

**FINAL REPORT**  
**FORT RICHARDSON**  
**OUB POLELINE ROAD DISPOSAL AREA**

**GROUNDWATER MONITORING REPORT**

**FORT RICHARDSON, ALASKA**

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**PREPARED FOR:**



**U.S. Army, Directorate of Public Works**  
**Contract No. W911KB-04-P-0091**

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**US Army**  
**Installation Management Agency**



**US Army Corps**  
**of Engineers**®  
Alaska District



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## LIST OF ACRONYMS

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AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
bgs	below ground surface
BLM	Bureau of Land Management
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CoC	Chemical of Concern
CRREL	U.S. Army Cold Regions Research and Engineering Laboratory
DCE	Dichloroethene
DO	Dissolved Oxygen
DOD	Department of Defense
DPW	Department of Public Works
EPA	Environmental Protection Agency
Fe	Iron
FFA	Federal Facilities Agreement
FTOC	From Top of Casing
GPS	Global Positioning Satellite
HHRA	Human Health Risk Assessment
ICRC	Integrated Concepts and Research Corporation
IDW	Investigation Derived Waste
IRP	Installation Restoration Program
J	The quantitation is an estimate
J-	Quantitation estimated low because of insufficient sample preservation
LTM	Long Term Monitoring
Mn	Manganese
MCL	Maximum Contaminant Level
MDL	Method Detection Limit
MNA	Monitored Natural Attenuation
µg/L	microgram per Liter
MS/MSD	Matrix Spike/ Matrix Spike Duplicate
NA	Not Applicable
NCP	National Contingency Plan
ND	Not Detected
ORP	Oxidation - Reduction Potential
OUB	Operable Unit B
PCA	1,1,2,2-Tetrachloroethane
PCE	Tetrachloroethene
pH	potential Hydrogen
POC	Point of Contact

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**LIST OF ACRONYMS (CONTINUED)**

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PQL	Practical Quantitation Limit
QC	Quality Control
RAO	Remedial Action Objectives
ROD	Record of Decision
SAP	Sampling and Analysis Plan
SIMS	Selective Ion Monitoring
SVE	Soil Vapor Extraction
TCE	Trichloroethene
USACE	United States Army Corps of Engineers
USAG-AK	United States Army Garrison-Alaska
VOC	Volatile Organic Compound
WGS	World Geodetic System
USGS	United States Geological Survey

## **1.0 INTRODUCTION**

Groundwater sampling activities at Operable Unit B (OUB) Poleline Road Disposal Area were conducted for the U.S. Army Directorate of Public Works (DPW) in October 2005 under United States Army Corps of Engineers (USACE) Contract Number W911KB-04-P-0091.

Annual groundwater sampling was established under the Installation Restoration Program (IRP) to address the needs of multiple programs at Fort Richardson Army Post. These programs include the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Federal Facilities Agreement (FFA), and the Alaska state program sites.

This report presents results from the groundwater sampling event at OUB Poleline Road Disposal Area during October 2005. The report summarizes and evaluates laboratory data collected and compares these findings with Remedial Action Objectives (RAOs) and timelines.

Figure 2-1 shows the location of Fort Richardson Army Post land boundaries relative to Anchorage, Alaska.

## **2.0 BACKGROUND INFORMATION**

### **2.1 Physical Setting**

Fort Richardson Army Post lies in an alluvial plain, often referred to as the Anchorage Lowland, which is bordered on the east by the Chugach Mountains and on the north, south, and west by waters of the Cook Inlet (Figure 2-1). Fort Richardson Army Post is situated in a transitional zone on the eastern edge of the Anchorage Lowland and is inundated with four major drainages that originate in the Chugach Mountains. The topography of Fort Richardson Army Post has been highly influenced by glacial activity and the effects of stream deposition and erosion.

Eagle River and Ship Creek are the primary streams on the installation, running from east to west. Ship Creek, the primary water source for Fort Richardson Army Post and Elmendorf Air Force Base, runs through Fort Richardson Army Post. Fort Richardson Army Post obtains drinking water from the Ship Creek Dam Reservoir and has several emergency water supply wells near Ship Creek. Groundwater used for the emergency water supply is obtained from the confined aquifer in the Knik outwash deposit. Water storage for Fort Richardson Army Post is provided by a permanent 2.5 million gallon underground reservoir in the Elmendorf Moraine, and by the Ship Creek Dam Reservoir at the base of the Chugach Mountain Range. A water treatment plant near the dam processes the drinking water. A drinking water well is located at the Otter Lake Recreational Facility, located approximately two miles from the cantonment area. (ICRC, 2003)

The U.S. Army's Cold Regions Research and Engineering Laboratory (CRREL) performed a subsurface investigation at OUB Poleline Road Disposal Area to help identify probable pathways for groundwater flow and contaminant migration. (CRREL, 2003) The investigation utilized a geophysical survey to profile the subsurface, evaluation of existing soil boring and monitoring well data, and three-dimensional modeling to synthesize the data.

In addition to profiling a weathered and competent bedrock layer, four major soil units were identified (kame gravel, channelized kame sand, fines, and a till layer). The modeling of the data confirmed the presence of the following three aquifers at OUB Poleline Road Disposal Area:

- **The perched aquifer** consists of a sand and gravel lens located adjacent to several irregularly shaped volumes of fine-grained soil. This perched aquifer is recharged from surface water infiltration along the base of the hill and adjacent wetlands. Based on modeling, contamination within the perched aquifer is believed to flow along the higher permeability sands and gravel between the zones of fine-grained soils, to the edge of the till layer, and then into the deeper aquifer. (CH2MHILL, 2003)
- **The unconfined aquifer** is comprised of the channelized kame sand situated atop a diamicton (till) layer. The unconfined aquifer averages approximately 10 feet thick across the OUB Poleline Road Disposal Area site and spans from approximately 20 to 30 feet below ground surface (bgs). Groundwater flows appeared varied and dependent on the topography of the underlying diamicton (till) layer. A zone near the observed wetland was identified in the investigation to be a mixing zone of the unconfined aquifer to the deeper semiconfined aquifer. (CH2MHILL, 2003)
- **The semi-confined deep aquifer** at OUB Poleline Road Disposal Area ranges in depth from approximately 80 to 125 feet bgs, with a thickness that varies from 3 to 40 feet. Five monitoring wells are located in the deep aquifer, with four of the five wells extending slightly into the top of the bedrock unit that is found from 120 to 170 feet bgs. According to modeling and geophysical results, two bedrock depressions that travel northeasterly and southeasterly were identified beneath OUB Poleline Road Disposal Area. Groundwater flow in the deep aquifer was found to be traveling within the kame gravel that lies within the bedrock depressions. (CH2MHILL, 2003)

Figure 2-1 Location of Fort Richardson Army Post



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## **2.2 Environmental History**

In 1988, the Environmental Protection Agency (EPA) Region 10 placed Fort Richardson Army Post on the hazardous waste compliance docket. The Army's investigation of contaminated sites at Fort Richardson Army Post under the IRP began in 1988. The objectives of the IRP are to assess sites where potentially hazardous material may exist and to develop and recommend remedial actions for those sites that pose a threat to human health and welfare or the environment. (*ICRC, 2003*)

The majority of the land currently used by the United States Army Garrison-Alaska (USAG-AK) is on long-term withdrawal from the public domain and was originally assigned to the Bureau of Land Management (BLM). Residual responsibility for USAG-AK withdrawn lands remains with the BLM, which retains interest in the stewardship of the transferred parcel even though the land is under the Department of Defense (DOD) long-term management plan. (*ICRC, 2003*)

OUB Poleline Road Disposal Area lies approximately 10 miles northeast of Anchorage, Alaska, 1 mile south of Eagle River, and 0.6 mile north of the Anchorage Regional Landfill (Figure 2-2). Poleline Road, a gravel road traveling northeast-southwest along a powerline route and the Eklutna Water Line, provides access to OUB. Barrs Boulevard, a gravel road extending from the Glenn Highway to Poleline Road, bisects the area. (*CH2MHill, 2003*)

The site was used as a chemical disposal area from 1950 to 1972. During this time, chemical agent identification sets and other military debris were burned and disposed of in trenches. The chemical sets were neutralized with a mixture of bleach or lime and chlorinated solvents before burial. The amount and extent of contamination present is known to reach bedrock about 150 feet bgs. (*EPA, 2005*)

OUB Poleline Road Disposal Area is a low-lying, flat area bordered by an 80-foot hill to the west, wetlands to the south and southwest, and low, wooded hills on the remaining borders. The main disposal area is comprised of approximately 1.5 acres. The vegetation on the main disposal area was cleared in 1994 and has not grown back significantly. The U.S. Army currently uses the land around OUB Poleline Road Disposal Area for training activities and recreational purposes. The Eklutna Water Line, which supplies Anchorage and part of Eagle River with drinking water, runs directly west of OUB Poleline Road Disposal Area. (*URS, 2001*)

The Long Term Monitoring (LTM) work plan was finalized in September 1997 with two objectives: 1) collect data on groundwater contaminant trends, and 2) devise an appropriate long-term site-monitoring plan. Plume monitoring will track the degradation of identified Chemicals of Concern (CoCs). Sampling is currently conducted semiannually. (*USACE, 2003*)

In 2004, Satori Group Inc. was contracted to perform low-flow groundwater sampling at OUB Poleline Road Disposal Area during August and October. Twenty three wells were sampled and analyzed in 2004.

In 2005, Satori Group, Inc. again performed low-flow groundwater sampling at OUB Poleline Road Disposal Area during June. Twenty three wells were sampled again.

Table 2-1 outlines the significant activities that have occurred at OUB Poleline Road Disposal Area from 1950 to present. Each year is accompanied with a brief description of important activities for that year.

**Table 2-1 OUB Poleline Road Disposal Area Site Activity History**

Year	Organization/Company	Activity
1950-1960	EPA Region 10	Disposal site for chemical agent test kits
1957	ADEC	Over flight of aerial photography identified visible trenches
1990-1992	Environmental Science & Engineering	Geophysical survey, soil borings, soil gas survey, monitoring well installation, groundwater sampling, water level survey, aquifer slug tests
1993	OHM Remediation Services Corporation	Rapid response removal action within Areas A-3 and A-4
1994-1995	CRREL	Geophysical surveys
1995	URS	Remedial investigation, including surface and subsurface soil sampling, groundwater sampling, and installation of several new monitoring wells
1995	URS	HHRA including groundwater sampling and modeling
1996	URS	Feasibility study to determine remedial alternatives
1996	URS	Ecological risk assessment and HHRA
1996	URS	Treatability study to provide data concerning SVE and air sparging that included groundwater sampling and soil borings
1996	URS	SVE evaluation study that included installing additional soil borings and soil/groundwater sampling
1997	USACE/ADEC/EPA	ROD signed and Implemented. RAOs and MCLs are established as the criteria for cleanup
1997-1999	URS	Design verification study to evaluate applicability of six-phase heating that included soil borings and surface and subsurface soil sampling
1998	URS	Dual-phased, high-vacuum extraction treatability study that included groundwater sampling, installing additional soil borings and monitoring wells, and subsurface sampling
1997-2003	URS, CH2M HILL	Groundwater monitoring to collect data on groundwater contaminant trends
2002-2003	CRREL, USACE	Installation of additional wells, water sampling, and subsurface visualization
2004	Satori Group, Inc.	Groundwater monitoring during August and October to collect data on contaminant trends
2005	Satori Group, Inc.	Groundwater monitoring during June 2005 to collect data on contaminant trends. Wells AP-4013, AP-4016, and AP-4015 were decommissioned.

Source(s): Fort Richardson Operable Unit B Poleline Road Disposal Area Groundwater Monitoring Report (*CH2M Hill 2003*)  
 Ft. Richardson April 2002  
 ADEC Contaminated Sites Database 2004

HHRA = Human health risk assessment  
 MCL = Maximum Contaminant Level  
 ROD = Record of Decision

SVE = Soil vapor extraction  
 ADEC = Alaska Department of Environmental Conservation

**Figure 2-2 OUB Poleline Road Disposal Area Location**

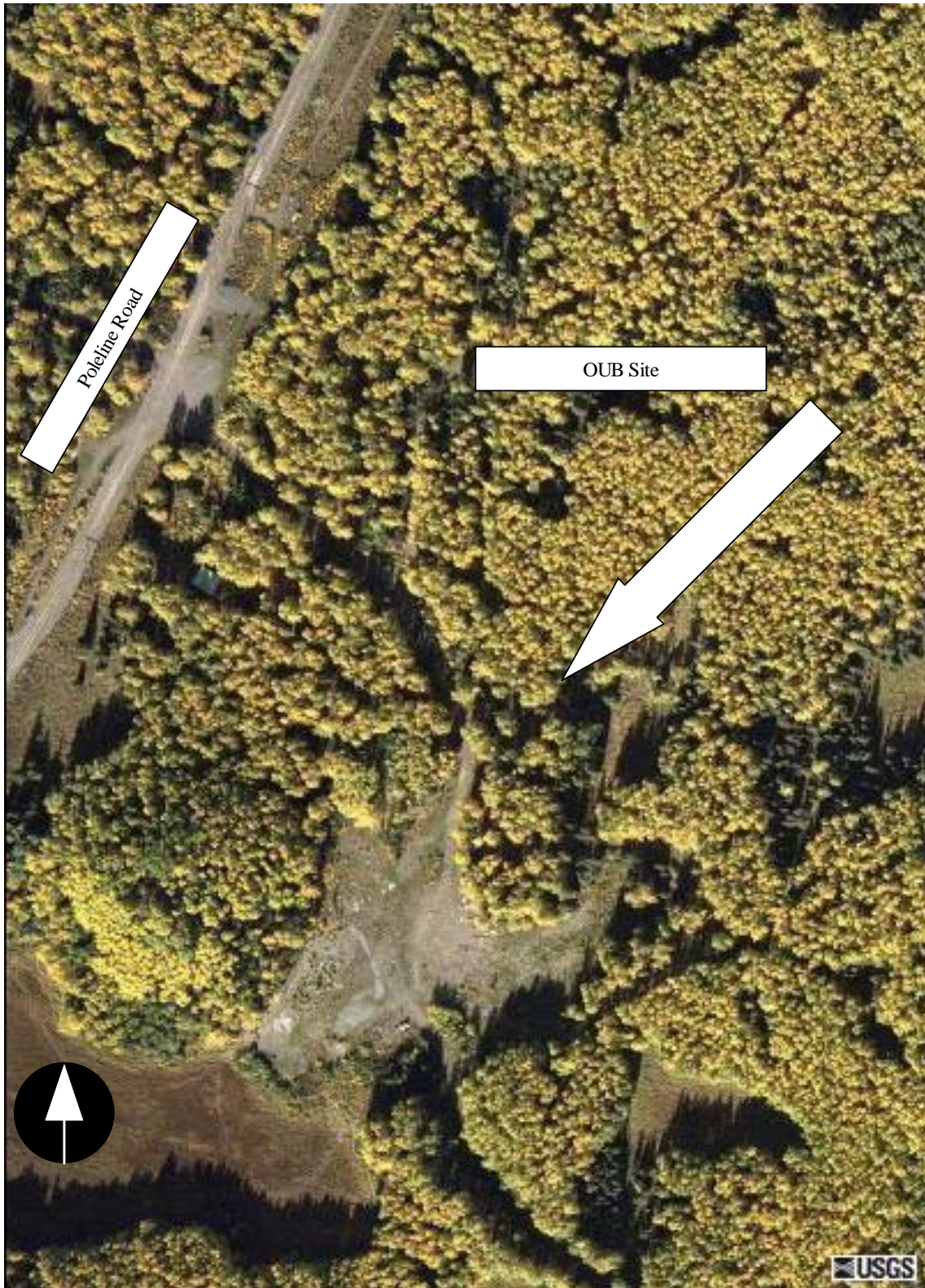


Image courtesy of the United States Geological Survey (USGS), 2002.

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### 2.3 Regulatory Requirements

The ROD, signed on 17 September 1997, established RAOs for OUB Poleline Road Disposal Area. RAOs were developed in accordance with the National Contingency Plan (NCP) and EPA guidance aimed to reduce contamination to levels safe for human health and the environment.

All RAOs for OUB Poleline Road Disposal Area are based on the EPA's MCLs for drinking water; except the RAO for PCA (1,1,2,2-Tetrachloroethane), which is a risk-based concentration based on a decreased risk of cancer for humans. (*CH2M Hill, 2003*)

Table 2-2 presents the RAOs for OUB Poleline Road Disposal Area documented in the 1997 ROD.

**Table 2-2 Remedial Cleanup Goals for Groundwater, OUB Poleline Road Disposal Area**

Contaminant	Remedial Action Objective (µg/L)
Benzene	5
Carbon tetrachloride	5
cis-1,2-Dichloroethene	70
Tetrachloroethene	5
Trichloroethene	5
trans-1,2-Dichloroethene	100
Vinyl Chloride	2.0
1,1,2,2-Tetrachloroethane	5.3 (MCL)

Sources: Woodward-Clyde, 1998, Long-Term Groundwater Monitoring Workplan, Operable Unit B, Poleline Road Disposal Area, Fort Richardson, Alaska, and Title 18, Section 75.345, of the Alaska Administrative Code (AAC)  
µg/L=micrograms per Liter

### **3.0 FIELD ACTIVITIES**

#### **3.1 Sample Collection Methodology**

All field activities were conducted in accordance with the *Sampling and Analysis Plan, Former Building 762, Former Building 786, Operable Unit B (Poleline Road), and Operable Unit E (Armored Vehicle Maintenance Area), Technical Memorandum, August 2004*. (SGI, 2004)

Initial static water level measurements were collected prior to groundwater removal to establish groundwater elevation and drawdown. Groundwater samples were collected utilizing the low-flow sample collection protocol; where low-flow techniques could not be used, samples were collected with disposable bailers. Sample collection time was determined once well stabilization parameters were achieved. If well stabilization parameters were not achieved within the 12 data cells on the USACE Alaska District Low Flow with Minimal Drawdown Form, a new form was used until stabilization parameters were met (Appendix A).

In the event individual wells contained minimal water for low flow sampling, a minimum of four casing volumes of water were removed or the well was purged dry using a bailer. Groundwater samples were then collected after two hours had expired. Wells that exhibited slow recharge during low-flow purging had drawdowns greater than 0.3', although pressure, charge, and exhaust settings affecting flow rates were continually adjusted.

Low-flow groundwater pumping was accomplished with a Geotech<sup>®</sup> Bladder Pump, model Geo1.66SS36 and regulated using the Geotech<sup>®</sup> Geocontroller<sup>®</sup> 2. Teflon<sup>®</sup> bonded tubing from the October 2004 groundwater event was stored and re-used for 2005. Parameters were measured with a YSI<sup>®</sup> Model 556 flow-through multi-meter calibrated daily. Prior to sample collection, the YSI<sup>®</sup> flow-through cell was removed from the sampling train and samples were collected directly from the Teflon<sup>®</sup> bonded tubing discharge line.

#### **3.2 Field Collection**

The first sampling event at OUB Poleline Road Disposal Area was conducted 13-17 October, 2005. Table 3-1 provides well names, inspection information, depth to groundwater measurements in feet from top of casing (FTOC), total well depth as measured in October 2005, sampling collection methods, and Global Positioning Satellite (GPS) locations.

Alternate wells AP-3984 AP-3744, and AP-4019 were sampled once again in place of AP-4016, AP-4015 and AP-4013. All three wells were decommissioned. Wells AP-4550 and AP-4551 were also added to the sampling list at the direction of the client. Sample volumes for dissolved metals analysis were filtered in the field through a 0.45 micron filter cartridge before being decanted into laboratory containers. Field data collected during the sampling event is presented in Appendix B.

### **3.3 Quality Control (QC)**

Five types of QC samples were collected to ensure data quality: trip blanks, field rinsate, field duplicates, and matrix spike/matrix spike duplicates (MS/MSD). Appendix C contains a sample inventory record and laboratory data review is presented as Appendix E.

### **3.4 Investigation Derived Waste (IDW)**

IDW generated during the project included water from well purging and equipment decontamination. Wastewater was deposited into 15-gallon or 35-gallon drums and transported to an environmental staging facility. A total of 124 gallons (combination of purge water and decontamination water) were disposed of during October 2005. All drums were labeled with USACE project number, point of contact (POC), date, site location, and well sampled before relinquishing drums for disposal

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**Table 3-1 OUB Poleline Road Disposal Area Well Information**

MONITORING WELL	CONDITION	DEPTH TO WATER (feet FTOC <sup>1</sup> )	TOTAL DEPTH (feet FTOC <sup>1</sup> )	COLLECTION METHOD	GPS COORDINATES <sup>2</sup>
		October 2005	October 2005	October 2005	
AP-3744	Good/ No Interior Well Cap	27.02	37.46	Bladder Pump	N 61° 18.215' W 149° 36.580'
AP-3745	Good	20.88	29.53	Bladder Pump	N 61° 18.174' W 149° 36.608'
AP-3747	Good/CRREL Monitor	24.25	33.15	Bladder Pump	N 61° 18.245' W 149° 36.586'
AP-3748	Good/CRREL Monitor	132.67	172.98	Bladder Pump	N 61° 18.263' W 149° 36.514'
AP-3749	Good	20.35	24.59	Bladder Pump	N 61° 18.120' W 149° 36.953'
AP-3981	Good	21.86	40.65	Bladder Pump	N 61° 18.167' W 149° 36.707'
AP-3982	Good/CRREL Monitor	25.75	37.11	Bladder Pump	N 61° 18.210' W 149° 36.513'
AP-3983	Good/CRREL Monitor	24.25	30.35	Bladder Pump	N 61° 18.194' W 149° 36.655'
AP-3984	Good	26.36	42.45	Bladder Pump	N 61° 18.188' W 149° 36.689'
AP-3985	Good	23.95	32.39	Bladder Pump	N 61° 18.171' W 149° 36.686'
AP-3989	Good	27.45	36.29	Bladder Pump	N 61° 18.202' W 149° 36.624'
AP-4011	Good	122.14	140.40	Bladder Pump	N 61° 18.203' W 149° 36.557'
AP-4017	Good/ No Interior Well Cap	65.40	99.74	Bladder Pump	N 61° 18.169' W 149° 36.663'
AP-4019	Good	136.38	158.40	Bladder Pump	N 61° 18.169' W 149° 36.663'
AP-4344	Good/CRREL Monitor	149.05	165.90	Bladder Pump	N 61° 18.294' W 149° 36.722'
AP-4345	Good/CRREL Monitor	154.92	187.93	Bladder Pump	N 61° 18.362' W 149° 36.521'
AP-4350	Good/CRREL Monitor	147.40	188.65	Bladder Pump	N 61° 18.364' W 149° 36.797'
AP-4352	Good	26.85	33.35	Bladder Pump	N 61° 18.269' W 149° 36.697'
AP-4353	Good/CRREL Monitor	32.10	69.41	Bladder Pump	N 61° 18.162' W 149° 36.693'
AP-4354	Good /CRREL Monitor	10.33	17.91	Bladder Pump	N 61° 18.164' W 149° 36.709'

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MONITORING WELL	CONDITION	DEPTH TO WATER (feet FTOC <sup>1</sup> )	TOTAL DEPTH (feet FTOC <sup>1</sup> )	COLLECTION METHOD	GPS COORDINATES <sup>2</sup>
		October 2005	October 2005	October 2005	
AP-4518	Good/CRREL Monitor	25.02	46.09	Bladder Pump	N 61° 18.182' W 149° 36.620'
AP-4519	Good	27.49	47.20	Bladder Pump	N 61° 18.170' W 149° 36.670'
AP-4525	Good	126.22	127.22	Bailer <sup>3</sup>	N 61° 18.187' W 149° 36.635'
AP-4550	Good	24.80	42.30	Bladder Pump	N 61° 18.194' W 149° 36.655'
AP-4551	Good	95.81	98.72	Bailer <sup>3</sup>	N 61° 18.185' W 149° 36.646'

<sup>1</sup> from top of casing (FTOC)

<sup>2</sup> World Geodetic System (WGS) 84

<sup>3</sup> Insufficient water in well to sample with Low Flow Bladder Pump

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## 4.0 FIELD AND ANALYTICAL METHODS

Data obtained during the October 2005 sampling program was obtained using a combination of laboratory analytical methods and field parameter measurements. The following sections detail these methods.

### 4.1 Field Parameters

The following field parameters were met before sampling commenced:

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#### Temperature

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The rate of contaminant uptake increases as temperature increases. Stability is necessary to keep analyte concentrations static during sampling period. (USACE, 2001)

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#### Potential Hydrogen (pH)

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Changes in pH may lead to the precipitation of metal species. These particulates are then erroneously filtered and may lead to a negative bias in the filtered sample results. (USACE, 2001)

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#### Conductivity

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Conductivity measurements provide an estimation of dissolved ionic matter in the water. A sudden change in conductivity can indicate a direct discharge or other source of pollution into the water. (GVSU<sup>1</sup>, 2005)

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#### Oxidation – Reduction Potential (ORP)

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Measuring the ORP of water indicates the tendency to accept or transfer electrons. An oxidizing environment is needed to convert any ammonia to nitrites and nitrates. If nitrates or nitrites are tested analytes, stability is necessary to control production during sampling period. (EE, 2003)

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#### Dissolved Oxygen (DO)

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Changes in DO levels represent the build-up of organic wastes. A decrease in DO is usually an indication of an influx of an organic pollutant. DO is a function of water temperature. (GVSU<sup>2</sup>, 2005)

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#### Turbidity

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Low sample turbidity is crucial to metals analysis. High turbidity can result in a high metals analytical result. (USACE, 2001)

## 4.2 Analytical Methods

Samples submitted for laboratory analysis were analyzed for Volatile Organic Compounds using method SW 8260B; Methane, Ethane and Ethene using method RSK 175; Chloride, Sulfate, Nitrate, and Nitrite using method EPA 300.0; and Dissolved metals Iron (Fe) and Manganese (Mn) using method SW 6020.

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### SW 8260B – Volatile Organic Compounds (VOCs)

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This analysis provides a gas chromatograph/mass spectrometer reading of a range of volatile organic compounds. It can be used to quantify a range of organic compounds that have boiling points below 200°C. This range of compounds includes all CoCs for this project.

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### RSK 175 – Light Gases - Methane, Ethane, Ethene

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The presence of methane in groundwater is indicative of strongly reducing conditions. Because methane is not present in fuel, the presence of methane above background concentrations in groundwater in contact with fuels is indicative of microbial degradation of hydrocarbons. Methane also is associated with spills of pure chlorinated solvents. (*Weaver et al., 1995*) It is not known if the methane comes from chlorinated solvent carbon or from native dissolved organic carbon. Ethane and ethene represent the end products of reductive dechlorination. (*EPA 1998*).

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### EPA 300.0 – Chloride, Sulfate, Nitrate, Nitrite

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Nitrate/Nitrite and Sulfate are competing electron acceptors. In order for reductive dechlorination to occur, nitrate/nitrite and sulfate concentrations in the contaminated portion of the aquifer must be low relative to background. Inorganic chloride accumulates as a result of reductive dechlorination. In aquifers with a low background of inorganic chloride, the concentration of inorganic chloride should increase as the chlorinated solvents degrade. (*USACE 2003*)

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### SW 6020 – Dissolved Metals - Iron (Fe), Manganese (Mn)

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Both Fe (III) and Mn (IV) can be used as an electron acceptor during anaerobic biodegradation of organic carbon and therefore compete with chlorinated hydrocarbon compounds in redox reactions. Elevated levels of the reduced forms of these metals (Fe III, Mn III and Mn IV) are a positive indicator of anaerobic conditions conducive to the degradation of chlorinated hydrocarbons.

## 5.0 RESULTS

Table 5-1 presents the analytical results for CoCs detected during the October 2005 sampling period. In addition, Table 5-1 shows historical sampling dates and results. Also presented are the comparisons between the historical sampling results and the RAOs for each CoC. Analytes exceeding the ADEC clean up criteria or the RAO values are shown as bold in Table 5-1.

Figure 5-1 presents all well locations that were sampled at OUB Poleline Road Disposal Area and shows October 2005 sample results, historical sample data, and RAOs. Analytes exceeding the RAOs are shown as bold in Table 5-1. Analytes exceeding the ADEC clean up criteria or the RAO values are shown as bold in Figure 5-1.

Laboratory analytical results are located in Appendix D.

### 5.1 Comparison with Clean-up Levels

CoCs that were both detected and above the RAO were identified during the October sampling event below:

- Benzene was detected in seven of the twenty-five wells in October with concentrations ranging from 0.290 J  $\mu\text{g/L}$  at AP-4551 to 1.58  $\mu\text{g/L}$  at AP-3989. None of these seven wells exceeded the RAO of 5.0  $\mu\text{g/L}$  value.
- Carbon tetrachloride was detected in six of the twenty-five wells in October with concentrations ranging from 0.540J-  $\mu\text{g/L}$  at AP-3747 to 1.18  $\mu\text{g/L}$  at AP-3984. None of these six wells exceeded the RAO of 5.0  $\mu\text{g/L}$  value.
- Cis-1,2-Dichloroethene was detected in fifteen of the twenty-five wells in October with concentrations ranging from 0.910J-  $\mu\text{g/L}$  at AP-4344 to 427  $\mu\text{g/L}$  at AP-4017. Six wells had detections above the RAO of 70  $\mu\text{g/L}$  with concentrations ranging from 85.5 J  $\mu\text{g/L}$  at AP-4551 to 427  $\mu\text{g/L}$  at AP-4017.
- Tetrachloroethene (PCE) was detected in eleven of the twenty-five wells in October with concentrations ranging from 1.78J-  $\mu\text{g/L}$  at AP-3747 to 38.8  $\mu\text{g/L}$  at AP-4550. Six wells had detections above the RAO of 5.0  $\mu\text{g/L}$  with concentrations ranging from 5.62  $\mu\text{g/L}$  at AP-4525 to 38.8  $\mu\text{g/L}$  at AP-4550.
- Trichloroethene (TCE) was detected in sixteen of the twenty-five wells in October with concentrations ranging from 0.500  $\mu\text{g/L}$  at AP-4354 to 2090  $\mu\text{g/L}$  at AP-4550. Sixteen wells had detections above the RAO of 5.0 $\mu\text{g/L}$  with concentrations ranging from 8.02  $\mu\text{g/L}$  at AP-4019 to 2090  $\mu\text{g/L}$  at AP-4550.
- Trans-1,2-Dichloroethene was detected in thirteen of the twenty-five wells in October with concentrations ranging from 1.79  $\mu\text{g/L}$  at AP-3745 to 142  $\mu\text{g/L}$  at AP-4017. Only one well, AP-4017, exceeded the RAO of 100  $\mu\text{g/L}$  with a concentration of 142  $\mu\text{g/L}$ .

- Vinyl Chloride was detected in four of the twenty five wells in October with concentrations ranging from 0.570 µg/L at AP-4550 to 3.73 µg/L at AP-3983. Only one well, AP-3983, exceeded the RAO of 2.0 µg/L with a concentration of 3.73 µg/L.
- 1,1,2,2-Tetrachloroethane (PCA) was detected in twelve of the twenty-five wells in October with concentrations ranging from 16.0 µg/L at AP-3744 to 1110 µg/L at AP-4550. All twelve wells exceeded the RAO of 5.3 µg/L value.

Table 5-1 OUB Poleline Road Disposal Area Sample Results

Well ID	Sample ID 0510FROBWA	Analyte	Analytical Method	Units µg/L	Sample Dates and Results									Cleanup Criteria	
	October 2005				March <sup>1</sup> 2002	Sept <sup>1</sup> 2002	March <sup>1</sup> 2003	June <sup>1</sup> 2003	Sept <sup>1</sup> 2003	August <sup>2</sup> 2004	October <sup>2</sup> 2004	June <sup>2</sup> 2005	October <sup>2</sup> 2005	Remedial Action Objective (µg/L)	
AP-4350	03	Trichloroethene	SW 8260B	µg/L				0.15 J			ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	5.0
AP-4344	04	cis-1,2-Dichloroethene	SW 8260B	µg/L				0.51			0.54J	0.48 J	0.520J	0.910J-	70
		Benzene	SW 8260B	µg/L				0.63			ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	5.0
		Carbon tetrachloride	SW 8260B	µg/L				0.49J			0.61J	0.58J	0.630J	0.660J-	5.0
		<b>Trichloroethene</b>	SW 8260B	µg/L				<b>13</b>			<b>16.8</b>	<b>16.1</b>	<b>18.2</b>	<b>26.6J-</b>	5.0
		1,1,2,2-Tetrachloroethane	SW 8260B	µg/L				0.22J			ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	5.3
AP-4352	05	Benzene	SW 8260B	µg/L				0.12J			ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	5.0
AP-4345	06	Benzene	SW 8260B	µg/L				0.15			ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	5.0
		Trichloroethene	SW 8260B	µg/L				0.39J			ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	5.0
AP-3748	07	No CoCs detected	SW 8260B	µg/L							No CoCs Detected				NA
AP-3747	08	1,1-Dichloroethene	SW 8260B	µg/L		0.55 J	0.19J			3.0	0.9J	ND (1.0)	ND (1.0)	0.440J-	7.0
		trans-1,2-Dichloroethene	SW 8260B	µg/L		7.2	1.2			9.7	5.01	6.22	1.78	3.07J-	100
		cis-1,2-Dichloroethene	SW 8260B	µg/L		26	3.9			34	17.5	24	6.5	10.1J-	70
		Carbon tetrachloride	SW 8260B	µg/L		1.1J	0.22J			2.0	0.71J	0.98J	0.560J	0.540J-	5.0
		<b>Trichloroethene</b>	SW 8260B	µg/L		<b>310</b>	<b>160</b>			<b>460</b>	<b>267</b>	<b>355</b>	<b>96.7</b>	<b>151J-</b>	5.0
		1,1,2-Trichloroethane	SW 8260B	µg/L		3.1	0.45			4.4	1.83	2.1	0.500J	0.760J-	5.0
		Tetrachloroethene	SW 8260B	µg/L		3.9	0.5			3.4	2.57	3.22	1.01	1.78J-	5.0
		<b>1,1,2,2-Tetrachloroethane</b>	SW 8260B	µg/L		<b>7.6</b>	0.52J			<b>8.9</b>	1.62	2.66	1.06	ND (0.500)	5.3

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Well ID	Sample ID 0510FROBWA	Analyte	Analytical Method	Units µg/L	Sample Dates and Results									Cleanup Criteria
	October 2005				March <sup>1</sup> 2002	Sept <sup>1</sup> 2002	March <sup>1</sup> 2003	June <sup>1</sup> 2003	Sept <sup>1</sup> 2003	August <sup>2</sup> 2004	October <sup>2</sup> 2004	June <sup>2</sup> 2005	October <sup>2</sup> 2005	Remedial Action Objective (µg/L)
AP-4011	09	trans-1,2-Dichloroethene	SW 8260B	µg/L	ND	0.71J	ND (0.12)		ND (0.61)	0.38J	ND (1.0)	ND (1.0)	ND (1.0)	100
		cis-1,2-Dichloroethene	SW 8260B	µg/L	3.3	4.8	0.8		3.9J	3.73	3.3	2.77	2.49	70
		Carbon tetrachloride	SW 8260B	µg/L	0.67J	0.79J	0.11J		ND (0.43)	0.52J	0.58J	ND (1.0)	0.640J	5.0
		<b>Trichloroethene</b>	SW 8260B	µg/L	<b>27</b>	<b>35</b>	<b>5.8</b>		<b>23J</b>	<b>24.2</b>	<b>24.9</b>	<b>22.2</b>	<b>18.2</b>	5.0
		1,1,2-Trichloroethane	SW 8260B	µg/L	ND	0.51J	ND (0.082)		0.58J	0.32J	ND (1.0)	ND (1.0)	ND (1.0)	5.0
		Tetrachloroethene	SW 8260B	µg/L	ND	ND	ND (0.09)		ND (0.45)	0.4J	ND (1.0)	ND (1.0)	ND (1.0)	5.0
		<b>1,1,2,2 Tetrachloroethane</b>	SW 8260B	µg/L	<b>12</b>	<b>8.8</b>	2.1		<b>10J</b>	3.39	3.56	2.7	ND (0.500)	5.3
		cis-1,2-Dichloroethene (Dup)	SW 8260B	µg/L								3.25		70
		Carbon tetrachloride (Dup)	SW 8260B	µg/L								0.640J		5.0
		<b>Trichloroethene (Dup)</b>	SW 8260B	µg/L								24.8		5.0
		<b>1,1,2,2 Tetrachloroethane (Dup)</b>	SW 8260B	µg/L							2.19		5.3	
AP-3749	10	No COCs detected	SW 8260B	µg/L						No COCs Detected				NA
AP-3982	11	Trichloroethene	SW 8260B	µg/L	ND	ND	ND (0.55)		ND (0.55)	0.55J	ND (1.0)	ND (1.0)	ND (1.0)	5.0
AP-3745	12	1,1,2-Trichloroethane	SW 8260B	µg/L	ND	ND	0.43		ND (0.41)	ND (1.0)	0.38J	ND (1.0)	ND (1.0)	5.0
		trans-1,2-Dichloroethene	SW 8260B	µg/L	ND	ND	0.49		ND (0.61)	0.9J	ND (1.0)	1.18	1.79	100
		cis-1,2-Dichloroethene	SW 8260B	µg/L	ND	1.2J	6.8		4.1	2.99	2.43	6.63	10.8	70
		Carbon tetrachloride	SW 8260B	µg/L	ND	0.64J	ND (0.086)		ND (0.43)	0.31J	0.9J	ND (1.0)	ND (1.0)	5.0
		<b>Trichloroethene</b>	SW 8260B	µg/L	4.2	<b>16</b>	<b>31J</b>		<b>28</b>	<b>28.5</b>	<b>20.3</b>	<b>36</b>	<b>82.9</b>	5.0
		<b>1,1,2,2-Tetrachloroethane</b>	SW 8260B	µg/L	2.8	<b>100</b>	<b>29J</b>		<b>9.4</b>	<b>28.9</b>	<b>79.7</b>	<b>40.1</b>	<b>53.9</b>	5.3
		cis-1,2-Dichloroethene (Dup)	SW 8260B	µg/L							2.87			70
		Carbon tetrachloride (Dup)	SW 8260B	µg/L							0.89J			5.0
		<b>Trichloroethene(Dup)</b>	SW 8260B	µg/L							<b>22.1</b>			5.0
		<b>1,1,2,2- Tetrachloroethane (Dup)</b>	SW 8260B	µg/L							<b>73.7</b>			5.3

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Well ID	Sample ID 0510FROBWA	Analyte	Analytical Method	Units µg/L	Sample Dates and Results									Cleanup Criteria
	October 2005				March <sup>1</sup> 2002	Sept <sup>1</sup> 2002	March <sup>1</sup> 2003	June <sup>1</sup> 2003	Sept <sup>1</sup> 2003	August <sup>2</sup> 2004	October <sup>2</sup> 2004	June <sup>2</sup> 2005	October <sup>2</sup> 2005	Remedial Action Objective (µg/L)
AP-4550	13	Vinyl chloride	SW 8260B	µg/L									0.570J	2.0
		1,1-Dichloroethene	SW 8260B	µg/L									5.83	7.0
		trans-1,2-Dichloroethene	SW 8260B	µg/L									92.1	100
		<b>cis-1,2-Dichloroethene</b>	SW 8260B	µg/L									<b>281</b>	70
		Benzene	SW 8260B	µg/L									1.46	5.0
		<b>Trichloroethene</b>	SW 8260B	µg/L									<b>2020</b>	5.0
		<b>1,1,2-Trichloroethane</b>	SW 8260B	µg/L									<b>19.1</b>	5.0
		<b>Tetrachloroethene</b>	SW 8260B	µg/L									<b>36.8</b>	5.0
	14 (Duplicate)	<b>1,1,2,2-Tetrachloroethane</b>	SW 8260B	µg/L									<b>1110</b>	5.3
		Vinyl chloride	SW 8260B	µg/L									0.600J	2.0
		<b>1,1-Dichloroethene</b>	SW 8260B	µg/L									<b>6.13</b>	7.0
		trans-1,2-Dichloroethene	SW 8260B	µg/L									94.4	100
		<b>cis-1,2-Dichloroethene</b>	SW 8260B	µg/L									<b>289</b>	70
		Benzene	SW 8260B	µg/L									1.45	5.0
		<b>Trichloroethene</b>	SW 8260B	µg/L									<b>2090</b>	5.0
		<b>1,1,2-Trichloroethane</b>	SW 8260B	µg/L									<b>19.5</b>	5.0
<b>Tetrachloroethene</b>	SW 8260B	µg/L									<b>38.8</b>	5.0		
<b>1,1,2,2-Tetrachloroethane</b>	SW 8260B	µg/L									<b>1030</b>	5.3		

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Well ID	Sample ID 0510FROBWA	Analyte	Analytical Method	Units µg/L	Sample Dates and Results									Cleanup Criteria
	October 2005				March <sup>1</sup> 2002	Sept <sup>1</sup> 2002	March <sup>1</sup> 2003	June <sup>1</sup> 2003	Sept <sup>1</sup> 2003	August <sup>2</sup> 2004	October <sup>2</sup> 2004	June <sup>2</sup> 2005	October <sup>2</sup> 2005	Remedial Action Objective (µg/L)
AP-3989	15	1,1-Dichloroethene	SW 8260B	µg/L	ND	2.8	3.0		ND (11.0)	2.75	2.43	ND (1.0)	1.67	7.0
		trans-1,2- Dichloroethene	SW 8260B	µg/L	42	48	59		34J	46.2	35.7J-	49.1	40.4	100
		<b>cis-1,2-Dichloroethene</b>	SW 8260B	µg/L	<b>160</b>	<b>200</b>	<b>170</b>		<b>160</b>	<b>164</b>	<b>147</b>	<b>119</b>	<b>122</b>	70
		Carbon tetrachloride	SW 8260B	µg/L	ND	ND	ND (0.43)		ND (8.6)	0.32J	ND (1.0)	ND (1.0)	ND (1.0)	5.0
		Benzene	SW 8260B	µg/L	ND	2.0J	2.3		ND (6.4)	2.29	1.47	1.64	1.58	5.0
		<b>Trichloroethene</b>	SW 8260B	µg/L	<b>900</b>	<b>870</b>	<b>920</b>		<b>900</b>	<b>1050</b>	<b>958</b>	<b>976</b>	<b>805</b>	5.0
		<b>1,1,2-Trichloroethane</b>	SW 8260B	µg/L	<b>9.5J</b>	<b>13</b>	<b>15J</b>		ND (8.2)	<b>9.83</b>	<b>9.18</b>	<b>9.18</b>	<b>8.51</b>	5.0
		<b>Tetrachloroethene</b>	SW 8260B	µg/L	<b>5.5J</b>	<b>8.8</b>	<b>7.7</b>		ND (9.0)	<b>8.65</b>	<b>6.35</b>	<b>5.44</b>	<b>4.56</b>	5.0
		<b>1,1,2,2-Tetrachloroethane</b>	SW 8260B	µg/L	<b>650</b>	<b>560</b>	<b>550</b>		<b>690</b>	<b>342</b>	<b>297</b>	<b>521</b>	<b>325</b>	5.3
AP-4525	16	<b>1,1-Dichloroethene</b>	SW 8260B	µg/L						<b>9.04</b>		<b>9.94</b>	ND (1.0)	7.0
		trans-1,2-Dichloroethene	SW 8260B	µg/L						75.4		70.5	10.2	100
		<b>cis-1,2-Dichloroethene</b>	SW 8260B	µg/L						<b>384</b>		<b>387</b>	<b>67.7</b>	70
		<b>Carbon tetrachloride</b>	SW 8260B	µg/L						<b>13.9</b>		<b>7.6</b>	0.660J	5.0
		Benzene	SW 8260B	µg/L						0.69		0.54	ND (0.4)	5.0
		<b>Trichloroethene</b>	SW 8260B	µg/L						<b>5720</b>		<b>4530</b>	<b>865</b>	5.0
		<b>1,1,2-Trichloroethane</b>	SW 8260B	µg/L						<b>34.5</b>		<b>29.2</b>	<b>13.6</b>	5.0
		<b>Tetrachloroethene</b>	SW 8260B	µg/L						<b>24.4</b>		<b>27.1</b>	<b>5.62</b>	5.0
		<b>1,1,2,2-Tetrachloroethane</b>	SW 8260B	µg/L					<b>453</b>		<b>883</b>	<b>385</b>	5.3	
AP-4019	17	cis-1,2-Dichloroethene	SW 8260B	µg/L	ND	ND	ND (0.47)		ND (0.47)		0.36J	ND (1.0)	ND (1.0)	70
		<b>Trichloroethene</b>	SW 8260B	µg/L	ND	0.65J	ND (0.55)		ND (0.55)		0.41J	ND (1.0)	<b>8.02</b>	5.0

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Well ID	Sample ID 0510FROBWA	Analyte	Analytical Method	Units µg/L	Sample Dates and Results									Cleanup Criteria
	October 2005				March <sup>1</sup> 2002	Sept <sup>1</sup> 2002	March <sup>1</sup> 2003	June <sup>1</sup> 2003	Sept <sup>1</sup> 2003	August <sup>2</sup> 2004	October <sup>2</sup> 2004	June <sup>2</sup> 2005	October <sup>2</sup> 2005	Remedial Action Objective (µg/L)
AP-3983	18	Vinyl Chloride	SW 8260B	µg/L	18J	18	7.6J		20	2.65	3.93	2.61	3.47	2.0
		1,1-Dichloroethene	SW 8260B	µg/L	ND	4.5	ND (1.6)		7.3	8.72	5.12	3.18	3.71	7.0
		trans-1,2-Dichloroethene	SW 8260B	µg/L	34	89	41		110	172	86.5	62.6	56.5	100
		cis-1,2-Dichloroethene	SW 8260B	µg/L	530	1100	350		680	523	485	348	288	70
		Carbon tetrachloride	SW 8260B	µg/L	ND	ND	ND (2.1)		ND (0.43)	0.6J	ND (1.0)	ND (1.0)	ND (1.0)	5.0
		Benzene	SW 8260B	µg/L	ND	1.6 J	ND (1.6)		1.5J	1.93	0.86	1.53	1.49	5.0
		Trichloroethene	SW 8260B	µg/L	120	1400	320		470	3130	1110	965	933	5.0
		1,1,2-Trichloroethane	SW 8260B	µg/L	18J	ND	22		45	32.9	22.0	13.1	13.2	5.0
		Tetrachloroethene	SW 8260B	µg/L	ND	13	4.1J		9.1	42	14.6	14.8	16.1	5.0
		1,1,2,2-Tetrachloroethane	SW 8260B	µg/L	280	1400	470J		840	1410	560	454	438	5.3
	1,2-Dichloroethane	SW 8260B	µg/L	ND	2.7	2.3J		6.1	3.19	2.56	ND (.50)	ND (.50)	5.0	
	19 (Duplicate)	Vinyl Chloride (Dup)	SW 8260B	µg/L						2.12			3.73	2.0
		1,1-Dichloroethene(Dup)	SW 8260B	µg/L						8.26			4.41	7.0
		trans-1,2-Dichloroethene (Dup)	SW 8260B	µg/L						152			65	100
		cis-1,2-Dichloroethene (Dup)	SW 8260B	µg/L						510			306	70
		Carbon tetrachloride (Dup)	SW 8260B	µg/L						0.56J			ND (1.0)	5.0
		Benzene (Dup)	SW 8260B	µg/L						1.97			1.53	5.0
		Trichloroethene (Dup)	SW 8260B	µg/L						3160			819	5.0
		1,1,2-Trichloroethane (Dup)	SW 8260B	µg/L						33.1			13.8	5.0
		Tetrachloroethene(Dup)	SW 8260B	µg/L						45.5			16	5.0
1,1,2,2-Tetrachloroethane (Dup)		SW 8260B	µg/L						1380			408	5.3	
1,2-Dichloroethane (Dup)	SW 8260B	µg/L						2.83			ND (1.0)	5.0		

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Well ID	Sample ID 0510FROBWA	Analyte	Analytical Method	Units µg/L	Sample Dates and Results									Cleanup Criteria	
	October 2005				March <sup>1</sup> 2002	Sept <sup>1</sup> 2002	March <sup>1</sup> 2003	June <sup>1</sup> 2003	Sept <sup>1</sup> 2003	August <sup>2</sup> 2004	October <sup>2</sup> 2004	June <sup>2</sup> 2005	October <sup>2</sup> 2005	Remedial Action Objective (µg/L)	
AP-4551	21	1,1-Dichloroethene	SW 8260B	µg/L									7.4	7.0	
		trans-1,2-Dichloroethene	SW 8260B	µg/L										9.97	100
		cis-1,2-Dichloroethene	SW 8260B	µg/L										85.5	70
		Benzene	SW 8260B	µg/L										0.290J	5.0
		Trichloroethene	SW 8260B	µg/L										1610	5.0
		1,1,2-Trichloroethane	SW 8260B	µg/L										8.27	5.0
		Tetrachloroethene	SW 8260B	µg/L										2.52	5.0
		1,1,2,2-Tetrachloroethane	SW 8260B	µg/L									90.5	5.3	
AP-4518	22	Trichloroethene	SW 8260B	µg/L						0.9J	0.81J	0.910J	0.920J	5.0	
		1,1,2,2,-Tetrachloroethane	SW 8260B	µg/L						0.3J	ND (0.5)	ND (0.5)	ND (0.5)	5.3	
AP-4017	23	Vinyl chloride	SW 8260B	µg/L	2.7	2.7	ND (5.3)		ND (5.3)	0.7J	2.54	2.00	3.18	2.0	
		1,1-Dichloroethene	SW 8260B	µg/L	12	11	9J		ND (5.3)	8.02	11.2	10.5	13.8	7.0	
		trans-1,2-Dichloroethene	SW 8260B	µg/L	110	120	100		83	21.2	142	113	142	100	
		cis-1,2-Dichloroethene	SW 8260B	µg/L	320	300	330		360	217	416	357	427	70	
		Benzene	SW 8260B	µg/L	ND	0.53J	ND (3.2)		ND (3.2)	1.01	0.92	ND (2.0)	0.430	5.0	
		Trichloroethene	SW 8260B	µg/L	810	1000	1000		1100	902	1430	1300	1530	5.0	
		1,1,2-Trichloroethane	SW 8260B	µg/L	21	25	23		31	18.7	25.7	23	25.9	5.0	
		Tetrachloroethene	SW 8260B	µg/L	4.2	3.9	ND (2.5)		ND (4.5)	2.4	2.44	2.90J	2.73	5.0	
		1,1,2,2-Tetrachloroethane	SW 8260B	µg/L	700	780	690J		890J	483	526	481	458	5.3	

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Well ID	Sample ID 0510FROBWA	Analyte	Analytical Method	Units µg/L	Sample Dates and Results								Cleanup Criteria		
	October 2005				March <sup>1</sup> 2002	Sept <sup>1</sup> 2002	March <sup>1</sup> 2003	June <sup>1</sup> 2003	Sept <sup>1</sup> 2003	August <sup>2</sup> 2004	October <sup>2</sup> 2004	June <sup>2</sup> 2005	October <sup>2</sup> 2005	Remedial Action Objective (µg/L)	
AP-4519	26	Vinyl Chloride	SW 8260B	µg/L							1.61	0.83J	0.590J	0.870J	2.0
		1,1-Dichloroethene	SW 8260B	µg/L							5.02	6.91	6.65	6.88	7.0
		trans-1,2-Dichloroethene	SW 8260B	µg/L							33.6	40.4	46.7	50	100
		<b>cis-1,2-Dichloroethene</b>	SW 8260B	µg/L							<b>155</b>	<b>182</b>	<b>138</b>	<b>216</b>	70
		Benzene	SW 8260B	µg/L							0.41	0.81	1.44	0.390J	5.0
		<b>Trichloroethene</b>	SW 8260B	µg/L							<b>375</b>	<b>646</b>	<b>540</b>	<b>900</b>	5.0
		<b>1,1,2-Trichloroethane</b>	SW 8260B	µg/L							4.89	<b>5.14</b>	<b>5</b>	<b>6.46</b>	5.0
		<b>Tetrachloroethene</b>	SW 8260B	µg/L							3.45	<b>7.31</b>	<b>9.01</b>	<b>10.4</b>	5.0
		<b>1,1,2,2-Tetrachloroethane</b>	SW 8260B	µg/L							<b>76.4</b>	<b>97.4</b>	<b>103</b>	<b>148</b>	5.3
AP-4353	27	1,1-Dichloroethene	SW 8260B	µg/L					2.2		2.38	2.11	2.68	1.67	7.0
		trans-1,2-Dichloroethene	SW 8260B	µg/L					22		24.6	20.4	20.4	13.9	100
		<b>cis-1,2-Dichloroethene</b>	SW 8260B	µg/L					<b>83</b>		<b>78</b>	<b>71.4</b>	54.8	57	70
		Benzene	SW 8260B	µg/L					0.19J		0.36J	ND (0.4)	ND (0.4)	ND (0.4)	5.0
		Vinyl Chloride	SW 8260B	µg/L					0.27J		ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	2.0
		<b>Trichloroethene</b>	SW 8260B	µg/L					<b>280</b>		<b>319</b>	<b>314</b>	<b>381</b>	<b>325</b>	5.0
		1,1,2-Trichloroethane	SW 8260B	µg/L					3.3		3.15	2.67	2.93	2.68	5.0
		<b>Tetrachloroethene</b>	SW 8260B	µg/L					4.5		<b>5.38</b>	<b>5.75</b>	<b>7.52</b>	<b>6.19</b>	5.0
		<b>1,1,2,2-Tetrachloroethane</b>	SW 8260B	µg/L					<b>140</b>		<b>120</b>	<b>94.1</b>	<b>253</b>	<b>138</b>	5.3
		1,1-Dichloroethene (Dup)	SW 8260B	µg/L									2.38		7.0
		trans-1,2-Dichloroethene (Dup)	SW 8260B	µg/L									18.8		100
		<b>cis-1,2-Dichloroethene (Dup)</b>	SW 8260B	µg/L									<b>70.5</b>		70
Benzene (Dup)	SW 8260B	µg/L									ND(0.4)		5.0		

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Well ID	Sample ID 0510FROBWA	Analyte	Analytical Method	Units µg/L	Sample Dates and Results									Cleanup Criteria			
	October 2005				March <sup>1</sup> 2002	Sept <sup>1</sup> 2002	March <sup>1</sup> 2003	June <sup>1</sup> 2003	Sept <sup>1</sup> 2003	August <sup>2</sup> 2004	October <sup>2</sup> 2004	June <sup>2</sup> 2005	October <sup>2</sup> 2005	Remedial Action Objective (µg/L)			
AP-4353	27	Vinyl Chloride (Dup)	SW 8260B	µg/L									ND(1.0)		2.0		
		<b>Trichloroethene (Dup)</b>	SW 8260B	µg/L										<b>373</b>		5.0	
		1,1,2-Trichloroethane (Dup)	SW 8260B	µg/L										2.98		5.0	
		<b>Tetrachloroethene (Dup)</b>	SW 8260B	µg/L											<b>7.74</b>		5.0
		<b>1,1,2,2-Tetrachloroethane (Dup)</b>	SW 8260B	µg/L											<b>177</b>		5.3
AP-4354	28	trans-1,2-Dichloroethene	SW 8260B	µg/L				0.39J			0.32J	ND (1.0)	ND (1.0)	ND (1.0)	100		
		cis-1,2-Dichloroethene	SW 8260B	µg/L				1.3			0.73J	ND (1.0)	ND (1.0)	ND (1.0)	70		
		<b>Trichloroethene</b>	SW 8260B	µg/L				<b>9.7</b>			1.45	ND (1.0)	ND (1.0)	0.500J	5.0		
		Benzene	SW 8260B	µg/L				0.18J			ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	5.0		
		Tetrachloroethene	SW 8260B	µg/L				0.17J			ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	5.0		
		1,1,2-Trichloroethane	SW 8260B	µg/L				ND(0.5)			0.67J	ND (1.0)	ND (1.0)	ND (1.0)	5.0		
	1,1,2,2-Tetrachloroethane	SW 8260B	µg/L				3.9			2.69	ND (0.5)	ND (0.5)	ND (0.5)	5.3			
	29 (Duplicate)	cis-1,2-Dichloroethene (Dup.)	SW 8260B	µg/L								0.42J		ND (1.0)	70		
		Trichloroethene(Dup.)	SW 8260B	µg/L								0.59J		0.490J	5.0		
Tetrachloroethene(Dup.)		SW 8260B	µg/L								0.44J		ND (1.0)	5.0			
AP-3744	31	cis-1,2-Dichloroethene	SW 8260B	µg/L									1.04J-	1.98	70		
		Carbon tetrachloride	SW 8260B	µg/L									0.48J-	0.680J	5.0		
		<b>Trichloroethene</b>	SW 8260B	µg/L										<b>38.3J-</b>	<b>39.1</b>	5.0	
		<b>1,1,2,2-Tetrachloroethane</b>	SW 8260B	µg/L											<b>7.72 J-</b>	<b>16</b>	5.3
AP-3981	32	<b>cis-1,2-Dichloroethene</b>	SW 8260B	µg/L	ND	<b>1.3 J</b>	ND (0.47)			ND (0.47)	ND (1.0)		0.470J	ND (1.0)	70		
		<b>Trichloroethene</b>	SW 8260B	µg/L	0.45J	<b>5.3</b>	1.5J			ND (0.55)	1.5		1.51	0.780J	5.0		
		1,1,2,2-Tetrachloroethane	SW 8260B	µg/L	ND	1.7 J	ND (0.48)			ND (0.48)	1.0		ND (0.5)	ND (0.5)	5.3		

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Well ID	Sample ID 0510FROBWA	Analyte	Analytical Method	Units µg/L	Sample Dates and Results									Cleanup Criteria
	October 2005				March <sup>1</sup> 2002	Sept <sup>1</sup> 2002	March <sup>1</sup> 2003	June <sup>1</sup> 2003	Sept <sup>1</sup> 2003	August <sup>2</sup> 2004	October <sup>2</sup> 2004	June <sup>2</sup> 2005	October <sup>2</sup> 2005	Remedial Action Objective (µg/L)
AP-3985	33	Vinyl Chloride	SW 8260B	µg/L	ND(0.31)	ND(0.31)	ND (0.11)		ND (2.7)	0.45J	ND (1.0)	ND (1.0)	ND (1.0)	2.0
		1,1-Dichloroethene	SW 8260B	µg/L	2.9	2.6	0.67		ND (2.7)	4.27	4.1	2.07	2.70	7.0
		trans-1,2-Dichloroethene	SW 8260B	µg/L	51	12	2.1		8.4J	11.8	10.7	6.04	8.06	100
		<b>cis-1,2-Dichloroethene</b>	SW 8260B	µg/L	<b>160</b>	59	9.6		48	49.4	65.1	27.6	35.6	70
		Benzene	SW 8260B	µg/L	ND	ND	ND (0.064)		ND (1.6)	ND (0.4)	0.22J	ND (0.4)	ND (0.4)	5.0
		<b>Trichloroethene</b>	SW 8260B	µg/L	<b>370</b>	<b>210</b>	<b>220</b>		<b>340</b>	<b>388</b>	<b>467</b>	<b>224</b>	<b>464</b>	5.0
		<b>1,1,2-Trichloroethane</b>	SW 8260B	µg/L	<b>6.9</b>	2.7	0.38J		3.7J	2.44	2.6	1.5	2.48	5.0
		<b>Tetrachloroethene</b>	SW 8260B	µg/L	<b>13</b>	<b>6.8</b>	1.4		3.0J	<b>7.84</b>	<b>6.68</b>	<b>5.65</b>	<b>8.86</b>	5.0
		<b>1,1,2,2-Tetrachloroethane</b>	SW 8260B	µg/L	<b>81</b>	<b>96</b>	<b>17J</b>		<b>120J</b>	<b>78.8</b>	<b>102</b>	<b>53.6</b>	<b>77</b>	5.3
		Vinyl Chloride (Dup.)	SW 8260B	µg/L						0.39J		ND (1.0)		2.0
		1,1-Dichloroethene (Dup.)	SW 8260B	µg/L						4.4		2.13		7.0
		trans-1,2-Dichloroethene (Dup.)	SW 8260B	µg/L						12.5		5.84		100
		cis-1,2-Dichloroethene (Dup.)	SW 8260B	µg/L						41.6		27.3		70
		<b>Trichloroethene (Dup.)</b>	SW 8260B	µg/L						<b>387</b>		<b>239</b>		5.0
		1,1,2-Trichloroethane (Dup.)	SW 8260B	µg/L						2.3		1.64		5.0
		<b>Tetrachloroethene (Dup.)</b>	SW 8260B	µg/L						<b>7.46</b>		<b>5.26</b>		5.0
<b>1,1,2,2-Tetrachloroethane (Dup.)</b>	SW 8260B	µg/L						<b>75.5</b>		<b>52</b>		5.3		

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Well ID	Sample ID 0510FROBWA	Analyte	Analytical Method	Units µg/L	Sample Dates and Results									Cleanup Criteria	
	October 2005				March <sup>1</sup> 2002	Sept <sup>1</sup> 2002	March <sup>1</sup> 2003	June <sup>1</sup> 2003	Sept <sup>1</sup> 2003	August <sup>2</sup> 2004	October <sup>2</sup> 2004	June <sup>2</sup> 2005	October <sup>2</sup> 2005	Remedial Action Objective (µg/L)	
AP-3984	34	Vinyl Chloride	SW 8620B	µg/	ND (0.31)	ND (0.31)	ND (0.11)			ND (2.7)		0.42J	ND (1.0)	ND (1.0)	2.0
		1,1-Dichloroethene	SW 8260B	µg/L	1.6 J	0.94 J	0.3 J			ND (2.7)		1.09	0.440 J	0.420J	7.0
		trans-1,2-Dichloroethene	SW 8260B	µg/L	9	12	3.4			5.0 J		21.9	3.13	2.72	100
		<b>cis-1,2-Dichloroethene</b>	SW 8260B	µg/L	41	54	17			44		<b>78.3</b>	19.1	16.8	70
		Carbon tetrachloride	SW 8260B	µg/L	3.4	2.4	0.41			ND (2.1)		1.20	1.16	1.18	5.0
		Benzene	SW 8260B	µg/L	0.49 J	0.77 J	0.15 J			ND (1.6)		1.58	0.410	0.370J	5.0
		<b>Trichloroethene</b>	SW 8260B	µg/L	<b>620</b>	<b>760</b>	<b>790</b>			<b>360</b>		<b>554</b>	<b>228</b>	<b>180</b>	5.0
		1,1,2-Trichloroethane	SW 8260B	µg/L	1.7 J	3	0.92			ND (2.1)		3.17	0.620 J	0.620J	5.0
		<b>Tetrachloroethene</b>	SW 8260B	µg/L	<b>65</b>	<b>28</b>	<b>7.4</b>			3.5 J		<b>12.4</b>	4.19	2.57	5.0
		<b>1,1,2,2-Tetrachloroethane</b>	SW 8260B	µg/L	<b>80</b>	<b>180</b>	<b>240 J</b>			<b>81 J</b>	<b>1520</b>	<b>34</b>	<b>23.6</b>	5.3	

ND= No Analyte Detected

J = The quantitation is an estimate

Grey cells indicate no sample taken

NA = Not Applicable

J- = Quantitation estimated low because of insufficient sample preservation

<sup>1</sup>No analyte detected reported in Method Detection Limit (MDL)

<sup>2</sup>No analyte detected reported in Practical Quantitation Limit (PQL)

Regulatory Exceedances in Bold

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## 5.2 Contaminant Distribution and Trends

The monitoring wells sampled as part of the OUB ground water monitoring program are listed in Table 5-2, including the screened interval of each well and the aquifer associated with each well. (CH2M Hill 2003). Wells located in the perched aquifer and the unconfined aquifer are designated shallow. Wells located in the deep semi-confined aquifer are designated deep wells.

Historical data review indicates a decrease in overall contaminant concentrations at OUB Poleline Road Disposal Area. PCA and TCE continue to be the most prevalent CoCs at all wells sampled

Two shallow aquifer wells (AP-3983, and AP-3984) along the southwest plume area showed an overall decrease of CoC concentrations. Shallow wells AP-4354, and AP-3981, located inside the plume boundaries exhibited little to no change from the previous sampling period in June 2005. Wells near the SVE system showed a decrease in COC's during the October 2005 sampling event. The sentinel wells in the shallow aquifer (AP-3749, AP-3982) exhibited little change from the previous sampling period. Figure 5-2 shows the historic level of PCA in the shallow aquifer.

Well AP-3747 located in the shallow aquifer within the northeast plume of OUB area, shows an increase in TCE concentration in October 2005. This well has exhibited small seasonal fluctuations in recent sampling periods. Figure 5-3 presents the historical data found at this well to support this trend.

Well-AP-3983 located in the shallow aquifer, but in the central plume area, has decreasing concentrations of CoC values. However, the CoC levels did increase from March 2003 to August 2004, but have resumed a general declining trend which continued in October 2005. Figure 5-4 presents the historical data to support this trend.

Well AP-3985 located in the shallow aquifer and within the southern section of the plume area showed an increase in all COC's from June 2005 to October 2005. Figure 5-5 shows CoC concentrations over time for the well.

Deep aquifer well AP-4017, located in the southern plume area, increased in contaminants between June 2005 and October 2005. This is accurate with historical data for the well comparing the spring and fall sampling events. The sentinel wells located in the deep aquifer all exhibited minimal change from the previous sampling period. Figure 5-6 shows the historic contamination levels of well AP-4017 in the deep aquifer. Well AP-4344, located in the northern area of the plume, again showed a slight increase in contamination for the October 2005 event. This well has exhibited small seasonal fluctuations in recent sampling periods.

**Table 5-2 OUB Monitoring Well Screened Intervals and Aquifer**

<b>Well ID</b>	<b>Top of Screened Interval<sup>1</sup></b>	<b>Bottom of Screened Interval<sup>1</sup></b>	<b>Aquifer</b>
AP-3744	21	35	Shallow
AP-3745	18	28	Shallow
AP-3747	20	30	Shallow
AP-3748	164.9	169.9	Deep
AP-3749	12	22	Shallow
AP-3981	29	39	Shallow
AP-3982	24	34	Shallow
AP-3983	18	28	Shallow
AP-3984	20	30	Shallow
AP-3985	22	32	Shallow
AP-3989	24	34	Shallow
AP-4011	111.2	137.3	Deep
AP-4017	76	96	Deep
AP-4019	130	160.4	Deep
AP-4344	152.1	162.1	Deep
AP-4345	149	161	Deep
AP-4350	176.3	186.3	Deep
AP-4352	20.3	30.3	Shallow
AP-4353	57	67	Shallow
AP-4354	4.8	14.8	Shallow
AP-4518	33.6	43.6	Shallow
AP-4519	33.9	43.9	Shallow
AP-4525	113	123	Deep
AP-4550	29.5	39.5	Shallow
AP-4551	85.2	95.2	Deep

<sup>1</sup>All depths are provided in feet below top of casing. (CH2M Hill, 2003)  
*Shallow wells located in the perched aquifer and the unconfined aquifer*  
*Deep wells located in semi-confined deep aquifer*

### 5.3 Monitored Natural Attenuation Evaluation (MNA)

All OUB wells were scored using analytical parameters and a preliminary screening process to determine if biodegradation of the CoCs is occurring. (EPA 1998) Attachment 1 contains the results of the scoring, methodology, and interpretation of the score as it pertains to biodegradation of chlorinated organics. Figure 5-7 presents a schematic of the reductive dechlorination process.

Using the MNA screening process, wells AP-3981, AP-3983, AP-3984, AP-3985, AP-4353, AP-4550, and AP-4519 exhibit adequate to limited evidence of biodegradation in the shallow aquifer during the October 2005 sampling period. The majority of the wells showing some evidence of biodegradation are located in the central area of the contaminant plume. Low dissolved oxygen, negative ORP values, and a lack of competing electron acceptors indicate favorable anaerobic conditions in which reductive dechlorination might occur. The presence of dechlorination daughter products, principally isomers of DCE, supports this conclusion. Sentinel wells located outside the plume in the shallow aquifer showed no evidence of biodegradation.

Wells AP-4551, AP-4525, and AP-4017 showed adequate to limited evidence of biodegradation in the deep aquifer for the OUB site. All other deep aquifer wells showed inadequate evidence for biodegradation of chlorinated organics.

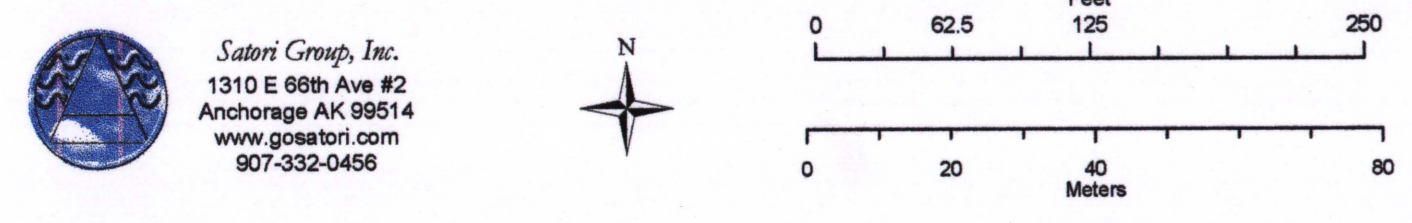
**Notes**  
 Groundwater elevation in meters. Previous groundwater elevations taken from archived reports. Data from March 1999 to April 2001 collected by URS Corporation (URS, 2001). Data from March 2002 to April 2003 collected by CH2M Hill.  
 All non-detect values before August 2004 are reported as the Method Detection Limit (MDL). 2004 August and October non-detect values are reported as the Practical Quantitation Limit (PQL). All concentrations are measured in µg/L.  
 Exceedances compared against Remedial Action Objectives values.  
 Grey Cells indicate no sample taken.  
**Regulatory Exceedances in Bold**

Sample Dates	Mar-99	Oct-99	Apr-00	Oct-00	Apr-01	Mar-02	Sep-02	Mar-03	Sep-03	Aug-04	Oct-04	Jun-05	Oct-05
GW Elevation	85.62	85.84	85.58	85.44	85.72	84.68	85.37	84.58	85.30	85.36	85.68	85.68	85.63
Analyses	Method SW 8260B												
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.50	1.93	0.96	1.53
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.97	1.97	1.53	1.53
Chloroethene (dcp)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride (dup)	2000	2000	2100	1400	1700	530	1100	300	600	380	480	348	280
cis-1,2-Dichloroethene	1100	480	510	220	180	34	89	41	119	172	85.5	62.6	56.3
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	720	60	120	60	54	ND	13	4.1	8.1	4.8	14.8	14.8	14.8
Trichloroethene	12000	3100	11000	3100	2800	120	1400	320	470	1100	560	454	430
Trichloroethene (dup)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	20000	15000	16000	3500	3400	280	1400	470	640	1400	560	454	430
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	2	4	3	2.8	4.7	12	18	7.42	20	190	3.80	2.61	3.47
Vinyl chloride (dup)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane (dup)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane (dup)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane (dup)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane (dup)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND



Sample Dates	Mar-99	Oct-99	Apr-00	Oct-00	Apr-01	Mar-02	Sep-02	Mar-03	Sep-03	Aug-04	Oct-04	Jun-05	Oct-05
GW Elevation	85.62	85.84	85.58	85.44	85.72	84.68	85.37	84.58	85.30	85.36	85.68	85.68	85.63
Analyses	Method SW 8260B												
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (dup)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (dup)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane (dup)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane (dup)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane (dup)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane (dup)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Sample Dates	Mar-99	Oct-99	Apr-00	Oct-00	Apr-01	Mar-02	Sep-02	Mar-03	Sep-03	Aug-04	Oct-04	Jun-05	Oct-05
GW Elevation	85.75	85.89	85.71	85.45	85.72	84.76	85.19	84.76	84.85	85.62	84.97	85.75	85.31
Analyses	Method SW 8260B												
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (dup)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride (dup)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane (dup)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane (dup)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane (dup)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane (dup)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND



**OUB Poline Road Disposal Area  
 2005 October Groundwater Analytical Results  
 Fort Richardson, Alaska**

- OUB Monitoring Well Locations
- OUB Plume Approximation
- Date of Aerial Photography - Sept 2003

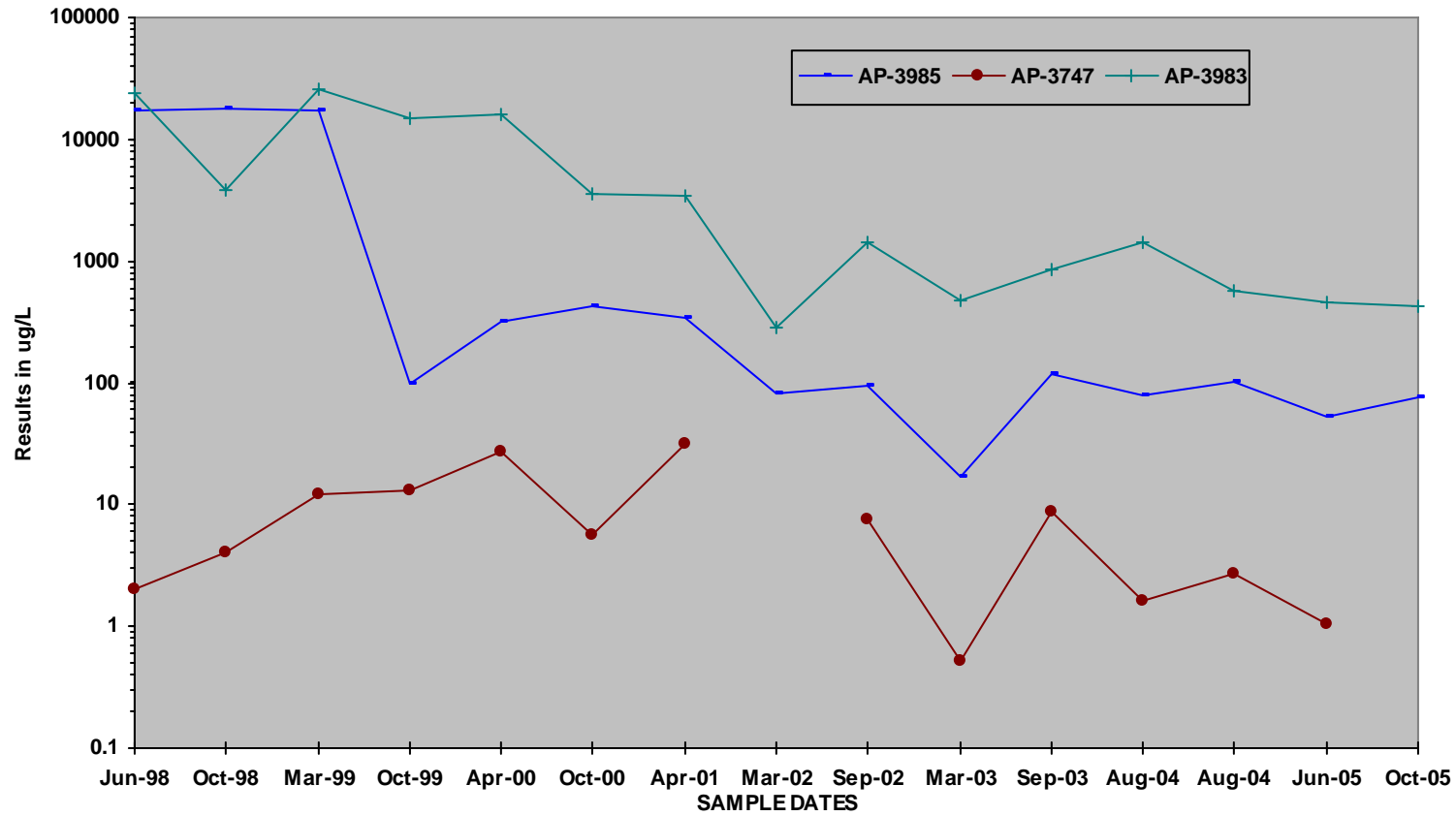
Chemical of Concern	Remedial Action Objectives values
Benzene	5 µg/L
Carbon Tetrachloride	5 µg/L
cis-1,2-Dichloroethene	70 µg/L
Trichloroethene	5 µg/L
trans-1,2-Dichloroethene	100 µg/L
Tetrachloroethene	5 µg/L
Trichloroethene (dup)	5 µg/L
1,1,2,2-Tetrachloroethane	5 µg/L
1,1,2-Trichloroethane	5 µg/L
Vinyl chloride	2 µg/L
1,1,1-Trichloroethane	200 µg/L
1,1,2-Trichloroethane	5 µg/L
1,1-Dichloroethane	7 µg/L
1,2-Dichloroethane	5 µg/L

**Abbreviations**  
 Dup = Duplicate Sample  
 NA = Not Available  
 ND = No Analyte Detected  
 J = Estimated Quantity  
 J+ = Analyte is present, but value may not be accurate or precise (estimated high)  
 J- = Analyte is present, but value may not be accurate or precise (estimated low)  
 B = Lab Blank Contamination

**Figure 5-1 Poline Road Disposal Area GIS Figure**

Figure 5-2 1,1,2,2 PCA Historic Trends of Shallow Aquifer Wells

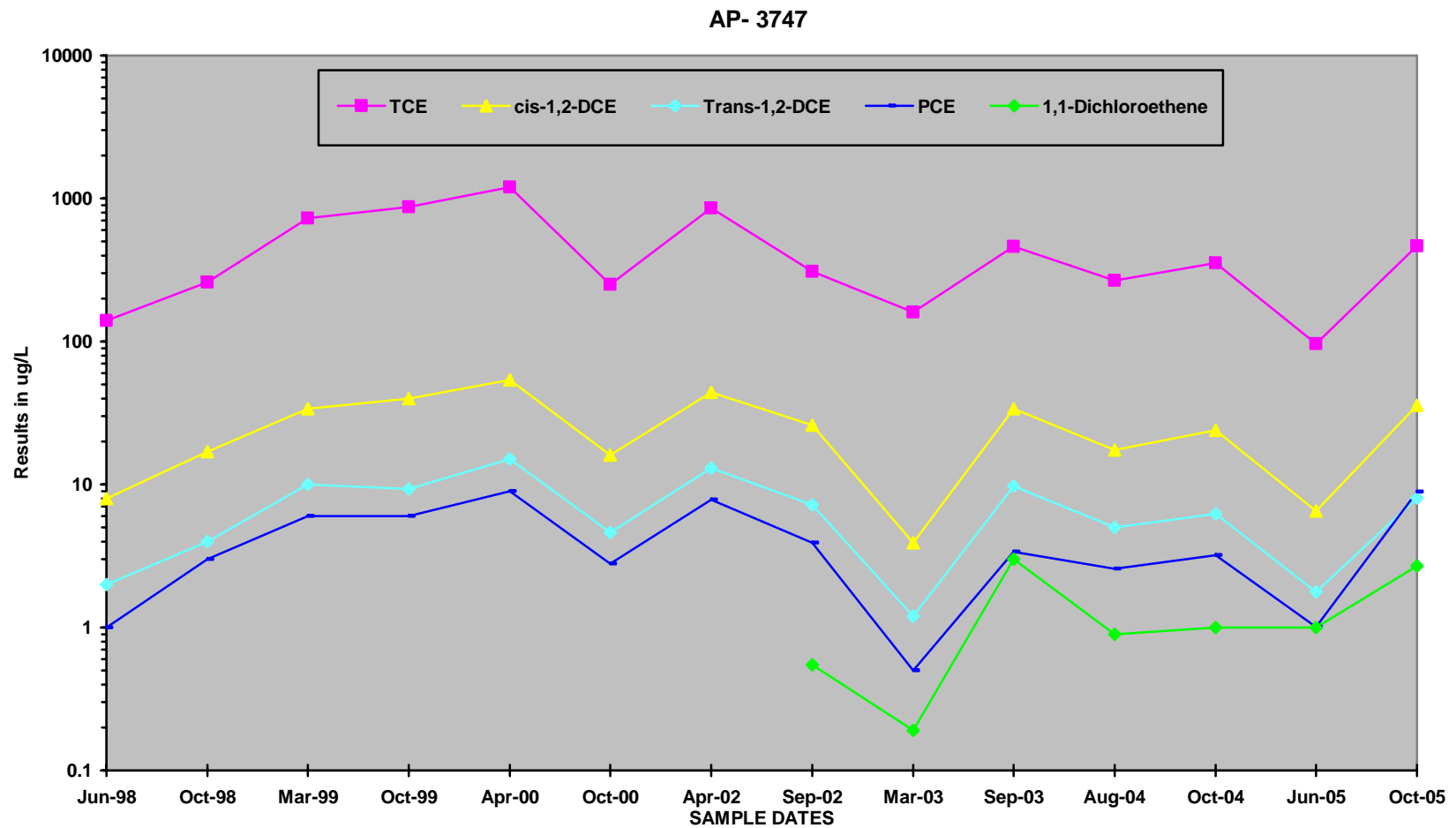
1,1,2,2 - PCA



AP-3747 was dry during March 2002 period. (CH2MHILL)

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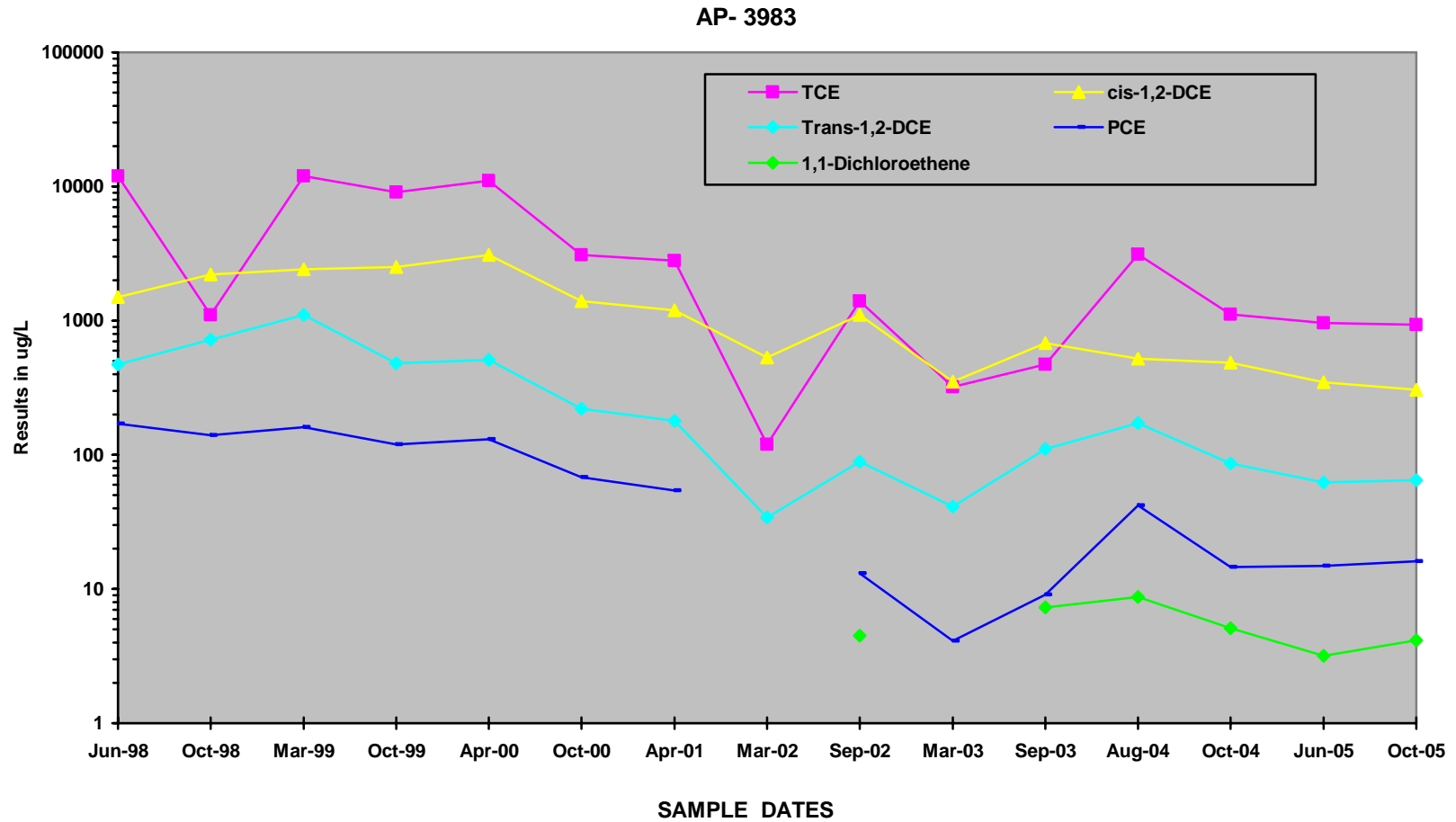
Figure 5-3 Historic Trends of AP-3747 Chemicals of Concern



Break in data trends indicates no analyte was detected during the sampling period, but did occur in the next round.

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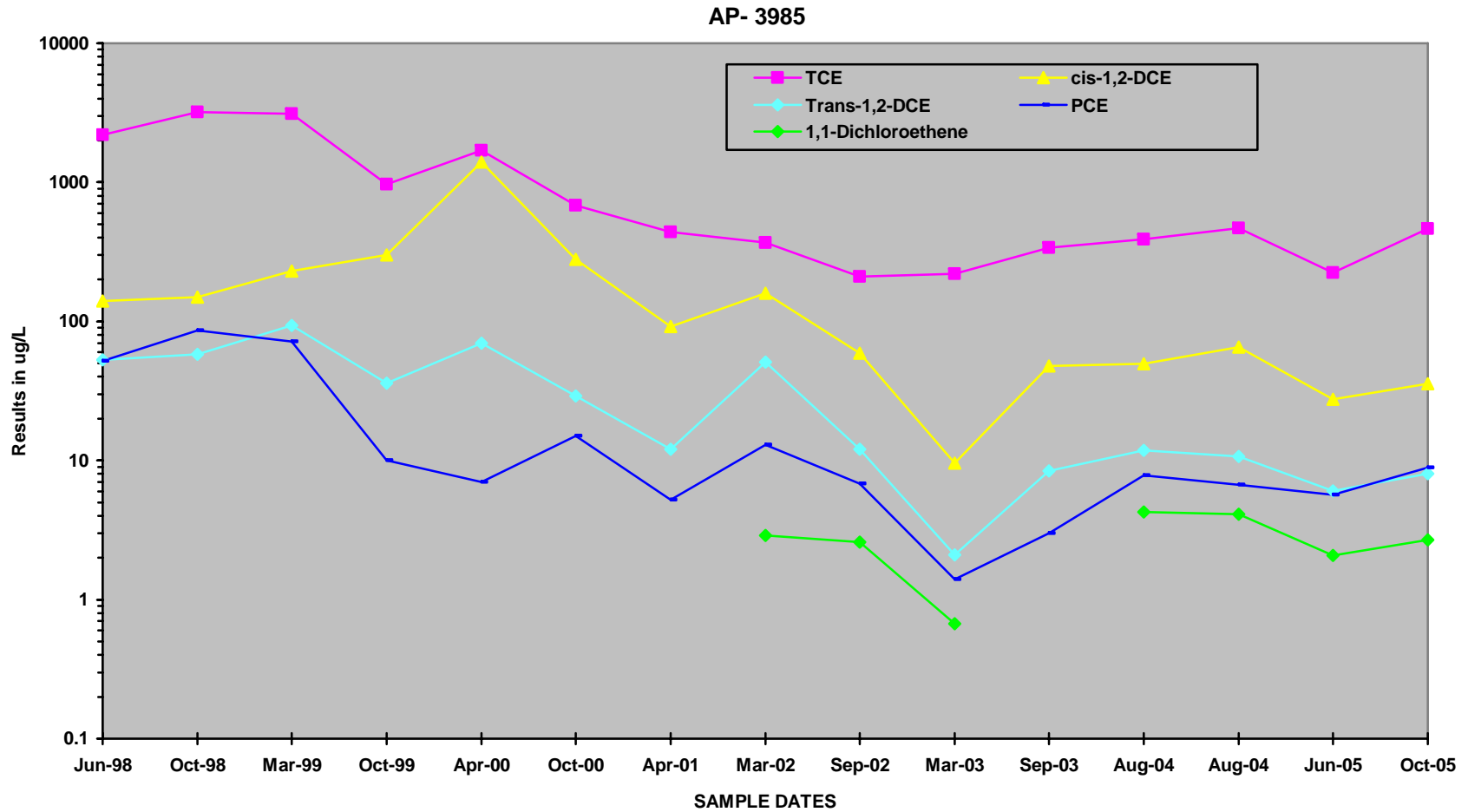
Figure 5-4 Historic Trends of AP-3983 Chemicals of Concern



Break in data trends indicates no analyte was detected during the sampling period, but did occur in the next round.

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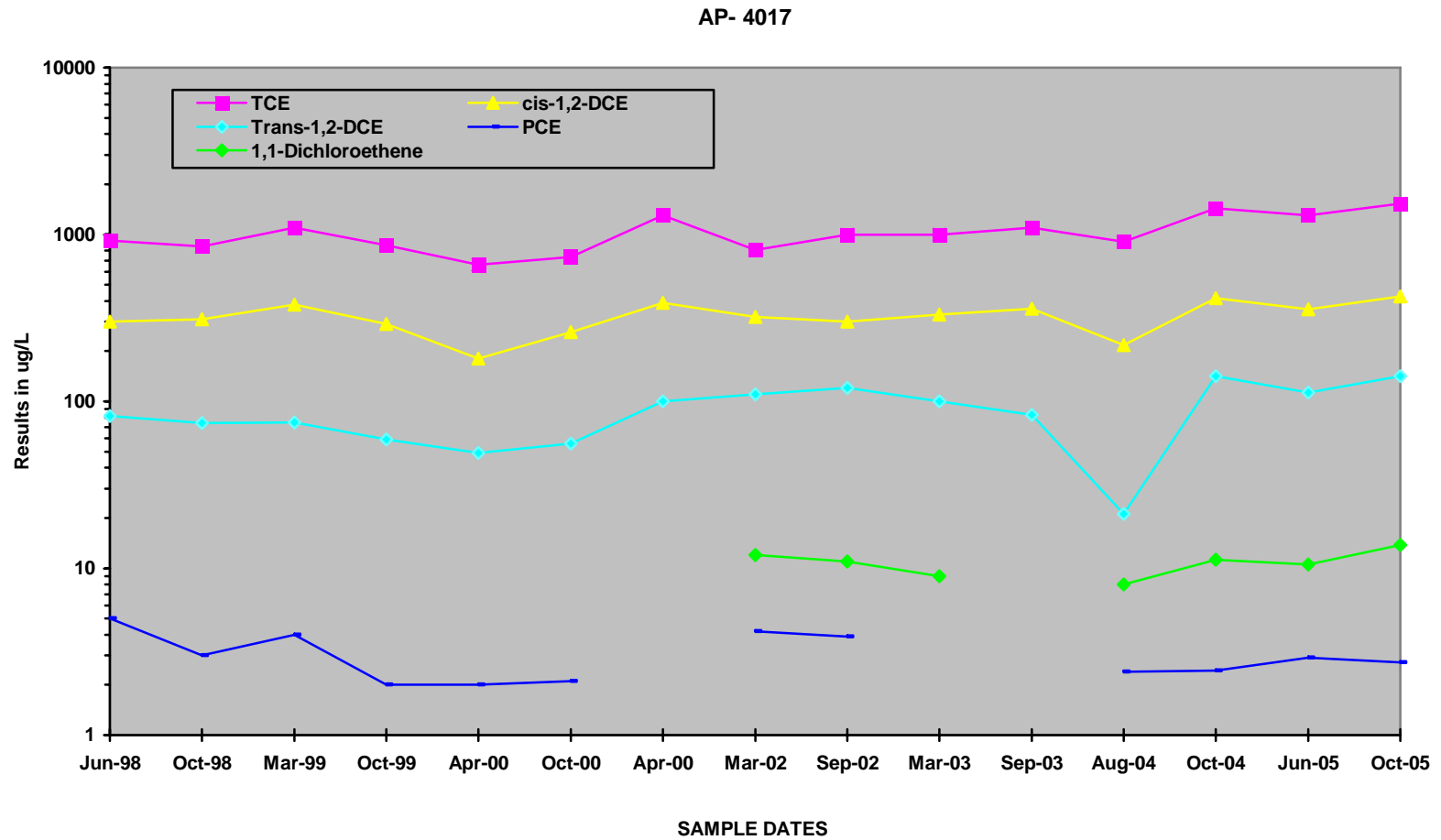
Figure 5-5 Historic Trends of AP-3985 Chemicals of Concern



Break in data trends indicates no analyte was detected during the sampling period, but did occur in the next round.

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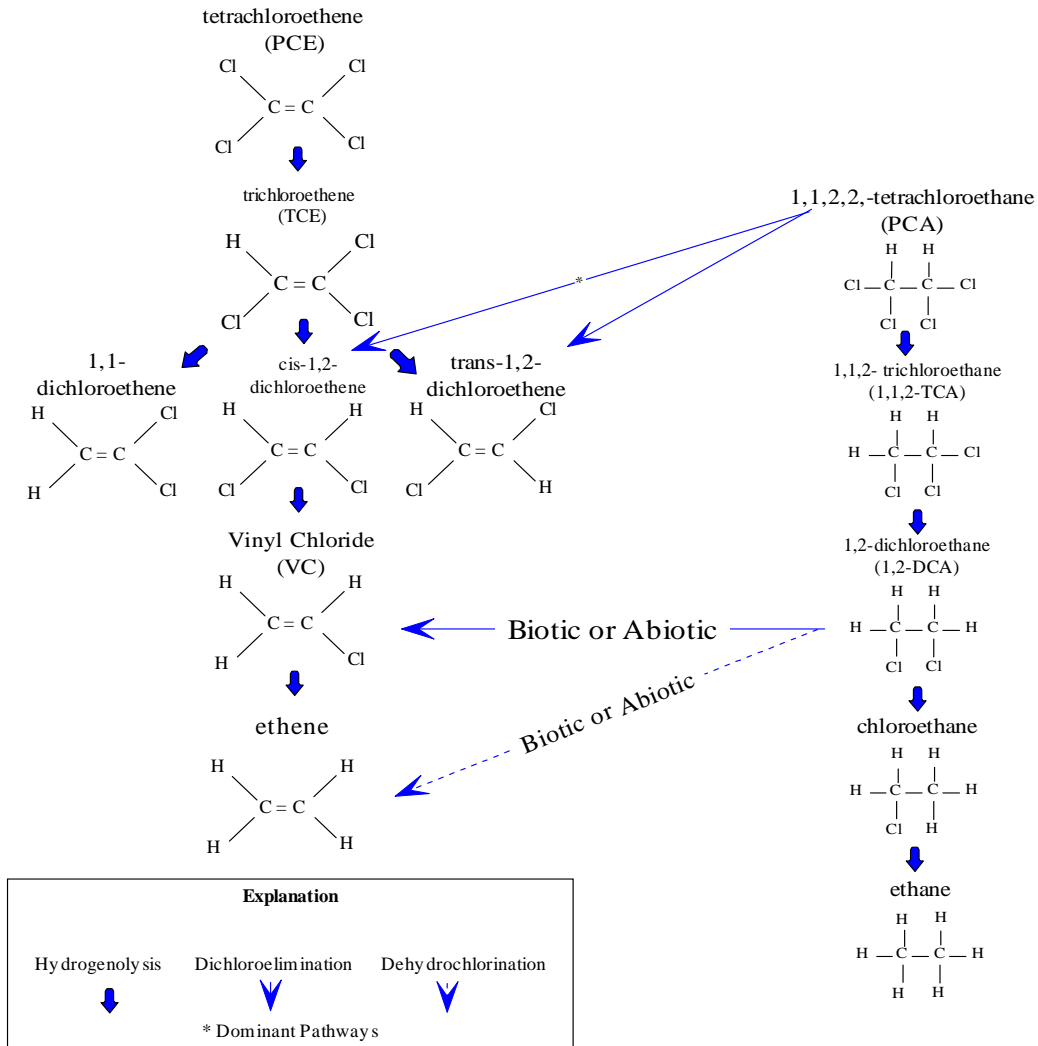
Figure 5-6 Historic Trends of AP-4017 Chemicals of Concern



Break in data trends indicates no analyte was detected during the sampling period, but did occur in the next round.

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**Figure 5-7 Reductive Dechlorination Process**



Anaerobic Degradation Pathways for Tetrachloroethene and 1,1,1,2-Tetrachloroethane. (Modified from Chen et al. 1996; McCarty, 1996; Nyer and Duffin, 1997; and Vogel et al., 1987.)

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## **6.0 CONCLUSIONS**

CoC concentrations exceeded remedial action objectives in numerous wells during the October 2005 sampling event. Both the semi-confined aquifer (deep) and the unconfined aquifer (shallow) had levels of CoC contamination above the RAOs. The highest levels of contamination were seen in the wells located in the former disposal area – the presumed “source area.”

Concentrations generally decreased with distance down-gradient from the source with deep aquifer well AP-4525 demonstrating the largest decrease in COC concentrations. Well AP-3985 and AP-4519 in the shallow aquifer showed an increase in COC concentrations during the October 2005 sampling event. No sentinel wells in either aquifer reported detections above the RAO for any CoC, although AP-4344 located to the northwest of the source area showed a slight increase of TCE concentration in October 2005.

The contaminant plume generally seems to follow the groundwater gradient running north-northeast from the source area. Not enough data exists to define exact plume boundaries. However, contamination does not seem to have migrated beyond the gravel road to the north of the disposal area. The CoC, TCE, has increased overall since June 2003 in AP-4344 which might indicate that the plume may be tracking somewhat northwest.

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**FINAL REPORT**  
**FORT RICHARDSON**  
**OUB POLELINE ROAD DISPOSAL AREA**

**ATTACHMENT 1: NATURAL ATTENUATION  
SCREENING**

**FORT RICHARDSON, ALASKA**

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**PREPARED FOR:**



**U.S. Army, Directorate of Public Works**  
**Contract No. W911KB-04-P-0091**

**June 2006**



**US Army**  
**Installation Management Agency**



**US Army Corps**  
**of Engineers**®  
Alaska District



Satori Group, Inc.  
1310 E. 66<sup>th</sup> Ave., #2  
Anchorage, AK 99518

**2005 October OUB MNA Tables**

<b>AP-4350</b>		
<b>Analyte</b>	<b>October-05</b>	<b>Points Awarded</b>
Dissolved Oxygen (mg/L)	9.33	-3
Nitrate-Nitrite (mg/L)	0.894	2
Iron (II) (mg/L)	ND (1.0)	0
Sulfate (mg/L)	26.4	0
Methane (mg/L)	ND (0.005)	0
ORP (mV)	187.7	0
PCE (released) (ug/L)	ND (1.0)	NA
TCE (released) (ug/L)	ND (1.0)	0
DCE (daughter) (ug/L)		
cis-1,2-Dichloroethene	ND (1.0)	NA
trans-1,2-Dichloroethene	ND (1.0)	NA
1,1-Dichloroethene	ND (1.0)	NA
	0	0
Ethene/Ethane (mg/L)	ND (0.01)	0
VC (daughter) (ug/L)	ND (1.0)	0
<b>Total MNA Score</b>		<b>-1</b>

PQL value for Ethene/Ethane was determined by the sum of individual PQLs

**2005 October OUB MNA Tables**

<b>AP-3744</b>		
<b>Analyte</b>	<b>October-05</b>	<b>Points Awarded</b>
Dissolved Oxygen (mg/L)	9.08	-3
Nitrate-Nitrite (mg/L)	2.01	0
Iron (II) (mg/L)	ND (1.0)	0
Sulfate (mg/L)	22.4	0
Methane (mg/L)	ND (0.005)	0
ORP (mV)	140.4	0
PCE (released) (ug/L)	ND (1.0)	NA
TCE (released) (ug/L)	39.1	2
DCE (daughter) (ug/L)		
cis-1,2-Dichloroethene	1.98	NA
trans-1,2-Dichloroethene	0.390J	NA
1,1-Dichloroethene	ND (1.0)	NA
	2.37	2
Ethene/Ethane (mg/L)	ND (0.01)	0
VC (daughter) (ug/L)	ND (1.0)	0
	<b>Total MNA Score</b>	<b>1</b>

PQL value for Ethene/Ethane was determined by the sum of individual PQLs

**2005 October OUB MNA Tables**

<b>AP-4519</b>		
<b>Analyte</b>	<b>October-05</b>	<b>Points Awarded</b>
Dissolved Oxygen (mg/L)	0.41	3
Nitrate-Nitrite (mg/L)	0.0000400J	2
Iron (II) (mg/L)	5.57	3
Sulfate (mg/L)	18.6	2
Methane (mg/L)	0.267	2
ORP (mV)	-22.2	2
PCE (released) (ug/L)	10.4	NA
TCE (released) (ug/L)	900	2
DCE (daughter) (ug/L)		
cis-1,2-Dichloroethene	216	NA
trans-1,2-Dichloroethene	50	NA
1,1-Dichloroethene	6.88	NA
	272.88	0
Ethene/Ethane (mg/L)	3.80J	3
VC (daughter) (ug/L)	.870J	2
<b>Total MNA Score</b>		<b>21</b>

PQL value for Ethene/Ethane was determined by the sum of individual PQLs

2005 October OUB MNA Tables

AP-4353		
Analyte	October-05	Points Awarded
Dissolved Oxygen (mg/L)	0.83	0
Nitrate-Nitrite (mg/L)	0.0000860J	2
Iron (II) (mg/L)	8.42	3
Sulfate (mg/L)	6.66	2
Methane (mg/L)	0.687	2
ORP (mV)	182.6	1
PCE (released) (ug/L)	6.19	NA
TCE (released) (ug/L)	325	2
DCE (daughter) (ug/L)		
cis-1,2-Dichloroethene	57	NA
trans-1,2-Dichloroethene	13.9	NA
1,1-Dichloroethene	1.67	NA
	72.57	0
Ethene/Ethane (mg/L)	8.90J	2
VC (daughter) (ug/L)	ND (1.0)	0
Total MNA Score		14

PQL value for Ethene/Ethane was determined by the sum of individual PQLs

**2005 October OUB MNA Tables**

<b>AP-4354</b>		
<b>Analyte</b>	<b>October-05</b>	<b>Points Awarded</b>
Dissolved Oxygen (mg/L)	1.01	-3
Nitrate-Nitrite (mg/L)	0.0000475J	2
Iron (II) (mg/L)	ND (1.0)	0
Sulfate (mg/L)	0.656	2
Methane (mg/L)	0.0246	0
ORP (mV)	318.6	0
PCE (released) (ug/L)	ND (1.0)	NA
TCE (released) (ug/L)	0.500J	2
DCE (daughter) (ug/L)		
cis-1,2-Dichloroethene	ND (1.0)	NA
trans-1,2-Dichloroethene	ND (1.0)	NA
1,1-Dichloroethene	ND (1.0)	NA
	0	0
Ethene/Ethane (mg/L)	ND (0.01)	0
VC (daughter) (ug/L)	ND (1.0)	0
<b>Total MNA Score</b>		<b>3</b>

PQL value for Ethene/Ethane was determined by the sum of individual PQLs

**2005 October OUB MNA Tables**

<b>AP-4017</b>		
<b>Analyte</b>	<b>October-05</b>	<b>Points Awarded</b>
Dissolved Oxygen (mg/L)	0.42	3
Nitrate-Nitrite (mg/L)	0.0000530J	2
Iron (II) (mg/L)	4.19	3
Sulfate (mg/L)	16.9	2
Methane (mg/L)	0.71	3
ORP (mV)	-44.9	1
PCE (released) (ug/L)	2.73	NA
TCE (released) (ug/L)	1530	2
DCE (daughter) (ug/L)		
cis-1,2-Dichloroethene	427	NA
trans-1,2-Dichloroethene	142	NA
1,1-Dichloroethene	13.8	NA
	582.8	0
Ethene/Ethane (mg/L)	ND (0.01)	0
VC (daughter) (ug/L)	3.18	2
	<b>Total MNA Score</b>	<b>18</b>

PQL value for Ethene/Ethane was determined by the sum of individual PQLs

**2005 October OUB MNA Tables**

<b>AP-4518</b>		
<b>Analyte</b>	<b>October-05</b>	<b>Points Awarded</b>
Dissolved Oxygen (mg/L)	9.3	-3
Nitrate-Nitrite (mg/L)	0.425	2
Iron (II) (mg/L)	ND (1.0)	0
Sulfate (mg/L)	12.4	2
Methane (mg/L)	ND (0.005)	0
ORP (mV)	280.7	0
PCE (released) (ug/L)	ND (1.0)	NA
TCE (released) (ug/L)	0.920 J	2
DCE (daughter) (ug/L)		
cis-1,2-Dichloroethene	ND (1.0)	NA
trans-1,2-Dichloroethene	ND (1.0)	NA
1,1-Dichloroethene	ND (1.0)	NA
	0	0
Ethene/Ethane (mg/L)	ND (0.01)	0
VC (daughter) (ug/L)	ND (1.0)	0
<b>Total MNA Score</b>		<b>3</b>

PQL value for Ethene/Ethane was determined by the sum of individual PQLs

**2005 October OUB MNA Tables**

<b>AP-4551</b>		
<b>Analyte</b>	<b>October-05</b>	<b>Points Awarded</b>
Dissolved Oxygen (mg/L)	BA	0
Nitrate-Nitrite (mg/L)	0.0000900J	2
Iron (II) (mg/L)	ND (1.0)	0
Sulfate (mg/L)	33.4	0
Methane (mg/L)	ND (0.005)	0
ORP (mV)	BA	0
PCE (released) (ug/L)	2.52	NA
TCE (released) (ug/L)	1610	2
DCE (daughter) (ug/L)		
cis-1,2-Dichloroethene	85.5	NA
trans-1,2-Dichloroethene	9.97	NA
1,1-Dichloroethene	7.4	NA
	102.87	2
Ethene/Ethane (mg/L)	ND (0.01)	0
VC (daughter) (ug/L)	ND (1.0)	0
	<b>Total MNA Score</b>	<b>6</b>

PQL value for Ethene/Ethane was determined by the sum of individual PQLs

**2005 October OUB MNA Tables**

<b>AP-3983</b>		
<b>Analyte</b>	<b>October-05</b>	<b>Points Awarded</b>
Dissolved Oxygen (mg/L)	0.21	3
Nitrate-Nitrite (mg/L)	0.276	2
Iron (II) (mg/L)	14.6	3
Sulfate (mg/L)	44.2	0
Methane (mg/L)	0.0273	0
ORP (mV)	-145.3	2
PCE (released) (ug/L)	16.1	NA
TCE (released) (ug/L)	933	2
DCE (daughter) (ug/L)		
cis-1,2-Dichloroethene	288	NA
trans-1,2-Dichloroethene	56.5	NA
1,1-Dichloroethene	3.71	NA
	348.21	2
Ethene/Ethane (mg/L)	38.6	3
VC (daughter) (ug/L)	3.47	2
	<b>Total MNA Score</b>	<b>19</b>

PQL value for Ethene/Ethane was determined by the sum of individual PQLs

**2005 October OUB MNA Tables**

<b>AP-3989</b>		
<b>Analyte</b>	<b>October-05</b>	<b>Points Awarded</b>
Dissolved Oxygen (mg/L)	2.5	-3
Nitrate-Nitrite (mg/L)	0.150	2
Iron (II) (mg/L)	1.24	3
Sulfate (mg/L)	29.5	0
Methane (mg/L)	0.0953	0
ORP (mV)	279.2	1
PCE (released) (ug/L)	4.56	NA
TCE (released) (ug/L)	805	2
DCE (daughter) (ug/L)		
cis-1,2-Dichloroethene	122	NA
trans-1,2-Dichloroethene	40.4	NA
1,1-Dichloroethene	1.67	NA
	164.07	0
Ethene/Ethane (mg/L)	ND (0.01)	0
VC (daughter) (ug/L)	ND (1.0)	0
	<b>Total MNA Score</b>	<b>5</b>

PQL value for Ethene/Ethane was determined by the sum of individual PQLs

**2005 October OUB MNA Tables**

<b>AP-4525</b>		
<b>Analyte</b>	<b>October-05</b>	<b>Points Awarded</b>
Dissolved Oxygen (mg/L)	BA	0
Nitrate-Nitrite (mg/L)	0.000985	2
Iron (II) (mg/L)	ND (1.0)	0
Sulfate (mg/L)	53.4	2
Methane (mg/L)	ND (0.005)	0
ORP (mV)	BA	0
PCE (released) (ug/L)	5.62	NA
TCE (released) (ug/L)	865	2
DCE (daughter) (ug/L)		
cis-1,2-Dichloroethene	67.7	NA
trans-1,2-Dichloroethene	10.2	NA
1,1-Dichloroethene	ND (1.0)	NA
	77.9	2
Ethene/Ethane (mg/L)	ND (0.01)	0
VC (daughter) (ug/L)	ND (1.0)	0
<b>Total MNA Score</b>		<b>8</b>

PQL value for Ethene/Ethane was determined by the sum of individual PQLs

**2005 October OUB MNA Tables**

<b>AP-4019</b>		
<b>Analyte</b>	<b>October-05</b>	<b>Points Awarded</b>
Dissolved Oxygen (mg/L)	10.23	-3
Nitrate-Nitrite (mg/L)	0.414	2
Iron (II) (mg/L)	ND (1.0)	0
Sulfate (mg/L)	12.6	2
Methane (mg/L)	ND (0.005)	0
ORP (mV)	254.1	0
PCE (released) (ug/L)	ND (1.0)	NA
TCE (released) (ug/L)	8.02	2
DCE (daughter) (ug/L)		
cis-1,2-Dichloroethene	ND (1.0)	NA
trans-1,2-Dichloroethene	ND (1.0)	NA
1,1-Dichloroethene	ND (1.0)	NA
	0	0
Ethene/Ethane (mg/L)	ND (0.01)	0
VC (daughter) (ug/L)	ND (1.0)	0
<b>Total MNA Score</b>		<b>3</b>

PQL value for Ethene/Ethane was determined by the sum of individual PQLs

**2005 October OUB MNA Tables**

<b>AP-4550</b>		
<b>Analyte</b>	<b>October-05</b>	<b>Points Awarded</b>
Dissolved Oxygen (mg/L)	0.33	3
Nitrate-Nitrite (mg/L)	0.0000880J	2
Iron (II) (mg/L)	10.1	3
Sulfate (mg/L)	55.5	0
Methane (mg/L)	0.1	2
ORP (mV)	-43.8	2
PCE (released) (ug/L)	36.8	NA
TCE (released) (ug/L)	2020	2
DCE (daughter) (ug/L)		
cis-1,2-Dichloroethene	281	NA
trans-1,2-Dichloroethene	92.1	NA
1,1-Dichloroethene	5.83	NA
	378.93	0
Ethene/Ethane (mg/L)	ND (0.01)	0
VC (daughter) (ug/L)	0.570J	2
	<b>Total MNA Score</b>	<b>16</b>

PQL value for Ethene/Ethane was determined by the sum of individual PQLs

**2005 October OUB MNA Tables**

<b>AP-3982</b>		
<b>Analyte</b>	<b>October-05</b>	<b>Points Awarded</b>
Dissolved Oxygen (mg/L)	5.3	-3
Nitrate-Nitrite (mg/L)	0.33	2
Iron (II) (mg/L)	.488J	0
Sulfate (mg/L)	9.08	2
Methane (mg/L)	ND (0.005)	0
ORP (mV)	55.5	1
PCE (released) (ug/L)	ND (1.0)	NA
TCE (released) (ug/L)	ND (1.0)	0
DCE (daughter) (ug/L)		
cis-1,2-Dichloroethene	ND (1.0)	NA
trans-1,2-Dichloroethene	ND (1.0)	NA
1,1-Dichloroethene	ND (1.0)	NA
	0	0
Ethene/Ethane (mg/L)	ND (0.01)	0
VC (daughter) (ug/L)	ND (1.0)	0
<b>Total MNA Score</b>		<b>2</b>

PQL value for Ethene/Ethane was determined by the sum of individual PQLs

**2005 October OUB MNA Tables**

<b>AP-3745</b>		
<b>Analyte</b>	<b>October-05</b>	<b>Points Awarded</b>
Dissolved Oxygen (mg/L)	4.35	-3
Nitrate-Nitrite (mg/L)	1.57	2
Iron (II) (mg/L)	ND (1.0)	0
Sulfate (mg/L)	19.2	2
Methane (mg/L)	ND (0.005)	0
ORP (mV)	179.1	0
PCE (released) (ug/L)	ND (1.0)	NA
TCE (released) (ug/L)	82.9	2
DCE (daughter) (ug/L)		
cis-1,2-Dichloroethene	10.8	NA
trans-1,2-Dichloroethene	1.79	NA
1,1-Dichloroethene	ND (1.0)	NA
	12.59	2
Ethene/Ethane (mg/L)	ND (0.01)	0
VC (daughter) (ug/L)	ND (1.0)	0
	<b>Total MNA Score</b>	<b>5</b>

PQL value for Ethene/Ethane was determined by the sum of individual PQLs

**2005 October OUB MNA Tables**

<b>AP-3749</b>		
<b>Analyte</b>	<b>October-05</b>	<b>Points Awarded</b>
Dissolved Oxygen (mg/L)	11.75	-3
Nitrate-Nitrite (mg/L)	0.65	2
Iron (II) (mg/L)	ND (1.0)	0
Sulfate (mg/L)	13.2	2
Methane (mg/L)	ND (0.005)	0
ORP (mV)	221.6	0
PCE (released) (ug/L)	ND (1.0)	NA
TCE (released) (ug/L)	ND (1.0)	0
DCE (daughter) (ug/L)		
cis-1,2-Dichloroethene	ND (1.0)	NA
trans-1,2-Dichloroethene	ND (1.0)	NA
1,1-Dichloroethene	ND (1.0)	NA
	0	0
Ethene/Ethane (mg/L)	ND (0.01)	0
VC (daughter) (ug/L)	ND (1.0)	0
<b>Total MNA Score</b>		<b>1</b>

PQL value for Ethene/Ethane was determined by the sum of individual PQLs

**2005 October OUB MNA Tables**

<b>AP-4345</b>		
<b>Analyte</b>	<b>October-05</b>	<b>Points Awarded</b>
Dissolved Oxygen (mg/L)	13.45	-3
Nitrate-Nitrite (mg/L)	0.868	2
Iron (II) (mg/L)	ND (1.0)	0
Sulfate (mg/L)	21.8	0
Methane (mg/L)	ND (0.005)	0
ORP (mV)	497.2	0
PCE (released) (ug/L)	ND (1.0)	NA
TCE (released) (ug/L)	ND (1.0)	NA
DCE (daughter) (ug/L)		
cis-1,2-Dichloroethene	ND (1.0)	NA
trans-1,2-Dichloroethene	ND (1.0)	NA
1,1-Dichloroethene	ND (1.0)	NA
	0	0
Ethene/Ethane (mg/L)	ND (0.01)	0
VC (daughter) (ug/L)	ND (1.0)	0
<b>Total MNA Score</b>		<b>-1</b>

PQL value for Ethene/Ethane was determined by the sum of individual PQLs

**2005 October OUB MNA Tables**

<b>AP-3748</b>		
<b>Analyte</b>	<b>October-05</b>	<b>Points Awarded</b>
Dissolved Oxygen (mg/L)	8.51	-3
Nitrate-Nitrite (mg/L)	0.988	2
Iron (II) (mg/L)	ND (1.0)	0
Sulfate (mg/L)	19.2	2
Methane (mg/L)	ND (0.005)	0
ORP (mV)	184.4	0
PCE (released) (ug/L)	ND (1.0)	NA
TCE (released) (ug/L)	ND (1.0)	0
DCE (daughter) (ug/L)		
cis-1,2-Dichloroethene	ND (1.0)	NA
trans-1,2-Dichloroethene	ND (1.0)	NA
1,1-Dichloroethene	ND (1.0)	NA
	0	0
Ethene/Ethane (mg/L)	ND (0.01)	0
VC (daughter) (ug/L)	ND (1.0)	0
<b>Total MNA Score</b>		<b>1</b>

PQL value for Ethene/Ethane was determined by the sum of individual PQLs

**2005 October OUB MNA Tables**

<b>AP-3747</b>		
<b>Analyte</b>	<b>October-05</b>	<b>Points Awarded</b>
Dissolved Oxygen (mg/L)	11.87	-3
Nitrate-Nitrite (mg/L)	0.232	2
Iron (II) (mg/L)	ND (1.0)	0
Sulfate (mg/L)	9.81	2
Methane (mg/L)	ND (0.005)	0
ORP (mV)	199.8	0
PCE (released) (ug/L)	1.78	NA
TCE (released) (ug/L)	151	2
DCE (daughter) (ug/L)		
cis-1,2-Dichloroethene	10.1	NA
trans-1,2-Dichloroethene	3.07	NA
1,1-Dichloroethene	0.440J	NA
	13.17	0
Ethene/Ethane (mg/L)	ND (0.01)	0
VC (daughter) (ug/L)	ND (1.0)	0
<b>Total MNA Score</b>		<b>3</b>

PQL value for Ethene/Ethane was determined by the sum of individual PQLs

**2005 October OUB MNA Tables**

<b>AP-4011</b>		
<b>Analyte</b>	<b>October-05</b>	<b>Points Awarded</b>
Dissolved Oxygen (mg/L)	12.53	-3
Nitrate-Nitrite (mg/L)	0.508	2
Iron (II) (mg/L)	ND (1.0)	0
Sulfate (mg/L)	12.5	2
Methane (mg/L)	ND (0.005)	0
ORP (mV)	197.2	0
PCE (released) (ug/L)	ND (1.0)	NA
TCE (released) (ug/L)	18.2	2
DCE (daughter) (ug/L)		
cis-1,2-Dichloroethene	2.49	NA
trans-1,2-Dichloroethene	ND (1.0)	NA
1,1-Dichloroethene	ND (1.0)	NA
	2.49	2
Ethene/Ethane (mg/L)	ND (0.01)	0
VC (daughter) (ug/L)	ND (1.0)	0
<b>Total MNA Score</b>		<b>5</b>

4.98

PQL value for Ethene/Ethane was determined by the sum of individual PQLs

**2005 October OUB MNA Tables**

<b>AP-4344</b>		
<b>Analyte</b>	<b>October-05</b>	<b>Points Awarded</b>
Dissolved Oxygen (mg/L)	11.65	-3
Nitrate-Nitrite (mg/L)	0.476	2
Iron (II) (mg/L)	ND (1.0)	0
Sulfate (mg/L)	13.7	2
Methane (mg/L)	ND (0.005)	0
ORP (mV)	183.6	0
PCE (released) (ug/L)	ND (1.0)	NA
TCE (released) (ug/L)	26.6	2
DCE (daughter) (ug/L)		
cis-1,2-Dichloroethene	0.910J	NA
trans-1,2-Dichloroethene	ND (1.0)	NA
1,1-Dichloroethene	ND (1.0)	NA
	0.910J	0
Ethene/Ethane (mg/L)	ND (0.01)	0
VC (daughter) (ug/L)	ND (1.0)	0
<b>Total MNA Score</b>		<b>3</b>

PQL value for Ethene/Ethane was determined by the sum of individual PQLs

**2005 October OUB MNA Tables**

<b>AP-4352</b>		
<b>Analyte</b>	<b>October-05</b>	<b>Points Awarded</b>
Dissolved Oxygen (mg/L)	11.95	-3
Nitrate-Nitrite (mg/L)	0.208	2
Iron (II) (mg/L)	ND (1.0)	0
Sulfate (mg/L)	7.14	2
Methane (mg/L)	ND (0.005)	0
ORP (mV)	160.5	0
PCE (released) (ug/L)	ND (1.0)	NA
TCE (released) (ug/L)	ND (1.0)	0
DCE (daughter) (ug/L)		
cis-1,2-Dichloroethene	ND (1.0)	NA
trans-1,2-Dichloroethene	ND (1.0)	NA
1,1-Dichloroethene	ND (1.0)	NA
	0	0
Ethene/Ethane (mg/L)	ND (0.01)	0
VC (daughter) (ug/L)	ND (1.0)	0
<b>Total MNA Score</b>		<b>1</b>

PQL value for Ethene/Ethane was determined by the sum of individual PQLs

2005 October OUB MNA Tables

AP-3981		
Analyte	October-05	Points Awarded
Dissolved Oxygen (mg/L)	0.47	3
Nitrate-Nitrite (mg/L)	ND (0.10)	0
Iron (II) (mg/L)	21.8	3
Sulfate (mg/L)	0.134	2
Methane (mg/L)	1.47	3
ORP (mV)	-91.4	1
PCE (released) (ug/L)	ND (1.0)	NA
TCE (released) (ug/L)	0.780J	2
DCE (daughter) (ug/L)		
cis-1,2-Dichloroethene	ND (1.0)	NA
trans-1,2-Dichloroethene	ND (1.0)	NA
1,1-Dichloroethene	ND (1.0)	NA
	ND (1.0)	0
Ethene/Ethane (mg/L)	ND (0.01)	0
VC (daughter) (ug/L)	ND (1.0)	0
Total MNA Score		14

PQL value for Ethene/Ethane was determined by the sum of individual PQLs

2005 October OUB MNA Tables

AP-3985		
Analyte	October-05	Points Awarded
Dissolved Oxygen (mg/L)	0.34	-3
Nitrate-Nitrite (mg/L)	ND (0.10)	0
Iron (II) (mg/L)	8.1	3
Sulfate (mg/L)	8	2
Methane (mg/L)	0.556	0
ORP (mV)	-69	2
PCE (released) (ug/L)	8.86	NA
TCE (released) (ug/L)	464	2
DCE (daughter) (ug/L)		
cis-1,2-Dichloroethene	35.6	NA
trans-1,2-Dichloroethene	8.06	NA
1,1-Dichloroethene	2.7	NA
	46.36	0
Ethene/Ethane (mg/L)	7	3
VC (daughter) (ug/L)	ND (1.0)	0
Total MNA Score		9

PQL value for Ethene/Ethane was determined by the sum of individual PQLs

2005 October OUB MNA Tables

AP-3984		
Analyte	October-05	Points Awarded
Dissolved Oxygen (mg/L)	1.64	-3
Nitrate-Nitrite (mg/L)	0.000853	2
Iron (II) (mg/L)	19.2	3
Sulfate (mg/L)	6.81	2
Methane (mg/L)	0.259	0
ORP (mV)	-91	1
PCE (released) (ug/L)	2.57	NA
TCE (released) (ug/L)	180	2
DCE (daughter) (ug/L)		
cis-1,2-Dichloroethene	16.8	NA
trans-1,2-Dichloroethene	2.72	NA
1,1-Dichloroethene	0.420J	NA
	19.94	2
Ethene/Ethane (mg/L)	11.4	3
VC (daughter) (ug/L)	ND (1.0)	0
Total MNA Score		12

PQL value for Ethene/Ethane was determined by the sum of individual PQLs

**FINAL REPORT**  
**FORT RICHARDSON**  
**OUB POLELINE ROAD DISPOSAL AREA**

**APPENDIX A: LOW FLOW SAMPLING**  
**FORMS**

**FORT RICHARDSON, ALASKA**

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**PREPARED FOR:**



**U.S. Army, Directorate of Public Works**  
**Contract No. W911KB-04-P-0091**

**June 2006**



**US Army**  
**Installation Management Agency**



**US Army Corps**  
**of Engineers**®  
Alaska District



Satori Group, Inc.  
1310 E. 66<sup>th</sup> Ave., #2  
Anchorage, AK 99518

Well ID: AP-4350

## Low-Flow Groundwater Sampling with Minimal Drawdown

Project:	Ft. Richardson Groundwater Sampling	Date:	01/01/05
Project #:	USACE Project No: #06-002 OUB	Start Time:	1100
Field Team:	A. CARDELL / R. POHL	End Time:	1205
Sample ID:	0510FROBWA-03	Time:	1205 <u>primary</u> dup
Sample ID:		Time:	primary dup
Sample ID:		Time:	primary dup

Weather Conditions: Breezy Cloudy 15°C

Depth to Top of Product (FTOC): <u>0</u>	Depth to Water (FTOC): <u>147.4</u>
Depth to Oil/Water Interface (FTOC):	Total Depth (FTOC): <u>188.65</u>

Flow Rate: 100ML Low Flow Rate: 0.1 Liter/min., increasing flow rate is permissible

Criteria for Stable Parameters as long as drawdown requirements are met.

Parameter	Working Range	Stability Criteria	Notes
Temperature	>0.00 °C	± 0.5 °C	ideally < 6 °C
pH	0-14	± 0.2	
Conductivity	0-9.99 S/m	± 3%	or ± 0.02 Sm
ORP	± 1999 mV	± 10%	or ± 2 mV
Dissolved Oxygen	0-19.99 mg/L	± 10%	or ± 0.02 mg/L
Turbidity	0-800 NTU	± 10%	or ± 10 NTU

### Sensory Observations

Color: Clear Amber, Tan, Brown, Grey, Milky White, Other:  
 Odor: None Low, Medium, High, Very Strong, H<sub>2</sub>S, Fuel Like, Chemical ?, Unknown  
 Turbidity: None Low, Medium, High, Very Turbid, Heavy Silts

### Instrument Observations

Round	Time	Temp °C	pH	Conductivity (S/m)	Turbidity y	DO (mg/L)	Color	Odor	ORP (mV)	Water Level (ft BTOC)	Draw-down
1	1130	5.31	7.56	204	1.37	12.33	clear	none	215.3	147.35	+ .05
2	1135	4.73	7.23	165	1.23	14.59	clear	none	223.0	147.35	+ .05
3	1140	4.55	7.22	157	1.37	14.76	clear	none	211.7	147.35	+ .05
4	1148	4.47	7.12	158	0.61	12.16	clear	none	202.9	147.35	+ .05
5	1150	4.48	7.07	161	0.85	11.03	clear	none	200.0	147.35	+ .05
6	1155	4.45	7.07	164	0.42	10.25	clear	none	195.6	147.35	+ .05
7	1200	4.52	7.14	168	0.57	9.62	clear	none	189.7	147.35	+ .05
8	1205	4.56	7.14	169	0.19	9.33	clear	none	187.7	147.35	+ .05
9											
10											
11											
12											

#### Notes:

Drawdown should be less than 0.3 feet from the original depth to groundwater for each event.  
 Minimal draw-down shall be achieved and measured by: 1) pumping at a low rate (approximately 1 liter/ 3 minutes and 2) continually measuring water levels in the well.

#### Comments

REMOVED CRREL Sampling Device + put Back when done. WATER took time to come up. Well Recharging well. 2 inch casing, well in good condition. Total Depth = 188.65



Well ID: AP-4544

**Low-Flow Groundwater Sampling with Minimal Drawdown**

Project: Ft. Richardson Groundwater Sampling Date: 10/10/05  
 Project #: USACE Project No: #06-002 OUB Start Time: 1310  
 Field Team: A. Caldwell / R. Pohl End Time: 13:50  
 Sample ID: 0510FROBWA-04 Time: 1350 (primary) dup triplicate ms/msd  
 Sample ID: \_\_\_\_\_ Time: \_\_\_\_\_ primary dup triplicate ms/msd  
 Sample ID: \_\_\_\_\_ Time: \_\_\_\_\_ primary dup triplicate ms/msd  
 Weather Conditions: Partly cloudy 17°C

Depth to Top of Product (FTOC): 0 Depth to Water (FTOC): 149.05  
 Depth to Oil/Water Interface (FTOC): \_\_\_\_\_ Total Depth (FTOC): 165.9  
 Flow Rate: 100ML Low Flow Rate: 0.1 Liter/min., increasing flow rate is permissible

**Criteria for Stable Parameters** as long as drawdown requirements are met.

Parameter	Working Range	Stability Criteria	Notes
Temperature	>0.00 °C	± 0.5 °C	ideally < 6 °C
pH	0-14	± 0.2	
Conductivity	0-9.99 S/m	± 3%	or ± 0.02 Sm
ORP	± 1999 mV	± 10%	or ± 2 mV
Dissolved Oxygen	0-19.99 mg/L	± 10%	or ± 0.02 mg/L
Turbidity	0-800 NTU	± 10%	or ± 10 NTU

**Sensory Observations**

Color: Clear Amber, Tan, Brown, Grey, Milky White, Other:  
 Odor: None Low, Medium, High, Very Strong, H<sub>2</sub>S, Fuel Like, Chemical ?, Unknown  
 Turbidity: None Low, Medium, High, Very Turbid, Heavy Silts

**Instrument Observations**

Round	Time	Temp °C	pH	Conductivity (S/m)	Turbidity y	DO (mg/L)	Color	Odor	ORP (mV)	Water Level (ft BTOC)	Draw-down
1	1325	7.03	7.98	149	0.19	12.02	clear	none	193.4	149.00	1.05
2	1330	6.51	7.97	146	0.52	12.19	clear	none	184.4	149.00	1.05
3	1335	6.16	7.97	145	1.00	13.51	clear	none	186.3	149.05	0
4	1340	5.75	7.82	144	1.20	12.88	clear	none	189.2	149.20 (149.05)	0
5	1345	5.58	7.71	145	0.89	11.55	clear	none	187.4	149.05	0
6	1350	5.45	7.64	146	0.86	11.05	clear	none	183.6	149.05	0
7											
8											
9											
10											
11											
12											

Notes:  
 Drawdown should be less than 0.3 feet from the original depth to groundwater for each event.  
 Minimal draw-down shall be achieved and measured by: 1) pumping at a low rate (approximately 1 liter/ 3 minutes and 2) continually measuring water levels in the well.

**Comments**

Removed CRREL sampling device & put back when done. Two inch casing. Well in good condition. Total Depth = 165.9.

Well ID: AP 4352



**Low-Flow Groundwater Sampling with Minimal Drawdown**

Project: Ft. Richardson Groundwater Sampling Date: 10/10/05  
 Project #: USACE Project No: #06-002 OUB Start Time: 14:30  
 Field Team: A. Caldwell / R. Pohl End Time: 14:55  
 Sample ID: 0510PROBWA-05 Time: 14:55 primary dup triplicate ms/msd  
 Sample ID: \_\_\_\_\_ Time: \_\_\_\_\_ primary dup triplicate ms/msd  
 Sample ID: \_\_\_\_\_ Time: \_\_\_\_\_ primary dup triplicate ms/msd

Weather Conditions: Partly Cloudy 18°C

Depth to Top of Product (FTOC): 0 Depth to Water (FTOC): 26.85  
 Depth to Oil/Water Interface (FTOC): \_\_\_\_\_ Total Depth (FTOC): 33.35

Flow Rate 100 mL @ 50 mL Low Flow Rate: 0.1 Liter/min., increasing flow rate is permissible

**Criteria for Stable Parameters** as long as drawdown requirements are met.

Parameter	Working Range	Stability Criteria	Notes
Temperature	>0.00 °C	± 0.5 °C	ideally < 6 °C
pH	0-14	± 0.2	
Conductivity	0-9.99 S/m	± 3%	or ± 0.02 Sm
ORP	± 1999 mV	± 10%	or ± 2 mV
Dissolved Oxygen	0-19.99 mg/L	± 10%	or ± 0.02 mg/L
Turbidity	0-800 NTU	± 10%	or ± 10 NTU

**Sensory Observations**

Color: Clear, Amber, Tan, Brown, Grey, Milky White Other: \_\_\_\_\_  
 Odor: None, Low, Medium, High, Very Strong, H<sub>2</sub>S, Fuel Like, Chemical ?, Unknown  
 Turbidity: None, Low Medium, High, Very Turbid, Heavy Silts

**Instrument Observations**

Round	Time	Temp °C	pH	Conductivity (S/m)	Turbidity y	DO (mg/L)	Color	Odor	ORP (mV)	Water Level (ft BTOC)	Draw-down
1	<u>1430</u>	<u>5.12</u>	<u>7.66</u>	<u>127</u>	<u>123</u>	<u>18.30</u>	<u>Milky</u>	<u>none</u>	<u>164.4</u>	<u>26.85</u>	<u>0</u>
2	<u>1435</u>	<u>5.70</u>	<u>7.56</u>	<u>129</u>	<u>181</u>	<u>11.91</u>	<u>Milky</u>	<u>none</u>	<u>166.1</u>	<u>27.11</u>	<u>- .26</u>
3	<u>1440</u>	<u>6.04</u>	<u>7.61</u>	<u>131</u>	<u>205</u>	<u>11.41</u>	<u>Milky</u>	<u>none</u>	<u>162.3</u>	<u>27.30</u>	<u>- .45</u>
4	<u>1445</u>	<u>6.49</u>	<u>7.64</u>	<u>133</u>	<u>205</u>	<u>11.34</u>	<u>Milky</u>	<u>none</u>	<u>160.2</u>	<u>27.40</u>	<u>- .55</u>
5	<u>1450</u>	<u>6.98</u>	<u>7.61</u>	<u>135</u>	<u>254</u>	<u>11.71</u>	<u>Milky</u>	<u>none</u>	<u>160.5</u>	<u>27.45</u>	<u>- .60</u>
6	<u>1455</u>	<u>6.50</u>	<u>7.64</u>	<u>135</u>	<u>255</u>	<u>11.95</u>	<u>Milky</u>	<u>none</u>	<u>160.5</u>	<u>27.70</u>	<u>- .85</u>
7											
8											
9											
10											
11											
12											

Notes:  
 Drawdown should be less than 0.3 feet from the original depth to groundwater for each event.  
 Minimal draw-down shall be achieved and measured by: 1) pumping at a low rate (approximately 1 liter/ 3 minutes and 2) continually measuring water levels in the well.

**Comments**

No CRREL sampling device present. Two inch casing. Well in good condition. Total well depth = 33.35. Well slow to recharge. Flow Rate adjusted to 50 mL.

Well ID: AP4345

### Low-Flow Groundwater Sampling with Minimal Drawdown

Project: Ft. Richardson Groundwater Sampling Date: 10/16/65  
 Project #: USACE Project No: #06-002 OUB Start Time: 0930  
 Field Team: A. Caldwell / B. Gunde End Time: 1055  
 Sample ID: 05DFR06WA-06 Time: 1055 (primary) dup triplicate ms/msd  
 Sample ID: \_\_\_\_\_ Time: \_\_\_\_\_ primary dup triplicate ms/msd  
 Sample ID: \_\_\_\_\_ Time: \_\_\_\_\_ primary dup triplicate ms/msd

Weather Conditions: Clear Cold 30° F

Depth to Top of Product (FTOC): 0 Depth to Water (FTOC): 154.92  
 Depth to Oil/Water Interface (FTOC): \_\_\_\_\_ Total Depth (FTOC): 187.93

Flow Rate: 100 ML Low Flow Rate: 0.1 Liter/min., increasing flow rate is permissible

#### Criteria for Stable Parameters as long as drawdown requirements are met.

Parameter	Working Range	Stability Criteria	Notes
Temperature	>0.00 °C	± 0.5 °C	ideally < 6 °C
pH	0-14	± 0.2	
Conductivity	0-9.99 S/m	± 3%	or ± 0.02 Sm
ORP	± 1999 mV	± 10%	or ± 2 mV
Dissolved Oxygen	0-19.99 mg/L	± 10%	or ± 0.02 mg/L
Turbidity	0-800 NTU	± 10%	or ± 10 NTU

#### Sensory Observations

Color: Clear Amber, Tan, Brown, Grey, Milky White, Other:  
 Odor: None Low, Medium, High, Very Strong, H<sub>2</sub>S, Fuel Like, Chemical ?, Unknown  
 Turbidity: None, Low Medium, High, Very Turbid, Heavy Silts

#### Instrument Observations

Round	Time	Temp °C	pH	Conductivity (S/m)	Turbidity y	DO (mg/L)	Color	Odor	ORP (mV)	Water Level (ft BTOC)	Draw-down
1	10:20	2.20	8.09	136	2.41	17.28	Clear	NONE	152.9	154.92	0
2	10:25	2.19	8.03	137	2.39	14.81	Clear	NONE	149.9	154.94	-0.02
3	10:30	2.33	7.90	132	2.14	14.16	Clear	NONE	186.0	154.92	0
4	10:35	2.35	7.76	123	2.82	14.05	Clear	NONE	262.0	154.92	0
5	10:40	2.50	7.74	116	2.52	13.59	Clear	NONE	440.5	154.92	0
6	10:45	2.70	7.72	114	4.38	13.72	Clear	NONE	476.6	154.91	+0.01
7	10:50	2.86	7.65	115	6.02	13.34	Clear	NONE	482.3	154.92	0
8	10:55	3.03	7.60	119	7.32	13.45	Clear	NONE	497.2	154.92	0
9											
10											
11											
12											

#### Notes:

Drawdown should be less than 0.3 feet from the original depth to groundwater for each event.  
 Minimal draw-down shall be achieved and measured by: 1) pumping at a low rate (approximately 1 liter/ 3 minutes and 2) continually measuring water levels in the well.

#### Comments

Well in good condition. Recharge well. Pulled CEREL sampling device from well + replaced. ORP reading increased on round 4 significantly. Levelled out + became stable. Total Depth is 187.93 ft.



Well ID: AP-3748

**Low-Flow Groundwater Sampling with Minimal Drawdown**

Project: Ft. Richardson Groundwater Sampling  
 Project #: USACE Project No: #06-002 OUB  
 Field Team: A Caldwell / B. Quade  
 Sample ID: 0510FROBWA-07 Time: 12:45 primary dup  
 Sample ID: \_\_\_\_\_ Time: \_\_\_\_\_ primary dup  
 Sample ID: \_\_\_\_\_ Time: \_\_\_\_\_ primary dup

Date: 10/11/05  
 Start Time: 12:05  
 End Time: 12:45

Weather Conditions: clear, cold, 35°F

Depth to Top of Product (FTOC): \_\_\_\_\_ Depth to Water (FTOC): 132.67  
 Depth to Oil/Water Interface (FTOC): \_\_\_\_\_ Total Depth (FTOC): 172.98

Flow Rate 100 ml Low Flow Rate: 0.1 Liter/min., increasing flow rate is permissible

**Criteria for Stable Parameters** as long as drawdown requirements are met.

Parameter	Working Range	Stability Criteria	Notes
Temperature	>0.00 °C	± 0.5 °C	ideally < 6 °C
pH	0-14	± 0.2	
Conductivity	0-9.99 S/m	± 3%	or ± 0.02 Sm
ORP	± 1999 mV	± 10%	or ± 2 mV
Dissolved Oxygen	0-19.99 mg/L	± 10%	or ± 0.02 mg/L
Turbidity	0-800 NTU	± 10%	or ± 10 NTU

**Sensory Observations**

Color: Clear, Amber, Tan, Brown, Grey, Milky White, Other:  
 Odor: None Low, Medium, High, Very Strong, H<sub>2</sub>S, Fuel Like, Chemical ?, Unknown  
 Turbidity: None, Low Medium, High, Very Turbid, Heavy Silts

**Instrument Observations**

Round	Time	Temp °C	pH	Conductivity (S/m)	Turbidity y	DO (mg/L)	Color	Odor	ORP (mV)	Water Level (ft BTOC)	Draw-down
1	12:15	4.12	8.28	101.0	1.27	13.27	clear	NONE	200.6	132.67	0
2	12:20	4.34	8.18	187	1.52	15.41	clear	NONE	203.8	132.60	+0.07
3	12:25	4.41	7.93	190	1.26	11.21	clear	NONE	200.2	132.62	+0.05
4	12:30	4.36	7.85	190	0.91	8.95	clear	NONE	193.9	132.61	+0.06
5	12:35	4.21	7.84	189	0.70	8.54	clear	NONE	191.1	132.61	+0.06
6	12:40	4.15	7.83	189	0.60	8.38	clear	NONE	188.1	132.60	+0.07
7	12:45	4.10	7.83	189	0.77	8.51	clear	NONE	184.4	132.60	+0.07
8											
9											
10											
11											
12											

Notes:  
 Drawdown should be less than 0.3 feet from the original depth to groundwater for each event.  
 Minimal draw-down shall be achieved and measured by: 1) pumping at a low rate (approximately 1 liter/ 3 minutes and 2) continually measuring water levels in the well.

**Comments**

*Well in good condition. Well sampling is recharging good. 2 in casing.  
 TOTAL DEPTH 172.98 Removed CRREL monitor + Replaced when done.*



Well ID: AP3747

### Low-Flow Groundwater Sampling with Minimal Drawdown

Project: Ft. Richardson Groundwater Sampling Date: 10/11/05  
 Project #: USACE Project No: #06-002 OUB Start Time: 13:35  
 Field Team: A. Caldwell / B. Quade End Time: 14:00  
 Sample ID: 0510 FROBWA-08 Time: 14:00 (primary) dup triplicate ms/msd  
 Sample ID: \_\_\_\_\_ Time: \_\_\_\_\_ primary dup triplicate ms/msd  
 Sample ID: \_\_\_\_\_ Time: \_\_\_\_\_ primary dup triplicate ms/msd

Weather Conditions: clear, no wind, 36 ° F

Depth to Top of Product (FTOC): ∅ Depth to Water (FTOC): 24.25  
 Depth to Oil/Water Interface (FTOC): \_\_\_\_\_ Total Depth (FTOC): 33.15

Flow Rate 100 ml Low Flow Rate: 0.1 Liter/min., increasing flow rate is permissible

**Criteria for Stable Parameters** as long as drawdown requirements are met.

Parameter	Working Range	Stability Criteria	Notes
Temperature	>0.00 °C	± 0.5 °C	ideally < 6 °C
pH	0-14	± 0.2	
Conductivity	0-9.99 S/m	± 3%	or ± 0.02 Sm
ORP	± 1999 mV	± 10%	or ± 2 mV
Dissolved Oxygen	0-19.99 mg/L	± 10%	or ± 0.02 mg/L
Turbidity	0-800 NTU	± 10%	or ± 10 NTU

**Sensory Observations**

Color: Clear Amber, Tan, Brown, Grey, Milky White, Other:  
 Odor: None Low, Medium, High, Very Strong, H<sub>2</sub>S, Fuel Like, Chemical ?, Unknown  
 Turbidity: None, Low Medium, High, Very Turbid, Heavy Silts

**Instrument Observations**

Round	Time	Temp °C	pH	Conductivity (S/m)	Turbidity	DO (mg/L)	Color	Odor	ORP (mV)	Water Level (ft BTOC)	Draw-down
1	13:40	4.19	7.96	97	1.41	13.05	clear	NONE	202.7	24.25	∅
2	13:45	4.02	7.83	94	0.99	12.42	clear	NONE	202.8	24.35	-0.10
3	13:50	3.98	7.81	94	0.88	12.35	clear	NONE	202.8	24.44	-0.19
4	13:55	4.16	7.79	94	0.71	11.91	clear	NONE	201.2	24.48	-0.23
5	14:00	4.64	7.78	95	0.77	11.87	clear	NONE	199.8	24.49	-0.24
6											
7											
8											
9											
10											
11											
12											

Notes:  
 Drawdown should be less than 0.3 feet from the original depth to groundwater for each event.  
 Minimal draw-down shall be achieved and measured by: 1) pumping at a low rate (approximately 1 liter/ 3 minutes and 2) continually measuring water levels in the well.

**Comments**

*Well is in good condition. CRREL was removed for sampling well. Drawdown was observed to be high. Attributed to shallow well conditions. Replaced CRREL when done. Total Depth - 33.15*

Well ID: AP-4011



### Low-Flow Groundwater Sampling with Minimal Drawdown

Project:	<u>Ft. Richardson Groundwater Sampling</u>	Date:	<u>10/11/05</u>
Project #:	<u>USACE Project No: #06-002 OUB</u>	Start Time:	<u>14:35</u>
Field Team:	<u>A. Caldwell + B. Quade</u>	End Time:	<u>15:20</u>
Sample ID:	<u>0510 FROBWA-09</u>	Time:	<u>15:20</u> (primary) dup triplicate ms/msd
Sample ID:		Time:	primary dup triplicate ms/msd
Sample ID:		Time:	primary dup triplicate ms/msd

Weather Conditions: clear, sunny, no wind, 45°F

Depth to Top of Product (FTOC):	<u>0</u>	Depth to Water (FTOC):	<u>122.14</u>
Depth to Oil/Water Interface (FTOC):		Total Depth (FTOC):	<u>140.40</u>
Flow Rate	<u>100 ml</u>	Low Flow Rate: 0.1 Liter/min., increasing flow rate is permissible	

**Criteria for Stable Parameters** as long as drawdown requirements are met.

Parameter	Working Range	Stability Criteria	Notes
Temperature	>0.00 °C	± 0.5 °C	ideally < 6 °C
pH	0-14	± 0.2	
Conductivity	0-9.99 S/m	± 3%	or ± 0.02 Sm
ORP	± 1999 mV	± 10%	or ± 2 mV
Dissolved Oxygen	0-19.99 mg/L	± 10%	or ± 0.02 mg/L
Turbidity	0-800 NTU	± 10%	or ± 10 NTU

**Sensory Observations**

Color: Clear, Amber, Tan, Brown, Grey, Milky White, Other:  
 Odor: None, Low, Medium, High, Very Strong, H<sub>2</sub>S, Fuel Like, Chemical ?, Unknown  
 Turbidity: None, Low, Medium, High, Very Turbid, Heavy Silts

**Instrument Observations**

Round	Time	Temp °C	pH	Conductivity (S/m)	Turbidity y	DO (mg/L)	Color	Odor	ORP (mV)	Water Level (ft BTOC)	Draw-down
1	14:55	5.42	8.11	113	1.18	16.46	clear	NONE	291.0	122.14	0
2	15:00	4.58	8.06	134	0.48	12.80	clear	NONE	214.5	121.80	+0.34
3	15:05	4.46	8.04	134	0.40	12.49	clear	NONE	204.7	121.91	+0.23
4	15:10	4.35	8.06	133	0.97	12.61	clear	NONE	201.4	121.91	+0.23
5	15:15	4.23	8.05	133	1.03	12.00	clear	NONE	199.4	121.81	+0.33
6	15:20	4.40	8.09	133	1.18	12.53	clear	NONE	197.2	121.81	+0.33
7											
8											
9											
10											
11											
12											

Notes:  
 Drawdown should be less than 0.3 feet from the original depth to groundwater for each event.  
 Minimal draw-down shall be achieved and measured by: 1) pumping at a low rate (approximately 1 liter/ 3 minutes and 2) continually measuring water levels in the well.

**Comments**

*Well is in good condition. No CRREL was in use at this well. 4" casing. well recharging quickly. Total Depth=140.4*

Well ID: AP-3749



**Low-Flow Groundwater Sampling with Minimal Drawdown**

Project: Ft. Richardson Groundwater Sampling Date: 10/11/05  
 Project #: USACE Project No: #06-002 OUB Start Time: 16:10  
 Field Team: A. Caldwell + B. Quade End Time: 1700  
 Sample ID: 0510 FR OBWA-10 Time: 1700 primary dup triplicate ms/msd  
 Sample ID: \_\_\_\_\_ Time: \_\_\_\_\_ primary dup triplicate ms/msd  
 Sample ID: \_\_\_\_\_ Time: \_\_\_\_\_ primary dup triplicate ms/msd

Weather Conditions: SUNNY, NO wind, 45°F

Depth to Top of Product (FTOC): 0 Depth to Water (FTOC): 20.35  
 Depth to Oil/Water Interface (FTOC): \_\_\_\_\_ Total Depth (FTOC): 24.59

Flow Rate: 100 ml Low Flow Rate: 0.1 Liter/min., increasing flow rate is permissible

**Criteria for Stable Parameters** as long as drawdown requirements are met.

Parameter	Working Range	Stability Criteria	Notes
Temperature	>0.00 °C	± 0.5 °C	ideally < 6 °C
pH	0-14	± 0.2	
Conductivity	0-9.99 S/m	± 3%	or ± 0.02 Sm
ORP	± 1999 mV	± 10%	or ± 2 mV
Dissolved Oxygen	0-19.99 mg/L	± 10%	or ± 0.02 mg/L
Turbidity	0-800 NTU	± 10%	or ± 10 NTU

**Sensory Observations**

Color: Clear Amber, Tan, Brown, Grey, Milky White, Other:  
 Odor: None Low, Medium, High, Very Strong, H<sub>2</sub>S, Fuel Like, Chemical ?, Unknown  
 Turbidity: None, Low Medium, High, Very Turbid, Heavy Silts

**Instrument Observations**

Round	Time	Temp °C	pH	Conductivity (S/m)	Turbidity	DO (mg/L)	Color	Odor	ORP (mV)	Water Level (ft BTOC)	Draw-down
1	16:20	4.53	7.88	105	4.49	13.20	clear	NONE	212.3	20.35	0
2	16:25	4.00	7.50	112	4.49	12.43	clear	NONE	224.4	20.31	+0.46
3	16:30	3.87	7.44	112	4.49	12.11	clear	NONE	224.3	20.30	+0.40
4	16:35	3.98	7.46	112	4.49	11.88	clear	NONE	222.3	20.29	+0.60
5	16:40	3.97	7.50	105	4.49	11.85	clear	NONE	221.0	20.31	+0.40
6	16:45	3.93	7.51	110	4.49	11.21	clear	NONE	221.9	20.30	+0.50
7	16:50	4.01	7.52	113	4.49	12.00	clear	NONE	222.2	20.30	+0.05
8	16:55	3.99	7.54	113	4.49	11.67	clear	NONE	221.7	20.30	+0.05
9	17:00	3.97	7.54	114	4.49	11.75	clear	NONE	221.6	20.29	+0.06
10											
11											
12											

Notes:  
 Drawdown should be less than 0.3 feet from the original depth to groundwater for each event.  
 Minimal draw-down shall be achieved and measured by: 1) pumping at a low rate (approximately 1 liter/ 3 minutes and 2) continually measuring water levels in the well.

**Comments**

*Well is in good condition. 4" casing. Well is recharging quickly.  
 Total Depth - 24.59*

Well ID: AP-3982

## Low-Flow Groundwater Sampling with Minimal Drawdown

Project:	Ft. Richardson Groundwater Sampling	Date:	10/12
Project #:	USACE Project No: #06-002 OUB	Start Time:	955
Field Team:	A. Caldwell / R. Pohl	End Time:	1035
Sample ID:	OS10FROBWA-11	Time:	1035 <u>primary</u> dup triplicate ms/msd
Sample ID:		Time:	primary dup triplicate ms/msd
Sample ID:		Time:	primary dup triplicate ms/msd

Weather Conditions: Cloudy, Calm, 42°F

Depth to Top of Product (FTOC): 0      Depth to Water (FTOC): 25.75  
 Depth to Oil/Water Interface (FTOC): \_\_\_\_\_      Total Depth (FTOC): 37.11

Flow Rate: 100 mL      Low Flow Rate: 0.1 Liter/min., increasing flow rate is permissible

**Criteria for Stable Parameters** as long as drawdown requirements are met.

Parameter	Working Range	Stability Criteria	Notes
Temperature	>0.00 °C	± 0.5 °C	ideally < 6 °C
pH	0-14	± 0.2	
Conductivity	0-9.99 S/m	± 3%	or ± 0.02 Sm
ORP	± 1999 mV	± 10%	or ± 2 mV
Dissolved Oxygen	0-19.99 mg/L	± 10%	or ± 0.02 mg/L
Turbidity	0-800 NTU	± 10%	or ± 10 NTU

### Sensory Observations

Color: Clear Amber, Tan, Brown, Grey, Milky White, Other:  
 Odor: None Low, Medium, High, Very Strong, H<sub>2</sub>S, Fuel Like, Chemical ?, Unknown  
 Turbidity: None Low, Medium, High, Very Turbid, Heavy Silts

### Instrument Observations

Round	Time	Temp °C	pH	Conductivity (S/m)	Turbidity y	DO (mg/L)	Color	Odor	ORP (mV)	Water Level (ft BTOC)	Draw-down
1	955	3.93	8.32	119	38.3	10.70	clear	none	148.0	25.77	0
2	1000	3.75	8.74	107	35.4	2.73	clear	none	92.7	25.85	-0.10
3	1005	3.70	8.43	106	33.1	2.86	clear	none	90.9	25.85	-0.10
4	1010	3.68	7.97	109	26.6	4.04	clear	none	96.1	25.85	-0.10
5	1015	3.62	7.64	110	25.7	4.72	clear	none	87.8	25.80	-0.05
6	1020	3.66	7.47	112	23.4	4.83	clear	none	62.0	25.80	-0.05
7	1025	3.61	7.36	113	21.9	5.09	clear	none	57.6	25.82	-0.07
8	1030	3.62	7.26	114	20.9	5.28	clear	none	59.4	25.82	-0.07
9	1035	3.63	7.25	115	19.2	5.30	clear	none	55.5	25.85	-0.10
10											
11											
12											

#### Notes:

Drawdown should be less than 0.3 feet from the original depth to groundwater for each event.  
 Minimal draw-down shall be achieved and measured by: 1) pumping at a low rate (approximately 1 liter/ 3 minutes and 2) continually measuring water levels in the well.

### Comments

Well in good condition. 4 inch casing. Removed CRREL monitor, replaced when finished. Total depth - 37.11

Well ID: AP-3745

### Low-Flow Groundwater Sampling with Minimal Drawdown

Project: Ft. Richardson Groundwater SamplingDate: 10/12/05Project #: USACE Project No: #06-002 OUBStart Time: 1120Field Team: A. Caldwell / R. PohlEnd Time: 1215Sample ID: 0510FR08WA-12Time: 1215 primary

dup

triplicate ms/msd

Sample ID: \_\_\_\_\_

Time: \_\_\_\_\_ primary

dup

triplicate ms/msd

Sample ID: \_\_\_\_\_

Time: \_\_\_\_\_ primary

dup

triplicate ms/msd

Weather Conditions: cloudy 40°FRPDepth to Top of Product (FTOC): 0Depth to Water (FTOC): 20.8 20.88

Depth to Oil/Water Interface (FTOC): \_\_\_\_\_

Total Depth (FTOC): 29.53Flow Rate 100 mL

Low Flow Rate: 0.1 Liter/min., increasing flow rate is permissible

#### Criteria for Stable Parameters

as long as drawdown requirements are met.

Parameter	Working Range	Stability Criteria	Notes
Temperature	>0.00 °C	± 0.5 °C	ideally < 6 °C
pH	0-14	± 0.2	
Conductivity	0-9.99 S/m	± 3%	or ± 0.02 Sm
ORP	± 1999 mV	± 10%	or ± 2 mV
Dissolved Oxygen	0-19.99 mg/L	± 10%	or ± 0.02 mg/L
Turbidity	0-800 NTU	± 10%	or ± 10 NTU

#### Sensory Observations

Color: Clear Amber, Tan, Brown, Grey, Milky White, Other:Odor: None Low, Medium, High, Very Strong, H<sub>2</sub>S, Fuel Like, Chemical ?, UnknownTurbidity: None Low, Medium, High, Very Turbid, Heavy Silts

#### Instrument Observations

Round	Time	Temp °C	pH	Conductivity (S/m)	Turbidity y	DO (mg/L)	Color	Odor	ORP (mV)	Water Level (ft BTOC)	Draw-down
1	1120	5.75	6.85	190	3.55	7.01	clear	none	166.7	20.90	-.02
2	1125	5.64	6.80	191	1.05	4.03	clear	none	161.7	20.94	-.06
3	1130	5.63	6.68	186	0.92	4.37	clear	none	165.9	20.95	-.07
4	1135	5.61	6.71	196	1.16	3.03	clear	none	159.6	20.95	-.07
5	1140	5.69	6.75	192	1.71	5.58	clear	none	163.2	20.94	-.06
6	1145	5.69	6.56	183	0.80	4.46	clear	none	172.2	20.94	-.06
7	1150	5.71	6.60	184	0.91	4.36	clear	none	174.6	20.95	-.07
8	1155	5.72	6.55	183	0.89	5.50	clear	none	182.0	20.97	-.09
9	1200	5.67	6.71	196	0.86	3.27	clear	none	169.2	20.97	-.09
10	1205	5.71	6.64	187	0.79	4.11	clear	none	172.7	20.96	-.08
11	1210	5.70	6.60	185	0.83	4.32	clear	none	171.6	20.96	-.08
12	1215	5.70	6.61	185	0.82	4.35	clear	none	179.1	20.95	-.07

#### Notes:

Drawdown should be less than 0.3 feet from the original depth to groundwater for each event.

Minimal draw-down shall be achieved and measured by: 1) pumping at a low rate (approximately 1 liter/ 3 minutes and 2) continually measuring water levels in the well.

#### Comments

Well in good condition. 4 inch casing. No CRRRL devise.  
Total Depth = 29.53

Well ID: AP-4550



### Low-Flow Groundwater Sampling with Minimal Drawdown

Project: Ft. Richardson Groundwater Sampling Date: 10/12/05  
 Project #: USACE Project No: #06-002 OUB Start Time: 1250  
 Field Team: A. Caldwell / R. Pohl End Time: 1340  
 Sample ID: 0510FLORWA-13 Time: 1340 primary dup triplicate ms/msd  
 Sample ID: 0510FLORWA-14 Time: 1310 primary dup triplicate ms/msd  
 Sample ID: \_\_\_\_\_ Time: \_\_\_\_\_ primary dup triplicate ms/msd

Weather Conditions: Cloudy, 40°F

Depth to Top of Product (FTOC): 0 Depth to Water (FTOC): 24.80  
 Depth to Oil/Water Interface (FTOC): \_\_\_\_\_ Total Depth (FTOC): 42.30

Flow Rate: 100 mL Low Flow Rate: 0.1 Liter/min., increasing flow rate is permissible

Criteria for Stable Parameters as long as drawdown requirements are met.

Parameter	Working Range	Stability Criteria	Notes
Temperature	>0.00 °C	± 0.5 °C	ideally < 6 °C
pH	0-14	± 0.2	
Conductivity	0-9.99 S/m	± 3%	or ± 0.02 Sm
ORP	± 1999 mV	± 10%	or ± 2 mV
Dissolved Oxygen	0-19.99 mg/L	± 10%	or ± 0.02 mg/L
Turbidity	0-800 NTU	± 10%	or ± 10 NTU

### Sensory Observations

Color: Clear, Amber, Tan, Brown, Grey, Milky White, Other:  
 Odor: None, Low, Medium, High, Very Strong, H<sub>2</sub>S, Fuel Like, Chemical ?, Unknown  
 Turbidity: None, Low, Medium, High, Very Turbid, Heavy Silts

### Instrument Observations

Round	Time	Temp °C	pH	Conductivity (S/m)	Turbidity y	DO (mg/L)	Color	Odor	ORP (mV)	Water Level (ft BTOC)	Draw-down
1	1258	8.02	6.75	290	8.48	3.10	clear	none	45.7	24.75	+ .05
2	1255	7.67	6.67	291	6.25	1.11	clear	none	10.0	24.70	+ .10
3	1300	7.33	6.66	290	7.52	.75	clear	none	-18.4	24.71	+ .09
4	1305	7.15	6.62	293	60.3	.50	clear	none	-34.9	24.70	+ .10
5	1310	7.10	6.59	290	34.1	.39	clear	none	-38.1	24.76	+ .04
6	1315	7.12	6.60	290	31.8	.39	clear	none	-40.0	24.74	+ .06
7	1320	7.05	6.63	288	19.7	.38	clear	none	-41.8	24.76	+ .04
8	1325	7.07	6.57	288	12.3	.46	clear	none	-42.8	24.76	+ .04
9	1330	7.01	6.58	287	10.7	.35	clear	none	-43.7	24.73	+ .07
10	1335	6.89	6.58	286	7.54	.35	clear	low	-43.6	24.73	+ .07
11	1340	7.08	6.57	286	8.61	.33	clear	low	-43.8	24.76	+ .04
12											

### Notes:

Drawdown should be less than 0.3 feet from the original depth to groundwater for each event.  
 Minimal draw-down shall be achieved and measured by: 1) pumping at a low rate (approximately 1 liter/ 3 minutes and 2) continually measuring water levels in the well.

### Comments

Well in good condition. 2 inch casing. No CRREL devise.  
 Total depth = 42.30. Actual time taken of dup. 1340.  
 False well # for dup. is AP-4599

Well ID: AP-3989**Low-Flow Groundwater Sampling with Minimal Drawdown**Project: Ft. Richardson Groundwater SamplingDate: 10/2/05Project #: USACE Project No: #06-002 OUBStart Time: 13:25Field Team: A. Caldwell / R. PohlEnd Time: 1550Sample ID: 0510FRDBWA-15Time: 1550 (primary) dup

triplicate ms/msd

Sample ID: \_\_\_\_\_

Time: \_\_\_\_\_ primary dup

triplicate ms/msd

Sample ID: \_\_\_\_\_

Time: \_\_\_\_\_ primary dup

triplicate ms/msd

Weather Conditions: Cloudy, 40° FDepth to Top of Product (FTOC): 0Depth to Water (FTOC): 27.45

Depth to Oil/Water Interface (FTOC): \_\_\_\_\_

Total Depth (FTOC): 36.29

Flow Rate

100 mL

Low Flow Rate: 0.1 Liter/min., increasing flow rate is permissible

**Criteria for Stable Parameters**

as long as drawdown requirements are met.

Parameter	Working Range	Stability Criteria	Notes
Temperature	>0.00 °C	± 0.5 °C	ideally < 6 °C
pH	0-14	± 0.2	
Conductivity	0-9.99 S/m	± 3%	or ± 0.02 Sm
ORP	± 1999 mV	± 10%	or ± 2 mV
Dissolved Oxygen	0-19.99 mg/L	± 10%	or ± 0.02 mg/L
Turbidity	0-800 NTU	± 10%	or ± 10 NTU

**Sensory Observations**Color: Clear Amber, Tan, Brown, Grey, Milky White, Other:Odor: None Low, Medium, High, Very Strong, H<sub>2</sub>S, Fuel Like, Chemical ?, UnknownTurbidity: None Low, Medium, High, Very Turbid, Heavy Silts**Instrument Observations**

Round	Time	Temp °C	pH	Conductivity (S/m)	Turbidity y	DO (mg/L)	Color	Odor	ORP (mV)	Water Level (ft BTOC)	Draw-down
1	1525	6.00	6.48	225	10.1	2.32	clear	none	415.0	27.45	0
2	1530	6.03	6.60	214	6.95	5.48	clear	none	340.0	27.75	- .30
3	1535	5.98	6.57	222	11.8	4.31	clear	none	317.4	28.00	-.55
4	1540	5.95	6.63	226	12.6	2.75	clear	none	302.3	27.85	-.40
5	1545	5.90	6.64	226	10.4	2.64	clear	none	289.9	27.86	-.41
6	1550	5.97	6.66	228	9.77	2.50	clear	none	279.2	27.72	-.33
7											
8											
9											
10											
11											
12											

**Notes:**

Drawdown should be less than 0.3 feet from the original depth to groundwater for each event.

Minimal draw-down shall be achieved and measured by: 1) pumping at a low rate (approximately 1 liter/ 3 minutes and 2) continually measuring water levels in the well.

**Comments**

Well in good condition. 2 inch casing. No CREL device.  
 Total depth = ca 36.29. Compressor pressure reduced to lessen drawdown. Drawdown stabilized after adjustment.

Well ID: AP-4525

### Low-Flow Groundwater Sampling with Minimal Drawdown

Project: Ft. Richardson Groundwater SamplingDate: 10/12/05Project #: USACE Project No: #06-002 OUBStart Time: 1430Field Team: A. Caldwell / R. PohlEnd Time: 1645Sample ID: 051FROBWA-16Time: 1645 primary dup

triplicate ms/msd

Sample ID: \_\_\_\_\_

Time: \_\_\_\_\_ primary dup

triplicate ms/msd

Sample ID: \_\_\_\_\_

Time: \_\_\_\_\_ primary dup

triplicate ms/msd

Weather Conditions: Cloudy, 40°FDepth to Top of Product (FTOC): 0Depth to Water (FTOC): 26.22

Depth to Oil/Water Interface (FTOC): \_\_\_\_\_

Total Depth (FTOC): 27.22

Flow Rate: \_\_\_\_\_

Low Flow Rate: 0.1 Liter/min., increasing flow rate is permissible

#### Criteria for Stable Parameters

as long as drawdown requirements are met.

Parameter	Working Range	Stability Criteria	Notes
Temperature	>0.00 °C	± 0.5 °C	ideally < 6 °C
pH	0-14	± 0.2	
Conductivity	0-9.99 S/m	± 3%	or ± 0.02 Sm
ORP	± 1999 mV	± 10%	or ± 2 mV
Dissolved Oxygen	0-19.99 mg/L	± 10%	or ± 0.02 mg/L
Turbidity	0-800 NTU	± 10%	or ± 10 NTU

#### Sensory Observations

Color: Clear Amber, Tan, Brown, Grey, Milky White, Other:Odor: None Low, Medium, High, Very Strong, H<sub>2</sub>S, Fuel Like, Chemical ?, UnknownTurbidity: None Low, Medium, High, Very Turbid, Heavy Silts

#### Instrument Observations

Round	Time	Temp °C	pH	Conductivity (S/m)	Turbidity	DO (mg/L)	Color	Odor	ORP (mV)	Water Level (ft BTOC)	Draw-down
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											

Notes:

Drawdown should be less than 0.3 feet from the original depth to groundwater for each event.

Minimal draw-down shall be achieved and measured by: 1) pumping at a low rate (approximately 1 liter/ 3 minutes and 2) continually measuring water levels in the well.

#### Comments

Not enough H<sub>2</sub>O to pump, bailer used instead.  
 $127.22 - 126.33 = 0.89 \times 0.163 = 0.145 \times 4 = 0.58 \text{ gal.}$   
 0.25 gal removed, dry. At two hrs >90% recharge.

Well in good condition, 2 inch casing.  
 Total depth 127.22.

Well ID: AP-4019**Low-Flow Groundwater Sampling with Minimal Drawdown**

Project: Ft. Richardson Groundwater Sampling Date: 10/13/05  
 Project #: USACE Project No: #06-002 OUB Start Time: 1010  
 Field Team: A. Caldwell / R. Pali End Time: 1045  
 Sample ID: 0510FROBWA-17 Time: 1045 primary dup triplicate ms/msd  
 Sample ID: \_\_\_\_\_ Time: \_\_\_\_\_ primary dup triplicate ms/msd  
 Sample ID: \_\_\_\_\_ Time: \_\_\_\_\_ primary dup triplicate ms/msd

Weather Conditions: Cloudy, 35°F

Depth to Top of Product (FTOC): 0 Depth to Water (FTOC): 136.38  
 Depth to Oil/Water Interface (FTOC): \_\_\_\_\_ Total Depth (FTOC): 158.40

Flow Rate 100 mL Low Flow Rate: 0.1 Liter/min., increasing flow rate is permissible**Criteria for Stable Parameters** as long as drawdown requirements are met.

Parameter	Working Range	Stability Criteria	Notes
Temperature	>0.00 °C	± 0.5 °C	ideally < 6 °C
pH	0-14	± 0.2	
Conductivity	0-9.99 S/m	± 3%	or ± 0.02 Sm
ORP	± 1999 mV	± 10%	or ± 2 mV
Dissolved Oxygen	0-19.99 mg/L	± 10%	or ± 0.02 mg/L
Turbidity	0-800 NTU	± 10%	or ± 10 NTU

**Sensory Observations**

Color: Clear Amber, Tan, Brown, Grey, Milky White, Other:  
 Odor: None Low, Medium, High, Very Strong, H<sub>2</sub>S, Fuel Like, Chemical ?, Unknown  
 Turbidity: None Low, Medium, High, Very Turbid, Heavy Silts

**Instrument Observations**

Round	Time	Temp °C	pH	Conductivity (S/m)	Turbidity y	DO (mg/L)	Color	Odor	ORP (mV)	Water Level (ft BTOC)	Draw-down
1	1010	1.78	7.78	90	9.77	9.57	clear	none	309.8	136.00	+ .38
2	1015	2.32	7.67	91	2.06	14.10	clear	none	332.6	135.98	+ .40
3	1020	2.70	7.63	99	1.62	11.73	clear	none	336.4	136.06	+ .32
4	1025	2.54	7.80	111	1.43	10.27	clear	none	292.6	135.85	+ .53
5	1030	2.40	7.89	112	1.71	9.37	clear	none	271.4	135.85	+ .53
6	1035	1.82	7.89	111	1.50	10.07	clear	none	262.9	135.85	+ .53
7	1040	2.00	7.86	112	1.28	9.88	clear	none	257.2	135.84	+ .54
8	1045	2.01	7.91	113	1.17	10.23	clear	none	254.1	135.83	+ .55
9											
10											
11											
12											

**Notes:**

Drawdown should be less than 0.3 feet from the original depth to groundwater for each event.  
 Minimal draw-down shall be achieved and measured by: 1) pumping at a low rate (approximately 1 liter/ 3 minutes and 2) continually measuring water levels in the well.

**Comments**

Well in good condition. No well casing cover, 4 inch casing.  
 Total Depth = 158.40

Well ID: AP 3983

### Low-Flow Groundwater Sampling with Minimal Drawdown

Project: Ft. Richardson Groundwater SamplingDate: 10/13/07Project #: USACE, Project No: #06-002 OUBStart Time: 1425Field Team: A. Caldwell / R. PohlEnd Time: 1515Sample ID: 0510FROBWA - 18Time: 1515 primarydup

triplicate ms/msd

Sample ID: 0510FROBWA - 19Time: 1445 primarydup

triplicate ms/msd

Sample ID: 0510FROBWA - 20Time: 1645 primarydup

triplicate ms/msd

Weather Conditions: Cloudy, 38°F

EQ. Blank

Depth to Top of Product (FTOC): 0Depth to Water (FTOC): 23.05 24.25Depth to Oil/Water Interface (FTOC): 0Total Depth (FTOC): 30.35Flow Rate 100 ml 50 ml

Low Flow Rate: 0.1 Liter/min., increasing flow rate is permissible

#### Criteria for Stable Parameters

as long as drawdown requirements are met.

Parameter	Working Range	Stability Criteria	Notes
Temperature	>0.00 °C	± 0.5 °C	ideally < 6 °C
pH	0-14	± 0.2	
Conductivity	0-9.99 S/m	± 3%	or ± 0.02 Sm
ORP	± 1999 mV	± 10%	or ± 2 mV
Dissolved Oxygen	0-19.99 mg/L	± 10%	or ± 0.02 mg/L
Turbidity	0-800 NTU	± 10%	or ± 10 NTU

#### Sensory Observations

Color: Clear, Amber, Tan, Brown, Grey, Milky White, Other:Odor: None, Low, Medium, High, Very Strong, H<sub>2</sub>S, Fuel Like, Chemical?, UnknownTurbidity: None, Low, Medium, High, Very Turbid, Heavy Silts

#### Instrument Observations

Round	Time	Temp °C	pH	Conductivity (S/m)	Turbidity y	DO (mg/L)	Color	Odor	ORP (mV)	Water Level (ft BTOC)	Draw-down
1	1425	7.44	7.27	261	393	5.81	tan	none	29.5	<u>23.05 24.25</u>	0
2	1430	7.13	7.35	268	393	.90	tan	none	-600	24.70	-.45
3	1435	7.07	7.41	267	201	150	tan	none	-1050	24.81	-.56
4	1440	6.86	7.42	267	163	.38	tan	none	-118.5	24.81	-.56
5	1445	6.68	7.42	265	216	.41	tan	none	-127.8	24.96	-.71
6	1450	7.01	7.41	268	200	1.22	tan	none	-1398	25.61	-.86
7	1455	6.84	7.41	267	152	.33	tan	none	-140.1	25.11	-.86
8	1500	6.82	7.42	267	182	.20	tan	none	-142.5	25.13	-.89
9	1505	6.79	7.40	266	193	.23	tan	none	-148.9	25.27	-1.02
10	1510	6.81	7.41	268	184	.22	tan	none	-149.8	25.40	-1.15
11	1515	6.74	7.44	267	133	.21	tan	none	-145.3	25.38	-1.13
12											

#### Notes:

Drawdown should be less than 0.3 feet from the original depth to groundwater for each event.

Minimal draw-down shall be achieved and measured by: 1) pumping at a low rate (approximately 1 liter/ 3 minutes and 2) continually measuring water levels in the well.

#### Comments

Well is in good condition. CAREL device removed & replaced when finished.  
 Total Well Depth = 30.35. 4 inch well casing. Well slow to recharge;  
 Flow rate reduced to stabilize draw down.  
 Dup fake ID # AP 4598.

$$98.72 - 95.81 = 2.91 \times 163 = .474 \times 4 = 1.896 \text{ (RP)}$$

Well ID: AP-4551

## Low-Flow Groundwater Sampling with Minimal Drawdown

Project: Ft. Richardson Groundwater SamplingDate: 10/13/05Project #: USACE Project No: #06-002 OUBStart Time: 1240Field Team: A. Caldwell / R. PohlEnd Time: 1540Sample ID: 0510FROBWA-21Time: 1540 primary dup

triplicate ms/msd

Sample ID: \_\_\_\_\_

Time: \_\_\_\_\_ primary dup

triplicate ms/msd

Sample ID: \_\_\_\_\_

Time: \_\_\_\_\_ primary dup

triplicate ms/msd

Weather Conditions: Cloudy, 40°FDepth to Top of Product (FTOC): 0Depth to Water (FTOC): 95.81

Depth to Oil/Water Interface (FTOC): \_\_\_\_\_

Total Depth (FTOC): 98.72Flow Rate: 0

Low Flow Rate: 0.1 Liter/min., increasing flow rate is permissible

### Criteria for Stable Parameters

as long as drawdown requirements are met.

Parameter	Working Range	Stability Criteria	Notes
Temperature	>0.00 °C	± 0.5 °C	ideally < 6 °C
pH	0-14	± 0.2	
Conductivity	0-9.99 S/m	± 3%	or ± 0.02 Sm
ORP	± 1999 mV	± 10%	or ± 2 mV
Dissolved Oxygen	0-19.99 mg/L	± 10%	or ± 0.02 mg/L
Turbidity	0-800 NTU	± 10%	or ± 10 NTU

### Sensory Observations

Color: Clear Amber, Tan, Brown, Grey, Milky White, Other:Odor: None Low, Medium, High, Very Strong, H<sub>2</sub>S, Fuel Like, Chemical ?, UnknownTurbidity: None Low, Medium, High, Very Turbid, Heavy Silts

### Instrument Observations

Round	Time	Temp °C	pH	Conductivity (S/m)	Turbidity	DO (mg/L)	Color	Odor	ORP (mV)	Water Level (ft BTOC)	Draw-down
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											

#### Notes:

Drawdown should be less than 0.3 feet from the original depth to groundwater for each event.

Minimal draw-down shall be achieved and measured by: 1) pumping at a low rate (approximately 1 liter/ 3 minutes and 2) continually measuring water levels in the well.

### Comments

Well in good condition. Low water level required bailer to be used.  
 Approx 2.5 gal removed @ 1300. Sampled @ 1540.

well depth of water before sampling 95.71 = 130m 90% recharge

$$98.72 - 95.81 = 2.91 \times 0.163 = 0.474 \times 4 = 1.897 \text{ gal}$$

Well ID: AP-451B**Low-Flow Groundwater Sampling with Minimal Drawdown**Project: Ft. Richardson Groundwater SamplingDate: 10/13/05Project #: USACE Project No: #06-002 OUBStart Time: 1735Field Team: A Caldwell / R. PahlEnd Time: 1820Sample ID: 0510FROBWA-12Time: 1820 primary dup

triplicate ms/msd

Sample ID: \_\_\_\_\_

Time: \_\_\_\_\_ primary dup

triplicate ms/msd

Sample ID: \_\_\_\_\_

Time: \_\_\_\_\_ primary dup

triplicate ms/msd

Weather Conditions: Cloudy, 40°FDepth to Top of Product (FTOC): 0Depth to Water (FTOC): 25.02

Depth to Oil/Water Interface (FTOC): \_\_\_\_\_

Total Depth (FTOC): 46.09

Flow Rate

100 mL

Low Flow Rate: 0.1 Liter/min., increasing flow rate is permissible

**Criteria for Stable Parameters**

as long as drawdown requirements are met.

Parameter	Working Range	Stability Criteria	Notes
Temperature	>0.00 °C	± 0.5 °C	ideally < 6 °C
pH	0-14	± 0.2	
Conductivity	0-9.99 S/m	± 3%	or ± 0.02 Sm
ORP	± 1999 mV	± 10%	or ± 2 mV
Dissolved Oxygen	0-19.99 mg/L	± 10%	or ± 0.02 mg/L
Turbidity	0-800 NTU	± 10%	or ± 10 NTU

**Sensory Observations**Color: Clear Amber, Tan, Brown, Grey, Milky White, Other:Odor: None Low, Medium, High, Very Strong, H<sub>2</sub>S, Fuel Like, Chemical ?, UnknownTurbidity: None Low, Medium, High, Very Turbid, Heavy Silts**Instrument Observations**

Round	Time	Temp °C	pH	Conductivity (S/m)	Turbidity y	DO (mg/L)	Color	Odor	ORP (mV)	Water Level (ft BTOC)	Draw-down
1	1735	3.76	7.48	120	2.29	11.61	clear	none	327.1	25.02	0
2	1740	3.59	7.52	121	0.95	3.33	clear	none	313.0	25.07	-0.05
3	1745	4.46	7.53	123	8.95	7.59	clear	none	300.3	25.04	-0.02
4	1750	3.44	7.55	124	15.60	7.95	clear	none	297.0	25.07	-0.05
5	1755	3.40	7.58	125	19.8	8.57	clear	none	291.5	25.01	+0.01
6	1800	3.39	7.60	125	17.9	8.96	clear	none	288.3	25.05	-0.03
7	1805	3.38	7.61	125	15.2	11.11	clear	none	285.7	25.03	-0.01
8	1810	3.36	7.63	125	12.3	9.41	clear	none	283.5	25.08	-0.05
9	1815	3.34	7.65	125	11.1	9.31	clear	none	281.9	25.04	-0.02
10	1820	3.33	7.66	125	9.81	9.30	clear	none	280.7	25.05	-0.03
11											
12											

**Notes:**

Drawdown should be less than 0.3 feet from the original depth to groundwater for each event.

Minimal draw-down shall be achieved and measured by: 1) pumping at a low rate (approximately 1 liter/ 3 minutes and 2) continually measuring water levels in the well.

**Comments**Well in good condition. CRREL device removed & replaced when finished.  
Total Well Depth = 46.09.

Well ID: AP-4017

### Low-Flow Groundwater Sampling with Minimal Drawdown

Project: Ft. Richardson Groundwater Sampling Date: 10/14/05  
 Project #: USACE Project No: #06-002 OUB Start Time: 1215  
 Field Team: A. Caldwell / R. Pohl End Time: 1245  
 Sample ID: 0510FROBWA-23 Time: 1245 (primary) dup triplicate ms/msd  
 Sample ID: \_\_\_\_\_ Time: \_\_\_\_\_ primary dup triplicate ms/msd  
 Sample ID: \_\_\_\_\_ Time: \_\_\_\_\_ primary dup triplicate ms/msd

Weather Conditions: cloudy

Depth to Top of Product (FTOC): 0 Depth to Water (FTOC): 65.40  
 Depth to Oil/Water Interface (FTOC): \_\_\_\_\_ Total Depth (FTOC): 99.74

Flow Rate: 100 ml Low Flow Rate: 0.1 Liter/min., increasing flow rate is permissible

#### Criteria for Stable Parameters as long as drawdown requirements are met.

Parameter	Working Range	Stability Criteria	Notes
Temperature	>0.00 °C	± 0.5 °C	ideally < 6 °C
pH	0-14	± 0.2	
Conductivity	0-9.99 S/m	± 3%	or ± 0.02 Sm
ORP	± 1999 mV	± 10%	or ± 2 mV
Dissolved Oxygen	0-19.99 mg/L	± 10%	or ± 0.02 mg/L
Turbidity	0-800 NTU	± 10%	or ± 10 NTU

#### Sensory Observations

Color: Clear Amber, Tan, Brown, Grey, Milky White, Other:  
 Odor: None Low, Medium, High, Very Strong, H<sub>2</sub>S, Fuel Like, Chemical ?, Unknown  
 Turbidity: None Low, Medium, High, Very Turbid, Heavy Silts

#### Instrument Observations

Round	Time	Temp °C	pH	Conductivity (S/m)	Turbidity y	DO (mg/L)	Color	Odor	ORP (mV)	Water Level (ft BTOC)	Draw-down
1	1215	5.48	6.87	225	.55	1.08	clear	none	-23.7	65.40	0.0
2	1220	5.48	6.87	225	.24	.58	clear	none	-35.1	65.28	+ .12
3	1225	5.44	6.87	224	.77	.56	clear	none	-36.6	65.40	0.0
4	1230	5.33	6.87	223	.19	.41	clear	none	-40.6	65.42	-.02
5	1235	5.34	6.87	224	.39	.39	clear	none	-42.5	65.44	-.04
6	1240	5.34	6.87	224	.33	.39	clear	none	-43.6	65.47	-.07
7	1245	5.40	6.87	224	.42	.42	clear	none	-44.9	65.48	-.08
8											
9											
10											
11											
12											

Notes:  
 Drawdown should be less than 0.3 feet from the original depth to groundwater for each event.  
 Minimal draw-down shall be achieved and measured by: 1) pumping at a low rate (approximately 1 liter/ 3 minutes and 2) continually measuring water levels in the well.

#### Comments

Well in good condition. No CRREL advise. Good recharge on well.

Well ID: AP-4519**Low-Flow Groundwater Sampling with Minimal Drawdown**Project: Ft. Richardson Groundwater SamplingDate: 10/14/05Project #: USACE Project No: #06-002 OUBStart Time: 1320Field Team: A. Caldwell R. PaulEnd Time: 1450Sample ID: OS10FR0BWA-26Time: 1450 primary dup

triplicate ms/msd

Sample ID: \_\_\_\_\_

Time: \_\_\_\_\_ primary dup

triplicate ms/msd

Sample ID: \_\_\_\_\_

Time: \_\_\_\_\_ primary dup

triplicate ms/msd

Weather Conditions: CloudyDepth to Top of Product (FTOC): 0Depth to Water (FTOC): 27.49

Depth to Oil/Water Interface (FTOC): \_\_\_\_\_

Total Depth (FTOC): 42.20

Flow Rate

50 mL

Low Flow Rate: 0.1 Liter/min., increasing flow rate is permissible

**Criteria for Stable Parameters**

as long as drawdown requirements are met.

Parameter	Working Range	Stability Criteria	Notes
Temperature	>0.00 °C	± 0.5 °C	ideally < 6 °C
pH	0-14	± 0.2	
Conductivity	0-9.99 S/m	± 3%	or ± 0.02 Sm
ORP	± 1999 mV	± 10%	or ± 2 mV
Dissolved Oxygen	0-19.99 mg/L	± 10%	or ± 0.02 mg/L
Turbidity	0-800 NTU	± 10%	or ± 10 NTU

**Sensory Observations**Color: Clear Amber, Tan, Brown, Grey, Milky White, Other:Odor: None Low, Medium, High, Very Strong, H<sub>2</sub>S, Fuel Like, Chemical ?, UnknownTurbidity: None Low, Medium, High, Very Turbid, Heavy Silts**Instrument Observations**

Round	Time	Temp °C	pH	Conductivity (S/m)	Turbidity y	DO (mg/L)	Color	Odor	ORP (mV)	Water Level (ft BTOC)	Draw-down
1	1320	5.79	6.71	184	8.15	2.91	clear	none	292.7	27.49	0
2	1325	5.94	6.70	185	7.97	2.07	clear	none	216.4	25.01	+2.48
3	1330	5.86	6.73	185	6.78	1.98	clear	none	167.5	24.97	+2.52
4	1335	5.68	6.74	184	6.78	1.41	clear	none	137.1	24.91	+2.45
5	1340	5.79	6.75	185	4.78	1.21	clear	none	117.0	24.90	+2.44
6	1345	5.52	6.75	184	4.29	1.21	clear	none	109.7	25.05	+2.44
7	1350	6.14	6.74	187	3.34	0.94	clear	none	89.5	25.35	+2.14
8	1355	6.38	6.75	189	3.57	1.51	clear	none	64.3	25.18	+2.31
9	1400	6.16	6.74	188	3.61	0.79	clear	none	56.7	25.28	+2.21
10	1405	6.39	6.74	189	2.71	0.72	clear	none	39.4	25.50	+1.99
11	1410	6.48	6.74	189	2.56	0.52	clear	none	21.0	25.11	+2.38
12	1415	6.23	6.73	188	2.18	0.59	clear	none	9.0	25.46	+2.03

**Notes:**

Drawdown should be less than 0.3 feet from the original depth to groundwater for each event.

Minimal draw-down shall be achieved and measured by: 1) pumping at a low rate (approximately 1 liter/ 3 minutes and 2) continually measuring water levels in the well.

**Comments**

Well in good condition. Well not stabilized after Round 12, continued on next page.

Pg 1 of 2



Well ID: AP-4519 (cont)

**Low-Flow Groundwater Sampling with Minimal Drawdown**

Project: Ft. Richardson Groundwater Sampling Date: 10/14/05  
 Project #: USACE Project No: #06-002 OUB Start Time: 1320  
 Field Team: A. Caldwell / R. Pohl End Time: 1450  
 Sample ID: 0510FROBWA-26 (continued) Time: 1450 primary dup triplicate ms/msd  
 Sample ID: \_\_\_\_\_ Time: \_\_\_\_\_ primary dup triplicate ms/msd  
 Sample ID: \_\_\_\_\_ Time: \_\_\_\_\_ primary dup triplicate ms/msd

Weather Conditions: cloudy

Depth to Top of Product (FTOC): 0 Depth to Water (FTOC): 27.49  
 Depth to Oil/Water Interface (FTOC): \_\_\_\_\_ Total Depth (FTOC): 47.20  
 Flow Rate: 50ml Low Flow Rate: 0.1 Liter/min., increasing flow rate is permissible

**Criteria for Stable Parameters** as long as drawdown requirements are met.

Parameter	Working Range	Stability Criteria	Notes
Temperature	>0.00 °C	± 0.5 °C	ideally < 6 °C
pH	0-14	± 0.2	
Conductivity	0-9.99 S/m	± 3%	or ± 0.02 Sm
ORP	± 1999 mV	± 10%	or ± 2 mV
Dissolved Oxygen	0-19.99 mg/L	± 10%	or ± 0.02 mg/L
Turbidity	0-800 NTU	± 10%	or ± 10 NTU

**Sensory Observations**

Color: clear Amber, Tan, Brown, Grey, Milky White, Other:  
 Odor: None Low, Medium, High, Very Strong, H<sub>2</sub>S, Fuel Like, Chemical ?, Unknown  
 Turbidity: None Low, Medium, High, Very Turbid, Heavy Silts

**Instrument Observations**

Round	Time	Temp °C	pH	Conductivity (S/m)	Turbidity y	DO (mg/L)	Color	Odor	ORP (mV)	Water Level (ft BTOC)	Draw-down (ft)
13	1420	6.40	6.73	188	1.71	.56	clear	none	-6.6	25.74	+2.35
14	1425	6.38	6.74	188	2.62	1.44	clear	none	-7.2	25.71	+1.78
15	1430	6.23	6.74	188	2.70	.58	clear	none	-9.7	25.52	+1.97
16	1435	6.29	6.72	188	3.73	.55	clear	none	-12.7	25.70	+1.79
17	1440	6.36	6.71	189	3.21	.42	clear	none	-19.2	25.65	+1.84
18	1445	6.17	6.71	188	4.95	.33	clear	none	-20.8	25.52	+1.97
19	1450	6.26	6.71	188	5.05	.43	clear	none	-22.2	25.71	+1.78
8											
9											
10											
11											
12											

Notes:  
 Drawdown should be less than 0.3 feet from the original depth to groundwater for each event.  
 Minimal draw-down shall be achieved and measured by: 1) pumping at a low rate (approximately 1 liter/ 3 minutes and 2) continually measuring water levels in the well.

**Comments**

pg 2 of 2

Well ID: AP-4333

## Low-Flow Groundwater Sampling with Minimal Drawdown

Project:	Ft. Richardson Groundwater Sampling	Date: <u>10/14/05</u>
Project #:	USACE Project No: #06-002 OUB	Start Time: <u>1335</u>
Field Team:	<u>A Caldwell / R Pott</u>	End Time: <u>1605</u>
Sample ID:	<u>06DFR00WA-27</u>	Time: <u>1105</u> <u>primary</u> dup triplicate ms/msd
Sample ID:		Time: _____ primary dup triplicate ms/msd
Sample ID:		Time: _____ primary dup triplicate ms/msd

Weather Conditions: Cloudy

Depth to Top of Product (FTOC): _____	Depth to Water (FTOC): <u>32.10</u>
Depth to Oil/Water Interface (FTOC): _____	Total Depth (FTOC): <u>69.41</u>

Flow Rate: 100 mL Low Flow Rate: 0.1 Liter/min., increasing flow rate is permissible

Criteria for Stable Parameters as long as drawdown requirements are met.

Parameter	Working Range	Stability Criteria	Notes
Temperature	>0.00 °C	± 0.5 °C	ideally < 6 °C
pH	0-14	± 0.2	
Conductivity	0-9.99 S/m	± 3%	or ± 0.02 Sm
ORP	± 1999 mV	± 10%	or ± 2 mV
Dissolved Oxygen	0-19.99 mg/L	± 10%	or ± 0.02 mg/L
Turbidity	0-800 NTU	± 10%	or ± 10 NTU

### Sensory Observations

Color: Clear, Amber, Tan, Brown, Grey, Milky White, Other:  
 Odor: None, Low Medium, High, Very Strong, H<sub>2</sub>S, Fuel Like, Chemical ?, Unknown  
 Turbidity: None, Low Medium, High, Very Turbid, Heavy Silts

### Instrument Observations

Round	Time	Temp °C	pH	Conductivity (S/m)	Turbidity y	DO (mg/L)	Color	Odor	ORP (mV)	Water Level (ft BTOC)	Draw-down
1	1535	5.58	7.21	135	4.69	7.10	clear	None	272.7	32.10	0
2	1540	5.76	6.23	148	3.61	1.98	TAN	Low	233.0	32.10	0
3	1545	5.85	6.21	149	3.94	1.48	Clear	None	227.7	32.10	0
4	1556	5.90	6.19	149	4.00	1.14	Clear	None	219.4	32.10	0
5	1555	5.95	6.19	149	3.60	1.92	Clear	None	212.8	32.10	0
6	16:00	5.85	6.16	148	3.46	.88	Clear	None	199.6	32.10	0
7	16:05	5.91	6.17	147	3.46	.83	Clear	None	182.6	32.10	0
8											
9											
10											
11											
12											

#### Notes:

Drawdown should be less than 0.3 feet from the original depth to groundwater for each event.  
 Minimal draw-down shall be achieved and measured by: 1) pumping at a low rate (approximately 1 liter/ 3 minutes and 2) continually measuring water levels in the well.

### Comments

Well in good condition. Recharge good. 2' casing inside well. CREL monitoring device removed + replaced. Total depth = 69.41



Well ID: AP-4354

### Low-Flow Groundwater Sampling with Minimal Drawdown

Project: Ft. Richardson Groundwater Sampling Date: 10/14/05  
 Project #: USACE Project No: #06-002 OUB Start Time: 16:40  
 Field Team: A Caldwell / R. Pohl End Time: 17:10  
 Sample ID: 0510FROBWA-28 Time: 17:10 (primary) dup triplicate ms/msd  
 Sample ID: ~~0510FROBWA-29~~ 0510FROBWA-29 Time: 16:40 primary (dup) triplicate ms/msd  
 Sample ID: 0510FROBWA-20 Time: 18:05 primary dup triplicate ms/msd

Weather Conditions: Cloudy, wind

Depth to Top of Product (FTOC): 0 Depth to Water (FTOC): 10.33  
 Depth to Oil/Water Interface (FTOC): \_\_\_\_\_ Total Depth (FTOC): 17.91

Flow Rate: 75 mL Low Flow Rate: 0.1 Liter/min., increasing flow rate is permissible

Criteria for Stable Parameters as long as drawdown requirements are met.

Parameter	Working Range	Stability Criteria	Notes
Temperature	>0.00 °C	± 0.5 °C	ideally < 6 °C
pH	0-14	± 0.2	
Conductivity	0-9.99 S/m	± 3%	or ± 0.02 Sm
ORP	± 1999 mV	± 10%	or ± 2 mV
Dissolved Oxygen	0-19.99 mg/L	± 10%	or ± 0.02 mg/L
Turbidity	0-800 NTU	± 10%	or ± 10 NTU

#### Sensory Observations

Color: Clear, Amber, Tan, Brown, Grey, Milky White, Other:  
 Odor: None, Low Medium, High, Very Strong, H<sub>2</sub>S, Fuel Like, Chemical ?, Unknown  
 Turbidity: None, Low Medium, High, Very Turbid, Heavy Silts

#### Instrument Observations

Round	Time	Temp °C	pH	Conductivity (S/m)	Turbidity y	DO (mg/L)	Color	Odor	ORP (mV)	Water Level (ft BTOC)	Draw-down
1	16:40	7.84	4.71	20	8.81	2.07	Clear	Low	292.6	10.20	+ .13
2	16:45	7.61	4.62	19	6.65	1.54	Clear	Low	302.9	10.20	+ .13
3	16:50	7.59	4.57	19	6.49	1.25	Clear	Low	309.6	10.20	+ .13
4	16:55	7.65	4.55	19	4.32	1.15	Clear	Low	316.8	10.20	+ .13
5	17:00	7.77	4.51	19	2.75	1.01	Clear	Low	313.7	10.20	+ .13
6	17:05	7.90	4.49	19	2.32	.93	Clear	Low	322.1	10.20	+ .13
7	17:10	7.65	4.52	19	2.51	1.01	Clear	Low	318.6	10.20	+ .13
8											
9											
10											
11											
12											

Notes:  
 Drawdown should be less than 0.3 feet from the original depth to groundwater for each event.  
 Minimal draw-down shall be achieved and measured by: 1) pumping at a low rate (approximately 1 liter/ 3 minutes and 2) continually measuring water levels in the well.

#### Comments

Well in good condition. Recharge good. No drawdown. 2' casing in well. CRREL monitoring device was removed + replaced. Total depth = 17.91. Dup false AP-4357 time of 16:40 false. Duplicate taken at 17:10

Equip. 2:

Well ID: **AP-3744**



### Low-Flow Groundwater Sampling with Minimal Drawdown

Project: **Ft. Richardson Groundwater Sampling**  
 Project #: **USACE Project No: #06-002 OUB**  
 Field Team: **DEREK LUKAS / RAYMOND POHL**  
 Sample ID: **0510PROBWA-21** Time: **1140** **primary** dup  
 Sample ID: \_\_\_\_\_ Time: \_\_\_\_\_ primary dup  
 Sample ID: \_\_\_\_\_ Time: \_\_\_\_\_ primary dup

Date: **10/17/05**  
 Start Time: **1110**  
 End Time: **1140**  
 duplicate ms/msd  
 duplicate ms/msd  
 duplicate ms/msd

Weather Conditions: **Cloudy, Windy, 38°F**

Depth to Top of Product (FTOC): **0** Depth to Water (FTOC): **27.02**  
 Depth to Oil/Water Interface (FTOC): \_\_\_\_\_ Total Depth (FTOC): **37.46**  
 Flow Rate: **100ml** Low Flow Rate: 0.1 Liter/min., increasing flow rate is permissible

**Criteria for Stable Parameters** as long as drawdown requirements are met.

Parameter	Working Range	Stability Criteria	Notes
Temperature	>0.00 °C	± 0.5 °C	ideally < 6 °C
pH	0-14	± 0.2	
Conductivity	0-9.99 S/m	± 3%	or ± 0.02 Sm
ORP	± 1999 mV	± 10%	or ± 2 mV
Dissolved Oxygen	0-19.99 mg/L	± 10%	or ± 0.02 mg/L
Turbidity	0-800 NTU	± 10%	or ± 10 NTU

#### Sensory Observations

Color: **Clear** Amber, Tan, Brown, Grey, Milky White, Other:  
 Odor: **None** Low, Medium, High, Very Strong, H<sub>2</sub>S, Fuel Like, Chemical ?, Unknown  
 Turbidity: **None** Low, Medium, High, Very Turbid, Heavy Silts

#### Instrument Observations

Round	Time	Temp °C	pH	Conductivity (S/m)	Turbidity	DO (mg/L)	Color	Odor	ORP (mV)	Water Level (ft BTOC)	Draw-down
1	1055	4.42	7.93	286							
2	1100	4.42	7.66	286	1.59	9.78	clear	none	189.3	27.02	0
3	1115	4.20	7.95	275	1.50	9.12	clear	none	155.3	27.22	+2.0
4	1120	4.23	7.90	263	.96	9.00	clear	none	167.4	27.12	-2.0
5	1125	4.16	7.87	260	.99	9.15	clear	none	177.7	27.00	+0.02
6	1130	4.09	8.00	260	.64	9.02	clear	none	152.8	27.02	0
7	1135	4.19	8.19	260	.66	8.85	clear	none	148.5	27.02	0
8	1140	4.21	8.23	260	.60	9.08	clear	none	140.4	27.02	0
9											
10											
11											
12											

Notes:  
 Drawdown should be less than 0.3 feet from the original depth to groundwater for each event.  
 Minimal draw-down shall be achieved and measured by: 1) pumping at a low rate (approximately 1 liter/ 3 minutes and 2) continually measuring water levels in the well.

#### Comments

Well in good condition. Recharge good. No drawdown. No CRREL device. Total Depth = 37.46.

Well ID: AP-3981

### Low-Flow Groundwater Sampling with Minimal Drawdown

Project: Ft. Richardson Groundwater Sampling

Date: 10/17/05

Project #: USACE Project No: #06-002 OUB

Start Time: 1230

Field Team: D. LUKERS / R. POHL

End Time: 1255

Sample ID: 051056001-32

Time: 1255

primary

dup

triplicate ms/msd

Sample ID:

Time:

primary

dup

triplicate ms/msd

Sample ID:

Time:

primary

dup

triplicate ms/msd

Weather Conditions: Cloudy, Windy, 38°

Depth to Top of Product (FTOC): 0

Depth to Water (FTOC): 21.86

Depth to Oil/Water Interface (FTOC):

Total Depth (FTOC): 40.65

Flow Rate

100 mL

Low Flow Rate: 0.1 Liter/min., increasing flow rate is permissible

#### Criteria for Stable Parameters

as long as drawdown requirements are met.

Parameter	Working Range	Stability Criteria	Notes
Temperature	>0.00 °C	± 0.5 °C	ideally < 6 °C
pH	0-14	± 0.2	
Conductivity	0-9.99 S/m	± 3%	or ± 0.02 Sm
ORP	± 1999 mV	± 10%	or ± 2 mV
Dissolved Oxygen	0-19.99 mg/L	± 10%	or ± 0.02 mg/L
Turbidity	0-800 NTU	± 10%	or ± 10 NTU

#### Sensory Observations

Color:  Clear, Amber, Tan, Brown, Grey, Milky White, Other:Odor:  None, Low, Medium, High, Very Strong, H<sub>2</sub>S, Fuel Like, Chemical ?, UnknownTurbidity:  None, Low, Medium, High, Very Turbid, Heavy Silts

#### Instrument Observations

Round	Time	Temp °C	pH	Conductivity (S/m)	Turbidity y	DO (mg/L)	Color	Odor	ORP (mV)	Water Level (ft BTOC)	Draw-down
1	1230	6.9	7.82	372	8.8	0.01	clear	none	17.2	21.86	-0.06
2	1235	6.56	9.19	373	4.91	0.75	clear	none	65.5	21.90	-0.04
3	1240	6.40	9.19	372	4.70	0.63	clear	none	-66.1	21.90	-0.04
4	1245	6.25	9.27	371	3.8	0.54	clear	none	-82.8	21.92	-0.07
5	1250	6.21	9.27	370	3.64	0.51	clear	none	-87.9	21.92	-0.09
6	1255	6.14	9.29	368	3.24	0.47	clear	none	-91.4	21.92	-0.06
7											
8											
9											
10											
11											
12											

#### Notes:

Drawdown should be less than 0.3 feet from the original depth to groundwater for each event.

Minimal draw-down shall be achieved and measured by: 1) pumping at a low rate (approximately 1 liter/ 3 minutes and 2) continually measuring water levels in the well.

#### Comments

Well in good condition. No CARTEL debris. Total depth 40.65.



Well ID: AP-3985

**Low-Flow Groundwater Sampling with Minimal Drawdown**

Project: Ft. Richardson Groundwater Sampling  
 Project #: USACE Project No: #06-002 OUB  
 Field Team: D. Lucas / R. P. W.  
 Sample ID: 0510 FROBWA-33 Time: 1435 primary dup  
 Sample ID: \_\_\_\_\_ Time: \_\_\_\_\_ primary dup  
 Sample ID: \_\_\_\_\_ Time: \_\_\_\_\_ primary dup

Date: 10/17/05  
 Start Time: 1345  
 End Time: 1435  
 duplicate ms/msd  
 duplicate ms/msd  
 duplicate ms/msd

Weather Conditions: Cloudy, Rain, Wind, 39°F

Depth to Top of Product (FTOC): 0 Depth to Water (FTOC): 23.95  
 Depth to Oil/Water Interface (FTOC): \_\_\_\_\_ Total Depth (FTOC): 32.39

Flow Rate: 100 mL Low Flow Rate: 0.1 Liter/min., increasing flow rate is permissible

**Criteria for Stable Parameters** as long as drawdown requirements are met.

Parameter	Working Range	Stability Criteria	Notes
Temperature	>0.00 °C	± 0.5 °C	ideally < 6 °C
pH	0-14	± 0.2	
Conductivity	0-9.99 S/m	± 3%	or ± 0.02 Sm
ORP	± 1999 mV	± 10%	or ± 2 mV
Dissolved Oxygen	0-19.99 mg/L	± 10%	or ± 0.02 mg/L
Turbidity	0-800 NTU	± 10%	or ± 10 NTU

**Sensory Observations**

Color: Clear Amber, Tan, Brown, Grey, Milky White, Other:  
 Odor: None Low, Medium, High, Very Strong, H<sub>2</sub>S, Fuel Like, Chemical ?, Unknown  
 Turbidity: None Low, Medium, High, Very Turbid, Heavy Silts

**Instrument Observations**

Round	Time	Temp °C	pH	Conductivity (S/m)	Turbidity y	DO (mg/L)	Color	Odor	ORP (mV)	Water Level (ft BTOC)	Draw-down
1	1345	6.58	9.16	280	1.49	10.50	clear	none	124.2	23.95	0.00
2	1350	6.76	9.18	296	1.64	1.45	clear	none	61.5	23.95	0.00
3	1355	6.74	9.21	306	1.08	.63	clear	none	10.5	23.95	0.00
4	1400	6.74	9.19	301	1.08	.59	clear	none	-27.2	23.95	0.00
5	1405	6.88	9.15	302	1.09	.47	clear	none	-41.9	23.98	-0.03
6	1410	6.72	9.10	297	1.24	.37	clear	none	-53.1	24.01	-0.06
7	1415	6.71	9.26	295	1.19	1.02	clear	none	-64.2	24.00	-0.05
8	1420	6.78	9.13	296	1.07	.53	clear	none	-61.6	24.01	-0.06
9	1425	6.86	8.99	296	1.99	.37	clear	none	-68.0	24.00	-0.05
10	1430	6.97	8.93	295	1.16	.34	clear	none	-68.2	24.00	-0.05
11	1435	6.86	8.89	292	1.16	.34	clear	none	-69.0	24.00	-0.06
12											

Notes:  
 Drawdown should be less than 0.3 feet from the original depth to groundwater for each event.  
 Minimal draw-down shall be achieved and measured by: 1) pumping at a low rate (approximately 1 liter/ 3 minutes and 2) continually measuring water levels in the well.

**Comments**

Well in good condition. GREL device removed & replaced when finished.  
 Total depth = 32.39

Well ID: AP-3984**Low-Flow Groundwater Sampling with Minimal Drawdown**

Project: Ft. Richardson Groundwater Sampling  
 Project #: USACE Project No: #06-002 OUB  
 Field Team: D. Lucas / R. Pohl  
 Sample ID: 0510FROBWA-34 Time: 1600 primary dup  
 Sample ID: \_\_\_\_\_ Time: \_\_\_\_\_ primary dup  
 Sample ID: \_\_\_\_\_ Time: \_\_\_\_\_ primary dup

Date: 10/17/05  
 Start Time: 15120  
 End Time: 1600  
 triplicate ms/msd  
 triplicate ms/msd  
 triplicate ms/msd

Weather Conditions: Cloudy, Calm, 40°F

Depth to Top of Product (FTOC): 0 Depth to Water (FTOC): 26.36  
 Depth to Oil/Water Interface (FTOC): \_\_\_\_\_ Total Depth (FTOC): 42.45

Flow Rate: 100 mL Low Flow Rate: 0.1 Liter/min., increasing flow rate is permissible**Criteria for Stable Parameters** as long as drawdown requirements are met.

Parameter	Working Range	Stability Criteria	Notes
Temperature	>0.00 °C	± 0.5 °C	ideally < 6 °C
pH	0-14	± 0.2	
Conductivity	0-9.99 S/m	± 3%	or ± 0.02 Sm
ORP	± 1999 mV	± 10%	or ± 2 mV
Dissolved Oxygen	0-19.99 mg/L	± 10%	or ± 0.02 mg/L
Turbidity	0-800 NTU	± 10%	or ± 10 NTU

**Sensory Observations**

Color: Clear Amber, Tan, Brown, Grey, Milky White, Other:  
 Odor: None Low, Medium, High, Very Strong, H<sub>2</sub>S, Fuel Like, Chemical ?, Unknown  
 Turbidity: None Low, Medium, High, Very Turbid, Heavy Silts

**Instrument Observations**

Round	Time	Temp °C	pH	Conductivity (S/m)	Turbidity	DO (mg/L)	Color	Odor	ORP (mV)	Water Level (ft BTOC)	Draw-down
1	1520	7.28	9.88	339	7.37	1.13	clear	none	-174.4	27.00	-0.54
2	1525	7.18	9.73	340	6.12	0.63	clear	none	-174.3	27.09	-0.73
3	1530	7.08	9.50	347	3.89	0.62	clear	none	-158.1	27.16	-0.89
4	1535	7.03	9.34	345	3.43	0.74	clear	none	-144.4	27.05	-0.69
5	1540	7.17	9.14	341	3.60	1.01	clear	none	-121.3	27.05	-0.69
6	1545	7.22	8.99	333	3.28	1.30	clear	none	-109.5	27.05	-0.69
7	1550	7.23	8.92	324	3.50	1.66	clear	none	-95.5	27.04	-0.68
8	1555	7.30	8.84	320	3.48	1.58	clear	none	-93.3	27.00	-0.64
9	1600	7.34	8.78	317	3.52	1.64	clear	none	-91.0	27.00	-0.64
10											
11											
12											

Notes:  
 Drawdown should be less than 0.3 feet from the original depth to groundwater for each event.  
 Minimal draw-down shall be achieved and measured by: 1) pumping at a low rate (approximately 1 liter/ 3 minutes and 2) continually measuring water levels in the well.

**Comments**

Well in good condition. No CRREL device. Total Depth = 42.45

**FINAL REPORT**  
**FORT RICHARDSON**  
**OUB POLELINE ROAD DISPOSAL AREA**

**APPENDIX B: WELL DATA**  
**SPREADSHEETS**

**FORT RICHARDSON, ALASKA**

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**PREPARED FOR:**



**U.S. Army, Directorate of Public Works**  
**Contract No. W911KB-04-P-0091**

**June 2006**



**US Army**  
**Installation Management Agency**



**US Army Corps**  
**of Engineers**®  
Alaska District



Satori Group, Inc.  
1310 E. 66<sup>th</sup> Ave., #2  
Anchorage, AK 99518

## Field Data

### Project Data:

Contract Number:	USACE # 06-002
Project/Site Name:	OUB
Date:	10/17/2005
Location (AP):	AP-3744
Sample ID:	0510FROBWA-31
Matrix:	WATER

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.580	61 18.215

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	PRIMARY	
Turbidity:	0.6	NTU
Free Phase Product:	NO	
Water Temperature:	4.21	Celsius
pH:	8.23	Standard Units
Dissolved Ox Concentrations:	9.08	mg/L
REDOX Potential:	140.4	-/+ mV
Conductivity:	260	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	CLEAR	
Odor:	NONE	
Groundwater Level:	27.02	Feet MSL
Total Depth:	37.46	



## Field Data

### Project Data:

Contract Number:	USACE # 06-002
Project/Site Name:	OUB
Date:	10/12/2005
Location (AP):	AP-4550
Sample ID:	0510FROBWA-13
Matrix:	WATER

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.655	61 18.194

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	PRIMARY	
Turbidity:	8.61	NTU
Free Phase Product:	NO	
Water Temperature:	7.08	Celsius
pH:	6.57	Standard Units
Dissolved Ox Concentrations:	0.33	mg/L
REDOX Potential:	-43.8	-/+ mV
Conductivity:	286	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	CLEAR	
Odor:	LOW	
Groundwater Level:	24.8	Feet MSL
Total Depth:	42.3	



## Field Data

### Project Data:

Contract Number:	USACE # 06-002	
Project/Site Name:	OUB	
Date:	10/12/2005	
Location (AP):	AP-4550	
Sample ID:	0510FROBWA-14	
Matrix:	WATER	

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.655	61 18.194

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	Duplicate	
Turbidity:	8.61	NTU
Free Phase Product:	NO	
Water Temperature:	7.08	Celsius
pH:	6.57	Standard Units
Dissolved Ox Concentrations:	0.33	mg/L
REDOX Potential:	-43.8	-/+ mV
Conductivity:	286	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	CLEAR	
Odor:	LOW	
Groundwater Level:	24.8	Feet MSL
Total Depth:	42.3	



## Field Data

### Project Data:

Contract Number:	USACE # 06-002	
Project/Site Name:	OUB	
Date:	10/12/2005	
Location (AP):	AP-4525	
Sample ID:	0510FROBWA-16	
Matrix:	WATER	

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.635	61 18.187

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	PRIMARY	
Turbidity:	NA	NTU
Free Phase Product:	NO	
Water Temperature:	NA	Celsius
pH:	NA	Standard Units
Dissolved Ox Concentrations:	NA	mg/L
REDOX Potential:	NA	-/+ mV
Conductivity:	NA	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	NA	
Odor:	NA	
Groundwater Level:	126.22	Feet MSL
Total Depth:	127.22	



## Field Data

### Project Data:

Contract Number:	USACE # 06-002
Project/Site Name:	OUB
Date:	10/14/2005
Location (AP):	AP-4519
Sample ID:	0510FROBWA-26
Matrix:	WATER

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.670	61 18.170

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	PRIMARY	
Turbidity:	5.05	NTU
Free Phase Product:	NO	
Water Temperature:	6.26	Celsius
pH:	6.71	Standard Units
Dissolved Ox Concentrations:	0.41	mg/L
REDOX Potential:	-22.2	-/+ mV
Conductivity:	188	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	CLEAR	
Odor:	NONE	
Groundwater Level:	27.49	Feet MSL
Total Depth:	47.2	



## Field Data

### Project Data:

Contract Number:	USACE # 06-002
Project/Site Name:	OUB
Date:	10/13/2005
Location (AP):	AP-4518
Sample ID:	0510FROBWA-22
Matrix:	WATER

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.620	61 18.182

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	PRIMARY	
Turbidity:	9.81	NTU
Free Phase Product:	NO	
Water Temperature:	3.33	Celsius
pH:	7.66	Standard Units
Dissolved Ox Concentrations:	9.3	mg/L
REDOX Potential:	280.7	-/+ mV
Conductivity:	125	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	CLEAR	
Odor:	NONE	
Groundwater Level:	25.02	Feet MSL
Total Depth:	46.09	



## Field Data

### Project Data:

Contract Number:	USACE # 06-002
Project/Site Name:	OUB
Date:	10/14/2005
Location (AP):	AP-4354
Sample ID:	0510FROBWA-28
Matrix:	WATER

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.709	61 18.164

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	PRIMARY/MSMSD	
Turbidity:	2.51	NTU
Free Phase Product:	NO	
Water Temperature:	7.65	Celsius
pH:	4.52	Standard Units
Dissolved Ox Concentrations:	1.01	mg/L
REDOX Potential:	318.6	-/+ mV
Conductivity:	19	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	CLEAR	
Odor:	LOW	
Groundwater Level:	10.33	Feet MSL
Total Depth:	17.91	



## Field Data

### Project Data:

Contract Number:	USACE # 06-002	
Project/Site Name:	OUB	
Date:	10/14/2005	
Location (AP):	AP-4354	
Sample ID:	0510FROBWA-30	
Matrix:	WATER	

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.709	61 18.164

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	EQUIP R	
Turbidity:	NA	NTU
Free Phase Product:	NO	
Water Temperature:	NA	Celsius
pH:	NA	Standard Units
Dissolved Ox Concentrations:	NA	mg/L
REDOX Potential:	NA	-/+ mV
Conductivity:	NA	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	NA	
Odor:	NA	
Groundwater Level:	10.33	Feet MSL
Total Depth:	17.91	



## Field Data

### Project Data:

Contract Number:	USACE # 06-002
Project/Site Name:	OUB
Date:	10/14/2005
Location (AP):	AP-4354
Sample ID:	0510FROBWA-29
Matrix:	WATER

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.709	61 18.164

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	DUPLICATE	
Turbidity:	2.51	NTU
Free Phase Product:	NO	
Water Temperature:	7.65	Celsius
pH:	4.52	Standard Units
Dissolved Ox Concentrations:	1.01	mg/L
REDOX Potential:	318.6	-/+ mV
Conductivity:	19	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	CLEAR	
Odor:	LOW	
Groundwater Level:	10.33	Feet MSL
Total Depth:	17.91	



## Field Data

### Project Data:

Contract Number:	USACE # 006-002	
Project/Site Name:	OUB	
Date:	10/14/2005	
Location (AP):	AP-4353	
Sample ID:	0510FROBWA-27	
Matrix:	WATER	

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.693	61 18.162

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	PRIMARY	
Turbidity:	3.46	NTU
Free Phase Product:	NO	
Water Temperature:	5.91	Celsius
pH:	6.17	Standard Units
Dissolved Ox Concentrations:	0.83	mg/L
REDOX Potential:	182.6	-/+ mV
Conductivity:	147	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	TAN	
Odor:	LOW	
Groundwater Level:	32.1	Feet MSL
Total Depth:	69.41	



## Field Data

### Project Data:

Contract Number:	USACE # 06-002	
Project/Site Name:	OUB	
Date:	10/10/2005	
Location (AP):	AP-4352	
Sample ID:	0510FROBWA-05	
Matrix:	WATER	

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.697	61 18.269

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	PRIMARY	
Turbidity:	2.55	NTU
Free Phase Product:	NO	
Water Temperature:	6.5	Celsius
pH:	7.64	Standard Units
Dissolved Ox Concentrations:	11.95	mg/L
REDOX Potential:	160.5	-/+ mV
Conductivity:	135	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	Milky White	
Odor:	NONE	
Groundwater Level:	26.85	Feet MSL
Total Depth:	33.35	



## Field Data

### Project Data:

Contract Number:	USACE # 06-002
Project/Site Name:	OUB
Date:	10/10/2005
Location (AP):	AP-4350
Sample ID:	0510FROBWA-03
Matrix:	WATER

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.797	61 18.364

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	PRIMARY	
Turbidity:	0.19	NTU
Free Phase Product:	NO	
Water Temperature:	4.56	Celsius
pH:	7.14	Standard Units
Dissolved Ox Concentrations:	9.33	mg/L
REDOX Potential:	187.7	-/+ mV
Conductivity:	169	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	CLEAR	
Odor:	NONE	
Groundwater Level:	147.4	Feet MSL
Total Depth:	188.65	FTOC



## Field Data

### Project Data:

Contract Number:	USACE # 06-002
Project/Site Name:	OUB
Date:	10/11/2005
Location (AP):	AP-4345
Sample ID:	0510FROBWA-06
Matrix:	WATER

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.521	61 18.362

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	PRIMARY	
Turbidity:	7.32	NTU
Free Phase Product:	NO	
Water Temperature:	3.03	Celsius
pH:	7.6	Standard Units
Dissolved Ox Concentrations:	13.45	mg/L
REDOX Potential:	497.2	-/+ mV
Conductivity:	119	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	CLEAR	
Odor:	NONE	
Groundwater Level:	154.92	Feet MSL
Total Depth:	187.93	



## Field Data

### Project Data:

Contract Number:	USACE # 06-002	
Project/Site Name:	OUB	
Date:	10/10/2005	
Location (AP):	AP-4344	
Sample ID:	0510FROBWA-04	
Matrix:	WATER	

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.722	61 18.294

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	PRIMARY	
Turbidity:	0.86	NTU
Free Phase Product:	NO	
Water Temperature:	5.45	Celsius
pH:	7.64	Standard Units
Dissolved Ox Concentrations:	11.65	mg/L
REDOX Potential:	183.6	-/+ mV
Conductivity:	146	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	CLEAR	
Odor:	NONE	
Groundwater Level:	149.05	Feet MSL
Total Depth:	165.9	



## Field Data

### Project Data:

Contract Number:	USACE # 06-002	
Project/Site Name:	OUB	
Date:	10/13/2005	
Location (AP):	AP-4019	
Sample ID:	0510FROBWA-17	
Matrix:	WATER	

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.663	61 18.169

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	PRIMARY	
Turbidity:	1.17	NTU
Free Phase Product:	NO	
Water Temperature:	2.01	Celsius
pH:	7.91	Standard Units
Dissolved Ox Concentrations:	10.23	mg/L
REDOX Potential:	254.1	-/+ mV
Conductivity:	113	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	CLEAR	
Odor:	NONE	
Groundwater Level:	136.38	Feet MSL
Total Depth:	158.4	



## Field Data

### Project Data:

Contract Number:	USACE # 06-002
Project/Site Name:	OUB
Date:	10/14/2005
Location (AP):	AP-4017
Sample ID:	0510FROBWA-23
Matrix:	WATER

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.663	61 18.169

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	PRIMARY	
Turbidity:	0.42	NTU
Free Phase Product:	NO	
Water Temperature:	5.4	Celsius
pH:	6.87	Standard Units
Dissolved Ox Concentrations:	0.42	mg/L
REDOX Potential:	-44.9	-/+ mV
Conductivity:	224	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	CLEAR	
Odor:	NONE	
Groundwater Level:	65.4	Feet MSL
Total Depth:	99.74	



## Field Data

### Project Data:

Contract Number:	USACE # 06-002
Project/Site Name:	OUB
Date:	10/11/2005
Location (AP):	AP-4011
Sample ID:	0510FROBWA-09
Matrix:	WATER

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.557	61 18.203

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	PRIMARY/MS/MSD	
Turbidity:	1.18	NTU
Free Phase Product:	NO	
Water Temperature:	4.4	Celsius
pH:	8.09	Standard Units
Dissolved Ox Concentrations:	12.53	mg/L
REDOX Potential:	197.2	-/+ mV
Conductivity:	133	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	CLEAR	
Odor:	NONE	
Groundwater Level:	122.14	Feet MSL
Total Depth:	140.4	



## Field Data

### Project Data:

Contract Number:	USACE # 06-002
Project/Site Name:	OUB
Date:	10/12/2005
Location (AP):	AP-3989
Sample ID:	0510FROBWA-15
Matrix:	WATER

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.624	61 18.202

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	PRIMARY	
Turbidity:	9.77	NTU
Free Phase Product:	NO	
Water Temperature:	5.97	Celsius
pH:	6.66	Standard Units
Dissolved Ox Concentrations:	2.5	mg/L
REDOX Potential:	279.2	-/+ mV
Conductivity:	228	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	CLEAR	
Odor:	NONE	
Groundwater Level:	27.45	Feet MSL
Total Depth:	36.29	



## Field Data

### Project Data:

Contract Number:	USACE # 06-002	
Project/Site Name:	OUB	
Date:	10/17/2005	
Location (AP):	AP-3985	
Sample ID:	0510FROBWA-33	
Matrix:	WATER	

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.686	61 18.171

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	PRIMARY	
Turbidity:	1.16	NTU
Free Phase Product:	NO	
Water Temperature:	6.86	Celsius
pH:	8.89	Standard Units
Dissolved Ox Concentrations:	0.34	mg/L
REDOX Potential:	-69	-/+ mV
Conductivity:	292	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	CLEAR	
Odor:	NONE	
Groundwater Level:	23.95	Feet MSL
Total Depth:	32.39	



## Field Data

### Project Data:

Contract Number:	USACE # 06-002
Project/Site Name:	OUB
Date:	10/17/2005
Location (AP):	AP-3984
Sample ID:	0510FROBWA-34
Matrix:	WATER

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.689	61 18.188

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	PRIMARY	
Turbidity:	3.52	NTU
Free Phase Product:	NO	
Water Temperature:	7.34	Celsius
pH:	8.78	Standard Units
Dissolved Ox Concentrations:	1.64	mg/L
REDOX Potential:	-91	-/+ mV
Conductivity:	317	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	CLEAR	
Odor:	NONE	
Groundwater Level:	26.36	Feet MSL
Total Depth:	42.45	



## Field Data

### Project Data:

Contract Number:	USACE # 06-002	
Project/Site Name:	OUB	
Date:	10/13/2005	
Location (AP):	AP-3983	
Sample ID:	0510FROBWA-18	
Matrix:	WATER	

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.655	61 18.194

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	PRIMARY	
Turbidity:	133	NTU
Free Phase Product:	NO	
Water Temperature:	6.74	Celsius
pH:	7.44	Standard Units
Dissolved Ox Concentrations:	0.21	mg/L
REDOX Potential:	-145.3	-/+ mV
Conductivity:	267	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	TAN	
Odor:	NONE	
Groundwater Level:	24.25	Feet MSL
Total Depth:	30.35	



## Field Data

### Project Data:

Contract Number:	USACE # 06-002	
Project/Site Name:	OUB	
Date:	10/13/2005	
Location (AP):	AP-3983	
Sample ID:	0510FROBWA-20	
Matrix:	WATER	

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.655	61 18.194

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	EQUIPMENT R.	
Turbidity:	NA	NTU
Free Phase Product:	NO	
Water Temperature:	NA	Celsius
pH:	NA	Standard Units
Dissolved Ox Concentrations:	NA	mg/L
REDOX Potential:	NA	-/+ mV
Conductivity:	NA	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	NA	
Odor:	NA	
Groundwater Level:	24.25	Feet MSL
Total Depth:	30.35	



## Field Data

### Project Data:

Contract Number:	USACE # 06-002	
Project/Site Name:	OUB	
Date:	10/13/2005	
Location (AP):	AP-3983	
Sample ID:	0510FROBWA-19	
Matrix:	WATER	

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.655	61 18.194

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	DUPLICATE	
Turbidity:	133	NTU
Free Phase Product:	NO	
Water Temperature:	6.74	Celsius
pH:	7.44	Standard Units
Dissolved Ox Concentrations:	0.21	mg/L
REDOX Potential:	-145.3	-/+ mV
Conductivity:	267	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	TAN	
Odor:	NONE	
Groundwater Level:	24.25	Feet MSL
Total Depth:	30.35	



## Field Data

### Project Data:

Contract Number:	USACE # 06-002	
Project/Site Name:	OUB	
Date:	10/12/2005	
Location (AP):	AP-3982	
Sample ID:	0510FROBWA-11	
Matrix:	WATER	

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.513	61 18.210

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	PRIMARY	
Turbidity:	19.2	NTU
Free Phase Product:	NO	
Water Temperature:	3.62	Celsius
pH:	7.25	Standard Units
Dissolved Ox Concentrations:	5.3	mg/L
REDOX Potential:	55.5	-/+ mV
Conductivity:	115	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	CLEAR	
Odor:	NONE	
Groundwater Level:	25.75	Feet MSL
Total Depth:	37.11	



## Field Data

### Project Data:

Contract Number:	USACE # 06-002
Project/Site Name:	OUB
Date:	10/17/2005
Location (AP):	AP-3981
Sample ID:	0510FROBWA-32
Matrix:	WATER

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.707	61 18.167

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	PRIMARY	
Turbidity:	3.24	NTU
Free Phase Product:	NO	
Water Temperature:	6.14	Celsius
pH:	9.29	Standard Units
Dissolved Ox Concentrations:	0.47	mg/L
REDOX Potential:	-91.4	-/+ mV
Conductivity:	369	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	CLEAR	
Odor:	NONE	
Groundwater Level:	21.86	Feet MSL
Total Depth:	40.65	



## Field Data

### Project Data:

Contract Number:	USACE # 06-002
Project/Site Name:	OUB
Date:	10/11/2005
Location (AP):	AP-3749
Sample ID:	0510FROBWA-10
Matrix:	WATER

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.953	61 18.120

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	PRIMARY	
Turbidity:	4.49	NTU
Free Phase Product:	NO	
Water Temperature:	3.97	Celsius
pH:	7.54	Standard Units
Dissolved Ox Concentrations:	11.75	mg/L
REDOX Potential:	221.6	-/+ mV
Conductivity:	114	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	CLEAR	
Odor:	NONE	
Groundwater Level:	20.35	Feet MSL
Total Depth:	24.59	



## Field Data

### Project Data:

Contract Number:	USACE # 06-002
Project/Site Name:	OUB
Date:	10/11/2005
Location (AP):	AP-3748
Sample ID:	0510FROBWA-07
Matrix:	WATER

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.514	61 18.263

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	PRIMARY	
Turbidity:	0.77	NTU
Free Phase Product:	NO	
Water Temperature:	4.1	Celsius
pH:	7.83	Standard Units
Dissolved Ox Concentrations:	8.51	mg/L
REDOX Potential:	184.4	-/+ mV
Conductivity:	189	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	CLEAR	
Odor:	NONE	
Groundwater Level:	132.67	Feet MSL
Total Depth:	172.98	



## Field Data

### Project Data:

Contract Number:	USACE # 06-002	
Project/Site Name:	OUB	
Date:	10/11/2005	
Location (AP):	AP-3747	
Sample ID:	0510FROBWA-08	
Matrix:	WATER	

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.586	61 18.245

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	PRIMARY	
Turbidity:	0.77	NTU
Free Phase Product:	NO	
Water Temperature:	4.64	Celsius
pH:	7.78	Standard Units
Dissolved Ox Concentrations:	11.87	mg/L
REDOX Potential:	199.8	-/+ mV
Conductivity:	95	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	CLEAR	
Odor:	NONE	
Groundwater Level:	24.25	Feet MSL
Total Depth:	33.15	



## Field Data

### Project Data:

Contract Number:	USACE # 06-002	
Project/Site Name:	OUB	
Date:	10/12/2005	
Location (AP):	AP-3745	
Sample ID:	0510FROBWA-12	
Matrix:	WATER	

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.608	61 18.174

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	PRIMARY	
Turbidity:	0.82	NTU
Free Phase Product:	NO	
Water Temperature:	5.7	Celsius
pH:	6.61	Standard Units
Dissolved Ox Concentrations:	4.35	mg/L
REDOX Potential:	179.1	-/+ mV
Conductivity:	185	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	CLEAR	
Odor:	NONE	
Groundwater Level:	20.88	Feet MSL
Total Depth:	29.53	



## Field Data

### Project Data:

Contract Number:	USACE # 06-002
Project/Site Name:	OUB
Date:	10/13/2005
Location (AP):	AP-4551
Sample ID:	0510FROBWA-21
Matrix:	WATER

### Location Data:

Sample Location:		
UTM WGS84 Zone 6	<u>X Coord</u>	<u>Y Coord</u>
Meters:	149 36.646	61 18.185

### Field Data (From Stabilized or Last Recording Prior to Sampling):

		<u>Units</u>
Sample Type:	PRIMARY	
Turbidity:	NA	NTU
Free Phase Product:	NO	
Water Temperature:	NA	Celsius
pH:	NA	Standard Units
Dissolved Ox Concentrations:	NA	mg/L
REDOX Potential:	NA	-/+ mV
Conductivity:	NA	umhos/cm
Filtered for Dissolved Metals:	YES	
Color:	NA	
Odor:	NA	
Groundwater Level:	95.81	Feet MSL
Total Depth:	98.72	



**FINAL REPORT**  
**FORT RICHARDSON**  
**OUB POLELINE ROAD DISPOSAL AREA**

**APPENDIX C: SAMPLE INVENTORY**  
**RECORDS**

**FORT RICHARDSON, ALASKA**

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**PREPARED FOR:**



**U.S. Army, Directorate of Public Works**  
**Contract No. W911KB-04-P-0091**

**June 2006**



**US Army**  
**Installation Management Agency**



**US Army Corps**  
**of Engineers**®  
Alaska District



Satori Group, Inc.  
1310 E. 66<sup>th</sup> Ave., #2  
Anchorage, AK 99518



SATORIGROUP INC.

## SAMPLE TRACKING LOG

Fort Richardson Groundwater Monitoring Program

Former Building OUB, October 2005 Sampling Event

Sample ID	Actual Well Number	Chain of Custody Well Number	Date	Actual Time Collected	Chain of Custody Time	Matrix	Type
0510FROBWA-01	TRIP BLANK	TRIP BLANK	10/10/05	0800	0800	WATER	TRIP BLANK
0510FROBWA-02	TRIP BLANK	TRIP BLANK	10/10/05	0800	0800	WATER	TRIP BLANK
0510FROBWA-03	AP-4350	AP-4350	10/10/05	1205	1205	WATER	PRIMARY
0510FROBWA-04	AP-4344	AP-4344	10/10/05	1350	1350	WATER	PRIMARY
0510FROBWA-05	AP-4352	AP-4352	10/10/05	1455	1455	WATER	PRIMARY
0510FROBWA-06	AP-4345	AP-4345	10/11/05	1055	1055	WATER	PRIMARY
0510FROBWA-07	AP-3748	AP-3748	10/11/05	1245	1245	WATER	PRIMARY
0510FROBWA-08	AP-3747	AP-3747	10/11/05	1400	1400	WATER	PRIMARY
0510FROBWA-09	AP-4011	AP-4011	10/11/05	1520	1520	WATER	PRIMARY
0510FROBWA-10	AP-3749	AP-3749	10/11/05	1700	1700	WATER	PRIMARY
0510FROBWA-11	AP-3982	AP-3982	10/12/05	1035	1035	WATER	PRIMARY
0510FROBWA-12	AP-3745	AP-3745	10/12/05	1215	1215	WATER	PRIMARY
0510FROBWA-13	AP-4550	AP-4550	10/12/05	1340	1340	WATER	PRIMARY_MS/MSD
0510FROBWA-14	AP-4550	AP-4599	10/12/05	1340	1310	WATER	DUPLICATE
0510FROBWA-15	AP-3989	AP-3989	10/12/05	1550	1550	WATER	PRIMARY
0510FROBWA-16	AP-4525	AP-4525	10/12/05	1645	1645	WATER	PRIMARY
0510FROBWA-17	AP-4019	AP-4019	10/13/05	1045	1045	WATER	PRIMARY

Sample ID	Actual Well Number	Chain of Custody Well Number	Date	Actual Time Collected	Chain of Custody Time	Matrix	Type
0510FROBWA-18	AP-3983	AP-3983	10/13/05	1515	1515	WATER	PRIMARY_MS/MSD
0510FROBWA-19	AP-3983	AP-4598	10/13/05	1515	1445	WATER	DUPLICATE
0510FROBWA-20	AP-3983	AP-3983	10/13/05	1645	1645	WATER	EQUIPMENT RINSE
0510FROBWA-21	AP-4551	AP-4551	10/13/05	1540	1540	WATER	PRIMARY
0510FROBWA-22	AP-4518	AP-4518	10/13/05	1820	1820	WATER	PRIMARY
0510FROBWA-23	AP-4017	AP-4017	10/14/05	1245	1245	WATER	PRIMARY
0510FROBWA-24	TRIP BLANK	TRIP BLANK	10/13/05	0800	0800	WATER	TRIP BLANK
0510FROBWA-25	TRIP BLANK	TRIP BLANK	10/13/05	0800	0800	WATER	TRIP BLANK
0510FROBWA-26	AP-4519	AP-4519	10/14/05	1450	1450	WATER	PRIMARY
0510FROBWA-27	AP-4353	AP-4353	10/14/05	1605	1605	WATER	PRIMARY
0510FROBWA-28	AP-4354	AP-4354	10/14/05	1710	1710	WATER	PRIMARY
0510FROBWA-29	AP-4354	AP-4597	10/14/05	1710	1640	WATER	DUPLICATE
0510FROBWA-30	AP-4354	AP-4354	10/14/05	1805	1805	WATER	EQUIPMENT RINSE
0510FROBWA-31	AP-3744	AP-3744	10/17/05	1140	1140	WATER	PRIMARY
0510FROBWA-32	AP-3981	AP-3981	10/17/05	1255	1255	WATER	PRIMARY
0510FROBWA-33	AP-3985	AP-3985	10/17/05	1435	1435	WATER	PRIMARY
0510FROBWA-34	AP-3984	AP-3984	10/17/05	1600	1600	WATER	PRIMARY

## Case Narrative

**Customer: ENHSINC**

**Satori Group, Inc.**

**Project: 1056845**

**Ft Richardson Groundwater**

**NPDL WO: 06-022**

### **1056845015 BMSD**

8260 - CCV recoveries for dichlorodifluoromethane and vinyl chloride are biased high and do not meet laboratory QC goals. The results for these analytes may be biased high in this BMSD.

8260 - LCS/LCSD recoveries for 1,2-dibromo-3-chloropropane are biased low and do not meet laboratory QC goals. The result for this analyte is considered estimated in this BMSD.

8260 - BMSD RPD for 1,2,3-trichlorobenzene does not meet laboratory QC goals. This analyte is not detected above the PQL in the original sample.

### **665250 MB**

300.0 - Detectable amount of Ortho Phosphate-P in the method blank; Ortho Phosphate-P was not detected in the samples.

### **666530 CCV**

8260 - CCV recovery for carbon disulfide was biased low and did not meet laboratory QC goals. This analyte was not reported in the associated samples.

### **666532 CCV**

8260 - CCV recoveries for carbon disulfide and tetrachloroethene were biased low and did not meet laboratory QC goals. This analyte was not reported in the associated samples.

### **667230 CCV**

8260 - CCV recoveries for dichlorodifluoromethane and vinyl chloride are biased high and do not meet laboratory QC goals. Positive results for these analytes may be biased high in the associated samples.



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

1056845



Virginia  
 Jersey

037377

1 CLIENT: **SATORI GROUP**  
 CONTACT: **D. Lucas** PHONE NO: (907) 332 0456  
 PROJECT: **FT. RICHARDSON GROUNDWATER** SITE/PSID#:  
 REPORTS TO:  
 INVOICE TO: **D. Lucas** FAX NO: (907) 332 0457  
 QUOTE # **7268A**  
 P.O. NUMBER **05-025**

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

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE G= COMP G= GRAB	Preservatives Used Analysis Required	HQ HQC	REMARKS
1	0510FROBWA-01	10/10/05	0800	H2O	3	G	X	HQ HQC	TRIP BLANK
2	0510FROBWA-02	10/10/05	0800	H2O	3	G	X	HQ HQC	TRIP BLANK
3	0510FROBWA-03	10/10/05	1205	H2O	6	G	X	HQ HQC	AP-4350
4	0510FROBWA-04	10/10/05	1350	H2O	6	G	X	HQ HQC	AP-4344
5	0510FROBWA-05	10/10/05	1455	H2O	6	G	X	HQ HQC	AP-4352
6	0510FROBWA-06	10/11/05	1055	H2O	6	G	X	HQ HQC	AP-4345
7	0510FROBWA-07	10/11/05	1245	H2O	6	G	X	HQ HQC	AP-3748
8	0510FROBWA-08	10/11/05	1400	H2O	6	G	X	HQ HQC	AP-3747
9	0510FROBWA-09	10/11/05	1520	H2O	6	G	X	HQ HQC	AP-4011
10	0510FROBWA-10	10/11/05	1700	H2O	6	G	X	HQ HQC	AP-3749

2

Shipping Carrier: \_\_\_\_\_  
 Shipping Ticket No: \_\_\_\_\_  
 Special Deliverable Requirements: **LEVEL III COELT**  
 Requested Turnaround Time and Special Instructions:  
 email coden@poo.usace.army.mil  
 USACE PROJ 06-002  
 \* COOLER HAND DELIVERED  
 USACE CHEMIST MIKE UTLEY \* MATRIX CODE WA

Collected/Relinquished By: (1)	Date	Time	Received By:	Time
<i>Diana Duce</i>	10/13/05	1630	<i>[Signature]</i>	
Relinquished By: (2)	Date	Time	Received By:	Time
			<i>[Signature]</i>	
Relinquished By: (3)	Date	Time	Received By:	Time
			<i>[Signature]</i>	
Relinquished By: (4)	Date	Time	Received By:	Time
	10/13/05	1631	<i>[Signature]</i>	



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

1056845



initia  
by

037371

1 CLIENT: **SATORI Group** PHONE NO: (907) 332 0456

CONTACT: **D. Lucas**

PROJECT: **F. RICHARDSON GROUNDWATER**

REPORTS TO:

INVOICE TO: **D. Lucas** FAX NO: (907) 332 0457

QUOTE # **7268 A**

P.O. NUMBER **05-025**

2

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	CONTAINERS			SAMPLE TYPE	PRESERVATIVES USED	ANALYSIS REQUIRED	REMARKS
					No	C	G				
11	A-F 0510FROBWA-11	10/12/05	1035	H2O	6			G		X	AP-3982
12	A-F 0510FROBWA-12	10/12/05	1215	H2O	6			G		X	AP-3745
13	A-F 0510FROBWA-13	10/12/05	1340	H2O	18			G		X	AP4550 +ms/msd
17	A-F 0510FROBWA-14	10/12/05	1310	H2O	6			G		X	AP-4599
18	A-F 0510FROBWA-15	10/12/05	1550	H2O	6			G		X	AP-3989
19	A-F 0510FROBWA-16	10/12/05	1645	H2O	6			G		X	AP-4525
	0510FROBWA-17										

3

4 Shipping Carrier: **Hand** Samples Received Cold? (Circle) YES NO  
 Shipping Ticket No: **B 56 C-2.0** Temperature: **C**  
 Special Deliverable Requirements: **LEVEL III COEIT** Chain of Custody Seal: (Circle) INTACT BROKEN **ABSENT**

5 Collected/Relinquished By: (1) **D. Lucas** Received By: **B. Sheets**  
 Relinquished By: (2) **B. Sheets** Received By: **B. Sheets**  
 Relinquished By: (3) **B. Sheets** Received By: **B. Sheets**  
 Relinquished By: (4) **B. Sheets** Received By: **B. Sheets**

Requested Turnaround Time and Special Instructions:  
 email: cooler@poa.usace.army.mil  
 USACE PROJECT 06-002  
 \* cooler hand delivered  
 USACE CHEMIST MIKE UTLEY MATRIX CODE WFT



CHAIN OF CUSTODY RECORD  
SGS Environmental Services Inc.

1056845



37375

1 CLIENT: SATORI GRAB PHONE NO: (907) 332 0456

CONTACT: D Lucas

PROJECT: FT. RICHARDSON GROUNDWATER SITE/PWSID#: \_\_\_\_\_

REPORTS TO: D. Lucas FAX NO.: (907) 332 0457

INVOICE TO: J. Lucas QUOTE # 7208A

P.O. NUMBER 05-025

SGS Reference:

PAGE 1 OF 2

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	CONTAINERS			PRESERVATIVES USED	ANALYSIS REQUIRED	REMARKS
					NO	C= COMP	G= GRAB			
3	OS10FROBWA-03	10/10/05	1205	H2O	3	G		X	EPA 300 (Chloride, Nitrate, Nitrite, Sulfate) (3)	AP-4350
4	OS10FROBWA-04	10/10/05	1350	H2O	3	G		X	EPA 300 (Chloride, Nitrate, Nitrite, Sulfate)	AP-4344
5	OS10FROBWA-05	10/10/05	1455	H2O	3	G		X	EPA 300 (Chloride, Nitrate, Nitrite, Sulfate)	AP-4352
6	OS10FROBWA-06	10/11/05	1055	H2O	3	G		X	EPA 300 (Chloride, Nitrate, Nitrite, Sulfate)	AP-4345
7	OS10FROBWA-07	10/11/05	1245	H2O	3	G		X	EPA 300 (Chloride, Nitrate, Nitrite, Sulfate)	AP-3748
8	OS10FROBWA-08	10/11/05	1400	H2O	3	G		X	EPA 300 (Chloride, Nitrate, Nitrite, Sulfate)	AP-3747
9	OS10FROBWA-09	10/11/05	1520	H2O	3	G		X	EPA 300 (Chloride, Nitrate, Nitrite, Sulfate)	AP-4011
10	OS10FROBWA-10	10/11/05	1700	H2O	3	G		X	EPA 300 (Chloride, Nitrate, Nitrite, Sulfate)	AP-3749
11	OS10FROBWA-11	10/12/05	1035	H2O	3	G		X	EPA 300 (Chloride, Nitrate, Nitrite, Sulfate)	AP-3982
12	OS10FROBWA-12	10/12/05	1215	H2O	3	G		X	EPA 300 (Chloride, Nitrate, Nitrite, Sulfate)	AP-3745

Collected/Relinquished By: (1) Dawn Duen Date 10/13/05 Time 1630 Received By: \_\_\_\_\_

Relinquished By: (2) \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ Received By: SP Holtzlos

Relinquished By: (3) \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ Received By: \_\_\_\_\_

Relinquished By: (4) \_\_\_\_\_ Date 10/15/05 Time 1631 Received By: Brenda Sheebs

Shipping Carrier: Hand

Shipping Ticket No: \_\_\_\_\_

Special Deliverable Requirements: LEVEL III COLLECT

Requested Turnaround Time and Special Instructions: email cooler @ poa.usace.army.mil usace project # 06-002 \* cooler \* METALS FIELD FILTERED hand delivered MATRIX CODE WA

Samples Received Cold? (Circle) YES NO

Temperature °C: 18.5-14 °C = 5.9

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT



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

1056845

gina sey



037376

1 CLIENT: **SATORI GROUP** PHONE NO: **(907) 332 0456**

CONTACT: **D. Lucas**

PROJECT: **F. RICHARDSON GROUNDWATER** SITE/PROJECT ID: **6020 (Fe, Mn)**

REPORTS TO: **D. Lucas** FAX NO: **(907) 332 0457**

INVOICE TO: **J. Lucas** QUOTE # **7268A**

P.O. NUMBER **05-025**

SGS Reference: \_\_\_\_\_

PAGE **2** OF **2**

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE C=COMP G=GRAB	Preservatives Used Analysis Required	Remarks
13	0510FROBWA-13	10/12/05	1340	H2O	9	G	BP 300 (Quinone) Atrite, Nitric, Sulfate 3	
14	0510FROBWA-14	10/12/05	1310	H2O	3	G	BP 300 (Quinone) Atrite, Nitric, Sulfate	
18	0510FROBWA-15	10/12/05	1550	H2O	3	G	BP 300 (Quinone) Atrite, Nitric, Sulfate	
19	0510FROBWA-16	10/12/05	1645	H2O	3	G	BP 300 (Quinone) Atrite, Nitric, Sulfate	

4 Shipping Carrier: **Land**

Shipping Ticket No: \_\_\_\_\_

Special Deliverable Requirements: **LEVEL III COELT**

Samples Received Cold? (Circle) YES NO

Temperature °C: **5.9** .TB=5.4

Chain of Custody Seal: (Circle) INTACT BROKEN **ABSENT**

Requested Turnaround Time and Special Instructions:  
 Email cooler @ poa.usace.army.mil  
 USACE PROJECT 06-002 \*METALS  
 \*COOLER HAND DELIVERED FIELD FILTERED  
 USACE CHEMIST MIKE UTLEY MATRIX CODE WA

5 Collected/Relinquished By: (1) **Dustin Juan** Date: **10/13/05** Time: **1630** Received By: \_\_\_\_\_

Relinquished By: (2) \_\_\_\_\_

Relinquished By: (3) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: **DP Holtz**

Relinquished By: (4) \_\_\_\_\_ Date: **10/13/05** Time: **1631** Received By: **Brenda Sheet**

SAMPLE RECEIPT FORM

SGS WO#:

105.6845

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: 10/28/05  
 Received Date: 10/13/05  
 Received Time: 1631  
 Is date/time conversion necessary? no  
 # of hours to AK Local Time: \_\_\_\_\_

Thermometer ID: 5D

Cooler ID	Temp Blank	Cooler Temp
1	5.6 °C	2.0 °C
2	5.4 °C	5.9 °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?

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

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

This section must be filled if problems are found.

Yes	No	Question
<input type="checkbox"/>	<input type="checkbox"/>	Was client notified of problems?
<input type="checkbox"/>	<input type="checkbox"/>	Individual contacted:
<input type="checkbox"/>	<input type="checkbox"/>	Via: Phone / Fax / Email (circle one)
<input type="checkbox"/>	<input type="checkbox"/>	Date/Time: _____
<input type="checkbox"/>	<input type="checkbox"/>	Reason for contact: _____
<input type="checkbox"/>	<input type="checkbox"/>	Change Order Required?
<input type="checkbox"/>	<input type="checkbox"/>	SGS Contact: _____

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

Completed by (sign): Brenda Sheets (print): Brenda Sheets  
 Login proof (check one): waived  required  performed by: \_\_\_\_\_





## Case Narrative

Customer: ENHSINC

Satori Group, Inc.

Project: 1056896

Ft Richardson Groundwater

NPDL WO: 06-002

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

**1056896017 PS**

**0510FROBWA-30**

EPA 353.2 - The MS for total nitrate / nitrite did not meet QC criteria. The batch LCS is within QC limits.

**1056896003 BMS**

300.0 - The matrix spike recovered outside of acceptance criteria for sulfate. See LFB for QC requirements.

EPA 353.2 - The MS for total nitrate / nitrite did not meet QC criteria. The batch LCS is within QC limits.

8260 - BMS/BMSD recoveries for 2-chloroethyl vinyl ether do not meet QC goals due to sample pH. The acid preservative hydrolyzes this analyte, precluding the ability to measure it in the QC or field samples.

8260 - BMS/BMSD recoveries for 2-butanone are biased high and do not meet laboratory QC goals. This analyte is not detected in the original sample.

**666013 MS**

353.2 - The MS for total nitrate/nitrite did not meet QC criteria. The batch LCS is within QC limits.

**666014 MS**

EPA 353.2 - The MS for total nitrate / nitrite did not meet QC criteria. The batch LCS is within QC limits.

**1056896004 BMSD**

8260 - BMSD recovery for trichloroethene is biased high and does not meet laboratory QC goals. This analyte meets BMS/LCS/LCSD recovery and RPD goals.

**667171 CCV**

8260 - CCV recovery for 2-CEVE is biased high and does not meet laboratory QC goals. This analyte is not detected above the PQL in any of the associated samples.

8260 - CCV recovery for 1,1,2,2-tetrachloroethane is biased high and does not meet laboratory QC goals. This analyte is either not detected above the PQL or not reported in association with this CCV.

**667260 CCV**

8260 - CCV recovery for 1,1,2,2-tetrachloroethane is biased high and does not meet laboratory QC goals. This analyte is not detected above the PQL or not reported in any of the associated samples.

**667431 CCV**

8260 - CCV recovery for acetone is biased high and does not meet laboratory QC goals. This analyte is not detected above the PQL in any of the associated samples.

**667480 CCV**

8260 - CCV recoveries for bromomethane and 1,1,2,2-tetrachloroethane are biased high and do not meet laboratory QC goals. These analytes are not detected above the PQL in any of the associated samples.

**667482 CCV**

8260 - CCV recovery for 1,1,2,2-tetrachloroethane is biased high and does not meet laboratory QC goals. This analyte is not detected above the PQL in any of the associated samples.

**667788 CCV**

8260 - CCV recovery for acetone is biased high and does not meet laboratory QC goals. This analyte is not detected above the PQL in any of the associated samples.



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

1056896



Virginia  
 irsey

037372

1 CLIENT: Satori Group  
 CONTACT: D. Lucas PHONE NO: (907) 332 0456  
 PROJECT: F. Richardson Groundwater SITE/PWSID#:  
 REPORTS TO:  
D. Lucas FAX NO: (907) 332 0457  
 INVOICE TO:  
J. Lucas QUOTE # 7268 A  
 P.O. NUMBER 05-025

SGS Reference:

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	CONTAINERS			SAMPLE TYPE	Preservatives Used	Analysis Required	REMARKS
					No	C=COMP	G=GRAB				
1	0510FROBWA-17	10/13/05	10:45	H2O	6	G	G	X	X	X	AP-4019
2	0510FROBWA-18	10/13/05	15:15	H2O	18	G	G	X	X	X	AP-3983, M <sup>3</sup> /MSD
3	0510FROBWA-19	10/13/05	14:45	H2O	6	G	G	X	X	X	AP-4598
4	0510FROBWA-20	10/13/05	16:45	H2O	6	G	G	X	X	X	E. RINSE
5	0510FROBWA-21	10/13/05	15:40	H2O	6	G	G	X	X	X	AP-4551
6	0510FROBWA-22	10/13/05	18:20	H2O	6	G	G	X	X	X	AP-4518
7	0510FROBWA-23	10/14/05	13:45	H2O	6	G	G	X	X	X	AP-4017
8	0510FROBWA-24	10/13/05	08:00	H2O	6	G	G	X	X	X	TRIP BLANK
9	0510FROBWA-25	10/13/05	08:00	H2O	6	G	G	X	X	X	TRIP BLANK
10	0510FROBWA-26	10/14/05	14:50	H2O	6	G	G	X	X	X	AP-4519

Shipping Carrier: Hand  
 Shipping Ticket No: \_\_\_\_\_  
 Special Deliverable Requirements: Level III COELT  
 Samples Received Cold? (Circle) YES NO  
 Temperature °C: TB=2.0 C=1.8  
 Chain of Custody Seal: (Circle) INTACT BROKEN  
ABSENT  
 Requested Turnaround Time and Special Instructions:  
email cooler@poo-y.sace.army.mil  
USACE project 06-002  
\*cooler hand delivered  
matrix code WA



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

1056896



rginia  
rsey

039686

1 CLIENT: SATORI Group PHONE NO: (907) 332 0456

CONTACT: D. Lucas SITE/PWSID#: F. Richardson GROUNDWATER

PROJECT: F. Richardson GROUNDWATER

REPORTS TO: D. Lucas FAX NO.: (907) 332 0457

INVOICE TO: J. Lucas QUOTE # 7268 A

P.O. NUMBER 05-025

SGS Reference:

PAGE 2 OF 2

NO CONTAINERS

C= COMP  
G= GRAB

Preservatives Used  
Analysts Required

HP HP  
RSK TMS (METHANE, ETHANE, ETHANE)  
8260 VOC  
3

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX
14	0510 FROBWA-27	10/14/05	1605	H2O
15	0510 FROBWA-28	10/14/05	1710	H2O
16	0510 FROBWA-29	10/14/05	1640	H2O
17	0510 FROBWA-30	10/14/05	1805	H2O

REMARKS

AP-4353  
AP-4354  
AP-4597  
E. RINSE

5 Collected/Relinquished By: (1) [Signature] Date 10/17/05 Time 837

Relinquished By: (2) [Signature] Date 10/17/05 Time 0930

Relinquished By: (3) [Signature] Date 10/17/05 Time 0932

Relinquished By: (4) [Signature] Date 10/17/05 Time 0932

4 Shipping Carrier: hand

Shipping Ticket No: 1820 . C=1.8

Special Deliverable Requirements: LEVEL III COEET

Samples Received Color? (Circle) YES NO

Temperature °C: 18.0 . C=1.8

Chain of Custody Seal: (Circle) INTACT BROKEN

Requested Turnaround Time and Special Instructions:  
email cooler @ poa.usace.army.mil  
USACE project 06-002  
\* cooler hand delivered  
MATRIX code WA



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

1056896

de  
West Virginia  
New Jersey



039684

1 CLIENT: SATORI Group  
 CONTACT: D. Lucas PHONE NO.: (907) 332 0456  
 PROJECT: FT. RICHARDSON GROUNDWATER  
 REPORTS TO:  
D. Lucas FAX NO.: (907) 332 0457  
 INVOICE TO:  
J. Lucas QUOTE # 7268A  
 P.O. NUMBER OS-025

SGS Reference:

PAGE 1 OF 2

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	CONTAINERS			SAMPLE TYPE	PRESERVATIVES USED	ANALYSIS REQUIRED	REMARKS
					NO	C	S				
1	OS10FROBWA-17	10/13/05	10:45	H2O	3	G		G	X	X	AP-4019
2	OS10FROBWA-18	10/13/05	15:15	H2O	9	G		G	X	X	AP-3983, M3/MSD
3	OS10FROBWA-19	10/13/05	14:45	H2O	3	G		G	X	X	AP-4598
4	OS10FROBWA-20	10/13/05	16:45	H2O	3	G		G	X	X	E1 RINSE
5	OS10FROBWA-21	10/13/05	15:40	H2O	3	G		G	X	X	AP-4551
6	OS10FROBWA-22	10/13/05	18:20	H2O	3	G		G	X	X	AP-4518
7	OS10FROBWA-23	10/14/05	12:45	H2O	3	G		G	X	X	AP-4017
8	OS10FROBWA-24	10/14/05	14:50	H2O	3	G		G	X	X	AP-4519
9	OS10FROBWA-27	10/14/05	16:05	H2O	3	G		G	X	X	AP-4353
10	OS10FROBWA-28	10/14/05	17:10	H2O	3	G		G	X	X	AP-4354

Shipping Carrier: Hand  
 Shipping Ticket No.: 7B-2-5 C-43  
 Samples Received Cold? (Circle) YES NO  
 Temperature: 7B-2-5 C-43  
 Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT  
 Special Deliverable Requirements:  
LEVEL III COEET  
 Requested Turnaround Time and Special Instructions:  
email cooler@paa.usace.army.mil  
USACE project # 06-002  
\* cooler hand delivered \*  
\* metal's field filtered MATRIX code wa

Collected/Relinquished By: (1) Duchess Jones Date: 10/17/05 Time: 8:45  
 Relinquished By: (2) B. E. Dand Date: 10/17/05 Time: 09:30  
 Relinquished By: (3) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Relinquished By: (4) \_\_\_\_\_ Date: 10/17/05 Time: 09:32



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

1056896

Virginia  
 ersey



039685

1 CLIENT: **SATORI GROUP**  
 CONTACT: **D. Lucas** PHONE NO: (907) 332 0456  
 PROJECT: **FT. RICHARDSON GROUNDWATER**  
 REPORTS TO:  
**D. Lucas** FAX NO.: (907) 332-0457  
 INVOICE TO:  
**J. Lucas** QUOTE # **7268A**  
 P.O. NUMBER **05-025**

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

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE C= COMP G= GRAB	Preservatives Used Analysis Required	REMARKS	
								Hand	Other
19G-I	OSIOFROBWA-29	10/14/05	1640	H2O	3	G	EPA 300 (Nitrate, nitrite) EPA 300 (Fe, Mn) EPA 300 (Nitrate, nitrite) EPA 300 (Chloride) EPA 300 (Sulfate) ③	X	AP-4597
19G-I	OSIOFROBWA-30	10/14/05	1805	H2O	3	G		X	E. RINS

5 Collected/Relinquished By: (1) *Dee June* Date: 10/17/05 Time: 0845 Received By: \_\_\_\_\_  
 Relinquished By: (2) *B. COE* Date: 10/17/05 Time: 0930 Received By: \_\_\_\_\_  
 Relinquished By: (3) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_  
 Relinquished By: (4) \_\_\_\_\_ Date: 10/17/05 Time: 0932 Received By: *[Signature]*

4 Shipping Carrier: *Hand*  
 Shipping Ticket No: *1325 44.3*  
 Special Deliverable Requirements: *LEVEL III COELT*  
 Chain of Custody Seal: (Circle) **INTACT** **BROKEN** **ABSENT**  
 Samples Received Cold? (Circle) YES NO  
 Temperature: *13.25 44.3*  
 Requested Turnaround Time and Special Instructions:  
*Email cooler@paa.usace.army.mil*  
*USACE project # 06-002*  
*\* cooler hand delivered*  
*\* metals field filtered*







## Case Narrative

Customer: ENHSINC

Satori Group, Inc.

Project: 1057046

Ft Richardson Groundwater

NPDL WO:

**1057046003 PS**

**0510FROBWA-33**

8260 - TB result for tetrachloroethane is greater than the PQL, but not detected in the associated method blank.

**1057046004 PS**

**0510FROBWA-34**

8260 - TB result for tetrachloroethane is greater than the PQL, but not detected in the associated method blank.

**1057046005 TB**

**0510FROBWA-35**

8260 - TB result for tetrachloroethane is greater than the PQL, but not detected in the associated method blank.

**666882 MS**

353.2 - The MS failed to meet QC criteria. The batch LCS is within QC limits.



# CHAIN OF CUSTODY RECORD

CT&E Environmental Services Inc.

Laboratory Division

**1** CLIENT: SATORI GROUP PHONE NO: (907) 332 0456  
 CONTACT: D. Lucas  
 PROJECT: FT. RICHARDSON GROUNDWATER PWSID#: \_\_\_\_\_  
 REPORTS TO: \_\_\_\_\_  
D. Lucas FAX NO: (907) \_\_\_\_\_  
 INVOICE TO: \_\_\_\_\_  
J. Lucas QUOTE# 7262A  
 P.O. NUMBER: 05-025

LAB NO	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No.	CONTAINERS	SAMPLE TYPE C = COMP G = GRAB	CT&E Reference:				REMARKS
								Preservatives Used	Analysis Required	HC	HC	
1	0510FROBWA-31	19/17/05	11:40	H2O	6	6	G	PSK 175 (METHANE) 8270	HC	HC	HC	AP-3744
2	0510FROBWA-32	19/17/05	12:55	H2O	6	6	G	PSK 175 (METHANE) 8270	HC	HC	HC	AP-3981
3	0510FROBWA-33	19/17/05	14:35	H2O	6	6	G	PSK 175 (METHANE) 8270	HC	HC	HC	AP-3985
4	0510FROBWA-34	19/17/05	16:00	H2O	6	6	G	PSK 175 (METHANE) 8270	HC	HC	HC	AP-3984
5	0510FROBWA-35	19/17/05	08:00	H2O	3	3	G	8260 VOC				TRIP BLANK
6	0510FROBWA-36	19/17/05	08:00	H2O	3	3	G					TRIP BLANK
7	0510FROBWA-01	19/18/05	10:35	H2O	6	6	G		X	X	X	AP-3871
8	0510FROBWA-02	19/18/05	12:30	H2O	6	6	G		X	X	X	AP-3774
9	0510FROBWA-03	19/18/05	15:30	H2O	6	6	G		X	X	X	AP-3893
10	0510FROBWA-04	19/18/05	17:00	H2O	6	6	G		X	X	X	AP-3468

**5** Collected/Relinquished By: (1) Jim Jim Date: 10/20/05 Time: 1005 Received By: \_\_\_\_\_  
 Relinquished By: (2) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_  
 Relinquished By: (3) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_  
 Relinquished By: (4) \_\_\_\_\_ Date: 10/20/05 Time: 1153 Received For Laboratory By: Brenda Steets

Shipping Carrier: Hand Temperature C: 2.1 TB 6.0  
 Shipping Ticket No: \_\_\_\_\_ Chain of Custody Seal: (Circle) INTACT - BROKEN - ABSENT  
 Data Deliverables: Level I Level II Level III EDD Type: COELT  
 Requested Turnaround Time and Special Instructions:  
email cooler @ poa.usace.army.mil  
0510FROBWA-31 TO -34 = USACE PROJ 06-002  
0510FROBWA-01 TO -04 = USACE PROJ 06-005  
\* cooler hand delivered MATRIX code WA

1057046

CHAIN OF CUSTODY RECORD

CT&E Environmental Services Inc.  
Laboratory Division

1 CLIENT: SATORI Group  
 CONTACT: D. Lucas  
 PROJECT: FT. RICHARDSON GROUNDWATER  
 REPORTS TO:  
 D. Lucas  
 INVOICE TO:  
 J. Lucas

PHONE NO: 907 332 0456  
 PWSID#:                       
 FAX NO: (907) 332-0457  
 QUOTE# 7268A  
 P.O. NUMBER: 05-025

LAB NO	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX
1	OS10FROBWA-31	10/17/05	1140	H <sub>2</sub> O
2	OS10FROBWA-32	10/17/05	1255	H <sub>2</sub> O
3	OS10FROBWA-33	10/17/05	1435	H <sub>2</sub> O
4	OS10FROBWA-34	10/17/05	1600	H <sub>2</sub> O
	OS10FROAWA-01	10/18/05	1035	H <sub>2</sub> O
	OS10FROAWA-02	10/18/05	1230	H <sub>2</sub> O
	OS10FROAWA-03	10/18/05	1530	H <sub>2</sub> O
	OS10FROAWA-04	10/18/05	1700	H <sub>2</sub> O
	OS10FROAWA-05	10/18/05	1815	H <sub>2</sub> O
	OS10FROAWA-06	10/19/05	1155	H <sub>2</sub> O

Collected/Relinquished By: (1)	Date	Time	Received By:
<i>Drew Jerm</i>	10/18/05	1005	<i>[Signature]</i>
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received For Laboratory By:
	10/20/05	1153	<i>Bendy Steels</i>

No.	CONTAINERS	SAMPLE TYPE C = COMP G = GRAB	Preservatives Used						REMARKS
			EPA 300 (Chloride)	EPA 300 (Nitrate/nitrite)	6020 (Fe, Mn)	EPA 300 (Sulfate)	EPA 300 (Nitrate/nitrite)	6020 (Al, As, Fe, Mn)	
			X	X	X	X	X	AP-3744	
			X	X	X	X	X	AP-3981	
			X	X	X	X	X	AP-3985	
			X	X	X	X	X	AP-3984	
			X	X	X	X	X	AP-3871	
			X	X	X	X	X	AP-3774	
			X	X	X	X	X	AP-3893	
			X	X	X	X	X	AP-3468	
			X	X	X	X	X	AP-3534	
			X	X	X	X	X	AP-3870 TMY MSD	

Shipping Carrier: *Level*  
 Shipping Ticket No: *1057046*  
 Data Deliverables:  
 Level I Level II Level III Level IV EDD Type: *COEET*  
 Requested Turnaround Time and Special Instructions:  
 email codes@pda.usace.army.mil  
 OS10FROBWA-31 TO -34 = USACE PROJ 06-002  
 OS10FROAWA-01 TO -06 = USACE PROJ 06-005  
 \*METALS FIELD FILTERED MATRIX CODE = WA  
 DELIVERED



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) (4)
- Notes: \_\_\_\_\_
- Is this a DoD project? (USACE, Navy, AFCEE)

Due Date: 11/4/05  
 Received Date: 10/20/05  
 Received Time: 1153  
 Is date/time conversion necessary? NO  
 # of hours to AK Local Time: \_\_\_\_\_  
 Thermometer ID: 690

Cooler ID	Temp Blank	Cooler Temp
<u>2</u>	<u>6.0</u> °C	<u>2.1</u> °C
	<u>2.9</u> °C	<u>4.1</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 / Carlife  
 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	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is received temperature $4 \pm 2^\circ\text{C}$ ?
		Exceptions: _____ Samples/Analyses Affected: _____
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Rad Screen performed? Result: _____
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Was there an airbill? (Note # above in the right hand column) _____
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Was cooler sealed with custody seals? # / where: _____
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Were seal(s) intact upon arrival?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Was there a COC with cooler?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Was COC sealed in plastic bag & taped inside lid of cooler?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Was the COC filled out properly?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Did the COC indicate COE / AFCEE / Navy project?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Did the COC and samples correspond?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Were all sample packed to prevent breakage? Packing material: <u>Bubblewrap / Verm</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Were all samples unbroken and clearly labeled? <u>Bio/25/05</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Were all samples sealed in separate plastic bags?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Were all VOCs free of headspace and/or MeOH preserved?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Were correct container / sample sizes submitted?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is sample condition good?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	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): Brenda J. Sheets (print): Brenda J. Sheets  
 Login proof (check one): waived \_\_\_\_\_ required \_\_\_\_\_ performed by: \_\_\_\_\_



**FINAL REPORT**  
**FORT RICHARDSON**  
**OUB POLELINE ROAD DISPOSAL AREA**

**APPENDIX D: LABORATORY ANALYTICAL  
RESULTS**

**FORT RICHARDSON, ALASKA**

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**PREPARED FOR:**



**U.S. Army, Directorate of Public Works**  
**Contract No. W911KB-04-P-0091**

**June 2006**



**US Army**  
**Installation Management Agency**



**US Army Corps**  
**of Engineers**®  
Alaska District



Satori Group, Inc.  
1310 E. 66<sup>th</sup> Ave., #2  
Anchorage, AK 99518



## Laboratory Analytical Report

**Client:** Satori Group, Inc.  
1310 E. 66th Ave #2  
Anchorage, AK 99518

**Attn:** Derek Lucas  
T: (907)332-0456 F:(907)332-0457  
dlucas@gosatori.com

**Project:** Ft Richardson Groundwater

**Workorder No.:** 1056845

**Certification:**

I certify that this data package is in compliance with the terms and conditions of the contract; both technically and for completeness, other than the conditions noted on the sample data sheet(s) and/or the case narrative. This certification applies only to the tested parameters and the specific sample(s) received at the laboratory.

**Released by:**

**SGS**

Victoria Bayly

2005.11.04

12:30:45 -09'00'

Alaska Division Project Manager

---

Victoria Bayly  
Victoria\_Bayly@sgs.com  
Project Manager

---

Report Date

Total number of pages in report : \_\_\_\_\_

Enclosed are the analytical results associated with this 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 Control Manual that outlines this program is available at your request. The laboratory ADEC certification numbers are AK08-03 (DW), UST-005 (CS) and AK00971 (Micro).

The laboratory NELAC certification number is 001327.

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS Quality Assurance Program Plan and the National Environmental Laboratory Accreditation Program.

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

MDL	Method Detection Limit
PQL	Practical Quantitation Limit (reporting limit).
CL	Control 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
LT	Less Than
Q	QC parameter out of acceptance range.
M	A matrix effect was present.
E	The analyte result is above the calibrated range.
DF	Analytical Dilution Factor
JL	The analyte was positively identified, but the quantitation is a low estimation.
<Surr>	Surrogate QC spiked standard

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



## SAMPLE SUMMARY

Print Date: 10/27/2005

Client Name: Satori Group, Inc.  
Project Name: Ft Richardson Groundwater  
Workorder No.: 1056845

### Analytical Methods

<u>Method Description</u>	<u>Analytical Method</u>
Dissolved Metals by ICP-MS	SW6020 Diss.
Ion Chromatographic Analysis (W)	EPA 300.0
Light Gases in Water	RSK-175
Nitrate/Nitrite Flow injection Pres.	EPA 353.2
Volatile Organic Compounds (W) FULL	SW8260B

### Sample ID Cross Reference

<u>Lab Sample ID</u>	<u>Client Sample ID</u>
1056845001	0510FROBWA-01
1056845002	0510FROBWA-02
1056845003	0510FROBWA-03
1056845004	0510FROBWA-04
1056845005	0510FROBWA-05
1056845006	0510FROBWA-06
1056845007	0510FROBWA-07
1056845008	0510FROBWA-08
1056845009	0510FROBWA-09
1056845010	0510FROBWA-10
1056845011	0510FROBWA-11
1056845012	0510FROBWA-12
1056845013	0510FROBWA-13
1056845017	0510FROBWA-14
1056845018	0510FROBWA-15
1056845019	0510FROBWA-16



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-01  
SGS Ref. #: 1056845001  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/10/05 08:00  
Receipt Date/Time: 10/13/05 16:31  
Location: Trip Blank

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	0.320 J	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Vinyl chloride	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7965	VXX14569	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7965	VXX14569	
Carbon disulfide	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
Acetone	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
trans-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
cis-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Chloroform	ND	1.00	0.300	ug/L	1	VMS7965	VXX14569	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Carbon tetrachloride	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Benzene	ND	0.400	0.120	ug/L	1	VMS7965	VXX14569	
Trichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Toluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1,2-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Tetrachloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7965	VXX14569	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-01  
 SGS Ref. #: 1056845001  
 Project ID: Ft Richardson Groundwater  
 Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
 Collection Date/Time: 10/10/05 08:00  
 Receipt Date/Time: 10/13/05 16:31  
 Location: Trip Blank

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
P & M -Xylene	0.650 J	2.00	0.620	ug/L	1	VMS7965	VXX14569	
Styrene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1,2,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7965	VXX14569	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Dibromofluoromethane <surr>	99.8	85-115		%	1	VMS7965	VXX14569	
1,2-Dichloroethane-D4 <surr>	107	72-119		%	1	VMS7965	VXX14569	
Toluene-d8 <surr>	100	85-120		%	1	VMS7965	VXX14569	
4-Bromofluorobenzene <surr>	105	76-119		%	1	VMS7965	VXX14569	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: **0510FROBWA-01**  
SGS Ref. #: 1056845001  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/10/05 08:00  
Receipt Date/Time: 10/13/05 16:31  
Location: Trip Blank

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7965			Prep Batch: VXX14569				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/18/05 17:44			Prep Date/Time: 10/18/05 14:00				Container ID:1056845001-A	
Dilution Factor: 1							Analyst: VS	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-02  
SGS Ref. #: 1056845002  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/10/05 08:00  
Receipt Date/Time: 10/13/05 16:31  
Location: Trip Blank

**Light Gases**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Methane	ND	5.00	1.50	ug/L	1	GAS1257		
Ethane	ND	5.00	1.50	ug/L	1	GAS1257		
Ethene	ND	5.00	1.50	ug/L	1	GAS1257		

**Batch Information**

Analytical Batch: GAS1257  
Analytical Method: RSK-175  
Analysis Date/Time: 10/19/05 13:09  
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL  
Container ID:1056845002-A  
Analyst: KWM



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-03  
SGS Ref. #: 1056845003  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/10/05 12:05  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4350

Dissolved Metals

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Iron	ND	1000	310	ug/L	5	MMS3846	MXX16475	
Manganese	ND	2.00	0.620	ug/L	5	MMS3846	MXX16475	

Batch Information

Analytical Batch: MMS3846  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/20/05 15:57  
Dilution Factor: 5

Prep Batch: MXX16475  
Prep Method: FILTER  
Prep Date/Time: 10/10/05 12:05

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID:1056845003-I  
Analyst: TK



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-03  
SGS Ref. #: 1056845003  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/10/05 12:05  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4350

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Sulfate	26.4	0.100	0.0310	mg/L	1	WIC3762		
Total Nitrate/Nitrite-N	0.894	0.100	0.0310	mg/L	5	WFI1069		
Chloride	18.7	0.100	0.0310	mg/L	1	WIC3762		

**Batch Information**

Analytical Batch: WFI1069  
Analytical Method: EPA 353.2  
Analysis Date/Time: 10/14/05 17:49  
Dilution Factor: 5

Initial Prep Wt./Vol.: 100 mL

Container ID:1056845003-G  
Analyst: AZS

Analytical Batch: WIC3762  
Analytical Method: EPA 300.0  
Analysis Date/Time: 10/17/05 16:34  
Dilution Factor: 1

Initial Prep Wt./Vol.: 5 mL

Container ID:1056845003-H  
Analyst: DSH



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: **0510FROBWA-03**  
SGS Ref. #: 1056845003  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/10/05 12:05  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4350

**Light Gases**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	ND	5.00	1.50	ug/L	1	GAS1257		
Ethane	ND	5.00	1.50	ug/L	1	GAS1257		
Ethene	ND	5.00	1.50	ug/L	1	GAS1257		

**Batch Information**

Analytical Batch: GAS1257  
Analytical Method: RSK-175  
Analysis Date/Time: 10/19/05 13:16  
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL  
Container ID:1056845003-D  
Analyst: KWM



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-03  
SGS Ref. #: 1056845003  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/10/05 12:05  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4350

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Vinyl chloride	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7965	VXX14569	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7965	VXX14569	
Carbon disulfide	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
Acetone	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
trans-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
cis-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Chloroform	0.500 J	1.00	0.300	ug/L	1	VMS7965	VXX14569	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Carbon tetrachloride	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Benzene	ND	0.400	0.120	ug/L	1	VMS7965	VXX14569	
Trichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Toluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1,2-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Tetrachloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7965	VXX14569	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-03  
 SGS Ref. #: 1056845003  
 Project ID: Ft Richardson Groundwater  
 Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
 Collection Date/Time: 10/10/05 12:05  
 Receipt Date/Time: 10/13/05 16:31  
 Location: AP-4350

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
Styrene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7965	VXX14569	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Dibromofluoromethane <surr>	98.5	85-115		%	1	VMS7965	VXX14569	
1,2-Dichloroethane-D4 <surr>	106	72-119		%	1	VMS7965	VXX14569	
Toluene-d8 <surr>	102	85-120		%	1	VMS7965	VXX14569	
4-Bromofluorobenzene <surr>	103	76-119		%	1	VMS7965	VXX14569	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: **0510FROBWA-03**  
SGS Ref. #: 1056845003  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/10/05 12:05  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4350

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7965			Prep Batch: VXX14569				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/18/05 18:20			Prep Date/Time: 10/18/05 14:00				Container ID:1056845003-A	
Dilution Factor: 1							Analyst: VS	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-04  
SGS Ref. #: 1056845004  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/10/05 13:50  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4344

**Dissolved Metals**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Iron	ND	1000	310	ug/L	5	MMS3846	MXX16475	
Manganese	ND	2.00	0.620	ug/L	5	MMS3846	MXX16475	

**Batch Information**

Analytical Batch: MMS3846  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/20/05 16:01  
Dilution Factor: 5

Prep Batch: MXX16475  
Prep Method: FILTER  
Prep Date/Time: 10/10/05 13:50

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID: 1056845004-I  
Analyst: TK



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-04  
SGS Ref. #: 1056845004  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/10/05 13:50  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4344

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Sulfate	13.7	0.100	0.0310	mg/L	1	WIC3762		
Total Nitrate/Nitrite-N	0.476	0.100	0.0310	mg/L	5	WF11069		
Chloride	10.7	0.100	0.0310	mg/L	1	WIC3762		

**Batch Information**

Analytical Batch: WF11069 Initial Prep Wt./Vol.: 100 mL  
 Analytical Method: EPA 353.2  
 Analysis Date/Time: 10/14/05 18:02 Container ID:1056845004-G  
 Dilution Factor: 5 Analyst: AZS

Analytical Batch: WIC3762 Initial Prep Wt./Vol.: 5 mL  
 Analytical Method: EPA 300.0  
 Analysis Date/Time: 10/17/05 16:52 Container ID:1056845004-H  
 Dilution Factor: 1 Analyst: DSH



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-04  
SGS Ref. #: 1056845004  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/10/05 13:50  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4344

**Light Gases**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Methane	ND	5.00	1.50	ug/L	1	GAS1257		
Ethane	ND	5.00	1.50	ug/L	1	GAS1257		
Ethene	ND	5.00	1.50	ug/L	1	GAS1257		

**Batch Information**

Analytical Batch: GAS1257  
Analytical Method: RSK-175  
Analysis Date/Time: 10/19/05 13:22  
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL  
Container ID: 1056845004-D  
Analyst: KWM



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-04  
SGS Ref. #: 1056845004  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/10/05 13:50  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4344

Volatile Gas Chromatography/Mass Spectroscopy

Parameter	Result	PQL/CL	MDL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Vinyl chloride	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7965	VXX14569	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7965	VXX14569	
Carbon disulfide	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
Acetone	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
trans-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
cis-1,2-Dichloroethene	0.910 J	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Chloroform	ND	1.00	0.300	ug/L	1	VMS7965	VXX14569	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Carbon tetrachloride	0.660 J	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Benzene	ND	0.400	0.120	ug/L	1	VMS7965	VXX14569	
Trichloroethene	26.6	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Toluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1,2-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Tetrachloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7965	VXX14569	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-04  
SGS Ref. #: 1056845004  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/10/05 13:50  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4344

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
Styrene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1,2,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7965	VXX14569	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Dibromofluoromethane <surr>	96.5	85-115		%	1	VMS7965	VXX14569	
1,2-Dichloroethane-D4 <surr>	102	72-119		%	1	VMS7965	VXX14569	
Toluene-d8 <surr>	97.2	85-120		%	1	VMS7965	VXX14569	
4-Bromofluorobenzene <surr>	105	76-119		%	1	VMS7965	VXX14569	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-04  
SGS Ref. #: 1056845004  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/10/05 13:50  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4344

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7965			Prep Batch: VXX14569				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/18/05 18:56			Prep Date/Time: 10/18/05 14:00				Container ID:1056845004-A	
Dilution Factor: 1							Analyst: VS	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: **0510FROBWA-05**  
SGS Ref. #: 1056845005  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/10/05 14:55  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4352

**Dissolved Metals**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Iron	ND	1000	310	ug/L	5	MMS3846	MXX16475	
Manganese	ND	2.00	0.620	ug/L	5	MMS3846	MXX16475	

**Batch Information**

Analytical Batch: MMS3846  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/20/05 16:14  
Dilution Factor: 5

Prep Batch: MXX16475  
Prep Method: FILTER  
Prep Date/Time: 10/10/05 14:55

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID:1056845005-1  
Analyst: TK



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-05  
SGS Ref. #: 1056845005  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/10/05 14:55  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4352

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Sulfate	7.14	0.100	0.0310	mg/L	1	WIC3762		
Total Nitrate/Nitrite-N	0.208	0.100	0.0310	mg/L	5	WFI1069		
Chloride	0.826	0.100	0.0310	mg/L	1	WIC3762		

**Batch Information**

Analytical Batch: WFI1069 Initial Prep Wt./Vol.: 100 mL  
Analytical Method: EPA 353.2  
Analysis Date/Time: 10/14/05 17:16 Container ID:1056845005-G  
Dilution Factor: 5 Analyst: AZS

Analytical Batch: WIC3762 Initial Prep Wt./Vol.: 5 mL  
Analytical Method: EPA 300.0  
Analysis Date/Time: 10/17/05 17:10 Container ID:1056845005-H  
Dilution Factor: 1 Analyst: DSH



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-05  
SGS Ref. #: 1056845005  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/10/05 14:55  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4352

**Light Gases**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	ND	5.00	1.50	ug/L	1	GAS1257		
Ethane	ND	5.00	1.50	ug/L	1	GAS1257		
Ethene	ND	5.00	1.50	ug/L	1	GAS1257		

**Batch Information**

Analytical Batch: GAS1257  
Analytical Method: RSK-175  
Analysis Date/Time: 10/19/05 13:27  
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1056845005-D  
Analyst: KWM



Client Sample ID: 0510FROBWA-05  
 SGS Ref. #: 1056845005  
 Project ID: Ft Richardson Groundwater  
 Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
 Collection Date/Time: 10/10/05 14:55  
 Receipt Date/Time: 10/13/05 16:31  
 Location: AP-4352

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Vinyl chloride	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7965	VXX14569	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7965	VXX14569	
Carbon disulfide	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
Acetone	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
trans-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
cis-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
Chloroform	ND	1.00	0.300	ug/L	1	VMS7965	VXX14569	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Carbon tetrachloride	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Benzene	ND	0.400	0.120	ug/L	1	VMS7965	VXX14569	
Trichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Toluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1,2-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Tetrachloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7965	VXX14569	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-05  
SGS Ref. #: 1056845005  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/10/05 14:55  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4352

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
Styrene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1,2,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7965	VXX14569	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Dibromofluoromethane <surr>	99.9	85-115		%	1	VMS7965	VXX14569	
1,2-Dichloroethane-D4 <surr>	108	72-119		%	1	VMS7965	VXX14569	
Toluene-d8 <surr>	101	85-120		%	1	VMS7965	VXX14569	
4-Bromofluorobenzene <surr>	108	76-119		%	1	VMS7965	VXX14569	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-05  
SGS Ref. #: 1056845005  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/10/05 14:55  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4352

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7965			Prep Batch: VXX14569				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/18/05 19:33			Prep Date/Time: 10/18/05 14:00				Container ID:1056845005-A	
Dilution Factor: 1							Analyst: VS	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-06  
SGS Ref. #: 1056845006  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/11/05 10:55  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4345

**Dissolved Metals**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Iron	ND	1000	310	ug/L	5	MMS3846	MXX16475	
Manganese	ND	2.00	0.620	ug/L	5	MMS3846	MXX16475	

**Batch Information**

Analytical Batch: MMS3846  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/20/05 16:18  
Dilution Factor: 5

Prep Batch: MXX16475  
Prep Method: FILTER  
Prep Date/Time: 10/11/05 10:55

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID:1056845006-I  
Analyst: TK



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-06  
SGS Ref. #: 1056845006  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/11/05 10:55  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4345

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Sulfate	21.8	0.100	0.0310	mg/L	1	WIC3762		
Total Nitrate/Nitrite-N	0.868	0.100	0.0310	mg/L	5	WF11069		
Chloride	23.3	0.100	0.0310	mg/L	1	WIC3762		

**Batch Information**

Analytical Batch: WF11069	Initial Prep Wt./Vol.: 100 mL
Analytical Method: EPA 353.2	
Analysis Date/Time: 10/14/05 17:25	Container ID:1056845006-G
Dilution Factor: 5	Analyst: AZS
Analytical Batch: WIC3762	Initial Prep Wt./Vol.: 5 mL
Analytical Method: EPA 300.0	
Analysis Date/Time: 10/17/05 17:29	Container ID:1056845006-H
Dilution Factor: 1	Analyst: DSH



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-06  
SGS Ref. #: 1056845006  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/11/05 10:55  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4345

Light Gases

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	ND	5.00	1.50	ug/L	1	GAS1257		
Ethane	ND	5.00	1.50	ug/L	1	GAS1257		
Ethene	ND	5.00	1.50	ug/L	1	GAS1257		

Batch Information

Analytical Batch: GAS1257  
Analytical Method: RSK-175  
Analysis Date/Time: 10/19/05 13:34  
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL  
Container ID:1056845006-D  
Analyst: KWM



Client Sample ID: 0510FROBWA-06  
SGS Ref. #: 1056845006  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/11/05 10:55  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4345

Volatile Gas Chromatography/Mass Spectroscopy

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Vinyl chloride	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7965	VXX14569	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7965	VXX14569	
Carbon disulfide	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
Acetone	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
trans-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
cis-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Chloroform	1.85	1.00	0.300	ug/L	1	VMS7965	VXX14569	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Carbon tetrachloride	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Benzene	ND	0.400	0.120	ug/L	1	VMS7965	VXX14569	
Trichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Toluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1,2-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Tetrachloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7965	VXX14569	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	



Client Sample ID: 0510FROBWA-06  
 SGS Ref. #: 1056845006  
 Project ID: Ft Richardson Groundwater  
 Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
 Collection Date/Time: 10/11/05 10:55  
 Receipt Date/Time: 10/13/05 16:31  
 Location: AP-4345

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
Styrene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1,2,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7965	VXX14569	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Dibromofluoromethane <surr>	101	85-115		%	1	VMS7965	VXX14569	
1,2-Dichloroethane-D4 <surr>	112	72-119		%	1	VMS7965	VXX14569	
Toluene-d8 <surr>	103	85-120		%	1	VMS7965	VXX14569	
4-Bromofluorobenzene <surr>	111	76-119		%	1	VMS7965	VXX14569	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-06  
SGS Ref. #: 1056845006  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/11/05 10:55  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4345

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7965			Prep Batch: VXX14569				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/18/05 20:08			Prep Date/Time: 10/18/05 14:00				Container ID:1056845006-A	
Dilution Factor: 1							Analyst: VS	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-07  
SGS Ref. #: 1056845007  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/11/05 12:45  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3748

**Dissolved Metals**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Iron	ND	1000	310	ug/L	5	MMS3846	MXX16475	
Manganese	2.91	2.00	0.620	ug/L	5	MMS3846	MXX16475	

**Batch Information**

Analytical Batch: MMS3846  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/20/05 16:23  
Dilution Factor: 5

Prep Batch: MXX16475  
Prep Method: FILTER  
Prep Date/Time: 10/11/05 12:45

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID:1056845007-I  
Analyst: TK



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-07  
SGS Ref. #: 1056845007  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/11/05 12:45  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3748

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Sulfate	19.2	0.100	0.0310	mg/L	1	WIC3762		
Total Nitrate/Nitrite-N	0.988	0.100	0.0310	mg/L	5	WF11069		
Chloride	48.9	0.100	0.0310	mg/L	1	WIC3762		

**Batch Information**

Analytical Batch: WF11069	Initial Prep Wt./Vol.: 100 mL
Analytical Method: EPA 353.2	
Analysis Date/Time: 10/14/05 17:26	Container ID:1056845007-G
Dilution Factor: 5	Analyst: AZS

Analytical Batch: WIC3762	Initial Prep Wt./Vol.: 5 mL
Analytical Method: EPA 300.0	
Analysis Date/Time: 10/17/05 17:47	Container ID:1056845007-H
Dilution Factor: 1	Analyst: DSH



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: **0510FROBWA-07**  
SGS Ref. #: 1056845007  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/11/05 12:45  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3748

**Light Gases**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	ND	5.00	1.50	ug/L	1	GAS1257		
Ethane	ND	5.00	1.50	ug/L	1	GAS1257		
Ethene	ND	5.00	1.50	ug/L	1	GAS1257		

**Batch Information**

Analytical Batch: GAS1257  
Analytical Method: RSK-175  
Analysis Date/Time: 10/19/05 13:40  
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL  
Container ID:1056845007-D  
Analyst: KWM



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-07  
SGS Ref. #: 1056845007  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/11/05 12:45  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3748

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Vinyl chloride	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7965	VXX14569	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7965	VXX14569	
Carbon disulfide	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
Acetone	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
trans-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
cis-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
Chloroform	ND	1.00	0.300	ug/L	1	VMS7965	VXX14569	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Carbon tetrachloride	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Benzene	ND	0.400	0.120	ug/L	1	VMS7965	VXX14569	
Trichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Toluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1,2-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Tetrachloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7965	VXX14569	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-07  
SGS Ref. #: 1056845007  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/11/05 12:45  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3748

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
Styrene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1,2,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7965	VXX14569	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Dibromofluoromethane <surr>	101	85-115		%	1	VMS7965	VXX14569	
1,2-Dichloroethane-D4 <surr>	115	72-119		%	1	VMS7965	VXX14569	
Toluene-d8 <surr>	103	85-120		%	1	VMS7965	VXX14569	
4-Bromofluorobenzene <surr>	112	76-119		%	1	VMS7965	VXX14569	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-07  
SGS Ref. #: 1056845007  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/11/05 12:45  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3748

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7965			Prep Batch: VXX14569				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/18/05 20:44			Prep Date/Time: 10/18/05 14:00				Container ID:1056845007-A	
Dilution Factor: 1							Analyst: VS	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-08  
SGS Ref. #: 1056845008  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/11/05 14:00  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3747

**Dissolved Metals**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Iron	ND	1000	310	ug/L	5	MMS3846	MXX16475	
Manganese	ND	2.00	0.620	ug/L	5	MMS3846	MXX16475	

**Batch Information**

Analytical Batch: MMS3846  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/20/05 16:27  
Dilution Factor: 5

Prep Batch: MXX16475  
Prep Method: FILTER  
Prep Date/Time: 10/11/05 14:00

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID:1056845008-I  
Analyst: TK



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-08  
SGS Ref. #: 1056845008  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/11/05 14:00  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3747

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Sulfate	9.81	0.100	0.0310	mg/L	1	WIC3762		
Total Nitrate/Nitrite-N	0.232	0.100	0.0310	mg/L	5	WFI1069		
Chloride	2.47	0.100	0.0310	mg/L	1	WIC3762		

**Batch Information**

Analytical Batch: WFI1069	Initial Prep Wt./Vol.: 100 mL
Analytical Method: EPA 353.2	
Analysis Date/Time: 10/14/05 17:28	Container ID: 1056845008-G
Dilution Factor: 5	Analyst: AZS
Analytical Batch: WIC3762	Initial Prep Wt./Vol.: 5 mL
Analytical Method: EPA 300.0	
Analysis Date/Time: 10/17/05 18:05	Container ID: 1056845008-H
Dilution Factor: 1	Analyst: DSH



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-08  
SGS Ref. #: 1056845008  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/11/05 14:00  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3747

Light Gases

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	ND	5.00	1.50	ug/L	1	GAS1257		
Ethane	ND	5.00	1.50	ug/L	1	GAS1257		
Ethene	ND	5.00	1.50	ug/L	1	GAS1257		

Batch Information

Analytical Batch: GAS1257  
Analytical Method: RSK-175  
Analysis Date/Time: 10/19/05 13:46  
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1056845008-D  
Analyst: KWM



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-08  
 SGS Ref. #: 1056845008  
 Project ID: Ft Richardson Groundwater  
 Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
 Collection Date/Time: 10/11/05 14:00  
 Receipt Date/Time: 10/13/05 16:31  
 Location: AP-3747

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Vinyl chloride	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7965	VXX14569	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloroethene	0.440 J	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7965	VXX14569	
Carbon disulfide	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
Acetone	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
trans-1,2-Dichloroethene	3.07	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
cis-1,2-Dichloroethene	10.1	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Chloroform	0.910 J	1.00	0.300	ug/L	1	VMS7965	VXX14569	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Carbon tetrachloride	0.540 J	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Benzene	ND	0.400	0.120	ug/L	1	VMS7965	VXX14569	
Trichloroethene	151	10.0	3.10	ug/L	10	VMS7969	VXX14569	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Toluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1,2-Trichloroethane	0.760 J	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Tetrachloroethene	1.78	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7965	VXX14569	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-08  
SGS Ref. #: 1056845008  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/11/05 14:00  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3747

**Volatiles Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
Styrene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1,2,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7965	VXX14569	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Dibromofluoromethane <surr>	102	85-115		%	1	VMS7965	VXX14569	
1,2-Dichloroethane-D4 <surr>	112	72-119		%	1	VMS7965	VXX14569	
Toluene-d8 <surr>	100	85-120		%	1	VMS7965	VXX14569	
4-Bromofluorobenzene <surr>	107	76-119		%	1	VMS7965	VXX14569	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-08  
SGS Ref. #: 1056845008  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/11/05 14:00  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3747

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7965			Prep Batch: VXX14569				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/18/05 21:20			Prep Date/Time: 10/18/05 14:00				Container ID:1056845008-A	
Dilution Factor: 1							Analyst: VS	
Analytical Batch: VMS7969			Prep Batch: VXX14569				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/20/05 18:19			Prep Date/Time: 10/18/05 14:00				Container ID:1056845008-A	
Dilution Factor: 10							Analyst: WJH	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-09  
SGS Ref. #: 1056845009  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/11/05 15:20  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4011

**Dissolved Metals**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Iron	ND	1000	310	ug/L	5	MMS3846	MXX16475	
Manganese	ND	2.00	0.620	ug/L	5	MMS3846	MXX16475	

**Batch Information**

Analytical Batch: MMS3846  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/20/05 16:31  
Dilution Factor: 5

Prep Batch: MXX16475  
Prep Method: FILTER  
Prep Date/Time: 10/11/05 15:20

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID:1056845009-I  
Analyst: TK



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-09  
SGS Ref. #: 1056845009  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/11/05 15:20  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4011

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Sulfate	12.5	0.100	0.0310	mg/L	1	WIC3762		
Total Nitrate/Nitrite-N	0.508	0.100	0.0310	mg/L	5	WF11069		
Chloride	1.49	0.100	0.0310	mg/L	1	WIC3762		

**Batch Information**

Analytical Batch: WF11069	Initial Prep Wt./Vol.: 100 mL
Analytical Method: EPA 353.2	
Analysis Date/Time: 10/14/05 17:29	Container ID:1056845009-G
Dilution Factor: 5	Analyst: AZS

Analytical Batch: WIC3762	Initial Prep Wt./Vol.: 5 mL
Analytical Method: EPA 300.0	
Analysis Date/Time: 10/17/05 18:23	Container ID:1056845009-H
Dilution Factor: 1	Analyst: DSH



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-09  
SGS Ref. #: 1056845009  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/11/05 15:20  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4011

**Light Gases**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	ND	5.00	1.50	ug/L	1	GAS1257		
Ethane	ND	5.00	1.50	ug/L	1	GAS1257		
Ethene	ND	5.00	1.50	ug/L	1	GAS1257		

**Batch Information**

Analytical Batch: GAS1257  
Analytical Method: RSK-175  
Analysis Date/Time: 10/19/05 15:49  
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1056845009-D  
Analyst: KWM



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-09  
SGS Ref. #: 1056845009  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/11/05 15:20  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4011

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Vinyl chloride	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7965	VXX14569	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7965	VXX14569	
Carbon disulfide	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
Acetone	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
trans-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
cis-1,2-Dichloroethene	2.49	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Chloroform	ND	1.00	0.300	ug/L	1	VMS7965	VXX14569	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Carbon tetrachloride	0.640 J	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Benzene	ND	0.400	0.120	ug/L	1	VMS7965	VXX14569	
Trichloroethene	18.2	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Toluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1,2-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Tetrachloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7965	VXX14569	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-09  
 SGS Ref. #: 1056845009  
 Project ID: Ft Richardson Groundwater  
 Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
 Collection Date/Time: 10/11/05 15:20  
 Receipt Date/Time: 10/13/05 16:31  
 Location: AP-4011

**Volatile Gas Chromatography/Mass Spectroscopy**

Parameter	Result	PQL/CL	MDL	Units	DF	Analytical	Prep	Qualifiers
						Batch	Batch	
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
Styrene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1,2,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7965	VXX14569	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Dibromofluoromethane <sur>	102	85-115		%	1	VMS7965	VXX14569	
1,2-Dichloroethane-D4 <sur>	118	72-119		%	1	VMS7965	VXX14569	
Toluene-d8 <sur>	101	85-120		%	1	VMS7965	VXX14569	
4-Bromofluorobenzene <sur>	111	76-119		%	1	VMS7965	VXX14569	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-09  
SGS Ref. #: 1056845009  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/11/05 15:20  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4011

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7965			Prep Batch: VXX14569				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/18/05 21:55			Prep Date/Time: 10/18/05 14:00				Container ID:1056845009-A	
Dilution Factor: 1							Analyst: VS	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-10  
SGS Ref. #: 1056845010  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/11/05 17:00  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3749

**Dissolved Metals**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Iron	ND	1000	310	ug/L	5	MMS3846	MXX16475	
Manganese	ND	2.00	0.620	ug/L	5	MMS3846	MXX16475	

**Batch Information**

Analytical Batch: MMS3846  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/20/05 16:36  
Dilution Factor: 5

Prep Batch: MXX16475  
Prep Method: FILTER  
Prep Date/Time: 10/11/05 17:00

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID: 1056845010-I  
Analyst: TK



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-10  
SGS Ref. #: 1056845010  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/11/05 17:00  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3749

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Sulfate	13.2	0.100	0.0310	mg/L	1	WIC3762		
Total Nitrate/Nitrite-N	0.650	0.100	0.0310	mg/L	5	WFI1069		
Chloride	1.68	0.100	0.0310	mg/L	1	WIC3762		

**Batch Information**

Analytical Batch: WFI1069  
Analytical Method: EPA 353.2  
Analysis Date/Time: 10/14/05 17:31  
Dilution Factor: 5

Initial Prep Wt./Vol.: 100 mL

Container ID:1056845010-G  
Analyst: AZS

Analytical Batch: WIC3762  
Analytical Method: EPA 300.0  
Analysis Date/Time: 10/17/05 19:36  
Dilution Factor: 1

Initial Prep Wt./Vol.: 5 mL

Container ID:1056845010-H  
Analyst: DSH



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-10  
SGS Ref. #: 1056845010  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/11/05 17:00  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3749

**Light Gases**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	ND	5.00	1.50	ug/L	1	GAS1258		
Ethane	ND	5.00	1.50	ug/L	1	GAS1258		
Ethene	ND	5.00	1.50	ug/L	1	GAS1258		

**Batch Information**

Analytical Batch: GAS1258  
Analytical Method: RSK-175  
Analysis Date/Time: 10/20/05 14:44  
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1056845010-D  
Analyst: KWM



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-10  
SGS Ref. #: 1056845010  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/11/05 17:00  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3749

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Vinyl chloride	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7965	VXX14569	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7965	VXX14569	
Carbon disulfide	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
Acetone	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
trans-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
cis-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
Chloroform	ND	1.00	0.300	ug/L	1	VMS7965	VXX14569	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Carbon tetrachloride	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Benzene	ND	0.400	0.120	ug/L	1	VMS7965	VXX14569	
Trichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Toluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1,2-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Tetrachloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7965	VXX14569	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-10  
 SGS Ref. #: 1056845010  
 Project ID: Ft Richardson Groundwater  
 Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
 Collection Date/Time: 10/11/05 17:00  
 Receipt Date/Time: 10/13/05 16:31  
 Location: AP-3749

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
Styrene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1,2,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7965	VXX14569	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Dibromofluoromethane <surr>	107	85-115		%	1	VMS7965	VXX14569	
1,2-Dichloroethane-D4 <surr>	119	72-119		%	1	VMS7965	VXX14569	
Toluene-d8 <surr>	103	85-120		%	1	VMS7965	VXX14569	
4-Bromofluorobenzene <surr>	113	76-119		%	1	VMS7965	VXX14569	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-10  
SGS Ref. #: 1056845010  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/11/05 17:00  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3749

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7965			Prep Batch: VXX14569				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/18/05 22:32			Prep Date/Time: 10/18/05 14:00				Container ID:1056845010-A	
Dilution Factor: 1							Analyst: VS	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-11  
SGS Ref. #: 1056845011  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/12/05 10:35  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3982

**Dissolved Metals**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Iron	488 J	1000	310	ug/L	5	MMS3846	MX16475	
Manganese	28.4	2.00	0.620	ug/L	5	MMS3846	MX16475	

**Batch Information**

Analytical Batch: MMS3846  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/20/05 16:40  
Dilution Factor: 5

Prep Batch: MX16475  
Prep Method: FILTER  
Prep Date/Time: 10/12/05 10:35

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID:1056845011-I  
Analyst: TK



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-11  
SGS Ref. #: 1056845011  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/12/05 10:35  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3982

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Sulfate	9.08	0.100	0.0310	mg/L	1	WIC3762		
Total Nitrate/Nitrite-N	0.330	0.100	0.0310	mg/L	5	WF11069		
Chloride	1.33	0.100	0.0310	mg/L	1	WIC3762		

**Batch Information**

Analytical Batch: WF11069 Initial Prep Wt./Vol.: 100 mL  
Analytical Method: EPA 353.2  
Analysis Date/Time: 10/14/05 17:32 Container ID:1056845011-G  
Dilution Factor: 5 Analyst: AZS

Analytical Batch: WIC3762 Initial Prep Wt./Vol.: 5 mL  
Analytical Method: EPA 300.0  
Analysis Date/Time: 10/17/05 19:54 Container ID:1056845011-H  
Dilution Factor: 1 Analyst: DSH



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-11  
SGS Ref. #: 1056845011  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/12/05 10:35  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3982

**Light Gases**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	ND	5.00	1.50	ug/L	1	GAS1258		
Ethane	ND	5.00	1.50	ug/L	1	GAS1258		
Ethene	ND	5.00	1.50	ug/L	1	GAS1258		

**Batch Information**

Analytical Batch: GAS1258  
Analytical Method: RSK-175  
Analysis Date/Time: 10/20/05 14:50  
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1056845011-D  
Analyst: KWM



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-11  
SGS Ref. #: 1056845011  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/12/05 10:35  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3982

Volatile Gas Chromatography/Mass Spectroscopy

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Vinyl chloride	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7965	VXX14569	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7965	VXX14569	
Carbon disulfide	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
Acetone	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
trans-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
cis-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
Chloroform	ND	1.00	0.300	ug/L	1	VMS7965	VXX14569	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Carbon tetrachloride	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Benzene	ND	0.400	0.120	ug/L	1	VMS7965	VXX14569	
Trichloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Toluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1,2-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Tetrachloroethene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7965	VXX14569	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-11  
 SGS Ref. #: 1056845011  
 Project ID: Ft Richardson Groundwater  
 Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
 Collection Date/Time: 10/12/05 10:35  
 Receipt Date/Time: 10/13/05 16:31  
 Location: AP-3982

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
Styrene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,1,2,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7965	VXX14569	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7965	VXX14569	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7965	VXX14569	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7965	VXX14569	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7965	VXX14569	
Dibromofluoromethane <surr>	105	85-115		%	1	VMS7965	VXX14569	
1,2-Dichloroethane-D4 <surr>	123	* 72-119		%	1	VMS7965	VXX14569	
Toluene-d8 <surr>	105	85-120		%	1	VMS7965	VXX14569	
4-Bromofluorobenzene <surr>	113	76-119		%	1	VMS7965	VXX14569	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-11  
SGS Ref. #: 1056845011  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/12/05 10:35  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3982

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7965			Prep Batch: VXX14569				Initial Prep Wl./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/18/05 23:43			Prep Date/Time: 10/18/05 14:00				Container ID:1056845011-A	
Dilution Factor: 1							Analyst: VS	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-12  
SGS Ref. #: 1056845012  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/12/05 12:15  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3745

**Dissolved Metals**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Iron	ND	1000	310	ug/L	5	MMS3846	MXX16475	
Manganese	ND	2.00	0.620	ug/L	5	MMS3846	MXX16475	

**Batch Information**

Analytical Batch: MMS3846  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/20/05 16:44  
Dilution Factor: 5

Prep Batch: MXX16475  
Prep Method: FILTER  
Prep Date/Time: 10/12/05 12:15

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID:1056845012-I  
Analyst: TK



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-12  
SGS Ref. #: 1056845012  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/12/05 12:15  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3745

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Sulfate	19.2	0.100	0.0310	mg/L	1	WIC3762		
Total Nitrate/Nitrite-N	1.57	0.100	0.0310	mg/L	5	WFI1069		
Chloride	1.83	0.100	0.0310	mg/L	1	WIC3762		

**Batch Information**

Analytical Batch: WFI1069 Initial Prep Wt./Vol.: 100 mL  
Analytical Method: EPA 353.2  
Analysis Date/Time: 10/14/05 17:34 Container ID:1056845012-G  
Dilution Factor: 5 Analyst: AZS

Analytical Batch: WIC3762 Initial Prep Wt./Vol.: 5 mL  
Analytical Method: EPA 300.0  
Analysis Date/Time: 10/17/05 20:12 Container ID:1056845012-H  
Dilution Factor: 1 Analyst: DSH



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-12  
SGS Ref. #: 1056845012  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/12/05 12:15  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3745

**Light Gases**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	ND	5.00	1.50	ug/L	1	GAS1258		
Ethane	ND	5.00	1.50	ug/L	1	GAS1258		
Ethene	ND	5.00	1.50	ug/L	1	GAS1258		

**Batch Information**

Analytical Batch: GAS1258  
Analytical Method: RSK-175  
Analysis Date/Time: 10/20/05 15:02  
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1056845012-D  
Analyst: KWM



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-12  
 SGS Ref. #: 1056845012  
 Project ID: Ft Richardson Groundwater  
 Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
 Collection Date/Time: 10/12/05 12:15  
 Receipt Date/Time: 10/13/05 16:31  
 Location: AP-3745

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Vinyl chloride	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7969	VXX14576	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,1-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7969	VXX14576	
Carbon disulfide	ND	2.00	0.620	ug/L	1	VMS7976	VXX14576	
Acetone	ND	10.0	3.10	ug/L	1	VMS7969	VXX14576	
trans-1,2-Dichloroethene	1.79	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
cis-1,2-Dichloroethene	10.8	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7969	VXX14576	
Chloroform	ND	1.00	0.300	ug/L	1	VMS7969	VXX14576	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Carbon tetrachloride	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Benzene	ND	0.400	0.120	ug/L	1	VMS7969	VXX14576	
Trichloroethene	82.9	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7969	VXX14576	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
Toluene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,1,2-Trichloroethane	0.790 J	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Tetrachloroethene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7969	VXX14576	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-12  
 SGS Ref. #: 1056845012  
 Project ID: Ft Richardson Groundwater  
 Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
 Collection Date/Time: 10/12/05 12:15  
 Receipt Date/Time: 10/13/05 16:31  
 Location: AP-3745

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7969	VXX14576	
Styrene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,1,2,2-Tetrachloroethane	53.9	0.500	0.150	ug/L	1	VMS7969	VXX14576	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7969	VXX14576	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7969	VXX14576	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7969	VXX14576	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7969	VXX14576	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7969	VXX14576	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
Dibromofluoromethane <sur>	98.6	85-115		%	1	VMS7969	VXX14576	
1,2-Dichloroethane-D4 <sur>	114	72-119		%	1	VMS7969	VXX14576	
Toluene-d8 <sur>	98.9	85-120		%	1	VMS7969	VXX14576	
4-Bromofluorobenzene <sur>	109	76-119		%	1	VMS7969	VXX14576	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-12  
SGS Ref. #: 1056845012  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/12/05 12:15  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3745

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7969			Prep Batch: VXX14576				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/20/05 18:53			Prep Date/Time: 10/20/05 14:58				Container ID:1056845012-A	
Dilution Factor: 1							Analyst: WJH	
<hr/>								
Analytical Batch: VMS7976			Prep Batch: VXX14576				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/24/05 14:19			Prep Date/Time: 10/20/05 14:58				Container ID:1056845012-A	
Dilution Factor: 1							Analyst: VS	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: **0510FROBWA-13**  
SGS Ref. #: 1056845013  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/12/05 13:40  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4550

**Dissolved Metals**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Iron	10100	1000	310	ug/L	5	MMS3846	MXX16475	
Manganese	1050	2.00	0.620	ug/L	5	MMS3846	MXX16475	

**Batch Information**

Analytical Batch: MMS3846  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/20/05 15:05  
Dilution Factor: 5

Prep Batch: MXX16475  
Prep Method: FILTER  
Prep Date/Time: 10/12/05 13:40

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID:1056845013-1  
Analyst: TK



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-13  
SGS Ref. #: 1056845013  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/12/05 13:40  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4550

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Sulfate	55.5	0.100	0.0310	mg/L	1	WIC3762		
Total Nitrate/Nitrite-N	0.0880 J	0.100	0.0310	mg/L	5	WFI1069		
Chloride	7.70	0.100	0.0310	mg/L	1	WIC3762		

**Batch Information**

Analytical Batch: WFI1069  
Analytical Method: EPA 353.2  
Analysis Date/Time: 10/14/05 17:35  
Dilution Factor: 5

Initial Prep Wt./Vol.: 100 mL

Container ID:1056845013-G  
Analyst: AZS

Analytical Batch: WIC3762  
Analytical Method: EPA 300.0  
Analysis Date/Time: 10/17/05 15:40  
Dilution Factor: 1

Initial Prep Wt./Vol.: 5 mL

Container ID:1056845013-H  
Analyst: DSH



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-13  
SGS Ref. #: 1056845013  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/12/05 13:40  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4550

**Light Gases**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	100	50.0	15.0	ug/L	10	GAS1258		
Ethane	ND	5.00	1.50	ug/L	1	GAS1258		
Ethene	ND	5.00	1.50	ug/L	1	GAS1258		

**Batch Information**

Analytical Batch: GAS1258  
Analytical Method: RSK-175  
Analysis Date/Time: 10/20/05 14:56  
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL  
Container ID:1056845013-D  
Analyst: KWM

Analytical Batch: GAS1258  
Analytical Method: RSK-175  
Analysis Date/Time: 10/20/05 15:53  
Dilution Factor: 10

Initial Prep Wt./Vol.: 1 mL  
Container ID:1056845013-D  
Analyst: KWM



Client Sample ID: 0510FROBWA-13  
 SGS Ref. #: 1056845013  
 Project ID: Ft Richardson Groundwater  
 Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
 Collection Date/Time: 10/12/05 13:40  
 Receipt Date/Time: 10/13/05 16:31  
 Location: AP-4550

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Vinyl chloride	0.570 J	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7969	VXX14576	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,1-Dichloroethene	5.83	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7969	VXX14576	
Carbon disulfide	ND	100	31.0	ug/L	50	VMS7976	VXX14576	
Acetone	ND	10.0	3.10	ug/L	1	VMS7969	VXX14576	
trans-1,2-Dichloroethene	92.1	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
cis-1,2-Dichloroethene	281	50.0	15.5	ug/L	50	VMS7976	VXX14576	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7969	VXX14576	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Chloroform	2.41	1.00	0.300	ug/L	1	VMS7969	VXX14576	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Carbon tetrachloride	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Benzene	1.46	0.400	0.120	ug/L	1	VMS7969	VXX14576	
Trichloroethene	2020	50.0	15.5	ug/L	50	VMS7976	VXX14576	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7969	VXX14576	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
Toluene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,1,2-Trichloroethane	19.1	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Tetrachloroethene	36.8	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7969	VXX14576	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-13  
SGS Ref. #: 1056845013  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/12/05 13:40  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4550

**Volatile Gas Chromatography/Mass Spectroscopy**

Parameter	Result	PQL/CCL	MDL	Units	DF	Analytical	Prep	Qualifiers
						Batch	Batch	
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7969	VXX14576	
Styrene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,1,2,2-Tetrachloroethane	1110	25.0	7.50	ug/L	50	VMS7976	VXX14576	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7969	VXX14576	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7969	VXX14576	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7969	VXX14576	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7969	VXX14576	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7969	VXX14576	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
Dibromofluoromethane <sur>	100	85-115		%	1	VMS7969	VXX14576	
1,2-Dichloroethane-D4 <sur>	113	72-119		%	1	VMS7969	VXX14576	
Toluene-d8 <sur>	94	85-120		%	1	VMS7969	VXX14576	
4-Bromofluorobenzene <sur>	109	76-119		%	1	VMS7969	VXX14576	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-13  
SGS Ref. #: 1056845013  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/12/05 13:40  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4550

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7969			Prep Batch: VXX14576				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/20/05 19:26			Prep Date/Time: 10/20/05 14:58				Container ID:1056845013-A	
Dilution Factor: 1							Analyst: WJH	
Analytical Batch: VMS7976			Prep Batch: VXX14576				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/24/05 17:06			Prep Date/Time: 10/20/05 14:58				Container ID:1056845013-A	
Dilution Factor: 50							Analyst: VS	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-14  
SGS Ref. #: 1056845017  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/12/05 13:10  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4599

**Dissolved Metals**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Iron	9820	1000	310	ug/L	5	MMS3846	MXX16475	
Manganese	1000	2.00	0.620	ug/L	5	MMS3846	MXX16475	

**Batch Information**

Analytical Batch: MMS3846  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/20/05 15:44  
Dilution Factor: 5

Prep Batch: MXX16475  
Prep Method: FILTER  
Prep Date/Time: 10/12/05 13:10

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID:1056845017-I  
Analyst: TK



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-14  
SGS Ref. #: 1056845017  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/12/05 13:10  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4599

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Sulfate	55.5	0.100	0.0310	mg/L	1	WIC3762		
Total Nitrate/Nitrite-N	0.0395 J	0.100	0.0310	mg/L	5	WF11069		
Chloride	7.81	0.100	0.0310	mg/L	1	WIC3762		

**Batch Information**

Analytical Batch: WF11069	Initial Prep Wt./Vol.: 100 mL
Analytical Method: EPA 353.2	
Analysis Date/Time: 10/14/05 17:50	Container ID:1056845017-G
Dilution Factor: 5	Analyst: AZS

Analytical Batch: WIC3762	Initial Prep Wt./Vol.: 5 mL
Analytical Method: EPA 300.0	
Analysis Date/Time: 10/17/05 21:07	Container ID:1056845017-H
Dilution Factor: 1	Analyst: DSH



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-14  
SGS Ref. #: 1056845017  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/12/05 13:10  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4599

**Light Gases**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	108	5.00	1.50	ug/L	1	GAS1258		
Ethane	ND	5.00	1.50	ug/L	1	GAS1258		
Ethene	ND	5.00	1.50	ug/L	1	GAS1258		

**Batch Information**

Analytical Batch: GAS1258  
Analytical Method: RSK-175  
Analysis Date/Time: 10/20/05 15:28  
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID: 1056845017-D  
Analyst: KWM



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-14  
SGS Ref. #: 1056845017  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/12/05 13:10  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4599

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Vinyl chloride	0.600 J	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7969	VXX14576	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,1-Dichloroethene	6.13	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7969	VXX14576	
Carbon disulfide	ND	100	31.0	ug/L	50	VMS7976	VXX14576	
Acetone	ND	10.0	3.10	ug/L	1	VMS7969	VXX14576	
trans-1,2-Dichloroethene	94.4	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
cis-1,2-Dichloroethene	289	50.0	15.5	ug/L	50	VMS7976	VXX14576	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7969	VXX14576	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Chloroform	2.39	1.00	0.300	ug/L	1	VMS7969	VXX14576	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Carbon tetrachloride	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Benzene	1.45	0.400	0.120	ug/L	1	VMS7969	VXX14576	
Trichloroethene	2090	50.0	15.5	ug/L	50	VMS7976	VXX14576	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7969	VXX14576	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
Toluene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,1,2-Trichloroethane	19.5	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Tetrachloroethene	38.8	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7969	VXX14576	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-14  
SGS Ref. #: 1056845017  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/12/05 13:10  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4599

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7969	VXX14576	
Styrene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,1,2,2-Tetrachloroethane	1030	25.0	7.50	ug/L	50	VMS7976	VXX14576	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7969	VXX14576	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7969	VXX14576	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7969	VXX14576	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7969	VXX14576	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7969	VXX14576	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
Dibromofluoromethane <surr>	100	85-115		%	1	VMS7969	VXX14576	
1,2-Dichloroethane-D4 <surr>	113	72-119		%	1	VMS7969	VXX14576	
Toluene-d8 <surr>	93.3	85-120		%	1	VMS7969	VXX14576	
4-Bromofluorobenzene <surr>	113	76-119		%	1	VMS7969	VXX14576	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-14  
SGS Ref. #: 1056845017  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/12/05 13:10  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4599

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7969			Prep Batch: VXX14576				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/20/05 21:39			Prep Date/Time: 10/20/05 14:58				Container ID:1056845017-A	
Dilution Factor: 1							Analyst: WJH	
Analytical Batch: VMS7976			Prep Batch: VXX14576				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/24/05 15:26			Prep Date/Time: 10/20/05 14:58				Container ID:1056845017-A	
Dilution Factor: 50							Analyst: VS	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-15  
SGS Ref. #: 1056845018  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/12/05 15:50  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3989

**Dissolved Metals**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Iron	1240	1000	310	ug/L	5	MMS3846	MXX16475	
Manganese	309	2.00	0.620	ug/L	5	MMS3846	MXX16475	

**Batch Information**

Analytical Batch: MMS3846  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/20/05 15:48  
Dilution Factor: 5

Prep Batch: MXX16475  
Prep Method: FILTER  
Prep Date/Time: 10/12/05 15:50

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID:1056845018-I  
Analyst: TK



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-15  
SGS Ref. #: 1056845018  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/12/05 15:50  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3989

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Sulfate	29.5	0.100	0.0310	mg/L	1	WIC3762		
Total Nitrate/Nitrite-N	0.150	0.100	0.0310	mg/L	5	WF11069		
Chloride	2.48	0.100	0.0310	mg/L	1	WIC3762		

**Batch Information**

Analytical Batch: WF11069  
Analytical Method: EPA 353.2  
Analysis Date/Time: 10/14/05 18:01  
Dilution Factor: 5

Initial Prep Wt./Vol.: 100 mL

Container ID:1056845018-G  
Analyst: AZS

Analytical Batch: WIC3762  
Analytical Method: EPA 300.0  
Analysis Date/Time: 10/17/05 21:25  
Dilution Factor: 1

Initial Prep Wt./Vol.: 5 mL

Container ID:1056845018-H  
Analyst: DSH



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-15  
SGS Ref. #: 1056845018  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/12/05 15:50  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3989

**Light Gases**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	95.3	5.00	1.50	ug/L	1	GAS1258		
Ethane	ND	5.00	1.50	ug/L	1	GAS1258		
Ethene	ND	5.00	1.50	ug/L	1	GAS1258		

**Batch Information**

Analytical Batch: GAS1258  
Analytical Method: RSK-175  
Analysis Date/Time: 10/20/05 15:34  
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1056845018-D  
Analyst: KWM



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-15  
SGS Ref. #: 1056845018  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/12/05 15:50  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3989

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Vinyl chloride	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7969	VXX14576	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,1-Dichloroethene	1.67	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7969	VXX14576	
Carbon disulfide	ND	40.0	12.4	ug/L	20	VMS7976	VXX14576	
Acetone	ND	10.0	3.10	ug/L	1	VMS7969	VXX14576	
trans-1,2-Dichloroethene	40.4	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
cis-1,2-Dichloroethene	122	20.0	6.20	ug/L	20	VMS7976	VXX14576	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7969	VXX14576	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Chloroform	1.09	1.00	0.300	ug/L	1	VMS7969	VXX14576	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Carbon tetrachloride	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Benzene	1.58	0.400	0.120	ug/L	1	VMS7969	VXX14576	
Trichloroethene	805	20.0	6.20	ug/L	20	VMS7976	VXX14576	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7969	VXX14576	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
Toluene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,1,2-Trichloroethane	8.51	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Tetrachloroethene	4.56	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7969	VXX14576	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-15  
 SGS Ref. #: 1056845018  
 Project ID: Ft Richardson Groundwater  
 Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
 Collection Date/Time: 10/12/05 15:50  
 Receipt Date/Time: 10/13/05 16:31  
 Location: AP-3989

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7969	VXX14576	
Styrene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,1,2,2-Tetrachloroethane	325	10.0	3.00	ug/L	20	VMS7976	VXX14576	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7969	VXX14576	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7969	VXX14576	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7969	VXX14576	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7969	VXX14576	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7969	VXX14576	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
Dibromofluoromethane <surr>	99	85-115		%	1	VMS7969	VXX14576	
1,2-Dichloroethane-D4 <surr>	111	72-119		%	1	VMS7969	VXX14576	
Toluene-d8 <surr>	94.5	85-120		%	1	VMS7969	VXX14576	
4-Bromofluorobenzene <surr>	108	76-119		%	1	VMS7969	VXX14576	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-15  
SGS Ref. #: 1056845018  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/12/05 15:50  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-3989

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7969			Prep Batch: VXX14576				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/20/05 22:13			Prep Date/Time: 10/20/05 14:58				Container ID:1056845018-A	
Dilution Factor: 1							Analyst: WJH	
Analytical Batch: VMS7976			Prep Batch: VXX14576				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/24/05 15:59			Prep Date/Time: 10/20/05 14:58				Container ID:1056845018-A	
Dilution Factor: 20							Analyst: VS	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-16  
SGS Ref. #: 1056845019  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/12/05 16:45  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4525

**Dissolved Metals**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Iron	ND	1000	310	ug/L	5	MMS3846	MXX16475	
Manganese	ND	2.00	0.620	ug/L	5	MMS3846	MXX16475	

**Batch Information**

Analytical Batch: MMS3846  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/20/05 15:52  
Dilution Factor: 5

Prep Batch: MXX16475  
Prep Method: FILTER  
Prep Date/Time: 10/12/05 16:45

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID:1056845019-1  
Analyst: TK



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-16  
SGS Ref. #: 1056845019  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/12/05 16:45  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4525

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Sulfate	53.4	0.100	0.0310	mg/L	1	WIC3762		
Total Nitrate/Nitrite-N	0.985	0.100	0.0310	mg/L	5	WF11069		
Chloride	8.59	0.100	0.0310	mg/L	1	WIC3762		

**Batch Information**

Analytical Batch: WF11069  
 Analytical Method: EPA 353.2  
 Analysis Date/Time: 10/14/05 17:53  
 Dilution Factor: 5

Initial Prep Wt./Vol.: 100 mL  
 Container ID:1056845019-G  
 Analyst: AZS

Analytical Batch: WIC3762  
 Analytical Method: EPA 300.0  
 Analysis Date/Time: 10/17/05 21:43  
 Dilution Factor: 1

Initial Prep Wt./Vol.: 5 mL  
 Container ID:1056845019-H  
 Analyst: DSH



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-16  
SGS Ref. #: 1056845019  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/12/05 16:45  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4525

**Light Gases**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	ND	5.00	1.50	ug/L	1	GAS1258		
Ethane	ND	5.00	1.50	ug/L	1	GAS1258		
Ethene	ND	5.00	1.50	ug/L	1	GAS1258		

**Batch Information**

Analytical Batch: GAS1258  
Analytical Method: RSK-175  
Analysis Date/Time: 10/20/05 15:40  
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID: 1056845019-D  
Analyst: KWM



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-16  
 SGS Ref. #: 1056845019  
 Project ID: Ft Richardson Groundwater  
 Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
 Collection Date/Time: 10/12/05 16:45  
 Receipt Date/Time: 10/13/05 16:31  
 Location: AP-4525

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Vinyl chloride	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7969	VXX14576	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,1-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7969	VXX14576	
Carbon disulfide	ND	40.0	12.4	ug/L	20	VMS7976	VXX14576	
Acetone	ND	10.0	3.10	ug/L	1	VMS7969	VXX14576	
trans-1,2-Dichloroethene	10.2	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
cis-1,2-Dichloroethene	67.7	1.00	0.310	ug/L	1	VMS7969	VXX14576	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7969	VXX14576	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Chloroform	1.63	1.00	0.300	ug/L	1	VMS7969	VXX14576	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Carbon tetrachloride	0.660 J	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Benzene	ND	0.400	0.120	ug/L	1	VMS7969	VXX14576	
Trichloroethene	865	20.0	6.20	ug/L	20	VMS7976	VXX14576	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7969	VXX14576	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
Toluene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,1,2-Trichloroethane	13.6	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Tetrachloroethene	5.62	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7969	VXX14576	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-16  
 SGS Ref. #: 1056845019  
 Project ID: Ft Richardson Groundwater  
 Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
 Collection Date/Time: 10/12/05 16:45  
 Receipt Date/Time: 10/13/05 16:31  
 Location: AP-4525

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7969	VXX14576	
Styrene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,1,2,2-Tetrachloroethane	385	10.0	3.00	ug/L	20	VMS7976	VXX14576	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7969	VXX14576	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7969	VXX14576	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7969	VXX14576	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7969	VXX14576	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7969	VXX14576	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7969	VXX14576	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7969	VXX14576	
Dibromofluoromethane <surr>	102	85-115		%	1	VMS7969	VXX14576	
1,2-Dichloroethane-D4 <surr>	114	72-119		%	1	VMS7969	VXX14576	
Toluene-d8 <surr>	95.6	85-120		%	1	VMS7969	VXX14576	
4-Bromofluorobenzene <surr>	109	76-119		%	1	VMS7969	VXX14576	



Satori Group, Inc.

Print Date: 10/27/2005

Client Sample ID: 0510FROBWA-16  
SGS Ref. #: 1056845019  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/12/05 16:45  
Receipt Date/Time: 10/13/05 16:31  
Location: AP-4525

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7969			Prep Batch: VXX14576				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/20/05 22:47			Prep Date/Time: 10/20/05 14:58				Container ID:1056845019-A	
Dilution Factor: 1							Analyst: WJH	
Analytical Batch: VMS7976			Prep Batch: VXX14576				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/24/05 16:32			Prep Date/Time: 10/20/05 14:58				Container ID:1056845019-A	
Dilution Factor: 20							Analyst: VS	

**SGS Environmental Services Inc.**  
**Alaska Division**  
**Laboratory Data Report**

Project: Ft Richardson Groundwater  
Client: Satori Group, Inc.  
SGS Work Order: 1056896  
NPDL Work Order: 06-002

Except as noted on the case narrative, all quality assurance/quality control criteria is in compliance with the standards set forth by the Alaska Department of Environmental Conservation (ADEC), the SGS Quality Assurance Program Plan, and the National Environmental Laboratory Accreditation Conference.

Please contact, your Project Manager and/or the Quality Assurance Manager should any questions occur.

Prepared by	(Signature)	<u><i>John Pisz</i></u>
	(Printed Name)	<u>John Pisz</u>
	(Date)	<u>12/1/05</u>
Released by	(Signature)	<u><i>Stephen C. Ede</i></u>
	(Printed Name)	<u>Stephen C. Ede</u>
	(Title)	<u>Technical Director</u>
	(Date)	<u>12/7/05</u>

This report contains a total number of 649 pages.



## Laboratory Analytical Report

Client: **Satori Group, Inc.**  
1310 E. 66th Ave #2  
Anchorage, AK 99518

Attn: **Derek Lucas**  
T: (907)332-0456 F:(907)332-0457  
dlucas@gosatori.com

Project: **Ft Richardson Groundwater**

Workorder No.: **1056896**

### Certification:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, other than the conditions noted on the sample data sheet(s) and/or the case narrative. This certification applies only to the tested parameters and the specific sample(s) received at the laboratory.

Released by:

SGS

Victoria Bayly

2005.11.04

12:37:22 -09'00'

Alaska Division Project Manager

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Victoria Bayly  
Victoria\_Bayly@sgs.com  
Project Manager

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Report Date

Total number of pages in report : \_\_\_\_\_



Enclosed are the analytical results associated with this 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 Control Manual that outlines this program is available at your request. The laboratory ADEC certification numbers are AK08-03 (DW), UST-005 (CS) and AK00971 (Micro).

The laboratory NELAC certification number is 001327.

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS Quality Assurance Program Plan and the National Environmental Laboratory Accreditation Program.

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

MDL	Method Detection Limit
PQL	Practical Quantitation Limit (reporting limit).
CL	Control 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
LT	Less Than
Q	QC parameter out of acceptance range.
M	A matrix effect was present.
E	The analyte result is above the calibrated range.
DF	Analytical Dilution Factor
JL	The analyte was positively identified, but the quantitation is a low estimation.
<Surr>	Surrogate QC spiked standard

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



SAMPLE SUMMARY

Print Date: 10/31/2005

Client Name: Satori Group, Inc.  
Project Name: Ft Richardson Groundwater  
Workorder No.: 1056896

Analytical Methods

<u>Method Description</u>	<u>Analytical Method</u>
Dissolved Metals by ICP-MS	SW6020 Diss.
Ion Chromatographic Analysis (W)	EPA 300.0
Light Gases in Water	RSK-175
Nitrate/Nitrite Flow injection Pres.	EPA 353.2
Volatile Organic Compounds (W) FULL	SW8260B

Sample ID Cross Reference

<u>Lab Sample ID</u>	<u>Client Sample ID</u>
1056896001	0510FROBWA-17
1056896002	0510FROBWA-18
1056896006	0510FROBWA-19
1056896007	0510FROBWA-20
1056896008	0510FROBWA-21
1056896009	0510FROBWA-22
1056896010	0510FROBWA-23
1056896011	0510FROBWA-24
1056896012	0510FROBWA-25
1056896013	0510FROBWA-26
1056896014	0510FROBWA-27
1056896015	0510FROBWA-28
1056896016	0510FROBWA-29
1056896017	0510FROBWA-30



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-17  
SGS Ref. #: 1056896001  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 10:45  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4019

**Dissolved Metals**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Iron	ND	1000	310	ug/L	5	MMS3846	MXX16475	
Manganese	ND	2.00	0.620	ug/L	5	MMS3846	MXX16475	

**Batch Information**

Analytical Batch: MMS3846  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/20/05 14:09  
Dilution Factor: 5

Prep Batch: MXX16475  
Prep Method: FILTER  
Prep Date/Time: 10/13/05 10:45

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID: 1056896001-I  
Analyst: TK



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-17  
SGS Ref. #: 1056896001  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 10:45  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4019

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Sulfate	12.6	0.100	0.0310	mg/L	1	WIC3763		
Total Nitrate/Nitrite-N	0.414	0.100	0.0310	mg/L	5	WFI1070		
Chloride	5.52	0.100	0.0310	mg/L	1	WIC3763		

**Batch Information**

Analytical Batch: WFI1070 Initial Prep Wt./Vol.: 100 mL  
 Analytical Method: EPA 353.2  
 Analysis Date/Time: 10/17/05 17:46 Container ID:1056896001-G  
 Dilution Factor: 5 Analyst: AZS

Analytical Batch: WIC3763 Initial Prep Wt./Vol.: 5 mL  
 Analytical Method: EPA 300.0  
 Analysis Date/Time: 10/18/05 20:53 Container ID:1056896001-H  
 Dilution Factor: 1 Analyst: DSH



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-17  
SGS Ref. #: 1056896001  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 10:45  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4019

**Light Gases**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	ND	5.00	1.50	ug/L	1	GAS1260		
Ethane	ND	5.00	1.50	ug/L	1	GAS1260		
Ethene	ND	5.00	1.50	ug/L	1	GAS1260		

**Batch Information**

Analytical Batch: GAS1260  
Analytical Method: RSK-175  
Analysis Date/Time: 10/25/05 13:02  
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL  
Container ID:1056896001-D  
Analyst: KWM



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-17  
SGS Ref. #: 1056896001  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 10:45  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4019

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Vinyl chloride	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7974	VXX14594	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7974	VXX14594	
Carbon disulfide	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
Acetone	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
trans-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
cis-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chloroform	ND	1.00	0.300	ug/L	1	VMS7974	VXX14594	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Carbon tetrachloride	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Benzene	ND	0.400	0.120	ug/L	1	VMS7974	VXX14594	
Trichloroethene	8.02	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Toluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1,2-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Tetrachloroethene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7974	VXX14594	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-17  
SGS Ref. #: 1056896001  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 10:45  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4019

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
Styrene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1,2,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7974	VXX14594	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Dibromofluoromethane <surr>	102	85-115		%	1	VMS7974	VXX14594	
1,2-Dichloroethane-D4 <surr>	101	72-119		%	1	VMS7974	VXX14594	
Toluene-d8 <surr>	96.7	85-120		%	1	VMS7974	VXX14594	
4-Bromofluorobenzene <surr>	100	76-119		%	1	VMS7974	VXX14594	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-17  
SGS Ref. #: 1056896001  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 10:45  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4019

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7974			Prep Batch: VXX14594				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/23/05 16:37			Prep Date/Time: 10/23/05 12:45				Container ID:1056896001-A	
Dilution Factor: 1							Analyst: VS	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-18  
SGS Ref. #: 1056896002  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 15:15  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-3983

**Dissolved Metals**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Iron	14600	1000	310	ug/L	5	MMS3846	MXX16475	
Manganese	456	2.00	0.620	ug/L	5	MMS3846	MXX16475	

**Batch Information**

Analytical Batch: MMS3846  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/20/05 13:38  
Dilution Factor: 5

Prep Batch: MXX16475  
Prep Method: FILTER  
Prep Date/Time: 10/13/05 15:15

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID:1056896002-I  
Analyst: TK



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-18  
SGS Ref. #: 1056896002  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 15:15  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-3983

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Nitrate/Nitrite-N	0.276	0.100	0.0310	mg/L	5	WF11070		
Sulfate	44.2	0.100	0.0310	mg/L	1	WIC3763		
Chloride	17.1	0.100	0.0310	mg/L	1	WIC3763		

**Batch Information**

Analytical Batch: WF11070	Initial Prep Wt./Vol.: 100 mL
Analytical Method: EPA 353.2	
Analysis Date/Time: 10/17/05 17:53	Container ID:1056896002-G
Dilution Factor: 5	Analyst: AZS

Analytical Batch: WIC3763	Initial Prep Wt./Vol.: 5 mL
Analytical Method: EPA 300.0	
Analysis Date/Time: 10/18/05 19:58	Container ID:1056896002-H
Dilution Factor: 1	Analyst: DSH



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: **0510FROBWA-18**  
SGS Ref. #: 1056896002  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 15:15  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-3983

**Light Gases**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	27.3	5.00	1.50	ug/L	1	GAS1260		
Ethane	15.5	5.00	1.50	ug/L	1	GAS1260		
Ethene	23.1	5.00	1.50	ug/L	1	GAS1260		

**Batch Information**

Analytical Batch: GAS1260  
Analytical Method: RSK-175  
Analysis Date/Time: 10/25/05 13:08  
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL  
Container ID:1056896002-D  
Analyst: KWM



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: **0510FROBWA-18**  
SGS Ref. #: 1056896002  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 15:15  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-3983

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
Vinyl chloride	3.47	1.00	0.310	ug/L	1	VMS7979	VXX14601	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7979	VXX14601	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
1,1-Dichloroethene	3.71	1.00	0.310	ug/L	1	VMS7979	VXX14601	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7979	VXX14601	
Carbon disulfide	ND	2.00	0.620	ug/L	1	VMS7979	VXX14601	
Acetone	ND	10.0	3.10	ug/L	1	VMS7979	VXX14601	
trans-1,2-Dichloroethene	56.5	1.00	0.310	ug/L	1	VMS7979	VXX14601	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
cis-1,2-Dichloroethene	288	50.0	15.5	ug/L	50	VMS7985	VXX14601	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7979	VXX14601	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
Chloroform	1.97	1.00	0.300	ug/L	1	VMS7979	VXX14601	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
Carbon tetrachloride	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
Benzene	1.49	0.400	0.120	ug/L	1	VMS7979	VXX14601	
Trichloroethene	933	50.0	15.5	ug/L	50	VMS7985	VXX14601	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7979	VXX14601	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7979	VXX14601	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7979	VXX14601	
Toluene	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
1,1,2-Trichloroethane	13.2	1.00	0.310	ug/L	1	VMS7979	VXX14601	
Tetrachloroethene	16.1	1.00	0.310	ug/L	1	VMS7979	VXX14601	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7979	VXX14601	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7979	VXX14601	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7979	VXX14601	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7979	VXX14601	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-18  
 SGS Ref. #: 1056896002  
 Project ID: Ft Richardson Groundwater  
 Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
 Collection Date/Time: 10/13/05 15:15  
 Receipt Date/Time: 10/17/05 09:32  
 Location: AP-3983

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7979	VXX14601	
Styrene	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
1,1,2,2-Tetrachloroethane	438	25.0	7.50	ug/L	50	VMS7985	VXX14601	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
4-isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7979	VXX14601	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7979	VXX14601	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7979	VXX14601	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7979	VXX14601	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7979	VXX14601	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7979	VXX14601	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7979	VXX14601	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7979	VXX14601	
Dibromofluoromethane <surr>	96.7	85-115		%	1	VMS7979	VXX14601	
1,2-Dichloroethane-D4 <surr>	100	72-119		%	1	VMS7979	VXX14601	
Toluene-d8 <surr>	99.9	85-120		%	1	VMS7979	VXX14601	
4-Bromofluorobenzene <surr>	103	76-119		%	1	VMS7979	VXX14601	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: **0510FROBWA-18**  
SGS Ref. #: 1056896002  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 15:15  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-3983

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7979			Prep Batch: VXX14601				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/25/05 21:31			Prep Date/Time: 10/25/05 13:00				Container ID:1056896002-A	
Dilution Factor: 1							Analyst: VS	
Analytical Batch: VMS7985			Prep Batch: VXX14601				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/26/05 16:04			Prep Date/Time: 10/25/05 13:00				Container ID:1056896002-A	
Dilution Factor: 50							Analyst: VS	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: **0510FROBWA-19**  
SGS Ref. #: 1056896006  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 14:45  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4598

**Dissolved Metals**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Iron	13400	1000	310	ug/L	5	MMS3846	MXX16475	
Manganese	410	2.00	0.620	ug/L	5	MMS3846	MXX16475	

**Batch Information**

Analytical Batch: MMS3846  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/20/05 14:13  
Dilution Factor: 5

Prep Batch: MXX16475  
Prep Method: FILTER  
Prep Date/Time: 10/13/05 14:45

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID:1056896006-I  
Analyst: TK



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-19  
SGS Ref. #: 1056896006  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 14:45  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4598

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Nitrate/Nitrite-N	0.285	0.100	0.0310	mg/L	5	WFI1070		
Sulfate	44.0	0.100	0.0310	mg/L	1	WIC3763		
Chloride	17.1	0.100	0.0310	mg/L	1	WIC3763		

**Batch Information**

Analytical Batch: WFI1070	Initial Prep Wt./Vol.: 100 mL
Analytical Method: EPA 353.2	
Analysis Date/Time: 10/17/05 17:47	Container ID:1056896006-G
Dilution Factor: 5	Analyst: AZS

Analytical Batch: WIC3763	Initial Prep Wt./Vol.: 5 mL
Analytical Method: EPA 300.0	
Analysis Date/Time: 10/18/05 21:11	Container ID:1056896006-H
Dilution Factor: 1	Analyst: DSH



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: **0510FROBWA-19**  
SGS Ref. #: 1056896006  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 14:45  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4598

**Light Gases**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	30.0	5.00	1.50	ug/L	1	GAS1260		
Ethane	18.2	5.00	1.50	ug/L	1	GAS1260		
Ethene	27.7	5.00	1.50	ug/L	1	GAS1260		

**Batch Information**

Analytical Batch: GAS1260  
Analytical Method: RSK-175  
Analysis Date/Time: 10/25/05 13:33  
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL  
Container ID: 1056896006-D  
Analyst: KWM



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-19  
SGS Ref. #: 1056896006  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 14:45  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4598

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Vinyl chloride	3.73	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7974	VXX14594	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloroethene	4.14	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7974	VXX14594	
Carbon disulfide	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
Acetone	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
trans-1,2-Dichloroethene	65.0	50.0	15.5	ug/L	50	VMS7979	VXX14594	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
cis-1,2-Dichloroethene	306	50.0	15.5	ug/L	50	VMS7979	VXX14594	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chloroform	2.01	1.00	0.300	ug/L	1	VMS7974	VXX14594	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Carbon tetrachloride	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Benzene	1.53	0.400	0.120	ug/L	1	VMS7974	VXX14594	
Trichloroethene	819	50.0	15.5	ug/L	50	VMS7979	VXX14594	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Toluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1,2-Trichloroethane	13.8	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Tetrachloroethene	16.0	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7974	VXX14594	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-19  
SGS Ref. #: 1056896006  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 14:45  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4598

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
Styrene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1,2,2-Tetrachloroethane	408	25.0	7.50	ug/L	50	VMS7979	VXX14594	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7974	VXX14594	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Dibromofluoromethane <surr>	103	85-115		%	1	VMS7974	VXX14594	
1,2-Dichloroethane-D4 <surr>	104	72-119		%	1	VMS7974	VXX14594	
Toluene-d8 <surr>	99.2	85-120		%	1	VMS7974	VXX14594	
4-Bromofluorobenzene <surr>	102	76-119		%	1	VMS7974	VXX14594	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-19  
SGS Ref. #: 1056896006  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 14:45  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4598

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7974			Prep Batch: VXX14594				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/23/05 17:09			Prep Date/Time: 10/23/05 12:45				Container ID:1056896006-A	
Dilution Factor: 1							Analyst: VS	
Analytical Batch: VMS7979			Prep Batch: VXX14594				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/25/05 17:20			Prep Date/Time: 10/23/05 12:45				Container ID:1056896006-A	
Dilution Factor: 50							Analyst: VS	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: **0510FROBWA-20**  
SGS Ref. #: 1056896007  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 16:45  
Receipt Date/Time: 10/17/05 09:32  
Location: E Rinse

**Dissolved Metals**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Iron	ND	1000	310	ug/L	5	MMS3846	MXX16477	
Manganese	ND	2.00	0.620	ug/L	5	MMS3846	MXX16477	

**Batch Information**

Analytical Batch: MMS3846  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/20/05 14:17  
Dilution Factor: 5

Prep Batch: MXX16477  
Prep Method: FILTER  
Prep Date/Time: 10/13/05 16:45

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID:1056896007-I  
Analyst: TK



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-20  
SGS Ref. #: 1056896007  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 16:45  
Receipt Date/Time: 10/17/05 09:32  
Location: E Rinse

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Nitrate/Nitrite-N	0.0370 J	0.100	0.0310	mg/L	5	WFI1070		
Sulfate	ND	0.100	0.0310	mg/L	1	WIC3763		
Chloride	0.0360 J	0.100	0.0310	mg/L	1	WIC3763		

**Batch Information**

Analytical Batch: WFI1070	Initial Prep Wt./Vol.: 100 mL
Analytical Method: EPA 353.2	
Analysis Date/Time: 10/17/05 17:49	Container ID:1056896007-G
Dilution Factor: 5	Analyst: AZS

Analytical Batch: WIC3763	Initial Prep Wt./Vol.: 5 mL
Analytical Method: EPA 300.0	
Analysis Date/Time: 10/18/05 21:29	Container ID:1056896007-H
Dilution Factor: 1	Analyst: DSH



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-20  
SGS Ref. #: 1056896007  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 16:45  
Receipt Date/Time: 10/17/05 09:32  
Location: E Rinse

**Light Gases**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	ND	5.00	1.50	ug/L	1	GAS1260		
Ethane	ND	5.00	1.50	ug/L	1	GAS1260		
Ethene	ND	5.00	1.50	ug/L	1	GAS1260		

**Batch Information**

Analytical Batch: GAS1260

Initial Prep Wt./Vol.: 1 mL

Analytical Method: RSK-175

Analysis Date/Time: 10/25/05 13:39

Container ID:1056896007-D

Dilution Factor: 1

Analyst: KWM



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-20  
SGS Ref. #: 1056896007  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 16:45  
Receipt Date/Time: 10/17/05 09:32  
Location: E Rinse

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Vinyl chloride	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7974	VXX14594	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7974	VXX14594	
Carbon disulfide	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
Acetone	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
trans-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
cis-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
Chloroform	ND	1.00	0.300	ug/L	1	VMS7974	VXX14594	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Carbon tetrachloride	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Benzene	ND	0.400	0.120	ug/L	1	VMS7974	VXX14594	
Trichloroethene	ND	1.00	0.310	ug/L	1	VMS7977	VXX14594	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Toluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1,2-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Tetrachloroethene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7974	VXX14594	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-20  
SGS Ref. #: 1056896007  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 16:45  
Receipt Date/Time: 10/17/05 09:32  
Location: E Rinse

Volatile Gas Chromatography/Mass Spectroscopy

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
Styrene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1,2,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7974	VXX14594	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Dibromofluoromethane <surr>	106	85-115		%	1	VMS7974	VXX14594	
1,2-Dichloroethane-D4 <surr>	108	72-119		%	1	VMS7974	VXX14594	
Toluene-d8 <surr>	98.4	85-120		%	1	VMS7974	VXX14594	
4-Bromofluorobenzene <surr>	101	76-119		%	1	VMS7974	VXX14594	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-20  
SGS Ref. #: 1056896007  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 16:45  
Receipt Date/Time: 10/17/05 09:32  
Location: E Rinse

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7974			Prep Batch: VXX14594				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/23/05 18:16			Prep Date/Time: 10/23/05 12:45				Container ID:1056896007-A	
Dilution Factor: 1							Analyst: VS	
Analytical Batch: VMS7977			Prep Batch: VXX14594				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/24/05 17:53			Prep Date/Time: 10/23/05 12:45				Container ID:1056896007-A	
Dilution Factor: 1							Analyst: VS	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: **0510FROBWA-21**  
SGS Ref. #: 1056896008  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 15:40  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4551

**Dissolved Metals**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Iron	ND	1000	310	ug/L	5	MMS3846	MXX16477	
Manganese	79.0	2.00	0.620	ug/L	5	MMS3846	MXX16477	

**Batch Information**

Analytical Batch: MMS3846  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/20/05 14:30  
Dilution Factor: 5

Prep Batch: MXX16477  
Prep Method: FILTER  
Prep Date/Time: 10/13/05 15:40

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID: 1056896008-I  
Analyst: TK



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-21  
SGS Ref. #: 1056896008  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 15:40  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4551

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Sulfate	33.4	0.100	0.0310	mg/L	1	WIC3763		
Total Nitrate/Nitrite-N	0.0900 J	0.100	0.0310	mg/L	5	WFI1070		
Chloride	7.48	0.100	0.0310	mg/L	1	WIC3763		

**Batch Information**

Analytical Batch: WFI1070 Initial Prep Wt./Vol.: 100 mL  
 Analytical Method: EPA 353.2  
 Analysis Date/Time: 10/17/05 17:50 Container ID:1056896008-G  
 Dilution Factor: 5 Analyst: AZS

Analytical Batch: WIC3763 Initial Prep Wt./Vol.: 5 mL  
 Analytical Method: EPA 300.0  
 Analysis Date/Time: 10/18/05 21:47 Container ID:1056896008-H  
 Dilution Factor: 1 Analyst: DSH



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: **0510FROBWA-21**  
SGS Ref. #: 1056896008  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 15:40  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4551

**Light Gases**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	ND	5.00	1.50	ug/L	1	GAS1260		
Ethane	ND	5.00	1.50	ug/L	1	GAS1260		
Ethene	ND	5.00	1.50	ug/L	1	GAS1260		

**Batch Information**

Analytical Batch: GAS1260  
Analytical Method: RSK-175  
Analysis Date/Time: 10/25/05 13:46  
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL  
Container ID:1056896008-D  
Analyst: KWM



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-21  
SGS Ref. #: 1056896008  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 15:40  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4551

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Vinyl chloride	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7974	VXX14594	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloroethene	7.40	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7974	VXX14594	
Carbon disulfide	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
Acetone	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
trans-1,2-Dichloroethene	9.97	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
cis-1,2-Dichloroethene	85.5	50.0	15.5	ug/L	50	VMS7979	VXX14594	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chloroform	1.60	1.00	0.300	ug/L	1	VMS7974	VXX14594	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Carbon tetrachloride	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Benzene	0.290 J	0.400	0.120	ug/L	1	VMS7974	VXX14594	
Trichloroethene	1610	50.0	15.5	ug/L	50	VMS7979	VXX14594	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Toluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1,2-Trichloroethane	8.27	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Tetrachloroethene	2.52	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7974	VXX14594	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: **0510FROBWA-21**  
 SGS Ref. #: 1056896008  
 Project ID: Ft Richardson Groundwater  
 Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
 Collection Date/Time: 10/13/05 15:40  
 Receipt Date/Time: 10/17/05 09:32  
 Location: AP-4551

**Volatile Gas Chromatography/Mass Spectroscopy**

Parameter	Result	PQL/CL	MDL	Units	DF	Analytical	Prep	Qualifiers
						Batch	Batch	
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
Styrene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1,2,2-Tetrachloroethane	90.5	25.0	7.50	ug/L	50	VMS7979	VXX14594	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7974	VXX14594	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Dibromofluoromethane <surr>	108	85-115		%	1	VMS7974	VXX14594	
1,2-Dichloroethane-D4 <surr>	108	72-119		%	1	VMS7974	VXX14594	
Toluene-d8 <surr>	101	85-120		%	1	VMS7974	VXX14594	
4-Bromofluorobenzene <surr>	101	76-119		%	1	VMS7974	VXX14594	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-21  
SGS Ref. #: 1056896008  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 15:40  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4551

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7974			Prep Batch: VXX14594				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/23/05 18:48			Prep Date/Time: 10/23/05 12:45				Container ID:1056896008-A	
Dilution Factor: 1							Analyst: VS	
Analytical Batch: VMS7979			Prep Batch: VXX14594				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/25/05 17:56			Prep Date/Time: 10/23/05 12:45				Container ID:1056896008-A	
Dilution Factor: 50							Analyst: VS	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: **0510FROBWA-22**  
SGS Ref. #: 1056896009  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 18:20  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4518

**Dissolved Metals**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Iron	ND	1000	310	ug/L	5	MMS3846	MXX16477	
Manganese	3.05	2.00	0.620	ug/L	5	MMS3846	MXX16477	

**Batch Information**

Analytical Batch: MMS3846  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/20/05 14:34  
Dilution Factor: 5

Prep Batch: MXX16477  
Prep Method: FILTER  
Prep Date/Time: 10/13/05 18:20

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID:1056896009-I  
Analyst: TK



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-22  
SGS Ref. #: 1056896009  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 18:20  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4518

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Nitrate/Nitrite-N	0.425	0.100	0.0310	mg/L	5	WF11070		
Sulfate	12.4	0.100	0.0310	mg/L	1	WIC3763		
Chloride	1.54	0.100	0.0310	mg/L	1	WIC3763		

**Batch Information**

Analytical Batch: WF11070	Initial Prep Wt./Vol.: 100 mL
Analytical Method: EPA 353.2	
Analysis Date/Time: 10/17/05 17:52	Container ID:1056896009-G
Dilution Factor: 5	Analyst: AZS
Analytical Batch: WIC3763	Initial Prep Wt./Vol.: 5 mL
Analytical Method: EPA 300.0	
Analysis Date/Time: 10/18/05 22:06	Container ID:1056896009-H
Dilution Factor: 1	Analyst: DSH



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-22  
SGS Ref. #: 1056896009  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 18:20  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4518

**Light Gases**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	ND	5.00	1.50	ug/L	1	GAS1260		
Ethane	ND	5.00	1.50	ug/L	1	GAS1260		
Ethene	ND	5.00	1.50	ug/L	1	GAS1260		

**Batch Information**

Analytical Batch: GAS1260  
Analytical Method: RSK-175  
Analysis Date/Time: 10/25/05 13:52  
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL  
Container ID:1056896009-D  
Analyst: KWM



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-22  
SGS Ref. #: 1056896009  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 18:20  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4518

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Vinyl chloride	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7974	VXX14594	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7974	VXX14594	
Carbon disulfide	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
Acetone	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
trans-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
cis-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chloroform	ND	1.00	0.300	ug/L	1	VMS7974	VXX14594	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Carbon tetrachloride	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Benzene	ND	0.400	0.120	ug/L	1	VMS7974	VXX14594	
Trichloroethene	0.920 J	1.00	0.310	ug/L	1	VMS7977	VXX14594	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Toluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1,2-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Tetrachloroethene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7974	VXX14594	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-22  
SGS Ref. #: 1056896009  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 18:20  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4518

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
Styrene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1,2,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7974	VXX14594	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Dibromofluoromethane <surr>	107	85-115		%	1	VMS7974	VXX14594	
1,2-Dichloroethane-D4 <surr>	110	72-119		%	1	VMS7974	VXX14594	
Toluene-d8 <surr>	95.1	85-120		%	1	VMS7974	VXX14594	
4-Bromofluorobenzene <surr>	99.7	76-119		%	1	VMS7974	VXX14594	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-22  
SGS Ref. #: 1056896009  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 18:20  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4518

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7974			Prep Batch: VXX14594				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/23/05 19:54			Prep Date/Time: 10/23/05 12:45				Container ID:1056896009-A	
Dilution Factor: 1							Analyst: VS	
Analytical Batch: VMS7977			Prep Batch: VXX14594				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/24/05 18:26			Prep Date/Time: 10/23/05 12:45				Container ID:1056896009-A	
Dilution Factor: 1							Analyst: VS	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-23  
SGS Ref. #: 1056896010  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 12:45  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4017

**Dissolved Metals**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Iron	4190	1000	310	ug/L	5	MMS3846	MXX16477	
Manganese	1790	2.00	0.620	ug/L	5	MMS3846	MXX16477	

**Batch Information**

Analytical Batch: MMS3846  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/20/05 14:39  
Dilution Factor: 5

Prep Batch: MXX16477  
Prep Method: FILTER  
Prep Date/Time: 10/14/05 12:45

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID: 1056896010-I  
Analyst: TK



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-23  
SGS Ref. #: 1056896010  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 12:45  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4017

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Sulfate	16.9	0.100	0.0310	mg/L	1	WIC3763		
Total Nitrate/Nitrite-N	0.0530 J	0.100	0.0310	mg/L	5	WFI1070		
Chloride	3.10	0.100	0.0310	mg/L	1	WIC3763		

**Batch Information**

Analytical Batch: WFI1070	Initial Prep Wt./Vol.: 100 mL
Analytical Method: EPA 353.2	
Analysis Date/Time: 10/17/05 18:04	Container ID:1056896010-G
Dilution Factor: 5	Analyst: AZS

Analytical Batch: WIC3763	Initial Prep Wt./Vol.: 5 mL
Analytical Method: EPA 300.0	
Analysis Date/Time: 10/18/05 22:24	Container ID:1056896010-H
Dilution Factor: 1	Analyst: DSH



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-23  
SGS Ref. #: 1056896010  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 12:45  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4017

Light Gases

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	710	50.0	15.0	ug/L	10	GAS1260		
Ethane	ND	5.00	1.50	ug/L	1	GAS1260		
Ethene	ND	5.00	1.50	ug/L	1	GAS1260		

Batch Information

Analytical Batch: GAS1260	Initial Prep Wt./Vol.: 1 mL
Analytical Method: RSK-175	
Analysis Date/Time: 10/25/05 14:13	Container ID:1056896010-D
Dilution Factor: 1	Analyst: KWM
<hr/>	
Analytical Batch: GAS1260	Initial Prep Wt./Vol.: 1 mL
Analytical Method: RSK-175	
Analysis Date/Time: 10/25/05 14:56	Container ID:1056896010-D
Dilution Factor: 10	Analyst: KWM



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-23  
SGS Ref. #: 1056896010  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 12:45  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4017

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Vinyl chloride	3.18	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7974	VXX14594	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloroethene	13.8	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7974	VXX14594	
Carbon disulfide	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
Acetone	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
trans-1,2-Dichloroethene	142	50.0	15.5	ug/L	50	VMS7979	VXX14594	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
cis-1,2-Dichloroethene	427	50.0	15.5	ug/L	50	VMS7979	VXX14594	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chloroform	1.03	1.00	0.300	ug/L	1	VMS7974	VXX14594	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Carbon tetrachloride	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Benzene	0.430	0.400	0.120	ug/L	1	VMS7974	VXX14594	
Trichloroethene	1530	50.0	15.5	ug/L	50	VMS7979	VXX14594	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Toluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1,2-Trichloroethane	25.9	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Tetrachloroethene	2.73	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7974	VXX14594	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-23  
SGS Ref. #: 1056896010  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 12:45  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4017

**Volatile Gas Chromatography/Mass Spectroscopy**

Parameter	Result	PQL/CL	MDL	Units	DF	Analytical	Prep	Qualifiers
						Batch	Batch	
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
Styrene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1,2,2-Tetrachloroethane	458	25.0	7.50	ug/L	50	VMS7979	VXX14594	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7974	VXX14594	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Dibromofluoromethane <surr>	105	85-115		%	1	VMS7974	VXX14594	
1,2-Dichloroethane-D4 <surr>	107	72-119		%	1	VMS7974	VXX14594	
Toluene-d8 <surr>	97.9	85-120		%	1	VMS7974	VXX14594	
4-Bromofluorobenzene <surr>	98.5	76-119		%	1	VMS7974	VXX14594	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-23  
SGS Ref. #: 1056896010  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 12:45  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4017

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7974			Prep Batch: VXX14594				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/23/05 20:27			Prep Date/Time: 10/23/05 12:45				Container ID:1056896010-A	
Dilution Factor: 1							Analyst: VS	
Analytical Batch: VMS7979			Prep Batch: VXX14594				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/25/05 19:07			Prep Date/Time: 10/23/05 12:45				Container ID:1056896010-A	
Dilution Factor: 50							Analyst: VS	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-24  
SGS Ref. #: 1056896011  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 08:00  
Receipt Date/Time: 10/17/05 09:32  
Location: Trip Blank

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Vinyl chloride	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7974	VXX14594	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7974	VXX14594	
Carbon disulfide	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
Acetone	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
trans-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
cis-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chloroform	ND	1.00	0.300	ug/L	1	VMS7974	VXX14594	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Carbon tetrachloride	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Benzene	ND	0.400	0.120	ug/L	1	VMS7974	VXX14594	
Trichloroethene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Toluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1,2-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Tetrachloroethene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7974	VXX14594	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: **0510FROBWA-24**  
 SGS Ref. #: 1056896011  
 Project ID: Ft Richardson Groundwater  
 Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
 Collection Date/Time: 10/13/05 08:00  
 Receipt Date/Time: 10/17/05 09:32  
 Location: Trip Blank

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
Styrene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1,2,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7974	VXX14594	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Dibromofluoromethane <surr>	102	85-115		%	1	VMS7974	VXX14594	
1,2-Dichloroethane-D4 <surr>	100	72-119		%	1	VMS7974	VXX14594	
Toluene-d8 <surr>	99.3	85-120		%	1	VMS7974	VXX14594	
4-Bromofluorobenzene <surr>	98.7	76-119		%	1	VMS7974	VXX14594	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: **0510FROBWA-24**  
SGS Ref. #: 1056896011  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 08:00  
Receipt Date/Time: 10/17/05 09:32  
Location: Trip Blank

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7974			Prep Batch: VXX14594				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/23/05 16:03			Prep Date/Time: 10/23/05 12:45				Container ID:1056896011-A	
Dilution Factor: 1							Analyst: VS	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: **0510FROBWA-25**  
SGS Ref. #: 1056896012  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/13/05 08:00  
Receipt Date/Time: 10/17/05 09:32  
Location: Trip Blank

**Light Gases**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	ND	5.00	1.50	ug/L	1	GAS1260		
Ethane	ND	5.00	1.50	ug/L	1	GAS1260		
Ethene	ND	5.00	1.50	ug/L	1	GAS1260		

**Batch Information**

Analytical Batch: GAS1260  
Analytical Method: RSK-175  
Analysis Date/Time: 10/25/05 14:20  
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL  
Container ID: 1056896012-A  
Analyst: KWM



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-26  
SGS Ref. #: 1056896013  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 14:50  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4519

**Dissolved Metals**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Iron	5570	1000	310	ug/L	5	MMS3846	MXX16477	
Manganese	588	2.00	0.620	ug/L	5	MMS3846	MXX16477	

**Batch Information**

Analytical Batch: MMS3846  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/20/05 14:43  
Dilution Factor: 5

Prep Batch: MXX16477  
Prep Method: FILTER  
Prep Date/Time: 10/14/05 14:50

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID: 1056896013-I  
Analyst: TK



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-26  
SGS Ref. #: 1056896013  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 14:50  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4519

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Sulfate	18.6	0.100	0.0310	mg/L	1	WIC3763		
Total Nitrate/Nitrite-N	0.0400 J	0.100	0.0310	mg/L	5	WFI1070		
Chloride	4.14	0.100	0.0310	mg/L	1	WIC3763		

**Batch Information**

Analytical Batch: WFI1070 Initial Prep Wt./Vol.: 100 mL  
Analytical Method: EPA 353.2  
Analysis Date/Time: 10/17/05 18:05 Container ID:1056896013-G  
Dilution Factor: 5 Analyst: AZS

Analytical Batch: WIC3763 Initial Prep Wt./Vol.: 5 mL  
Analytical Method: EPA 300.0  
Analysis Date/Time: 10/18/05 23:18 Container ID:1056896013-H  
Dilution Factor: 1 Analyst: DSH



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-26  
SGS Ref. #: 1056896013  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 14:50  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4519

**Light Gases**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	267	50.0	15.0	ug/L	10	GAS1260		
Ethane	2.90 J	5.00	1.50	ug/L	1	GAS1260		
Ethene	2.90 J	5.00	1.50	ug/L	1	GAS1260		

**Batch Information**

Analytical Batch: GAS1260	Initial Prep Wt./Vol.: 1 mL
Analytical Method: RSK-175	
Analysis Date/Time: 10/25/05 14:26	Container ID:1056896013-D
Dilution Factor: 1	Analyst: KWM

Analytical Batch: GAS1260	Initial Prep Wt./Vol.: 1 mL
Analytical Method: RSK-175	
Analysis Date/Time: 10/25/05 15:03	Container ID:1056896013-D
Dilution Factor: 10	Analyst: KWM



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-26  
SGS Ref. #: 1056896013  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 14:50  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4519

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Vinyl chloride	0.870 J	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7974	VXX14594	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloroethene	6.88	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7974	VXX14594	
Carbon disulfide	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
Acetone	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
trans-1,2-Dichloroethene	50.0	25.0	7.75	ug/L	25	VMS7979	VXX14594	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
cis-1,2-Dichloroethene	216	25.0	7.75	ug/L	25	VMS7979	VXX14594	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chloroform	ND	1.00	0.300	ug/L	1	VMS7974	VXX14594	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Carbon tetrachloride	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Benzene	0.390 J	0.400	0.120	ug/L	1	VMS7974	VXX14594	
Trichloroethene	900	25.0	7.75	ug/L	25	VMS7979	VXX14594	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Toluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1,2-Trichloroethane	6.46	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Tetrachloroethene	10.4	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7974	VXX14594	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-26  
 SGS Ref. #: 1056896013  
 Project ID: Ft Richardson Groundwater  
 Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
 Collection Date/Time: 10/14/05 14:50  
 Receipt Date/Time: 10/17/05 09:32  
 Location: AP-4519

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
Styrene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1,2,2-Tetrachloroethane	148	12.5	3.75	ug/L	25	VMS7979	VXX14594	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7974	VXX14594	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Dibromofluoromethane <surr>	106	85-115		%	1	VMS7974	VXX14594	
1,2-Dichloroethane-D4 <surr>	117	72-119		%	1	VMS7974	VXX14594	
Toluene-d8 <surr>	100	85-120		%	1	VMS7974	VXX14594	
4-Bromofluorobenzene <surr>	100	76-119		%	1	VMS7974	VXX14594	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-26  
SGS Ref. #: 1056896013  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 14:50  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4519

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7974			Prep Batch: VXX14594				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/23/05 21:00			Prep Date/Time: 10/23/05 12:45				Container ID:1056896013-A	
Dilution Factor: 1							Analyst: VS	
Analytical Batch: VMS7979			Prep Batch: VXX14594				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/25/05 20:20			Prep Date/Time: 10/23/05 12:45				Container ID:1056896013-A	
Dilution Factor: 25							Analyst: VS	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-27  
SGS Ref. #: 1056896014  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 16:05  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4353

**Dissolved Metals**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Iron	8420	1000	310	ug/L	5	MMS3846	MXX16477	
Manganese	725	2.00	0.620	ug/L	5	MMS3846	MXX16477	

**Batch Information**

Analytical Batch: MMS3846  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/20/05 14:47  
Dilution Factor: 5

Prep Batch: MXX16477  
Prep Method: FILTER  
Prep Date/Time: 10/14/05 16:05

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID: 1056896014-I  
Analyst: TK



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: **0510FROBWA-27**  
SGS Ref. #: 1056896014  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 16:05  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4353

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Sulfate	6.66	0.100	0.0310	mg/L	1	WIC3763		
Total Nitrate/Nitrite-N	0.0860 J	0.100	0.0310	mg/L	5	WFI1070		
Chloride	2.66	0.100	0.0310	mg/L	1	WIC3763		

**Batch Information**

Analytical Batch: WFI1070	Initial Prep Wt./Vol.: 100 mL
Analytical Method: EPA 353.2	
Analysis Date/Time: 10/17/05 18:07	Container ID:1056896014-G
Dilution Factor: 5	Analyst: AZS
<hr/>	
Analytical Batch: WIC3763	Initial Prep Wt./Vol.: 5 mL
Analytical Method: EPA 300.0	
Analysis Date/Time: 10/18/05 23:36	Container ID:1056896014-H
Dilution Factor: 1	Analyst: DSH



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-27  
SGS Ref. #: 1056896014  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 16:05  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4353

**Light Gases**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	687	50.0	15.0	ug/L	10	GAS1260		
Ethane	3.20 J	5.00	1.50	ug/L	1	GAS1260		
Ethene	5.70	5.00	1.50	ug/L	1	GAS1260		

**Batch Information**

Analytical Batch: GAS1260

Initial Prep Wt./Vol.: 1 mL

Analytical Method: RSK-175

Analysis Date/Time: 10/25/05 14:32

Container ID:1056896014-D

Dilution Factor: 1

Analyst: KWM

Analytical Batch: GAS1260

Initial Prep Wt./Vol.: 1 mL

Analytical Method: RSK-175

Analysis Date/Time: 10/25/05 15:09

Container ID:1056896014-D

Dilution Factor: 10

Analyst: KWM



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-27  
 SGS Ref. #: 1056896014  
 Project ID: Ft Richardson Groundwater  
 Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
 Collection Date/Time: 10/14/05 16:05  
 Receipt Date/Time: 10/17/05 09:32  
 Location: AP-4353

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Vinyl chloride	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7974	VXX14594	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloroethene	1.67	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7974	VXX14594	
Carbon disulfide	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
Acetone	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
trans-1,2-Dichloroethene	13.9	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
cis-1,2-Dichloroethene	57.0	25.0	7.75	ug/L	25	VMS7979	VXX14594	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chloroform	ND	1.00	0.300	ug/L	1	VMS7974	VXX14594	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Carbon tetrachloride	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Benzene	ND	0.400	0.120	ug/L	1	VMS7974	VXX14594	
Trichloroethene	325	25.0	7.75	ug/L	25	VMS7979	VXX14594	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Toluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1,2-Trichloroethane	2.68	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Tetrachloroethene	6.19	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7974	VXX14594	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: **0510FROBWA-27**  
 SGS Ref. #: 1056896014  
 Project ID: Ft Richardson Groundwater  
 Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
 Collection Date/Time: 10/14/05 16:05  
 Receipt Date/Time: 10/17/05 09:32  
 Location: AP-4353

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
Styrene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1,2,2-Tetrachloroethane	138	12.5	3.75	ug/L	25	VMS7979	VXX14594	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7974	VXX14594	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Dibromofluoromethane <surr>	110	85-115		%	1	VMS7974	VXX14594	
1,2-Dichloroethane-D4 <surr>	111	72-119		%	1	VMS7974	VXX14594	
Toluene-d8 <surr>	98.9	85-120		%	1	VMS7974	VXX14594	
4-Bromofluorobenzene <surr>	98.8	76-119		%	1	VMS7974	VXX14594	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-27  
SGS Ref. #: 1056896014  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 16:05  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4353

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7974			Prep Batch: VXX14594				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/23/05 23:11			Prep Date/Time: 10/23/05 12:45				Container ID:1056896014-A	
Dilution Factor: 1							Analyst: VS	
Analytical Batch: VMS7979			Prep Batch: VXX14594				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/25/05 20:55			Prep Date/Time: 10/23/05 12:45				Container ID:1056896014-A	
Dilution Factor: 25							Analyst: VS	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: **0510FROBWA-28**  
SGS Ref. #: 1056896015  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 17:10  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4354

**Dissolved Metals**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Iron	ND	1000	310	ug/L	5	MMS3846	MXX16477	
Manganese	127	2.00	0.620	ug/L	5	MMS3846	MXX16477	

**Batch Information**

Analytical Batch: MMS3846  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/20/05 14:52  
Dilution Factor: 5

Prep Batch: MXX16477  
Prep Method: FILTER  
Prep Date/Time: 10/14/05 17:10

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID:1056896015-I  
Analyst: TK



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-28  
SGS Ref. #: 1056896015  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 17:10  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4354

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Sulfate	0.656	0.100	0.0310	mg/L	1	WIC3763		
Total Nitrate/Nitrite-N	0.0475 J	0.100	0.0310	mg/L	5	WFI1070		
Chloride	1.21	0.100	0.0310	mg/L	1	WIC3763		

**Batch Information**

Analytical Batch: WFI1070  
 Analytical Method: EPA 353.2  
 Analysis Date/Time: 10/17/05 18:08  
 Dilution Factor: 5  
 Initial Prep Wt./Vol.: 100 mL  
 Container ID:1056896015-G  
 Analyst: AZS

Analytical Batch: WIC3763  
 Analytical Method: EPA 300.0  
 Analysis Date/Time: 10/18/05 23:55  
 Dilution Factor: 1  
 Initial Prep Wt./Vol.: 5 mL  
 Container ID:1056896015-H  
 Analyst: DSH



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-28  
SGS Ref. #: 1056896015  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 17:10  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4354

**Light Gases**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	24.6	5.00	1.50	ug/L	1	GAS1260		
Ethane	ND	5.00	1.50	ug/L	1	GAS1260		
Ethene	ND	5.00	1.50	ug/L	1	GAS1260		

**Batch Information**

Analytical Batch: GAS1260  
Analytical Method: RSK-175  
Analysis Date/Time: 10/25/05 14:38  
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL  
Container ID:1056896015-D  
Analyst: KWM



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-28  
SGS Ref. #: 1056896015  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 17:10  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4354

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Vinyl chloride	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7974	VXX14594	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7974	VXX14594	
Carbon disulfide	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
Acetone	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
trans-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
cis-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
Chloroform	ND	1.00	0.300	ug/L	1	VMS7974	VXX14594	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Carbon tetrachloride	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Benzene	ND	0.400	0.120	ug/L	1	VMS7974	VXX14594	
Trichloroethene	0.500 J	1.00	0.310	ug/L	1	VMS7979	VXX14594	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Toluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1,2-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Tetrachloroethene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7974	VXX14594	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-28  
 SGS Ref. #: 1056896015  
 Project ID: Ft Richardson Groundwater  
 Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
 Collection Date/Time: 10/14/05 17:10  
 Receipt Date/Time: 10/17/05 09:32  
 Location: AP-4354

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
Styrene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1,2,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7979	VXX14594	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7974	VXX14594	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Dibromofluoromethane <surr>	110	85-115		%	1	VMS7974	VXX14594	
1,2-Dichloroethane-D4 <surr>	114	72-119		%	1	VMS7974	VXX14594	
Toluene-d8 <surr>	98.3	85-120		%	1	VMS7974	VXX14594	
4-Bromofluorobenzene <surr>	97.5	76-119		%	1	VMS7974	VXX14594	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-28  
SGS Ref. #: 1056896015  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 17:10  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4354

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7974			Prep Batch: VXX14594				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/23/05 21:33			Prep Date/Time: 10/23/05 12:45				Container ID:1056896015-A	
Dilution Factor: 1							Analyst: VS	
<hr/>								
Analytical Batch: VMS7979			Prep Batch: VXX14594				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/25/05 16:44			Prep Date/Time: 10/23/05 12:45				Container ID:1056896015-A	
Dilution Factor: 1							Analyst: VS	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-29  
SGS Ref. #: 1056896016  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 16:40  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4597

**Dissolved Metals**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Iron	ND	1000	310	ug/L	5	MMS3846	MXX16477	
Manganese	131	2.00	0.620	ug/L	5	MMS3846	MXX16477	

**Batch Information**

Analytical Batch: MMS3846  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/20/05 14:56  
Dilution Factor: 5

Prep Batch: MXX16477  
Prep Method: FILTER  
Prep Date/Time: 10/14/05 16:40

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID:1056896016-I  
Analyst: TK



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-29  
SGS Ref. #: 1056896016  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 16:40  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4597

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Nitrate/Nitrite-N	ND	0.100	0.0310	mg/L	5	WF11070		
Sulfate	0.639	0.100	0.0310	mg/L	1	WIC3763		
Chloride	1.20	0.100	0.0310	mg/L	1	WIC3763		

**Batch Information**

Analytical Batch: WF11070  
Analytical Method: EPA 353.2  
Analysis Date/Time: 10/17/05 18:10  
Dilution Factor: 5  
initial Prep Wt./Vol.: 100 mL  
Container ID:1056896016-G  
Analyst: AZS

Analytical Batch: WIC3763  
Analytical Method: EPA 300.0  
Analysis Date/Time: 10/19/05 00:13  
Dilution Factor: 1  
Initial Prep Wt./Vol.: 5 mL  
Container ID:1056896016-H  
Analyst: DSH



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: **0510FROBWA-29**  
SGS Ref. #: 1056896016  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 16:40  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4597

**Light Gases**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	24.1	5.00	1.50	ug/L	1	GAS1260		
Ethane	ND	5.00	1.50	ug/L	1	GAS1260		
Ethene	ND	5.00	1.50	ug/L	1	GAS1260		

**Batch Information**

Analytical Batch: GAS1260  
Analytical Method: RSK-175  
Analysis Date/Time: 10/25/05 14:44  
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1056896016-D  
Analyst: KWM



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-29  
SGS Ref. #: 1056896016  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 16:40  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4597

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Vinyl chloride	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7974	VXX14594	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7974	VXX14594	
Carbon disulfide	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
Acetone	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
trans-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
cis-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
Chloroform	ND	1.00	0.300	ug/L	1	VMS7974	VXX14594	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Carbon tetrachloride	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Benzene	ND	0.400	0.120	ug/L	1	VMS7974	VXX14594	
Trichloroethene	0.490 J	1.00	0.310	ug/L	1	VMS7980	VXX14594	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Toluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1,2-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Tetrachloroethene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7974	VXX14594	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-29  
SGS Ref. #: 1056896016  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 16:40  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4597

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
Styrene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1,2,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7980	VXX14594	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7974	VXX14594	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Dibromofluoromethane <surr>	109	85-115		%	1	VMS7974	VXX14594	
1,2-Dichloroethane-D4 <surr>	109	72-119		%	1	VMS7974	VXX14594	
Toluene-d8 <surr>	99	85-120		%	1	VMS7974	VXX14594	
4-Bromofluorobenzene <surr>	99.3	76-119		%	1	VMS7974	VXX14594	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-29  
SGS Ref. #: 1056896016  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 16:40  
Receipt Date/Time: 10/17/05 09:32  
Location: AP-4597

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7974			Prep Batch: VXX14594				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/23/05 22:06			Prep Date/Time: 10/23/05 12:45				Container ID:1056896016-A	
Dilution Factor: 1							Analyst: VS	
Analytical Batch: VMS7980			Prep Batch: VXX14594				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/25/05 13:24			Prep Date/Time: 10/23/05 12:45				Container ID:1056896016-A	
Dilution Factor: 1							Analyst: VS	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: **0510FROBWA-30**  
SGS Ref. #: 1056896017  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 18:05  
Receipt Date/Time: 10/17/05 09:32  
Location: E Rinse

**Dissolved Metals**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Iron	ND	1000	310	ug/L	5	MMS3846	MXX16477	
Manganese	ND	2.00	0.620	ug/L	5	MMS3846	MXX16477	

**Batch Information**

Analytical Batch: MMS3846  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/20/05 15:00  
Dilution Factor: 5

Prep Batch: MXX16477  
Prep Method: FILTER  
Prep Date/Time: 10/14/05 18:05

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID:1056896017-I  
Analyst: TK



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-30  
SGS Ref. #: 1056896017  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 18:05  
Receipt Date/Time: 10/17/05 09:32  
Location: E Rinse

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Nitrate/Nitrite-N	0.0520 J	0.100	0.0310	mg/L	5	WF11070		
Sulfate	ND	0.100	0.0310	mg/L	1	WIC3763		
Chloride	0.0340 J	0.100	0.0310	mg/L	1	WIC3763		

**Batch Information**

Analytical Batch: WF11070  
 Analytical Method: EPA 353.2  
 Analysis Date/Time: 10/17/05 18:11  
 Dilution Factor: 5  
 Initial Prep Wt./Vol.: 100 mL  
 Container ID: 1056896017-G  
 Analyst: AZS

Analytical Batch: WIC3763  
 Analytical Method: EPA 300.0  
 Analysis Date/Time: 10/19/05 01:07  
 Dilution Factor: 1  
 Initial Prep Wt./Vol.: 5 mL  
 Container ID: 1056896017-H  
 Analyst: DSH



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-30  
SGS Ref. #: 1056896017  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 18:05  
Receipt Date/Time: 10/17/05 09:32  
Location: E Rinse

**Light Gases**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	ND	5.00	1.50	ug/L	1	GAS1260		
Ethane	ND	5.00	1.50	ug/L	1	GAS1260		
Ethene	ND	5.00	1.50	ug/L	1	GAS1260		

**Batch Information**

Analytical Batch: GAS1260  
Analytical Method: RSK-175  
Analysis Date/Time: 10/25/05 14:50  
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL  
Container ID:1056896017-D  
Analyst: KWM



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: **0510FROBWA-30**  
SGS Ref. #: 1056896017  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 18:05  
Receipt Date/Time: 10/17/05 09:32  
Location: E Rinse

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Vinyl chloride	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7974	VXX14594	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7974	VXX14594	
Carbon disulfide	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
Acetone	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
trans-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
cis-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chloroform	ND	1.00	0.300	ug/L	1	VMS7974	VXX14594	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Carbon tetrachloride	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Benzene	ND	0.400	0.120	ug/L	1	VMS7974	VXX14594	
Trichloroethene	ND	1.00	0.310	ug/L	1	VMS7980	VXX14594	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Toluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1,2-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Tetrachloroethene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7974	VXX14594	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: **0510FROBWA-30**  
SGS Ref. #: 1056896017  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 18:05  
Receipt Date/Time: 10/17/05 09:32  
Location: E Rinse

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u>	<u>Prep</u>	<u>Qualifiers</u>
						<u>Batch</u>	<u>Batch</u>	
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
Styrene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,1,2,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7974	VXX14594	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7974	VXX14594	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7974	VXX14594	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7974	VXX14594	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7974	VXX14594	
Dibromofluoromethane <surr>	109	85-115		%	1	VMS7974	VXX14594	
1,2-Dichloroethane-D4 <surr>	109	72-119		%	1	VMS7974	VXX14594	
Toluene-d8 <surr>	97.3	85-120		%	1	VMS7974	VXX14594	
4-Bromofluorobenzene <surr>	102	76-119		%	1	VMS7974	VXX14594	



Satori Group, Inc.

Print Date: 10/31/2005

Client Sample ID: 0510FROBWA-30  
SGS Ref. #: 1056896017  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/14/05 18:05  
Receipt Date/Time: 10/17/05 09:32  
Location: E Rinse

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7974			Prep Batch: VXX14594				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/23/05 22:38			Prep Date/Time: 10/23/05 12:45				Container ID:1056896017-A	
Dilution Factor: 1							Analyst: VS	
Analytical Batch: VMS7980			Prep Batch: VXX14594				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/25/05 13:57			Prep Date/Time: 10/23/05 12:45				Container ID:1056896017-A	
Dilution Factor: 1							Analyst: VS	

**SGS Environmental Services Inc.**  
**Alaska Division**  
**Laboratory Data Report**

Project: Ft Richardson Groundwater  
Client: Satori Group, Inc.  
SGS Work Order: 1057046  
NPDL Work Order: 06-002

Except as noted on the case narrative, all quality assurance/quality control criteria is in compliance with the standards set forth by the Alaska Department of Environmental Conservation (ADEC), the SGS Quality Assurance Program Plan, and the National Environmental Laboratory Accreditation Conference.

Please contact your Project Manager and/or the Quality Assurance Manager should any questions occur.

Prepared by	(Signature)	<u>[Signature]</u>
	(Printed Name)	<u>J. Talbot</u>
	(Date)	<u>12/15/05</u>
Released by	(Signature)	<u>[Signature]</u>
	(Printed Name)	<u>WIZIMINNA C. HARRIS</u>
	(Title)	<u>Data Package Reviewer</u>
	(Date)	<u>12/09/05</u>

This report contains a total number of 317 pages.



## Laboratory Analytical Report

Client: **Satori Group, Inc.**  
1310 E. 66th Ave #2  
Anchorage, AK 99518

Attn: **Derek Lucas**  
T: (907)332-0456 F:(907)332-0457  
dlucas@gosatori.com

Project: **Ft Richardson Groundwater**

Workorder No.: **1057046**

### Certification:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, other than the conditions noted on the sample data sheet(s) and/or the case narrative. This certification applies only to the tested parameters and the specific sample(s) received at the laboratory.

Released by:

**SGS**

**Victoria Bayly**

2005.11.16

16:26:04 -09'00'

Alaska Division Project Manager

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Victoria Bayly  
Victoria\_Bayly@sgs.com  
Project Manager

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Report Date

Total number of pages in report : \_\_\_\_\_

Enclosed are the analytical results associated with this 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 Control Manual that outlines this program is available at your request. The laboratory ADEC certification numbers are AK08-03 (DW), UST-005 (CS) and AK00971 (Micro).

The laboratory NELAC certification number is 001327.

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS Quality Assurance Program Plan and the National Environmental Laboratory Accreditation Program.

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

MDL	Method Detection Limit
PQL	Practical Quantitation Limit (reporting limit).
CL	Control 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
LT	Less Than
Q	QC parameter out of acceptance range.
M	A matrix effect was present.
E	The analyte result is above the calibrated range.
DF	Analytical Dilution Factor
JL	The analyte was positively identified, but the quantitation is a low estimation.
<Surr>	Surrogate QC spiked standard

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



## SAMPLE SUMMARY

Print Date: 11/15/2005

Client Name: Satori Group, Inc.  
Project Name: Ft Richardson Groundwater  
Workorder No.: 1057046

### Analytical Methods

<u>Method Description</u>	<u>Analytical Method</u>
Dissolved Metals by ICP-MS	SW6020 Diss.
Ion Chromatographic Analysis (W)	EPA 300.0
Light Gases in Water	RSK-175
Nitrate/Nitrite Flow injection Pres.	EPA 353.2
Volatile Organic Compounds (W) FULL	SW8260B

### Sample ID Cross Reference

<u>Lab Sample ID</u>	<u>Client Sample ID</u>
1057046001	0510FROBWA-31
1057046002	0510FROBWA-32
1057046003	0510FROBWA-33
1057046004	0510FROBWA-34
1057046005	0510FROBWA-35
1057046006	0510FROBWA-36



Satori Group, Inc.

Print Date: 11/15/2005

Client Sample ID: **0510FROBWA-31**  
SGS Ref. #: 1057046001  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/17/05 11:40  
Receipt Date/Time: 10/20/05 11:53  
Location: AP-3744

**Dissolved Metals**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Iron	ND	1000	310	ug/L	5	MMS3863	MXX16524	
Manganese	ND	2.00	0.620	ug/L	5	MMS3863	MXX16524	

**Batch Information**

Analytical Batch: MMS3863  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/31/05 14:31  
Dilution Factor: 5

Prep Batch: MXX16524  
Prep Method: FILTER  
Prep Date/Time: 10/17/05 11:40

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID:1057046001-I  
Analyst: TK



Satori Group, Inc.

Print Date: 11/15/2005

Client Sample ID: 0510FROBWA-31  
SGS Ref. #: 1057046001  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/17/05 11:40  
Receipt Date/Time: 10/20/05 11:53  
Location: AP-3744

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Sulfate	22.4	0.100	0.0310	mg/L	1	WIC3766		
Total Nitrate/Nitrite-N	2.01	0.100	0.0310	mg/L	5	WFI1073		
Chloride	1.72	0.100	0.0310	mg/L	1	WIC3766		

**Batch Information**

Analytical Batch: WFI1073	Initial Prep Wt./Vol.: 100 mL
Analytical Method: EPA 353.2	
Analysis Date/Time: 10/20/05 16:46	Container ID:1057046001-G
Dilution Factor: 5	Analyst: AZS
Analytical Batch: WIC3766	Initial Prep Wt./Vol.: 5 mL
Analytical Method: EPA 300.0	
Analysis Date/Time: 10/20/05 14:59	Container ID:1057046001-H
Dilution Factor: 1	Analyst: JEM



Satori Group, Inc.

Print Date: 11/15/2005

Client Sample ID: 0510FROBWA-31  
SGS Ref. #: 1057046001  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/17/05 11:40  
Receipt Date/Time: 10/20/05 11:53  
Location: AP-3744

**Light Gases**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Methane	ND	5.00	1.50	ug/L	1	GAS1262		
Ethane	ND	5.00	1.50	ug/L	1	GAS1262		
Ethene	ND	5.00	1.50	ug/L	1	GAS1262		

**Batch Information**

Analytical Batch: GAS1262  
Analytical Method: RSK-175  
Analysis Date/Time: 10/27/05 11:44  
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL  
Container ID:1057046001-D  
Analyst: KWM



Client Sample ID: 0510FROBWA-31  
 SGS Ref. #: 1057046001  
 Project ID: Ft Richardson Groundwater  
 Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
 Collection Date/Time: 10/17/05 11:40  
 Receipt Date/Time: 10/20/05 11:53  
 Location: AP-3744

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Vinyl chloride	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7993	VXX14625	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,1-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7993	VXX14625	
Carbon disulfide	ND	2.00	0.620	ug/L	1	VMS7993	VXX14625	
Acetone	ND	10.0	3.10	ug/L	1	VMS7993	VXX14625	
trans-1,2-Dichloroethene	0.390 J	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
cis-1,2-Dichloroethene	1.98	1.00	0.310	ug/L	1	VMS7993	VXX14625	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7993	VXX14625	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Chloroform	0.350 J	1.00	0.300	ug/L	1	VMS7993	VXX14625	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Carbon tetrachloride	0.680 J	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Benzene	ND	0.400	0.120	ug/L	1	VMS7993	VXX14625	
Trichloroethene	39.1	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7993	VXX14625	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
Toluene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,1,2-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Tetrachloroethene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7993	VXX14625	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	



Satori Group, Inc.

Print Date: 11/15/2005

Client Sample ID: 0510FROBWA-31  
 SGS Ref. #: 1057046001  
 Project ID: Ft Richardson Groundwater  
 Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
 Collection Date/Time: 10/17/05 11:40  
 Receipt Date/Time: 10/20/05 11:53  
 Location: AP-3744

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7993	VXX14625	
Styrene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,1,2,2-Tetrachloroethane	16.0	0.500	0.150	ug/L	1	VMS7993	VXX14625	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7993	VXX14625	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7993	VXX14625	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7993	VXX14625	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7993	VXX14625	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7993	VXX14625	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
Dibromofluoromethane <surr>	98.8	85-115		%	1	VMS7993	VXX14625	
1,2-Dichloroethane-D4 <surr>	98.9	72-119		%	1	VMS7993	VXX14625	
Toluene-d8 <surr>	103	85-120		%	1	VMS7993	VXX14625	
4-Bromofluorobenzene <surr>	110	76-119		%	1	VMS7993	VXX14625	



Satori Group, Inc.

Print Date: 11/15/2005

Client Sample ID: 0510FROBWA-31  
SGS Ref. #: 1057046001  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/17/05 11:40  
Receipt Date/Time: 10/20/05 11:53  
Location: AP-3744

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7993			Prep Batch: VXX14625				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/28/05 14:36			Prep Date/Time: 10/28/05 10:00				Container ID:1057046001-B	
Dilution Factor: 1							Analyst: VS	



Satori Group, Inc.

Print Date: 11/15/2005

Client Sample ID: **0510FROBWA-32**  
SGS Ref. #: 1057046002  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/17/05 12:55  
Receipt Date/Time: 10/20/05 11:53  
Location: AP-3981

**Dissolved Metals**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Iron	21800	1000	310	ug/L	5	MMS3863	MXX16524	
Manganese	916	2.00	0.620	ug/L	5	MMS3863	MXX16524	

**Batch Information**

Analytical Batch: MMS3863  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/31/05 14:35  
Dilution Factor: 5

Prep Batch: MXX16524  
Prep Method: FILTER  
Prep Date/Time: 10/17/05 12:55

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID: 1057046002-I  
Analyst: TK



Satori Group, Inc.

Print Date: 11/15/2005

Client Sample ID: 0510FROBWA-32  
SGS Ref. #: 1057046002  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/17/05 12:55  
Receipt Date/Time: 10/20/05 11:53  
Location: AP-3981

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Sulfate	0.134	0.100	0.0310	mg/L	1	WIC3766		
Total Nitrate/Nitrite-N	ND	0.100	0.0310	mg/L	5	WFI1073		
Chloride	1.55	0.100	0.0310	mg/L	1	WIC3766		

**Batch Information**

Analytical Batch: WFI1073	Initial Prep Wt./Vol.: 100 mL
Analytical Method: EPA 353.2	
Analysis Date/Time: 10/20/05 16:47	Container ID:1057046002-G
Dilution Factor: 5	Analyst: AZS
<hr/>	
Analytical Batch: WIC3766	Initial Prep Wt./Vol.: 5 mL
Analytical Method: EPA 300.0	
Analysis Date/Time: 10/20/05 15:54	Container ID:1057046002-H
Dilution Factor: 1	Analyst: JEM



Satori Group, Inc.

Print Date: 11/15/2005

Client Sample ID: 0510FROBWA-32  
SGS Ref. #: 1057046002  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/17/05 12:55  
Receipt Date/Time: 10/20/05 11:53  
Location: AP-3981

Light Gases

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	1470	100	30.0	ug/L	20	GAS1262		
Ethane	ND	5.00	1.50	ug/L	1	GAS1262		
Ethene	ND	5.00	1.50	ug/L	1	GAS1262		

Batch Information

Analytical Batch: GAS1262	Initial Prep Wt./Vol.: 1 mL
Analytical Method: RSK-175	
Analysis Date/Time: 10/27/05 11:50	Container ID:1057046002-D
Dilution Factor: 1	Analyst: KWM
Analytical Batch: GAS1262	Initial Prep Wt./Vol.: 1 mL
Analytical Method: RSK-175	
Analysis Date/Time: 10/27/05 14:07	Container ID:1057046002-D
Dilution Factor: 20	Analyst: KWM



Satori Group, Inc.

Print Date: 11/15/2005

Client Sample ID: 0510FROBWA-32  
SGS Ref. #: 1057046002  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/17/05 12:55  
Receipt Date/Time: 10/20/05 11:53  
Location: AP-3981

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Vinyl chloride	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7993	VXX14625	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,1-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7993	VXX14625	
Carbon disulfide	ND	2.00	0.620	ug/L	1	VMS7993	VXX14625	
Acetone	ND	10.0	3.10	ug/L	1	VMS7993	VXX14625	
trans-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
cis-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7993	VXX14625	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Chloroform	ND	1.00	0.300	ug/L	1	VMS7993	VXX14625	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Carbon tetrachloride	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Benzene	ND	0.400	0.120	ug/L	1	VMS7993	VXX14625	
Trichloroethene	0.780 J	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7993	VXX14625	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
Toluene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,1,2-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Tetrachloroethene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7993	VXX14625	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	



Satori Group, Inc.

Print Date: 11/15/2005

Client Sample ID: 0510FROBWA-32  
 SGS Ref. #: 1057046002  
 Project ID: Ft Richardson Groundwater  
 Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
 Collection Date/Time: 10/17/05 12:55  
 Receipt Date/Time: 10/20/05 11:53  
 Location: AP-3981

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7993	VXX14625	
Styrene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,1,2,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7993	VXX14625	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7993	VXX14625	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7993	VXX14625	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7993	VXX14625	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7993	VXX14625	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
Dibromofluoromethane <surr>	100	85-115		%	1	VMS7993	VXX14625	
1,2-Dichloroethane-D4 <surr>	101	72-119		%	1	VMS7993	VXX14625	
Toluene-d8 <surr>	101	85-120		%	1	VMS7993	VXX14625	
4-Bromofluorobenzene <surr>	105	76-119		%	1	VMS7993	VXX14625	



Satori Group, Inc.

Print Date: 11/15/2005

Client Sample ID: 0510FROBWA-32  
SGS Ref. #: 1057046002  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/17/05 12:55  
Receipt Date/Time: 10/20/05 11:53  
Location: AP-3981

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Batch Information								
Analytical Batch: VMS7993			Prep Batch: VXX14625				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/28/05 14:01			Prep Date/Time: 10/28/05 10:00				Container ID:1057046002-B	
Dilution Factor: 1							Analyst: VS	



Satori Group, Inc.

Print Date: 11/15/2005

Client Sample ID: **0510FROBWA-33**  
SGS Ref. #: 1057046003  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/17/05 14:35  
Receipt Date/Time: 10/20/05 11:53  
Location: AP-3985

**Dissolved Metals**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Iron	8100	1000	310	ug/L	5	MMS3863	MXX16524	
Manganese	735	2.00	0.620	ug/L	5	MMS3863	MXX16524	

**Batch Information**

Analytical Batch: MMS3863  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/31/05 14:40  
Dilution Factor: 5

Prep Batch: MXX16524  
Prep Method: FILTER  
Prep Date/Time: 10/17/05 14:35

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID:1057046003-I  
Analyst: TK



Satori Group, Inc.

Print Date: 11/15/2005

Client Sample ID: 0510FROBWA-33  
SGS Ref. #: 1057046003  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/17/05 14:35  
Receipt Date/Time: 10/20/05 11:53  
Location: AP-3985

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Nitrate/Nitrite-N	ND	0.100	0.0310	mg/L	5	WFI1073		
Sulfate	8.00	0.100	0.0310	mg/L	1	WIC3766		
Chloride	1.82	0.100	0.0310	mg/L	1	WIC3766		

**Batch Information**

Analytical Batch: WFI1073	Initial Prep Wt./Vol.: 100 mL
Analytical Method: EPA 353.2	
Analysis Date/Time: 10/20/05 16:49	Container ID: 1057046003-G
Dilution Factor: 5	Analyst: AZS

Analytical Batch: WIC3766	Initial Prep Wt./Vol.: 5 mL
Analytical Method: EPA 300.0	
Analysis Date/Time: 10/20/05 16:12	Container ID: 1057046003-H
Dilution Factor: 1	Analyst: JEM



Satori Group, Inc.

Print Date: 11/15/2005

Client Sample ID: **0510FROBWA-33**  
SGS Ref. #: 1057046003  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/17/05 14:35  
Receipt Date/Time: 10/20/05 11:53  
Location: AP-3985

**Light Gases**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	556	50.0	15.0	ug/L	10	GAS1262		
Ethane	2.70 J	5.00	1.50	ug/L	1	GAS1262		
Ethene	4.30 J	5.00	1.50	ug/L	1	GAS1262		

**Batch Information**

Analytical Batch: GAS1262  
Analytical Method: RSK-175  
Analysis Date/Time: 10/27/05 11:57  
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1057046003-D  
Analyst: KWM

Analytical Batch: GAS1262  
Analytical Method: RSK-175  
Analysis Date/Time: 10/27/05 14:14  
Dilution Factor: 10

Initial Prep Wt./Vol.: 1 mL

Container ID:1057046003-D  
Analyst: KWM



Satori Group, Inc.

Print Date: 11/15/2005

Client Sample ID: 0510FROBWA-33  
SGS Ref. #: 1057046003  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/17/05 14:35  
Receipt Date/Time: 10/20/05 11:53  
Location: AP-3985

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Vinyl chloride	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7993	VXX14625	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,1-Dichloroethene	2.70	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7993	VXX14625	
Carbon disulfide	ND	2.00	0.620	ug/L	1	VMS7993	VXX14625	
Acetone	ND	10.0	3.10	ug/L	1	VMS7993	VXX14625	
trans-1,2-Dichloroethene	8.06	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
cis-1,2-Dichloroethene	35.6	1.00	0.310	ug/L	1	VMS7993	VXX14625	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7993	VXX14625	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Chloroform	ND	1.00	0.300	ug/L	1	VMS7993	VXX14625	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Carbon tetrachloride	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Benzene	ND	0.400	0.120	ug/L	1	VMS7993	VXX14625	
Trichloroethene	464	25.0	7.75	ug/L	25	VMS7993	VXX14625	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7993	VXX14625	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
Toluene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,1,2-Trichloroethane	2.48	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Tetrachloroethene	8.86	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7993	VXX14625	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	



Satori Group, Inc.

Print Date: 11/15/2005

Client Sample ID: 0510FROBWA-33  
SGS Ref. #: 1057046003  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/17/05 14:35  
Receipt Date/Time: 10/20/05 11:53  
Location: AP-3985

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7993	VXX14625	
Styrene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,1,2,2-Tetrachloroethane	77.0	12.5	3.75	ug/L	25	VMS7993	VXX14625	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7993	VXX14625	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7993	VXX14625	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7993	VXX14625	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7993	VXX14625	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7993	VXX14625	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
Dibromofluoromethane <surr>	99.9	85-115		%	1	VMS7993	VXX14625	
1,2-Dichloroethane-D4 <surr>	104	72-119		%	1	VMS7993	VXX14625	
Toluene-d8 <surr>	105	85-120		%	1	VMS7993	VXX14625	
4-Bromofluorobenzene <surr>	113	76-119		%	1	VMS7993	VXX14625	



Satori Group, Inc.

Print Date: 11/15/2005

Client Sample ID: 0510FROBWA-33  
SGS Ref. #: 1057046003  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/17/05 14:35  
Receipt Date/Time: 10/20/05 11:53  
Location: AP-3985

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7993			Prep Batch: VXX14625				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/28/05 15:48			Prep Date/Time: 10/28/05 10:00				Container ID:1057046003-B	
Dilution Factor: 25							Analyst: VS	
Analytical Batch: VMS7993			Prep Batch: VXX14625				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/28/05 16:59			Prep Date/Time: 10/28/05 10:00				Container ID:1057046003-B	
Dilution Factor: 1							Analyst: VS	



Satori Group, Inc.

Print Date: 11/15/2005

Client Sample ID: **0510FROBWA-34**  
SGS Ref. #: 1057046004  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/17/05 16:00  
Receipt Date/Time: 10/20/05 11:53  
Location: AP-3984

**Dissolved Metals**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Iron	19200	1000	310	ug/L	5	MMS3863	MXX16524	
Manganese	407	2.00	0.620	ug/L	5	MMS3863	MXX16524	

**Batch Information**

Analytical Batch: MMS3863  
Analytical Method: SW6020 Diss.  
Analysis Date/Time: 10/31/05 14:59  
Dilution Factor: 5

Prep Batch: MXX16524  
Prep Method: FILTER  
Prep Date/Time: 10/17/05 16:00

Initial Prep Wt./Vol.: 100 mL  
Prep Extract Vol.: 100 mL  
Container ID: 1057046004-I  
Analyst: TK



Satori Group, Inc.

Print Date: 11/15/2005

Client Sample ID: 0510FROBWA-34  
SGS Ref. #: 1057046004  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/17/05 16:00  
Receipt Date/Time: 10/20/05 11:53  
Location: AP-3984

**Waters Department**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Sulfate	6.81	0.100	0.0310	mg/L	1	WIC3766		
Total Nitrate/Nitrite-N	0.853	0.100	0.0310	mg/L	5	WFI1073		
Chloride	3.66	0.100	0.0310	mg/L	1	WIC3766		

**Batch Information**

Analytical Batch: WFI1073	Initial Prep Wt./Vol.: 100 mL
Analytical Method: EPA 353.2	
Analysis Date/Time: 10/20/05 16:50	Container ID:1057046004-G
Dilution Factor: 5	Analyst: AZS
Analytical Batch: WIC3766	Initial Prep Wt./Vol.: 5 mL
Analytical Method: EPA 300.0	
Analysis Date/Time: 10/20/05 16:30	Container ID:1057046004-H
Dilution Factor: 1	Analyst: JEM



Satori Group, Inc.

Print Date: 11/15/2005

Client Sample ID: 0510FROBWA-34  
SGS Ref. #: 1057046004  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/17/05 16:00  
Receipt Date/Time: 10/20/05 11:53  
Location: AP-3984

**Light Gases**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	259	50.0	15.0	ug/L	10	GAS1262		
Ethane	6.00	5.00	1.50	ug/L	1	GAS1262		
Ethene	5.40	5.00	1.50	ug/L	1	GAS1262		

**Batch Information**

Analytical Batch: GAS1262	Initial Prep Wt./Vol.: 1 mL
Analytical Method: RSK-175	
Analysis Date/Time: 10/27/05 12:04	Container ID:1057046004-D
Dilution Factor: 1	Analyst: KWM
Analytical Batch: GAS1262	Initial Prep Wt./Vol.: 1 mL
Analytical Method: RSK-175	
Analysis Date/Time: 10/27/05 14:20	Container ID:1057046004-D
Dilution Factor: 10	Analyst: KWM



Client Sample ID: 0510FROBWA-34  
 SGS Ref. #: 1057046004  
 Project ID: Ft Richardson Groundwater  
 Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
 Collection Date/Time: 10/17/05 16:00  
 Receipt Date/Time: 10/20/05 11:53  
 Location: AP-3984

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Vinyl chloride	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7993	VXX14625	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,1-Dichloroethene	0.420 J	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7993	VXX14625	
Carbon disulfide	ND	2.00	0.620	ug/L	1	VMS7993	VXX14625	
Acetone	ND	10.0	3.10	ug/L	1	VMS7993	VXX14625	
trans-1,2-Dichloroethene	2.72	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
cis-1,2-Dichloroethene	16.8	1.00	0.310	ug/L	1	VMS7993	VXX14625	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7993	VXX14625	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Chloroform	0.500 J	1.00	0.300	ug/L	1	VMS7993	VXX14625	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Carbon tetrachloride	1.18	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Benzene	0.370 J	0.400	0.120	ug/L	1	VMS7993	VXX14625	
Trichloroethene	180	10.0	3.10	ug/L	10	VMS7993	VXX14625	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7993	VXX14625	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
Toluene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,1,2-Trichloroethane	0.620 J	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Tetrachloroethene	2.57	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7993	VXX14625	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	



Satori Group, Inc.

Print Date: 11/15/2005

Client Sample ID: 0510FROBWA-34  
 SGS Ref. #: 1057046004  
 Project ID: Ft Richardson Groundwater  
 Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
 Collection Date/Time: 10/17/05 16:00  
 Receipt Date/Time: 10/20/05 11:53  
 Location: AP-3984

**Volatile Gas Chromatography/Mass Spectroscopy**

Parameter	Result	PQL/CL	MDL	Units	DF	Analytical	Prep	Qualifiers
						Batch	Batch	
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7993	VXX14625	
Styrene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,1,2,2-Tetrachloroethane	23.6	0.500	0.150	ug/L	1	VMS7993	VXX14625	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7993	VXX14625	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7993	VXX14625	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7993	VXX14625	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7993	VXX14625	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7993	VXX14625	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
Dibromofluoromethane <surr>	94.9	85-115		%	1	VMS7993	VXX14625	
1,2-Dichloroethane-D4 <surr>	97	72-119		%	1	VMS7993	VXX14625	
Toluene-d8 <surr>	100	85-120		%	1	VMS7993	VXX14625	
4-Bromofluorobenzene <surr>	105	76-119		%	1	VMS7993	VXX14625	



Satori Group, Inc.

Print Date: 11/15/2005

Client Sample ID: 0510FROBWA-34  
SGS Ref. #: 1057046004  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/17/05 16:00  
Receipt Date/Time: 10/20/05 11:53  
Location: AP-3984

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7993			Prep Batch: VXX14625				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/28/05 15:12			Prep Date/Time: 10/28/05 10:00				Container ID:1057046004-B	
Dilution Factor: 10							Analyst: VS	
Analytical Batch: VMS7993			Prep Batch: VXX14625				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/28/05 16:23			Prep Date/Time: 10/28/05 10:00				Container ID:1057046004-B	
Dilution Factor: 1							Analyst: VS	



Satori Group, Inc.

Print Date: 11/15/2005

Client Sample ID: 0510FROBWA-35  
 SGS Ref. #: 1057046005  
 Project ID: Ft Richardson Groundwater  
 Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
 Collection Date/Time: 10/17/05 08:00  
 Receipt Date/Time: 10/20/05 11:53  
 Location: Trip Blank

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Dichlorodifluoromethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Chloromethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Vinyl chloride	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Bromomethane	ND	3.00	0.940	ug/L	1	VMS7993	VXX14625	
Chloroethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Trichlorofluoromethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,1-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Methylene chloride	ND	5.00	1.00	ug/L	1	VMS7993	VXX14625	
Carbon disulfide	ND	2.00	0.620	ug/L	1	VMS7993	VXX14625	
Acetone	ND	10.0	3.10	ug/L	1	VMS7993	VXX14625	
trans-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,1-Dichloroethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
2,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
cis-1,2-Dichloroethene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
2-Butanone (MEK)	ND	10.0	3.10	ug/L	1	VMS7993	VXX14625	
Bromochloromethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Chloroform	ND	1.00	0.300	ug/L	1	VMS7993	VXX14625	
1,1,1-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Carbon tetrachloride	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,1-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Benzene	ND	0.400	0.120	ug/L	1	VMS7993	VXX14625	
Trichloroethene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,2-Dichloropropane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Dibromomethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Bromodichloromethane	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
2-Chloroethyl Vinyl Ether	ND	10.0	3.10	ug/L	1	VMS7993	VXX14625	
cis-1,3-Dichloropropene	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
Toluene	0.610 J	1.00	0.310	ug/L	1	VMS7993	VXX14625	
trans-1,3-Dichloropropene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,1,2-Trichloroethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Tetrachloroethene	1.49	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,3-Dichloropropane	ND	0.400	0.120	ug/L	1	VMS7993	VXX14625	
Dibromochloromethane	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
1,2-Dibromoethane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Chlorobenzene	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
1,1,1,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
Ethylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	



Satori Group, Inc.

Print Date: 11/15/2005

Client Sample ID: 0510FROBWA-35  
 SGS Ref. #: 1057046005  
 Project ID: Ft Richardson Groundwater  
 Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
 Collection Date/Time: 10/17/05 08:00  
 Receipt Date/Time: 10/20/05 11:53  
 Location: Trip Blank

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
P & M -Xylene	ND	2.00	0.620	ug/L	1	VMS7993	VXX14625	
Styrene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Bromoform	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Isopropylbenzene (Cumene)	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Bromobenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
o-Xylene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,2,3-Trichloropropane	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
n-Propylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
2-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
4-Chlorotoluene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,1,2,2-Tetrachloroethane	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
1,3,5-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
tert-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,2,4-Trimethylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
sec-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
4-Isopropyltoluene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
1,2-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
n-Butylbenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,3-Dichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
1,2-Dibromo-3-chloropropane	ND	2.00	0.620	ug/L	1	VMS7993	VXX14625	
1,2,4-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Hexachlorobutadiene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
Naphthalene	ND	2.00	0.620	ug/L	1	VMS7993	VXX14625	
1,2,3-Trichlorobenzene	ND	1.00	0.310	ug/L	1	VMS7993	VXX14625	
4-Methyl-2-pentanone (MIBK)	ND	10.0	3.10	ug/L	1	VMS7993	VXX14625	
2-Hexanone	ND	10.0	3.10	ug/L	1	VMS7993	VXX14625	
Methyl-t-butyl ether	ND	5.00	1.50	ug/L	1	VMS7993	VXX14625	
1,2-Dichloroethane	ND	0.500	0.150	ug/L	1	VMS7993	VXX14625	
Dibromofluoromethane <surr>	99.9	85-115		%	1	VMS7993	VXX14625	
1,2-Dichloroethane-D4 <surr>	97.3	72-119		%	1	VMS7993	VXX14625	
Toluene-d8 <surr>	102	85-120		%	1	VMS7993	VXX14625	
4-Bromofluorobenzene <surr>	107	76-119		%	1	VMS7993	VXX14625	



Satori Group, Inc.

Print Date: 11/15/2005

Client Sample ID: **0510FROBWA-35**  
SGS Ref. #: 1057046005  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/17/05 08:00  
Receipt Date/Time: 10/20/05 11:53  
Location: Trip Blank

**Volatile Gas Chromatography/Mass Spectroscopy**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
<b>Batch Information</b>								
Analytical Batch: VMS7993			Prep Batch: VXX14625				Initial Prep Wt./Vol.: 5 mL	
Analytical Method: SW8260B			Prep Method: SW5030B				Prep Extract Vol.: 5 mL	
Analysis Date/Time: 10/28/05 13:25			Prep Date/Time: 10/28/05 10:00				Container ID:1057046005-B	
Dilution Factor: 1							Analyst: VS	



Satori Group, Inc.

Print Date: 11/15/2005

Client Sample ID: **0510FROBWA-36**  
SGS Ref. #: 1057046006  
Project ID: Ft Richardson Groundwater  
Matrix: Water (Surface, Eff., Ground)

All Dates/Times are Alaska Local Time  
Collection Date/Time: 10/17/05 08:00  
Receipt Date/Time: 10/20/05 11:53  
Location: Trip Blank

**Light Gases**

<u>Parameter</u>	<u>Result</u>	<u>PQL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Methane	ND	5.00	1.50	ug/L	1	GAS1262		
Ethane	ND	5.00	1.50	ug/L	1	GAS1262		
Ethene	ND	5.00	1.50	ug/L	1	GAS1262		

**Batch Information**

Analytical Batch: GAS1262  
Analytical Method: RSK-175  
Analysis Date/Time: 10/27/05 12:10  
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL  
Container ID:1057046006-A  
Analyst: KWM

**FINAL REPORT**  
**FORT RICHARDSON**  
**OUB POLELINE ROAD DISPOSAL AREA**

**APPENDIX E: LABORATORY REVIEW**  
**DATA**

**FORT RICHARDSON, ALASKA**

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**PREPARED FOR:**



**U.S. Army, Directorate of Public Works**  
**Contract No. W911KB-04-P-0091**

**June 2006**



**US Army**  
**Installation Management Agency**



**US Army Corps**  
**of Engineers®**  
Alaska District



Satori Group, Inc.  
1310 E. 66<sup>th</sup> Ave., #2  
Anchorage, AK 99518



2000 W. International Airport Road,  
Suite C-1  
Anchorage, Alaska 99502-1116  
Phone: 907-243-6300  
Fax: 907.243-6301

April 25, 2006

To: Mr. Derek Lucas  
Satori Group, Inc.  
1310 East 66<sup>th</sup> Avenue, Suite #2  
Anchorage, Alaska 99518

**Subject: Fort Richardson Operable Unit B, Poleline Road**

---

Dear Mr. Lucas:

Shaw has prepared the following data quality evaluation report in support of October 2005 groundwater monitoring of Fort Richardson Operable Unit B, Poleline Road.

## **Introduction**

The objective of this data quality evaluation (DQE) report is to assess the data quality of analytical results for water samples collected for semi-annual groundwater monitoring at Fort Richardson Poleline Road Disposal Area, Operable Unit B (OUB) location as outlined in the 2004 Sampling and Analysis Plan (SAP) prepared by Satori Group, Inc. Samples were collected and analyzed to provide a framework for long-term monitoring of the groundwater. The data may also be used to support future activities such as feasibility studies, risk assessments, fate and transport modeling and remedial actions. Individual method quality control (QC) limits were evaluated against laboratory supplied QC limits. This report is intended as a general data quality assessment designed to summarize data issues.

## **Analytical Data**

This DQE report covers a total of 25 primary environmental field samples. Samples listed on the Chain of Custody (CoC) for fictitious well locations AP-4599 (0510FROBWA-14), AP-4598 (0510FROBWA-19) and AP-4597 (0510FROBWA-29) were submitted to the laboratory for analysis as a blind field duplicates for wells AP-4550, AP-3983 and AP-4354 respectively. Samples AP-4550 (0510FROBWA-12), and AP-3983 (0510FROBWA-18) were also submitted as a field designated matrix spike and matrix spike duplicate (MS/MSD) sample for all analysis methods. Equipment rinse blank samples associated with well AP-3983 and AP-4354 were submitted as 0510FROBWA-20 and 0510FROBWA-30 respectively. A total of six trip blank samples for volatile analysis methods were submitted, one trip blank each for VOC by SW8260B and Light Hydrocarbons by RSK-175 methods for each cooler containing volatile samples. These samples were reported under three sample delivery group (SDG) as SGS Environmental Services (SGS) reports 1056845, 1056896, and 1057046. Samples were collected between October 10<sup>th</sup>, 2005 and October 17<sup>th</sup>, 2005. Samples were hand-delivered by Satori on October 13<sup>th</sup>, October 17<sup>th</sup>, and October 20<sup>th</sup> of 2005 to SGS for analysis. Table 1 summarizes the analytical laboratory methods used to analyze the environmental samples.

**Table 1 - Analytical Parameter**

Parameter	Method	Laboratory
Methane, Ethane & Ethene	RSK-175	SGS – Anchorage
Volatile Organic Compounds – (VOC)	SW8260B	SGS – Anchorage
Anions - Sulfate and Chloride	EPA 300.0	SGS – Anchorage
Total Nitrate+Nitrite	EPA 353.2	SGS – Anchorage
Dissolved Metals – Iron and Manganese	SW6020	SGS – Anchorage

**SIM – Selective ion Monitoring**

**BTEX = Benzene, Toluene, Ethylbenzene, Xylenes**

The assessment of data includes a review of: CoC documentation, holding time compliance, method required QC samples at the specified frequencies, evaluation and flagging for method blanks, evaluation and flagging for laboratory control spiking samples, evaluation and flagging for surrogate spike recoveries for organic analyses, and evaluation of MS/MSD samples on a site/location basis.

Field samples were also reviewed to ascertain field compliance and data quality issues. This included the review of trip blanks, equipment blanks and field duplicates as required by the Satori SAP.

Data flags were assigned according to the following criteria. These flags, as well as the reason for each flag can be found in Table 2. Multiple flags may be applied to specific sample method/matrix/analyte combinations, but there will be only one final flag. A final flag is applied to the data and is the most conservative of the applied validation flags. The final flags also include matrix and blank sample impacts.

The data flags that may be used for this review are defined below:

- J = Analyte is present but the reported value may not be accurate or precise (estimated).
- J+ = Analyte is present but the reported value may not be accurate or precise (estimated bias high).
- J- = Analyte is present but the reported value may not be accurate or precise (estimated bias low).
- R = The data is unusable due to deficiencies in the ability to analyze the sample and meet QC criteria.
- U = Analyte was not detected at the specified detection limit.
- UJ = Analyte was not detected and the specified detection limit may not be accurate or precise (estimated).

## **Findings**

The frequency of field and laboratory quality control samples are specified in the Satori SAP. Laboratory supplied control criteria were used to evaluate the laboratory data. In the following method specific discussions, only the criteria exceedances that have the potential to impact data qualification are discussed. Note that review and data flagging for laboratory initial instrument calibration and continuing calibration verification was not included in the scope of this review.

### **SW8260B – Volatile Organic Compounds (VOC)**

#### **Laboratory and Field Blanks**

There were no detections of any VOC compounds detected in the associated method blank samples, no laboratory contamination was observed.

No VOC contamination was detected in equipment rinse blank samples 0510FROBWA-20 or 0510FROBWA-30.

Trip blank sample 0510FROBWA-01 had contamination for compounds dichlorodifluoromethane and m+p xylenes however these compounds were not detected in the associated field samples. Trip blank sample 0510FROBWA-35 had contamination for compounds toluene and tetrachloroethane. Toluene was not detected in the associated field samples however tetrachloroethane was detected in field samples 0510FROBWA-33 and 0510FROBWA-34 within 10 times the level detected in the associated trip blank. The tetrachloroethene results for samples 0510FROBWA-33 and 0510FROBWA-34 have been validation flagged as J+ due to trip blank contamination.

#### **Matrix Spike/Duplicate (MS/MSD)**

The compound 2-chloroethyl vinyl ether was not recovered from either of the MS/MSD samples because this compound is hydrolyzed by the samples acid preservative and lost. Accurate recovery and detection of this compound from acid preserved samples is not possible. 2-chloroethyl vinyl ether was not detected in any of the samples. An R (rejected) data flag was applied to all field sample 2-chloroethyl vinyl ether results. Note that 2-chloroethyl vinyl ether was not included on the SAP required analyte list.

The MS/MSD samples prepared from 0510FROBWA-13 had recoveries for spiked compounds dibromochloromethane, bromoform, 1,1,2,2-tetrachloroethane, 1,2-dibromo-3-chloropropane, naphthalene, and 1,2,3-trichlorobenzene that marginally exceeded their respective lower control limits. The MS/MSD samples prepared from 0510FROBWA-18 had recoveries for spiked compounds 2-butanone and trichloroethene that marginally exceeded their respective upper control limits. No validation flags were applied due to the marginal MS/MSD recovery outliers. All other quality control criteria were met for VOC by SW8260B.

### **RSK-175 - Light Hydrocarbon Gases**

There were no quality control outliers for this analysis method. No contamination of methane, ethane or ethene in the trip blank, equipment blank or the associated method blank samples was detected. All other quality control criteria were met by laboratory for the light hydrocarbon gasses by RSK-175.

### **E300.0 – Sulfate and Chloride**

#### **Matrix Spike/Duplicate**

The laboratory performed a matrix spike but did not perform a matrix spike duplicate as requested for samples 0510FROBWA-13 and 0510FROBWA-18 for E300.0 anions analysis. The laboratory alternately

performed a lab duplicate analysis of the unspiked field sample for determination of batch precision which was within control limits. The matrix spike performed for sample 05FROBWA-13 had recovery for sulfate of 77% and 05FROBWA-18 had recovery for sulfate of 81%. These matrix spike results were below the lower recovery control limit of 85%. The sulfate results for samples 0510FROBWA-13 and 0510FROBWA-18 have been flagged as estimated values bias low (J-) due to the matrix spike recovery.

#### **Equipment Rinse Blank**

Chloride was detected in equipment rinse blank samples 0510FROBWA-20 and 0510FROBWA-30 indicating potential for cross contamination of this analyte. The level of contamination observed in the rinse blank was less than one tenth the level of chloride observed in the associated field samples from wells AP-3983 and AP-4354, therefore no flags were applied to sample results due to the equipment rinse blank chloride contamination. All other QA/QC criteria were met for sulfate and chloride by E300.0.

#### **E353.2 - Total Nitrate + Nitrite**

Samples were requested for total nitrate+nitrite analysis by method E300.0. However, the laboratory substituted analysis method E353.2 for total nitrate+nitrite. There is no significant impact to the results due to this substitution of analysis method.

#### **Matrix Spike/Duplicate**

The laboratory performed a matrix spike but did not perform a matrix spike duplicate as requested for total nitrate+nitrite samples 0510FROBWA-13 and 0510FROBWA-18.

The laboratory instead performed a laboratory duplicate analysis of the unspiked field samples requested for MS/MSD for determination of batch precision. Precision for laboratory duplicate of 0510FROBWA-13 was outside the limit. However, the results were below the reporting limit where method precision is diminished. The accuracy as indicated by matrix spike recovery for both requested matrix spike samples 0510FROBWA-13 and 0510FROBWA-18 as well as three additional laboratory selected matrix spike project samples 0510FROBWA-05, 0510FROBWA-16 and 0510FROBWA-30 were all below the lower control limit likely indicating matrix effects impacting these samples. The total nitrate+nitrite results for these five samples have been flagged as estimated values bias low (J-) due to matrix effects.

#### **Equipment Rinse Blank**

Total nitrate+nitrite was detected in equipment rinse blank samples 0510FROBWA-20 and 0510FROBWA-30 indicating potential for cross contamination of this analyte. The level of contamination observed in the rinse blank was greater than one tenth the level of total nitrate+nitrite observed in the associated field samples 0510FROBWA-18, 0510FROBWA-19 from well AP-3983 and sample 0510FROBWA-28 from well AP-4354. The results for these three associated field samples have been flagged as estimated bias high (J+) due to the equipment rinse blank contamination. Sample 0510FROBWA-18 was flagged as J- due to matrix spike recoveries and as J+ for equipment blank issues. The final flag for sample 0510FROBWA-18 is estimated (J) without indication of direction of bias.

#### **SW6020 - Dissolved Metals**

##### **Matrix Spike/Duplicate**

Field samples 0510FROBWA-13 and 0510FROBWA-18 were requested to be prepared as MS/MSD samples. The laboratory did not report the dissolved metals MS/MSD results for these samples in the initial laboratory reports. The laboratory was contacted concerning the missing MS/MSD results and they

were provided as amendments to reports 1056896 and 1056845. Otherwise, there were no quality control outliers for this analysis method; no validation flagging of results was required.

### **Field Sample Duplicate**

The samples identified on the chain of custody as fictitious well locations AP-4599 (0510FROBWA-14), AP-4598 (0510FROBWA-19) and AP-4597 (0510FROBWA-29) were submitted to the laboratory for analysis as a blind field duplicates of actual wells AP-4550, AP-3983 and AP-4354 respectively. All of the primary and field duplicate sample results are in agreement per the requirements of EM 200-1-6 (Chemical Quality Assurance for Hazardous, Toxic and Radioactive Waste [HTRW] Projects Table 4-1.)

### **Chain-of-Custody & Sample Preservation**

Samples were received at the laboratory as three separate deliveries in six separate coolers. SW8260B VOC samples 0510FROBWA-03, 0510FROBWA-04, 0510FROBWA-05, 0510FROBWA-06, 0510FROBWA-07, 0510FROBWA-08, and 0510FROBWA-11 were found to have pH >2.0 indicating the samples were insufficiently preserved with acid. All VOC results and detection limits for these seven samples have been flagged as low estimates (J- and UJ-) due to possibility of biological degradation of the sample. The chain of custody documentation for the samples was in order and samples were otherwise properly preserved and were prepared and analyzed within method specified holding times.

### **Overall Assessment**

The final activity in the data quality evaluation is an assessment of whether the data meets the objectives of the Satori SAP. The goal of this assessment is to demonstrate that a sufficient number of representative samples were collected and the precision, accuracy, representativeness, completeness and comparability (PARCC) of the resulting analytical data is sufficient to be used to support the decision making process. The following summary highlights the data evaluation findings for the above defined events:

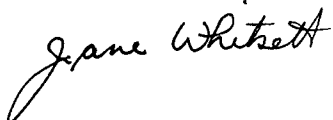
1. The completeness objectives were met for all method/analyte combinations. Those project field sample results requiring validation flagging are listed in table 2.
2. The precision and accuracy of the data, as measured by field and laboratory quality control indicators, suggest that the data is sufficiently useable for the purposes of this project. All results for the three field duplicate sample pairs were within the acceptance criteria of EM 200-1-6.
3. The field crews and laboratories followed the Satori SAP and project documents, thereby assuring representativeness of the data.

A comprehensive summary of Fort Richardson Operable Unit B, Poleline Road location data can be found in the attached Table 2.

We look forward to our continued business relationship with you. Please feel free to contact me with any questions or if you need additional information.

Sincerely,

Shaw Alaska, Inc.



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Attachment

**Table 2 Summary of Poleline Location OUB Results with Qualifier Flags**

Sample ID	Analytical Method	Analyte	Lab Result	Final Flag	Reason
0510FROBWA-03	SW 8260B	Dichlorodifluoromethane	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	Chloromethane	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	Vinyl chloride	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	Bromomethane	0.940 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	Chloroethane	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	Trichlorofluoromethane	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	1,1-Dichloroethene	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	Methylene chloride	1.0 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	Carbon disulfide	0.620 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	Acetone	3.10 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	trans-1,2-Dichloroethene	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	1,1-Dichloroethane	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	2,2-Dichloropropane	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	cis-1,2-Dichloroethene	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	Bromochloromethane	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	2-Butanone (MEK)	3.10 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	Chloroform	0.500 ug/L	J-	pH
0510FROBWA-03	SW 8260B	1,1,1-Trichloroethane	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	Carbon tetrachloride	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	1,1-Dichloropropene	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	Benzene	0.120 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	Trichloroethene	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	1,2-Dichloropropane	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	Dibromomethane	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	Bromodichloromethane	0.150 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	cis1,,3-Dichloropropene	0.150 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	Toluene	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	trans-1,3-Dichloropropene	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	1,1,2-Trichloroethane	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	Tetrachloroethene	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	1,3-Dichloropropane	0.120 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	Dibromochloromethane	0.150 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	1,2-Dibromoethane	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	Chlorobenzene	0.150 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	1,1,1,2-Tetrachloroethane	0.150 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	Ethylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	m&p-Xylene	0.620 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	Styrene	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	Bromoform	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	Isopropylbenzene (Cumene)	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	o-Xylene	0.310 ug/L	UJ-	pH

Table 2 Continued

Sample ID	Analytical Method	Analyte	Lab Result	Final Flag	Reason
0510FROBWA-03	SW 8260B	Bromobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	1,2,3-Trichloropropane	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	n-Propylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	2-Chlorotoluene	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	4-Chlorotoluene	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	1,1,2,2-Tetrachloroethane	0.150 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	1,3,5-Trimethylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	tert-Butylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	1,2,4-Trimethylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	sec-Butylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	4-Isopropyltoluene	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	1,4-Dichlorobenzene	0.150 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	1,2-Dichlorobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	1,3-Dichlorobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	n-Butylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	1,2-Dibromo-3-chloropropane	0.620 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	1,2,4-Trichlorobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	Hexachlorobutadiene	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	Naphthalene	0.620 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	1,2,3-Trichlorobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	4-Methyl-2-pentanone	3.10 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	2-Hexanone	3.10 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	Methyl-t-butyl ether	1.5 ug/L	UJ-	pH
0510FROBWA-03	SW 8260B	1,2-Dichloroethane	0.150 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	Dichlorodifluoromethane	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	Chloromethane	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	Vinyl chloride	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	Bromomethane	0.940 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	Chloroethane	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	Trichlorofluoromethane	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	1,1-Dichloroethene	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	Methylene chloride	1.0 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	Carbon disulfide	0.620 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	Acetone	3.10 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	trans-1,2-Dichloroethene	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	1,1-Dichloroethane	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	2,2-Dichloropropane	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	cis-1,2-Dichloroethene	0.910 ug/L	J-	pH
0510FROBWA-04	SW 8260B	Bromochloromethane	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	2-Butanone (MEK)	3.10 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	Chloroform	0.300 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	1,1,1-Trichloroethane	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	Carbon tetrachloride	0.660 ug/L	J-	pH
0510FROBWA-04	SW 8260B	1,1-Dichloropropene	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	Benzene	0.120 ug/L	UJ-	pH

Table 2 Continued

Sample ID	Analytical Method	Analyte	Lab Result	Final Flag	Reason
0510FROBWA-04	SW 8260B	Trichloroethene	26.6 ug/L	J-	pH
0510FROBWA-04	SW 8260B	1,2-Dichloropropane	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	Dibromomethane	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	Bromodichloromethane	0.150 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	cis-1,3-Dichloropropene	0.150 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	Toluene	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	trans-1,3-Dichloropropene	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	1,1,2-Trichloroethane	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	Tetrachloroethene	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	1,3-Dichloropropane	0.120 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	Dibromochloromethane	0.150 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	1,2-Dibromoethane	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	Chlorobenzene	0.150 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	1,1,1,2-Tetrachloroethane	0.150 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	Ethylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	m&p-Xylene	0.620 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	Styrene	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	Bromoform	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	Isopropylbenzene (Cumene)	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	o-Xylene	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	Bromobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	1,2,3-Trichloropropane	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	n-Propylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	2-Chlorotoluene	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	4-Chlorotoluene	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	1,1,2,2-Tetrachloroethane	0.150 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	1,3,5-Trimethylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	tert-Butylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	1,2,4-Trimethylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	sec-Butylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	4-Isopropyltoluene	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	1,4-Dichlorobenzene	0.150 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	1,2-Dichlorobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	1,3-Dichlorobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	n-Butylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	1,2-Dibromo-3-chloropropane	0.620 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	1,2,4-Trichlorobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	Hexachlorobutadiene	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	Naphthalene	0.620 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	1,2,3-Trichlorobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	4-Methyl-2-pentanone	3.10 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	2-Hexanone	3.10 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	Methyl-t-butyl ether	1.5 ug/L	UJ-	pH
0510FROBWA-04	SW 8260B	1,2-Dichloroethane	0.150 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	Dichlorodifluoromethane	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	Chloromethane	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	Vinyl chloride	0.310 ug/L	UJ-	pH

Table 2 Continued

Sample ID	Analytical Method	Analyte	Lab Result	Final Flag	Reason
0510FROBWA-05	SW 8260B	Bromomethane	0.940 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	Chloroethane	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	Trichlorofluoromethane	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	1,1-Dichloroethene	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	Methylene chloride	1.0 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	Carbon disulfide	0.620 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	Acetone	3.10 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	trans-1,2-Dichloroethene	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	1,1-Dichloroethane	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	2,2-Dichloropropane	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	cis-1,2-Dichloroethene	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	Bromochloromethane	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	2-Butanone (MEK)	3.10 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	Chloroform	0.300 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	1,1,1-Trichloroethane	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	Carbon tetrachloride	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	1,1-Dichloropropene	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	Benzene	0.120 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	Trichloroethene	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	1,2-Dichloropropane	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	Dibromomethane	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	Bromodichloromethane	0.150 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	cis1,,3-Dichloropropene	0.150 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	Toluene	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	trans-1,3-Dichloropropene	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	1,1,2-Trichloroethane	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	Tetrachloroethene	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	1,3-Dichloropropane	0.120 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	Dibromochloromethane	0.150 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	1,2-Dibromoethane	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	Chlorobenzene	0.150 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	1,1,1,2-Tetrachloroethane	0.150 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	Ethylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	m&p-Xylene	0.620 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	Styrene	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	Bromoform	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	Isopropylbenzene (Cumene)	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	o-Xylene	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	Bromobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	1,2,3-Trichloropropane	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	n-Propylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	2-Chlorotoluene	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	4-Chlorotoluene	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	1,1,2,2-Tetrachloroethane	0.150 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	1,3,5-Trimethylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	tert-Butylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	1,2,4-Trimethylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	sec-Butylbenzene	0.310 ug/L	UJ-	pH

Table 2 Continued

Sample ID	Analytical Method	Analyte	Lab Result	Final Flag	Reason
0510FROBWA-05	SW 8260B	4-Isopropyltoluene	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	1,4-Dichlorobenzene	0.150 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	1,2-Dichlorobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	1,3-Dichlorobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	n-Butylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	1,2-Dibromo-3-chloropropane	0.620 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	1,2,4-Trichlorobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	Hexachlorobutadiene	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	Naphthalene	0.620 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	1,2,3-Trichlorobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	4-Methyl-2-pentanone	3.10 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	2-Hexanone	3.10 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	Methyl-t-butyl ether	1.5 ug/L	UJ-	pH
0510FROBWA-05	SW 8260B	1,2-Dichloroethane	0.150 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	Dichlorodifluoromethane	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	Chloromethane	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	Vinyl chloride	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	Bromomethane	0.940 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	Chloroethane	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	Trichlorofluoromethane	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	1,1-Dichloroethene	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	Methylene chloride	1.0 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	Carbon disulfide	0.620 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	Acetone	3.10 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	trans-1,2-Dichloroethene	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	1,1-Dichloroethane	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	2,2-Dichloropropane	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	cis-1,2-Dichloroethene	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	Bromochloromethane	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	2-Butanone (MEK)	3.10 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	Chloroform	1.85 ug/L	J-	pH
0510FROBWA-06	SW 8260B	1,1,1-Trichloroethane	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	Carbon tetrachloride	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	1,1-Dichloropropene	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	Benzene	0.120 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	Trichloroethene	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	1,2-Dichloropropane	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	Dibromomethane	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	Bromodichloromethane	0.150 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	cis1,,3-Dichloropropene	0.150 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	Toluene	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	trans-1,3-Dichloropropene	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	1,1,2-Trichloroethane	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	Tetrachloroethene	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	1,3-Dichloropropane	0.120 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	Dibromochloromethane	0.150 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	1,2-Dibromoethane	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	Chlorobenzene	0.150 ug/L	UJ-	pH

Table 2 Continued

Sample ID	Analytical Method	Analyte	Lab Result	Final Flag	Reason
0510FROBWA-06	SW 8260B	1,1,1,2-Tetrachloroethane	0.150 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	Ethylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	m&p-Xylene	0.620 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	Styrene	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	Bromoform	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	Isopropylbenzene (Cumene)	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	o-Xylene	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	Bromobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	1,2,3-Trichloropropane	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	n-Propylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	2-Chlorotoluene	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	4-Chlorotoluene	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	1,1,2,2-Tetrachloroethane	0.150 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	1,3,5-Trimethylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	tert-Butylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	1,2,4-Trimethylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	sec-Butylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	4-Isopropyltoluene	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	1,4-Dichlorobenzene	0.150 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	1,2-Dichlorobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	1,3-Dichlorobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	n-Butylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	1,2-Dibromo-3-chloropropane	0.620 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	1,2,4-Trichlorobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	Hexachlorobutadiene	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	Naphthalene	0.620 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	1,2,3-Trichlorobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	4-Methyl-2-pentanone	3.10 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	2-Hexanone	3.10 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	Methyl-t-butyl ether	1.5 ug/L	UJ-	pH
0510FROBWA-06	SW 8260B	1,2-Dichloroethane	0.150 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	Dichlorodifluoromethane	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	Chloromethane	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	Vinyl chloride	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	Bromomethane	0.940 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	Chloroethane	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	Trichlorofluoromethane	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	1,1-Dichloroethene	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	Methylene chloride	1.0 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	Carbon disulfide	0.620 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	Acetone	3.10 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	trans-1,2-Dichloroethene	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	1,1-Dichloroethane	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	2,2-Dichloropropane	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	cis-1,2-Dichloroethene	0.310 ug/L	UJ-	pH

Table 2 Continued

Sample ID	Analytical Method	Analyte	Lab Result	Final Flag	Reason
0510FROBWA-07	SW 8260B	Bromochloromethane	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	2-Butanone (MEK)	3.10 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	Chloroform	0.300 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	1,1,1-Trichloroethane	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	Carbon tetrachloride	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	1,1-Dichloropropene	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	Benzene	0.120 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	Trichloroethene	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	1,2-Dichloropropane	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	Dibromomethane	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	Bromodichloromethane	0.150 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	cis-1,,3-Dichloropropene	0.150 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	Toluene	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	trans-1,3-Dichloropropene	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	1,1,2-Trichloroethane	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	Tetrachloroethene	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	1,3-Dichloropropane	0.120 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	Dibromochloromethane	0.150 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	1,2-Dibromoethane	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	Chlorobenzene	0.150 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	1,1,1,2-Tetrachloroethane	0.150 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	Ethylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	m&p-Xylene	0.620 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	Styrene	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	Bromoform	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	Isopropylbenzene (Cumene)	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	o-Xylene	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	Bromobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	1,2,3-Trichloropropane	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	n-Propylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	2-Chlorotoluene	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	4-Chlorotoluene	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	1,1,2,2-Tetrachloroethane	0.150 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	1,3,5-Trimethylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	tert-Butylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	1,2,4-Trimethylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	sec-Butylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	4-Isopropyltoluene	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	1,4-Dichlorobenzene	0.150 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	1,2-Dichlorobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	1,3-Dichlorobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	n-Butylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	1,2-Dibromo-3-chloropropane	0.620 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	1,2,4-Trichlorobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	Hexachlorobutadiene	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	Naphthalene	0.620 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	1,2,3-Trichlorobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	4-Methyl-2-pentanone	3.10 ug/L	UJ-	pH

Table 2 Continued

Sample ID	Analytical Method	Analyte	Lab Result	Final Flag	Reason
0510FROBWA-07	SW 8260B	2-Hexanone	3.10 ug/L	UJ-	PH
0510FROBWA-07	SW 8260B	Methyl-t-butyl ether	1.5 ug/L	UJ-	pH
0510FROBWA-07	SW 8260B	1,2-Dichloroethane	0.150 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	Dichlorodifluoromethane	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	Chloromethane	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	Vinyl chloride	0.310 ug/L	UJ-	PH
0510FROBWA-08	SW 8260B	Bromomethane	0.940 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	Chloroethane	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	Trichlorofluoromethane	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	1,1-Dichloroethene	0.440 ug/L	J-	pH
0510FROBWA-08	SW 8260B	Methylene chloride	1.0 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	Carbon disulfide	0.620 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	Acetone	3.10 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	trans-1,2-Dichloroethene	3.07 ug/L	J-	pH
0510FROBWA-08	SW 8260B	1,1-Dichloroethane	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	2,2-Dichloropropane	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	cis-1,2-Dichloroethene	10.1 ug/L	J-	pH
0510FROBWA-08	SW 8260B	Bromochloromethane	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	2-Butanone (MEK)	3.10 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	Chloroform	0.910 ug/L	J-	pH
0510FROBWA-08	SW 8260B	1,1,1-Trichloroethane	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	Carbon tetrachloride	0.540 ug/L	J-	pH
0510FROBWA-08	SW 8260B	1,1-Dichloropropene	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	Benzene	0.120 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	Trichloroethene	151 ug/L	J-	pH
0510FROBWA-08	SW 8260B	1,2-Dichloropropane	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	Dibromomethane	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	Bromodichloromethane	0.150 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	cis1,,3-Dichloropropene	0.150 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	Toluene	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	trans-1,3-Dichloropropene	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	1,1,2-Trichloroethane	0.760 ug/L	J-	pH
0510FROBWA-08	SW 8260B	Tetrachloroethene	1.78 ug/L	J-	pH
0510FROBWA-08	SW 8260B	1,3-Dichloropropane	0.120 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	Dibromochloromethane	0.150 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	1,2-Dibromoethane	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	Chlorobenzene	0.150 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	1,1,1,2-Tetrachloroethane	0.150 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	Ethylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	m&p-Xylene	0.620 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	Styrene	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	Bromoform	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	Isopropylbenzene (Cumene)	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	o-Xylene	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	Bromobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	1,2,3-Trichloropropane	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	n-Propylbenzene	0.310 ug/L	UJ-	pH

Table 2 Continued

Sample ID	Analytical Method	Analyte	Lab Result	Final Flag	Reason
0510FROBWA-08	SW 8260B	2-Chlorotoluene	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	4-Chlorotoluene	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	1,1,2,2-Tetrachloroethane	0.150 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	1,3,5-Trimethylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	tert-Butylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	1,2,4-Trimethylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	sec-Butylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	4-Isopropyltoluene	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	1,4-Dichlorobenzene	0.150 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	1,2-Dichlorobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	1,3-Dichlorobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	n-Butylbenzene	0.310 ug/L	UJ-	PH
0510FROBWA-08	SW 8260B	1,2-Dibromo-3-chloropropane	0.620 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	1,2,4-Trichlorobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	Hexachlorobutadiene	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	Naphthalene	0.620 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	1,2,3-Trichlorobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	4-Methyl-2-pentanone	3.10 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	2-Hexanone	3.10 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	Methyl-t-butyl ether	1.5 ug/L	UJ-	pH
0510FROBWA-08	SW 8260B	1,2-Dichloroethane	0.150 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	Dichlorodifluoromethane	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	Chloromethane	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	Vinyl chloride	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	Bromomethane	0.940 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	Chloroethane	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	Trichlorofluoromethane	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	1,1-Dichloroethene	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	Methylene chloride	1.0 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	Carbon disulfide	0.620 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	Acetone	3.10 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	trans-1,2-Dichloroethene	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	1,1-Dichloroethane	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	2,2-Dichloropropane	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	cis-1,2-Dichloroethene	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	Bromochloromethane	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	2-Butanone (MEK)	3.10 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	Chloroform	0.300 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	1,1,1-Trichloroethane	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	Carbon tetrachloride	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	1,1-Dichloropropene	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	Benzene	0.120 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	Trichloroethene	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	1,2-Dichloropropane	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	Dibromomethane	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	Bromodichloromethane	0.150 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	cis1,,3-Dichloropropene	0.150 ug/L	UJ-	pH

Table 2 Continued

Sample ID	Analytical Method	Analyte	Lab Result	Final Flag	Reason
0510FROBWA-11	SW 8260B	Toluene	0.310 ug/L	UJ-	PH
0510FROBWA-11	SW 8260B	trans-1,3-Dichloropropene	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	1,1,2-Trichloroethane	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	Tetrachloroethene	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	1,3-Dichloropropane	0.120 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	Dibromochloromethane	0.150 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	1,2-Dibromoethane	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	Chlorobenzene	0.150 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	1,1,1,2-Tetrachloroethane	0.150 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	Ethylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	m&p-Xylene	0.620 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	Styrene	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	Bromoform	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	Isopropylbenzene (Cumene)	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	o-Xylene	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	Bromobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	1,2,3-Trichloropropane	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	n-Propylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	2-Chlorotoluene	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	4-Chlorotoluene	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	1,1,2,2-Tetrachloroethane	0.150 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	1,3,5-Trimethylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	tert-Butylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	1,2,4-Trimethylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	sec-Butylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	4-Isopropyltoluene	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	1,4-Dichlorobenzene	0.150 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	1,2-Dichlorobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	1,3-Dichlorobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	n-Butylbenzene	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	1,2-Dibromo-3-chloropropane	0.620 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	1,2,4-Trichlorobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	Hexachlorobutadiene	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	Naphthalene	0.620 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	1,2,3-Trichlorobenzene	0.310 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	4-Methyl-2-pentanone	3.10 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	2-Hexanone	3.10 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	Methyl-t-butyl ether	1.5 ug/L	UJ-	pH
0510FROBWA-11	SW 8260B	1,2-Dichloroethane	0.150 ug/L	UJ-	pH
0510FROBWA-01	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-03	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-04	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-05	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-06	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-07	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-08	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-09	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD

Table 2 Continued

Sample ID	Analytical Method	Analyte	Lab Result	Final Flag	Reason
0510FROBWA-10	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-11	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-12	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-13	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-14	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-15	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-16	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-17	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-18	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-19	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-20	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-21	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-22	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-23	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-24	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-26	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-27	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-28	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-29	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-30	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-31	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-32	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-33	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-34	SW 8260B	2-chloroethyl vinyl ether	3.1 ug/L	R	MS/MSD
0510FROBWA-33	SW 8260B	tetrachloroethene	8.86 ug/L	J+	TB
0510FROBWA-34	SW 8260B	tetrachloroethene	2.57 ug/L	J+	TB
0510FROBWA-13	E300.0	sulfate	55.5 mg/L	J-	MS/MSD
0510FROBWA-18	E300.0	sulfate	44.2 mg/L	J-	MS/MSD
0510FROBWA-05	E353.2	total nitrate+nitrite	0.208 mg/L	J-	MS/MSD
0510FROBWA-13	E353.2	total nitrate+nitrite	0.0880 mg/L	J-	MS/MSD
0510FROBWA-16	E353.2	total nitrate+nitrite	0.985 mg/L	J-	MS/MSD
0510FROBWA-18	E353.2	total nitrate+nitrite	0.276 mg/L	J	MS/MSD, EB
0510FROBWA-19	E353.2	total nitrate+nitrite	0.285 mg/L	J+	EB
0510FROBWA-28	E353.2	total nitrate+nitrite	0.0457 mg/L	J+	EB
0510FROBWA-30	E353.2	total nitrate+nitrite	0.0520 mg/L	J-	MS/MSD

**Qualifier**

**Definition**

MS/MSD

Matrix spike/matrix spike duplicate recovery was beyond control limits

UJ-

Analyte was not detected at the specified detection limit but the limit may not be accurate or precise (limit estimated, bias low).

J

Analyte is present but the reported value may not be accurate or precise (estimated).

J+

Analyte is present but the reported value may not be accurate or precise (estimated bias high).

J-

Analyte is present but the reported value may not be accurate or precise (estimated bias low).

R

The data is unusable due to deficiencies in the ability to analyze the sample and meet QC criteria.

pH

Insufficient sample preservation.

EB

Equipment blank contamination present.

TB

Trip blank contamination present.