	EPA 8260B	2/13/2007	KJD

QUALITY ASSURANCE REPORT: VOLATILE ORGANIC COMPOUNDS 8260

Date: 02/13/07

Sample I.D.: 143547 **QC Pack:** 9-021307-1

	Units	DF	Lab Blank Conc ug/L	LCS % Rec	Matrix Spike %	Matrix Spike Duplicate (%)	RPD %
Allyl Chloride	ug/L	1.0	< 1.0	105	109	102	6.6
Bromobenzene	ug/L	1.0	< 1.0	114	119	117	1.9
Bromochloromethane	ug/L	1.0	< 1.0	118	120	116	3.8
Bromodichloromethane	ug/L	1.0	< 1.0	116	119	117	1.3
Bromoform	ug/L	1.0	< 1.0	108	99	101	2.4
Bromomethane	ug/L	1.0	< 2.0	95	95	91	4.4
Carbon Tetrachloride	ug/L	1.0	< 1.0	124	132	125	5.9
Chlorobenzene	ug/L	1.0	< 1.0	109	114	111	2.7
Chloroethane	ug/L	1.0	< 1.0	102	105	99	5.6
Chloroform	ug/L	1.0	< 1.0	118	126	120	4.9
Chloromethane	ug/L	1.0	< 1.0	100	99	94	5.2
2-Chlorotoluene	ug/L	1.0	< 1.0	119	129	125	2.8
4-Chlorotoluene	ug/L	1.0	< 1.0	115	123	119	3.6
Dibromochloromethane	ug/L	1.0	< 1.0	107	106	105	0.6
1,2-Dibromo-3-chloropropane	ug/L	1.0	< 2.0	87	72	76	5.4
1,2-Dibromoethane	ug/L	1.0	< 1.0	109	102	104	1.3
Dibromomethane	ug/l	1.0	< 1.0	117	111	111	0.0
1,2-Dichlorobenzene	ug/L	1.0	< 1.0	110	111	109	2.1
1,3-Dichlorobenzene	ug/L	1.0	< 1.0	110	115	111	3.3
1,4-Dichlorobenzene	ug/L	1.0	< 1.0	108	112	108	3.6
Dichlorodifluoromethane	ug/L	1.0	< 3.0	83	90	77	14.8
1,1-Dichloroethane	ug/L	1.0	< 1.0	117	123	118	4.6
1,2-Dichloroethane	ug/L	1.0	< 1.0	111	109	109	0.8
1,1-Dichloroethylene	ug/L	1.0	< 1.0	119	122	116	5.1
Cis-1,2-Dichloroethylene	ug/L	1.0	< 1.0	123	128	124	3.4
Trans-1,2-Dichloroethylene	ug/L	1.0	< 1.0	118	125	117	6.5
Dichlorofluoromethane	ug/L	1.0	< 1.0	105	108	101	6.3
1,2-Dichloropropane	ug/L	1.0	< 1.0	113	115	112	2.3
1,3-Dichloropropane	ug/L	1.0	< 1.0	108	105	105	0.2
2,2-Dichloropropane	ug/L	1.0	< 1.0	127	124	119	3.8
1,1-Dichloropropene	ug/L	1.0	< 1.0	121	128	122	5.0
Cis-1,3-Dichloropropene	ug/L	1.0	< 1.0	107	108	107	0.9
Trans-1,3-Dichloropropene	ug/L	1.0	< 1.0	103	101	101	0.0
Hexachlorobutadiene	ug/L	1.0	< 2.0	122	124	122	2.2
Methylene Chloride	ug/L	1.0	< 1.0	133	134	131	2.6
1,1,1,2-Tetrachloroethane	ug/L	1.0	< 1.0	115	118	117	0.9
1,1,2,2-Tetrachloroethane	ug/L	1.0	< 1.0	107	95	98	2.8
Tetrachloroethylene	ug/L	1.0	< 1.0	119	127	124	2.2
1,2,3-Trichlorobenzene	ug/L	1.0	< 2.0	99	82	86	5.0
1,2,4-Trichlorobenzene	ug/L	1.0	< 2.0	104	96	97	1.0

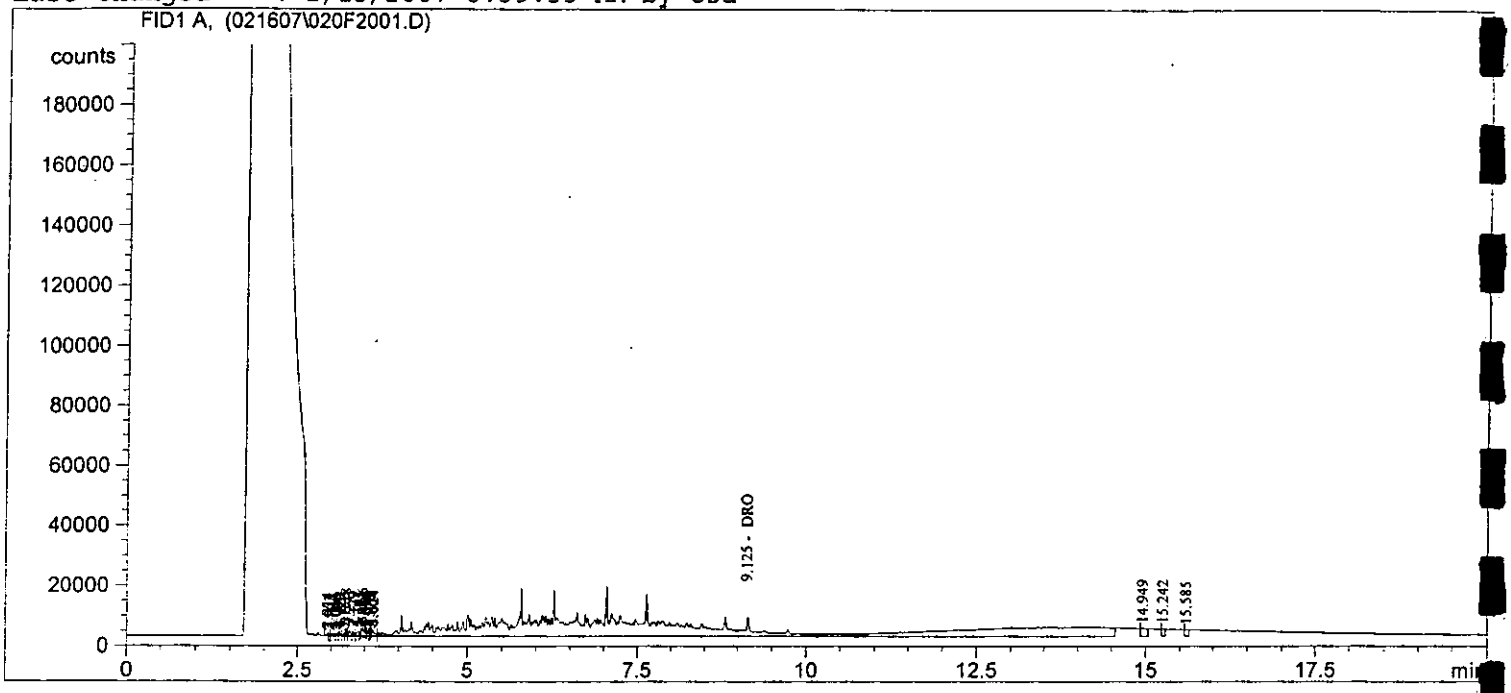
QUALITY ASSURANCE REPORT: VOLATILE ORGANIC COMPOUNDS 8260

Date: 02/13/07
QC Pack: 9-021307-1

Sample I.D.: 143547

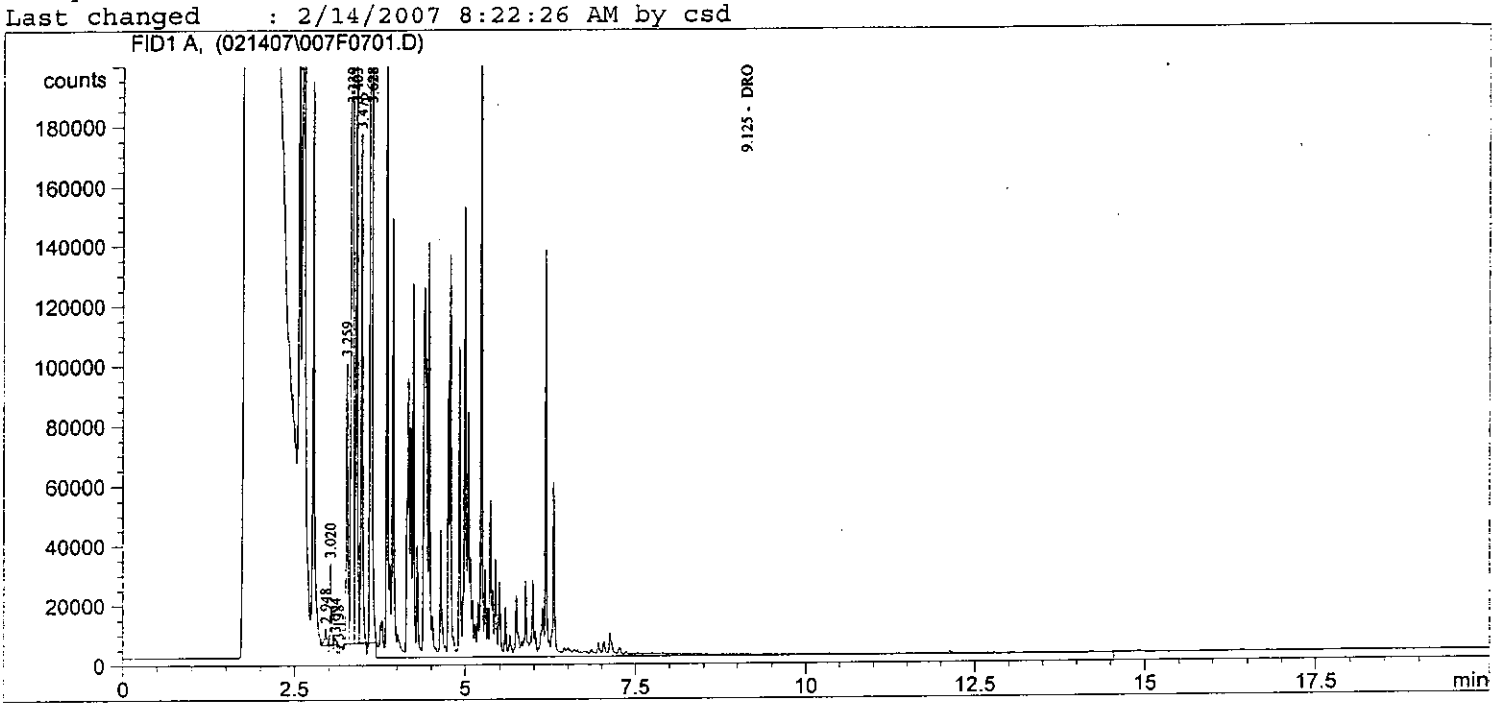
	Units	DF	Lab Blank Conc ug/L	LCS % Rec	Matrix Spike %	Matrix Spike Duplicate (%)	RPD %
1,1,1-Trichloroethane	ug/L	1.0	< 1.0	122	129	121	6.1
1,1,2-Trichloroethane	ug/L	1.0	< 1.0	111	104	103	1.3
Trichloroethylene	ug/L	1.0	< 1.0	120	126	120	4.6
Trichlorofluoromethane	ug/L	1.0	< 3.0	111	111	92	19.5
1,2,3-Trichloropropane	ug/L	1.0	< 1.0	104	88	91	3.0
1,1,2-Trichlorotrifluoroethane	ug/L	1.0	< 1.0	112	116	105	9.3
Vinyl Chloride	ug/L	1.0	< 1.0	100	100	94	5.7
Acetone	ug/L	1.0	< 20	157	95	97	2.1
Benzene	ug/L	1.0	< 1.0	118	124	119	3.7
n-Butylbenzene	ug/L	1.0	< 1.0	121	128	122	4.6
sec-Butylbenzene	ug/L	1.0	< 1.0	121	131	126	4.2
tert-Butylbenzene	ug/L	1.0	< 1.0	105	115	110	5.2
Isopropylbenzene (Cumene)	ug/L	1.0	< 1.0	108	115	111	3.3
Ethyl Benzene	ug/L	1.0	< 1.0	116	125	121	2.8
Ethyl Ether	ug/L	1.0	< 2.0	106	99	96	2.5
p-Isopropyltoluene	ug/L	1.0	< 1.0	121	130	124	4.4
Methyl Ethyl Ketone	ug/L	1.0	< 5.0	113	81	82	2.0
Methyl Isobutyl Ketone	ug/L	1.0	< 5.0	103	80	83	3.2
Methyl tert-butyl ether	ug/L	1.0	< 1.0	103	93	93	0.4
n-Propylbenzene	ug/L	1.0	< 1.0	115	127	121	4.8
Naphthalene	ug/L	1.0	< 2.0	90	70	76	8.4
Styrene	ug/L	1.0	< 1.0	112	116	114	1.7
Tetrahydrofuran	ug/L	1.0	< 5.0	106	84	85	0.9
Toluene	ug/L	1.0	< 1.0	114	122	120	2.1
1,2,4-Trimethylbenzene	ug/L	1.0	< 1.0	118	126	121	3.5
1,3,5-Trimethylbenzene	ug/L	1.0	< 1.0	118	126	122	3.3
m-Xylene & p-Xylene	ug/L	1.0	< 1.0	116	121	118	2.9
o-Xylene	ug/L	1.0	< 1.0	117	124	122	2.4

```
==========================================================================
Injection Date  : 2/16/2007 5:01:36 PM          Seq. Line :  20
Sample Name     : 143521                         Location : Vial 20
Acq. Operator   : csd                               Inj :   1
Acq. Instrument : GC-7                       Inj Volume : 1 µl
Acq. Method     : D:\HPCHEM\7\METHODS\!TEST3.M
Last changed    : 12/29/2006 2:46:30 PM by csd
Analysis Method : C:\HPCHEM\3\METHODS\D021407L.M
Last changed    : 2/15/2007 8:39:53 AM by csd
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 15, 2007 8:39:45 AM
Multiplier            :      1.0000
Dilution              :     10.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime  Type     Area      Amt/Area     Amount    Grp   Name
 [min]          counts*s                 [ppm]
-------|------|----------|----------|----------|--|------------------
  9.125 HHA+   1.86062e6  4.24440e-7    7.89721     DRO

Totals :                                 7.89721

 Results obtained with enhanced integrator!
==========================================================================
                          *** End of Report ***
```

Injection Date : 2/14/2007 11:14:23 AM Seq. Line : 7
Sample Name : 143527 Location : Vial 7
Acq. Operator : csd Inj : 1
Acq. Instrument : GC-7 Inj Volume : 1 µl
Acq. Method : D:\HPCHEM\7\METHODS\!TEST3.M
Last changed : 12/29/2006 2:46:30 PM by csd
Analysis Method : C:\HPCHEM\3\METHODS\D021307L.M
Last changed : 2/14/2007 8:22:26 AM by csd



External Standard Report

Sorted By : Signal
Calib. Data Modified : 2/14/2007 8:22:24 AM
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

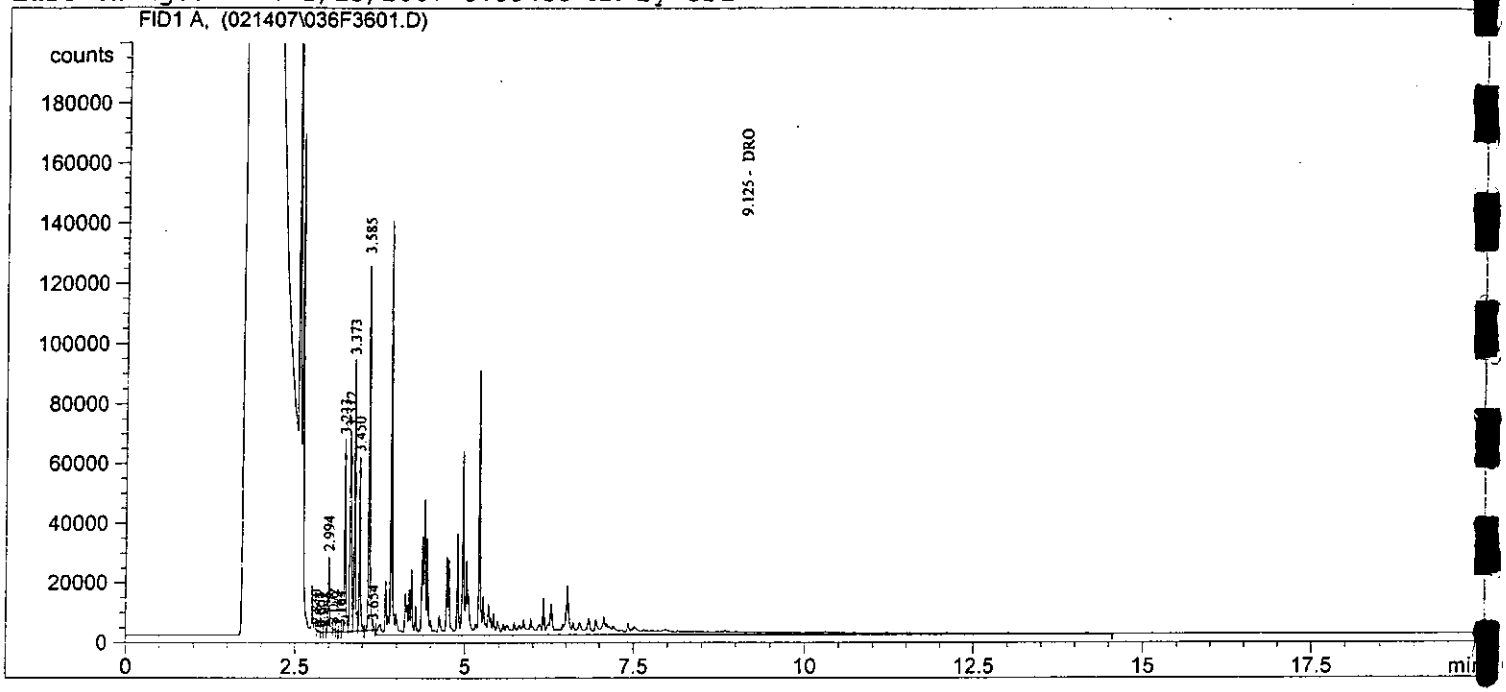
Signal 1: FID1 A,

RetTime [min]	Type	Area counts*s	Amt/Area	Amount [ppm]	Grp	Name
9.125	HHA+	4.17115e6	4.60728e-7	1.92177		DRO
Totals :				1.92177		

Results obtained with enhanced integrator!

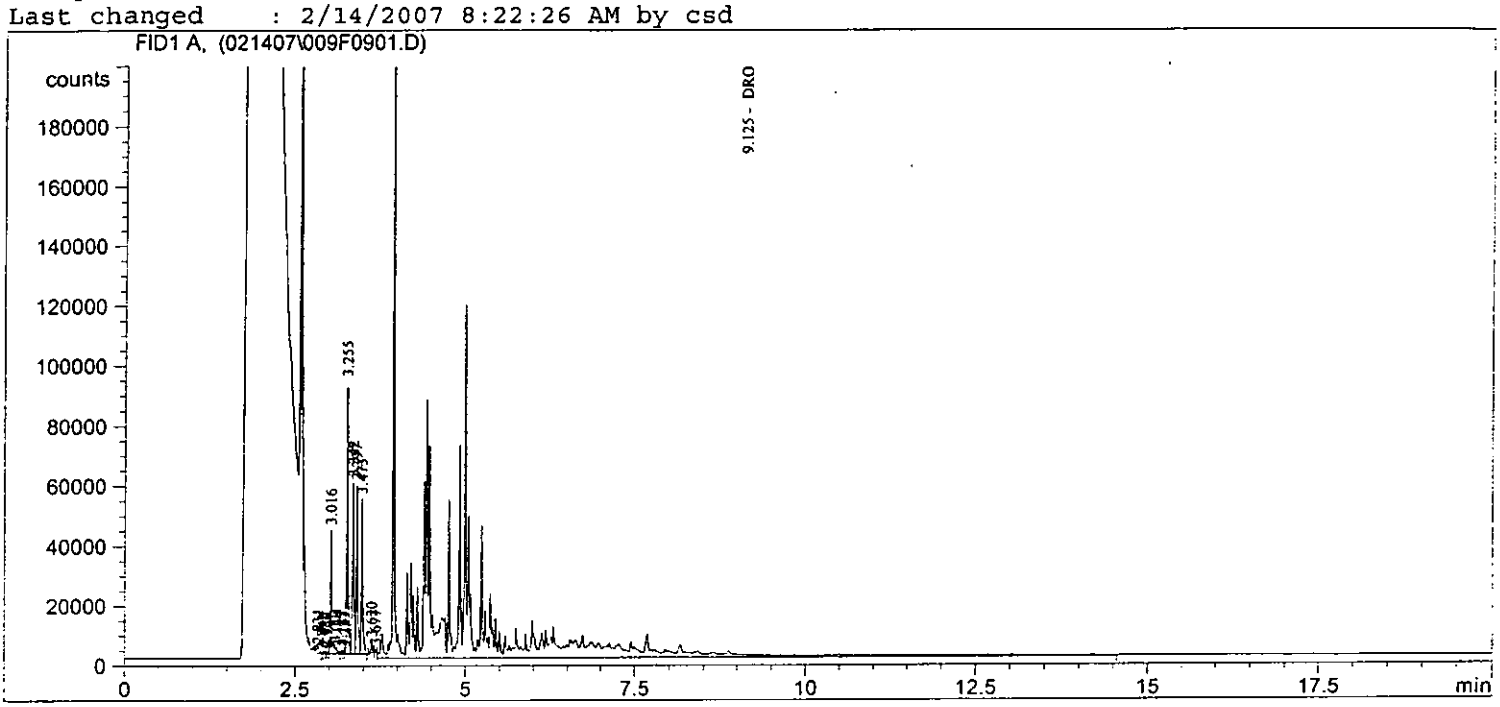
*** End of Report ***

```
==========================================================================
Injection Date  : 2/15/2007 12:29:49 AM          Seq. Line :  36
Sample Name     : 143528                          Location : Vial 36
Acq. Operator   : csd                                Inj :   1
Acq. Instrument : GC-7                          Inj Volume : 1 µl
Sequence File   : C:\HPCHEM\3\SEQUENCE\021407.S
Acq. Method     : D:\HPCHEM\7\METHODS\!TEST3.M
Last changed    : 12/29/2006 2:46:30 PM by csd
Analysis Method : C:\HPCHEM\3\METHODS\D021407L.M
Last changed    : 2/15/2007 8:39:53 AM by csd
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 15, 2007 8:39:45 AM
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          counts*s                [ppm]
-------|------|----------|----------|----------|--|------------------
  9.125 HHA+   1.65398e6  4.21209e-7 6.96670e-1     DRO

Totals :                               6.96670e-1

 Results obtained with enhanced integrator!
==========================================================================
                          *** End of Report ***
```

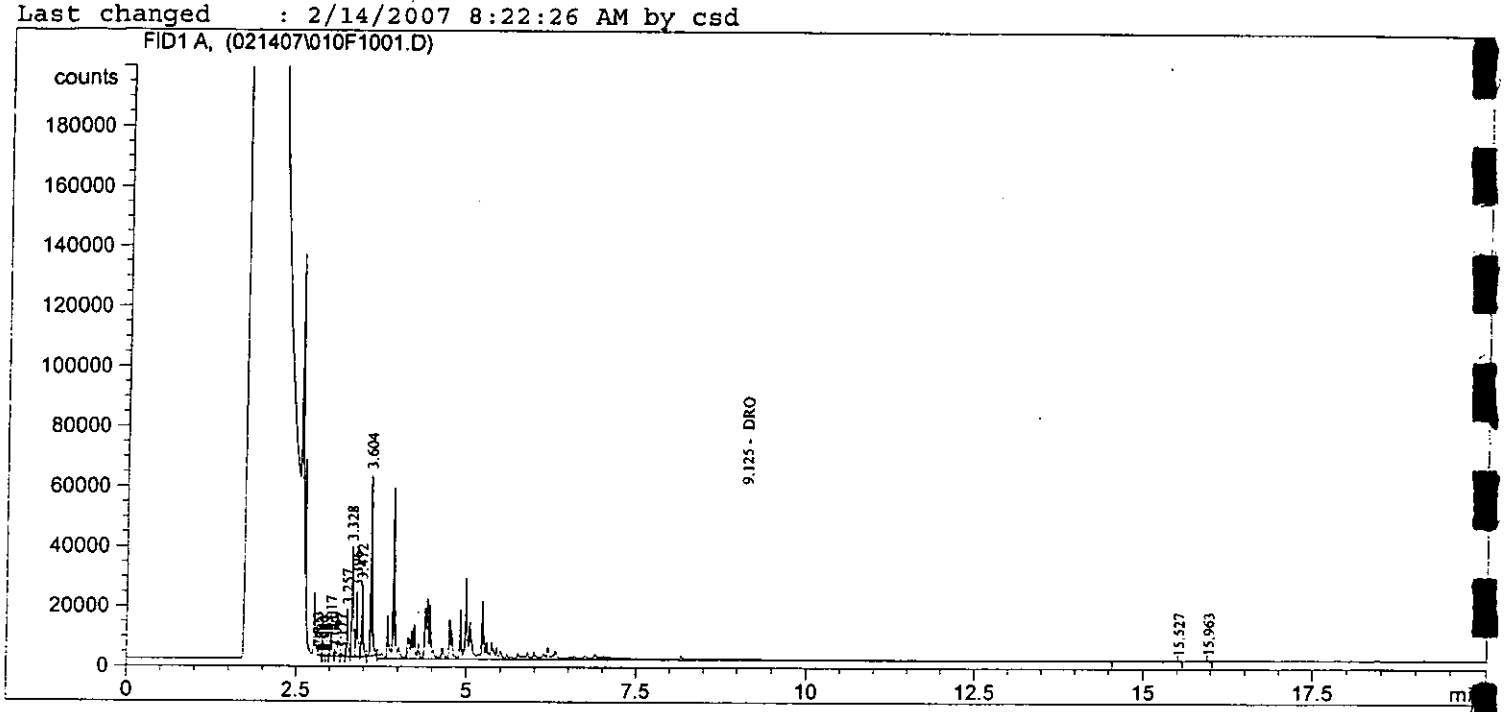
```
==========================================================================
Injection Date  : 2/14/2007 12:09:15 PM          Seq. Line :   9
Sample Name     : 143529                         Location : Vial 9
Acq. Operator   : csd                               Inj :   1
Acq. Instrument : GC-7                        Inj Volume : 1 µl
Acq. Method     : D:\HPCHEM\7\METHODS\!TEST3.M
Last changed    : 12/29/2006 2:46:30 PM by csd
Analysis Method : C:\HPCHEM\3\METHODS\D021307L.M
Last changed    : 2/14/2007 8:22:26 AM by csd
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2007 8:22:24 AM
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          counts*s                [ppm]
-------|------|----------|----------|----------|--|------------------
  9.125 HHA+   2.51131e6  4.54166e-7    1.14055     DRO

Totals :                                1.14055

 Results obtained with enhanced integrator!
==========================================================================
                          *** End of Report ***
```

Data File C:\HPCHEM\3\DATA\021407\010F1001.D Sample Name: 1435

Injection Date	: 2/14/2007 12:36:36 PM	Seq. Line	: 10
Sample Name	: 143530	Location	: Vial 10
Acq. Operator	: csd	Inj	: 1
Acq. Instrument	: GC-7	Inj Volume	: 1 µl
Acq. Method	: D:\HPCHEM\7\METHODS\!TEST3.M		
Last changed	: 12/29/2006 2:46:30 PM by csd		
Analysis Method	: C:\HPCHEM\3\METHODS\D021307L.M		
Last changed	: 2/14/2007 8:22:26 AM by csd		



External Standard Report

Sorted By : Signal
Calib. Data Modified : 2/14/2007 8:22:24 AM
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

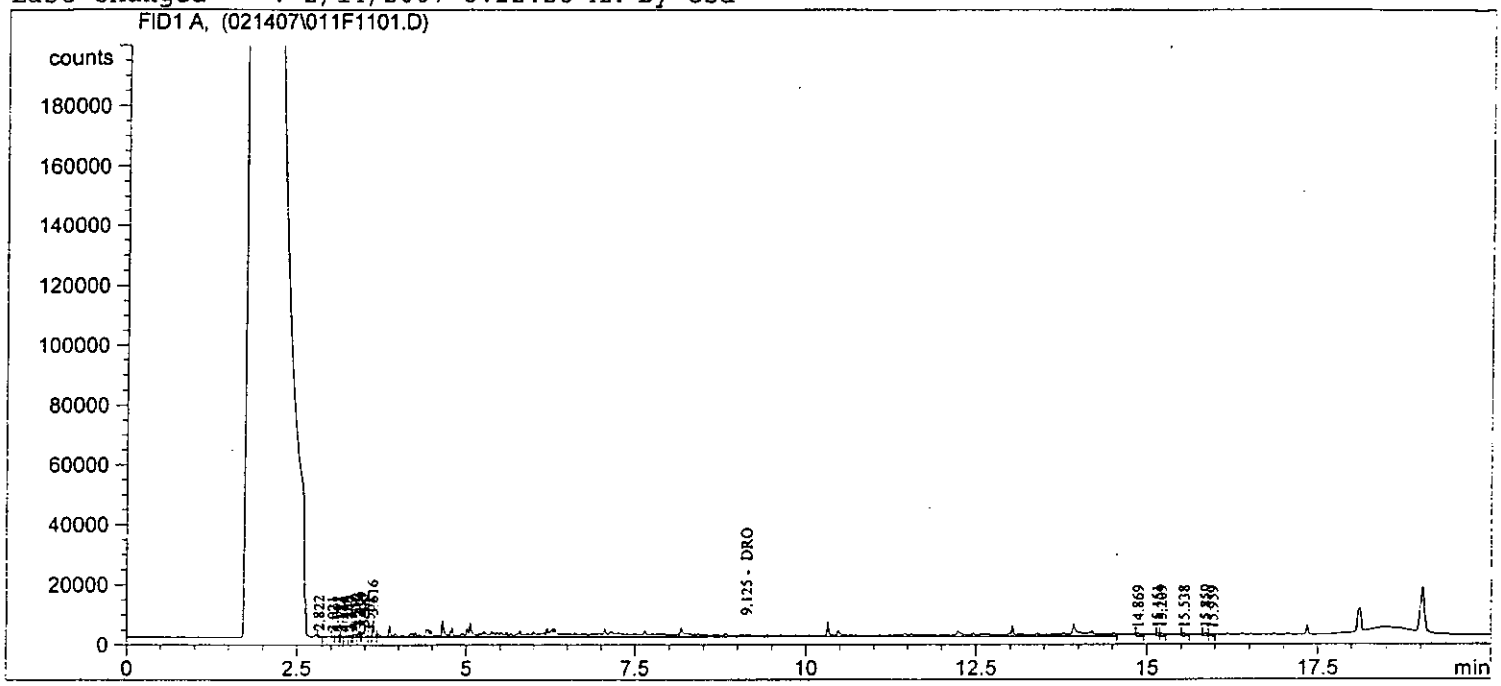
RetTime [min]	Type	Area counts*s	Amt/Area	Amount [ppm]	Grp	Name
9.125	HHA+	7.28104e5	4.13778e-7	3.01274e-1		DRO

Totals : 3.01274e-1

Results obtained with enhanced integrator!

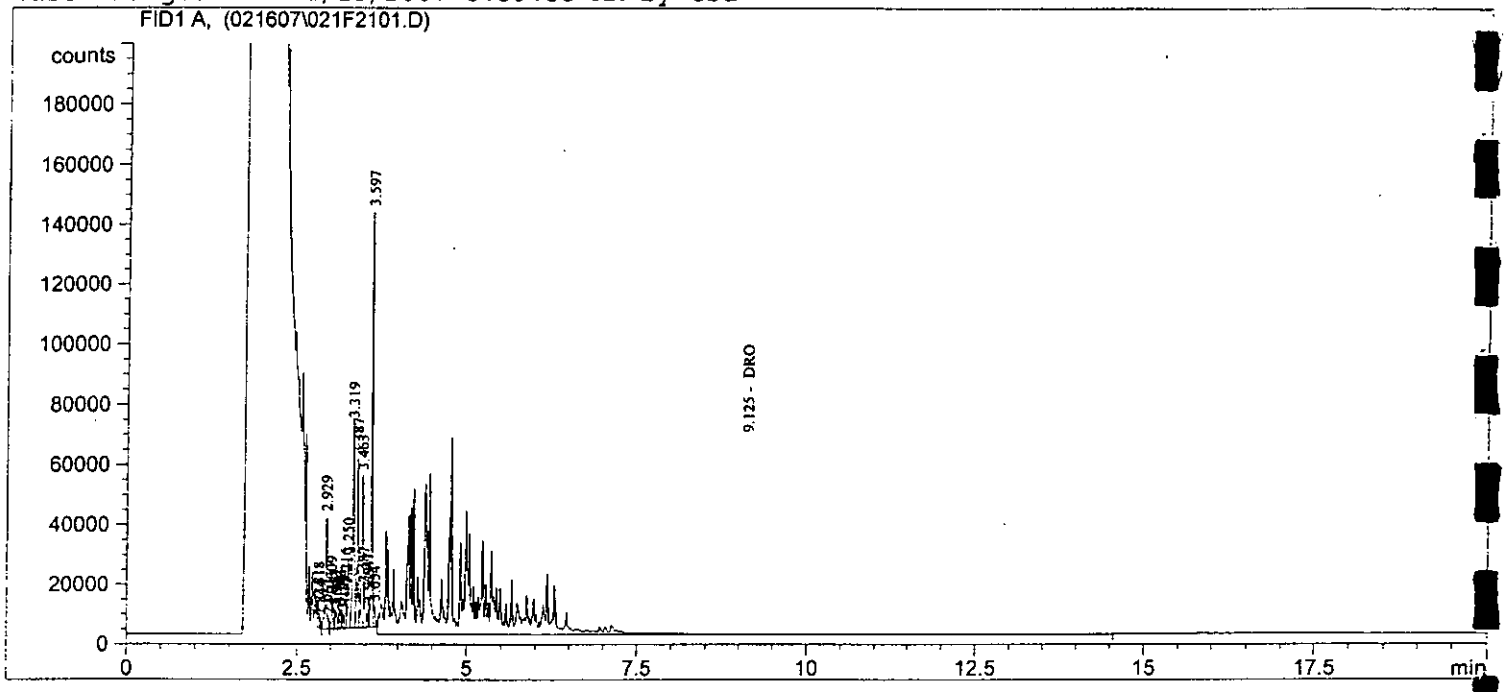
*** End of Report ***

```
==========================================================================
Injection Date  : 2/14/2007 1:04:03 PM          Seq. Line :  11
Sample Name     : 143531                        Location : Vial 11
Acq. Operator   : csd                               Inj :  1
Acq. Instrument : GC-7                      Inj Volume : 1 µl
Acq. Method     : D:\HPCHEM\7\METHODS\!TEST3.M
Last changed    : 12/29/2006 2:46:30 PM by csd
Analysis Method : C:\HPCHEM\3\METHODS\D021307L.M
Last changed    : 2/14/2007 8:22:26 AM by csd
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2007 8:22:24 AM
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime  Type      Area      Amt/Area    Amount    Grp   Name
 [min]          counts*s                 [ppm]
-------|------|----------|----------|----------|--|------------------
  9.125 HHA+   5.99612e5  4.01590e-7 2.40798e-1     DRO

Totals :                               2.40798e-1

 Results obtained with enhanced integrator!
==========================================================================
                          *** End of Report ***
```

```
Injection Date   : 2/16/2007 5:29:31 PM          Seq. Line :  21
Sample Name      : 143525                        Location : Vial 21
Acq. Operator    : csd                              Inj :   1
Acq. Instrument  : GC-7                       Inj Volume : 1 µl
Acq. Method      : D:\HPCHEM\7\METHODS\!TEST3.M
Last changed     : 12/29/2006 2:46:30 PM by csd
Analysis Method  : C:\HPCHEM\3\METHODS\D021407L.M
Last changed     : 2/15/2007 8:39:53 AM by csd
```

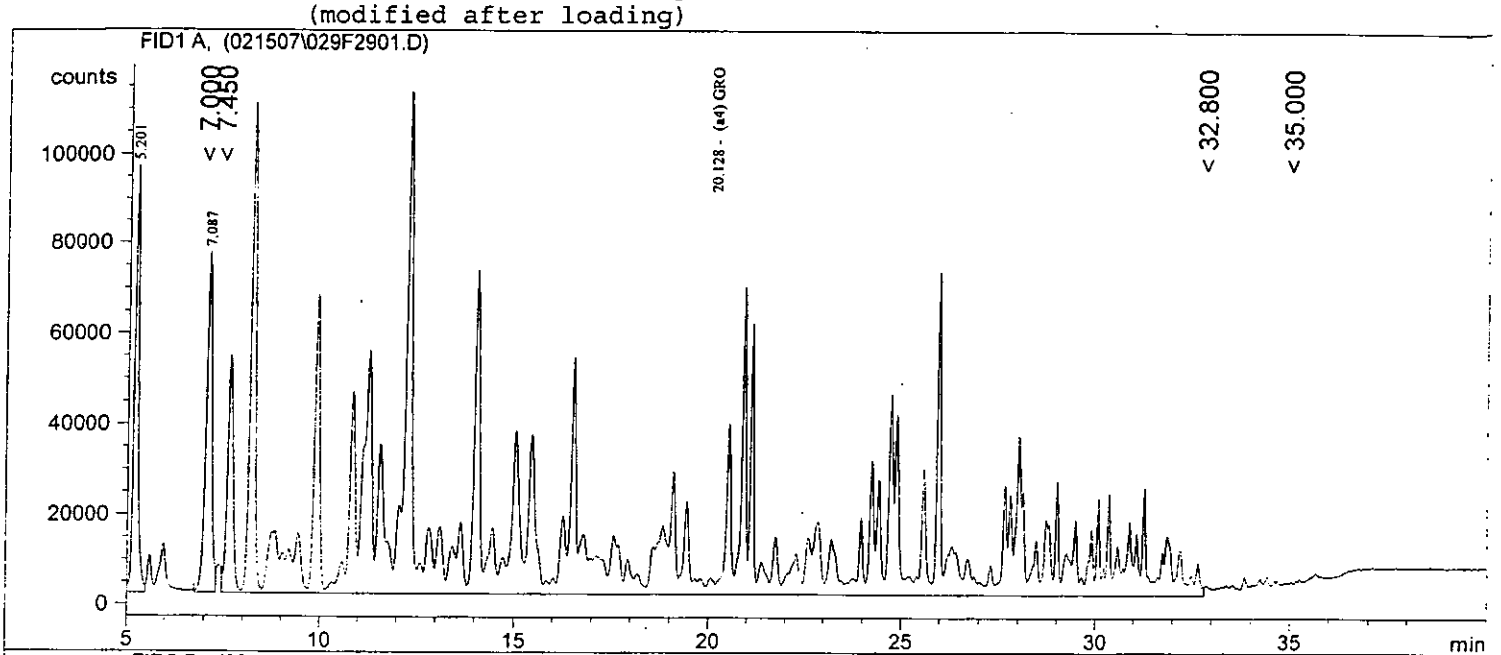


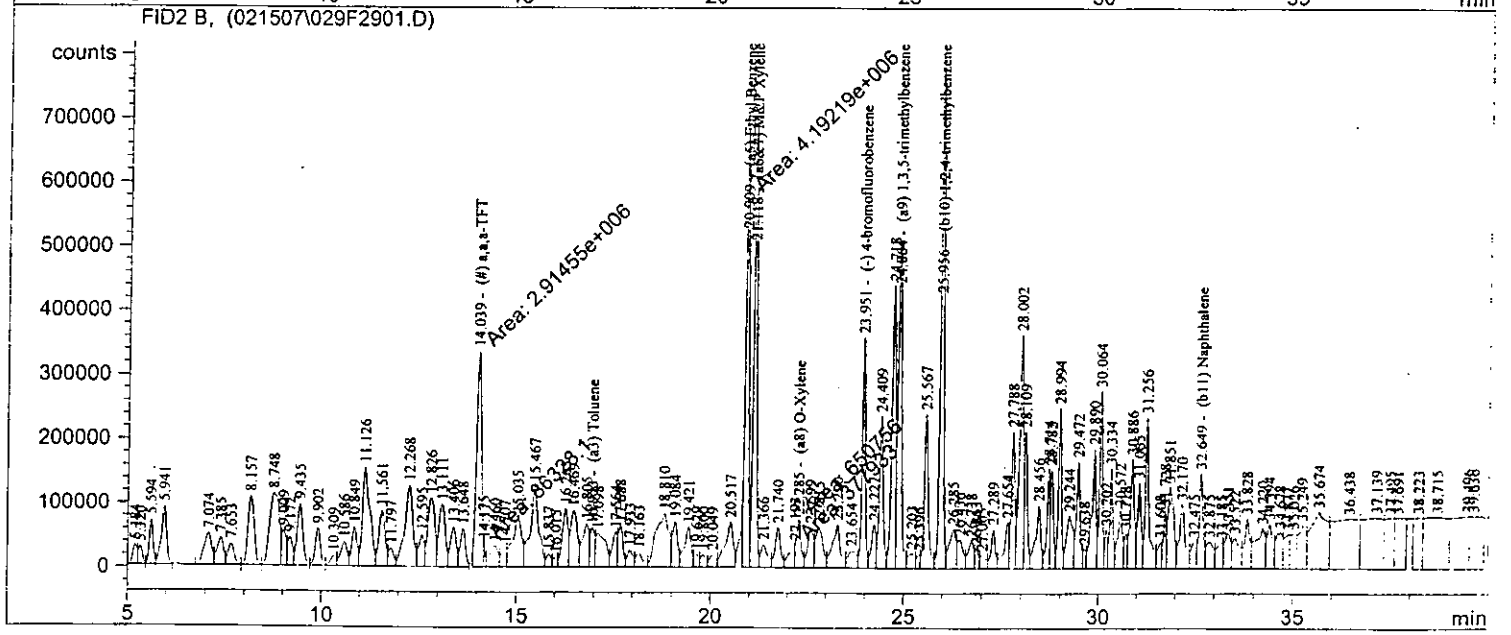
External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 15, 2007 8:39:45 AM
Multiplier            :      1.0000
Dilution              :      5.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          counts*s                [ppm]
-------|------|----------|----------|----------|--|------------------
  9.125 HHA+   1.94413e6  4.25552e-7    4.13664     DRO

Totals :                                 4.13664

 Results obtained with enhanced integrator!
```

*** End of Report ***

Injection Date	: 2/16/2007 9:26:45 AM	Seq. Line	: 29
Sample Name	: 143519	Location	: Vial 29
Acq. Operator	: csd	Inj	: 1
Acq. Instrument	: GC-4	Inj Volume	: Manually
Acq. Method	: D:\HPCHEM\4\METHODS\!GRO2.M		
Last changed	: 2/5/2007 11:36:30 AM by csd		
Analysis Method	: C:\HPCHEM\1\METHODS\021507SL.M		
Last changed	: 2/16/2007 10:10:28 AM by csd (modified after loading)		



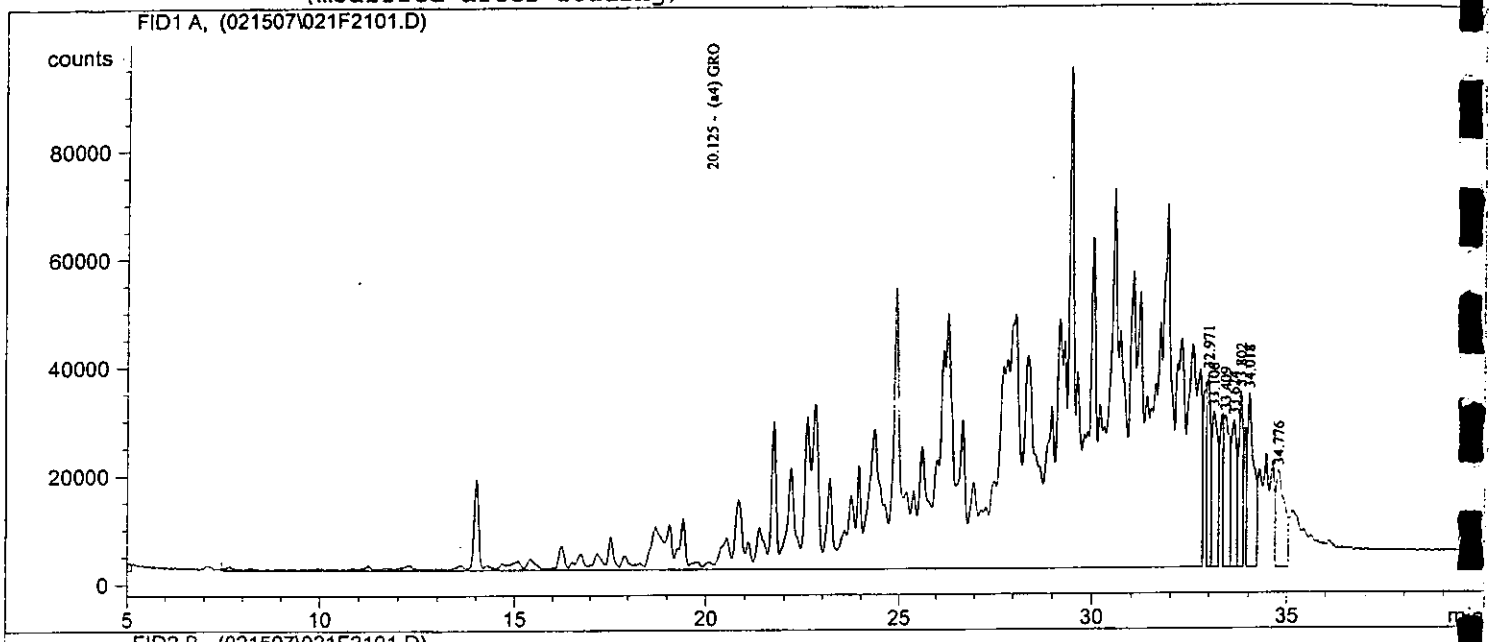


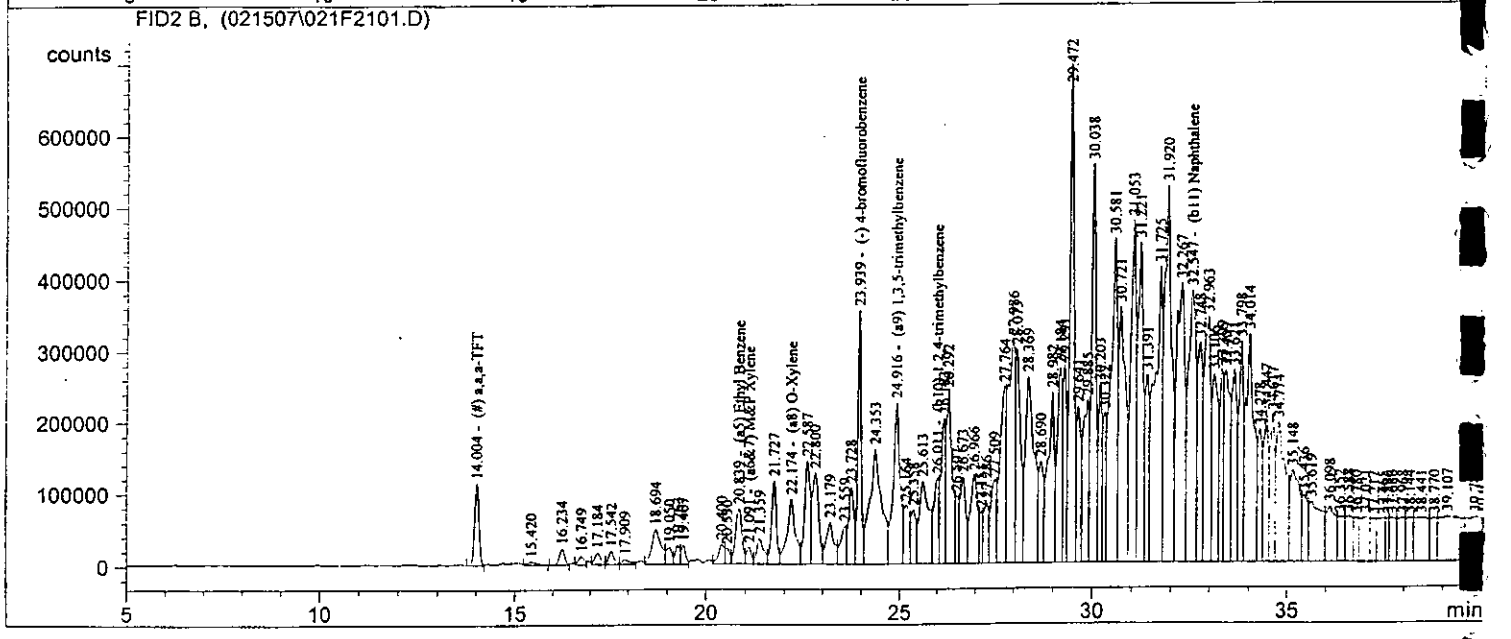
External Standard Report

Sorted By	:	Signal
Calib. Data Modified	:	2/16/2007 8:27:46 AM
Multiplier	:	1.0000
Dilution	:	1.0000
Sample Amount	:	24.60000 [ppb] (not used in calc.)

Use Multiplier & Dilution Factor with ISTDs

Injection Date	: 2/16/2007 2:57:59 AM	Seq. Line	: 21
Sample Name	: 143521	Location	: Vial 21
Acq. Operator	: csd	Inj	: 1
Acq. Instrument	: GC-4	Inj Volume	: Manually
Acq. Method	: D:\HPCHEM\4\METHODS\!GRO2.M		
Last changed	: 2/5/2007 11:36:30 AM by csd		
Analysis Method	: C:\HPCHEM\1\METHODS\021507SL.M		
Last changed	: 2/16/2007 8:35:54 AM by csd (modified after loading)		



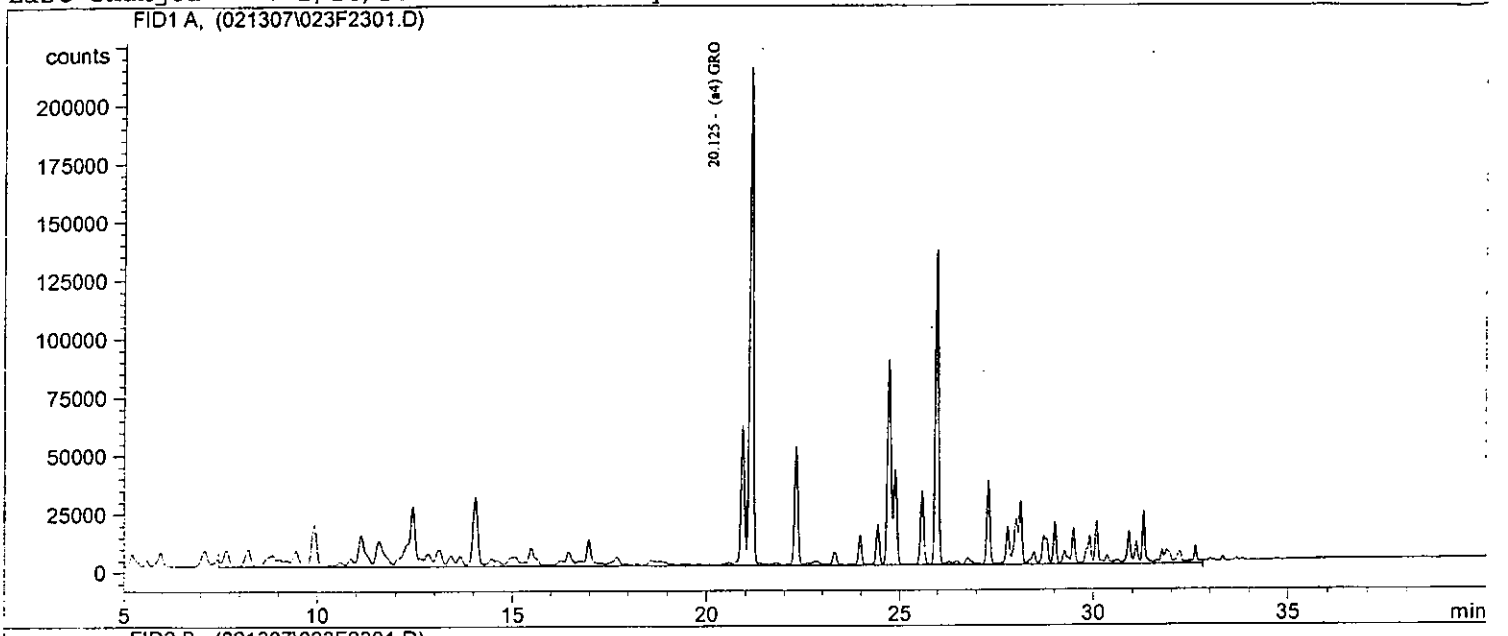


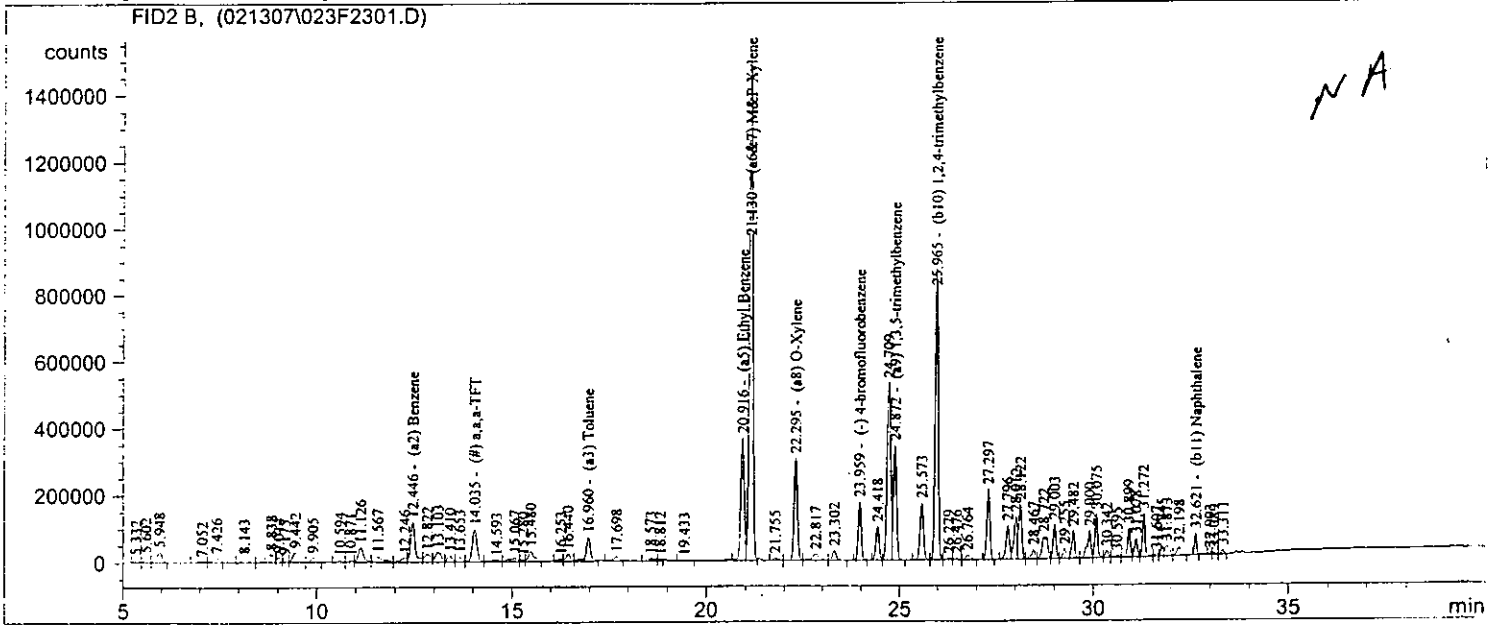
External Standard Report

Sorted By	:	Signal
Calib. Data Modified	:	2/16/2007 8:27:46 AM
Multiplier	:	1.0000
Dilution	:	2.0000
Sample Amount	:	27.00000 [ppb] (not used in calc.)

Use Multiplier & Dilution Factor with ISTDs

Injection Date	: 2/14/2007 8:35:48 AM	Seq. Line	: 23
Sample Name	: 143527	Location	: Vial 23
Acq. Operator	: mes	Inj	: 1
Acq. Instrument	: GC-4	Inj Volume	: Manually
Acq. Method	: D:\HPCHEM\4\METHODS\!GRO2.M		
Last changed	: 2/5/2007 11:36:30 AM by csd		
Analysis Method	: C:\HPCHEM\1\METHODS\021307LL.M		
Last changed	: 2/14/2007 9:21:58 AM by csd		





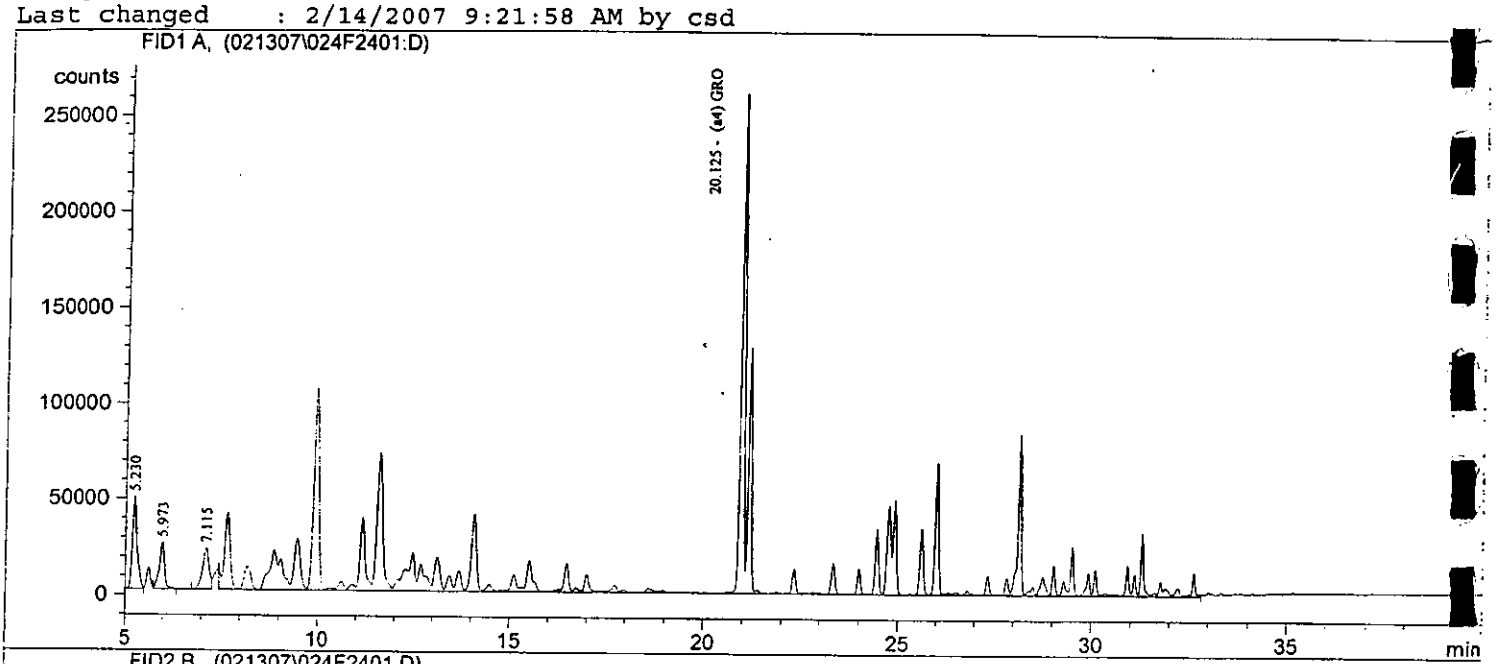
NA

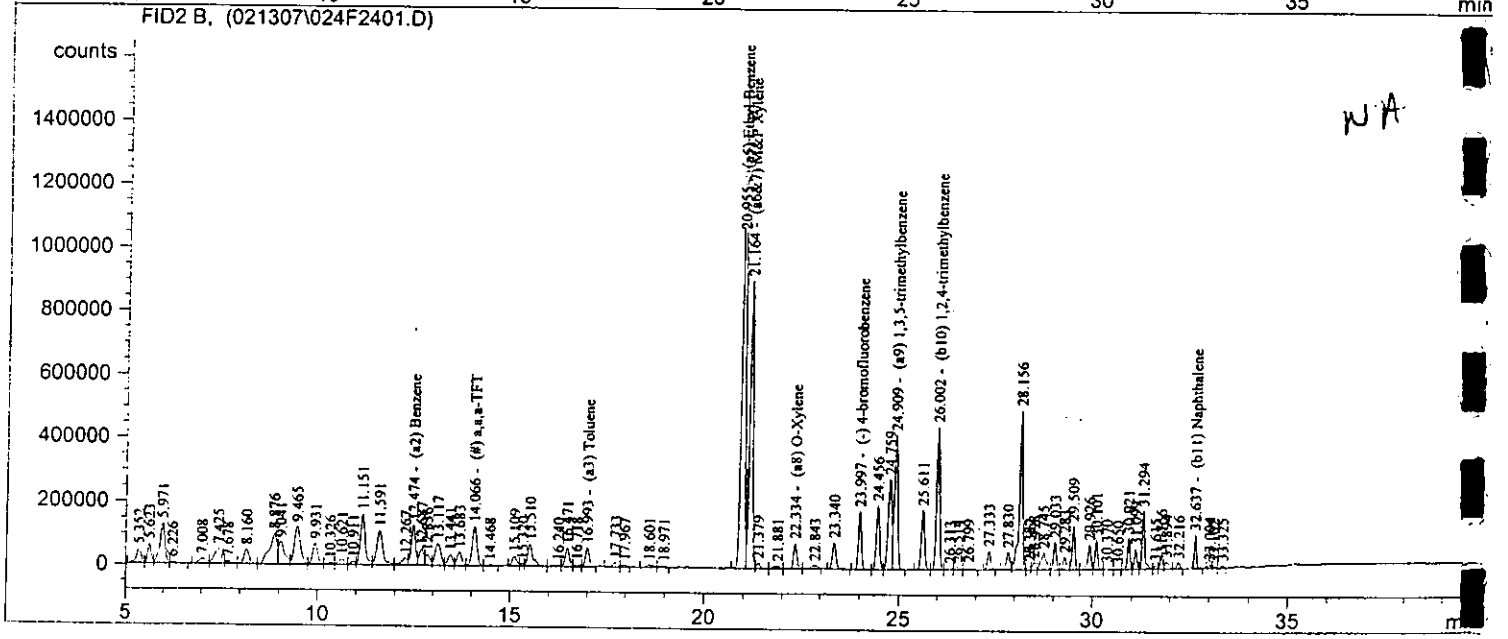
External Standard Report

Sorted By	:	Signal
Calib. Data Modified	:	2/14/2007 9:21:49 AM
Multiplier	:	1.0000
Dilution	:	20.0000

Use Multiplier & Dilution Factor with ISTDs

Injection Date : 2/14/2007 9:25:22 AM Seq. Line : 24
Sample Name : 143528 Location : Vial 24
Acq. Operator : mes Inj : 1
Acq. Instrument : GC-4 Inj Volume : Manually
Acq. Method : D:\HPCHEM\4\METHODS\!GRO2.M
Last changed : 2/5/2007 11:36:30 AM by csd
Analysis Method : C:\HPCHEM\1\METHODS\021307LL.M
Last changed : 2/14/2007 9:21:58 AM by csd



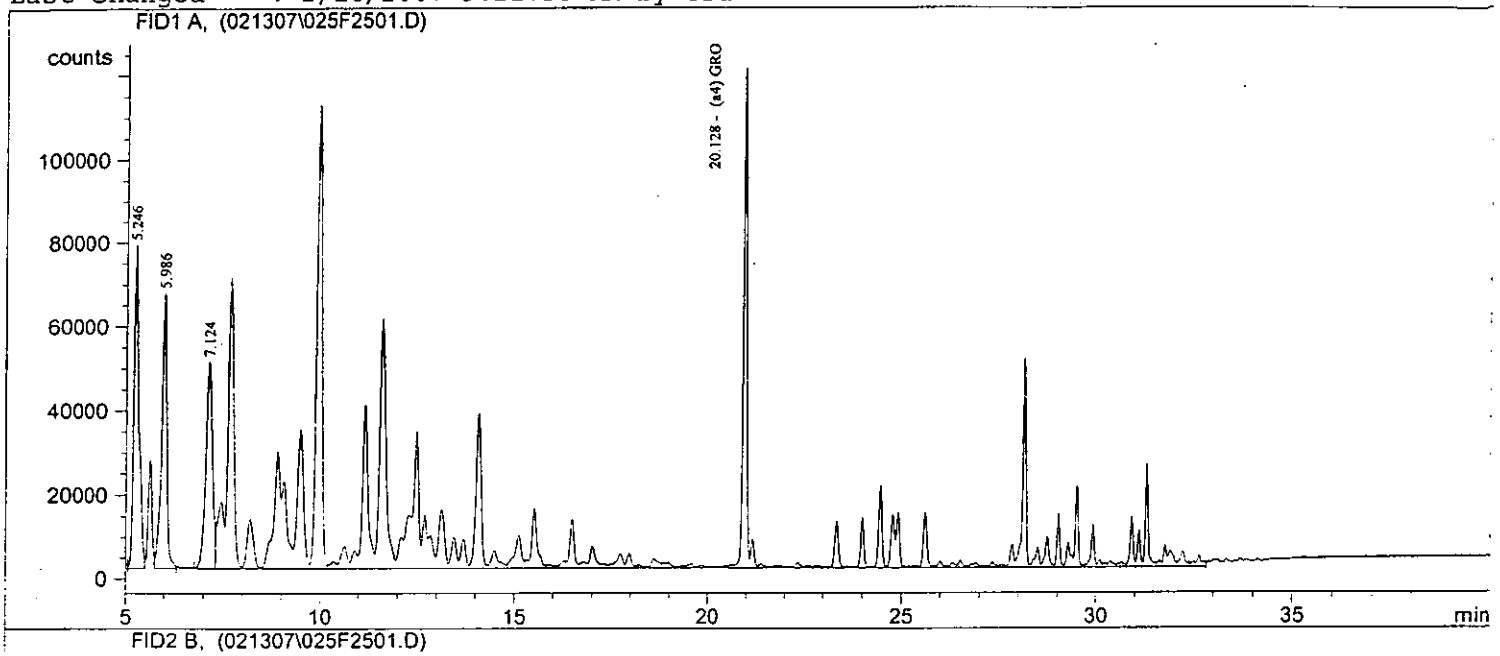


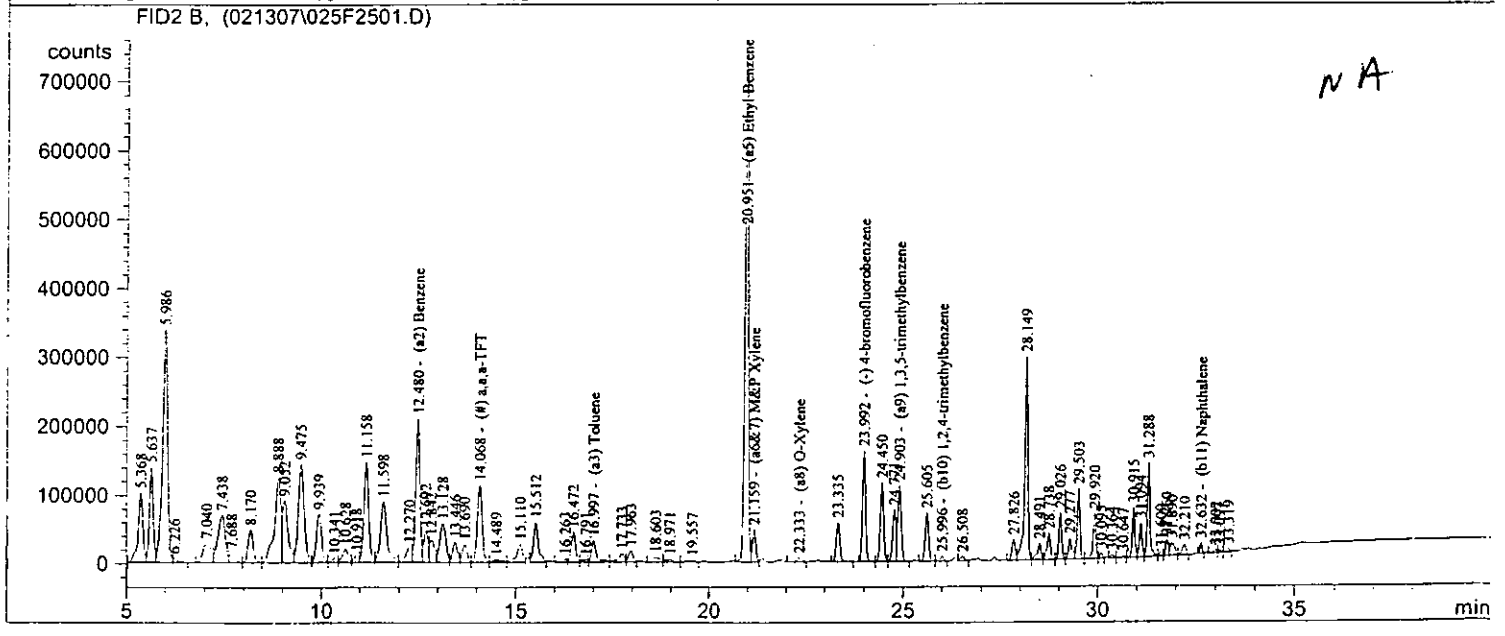
NJA

External Standard Report

Sorted By : Signal
Calib. Data Modified : 2/14/2007 9:21:49 AM
Multiplier : 1.0000
Dilution : 5.0000
Use Multiplier & Dilution Factor with ISTDs

Injection Date	: 2/14/2007 10:14:56 AM	Seq. Line	: 25
Sample Name	: 143529	Location	: Vial 25
Acq. Operator	: mes	Inj	: 1
Acq. Instrument	: GC-4	Inj Volume	: Manually
Acq. Method	: D:\HPCHEM\4\METHODS\!GRO2.M		
Last changed	: 2/5/2007 11:36:30 AM by csd		
Analysis Method	: C:\HPCHEM\1\METHODS\021307LL.M		
Last changed	: 2/14/2007 9:21:58 AM by csd		





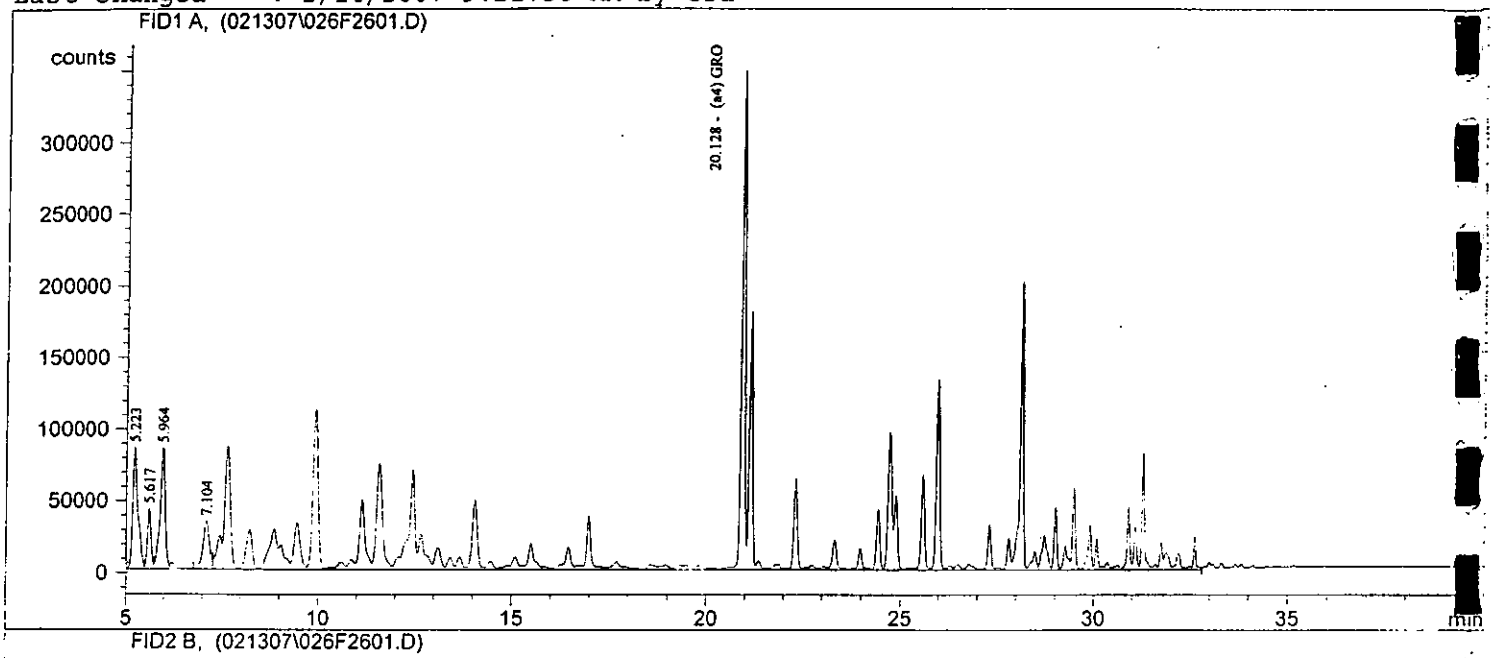
NA

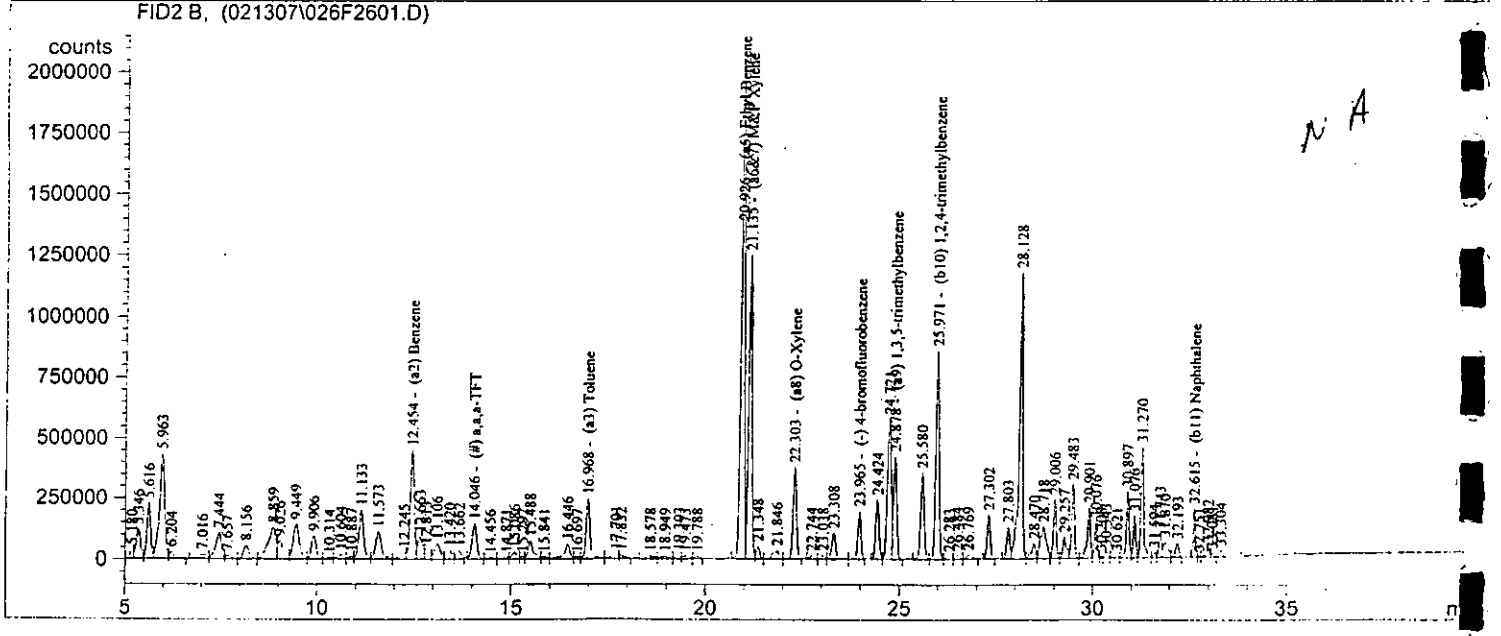
External Standard Report

Sorted By	:	Signal
Calib. Data Modified	:	2/14/2007 9:21:49 AM
Multiplier	:	1.0000
Dilution	:	10.0000

Use Multiplier & Dilution Factor with ISTDs

Injection Date	: 2/14/2007 11:04:27 AM	Seq. Line	: 26
Sample Name	: 143530	Location	: Vial 26
Acq. Operator	: mes	Inj	: 1
Acq. Instrument	: GC-4	Inj Volume	: Manually
Acq. Method	: D:\HPCHEM\4\METHODS\!GRO2.M		
Last changed	: 2/5/2007 11:36:30 AM by csd		
Analysis Method	: C:\HPCHEM\1\METHODS\021307LL.M		
Last changed	: 2/14/2007 9:21:58 AM by csd		





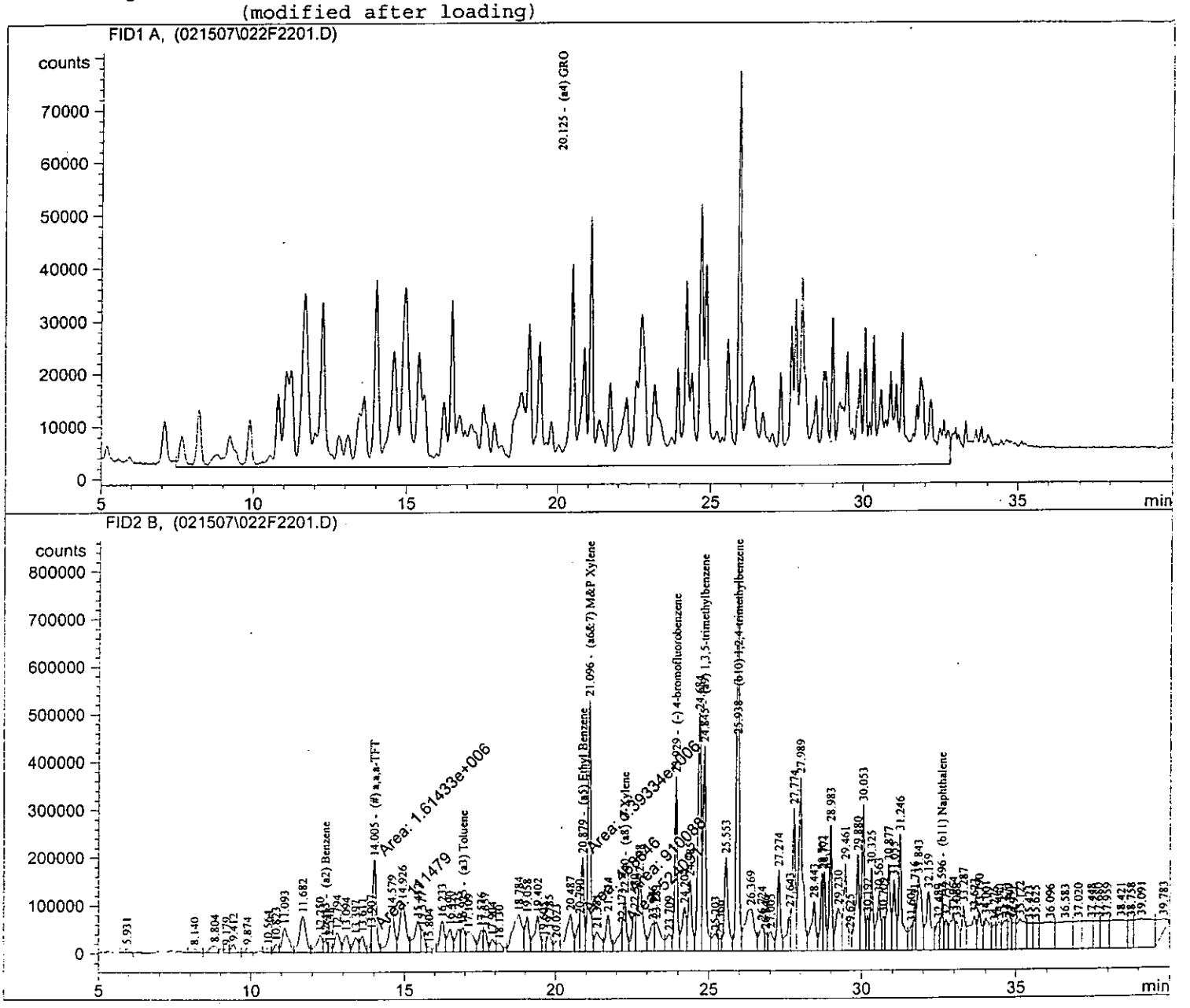
N A

External Standard Report

Sorted By	:	Signal
Calib. Data Modified	:	2/14/2007 9:21:49 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Use Multiplier & Dilution Factor with ISTDs

Injection Date	: 2/16/2007 3:46:36 AM	Seq. Line	: 22
Sample Name	: 143525	Location	: Vial 22
Acq. Operator	: csd	Inj	: 1
Acq. Instrument	: GC-4	Inj Volume	: Manually
Acq. Method	: D:\HPCHEM\4\METHODS\!GRO2.M		
Last changed	: 2/5/2007 11:36:30 AM by csd		
Analysis Method	: C:\HPCHEM\1\METHODS\021507SL.M		
Last changed	: 2/16/2007 8:35:54 AM by csd (modified after loading)		



External Standard Report

Sorted By	:	Signal
Calib. Data Modified	:	2/16/2007 8:27:46 AM
Multiplier	:	1.0000
Dilution	:	20.0000
Sample Amount	:	23.30000 [ppb] (not used in calc.)

Use Multiplier & Dilution Factor with ISTDs

CHAIN OF CUSTODY RECORD

№ 38722 75269

STS

Contact Person Tim Erape
Phone No. 763 315 7300 Office Mpls
Project No. 20060639 PO No.
Project Name Alexi Exhaust

Special Handling Request
- ☐ Rush
- ☐ Verbal
- ☐ Other

RECORD NUMBER 38721 THROUGH 38722
Laboratory NTS
Contact Person Renee Stone
Phone No.
Results Due Standard

Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation Y	Preservation N	Field Data PID/FID Ambient	Field Data PID/FID Sample	Field Data PH	Field Data Special Cond.	Analysis Request	Comments on Sample (Include Major Contaminants)
B-2 (18')	2/7	1320	X		3	Soil	1	2					BTEX/GRO, DRO, dry wt	143516
B-3 (5')	2/7	1140	X		3		1	2						143517
B-3 (16')	2/7	1145	X		3		1	2						143518
B-4 (13')	2/7	1010	X		3									143519
B-4 (22')	2/7	1015	X		3									143520
B-5 (6')	2/7	1605	X		3									143521
B-5 (25')	2/7	1610	X		3									143522
B-6 (23')	2/7	1420	X		3									143523
Methanol blank	2/8	1105	X		1	MeOH	1						BTEX/GRO	143524

Collected by:	Mathew Berkeman	Date	See Above	Time	
Received by:		Date	2/9/07	Time	1600
Received by:		Date		Time	
Received by:		Date	2-12-7	Time	910A
Received for lab by:		Date	2-12-07	Time	12:00

Delivery by:		Date		Time	
Relinquished by:	Mathew Berkeman	Date	2/9/07	Time	1602
Relinquished by:		Date	2/12/07	Time	
Relinquished by:		Date	2-12-7	Time	12P
Relinquished by:		Date		Time	

Laboratory Comments Only: Seals Intact Upon Receipt? ☐ Yes ☐ No ☐ N/A 3.2°C onice

Final Disposition:

Comments (Weather Conditions, Precautions, Hazards):

Distribution: Original and Green - Laboratory Yellow - As needed Pink - Transporter Goldenrod - STS Project File
Instructions to Laboratory: Forward completed original to STS with analytical results. Retain green copy.

6/99cp10k

STS Consultants Ltd.
Consulting Engineers

CHAIN OF CUSTODY RECORD

№ 38721 75269

RECORD NUMBER 38721 THROUGH 38722

Contact Person Tim Erapa
Phone No. 763 315 6300 Office Mpls
Project No. 200600539 PO No.
Project Name Alex Exhaust

Special Handling Request
- ☐ Rush
- ☐ Verbal
- ☐ Other

Laboratory NTS
Contact Person
Phone No.
Results Due

Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation Y	Preservation N	Field Data PID/FID Ambient	Field Data PID/FID Sample	Field Data PH	Field Data Special Cond.	Analysis Request	Comments on Sample (Include Major Contaminants)
TW-1	2/8	1045	X		7	Water	7						VOC, GRO, DRO	143527
TW-2	2/7	1430	X		7	↓	7						↓	143528
TW-3	2/7	1300	X		7		7							143529
TW-4	2/7	1135	X		7		7							143530
TW-5	2/8	1005	X		7		7							143531
TW-6	2/7	1535	X		7	↓	7						↓	143532
B-1 6'	2/6	1000	X		3	Soil	1	2					BTEX/GRO, DRO, Dry Wt	143525
B-1 20'	2/6	1005	X		3	↓	1	2					↓	143526
F.B.	2/8	1635	X		7	Water	7						VOC, GRO, DRO	143533

Collected by:	Matthew Beckman	Date	See	Time	Above	Delivery by:	Date / Time
Received by:	Dan Tonn	Date	2/9/07	Time	1600	Relinquished by: Matthew Beckman	Date 2/9/07 Time 1602
Received by:		Date		Time		Relinquished by: Dan Tonn	Date 2/12/07 Time
Received by:	Jim Matyska	Date	2-12-7	Time	910A	Relinquished by: Jim Matyska	Date 2-12-7 Time 12*
Received for lab by:	[illegible]	Date	2-12-07	Time	12:00	Relinquished by:	Date / Time

Laboratory Comments Only: Seals Intact Upon Receipt? ☐ Yes ☐ No ☐ N/A 3.2°C once

Final Disposition:	Comments (Weather Conditions, Precautions, Hazards):

Distribution: Original and Green - Laboratory Yellow - As needed Pink - Transporter Goldenrod - STS Project File
Instructions to Laboratory: Forward completed original to STS with analytical results. Retain green copy.

6/99cp10k

STS Consultants Ltd.
[illegible]lting [illegible]neer[illegible]

NTS Sample: 143525
Description: B-1 (6)
Sample Date: 2/8/2007 10:00:00 AM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	Method	Analysis Date	Analyst
DRO	170	mg/Kg	50	WI(95) DRO	2/16/2007	CSD
Benzene	<2400	µg/Kg	2400	EPA 8021	2/16/2007	CSD
Ethyl Benzene	10000	µg/Kg	1700	EPA 8021	2/16/2007	CSD
GRO	1100	mg/Kg	120	WI(95) GRO	2/16/2007	CSD
Toluene	2700	µg/Kg	2400	EPA 8021	2/16/2007	CSD
Xylene, Total	28000	µg/Kg	4800	EPA 8021	2/16/2007	CSD
Solids, Total (TS)	89.5	%		SM 2540G	2/14/2007	TEM

NTS Sample: 143526
Description: B-1 (20)
Sample Date: 2/8/2007 10:05:00 AM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	Method	Analysis Date	Analyst
DRO	<10	mg/Kg	10	WI(95) DRO	2/16/2007	CSD
Benzene	<120	µg/Kg	120	EPA 8021	2/16/2007	CSD
Ethyl Benzene	<80	µg/Kg	80	EPA 8021	2/16/2007	CSD
GRO	<57	mg/Kg	57	WI(95) GRO	2/16/2007	CSD
Toluene	<120	µg/Kg	120	EPA 8021	2/16/2007	CSD
Xylene, Total	<230	µg/Kg	230	EPA 8021	2/16/2007	CSD
Solids, Total (TS)	88.7	%		SM 2540G	2/14/2007	TEM

Northeast Technical Services
315 Chestnut Street
PO Box 1142
Virginia, MN 55792
Phone: 218-741-4290
Fax: 218-742-1010

MDH Certification: 027-137-157

Laboratory Results

NTS COC: 75269
Received: 2/12/2007
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Approved by: _____
Renee Stone

STS Consultants
Attn: Tim Grape
10900 73rd Ave. N.
Suite 150
Maple Grove, MN 55369

NTS Sample: 143516
Description: B-2 (18)
Sample Date: 2/7/2007 1:20:00 PM

Matrix: Non-Aqueous
Sample Type: Grab

Analyte	Result	Units	RL	Method	Analysis Date	Analyst
DRO	<10	mg/Kg	10	WI(95) DRO	2/15/2007	CSD
Benzene	<110	µg/Kg	110	EPA 8021	2/16/2007	CSD
Ethyl Benzene	<78	µg/Kg	78	EPA 8021	2/16/2007	CSD
GRO	<5.5	mg/Kg	5.5	WI(95) GRO	2/16/2007	CSD
Toluene	<110	µg/Kg	110	EPA 8021	2/16/2007	CSD
Xylene, Total	<220	µg/Kg	220	EPA 8021	2/16/2007	CSD
Solids, Total (TS)	89.5	%		SM 2540G	2/14/2007	TEM

NTS Sample: 143517
Description: B-3 (5)
Sample Date: 2/7/2007 11:40:00 AM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	Method	Analysis Date	Analyst
DRO	<10	mg/Kg	10	WI(95) DRO	2/15/2007	CSD
Benzene	<120	µg/Kg	120	EPA 8021	2/16/2007	CSD
Ethyl Benzene	<81	µg/Kg	81	EPA 8021	2/16/2007	CSD
GRO	<5.8	mg/Kg	5.8	WI(95) GRO	2/16/2007	CSD
Toluene	<120	µg/Kg	120	EPA 8021	2/16/2007	CSD
Xylene, Total	<230	µg/Kg	230	EPA 8021	2/16/2007	CSD
Solids, Total (TS)	87.7	%		SM 2540G	2/14/2007	TEM

NTS Sample: 143518
Description: B-3 (16)
Sample Date: 2/7/2007 11:45:00 AM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	Method	Analysis Date	Analyst
DRO	<10	mg/Kg	10	WI(95) DRO	2/15/2007	CSD
Benzene	<110	µg/Kg	110	EPA 8021	2/16/2007	CSD
Ethyl Benzene	<78	µg/Kg	78	EPA 8021	2/16/2007	CSD
GRO	<5.5	mg/Kg	5.5	WI(95) GRO	2/16/2007	CSD
Toluene	<110	µg/Kg	110	EPA 8021	2/16/2007	CSD
Xylene, Total	<220	µg/Kg	220	EPA 8021	2/16/2007	CSD
Solids, Total (TS)	90.9	%		SM 2540G	2/14/2007	TEM

NTS Sample: 143519
Description: B-4 (13)
Sample Date: 2/7/2007 10:10:00 AM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	Method	Analysis Date	Analyst
DRO	<10	mg/Kg	10	WI(95) DRO	2/15/2007	CSD
Benzene	<120	µg/Kg	120	EPA 8021	2/16/2007	CSD
Ethyl Benzene	1400	µg/Kg	81	EPA 8021	2/16/2007	CSD
GRO	71	mg/Kg	5.8	WI(95) GRO	2/16/2007	CSD
Toluene	140	µg/Kg	120	EPA 8021	2/16/2007	CSD
Xylene, Total	1500	µg/Kg	230	EPA 8021	2/16/2007	CSD
Solids, Total (TS)	87.7	%		SM 2540G	2/14/2007	TEM

NTS Sample: 143520
Description: B-4 (22)
Sample Date: 2/7/2007 10:15:00 AM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	Method	Analysis Date	Analyst
DRO	<10	mg/Kg	10	WI(95) DRO	2/15/2007	CSD
Benzene	<110	µg/Kg	110	EPA 8021	2/16/2007	CSD
Ethyl Benzene	<78	µg/Kg	78	EPA 8021	2/16/2007	CSD
GRO	<5.6	mg/Kg	5.6	WI(95) GRO	2/16/2007	CSD
Toluene	<110	µg/Kg	110	EPA 8021	2/16/2007	CSD
Xylene, Total	<220	µg/Kg	220	EPA 8021	2/16/2007	CSD
Solids, Total (TS)	89.6	%		SM 2540G	2/14/2007	TEM

NTS Sample: 143521
Description: B-5 (6)
Sample Date: 2/7/2007 4:05:00 PM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	Method	Analysis Date	Analyst	
DRO	310	mg/Kg	100	WI(95) DRO	2/16/2007	CSD	q
Benzene	<110	µg/Kg	240	EPA 8021	2/16/2007	CSD	
Ethyl Benzene	610	µg/Kg	170	EPA 8021	2/16/2007	CSD	
GRO	130	mg/Kg	12	WI(95) GRO	2/16/2007	CSD	
Toluene	<110	µg/Kg	240	EPA 8021	2/16/2007	CSD	
Xylene, Total	<220	µg/Kg	480	EPA 8021	2/16/2007	CSD	
Solids, Total (TS)	82.8	%		SM 2540G	2/14/2007	TEM	

Qualifier	Description
q	Qualified Data.

Note
Heavy hydrocarbons outside the DRO window.

NTS Sample: 143522
Description: B-5 (25)
Sample Date: 2/7/2007 4:10:00 PM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	Method	Analysis Date	Analyst
DRO	<10	mg/Kg	10	WI(95) DRO	2/16/2007	CSD
Benzene	<110	µg/Kg	110	EPA 8021	2/16/2007	CSD
Ethyl Benzene	<80	µg/Kg	80	EPA 8021	2/16/2007	CSD
GRO	<5.7	mg/Kg	5.7	WI(95) GRO	2/16/2007	CSD
Toluene	<110	µg/Kg	110	EPA 8021	2/16/2007	CSD
Xylene, Total	<230	µg/Kg	230	EPA 8021	2/16/2007	CSD
Solids, Total (TS)	87.8	%		SM 2540G	2/14/2007	TEM

NTS Sample: 143523
Description: B-6 (23)
Sample Date: 2/7/2007 2:20:00 PM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	Method	Analysis Date	Analyst
DRO	<10	mg/Kg	10	WI(95) DRO	2/16/2007	CSD
Benzene	<110	µg/Kg	110	EPA 8021	2/16/2007	CSD
Ethyl Benzene	<79	µg/Kg	79	EPA 8021	2/16/2007	CSD
GRO	<5.6	mg/Kg	5.6	WI(95) GRO	2/16/2007	CSD
Toluene	<110	µg/Kg	110	EPA 8021	2/16/2007	CSD
Xylene, Total	<230	µg/Kg	230	EPA 8021	2/16/2007	CSD
Solids, Total (TS)	89.2	%		SM 2540G	2/14/2007	TEM

NTS Sample: 143524
Description: MeOH Blank
Sample Date: 2/7/2007 11:05:00 AM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	Method	Analysis Date	Analyst
Benzene	<100	µg/Kg	100	EPA 8021	2/16/2007	CSD
Ethyl Benzene	<70	µg/Kg	70	EPA 8021	2/16/2007	CSD
GRO	<5	mg/Kg	5	WI(95) GRO	2/16/2007	CSD
Toluene	<100	µg/Kg	100	EPA 8021	2/16/2007	CSD
Xylene, Total	<200	µg/Kg	200	EPA 8021	2/16/2007	CSD

NTS Sample: 143527
Description: TW-1
Sample Date: 2/8/2007 10:45:00 AM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Notes: I - Improper sample preservation noted, analysis performed. VOC pH=7

Analyte	Result	Units	RL	Method	Analysis Date	Analyst	
DRO	2.8	mg/L	0.1	WI(95) DRO	2/14/2007	CSD	i
GRO	11	mg/L	2	WI(95) GRO	2/14/2007	MES	i
1,1,1,2-Tetrachloroethane	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
1,1,1-Trichloroethane	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
1,1,2,2-Tetrachloroethane	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
1,1,2-Trichloroethane	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
1,1,2-Trichlorotrifluoroethane	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
1,1-Dichloroethane	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
1,1-Dichloroethylene	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
1,1-Dichloropropene	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
1,2,3-Trichlorobenzene	<40	µg/L	40	EPA 8260B	2/13/2007	KJD	
1,2,3-Trichloropropane	<40	µg/L	40	EPA 8260B	2/13/2007	KJD	
1,2,4-Trichlorobenzene	<40	µg/L	40	EPA 8260B	2/13/2007	KJD	
1,2,4-Trimethylbenzene	1200	µg/L	20	EPA 8260B	2/13/2007	KJD	
1,2-Dibromo-3-chloropropane	<40	µg/L	40	EPA 8260B	2/13/2007	KJD	
1,2-Dibromoethane	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
1,2-Dichlorobenzene	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
1,2-Dichloroethane	370	µg/L	40	EPA 8260B	2/13/2007	KJD	
1,2-Dichloropropane	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
1,3,5-Trimethylbenzene	380	µg/L	20	EPA 8260B	2/13/2007	KJD	
1,3-Dichlorobenzene	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
1,3-Dichloropropane	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
1,4-Dichlorobenzene	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
2,2-Dichloropropane	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
2-Chlorotoluene	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
4-Chlorotoluene	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Acetone	<400	µg/L	400	EPA 8260B	2/13/2007	KJD	
Allyl Chloride	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Benzene	150	µg/L	20	EPA 8260B	2/13/2007	KJD	
Bromobenzene	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Bromochloromethane	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Bromodichloromethane	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Bromoform	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Bromomethane	<40	µg/L	40	EPA 8260B	2/13/2007	KJD	
Carbon Tetrachloride	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Chlorobenzene	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Chloroethane	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	

Qualifier	Description
i	Improper sample preservation noted, analysis performed.
n	Matrix Spike recovery not within control limits.

Note
DRO sample pH 7.,pH=7

NTS Sample: 143527
Description: TW-1
Sample Date: 2/8/2007 10:45:00 AM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Notes: I - Improper sample preservation noted, analysis performed. VOC pH=7

Analyte	Result	Units	RL	Method	Analysis Date	Analyst	
Chloroform	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Chloromethane	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Cis-1,2-Dichloroethylene	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Cis-1,3-Dichloropropene	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Dibromochloromethane	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Dibromomethane	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Dichlorodifluoromethane	<40	µg/L	40	EPA 8260B	2/13/2007	KJD	
Dichlorofluoromethane	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Ethyl Benzene	530	µg/L	20	EPA 8260B	2/13/2007	KJD	
Ethyl Ether	<40	µg/L	40	EPA 8260B	2/13/2007	KJD	
Hexachlorobutadiene	<40	µg/L	40	EPA 8260B	2/13/2007	KJD	
Isopropylbenzene	61	µg/L	20	EPA 8260B	2/13/2007	KJD	
Methyl Ethyl Ketone	<200	µg/L	200	EPA 8260B	2/13/2007	KJD	
Methyl Isobutyl Ketone	<200	µg/L	200	EPA 8260B	2/13/2007	KJD	
Methyl Tert-butyl Ether	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Methylene Chloride	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Naphthalene	210	µg/L	40	EPA 8260B	2/13/2007	KJD	
n-Butylbenzene	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
n-Propylbenzene	180	µg/L	20	EPA 8260B	2/13/2007	KJD	
p-Isopropyltoluene	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
sec-Butylbenzene	23	µg/L	20	EPA 8260B	2/13/2007	KJD	n
Styrene	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
tert-Butylbenzene	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Tetrachloroethylene	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Tetrahydrofuran	<100	µg/L	100	EPA 8260B	2/13/2007	KJD	
Toluene	87	µg/L	20	EPA 8260B	2/13/2007	KJD	
Trans-1,2-Dichloroethylene	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Trans-1,3-Dichloropropene	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Trichloroethylene	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Trichlorofluoromethane	<40	µg/L	40	EPA 8260B	2/13/2007	KJD	
Vinyl Chloride	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Xylene, M&P	1800	µg/L	40	EPA 8260B	2/13/2007	KJD	
Xylene, O	420	µg/L	20	EPA 8260B	2/13/2007	KJD	
Surrogate 1,2-Dichloroethane-d4	99	%	20	EPA 8260B	2/13/2007	KJD	
Surrogate Bromofluorobenzene	103	%	20	EPA 8260B	2/13/2007	KJD	
Surrogate Toluene-d8	97.3	%	20	EPA 8260B	2/13/2007	KJD	

Qualifier	Description	Note
i	Improper sample preservation noted, analysis performed.	DRO sample pH 7.,pH=7
n	Matrix Spike recovery not within control limits.	

NTS Sample: 143528
Description: TW-2
Sample Date: 2/7/2007 2:30:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Notes: i - Improper sample preservation noted, analysis performed. VOC pH = 7.

Analyte	Result	Units	RL	Method	Analysis Date	Analyst	
DRO	1	mg/L	0.1	WI(95) DRO	2/15/2007	CSD	i
GRO	3.9	mg/L	0.5	WI(95) GRO	2/14/2007	MES	i
1,1,1,2-Tetrachloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,1,1-Trichloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,1,2,2-Tetrachloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,1,2-Trichloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,1,2-Trichlorotrifluoroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,1-Dichloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,1-Dichloroethylene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,1-Dichloropropene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,2,3-Trichlorobenzene	<2	µg/L	2	EPA 8260B	2/13/2007	KJD	
1,2,3-Trichloropropane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD	
1,2,4-Trichlorobenzene	<2	µg/L	2	EPA 8260B	2/13/2007	KJD	
1,2,4-Trimethylbenzene	200	µg/L	10	EPA 8260B	2/13/2007	KJD	
1,2-Dibromo-3-chloropropane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD	
1,2-Dibromoethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,2-Dichlorobenzene	2.3	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,2-Dichloroethane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD	
1,2-Dichloropropane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,3,5-Trimethylbenzene	150	µg/L	10	EPA 8260B	2/13/2007	KJD	
1,3-Dichlorobenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,3-Dichloropropane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,4-Dichlorobenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
2,2-Dichloropropane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
2-Chlorotoluene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
4-Chlorotoluene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Acetone	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Allyl Chloride	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Benzene	38	µg/L	1	EPA 8260B	2/13/2007	KJD	
Bromobenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Bromochloromethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Bromodichloromethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Bromoform	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Bromomethane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD	
Carbon Tetrachloride	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Chlorobenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Chloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	

Qualifier	Description
i	Improper sample preservation noted, analysis performed.
m	Mercury detected in the field blank is in excess of the method limit.

Note
DRO sample pH 7.,pH=7

NTS Sample: 143528
Description: TW-2
Sample Date: 2/7/2007 2:30:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Notes: i - Improper sample preservation noted, analysis performed. VOC pH = 7.

Analyte	Result	Units	RL	Method	Analysis Date	Analyst	
Chloroform	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Chloromethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Cis-1,2-Dichloroethylene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Cis-1,3-Dichloropropene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Dibromochloromethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Dibromomethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Dichlorodifluoromethane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD	
Dichlorofluoromethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Ethyl Benzene	700	µg/L	10	EPA 8260B	2/13/2007	KJD	
Ethyl Ether	<2	µg/L	2	EPA 8260B	2/13/2007	KJD	
Hexachlorobutadiene	<2	µg/L	2	EPA 8260B	2/13/2007	KJD	
Isopropylbenzene	38	µg/L	1	EPA 8260B	2/13/2007	KJD	
Methyl Ethyl Ketone	<10	µg/L	10	EPA 8260B	2/13/2007	KJD	
Methyl Isobutyl Ketone	<10	µg/L	10	EPA 8260B	2/13/2007	KJD	
Methyl Tert-butyl Ether	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Methylene Chloride	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Naphthalene	77	µg/L	2	EPA 8260B	2/13/2007	KJD	
n-Butylbenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
n-Propylbenzene	83	µg/L	1	EPA 8260B	2/13/2007	KJD	
p-Isopropyltoluene	1.9	µg/L	1	EPA 8260B	2/13/2007	KJD	
sec-Butylbenzene	4.2	µg/L	1	EPA 8260B	2/13/2007	KJD	m
Styrene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
tert-Butylbenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Tetrachloroethylene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Tetrahydrofuran	<5	µg/L	5	EPA 8260B	2/13/2007	KJD	
Toluene	18	µg/L	1	EPA 8260B	2/13/2007	KJD	
Trans-1,2-Dichloroethylene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Trans-1,3-Dichloropropene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Trichloroethylene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Trichlorofluoromethane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD	
Vinyl Chloride	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Xylene, M&P	360	µg/L	20	EPA 8260B	2/13/2007	KJD	
Xylene, O	27	µg/L	1	EPA 8260B	2/13/2007	KJD	
Surrogate 1,2-Dichloroethane-d4	97.4	%	1	EPA 8260B	2/13/2007	KJD	
Surrogate Bromofluorobenzene	104	%	1	EPA 8260B	2/13/2007	KJD	
Surrogate Toluene-d8	97.8	%	1	EPA 8260B	2/13/2007	KJD	

Qualifier	Description
i	Improper sample preservation noted, analysis performed.
m	Mercury detected in the field blank is in excess of the method limit.

Note
DRO sample pH 7.,pH=7

NTS Sample: 143529
Description: TW-3
Sample Date: 2/7/2007 1:00:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	Method	Analysis Date	Analyst
DRO	1.2	mg/L	0.1	WI(95) DRO	2/14/2007	CSD
GRO	5.8	mg/L	1	WI(95) GRO	2/14/2007	MES
1,1,1,2-Tetrachloroethane	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
1,1,1-Trichloroethane	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
1,1,2,2-Tetrachloroethane	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
1,1,2-Trichloroethane	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
1,1,2-Trichlorotrifluoroethane	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
1,1-Dichloroethane	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
1,1-Dichloroethylene	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
1,1-Dichloropropene	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
1,2,3-Trichlorobenzene	<20	µg/L	20	EPA 8260B	2/13/2007	KJD
1,2,3-Trichloropropane	<20	µg/L	20	EPA 8260B	2/13/2007	KJD
1,2,4-Trichlorobenzene	<20	µg/L	20	EPA 8260B	2/13/2007	KJD
1,2,4-Trimethylbenzene	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
1,2-Dibromo-3-chloropropane	<20	µg/L	20	EPA 8260B	2/13/2007	KJD
1,2-Dibromoethane	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
1,2-Dichlorobenzene	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
1,2-Dichloroethane	<20	µg/L	20	EPA 8260B	2/13/2007	KJD
1,2-Dichloropropane	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
1,3,5-Trimethylbenzene	75	µg/L	10	EPA 8260B	2/13/2007	KJD
1,3-Dichlorobenzene	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
1,3-Dichloropropane	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
1,4-Dichlorobenzene	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
2,2-Dichloropropane	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
2-Chlorotoluene	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
4-Chlorotoluene	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
Acetone	<200	µg/L	200	EPA 8260B	2/13/2007	KJD
Allyl Chloride	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
Benzene	160	µg/L	10	EPA 8260B	2/13/2007	KJD
Bromobenzene	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
Bromochloromethane	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
Bromodichloromethane	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
Bromoform	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
Bromomethane	<20	µg/L	20	EPA 8260B	2/13/2007	KJD
Carbon Tetrachloride	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
Chlorobenzene	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
Chloroethane	<10	µg/L	10	EPA 8260B	2/13/2007	KJD

Qualifier	Description	Note
n	Matrix Spike recovery not within control limits.	

NTS Sample: 143529
Description: TW-3
Sample Date: 2/7/2007 1:00:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	Method	Analysis Date	Analyst	
Chloroform	<10	µg/L	10	EPA 8260B	2/13/2007	KJD	
Chloromethane	<10	µg/L	10	EPA 8260B	2/13/2007	KJD	
Cis-1,2-Dichloroethylene	<10	µg/L	10	EPA 8260B	2/13/2007	KJD	
Cis-1,3-Dichloropropene	<10	µg/L	10	EPA 8260B	2/13/2007	KJD	
Dibromochloromethane	<10	µg/L	10	EPA 8260B	2/13/2007	KJD	
Dibromomethane	<10	µg/L	10	EPA 8260B	2/13/2007	KJD	
Dichlorodifluoromethane	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Dichlorofluoromethane	<10	µg/L	10	EPA 8260B	2/13/2007	KJD	
Ethyl Benzene	620	µg/L	10	EPA 8260B	2/13/2007	KJD	
Ethyl Ether	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Hexachlorobutadiene	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Isopropylbenzene	65	µg/L	10	EPA 8260B	2/13/2007	KJD	
Methyl Ethyl Ketone	<100	µg/L	100	EPA 8260B	2/13/2007	KJD	
Methyl Isobutyl Ketone	<100	µg/L	100	EPA 8260B	2/13/2007	KJD	
Methyl Tert-butyl Ether	<10	µg/L	10	EPA 8260B	2/13/2007	KJD	
Methylene Chloride	<10	µg/L	10	EPA 8260B	2/13/2007	KJD	
Naphthalene	30	µg/L	20	EPA 8260B	2/13/2007	KJD	
n-Butylbenzene	<10	µg/L	10	EPA 8260B	2/13/2007	KJD	
n-Propylbenzene	130	µg/L	10	EPA 8260B	2/13/2007	KJD	
p-Isopropyltoluene	<10	µg/L	10	EPA 8260B	2/13/2007	KJD	
sec-Butylbenzene	12	µg/L	10	EPA 8260B	2/13/2007	KJD	n
Styrene	<10	µg/L	10	EPA 8260B	2/13/2007	KJD	
tert-Butylbenzene	<10	µg/L	10	EPA 8260B	2/13/2007	KJD	
Tetrachloroethylene	<10	µg/L	10	EPA 8260B	2/13/2007	KJD	
Tetrahydrofuran	<50	µg/L	50	EPA 8260B	2/13/2007	KJD	
Toluene	23	µg/L	10	EPA 8260B	2/13/2007	KJD	
Trans-1,2-Dichloroethylene	<10	µg/L	10	EPA 8260B	2/13/2007	KJD	
Trans-1,3-Dichloropropene	<10	µg/L	10	EPA 8260B	2/13/2007	KJD	
Trichloroethylene	<10	µg/L	10	EPA 8260B	2/13/2007	KJD	
Trichlorofluoromethane	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Vinyl Chloride	<10	µg/L	10	EPA 8260B	2/13/2007	KJD	
Xylene, M&P	42	µg/L	20	EPA 8260B	2/13/2007	KJD	
Xylene, O	<10	µg/L	10	EPA 8260B	2/13/2007	KJD	
Surrogate 1,2-Dichloroethane-d4	96.6	%	10	EPA 8260B	2/13/2007	KJD	
Surrogate Bromofluorobenzene	106	%	10	EPA 8260B	2/13/2007	KJD	
Surrogate Toluene-d8	98.9	%	10	EPA 8260B	2/13/2007	KJD	

Qualifier	Description	Note
n	Matrix Spike recovery not within control limits.	

NTS Sample: 143530
Description: TW-4
Sample Date: 2/7/2007 11:25:00 AM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Notes: i - Improper sample preservation noted, analysis performed. VOC pH = 6.

Analyte	Result	Units	RL	Method	Analysis Date	Analyst	
DRO	0.4	mg/L	0.1	WI(95) DRO	2/14/2007	CSD	i
GRO	1.3	mg/L	0.1	WI(95) GRO	2/14/2007	MES	i
1,1,1,2-Tetrachloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,1,1-Trichloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,1,2,2-Tetrachloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,1,2-Trichloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,1,2-Trichlorotrifluoroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,1-Dichloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,1-Dichloroethylene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,1-Dichloropropene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,2,3-Trichlorobenzene	<2	µg/L	2	EPA 8260B	2/13/2007	KJD	
1,2,3-Trichloropropane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD	
1,2,4-Trichlorobenzene	<2	µg/L	2	EPA 8260B	2/13/2007	KJD	
1,2,4-Trimethylbenzene	53	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,2-Dibromo-3-chloropropane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD	
1,2-Dibromoethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,2-Dichlorobenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,2-Dichloroethane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD	
1,2-Dichloropropane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,3,5-Trimethylbenzene	21	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,3-Dichlorobenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,3-Dichloropropane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,4-Dichlorobenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
2,2-Dichloropropane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
2-Chlorotoluene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
4-Chlorotoluene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Acetone	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Allyl Chloride	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Benzene	26	µg/L	1	EPA 8260B	2/13/2007	KJD	
Bromobenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Bromochloromethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Bromodichloromethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Bromoform	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Bromomethane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD	
Carbon Tetrachloride	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Chlorobenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Chloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	

Qualifier	Description	Note
I	Improper sample preservation noted, analysis performed.	DRO sample pH 7.,pH=5
n	Matrix Spike recovery not within control limits.	

NTS Sample: 143530
Description: TW-4
Sample Date: 2/7/2007 11:25:00 AM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Notes: i - Improper sample preservation noted, analysis performed. VOC pH = 6.

Analyte	Result	Units	RL	Method	Analysis Date	Analyst	
Chloroform	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Chloromethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Cis-1,2-Dichloroethylene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Cis-1,3-Dichloropropene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Dibromochloromethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Dibromomethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Dichlorodifluoromethane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD	
Dichlorofluoromethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Ethyl Benzene	160	µg/L	10	EPA 8260B	2/13/2007	KJD	
Ethyl Ether	<2	µg/L	2	EPA 8260B	2/13/2007	KJD	
Hexachlorobutadiene	<2	µg/L	2	EPA 8260B	2/13/2007	KJD	
Isopropylbenzene	9.2	µg/L	1	EPA 8260B	2/13/2007	KJD	
Methyl Ethyl Ketone	<10	µg/L	10	EPA 8260B	2/13/2007	KJD	
Methyl Isobutyl Ketone	<10	µg/L	10	EPA 8260B	2/13/2007	KJD	
Methyl Tert-butyl Ether	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Methylene Chloride	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Naphthalene	18	µg/L	2	EPA 8260B	2/13/2007	KJD	
n-Butylbenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
n-Propylbenzene	19	µg/L	1	EPA 8260B	2/13/2007	KJD	
p-Isopropyltoluene	1.2	µg/L	1	EPA 8260B	2/13/2007	KJD	
sec-Butylbenzene	1.8	µg/L	1	EPA 8260B	2/13/2007	KJD	n
Styrene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
tert-Butylbenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Tetrachloroethylene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Tetrahydrofuran	<5	µg/L	5	EPA 8260B	2/13/2007	KJD	
Toluene	14	µg/L	1	EPA 8260B	2/13/2007	KJD	
Trans-1,2-Dichloroethylene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Trans-1,3-Dichloropropene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Trichloroethylene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Trichlorofluoromethane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD	
Vinyl Chloride	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Xylene, M&P	68	µg/L	2	EPA 8260B	2/13/2007	KJD	
Xylene, O	24	µg/L	1	EPA 8260B	2/13/2007	KJD	
Surrogate 1,2-Dichloroethane-d4	96.5	%	1	EPA 8260B	2/13/2007	KJD	
Surrogate Bromofluorobenzene	103	%	1	EPA 8260B	2/13/2007	KJD	
Surrogate Toluene-d8	97.3	%	1	EPA 8260B	2/13/2007	KJD	

Qualifier	Description
i	Improper sample preservation noted, analysis performed.
n	Matrix Spike recovery not within control limits.

Note
DRO sample pH 7.,pH=5

NTS Sample: 143531
Description: TW-5
Sample Date: 2/7/2007 12:05:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	Method	Analysis Date	Analyst
DRO	0.3	mg/L	0.1	WI(95) DRO	2/14/2007	CSD
GRO	<0.1	mg/L	0.1	WI(95) GRO	2/14/2007	MES
1,1,1,2-Tetrachloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
1,1,1-Trichloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
1,1,2,2-Tetrachloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
1,1,2-Trichloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
1,1,2-Trichlorotrifluoroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
1,1-Dichloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
1,1-Dichloroethylene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
1,1-Dichloropropene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
1,2,3-Trichlorobenzene	<2	µg/L	2	EPA 8260B	2/13/2007	KJD
1,2,3-Trichloropropane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD
1,2,4-Trichlorobenzene	<2	µg/L	2	EPA 8260B	2/13/2007	KJD
1,2,4-Trimethylbenzene	8	µg/L	1	EPA 8260B	2/13/2007	KJD
1,2-Dibromo-3-chloropropane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD
1,2-Dibromoethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
1,2-Dichlorobenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
1,2-Dichloroethane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD
1,2-Dichloropropane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
1,3,5-Trimethylbenzene	2.5	µg/L	1	EPA 8260B	2/13/2007	KJD
1,3-Dichlorobenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
1,3-Dichloropropane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
1,4-Dichlorobenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
2,2-Dichloropropane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
2-Chlorotoluene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
4-Chlorotoluene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Acetone	<20	µg/L	20	EPA 8260B	2/13/2007	KJD
Allyl Chloride	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Benzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Bromobenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Bromochloromethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Bromodichloromethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Bromoform	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Bromomethane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD
Carbon Tetrachloride	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Chlorobenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Chloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD

NTS Sample: 143531
Description: TW-5
Sample Date: 2/7/2007 12:05:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	Method	Analysis Date	Analyst
Chloroform	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Chloromethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Cis-1,2-Dichloroethylene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Cis-1,3-Dichloropropene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Dibromochloromethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Dibromomethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Dichlorodifluoromethane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD
Dichlorofluoromethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Ethyl Benzene	1.5	µg/L	1	EPA 8260B	2/13/2007	KJD
Ethyl Ether	<2	µg/L	2	EPA 8260B	2/13/2007	KJD
Hexachlorobutadiene	<2	µg/L	2	EPA 8260B	2/13/2007	KJD
Isopropylbenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Methyl Ethyl Ketone	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
Methyl Isobutyl Ketone	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
Methyl Tert-butyl Ether	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Methylene Chloride	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Naphthalene	<2	µg/L	2	EPA 8260B	2/13/2007	KJD
n-Butylbenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
n-Propylbenzene	1.1	µg/L	1	EPA 8260B	2/13/2007	KJD
p-Isopropyltoluene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
sec-Butylbenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Styrene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
tert-Butylbenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Tetrachloroethylene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Tetrahydrofuran	<5	µg/L	5	EPA 8260B	2/13/2007	KJD
Toluene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Trans-1,2-Dichloroethylene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Trans-1,3-Dichloropropene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Trichloroethylene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Trichlorofluoromethane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD
Vinyl Chloride	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Xylene, M&P	2.3	µg/L	2	EPA 8260B	2/13/2007	KJD
Xylene, O	1.9	µg/L	1	EPA 8260B	2/13/2007	KJD
Surrogate 1,2-Dichloroethane-d4	92.7	%	1	EPA 8260B	2/13/2007	KJD
Surrogate Bromofluorobenzene	106	%	1	EPA 8260B	2/13/2007	KJD
Surrogate Toluene-d8	98.2	%	1	EPA 8260B	2/13/2007	KJD

NTS Sample: 143532
Description: TW-6
Sample Date: 2/7/2007 3:35:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	Method	Analysis Date	Analyst	
DRO	<0.1	mg/L	0.1	WI(95) DRO	2/14/2007	CSD	i
GRO	<0.1	mg/L	0.1	WI(95) GRO	2/14/2007	MES	
1,1,1,2-Tetrachloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,1,1-Trichloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,1,2,2-Tetrachloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,1,2-Trichloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,1,2-Trichlorotrifluoroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,1-Dichloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,1-Dichloroethylene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,1-Dichloropropene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,2,3-Trichlorobenzene	<2	µg/L	2	EPA 8260B	2/13/2007	KJD	
1,2,3-Trichloropropane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD	
1,2,4-Trichlorobenzene	<2	µg/L	2	EPA 8260B	2/13/2007	KJD	
1,2,4-Trimethylbenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,2-Dibromo-3-chloropropane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD	
1,2-Dibromoethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,2-Dichlorobenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,2-Dichloroethane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD	
1,2-Dichloropropane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,3,5-Trimethylbenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,3-Dichlorobenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,3-Dichloropropane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
1,4-Dichlorobenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
2,2-Dichloropropane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
2-Chlorotoluene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
4-Chlorotoluene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Acetone	<20	µg/L	20	EPA 8260B	2/13/2007	KJD	
Allyl Chloride	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Benzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Bromobenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Bromochloromethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Bromodichloromethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Bromoform	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Bromomethane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD	
Carbon Tetrachloride	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Chlorobenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	
Chloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD	

Qualifier	Description	Note
i	Improper sample preservation noted, analysis performed.	DRO sample pH 3.

NTS Sample: 143532
Description: TW-6
Sample Date: 2/7/2007 3:35:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	Method	Analysis Date	Analyst
Chloroform	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Chloromethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Cis-1,2-Dichloroethylene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Cis-1,3-Dichloropropene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Dibromochloromethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Dibromomethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Dichlorodifluoromethane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD
Dichlorofluoromethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Ethyl Benzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Ethyl Ether	<2	µg/L	2	EPA 8260B	2/13/2007	KJD
Hexachlorobutadiene	<2	µg/L	2	EPA 8260B	2/13/2007	KJD
Isopropylbenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Methyl Ethyl Ketone	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
Methyl Isobutyl Ketone	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
Methyl Tert-butyl Ether	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Methylene Chloride	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Naphthalene	<2	µg/L	2	EPA 8260B	2/13/2007	KJD
n-Butylbenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
n-Propylbenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
p-Isopropyltoluene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
sec-Butylbenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Styrene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
tert-Butylbenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Tetrachloroethylene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Tetrahydrofuran	<5	µg/L	5	EPA 8260B	2/13/2007	KJD
Toluene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Trans-1,2-Dichloroethylene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Trans-1,3-Dichloropropene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Trichloroethylene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Trichlorofluoromethane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD
Vinyl Chloride	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Xylene, M&P	<2	µg/L	2	EPA 8260B	2/13/2007	KJD
Xylene, O	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Surrogate 1,2-Dichloroethane-d4	101	%	1	EPA 8260B	2/13/2007	KJD
Surrogate Bromofluorobenzene	106	%	1	EPA 8260B	2/13/2007	KJD
Surrogate Toluene-d8	97.9	%	1	EPA 8260B	2/13/2007	KJD

Qualifier	Description	Note
i	Improper sample preservation noted, analysis performed.	DRO sample pH 3.

NTS Sample: 143533
Description: Field Blank
Sample Date: 2/8/2007 4:35:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	Method	Analysis Date	Analyst
DRO	<0.1	mg/L	0.1	WI(95) DRO	2/14/2007	CSD
GRO	<0.1	mg/L	0.1	WI(95) GRO	2/14/2007	MES
1,1,1,2-Tetrachloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
1,1,1-Trichloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
1,1,2,2-Tetrachloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
1,1,2-Trichloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
1,1,2-Trichlorotrifluoroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
1,1-Dichloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
1,1-Dichloroethylene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
1,1-Dichloropropene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
1,2,3-Trichlorobenzene	<2	µg/L	2	EPA 8260B	2/13/2007	KJD
1,2,3-Trichloropropane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD
1,2,4-Trichlorobenzene	<2	µg/L	2	EPA 8260B	2/13/2007	KJD
1,2,4-Trimethylbenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
1,2-Dibromo-3-chloropropane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD
1,2-Dibromoethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
1,2-Dichlorobenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
1,2-Dichloroethane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD
1,2-Dichloropropane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
1,3,5-Trimethylbenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
1,3-Dichlorobenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
1,3-Dichloropropane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
1,4-Dichlorobenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
2,2-Dichloropropane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
2-Chlorotoluene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
4-Chlorotoluene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Acetone	<20	µg/L	20	EPA 8260B	2/13/2007	KJD
Allyl Chloride	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Benzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Bromobenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Bromochloromethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Bromodichloromethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Bromoform	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Bromomethane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD
Carbon Tetrachloride	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Chlorobenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Chloroethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD

NTS Sample: 143533
Description: Field Blank
Sample Date: 2/8/2007 4:35:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	Method	Analysis Date	Analyst
Chloroform	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Chloromethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Cis-1,2-Dichloroethylene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Cis-1,3-Dichloropropene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Dibromochloromethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Dibromomethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Dichlorodifluoromethane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD
Dichlorofluoromethane	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Ethyl Benzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Ethyl Ether	<2	µg/L	2	EPA 8260B	2/13/2007	KJD
Hexachlorobutadiene	<2	µg/L	2	EPA 8260B	2/13/2007	KJD
Isopropylbenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Methyl Ethyl Ketone	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
Methyl Isobutyl Ketone	<10	µg/L	10	EPA 8260B	2/13/2007	KJD
Methyl Tert-butyl Ether	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Methylene Chloride	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Naphthalene	<2	µg/L	2	EPA 8260B	2/13/2007	KJD
n-Butylbenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
n-Propylbenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
p-Isopropyltoluene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
sec-Butylbenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Styrene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
tert-Butylbenzene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Tetrachloroethylene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Tetrahydrofuran	12	µg/L	5	EPA 8260B	2/13/2007	KJD
Toluene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Trans-1,2-Dichloroethylene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Trans-1,3-Dichloropropene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Trichloroethylene	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Trichlorofluoromethane	<2	µg/L	2	EPA 8260B	2/13/2007	KJD
Vinyl Chloride	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Xylene, M&P	<2	µg/L	2	EPA 8260B	2/13/2007	KJD
Xylene, O	<1	µg/L	1	EPA 8260B	2/13/2007	KJD
Surrogate 1,2-Dichloroethane-d4	96	%	1	EPA 8260B	2/13/2007	KJD
Surrogate Bromofluorobenzene	104	%	1	EPA 8260B	2/13/2007	KJD
Surrogate Toluene-d8	98.4	%	1	EPA 8260B	2/13/2007	KJD

State Contract # 5-972(5)

CHAIN OF CUSTODY RECORD

№ 38722 75269

STS

Contact Person Tim Erpe
Phone No. 263 315 7300 Office Mpls
Project No 2006 06539 PO No.
Project Name Alexi Exhaust

Special Handling Request
- ☐ Rush
- ☐ Verbal
- ☐ Other

RECORD NUMBER 35721 THROUGH 35722
Laboratory NTS
Contact Person Renee Stone
Phone No.
Results Due Standard

Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation Y	Preservation N	Field Data PID/FID Ambient	Field Data PID/FID Sample	Field Data PH	Field Data Special Cond.	Analysis Request	Comments on Sample (Include Major Contaminants)
B-2 (18')	2/7	1320	X		3	Soil	1	2					BTEX/GRO, DRO, dry wt.	143516
B-3 (5')	2/7	1140	X		3		1	2						143517
B-3 (16')	2/7	1145	X		3		1	2						143518
B-4 (17')	2/7	1010	X		3									143519
B-4 (22')	2/7	1015	X		3									143520
B-5 (6')	2/7	1605	X		3									143521
B-5 (25')	2/7	1610	X		3									143522
B-6 (23')	2/7	1420	X		3									143523
Mathew Black	2/8	1105	X		1	MeOH	1						BTEX/GRO	143524

Collected by: Mathew Berkeman	Date See above	Time	Delivery by:	Date	Time
Received by: Dan Zenn	Date 2/9/07	Time 1600	Relinquished by: Mathew Berkeman	Date 2/9/07	Time 1602
Received by:	Date	Time	Relinquished by: Dan Zenn	Date 2/12/07	Time
Received by: Jim Matyka	Date 2-12-7	Time 910A	Relinquished by: Jim Matyka	Date 2-12-7	Time 12P
Received for lab by: [signature]	Date 2-12-07	Time 12:00	Relinquished by:	Date	Time

Laboratory Comments Only: Seals Intact Upon Receipt? ☐ Yes ☐ No ☐ N/A 3.2°C on ice

Final Disposition:

Comments (Weather Conditions, Precautions, Hazards):

Distribution: Original and Green - Laboratory Yellow - As needed Pink - Transporter Goldenrod - STS Project File
Instructions to Laboratory: Forward completed original to STS with analytical results. Retain green copy.

6/99cp10k

STS Consultants Ltd.
Consulting Engineers

CHAIN OF CUSTODY RECORD

№ 38721 75269

Contact Person Tim Krapu
Phone No. 763 315 6300 Office Mpls
Project No. 200601634 PO No.
Project Name Alex Exhaust

Special Handling Request
- ☐ Rush
- ☐ Verbal
- ☐ Other

RECORD NUMBER 38721 THROUGH 38722
Laboratory NTS
Contact Person
Phone No.
Results Due

Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation Y	Preservation N	Field Data PID/FID Ambient	Field Data PID/FID Sample	Field Data PH	Field Data Special Cond.	Analysis Request	Comments on Sample (Include Major Contaminants)
TW-1	2/6	1045	X		7	Water	7						VOC, GRO, DRO	143527
TW-2	2/7	1430	X		7		7							143528
TW-3	2/7	1300	X		7		7							143529
TW-4	2/7	1125	X		7		7							143530
TW-5	2/6	1205	X		7		7							143531
TW-6	2/7	1535	X		7	↓	7							143532
B-1 6'	2/6	1000	X		3	Soil	1	2					BTEX/GRO, DRO, Dry Wt	143525
B-1 20'	2/6	1005	X		3	↓	1	2					↓	143526
F.B.	2/6	1635	X		7	Water	7						VOC, GRO, DRO	143533

Collected by:	Matthew Beckman	Date	See Above	Time	
Received by:		Date	2/8/07	Time	1600
Received by:		Date		Time	
Received by:		Date	2-12-7	Time	910A
Received for lab by:		Date	2-12-07	Time	12:00

Delivery by:		Date	Time
Relinquished by:	Matthew Beckman	Date 2/9/07	Time 1602
Relinquished by:		Date 2/12/07	Time
Relinquished by:		Date 2-12-7	Time 12
Relinquished by:		Date	Time

Laboratory Comments Only: Seals Intact Upon Receipt? ☐ Yes ☐ No ☐ N/A 3.2°C once

Final Disposition:	Comments (Weather Conditions, Precautions, Hazards):

Distribution: Original and Green - Laboratory Yellow - As needed Pink - Transporter Goldenrod - STS Project File
Instructions to Laboratory: Forward completed original to STS with analytical results. Retain green copy.

6/99cp10k

STS Consultants Ltd.
Consulting Engineers

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

RECEIVED MAR 0 5 2007

February 15, 2007

Mr. Tim Grape
STS Consultants,Ltd.
10900 73rd Ave. N.
Suite 150
Maple Grove, MN 55369

RE: Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Dear Mr. Grape:
Enclosed are the analytical results for sample(s) received by the laboratory on February 09, 2007. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Seth Jacobson

seth.jacobson@pacelabs.com
Project Manager

Illinois Certification #: 200011
Iowa Certification #: 368
Minnesota Certification #: 027-053-137
Wisconsin Certification #: 999407970

Enclosures

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

PROJECT NARRATIVE

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Method: **TO-15**
Description: TO15 MSV AIR
Client: STS Consultants, Ltd.
Date: February 15, 2007

General Information:
5 samples were analyzed for TO-15. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

QC Batch: AIR/5173

IC: The initial calibration for this compound was outside of method control limits. The result is estimated.

- BLANK (Lab ID: 309344)
  - 1,2,4-Trichlorobenzene
- DUP (Lab ID: 310336)
  - 1,2,4-Trichlorobenzene
- FB (Lab ID: 1046203005)
  - 1,2,4-Trichlorobenzene
- LCS (Lab ID: 309345)
  - 1,2,4-Trichlorobenzene

SS: This analyte did not meet the secondary source verification criteria for the initial calibration. The reported result should be considered an estimated value.

- DUP (Lab ID: 310336)
  - Acetone
- FB (Lab ID: 1046203005)
  - Acetone
- LCS (Lab ID: 309345)
  - Acetone
  - Tetrahydrofuran

QC Batch: AIR/5188

IC: The initial calibration for this compound was outside of method control limits. The result is estimated.

- BLANK (Lab ID: 310368)
  - 1,2,4-Trichlorobenzene
- DUP (Lab ID: 310337)
  - 1,2,4-Trichlorobenzene
- LCS (Lab ID: 310369)
  - 1,2,4-Trichlorobenzene
- VP-3 (Lab ID: 1046203003)
  - 1,2,4-Trichlorobenzene

SS: This analyte did not meet the secondary source verification criteria for the initial calibration. The reported result should be considered an estimated value.

- LCS (Lab ID: 310369)
  - Acetone
- VP-3 (Lab ID: 1046203003)
  - Acetone

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

PROJECT NARRATIVE

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Method: TO-15
Description: TO15 MSV AIR
Client: STS Consultants, Ltd.
Date: February 15, 2007

QC Batch: AIR/5198

IC: The initial calibration for this compound was outside of method control limits. The result is estimated.

- BLANK (Lab ID: 310879)
  - 1,2,4-Trichlorobenzene
- DUP (Lab ID: 310881)
  - 1,2,4-Trichlorobenzene
- DUP (Lab ID: 310882)
  - 1,2,4-Trichlorobenzene
- LCS (Lab ID: 310880)
  - 1,2,4-Trichlorobenzene
- VP-1 (Lab ID: 1046203001)
  - 1,2,4-Trichlorobenzene
- VP-2 (Lab ID: 1046203002)
  - 1,2,4-Trichlorobenzene
- VP-4 (Lab ID: 1046203004)
  - 1,2,4-Trichlorobenzene

SS: This analyte did not meet the secondary source verification criteria for the initial calibration. The reported result should be considered an estimated value.

- LCS (Lab ID: 310880)
  - Acetone
- VP-4 (Lab ID: 1046203004)
  - Acetone

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: AIR/5173

CC: The continuing calibration for this compound is outside of method control limits. The result is estimated.

- LCS (Lab ID: 309345)
  - 1,2,4-Trimethylbenzene
  - Naphthalene

QC Batch: AIR/5188

CC: The continuing calibration for this compound is outside of method control limits. The result is estimated.

- LCS (Lab ID: 310369)
  - 1,2,4-Trimethylbenzene
  - Hexachloro-1,3-butadiene
  - Naphthalene
- VP-3 (Lab ID: 1046203003)
  - Naphthalene

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

PROJECT NARRATIVE

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Method: **TO-15**
Description: TO15 MSV AIR
Client: STS Consultants, Ltd.
Date: February 15, 2007

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: AIR/5173

L1: Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
- LCS (Lab ID: 309345)
  - Ethyl acetate

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
- LCS (Lab ID: 309345)
  - Hexachloro-1,3-butadiene

QC Batch: AIR/5188

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
- LCS (Lab ID: 310369)
  - 1,2,4-Trichlorobenzene
  - Ethyl acetate
  - Hexachloro-1,3-butadiene

QC Batch: AIR/5198

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
- LCS (Lab ID: 310880)
  - Hexachloro-1,3-butadiene

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
- LCS (Lab ID: 310880)
  - Naphthalene

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: AIR/5188

D6: The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
- DUP (Lab ID: 310337)
  - Acetone

Additional Comments:

Sample Comments:

K1: The Total Hydrocarbon (THC) pattern occured in the first half of the chromatogram (before toluene).
- VP-1 (Lab ID: 1046203001)
- VP-2 (Lab ID: 1046203002)

K3: The Total Hydrocarbon (THC) pattern is evenly distributed throughout the chromatogram (before and after toluene).
- VP-3 (Lab ID: 1046203003)

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

PROJECT NARRATIVE

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Method: TO-15
Description: TO15 MSV AIR
Client: STS Consultants, Ltd.
Date: February 15, 2007

Sample Comments:

K1: The Total Hydrocarbon (THC) pattern occured in the first half of the chromatogram (before toluene).
- VP-4 (Lab ID: 1046203004)

K3: The Total Hydrocarbon (THC) pattern is evenly distributed throughout the chromatogram (before and after toluene).
- FB (Lab ID: 1046203005)

Analyte Comments:

QC Batch: AIR/5188

E: Analyte concentration exceeded the calibration range. The reported result is estimated.
- DUP (Lab ID: 310337)
  - Acetone

E: Analyte concentration exceeded the calibration range. The reported result is estimated.
- DUP (Lab ID: 310337)
  - Propylene

QC Batch: AIR/5198

E: Analyte concentration exceeded the calibration range. The reported result is estimated.
- VP-1 (Lab ID: 1046203001)
  - Cyclohexane

E: Analyte concentration exceeded the calibration range. The reported result is estimated.
- VP-1 (Lab ID: 1046203001)
  - n-Hexane

E: Analyte concentration exceeded the calibration range. The reported result is estimated.
- VP-2 (Lab ID: 1046203002)
  - Cyclohexane

E: Analyte concentration exceeded the calibration range. The reported result is estimated.
- VP-2 (Lab ID: 1046203002)
  - n-Hexane

E: Analyte concentration exceeded the calibration range. The reported result is estimated.
- VP-4 (Lab ID: 1046203004)
  - Propylene

E: Analyte concentration exceeded the calibration range. The reported result is estimated.
- DUP (Lab ID: 310881)
  - Propylene

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

SAMPLE SUMMARY

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1046203001	VP-1	Air	02/08/07 14:45	02/09/07 13:00
1046203002	VP-2	Air	02/08/07 14:20	02/09/07 13:00
1046203003	VP-3	Air	02/08/07 15:00	02/09/07 13:00
1046203004	VP-4	Air	02/08/07 15:30	02/09/07 13:00
1046203005	FB	Air	02/08/07 15:45	02/09/07 13:00

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

SAMPLE ANALYTE COUNT

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Lab ID	Sample ID	Method	Analytes Reported
1046203001	VP-1	TO-15	58
1046203002	VP-2	TO-15	58
1046203003	VP-3	TO-15	58
1046203004	VP-4	TO-15	58
1046203005	FB	TO-15	58

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

ANALYTICAL RESULTS

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Sample: VP-1 **Lab ID: 1046203001** Collected: 02/08/07 14:45 Received: 02/09/07 13:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Acetone	ND	ug/m3	312	650		02/14/07 03:23	67-64-1	
Benzene	**15700**	ug/m3	422	650		02/14/07 03:23	71-43-2	
Bromodichloromethane	ND	ug/m3	910	650		02/14/07 03:23	75-27-4	
Bromoform	ND	ug/m3	1360	650		02/14/07 03:23	75-25-2	
Bromomethane	ND	ug/m3	514	650		02/14/07 03:23	74-83-9	
1,3-Butadiene	ND	ug/m3	292	650		02/14/07 03:23	106-99-0	
2-Butanone (MEK)	ND	ug/m3	390	650		02/14/07 03:23	78-93-3	
Carbon disulfide	ND	ug/m3	410	650		02/14/07 03:23	75-15-0	
Carbon tetrachloride	ND	ug/m3	845	650		02/14/07 03:23	56-23-5	
Chlorobenzene	ND	ug/m3	611	650		02/14/07 03:23	108-90-7	
Chloroethane	ND	ug/m3	351	650		02/14/07 03:23	75-00-3	
Chloroform	ND	ug/m3	644	650		02/14/07 03:23	67-66-3	
Chloromethane	ND	ug/m3	273	650		02/14/07 03:23	74-87-3	
Cyclohexane	**1080000**	ug/m3	4420	6500		02/14/07 03:58	110-82-7	E
Dibromochloromethane	ND	ug/m3	1100	650		02/14/07 03:23	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/m3	1040	650		02/14/07 03:23	106-93-4	
1,2-Dichlorobenzene	ND	ug/m3	780	650		02/14/07 03:23	95-50-1	
1,3-Dichlorobenzene	ND	ug/m3	780	650		02/14/07 03:23	541-73-1	
1,4-Dichlorobenzene	ND	ug/m3	780	650		02/14/07 03:23	106-46-7	
Dichlorodifluoromethane	ND	ug/m3	650	650		02/14/07 03:23	75-71-8	
1,1-Dichloroethane	ND	ug/m3	533	650		02/14/07 03:23	75-34-3	
1,2-Dichloroethane	ND	ug/m3	533	650		02/14/07 03:23	107-06-2	
1,1-Dichloroethene	ND	ug/m3	526	650		02/14/07 03:23	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	526	650		02/14/07 03:23	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	526	650		02/14/07 03:23	156-60-5	
1,2-Dichloropropane	ND	ug/m3	611	650		02/14/07 03:23	78-87-5	
cis-1,3-Dichloropropene	ND	ug/m3	598	650		02/14/07 03:23	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/m3	598	650		02/14/07 03:23	10061-02-6	
Dichlorotetrafluoroethane	ND	ug/m3	910	650		02/14/07 03:23	76-14-2	
Ethyl acetate	ND	ug/m3	474	650		02/14/07 03:23	141-78-6	
Ethylbenzene	**18400**	ug/m3	572	650		02/14/07 03:23	100-41-4	
4-Ethyltoluene	**4050**	ug/m3	1620	650		02/14/07 03:23	622-96-8	
n-Heptane	**288000**	ug/m3	5400	6500		02/14/07 03:58	142-82-5	
Hexachloro-1,3-butadiene	ND	ug/m3	1430	650		02/14/07 03:23	87-68-3	L2
n-Hexane	**540000**	ug/m3	4680	6500		02/14/07 03:58	110-54-3	E
2-Hexanone	ND	ug/m3	540	650		02/14/07 03:23	591-78-6	
Methylene Chloride	ND	ug/m3	462	650		02/14/07 03:23	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/m3	540	650		02/14/07 03:23	108-10-1	
Methyl-tert-butyl ether	ND	ug/m3	474	650		02/14/07 03:23	1634-04-4	
Naphthalene	ND	ug/m3	1760	650		02/14/07 03:23	91-20-3	
Propylene	ND	ug/m3	228	650		02/14/07 03:23	115-07-1	
Styrene	ND	ug/m3	566	650		02/14/07 03:23	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/m3	910	650		02/14/07 03:23	79-34-5	
Tetrachloroethene	ND	ug/m3	910	650		02/14/07 03:23	127-18-4	
Tetrahydrofuran	ND	ug/m3	390	650		02/14/07 03:23	109-99-9	
Toluene	**4100**	ug/m3	500	650		02/14/07 03:23	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	644	650		02/14/07 03:23	120-82-1	IC

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

ANALYTICAL RESULTS

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Sample: VP-1 **Lab ID: 1046203001** Collected: 02/08/07 14:45 Received: 02/09/07 13:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1,1-Trichloroethane	ND	ug/m3	715	650		02/14/07 03:23	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	715	650		02/14/07 03:23	79-00-5	
Trichloroethene	ND	ug/m3	715	650		02/14/07 03:23	79-01-6	
Trichlorofluoromethane	ND	ug/m3	715	650		02/14/07 03:23	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	1040	650		02/14/07 03:23	76-13-1	
1,2,4-Trimethylbenzene	**5930**	ug/m3	1620	650		02/14/07 03:23	95-63-6	
1,3,5-Trimethylbenzene	**2370**	ug/m3	1620	650		02/14/07 03:23	108-67-8	
Vinyl acetate	ND	ug/m3	462	650		02/14/07 03:23	108-05-4	
Vinyl chloride	ND	ug/m3	338	650		02/14/07 03:23	75-01-4	
m&p-Xylene	**31200**	ug/m3	1140	650		02/14/07 03:23	1330-20-7	
o-Xylene	**5180**	ug/m3	572	650		02/14/07 03:23	95-47-6	

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

ANALYTICAL RESULTS

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Sample: VP-2 **Lab ID: 1046203002** Collected: 02/08/07 14:20 Received: 02/09/07 13:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Acetone	ND	ug/m3	300	625		02/14/07 02:10	67-64-1	
Benzene	**33500**	ug/m3	406	625		02/14/07 02:10	71-43-2	
Bromodichloromethane	ND	ug/m3	875	625		02/14/07 02:10	75-27-4	
Bromoform	ND	ug/m3	1310	625		02/14/07 02:10	75-25-2	
Bromomethane	ND	ug/m3	494	625		02/14/07 02:10	74-83-9	
1,3-Butadiene	ND	ug/m3	281	625		02/14/07 02:10	106-99-0	
2-Butanone (MEK)	ND	ug/m3	375	625		02/14/07 02:10	78-93-3	
Carbon disulfide	ND	ug/m3	394	625		02/14/07 02:10	75-15-0	
Carbon tetrachloride	ND	ug/m3	812	625		02/14/07 02:10	56-23-5	
Chlorobenzene	ND	ug/m3	588	625		02/14/07 02:10	108-90-7	
Chloroethane	ND	ug/m3	338	625		02/14/07 02:10	75-00-3	
Chloroform	ND	ug/m3	619	625		02/14/07 02:10	67-66-3	
Chloromethane	ND	ug/m3	262	625		02/14/07 02:10	74-87-3	
Cyclohexane	**918000**	ug/m3	4250	6250		02/14/07 02:47	110-82-7	E
Dibromochloromethane	ND	ug/m3	1060	625		02/14/07 02:10	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/m3	1000	625		02/14/07 02:10	106-93-4	
1,2-Dichlorobenzene	ND	ug/m3	750	625		02/14/07 02:10	95-50-1	
1,3-Dichlorobenzene	ND	ug/m3	750	625		02/14/07 02:10	541-73-1	
1,4-Dichlorobenzene	ND	ug/m3	750	625		02/14/07 02:10	106-46-7	
Dichlorodifluoromethane	ND	ug/m3	625	625		02/14/07 02:10	75-71-8	
1,1-Dichloroethane	ND	ug/m3	512	625		02/14/07 02:10	75-34-3	
1,2-Dichloroethane	ND	ug/m3	512	625		02/14/07 02:10	107-06-2	
1,1-Dichloroethene	ND	ug/m3	506	625		02/14/07 02:10	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	506	625		02/14/07 02:10	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	506	625		02/14/07 02:10	156-60-5	
1,2-Dichloropropane	ND	ug/m3	588	625		02/14/07 02:10	78-87-5	
cis-1,3-Dichloropropene	ND	ug/m3	575	625		02/14/07 02:10	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/m3	575	625		02/14/07 02:10	10061-02-6	
Dichlorotetrafluoroethane	ND	ug/m3	875	625		02/14/07 02:10	76-14-2	
Ethyl acetate	ND	ug/m3	456	625		02/14/07 02:10	141-78-6	
Ethylbenzene	**18000**	ug/m3	550	625		02/14/07 02:10	100-41-4	
4-Ethyltoluene	**5100**	ug/m3	1560	625		02/14/07 02:10	622-96-8	
n-Heptane	ND	ug/m3	519	625		02/14/07 02:10	142-82-5	
Hexachloro-1,3-butadiene	ND	ug/m3	1380	625		02/14/07 02:10	87-68-3	L2
n-Hexane	**829000**	ug/m3	4500	6250		02/14/07 02:47	110-54-3	E
2-Hexanone	ND	ug/m3	519	625		02/14/07 02:10	591-78-6	
Methylene Chloride	ND	ug/m3	444	625		02/14/07 02:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/m3	519	625		02/14/07 02:10	108-10-1	
Methyl-tert-butyl ether	ND	ug/m3	456	625		02/14/07 02:10	1634-04-4	
Naphthalene	ND	ug/m3	1690	625		02/14/07 02:10	91-20-3	
Propylene	ND	ug/m3	219	625		02/14/07 02:10	115-07-1	
Styrene	ND	ug/m3	544	625		02/14/07 02:10	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/m3	875	625		02/14/07 02:10	79-34-5	
Tetrachloroethene	ND	ug/m3	875	625		02/14/07 02:10	127-18-4	
Tetrahydrofuran	ND	ug/m3	375	625		02/14/07 02:10	109-99-9	
Toluene	**3740**	ug/m3	481	625		02/14/07 02:10	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	619	625		02/14/07 02:10	120-82-1	IC

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

ANALYTICAL RESULTS

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Sample: VP-2 **Lab ID: 1046203002** Collected: 02/08/07 14:20 Received: 02/09/07 13:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1,1-Trichloroethane	ND	ug/m3	688	625		02/14/07 02:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	688	625		02/14/07 02:10	79-00-5	
Trichloroethene	ND	ug/m3	688	625		02/14/07 02:10	79-01-6	
Trichlorofluoromethane	ND	ug/m3	688	625		02/14/07 02:10	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	1000	625		02/14/07 02:10	76-13-1	
1,2,4-Trimethylbenzene	**6970**	ug/m3	1560	625		02/14/07 02:10	95-63-6	
1,3,5-Trimethylbenzene	**4190**	ug/m3	1560	625		02/14/07 02:10	108-67-8	
Vinyl acetate	ND	ug/m3	444	625		02/14/07 02:10	108-05-4	
Vinyl chloride	ND	ug/m3	325	625		02/14/07 02:10	75-01-4	
m&p-Xylene	**28600**	ug/m3	1100	625		02/14/07 02:10	1330-20-7	
o-Xylene	**2760**	ug/m3	550	625		02/14/07 02:10	95-47-6	

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

ANALYTICAL RESULTS

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Sample: VP-3 **Lab ID: 1046203003** Collected: 02/08/07 15:00 Received: 02/09/07 13:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Acetone	**48.6**	ug/m3	3.6	7.55		02/13/07 17:19	67-64-1	SS
Benzene	**29.1**	ug/m3	0.98	1.51		02/12/07 19:02	71-43-2	
Bromodichloromethane	ND	ug/m3	2.1	1.51		02/12/07 19:02	75-27-4	
Bromoform	ND	ug/m3	3.2	1.51		02/12/07 19:02	75-25-2	
Bromomethane	ND	ug/m3	1.2	1.51		02/12/07 19:02	74-83-9	
1,3-Butadiene	ND	ug/m3	0.68	1.51		02/12/07 19:02	106-99-0	
2-Butanone (MEK)	**11.0**	ug/m3	0.91	1.51		02/12/07 19:02	78-93-3	
Carbon disulfide	**3.7**	ug/m3	0.95	1.51		02/12/07 19:02	75-15-0	
Carbon tetrachloride	ND	ug/m3	2.0	1.51		02/12/07 19:02	56-23-5	
Chlorobenzene	ND	ug/m3	1.4	1.51		02/12/07 19:02	108-90-7	
Chloroethane	ND	ug/m3	0.82	1.51		02/12/07 19:02	75-00-3	
Chloroform	ND	ug/m3	1.5	1.51		02/12/07 19:02	67-66-3	
Chloromethane	ND	ug/m3	0.63	1.51		02/12/07 19:02	74-87-3	
Cyclohexane	**98.5**	ug/m3	1.0	1.51		02/12/07 19:02	110-82-7	
Dibromochloromethane	ND	ug/m3	2.6	1.51		02/12/07 19:02	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/m3	2.4	1.51		02/12/07 19:02	106-93-4	
1,2-Dichlorobenzene	ND	ug/m3	1.8	1.51		02/12/07 19:02	95-50-1	
1,3-Dichlorobenzene	ND	ug/m3	1.8	1.51		02/12/07 19:02	541-73-1	
1,4-Dichlorobenzene	ND	ug/m3	1.8	1.51		02/12/07 19:02	106-46-7	
Dichlorodifluoromethane	**29.7**	ug/m3	1.5	1.51		02/12/07 19:02	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.2	1.51		02/12/07 19:02	75-34-3	
1,2-Dichloroethane	ND	ug/m3	1.2	1.51		02/12/07 19:02	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.2	1.51		02/12/07 19:02	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.2	1.51		02/12/07 19:02	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.2	1.51		02/12/07 19:02	156-60-5	
1,2-Dichloropropane	ND	ug/m3	1.4	1.51		02/12/07 19:02	78-87-5	
cis-1,3-Dichloropropene	ND	ug/m3	1.4	1.51		02/12/07 19:02	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/m3	1.4	1.51		02/12/07 19:02	10061-02-6	
Dichlorotetrafluoroethane	ND	ug/m3	2.1	1.51		02/12/07 19:02	76-14-2	
Ethyl acetate	ND	ug/m3	1.1	1.51		02/12/07 19:02	141-78-6	
Ethylbenzene	**15.0**	ug/m3	1.3	1.51		02/12/07 19:02	100-41-4	
4-Ethyltoluene	**11.0**	ug/m3	3.8	1.51		02/12/07 19:02	622-96-8	
n-Heptane	**36.2**	ug/m3	1.3	1.51		02/12/07 19:02	142-82-5	
Hexachloro-1,3-butadiene	ND	ug/m3	3.3	1.51		02/12/07 19:02	87-68-3	
n-Hexane	**42.1**	ug/m3	1.1	1.51		02/12/07 19:02	110-54-3	
2-Hexanone	ND	ug/m3	1.3	1.51		02/12/07 19:02	591-78-6	
Methylene Chloride	**2.1**	ug/m3	1.1	1.51		02/12/07 19:02	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/m3	1.3	1.51		02/12/07 19:02	108-10-1	
Methyl-tert-butyl ether	ND	ug/m3	1.1	1.51		02/12/07 19:02	1634-04-4	
Naphthalene	**4.3**	ug/m3	4.1	1.51		02/12/07 19:02	91-20-3	CC
Propylene	**167**	ug/m3	2.6	7.55		02/13/07 17:19	115-07-1	
Styrene	**2.9**	ug/m3	1.3	1.51		02/12/07 19:02	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/m3	2.1	1.51		02/12/07 19:02	79-34-5	
Tetrachloroethene	**3.2**	ug/m3	2.1	1.51		02/12/07 19:02	127-18-4	
Tetrahydrofuran	ND	ug/m3	0.91	1.51		02/12/07 19:02	109-99-9	
Toluene	**39.1**	ug/m3	1.2	1.51		02/12/07 19:02	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	1.5	1.51		02/12/07 19:02	120-82-1	IC

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

ANALYTICAL RESULTS

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Sample: VP-3 **Lab ID: 1046203003** Collected: 02/08/07 15:00 Received: 02/09/07 13:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1,1-Trichloroethane	ND	ug/m3	1.7	1.51		02/12/07 19:02	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.7	1.51		02/12/07 19:02	79-00-5	
Trichloroethene	ND	ug/m3	1.7	1.51		02/12/07 19:02	79-01-6	
Trichlorofluoromethane	ND	ug/m3	1.7	1.51		02/12/07 19:02	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	2.4	1.51		02/12/07 19:02	76-13-1	
1,2,4-Trimethylbenzene	**31.3**	ug/m3	3.8	1.51		02/12/07 19:02	95-63-6	
1,3,5-Trimethylbenzene	**8.9**	ug/m3	3.8	1.51		02/12/07 19:02	108-67-8	
Vinyl acetate	ND	ug/m3	1.1	1.51		02/12/07 19:02	108-05-4	
Vinyl chloride	ND	ug/m3	0.79	1.51		02/12/07 19:02	75-01-4	
m&p-Xylene	**36.9**	ug/m3	2.7	1.51		02/12/07 19:02	1330-20-7	
o-Xylene	**11.7**	ug/m3	1.3	1.51		02/12/07 19:02	95-47-6	

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

ANALYTICAL RESULTS

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Sample: VP-4 **Lab ID: 1046203004** Collected: 02/08/07 15:30 Received: 02/09/07 13:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Acetone	**48.4**	ug/m3	3.1	6.5		02/13/07 17:49	67-64-1	SS
Benzene	**21.9**	ug/m3	4.2	6.5		02/13/07 17:49	71-43-2	
Bromodichloromethane	ND	ug/m3	9.1	6.5		02/13/07 17:49	75-27-4	
Bromoform	ND	ug/m3	13.6	6.5		02/13/07 17:49	75-25-2	
Bromomethane	ND	ug/m3	5.1	6.5		02/13/07 17:49	74-83-9	
1,3-Butadiene	ND	ug/m3	2.9	6.5		02/13/07 17:49	106-99-0	
2-Butanone (MEK)	ND	ug/m3	3.9	6.5		02/13/07 17:49	78-93-3	
Carbon disulfide	**6.8**	ug/m3	4.1	6.5		02/13/07 17:49	75-15-0	
Carbon tetrachloride	ND	ug/m3	8.4	6.5		02/13/07 17:49	56-23-5	
Chlorobenzene	ND	ug/m3	6.1	6.5		02/13/07 17:49	108-90-7	
Chloroethane	ND	ug/m3	3.5	6.5		02/13/07 17:49	75-00-3	
Chloroform	ND	ug/m3	6.4	6.5		02/13/07 17:49	67-66-3	
Chloromethane	ND	ug/m3	2.7	6.5		02/13/07 17:49	74-87-3	
Cyclohexane	**27.0**	ug/m3	4.4	6.5		02/13/07 17:49	110-82-7	
Dibromochloromethane	ND	ug/m3	11.0	6.5		02/13/07 17:49	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/m3	10.4	6.5		02/13/07 17:49	106-93-4	
1,2-Dichlorobenzene	ND	ug/m3	7.8	6.5		02/13/07 17:49	95-50-1	
1,3-Dichlorobenzene	ND	ug/m3	7.8	6.5		02/13/07 17:49	541-73-1	
1,4-Dichlorobenzene	ND	ug/m3	7.8	6.5		02/13/07 17:49	106-46-7	
Dichlorodifluoromethane	ND	ug/m3	6.5	6.5		02/13/07 17:49	75-71-8	
1,1-Dichloroethane	ND	ug/m3	5.3	6.5		02/13/07 17:49	75-34-3	
1,2-Dichloroethane	ND	ug/m3	5.3	6.5		02/13/07 17:49	107-06-2	
1,1-Dichloroethene	ND	ug/m3	5.3	6.5		02/13/07 17:49	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	5.3	6.5		02/13/07 17:49	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	5.3	6.5		02/13/07 17:49	156-60-5	
1,2-Dichloropropane	ND	ug/m3	6.1	6.5		02/13/07 17:49	78-87-5	
cis-1,3-Dichloropropene	ND	ug/m3	6.0	6.5		02/13/07 17:49	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/m3	6.0	6.5		02/13/07 17:49	10061-02-6	
Dichlorotetrafluoroethane	ND	ug/m3	9.1	6.5		02/13/07 17:49	76-14-2	
Ethyl acetate	ND	ug/m3	4.7	6.5		02/13/07 17:49	141-78-6	
Ethylbenzene	**7.2**	ug/m3	5.7	6.5		02/13/07 17:49	100-41-4	
4-Ethyltoluene	ND	ug/m3	16.2	6.5		02/13/07 17:49	622-96-8	
n-Heptane	**21.1**	ug/m3	5.4	6.5		02/13/07 17:49	142-82-5	
Hexachloro-1,3-butadiene	ND	ug/m3	14.3	6.5		02/13/07 17:49	87-68-3	L2
n-Hexane	**32.5**	ug/m3	4.7	6.5		02/13/07 17:49	110-54-3	
2-Hexanone	ND	ug/m3	5.4	6.5		02/13/07 17:49	591-78-6	
Methylene Chloride	ND	ug/m3	4.6	6.5		02/13/07 17:49	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/m3	5.4	6.5		02/13/07 17:49	108-10-1	
Methyl-tert-butyl ether	ND	ug/m3	4.7	6.5		02/13/07 17:49	1634-04-4	
Naphthalene	ND	ug/m3	17.6	6.5		02/13/07 17:49	91-20-3	
Propylene	**267**	ug/m3	2.3	6.5		02/13/07 17:49	115-07-1	E
Styrene	ND	ug/m3	5.7	6.5		02/13/07 17:49	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/m3	9.1	6.5		02/13/07 17:49	79-34-5	
Tetrachloroethene	ND	ug/m3	9.1	6.5		02/13/07 17:49	127-18-4	
Tetrahydrofuran	ND	ug/m3	3.9	6.5		02/13/07 17:49	109-99-9	
Toluene	**25.0**	ug/m3	5.0	6.5		02/13/07 17:49	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.4	6.5		02/13/07 17:49	120-82-1	IC

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

ANALYTICAL RESULTS

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Sample: VP-4 **Lab ID: 1046203004** Collected: 02/08/07 15:30 Received: 02/09/07 13:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1,1-Trichloroethane	ND	ug/m3	7.2	6.5		02/13/07 17:49	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	7.2	6.5		02/13/07 17:49	79-00-5	
Trichloroethene	ND	ug/m3	7.2	6.5		02/13/07 17:49	79-01-6	
Trichlorofluoromethane	ND	ug/m3	7.2	6.5		02/13/07 17:49	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	10.4	6.5		02/13/07 17:49	76-13-1	
1,2,4-Trimethylbenzene	ND	ug/m3	16.2	6.5		02/13/07 17:49	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	16.2	6.5		02/13/07 17:49	108-67-8	
Vinyl acetate	ND	ug/m3	4.6	6.5		02/13/07 17:49	108-05-4	
Vinyl chloride	ND	ug/m3	3.4	6.5		02/13/07 17:49	75-01-4	
m&p-Xylene	**14.1**	ug/m3	11.4	6.5		02/13/07 17:49	1330-20-7	
o-Xylene	ND	ug/m3	5.7	6.5		02/13/07 17:49	95-47-6	

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

ANALYTICAL RESULTS

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Sample: FB **Lab ID: 1046203005** Collected: 02/08/07 15:45 Received: 02/09/07 13:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Acetone	**5.7**	ug/m3	0.60	1.25		02/12/07 17:59	67-64-1	SS
Benzene	ND	ug/m3	0.81	1.25		02/12/07 17:59	71-43-2	
Bromodichloromethane	ND	ug/m3	1.8	1.25		02/12/07 17:59	75-27-4	
Bromoform	ND	ug/m3	2.6	1.25		02/12/07 17:59	75-25-2	
Bromomethane	ND	ug/m3	0.99	1.25		02/12/07 17:59	74-83-9	
1,3-Butadiene	ND	ug/m3	0.56	1.25		02/12/07 17:59	106-99-0	
2-Butanone (MEK)	**1.7**	ug/m3	0.75	1.25		02/12/07 17:59	78-93-3	
Carbon disulfide	ND	ug/m3	0.79	1.25		02/12/07 17:59	75-15-0	
Carbon tetrachloride	ND	ug/m3	1.6	1.25		02/12/07 17:59	56-23-5	
Chlorobenzene	ND	ug/m3	1.2	1.25		02/12/07 17:59	108-90-7	
Chloroethane	ND	ug/m3	0.68	1.25		02/12/07 17:59	75-00-3	
Chloroform	ND	ug/m3	1.2	1.25		02/12/07 17:59	67-66-3	
Chloromethane	**0.83**	ug/m3	0.52	1.25		02/12/07 17:59	74-87-3	
Cyclohexane	ND	ug/m3	0.85	1.25		02/12/07 17:59	110-82-7	
Dibromochloromethane	ND	ug/m3	2.1	1.25		02/12/07 17:59	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/m3	2.0	1.25		02/12/07 17:59	106-93-4	
1,2-Dichlorobenzene	ND	ug/m3	1.5	1.25		02/12/07 17:59	95-50-1	
1,3-Dichlorobenzene	ND	ug/m3	1.5	1.25		02/12/07 17:59	541-73-1	
1,4-Dichlorobenzene	ND	ug/m3	1.5	1.25		02/12/07 17:59	106-46-7	
Dichlorodifluoromethane	**2.2**	ug/m3	1.2	1.25		02/12/07 17:59	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.0	1.25		02/12/07 17:59	75-34-3	
1,2-Dichloroethane	ND	ug/m3	1.0	1.25		02/12/07 17:59	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.0	1.25		02/12/07 17:59	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.0	1.25		02/12/07 17:59	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.0	1.25		02/12/07 17:59	156-60-5	
1,2-Dichloropropane	ND	ug/m3	1.2	1.25		02/12/07 17:59	78-87-5	
cis-1,3-Dichloropropene	ND	ug/m3	1.2	1.25		02/12/07 17:59	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/m3	1.2	1.25		02/12/07 17:59	10061-02-6	
Dichlorotetrafluoroethane	ND	ug/m3	1.8	1.25		02/12/07 17:59	76-14-2	
Ethyl acetate	ND	ug/m3	0.91	1.25		02/12/07 17:59	141-78-6	
Ethylbenzene	ND	ug/m3	1.1	1.25		02/12/07 17:59	100-41-4	
4-Ethyltoluene	ND	ug/m3	3.1	1.25		02/12/07 17:59	622-96-8	
n-Heptane	ND	ug/m3	1.0	1.25		02/12/07 17:59	142-82-5	
Hexachloro-1,3-butadiene	ND	ug/m3	2.8	1.25		02/12/07 17:59	87-68-3	
n-Hexane	ND	ug/m3	0.90	1.25		02/12/07 17:59	110-54-3	
2-Hexanone	ND	ug/m3	1.0	1.25		02/12/07 17:59	591-78-6	
Methylene Chloride	ND	ug/m3	0.89	1.25		02/12/07 17:59	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/m3	1.0	1.25		02/12/07 17:59	108-10-1	
Methyl-tert-butyl ether	ND	ug/m3	0.91	1.25		02/12/07 17:59	1634-04-4	
Naphthalene	ND	ug/m3	3.4	1.25		02/12/07 17:59	91-20-3	
Propylene	ND	ug/m3	0.44	1.25		02/12/07 17:59	115-07-1	
Styrene	ND	ug/m3	1.1	1.25		02/12/07 17:59	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/m3	1.8	1.25		02/12/07 17:59	79-34-5	
Tetrachloroethene	ND	ug/m3	1.8	1.25		02/12/07 17:59	127-18-4	
Tetrahydrofuran	ND	ug/m3	0.75	1.25		02/12/07 17:59	109-99-9	
Toluene	ND	ug/m3	0.96	1.25		02/12/07 17:59	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	1.2	1.25		02/12/07 17:59	120-82-1	IC

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

ANALYTICAL RESULTS

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Sample: FB **Lab ID: 1046203005** Collected: 02/08/07 15:45 Received: 02/09/07 13:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1,1-Trichloroethane	ND	ug/m3	1.4	1.25		02/12/07 17:59	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.4	1.25		02/12/07 17:59	79-00-5	
Trichloroethene	ND	ug/m3	1.4	1.25		02/12/07 17:59	79-01-6	
Trichlorofluoromethane	ND	ug/m3	1.4	1.25		02/12/07 17:59	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	2.0	1.25		02/12/07 17:59	76-13-1	
1,2,4-Trimethylbenzene	ND	ug/m3	3.1	1.25		02/12/07 17:59	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	3.1	1.25		02/12/07 17:59	108-67-8	
Vinyl acetate	ND	ug/m3	0.89	1.25		02/12/07 17:59	108-05-4	
Vinyl chloride	ND	ug/m3	0.65	1.25		02/12/07 17:59	75-01-4	
m&p-Xylene	ND	ug/m3	2.2	1.25		02/12/07 17:59	1330-20-7	
o-Xylene	ND	ug/m3	1.1	1.25		02/12/07 17:59	95-47-6	

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

QUALITY CONTROL DATA

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

QC Batch: AIR/5173
QC Batch Method: TO-15
Analysis Method: TO-15
Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 1046203005

METHOD BLANK: 309344
Associated Lab Samples: 1046203005

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	
1,1,2,2-Tetrachloroethane	ug/m3	ND	1.4	
1,1,2-Trichloroethane	ug/m3	ND	1.1	
1,1,2-Trichlorotrifluoroethane	ug/m3	ND	1.6	
1,1-Dichloroethane	ug/m3	ND	0.82	
1,1-Dichloroethene	ug/m3	ND	0.81	
1,2,4-Trichlorobenzene	ug/m3	ND	0.99	IC
1,2,4-Trimethylbenzene	ug/m3	ND	2.5	
1,2-Dibromoethane (EDB)	ug/m3	ND	1.6	
1,2-Dichlorobenzene	ug/m3	ND	1.2	
1,2-Dichloroethane	ug/m3	ND	0.82	
1,2-Dichloropropane	ug/m3	ND	0.94	
1,3,5-Trimethylbenzene	ug/m3	ND	2.5	
1,3-Butadiene	ug/m3	ND	0.45	
1,3-Dichlorobenzene	ug/m3	ND	1.2	
1,4-Dichlorobenzene	ug/m3	ND	1.2	
2-Butanone (MEK)	ug/m3	ND	0.60	
2-Hexanone	ug/m3	ND	0.83	
4-Ethyltoluene	ug/m3	ND	2.5	
4-Methyl-2-pentanone (MIBK)	ug/m3	ND	0.83	
Acetone	ug/m3	ND	0.48	
Benzene	ug/m3	ND	0.65	
Bromodichloromethane	ug/m3	ND	1.4	
Bromoform	ug/m3	ND	2.1	
Bromomethane	ug/m3	ND	0.79	
Carbon disulfide	ug/m3	ND	0.63	
Carbon tetrachloride	ug/m3	ND	1.3	
Chlorobenzene	ug/m3	ND	0.94	
Chloroethane	ug/m3	ND	0.54	
Chloroform	ug/m3	ND	0.99	
Chloromethane	ug/m3	ND	0.42	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	
cis-1,3-Dichloropropene	ug/m3	ND	0.92	
Cyclohexane	ug/m3	ND	0.68	
Dibromochloromethane	ug/m3	ND	1.7	
Dichlorodifluoromethane	ug/m3	ND	1.0	
Dichlorotetrafluoroethane	ug/m3	ND	1.4	
Ethyl acetate	ug/m3	ND	0.73	
Ethylbenzene	ug/m3	ND	0.88	
Hexachloro-1,3-butadiene	ug/m3	ND	2.2	
m&p-Xylene	ug/m3	ND	1.8	
Methyl-tert-butyl ether	ug/m3	ND	0.73	
Methylene Chloride	ug/m3	ND	0.71	

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

QUALITY CONTROL DATA

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

METHOD BLANK: 309344

Associated Lab Samples: 1046203005

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
n-Heptane	ug/m3	ND	0.83	
n-Hexane	ug/m3	ND	0.72	
Naphthalene	ug/m3	ND	2.7	
o-Xylene	ug/m3	ND	0.88	
Propylene	ug/m3	ND	0.35	
Styrene	ug/m3	ND	0.87	
Tetrachloroethene	ug/m3	ND	1.4	
Tetrahydrofuran	ug/m3	ND	0.60	
Toluene	ug/m3	ND	0.77	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	
trans-1,3-Dichloropropene	ug/m3	ND	0.92	
Trichloroethene	ug/m3	ND	1.1	
Trichlorofluoromethane	ug/m3	ND	1.1	
Vinyl acetate	ug/m3	ND	0.71	
Vinyl chloride	ug/m3	ND	0.52	

LABORATORY CONTROL SAMPLE: 309345

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	58.3	63.0	108	60-134	
1,1,2,2-Tetrachloroethane	ug/m3	74	89.7	121	55-141	
1,1,2-Trichloroethane	ug/m3	59.4	62.1	105	64-129	
1,1,2-Trichlorotrifluoroethane	ug/m3	81.8	85.9	105	55-137	
1,1-Dichloroethane	ug/m3	43.6	49.7	114	59-136	
1,1-Dichloroethene	ug/m3	41.9	44.2	105	60-137	
1,2,4-Trichlorobenzene	ug/m3	80.6	144	179	50-150	IC
1,2,4-Trimethylbenzene	ug/m3	53	65.2	123	63-137	CC
1,2-Dibromoethane (EDB)	ug/m3	82.8	98.2	119	61-136	
1,2-Dichlorobenzene	ug/m3	64.8	86.5	133	60-139	
1,2-Dichloroethane	ug/m3	43.6	50.2	115	56-141	
1,2-Dichloropropane	ug/m3	49.4	58.4	118	57-131	
1,3,5-Trimethylbenzene	ug/m3	52.5	62.8	120	61-134	
1,3-Butadiene	ug/m3	24.3	25.8	106	53-140	
1,3-Dichlorobenzene	ug/m3	67.3	79.9	119	59-136	
1,4-Dichlorobenzene	ug/m3	64.2	78.5	122	59-130	
2-Butanone (MEK)	ug/m3	32.4	35.1	108	54-133	
2-Hexanone	ug/m3	45.8	46.3	101	54-139	
4-Ethyltoluene	ug/m3	55	60.6	110	61-138	
4-Methyl-2-pentanone (MIBK)	ug/m3	45.8	47.7	104	53-139	
Acetone	ug/m3	24.4	28.0	115	50-139	SS
Benzene	ug/m3	34.4	39.4	114	64-125	
Bromodichloromethane	ug/m3	70.9	77.5	109	61-131	
Bromoform	ug/m3	110	133	120	66-138	
Bromomethane	ug/m3	40.3	43.1	107	55-135	
Carbon disulfide	ug/m3	33.3	36.4	109	50-150	

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

QUALITY CONTROL DATA

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

LABORATORY CONTROL SAMPLE: 309345

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Carbon tetrachloride	ug/m3	67.8	71.0	105	58-135	
Chlorobenzene	ug/m3	49.6	49.1	99	62-139	
Chloroethane	ug/m3	27.1	30.9	114	56-140	
Chloroform	ug/m3	48.7	50.1	103	50-150	
Chloromethane	ug/m3	21	21.9	104	56-144	
cis-1,2-Dichloroethene	ug/m3	42.7	51.2	120	62-135	
cis-1,3-Dichloropropene	ug/m3	48.9	63.4	130	64-133	
Cyclohexane	ug/m3	35.7	45.0	126	54-139	
Dibromochloromethane	ug/m3	95.3	112	117	50-150	
Dichlorodifluoromethane	ug/m3	50.8	51.0	100	60-130	
Dichlorotetrafluoroethane	ug/m3	71.8	75.6	105	59-130	
Ethyl acetate	ug/m3	35.9	48.8	136	60-132	L1
Ethylbenzene	ug/m3	46.4	61.7	133	65-140	
Hexachloro-1,3-butadiene	ug/m3	115	184	160	50-150	L3
m&p-Xylene	ug/m3	92.7	114	123	60-132	
Methyl-tert-butyl ether	ug/m3	38.1	44.2	116	50-150	
Methylene Chloride	ug/m3	37.1	48.0	129	56-138	
n-Heptane	ug/m3	43.3	58.3	134	62-135	
n-Hexane	ug/m3	35.8	45.2	126	62-134	
Naphthalene	ug/m3	55.3	88.3	160	70-130	CC
o-Xylene	ug/m3	46.8	57.9	124	64-132	
Propylene	ug/m3	18.4	22.2	121	56-125	
Styrene	ug/m3	45.9	53.7	117	69-134	
Tetrachloroethene	ug/m3	67.6	79.7	118	60-137	
Tetrahydrofuran	ug/m3	31.5	35.2	112	52-139	SS
Toluene	ug/m3	41	46.3	113	69-130	
trans-1,2-Dichloroethene	ug/m3	39.9	46.7	117	50-150	
trans-1,3-Dichloropropene	ug/m3	50.8	67.2	132	70-142	
Trichloroethene	ug/m3	56.8	60.9	107	60-134	
Trichlorofluoromethane	ug/m3	57.7	62.2	108	56-141	
Vinyl acetate	ug/m3	38.3	47.8	125	61-142	
Vinyl chloride	ug/m3	26.3	29.0	110	66-132	

SAMPLE DUPLICATE: 310336

Parameter	Units	1046203005 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	ND	0	25	
1,1,2,2-Tetrachloroethane	ug/m3	ND	ND	0	25	
1,1,2-Trichloroethane	ug/m3	ND	ND	0	25	
1,1,2-Trichlorotrifluoroethane	ug/m3	ND	ND	0	25	
1,1-Dichloroethane	ug/m3	ND	ND	0	25	
1,1-Dichloroethene	ug/m3	ND	ND	0	25	
1,2,4-Trichlorobenzene	ug/m3	ND	ND	0	25	IC
1,2,4-Trimethylbenzene	ug/m3	ND	ND	0	25	
1,2-Dibromoethane (EDB)	ug/m3	ND	ND	0	25	
1,2-Dichlorobenzene	ug/m3	ND	ND	0	25	
1,2-Dichloroethane	ug/m3	ND	ND	0	25	

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

QUALITY CONTROL DATA

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

SAMPLE DUPLICATE: 310336

Parameter	Units	1046203005 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloropropane	ug/m3	ND	ND	0	25	
1,3,5-Trimethylbenzene	ug/m3	ND	ND	0	25	
1,3-Butadiene	ug/m3	ND	ND	0	25	
1,3-Dichlorobenzene	ug/m3	ND	ND	0	25	
1,4-Dichlorobenzene	ug/m3	ND	ND	0	25	
2-Butanone (MEK)	ug/m3	1.7	1.7	5	25	
2-Hexanone	ug/m3	ND	ND	0	25	
4-Ethyltoluene	ug/m3	ND	ND	0	25	
4-Methyl-2-pentanone (MIBK)	ug/m3	ND	ND	0	25	
Acetone	ug/m3	5.7	7.3	24	25	SS
Benzene	ug/m3	ND	ND	0	25	
Bromodichloromethane	ug/m3	ND	ND	0	25	
Bromoform	ug/m3	ND	ND	0	25	
Bromomethane	ug/m3	ND	ND	0	25	
Carbon disulfide	ug/m3	ND	ND	0	25	
Carbon tetrachloride	ug/m3	ND	ND	0	25	
Chlorobenzene	ug/m3	ND	ND	0	25	
Chloroethane	ug/m3	ND	ND	0	25	
Chloroform	ug/m3	ND	ND	0	25	
Chloromethane	ug/m3	0.83	0.93	12	25	
cis-1,2-Dichloroethene	ug/m3	ND	ND	0	25	
cis-1,3-Dichloropropene	ug/m3	ND	ND	0	25	
Cyclohexane	ug/m3	ND	ND	0	25	
Dibromochloromethane	ug/m3	ND	ND	0	25	
Dichlorodifluoromethane	ug/m3	2.2	2.5	13	25	
Dichlorotetrafluoroethane	ug/m3	ND	ND	0	25	
Ethyl acetate	ug/m3	ND	ND	0	25	
Ethylbenzene	ug/m3	ND	ND	0	25	
Hexachloro-1,3-butadiene	ug/m3	ND	ND	0	25	
m&p-Xylene	ug/m3	ND	ND	0	25	
Methyl-tert-butyl ether	ug/m3	ND	ND	0	25	
Methylene Chloride	ug/m3	ND	ND	0	25	
n-Heptane	ug/m3	ND	ND	0	25	
n-Hexane	ug/m3	ND	ND	0	25	
Naphthalene	ug/m3	ND	ND	0	25	
o-Xylene	ug/m3	ND	ND	0	25	
Propylene	ug/m3	ND	ND	0	25	
Styrene	ug/m3	ND	ND	0	25	
Tetrachloroethene	ug/m3	ND	ND	0	25	
Tetrahydrofuran	ug/m3	ND	ND	0	25	
Toluene	ug/m3	ND	ND	0	25	
trans-1,2-Dichloroethene	ug/m3	ND	ND	0	25	
trans-1,3-Dichloropropene	ug/m3	ND	ND	0	25	
Trichloroethene	ug/m3	ND	ND	0	25	
Trichlorofluoromethane	ug/m3	ND	ND	0	25	
Vinyl acetate	ug/m3	ND	ND	0	25	
Vinyl chloride	ug/m3	ND	ND	0	25	

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

QUALITY CONTROL DATA

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

QC Batch: AIR/5188
QC Batch Method: TO-15
Analysis Method: TO-15
Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 1046203003

METHOD BLANK: 310368
Associated Lab Samples: 1046203003

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	
1,1,2,2-Tetrachloroethane	ug/m3	ND	1.4	
1,1,2-Trichloroethane	ug/m3	ND	1.1	
1,1,2-Trichlorotrifluoroethane	ug/m3	ND	1.6	
1,1-Dichloroethane	ug/m3	ND	0.82	
1,1-Dichloroethene	ug/m3	ND	0.81	
1,2,4-Trichlorobenzene	ug/m3	ND	0.99	IC
1,2,4-Trimethylbenzene	ug/m3	ND	2.5	
1,2-Dibromoethane (EDB)	ug/m3	ND	1.6	
1,2-Dichlorobenzene	ug/m3	ND	1.2	
1,2-Dichloroethane	ug/m3	ND	0.82	
1,2-Dichloropropane	ug/m3	ND	0.94	
1,3,5-Trimethylbenzene	ug/m3	ND	2.5	
1,3-Butadiene	ug/m3	ND	0.45	
1,3-Dichlorobenzene	ug/m3	ND	1.2	
1,4-Dichlorobenzene	ug/m3	ND	1.2	
2-Butanone (MEK)	ug/m3	ND	0.60	
2-Hexanone	ug/m3	ND	0.83	
4-Ethyltoluene	ug/m3	ND	2.5	
4-Methyl-2-pentanone (MIBK)	ug/m3	ND	0.83	
Acetone	ug/m3	ND	0.48	
Benzene	ug/m3	ND	0.65	
Bromodichloromethane	ug/m3	ND	1.4	
Bromoform	ug/m3	ND	2.1	
Bromomethane	ug/m3	ND	0.79	
Carbon disulfide	ug/m3	ND	0.63	
Carbon tetrachloride	ug/m3	ND	1.3	
Chlorobenzene	ug/m3	ND	0.94	
Chloroethane	ug/m3	ND	0.54	
Chloroform	ug/m3	ND	0.99	
Chloromethane	ug/m3	ND	0.42	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	
cis-1,3-Dichloropropene	ug/m3	ND	0.92	
Cyclohexane	ug/m3	ND	0.68	
Dibromochloromethane	ug/m3	ND	1.7	
Dichlorodifluoromethane	ug/m3	ND	1.0	
Dichlorotetrafluoroethane	ug/m3	ND	1.4	
Ethyl acetate	ug/m3	ND	0.73	
Ethylbenzene	ug/m3	ND	0.88	
Hexachloro-1,3-butadiene	ug/m3	ND	2.2	
m&p-Xylene	ug/m3	ND	1.8	
Methyl-tert-butyl ether	ug/m3	ND	0.73	
Methylene Chloride	ug/m3	ND	0.71	

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

QUALITY CONTROL DATA

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

METHOD BLANK: 310368

Associated Lab Samples: 1046203003

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
n-Heptane	ug/m3	ND	0.83	
n-Hexane	ug/m3	ND	0.72	
Naphthalene	ug/m3	ND	2.7	
o-Xylene	ug/m3	ND	0.88	
Propylene	ug/m3	ND	0.35	
Styrene	ug/m3	ND	0.87	
Tetrachloroethene	ug/m3	ND	1.4	
Tetrahydrofuran	ug/m3	ND	0.60	
Toluene	ug/m3	ND	0.77	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	
trans-1,3-Dichloropropene	ug/m3	ND	0.92	
Trichloroethene	ug/m3	ND	1.1	
Trichlorofluoromethane	ug/m3	ND	1.1	
Vinyl acetate	ug/m3	ND	0.71	
Vinyl chloride	ug/m3	ND	0.52	

LABORATORY CONTROL SAMPLE: 310369

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	58.3	63.0	108	60-134	
1,1,2,2-Tetrachloroethane	ug/m3	74	89.7	121	55-141	
1,1,2-Trichloroethane	ug/m3	59.4	62.1	105	64-129	
1,1,2-Trichlorotrifluoroethane	ug/m3	81.8	85.9	105	55-137	
1,1-Dichloroethane	ug/m3	43.6	49.7	114	59-136	
1,1-Dichloroethene	ug/m3	41.9	44.2	105	60-137	
1,2,4-Trichlorobenzene	ug/m3	80.6	144	179	50-150	IC,L3
1,2,4-Trimethylbenzene	ug/m3	53	65.2	123	63-137	CC
1,2-Dibromoethane (EDB)	ug/m3	82.8	98.2	119	61-136	
1,2-Dichlorobenzene	ug/m3	64.8	86.5	133	60-139	
1,2-Dichloroethane	ug/m3	43.6	50.2	115	56-141	
1,2-Dichloropropane	ug/m3	49.4	58.4	118	57-131	
1,3,5-Trimethylbenzene	ug/m3	52.5	62.8	120	61-134	
1,3-Butadiene	ug/m3	24.3	25.8	106	53-140	
1,3-Dichlorobenzene	ug/m3	67.3	79.9	119	59-136	
1,4-Dichlorobenzene	ug/m3	64.2	78.5	122	59-130	
2-Butanone (MEK)	ug/m3	32.4	35.1	108	54-133	
2-Hexanone	ug/m3	45.8	46.3	101	54-139	
4-Ethyltoluene	ug/m3	55	60.6	110	61-138	
4-Methyl-2-pentanone (MIBK)	ug/m3	45.8	47.7	104	53-139	
Acetone	ug/m3	24.4	28.0	115	50-139	SS
Benzene	ug/m3	34.4	39.4	114	64-125	
Bromodichloromethane	ug/m3	70.9	77.5	109	61-131	
Bromoform	ug/m3	110	133	120	66-138	
Bromomethane	ug/m3	40.3	43.1	107	55-135	
Carbon disulfide	ug/m3	33.3	36.4	109	50-150	

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

QUALITY CONTROL DATA

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

LABORATORY CONTROL SAMPLE: 310369

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Carbon tetrachloride	ug/m3	67.8	71.0	105	58-135	
Chlorobenzene	ug/m3	49.6	49.1	99	62-139	
Chloroethane	ug/m3	27.1	30.9	114	56-140	
Chloroform	ug/m3	48.7	50.1	103	50-150	
Chloromethane	ug/m3	21	21.9	104	56-144	
cis-1,2-Dichloroethene	ug/m3	42.7	51.2	120	62-135	
cis-1,3-Dichloropropene	ug/m3	48.9	63.4	130	64-133	
Cyclohexane	ug/m3	35.7	45.0	126	54-139	
Dibromochloromethane	ug/m3	95.3	112	117	50-150	
Dichlorodifluoromethane	ug/m3	50.8	51.0	100	60-130	
Dichlorotetrafluoroethane	ug/m3	71.8	75.6	105	59-130	
Ethyl acetate	ug/m3	35.9	48.8	136	60-132	L3
Ethylbenzene	ug/m3	46.4	61.7	133	65-140	
Hexachloro-1,3-butadiene	ug/m3	115	184	160	50-150	CC,L3
m&p-Xylene	ug/m3	92.7	114	123	60-132	
Methyl-tert-butyl ether	ug/m3	38.1	44.2	116	50-150	
Methylene Chloride	ug/m3	37.1	48.0	129	56-138	
n-Heptane	ug/m3	43.3	58.3	134	62-135	
n-Hexane	ug/m3	35.8	45.2	126	62-134	
Naphthalene	ug/m3	55.3	88.3	160	70-130	CC
o-Xylene	ug/m3	46.8	57.9	124	64-132	
Propylene	ug/m3	18.4	22.2	121	56-125	
Styrene	ug/m3	45.9	53.7	117	69-134	
Tetrachloroethene	ug/m3	67.6	79.7	118	60-137	
Tetrahydrofuran	ug/m3	31.5	35.2	112	52-139	
Toluene	ug/m3	41	46.3	113	69-130	
trans-1,2-Dichloroethene	ug/m3	39.9	46.7	117	50-150	
trans-1,3-Dichloropropene	ug/m3	50.8	67.2	132	70-142	
Trichloroethene	ug/m3	56.8	60.9	107	60-134	
Trichlorofluoromethane	ug/m3	57.7	62.2	108	56-141	
Vinyl acetate	ug/m3	38.3	47.8	125	61-142	
Vinyl chloride	ug/m3	26.3	29.0	110	66-132	

SAMPLE DUPLICATE: 310337

Parameter	Units	1046237001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	ND	0	25	
1,1,2,2-Tetrachloroethane	ug/m3	ND	ND	0	25	
1,1,2-Trichloroethane	ug/m3	ND	ND	0	25	
1,1,2-Trichlorotrifluoroethane	ug/m3	ND	ND	0	25	
1,1-Dichloroethane	ug/m3	ND	ND	0	25	
1,1-Dichloroethene	ug/m3	ND	ND	0	25	
1,2,4-Trichlorobenzene	ug/m3	ND	ND	0	25	IC
1,2,4-Trimethylbenzene	ug/m3	23.7	23.1	2	25	
1,2-Dibromoethane (EDB)	ug/m3	ND	ND	0	25	
1,2-Dichlorobenzene	ug/m3	ND	ND	0	25	
1,2-Dichloroethane	ug/m3	ND	ND	0	25	

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

QUALITY CONTROL DATA

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

SAMPLE DUPLICATE: 310337

Parameter	Units	1046237001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloropropane	ug/m3	ND	ND	0	25	
1,3,5-Trimethylbenzene	ug/m3	7.5	7.3	3	25	
1,3-Butadiene	ug/m3	ND	ND	0	25	
1,3-Dichlorobenzene	ug/m3	ND	ND	0	25	
1,4-Dichlorobenzene	ug/m3	ND	ND	0	25	
2-Butanone (MEK)	ug/m3	21.3	23.9	11	25	
2-Hexanone	ug/m3	ND	ND	0	25	
4-Ethyltoluene	ug/m3	8.2	8.2	.4	25	
4-Methyl-2-pentanone (MIBK)	ug/m3	8.0	8.4	6	25	
Acetone	ug/m3	67.2	102	41	25	D6,E
Benzene	ug/m3	20.5	22.0	7	25	
Bromodichloromethane	ug/m3	ND	ND	0	25	
Bromoform	ug/m3	ND	ND	0	25	
Bromomethane	ug/m3	ND	ND	0	25	
Carbon disulfide	ug/m3	4.1	4.0	1	25	
Carbon tetrachloride	ug/m3	ND	ND	0	25	
Chlorobenzene	ug/m3	ND	ND	0	25	
Chloroethane	ug/m3	ND	ND	0	25	
Chloroform	ug/m3	ND	ND	0	25	
Chloromethane	ug/m3	ND	ND	0	25	
cis-1,2-Dichloroethene	ug/m3	ND	ND	0	25	
cis-1,3-Dichloropropene	ug/m3	ND	ND	0	25	
Cyclohexane	ug/m3	29.0	30.4	5	25	
Dibromochloromethane	ug/m3	ND	ND	0	25	
Dichlorodifluoromethane	ug/m3	2.1	2.1	.1	25	
Dichlorotetrafluoroethane	ug/m3	ND	ND	0	25	
Ethyl acetate	ug/m3	ND	ND	0	25	
Ethylbenzene	ug/m3	9.6	10.4	9	25	
Hexachloro-1,3-butadiene	ug/m3	ND	ND	0	25	
m&p-Xylene	ug/m3	34.8	37.3	7	25	
Methyl-tert-butyl ether	ug/m3	1.2	1.3	6	25	
Methylene Chloride	ug/m3	ND	ND	0	25	
n-Heptane	ug/m3	7.8	8.6	9	25	
n-Hexane	ug/m3	21.2	22.4	5	25	
Naphthalene	ug/m3	ND	ND	0	25	
o-Xylene	ug/m3	13.5	14.4	6	25	
Propylene	ug/m3	111	104	7	25	E
Styrene	ug/m3	2.3	2.5	7	25	
Tetrachloroethene	ug/m3	ND	ND	0	25	
Tetrahydrofuran	ug/m3	ND	ND	0	25	
Toluene	ug/m3	36.8	39.0	6	25	
trans-1,2-Dichloroethene	ug/m3	ND	ND	0	25	
trans-1,3-Dichloropropene	ug/m3	ND	ND	0	25	
Trichloroethene	ug/m3	ND	ND	0	25	
Trichlorofluoromethane	ug/m3	ND	ND	0	25	
Vinyl acetate	ug/m3	ND	ND	0	25	
Vinyl chloride	ug/m3	ND	ND	0	25	

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

QUALITY CONTROL DATA

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

QC Batch: AIR/5198 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 1046203001, 1046203002, 1046203004

METHOD BLANK: 310879
Associated Lab Samples: 1046203001, 1046203002, 1046203004

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	
1,1,2,2-Tetrachloroethane	ug/m3	ND	1.4	
1,1,2-Trichloroethane	ug/m3	ND	1.1	
1,1,2-Trichlorotrifluoroethane	ug/m3	ND	1.6	
1,1-Dichloroethane	ug/m3	ND	0.82	
1,1-Dichloroethene	ug/m3	ND	0.81	
1,2,4-Trichlorobenzene	ug/m3	ND	0.99	IC
1,2,4-Trimethylbenzene	ug/m3	ND	2.5	
1,2-Dibromoethane (EDB)	ug/m3	ND	1.6	
1,2-Dichlorobenzene	ug/m3	ND	1.2	
1,2-Dichloroethane	ug/m3	ND	0.82	
1,2-Dichloropropane	ug/m3	ND	0.94	
1,3,5-Trimethylbenzene	ug/m3	ND	2.5	
1,3-Butadiene	ug/m3	ND	0.45	
1,3-Dichlorobenzene	ug/m3	ND	1.2	
1,4-Dichlorobenzene	ug/m3	ND	1.2	
2-Butanone (MEK)	ug/m3	ND	0.60	
2-Hexanone	ug/m3	ND	0.83	
4-Ethyltoluene	ug/m3	ND	2.5	
4-Methyl-2-pentanone (MIBK)	ug/m3	ND	0.83	
Acetone	ug/m3	ND	0.48	
Benzene	ug/m3	ND	0.65	
Bromodichloromethane	ug/m3	ND	1.4	
Bromoform	ug/m3	ND	2.1	
Bromomethane	ug/m3	ND	0.79	
Carbon disulfide	ug/m3	ND	0.63	
Carbon tetrachloride	ug/m3	ND	1.3	
Chlorobenzene	ug/m3	ND	0.94	
Chloroethane	ug/m3	ND	0.54	
Chloroform	ug/m3	ND	0.99	
Chloromethane	ug/m3	ND	0.42	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	
cis-1,3-Dichloropropene	ug/m3	ND	0.92	
Cyclohexane	ug/m3	ND	0.68	
Dibromochloromethane	ug/m3	ND	1.7	
Dichlorodifluoromethane	ug/m3	ND	1.0	
Dichlorotetrafluoroethane	ug/m3	ND	1.4	
Ethyl acetate	ug/m3	ND	0.73	
Ethylbenzene	ug/m3	ND	0.88	
Hexachloro-1,3-butadiene	ug/m3	ND	2.2	L2
m&p-Xylene	ug/m3	ND	1.8	
Methyl-tert-butyl ether	ug/m3	ND	0.73	
Methylene Chloride	ug/m3	ND	0.71	

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

QUALITY CONTROL DATA

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

METHOD BLANK: 310879

Associated Lab Samples: 1046203001, 1046203002, 1046203004

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
n-Heptane	ug/m3	ND	0.83	
n-Hexane	ug/m3	ND	0.72	
Naphthalene	ug/m3	ND	2.7	
o-Xylene	ug/m3	ND	0.88	
Propylene	ug/m3	ND	0.35	
Styrene	ug/m3	ND	0.87	
Tetrachloroethene	ug/m3	ND	1.4	
Tetrahydrofuran	ug/m3	ND	0.60	
Toluene	ug/m3	ND	0.77	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	
trans-1,3-Dichloropropene	ug/m3	ND	0.92	
Trichloroethene	ug/m3	ND	1.1	
Trichlorofluoromethane	ug/m3	ND	1.1	
Vinyl acetate	ug/m3	ND	0.71	
Vinyl chloride	ug/m3	ND	0.52	

LABORATORY CONTROL SAMPLE: 310880

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	58.3	56.9	98	60-134	
1,1,2,2-Tetrachloroethane	ug/m3	74	82.3	111	55-141	
1,1,2-Trichloroethane	ug/m3	59.4	56.3	95	64-129	
1,1,2-Trichlorotrifluoroethane	ug/m3	81.8	79.8	97	55-137	
1,1-Dichloroethane	ug/m3	43.6	43.2	99	59-136	
1,1-Dichloroethene	ug/m3	41.9	40.6	97	60-137	
1,2,4-Trichlorobenzene	ug/m3	80.6	126	156	50-150	IC
1,2,4-Trimethylbenzene	ug/m3	53	59.9	113	63-137	
1,2-Dibromoethane (EDB)	ug/m3	82.8	90.8	110	61-136	
1,2-Dichlorobenzene	ug/m3	64.8	78.5	121	60-139	
1,2-Dichloroethane	ug/m3	43.6	45.7	105	56-141	
1,2-Dichloropropane	ug/m3	49.4	53.5	108	57-131	
1,3,5-Trimethylbenzene	ug/m3	52.5	57.4	109	61-134	
1,3-Butadiene	ug/m3	24.3	25.9	107	53-140	
1,3-Dichlorobenzene	ug/m3	67.3	72.1	107	59-136	
1,4-Dichlorobenzene	ug/m3	64.2	70.3	110	59-130	
2-Butanone (MEK)	ug/m3	32.4	33.9	105	54-133	
2-Hexanone	ug/m3	45.8	46.8	102	54-139	
4-Ethyltoluene	ug/m3	55	56.0	102	61-138	
4-Methyl-2-pentanone (MIBK)	ug/m3	45.8	48.3	105	53-139	
Acetone	ug/m3	24.4	26.4	108	50-139	SS
Benzene	ug/m3	34.4	36.7	106	64-125	
Bromodichloromethane	ug/m3	70.9	69.4	98	61-131	
Bromoform	ug/m3	110	118	107	66-138	
Bromomethane	ug/m3	40.3	42.4	105	55-135	
Carbon disulfide	ug/m3	33.3	35.2	106	50-150	

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

QUALITY CONTROL DATA

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

LABORATORY CONTROL SAMPLE: 310880

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Carbon tetrachloride	ug/m3	67.8	62.1	92	58-135	
Chlorobenzene	ug/m3	49.6	45.9	92	62-139	
Chloroethane	ug/m3	27.1	31.2	115	56-140	
Chloroform	ug/m3	48.7	45.5	93	50-150	
Chloromethane	ug/m3	21	21.2	101	56-144	
cis-1,2-Dichloroethene	ug/m3	42.7	47.7	111	62-135	
cis-1,3-Dichloropropene	ug/m3	48.9	57.8	118	64-133	
Cyclohexane	ug/m3	35.7	41.4	116	54-139	
Dibromochloromethane	ug/m3	95.3	101	106	50-150	
Dichlorodifluoromethane	ug/m3	50.8	44.8	88	60-130	
Dichlorotetrafluoroethane	ug/m3	71.8	71.0	99	59-130	
Ethyl acetate	ug/m3	35.9	47.1	131	60-132	
Ethylbenzene	ug/m3	46.4	57.7	124	65-140	
Hexachloro-1,3-butadiene	ug/m3	115	39.5	34	50-150	L2
m&p-Xylene	ug/m3	92.7	105	114	60-132	
Methyl-tert-butyl ether	ug/m3	38.1	43.3	114	50-150	
Methylene Chloride	ug/m3	37.1	45.3	122	56-138	
n-Heptane	ug/m3	43.3	54.4	125	62-135	
n-Hexane	ug/m3	35.8	44.0	123	62-134	
Naphthalene	ug/m3	55.3	79.0	143	70-130	L3
o-Xylene	ug/m3	46.8	52.8	113	64-132	
Propylene	ug/m3	18.4	19.9	108	56-125	
Styrene	ug/m3	45.9	49.9	109	69-134	
Tetrachloroethene	ug/m3	67.6	74.5	110	60-137	
Tetrahydrofuran	ug/m3	31.5	36.0	114	52-139	
Toluene	ug/m3	41	42.8	104	69-130	
trans-1,2-Dichloroethene	ug/m3	39.9	45.6	114	50-150	
trans-1,3-Dichloropropene	ug/m3	50.8	62.5	123	70-142	
Trichloroethene	ug/m3	56.8	55.8	98	60-134	
Trichlorofluoromethane	ug/m3	57.7	53.5	93	56-141	
Vinyl acetate	ug/m3	38.3	43.8	114	61-142	
Vinyl chloride	ug/m3	26.3	29.5	112	66-132	

SAMPLE DUPLICATE: 310881

Parameter	Units	1046203004 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	ND	0	25	
1,1,2,2-Tetrachloroethane	ug/m3	ND	ND	0	25	
1,1,2-Trichloroethane	ug/m3	ND	ND	0	25	
1,1,2-Trichlorotrifluoroethane	ug/m3	ND	ND	0	25	
1,1-Dichloroethane	ug/m3	ND	ND	0	25	
1,1-Dichloroethene	ug/m3	ND	ND	0	25	
1,2,4-Trichlorobenzene	ug/m3	ND	ND	0	25	IC
1,2,4-Trimethylbenzene	ug/m3	ND	12.1J	9	25	
1,2-Dibromoethane (EDB)	ug/m3	ND	ND	0	25	
1,2-Dichlorobenzene	ug/m3	ND	ND	0	25	
1,2-Dichloroethane	ug/m3	ND	ND	0	25	

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

QUALITY CONTROL DATA

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

SAMPLE DUPLICATE: 310881

Parameter	Units	1046203004 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloropropane	ug/m3	ND	ND	0	25	
1,3,5-Trimethylbenzene	ug/m3	ND	ND	0	25	
1,3-Butadiene	ug/m3	ND	ND	0	25	
1,3-Dichlorobenzene	ug/m3	ND	ND	0	25	
1,4-Dichlorobenzene	ug/m3	ND	ND	0	25	
2-Butanone (MEK)	ug/m3	ND	ND	0	25	
2-Hexanone	ug/m3	ND	ND	0	25	
4-Ethyltoluene	ug/m3	ND	ND	0	25	
4-Methyl-2-pentanone (MIBK)	ug/m3	ND	ND	0	25	
Acetone	ug/m3	48.4	56.0	15	25	
Benzene	ug/m3	21.9	22.5	3	25	
Bromodichloromethane	ug/m3	ND	ND	0	25	
Bromoform	ug/m3	ND	ND	0	25	
Bromomethane	ug/m3	ND	ND	0	25	
Carbon disulfide	ug/m3	6.8	6.7	2	25	
Carbon tetrachloride	ug/m3	ND	ND	0	25	
Chlorobenzene	ug/m3	ND	ND	0	25	
Chloroethane	ug/m3	ND	ND	0	25	
Chloroform	ug/m3	ND	ND	0	25	
Chloromethane	ug/m3	ND	ND	0	25	
cis-1,2-Dichloroethene	ug/m3	ND	ND	0	25	
cis-1,3-Dichloropropene	ug/m3	ND	ND	0	25	
Cyclohexane	ug/m3	27.0	27.8	3	25	
Dibromochloromethane	ug/m3	ND	ND	0	25	
Dichlorodifluoromethane	ug/m3	ND	ND	0	25	
Dichlorotetrafluoroethane	ug/m3	ND	ND	0	25	
Ethyl acetate	ug/m3	ND	ND	0	25	
Ethylbenzene	ug/m3	7.2	7.7	7	25	
Hexachloro-1,3-butadiene	ug/m3	ND	ND	0	25	L2
m&p-Xylene	ug/m3	14.1	15.4	9	25	
Methyl-tert-butyl ether	ug/m3	ND	ND	0	25	
Methylene Chloride	ug/m3	ND	ND	0	25	
n-Heptane	ug/m3	21.1	21.7	3	25	
n-Hexane	ug/m3	32.5	32.6	.3	25	
Naphthalene	ug/m3	ND	ND	0	25	
o-Xylene	ug/m3	ND	ND	0	25	
Propylene	ug/m3	267	269	.7	25	E
Styrene	ug/m3	ND	ND	0	25	
Tetrachloroethene	ug/m3	ND	ND	0	25	
Tetrahydrofuran	ug/m3	ND	ND	0	25	
Toluene	ug/m3	25.0	27.1	8	25	
trans-1,2-Dichloroethene	ug/m3	ND	ND	0	25	
trans-1,3-Dichloropropene	ug/m3	ND	ND	0	25	
Trichloroethene	ug/m3	ND	ND	0	25	
Trichlorofluoromethane	ug/m3	ND	ND	0	25	
Vinyl acetate	ug/m3	ND	ND	0	25	
Vinyl chloride	ug/m3	ND	ND	0	25	

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

QUALITY CONTROL DATA

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

SAMPLE DUPLICATE: 310882

Parameter	Units	1046237003 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	ND	0	25	
1,1,2,2-Tetrachloroethane	ug/m3	ND	ND	0	25	
1,1,2-Trichloroethane	ug/m3	ND	ND	0	25	
1,1,2-Trichlorotrifluoroethane	ug/m3	ND	ND	0	25	
1,1-Dichloroethane	ug/m3	ND	ND	0	25	
1,1-Dichloroethene	ug/m3	ND	ND	0	25	
1,2,4-Trichlorobenzene	ug/m3	ND	ND	0	25	IC
1,2,4-Trimethylbenzene	ug/m3	ND	ND	0	25	
1,2-Dibromoethane (EDB)	ug/m3	ND	ND	0	25	
1,2-Dichlorobenzene	ug/m3	ND	ND	0	25	
1,2-Dichloroethane	ug/m3	ND	ND	0	25	
1,2-Dichloropropane	ug/m3	ND	ND	0	25	
1,3,5-Trimethylbenzene	ug/m3	ND	ND	0	25	
1,3-Butadiene	ug/m3	ND	ND	0	25	
1,3-Dichlorobenzene	ug/m3	ND	ND	0	25	
1,4-Dichlorobenzene	ug/m3	ND	ND	0	25	
2-Butanone (MEK)	ug/m3	ND	ND	0	25	
2-Hexanone	ug/m3	ND	ND	0	25	
4-Ethyltoluene	ug/m3	ND	ND	0	25	
4-Methyl-2-pentanone (MIBK)	ug/m3	ND	ND	0	25	
Acetone	ug/m3	ND	ND	0	25	
Benzene	ug/m3	12.2	12.6	4	25	
Bromodichloromethane	ug/m3	ND	ND	0	25	
Bromoform	ug/m3	ND	ND	0	25	
Bromomethane	ug/m3	ND	ND	0	25	
Carbon disulfide	ug/m3	793	842	6	25	
Carbon tetrachloride	ug/m3	ND	ND	0	25	
Chlorobenzene	ug/m3	ND	ND	0	25	
Chloroethane	ug/m3	ND	ND	0	25	
Chloroform	ug/m3	ND	ND	0	25	
Chloromethane	ug/m3	ND	ND	0	25	
cis-1,2-Dichloroethene	ug/m3	ND	ND	0	25	
cis-1,3-Dichloropropene	ug/m3	ND	ND	0	25	
Cyclohexane	ug/m3	410	423	3	25	
Dibromochloromethane	ug/m3	ND	ND	0	25	
Dichlorodifluoromethane	ug/m3	14.3	14.6	3	25	
Dichlorotetrafluoroethane	ug/m3	ND	ND	0	25	
Ethyl acetate	ug/m3	ND	ND	0	25	
Ethylbenzene	ug/m3	ND	ND	0	25	
Hexachloro-1,3-butadiene	ug/m3	ND	ND	0	25	L2
m&p-Xylene	ug/m3	ND	ND	0	25	
Methyl-tert-butyl ether	ug/m3	ND	ND	0	25	
Methylene Chloride	ug/m3	ND	ND	0	25	
n-Heptane	ug/m3	ND	ND	0	25	
n-Hexane	ug/m3	99.3	103	4	25	
Naphthalene	ug/m3	ND	ND	0	25	
o-Xylene	ug/m3	ND	ND	0	25	
Propylene	ug/m3	214	188	13	25	

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

QUALITY CONTROL DATA

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

SAMPLE DUPLICATE: 310882

Parameter	Units	1046237003 Result	Dup Result	RPD	Max RPD	Qualifiers
Styrene	ug/m3	ND	ND	0	25	
Tetrachloroethene	ug/m3	ND	ND	0	25	
Tetrahydrofuran	ug/m3	ND	ND	0	25	
Toluene	ug/m3	ND	ND	0	25	
trans-1,2-Dichloroethene	ug/m3	ND	ND	0	25	
trans-1,3-Dichloropropene	ug/m3	ND	ND	0	25	
Trichloroethene	ug/m3	ND	ND	0	25	
Trichlorofluoromethane	ug/m3	ND	ND	0	25	
Vinyl acetate	ug/m3	ND	ND	0	25	
Vinyl chloride	ug/m3	ND	ND	0	25	

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

QUALIFIERS

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SAMPLE QUALIFIERS

Sample: 1046203001

[1] The Total Hydrocarbon (THC) pattern occured in the first half of the chromatogram (before toluene).

Sample: 1046203002

[1] The Total Hydrocarbon (THC) pattern occured in the first half of the chromatogram (before toluene).

Sample: 1046203003

[1] The Total Hydrocarbon (THC) pattern is evenly distributed throughout the chromatogram (before and after toluene).

Sample: 1046203004

[1] The Total Hydrocarbon (THC) pattern occured in the first half of the chromatogram (before toluene).

Sample: 1046203005

[1] The Total Hydrocarbon (THC) pattern is evenly distributed throughout the chromatogram (before and after toluene).

ANALYTE QUALIFIERS

CC	The continuing calibration for this compound is outside of method control limits. The result is estimated.
D6	The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
IC	The initial calibration for this compound was outside of method control limits. The result is estimated.
L1	Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
SS	This analyte did not meet the secondary source verification criteria for the initial calibration. The reported result should be considered an estimated value.

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1046203005	FB	TO-15	AIR/5173		
1046203003	VP-3	TO-15	AIR/5188		
1046203001	VP-1	TO-15	AIR/5198		
1046203002	VP-2	TO-15	AIR/5198		
1046203004	VP-4	TO-15	AIR/5198		

Data File: \\192.168.10.12\chem\10air0.i\021307.b\04427tic.D
Report Date: 27-Feb-2007 15:02

Pace Analytical Services

TENTATIVELY IDENTIFIED COMPOUNDS

Client Name:
Lab Smp Id: 1046203001
Operator : HRG
Sample Location:
Sample Matrix: AIR
Analysis Type: VOA
Inj Date: 14-FEB-2007 03:23

Client SDG: 102205

Sample Date:
Sample Point:
Date Received:
Level: LOW

Number TICs found: 9

CONCENTRATION UNITS:
(ug/L or ug/KG) ppbv

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	78-78-4	Butane, 2-methyl-	4.521	36900	NJ
2.	96-14-0	Pentane, 3-methyl-	5.755	22800	NJ
3.	96-37-7	Cyclopentane, methyl-	6.586	21100	NJ
4.	591-76-4	Hexane, 2-methyl-	7.176	17000	NJ
5.	589-34-4	Hexane, 3-methyl-	7.362	16600	NJ
6.	594-82-1	Butane, 2,2,3,3-tetramethyl	7.659	75100	NJ
7.	589-43-5	Hexane, 2,4-dimethyl-	8.565	33000	NJ
8.	565-75-3	Pentane, 2,3,4-trimethyl-	9.018	31500	NJ
9.	560-21-4	Pentane, 2,3,3-trimethyl-	9.179	36800	NJ

Data File: \\192.168.10.12\chem\10air0.i\021307.b\04427tic.D
Report Date: 27-Feb-2007 15:02

Pace Analytical Services

TO15 Analysis (UNIX)

Data file : \\192.168.10.12\chem\10air0.i\021307.b\04427tic.D
Lab Smp Id: 1046203001
Inj Date : 14-FEB-2007 03:23
Operator : HRG Inst ID: 10air0.i
Smp Info :
Misc Info : 5198
Comment : Volatile Organic COMPOUNDS in Air
Method : \\192.168.10.12\chem\10air0.i\021307.b\LOWTO15_038.m
Meth Date : 27-Feb-2007 11:06 lweinkauf Quant Type: ISTD
Cal Date : 07-FEB-2007 16:44 Cal File: 03809.D
Als bottle: 27
Dil Factor: 650.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14
Processing Host: AIRGROUP

Concentration Formula: Amt * DF * Uf * CpndVariable

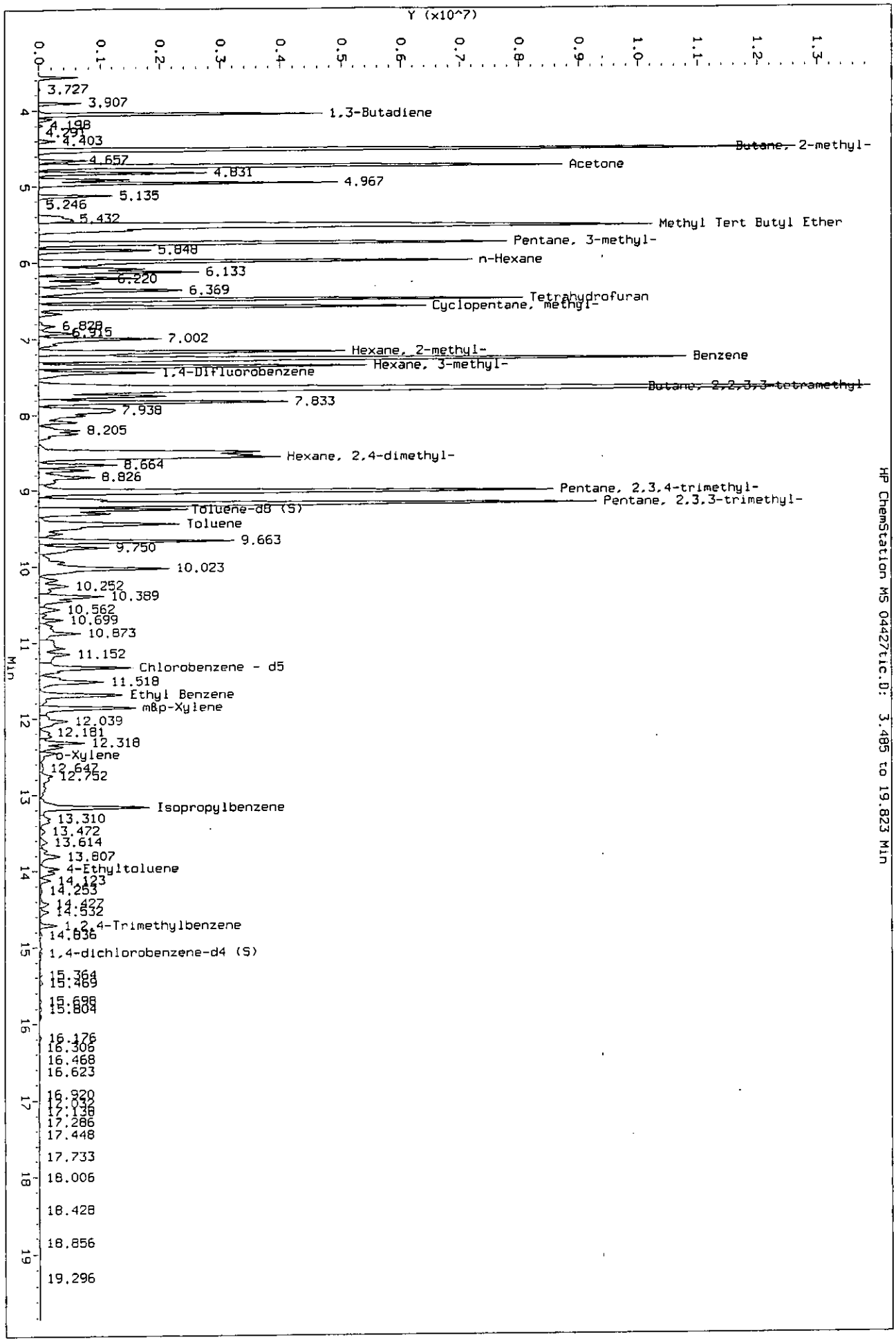
Name	Value	Description
DF	650.000	Dilution Factor
Uf	1.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

ISTD	RT	AREA	AMOUNT
* 31 1,4-Difluorobenzene	7.442	4729942	10.000

		CONCENTRATIONS			QUANT		
RT	AREA	ON-COL(ppbv)	FINAL(ppbv)	QUAL	LIBRARY	LIB ENTRY	CPND #
Butane, 2-methyl-				CAS #: 78-78-4			
4.521	26836508	56.7374978	36900	91	NBS75K.1	62518	31
Pentane, 3-methyl-				CAS #: 96-14-0			
5.755	16622896	35.1439733	22800	91	NBS75K.1	62868	31
Cyclopentane, methyl-				CAS #: 96-37-7			
6.586	15365881	32.4864045	21100	86	NBS75K.1	594	31
Hexane, 2-methyl-				CAS #: 591-76-4			
7.176	12398995	26.2138413	17000	90	NBS75K.1	63435	31
Hexane, 3-methyl-				CAS #: 589-34-4			
7.362	12104979	25.5922354	16600	90	NBS75K.1	63423	31
Butane, 2,2,3,3-tetramethyl-				CAS #: 594-82-1			
7.659	54638005	115.515167	75100	78	NBS75K.1	3090	31

Data File: \\192.168.10.12\chem\10air0.i\021307.b\04427tic.D
Report Date: 27-Feb-2007 15:02

		CONCENTRATIONS			QUANT		
RT	AREA	ON-COL(ppbv)	FINAL(ppbv)	QUAL	LIBRARY	LIB ENTRY	CPND #
====	====	==========	==========	====	=======	========	======
Hexane, 2,4-dimethyl-				CAS #: 589-43-5			
8.565	23980518	50.6993896	33000	96	NBS75K.l	3089	31
Pentane, 2,3,4-trimethyl-				CAS #: 565-75-3			
9.018	22938325	48.4959950	31500	91	NBS75K.l	64229	31
Pentane, 2,3,3-trimethyl-				CAS #: 560-21-4			
9.179	26769475	56.5957768	36800	83	NBS75K.l	3088	31



Data File: \\192.168.10.12\chem\10air0.i\021307.b\04427tic.D
Injection Date: 14-FEB-2007 03:23
Instrument: 10air0.i
Client Sample ID:

HP ChemStation MS 04427tic.D: 3.485 to 19.823 Min

10462061

Data File: \\192.168.10.12\chem\10air0.i\021307.b\04425tic.D
Report Date: 27-Feb-2007 15:00

Pace Analytical Services

TENTATIVELY IDENTIFIED COMPOUNDS

Client Name:
Lab Smp Id: 1046203002
Operator : HRG
Sample Location:
Sample Matrix: AIR
Analysis Type: VOA
Inj Date: 14-FEB-2007 02:10

Client SDG: 102205

Sample Date:
Sample Point:
Date Received:
Level: LOW

Number TICs found: 9

CONCENTRATION UNITS:
(ug/L or ug/KG) ppbv

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	78-78-4	Butane, 2-methyl-	4.514	7470	NJ
2.	96-14-0	Pentane, 3-methyl-	5.767	5870	NJ
3.	96-37-7	Cyclopentane, methyl-	6.592	5960	NJ
4.	540-84-1	Pentane, 2,2,4-trimethyl-	7.665	16400	NJ
5.	142-82-5	Heptane	7.839	4290	NJ
6.	108-87-2	Cyclohexane, methyl-	8.540	7360	NJ
7.	3522-94-9	Hexane, 2,2,5-trimethyl-	9.675	13800	NJ
8.		Unknown	10.035	13400	J
9.		Unknown	10.401	4910	J

Data File: \\192.168.10.12\chem\10air0.i\021307.b\04425tic.D
Report Date: 27-Feb-2007 15:00

Pace Analytical Services

TO15 Analysis (UNIX)

Data file : \\192.168.10.12\chem\10air0.i\021307.b\04425tic.D
Lab Smp Id: 1046203002
Inj Date : 14-FEB-2007 02:10
Operator : HRG Inst ID: 10air0.i
Smp Info :
Misc Info : 5198
Comment : Volatile Organic COMPOUNDS in Air
Method : \\192.168.10.12\chem\10air0.i\021307.b\LOWTO15_038.m
Meth Date : 27-Feb-2007 11:06 lweinkauf Quant Type: ISTD
Cal Date : 07-FEB-2007 16:44 Cal File: 03809.D
Als bottle: 25
Dil Factor: 625.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14
Processing Host: AIRGROUP

Concentration Formula: Amt * DF * Uf * CpndVariable

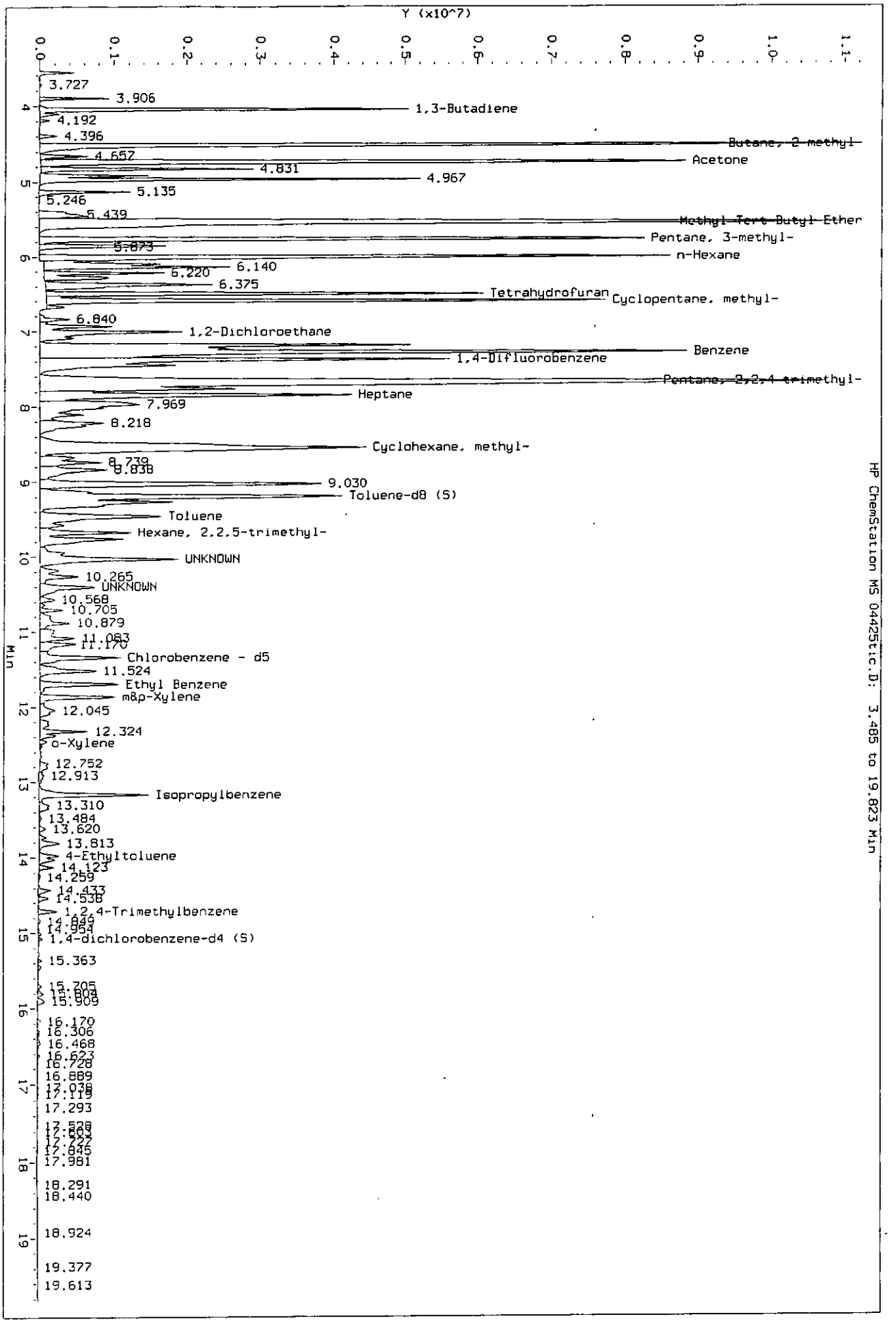
Name	Value	Description
DF	625.000	Dilution Factor
Uf	1.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

ISTD	RT	AREA	AMOUNT
* 31 1,4-Difluorobenzene	7.455	19646425	10.000
* 46 Chlorobenzene - d5	11.344	3498880	10.000

	CONCENTRATIONS			QUANT			
RT	AREA	ON-COL(ppbv)	FINAL(ppbv)	QUAL	LIBRARY	LIB ENTRY	CPND #
Butane, 2-methyl-				CAS #: 78-78-4			
4.514	23481969	11.9522855	7470	86	NBS75K.1	62518	31
Pentane, 3-methyl-				CAS #: 96-14-0			
5.767	18461128	9.39668535	5870	91	NBS75K.1	62867	31
Cyclopentane, methyl-				CAS #: 96-37-7			
6.592	18736922	9.53706385	5960	90	NBS75K.1	594	31
Pentane, 2,2,4-trimethyl-				CAS #: 540-84-1			
7.665	51549811	26.2387733	16400	78	NBS75K.1	64221	31
Heptane				CAS #: 142-82-5			
7.839	13492588	6.86770624	4290	80	NBS75K.1	63439	31

Data File: \\192.168.10.12\chem\10air0.i\021307.b\04425tic.D
Report Date: 27-Feb-2007 15:00

		CONCENTRATIONS			QUANT		
RT	AREA	ON-COL(ppbv)	FINAL(ppbv)	QUAL	LIBRARY	LIB ENTRY	CPND #
Cyclohexane, methyl-				CAS #: 108-87-2			
8.540	23148819	11.7827125	7360	95	NBS75K.l	63236	31
Hexane, 2,2,5-trimethyl-				CAS #: 3522-94-9			
9.675	7743978	22.1327317	13800	72	NBS75K.l	65126	46
Unknown				CAS #:			
10.035	7492644	21.4144056	13400	0		0	46
Unknown				CAS #:			
10.401	2750071	7.85985960	4910	0		0	46



Data File: \\192.168.10.12\chem\10air0.i\021307.b\04425tic.D
Injection Date: 14-FEB-2007 02:10
Instrument: 10air0.i
Client Sample ID:

HP ChemStation MS 04425tic.D: 3.485 to 19.823 Min

10420007

Data File: \\192.168.10.12\chem\10air0.i\021207.b\04315tic.D
Report Date: 27-Feb-2007 14:55

Pace Analytical Services

TENTATIVELY IDENTIFIED COMPOUNDS

Client Name:
Lab Smp Id: 1046203003
Operator : HRG
Sample Location:
Sample Matrix: AIR
Analysis Type: VOA
Inj Date: 12-FEB-2007 19:02

Client SDG: 102205

Sample Date:
Sample Point:
Date Received:
Level: LOW

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/KG) ppbv

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	594-82-1	Butane, 2,2,3,3-tetramethyl	7.653	30.9	NJ
2.	108-87-2	Cyclohexane, methyl-	8.534	11.0	NJ
3.	565-75-3	Pentane, 2,3,4-trimethyl-	9.011	12.8	NJ
4.	560-21-4	Pentane, 2,3,3-trimethyl-	9.179	16.3	NJ
5.	79-92-5	Camphene	13.881	20.1	NJ
6.		Unknown	14.123	9.22	J
7.	124-18-5	Decane	14.538	11.1	NJ
8.	138-86-3	Limonene	15.419	30.8	NJ
9.		Unknown	15.878	21.4	J
10.		Unknown	16.883	13.9	J

Data File: \\192.168.10.12\chem\10air0.i\021207.b\04315tic.D
Report Date: 27-Feb-2007 14:55

Pace Analytical Services

TO15 Analysis (UNIX)

Data file : \\192.168.10.12\chem\10air0.i\021207.b\04315tic.D
Lab Smp Id: 1046203003
Inj Date : 12-FEB-2007 19:02
Operator : HRG Inst ID: 10air0.i
Smp Info :
Misc Info : 5173
Comment : Volatile Organic COMPOUNDS in Air
Method : \\192.168.10.12\chem\10air0.i\021207.b\LOWTO15_038.m
Meth Date : 27-Feb-2007 10:50 lweinkauf Quant Type: ISTD
Cal Date : 07-FEB-2007 16:44 Cal File: 03809.D
Als bottle: 15
Dil Factor: 1.51000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14
Processing Host: AIRGROUP

Concentration Formula: Amt * DF * Uf * CpndVariable

Name	Value	Description
DF	1.510	Dilution Factor
Uf	1.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

ISTD	RT	AREA	AMOUNT
* 31 1,4-Difluorobenzene	7.454	2990427	10.000
* 46 Chlorobenzene - d5	11.331	2571003	10.000

	CONCENTRATIONS				QUANT		
RT	AREA	ON-COL(ppbv)	FINAL(ppbv)	QUAL	LIBRARY	LIB ENTRY	CPND #
Butane, 2,2,3,3-tetramethyl-				CAS #: 594-82-1			
7.653	6114374	20.4464857	30.9	72	NBS75K.1	64215	31
Cyclohexane, methyl-				CAS #: 108-87-2			
8.534	2187386	7.31462632	11.0	94	NBS75K.1	1326	31
Pentane, 2,3,4-trimethyl-				CAS #: 565-75-3			
9.011	2545852	8.51333757	12.8	90	NBS75K.1	64228	31
Pentane, 2,3,3-trimethyl-				CAS #: 560-21-4			
9.179	3232233	10.8085988	16.3	83	NBS75K.1	3088	31
Camphene				CAS #: 79-92-5			
13.881	3430197	13.3418614	20.1	97	NBS75K.1	65767	46

Data File: \\192.168.10.12\chem\10air0.i\021207.b\04315tic.D
Report Date: 27-Feb-2007 14:55

		CONCENTRATIONS			QUANT		
RT	AREA	ON-COL(ppbv)	FINAL(ppbv)	QUAL	LIBRARY	LIB ENTRY	CPND #
Unknown				CAS #:			
14.123	1570202	6.10735073	9.22	0		0	46
Decane				CAS #:	124-18-5		
14.538	1896598	7.37687724	11.1	95	NBS75K.1	66204	46
Limonene				CAS #:	138-86-3		
15.419	5248658	20.4148213	30.8	91	NBS75K.1	6647	46
Unknown				CAS #:			
15.878	3652300	14.2057355	21.4	0		0	46
Unknown				CAS #:			
16.883	2360820	9.18248501	13.9	0		0	46

Data File: \\192.168.10.12\chem\10air0.i\021307.b\04409tic.D
Report Date: 27-Feb-2007 14:59

Pace Analytical Services

TO15 Analysis (UNIX)

Data file : \\192.168.10.12\chem\10air0.i\021307.b\04409tic.D
Lab Smp Id: 1046203004
Inj Date : 13-FEB-2007 17:49
Operator : HRG Inst ID: 10air0.i
Smp Info :
Misc Info : 5198
Comment : Volatile Organic COMPOUNDS in Air
Method : \\192.168.10.12\chem\10air0.i\021307.b\LOWTO15_038.m
Meth Date : 27-Feb-2007 11:06 lweinkauf Quant Type: ISTD
Cal Date : 07-FEB-2007 16:44 Cal File: 03809.D
Als bottle: 9
Dil Factor: 6.50000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14
Processing Host: AIRGROUP

Concentration Formula: Amt * DF * Uf * CpndVariable

Name	Value	Description
DF	6.500	Dilution Factor
Uf	1.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

ISTD	RT	AREA	AMOUNT
* 31 1,4-Difluorobenzene	7.448	2064168	10.000
* 46 Chlorobenzene - d5	11.331	2304275	10.000

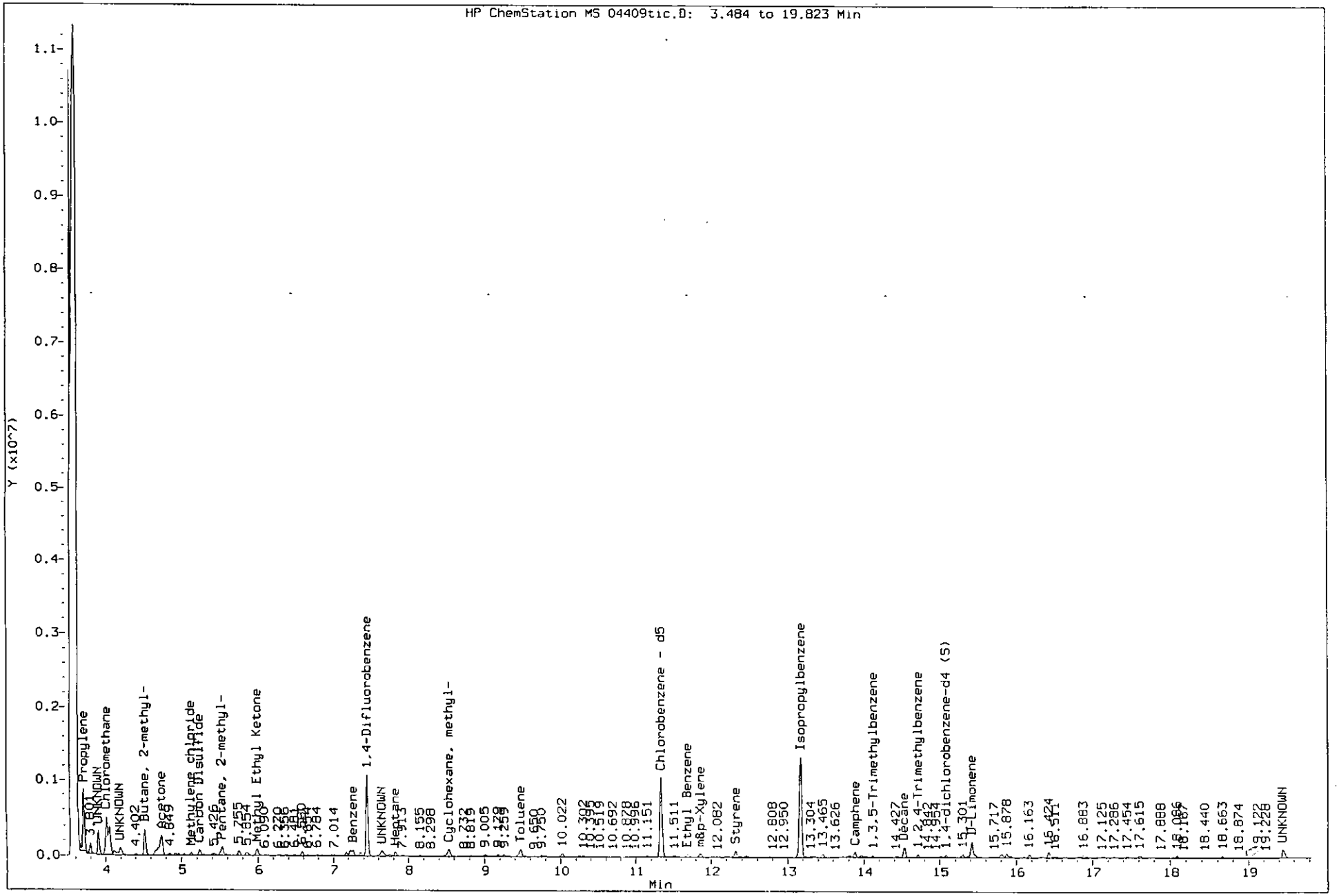
		CONCENTRATIONS			QUANT		
RT	AREA	ON-COL(ppbv)	FINAL(ppbv)	QUAL	LIBRARY	LIB ENTRY	CPND #
Unknown				CAS #:			
3.906	491452	2.38087397	15.5	0		0	31
Unknown				CAS #:			
4.198	395973	1.91831724	12.5	0		0	31
Butane, 2-methyl-				CAS #:	78-78-4		
4.527	656798	3.18190285	20.7	86	NBS75K.1	62517	31
Pentane, 2-methyl-				CAS #:	107-83-5		
5.531	338714	1.64092148	10.7	87	NBS75K.1	733	31
Unknown				CAS #:			
7.647	283504	1.37345187	8.93	0		0	31

Data File: \\192.168.10.12\chem\10air0.i\021307.b\04409tic.D
Report Date: 27-Feb-2007 14:59

		CONCENTRATIONS			QUANT		
RT	AREA	ON-COL(ppbv)	FINAL(ppbv)	QUAL	LIBRARY	LIB ENTRY	CPND #
Cyclohexane, methyl-				CAS #: 108-87-2			
8.527	275908	1.33665379	8.69	95	NBS75K.l	1326	31
Camphene				CAS #: 79-92-5			
13.887	413345	1.79381661	11.6	97	NBS75K.l	65768	46
Decane				CAS #: 124-18-5			
14.532	288482	1.25194131	8.14	91	NBS75K.l	8077	46
D-Limonene				CAS #: 5989-27-5			
15.413	590544	2.56281761	16.6	94	NBS75K.l	65790	46
Unknown				CAS #:			
19.445	314764	1.36600013	8.88	0		0	46

Data File: \\192.168.10.12\chem\10air0.i\021307.b\04409tic.D
Injection Date: 13-FEB-2007 17:49
Instrument: 10air0.i
Client Sample ID:

10462030004



Data File: \\192.168.10.12\chem\10air0.i\021207.b\04313tic.D
Report Date: 27-Feb-2007 14:53

Pace Analytical Services

TENTATIVELY IDENTIFIED COMPOUNDS

Client Name:
Lab Smp Id: 1046203005
Operator : HRG
Sample Location:
Sample Matrix: AIR
Analysis Type: VOA
Inj Date: 12-FEB-2007 17:59

Client SDG: 102205

Sample Date:
Sample Point:
Date Received:
Level: LOW

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/KG) ppbv

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	91-57-6	Naphthalene, 2-methyl-	10.972	1.89	NJ
2.	3891-98-3	Dodecane, 2,6,10-trimethyl-	13.689	3.33	NJ
3.	629-59-4	Tetradecane	15.004	2.78	NJ
4.	629-92-5	Nonadecane	17.324	1.27	NJ
5.	556-67-2	Cyclotetrasiloxane, octamet	18.626	1.73	NJ

Data File: \\192.168.10.12\chem\10air0.i\021207.b\04313tic.D
Report Date: 27-Feb-2007 14:53

Pace Analytical Services

TO15 Analysis (UNIX)

Data file : \\192.168.10.12\chem\10air0.i\021207.b\04313tic.D
Lab Smp Id: 1046203005
Inj Date : 12-FEB-2007 17:59
Operator : HRG Inst ID: 10air0.i
Smp Info :
Misc Info : 5173
Comment : Volatile Organic COMPOUNDS in Air
Method : \\192.168.10.12\chem\10air0.i\021207.b\LOWTO15_038.m
Meth Date : 27-Feb-2007 10:50 lweinkauf Quant Type: ISTD
Cal Date : 07-FEB-2007 16:44 Cal File: 03809.D
Als bottle: 13
Dil Factor: 1.25000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14
Processing Host: AIRGROUP

Concentration Formula: Amt * DF * Uf * CpndVariable

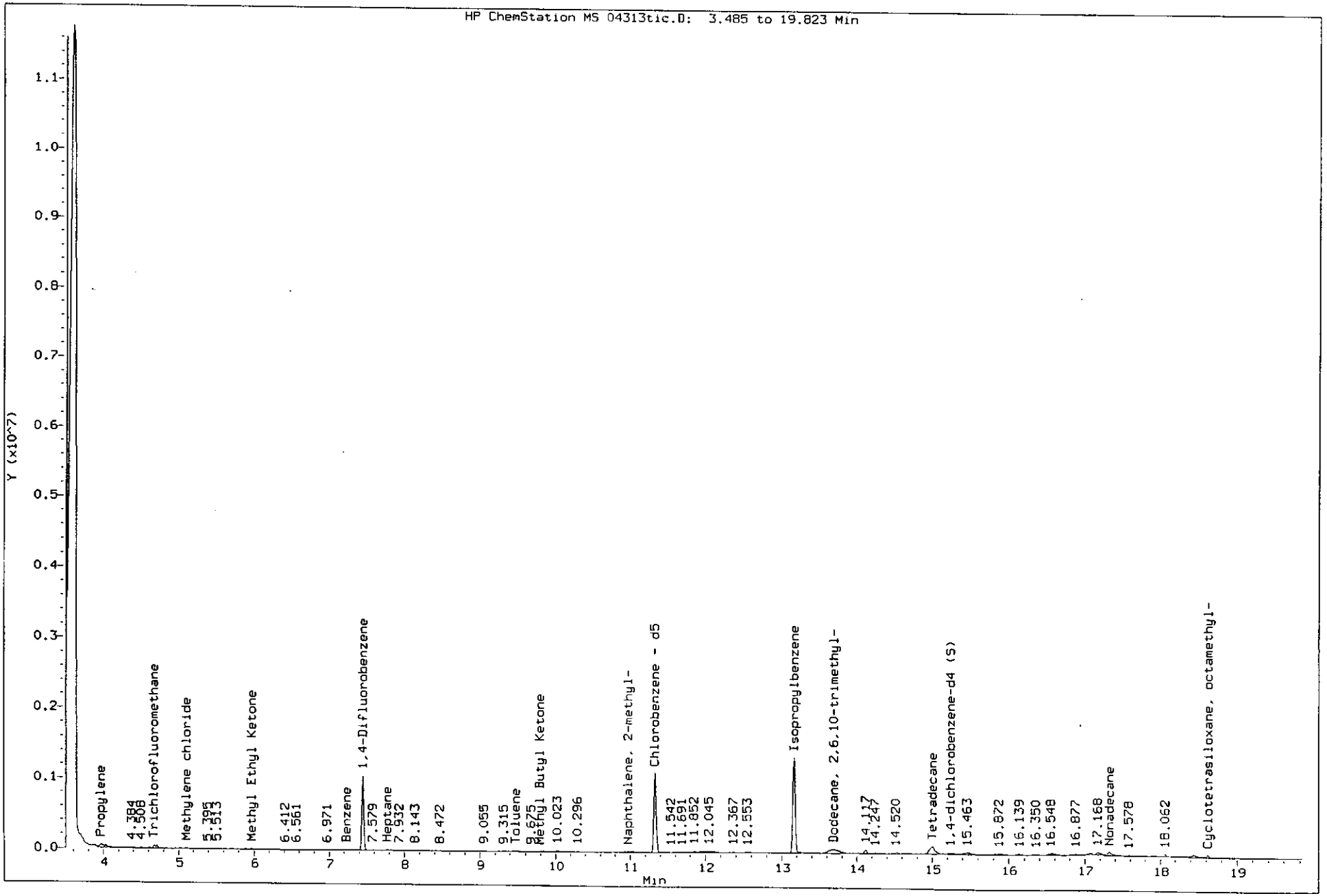
Name	Value	Description
DF	1.250	Dilution Factor
Uf	1.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

ISTD	RT	AREA	AMOUNT
* 46 Chlorobenzene - d5	11.331	2487597	10.000

		CONCENTRATIONS			QUANT		
RT	AREA	ON-COL(ppbv)	FINAL(ppbv)	QUAL	LIBRARY	LIB ENTRY	CPND #
Naphthalene, 2-methyl-				CAS #: 91-57-6			
10.972	376920	1.51519503	1.89	80	NBS75K.1	8115	46
Dodecane, 2,6,10-trimethyl-				CAS #: 3891-98-3			
13.689	662342	2.66257532	3.33	87	NBS75K.1	70270	46
Tetradecane				CAS #: 629-59-4			
15.004	554054	2.22726496	2.78	96	NBS75K.1	69659	46
Nonadecane				CAS #: 629-92-5			
17.324	253643	1.01963230	1.27	74	NBS75K.1	37469	46
Cyclotetrasiloxane, octamethyl-				CAS #: 556-67-2			
18.626	344298	1.38405656	1.73	78	NBS75K.1	41966	46

Data File: \\192.168.10.12\chem\10air0.i\021207.b\04313tic.D
Injection Date: 12-FEB-2007 17:59
Instrument: 10air0.i
Client Sample ID:

10416203005



CHAIN OF CUSTODY RECORD

№ 38720 046203

RECORD NUMBER 38720 THROUGH 38720

Contact Person Tim Krapf
Phone No. 763 315 6306 Office Mpls
Project No 2006068.39 PO No.
Project Name Alex Exhaust

Special Handling Request
- ☐ Rush
- ☐ Verbal
- ☐ Other

Laboratory Pace Analytical
Contact Person
Phone No. 612 607 1700
Results Due Standard

Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation Y	Preservation N	Field Data PID/FID Ambient	Field Data PID/FID Sample	Field Data PH	Field Data Special Cond.	Analysis Request	Comments on Sample (Include Major Contaminants)
VP-1	2/8	1415	X		1	air		X					TO-15	001
VP-2 1430	2/8	~~1545~~	X		1	↓		X					↓	002
VP-3	2/8	1500	X		1			X						003
VP-4	2/8	1530	X		1			X						004
F.B.	2/8	1545	X		1	↓		X					↓	005

Collected by: Matthew Beekman	Date See	Time Above	Delivery by: Shawn Jones	Date 2/9/07	Time 1121
Received by:	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received for lab by: B. Fleck	Date 2/9/07	Time 13:00	Relinquished by:	Date	Time

Laboratory Comments Only: Seals Intact Upon Receipt? ☐ Yes ☐ No ☐ N/A

Final Disposition:	Comments (Weather Conditions, Precautions, Hazards):

Distribution: Original and Green - Laboratory Yellow - As needed Pink - Transporter Goldenrod - STS Project File
Instructions to Laboratory: Forward completed original to STS with analytical results. Retain green copy.

6/99cp10k

STS Consultants Ltd.
Consulting Engineers

Sample Condition Upon Receipt

Pace Analytical

Client Name: STS Project # 1046203

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace Other _____

Tracking #: _____

Optional: Proj Due Date: Proj Name:

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☒ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other _____

Thermometer Used 230194010 Type of Ice: Wet Blue (None) ☐ Samples on ice, cooling process has begun

Cooler Temperature Amb Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: BF 2/9/07

Comments:

Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☒No ☐N/A	7.
Sufficient Volume:	☒Yes ☐No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No ☐N/A	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
Containers Intact:	☒Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: AIR CAN		
All containers needing preservation have been checked.	☐Yes ☐No ☒N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☒N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☒No	Initial when completed / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☒N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☒No ☐N/A	15.
Trip Blank Present:	☐Yes ☒No ☐N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☐N/A	
Pace Trip Blank Lot # (if purchased): _____		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: DHP **Date:** 2/9/07

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

APPENDIX C

Methodologies

disclaimer

STS Standard Methodologies and Procedures

STS conducts environmental investigation and review following Minnesota Pollution Control Agency (MPCA) Guidance Documents and generally-accepted professional practices. The following sections provide a summary of standard STS procedures used at Leaking Underground Storage Tank (LUST) sites in Minnesota.

1.0 Site Reconnaissance and Background Review

Where appropriate, STS conducts literature review and interviews with knowledgeable individuals to develop a project background, and/or complete a reconnaissance of a project setting. These activities are conducted in general conformance with the acceptable procedures for site reconnaissance, interviewing, and acquisition of readily-available public documents, and the on-site activities for these tasks that are described in MPCA Fact Sheet 4.02.

These reviews include the historic occupant/land uses associated with properties and their surroundings, and may be conducted to observe for the presence of groundwater wells where indications of presumed UST fill pipes, vents, hatches, piping, dispenser islands, or other site-specific appurtenances indicative of a property history with potential for USTs to be present.

Walking well surveys conducted by STS rely on visual observations made during a walking reconnaissance of the indicated search radius. These reviews are limited to the observations possible from public lands, rights-of-way, and transportation corridors (including sidewalks) unless property owner permission is provided to STS for closer inspection.

Reviews of County Well Index (CWI) records conducted by STS includes the review of well logs found in an indicated search area (township, range, section) in an electronic copy of the CWI database, and may include a visit to the University of Minnesota, Minnesota Geological Survey (MGS) facility for direct review of records on file at that location. These records are often provided with a key map showing the specific locations of wells based on literature review and on-site confirmation conducted by MGS. STS also contacts a local water planning official to gain information on current and projected groundwater wells in the area. This official is often the engineer for the municipality, and/or the Public Works Director. In rural areas, the County Planning Office and/or Engineering Office may have an environmental component involved in groundwater planning.

Interviews conducted by STS with knowledgeable individuals can include telephone and face-to-face discussions with current/past property owners, neighbors, representatives of the city/county where the site is located, or other individuals with specific knowledge about a site. These interviews are relatively informal in nature, and are documented as such in the STS report. Accounts of site history that can be cross-corroborated between sources are given greater credibility when used by STS to interpret site findings than individual accounts that are non-specific in nature. In the event non-specific accounts of past environmental incidents or property use are received by STS, additional sources of information are sought to determine if the account can be confirmed.

Sites with groundwater impacts require evaluation of municipal water well risk, if the impacts are found in a Source Water Protection (SWP) area or Drinking Water Source Management Area (DWSMA). To determine this, STS queries the Minnesota Dept. of Health (MDH) website. Specific information concerning the SWP / DWSMA i(if any) involved is gathered by contacting the various officials mentioned above, and/or MDH area hydrologists, etc. listed on the MDH website.

2.0 Site Investigation

Site investigations conducted by STS typically include soil borings using the hollow stem auger method to advance soil borings, and the use of rotary drilling to extend these borings into bedrock where required. The placement of borings by STS is conducted in conformance with MPCA Fact Sheet 4.01 procedures. STS extends soil borings in conformance with ASTM D-4700, typical site investigations rely on the use of a motorized drill rig equipped with hollow-stem augers. Samples are retrieved using the split-spoon sampler in conformance with ASTM D-1586. A typical sample interval is 2.5 feet between intervals. A 2 foot split-spoon sampler is used to retrieve a representative soil sample from this interval. Soils are classified in conformance with ASTM D-2487, the visual manual procedure and described in general conformance with the Unified Soil Classification System.

Other methods are used by STS for soil sampling, notably direct-push "Geoprobe" sampling equipment advanced using the "Hurricane" sampling vehicle that has been push and rotary drilling capabilities. The samplers used are consistent with ASTM D-3550 methodology.

Field screening of soil samples is conducted in conformance with the polyethylene bag head space screening method described in MPCA Fact Sheet 3.22. For this purpose, STS uses a photoionization detector (PID) equipped with a 10.6 eV lamp and calibrated using isobutylene as a benzene surrogate. In the event a different screening tool (Flame Ionization Detector, Methane Meter, or different PID lamp excitation level) is used, this is noted on the boring log. Boring logs prepared by STS typically receive peer review of soil classification by a Professional Geologist, the typed boring logs show the encountered

strata with the PID meter readings, and indicate the background PID meter deflections observed in ambient air. Alternate forms of boring logs are used when downhole instrumentation is involved, such as the use of Laser Induced Fluorescence or Membrane Interface Probe technology.

Soil samples from boreholes are prepared for laboratory analysis in conformance with MPCA Fact Sheet 3.22. Soil borings that encounter groundwater often require groundwater sample collection from temporary wells or permanent monitoring wells. This is conducted in conformance with MPCA Fact Sheet 3.23. In the event permanent monitoring wells are required, STS installs these in conformance with Minnesota Department of Health (MDH) well codes.

2.1 Vapor Intrusion Investigation

STS follows the MPCA guidance for Vapor Risk Evaluation and Vapor Intrusion Assessment (Guidance Document 4.01a) for vapor sampling during investigation, and as a supplement to investigations that were completed without evaluation of this exposure pathway. This may include push probes for soil gas sampling using the Post-Run Tubing (PRT) sampler, and/or installation of semi permanent soil gas monitoring points.

Sub-slab samples are collected by first drilling a small (1/2 inch to 1-1/4 inch dia.) hole, and setting a temporary sample line in the hole. This line is equipped with intake protection to avoid soil entry, and a surface seal to prevent ambient air from flowing into the sub-slab air being sampled. STS also fabricates sample ports from brass and polyethylene that are grouted to a ¾ inch hole, which allows for repeated sub-slab samples from the same location in a manner that minimizes disruption to the building owner.

Whenever sample points such as those described above are sampled, STS purges them prior to sample collection. The purge device used may vary with application, but is generally a multi-gas detector (e.g. Landtech GEM 500) that has an integral, calibrated flow sample pump. This instrument has a steady-flow pump that allows for predictable sample line purging; the unit is allowed to run for the time required to purge the sample line. The instrument sensor readings are observed, and the sample line purging is considered to be confirmed when the readings appear to stabilize. The multi-gas monitor collects measurements of subsurface gas constituents such as oxygen, carbon dioxide, and methane which are useful in interpreting sample results and evaluating subsurface air flux.

STS efforts for Quality Assurance (QA) are defined in the Work Plan on a site-specific basis, and may include use of a tracer compound. An example of tracer use is placement of sorbent cloths containing isopropanol around a vapor sample probe. The presence of elevated isopropanol concentrations in collected vapor samples would indicate that atmospheric air followed a "short circuit" path to the vapor

collection point, compromising the vapor sample data. Another QA strategy is to review the instrument readings for oxygen and carbon dioxide, and compare the gas ratios to atmospheric norms. Subsurface vapor tends to be oxygen depleted and richer in carbon dioxide, unless subsurface air flux is sufficient to bring fresh air into the subsurface environment. Such increased air flux often occurs due to human alterations such as placement of granular fill and/or structures that penetrate the soil. The presence of such influencing factors, when observed, is taken into account when reviewing the results of vapor monitoring.

Sample collection is by 'Summa' canister, following manufacturer and Laboratory prescribed procedures. Quality Assurance efforts include the line purging and vapor screening tools described above, collection of Quality Assurance samples such as a sample line method blank, Ambient Air sample collection, and documentation of sample location conditions such as building interior observations and listing of readily observed materials in the area that could bias sample results. The latter conditions are documented on the form, Indoor Air Quality Building Survey prepared by Minnesota Department of Health.

Analytical results are interpreted by comparing the contaminants released at the site, with the compounds present in the vapor samples. While the presence of air contaminants not released from the site may be a concern, identification of these additional pollutants is not an objective of focused investigatory work. Compounds in air samples that were released from the site are reviewed further. The results of subsurface, sub-slab, and interior air sample analysis are evaluated to determine if a contaminant *migration pathway* appears to be completed. A completed exposure pathway would be inferred if (1) all sample locations had the same compound present, and it was a contaminant found in the release, and (2) the ratios of these compounds is consistent, with variability attributable to application of Henry's Law and/or natural attenuation processes, where appropriate.

Additional efforts for data reduction may be appropriate in specific cases. When applied to a site, STS will document the evaluation method and references that apply.

3.0 Well Sampling

The following methodologies pertain to groundwater samples collected from wells.

3.1 New Wells

New wells installed by STS are developed prior to sampling in order to enhance the connection between the well and the aquifer, and allow for collection of groundwater levels and laboratory samples that represent groundwater conditions to the extent practicable.

Well development can include jetting/flushing of the well screen using clean water from a tested source soon after well installation. The jetted water is then removed from the well by purging with a submersible pump and the volumes removed noted on the STS Well Development Summary. The well screen is then surged to loosen fines in the well annulus, followed by purging of the well to remove fines with the purge water. This process is repeated as necessary to clear sediment from the well; then the well is purged at a sustainable rate for collection of well stabilization parameters as described below.

3.2 Monitoring Well Sampling

Monitoring wells are sampled by STS by purging the well at a sustainable rate (if the well yields water at a pumpable flow rate) and by collecting readings of "well stabilization" parameters during purging at intervals of approximately one standing volume. The standing volume is determined by calculating the volume of water found in the well screen/casing and varies with well diameter.

Well stabilization is considered to occur when the following parameters match within the indicated tolerances:

- pH, ±0.1 unit
- temperature, ±0.5°C
- specific conductivity, ±5% of instrument range
- redox potential (if applicable), ±20 mV
- observed color and turbidity, consistent throughout the last three well volumes

In some cases, monitoring wells yield too slowly to allow continued purging. If this is the case, STS will purge the well dry once and then collect the stabilization reading set. Well recovery is monitored by STS, and the well may be bailed dry a second time if it recovers approximately 50% in two hours. Additional sets of stabilization readings will be taken for wells that can be bailed repeatedly and recover groundwater each time. Wells that recover too slowly to allow repeated or continued purging will be sampled within approximately three hours of being purged dry, if sufficient water is available for sample bottle filling. Departures from these procedures will be noted on the STS Sampling Information Form.

Sample collection is accomplished using a sampler bailer, or through use of a dedicated length of sample tubing connected to a peristaltic pump. Collection of water for field tests are typically run through the submersible pump's purge line prior to laboratory sample collection. A description of the sample collection device used is documented on the STS Sampling Information Form.

3.3 Water Supply Well Sampling

STS samples water wells by collecting the available information on the well depth, construction, and water level if readily available. The water wells are allowed to run, and purge water is drawn from a tap as close as practicable to the pump effluent. Often, this sample tap is equipped with a hose or other purge line to direct volumes of water away from the well location. Wells that are infrequently used involve collection of the stabilization readings described above to determine when groundwater geochemistry in the well has stabilized sufficiently for sample collection. Wells that are in constant use, or have been run frequently or an extended period prior to sample collection by STS may involve a "grab" sample from the sampling tap, as the continued period of operation would be assumed to stabilize well geochemistry prior to this.

Water samples are collected from these wells by removing the purge hose if appropriate, and slowing the rate of water flow through the sampling tap to a steady trickle, without observable air bubbles or other turbulence. Water is allowed to run directly into sample containers prepared by the analytical laboratory and handled appropriately. Water sampling for bacteriological testing is a specialized technique, and includes preparation of the sample location (e.g. flame sterilization for the tap) prior to sample collection. This form of water sampling requires more careful handling of all sampling materials, and provisions for rapid shipment of samples to the testing facility.

4.0 Equipment Decontamination

To minimize the amount of equipment requiring decontamination, STS relies on the use of dedicated, disposable sampling equipment where practicable. Such disposable equipment includes tubing, bailers and bailer retrieval cord, and in-well samplers. Items not available as disposable items are decontaminated between uses/wells. STS seeks to sample "clean" areas first, and work toward more contaminated locations to minimize the effects of contaminant carry-over.

The topic of equipment decontamination is extensive and beyond the scope of this report. STS generally follows "EPA Protocol B" for decontamination of equipment, using a laboratory grade detergent followed by three deionized water rinses. Where available, STS uses a running water rinse for the third rinse to maximize the efficiency of decontamination and remove traces of contaminants that may remain in standing rinse water.

Field blanks are often collected from equipment rinsate water generated during the final rinse of equipment such as bailers, sample tubing, etc. The same deionized water used for equipment rinsing is used for preparation of the field blank to allow for quality assurance testing on the field blank collected.

When disposable bailers are used, a field blank is prepared by pouring deionized water into the bailer prior to use in a well, and then pouring the bailer's contents into the sample containers.

5.0 Aquifer Parameters

Certain aquifer parameters have to be established for evaluation of groundwater receptor risks. The following aquifer parameters were estimated using generally-accepted techniques for use in the risk estimation that applied to the site.

5.1 Horizontal Gradient

The horizontal gradient (dh/dl) was estimated by taking the difference in head (water elevation) between an up-gradient well and a similarly-constructed down-gradient well, to determine the "dh" value. The linear distance between these points was measured graphically perpendicular to flow lines (from the site map) and/or from actual field measurements. The dh value divided by the length between data points provides the horizontal gradient (unitless factor) for use in groundwater flow calculations.

5.2 Vertical Gradient

The vertical gradient (dh/dv) was estimated by taking the difference in head between wells screened in different portions of an aquifer, or separate aquifers to provide the "dh" value. This value divided by the "dv" value provides an estimated vertical gradient (unitless factor). STS assigns the descriptions "upward" or "downward" to describe the resulting gradient.

The dv value was calculated by taking the elevation of the center of the saturated portion of the shallower well, and subtracting the elevation center of the deeper well's sand pack. Therefore, the shallower wells bottom would be the base of borehole containing sand pack where the screen section is located. The top of well for the deeper well would include the upper elevation of the sand pack found above the well screen, and below the well seal/grout in the annulus.

5.3 Pore Velocity

The pore velocity in the impacted aquifer is presented as an estimate, and was based on the estimated values described according to the following formula:

$$\text{Pore velocity} = k \times \frac{dh/dl}{\text{porosity}}$$

For this calculation, aquifer material porosity was estimated per Fetter, in the reference cited in the following section.

5.4 Determination of Hydraulic Conductivity (k)

STS evaluated the soil texture found in the aquifer materials (screened portion of monitoring wells, for example) for determining of k as follows:

5.4.1 Estimated by Soil Texture

The predominant soil textures encountered in the impacted aquifer were classified by STS and compared with the soil types described by C.W. Fetter in Applied Hydrogeology, 2nd Edition dated 1988 (page 80) and in literature cited by Mr. Fetter. The literature provides values of k in cm/sec which are converted to other units (e.g. ft/day) using conversion formulas as appropriate.

5.4.2 Estimated by Hazen Approximation

MPCA fact sheets refer to use of the "Hazen Approximation" for determination of k. The Hazen Approximation was derived from empirical tests conducted on manufactured sand beds of less than maximum density. According to Fetter, the approximation becomes less accurate with decreasing *effective grain size*. The Hazen method is valid for k values greater than 10^{-3} cm/sec, and with soils that have <5% of fines passing the No. 200 sieve. STS performs grain size analysis on soil samples collected from aquifer materials, in conformance with ASTM D-422.

The *effective grain size* (D_{10}) derived from the sieve analysis is used to estimate k (Hazen method) as follows:

$$k = C \times (D_{10})^2$$

Where k is hydraulic conductivity in centimeters/sec, C is a constant given by definition in the literature, and D_{10} is the effective grain size in centimeters. Fetter provides values for C based on textural soil classifications. Where appreciable difference in C values exist for a textural class, the higher and lower values are used to calculate a range of k values.

5.5 Natural Attenuation

STS follows MPCA guidance for evaluation of natural attenuation processes in groundwater. The Conceptual Model used in this evaluation includes the assumption that contaminant concentrations can diminish as the result of advection (dilution and aquifer mixing), diffusion (as contaminant mass is lost to the unsaturated zone by off-gassing of vapor), and bio-degradation. Microbial populations are facultative; microbes suited to a given set of geochemical conditions will become numerous if given time, when faced with an energy source (such as dissolved hydrocarbons), and a metabolism-inducing agent. Bio-attenuation suitability evaluation is estimated through collection of field measurements for this inducing agent (usually an electron acceptor such as dissolved oxygen, or alternative such as nitrate, iron, sulfate, etc.) either directly by measuring oxygen or an ion in solution, or indirectly by measuring oxidation-reduction potential or other geochemical parameters.

The above-described approach is used to develop an *inference* that natural attenuation processes involving microbial activity can occur. Other inferences can include the measurement of respirometry (oxygen, carbon dioxide, methane) parameters to find evidence that metabolic activity is changing the composition of subsurface gases. Other techniques may sample subsurface vapor to determine if the ratio of parent compound and degradation products changes over time, or across distance traveled in the groundwater.

Direct observation of natural attenuation can be made, by comparing analytical results collected over time from the same locations. If multiple (a rule of thumb is six) consecutive sampling events show a generally declining trend in contaminant concentrations, and this is not due to the plume moving out of the monitored area, a conclusion is made that natural attenuation is occurring.

6.0 Risk Estimation

STS conducts risk estimation on LUST sites in conformance with MPCA Fact Sheet 4.02. The risk estimations rely on probable risks associated with impact severity and extent, and proximity to identified receptors. Receptors of contamination may be human or ecological beings. The pathways of exposure include direct bodily contact with contamination, ingestion of impacted soil and/or groundwater, and inhalation of vapors. Low-risk sites include those with minor impacts, impacts found only in a relatively small area, and sites where impacts are separated from receptors by a considerable distance. Risk-elevating factors include severe impacts, impacts that are extensive or are expanding in scope, and the presence of impacts in/near groundwater receptors in the vicinity.

In the event that elevated receptor risks are evident, additional effort is expended in determining whether impacts to receptors have occurred. In the event receptors are impacted by a release, corrective action is required in conformance with MPCA policies. When site conditions are such that receptor impacts have been addressed, a revised estimation of risk can be performed. Remedial actions (including natural attenuation) can act on remaining contamination such that either the extent or magnitude of impacts (or both) are diminished sufficiently to lower the estimated risks associated with a release site. In some cases, additional risk evaluation effort relies on established toxicological procedures to evaluate risks associated with site conditions. In such cases, a detailed description of methodology will be found in the STS text. Other factors that can reduce risk involve breaking an exposure pathway. Examples of this are: covering contaminated soil so that it cannot come into contact with receptors and/or will not leach to groundwater, providing an alternative source of water to receptors at-risk from contaminated groundwater, and preventing exposure to inhalable contaminants by changing the level or duration of exposure.

APPENDIX D

Geologic Logs of Soil Borings, STS Sampling Information Forms, Soil Vapor Probe Sampling Summary Form

SAMPLING INFORMATION FORM

STS Consultants, Ltd.
10900 - 73rd Avenue North, Suite 150
Maple Grove, MN 55369

Sampler's Name Mathew J. Beckman
Unusual Conditions
Location Alexandria, MN
Sample ID number TW-1 Date sampled 2/8/2007
Describe sampling point Temporary well converted from B-1
Unique Well Number

Weather Overcast/ -10's -- 0's
Project Alex Exhaust
STS project number: 200606839
Time 1010 am pm X

MONITORING WELL INFORMATION: (If Applicable)

Monitoring point elevation = 100.70 TOC of Casing Datum = Assumed local Water elevation = 79.70
Well depth (prior to sampling) = 25.00 feet below monitoring point (mp)
Depth to water (below mp) = 21.00 feet Date 2/08/07 Time 1000 am X pm
Well diameter 2 inches Water level above screen? No Yes feet
Volume of water in well = ~0.6 gallons

PURGING INFORMATION:

Purging method: Bailer X Submersible pump Tap Other
Tubing type: Teflon Black poly Other
Pump intake or bailer set at Waterline feet below monitoring point (mp).
Discharge rate (if applicable) <1 gal/min gpm x 0.1336806 = cfm
At least well volumes evacuated before sampling, totaling ~3 gallons.

SAMPLING INFORMATION

Sampling method: Bailer X Tap Other
Tubing type (if applicable): Teflon Other
Bailer was: Disposable Laboratory cleaned Field cleaned Other
Sample collected from Waterline feet below monitoring point. (mp)
Sample collection discharge rate (if applicable): = <1 L/min gpm
Sample appearance Cloudy/sediment Odor None observed
Note any sampling observations if necessary

Chemical Analysis VOC, GRO and DRO
Equipment Calibration pH = 7.4,10.7 Conductivity = 700 µs/cm @ 0800

FIELD STABILIZATION

Military time	pH	Redox Pot.	Temperature corrected conductance [ms/cm]	Temperature [°C]	Water Level (nearest 0.01 ft.)	Cumulative volume of water removed [gal.]
1020	7.4	-23	3.59	5.1		~1
1025	7.4	-15	3.51	5.0		~2
1030	7.4	-5	3.49	4.9		~3

SAMPLING INFORMATION FORM

STS Consultants, Ltd.
10900 - 73rd Avenue North, Suite 150
Maple Grove, MN 55369

Sampler's Name Mathew J. Beckman
Unusual Conditions
Location Alexandria, MN
Sample ID number TW-2 Date sampled 2/7/2007
Describe sampling point Temporary well converted from B-2
Unique Well Number

Weather Overcast/ -10's – 0's
Project Alex Exhaust
STS project number: 200606839
Time 1430 am pm X

MONITORING WELL INFORMATION: (If Applicable)

Monitoring point elevation = 100.67 Datum = Assumed local Water elevation = 83.12
Well depth (prior to sampling) = 25.00 feet below monitoring point (mp)
Depth to water (below mp) = 17.55 feet Date 2/7/07 Time 1340 am pm X
Well diameter 2 inches Water level above screen? No Yes feet
Volume of water in well = ~0.6 gallons

PURGING INFORMATION:

Purging method: Bailer Submersible pump Tap Other X - Peristaltic pump
Tubing type: Teflon Black poly Other
Pump intake or bailer set at Waterline feet below monitoring point (mp).
Discharge rate (if applicable) <1 gal/min gpm x 0.1336806 = cfm
At least 5 well volumes evacuated before sampling, totaling ~3 gallons.

SAMPLING INFORMATION

Sampling method: Bailer Tap Other X - Peristaltic pump
Tubing type (if applicable): Teflon Other
Bailer was: Disposable Laboratory cleaned Field cleaned Other
Sample collected from Waterline feet below monitoring point. (mp)
Sample collection discharge rate (if applicable): = <1 L/min gpm
Sample appearance Cloudy/sediment Odor None observed
Note any sampling observations if necessary

Chemical Analysis VOC, GRO and DRO
Equipment Calibration pH = 7,4,10,7 Conductivity = 700 µs/cm @ 1030

FIELD STABILIZATION

Military time	pH	Redox Pot.	Temperature corrected conductance [ms/cm]	Temperature [°C]	Water Level (nearest 0.01 ft.)	Cumulative volume of water removed [gal.]
1355	7.2	10	4.39	4.2		~1
1405	7.2	12	4.31	4.1		~2
1415	7.2	14	4.28	4.3		~3

SAMPLING INFORMATION FORM

STS Consultants, Ltd.
10900 - 73rd Avenue North, Suite 150
Maple Grove, MN 55369

Sampler's Name Mathew J. Beckman
Unusual Conditions
Location Alexandria, MN
Sample ID number TW-3 Date sampled 2/7/2007
Describe sampling point Temporary well converted from B-3
Unique Well Number

Weather Overcast/ -10's – 0's
Project Alex Exhaust
STS project number: 200606839
Time 1300 am pm X

MONITORING WELL INFORMATION: (If Applicable)

Monitoring point elevation = 101.1 Datum = Assumed local Water elevation = 84.99
Well depth (prior to sampling) = 25.00 feet below monitoring point (mp)
Depth to water (below mp) = 16.11 feet Date 2/08/07 Time 1200 am X pm
Well diameter 2 inches Water level above screen? No Yes feet
Volume of water in well = ~1 gallons

PURGING INFORMATION:

Purging method: Bailer Submersible pump Tap Other X - Peristaltic pump
Tubing type: Teflon Black poly Other PVC
Pump intake or bailer set at Waterline feet below monitoring point (mp).
Discharge rate (if applicable) <1 gal/min gpm x 0.1336806 = cfm
At least well volumes evacuated before sampling, totaling ~3 gallons.

SAMPLING INFORMATION

Sampling method: Bailer Tap Other X - Peristaltic pump
Tubing type (if applicable): Teflon Other
Bailer was: Disposable Laboratory cleaned Field cleaned Other
Sample collected from Waterline feet below monitoring point. (mp)
Sample collection discharge rate (if applicable): = <1 L/min gpm
Sample appearance Cloudy/sediment Odor None observed
Note any sampling observations if necessary

Chemical Analysis VOC, GRO and DRO
Equipment Calibration pH = 7,4,10,7 Conductivity = 700 µs/cm @ 1030

FIELD STABILIZATION

Military time	pH	Redox Pot.	Temperature corrected conductance [ms/cm]	Temperature [°C]	Water Level (nearest 0.01 ft.)	Cumulative volume of water removed [gal.]
1215	7.1	-17	3.51	9.2		~1
1225	7.1	-16	3.49	9.1		~2
1235	7.1	-12	3.50	9.2		~3

SAMPLING INFORMATION FORM

STS Consultants, Ltd.
10900 - 73rd Avenue North, Suite 150
Maple Grove, MN 55369

Sampler's Name Mathew J. Beckman
Unusual Conditions
Location Alexandria, MN
Sample ID number TW-4 Date sampled 2/7/2007
Describe sampling point Temporary well converted from B-4
Unique Well Number

Weather Overcast/ -10's – 0's
Project Alex Exhaust
STS project number: 200606839
Time 1125 am pm X

MONITORING WELL INFORMATION: (If Applicable)

Monitoring point elevation = 100.08 Datum = Assumed local Water elevation = 78.36
Well depth (prior to sampling) = 30.00 feet below monitoring point (mp)
Depth to water (below mp) = 21.72 feet Date 2/7/07 Time 1035 am X pm
Well diameter 2 inches Water level above screen? No Yes feet
Volume of water in well = ~1 gallons

PURGING INFORMATION:

Purging method: Bailer X Submersible pump Tap Other X - Peristaltic pump
Tubing type: Teflon Black poly Other
Pump intake or bailer set at Waterline feet below monitoring point (mp).
Discharge rate (if applicable) <1 gal/min gpm x 0.1336806 = cfm
At least well volumes evacuated before sampling, totaling ~3 gallons.

SAMPLING INFORMATION

Sampling method: Bailer X Tap Other X - Peristaltic pump
Tubing type (if applicable): Teflon Other
Bailer was: Disposable Laboratory cleaned Field cleaned Other
Sample collected from Waterline feet below monitoring point. (mp)
Sample collection discharge rate (if applicable): = <1 L/min gpm
Sample appearance Cloudy/sediment Odor None observed
Note any sampling observations if necessary

Chemical Analysis VOC, GRO and DRO
Equipment Calibration pH = 7.4,10.7 Conductivity = 700 µs/cm @ 0945

FIELD STABILIZATION

Military time	pH	Redox Pot.	Temperature corrected conductance [ms/cm]	Temperature [°C]	Water Level (nearest 0.01 ft.)	Cumulative volume of water removed [gal.]
1045	7.2	101	3.56	7.2		~1
1055	7.2	100	3.51	7.1		~2
1105	7.2	99	3.49	7.3		~3

SAMPLING INFORMATION FORM

STS Consultants, Ltd.
10900 - 73rd Avenue North, Suite 150
Maple Grove, MN 55369

Sampler's Name Mathew J. Beckman
Unusual Conditions
Location Alexandria, MN
Sample ID number TW-5 Date sampled 2/7/2007
Describe sampling point Temporary well converted from B-5
Unique Well Number

Weather Overcast/ -10's – 0's
Project Alex Exhaust
STS project number: 200606839
Time 1205 am pm X

MONITORING WELL INFORMATION: (If Applicable)

Monitoring point elevation = 99.98 Datum = Assumed local Water elevation = 74.83
Well depth (prior to sampling) = 26.0 feet below monitoring point (mp)
Depth to water (below mp) = 25.15 feet Date 2/08/07 Time 1000 am X pm
Well diameter 2 inches Water level above screen? No Yes feet
Volume of water in well = ~0.6 gallons

PURGING INFORMATION:

Purging method: Bailer X Submersible pump Tap Other
Tubing type: Teflon Black poly Other
Pump intake or bailer set at Waterline feet below monitoring point (mp).
Discharge rate (if applicable) <1 gal/min gpm x 0.1336806 = cfm
At least well volumes evacuated before sampling, totaling ~3 gallons.

SAMPLING INFORMATION

Sampling method: Bailer X Tap Other
Tubing type (if applicable): Teflon Other
Bailer was: Disposable Laboratory cleaned Field cleaned Other
Sample collected from Waterline feet below monitoring point. (mp)
Sample collection discharge rate (if applicable): = <1 L/min gpm
Sample appearance Cloudy/sediment Odor None observed
Note any sampling observations if necessary No water in well 2/7/07. ~0.5' of water in well the morning of 2/8/07.

Chemical Analysis VOC, GRO and DRO
Equipment Calibration pH = 7,4,10,7 Conductivity = 700 µs/cm @ 0800

FIELD STABILIZATION

Military time	pH	Redox Pot.	Temperature corrected conductance [ms/cm]	Temperature [°C]	Water Level (nearest 0.01 ft.)	Cumulative volume of water removed [gal.]

SAMPLING INFORMATION FORM

STS Consultants, Ltd.
10900 - 73rd Avenue North, Suite 150
Maple Grove, MN 55369

Sampler's Name Mathew J. Beckman
Unusual Conditions
Location Alexandria, MN
Sample ID number TW-6 Date sampled 2/8/2007
Describe sampling point Temporary well converted from B-6
Unique Well Number

Weather Overcast/ -10's – 0's
Project Alex Exhaust
STS project number: 200606839
Time 1535 am pm X

MONITORING WELL INFORMATION: (If Applicable)

Monitoring point elevation = 99.86 Datum = Assumed local Water elevation = 77.39
Well depth (prior to sampling) = 25.00 feet below monitoring point (mp)
Depth to water (below mp) = 22.47 feet Date 2/7/07 Time 1445 am X pm
Well diameter 2 inches Water level above screen? No Yes feet
Volume of water in well = ~0.5 gallons

PURGING INFORMATION:

Purging method: Bailer Submersible pump Tap Other X - Peristaltic pump
Tubing type: Teflon Black poly Other
Pump intake or bailer set at Waterline feet below monitoring point (mp).
Discharge rate (if applicable) <1 gal/min gpm x 0.1336806 = cfm
At least well volumes evacuated before sampling, totaling ~3 gallons.

SAMPLING INFORMATION

Sampling method: Bailer Tap Other X - Peristaltic pump
Tubing type (if applicable): Teflon Other
Bailer was: Disposable Laboratory cleaned Field cleaned Other
Sample collected from Waterline feet below monitoring point. (mp)
Sample collection discharge rate (if applicable): = <1 L/min gpm
Sample appearance Cloudy/sediment Odor None observed
Note any sampling observations if necessary

Chemical Analysis VOC, GRO and DRO
Equipment Calibration pH = 7,4,10,7 Conductivity = 700 µs/cm @ 0800

FIELD STABILIZATION

Military time	pH	Redox Pot.	Temperature corrected conductance [ms/cm]	Temperature [°C]	Water Level (nearest 0.01 ft.)	Cumulative volume of water removed [gal.]
1500	7.2	12	3.91	6.9		~1
1510	7.2	13	3.88	6.9		~2
1520	7.2	15	3.86	6.8		~3

STS Consultants Ltd.

OWNER: **Minnesota Pollution Control Agency**

LOG OF BORING NUMBER: **B-1**

PROJECT NAME: **Alex Exhaust, Leak # 15,656**

ARCHITECT-ENGINEER: **STS Consultants, Ltd.**

SITE LOCATION: **Alexandria, Minnesota**

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.³	PHOTO-IONIZATION DETECTOR READING (PPM)
				SURFACE ELEVATION +100.0 Assumed local		
	1	MC		1.0 Sandy GRAVEL, brown - GPS Silty CLAY, trace Sand and Gravel, dark brown - CL-ML		<1
5.0	2					52
	3	MC				>2000
10.0	4					>2000
	5	MC				26
15.0	6					26
	7	MC				3
20.0	8					3
	9	MC		21.0 Fine to coarse Clayey SAND, light brown - SC 23.0		<1
25.0	10			Silty CLAY, trace Sand and Gravel, grey - brown - CL-ML		<1
	11	MC				<1
30.0	12					<1
	13	MC				<1
35.0	14					<1
	15	MC				<1
40.0	16			40.0		<1
				End of boring 40 feet. Boring drilled to full depth with Hollow stem auger and sampled with 5 foot Macro Core sampler. Soil samples were screened with 10.6 eV lamp photoionization detector (PID) in general accordance with MPCA polyethylene bag headspace screening as outlined in Guidance Document 4-04. Background PID levels at 0-1 units. Sample taken at 6 and 20 feet for laboratory analysis of the following parameters: BTEX/GRO and DRO. Groundwater encountered at 21.0 feet - see sampling information form. Boring backfilled with high solids bentonite grout upon completion.		

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.² (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT. (10 20 30 40 50)

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 21.0	BORING STARTED 2/7/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 2/8/07	ENTERED BY MJB	SHEET NO. 1 OF 1
WL	RIG/FOREMAN Vaines/Kevin	APP'D BY	STS JOB NO. 200606839

BORING LOG 200606839.GPJ STS.GDT 6/19/07

STS Consultants Ltd.

OWNER: **Minnesota Pollution Control Agency**

LOG OF BORING NUMBER: **B-2**

PROJECT NAME: **Alex Exhaust, Leak # 15,656**

ARCHITECT-ENGINEER: **STS Consultants, Ltd.**

SITE LOCATION: **Alexandria, Minnesota**

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE / RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.³	PHOTO-IONIZATION DETECTOR READING (PPM)
				SURFACE ELEVATION +99.5 Assumed local		
	1	MC		Silty SAND, dark brown		<1
				3.0		
5.0	2			Silty CLAY, trace Sand, light brown - CL-ML		<1
	3	MC				<1
10.0	4					<1
	5	MC				<1
15.0	6					<1
	7	MC				<1
20.0	8					<1
				21.0		
	9	MC		Fine to coarse Clayey SAND, light brown - SC		<1
	10			24.0		
25.0				25.0 Silty CLAY, trace Sand and Gravel, grey - CL-ML		45
				End of boring 25 feet. Boring drilled to full depth with Hollow stem auger and sampled with 5 foot Macro Core sampler. Soil samples were screened with 10.6 eV lamp photoionization detector (PID) in general accordance with MPCA polyethylene bag headspace screening as outlined in Guidance Document 4-04. Background PID levels at 0-1 units. Sample taken at 18 feet for laboratory analysis of the following parameters: BTEX/GRO and DRO. Groundwater encountered at 17.6 feet - see sampling information form.		
				Boring backfilled with high solids bentonite grout upon completion.		

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.² (1 2 3 4 5)

PLASTIC LIMIT % (×) — WATER CONTENT % (●) — LIQUID LIMIT % (△)

10 20 30 40 50

STANDARD PENETRATION BLOWS/FT. (⊗) 10 20 30 40 50

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 17.6	BORING STARTED 2/7/07	STS OFFICE	Minneapolis Area - 06
WL	BORING COMPLETED 2/8/07	ENTERED BY MJB	SHEET NO. 1 OF 1
WL	RIG/FOREMAN Valnes/Kevin	APP'D BY	STS JOB NO. 200606839

BORING_LOG 200606839.GPJ STS.GDT 6/19/07

STS Consultants Ltd.

OWNER: **Minnesota Pollution Control Agency**

LOG OF BORING NUMBER: **B-3**

PROJECT NAME: **Alex Exhaust, Leak # 15,656**

ARCHITECT-ENGINEER: **STS Consultants, Ltd.**

SITE LOCATION: **Alexandria, Minnesota**

DEPTH(FT)	ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.³	PHOTO-IONIZATION DETECTOR READING (PPM)
						SURFACE ELEVATION +99.3 Assumed local		
		1	MC			Silty SAND, little Gravel, dark brown		<1
						3.0		
5.0		2				Silty CLAY, trace Sand, light brown - CL-ML		343
		3	MC					250
10.0		4						205
		5	MC					202
15.0		6						200
		7	MC					<1
20.0		8						<1
						20.0		
		9	MC			Fine to coarse Clayey SAND, light brown - SC		<1
		10				24.0		
25.0						25.0 Silty CLAY, trace Sand and Gravel, grey - CL-ML		21

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.² (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT. (10 20 30 40 50)

End of boring 25 feet. Boring drilled to full depth with Hollow stem auger and sampled with 5 foot Macro Core sampler. Soil samples were screened with 10.6 eV lamp photoionization detector (PID) in general accordance with MPCA polyethylene bag headspace screening as outlined in Guidance Document 4-04. Background PID levels at 0-1 units. Sample taken at 5 and 16 feet for laboratory analysis of the following parameters: BTEX/GRO and DRO. Groundwater encountered at 16.1 feet - see sampling information form.

Boring backfilled with high solids bentonite grout upon completion.

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 16.1	BORING STARTED 2/7/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 2/8/07	ENTERED BY MJB	SHEET NO. 1 OF 1
WL	RIG/FOREMAN Valnes/Kevin	APP'D BY	STS JOB NO. 200606839

BORING LOG 200606839.GPJ STS.GDT 6/19/07

STS Consultants Ltd.

OWNER: **Minnesota Pollution Control Agency**

LOG OF BORING NUMBER: **B-4**

PROJECT NAME: **Alex Exhaust, Leak # 15,656**

ARCHITECT-ENGINEER: **STS Consultants, Ltd.**

SITE LOCATION: **Alexandria, Minnesota**

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.³	PHOTO-IONIZATION DETECTOR READING (PPM)
					SURFACE ELEVATION +99.4 Assumed local		
	1	MC			Silty SAND, little Gravel, brown - SM		<1
					2.0 Silty CLAY, trace Sand, light brown - CL-ML		
5.0	2						<1
	3	MC					>2000
10.0	4						>2000
	5	MC					>2000
15.0	6						>2000
	7	MC					31
20.0	8						29
	9	MC					11
25.0	10				25.0		10
	11	MC			Fine to coarse Clayey SAND, light brown - SC		<1
30.0	12				27.0 Silty CLAY, trace Sand and Gravel, grey - brown - CL-ML		<1
					30.0 End of boring 30 feet. Boring drilled to full depth with Hollow stem auger and sampled with 5 foot Macro Core sampler. Soil samples were screened with 10.6 eV lamp photoionization detector (PID) in general accordance with MPCA polyethylene bag headspace screening as outlined in Guidance Document 4-04. Background PID levels at 0-1 units. Sample taken at 13 and 22 feet for laboratory analysis of the following parameters: BTEX/GRO and DRO. Groundwater encountered at 21.7 feet - see sampling information form.		
					Boring backfilled with high solids bentonite grout upon completion.		

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.² (1, 2, 3, 4, 5)

PLASTIC LIMIT % / WATER CONTENT % / LIQUID LIMIT % (10, 20, 30, 40, 50)

STANDARD PENETRATION BLOWS/FT. (10, 20, 30, 40, 50)

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 21.7	BORING STARTED 2/7/07	STS OFFICE	Minneapolis Area - 06
WL	BORING COMPLETED 2/8/07	ENTERED BY MJB	SHEET NO. 1 OF 1
WL	RIG/FOREMAN Valnes/Kevin	APP'D BY	STS JOB NO. 200606839

BORING_LOG 200606839.GPJ STS.GDT 6/19/07

STS Consultants Ltd.

OWNER: **Minnesota Pollution Control Agency**

LOG OF BORING NUMBER: **B-5**

PROJECT NAME: **Alex Exhaust, Leak # 15,656**

ARCHITECT-ENGINEER: **STS Consultants, Ltd.**

SITE LOCATION: **Alexandria, Minnesota**

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.³	PHOTO-IONIZATION DETECTOR READING (PPM)	UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5) / PLASTIC LIMIT % / WATER CONTENT % / LIQUID LIMIT % (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT. (10 20 30 40 50)
					SURFACE ELEVATION +98.9 Assumed local			
	1	MC			Silty SAND, little Gravel, dark brown - SM		<1	
					2.0			
5.0	2				Silty CLAY, trace Sand and Gravel, dark brown - CL-ML		<1	
	3	MC					58	
10.0	4						55	
	5	MC					9	
15.0	6						8	
	7	MC					8	
					18.0			
20.0	8				Silty CLAY, trace Sand and Gravel, grey - CL-ML		<1	
	9	MC					<1	
25.0	10						<1	
26					26.0			
					End of boring 26 feet. Boring drilled to full depth with Hollow stem auger and sampled with 5 foot Macro Core sampler. Soil samples were screened with 10.6 eV lamp photoionization detector (PID) in general accordance with MPCA polyethylene bag headspace screening as outlined in Guidance Document 4-04. Background PID levels at 0-1 units. Sample taken at 6 and 25 feet for laboratory analysis of the following parameters: BTEX/GRO and DRO. Groundwater encountered at 25.15 feet - see sampling information form.			
					Boring backfilled with high solids bentonite grout upon completion.			

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 25.2	BORING STARTED 2/7/07	STS OFFICE	Minneapolis Area - 06
WL	BORING COMPLETED 2/8/07	ENTERED BY MJB	SHEET NO. 1 OF 1
WL	RIG/FOREMAN Vaines/Kevin	APP'D BY	STS JOB NO. 200606839

BORING_LOG 200606839.GPJ STS.GDT 6/19/07

STS Consultants Ltd.

OWNER: **Minnesota Pollution Control Agency**

LOG OF BORING NUMBER: **B-6**

PROJECT NAME: **Alex Exhaust, Leak # 15,656**

ARCHITECT-ENGINEER: **STS Consultants, Ltd.**

SITE LOCATION: **Alexandria, Minnesota**

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.³	PHOTO-IONIZATION DETECTOR READING (PPM)
					SURFACE ELEVATION +98.8 Assumed local		
	1	MC			Silty SAND, brown - SM		<1
					2.0		
5.0	2				Silty CLAY, little Sand, light brown - CL-ML		<1
	3	MC					<1
10.0	4						<1
	5	MC					<1
15.0	6						<1
	7	MC					<1
20.0	8						<1
	9	MC					<1
25.0	10						<1
					25.0		
					End of boring 25 feet. Boring drilled to full depth with Hollow stem auger and sampled with 5 foot Macro Core sampler. Soil samples were screened with 10.6 eV lamp photoionization detector (PID) in general accordance with MPCA polyethylene bag headspace screening as outlined in Guidance Document 4-04. Background PID levels at 0-1 units. Sample taken at 23 feet for laboratory analysis of the following parameters: BTEX/GRO and DRO. Groundwater encountered at 20.9 feet - see sampling information form.		
					Boring backfilled with high solids bentonite grout upon completion.		

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.² (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT. (10 20 30 40 50)

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 20.9	BORING STARTED 2/7/07	STS OFFICE	Minneapolis Area - 06
WL	BORING COMPLETED 2/8/07	ENTERED BY MJB	SHEET NO. 1 OF 1
WL	RIG/FOREMAN Valnes/Kevin	APP'D BY	STS JOB NO. 200606839

BORING_LOG 200606839.GPJ STS.GDT 6/19/07

STS Consultants, Ltd.

Soil Vapor Probe Sampling Summary

STS Project Number: 200606839

Date: 8-Feb-07

Inititals: MJB

Approximate Depth to Groundwater at site (feet from surface): ~13

Vapor Probe Advancement Method (Manual or Probe): Probe

STS Sample ID	Sample Collection Time	Sample Depth (ft.)	Soil Type in Sample Zone	PID	Quad-Gas Readings (GEM 500)					Suma Canister Sample			
					O2 %	CH4 %	CO2 %	Balance %	Purge Time (Sec)	Canister Number	Initial Vacuum Gauge Reading (in. Hg)	Final Vacuum Gauge Reading (in. Hg)	Canister Filling Time (sec.)
VP-1	1445	3	Silty Clay	>2000	0.3	12.0	8.9	78.8	120	971	NA	NA	60
VP-2	1420	8	Silty Clay	>2000	0.4	15.1	6.8	77.7	120	938	NA	NA	60
VP-3	1500	3	Silty Clay	<1	20.5	0.4	0.3	78.8	120	1042	NA	NA	60
VP-4	1530	3	Silty Clay	136	18.2	0.0	0.3	81.5	120	1047	NA	NA	60

APPENDIX E

Copies of Water Supply Well Logs

Unique No. 00214756

County Name Douglas

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 1031

Update Date 2000/03/09

Entry Date 1988/04/07

Township Name	Township	Range	Dir	Section	Subsection
	128	37	W	18	DAAADD

Well Depth	Depth Completed	Date Well Completed
129 ft.	129 ft.	1959/09/00

Well Name ALEXANDRIA 7A

Drilling Method

Well Owner's Name ALEXANDRIA 7A

ALEXANDRIA MN 56308-

Drilling Fluid

Well Hydrofractured? ☐ Yes ☐ No

From ft. to ft.

Use Municipal

Casing **Drive Shoe?** ☐ Yes ☐ N

Hole Diameter

Casing Diameter **Weight(lbs/ft)**

16 in. to ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
NO RECORD			0	129

Screen **Open Hole** From ft. to ft.

Make Type

Static Water Level 38 ft. from Land surface Date 1959/09/00

PUMPING LEVEL (below land surface)

58 ft. after hrs. pumping 440 g.p.m.

Well Head Completion

Pitless adapter mfr Model

Casing Protection ☐ 12 in. above grade

☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? ☐ Yes ☐ No

Nearest Known Source of Contamination

ft. direction type

Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed

Mfr name

Model HP Volts

Drop Pipe Length ft. Capacity g.p.m

Type

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

Was a variance granted from the MDH for this Well? ☐ Yes ☐ No

REMARKS, ELEVATION, SOURCE OF DATA, etc.

DRILLER: MINNESOTA WELL DRILLERS MADISON, MINNESOTA

USGS Quad: Alexandria East Elevation 1405

Aquifer: QBAA Alt Id: 79-1215

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. MNDNR

License Business Name Minnesota Dept. of Natural Resources

Name of Driller

Report Copy

HE-01205-06 (Rev. 9/96)

Unique No. 00214759

County Name Douglas

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 1031

Update Date 2000/03/09

Entry Date 1988/04/07

Township Name	Township	Range	Dir	Section	Subsection
	128	37	W	18	ADDDBD

Well Depth	Depth Completed	Date Well Completed
118 ft.	118 ft.	1958/02/00

Well Name ALEXANDRIA 9

Drilling Method

Well Owner's Name ALEXANDRIA 9

ALEXANDRIA MN 56308-

Drilling Fluid

Well Hydrofractured? ☐ Yes ☐ No

From ft. to ft.

Use Public Supply/non-community

Casing Drive Shoe? ☐ Yes ☐ N

Hole Diameter

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
NO RECORD			0	118

Casing Diameter Weight(lbs/ft)

16 in. to 96 ft

Screen Y

Open Hole From ft. to ft.

Make Type

Diameter	Slot	Length	Set	Fitting
		25	96 ft. to 118 ft	

Static Water Level 38 ft. from Land surface Date 1958/02/00

PUMPING LEVEL (below land surface)

58 ft. after hrs. pumping 440 g.p.m.

Well Head Completion

Pitless adapter mfr Model

Casing Protection ☐ 12 in. above grade

☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? ☐ Yes ☐ No

Nearest Known Source of Contamination

ft. direction type

Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed Y

Mfr name

Model HP Volts

Drop Pipe Length ft. Capacity 500 g.p.m

Type

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

Was a variance granted from the MDH for this Well? ☐ Yes ☐ No

REMARKS, ELEVATION, SOURCE OF DATA, etc.

USE OF WELL IS PUBLIC SUPPLY

USGS Quad: Alexandria East Elevation 1392

Aquifer: QBAA Alt Id: 79-1215

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 12013

License Business Name Thein S.e. Well Co.

Name of Driller

Report Copy

HE-01205-06 (Rev. 9/96)

Unique No. 00214758

County Name Douglas

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 1031

Update Date 2000/03/09

Entry Date 1988/04/07

Township Name	Township	Range	Dir	Section	Subsection
	128	37	W	17	BCCCDD

Well Depth 125 ft. | Depth Completed 119 ft. | Date Well Completed 1962/01/00

Well Name ALEXANDRIA 8A

Drilling Method Cable Tool

Well Owner's Name ALEXANDRIA 8A

ALEXANDRIA MN 56308-

Drilling Fluid

Well Hydrofractured? ☐ Yes ☐ No

From ft. to ft.

Use Public Supply/non-community

Casing Drive Shoe? ☐ Yes ☐ N

Hole Diameter

Casing Diameter Weight(lbs/ft)

16 in. to 99 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
BLACK DIRT			0	1
CLAY & SAND			1	14
SAND			14	34
CLAY			34	54
SAND & CLAY			54	61
HARDPAN			61	89
SAND			89	119
FINE SAND (BACK-FILLED)			119	125
CLAY			125	125

Screen Y

Open Hole From ft. to ft.

Make EVERDUR Type

Diameter	Slot	Length	Set	Fitting
16	20	99 ft. to 119 ft		

Static Water Level 39 ft. from Land surface Date 1962/01/00

PUMPING LEVEL (below land surface)

75.43 ft. after hrs. pumping 1000 g.p.m.

Well Head Completion

Pitless adapter mfr Model

Casing Protection ☑ 12 in. above grade

☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? ☐ Yes ☐ No

Nearest Known Source of Contamination

ft. direction type

Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed

Mfr name

Model HP Volts

Drop Pipe Length ft. Capacity g.p.m

Type

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

Was a variance granted from the MDH for this Well? ☐ Yes ☐ No

USGS Quad: Alexandria East Elevation 1398

Aquifer: QBAA Alt Id:

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 62012

License Business Name Keys Well Co.

Name of Driller KEMPER, R.

Report Copy

HE-01205-06 (Rev. 9/96)

SOURCE WATER ASSESSMENT FOR
Alexandria

ID Number: 1210001

Facility Contact:
Gary Eiden
(320) 763-6501
Alexandria
Keith Avery
ATTN: WATER PLANT
316 Fillmore Street
Alexandria, MN 56308

MDH Contact:
Mike Howe
(320) 650-1076
3400 North First Street, Suite 305
St. Cloud, MN 56303
mike.howe@health.state.mn.us

Status of the Source Water Protection Plan:

The water supply system is implementing the wellhead protection plan that has been approved by the Minnesota Department of Health under Minnesota Rules 4720.

Source Water Protection Area: - Click Map1 to view SWPA map(s).

Yes - A Source Water Protection Area has been designated for this well.

Description of the source water - The water supply for Alexandria is obtained from 7 primary wells. Well depth (in feet), well status, aquifer(s) used, and sensitivity of the source(s) of drinking water are listed in the following table.

Unique Well No	Well ID	Depth	Well Use	Aquifer	Aquifer Sensitivity	*Well Sensitivity	SWPA
00214756	Well #7A	120.0	Primary	Glacial Deposits	High	See (1)	Yes
00214758	Well #8A	121.0	Primary	Glacial Deposits	High	See (2)	Yes
00214759	Well #9	110.0	Primary	Glacial Deposits	High	See (1)	Yes
00475655	Well #12	125.0	Primary	Glacial Deposits	High	See (2)	Yes
00635452	Well #13	130.0	Primary	Glacial Deposits	High	See (2)	Yes
00680655	Well #14	140.0	Primary	Glacial Deposits	High	See (2)	No
00685764	Well #15	132.0	Primary	Glacial Deposits	High	See (2)	No

Well construction assessment - 00214758, 00475655, 00635452, 00680655, 00685764 meet current standards for construction and maintenance. These factors do not contribute to the susceptibility of the source water to contamination; and The Minnesota Department of Health considers 00214756, 00214759 potentially vulnerable to contamination because there is insufficient information to document well construction.

Well Sensitivity - Well sensitivity refers to the integrity of the well due to its construction and maintenance. It is based on the results of the well construction assessment. It can be one of the following:

(1) The well is susceptible to contamination because it does not meet current construction standards or no information about well construction is available, regardless of aquifer sensitivity.
(2) The well is not susceptible because it meets well construction standards and does not present a pathway for contamination to readily enter the water supply.

Aquifer Sensitivity - Aquifer sensitivity refers to the degree of geological protection afforded the aquifer(s) used by the public water supply.

High - The aquifer is considered to exhibit a high sensitivity to contamination because of the local geological setting.

Source Water Susceptibility - Source water susceptibility refers to the likelihood that a contaminant will reach the source of drinking water. It reflects the results of assessing well sensitivity, aquifer sensitivity, and water quality data.

High - The source of drinking water is considered to exhibit a high susceptibility to contamination because of the local geological setting.

The source water is considered to be susceptible because of the tritium content of the well water in glacial deposits.

Contaminants of concern - The following statement summarizes the potential contaminants for which a source of drinking water may be at risk:

One or more contaminants regulated under the federal Safe Drinking Water Act for this public water supply system have been detected in the source water. However, the water supplied to users meets state and federal drinking water standards for potability. For further information, please contact the MDH representative listed at the beginning of this assessment.

Drinking Water Supply Management Area

DWS Name	**Alexandria**
Wellhead Protection Type	**A**
Capture Zone Type	**S**
DWSMA Approval Date	Wed, 29 May 2002 00:00:00
DWSMA Status	**A**
Location Collection Method	**DS2**
Acres	**4962.4**

Print

PHOTOGRAPHIC LOG

Client Name: MPCA	Site Location: Alex Exhaust – Leak 15,656	Project No. 200606839

Photo No.	Date:
1	5/16/88

Direction Photo Taken:

Facing Northwest

Description:

This photograph shows one of the four USTs removed from the former Cenex station in May of 1988.

Photo No.	Date:
2	5/16/88

Direction Photo Taken:

Facing Northwest

Description:

This photograph shows three of the four USTs excavated from the release site in May of 1988.

PHOTOGRAPHIC LOG

Client Name: MPCA	**Site Location:** Alex Exhaust – Leak 15,656	**Project No.** 200606839

Photo No. 3	**Date:** 2/7/07

Direction Photo Taken:

Facing Northwest

Description:

This photograph shows the site configuration in February, 2007. The white building on the right of the photo is the Alex Exhaust building.

Photo No. 4	**Date:** 2/7/07

Direction Photo Taken:

Facing Northwest

Description:

This photograph shows the large shed/garage building north of the Alex Exhaust building.

APPENDIX G

Guidance Document 1-03a *Spatial Data Reporting Form.*

Petroleum Remediation Program
Minnesota Pollution Control Agency
http://www.pca.state.mn.us/programs/lust_p.html

Spatial Data Reporting Form

Guidance Document 1-03a
(For complete instructions, see Guidance Document 1-03.)

Part 1. Background

Has a site location data point been submitted for this site (circle/highlight)? YES or (NO)
If yes, you do not need to complete Part 2 of this form but should complete Part 3 if there are additional site features to report. This form can be submitted electronically if desired (e.g., as an e-mail attachment to the project manager).

MPCA Site ID: LEAK00015,656
Site Name: **Alex Exhaust**
Data Collection Date: **February 6, 2007**
Name of Person Who Collected Data: **Matt Beckman**
Organization Name: **STS Consultants, Ltd.**
Organization Type: **Environmental Consulting Firm**

Part 2. Site Location (use one of the three spatial data reporting formats provided)

Point Description: **Center of main site building – Alex Exhaust shop**
Collection Method: **Digital Orthoquad interpolation**
Datum (circle/highlight): **WGS84**

1) Longitude (dd mm ss.ss):	Latitude (dd mm ss.ss):
2) Longitude (dd.dddddd): 95.364030	**Latitude (dd.dddddd): 45.889612**
3) UTM - X (Easting):	UTM - Y (Northing):
UTM Zone:	

Part 3. Other Site Features

Point Description: **Soil Boring/Temporary Well B-1**
Collection Method: **Handheld GPS Unit (Garmin Map 76)**
Datum (circle/highlight): **WGS84**
1) Longitude (dd mm ss.ss): Latitude (dd mm ss.ss):
2) Longitude (dd.dddddd): 95.36395 **Latitude (dd.dddddd): 45.88951**
3) UTM - X (Easting): UTM - Y (Northing):
UTM Zone:

Point Description: **Soil Boring/Temporary Well B-2**
Collection Method: **Handheld GPS Unit (Garmin Map 76)**
Datum (circle/highlight): **WGS84**
1) Longitude (dd mm ss.ss): Latitude (dd mm ss.ss):
2) Longitude (dd.dddddd): 95.36419 **Latitude (dd.dddddd): 45.88958**
3) UTM - X (Easting): UTM - Y (Northing):
UTM Zone:

Point Description: **Soil Boring/Temporary Well B-3**
Collection Method: **Handheld GPS Unit (Garmin Map 76)**
Datum (circle/highlight): **WGS84**
1) Longitude (dd mm ss.ss): Latitude (dd mm ss.ss):
2) Longitude (dd.dddddd): 95.36380 **Latitude (dd.dddddd): 45.88958**
3) UTM - X (Easting): UTM - Y (Northing):
UTM Zone:

Point Description: **Soil Boring/Temporary Well B-4**
Collection Method: **Handheld GPS Unit (Garmin Map 76)**
Datum (circle/highlight): **WGS84**
1) Longitude (dd mm ss.ss): Latitude (dd mm ss.ss):
2) Longitude (dd.dddddd): 95.36398 **Latitude (dd.dddddd): 45.88972**
3) UTM - X (Easting): UTM - Y (Northing):
UTM Zone:

Point Description: **Soil Boring/Temporary Well B-5**
Collection Method: **Handheld GPS Unit (Garmin Map 76)**
Datum (circle/highlight): **WGS84**
1) Longitude (dd mm ss.ss): Latitude (dd mm ss.ss):
2) Longitude (dd.dddddd): 95.36396 **Latitude (dd.dddddd): 45.88982**
3) UTM - X (Easting): UTM - Y (Northing):
UTM Zone:

Point Description: **Soil Boring/Temporary Well B-6**
Collection Method: **Handheld GPS Unit (Garmin Map 76)**
Datum (circle/highlight): **WGS84**
1) Longitude (dd mm ss.ss): Latitude (dd mm ss.ss):

2) Longitude (dd.dddddd): 95.36419

Latitude (dd.dddddd): 45.88957

3) UTM - X (Easting):

UTM - Y (Northing):

UTM Zone:

Section 17: Consultant (or other) Information

By signing this document, I/we acknowledge that we are submitting this document on behalf of and as agents of the responsible person or volunteer for this leak site. I/we acknowledge that if information in this document is inaccurate or incomplete, it will delay the completion of remediation and may harm the environment and may result in reduction of reimbursement awards. In addition, I/we acknowledge on behalf of the responsible person or volunteer for this leak site that if this document is determined to contain a false material statement, representation, or certification, or if it omits material information, the responsible person or volunteer may be found to be in violation of Minn. Stat. § 115.075 (1994) or Minn. R. 7000.0300 (Duty of Candor), and that the responsible person or volunteer may be liable for civil penalties.

MPCA staff are instructed to reject unsigned investigation reports or if the report form has been altered.

Name and Title:	Signature:	Date signed:
Timothy J. Grape, PG **Project Geologist**		6/30/07
Robert L. DeGroot, PG PE **Principal Engineer**		6/30/07

Company and mailing address:

STS Consultants, Ltd.
10900 73rd Avenue N. Suite # 150
Maple Grove, MN 55369

Phone: **(763) 315-6300**

Fax: **(763) 315-1836**

Web pages and phone numbers

MPCA staff	http://pca.state.mn.us/pca/staff/index.cfm
MPCA toll free	**1-800-657-3864**
Petroleum Remediation Program web page	http://www.pca.state.mn.us/programs/lust_p.html
MPCA Infor. Request	http://www.pca.state.mn.us/about/inforequest.html
MPCA Petroleum Brownfields Program	http://www.pca.state.mn.us/programs/vpic_p.html
PetroFund Web Page	http://www.state.mn.us/cgi-bin/portal/mn/jsp/content.do?id=-536881377&agency=Commerce
PetroFund Phone	**651-297-1119**, or **1-800-638-0418**

State Duty Officer 651-649-5451 or 1-800-422-0798