

**PHASE II CORRECTIVE ACTION AND ADDITIONAL  
GROUNDWATER DELINEATION REPORT**

**LOT 10, BLOCK 1, METRO INDUSTRIAL AIRPARK  
FAIRBANKS, ALASKA**

**JANUARY 29, 2007**

Prepared For:

Glenn Goetz  
2143 Van Horn Road  
Fairbanks, AK 99701

Prepared By:



*Environmental Engineering & Industrial Hygiene Consultants*

**Managing Office**  
2400 College Road  
Fairbanks, Alaska 99709  
p. 907.452.5688  
f. 907.452.5694

206 E. Fireweed Lane, Suite 200  
Anchorage, Alaska 99503  
p. 907.222.2445  
f. 907.222.0915

119 Seward Street #10  
Juneau, Alaska 99801  
p: 907.586.6813  
f: 907.586.6819

[www.nortechengr.com](http://www.nortechengr.com)



## TABLE OF CONTENTS

<b>1.0</b>	<b>EXECUTIVE SUMMARY .....</b>	<b>1</b>
<b>2.0</b>	<b>PROJECT BACKGROUND .....</b>	<b>2</b>
2.1	General Site Setting and Description .....	3
2.2	Project History and Previous Investigations .....	3
2.3	Project Objectives and Scope of Work.....	4
<b>3.0</b>	<b>METHODOLOGY.....</b>	<b>5</b>
3.1	Direct Push Groundwater Sampling .....	5
3.2	Headspace Field Screening and Soil Sampling .....	5
3.3	Laboratory Analyses.....	6
3.4	Soil and Groundwater Cleanup Levels .....	6
<b>4.0</b>	<b>FIELD ACTIVITIES .....</b>	<b>7</b>
<b>5.0</b>	<b>LABORATORY RESULTS .....</b>	<b>8</b>
5.1	Soil Results .....	8
5.2	Groundwater Results.....	8
5.3	Water Supply Well.....	8
5.4	Quality Control Summary .....	9
5.5	Conceptual Site Model .....	10
<b>6.0</b>	<b>ANALYSIS .....</b>	<b>10</b>
6.1	North Shop (FD-01).....	10
6.2	South Shop Floor Drain Removal.....	11
6.2.1	FD-02.....	11
6.2.2	FD-03.....	11
6.2.3	FD-04.....	12
6.2.4	FD-05.....	12
6.2.5	FD-06.....	13
6.2.6	Summary and Recommendations .....	13
6.3	Groundwater.....	14
6.3.1	Field Parameters .....	14
6.3.2	DRO/RRO Concentrations.....	15
6.3.3	Water Supply Well .....	16
6.3.4	Summary and Recommendations .....	16
6.4	Property Transfer Implications .....	18
<b>7.0</b>	<b>CONCLUSIONS.....</b>	<b>18</b>





<b>8.0</b>	<b>RECOMMENDED GROUNDWATER MONITORING PROGRAM.....</b>	<b>19</b>
<b>9.0</b>	<b>LIMITATIONS AND NOTIFICATIONS .....</b>	<b>21</b>
<b>10.0</b>	<b>SIGNATURES OF ENVIRONMENTAL PROFESSIONALS .....</b>	<b>21</b>

## APPENDICES

Appendix 1: Figures

Appendix 2: Tables

Appendix 3: Site Photographs

Appendix 4 Laboratory Reports and ADEC Laboratory Checklist





**ENVIRONMENTAL ENGINEERING, HEALTH & SAFETY**

Anchorage: 206 E. Fireweed Ln, Suite 200, 99503 907.222.2445 Fax: 222.0915

Juneau: 119 Seward Street #10, 99801, 907.586.6813 Fax: 586-6819

Fairbanks: 2400 College Rd, 99709 907.452.5688 Fax: 452.5694  
info@nortechengr.com www.nortechengr.com

## 1.0 EXECUTIVE SUMMARY

**NORTECH** has completed the Phase II corrective action and additional groundwater activities planned at Alaska Truck and Gear, located at 2143 Van Horn Road in Fairbanks, Alaska. The initial site characterization at Alaska Truck and Gear was reported in September 13, 2006 and the corrective action work plan to remove the floor drains and complete the groundwater delineation was approved by ADEC and EPA on September 19, 2006. This work included removal of the six floor drain structures and field screening with soil sampling at these six locations. Groundwater samples were collected from the floor drain in the north shop, the water supply well, and at nine locations around the south shop.

Each of the six floor drain structures has been removed and the concrete slab has been patched and sealed with new concrete to prevent further potential discharges to the subsurface in these areas. Laboratory results indicate that FD-01 in the north shop and FD-02 in the south shop meet the ADEC cleanup levels and/or Fairbanks background concentrations for both soil and groundwater. FD-03 in the main part of the south shop meets the ADEC cleanup levels for soil, while the DRO concentration exceeds the ADEC cleanup level in water. In the southern portion of the south shop, FD-04, FD-05, and FD-06 exceed the ADEC cleanup level for DRO in both soil and groundwater and FD-06 also exceeds the groundwater cleanup level for RRO. Approximately 90 – 110 cubic yards of contaminated soil are estimated to remain beneath the southern portion of the building slab. This soil is effectively encapsulated by the concrete slab of the building and is considered a minimal risk for future migration to the groundwater. Additional soil characterization is not considered necessary at the Site.

Groundwater DRO concentrations outside the building footprint are lower than those in the building. The highest groundwater DRO concentration in the building is approximately an order of magnitude above the ADEC cleanup level while the highest concentration outside the building is approximately twice the ADEC cleanup level. The groundwater DRO concentrations exceeding the ADEC cleanup level is west and southwest of the floor drain areas and elevated DRO concentrations extend up to approximately 60 feet from the building in these directions. The results suggest that the hydraulic gradient may not be to the northwest and/or additional sources outside the building may be contributing to the DRO concentrations. Additionally, permanently frozen ground may be present northwest of the shop, between the shop and the retail building, and may be impacting the direction of groundwater flow across the Site. This contamination does not extend offsite, beneath the other two buildings, or to the water supply well near the retail building.





Additional delineation of the groundwater plume beyond the boundaries already established is also not considered necessary. Installation of five direct-push, long-term groundwater monitoring wells is recommended at the Site to evaluate the hydraulic gradient and a complete multi-year groundwater monitoring program. These activities are recommended to determine the groundwater flow direction and evaluate the stability of the DRO plume at the site. The recommended well locations are shown in Figure 4 with the FD-04 location is in the source area and the four other locations around the expected perimeter of the groundwater plume.

The hydraulic gradient evaluation is recommended to determine the groundwater flow direction at the Site and evaluate the potential impact of permanently frozen ground in the driveway areas. This includes completing an elevation survey the five wells and collecting groundwater elevation data monthly for 12 consecutive months and during any sampling events. This available hydraulic gradient data should be reported with each groundwater sampling report described below.

A multi-year groundwater sampling program with brief reporting requirements after each sampling event is recommended to evaluate the potential for contaminant migration at the Site. This is expected to be limited since the contaminants sources have been removed and the secondary source soils have been encapsulated. The sampling events should include collection of field parameters with laboratory analysis for DRO and RRO. A total of four sampling events are recommended in the next three years, including a sampling event at the time of well installation, and annual sampling events in September/October 2007, 2008, and 2009. At the completion of these sampling events, a summary report of the hydraulic gradient and groundwater conditions should be completed with recommendations for future activities, if necessary.

This report should be submitted to ADEC to document the soil and groundwater conditions at the Site and to obtain approval for the groundwater monitoring program. This report should also be the basis for ADEC to develop deed notification and/or land use restrictions for the property. The report should also be submitted to EPA to document removal of the Class V injection wells and document the site conditions and planned groundwater monitoring program.

## **2.0 PROJECT BACKGROUND**

This section provides a short summary of the Site characteristics and history. More detailed information about the Site, including ownership records and aerial photographs, are contained in the Phase I ESA report (dated January 26, 2007) and Initial Site Characterization and Corrective Action Plan (dated September 20, 2006).





## 2.1 General Site Setting and Description

The subject property is identified as Lot 10, Block 1, Metro Industrial Airpark Subdivision. The site address is 2143 Van Horn Road and is located on the south side of Van Horn Road, just outside the Fairbanks city limits (see Figures 1 and 2). The Site currently has three buildings including two shop buildings utilized for truck maintenance and a retail building for parts and customer service activities. Community wastewater, electric, and communication utilities are currently available and connected to the Site. However, community water is not available on the south side of Van Horn Road and the site uses an on site well as a water source. Although the water is plumbed into each of the buildings, is not considered suitable for drinking and Alaska Truck Center provides bottled drinking water for employees.

The elevation of the property is approximately 440-445 feet above mean sea level with little observable topographic relief across the Site. A former slough is visible behind the Corporate Express facility to the west of the site. The water table throughout the Fairbanks lowlands is usually 10 to 20 feet below the surface, depending on ground elevations and groundwater stage, with water table fluctuations on the order of 2 to 5 feet seasonally. Groundwater under the Site is likely to be influenced by changes in water levels of the Tanana and Chena Rivers and is estimated to vary seasonally between 10 to 15 feet below the ground surface with a typical hydraulic gradient of 0.001 foot/foot or less. Nearby groundwater studies have indicated that the local groundwater flow direction is generally northwest with minor variations to the west. The Chena River to the north of the site generally acts as a drain for the local aquifer and the Tanana River to the south generally acts to recharge the aquifer.

## 2.2 Project History and Previous Investigations

**NORTECH** conducted a Phase I Environmental Site Assessment (ESA) inspection at the subject property in July 2006 for the current property owner prior to listing the facility for sale. The Phase I ESA identified several environmental concerns on the Site. The primary environmental concerns related to the finding of six floor drains/sumps in the two shops on the eastern side of Lot 10. A second environmental concern at the site identified was the apparent feed/return lines to a buried heating oil storage tank outside of the south shop. Other environmental concerns included the presence of a number of drums around the site and numerous small areas of stained surface soils associated with previously parked vehicles.

The Initial Site Characterization consisted of collecting soil and groundwater samples from each of the six floor drain structures using direct push techniques. The initial groundwater characterization showed FD-01 (in the north shop) had an elevated chromium concentration. However, soil results did not confirm that the structure was



the source of the groundwater contamination. Soil and groundwater results in the south shop indicated that diesel range organics (DRO) and residual range organics (RRO) were the contaminants of concern. Gasoline range organics (GRO), volatile organic compounds (VOCs including benzene, toluene, ethylbenzene, and xylenes), polycyclic aromatic hydrocarbons (PAHs), and RCRA 8 metals were not detected above ADEC cleanup levels and were not considered contaminants of concern at the site.

The initial site characterization estimated that up to 120 to 140 cubic yards of DRO/RRO contaminated soil remain above the groundwater table within the structural prism of the south shop. Additionally, the floor drain structures were identified and reported to EPA as Class V injection wells and the report provided inventory forms and a pre-closure notification. Although EPA is involved with the closure of the structures, ADEC was identified as the primary regulator of the site.

### 2.3 Project Objectives and Scope of Work

The initial subsurface soil and groundwater characterization investigation identified the above documented the POL and potential chromium impacts to the subsurface soil and groundwater environments beneath the two shop buildings at the site. These results were used to develop a corrective action plan to remove and close the floor drains, complete the groundwater delineation outside the footprint of the south shop, and develop a long term monitoring plan for the property. This report documents the completion of these activities, including:

- Decommissioning and closure of the six existing floor drains/sumps, including removal of the drums, soil headspace field screening of the new limits of excavation, and soil sampling of selected locations for DRO analysis
- Collection of a groundwater sample from FD-01 for chromium speciation to confirm hexavalent chromium ( $\text{Cr}^{6+}$ ) is not a contaminant of concern
- Groundwater delineation outside of the southern shop building, including recording of field parameters (such as DO, pH, and ORP) and collection of laboratory samples for DRO and RRO analyses
- Collection of a sample from the onsite water supply well for DRO and VOC analyses

The goal of these activities is to develop of a long-term plan for groundwater monitoring at the site. This plan is expected to document the contaminants of concern and outline locations for groundwater samples and the expected future sampling requirements.





### 3.0 METHODOLOGY

The field activities undertaken during this corrective action and additional groundwater characterization at the Site were intended to confirm the extent of soil contamination and identify the limits of the groundwater contamination. These activities were conducted in general accordance with ADEC guidance and this section briefly summarizes the major components of each field methodology.

#### 3.1 Direct Push Groundwater Sampling

Groundwater sampling was conducted utilizing direct-push techniques. **NORTECH** subcontracted with GeoTek Alaska (GeoTek) from Anchorage, Alaska, to provide the direct-push equipment and operators for this project. The sampling technique advanced a screened stainless steel sampling rod at each sample location using the Geoprobe rig. The groundwater sampling rods were set at a depth such that the screen intersected the top of the water table. Upon completion of the sampling activities, the groundwater sampling rods were retrieved from each boring and decontaminated.

One groundwater sample was collected from each of the nine locations. Each groundwater sampling point was purged and sampled using a peristaltic pump and low-flow sampling techniques. Each point was purged until the field parameters stabilized or the point was pumped dry at least three times. After stabilized field parameters were recorded the groundwater samples were collected. Groundwater samples were collected into clean, laboratory-supplied jars, appropriately labeled, and placed immediately into a cooler with ice.

#### 3.2 Headspace Field Screening and Soil Sampling

A PhotoVac 2020 Hand Held Air Monitor/Photoionization Detector (PID) was used to field screen the soils for POL contamination. Field screening samples were collected at the limits of excavation necessary for removal of each floor drain drum structure.

**NORTECH** used the headspace method of field screening in general accordance with Section 4 of the ADEC *UST Procedures Manual and Standard Sampling Procedures* (the SSP). Headspace screening consists of partially (33%-50%) filling a clean resealable bag with freshly uncovered soils to be field screened. The resealable bag was closed and headspace vapors were allowed to develop for at least 10 minutes but not more than one hour. The bag was agitated at the beginning and end of the headspace development period. In accordance with the SSP, the highest PID reading from each sample was recorded.





Laboratory soil samples were collected from these locations in accordance with the corrective action plan. Soil samples were collected into clean, laboratory-supplied jars, appropriately labeled, and placed immediately into a cooler with ice. Soil samples were submitted to the laboratory for DRO/RRO analysis.

### 3.3 Laboratory Analyses

Four soil samples were collected at the limits of excavation during the floor drain removal (corrective action) activities. A total of nine water samples were collected to delineate the extent of groundwater contamination near the south shop. One groundwater sample was collected from FD-01 in the north shop for chromium speciation. One additional sample was also collected in the retail building to identify potential contaminants of concern in the water supply well for the property. The following list indicates the analytical methods performed during this work:

- Diesel Range Organics (DRO) by Alaska Method AK102
- Residual Range Organics (RRO) by Alaska Method AK102
- Volatile Organic Compounds (VOCs) by Method 524.2 (water supply well only)

A single water sample was collected from the groundwater beneath the floor drain in the north shop to provide speciation of the total chromium concentration previously observed at that location. Analytical methods for this sample included:

- Total Chromium by Method 200.8
- Hexavalent Chromium ( $\text{Cr}^{6+}$ ) by Method 7019 A

Specific sample container and preservation requirements and QA/QC procedures are described in the SSP, along with more details regarding sample management.

### 3.4 Soil and Groundwater Cleanup Levels

The cleanup criteria for this Site were determined using ADEC's Method 2 for soil (under 40-inch zone, migration to groundwater) as outlined in ADEC regulations (18 AAC 75.341, Tables B1 and B2). Groundwater contaminant cleanup levels are listed in Table C of the same regulation. Method 2 cleanup levels are shown with the laboratory results for selected compounds in Tables 2 and 3 of Appendix 2.





---

#### 4.0 FIELD ACTIVITIES

##### October 5, 2006

**NORTECH** personnel Ron Pratt and Dennis Shepard conducted field screening and soil sampling during the excavation and removal of the five floor drains located within the southern shop building. Weather conditions during these field activities were generally cool with high temperatures around 45 to 50°F with calm to light winds and light rain.

The floor drains were hand excavated by personnel from Alaska Truck and Gear. Upon removal, several of the floor drain structures were determined to be corrugated pipes while the others were 55-gallon drums. Additional soil was excavated beneath the drum bottoms and along the sidewalls to align with the saw-cut in the concrete slab. Field screening samples were collected from the bottom and sidewall of each excavation and the results of the field screening are presented in Table 1 with the laboratory results. Laboratory samples were collected from four locations (FD-02, FD-03, FD-04, and FD-06) in accordance with the corrective action plan.

##### November 12, 2006

**NORTECH** personnel Peter Beardsley and Dennis Shepard met with a two-person crew from Geotek Alaska to collect groundwater samples as outlined in the corrective action plan. The first location attempted met with resistance at 11 feet below grade that increased with depth to 15 feet below grade. No water was encountered at this location, although groundwater was expected at 8 – 10 feet below grade. The drill rig moved to a new location and advanced the sampling rods without a problem. This location (21) and locations 22 through 29 were also advanced and sampled without additional problems. The groundwater depth was approximately 10 feet below grade throughout these wells. Sample location 27 was added in the field to provide additional delineation near location 24, which had an odor of heavy oil. Other locations did not have olfactory or visual evidence of contamination. Field parameters, including DO, pH, and conductivity were recorded at each location and summarized in Table 3.

After finishing location 29, a second attempt was made to advance a sample point near the first location. This location was approximately 7 feet northwest of the original location and similar subsurface resistance was encountered. No water was observed at 14 feet below grade. Upon removal from the ground, the direct push tools had traces of fine silt working into the threads that is commonly observed when attempting to use direct push sampling methods in frozen ground. After evaluation of traffic patterns on the property and discussions with the property owner, **NORTECH** and Geotek determined that the ground in this area may be permanently frozen due to constant clearing of snow and heavy truck use during the winter months. Additional sampling in this area was not expected to be productive and was not attempted.



## 5.0 LABORATORY RESULTS

Soil sample results are summarized in Table 1 and groundwater samples are summarized in Table 2. Complete copies of the laboratory reports are included in Appendix 4. A copy of the ADEC Laboratory Data Review Checklist is also included in Appendix 4.

### 5.1 Soil Results

Field screening was completed at each floor drain location and four samples were collected for DRO/RRO analysis. These locations were based on the field screening results as described in the soil sampling program of the corrective action plan. The DRO concentrations ranged from non-detect at 21.3 mg/kg in FD-02 to 2,210 mg/kg in FD-04. The chromatograph pattern from FD-03 and FD-04 was consistent with weathered middle distillate, while the FD-06 chromatograph was more consistent with lube oil.

### 5.2 Groundwater Results

A water sample from FD-01 was collected for total and hexavalent chromium. The total chromium concentration was 0.00896 mg/L and hexavalent chromium was not detected.

A total of nine samples (21 through 29) were collected to the west of the south shop for DRO and RRO analyses. The concentrations were non-detect for both DRO and RRO at five of the locations. Detected DRO concentrations ranged from 0.348 mg/L at location 26 to 3.05 mg/L at location 24. Detected RRO concentrations ranged from 0.531 mg/L at location 26 to 2.22 mg/L at location 24. Chromatograph patterns at locations 24, 26, and 28 were consistent with weathered middle distillate, while the chromatograph pattern from location 22 was not consistent with any particular hydrocarbon product.

### 5.3 Water Supply Well

A water supply well for the property is located adjacent to the south side of the retail building. A sample was collected from this well for volatile organic compound (VOC) analysis, as well as DRO and RRO. None of these compounds was detected in this sample and no summary table was produced.





#### 5.4 Quality Control Summary

The soil sampling effort was intended to confirm the initial DRO concentrations in the soil at the floor drain locations and assess any differences upon removal of the floor drain structures. The field methods were consistent with ADEC guidelines and the sample integrity is of adequate quality. However, no soil field duplicate was collected during this investigation to identify potential sample collection, handling, or analysis deficiencies. A trip blank is not part of the DRO methodology.

The groundwater sampling effort was undertaken primarily to provide initial characterization outside the footprint of the south shop. A field duplicate was not collected due to the difficult field conditions, including the low temperatures and low flow conditions in the push points. Trip blanks are not part of the DRO or chromium speciation methodology. The

Each of the three SGS laboratory reports for the samples collected during this corrective action and delineation report contains a case narrative describing the potential quality control issues encountered at the laboratory along with a description of the potential effect on the results. This case narrative is located on page 2 of each of the laboratory reports in Appendix 4. Additionally, SGS Report 1066431 contains the MWH Laboratories Report for the VOC analysis. This contains an additional case narrative for this analysis.

**NORTECH** reviewed these potential quality issues as well as the other quality related portions of the laboratory report for issues that are considered significant to the overall quality of the laboratory data. For soil samples, sample FD-06 had an elevated surrogate concentration due to the elevated levels of DRO in the sample. The RRO analysis in the water samples had some minor issues in the method blank and LCS/LCSD and the samples were re-extracted in accordance with the laboratory quality control program.

During review of the results, the hexavalent chromium was not detected but the detection limit was identified as being above the ADEC cleanup level. The total chromium was below the ADEC cleanup level and the hexavalent species of chromium can not exceed the total chromium concentration, so this is not considered a concern.

Based on review of the field and laboratory quality control review, all of the data may be used for the objectives of the evaluation.





## 5.5 Conceptual Site Model

The conceptual site model (CSM) is a method used to systematically evaluate the potential receptors that may exist at a site now or at any time in the future. The initial site characterization included a draft CSM based on known or suspected contamination at the site. The activities and results completed during this phase of the project did not significantly change the CSM for the site and the draft CSM is considered adequate for the property at this time.

## 6.0 ANALYSIS

**NORTECH** has completed corrective action and additional delineation activities as outlined in the corrective action plan at 2143 Van Horn Road, in Fairbanks, Alaska. The corrective actions consisted of removal of the floor drain structures with additional field screening and sampling at the limits of excavation. Additional groundwater contaminant delineation was also undertaken outside the south shop. The facility is currently owned by Glenn Goetz and is operating as Alaska Truck and Gear with two maintenance shops and a retail area. This report documents the activities that have been conducted at the site to address these concerns and makes recommendations for future activities at the facility.

### 6.1 North Shop (FD-01)

A single groundwater sample was collected from FD-01 for chromium speciation after initial characterization results indicated that total chromium exceeded the ADEC cleanup level and the Fairbanks background concentration. The initial results were generally inconsistent with the both the soil results from this location and the groundwater results from the other areas sampled during the initial characterization, as well as with field observations during the initial sampling. The results from the new sample indicated that the total chromium concentration was below the ADEC cleanup level as well as consistent with the range of chromium results found in the south shop during the initial investigation. The hexavalent chromium speciation did not have an adequate detection limit to determine the fraction of total chromium that is hexavalent, but this is not considered necessary due to the total chromium results. Based on these results, chromium is no longer considered a contaminant of concern at the site.

The floor drain structure was removed from the floor after the groundwater sampling was completed. No additional field screening or sampling was necessary based on the previous results. This shop building is now considered to meet the ADEC cleanup levels and no additional investigation is considered necessary in this area.



## 6.2 South Shop Floor Drain Removal

The work plan for the floor drain removal included limited concrete cutting and soil excavation as needed to remove the floor drain structures and facilitate sealing of the concrete floor. After the structures were removed, soil headspace field screening was completed at the limits of excavation. Laboratory sampling was undertaken at the floor drain location in the event that the previous sampling location was removed during excavation or field screening results at the limits of excavation are higher than the highest readings during the initial characterization. Laboratory analysis was limited to DRO based on the initial characterization results.

### 6.2.1 FD-02

This floor drain was located near the northwest corner of the south shop. Field screening and sampling during the initial characterization indicated that this area met the ADEC cleanup levels for each of the contaminants of concern. After removal of the floor drain, field screening of the sidewalls and bottom were higher than the previous field screening results during the initial characterization. A laboratory sample was collected from the bottom of this excavation. DRO was not detected in this sample, confirming the previous results at this location. This former floor drain location is no longer considered a potential source area for contamination beneath this shop.

### 6.2.2 FD-03

FD-03 is located in the central shop work area approximately 35 feet south of the northern wall. During the initial characterization, this location had elevated field screening values in the one foot interval immediately below the drum bottom (four feet below the slab) and field screening results generally attenuated to background below that depth. The floor drain structure removal included approximately one foot of soil beneath the bottom of the floor drain structure, including the contaminated soil which was sampled during the initial site investigation. After the sampling effort, this former floor drain was backfilled and sealed with concrete.

One laboratory sample was collected from FD-03 to characterize the soil at the limits of excavation. The sidewall and bottom field screening locations had similar results (32.7 and 24.2 ppm respectively) and the bottom area was sampled to provide data regarding the depth of the DRO contamination. This sample had a DRO concentration of 161 mg/kg, which is below the ADEC cleanup level of 250 mg/kg. These results indicate that the soil remaining at this location meets the ADEC cleanup levels. Future excavation in this area may encounter a minor amount of soil with elevated field screening values, but this is considered negligible for the estimate of contaminated soil remaining beneath the structure.







### 6.2.3 FD-04

FD-04 is located on the western side of the shop approximately 60 feet south of the north wall. The initial characterization indicated that this location had elevated field screening values from the bottom of the drum to approximately eight feet below the slab (five feet below the drum) with the highest field screening result (429 ppm) approximately two feet below the bottom of the structure. Field screening after removal of the floor drain structure showed lower results than the initial characterization on the bottom of the excavation (one foot below the structure, 32.3 ppm) and higher results on the sidewalls (906 ppm).

Based on these field screening results, a sample was collected on the sidewalls of the excavation to characterize the material remaining in the area. The material sampled below the floor drain structure during the initial characterization remains in place and the location has been backfilled and sealed with concrete. The DRO concentration (2,210 mg/kg) on the sidewall is similar to the concentration remaining two feet beneath the former structure (1920 mg/kg). These results confirm that this former floor drain structure contaminated the soil in this area. The similarity of these DRO concentrations confirms that the initial characterization that identified DRO as the primary contaminant of concern was appropriate for this location. The original estimate of contaminated soil beneath the slab in the area (30 – 35 cubic yards) is unchanged.

### 6.2.4 FD-05

FD-05 is located in the central work area of the shop approximately 30 feet north of the south entrance. The field screening results after removal of the FD-05 floor drain structure were 43.7 ppm on the bottom and 22.6 ppm on the sidewall. These were below the initial characterization field screening results for the sample that was collected approximately four feet below the bottom of the structure. These field screening results confirmed the initial characterization and no additional samples were collected in accordance with the work plan. The original estimated quantity of 30 – 35 cubic yards remains unchanged.

A flush mount monument was installed in the concrete slab to facilitate installation of a monitoring well at this location. The location was selected due to the relatively high DRO concentration and the geometry of the floor drains and expected groundwater flow direction.





---

### 6.2.5 FD-06

This former floor drain is located in the southeast corner of the shop. During the initial characterization, elevated field screening results were found in the two feet below the bottom of the drum and the initial characterization sample was collected at the bottom of the drum. The soil at the former sample location was removed during this removal of the structure and the new field screening results at the bottom (16.0 ppm) were similar to the previous results one foot below the drum (19.9 ppm). The sidewall field screening result of 53.0 ppm was above the previous field screening results at this location.

As described in the corrective action plan, one sample was collected from the sidewalls due to the higher field screening result. This sample had a DRO concentration of 1,480 mg/kg. Based on the previous and new field screening results, the new bottom of the excavation probably has a similar concentration now that the previous sample location (4,160 mg/kg) has been removed. This result confirms the previously documented impacts and the estimated quantity of contaminated soil remains unchanged at approximately 30 – 35 cubic yards. This location has been sealed with concrete.

### 6.2.6 Summary and Recommendations

The floor drain structures were removed from the south shop during these corrective action activities. Field screening and laboratory results indicate that the limited soil removal successfully removed the small amount of DRO contaminated soil at FD-02 as well as reduced the highest DRO concentrations at location FD-06. Locations FD-04 and FD-05 were confirmed to be similar to the initial characterization results. Based on these new results and the previous geometric assumptions (1 to 1 slope of contamination from the bottom of the slab to the water table), the estimate of contaminated soil beneath the building has been reduced to 90 to 110 cubic yards of soil.

As described above, the floor drain structures were removed from the slab and the slab was cut with a smooth edge. Then the excavations were backfilled and the concrete floor was patched with concrete. This has effectively sealed the concrete slab to prevent future releases in these locations. Additionally, this concrete seal has effectively immobilized the existing soil contamination beneath the slab by preventing infiltration and migration of water below the slab. Therefore, this corrective action is considered to have effectively addressed both the primary sources and the secondary source soils beneath the building while the building is present on the site. No additional characterization or corrective action is considered necessary or recommended at this time. In the event that the building is removed, the contaminated secondary source soils will need to be addressed.

### 6.3 Groundwater

Laboratory sampling was completed at the former floor drain locations during the initial characterization in August 2006. These results generally confirmed the contaminants of concern in the groundwater with DRO concentrations exceeding the ADEC cleanup level in the FD-03, FD-04, FD-05, and FD-06 locations, with concentrations ranging from 3.78 to 15.1 mg/l. RRO concentrations also exceed the ADEC cleanup levels in FD-06, the location with the highest RRO concentration in the soil. The previous results are shown in Figure 4 along with the new results discussed below.

#### 6.3.1 Field Parameters

A variety of field parameters were collected during the sampling event and summarized in Table 3. The pH, conductivity, and temperature are used to verify that the groundwater conditions have stabilized (results steady within ~10%) during the sampling event. The dissolved oxygen (DO) and oxidation/reduction potential (ORP) may be indicators of biological degradation of contaminants in the groundwater. Low DO is generally an indicator of being in a contaminant plume, while higher DO is indicative of being outside the plume. A negative ORP is generally indicative of a reducing environment, which is generally consistent with the natural degradation of petroleum contaminants. These values are considered raw values from the instrument and have not been pH or temperature corrected.

The pH, conductivity, and temperature are generally similar to previous results in the Fairbanks area. The variability of the temperature is thought to be related to the sampling conditions, which required keeping the equipment in the truck with the truck door open to the subzero outdoor temperatures. An example of this is FD-01 which was collected inside and shows a significantly higher temperature and is probably closer to the actual aquifer temperature.

The dissolved oxygen is generally higher at the edges of a plume and lower in the middle. The DO results indicate that contamination is present beneath the building and in the surrounding areas. The upgradient (southeast and east) samples with a DO of 0 mg/L suggest that contaminants may be migrating towards the south shop. The detectable concentrations of DO in the farthest downgradient locations (22, 28, and 29) suggest that these areas may be on the edge of the shop plume. The concentration of 12.09 mg/L at location 28 is considered abnormally high, but it does indicate a detectable DO concentration at this location. The negative ORP values generally indicate that the investigation area is a reducing environment and that contaminants in this area may be undergoing anaerobic reduction. While this indicates that natural biodegradation of the contaminants may be occurring, a more detailed study is required to fully evaluate the potential for natural biodegradation at this property.



### 6.3.2 DRO/RRO Concentrations

Based on the results within the building, additional delineation of groundwater contamination was needed outside the building to define the limits of the dissolved DRO plume. Groundwater was sampled at nine locations in the vicinity of the southern shop building utilizing direct push methods. A tenth location was attempted, but gave indications of being frozen at depth and no water could be recovered with the screen between 11 and 14 feet below grade.

The new results provided groundwater DRO and RRO concentrations that are below the ADEC cleanup levels around most of the south shop. The areas northwest and north of the impacted floor drains (locations 21, 22, 23, 29, and FD-02) had non-detect or low concentrations of DRO that were not consistent with any particular hydrocarbon. The frozen location was also in this direction. Overall, these results indicate that the contamination does not appear to be moving significantly in the northwest direction. This is probably due to a combination of the relatively low mobility of the DRO hydrocarbons as well as potential groundwater effects due to irregular permanently frozen ground in the heavily used driveway areas.

Two locations (25 and 26) were expected to be upgradient background locations. DRO and RRO concentrations at these locations met the ADEC cleanup levels, although low levels of DRO and RRO consistent with weathered middle distillate were detected at location 26. The source of these hydrocarbons is unknown at this time. No obvious source is present in this direction and the hydraulic gradient may be impacted by permanently frozen ground in the driveway areas.

Locations 28 and 24 were located west of the floor drains and had a DRO concentration slightly above the ADEC cleanup level. Location 24 was the only sample that had a hydrocarbon odor during sampling and also had the highest DRO and RRO concentration during the exterior delineation effort. This area along the exterior of the southern shop wall was used for drum storage and had stained soil during the Phase I ESA inspection. Assuming that this contamination is related to the floor drains suggests that the hydraulic gradient beneath the property may be more to the west or southwest. A third sample farther to the southwest (location 27) was non-detect for both DRO and RRO, suggesting that contaminant migration west and/or southwest from the known floor drain sources is limited.

An alternative interpretation of the results from location 24 is that another source, potentially offsite to the south, is present and contributing to the DRO and RRO concentrations in the groundwater. As described above, an additional source may also be responsible for the DRO and RRO detected at location 26. While no obvious other





sources, either onsite or offsite, were observed, evaluation of the potential offsite sources would require groundwater elevation monitoring to determine the normal groundwater flow direction at the site.

The groundwater results at this site indicate that contamination is not widespread and does not impact other buildings on the property. Contamination may extend off of Lot 10 to the south or east, but other sources in these directions may be contributing to the problem as well. Permanently frozen soil in the heavy traffic driveway areas may also be having an impact on the contaminant migration.

### 6.3.3 Water Supply Well

The water supply well is adjacent to the south side of the retail store and is northwest (downgradient) of the south shop and former floor drain structures. This well was tested for DRO/RRO and drinking water VOCs and none of these contaminants of concern were detected. This well is reported to be fairly shallow and is only used for bathrooms and truck/equipment washing. Alaska Truck and Gear provides bottled drinking water for employees and the well water is not used for drinking due to poor aesthetic qualities. Based on the well sample results, as well as the groundwater results and frozen location, the contaminants from the shop have not reached the water supply well at this time and appear unlikely to in the future.

### 6.3.4 Summary and Recommendations

Laboratory sampling has been completed in both the north and south shop floor drain locations, outside the south shop, and from the water supply well. This data indicates that the north shop and water supply well are not impacted by contaminants of concern at this site. Groundwater contamination is present beneath and adjacent to the south shop and is limited to DRO and RRO. The highest concentrations were detected beneath the former floor drain structures and are within an order of magnitude of the groundwater cleanup level.

While the former floor drain structures have impacted the groundwater at the site, the data indicates that the concentrations are relatively low and that the contamination is not migrating in the direction of expected groundwater flow. This suggests that the groundwater flow is not to the northwest as expected or additional sources outside of the building footprint may be present. Determination of the hydraulic gradient at the site is necessary to evaluate the potential flow direction of the groundwater and the potential migration direction for the contaminants at the site.







The results also indicate that the contaminant migration is generally less than 60 feet. Clean limits were found in most directions, but contamination found in some of the perimeter wells exceeds the ADEC cleanup level and/or may be coming from other sources, as described above. At this time, the concentrations do not warrant additional delineation beyond the data available (such as offsite to the south), but the long-term site evaluation should include monitoring wells in these areas to provide contaminant concentration data to augment the hydraulic gradient data.

Evaluation of the hydraulic gradient requires a minimum of three monitoring locations with four or five considered much more accurate. Additionally, long-term monitoring at the site and evaluation of potential other sources requires monitoring wells in specific locations. Based on these needs, **NORTECH** recommends installation of five monitoring wells as shown in Figure 4. FD-05 is recommended as the source area location because a flush-mount monument has already been installed at this location. Wells near locations 22 and 28 are recommended to provide perimeter wells in the north and west directions. Wells near locations 24 and 26 are recommended to provide perimeter wells in these directions and evaluate the potential for additional sources of contamination.

**NORTECH** recommends installation of these wells and initial sampling during March or April 2007 with annual sampling in September/October of 2007, 2008, and 2009. Monthly groundwater elevations should be collected for the first 12 months after well installation to evaluate the hydraulic gradient. These sampling times are recommended to evaluate the groundwater conditions during the stable groundwater recession during the winter months in Fairbanks and avoid transient conditions that often provide conflicting results. This is considered appropriate in Fairbanks because the winter season and groundwater recession represent 7-8 months of a typical year. Recommendations for future sampling events beyond 2009 would be evaluated in the 2009 sampling report. Laboratory analysis should be limited to DRO and RRO. A detailed study of natural attenuation parameters is not currently considered necessary, but continued collection of the standard field parameters during future sampling events is recommended.

Prepacked direct push monitoring wells are recommended for use at this site. Locations with poor recharge showed no clear pattern during these initial characterization efforts. The poor recharge should be avoided by the use of the larger diameter prepacked wells. Flush-mount monuments without a concrete apron should be installed to prevent damage from truck traffic or during plowing and facilitate recovery of the wells in the event that damage occurs.







## 6.4 Property Transfer Implications

The Phase I and II activities undertaken at this site were initiated to facilitate the sale of the property. The data currently available suggests that the future owner of the property will have liability for contaminated soil beneath the south shop at the former locations of FD-04, FD-05, and FD-06. This material is currently encapsulated beneath the structure, but would need to be addressed in accordance with ADEC regulations in force at the time of building demolition. ADEC typically documents this type of remaining contamination through deed notices and land-use restrictions and draft language is available from ADEC.

The groundwater monitoring program is designed to evaluate the potential for this encapsulated material to migrate and impact receptors outside the building footprint. The recommended program should be adequate to address these concerns and periodic limited confirmation sampling may be required after 2009. This is typically done on a two or three year basis. An additional sampling event may be necessary at the time of building demolition and/or other corrective action. These requirements will also be documented in the deed notice and land use restriction.

The corrective action and long-term monitoring activities described above are considered routine in the environmental industry. The goal of this characterization effort is to develop an ADEC-approved work plan that can be used to estimate the future costs of the environmental concerns at the site. The liability and work plan can then be reasonably incorporated into a purchase and sale agreement for the property.

## 7.0 CONCLUSIONS

The initial site characterization at Alaska Truck and Gear was reported in September 13, 2006 and the corrective action work plan to remove the floor drains was approved by ADEC on September 19, 2006. **NORTECH** has executed this work plan, including removal of the six floor drain structures and characterization of subsurface soil and groundwater. Field screening, soil sampling, and groundwater sampling were undertaken to complete the characterization of the contamination associated with the former floor drains, as described in the work plan. Based on the results of these activities, **NORTECH** has developed the following conclusions about the Site:

- Each of the six floor drain structures has been removed along with adjacent soil and the concrete slab has been patched and sealed with new concrete
- FD-01 in the north shop meets the ADEC cleanup levels (based on Fairbanks background concentrations) for both soil and groundwater





- FD-02 in the south shop meets the ADEC cleanup levels for both soil and groundwater
- FD-03 meets the ADEC cleanup levels for soil, while the DRO concentration exceeds the ADEC cleanup level in water
- FD-04, FD-05, and FD-06 exceed the ADEC cleanup level for DRO in both soil and groundwater and FD-06 also exceeds the groundwater cleanup level for RRO
- Approximately 90 – 110 cubic yards of contaminated soil are estimated to remain beneath the building slab
- This soil is effectively encapsulated by the presence of the building and is considered a minimal risk for migration
- The highest DRO concentration in water is approximately an order of magnitude above the ADEC cleanup level
- Groundwater DRO concentrations outside the building footprint are lower than those in the building
- The groundwater DRO concentration outside the building exceeds the ADEC cleanup level to the west and southwest of the floor drain areas
- Elevated DRO concentrations extend up to 60 feet from the building in these directions
- The results suggest that the hydraulic gradient may not be to the northwest and/or additional sources outside the building may be contributing to the DRO concentrations
- Permanently frozen ground may be present northwest of the shop, between the shop and the retail building
- The water supply well near the retail building is not impacted by the contamination

## 8.0 RECOMMENDED GROUNDWATER MONITORING PROGRAM

Based on the conclusions described above, additional delineation of the groundwater plume is not considered necessary. Hydraulic gradient evaluation and a multi-year groundwater monitoring program are recommended to determine the groundwater flow direction and evaluate the stability of the DRO plume at the site. The recommended groundwater program has the following components:



- Documentation Efforts
  - Submit this report to ADEC to document the site conditions and for approval as a groundwater monitoring program for the activities recommended below
  - Use this report with ADEC to develop deed notification and/or land use restrictions for the property
  - Submit this report to EPA to document removal of the Class V injection wells and document the site conditions and planned groundwater monitoring program
- Install five direct-push monitoring wells as shown in Figure 4
  - The FD-04 location is in the source area
  - The other four locations represent the expected perimeter of the groundwater plume
- Complete a hydraulic gradient evaluation to determine the groundwater flow direction
  - Complete an elevation survey the five wells
  - Collect groundwater elevation data monthly for 12 consecutive months
  - Report available data with each groundwater sampling report
- Complete a multi-year groundwater sampling program with brief reporting requirements after each sampling event
  - Field parameters should be collected during sampling events
  - Laboratory analysis should be for DRO and RRO
  - The first sampling event should be at the time of well installation
  - The second sampling event should be in September/October 2007
  - The third sampling event should be in September/October 2008
  - The fourth sampling event should be in September/October 2009
- Complete a summary report for the site with recommendations for future activities, if necessary



## 9.0 LIMITATIONS AND NOTIFICATIONS

**NORTECH** provides a level of service that is performed within the standards of care and competence of the environmental engineering profession. However, it must be recognized that limitations exist within any site investigation or assessment. This report provides results based on a restricted work scope and from the analysis and observation of a limited number of samples. Therefore, while it is our opinion that these limitations are reasonable and adequate for the purposes of this report, actual site conditions may differ. Specifically, the unknown nature of exact subsurface physical conditions, sampling locations, the analytical procedures' inherent limitations, as well as financial and time constraints are limiting factors.

The report is a record of observations and measurements made on the subject site as described. The data should be considered representative only of the time the site investigation was completed. No other warranty or presentation, either expressed or implied, is included or intended. This report is prepared for the exclusive use of Alaska Truck and Gear. If it is made available to others, it should be for information on factual data only, and not as a warranty of conditions, such as those interpreted from the results presented or discussed in the report. We certify that except as specifically noted in this report, all statements and data appearing in this report are in conformance with ADEC's Standard Sampling Procedures. **NORTECH** has performed the work, made the findings, and proposed the recommendations described in this report in accordance with generally accepted environmental engineering practices.

## 10.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

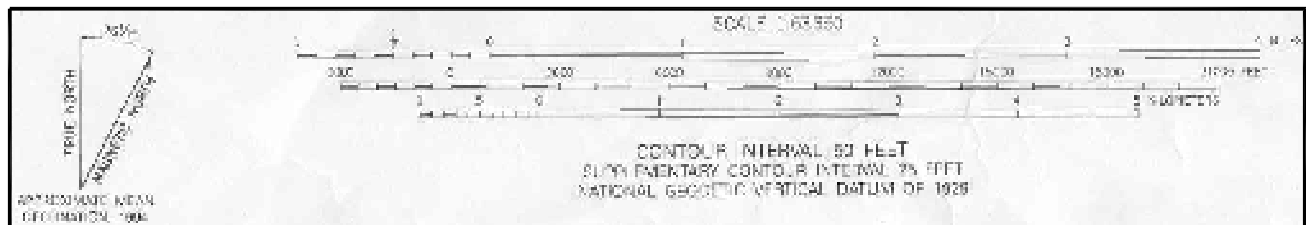
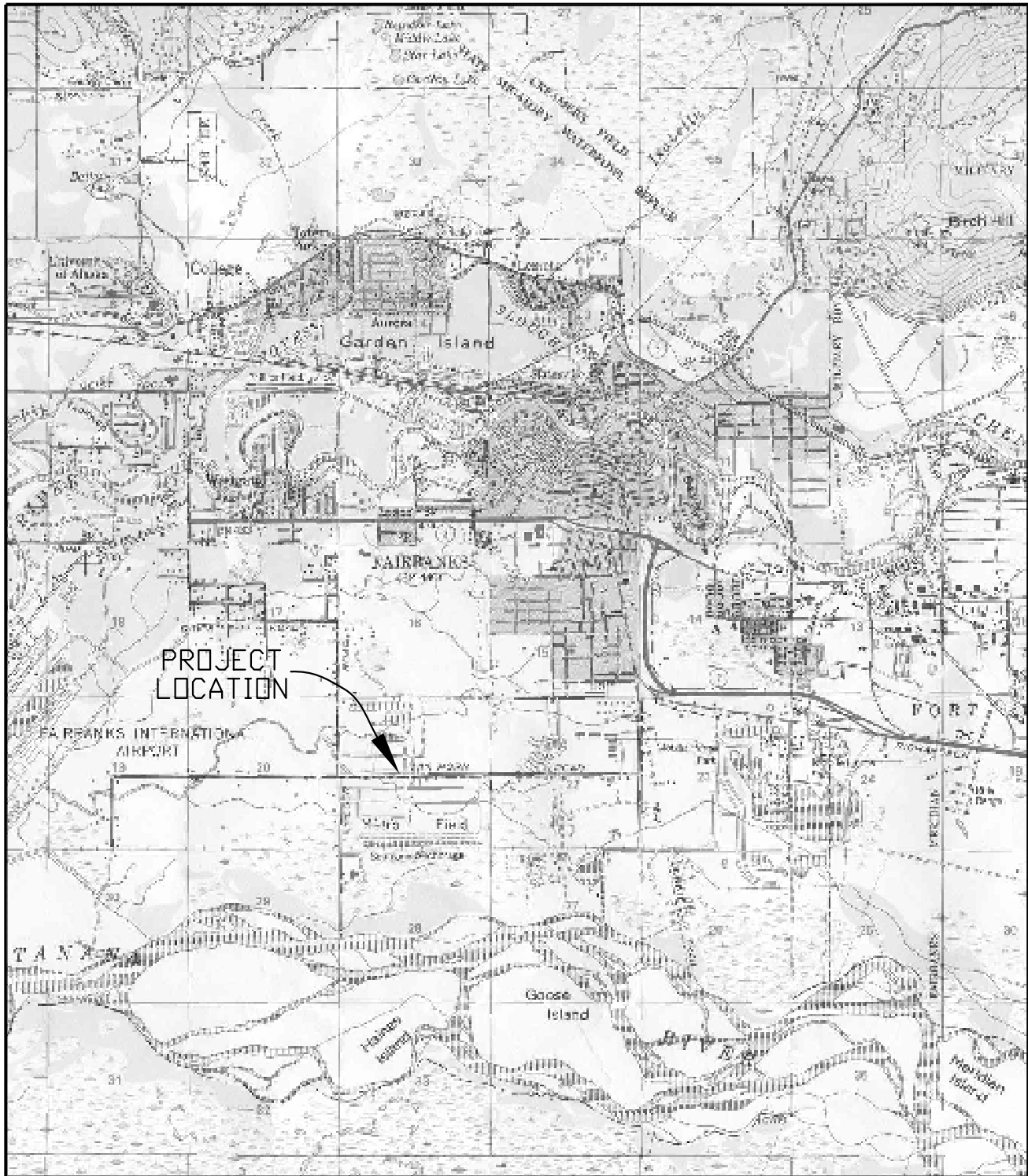
**Dave Miller**, Environmental Scientist for **NORTECH**, has a B.S. and M.S. in Biology (emphasis in botany and mycology). He has extensive experience conducting environmental assessments, remedial investigations, and other fieldwork in Alaska.

David L. Miller  
Environmental Scientist

**Peter Beardsley, PE**, Environmental Engineer for **NORTECH** has a B.S. degree in Environmental Engineering and is a registered Civil Engineer in Alaska. He has worked on all aspects of environmental investigations and cleanup efforts and is well versed in ESA regulatory requirements.

Peter Beardsley, PE  
Environmental Engineer





ENVIRONMENTAL & ENGINEERING CONSULTANTS

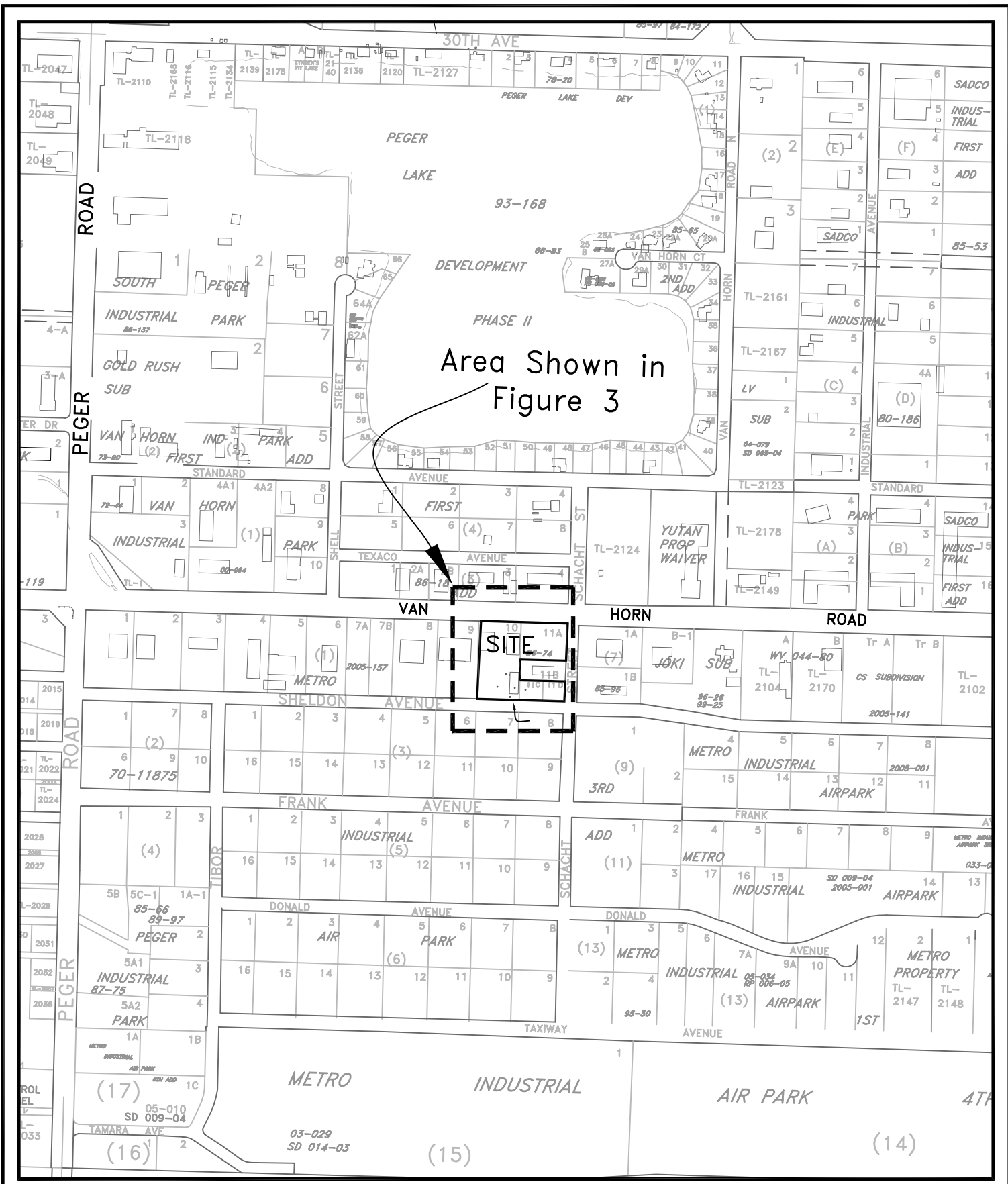
2400 College Road, Fairbanks, Alaska 99709  
 (907) 452-5688 FAX: (907) 452-5694

Location Map  
 Goetz Lots, Block 1, Metro Ind.  
 Fairbanks, Alaska

USGS Fairbanks (D-2, SW), AK  
 1992

FIGURE  
 1

DATE:	06/21/06
DESIGN:	PLB
DRAWN:	PLB
PROJECT NO:	06-1044
DWG:	061044a(201)
SCALE:	1" = 1mi

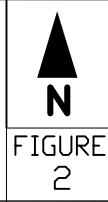


Area Shown in Figure 3



**ENVIRONMENTAL & ENGINEERING CONSULTANTS**  
 2400 College Road, Fairbanks, Alaska 99709  
 (907) 452-5688 FAX: (907) 452-5694

Vicinity Map  
 Goetz Lots, Block 1, Metro Ind.  
 Fairbanks, Alaska



DATE:	1/24/07
DESIGN:	PLB
DRAWN:	PLB
PROJECT NO:	06-1044
DWG:	061044a(302)
SCALE:	1" = 600'



Van Horn Road

SITE

North Shop

Retail Area

FD-01

Water Supply Well

South Shop

Sheldon Avenue

Area Shown in Figure 4



ENVIRONMENTAL & ENGINEERING CONSULTANTS

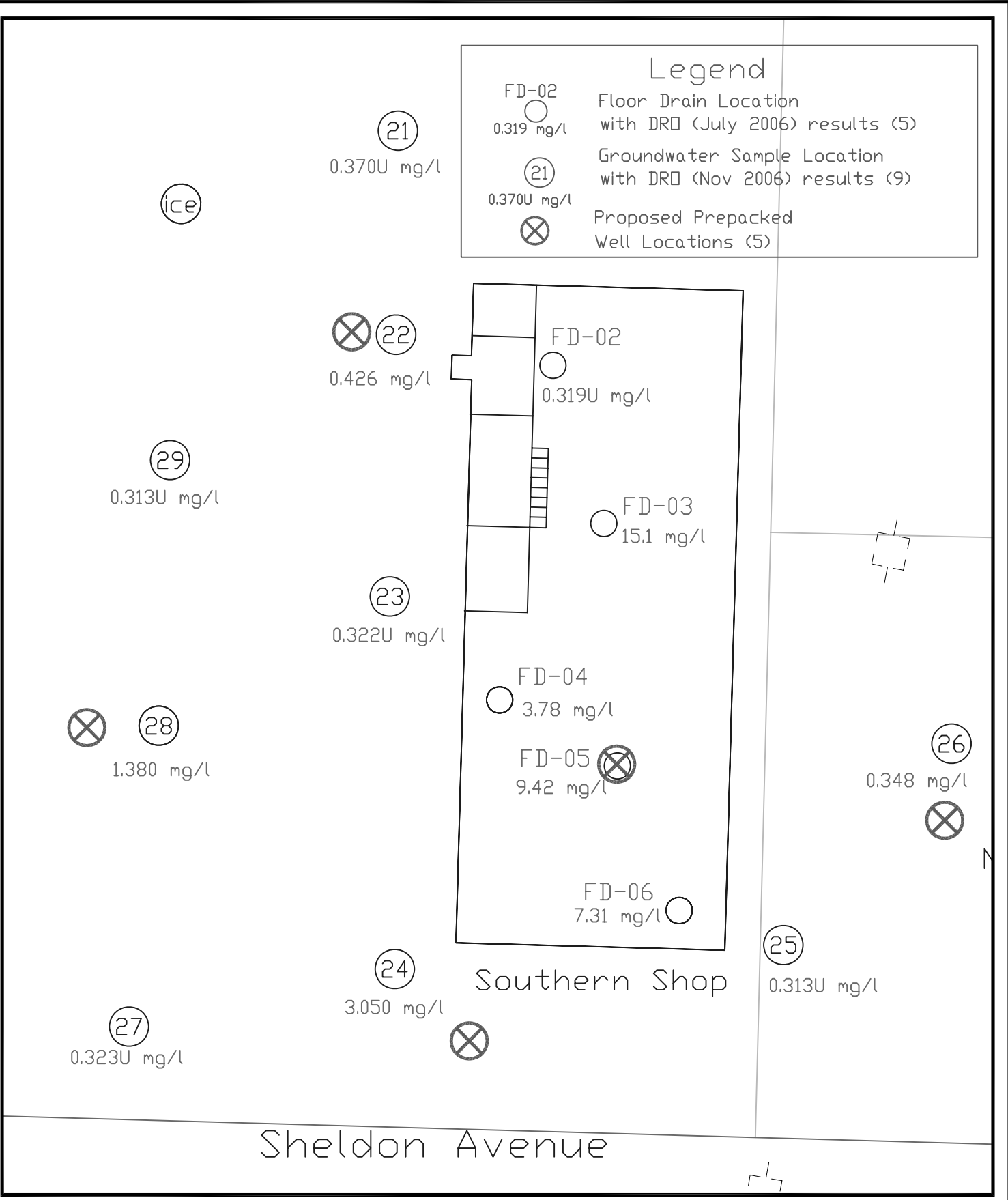
2400 College Road, Fairbanks, Alaska 99709  
(907) 452-5688 FAX: (907) 452-5694

Site Map  
Goetz Lots, Block 1, Metro Ind.  
Fairbanks, Alaska



FIGURE  
3

DATE:	1/24/07
DESIGN:	PLB
DRAWN:	PLB
PROJECT NO:	06-1044
DWG:	061044a(303)
SCALE:	1" = 75'



ENVIRONMENTAL & ENGINEERING CONSULTANTS

2400 College Road, Fairbanks, Alaska 99709  
 (907) 452-5688 FAX: (907) 452-5694

Sample Locations with DRD Results  
 Goetz Lots, Block 1, Metro Ind.  
 Fairbanks, Alaska



FIGURE  
4

1/24/07
PLB
AWN: PLB
PROJECT NO: 06-1044
061044a(304)
1" = 20'

**Table 1  
Soil Laboratory Results**

Sample ID	ADEC	FD-2	FD-3	FD-4	FD-6
Analyte	Method 2	mg/Kg	mg/Kg	mg/Kg	mg/Kg
<b>Closure Results</b>					
Field Screening Result	ppm	17.2	24.2	798	43.2
DRO	250	ND(21.3)	161	<b>2,210</b>	<b>1,480</b>
Lab Comment			WMD	WMD	LO

<b>Previous Characterization Results</b>					
Field Screening Result	ppm	2.3	98.2	429	43.2
DRO	250	ND(21.0)	<b>2,150</b>	<b>1,920</b>	<b>4,160</b>

**Notes**

ND(X.XX)	Analyte not detected at the listed detection limit
Shade	Analyte detected in concentration below the ADEC Cleanup level
<b>Bold</b>	Analyte detected in concentration exceeding the ADEC Cleanup level
WMD	Pattern is consistent with a weathered middle distillate
LO	Pattern is consistent with a lube oil

**Table 2**  
**Groundwater Laboratory Results**

Sample ID	Unit	DRO	RRO	Lab Comment
ADEC Limit	mg/L	1.3	1.5	
21	mg/L	0.370U	0.617U	
22	mg/L	0.426	0.538U	UNH
23	mg/L	0.322U	0.536U	
24	mg/L	<b>3.05</b>	<b>2.22</b>	WMD
25	mg/L	0.313U	0.522U	
26	mg/L	0.348	0.531	WMD
27	mg/L	0.323U	0.538U	
28	mg/L	<b>1.38</b>	1.07	WMD
29	mg/L	0.313U	0.522U	

Sample ID	Unit	Total Cr	Hexavalent Cr	Lab Comment
ADEC Limit	mg/L	0.1	0.1	
FD-01	mg/L	0.00896	2.00U	

**Notes:**

U	Analyte not detected at the listed detection limit
Shade	Analyte detected in concentration below the ADEC Cleanup level
<b>Bold</b>	Analyte detected in concentration exceeding the ADEC Cleanup level
WMD	Pattern is consistent with a weathered middle distillate
UNH	Unknown (not identifiable) hydrocarbon is present

**Table 3**  
**Field Parameter Summary**

Location	pH	Conductivity	DO	Temp	ORP
Units	pH	uohms	mg/L	deg F	mv
21	NT	NT	NT	NT	NT
22	6.08	67.3	1.42	38.5	-240
23	5.93	54.5	0.0	43.7	-213
24	6.60	74.1	0.0	40.5	-156
25	6.35	37.8	0.0	37.8	-139
26	6.18	32.3	0.0	36.7	-133
27	6.08	34.2	0.0	33.4	-51
28	6.43	47.7	12.09	36.7	-105
29	6.28	59.8	3.21	33.4	-103
FD-01	6.6	40.2	0.0	49.6	-55

**Notes:**

NT Location not tested

**Appendix 3 - Site Photographs**  
**Floor Drain Removal - 2143 Van Horn Road**



Photo 01 - Lube-Cube and FD-06 after removal of the structure and prior to sealing



Photo 02 - FD-02 after removal of the structure and prior to sealing



**Appendix 3 - Site Photographs**  
**Floor Drain Removal - 2143 Van Horn Road**



Photo 03 - FD-05 after removal of the structure and prior to sealing



Photo 04 - Bottom sampling location (typical)



**SGS Environmental Services  
Alaska Division  
Level II Laboratory Data Report**

Project: Alaska Truck & Gear  
Client: Nortech  
SGS Work Order: 1065745

Released by:

A handwritten signature in black ink that reads "Stephen C. Ede". The signature is written in a cursive style.

Alaska Division Technical Director

Stephen C. Ede  
2006.10.24  
16:26:47 -08'00'

**Contents:**

Cover Page  
Case Narrative  
Final Report Pages  
Quality Control Summary Forms  
Chain of Custody/Sample Receipt Forms

**Note:**

Unless otherwise noted, all quality assurance/quality control criteria is in compliance with the standards set forth by the proper regulatory authority, the SGS Quality Assurance Program Plan, and the National Environmental Accreditation Conference.



Case Narrative

**Client** NORTECH Nortech  
**Workorder** 1065745 Alaska Truck & Gear

**Printed Date/Time** 10/24/2006 13:47

**Sample ID** **Client Sample ID**

---

Refer to the sample receipt form for information on sample condition.

---

**1065745002 PS FD-3**  
DRO - The pattern is consistent with a weathered middle distillate.

**1065745003 PS FD-4**  
DRO - The pattern is consistent with a middle distillate.

**1065745004 PS FD-6**  
DRO - Surrogate is outside QC goals (biased high) due to hydrocarbon interference.  
DRO/RRO - The pattern is consistent with a lube oil.

200 W. Potter Drive  
Anchorage, AK 99518-1605  
Tel: (907) 562-2343  
Fax: (907) 561-5301  
Web: <http://www.us.sgs.com>

Peter Beardsley  
Nortech  
2400 College Rd.  
Fairbanks, AK 99709

**Work Order:** 1065745  
Alaska Truck & Gear  
**Client:** Nortech  
**Report Date:** October 24, 2006

**Released by:**

Alaska Division Technical Director

Stephen C. Ede  
2006.10.24 16:27:02 -  
08'00'

Enclosed are the analytical results associated with the above workorder.

As required by the state of Alaska and the USEPA, a formal Quality Assurance/Quality Control Program is maintained by SGS. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request.

The laboratory certification numbers are AK971-05 (DW), UST-005 (CS) and AK00971 (Micro) for ADEC and 001582 for NELAP (RCRA methods: 1010/1020, 1311, 6000/7000, 9040/9045, 9056, 9060, 9065, 8015B, 8021B, 8081A/8082, 8260B, 8270C).

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP, the National Environmental Laboratory Accreditation Program and, when applicable, other regulatory authorities.

If you have any questions regarding this report or if we can be of any other assistance, please contact your SGS Project Manager at 907-562-2343.

The following descriptors may be found on your report which will serve to further qualify the data.

PQL	Practical Quantitation Limit (reporting limit).
U	Indicates the analyte was analyzed for but not detected.
F	Indicates value that is greater than or equal to the MDL.
J	The quantitation is an estimation.
ND	Indicates the analyte is not detected.
B	Indicates the analyte is found in a blank associated with the sample.
*	The analyte has exceeded allowable regulatory or control limits.
GT	Greater Than
D	The analyte concentration is the result of a dilution.
LT	Less Than
!	Surrogate out of control limits.
Q	QC parameter out of acceptance range.
M	A matrix effect was present.
JL	The analyte was positively identified, but the quantitation is a low estimation.
E	The analyte result is above the calibrated range.

Note: Soil samples are reported on a dry weight basis unless otherwise specified.



SGS Ref.# 1065745001  
Client Name Nortech  
Project Name/# Alaska Truck & Gear  
Client Sample ID FD-2  
Matrix Soil/Solid

All Dates/Times are Alaska Standard Time  
Printed Date/Time 10/24/2006 13:47  
Collected Date/Time 10/05/2006 15:50  
Received Date/Time 10/07/2006 15:50  
Technical Director Stephen C. Ede

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<b><u>Semivolatile Organic Fuels Department</u></b>									
Diesel Range Organics	ND	21.3	mg/Kg	AK102	A		10/11/06	10/20/06	MCM
<b><u>Surrogates</u></b>									
5a Androstane <surr>	73.7		%	AK102	A	50-150	10/11/06	10/20/06	MCM
<b><u>Solids</u></b>									
Total Solids	91.0		%	SM20 2540G	A			10/16/06	BNE



SGS Ref.# 1065745002  
Client Name Nortech  
Project Name/# Alaska Truck & Gear  
Client Sample ID FD-3  
Matrix Soil/Solid

All Dates/Times are Alaska Standard Time  
Printed Date/Time 10/24/2006 13:47  
Collected Date/Time 10/05/2006 15:55  
Received Date/Time 10/07/2006 15:50  
Technical Director Stephen C. Ede

Sample Remarks:

DRO - The pattern is consistent with a weathered middle distillate.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<b><u>Semivolatile Organic Fuels Department</u></b>									
Diesel Range Organics	161	21.2	mg/Kg	AK102	A		10/11/06	10/20/06	MCM
<b><u>Surrogates</u></b>									
5a Androstane <surr>	61.6		%	AK102	A	50-150	10/11/06	10/20/06	MCM
<b><u>Solids</u></b>									
Total Solids	93.7		%	SM20 2540G	A			10/16/06	BNE





SGS Ref.# 1065745003  
Client Name Nortech  
Project Name/# Alaska Truck & Gear  
Client Sample ID FD-4  
Matrix Soil/Solid

All Dates/Times are Alaska Standard Time  
Printed Date/Time 10/24/2006 13:47  
Collected Date/Time 10/05/2006 16:05  
Received Date/Time 10/07/2006 15:50  
Technical Director Stephen C. Ede

Sample Remarks:  
DRO - The pattern is consistent with a middle distillate.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<b><u>Semivolatile Organic Fuels Department</u></b>									
Diesel Range Organics	2210	581	mg/Kg	AK102	A		10/11/06	10/20/06	MCM
<b><u>Surrogates</u></b>									
5a Androstane <surrogate>	451	!	%	AK102	A	50-150	10/11/06	10/20/06	MCM
<b><u>Solids</u></b>									
Total Solids	88.5		%	SM20 2540G	A			10/16/06	BNE



**SGS Ref.#** 1065745004  
**Client Name** Nortech  
**Project Name/#** Alaska Truck & Gear  
**Client Sample ID** FD-6  
**Matrix** Soil/Solid

**All Dates/Times are Alaska Standard Time**  
**Printed Date/Time** 10/24/2006 13:47  
**Collected Date/Time** 10/05/2006 16:10  
**Received Date/Time** 10/07/2006 15:50  
**Technical Director** Stephen C. Ede

Sample Remarks:

DRO - Surrogate is outside QC goals (biased high) due to hydrocarbon interference.  
 DRO/RRO - The pattern is consistent with a lube oil.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<b><u>Semivolatile Organic Fuels Department</u></b>									
Diesel Range Organics	1480	1080	mg/Kg	AK102	A		10/11/06	10/20/06	MCM
<b><u>Surrogates</u></b>									
5a Androstane <surr>	1540	!	%	AK102	A	50-150	10/11/06	10/20/06	MCM
<b><u>Solids</u></b>									
Total Solids	83.7		%	SM20 2540G	A			10/16/06	BNE



SGS Ref.# 733696 Method Blank  
Client Name Nortech  
Project Name/# Alaska Truck & Gear  
Matrix Soil/Solid

Printed Date/Time 10/24/2006 13:47  
Prep Batch XXX17424  
Method SW3550B  
Date 10/11/2006

QC results affect the following production samples:

1065745001, 1065745002, 1065745003, 1065745004

Parameter	Results	Reporting/Control Limit	MDL	Units	Analysis Date
-----------	---------	----------------------------	-----	-------	------------------

**Semivolatile Organic Fuels Department**

Diesel Range Organics	ND	19.4	1.94	mg/Kg	10/20/06
-----------------------	----	------	------	-------	----------

**Surrogates**

5a Androstane <surr>	82.5	60-120		%	10/20/06
----------------------	------	--------	--	---	----------

Batch XFC7204  
Method AK102  
Instrument HP 5890 Series II FID SV D R



SGS Ref.# 734134 Method Blank  
Client Name Nortech  
Project Name/# Alaska Truck & Gear  
Matrix Soil/Solid

Printed Date/Time 10/24/2006 13:47  
Prep Batch  
Method  
Date

QC results affect the following production samples:  
1065745001, 1065745002, 1065745003, 1065745004

Parameter	Results	Reporting/Control Limit	MDL	Units	Analysis Date
-----------	---------	----------------------------	-----	-------	------------------

**Solids**

Total Solids	99.7			%	10/16/06
Batch	SPT7037				
Method	SM20 2540G				
Instrument					



SGS Ref.# 735072 Duplicate  
Client Name Nortech  
Project Name/# Alaska Truck & Gear  
Original 1065748002  
Matrix Soil/Solid

Printed Date/Time 10/24/2006 13:47  
Prep Batch  
Method  
Date

QC results affect the following production samples:  
1065745001, 1065745002, 1065745003, 1065745004

Parameter	Original Result	QC Result	Units	RPD	RPD Limits	Analysis Date
-----------	-----------------	-----------	-------	-----	------------	---------------

**Solids**

Total Solids	94.9	94.1	%	1	(< 5)	10/16/2006
Batch	SPT7037					
Method	SM20 2540G					
Instrument						



SGS Ref.# 733697 Lab Control Sample  
Client Name Nortech  
Project Name/# Alaska Truck & Gear  
Matrix Soil/Solid

Printed Date/Time 10/24/2006 13:47  
Prep Batch XXX17424  
Method SW3550B  
Date 10/11/2006

QC results affect the following production samples:  
1065745001, 1065745002, 1065745003, 1065745004

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
-----------	------------	-----------	-----------------	-----	------------	---------------	---------------

**Semivolatile Organic Fuels Department**

Diesel Range Organics LCS 30.8 95 ( 75-125 ) 32.6 mg/Kg 10/20/2006

**Surrogates**

5a Androstane <surr> LCS 89 ( 60-120 ) 10/20/2006

Batch XFC7204  
Method AK102  
Instrument HP 5890 Series II FID SV D R



**SGS Ref.#** 733885 Matrix Spike **Printed Date/Time** 10/24/2006 13:47  
 733886 Matrix Spike Duplicate **Prep** **Batch** XXX17424  
**Method** Sonication Extraction Soil AK1  
**Date** 10/11/2006  
**Original** 1065745002  
**Matrix** Soil/Solid

QC results affect the following production samples:  
 1065745001, 1065745002, 1065745003, 1065745004

Parameter	Qualifiers	Original Result	QC Result	Pet Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
<b><u>Semivolatile Organic Fuels Department</u></b>									
Diesel Range Organics	MS	161	219		164* ( 60-140 )			35.4 mg/Kg	10/20/2006
	MSD		196		102	11	(< 50 )	35.2 mg/Kg	10/20/2006
<b>Surrogates</b>									
5a Androstane <surr>	MS		2.84		80 ( 50-150 )				10/20/2006
	MSD		2.52		72	12			10/20/2006
<b>Batch</b>	XFC7204								
<b>Method</b>	AK102								
<b>Instrument</b>	HP 5890 Series II FID SV D R								





**CHAIN OF CUSTODY RECORD**  
**SGS Environmental Services Inc.**

1065745



- Local  
 • Alaska  
 • Louisiana  
 • New Jersey  
 • West Virginia

1 CLIENT: **NORTECH** PHONE NO: (907) 452-5688  
 CONTACT: **Peter Beardsley** SITE/PWSID#: \_\_\_\_\_  
 PROJECT: **Alaska Truck & Gear** E-MAIL: \_\_\_\_\_  
 REPORTS TO: **NORTECH** 2400 College Rd  
 Fairbanks AK FAX NO.: (907) 452-5694  
 INVOICE TO: **NORTECH** QUOTE # \_\_\_\_\_  
 P.O. NUMBER **06-1044**

SGS Reference: \_\_\_\_\_ PAGE 1 OF 1

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	SAMPLE TYPE	Preservatives Used	Analysts Required	REMARKS
1 A	FD-2	10/5/06	1550	Soil	G		X	
2	FD-3	10/5/06	1555	Soil	G		X	
3	FD-4	10/5/06	1605	Soil	G		X	
4	FD-6	10/5/06	1610	Soil	G		X	

3 CONTAINERS

Shipping Carrier: **hand** Samples Received Cold? (Circle) YES  NO   
 Shipping Ticket No: \_\_\_\_\_ Temperature [C]: **16.3** [F]: **99** [C]: **4.5** [F]: **50**  
 Special Deliverable Requirements: \_\_\_\_\_ Chain of Custody Seal: (Circle) INTACT  BROKEN  ABSENT  
 Requested Turnaround Time and Special Instructions: \_\_\_\_\_

4

Collected/Relinquished By: (1)	Date	Time	Received By:
<i>[Signature]</i>	10/6/06	1018	<i>[Signature]</i>
Relinquished By: (2)	Date	Time	Received By:
<i>[Signature]</i>	10/6/06	1640	<i>[Signature]</i>
Relinquished By: (3)	Date	Time	Received By:
<i>[Signature]</i>			
Relinquished By: (4)	Date	Time	Received By:
<i>[Signature]</i>	10/7/06	1050	<i>[Signature]</i>



SAMPLE RECEIPT FORM

SGS WO#:

- Yes  No  NA  Are samples RUSH, priority, or w/n 72 hrs. of hold time?
- Yes  No  NA  If yes have you done e-mail notification?
- Yes  No  NA  Are samples within 24 hrs. of hold time or due date?
- Yes  No  NA  If yes, have you spoken with Supervisor?
- Yes  No  NA  Archiving bottles – if req., are they properly marked?
- Yes  No  NA  Are there any problems? PM Notified? \_\_\_\_\_
- Yes  No  NA  Were samples preserved correctly and pH verified?

Due Date: 10/20/06

Received Date: 10/6/06

Received Time: 1018

Is date/time conversion necessary? ---

# of hours to AK Local Time: \_\_\_\_\_

Thermometer ID: Longstem B

Cooler ID	Temp Blank	Cooler Temp
<u>1</u>	<u>3.9</u> °C	<u>4.5</u> °C
_____	_____ °C	_____ °C
_____	_____ °C	_____ °C
_____	_____ °C	_____ °C
_____	_____ °C	_____ °C

\*Temperature readings include thermometer correction factors

Delivery method (circle all that apply) Client /

Alert Courier / UPS / FedEx / USPS /

AA Goldstreak / NAC / ERA / PenAir / Carllie

Lynden / SGS / Other: \_\_\_\_\_

Airbill # \_\_\_\_\_

Additional Sample Remarks: (✓ if applicable)

Extra Sample Volume? \_\_\_\_\_

Limited Sample Volume? \_\_\_\_\_

Field preserved for volatiles? \_\_\_\_\_

Field-filtered for dissolved? \_\_\_\_\_

Lab-filtered for dissolved? \_\_\_\_\_

Ref Lab required? \_\_\_\_\_

Foreign Soil? \_\_\_\_\_

- Yes  No  NA  If this is for PWS, provide PWSID. \_\_\_\_\_
- Yes  No  NA  Will courier charges apply? \_\_\_\_\_
- Yes  No  NA  Method of payment? \_\_\_\_\_
- Data package required? (Level: 1 (2) 3 / 4 )
- Notes: \_\_\_\_\_
- Is this a DoD project? (USACE, Navy, AFCEE)

***This section must be filled out for DoD projects (USACE, Navy, AFCEE)***

- |       |       |   |                                  |
|-------|-------|---|----------------------------------|
| Yes   | No    | Is received temperature 4 ± 2°C?                              |                                  |
| _____ | _____ | Exceptions: _____   | Samples/Analyses Affected: _____ |
| _____ | _____ | _____   | _____                            |
| _____ | _____ | _____   | _____                            |
| _____ | _____ | Rad Screen performed? Result: _____                           |                                  |
| _____ | _____ | Was there an airbill? (Note # above in the right hand column) |                                  |
| _____ | _____ | Was cooler sealed with custody seals?                         |                                  |
| _____ | _____ | # / where: _____  |                                  |
| _____ | _____ | Were seal(s) intact upon arrival?                             |                                  |
| _____ | _____ | Was there a COC with cooler?                                  |                                  |
| _____ | _____ | Was COC sealed in plastic bag & taped inside lid of cooler?   |                                  |
| _____ | _____ | Was the COC filled out properly?                              |                                  |
| _____ | _____ | Did the COC indicate COE / AFCEE / Navy project?              |                                  |
| _____ | _____ | Did the COC and samples correspond?                           |                                  |
| _____ | _____ | Were all sample packed to prevent breakage?                   |                                  |
| _____ | _____ | Packing material: _____                                       |                                  |
| _____ | _____ | Were all samples unbroken and clearly labeled?                |                                  |
| _____ | _____ | Were all samples sealed in separate plastic bags?             |                                  |
| _____ | _____ | Were all VOCs free of headspace and/or MeOH preserved?        |                                  |
| _____ | _____ | Were correct container / sample sizes submitted?              |                                  |
| _____ | _____ | Is sample condition good?                                     |                                  |
| _____ | _____ | Was copy of CoC, SRF, and custody seals given to PM to fax?   |                                  |

***This section must be filled if problems are found.***

- Yes  No  Was client notified of problems? \_\_\_\_\_
- Individual contacted: \_\_\_\_\_
- Via: Phone / Fax / Email (circle one) \_\_\_\_\_
- Date/Time: \_\_\_\_\_
- Reason for contact: \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- Change Order Required? \_\_\_\_\_
- SGS Contact: \_\_\_\_\_

Notes: \_\_\_\_\_

Completed by (sign): Sunny Castleberry

(print): Sunny Castleberry

Login proof (check one): waived \_\_\_\_\_ required

performed by: [Signature]





SGS WO#:

1065745

SAMPLE RECEIPT FORM FOR TRANSFERS
From
FAIRBANKS, ALASKA OR HONOLULU, HAWAII
To
ANCHORAGE, AK

TO BE COMPLETED IN ANCHORAGE UPON ARRIVAL FROM FAIRBANKS OR HAWAII.
NOTES RECORDED BELOW ARE ACTIONS NEEDED UPON ARRIVAL IN ANCHORAGE.

Notes:
\_\_\_\_\_
\_\_\_\_\_
\_\_\_\_\_
\_\_\_\_\_
\_\_\_\_\_

Receipt Date / Time: 10/7/06 1050

Is Sample Date/Time Conversion Necessary? Yes \_\_\_\_\_ No [checked]

Number of Hours From Alaska Local Time: \_\_\_\_\_

Foreign Soil? Yes \_\_\_\_\_ No [checked]

Delivery method to Anchorage (circle all that apply):

Alert Courier / UPS / FedEx / USPS / AA Goldstreak / NAC / ERA / PenAir / Carlife / Lynden / SGS

Other: \_\_\_\_\_

Airbill # \_\_\_\_\_

COOLER AND TEMP BLANK READINGS\*

Table with 6 columns: Cooler ID, Temp Blank (°C), Cooler (°C), Cooler ID, Temp Blank (°C), Cooler (°C). Row 1: 1, 1.8, 4.3, blank, blank, blank.

CUSTODY SEALS INTACT: YES / NO

# / WHERE: 1 on front

COMPLETED BY: [Signature]

\*Temperature readings include thermometer correction factors.

5747

TB = 1.8  
C = 4.3

**SGS** Environmental

CUSTODY SEAL UO 8745-8746

*Jimmy Costello*

Signature:

Date/Time:

10/6/06 @ 16:10



**SGS Environmental Services  
Alaska Division  
Level II Laboratory Data Report**

Project: 06-1044  
Client: Nortech  
SGS Work Order: 1066775

Released by:

A handwritten signature in black ink that reads "Stephen C. Ede". The signature is written in a cursive style.

Alaska Division Technical Director

Stephen C. Ede  
2006.11.21  
08:38:42 -09'00'

**Contents:**

Cover Page  
Case Narrative  
Final Report Pages  
Quality Control Summary Forms  
Chain of Custody/Sample Receipt Forms

**Note:**

Unless otherwise noted, all quality assurance/quality control criteria is in compliance with the standards set forth by the proper regulatory authority, the SGS Quality Assurance Program Plan, and the National Environmental Accreditation Conference.



**Case Narrative**

**Client** NORTECH Nortech  
**Workorder** 1066775 06-1044

**Printed Date/Time** 11/20/2006 16:51

**Sample ID** **Client Sample ID**

---

Refer to the sample receipt form for information on sample condition.

---



200 W. Potter Drive  
Anchorage, AK 99518-1605  
Tel: (907) 562-2343  
Fax: (907) 561-5301  
Web: <http://www.us.sgs.com>

Peter Beardsley  
Nortech  
2400 College Rd.  
Fairbanks, AK 99709

**Work Order:** 1066775  
06-1044  
**Client:** Nortech  
**Report Date:** November 20, 2006

**Released by:**

Alaska Division Technical Director

Stephen C. Ede  
2006.11.21 08:39:06 -  
09'00'

Enclosed are the analytical results associated with the above workorder.

As required by the state of Alaska and the USEPA, a formal Quality Assurance/Quality Control Program is maintained by SGS. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request.

The laboratory certification numbers are AK971-05 (DW), UST-005 (CS) and AK00971 (Micro) for ADEC and 001582 for NELAP (RCRA methods: 1010/1020, 1311, 6000/7000, 9040/9045, 9056, 9060, 9065, 8015B, 8021B, 8081A/8082, 8260B, 8270C).

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP, the National Environmental Laboratory Accreditation Program and, when applicable, other regulatory authorities.

If you have any questions regarding this report or if we can be of any other assistance, please contact your SGS Project Manager at 907-562-2343.

The following descriptors may be found on your report which will serve to further qualify the data.

PQL	Practical Quantitation Limit (reporting limit).
U	Indicates the analyte was analyzed for but not detected.
F	Indicates value that is greater than or equal to the MDL.
J	The quantitation is an estimation.
ND	Indicates the analyte is not detected.
B	Indicates the analyte is found in a blank associated with the sample.
*	The analyte has exceeded allowable regulatory or control limits.
GT	Greater Than
D	The analyte concentration is the result of a dilution.
LT	Less Than
!	Surrogate out of control limits.
Q	QC parameter out of acceptance range.
M	A matrix effect was present.
JL	The analyte was positively identified, but the quantitation is a low estimation.
E	The analyte result is above the calibrated range.

Note: Soil samples are reported on a dry weight basis unless otherwise specified.



SGS Ref.# 1066775001  
Client Name Nortech  
Project Name/# 06-1044  
Client Sample ID FD-01  
Matrix Water (Surface, Eff., Ground)

All Dates/Times are Alaska Standard Time  
Printed Date/Time 11/20/2006 16:51  
Collected Date/Time 11/12/2006 13:50  
Received Date/Time 11/13/2006 8:32  
Technical Director Stephen C. Ede

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<b><u>Metals Department</u></b>									
Hexavalent Chromium	ND	2.00	mg/L	SW7196A	B	(<5)		11/13/06	CAW
<b><u>Metals by ICP/MS</u></b>									
Chromium	8.96	1.00	ug/L	EP200.8	A		11/14/06	11/17/06	TK



SGS Ref.# 741114 Method Blank  
Client Name Nortech  
Project Name/# 06-1044  
Matrix Water (Surface, Eff., Ground)

Printed Date/Time 11/20/2006 16:51  
Prep Batch  
Method  
Date

QC results affect the following production samples:  
1066775001

Parameter	Results	Reporting/Control Limit	MDL	Units	Analysis Date
-----------	---------	-------------------------	-----	-------	---------------

**Metals Department**

Hexavalent Chromium	0.00800 J	0.0200	0.00620	mg/L	11/13/06
Batch	FHV4626				
Method	SW7196A				
Instrument					



SGS Ref.# 741457 Method Blank  
Client Name Nortech  
Project Name/# 06-1044  
Matrix Water (Surface, Eff., Ground)

Printed Date/Time 11/20/2006 16:51  
Prep Batch MXX18424  
Method E200.2  
Date 11/14/2006

QC results affect the following production samples:  
1066775001

Parameter	Results	Reporting/Control Limit	MDL	Units	Analysis Date
-----------	---------	-------------------------	-----	-------	---------------

**Metals by ICP/MS**

Chromium	ND	1.00	0.310	ug/L	11/17/06
Batch	MMS4556				
Method	EP200.8				
Instrument	Perkin Elmer Sciex ICP-MS P3				



SGS Ref.# 741115 Lab Control Sample

Printed Date/Time 11/20/2006 16:51  
Prep Batch

Client Name Nortech  
Project Name/# 06-1044  
Matrix Water (Surface, Eff., Ground)

Method  
Date

QC results affect the following production samples:

1066775001

---

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
-----------	------------	-----------	-----------------	-----	------------	---------------	---------------

---

**Metals Department**

Hexavalent Chromium LCS 0.525 105 ( 85-115 ) 0.5 mg/L 11/13/2006

Batch FHV4626  
Method SW7196A  
Instrument



SGS Ref.# 741458 Lab Control Sample  
Client Name Nortech  
Project Name/# 06-1044  
Matrix Water (Surface, Eff., Ground)

Printed Date/Time 11/20/2006 16:51  
Prep Batch MXX18424  
Method E200.2  
Date 11/14/2006

QC results affect the following production samples:  
1066775001

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
-----------	------------	-----------	-----------------	-----	------------	---------------	---------------

**Metals by ICP/MS**

Chromium	LCS	945	95	( 85-115 )		1000 ug/L	11/17/2006
Batch	MMS4556						
Method	EP200.8						
Instrument	Perkin Elmer Sciex ICP-MS P3						



SGS Ref.# 741116 Matrix Spike  
741117 Matrix Spike Duplicate

Printed Date/Time 11/20/2006 16:51  
Prep Batch  
Method  
Date

Original 1066775001  
Matrix Water (Surface, Eff., Ground)

QC results affect the following production samples:  
1066775001

Parameter	Qualifiers	Original Result	QC Result	Pet Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
-----------	------------	-----------------	-----------	-----------	---------------	-----	------------	---------------	---------------

Metals Department

Hexavalent Chromium	MS ND	52.5	105	( 85-115 )				50	mg/L 11/13/2006
	MSD	52.5	105			0	(< 15 )	50	mg/L 11/13/2006

Batch FHV4626  
Method SW7196A  
Instrument





1066775

awall  
Maryland  
North Carolina

063398

1

CLIENT: Nortech Envirow & Engr. Consultants  
 CONTACT: Peter Beardsley PHONE NO: (907) 452-5688  
 PROJECT: 06-1044 SITE/PWSID#:   
 REPORTS TO: E-MAIL:   
 Beardsley@Nortechengr.com FAX NO: (907) 452  
 INVOICE TO: Nortech QUOTE # 7901 P.O. NUMBER

2

SGS Reference:

No CONTAINERS

PRESERVATIVES USED: 4/107  
 ANALYSIS REQUIRED: (3) EPA 200.8  
 SW 71964

SAMPLE TYPE  
 C= COMP  
 G= GRAB

1  
 1

6  
 6

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	REMARKS
0A	FD-01	11-12-06	1:50P	W	
0B	FD-01	"	1:52P	W	

5

Collected/Relinquished By: (1) M. Dennis Shepard  
 Date: 11-12-06 Time: 3:00PM  
 Received By: Chris Silbee

Relinquished By: (2) Chris Silbee  
 Date: 11-13-06 Time: 8:31AM  
 Received By: [Signature]

Relinquished By: (3)  
 Date: 0832 11/13/06  
 Received By: [Signature]

Relinquished By: (4)  
 Date: [Signature]

Shipping Carrier: AA-Gold Star  
 Samples Received Cold? (Circle) YES NO  
 Temperature (C): 18-0.3 (C) = 2.0

Shipping Ticket No:  
 Special Deliverable Requirements:  
 Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Requested Turnaround Time and Special Instructions:  
**SHORT HOLDING**



SAMPLE RECEIPT FORM

SGS WO#:

Yes No NA

- Are samples **RUSH**, priority, or w/n 72 hrs. of **hold time**?
- If yes, have you done *e-mail notification*?
- Are samples *within 24 hrs.* of **hold time** or due date?
- If yes, have you *spoken with Supervisor*?
- Archiving bottles - if req., are they properly marked?
- Are there any **problems**? PM Notified? \_\_\_\_\_
- Were samples preserved correctly and pH verified?

Due Date: 11/24/06  
 Received Date: 11/13/06  
 Received Time: 0832  
 Is date/time conversion necessary? No  
 # of hours to AK Local Time: \_\_\_\_\_

Thermometer ID: 7D

Cooler ID	Temp Blank	Cooler Temp
<u>1</u>	<u>0.3 °C</u>	<u>2.0 °C</u>
_____	_____ °C	_____ °C
_____	_____ °C	_____ °C
_____	_____ °C	_____ °C
_____	_____ °C	_____ °C

\*Temperature readings include thermometer correction factors

- If this is for PWS, provide **PWSID**. \_\_\_\_\_
- Will courier charges apply?
- Method of payment? \_\_\_\_\_
- Data package required? (Level: 1 / 2 / 3 / 4)
- Notes: \_\_\_\_\_
- Is this a DoD project? (USACE, Navy, AFCEE)

Delivery method (circle all that apply) Client  
 Alert Courier / UPS / FedEx / USPS /  
 AA Goldstreak / NAC / ERA / PenAir / Carlisle  
 Lynden / SGS / Other: \_\_\_\_\_

Airbill #

- Additional Sample Remarks: (*√ if applicable*)
- Extra Sample Volume?
  - Limited Sample Volume?
  - Field preserved for volatiles?
  - Field-filtered for dissolved?
  - Lab-filtered for dissolved?
  - Ref Lab required?
  - Foreign Soil?

***This section must be filled out for DoD projects (USACE, Navy, AFCEE)***

Yes No

- Is received temperature  $4 \pm 2^\circ\text{C}$ ?
- Exceptions: \_\_\_\_\_ Samples/Analyses Affected: \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- Rad Screen performed? Result: \_\_\_\_\_
- Was there an airbill? (Note # above in the right hand column)
- Was cooler sealed with custody seals?  
# / where: \_\_\_\_\_
- Were seal(s) intact upon arrival?
- Was there a COC with cooler?
- Was COC sealed in plastic bag & taped inside lid of cooler?
- Was the COC filled out properly?
- Did the COC indicate COE / AFCEE / Navy project?
- Did the COC and samples correspond?
- Were all sample packed to prevent breakage?  
Packing material: \_\_\_\_\_
- Were all samples unbroken and clearly labeled?
- Were all samples sealed in separate plastic bags?
- Were all VOCs free of headspace and/or MeOH preserved?
- Were correct container / sample sizes submitted?
- Is sample condition good?
- Was copy of CoC, SRF, and custody seals given to PM to fax?

***This section must be filled if problems are found.***

Yes No

- Was client notified of problems?
- Individual contacted: \_\_\_\_\_
- Via: Phone / Fax / Email (*circle one*)
- Date/Time: \_\_\_\_\_
- Reason for contact: \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- Change Order Required? \_\_\_\_\_
- SGS Contact: \_\_\_\_\_

Notes: Temp Blank too close, but contained no ice  
No ice in samples.

**SHORT HOLDING**

Completed by (sign): [Signature] (print): Reena Mistry  
 Login proof (check one): waived \_\_\_\_\_ required \_\_\_\_\_ performed by: \_\_\_\_\_





**SGS Environmental Services  
Alaska Division  
Level II Laboratory Data Report**

Project: 06-1044  
Client: Nortech  
SGS Work Order: 1066431

Released by:   
Alaska Division Technical Director

Stephen C. Ede  
2006.11.29  
15:48:47 -09'00'

**Contents:**

Cover Page  
Case Narrative  
Final Report Pages  
Quality Control Summary Forms  
Chain of Custody/Sample Receipt Forms

**Note:**

Unless otherwise noted, all quality assurance/quality control criteria is in compliance with the standards set forth by the proper regulatory authority, the SGS Quality Assurance Program Plan, and the National Environmental Accreditation Conference.



Case Narrative

Client NORTECH Nortech  
Workorder 1066431 06-1044

Printed Date/Time 11/29/2006 15:20

Sample ID Client Sample ID

---

Refer to the sample receipt form for information on sample condition.

---

1066431001 PS WW1  
VOC by 524.2 were analyzed by Montgomery Watson Harza of Monrovia, CA.

1066431003 PS 22  
DRO - Unknown hydrocarbon with several peaks is present.

1066431005 PS 24  
DRO/RRO - The pattern is consistent with a weathered middle distillate.

1066431007 PS 26  
DRO/RRO - The pattern is consistent with a weathered middle distillate.

1066431009 PS 28  
DRO/RRO - The pattern is consistent with a weathered middle distillate.

1066431011 TB Trip Blank  
VOC by 524.2 were analyzed by Montgomery Watson Harza of Monrovia, CA.

741428 MB MB for HBN 180341 [XXX/17573]  
AK103 - MB result is greater than one-half the PQL yet less than PQL.

741625 MB MB for HBN 180381 [XXX/17580]  
RRO - MB result is greater than one half of the PQL but less than PQL.

741626 LCS LCS for HBN 180381 [XXX/17580]  
RRO - LCS/LCSD spike recovery was biased high (123%,136%). Associated samples will be re-extracted.

741627 LCSD LCSD for HBN 180381 [XXX/17580]  
RRO - LCS/LCSD spike recovery was biased high (123%,136%). Associated samples will be re-extracted.

200 W. Potter Drive  
Anchorage, AK 99518-1605  
Tel: (907) 562-2343  
Fax: (907) 561-5301  
Web: <http://www.us.sgs.com>

Peter Beardsley  
Nortech  
2400 College Rd.  
Fairbanks, AK 99709

**Work Order:** 1066431  
06-1044  
**Client:** Nortech  
**Report Date:** November 29, 2006

**Released by:**

  
Alaska Division Technical Director

Stephen C. Ede  
2006.11.29 15:49:08  
-09'00'

Enclosed are the analytical results associated with the above workorder.

As required by the state of Alaska and the USEPA, a formal Quality Assurance/Quality Control Program is maintained by SGS. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request.

The laboratory certification numbers are AK971-05 (DW), UST-005 (CS) and AK00971 (Micro) for ADEC and 001582 for NELAP (RCRA methods: 1010/1020, 1311, 6000/7000, 9040/9045, 9056, 9060, 9065, 8015B, 8021B, 8081A/8082, 8260B, 8270C).

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP, the National Environmental Laboratory Accreditation Program and, when applicable, other regulatory authorities.

If you have any questions regarding this report or if we can be of any other assistance, please contact your SGS Project Manager at 907-562-2343.

The following descriptors may be found on your report which will serve to further qualify the data.

PQL	Practical Quantitation Limit (reporting limit).
U	Indicates the analyte was analyzed for but not detected.
F	Indicates value that is greater than or equal to the MDL.
J	The quantitation is an estimation.
ND	Indicates the analyte is not detected.
B	Indicates the analyte is found in a blank associated with the sample.
*	The analyte has exceeded allowable regulatory or control limits.
GT	Greater Than
D	The analyte concentration is the result of a dilution.
LT	Less Than
!	Surrogate out of control limits.
Q	QC parameter out of acceptance range.
M	A matrix effect was present.
JL	The analyte was positively identified, but the quantitation is a low estimation.
E	The analyte result is above the calibrated range.

Note: Soil samples are reported on a dry weight basis unless otherwise specified.



SGS Ref.# 1066431001  
Client Name Nortech  
Project Name/# 06-1044  
Client Sample ID WW1  
Matrix Water (Surface, Eff., Ground)

All Dates/Times are Alaska Standard Time  
Printed Date/Time 11/29/2006 15:20  
Collected Date/Time 11/12/2006 17:00  
Received Date/Time 11/14/2006 9:00  
Technical Director Stephen C. Ede

Sample Remarks:  
VOC by 524.2 were analyzed by Montgomery Watson Harza of Monrovia, CA.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<b><u>Semivolatile Organic Fuels Department</u></b>									
Diesel Range Organics	ND	0.319	mg/L	AK102	D		11/16/06	11/21/06	JE
Residual Range Organics	ND	0.532	mg/L	AK103	D		11/16/06	11/21/06	JE
<b>Surrogates</b>									
5a Androstane <surr>	93.1		%	AK102	D	50-150	11/16/06	11/21/06	JE
n-Triacontane-d62 <surr>	115		%	AK103	D	50-150	11/16/06	11/21/06	JE



SGS Ref.# 1066431002  
Client Name Nortech  
Project Name/# 06-1044  
Client Sample ID 21  
Matrix Water (Surface, Eff., Ground)

All Dates/Times are Alaska Standard Time  
Printed Date/Time 11/29/2006 15:20  
Collected Date/Time 11/12/2006 11:46  
Received Date/Time 11/14/2006 9:00  
Technical Director Stephen C. Ede

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
-----------	---------	-----	-------	--------	--------------	------------------	-----------	---------------	------

**Semivolatile Organic Fuels Department**

Diesel Range Organics	ND	0.370	mg/L	AK102	A		11/15/06	11/20/06	MCM
Residual Range Organics	ND	0.617	mg/L	AK103	A		11/15/06	11/20/06	MCM

**Surrogates**

5a Androstane <surr>	96.8		%	AK102	A	50-150	11/15/06	11/20/06	MCM
n-Triacontane-d62 <surr>	116		%	AK103	A	50-150	11/15/06	11/20/06	MCM





SGS Ref.# 1066431003  
Client Name Nortech  
Project Name/# 06-1044  
Client Sample ID 22  
Matrix Water (Surface, Eff., Ground)

All Dates/Times are Alaska Standard Time  
Printed Date/Time 11/29/2006 15:20  
Collected Date/Time 11/12/2006 12:26  
Received Date/Time 11/14/2006 9:00  
Technical Director Stephen C. Ede

Sample Remarks:  
DRO - Unknown hydrocarbon with several peaks is present.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<b><u>Semivolatile Organic Fuels Department</u></b>									
Diesel Range Organics	0.426	0.323	mg/L	AK102	A		11/15/06	11/20/06	MCM
Residual Range Organics	ND	0.538	mg/L	AK103	A		11/15/06	11/20/06	MCM
<b>Surrogates</b>									
5a Androstane <surr>	111		%	AK102	A	50-150	11/15/06	11/20/06	MCM
n-Triacontane-d62 <surr>	119		%	AK103	A	50-150	11/15/06	11/20/06	MCM



SGS Ref.# 1066431004  
Client Name Nortech  
Project Name/# 06-1044  
Client Sample ID 23  
Matrix Water (Surface, Eff., Ground)

All Dates/Times are Alaska Standard Time  
Printed Date/Time 11/29/2006 15:20  
Collected Date/Time 11/12/2006 13:03  
Received Date/Time 11/14/2006 9:00  
Technical Director Stephen C. Ede

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
-----------	---------	-----	-------	--------	--------------	------------------	-----------	---------------	------

**Semivolatile Organic Fuels Department**

Diesel Range Organics	ND	0.322	mg/L	AK102	A		11/15/06	11/20/06	MCM
Residual Range Organics	ND	0.536	mg/L	AK103	A		11/15/06	11/20/06	MCM

**Surrogates**

5a Androstane <surr>	83		%	AK102	A	50-150	11/15/06	11/20/06	MCM
n-Triacontane-d62 <surr>	97.7		%	AK103	A	50-150	11/15/06	11/20/06	MCM



SGS Ref.# 1066431005  
Client Name Nortech  
Project Name/# 06-1044  
Client Sample ID 24  
Matrix Water (Surface, Eff., Ground)

All Dates/Times are Alaska Standard Time  
Printed Date/Time 11/29/2006 15:20  
Collected Date/Time 11/12/2006 14:16  
Received Date/Time 11/14/2006 9:00  
Technical Director Stephen C. Ede

Sample Remarks:

DRO/RRO - The pattern is consistent with a weathered middle distillate.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<b><u>Semivolatile Organic Fuels Department</u></b>									
Diesel Range Organics	3.05	0.316	mg/L	AK102	A		11/15/06	11/20/06	MCM
Residual Range Organics	2.22	0.526	mg/L	AK103	A		11/15/06	11/20/06	MCM
<b>Surrogates</b>									
5a Androstane <surr>	86		%	AK102	A	50-150	11/15/06	11/20/06	MCM
n-Triacontane-d62 <surr>	88.1		%	AK103	A	50-150	11/15/06	11/20/06	MCM



SGS Ref.# 1066431006  
Client Name Nortech  
Project Name/# 06-1044  
Client Sample ID 25  
Matrix Water (Surface, Eff., Ground)

All Dates/Times are Alaska Standard Time  
Printed Date/Time 11/29/2006 15:20  
Collected Date/Time 11/12/2006 15:00  
Received Date/Time 11/14/2006 9:00  
Technical Director Stephen C. Ede

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<b><u>Semivolatile Organic Fuels Department</u></b>									
Diesel Range Organics	ND	0.313	mg/L	AK102	A		11/15/06	11/20/06	MCM
Residual Range Organics	ND	0.522	mg/L	AK103	A		11/15/06	11/20/06	MCM
<b>Surrogates</b>									
5a Androstane <surr>	110		%	AK102	A	50-150	11/15/06	11/20/06	MCM
n-Triacontane-d62 <surr>	119		%	AK103	A	50-150	11/15/06	11/20/06	MCM



SGS Ref.# 1066431007  
Client Name Nortech  
Project Name/# 06-1044  
Client Sample ID 26  
Matrix Water (Surface, Eff., Ground)

All Dates/Times are Alaska Standard Time  
Printed Date/Time 11/29/2006 15:20  
Collected Date/Time 11/12/2006 15:40  
Received Date/Time 11/14/2006 9:00  
Technical Director Stephen C. Ede

Sample Remarks:

DRO/RRO - The pattern is consistent with a weathered middle distillate.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<b><u>Semivolatile Organic Fuels Department</u></b>									
Diesel Range Organics	0.348	0.316	mg/L	AK102	A		11/15/06	11/20/06	MCM
Residual Range Organics	0.531	0.526	mg/L	AK103	A		11/15/06	11/20/06	MCM
<b>Surrogates</b>									
5a Androstane <surr>	115		%	AK102	A	50-150	11/15/06	11/20/06	MCM
n-Triacontane-d62 <surr>	125		%	AK103	A	50-150	11/15/06	11/20/06	MCM



SGS Ref.# 1066431008  
Client Name Nortech  
Project Name/# 06-1044  
Client Sample ID 27  
Matrix Water (Surface, Eff., Ground)

All Dates/Times are Alaska Standard Time  
Printed Date/Time 11/29/2006 15:20  
Collected Date/Time 11/12/2006 16:15  
Received Date/Time 11/14/2006 9:00  
Technical Director Stephen C. Ede

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<b><u>Semivolatile Organic Fuels Department</u></b>									
Diesel Range Organics	ND	0.323	mg/L	AK102	A		11/15/06	11/20/06	MCM
Residual Range Organics	ND	0.538	mg/L	AK103	A		11/15/06	11/20/06	MCM
<b>Surrogates</b>									
5a Androstane <surr>	97.1		%	AK102	A	50-150	11/15/06	11/20/06	MCM
n-Triacontane-d62 <surr>	112		%	AK103	A	50-150	11/15/06	11/20/06	MCM



**SGS Ref.#** 1066431009  
**Client Name** Nortech  
**Project Name/#** 06-1044  
**Client Sample ID** 28  
**Matrix** Water (Surface, Eff., Ground)

**All Dates/Times are Alaska Standard Time**  
**Printed Date/Time** 11/29/2006 15:20  
**Collected Date/Time** 11/12/2006 17:03  
**Received Date/Time** 11/14/2006 9:00  
**Technical Director** Stephen C. Ede

**Sample Remarks:**  
 DRO/RRO - The pattern is consistent with a weathered middle distillate.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<b><u>Semivolatile Organic Fuels Department</u></b>									
Diesel Range Organics	1.38	0.319	mg/L	AK102	A		11/15/06	11/20/06	MCM
Residual Range Organics	1.07	0.532	mg/L	AK103	A		11/15/06	11/20/06	MCM
<b>Surrogates</b>									
5a Androstane <surr>	95		%	AK102	A	50-150	11/15/06	11/20/06	MCM
n-Triacontane-d62 <surr>	91.3		%	AK103	A	50-150	11/15/06	11/20/06	MCM



SGS Ref.# 1066431010  
Client Name Nortech  
Project Name/# 06-1044  
Client Sample ID 29  
Matrix Water (Surface, Eff., Ground)

All Dates/Times are Alaska Standard Time  
Printed Date/Time 11/29/2006 15:20  
Collected Date/Time 11/12/2006 17:25  
Received Date/Time 11/14/2006 9:00  
Technical Director Stephen C. Ede

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<b><u>Semivolatile Organic Fuels Department</u></b>									
Diesel Range Organics	ND	0.313	mg/L	AK102	A		11/15/06	11/20/06	MCM
Residual Range Organics	ND	0.522	mg/L	AK103	A		11/15/06	11/20/06	MCM
<b>Surrogates</b>									
5a Androstane <surr>	117		%	AK102	A	50-150	11/15/06	11/20/06	MCM
n-Triacontane-d62 <surr>	130		%	AK103	A	50-150	11/15/06	11/20/06	MCM





**SGS Ref.#** 741428 Method Blank  
**Client Name** Nortech  
**Project Name/#** 06-1044  
**Matrix** Water (Surface, Eff., Ground)

**Printed Date/Time** 11/29/2006 15:20  
**Prep Batch** XXX17573  
**Method** SW3520C  
**Date** 11/15/2006

QC results affect the following production samples:

1066431002, 1066431003, 1066431004, 1066431005, 1066431006, 1066431007, 1066431008, 1066431009, 1066431010

Parameter	Results	Reporting/Control Limit	MDL	Units	Analysis Date
<b><u>Semivolatile Organic Fuels Department</u></b>					
Diesel Range Organics	ND	0.300	0.0600	mg/L	11/20/06
<b>Surrogates</b>					
5a Androstane <surr>	94.5	60-120		%	11/20/06
<b>Batch</b>	XFC7240				
<b>Method</b>	AK102				
<b>Instrument</b>	HP 5890 Series II FID SV D R				
Residual Range Organics	0.284 J	0.500	0.0600	mg/L	11/20/06
<b>Surrogates</b>					
n-Triacontane-d62 <surr>	117	60-120		%	11/20/06
<b>Batch</b>	XFC7240				
<b>Method</b>	AK103				
<b>Instrument</b>	HP 5890 Series II FID SV D R				



**SGS Ref.#** 741625 Method Blank  
**Client Name** Nortech  
**Project Name/#** 06-1044  
**Matrix** Water (Surface, Eff., Ground)

**Printed Date/Time** 11/29/2006 15:20  
**Prep Batch** XXX17580  
**Method** SW3520C  
**Date** 11/16/2006

QC results affect the following production samples:  
 1066431001

Parameter	Results	Reporting/Control Limit	MDL	Units	Analysis Date
<b><u>Semivolatile Organic Fuels Department</u></b>					
Diesel Range Organics	ND	0.300	0.0600	mg/L	11/21/06
<b>Surrogates</b>					
5a Androstane <surr>	95.3	60-120		%	11/21/06
<b>Batch</b>	XFC7242				
<b>Method</b>	AK102				
<b>Instrument</b>	HP 5890 Series II FID SV D R				
Residual Range Organics	0.277 J	0.500	0.0600	mg/L	11/21/06
<b>Surrogates</b>					
n-Triacontane-d62 <surr>	117	60-120		%	11/21/06
<b>Batch</b>	XFC7242				
<b>Method</b>	AK103				
<b>Instrument</b>	HP 5890 Series II FID SV D R				



**SGS Ref.#** 741429 Lab Control Sample  
**Client Name** Nortech  
**Project Name/#** 06-1044  
**Matrix** Water (Surface, Eff., Ground)

**Printed Date/Time** 11/29/2006 15:20  
**Prep Batch** XXX17573  
**Method** SW3520C  
**Date** 11/15/2006

QC results affect the following production samples:

1066431002, 1066431003, 1066431004, 1066431005, 1066431006, 1066431007, 1066431008, 1066431009, 1066431010

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
-----------	------------	-----------	-----------------	-----	------------	---------------	---------------

**Semivolatile Organic Fuels Department**

Diesel Range Organics	LCS	1.08	108	( 75-125 )		1 mg/L	11/20/2006
-----------------------	-----	------	-----	------------	--	--------	------------

**Surrogates**

5a Androstane <surr>	LCS		90	( 60-120 )			11/20/2006
----------------------	-----	--	----	------------	--	--	------------

**Batch** XFC7240  
**Method** AK102  
**Instrument** HP 5890 Series II FID SV D R

Residual Range Organics	LCS	1.08	108	( 60-120 )		1 mg/L	11/20/2006
-------------------------	-----	------	-----	------------	--	--------	------------

**Surrogates**

n-Triacontane-d62 <surr>	LCS		89	( 60-120 )			11/20/2006
--------------------------	-----	--	----	------------	--	--	------------

**Batch** XFC7240  
**Method** AK103  
**Instrument** HP 5890 Series II FID SV D R



**SGS Ref.#** 741626 Lab Control Sample  
 741627 Lab Control Sample Duplicate  
**Client Name** Nortech  
**Project Name/#** 06-1044  
**Matrix** Water (Surface, Eff., Ground)

**Printed Date/Time** 11/29/2006 15:20  
**Prep Batch** XXX17580  
**Method** SW3520C  
**Date** 11/16/2006

QC results affect the following production samples:  
 1066431001

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
-----------	------------	-----------	-----------------	-----	------------	---------------	---------------

**Semivolatile Organic Fuels Department**

Diesel Range Organics	LCS	1.16	116	( 75-125 )			1 mg/L	11/21/2006
	LCSD	1.16	116		0	(< 20 )	1 mg/L	11/21/2006

**Surrogates**

5a Androstane <surr>	LCS		91	( 60-120 )				11/21/2006
	LCSD		89		2			11/21/2006

**Batch** XFC7242  
**Method** AK102  
**Instrument** HP 5890 Series II FID SV D R

Residual Range Organics	LCS	1.23	123 *	( 60-120 )			1 mg/L	11/21/2006
	LCSD	1.36	136 *		10	(< 20 )	1 mg/L	11/21/2006

**Surrogates**

n-Triacontane-d62 <surr>	LCS		94	( 60-120 )				11/21/2006
	LCSD		93		1			11/21/2006

**Batch** XFC7242  
**Method** AK103  
**Instrument** HP 5890 Series II FID SV D R



**SGS Ref.#** 741613 Matrix Spike **Printed Date/Time** 11/29/2006 15:20  
 741614 Matrix Spike Duplicate **Prep Batch** XXX17573  
**Method** Continuous Liq Extra. AK102/1  
**Date** 11/15/2006  
**Original** 1066783004  
**Matrix** Water (Surface, Eff., Ground)

QC results affect the following production samples:

1066431002, 1066431003, 1066431004, 1066431005, 1066431006, 1066431007, 1066431008, 1066431009, 1066431010

Parameter	Qualifiers	Original Result	QC Result	Pet Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
-----------	------------	-----------------	-----------	-----------	---------------	-----	------------	---------------	---------------

**Semivolatile Organic Fuels Department**

Diesel Range Organics	MS	0.162 J	1.06	95	( 75-125 )			0.943	mg/L 11/20/2006
	MSD		1.23	114		15	(< 30 )	0.943	mg/L 11/20/2006

**Surrogates**

5a Androstane <surr>	MS		.0759	80	( 50-150 )				11/20/2006
	MSD		0.085	91		12			11/20/2006

**Batch** XFC7240  
**Method** AK102  
**Instrument** HP 5890 Series II FID SV D R

Residual Range Organics	MS	0.427 J	1.22	84	( 60-140 )			0.943	mg/L 11/20/2006
	MSD		1.56	120		25	(< 30 )	0.943	mg/L 11/20/2006

**Surrogates**

n-Triacontane-d62 <surr>	MS		.0793	84	( 50-150 )				11/20/2006
	MSD		0.089	94		11			11/20/2006

**Batch** XFC7240  
**Method** AK103  
**Instrument** HP 5890 Series II FID SV D R



**CHAIN OF CUSTODY RECORD**  
**SGS Environmental Services Inc.**

1066431



- Alaska
- Louisiana
- New Jersey
- West Virginia

1 CLIENT: Nortech  
 CONTACT: Peter Beardsley PHONE NO: (907) 452-5688  
 PROJECT: 06-1044 SITE/PWSID#: \_\_\_\_\_  
 REPORTS TO: \_\_\_\_\_  
Beardsley@nortechengr.com FAX NO.: (907) 452-5694  
 INVOICE TO: Nortech QUOTE # \_\_\_\_\_  
Peter Beardsley P.O. NUMBER 061044

SGS Reference: \_\_\_\_\_ PAGE 1 OF 2

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	SAMPLE TYPE	Preservatives Used	Analysis Required	HCL	HCL	HCL	REMARKS
1	D-E	11-12-08	5:00P	W	G	X		X			
2	A-C		5:10P		G				X		
3	A-B		11:46A			X		X			
4			12:26P			X		X			
5			1:03P			X		X			
6			2:16			X		X			
7			3:00			X		X			
8			3:40			X		X			
9			4:15			X		X			
5		11-12-06	5:03	W	G	X		X			

③ PRO VOCs 524

CONTAINERS		Shipping Carrier: <u>hand</u>		Samples Received Cold? (Circle) YES <u>NO</u>	
No	Analysis Required	Temperature [C: _____]	Shipping Ticket No: _____	Chain of Custody Seal: (Circle) INTACT <u>BROKEN</u>	Requested Turnaround Time and Special Instructions:
2	X				
3					
2	X				
2	X				
2	X				
2	X				
2	X				
2	X				
2	X				
2	X				
2	X				

Collected/Relinquished By: [Signature] Date: 11-13-06 Time: 11:05am Received By: [Signature] Time: 11:05am

Relinquished By: (2) [Signature] Date: 11/13/06 Time: 11:05 Received By: [Signature] Time: 11:05

Relinquished By: (3) [Signature] Date: 11/13/06 Time: 11:05 Received By: [Signature] Time: 11:05

Relinquished By: (4) [Signature] Date: 11/14/06 Time: 0900 Received By: [Signature] Time: 0900



1066431



Locatio  
• Alaska  
• Louisiana  
• New Jersey  
• West Virginia  
WV

**CHAIN OF CUSTODY RECORD  
SGS Environmental Services Inc.**

**1** CLIENT: Nor-tech  
CONTACT: Peter Beardsley PHONE NO: (907) 452-5688  
PROJECT: 06-1044 SITE/PWSID#:  
REPORTS TO:  
Beardsley@Nortekenvr.com FAX NO: (907) 452-5694  
INVOICE TO:  
Nor-tech QUOTE #  
P.O. NUMBER 061044

SGS Reference: PAGE 2 OF 2

Preservatives Used	Analysis Required	NO CONTAINERS
KCL KCL KCL	③	
DRO		
KRO		
VOCs 524		

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	SAMPLE TYPE	No CONTAINERS		REMARKS
						C= COMP	G= GRAB	
10 A-B	29	11-12-06	5:25	W	2	2	X	
11 A-B	TRIP BLANK	11-12-06		W	2		X	

**5** Collected/Relinquished By: (1) *M. B. ...* Received By: *Sunny Coatsburg*  
Date: 11-13-06 Time: 11:05 AM  
Relinquished By: (2) *Sunny Coatsburg* Received By:  
Date: 11/13/06 Time: 1640  
Relinquished By: (3) Received By:  
Date: 11/14/06 Time: 0900  
Relinquished By: (4) Received By:

Shipping Carrier: *hand* Samples Received Cold? (Circle) YES NO  
Temperature [C: \_\_\_\_\_  
Chain of Custody Seal: (Circle) INTACT BROKEN  
Special Deliverable Requirements: ABSENT  
Requested Turnaround Time and Special Instructions:



Yes No NA

Are samples RUSH, priority, or w/n 72 hrs. of hold time?

If yes have you done e-mail notification?

Are samples within 24 hrs. of hold time or due date?

If yes, have you spoken with Supervisor?

Archiving bottles - if req., are they properly marked?

Are there any problems? PM Notified? \_\_\_\_\_

Were samples preserved correctly and pH verified?

\_\_\_\_\_

\_\_\_\_\_

If this is for PWS, provide PWSID. \_\_\_\_\_

Will courier charges apply?

Method of payment? \_\_\_\_\_

Data package required? (Level: 1 / 2 / 3 / 4 )

Notes: \_\_\_\_\_

Is this a DoD project? (USACE, Navy, AFCEE)

Due Date: 11/29/06

Received Date: 11/13/06

Received Time: 1105

Is date/time conversion necessary? \_\_\_\_\_

# of hours to AK Local Time: \_\_\_\_\_

Thermometer ID: Longstem 710

Cooler ID	Temp Blank	Cooler Temp
<u>1</u>	<u>5.0</u> °C	<u>5.5</u> °C
<u>2</u>	<u>none</u> °C	<u>5.8</u> °C
_____	_____ °C	_____ °C
_____	_____ °C	_____ °C
_____	_____ °C	_____ °C

\*Temperature readings include thermometer correction factors

Delivery method (circle all that apply): Client /

Alert Courier / UPS / FedEx / USPS /

AA Goldstreak / NAC / ERA / PenAir / Carlisle

Lynden / SGS / Other: \_\_\_\_\_

Airbill # \_\_\_\_\_

Additional Sample Remarks: (✓ if applicable)

\_\_\_\_\_ Extra Sample Volume?

Limited Sample Volume? TR

\_\_\_\_\_ Field preserved for volatiles?

\_\_\_\_\_ Field-filtered for dissolved?

\_\_\_\_\_ Lab-filtered for dissolved?

Ref Lab required? IA-C, IIA-C

\_\_\_\_\_ Foreign Soil?

**This section must be filled out for DoD projects (USACE, Navy, AFCEE)**

Yes No

\_\_\_\_\_ Is received temperature 4 ± 2°C?

\_\_\_\_\_ Exceptions: \_\_\_\_\_ Samples/Analyses Affected: \_\_\_\_\_

\_\_\_\_\_ Rad Screen performed? Result: \_\_\_\_\_

\_\_\_\_\_ Was there an airbill? (Note # above in the right hand column)

\_\_\_\_\_ Was cooler sealed with custody seals?

\_\_\_\_\_ # / where: \_\_\_\_\_

\_\_\_\_\_ Were seal(s) intact upon arrival?

\_\_\_\_\_ Was there a COC with cooler?

\_\_\_\_\_ Was COC sealed in plastic bag & taped inside lid of cooler?

\_\_\_\_\_ Was the COC filled out properly?

\_\_\_\_\_ Did the COC indicate COE / AFCEE / Navy project?

\_\_\_\_\_ Did the COC and samples correspond?

\_\_\_\_\_ Were all sample packed to prevent breakage?

\_\_\_\_\_ Packing material: \_\_\_\_\_

\_\_\_\_\_ Were all samples unbroken and clearly labeled?

\_\_\_\_\_ Were all samples sealed in separate plastic bags?

\_\_\_\_\_ Were all VOCs free of headspace and/or MeOH preserved?

\_\_\_\_\_ Were correct container / sample sizes submitted?

\_\_\_\_\_ Is sample condition good?

\_\_\_\_\_ Was copy of CoC, SRF, and custody seals given to PM to fax?

**This section must be filled if problems are found.**

Yes No

\_\_\_\_\_ Was client notified of problems?

Individual contacted: \_\_\_\_\_

Via: Phone / Fax / Email (circle one)

Date/Time: \_\_\_\_\_

Reason for contact: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Change Order Required? \_\_\_\_\_

SGS Contact: \_\_\_\_\_

Notes: \_\_\_\_\_

Completed by (sign): Sunny Castleberry (print): Sunny Castleberry

Login proof (check one): waived \_\_\_\_\_ required \_\_\_\_\_ performed by: \_\_\_\_\_





1066431

SGS WO#:



SAMPLE RECEIPT FORM FOR TRANSFERS
From
FAIRBANKS, ALASKA OR HONOLULU, HAWAII
To
ANCHORAGE, AK

TO BE COMPLETED IN ANCHORAGE UPON ARRIVAL FROM FAIRBANKS OR HAWAII.
NOTES RECORDED BELOW ARE ACTIONS NEEDED UPON ARRIVAL IN ANCHORAGE.

Notes:
\_\_\_\_\_
\_\_\_\_\_
\_\_\_\_\_
\_\_\_\_\_
\_\_\_\_\_

Receipt Date / Time: 11-14-06 0900
Is Sample Date/Time Conversion Necessary? Yes \_\_\_\_\_ No [checked]
Number of Hours From Alaska Local Time: \_\_\_\_\_
Foreign Soil? Yes \_\_\_\_\_ No [checked]

Delivery method to Anchorage (circle all that apply):
Alert Courier / UPS / FedEx / USPS / AA Goldstreak / NAC / ERA / PenAir / Carliile / (Lynden) SGS
Other: \_\_\_\_\_
Airbill # \_\_\_\_\_

Table with 6 columns: Cooler ID, Temp Blank (°C), Cooler (°C), Cooler ID, Temp Blank (°C), Cooler (°C). Handwritten data: (1, 1.8, 2.1), (2, 0.9, 1.4)

CUSTODY SEALS INTACT: (YES) / NO
# / WHERE: Confront, Conback

COMPLETED BY: JLS

\*Temperature readings include thermometer correction factors.

1066431



SGS

SAMPLE RECEIPT FORM (page 2)

SGS WO#:

#	Container ID	Matrix	Test	QC	TB	Container Volume										Container Type							Preservative															
						1 L	500 mL	250 mL	125 mL	60 mL	40 mL	8oz (250 mL)	4oz (125 mL)	Other	AG	CG	HDPE	Nalgene	Cubie	Coil	Septa	Other	None	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	MeOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	NaOH	Other								
1	A-C	1	VOC524.2										3						X																			
	D-E		DRO/PRO		2														X																			
2-10	A-B	1	DRO/PRO		18														X																			
11	A-B	1	VOC524.2			X							225 1/15						X																			

Bottle Totals									
20									
sc 11/3									

Completed by: Jimmy Coatsberry Date: 11/13/06

C:\Documents and Settings\scastleberry.FAIRBANKS\Local Settings\Temporary Internet Files\OLK10C\F004r15\_SampleReceiptForm\_pg12.doc

Cooler/Sample Temperature Compliance Tracking Sheet

**SGS**

Total # of Coolers: 2 SGS WO#: 1066431

Cooler: # 1 Arch: 1-8 FBX/TB: NONE C: 2-1  
1A-E, 2A-B, 3A-B, 4A-B, 5A-B, 11A-C

Cooler: # 2 Arch: 5-9 FBX/TB: NONE C: 1-4  
6A-B, 7A-B, 8A-B, 9A-B, 10A-B

Cooler: # \_\_\_\_\_ TB: \_\_\_\_\_ C: \_\_\_\_\_

Cooler: # \_\_\_\_\_ TB: \_\_\_\_\_ C: \_\_\_\_\_

Cooler: # \_\_\_\_\_ TB: \_\_\_\_\_ C: \_\_\_\_\_

Cooler: # \_\_\_\_\_ TB: \_\_\_\_\_ C: \_\_\_\_\_

Cooler: # \_\_\_\_\_ TB: \_\_\_\_\_ C: \_\_\_\_\_

Note: \_\_\_\_\_

Arch: \_\_\_\_\_ Date: 11-14-06  
 Completed By: [Signature] Date: 11/13/06

**SGS** Environmental

CUSTODY SEAL WO# 6431 Cooler# 2

Signature: Sunny Castiberg

Date/Time: 11/13/06 1640

**SGS** Environmental

CUSTODY SEAL WO# 6431 Cooler# 2

Signature: Sunny Castiberg

Date/Time: 11/13/06 1640

**SGS** Environmental

CUSTODY SEAL WO# 1066431 Cooler# 1

Signature: Sunny Castiberg

Date/Time: 11/13/06 1640

**SGS** Environmental

CUSTODY SEAL WO# 6431 Cooler# 1

Signature: Sunny Castiberg

Date/Time: 11/13/06 1640

**SGS** Environmental

CUSTODY SEAL WO# 6432

Signature: Sunny Castiberg

Date/Time: 11/13/06 1640

**SGS** Environmental

CUSTODY SEAL WO# 6432

Signature: Sunny Castiberg

Date/Time: 11/13/06 1640

TB=0.9  
C=1.4

TB=1.8  
C=2.1

TB=2.5  
C=0.9



**MWH Laboratories**

A Division of MWH Americas, Inc.

750 Royal Oaks Drive, Suite 100  
Monrovia, California 91016-3829  
Tel: 626 386 1100  
Fax: 626 386 1101  
1 800 506 LABS (1 800 566 5227)

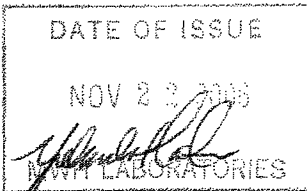
**Laboratory Report**

for

SGS Environmental Services Inc.  
200 W. Potter Drive

Anchorage , AK 99518

Attention: Forest Taylor  
Fax: (907) 561-5301



YOM Yolanda Martin  
Project Manager



Report#: 189010  
Project: DRINKING  
PO#: 1066431

Laboratory certifies that the test results meet all **NELAC** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are Comments, QC Report, QC Summary, Data Report, Hits Report, totaling 25 page[s].



**CHAIN OF CUSTODY RECORD**  
**SGS Environmental Services Inc.**

1899010  
 Locations Nationwide  
 • Alaska  
 • Hawaii  
 • Louisiana  
 • Maryland  
 • New Jersey  
 • North Carolina  
 • West Virginia  
 www.us.sgs.com  
 064971

<b>1</b> CLIENT: <i>SGS-AK</i> CONTACT: <i>Forest Taylor</i> PROJECT: <i>06-1044</i> REPORTS TO: <i>forest.taylor@sgs.com</i> INVOICE TO:		PHONE NO.: <i>107 562-2343</i> SITE/PWSID#: <i>N/A</i> E-MAIL: FAX NO.: <i>907 561-5301</i> QUOTE # P.O. NUMBER <i>1666431</i>		SGS Reference: <i>MWH</i> PAGE <i>1</i> OF <i>1</i>	
<b>2</b> LAB NO. <i>WW1</i> <i>trip blank</i>		SAMPLE IDENTIFICATION DATE <i>11/12/06</i> <i>L</i>		TIME <i>1700</i> <i>L</i>	
MATRIX <i>H2O</i> <i>H2O</i>		CONTAINERS No <i>3</i> <i>2</i>		SAMPLE TYPE C= COMP G= GRAB <i>G</i> <i>G</i>	
REMARKS <i>1066431001</i> <i>1066431011</i>		Preservatives Used <i>WV</i> Analysis Required <i>VOC 524.2</i> <i>(3)</i>		Shipping Carrier:	
<b>5</b> Collected/Relinquished By: (1) <i>Steph Arnold</i>		Date <i>11/15/06</i>		Received By: <i>[Signature]</i>	
Relinquished By: (2)		Date <i>11/15/06</i>		Received By: <i>[Signature]</i>	
Relinquished By: (3)		Date		Received By:	
Relinquished By: (4)		Date		Received By:	
Shipping Ticket No: <i>Level II</i>		Special Deliverable Requirements: <i>INTACT</i>		Samples Received Cold? (Circle) YES NO <i>YES</i>	
Temperature (C): <i>TEMP</i>		Chain of Custody Seal: (Circle) <i>BROKEN</i>		Requested Turnaround Time and Special Instructions:	

**SCANNED**

**MWH Laboratories**  
 750 Royal Oaks Drive, Monrovia, CA 91016  
 PHONE: 626-386-1100/FAX: 626-386-1101

ACKNOWLEDGMENT OF SAMPLES RECEIVED

SGS Environmental Services Inc.  
 200 W. Potter Drive  
 Anchorage, AK 99518  
 Attn: Forest Taylor  
 Phone: (907) 562-2343

Customer Code: CTE-AK  
 PO#: 1066431  
 Group#: 189010  
 Project#: DRINKING  
 Proj Mgr: Yolanda Martin  
 Phone: (626) 386-1104

The following samples were received from you on 11/16/06. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using MWH Laboratories.

Sample#	Sample Id	Tests Scheduled	Matrix	Sample Date
2611160029	1066431001	WW1 @VOASDWA	Water	12-nov-2006 17:00:00
2611160031	1066431011	TRIP BLANK @VOASDWA	Water	12-nov-2006 17:00:00

Test Acronym Description

Test Acronym	Description
@VOASDWA	Regulated VOCs plus Lists 1&3



**MWH Laboratories**  
A Division of MWH Americas, Inc.

750 Foyal Oaks Drive, Suite 100  
Monrovia, California 91016-3629  
Tel: 626 386 1100  
Fax: 626 386 1101  
1 800 566 LABS (1 800 566 5227)

---

Report  
Comments  
#189010

(QC Ref#: 2611160029)

Test: 1,2,4-Trichlorobenzene (ML/EPA 524.2)

LE = MRL Check recovery was above laboratory acceptance  
limits.

(QC Ref#: 2611160031)

Test: 1,2,4-Trichlorobenzene (ML/EPA 524.2)

LE = MRL Check recovery was above laboratory acceptance  
limits.





# MWH Laboratories

A Division of MWH Americas, Inc.

750 Royal Oaks Drive, Suite 100  
Monrovia, California 91016-3829  
Tel: 626 386 1100  
Fax: 626 386 1101  
1 800 566 LABS (1 800 566 5227)

Laboratory  
Hits Report  
#189010

SGS Environmental Services Inc.  
Forest Taylor  
200 W. Potter Drive  
Anchorage , AK 99518

Samples Received  
16-nov-2006 11:10:18

Analyzed	Sample#	Sample ID	Result	Federal MCL	UNITS	MRL
	2611160029	1066431001	WW1			
	2611160031	1066431011	TRIP BLANK			

SUMMARY OF POSITIVE DATA ONLY.



# MWH Laboratories

A Division of MWH Americas, Inc.

750 Poyat Oaks Drive, Suite 100  
Monrovia, California 91016-3629  
Tel: 626 386 1100  
Fax: 626 386 1101  
1 800 566 LABS (1 800 566 5227)

Laboratory  
Data Report  
#189010

SGS Environmental Services Inc.  
Forest Taylor  
200 W. Potter Drive  
Anchorage , AK 99518

Samples Received  
11/16/06

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
1066431001 WW1 (2611160029)				Sampled on 11/12/06 17:00				
<b>Regulated VOCs plus Lists 1&amp;3</b>								
11/20/06	21:46	341919	( EPA 524.2	) 1,1,1,2-Tetrachloroethane	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) 1,1,1-Trichloroethane	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) 1,1,2,2-Tetrachloroethane	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) 1,1,2-Trichloroethane	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) 1,1-Dichloroethane	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) 1,1-Dichloroethylene	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) 1,1-Dichloropropene	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) 1,2,3-Trichlorobenzene	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) 1,2,3-Trichloropropane	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) 1,2,4-Trichlorobenzene	ND (LE)	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) 1,2,4-Trimethylbenzene	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) 1,2-Dichloroethane	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) 1,2-Dichloropropane	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) 1,3,5-Trimethylbenzene	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) 1,3-Dichloropropane	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) p-Dichlorobenzene (1,4-DCB)	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) 2,2-Dichloropropane	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) 2-Butanone (MEK)	ND	ug/l	5.0	1
11/20/06	21:46	341919	( EPA 524.2	) o-Chlorotoluene	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) p-Chlorotoluene	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) 4-Methyl-2-Pentanone (MIBK)	ND	ug/l	5.0	1
11/20/06	21:46	341919	( EPA 524.2	) Benzene	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) Bromobenzene	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) Bromomethane (Methyl Bromide)	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) Bromoethane	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) cis-1,2-Dichloroethylene	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) Chlorobenzene	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) Carbon Tetrachloride	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) cis-1,3-Dichloropropene	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) Bromoform	ND	ug/l	0.5	1



# MWH Laboratories

A Division of MWH Americas, Inc.

750 Royal Oaks Drive, Suite 100  
Monrovia, California 91016-3829  
Tel: 626 386 1100  
Fax: 626 386 1101  
1 800 566 LABS (1 800 566 5227)

Laboratory  
Data Report  
#189010

SGS Environmental Services Inc.  
(continued)

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
1066431001	WW1	(2611160029)		(continued)	Sampled on	11/12/06	17:00	
11/20/06	21:46	341919	( EPA 524.2	) Chloroform (Trichloromethane)	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) Bromochloromethane	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) Chloroethane	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) Chloromethane (Methyl Chloride)	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) Chlorodibromomethane	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) Dibromomethane	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) Bromodichloromethane	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) Dichloromethane	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) Di-isopropyl ether	ND	ug/l	3.0	1
11/20/06	21:46	341919	( EPA 524.2	) Ethyl benzene	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) Dichlorodifluoromethane	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) Fluorotrichloromethane-Freon11	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) Hexachlorobutadiene	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) Isopropylbenzene	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) m-Dichlorobenzene (1,3-DCB)	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) m,p-Xylenes	ND	ug/l	1.0	1
11/20/06	21:46	341919	( EPA 524.2	) Methyl Tert-butyl ether (MTBE)	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) Naphthalene	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) n-Butylbenzene	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) n-Propylbenzene	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) o-Xylene	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) o-Dichlorobenzene (1,2-DCB)	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) Tetrachloroethylene (PCE)	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) p-Isopropyltoluene	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) sec-Butylbenzene	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) Styrene	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) trans-1,2-Dichloroethylene	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) tert-amyl Methyl Ether	ND	ug/l	3.0	1
11/20/06	21:46	341919	( EPA 524.2	) tert-Butyl Ethyl Ether	ND	ug/l	3.0	1
11/20/06	21:46	341919	( EPA 524.2	) tert-Butylbenzene	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) Trichloroethylene (TCE)	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) Trichlorotrifluoroethane (Freon	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) trans-1,3-Dichloropropene	ND	ug/l	0.5	1
11/20/06	21:46	341919	( EPA 524.2	) Toluene	ND	ug/l	0.5	1



# MWH Laboratories

A Division of MWH Americas, Inc.

750 Royal Oaks Drive, Suite 100  
Monrovia, California 91016-3629  
Tel: 626 386 1100  
Fax: 626 386 1101  
1 800 566 LABS (1 800 566 5227)

Laboratory  
Data Report  
#189010

SGS Environmental Services Inc.  
(continued)

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
<b>1066431001 WW1 (2611160029)</b>				<b>(continued)</b>	<b>Sampled on 11/12/06 17:00</b>			
	11/20/06 21:46	341919	( EPA 524.2	) Total 1,3-Dichloropropene	ND	ug/l	0.5	1
	11/20/06 21:46	341919	( EPA 524.2	) Total THM	ND	ug/l	0.5	1
	11/20/06 21:46	341919	( EPA 524.2	) Total xylenes	ND	ug/l	1.5	1
	11/20/06 21:46	341919	( EPA 524.2	) Vinyl chloride (VC)	ND	ug/l	0.3	1
			( EPA 524.2	) 1,2-Dichloroethane-d4(70-130)	114	% Rec		
			( EPA 524.2	) Toluene-d8(70-130)	99	% Rec		
			( EPA 524.2	) 4-Bromofluorobenzene(70-130)	99	% Rec		



# MWH Laboratories

A Division of MWH Americas, Inc.

750 Royal Oaks Drive, Suite 100  
Monrovia, California 91016-3829  
Tel: 626 386 1100  
Fax: 626 386 1101  
1 800 566 LABS (1 800 566 5227)

Laboratory  
Data Report  
#189010

SGS Environmental Services Inc.  
(continued)

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
----------	----------	---------	--------	---------	--------	-------	-----	----------

1066431011 TRIP BLANK (2611160031)      Sampled on 11/12/06 17:00

### Regulated VOCs plus Lists 1&3

11/20/06 22:14	341919	{ EPA 524.2	) 1,1,1,2-Tetrachloroethane	ND	ug/l	0.5	1
11/20/06 22:14	341919	{ EPA 524.2	) 1,1,1-Trichloroethane	ND	ug/l	0.5	1
11/20/06 22:14	341919	{ EPA 524.2	) 1,1,2,2-Tetrachloroethane	ND	ug/l	0.5	1
11/20/06 22:14	341919	{ EPA 524.2	) 1,1,2-Trichloroethane	ND	ug/l	0.5	1
11/20/06 22:14	341919	{ EPA 524.2	) 1,1-Dichloroethane	ND	ug/l	0.5	1
11/20/06 22:14	341919	{ EPA 524.2	) 1,1-Dichloroethylene	ND	ug/l	0.5	1
11/20/06 22:14	341919	{ EPA 524.2	) 1,1-Dichloropropene	ND	ug/l	0.5	1
11/20/06 22:14	341919	{ EPA 524.2	) 1,2,3-Trichlorobenzene	ND	ug/l	0.5	1
11/20/06 22:14	341919	{ EPA 524.2	) 1,2,3-Trichloropropane	ND	ug/l	0.5	1
11/20/06 22:14	341919	{ EPA 524.2	) 1,2,4-Trichlorobenzene	ND (LE)	ug/l	0.5	1
11/20/06 22:14	341919	{ EPA 524.2	) 1,2,4-Trimethylbenzene	ND	ug/l	0.5	1
11/20/06 22:14	341919	{ EPA 524.2	) 1,2-Dichloroethane	ND	ug/l	0.5	1
11/20/06 22:14	341919	{ EPA 524.2	) 1,2-Dichloropropane	ND	ug/l	0.5	1
11/20/06 22:14	341919	{ EPA 524.2	) 1,3,5-Trimethylbenzene	ND	ug/l	0.5	1
11/20/06 22:14	341919	{ EPA 524.2	) 1,3-Dichloropropane	ND	ug/l	0.5	1
11/20/06 22:14	341919	{ EPA 524.2	) p-Dichlorobenzene (1,4-DCB)	ND	ug/l	0.5	1
11/20/06 22:14	341919	{ EPA 524.2	) 2,2-Dichloropropane	ND	ug/l	0.5	1
11/20/06 22:14	341919	{ EPA 524.2	) 2-Butanone (MEK)	ND	ug/l	5.0	1
11/20/06 22:14	341919	{ EPA 524.2	) o-Chlorotoluene	ND	ug/l	0.5	1
11/20/06 22:14	341919	{ EPA 524.2	) p-Chlorotoluene	ND	ug/l	0.5	1
11/20/06 22:14	341919	{ EPA 524.2	) 4-Methyl-2-Pentanone (MIBK)	ND	ug/l	5.0	1
11/20/06 22:14	341919	{ EPA 524.2	) Benzene	ND	ug/l	0.5	1
11/20/06 22:14	341919	{ EPA 524.2	) Bromobenzene	ND	ug/l	0.5	1
11/20/06 22:14	341919	{ EPA 524.2	) Bromomethane (Methyl Bromide)	ND	ug/l	0.5	1
11/20/06 22:14	341919	{ EPA 524.2	) Bromoethane	ND	ug/l	0.5	1
11/20/06 22:14	341919	{ EPA 524.2	) cis-1,2-Dichloroethylene	ND	ug/l	0.5	1
11/20/06 22:14	341919	{ EPA 524.2	) Chlorobenzene	ND	ug/l	0.5	1
11/20/06 22:14	341919	{ EPA 524.2	) Carbon Tetrachloride	ND	ug/l	0.5	1
11/20/06 22:14	341919	{ EPA 524.2	) cis-1,3-Dichloropropene	ND	ug/l	0.5	1
11/20/06 22:14	341919	{ EPA 524.2	) Bromoform	ND	ug/l	0.5	1
11/20/06 22:14	341919	{ EPA 524.2	) Chloroform (Trichloromethane)	ND	ug/l	0.5	1



750 Royal Oaks Drive, Suite 100  
 Monrovia, California 91016-3629  
 Tel: 626 386 1100  
 Fax: 626 386 1101  
 1 800 566 LABS (1 800 566 5227)

Laboratory  
 Data Report  
 #189010

SGS Environmental Services Inc.  
 (continued)

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
1066431011	TRIP BLANK	(2611160031)		(continued)				
	11/20/06 22:14	341919	( EPA 524.2	) Bromochloromethane	ND	ug/l	0.5	1
	11/20/06 22:14	341919	( EPA 524.2	) Chloroethane	ND	ug/l	0.5	1
	11/20/06 22:14	341919	( EPA 524.2	) Chloromethane (Methyl Chloride)	ND	ug/l	0.5	1
	11/20/06 22:14	341919	( EPA 524.2	) Chlorodibromomethane	ND	ug/l	0.5	1
	11/20/06 22:14	341919	( EPA 524.2	) Dibromomethane	ND	ug/l	0.5	1
	11/20/06 22:14	341919	( EPA 524.2	) Bromodichloromethane	ND	ug/l	0.5	1
	11/20/06 22:14	341919	( EPA 524.2	) Dichloromethane	ND	ug/l	0.5	1
	11/20/06 22:14	341919	( EPA 524.2	) Di-isopropyl ether	ND	ug/l	3.0	1
	11/20/06 22:14	341919	( EPA 524.2	) Ethyl benzene	ND	ug/l	0.5	1
	11/20/06 22:14	341919	( EPA 524.2	) Dichlorodifluoromethane	ND	ug/l	0.5	1
	11/20/06 22:14	341919	( EPA 524.2	) Fluorotrichloromethane-Freon11	ND	ug/l	0.5	1
	11/20/06 22:14	341919	( EPA 524.2	) Hexachlorobutadiene	ND	ug/l	0.5	1
	11/20/06 22:14	341919	( EPA 524.2	) Isopropylbenzene	ND	ug/l	0.5	1
	11/20/06 22:14	341919	( EPA 524.2	) m-Dichlorobenzene (1,3-DCB)	ND	ug/l	0.5	1
	11/20/06 22:14	341919	( EPA 524.2	) m,p-Xylenes	ND	ug/l	1.0	1
	11/20/06 22:14	341919	( EPA 524.2	) Methyl Tert-butyl ether (MTBE)	ND	ug/l	0.5	1
	11/20/06 22:14	341919	( EPA 524.2	) Naphthalene	ND	ug/l	0.5	1
	11/20/06 22:14	341919	( EPA 524.2	) n-Butylbenzene	ND	ug/l	0.5	1
	11/20/06 22:14	341919	( EPA 524.2	) n-Propylbenzene	ND	ug/l	0.5	1
	11/20/06 22:14	341919	( EPA 524.2	) o-Xylene	ND	ug/l	0.5	1
	11/20/06 22:14	341919	( EPA 524.2	) o-Dichlorobenzene (1,2-DCB)	ND	ug/l	0.5	1
	11/20/06 22:14	341919	( EPA 524.2	) Tetrachloroethylene (PCE)	ND	ug/l	0.5	1
	11/20/06 22:14	341919	( EPA 524.2	) p-Isopropyltoluene	ND	ug/l	0.5	1
	11/20/06 22:14	341919	( EPA 524.2	) sec-Butylbenzene	ND	ug/l	0.5	1
	11/20/06 22:14	341919	( EPA 524.2	) Styrene	ND	ug/l	0.5	1
	11/20/06 22:14	341919	( EPA 524.2	) trans-1,2-Dichloroethylene	ND	ug/l	0.5	1
	11/20/06 22:14	341919	( EPA 524.2	) tert-amyl Methyl Ether	ND	ug/l	3.0	1
	11/20/06 22:14	341919	( EPA 524.2	) tert-Butyl Ethyl Ether	ND	ug/l	3.0	1
	11/20/06 22:14	341919	( EPA 524.2	) tert-Butylbenzene	ND	ug/l	0.5	1
	11/20/06 22:14	341919	( EPA 524.2	) Trichloroethylene (TCE)	ND	ug/l	0.5	1
	11/20/06 22:14	341919	( EPA 524.2	) Trichlorotrifluoroethane (Freon	ND	ug/l	0.5	1
	11/20/06 22:14	341919	( EPA 524.2	) trans-1,3-Dichloropropene	ND	ug/l	0.5	1
	11/20/06 22:14	341919	( EPA 524.2	) Toluene	ND	ug/l	0.5	1
	11/20/06 22:14	341919	( EPA 524.2	) Total 1,3-Dichloropropene	ND	ug/l	0.5	1



# MWH Laboratories

A Division of MWH Americas, Inc.

750 Royal Oaks Drive, Suite 100  
Monrovia, California 91016-3629  
Tel: 626 386 1100  
Fax: 626 386 1101  
1 800 566 LABS (1 800 566 5227)

Laboratory  
Data Report  
#189010

SGS Environmental Services Inc.  
(continued)

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
<b>1066431011 TRIP BLANK (2611160031) (continued)</b>					<b>Sampled on</b>		<b>11/12/06 17:0</b>	
11/20/06	22:14	341919	( EPA 524.2	) Total THM	ND	ug/l	0.5	1
11/20/06	22:14	341919	( EPA 524.2	) Total xylenes	ND	ug/l	1.5	1
11/20/06	22:14	341919	( EPA 524.2	) Vinyl chloride (VC)	ND	ug/l	0.3	1
			( EPA 524.2	) 1,2-Dichloroethane-d4(70-130)	112	% Rec		
			( EPA 524.2	) Toluene-d8(70-130)	97	% Rec		
			( EPA 524.2	) 4-Bromofluorobenzene(70-130)	97	% Rec		



**MWH Laboratories**

*A Division of MWH Americas, Inc.*

750 Royal Oaks Drive, Suite 100  
Monrovia, California 91016-3629  
Tel: 626 386 1100  
Fax: 626 386 1101  
1 800 566 LABS (1 800 566 5227)

Laboratory  
QC Summary  
#189010

SGS Environmental Services Inc.

---

QC Ref #341919 - Regulated VOCs plus Lists 1&3 Analysis Date: 11/20/2006

2611160029  
2611160031

1066431001 WW1  
1066431011 TRIP BLANK

Analyzed by: rpd  
Analyzed by: rpd





**MWH Laboratories**  
A Division of MWH Americas, Inc.

750 Royal Oaks Drive, Suite 100  
Monrovia, California 91016-3629  
Tel: 626 386 1100  
Fax: 626 386 1101  
1 800 566 LABS (1 800 566 5227)

Laboratory  
QC Report  
#189010

SGS Environmental Services Inc.

QC Ref #341919      Regulated VOCs plus Lists 1&3

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
LCS1	1,1,1,2-Tetrachloroethane	5	4.86	UGL	97.2	( 70-130 )	
LCS2	1,1,1,2-Tetrachloroethane	5	4.81	UGL	96.2	( 70-130 )	
MBLK	1,1,1,2-Tetrachloroethane	ND	<0.5	UGL			
MRL_CHK	1,1,1,2-Tetrachloroethane	0.500	0.49	UGL	98.0	( 50-150 )	
MS	1,1,1,2-Tetrachloroethane	10	10.4	UGL	104.0	( 70-130 )	
MSD	1,1,1,2-Tetrachloroethane	10	10.7	UGL	107.0	( 70-130 )	
RPD_LCS	1,1,1,2-Tetrachloroethane	97.200	96.200	UGL	1.0	( 0-20 )	
RPD_MS	1,1,1,2-Tetrachloroethane	104.000	107.000	UGL	2.8	( 0-20 )	
LCS1	1,1,1-Trichloroethane	5	5.51	UGL	110.2	( 70-130 )	
LCS2	1,1,1-Trichloroethane	5	5.14	UGL	102.8	( 70-130 )	
MBLK	1,1,1-Trichloroethane	ND	<0.5	UGL			
MRL_CHK	1,1,1-Trichloroethane	0.500	0.47	UGL	94.0	( 50-150 )	
MS	1,1,1-Trichloroethane	10	11.8	UGL	118.0	( 70-130 )	
MSD	1,1,1-Trichloroethane	10	11.6	UGL	116.0	( 70-130 )	
RPD_LCS	1,1,1-Trichloroethane	110.200	102.800	UGL	6.9	( 0-20 )	
RPD_MS	1,1,1-Trichloroethane	118.000	116.000	UGL	1.7	( 0-20 )	
LCS1	1,1,2,2-Tetrachloroethane	5	5.07	UGL	101.4	( 70-130 )	
LCS2	1,1,2,2-Tetrachloroethane	5	5.02	UGL	100.4	( 70-130 )	
MBLK	1,1,2,2-Tetrachloroethane	ND	<0.5	UGL			
MRL_CHK	1,1,2,2-Tetrachloroethane	0.500	0.55	UGL	110.0	( 50-150 )	
MS	1,1,2,2-Tetrachloroethane	10	10.3	UGL	103.0	( 70-130 )	
MSD	1,1,2,2-Tetrachloroethane	10	10.3	UGL	103.0	( 70-130 )	
RPD_LCS	1,1,2,2-Tetrachloroethane	101.400	100.400	UGL	1.0	( 0-20 )	
RPD_MS	1,1,2,2-Tetrachloroethane	103.000	103.000	UGL	0.0	( 0-20 )	
LCS1	1,1,2-Trichloroethane	5	5.15	UGL	103.0	( 70-130 )	
LCS2	1,1,2-Trichloroethane	5	5.04	UGL	100.8	( 70-130 )	
MBLK	1,1,2-Trichloroethane	ND	<0.5	UGL			
MRL_CHK	1,1,2-Trichloroethane	0.500	0.47	UGL	94.0	( 50-150 )	
MS	1,1,2-Trichloroethane	10	10.9	UGL	109.0	( 70-130 )	
MSD	1,1,2-Trichloroethane	10	11.0	UGL	110.0	( 70-130 )	
RPD_LCS	1,1,2-Trichloroethane	103.000	100.800	UGL	2.2	( 0-20 )	
RPD_MS	1,1,2-Trichloroethane	109.000	110.000	UGL	0.9	( 0-20 )	
LCS1	1,1-Dichloroethane	5	5.48	UGL	109.6	( 70-130 )	

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.  
Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

SGS Environmental Services Inc.  
 (continued)

LCS2	1,1-Dichloroethane	5	5.23	UGL	104.6	( 70-130 )
MBLK	1,1-Dichloroethane	ND	<0.5	UGL		
MRL_CHK	1,1-Dichloroethane	0.500	0.49	UGL	98.0	( 50-150 )
MS	1,1-Dichloroethane	10	11.9	UGL	119.0	( 70-130 )
MSD	1,1-Dichloroethane	10	12.0	UGL	120.0	( 70-130 )
RPD_LCS	1,1-Dichloroethane	109.600	104.600	UGL	4.7	( 0-20 )
RPD_MS	1,1-Dichloroethane	119.000	120.000	UGL	0.8	( 0-20 )
LCS1	1,1-Dichloroethylene	5	5.98	UGL	119.6	( 70-130 )
LCS2	1,1-Dichloroethylene	5	5.65	UGL	113.0	( 70-130 )
MBLK	1,1-Dichloroethylene	ND	<0.5	UGL		
MRL_CHK	1,1-Dichloroethylene	0.500	0.59	UGL	118.0	( 50-150 )
MS	1,1-Dichloroethylene	10	13.1	UGL	<u>131.0</u>	( 70-130 )
MSD	1,1-Dichloroethylene	10	13.5	UGL	<u>135.0</u>	( 70-130 )
RPD_LCS	1,1-Dichloroethylene	119.600	113.000	UGL	5.7	( 0-20 )
RPD_MS	1,1-Dichloroethylene	131.000	135.000	UGL	3.0	( 0-20 )
LCS1	1,1-Dichloropropene	5	5.27	UGL	105.4	( 70-130 )
LCS2	1,1-Dichloropropene	5	4.85	UGL	97.0	( 70-130 )
MBLK	1,1-Dichloropropene	ND	<0.5	UGL		
MRL_CHK	1,1-Dichloropropene	0.500	0.49	UGL	98.0	( 50-150 )
MS	1,1-Dichloropropene	10	10.5	UGL	105.0	( 70-130 )
MSD	1,1-Dichloropropene	10	10.8	UGL	108.0	( 70-130 )
RPD_LCS	1,1-Dichloropropene	105.400	97.000	UGL	8.3	( 0-20 )
RPD_MS	1,1-Dichloropropene	105.000	108.000	UGL	2.8	( 0-20 )
LCS1	1,2,3-Trichlorobenzene	5	4.74	UGL	94.8	( 70-130 )
LCS2	1,2,3-Trichlorobenzene	5	4.73	UGL	94.6	( 70-130 )
MBLK	1,2,3-Trichlorobenzene	ND	<0.5	UGL		
MRL_CHK	1,2,3-Trichlorobenzene	0.500	0.64	UGL	128.0	( 50-150 )
MS	1,2,3-Trichlorobenzene	10	9.23	UGL	92.3	( 70-130 )
MSD	1,2,3-Trichlorobenzene	10	9.20	UGL	92.0	( 70-130 )
RPD_LCS	1,2,3-Trichlorobenzene	94.800	94.600	UGL	0.2	( 0-20 )
RPD_MS	1,2,3-Trichlorobenzene	92.300	92.000	UGL	0.3	( 0-20 )
LCS1	1,2,3-Trichloropropane	5	4.65	UGL	93.0	( 70-130 )
LCS2	1,2,3-Trichloropropane	5	4.58	UGL	91.6	( 70-130 )
MBLK	1,2,3-Trichloropropane	ND	<0.5	UGL		
MRL_CHK	1,2,3-Trichloropropane	0.500	0.51	UGL	102.0	( 50-150 )
MS	1,2,3-Trichloropropane	10	10.4	UGL	104.0	( 70-130 )

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.  
 Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates  
 are advisory only, unless otherwise specified in the method.



**MWH Laboratories**  
A Division of MWH Americas, Inc.

750 Royal Oaks Drive, Suite 100  
Monrovia, California 91016-3629  
Tel: 626 386 1100  
Fax: 626 386 1101  
1 800 566 LABS (1 800 566 5227)

Laboratory  
QC Report  
#189010

SGS Environmental Services Inc.  
(continued)

MSD	1,2,3-Trichloropropane	10	9.98	UGL	99.8	( 70-130 )
RPD_LCS	1,2,3-Trichloropropane	93.000	91.600	UGL	1.5	( 0-20 )
RPD_MS	1,2,3-Trichloropropane	104.000	99.800	UGL	4.1	( 0-20 )
LCS1	1,2,4-Trichlorobenzene	5	4.69	UGL	93.8	( 70-130 )
LCS2	1,2,4-Trichlorobenzene	5	4.69	UGL	93.8	( 70-130 )
MBLK	1,2,4-Trichlorobenzene	ND	<0.5	UGL		
MRL_CHK	1,2,4-Trichlorobenzene	0.500	0.77	UGL	<u>154.0</u>	( 50-150 )
MS	1,2,4-Trichlorobenzene	10	8.45	UGL	84.5	( 70-130 )
MSD	1,2,4-Trichlorobenzene	10	8.74	UGL	87.4	( 70-130 )
RPD_LCS	1,2,4-Trichlorobenzene	93.800	93.800	UGL	0.0	( 0-20 )
RPD_MS	1,2,4-Trichlorobenzene	84.500	87.400	UGL	3.4	( 0-20 )
LCS1	1,2,4-Trimethylbenzene	5	4.76	UGL	95.2	( 70-130 )
LCS2	1,2,4-Trimethylbenzene	5	4.62	UGL	92.4	( 70-130 )
MBLK	1,2,4-Trimethylbenzene	ND	<0.5	UGL		
MRL_CHK	1,2,4-Trimethylbenzene	0.500	0.45	UGL	90.0	( 50-150 )
MS	1,2,4-Trimethylbenzene	10	8.32	UGL	83.2	( 70-130 )
MSD	1,2,4-Trimethylbenzene	10	8.51	UGL	85.1	( 70-130 )
RPD_LCS	1,2,4-Trimethylbenzene	95.200	92.400	UGL	3.0	( 0-20 )
RPD_MS	1,2,4-Trimethylbenzene	83.200	85.100	UGL	2.3	( 0-20 )
LCS1	1,2-Dichloroethane	5	5.60	UGL	112.0	( 70-130 )
LCS2	1,2-Dichloroethane	5	5.38	UGL	107.6	( 70-130 )
MBLK	1,2-Dichloroethane	ND	<0.5	UGL		
MRL_CHK	1,2-Dichloroethane	0.500	0.51	UGL	102.0	( 50-150 )
MS	1,2-Dichloroethane	10	11.8	UGL	118.0	( 70-130 )
MSD	1,2-Dichloroethane	10	12.0	UGL	120.0	( 70-130 )
RPD_LCS	1,2-Dichloroethane	112.000	107.600	UGL	4.0	( 0-20 )
RPD_MS	1,2-Dichloroethane	118.000	120.000	UGL	1.7	( 0-20 )
LCS1	1,2-Dichloropropane	5	5.14	UGL	102.8	( 70-130 )
LCS2	1,2-Dichloropropane	5	4.94	UGL	98.8	( 70-130 )
MBLK	1,2-Dichloropropane	ND	<0.5	UGL		
MRL_CHK	1,2-Dichloropropane	0.500	0.47	UGL	94.0	( 50-150 )
MS	1,2-Dichloropropane	10	10.9	UGL	109.0	( 70-130 )
MSD	1,2-Dichloropropane	10	11.1	UGL	111.0	( 70-130 )
RPD_LCS	1,2-Dichloropropane	102.800	98.800	UGL	4.0	( 0-20 )
RPD_MS	1,2-Dichloropropane	109.000	111.000	UGL	1.8	( 0-20 )
LCS1	1,3,5-Trimethylbenzene	5	4.76	UGL	95.2	( 70-130 )

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.  
Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates  
are advisory only, unless otherwise specified in the method.

SGS Environmental Services Inc.  
 (continued)

LCS2	1,3,5-Trimethylbenzene	5	4.63	UGL	92.6	( 70-130 )
MBLK	1,3,5-Trimethylbenzene	ND	<0.5	UGL		
MRL_CHK	1,3,5-Trimethylbenzene	0.500	0.43	UGL	86.0	( 50-150 )
MS	1,3,5-Trimethylbenzene	10	7.79	UGL	77.9	( 70-130 )
MSD	1,3,5-Trimethylbenzene	10	8.19	UGL	81.9	( 70-130 )
RPD_LCS	1,3,5-Trimethylbenzene	95.200	92.600	UGL	2.8	( 0-20 )
RPD_MS	1,3,5-Trimethylbenzene	77.900	81.900	UGL	5.0	( 0-20 )
LCS1	1,3-Dichloropropane	5	5.07	UGL	101.4	( 70-130 )
LCS2	1,3-Dichloropropane	5	5.27	UGL	105.4	( 70-130 )
MBLK	1,3-Dichloropropane	ND	<0.5	UGL		
MRL_CHK	1,3-Dichloropropane	0.500	0.49	UGL	98.0	( 50-150 )
MS	1,3-Dichloropropane	10	10.9	UGL	109.0	( 70-130 )
MSD	1,3-Dichloropropane	10	11.2	UGL	112.0	( 70-130 )
RPD_LCS	1,3-Dichloropropane	101.400	105.400	UGL	3.9	( 0-20 )
RPD_MS	1,3-Dichloropropane	109.000	112.000	UGL	2.7	( 0-20 )
LCS1	p-Dichlorobenzene (1,4-DCB)	5	4.76	UGL	95.2	( 70-130 )
LCS2	p-Dichlorobenzene (1,4-DCB)	5	4.94	UGL	98.8	( 70-130 )
MBLK	p-Dichlorobenzene (1,4-DCB)	ND	<0.5	UGL		
MRL_CHK	p-Dichlorobenzene (1,4-DCB)	0.500	0.50	UGL	100.0	( 50-150 )
MS	p-Dichlorobenzene (1,4-DCB)	10	9.30	UGL	93.0	( 70-130 )
MSD	p-Dichlorobenzene (1,4-DCB)	10	9.31	UGL	93.1	( 70-130 )
RPD_LCS	p-Dichlorobenzene (1,4-DCB)	95.200	98.800	UGL	3.7	( 0-20 )
RPD_MS	p-Dichlorobenzene (1,4-DCB)	93.000	93.100	UGL	0.1	( 0-20 )
LCS1	2,2-Dichloropropane	5	5.41	UGL	108.2	( 70-130 )
LCS2	2,2-Dichloropropane	5	5.37	UGL	107.4	( 70-130 )
MBLK	2,2-Dichloropropane	ND	<0.5	UGL		
MRL_CHK	2,2-Dichloropropane	0.500	0.50	UGL	100.0	( 50-150 )
MS	2,2-Dichloropropane	10	2.07	UGL	<u>20.7</u>	( 70-130 )
MSD	2,2-Dichloropropane	10	2.15	UGL	<u>21.5</u>	( 70-130 )
RPD_LCS	2,2-Dichloropropane	108.200	107.400	UGL	0.7	( 0-20 )
RPD_MS	2,2-Dichloropropane	20.700	21.500	UGL	3.8	( 0-20 )
LCS1	2-Butanone (MEK)	50	55.5	UGL	111.0	( 70-130 )
LCS2	2-Butanone (MEK)	50	49.9	UGL	99.8	( 70-130 )
MBLK	2-Butanone (MEK)	ND	<5.0	UGL		
MRL_CHK	2-Butanone (MEK)	5.00	5.48	UGL	109.6	( 50-150 )
MS	2-Butanone (MEK)	100	102	UGL	102.0	( 70-130 )

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.  
 Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates  
 are advisory only, unless otherwise specified in the method.



**MWH Laboratories**  
A Division of MWH Americas, Inc.

750 Royal Oaks Drive, Suite 100  
Morrovia, California 91016-3629  
Tel: 626 386 1100  
Fax: 626 386 1101  
1 800 566 LABS (1 800 566 5227)

Laboratory  
QC Report  
#189010

SGS Environmental Services Inc.  
(continued)

MSD	2-Butanone (MEK)	100	103	UGL	103.0	( 70-130 )
RPD_LCS	2-Butanone (MEK)	111.000	99.800	UGL	10.6	( 0-20 )
RPD_MS	2-Butanone (MEK)	102.000	103.000	UGL	1.0	( 0-20 )
LCS1	o-Chlorotoluene	5	5.02	UGL	100.4	( 70-130 )
LCS2	o-Chlorotoluene	5	5.09	UGL	101.8	( 70-130 )
MBLK	o-Chlorotoluene	ND	<0.5	UGL		
MRL_CHK	o-Chlorotoluene	0.500	0.49	UGL	98.0	( 50-150 )
MS	o-Chlorotoluene	10	10.1	UGL	101.0	( 70-130 )
MSD	o-Chlorotoluene	10	10.1	UGL	101.0	( 70-130 )
RPD_LCS	o-Chlorotoluene	100.400	101.800	UGL	1.4	( 0-20 )
RPD_MS	o-Chlorotoluene	101.000	101.000	UGL	0.0	( 0-20 )
LCS1	p-Chlorotoluene	5	5.24	UGL	104.8	( 70-130 )
LCS2	p-Chlorotoluene	5	5.13	UGL	102.6	( 70-130 )
MBLK	p-Chlorotoluene	ND	<0.5	UGL		
MRL_CHK	p-Chlorotoluene	0.500	0.52	UGL	104.0	( 50-150 )
MS	p-Chlorotoluene	10	9.81	UGL	98.1	( 70-130 )
MSD	p-Chlorotoluene	10	9.75	UGL	97.5	( 70-130 )
RPD_LCS	p-Chlorotoluene	104.800	102.600	UGL	2.1	( 0-20 )
RPD_MS	p-Chlorotoluene	98.100	97.500	UGL	0.6	( 0-20 )
LCS1	4-Methyl-2-Pentanone (MIBK)	50	49.6	UGL	99.2	( 70-130 )
LCS2	4-Methyl-2-Pentanone (MIBK)	50	47.6	UGL	95.2	( 70-130 )
MBLK	4-Methyl-2-Pentanone (MIBK)	ND	<5.0	UGL		
MRL_CHK	4-Methyl-2-Pentanone (MIBK)	5.00	4.19	UGL	83.8	( 50-150 )
MS	4-Methyl-2-Pentanone (MIBK)	100	109	UGL	109.0	( 70-130 )
MSD	4-Methyl-2-Pentanone (MIBK)	100	110	UGL	110.0	( 70-130 )
RPD_LCS	4-Methyl-2-Pentanone (MIBK)	99.200	95.200	UGL	4.1	( 0-20 )
RPD_MS	4-Methyl-2-Pentanone (MIBK)	109.000	110.000	UGL	0.9	( 0-20 )
MS	Spiked sample	Lab # 26	11150467	NONE		( 0-0 )
LCS1	Benzene	5	5.36	UGL	107.2	( 70-130 )
LCS2	Benzene	5	5.16	UGL	103.2	( 70-130 )
MBLK	Benzene	ND	<0.5	UGL		
MRL_CHK	Benzene	0.500	0.51	UGL	102.0	( 50-150 )
MS	Benzene	10	11.2	UGL	112.0	( 70-130 )
MSD	Benzene	10	11.1	UGL	111.0	( 70-130 )
RPD_LCS	Benzene	107.200	103.200	UGL	3.8	( 0-20 )
RPD_MS	Benzene	112.000	111.000	UGL	0.9	( 0-20 )

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.  
Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates  
are advisory only, unless otherwise specified in the method.



**MWH Laboratories**  
A Division of MWH Americas, Inc.

750 Royal Oaks Drive, Suite 100  
Monrovia, California 91016-3829  
Tel: 626 386 1100  
Fax: 626 386 1101  
1 800 566 LABS (1 800 566 5227)

Laboratory  
QC Report  
#189010

SGS Environmental Services Inc.  
(continued)

LCS1	Bromobenzene	5	5.13	UGL	102.6	( 70-130 )
LCS2	Bromobenzene	5	5.05	UGL	101.0	( 70-130 )
MBLK	Bromobenzene	ND	<0.5	UGL		
MRL_CHK	Bromobenzene	0.500	0.51	UGL	102.0	( 50-150 )
MS	Bromobenzene	10	9.81	UGL	98.1	( 70-130 )
MSD	Bromobenzene	10	9.98	UGL	99.8	( 70-130 )
RPD_LCS	Bromobenzene	102.600	101.000	UGL	1.6	( 0-20 )
RPD_MS	Bromobenzene	98.100	99.800	UGL	1.7	( 0-20 )
LCS1	Bromomethane (Methyl Bromide)	5	5.48	UGL	109.6	( 70-130 )
LCS2	Bromomethane (Methyl Bromide)	5	5.37	UGL	107.4	( 70-130 )
MBLK	Bromomethane (Methyl Bromide)	ND	<0.5	UGL		
MRL_CHK	Bromomethane (Methyl Bromide)	0.500	0.55	UGL	110.0	( 50-150 )
MS	Bromomethane (Methyl Bromide)	10	10.5	UGL	105.0	( 70-130 )
MSD	Bromomethane (Methyl Bromide)	10	11.1	UGL	111.0	( 70-130 )
RPD_LCS	Bromomethane (Methyl Bromide)	109.600	107.400	UGL	2.0	( 0-20 )
RPD_MS	Bromomethane (Methyl Bromide)	105.000	111.000	UGL	5.6	( 0-20 )
LCS1	Bromoethane	5	6.27	UGL	125.4	( 70-130 )
LCS2	Bromoethane	5	6.06	UGL	121.2	( 70-130 )
MBLK	Bromoethane	ND	<0.5	UGL		
MRL_CHK	Bromoethane	0.500	0.53	UGL	106.0	( 50-150 )
MS	Bromoethane	10	10.1	UGL	101.0	( 70-130 )
MSD	Bromoethane	10	10.3	UGL	103.0	( 70-130 )
RPD_LCS	Bromoethane	125.400	121.200	UGL	3.4	( 0-20 )
RPD_MS	Bromoethane	101.000	103.000	UGL	2.0	( 0-20 )
LCS1	cis-1,2-Dichloroethylene	5	5.07	UGL	101.4	( 70-130 )
LCS2	cis-1,2-Dichloroethylene	5	5.05	UGL	101.0	( 70-130 )
MBLK	cis-1,2-Dichloroethylene	ND	<0.5	UGL		
MRL_CHK	cis-1,2-Dichloroethylene	0.500	0.50	UGL	100.0	( 50-150 )
MS	cis-1,2-Dichloroethylene	10	11.3	UGL	113.0	( 70-130 )
MSD	cis-1,2-Dichloroethylene	10	11.4	UGL	114.0	( 70-130 )
RPD_LCS	cis-1,2-Dichloroethylene	101.400	101.000	UGL	0.4	( 0-20 )
RPD_MS	cis-1,2-Dichloroethylene	113.000	114.000	UGL	0.9	( 0-20 )
LCS1	Chlorobenzene	5	5.18	UGL	103.6	( 70-130 )
LCS2	Chlorobenzene	5	5.10	UGL	102.0	( 70-130 )
MBLK	Chlorobenzene	ND	<0.5	UGL		
MRL_CHK	Chlorobenzene	0.500	0.51	UGL	102.0	( 50-150 )

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.  
Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates  
are advisory only, unless otherwise specified in the method.



**MWH Laboratories**  
A Division of MWH Americas, Inc.

750 Royal Oaks Drive, Suite 100  
Monrovia, California 91016-3629  
Tel: 626 386 1100  
Fax: 626 386 1101  
1 800 566 LASS (1 800 566 5227)

Laboratory  
QC Report  
#189010

SGS Environmental Services Inc.  
(continued)

MS	Chlorobenzene	10	10.5	UGL	105.0	( 70-130 )
MSD	Chlorobenzene	10	11.0	UGL	110.0	( 70-130 )
RPD_LCS	Chlorobenzene	103.600	102.000	UGL	1.6	( 0-20 )
RPD_MS	Chlorobenzene	105.000	110.000	UGL	4.7	( 0-20 )
LCS1	Carbon Tetrachloride	5	5.51	UGL	110.2	( 70-130 )
LCS2	Carbon Tetrachloride	5	5.19	UGL	103.8	( 70-130 )
MBLK	Carbon Tetrachloride	ND	<0.5	UGL		
MRL_CHK	Carbon Tetrachloride	0.500	0.47	UGL	94.0	( 50-150 )
MS	Carbon Tetrachloride	10	12.0	UGL	120.0	( 70-130 )
MSD	Carbon Tetrachloride	10	12.2	UGL	122.0	( 70-130 )
RPD_LCS	Carbon Tetrachloride	110.200	103.800	UGL	6.0	( 0-20 )
RPD_MS	Carbon Tetrachloride	120.000	122.000	UGL	1.7	( 0-20 )
LCS1	cis-1,3-Dichloropropene	5	4.64	UGL	92.8	( 70-130 )
LCS2	cis-1,3-Dichloropropene	5	4.48	UGL	89.6	( 70-130 )
MBLK	cis-1,3-Dichloropropene	ND	<0.5	UGL		
MRL_CHK	cis-1,3-Dichloropropene	0.500	0.41	UGL	82.0	( 50-150 )
MS	cis-1,3-Dichloropropene	10	7.33	UGL	73.3	( 70-130 )
MSD	cis-1,3-Dichloropropene	10	7.47	UGL	74.7	( 70-130 )
RPD_LCS	cis-1,3-Dichloropropene	92.800	89.600	UGL	3.5	( 0-20 )
RPD_MS	cis-1,3-Dichloropropene	73.300	74.700	UGL	1.9	( 0-20 )
LCS1	Bromoform	5	4.62	UGL	92.4	( 70-130 )
LCS2	Bromoform	5	4.71	UGL	94.2	( 70-130 )
MBLK	Bromoform	ND	<0.5	UGL		
MRL_CHK	Bromoform	0.500	0.45	UGL	90.0	( 50-150 )
MS	Bromoform	10	9.73	UGL	97.3	( 70-130 )
MSD	Bromoform	10	9.54	UGL	95.4	( 70-130 )
RPD_LCS	Bromoform	92.400	94.200	UGL	1.9	( 0-20 )
RPD_MS	Bromoform	97.300	95.400	UGL	2.0	( 0-20 )
LCS1	Chloroform (Trichloromethane)	5	5.28	UGL	105.6	( 70-130 )
LCS2	Chloroform (Trichloromethane)	5	5.17	UGL	103.4	( 70-130 )
MBLK	Chloroform (Trichloromethane)	ND	<0.5	UGL		
MRL_CHK	Chloroform (Trichloromethane)	0.500	0.47	UGL	94.0	( 50-150 )
MS	Chloroform (Trichloromethane)	10	11.8	UGL	118.0	( 70-130 )
MSD	Chloroform (Trichloromethane)	10	11.4	UGL	114.0	( 70-130 )
RPD_LCS	Chloroform (Trichloromethane)	105.600	103.400	UGL	2.1	( 0-20 )
RPD_MS	Chloroform (Trichloromethane)	118.000	114.000	UGL	3.4	( 0-20 )

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.  
Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates  
are advisory only, unless otherwise specified in the method.



**MWH Laboratories**  
A Division of MWH Americas, Inc.

750 Royal Oaks Drive, Suite 100  
Monrovia, California 91016-3622  
Tel: 626 386 1100  
Fax: 626 386 1101  
1 800 566 LABS (1 800 566 5227)

Laboratory  
QC Report  
#189010

SGS Environmental Services Inc.  
(continued)

LCS1	Bromochloromethane	5	5.41	UGL	108.2	( 70-130 )
LCS2	Bromochloromethane	5	5.21	UGL	104.2	( 70-130 )
MBLK	Bromochloromethane	ND	<0.5	UGL		
MRL_CHK	Bromochloromethane	0.500	0.45	UGL	90.0	( 50-150 )
MS	Bromochloromethane	10	11.8	UGL	116.0	( 70-130 )
MSD	Bromochloromethane	10	11.7	UGL	117.0	( 70-130 )
RPD_LCS	Bromochloromethane	108.200	104.200	UGL	3.8	( 0-20 )
RPD_MS	Bromochloromethane	118.000	117.000	UGL	0.9	( 0-20 )
LCS1	Chloroethane	5	5.18	UGL	103.6	( 70-130 )
LCS2	Chloroethane	5	4.83	UGL	96.6	( 70-130 )
MBLK	Chloroethane	ND	<0.5	UGL		
MRL_CHK	Chloroethane	0.500	0.54	UGL	108.0	( 50-150 )
MS	Chloroethane	10	11.6	UGL	116.0	( 70-130 )
MSD	Chloroethane	10	11.4	UGL	114.0	( 70-130 )
RPD_LCS	Chloroethane	103.600	96.600	UGL	7.0	( 0-20 )
RPD_MS	Chloroethane	116.000	114.000	UGL	1.7	( 0-20 )
LCS1	Chloromethane (Methyl Chloride)	5	5.43	UGL	108.6	( 70-130 )
LCS2	Chloromethane (Methyl Chloride)	5	5.23	UGL	104.6	( 70-130 )
MBLK	Chloromethane (Methyl Chloride)	ND	<0.5	UGL		
MRL_CHK	Chloromethane (Methyl Chloride)	0.500	0.63	UGL	126.0	( 50-150 )
MS	Chloromethane (Methyl Chloride)	10	11.9	UGL	119.0	( 70-130 )
MSD	Chloromethane (Methyl Chloride)	10	11.8	UGL	118.0	( 70-130 )
RPD_LCS	Chloromethane (Methyl Chloride)	108.600	104.600	UGL	3.8	( 0-20 )
RPD_MS	Chloromethane (Methyl Chloride)	119.000	118.000	UGL	0.8	( 0-20 )
LCS1	Chlorodibromomethane	5	4.88	UGL	97.6	( 70-130 )
LCS2	Chlorodibromomethane	5	4.82	UGL	96.4	( 70-130 )
MBLK	Chlorodibromomethane	ND	<0.5	UGL		
MRL_CHK	Chlorodibromomethane	0.500	0.47	UGL	94.0	( 50-150 )
MS	Chlorodibromomethane	10	10.3	UGL	103.0	( 70-130 )
MSD	Chlorodibromomethane	10	10.6	UGL	106.0	( 70-130 )
RPD_LCS	Chlorodibromomethane	97.600	96.400	UGL	1.2	( 0-20 )
RPD_MS	Chlorodibromomethane	103.000	106.000	UGL	2.9	( 0-20 )
LCS1	Dibromomethane	5	5.22	UGL	104.4	( 70-130 )
LCS2	Dibromomethane	5	5.21	UGL	104.2	( 70-130 )
MBLK	Dibromomethane	ND	<0.5	UGL		
MRL_CHK	Dibromomethane	0.500	0.49	UGL	98.0	( 50-150 )

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.  
Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates  
are advisory only, unless otherwise specified in the method.





**MWH Laboratories**  
A Division of MWH Americas, Inc.

750 Royal Oaks Drive, Suite 100  
Monrovia, California 91016-3829  
Tel: 626 386 1100  
Fax: 626 388 1101  
1 800 566 LA65 (1 800 566 5227)

Laboratory  
QC Report  
#189010

SGS Environmental Services Inc.  
(continued)

MS	Dibromomethane	10	11.0	UGL	110.0	( 70-130 )
MSD	Dibromomethane	10	11.3	UGL	113.0	( 70-130 )
RPD_LCS	Dibromomethane	104.400	104.200	UGL	0.2	( 0-20 )
RPD_MS	Dibromomethane	110.000	113.000	UGL	2.7	( 0-20 )
LCS1	Bromodichloromethane	5	5.04	UGL	100.8	( 70-130 )
LCS2	Bromodichloromethane	5	4.85	UGL	97.0	( 70-130 )
MBLK	Bromodichloromethane	ND	<0.5	UGL		
MRL_CHK	Bromodichloromethane	0.500	0.49	UGL	98.0	( 50-150 )
MS	Bromodichloromethane	10	11.5	UGL	115.0	( 70-130 )
MSD	Bromodichloromethane	10	11.3	UGL	113.0	( 70-130 )
RPD_LCS	Bromodichloromethane	100.800	97.000	UGL	3.8	( 0-20 )
RPD_MS	Bromodichloromethane	115.000	113.000	UGL	1.8	( 0-20 )
LCS1	Dichloromethane	5	5.28	UGL	105.6	( 70-130 )
LCS2	Dichloromethane	5	5.32	UGL	106.4	( 70-130 )
MBLK	Dichloromethane	ND	<0.5	UGL		
MRL_CHK	Dichloromethane	0.500	0.52	UGL	104.0	( 50-150 )
MS	Dichloromethane	10	11.8	UGL	118.0	( 70-130 )
MSD	Dichloromethane	10	11.7	UGL	117.0	( 70-130 )
RPD_LCS	Dichloromethane	105.600	106.400	UGL	0.8	( 0-20 )
RPD_MS	Dichloromethane	118.000	117.000	UGL	0.9	( 0-20 )
LCS1	Di-isopropyl ether	5	5.04	UGL	100.8	( 70-130 )
LCS2	Di-isopropyl ether	5	4.93	UGL	98.6	( 70-130 )
MBLK	Di-isopropyl ether	ND	<3.0	UGL		
MRL_CHK	Di-isopropyl ether	0.500	0.49	UGL	98.0	( 50-150 )
MS	Di-isopropyl ether	10	10.5	UGL	105.0	( 70-130 )
MSD	Di-isopropyl ether	10	10.6	UGL	106.0	( 70-130 )
RPD_LCS	Di-isopropyl ether	100.800	98.600	UGL	2.2	( 0-20 )
RPD_MS	Di-isopropyl ether	105.000	106.000	UGL	0.9	( 0-20 )
LCS1	Ethyl benzene	5	4.98	UGL	99.6	( 70-130 )
LCS2	Ethyl benzene	5	4.85	UGL	97.0	( 70-130 )
MBLK	Ethyl benzene	ND	<0.5	UGL		
MRL_CHK	Ethyl benzene	0.500	0.45	UGL	90.0	( 50-150 )
MS	Ethyl benzene	10	10.0	UGL	100.0	( 70-130 )
MSD	Ethyl benzene	10	10.3	UGL	103.0	( 70-130 )
RPD_LCS	Ethyl benzene	99.600	97.000	UGL	2.6	( 0-20 )
RPD_MS	Ethyl benzene	100.000	103.000	UGL	3.0	( 0-20 )

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.  
Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates  
are advisory only, unless otherwise specified in the method.

SGS Environmental Services Inc.  
 (continued)

LCS1	Dichlorodifluoromethane	5	5.01	UGL	100.2	( 70-130 )
LCS2	Dichlorodifluoromethane	5	4.71	UGL	94.2	( 70-130 )
MBLK	Dichlorodifluoromethane	ND	<0.5	UGL		
MRL_CHK	Dichlorodifluoromethane	0.500	0.53	UGL	106.0	( 50-150 )
MS	Dichlorodifluoromethane	10	11.2	UGL	112.0	( 70-130 )
MSD	Dichlorodifluoromethane	10	11.2	UGL	112.0	( 70-130 )
RPD_LCS	Dichlorodifluoromethane	100.200	94.200	UGL	6.2	( 0-20 )
RPD_MS	Dichlorodifluoromethane	112.000	112.000	UGL	0.0	( 0-20 )
LCS1	Fluorotrichloromethane-Freon11	5	5.64	UGL	112.8	( 70-130 )
LCS2	Fluorotrichloromethane-Freon11	5	5.24	UGL	104.8	( 70-130 )
MBLK	Fluorotrichloromethane-Freon11	ND	<0.5	UGL		
MRL_CHK	Fluorotrichloromethane-Freon11	0.500	0.54	UGL	108.0	( 50-150 )
MS	Fluorotrichloromethane-Freon11	10	12.1	UGL	121.0	( 70-130 )
MSD	Fluorotrichloromethane-Freon11	10	12.2	UGL	122.0	( 70-130 )
RPD_LCS	Fluorotrichloromethane-Freon11	112.800	104.800	UGL	7.4	( 0-20 )
RPD_MS	Fluorotrichloromethane-Freon11	121.000	122.000	UGL	0.8	( 0-20 )
LCS1	Hexachlorobutadiene	5	5.51	UGL	110.2	( 70-130 )
LCS2	Hexachlorobutadiene	5	5.28	UGL	105.6	( 70-130 )
MBLK	Hexachlorobutadiene	ND	<0.5	UGL		
MRL_CHK	Hexachlorobutadiene	0.500	0.44	UGL	88.0	( 50-150 )
MS	Hexachlorobutadiene	10	7.52	UGL	75.2	( 70-130 )
MSD	Hexachlorobutadiene	10	7.58	UGL	75.8	( 70-130 )
RPD_LCS	Hexachlorobutadiene	110.200	105.600	UGL	4.3	( 0-20 )
RPD_MS	Hexachlorobutadiene	75.200	75.800	UGL	0.8	( 0-20 )
LCS1	Isopropylbenzene	5	5.12	UGL	102.4	( 70-130 )
LCS2	Isopropylbenzene	5	4.96	UGL	99.2	( 70-130 )
MBLK	Isopropylbenzene	ND	<0.5	UGL		
MRL_CHK	Isopropylbenzene	0.500	0.49	UGL	98.0	( 50-150 )
MS	Isopropylbenzene	10	9.47	UGL	94.7	( 70-130 )
MSD	Isopropylbenzene	10	9.64	UGL	96.4	( 70-130 )
RPD_LCS	Isopropylbenzene	102.400	99.200	UGL	3.2	( 0-20 )
RPD_MS	Isopropylbenzene	94.700	96.400	UGL	1.8	( 0-20 )
LCS1	m-Dichlorobenzene (1,3-DCB)	5	4.79	UGL	95.8	( 70-130 )
LCS2	m-Dichlorobenzene (1,3-DCB)	5	4.70	UGL	94.0	( 70-130 )
MBLK	m-Dichlorobenzene (1,3-DCB)	ND	<0.5	UGL		
MRL_CHK	m-Dichlorobenzene (1,3-DCB)	0.500	0.50	UGL	100.0	( 50-150 )

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining. Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.



**MWH Laboratories**  
A Division of MWH Americas, Inc.

750 Royal Oaks Drive, Suite 100  
Monrovia, California 91018-3629  
Tel. 626 386 1100  
Fax. 626 386 1101  
1 800 566 LABS (1 800 566 5227)

Laboratory  
QC Report  
#189010

SGS Environmental Services Inc.  
(continued)

MS	m-Dichlorobenzene (1,3-DCB)	10	9.16	UGL	91.6	( 70-130 )
MSD	m-Dichlorobenzene (1,3-DCB)	10	9.58	UGL	95.8	( 70-130 )
RPD_LCS	m-Dichlorobenzene (1,3-DCB)	95.800	94.000	UGL	1.9	( 0-20 )
RPD_MS	m-Dichlorobenzene (1,3-DCB)	91.600	95.800	UGL	4.5	( 0-20 )
LCS1	m,p-Xylenes	10	10.7	UGL	107.0	( 70-130 )
LCS2	m,p-Xylenes	10	10.2	UGL	102.0	( 70-130 )
MBLK	m,p-Xylenes	ND	<1.0	UGL		
MRL_CHK	m,p-Xylenes	1.00	0.93	UGL	93.0	( 50-150 )
MS	m,p-Xylenes	20	20.4	UGL	102.0	( 70-130 )
MSD	m,p-Xylenes	20	21.4	UGL	107.0	( 70-130 )
RPD_LCS	m,p-Xylenes	107.000	102.000	UGL	4.8	( 0-20 )
RPD_MS	m,p-Xylenes	102.000	107.000	UGL	4.8	( 0-20 )
LCS1	Methyl Tert-butyl ether (MTBE)	5	4.71	UGL	94.2	( 70-130 )
LCS2	Methyl Tert-butyl ether (MTBE)	5	4.77	UGL	95.4	( 70-130 )
MBLK	Methyl Tert-butyl ether (MTBE)	ND	<0.5	UGL		
MRL_CHK	Methyl Tert-butyl ether (MTBE)	0.500	0.46	UGL	92.0	( 50-150 )
MS	Methyl Tert-butyl ether (MTBE)	10	9.64	UGL	96.4	( 70-130 )
MSD	Methyl Tert-butyl ether (MTBE)	10	9.84	UGL	98.4	( 70-130 )
RPD_LCS	Methyl Tert-butyl ether (MTBE)	94.200	95.400	UGL	1.3	( 0-20 )
RPD_MS	Methyl Tert-butyl ether (MTBE)	96.400	98.400	UGL	2.1	( 0-20 )
LCS1	Naphthalene	5	4.59	UGL	91.8	( 70-130 )
LCS2	Naphthalene	5	4.41	UGL	88.2	( 70-130 )
MBLK	Naphthalene	ND	<0.5	UGL		
MRL_CHK	Naphthalene	0.500	0.50	UGL	100.0	( 50-150 )
MS	Naphthalene	10	8.86	UGL	88.6	( 70-130 )
MSD	Naphthalene	10	9.19	UGL	91.9	( 70-130 )
RPD_LCS	Naphthalene	91.800	88.200	UGL	4.0	( 0-20 )
RPD_MS	Naphthalene	88.600	91.900	UGL	3.7	( 0-20 )
LCS1	n-Butylbenzene	5	5.07	UGL	101.4	( 70-130 )
LCS2	n-Butylbenzene	5	4.87	UGL	97.4	( 70-130 )
MBLK	n-Butylbenzene	ND	<0.5	UGL		
MRL_CHK	n-Butylbenzene	0.500	0.37	UGL	74.0	( 50-150 )
MS	n-Butylbenzene	10	8.31	UGL	83.1	( 70-130 )
MSD	n-Butylbenzene	10	8.41	UGL	84.1	( 70-130 )
RPD_LCS	n-Butylbenzene	101.400	97.400	UGL	4.0	( 0-20 )
RPD_MS	n-Butylbenzene	83.100	84.100	UGL	1.2	( 0-20 )

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.  
Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates  
are advisory only, unless otherwise specified in the method.



**MWH Laboratories**  
A Division of MWH Americas, Inc.

750 Royal Oaks Drive, Suite 100  
Monrovia, California 91016-3629  
Tel: 626 386 1100  
Fax: 626 386 1101  
1 800 566 LABS (1 800 566 5227)

Laboratory  
QC Report  
#189010

SGS Environmental Services Inc.  
(continued)

LCS1	n-Propylbenzene	5	5.20	UGL	104.0	( 70-130 )
LCS2	n-Propylbenzene	5	5.07	UGL	101.4	( 70-130 )
MBLK	n-Propylbenzene	ND	<0.5	UGL		
MRL_CHK	n-Propylbenzene	0.500	0.47	UGL	94.0	( 50-150 )
MS	n-Propylbenzene	10	9.29	UGL	92.9	( 70-130 )
MSD	n-Propylbenzene	10	9.49	UGL	94.9	( 70-130 )
RPD_LCS	n-Propylbenzene	104.000	101.400	UGL	2.5	( 0-20 )
RPD_MS	n-Propylbenzene	92.900	94.900	UGL	2.1	( 0-20 )
LCS1	o-Xylene	5	4.91	UGL	98.2	( 70-130 )
LCS2	o-Xylene	5	4.74	UGL	94.8	( 70-130 )
MBLK	o-Xylene	ND	<0.5	UGL		
MRL_CHK	o-Xylene	0.500	0.40	UGL	80.0	( 50-150 )
MS	o-Xylene	10	9.74	UGL	97.4	( 70-130 )
MSD	o-Xylene	10	10.3	UGL	103.0	( 70-130 )
RPD_LCS	o-Xylene	98.200	94.800	UGL	3.5	( 0-20 )
RPD_MS	o-Xylene	97.400	103.000	UGL	5.6	( 0-20 )
LCS1	o-Dichlorobenzene (1,2-DCB)	5	5.27	UGL	105.4	( 70-130 )
LCS2	o-Dichlorobenzene (1,2-DCB)	5	5.10	UGL	102.0	( 70-130 )
MBLK	o-Dichlorobenzene (1,2-DCB)	ND	<0.5	UGL		
MRL_CHK	o-Dichlorobenzene (1,2-DCB)	0.500	0.51	UGL	102.0	( 50-150 )
MS	o-Dichlorobenzene (1,2-DCB)	10	10.2	UGL	102.0	( 70-130 )
MSD	o-Dichlorobenzene (1,2-DCB)	10	10.2	UGL	102.0	( 70-130 )
RPD_LCS	o-Dichlorobenzene (1,2-DCB)	105.400	102.000	UGL	3.3	( 0-20 )
RPD_MS	o-Dichlorobenzene (1,2-DCB)	102.000	102.000	UGL	0.0	( 0-20 )
LCS1	Tetrachloroethylene (PCE)	5	5.33	UGL	106.6	( 70-130 )
LCS2	Tetrachloroethylene (PCE)	5	5.12	UGL	102.4	( 70-130 )
MBLK	Tetrachloroethylene (PCE)	ND	<0.5	UGL		
MRL_CHK	Tetrachloroethylene (PCE)	0.500	0.48	UGL	96.0	( 50-150 )
MS	Tetrachloroethylene (PCE)	10	9.78	UGL	97.8	( 70-130 )
MSD	Tetrachloroethylene (PCE)	10	10.0	UGL	100.0	( 70-130 )
RPD_LCS	Tetrachloroethylene (PCE)	106.600	102.400	UGL	4.0	( 0-20 )
RPD_MS	Tetrachloroethylene (PCE)	97.800	100.000	UGL	2.2	( 0-20 )
LCS1	p-Isopropyltoluene	5	4.52	UGL	90.4	( 70-130 )
LCS2	p-Isopropyltoluene	5	4.47	UGL	89.4	( 70-130 )
MBLK	p-Isopropyltoluene	ND	<0.5	UGL		
MRL_CHK	p-Isopropyltoluene	0.500	0.42	UGL	84.0	( 50-150 )

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.  
Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates  
are advisory only, unless otherwise specified in the method.



**MWH Laboratories**  
A Division of MWH Americas, Inc.

750 Royal Oaks Drive, Suite 100  
Monrovia, California 91016-3529  
Tel: 626 386 1100  
Fax: 626 386 1101  
1 800 566 LABS (1 800 566 5227)

Laboratory  
QC Report  
#189010

SGS Environmental Services Inc.  
(continued)

MS	p-Isopropyltoluene	10	8.20	UGL	82.0	( 70-130 )
MSD	p-Isopropyltoluene	10	8.47	UGL	84.7	( 70-130 )
RPD_LCS	p-Isopropyltoluene	90.400	89.400	UGL	1.1	( 0-20 )
RPD_MS	p-Isopropyltoluene	82.000	84.700	UGL	3.2	( 0-20 )
LCS1	sec-Butylbenzene	5	4.95	UGL	99.0	( 70-130 )
LCS2	sec-Butylbenzene	5	4.77	UGL	95.4	( 70-130 )
MBLK	sec-Butylbenzene	ND	<0.5	UGL		
MRL_CHK	sec-Butylbenzene	0.500	0.49	UGL	98.0	( 50-150 )
MS	sec-Butylbenzene	10	8.76	UGL	87.6	( 70-130 )
MSD	sec-Butylbenzene	10	9.16	UGL	91.6	( 70-130 )
RPD_LCS	sec-Butylbenzene	99.000	95.400	UGL	3.7	( 0-20 )
RPD_MS	sec-Butylbenzene	87.600	91.600	UGL	4.5	( 0-20 )
LCS1	Styrene	5	4.99	UGL	99.8	( 70-130 )
LCS2	Styrene	5	4.88	UGL	97.6	( 70-130 )
MBLK	Styrene	ND	<0.5	UGL		
MRL_CHK	Styrene	0.500	0.44	UGL	88.0	( 50-150 )
MS	Styrene	10	6.66	UGL	<u>66.6</u>	( 70-130 )
MSD	Styrene	10	7.51	UGL	75.1	( 70-130 )
RPD_LCS	Styrene	99.800	97.600	UGL	2.2	( 0-20 )
RPD_MS	Styrene	66.600	75.100	UGL	12.0	( 0-20 )
LCS1	1,2-dichloroethane-d4	100	108	NR	108.0	( 70-130 )
LCS2	1,2-dichloroethane-d4	100	117	NR	117.0	( 70-130 )
MBLK	1,2-dichloroethane-d4	106	105	NR	105.0	
MRL_CHK	1,2-dichloroethane-d4	100	107	NR	107.0	( 50-150 )
MS	1,2-dichloroethane-d4	100	113	NR	113.0	( 70-130 )
MSD	1,2-dichloroethane-d4	100	114	NR	114.0	( 70-130 )
RPD_LCS	1,2-dichloroethane-d4	108.000	117.000	NR	8.0	( 0-20 )
RPD_MS	1,2-dichloroethane-d4	113.000	114.000	NR	0.9	( 0-20 )
LCS1	Toluene-d8	100	102	NR	102.0	( 70-130 )
LCS2	Toluene-d8	100	99	NR	99.0	( 70-130 )
MBLK	Toluene-d8	100	96	NR	96.0	
MRL_CHK	Toluene-d8	100	98	NR	98.0	( 50-150 )
MS	Toluene-d8	100	99	NR	99.0	( 70-130 )
MSD	Toluene-d8	100	101	NR	101.0	( 70-130 )
RPD_LCS	Toluene-d8	102.000	99.000	NR	3.0	( 0-20 )
RPD_MS	Toluene-d8	99.000	101.000	NR	2.0	( 0-20 )

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.  
Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates  
are advisory only, unless otherwise specified in the method.

SGS Environmental Services Inc.  
 (continued)

LCS1	4-Bromofluorobenzene	100	92	%R	92.0	( 70-130 )
LCS2	4-Bromofluorobenzene	100	94	%R	94.0	( 70-130 )
MBLK	4-Bromofluorobenzene	100	103	%R	103.0	
MRL_CHK	4-Bromofluorobenzene	100	104	%R	104.0	( 50-150 )
MS	4-Bromofluorobenzene	100	90	%R	90.0	( 70-130 )
MSD	4-Bromofluorobenzene	100	90	%R	90.0	( 70-130 )
RPD_LCS	4-Bromofluorobenzene	92.000	94.000	%R	2.2	( 0-20 )
RPD_MS	4-Bromofluorobenzene	90.000	90.000	%R	0.0	( 0-20 )
LCS1	trans-1,2-Dichloroethylene	5	5.95	UGL	119.0	( 70-130 )
LCS2	trans-1,2-Dichloroethylene	5	5.55	UGL	111.0	( 70-130 )
MBLK	trans-1,2-Dichloroethylene	ND	<0.5	UGL		
MRL_CHK	trans-1,2-Dichloroethylene	0.500	0.56	UGL	112.0	( 50-150 )
MS	trans-1,2-Dichloroethylene	10	12.1	UGL	121.0	( 70-130 )
MSD	trans-1,2-Dichloroethylene	10	12.4	UGL	124.0	( 70-130 )
RPD_LCS	trans-1,2-Dichloroethylene	119.000	111.000	UGL	7.0	( 0-20 )
RPD_MS	trans-1,2-Dichloroethylene	121.000	124.000	UGL	2.4	( 0-20 )
LCS1	tert-amyl Methyl Ether	5	4.78	UGL	95.6	( 70-130 )
LCS2	tert-amyl Methyl Ether	5	4.57	UGL	91.4	( 70-130 )
MBLK	tert-amyl Methyl Ether	ND	<3.0	UGL		
MRL_CHK	tert-amyl Methyl Ether	0.500	0.44	UGL	88.0	( 50-150 )
MS	tert-amyl Methyl Ether	10	8.85	UGL	88.5	( 70-130 )
MSD	tert-amyl Methyl Ether	10	9.12	UGL	91.2	( 70-130 )
RPD_LCS	tert-amyl Methyl Ether	95.600	91.400	UGL	4.5	( 0-20 )
RPD_MS	tert-amyl Methyl Ether	88.500	91.200	UGL	3.0	( 0-20 )
LCS1	tert-Butyl Ethyl Ether	5	4.86	UGL	97.2	( 70-130 )
LCS2	tert-Butyl Ethyl Ether	5	4.71	UGL	94.2	( 70-130 )
MBLK	tert-Butyl Ethyl Ether	ND	<3.0	UGL		
MRL_CHK	tert-Butyl Ethyl Ether	0.500	0.47	UGL	94.0	( 50-150 )
MS	tert-Butyl Ethyl Ether	10	9.11	UGL	91.1	( 70-130 )
MSD	tert-Butyl Ethyl Ether	10	9.31	UGL	93.1	( 70-130 )
RPD_LCS	tert-Butyl Ethyl Ether	97.200	94.200	UGL	3.1	( 0-20 )
RPD_MS	tert-Butyl Ethyl Ether	91.100	93.100	UGL	2.2	( 0-20 )
LCS1	tert-Butylbenzene	5	4.71	UGL	94.2	( 70-130 )
LCS2	tert-Butylbenzene	5	4.68	UGL	93.6	( 70-130 )
MBLK	tert-Butylbenzene	ND	<0.5	UGL		
MRL_CHK	tert-Butylbenzene	0.500	0.48	UGL	96.0	( 50-150 )

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.  
 Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates  
 are advisory only, unless otherwise specified in the method.



# MWH Laboratories

A Division of MWH Americas, Inc.

750 Royal Oaks Drive, Suite 100  
Monrovia, California 91016-3629  
Tel: 626 388 1100  
Fax: 626 388 1101  
1 800 566 LABS (1 800 566 5227)

Laboratory  
QC Report  
#189010

## SGS Environmental Services Inc. (continued)

MS	tert-Butylbenzene	10	9.05	UGL	90.5	( 70-130 )
MSD	tert-Butylbenzene	10	9.12	UGL	91.2	( 70-130 )
RPD_LCS	tert-Butylbenzene	94.200	93.600	UGL	0.6	( 0-20 )
RPD_MS	tert-Butylbenzene	90.500	91.200	UGL	0.8	( 0-20 )
LCS1	Trichloroethylene (TCE)	5	5.40	UGL	108.0	( 70-130 )
LCS2	Trichloroethylene (TCE)	5	4.99	UGL	99.8	( 70-130 )
MBLK	Trichloroethylene (TCE)	ND	<0.5	UGL		
MRL_CHK	Trichloroethylene (TCE)	0.500	0.47	UGL	94.0	( 50-150 )
MS	Trichloroethylene (TCE)	10	11.0	UGL	110.0	( 70-130 )
MSD	Trichloroethylene (TCE)	10	11.3	UGL	113.0	( 70-130 )
RPD_LCS	Trichloroethylene (TCE)	108.000	99.800	UGL	7.9	( 0-20 )
RPD_MS	Trichloroethylene (TCE)	110.000	113.000	UGL	2.7	( 0-20 )
LCS1	Trichlorotrifluoroethane (Freon)	5	5.73	UGL	114.6	( 70-130 )
LCS2	Trichlorotrifluoroethane (Freon)	5	5.30	UGL	106.0	( 70-130 )
MBLK	Trichlorotrifluoroethane (Freon)	ND	<0.5	UGL		
MRL_CHK	Trichlorotrifluoroethane (Freon)	0.500	0.54	UGL	108.0	( 50-150 )
MS	Trichlorotrifluoroethane (Freon)	10	10.6	UGL	106.0	( 70-130 )
MSD	Trichlorotrifluoroethane (Freon)	10	10.5	UGL	105.0	( 70-130 )
RPD_LCS	Trichlorotrifluoroethane (Freon)	114.600	106.000	UGL	7.8	( 0-20 )
RPD_MS	Trichlorotrifluoroethane (Freon)	106.000	105.000	UGL	0.9	( 0-20 )
LCS1	trans-1,3-Dichloropropene	5	4.70	UGL	94.0	( 70-130 )
LCS2	trans-1,3-Dichloropropene	5	4.49	UGL	89.8	( 70-130 )
MBLK	trans-1,3-Dichloropropene	ND	<0.5	UGL		
MRL_CHK	trans-1,3-Dichloropropene	0.500	0.43	UGL	86.0	( 50-150 )
MS	trans-1,3-Dichloropropene	10	7.48	UGL	74.8	( 70-130 )
MSD	trans-1,3-Dichloropropene	10	7.49	UGL	74.9	( 70-130 )
RPD_LCS	trans-1,3-Dichloropropene	94.000	89.800	UGL	4.6	( 0-20 )
RPD_MS	trans-1,3-Dichloropropene	74.800	74.900	UGL	0.1	( 0-20 )
LCS1	Toluene	5	5.32	UGL	106.4	( 70-130 )
LCS2	Toluene	5	4.96	UGL	99.2	( 70-130 )
MBLK	Toluene	ND	<0.5	UGL		
MRL_CHK	Toluene	0.500	0.47	UGL	94.0	( 50-150 )
MS	Toluene	10	10.5	UGL	105.0	( 70-130 )
MSD	Toluene	10	10.7	UGL	107.0	( 70-130 )
RPD_LCS	Toluene	106.400	99.200	UGL	7.0	( 0-20 )
RPD_MS	Toluene	105.000	107.000	UGL	1.9	( 0-20 )

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.  
Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates  
are advisory only, unless otherwise specified in the method.



**MWH Laboratories**  
A Division of MWH Americas, Inc.

750 Royal Oaks Drive, Suite 100  
Monrovia, California 91016-3629  
Tel: 626 386 1100  
Fax: 626 386 1101  
1 800 566 LABS (1 800 566 5227)

Laboratory  
QC Report  
#189010

SGS Environmental Services Inc.  
(continued)

---

LCS1	Vinyl chloride (VC)	5	5.14	UGL	102.8	( 70-130 )
LCS2	Vinyl chloride (VC)	5	4.79	UGL	95.8	( 70-130 )
MBLK	Vinyl chloride (VC)	ND	<0.3	UGL		
MRL_CHK	Vinyl chloride (VC)	0.500	0.49	UGL	98.0	( 50-150 )
MS	Vinyl chloride (VC)	10	11.0	UGL	110.0	( 70-130 )
MSD	Vinyl chloride (VC)	10	11.2	UGL	112.0	( 70-130 )
RPD_LCS	Vinyl chloride (VC)	102.800	95.800	UGL	7.0	( 0-20 )
RPD_MS	Vinyl chloride (VC)	110.000	112.000	UGL	1.8	( 0-20 )

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.  
Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates  
are advisory only, unless otherwise specified in the method.



# Laboratory Data Review Checklist

## 1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

Yes       No

Comments:

b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

Yes       No

Comments:

NA

## 2. Chain of Custody (COC)

a. COC information completed, signed, and dated (including released/received by)?

Yes       No

Comments:

b. Correct analyses requested?

Yes       No

Comments:

## 3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt ( $4^{\circ} \pm 2^{\circ} \text{C}$ )?

Yes       No

Comments:

b. Sample preservation acceptable - acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes       No

Comments:

c. Sample condition documented - broken, leaking (Methanol), zero headspace (VOC vials)?

Yes       No

Comments:

d. If there were any discrepancies, were they documented? - For example, incorrect sample containers/preservation, sample temperature outside of acceptance range, insufficient or missing samples, etc.?

Yes       No

Comments:

NA

e. Data quality or usability affected? Explain.

Comments:

NA

#### 4. Case Narrative

a. Present and understandable?

Yes       No

Comments:

b. Discrepancies, errors or QC failures identified by the lab?

Yes       No

Comments:

c. Were all corrective actions documented?

Yes       No

Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

see Section 5.4 of report

#### 5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes       No

Comments:

b. All applicable holding times met?

Yes       No

Comments:

see Section 5.3 of report

c. All soils reported on a dry weight basis?

Yes       No

Comments:

d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project?

Yes  No

Comments:

see Section 5.4 of report

e. Data quality or usability affected? Explain.

Comments:

see Section 5.4 or report

## 6. QC Samples

### a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes  No

Comments:

ii. All method blank results less than PQL?

Yes  No

Comments:

iii. If above PQL, what samples are affected?

Comments:

NA

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No

Comments:

NA

v. Data quality or usability affected? Explain.

Comments:

NA

### b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics - One LCS/LCSD reported per matrix, analysis and 20 samples?

Yes  No

Comments:

ii. Metals/Inorganics - One LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes  No

Comments:

iii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes  No

Comments:

RRO outside, re-extracted and within limits

iv. Precision - All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes  No

Comments:

NA

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

NA

vi. Do the affected samples(s) have data flags? If so, are the data flags clearly defined?

Yes  No

Comments:

NA

vii. Data quality or usability affected? Explain.

Comments:

No, see Case Narrative and Section 5.4 of report

c. Surrogates - Organics Only

i. Are surrogate recoveries reported for organic analyses - field, QC and laboratory samples?

Yes  No

Comments:

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

Yes  No

Comments:

one high due to hydrocarbon interference

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

Yes  No

Comments:

Comment on the front page of sample results

iv. Data quality or usability affected? Explain.

Comments:

No, see case narrative and Section 5.4 of report

d. Trip Blank - Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and cooler?

Yes  No

Comments:

ii. All results less than PQL?

Yes  No

Comments:

NA

iii. If above PQL, what samples are affected?

Comments:

NA

iv. Data quality or usability affected? Explain.

Comments:

NA

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes  No

Comments:

Field duplicates not collected, see Section 5.4

ii. Submitted blind to lab?

Yes  No

Comments:

NA

iii. Precision - All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

Yes  No

Comments:

iv. Data quality or usability affected?

Yes  No

Comments:

NA

f. Decontamination or Equipment Blank (if applicable)

Yes     No     Not Applicable

i. All results less than PQL?

Yes     No

Comments:

NA

ii. If above PQL, what samples are affected?

Comments:

NA

iii. Data quality or usability affected? Explain.

Comments:

NA

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes     No

Comments:

NA

Completed by: Peter Beardsley

Title: Environmental Engineer

Date: Sep 16, 2006

Report Name: Goetz Phase II

Report Date: Aug 16, 2006

Firm: Nortech

File Number:

Print Form

Reset Form