

Groundwater Monitoring Well Report / Release Investigation  
Sahn Investments  
1401 Kellum Street  
Lots 2,3,4, & 8 Block 137, Weeks Field Subdivision  
Fairbanks, Alaska

August 2009

**ALASKA RESOURCES & ENVIRONMENTAL SERVICES, LLC**



SUBMITTED TO:  
Alaska Department of Environmental Conservation  
Northern Regional Office  
Contaminated Sites Program  
610 University Avenue  
Fairbanks, Alaska 99709-3643

BY:  
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**Groundwater Monitoring Well Report / Release Investigation**  
**1401 Kellum Street**  
**Fairbanks, Alaska**  
**August 2009**

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## **INTRODUCTION**

This report was prepared on behalf of Mr. Jeff Zuckerman of Sahn Investments, who has contracted with Alaska Resources & Environmental Services (ARES) to perform the groundwater investigation associated with the petroleum release of diesel heating fuel as detailed in the Sahn *Investment Phase II Report ESA May 2007*. The work described in this report was conducted in accordance with the Alaska Department of Environmental Conservation (ADEC) approved *Sahn Investments Monitoring Well Sampling Work Plan* dated June 2009.

The objective of our work was to obtain groundwater sample data on the subject property in order to assess the impacts to groundwater in the vicinity of the historical petroleum release and to determine if contaminants are migrating onto and/or off-site. Three (3) permanent groundwater monitoring wells were installed as part of the groundwater investigation. Assessment of groundwater quality fulfills the ADEC requirements for completion of the Site Characterization for this site.

## **SITE BACKGROUND**

### **Site Description**

The Sahn Investment parcel (subject property) is situated on an approximate 1-acre site located north of Airport Way at 1401 Kellum Street, Fairbanks, Alaska (Figure 1,2). The site is located in the U.S. Geological Survey (USGS) Fairbanks D-2 quadrangle. The legal description for the property is as follows: Tax Lots 2,3,4, & 8 Block 137, Weeks Field Subdivision.

### **History**

ARES was authorized to perform a Site Characterization associated with the removal of two underground storage tanks (UST's) located on the property in 2007. Tank #1 consisted of a 1,000-gallon UST and Tank # 2 consisted of a 300-gallon UST. Both tanks were used for the storage of # 2 diesel fuel used to heat structures located on the property.

While conducting the Site Assessment during removal and close-out of a Tank # 2, petroleum contaminated soils were encountered. Soils had a strong diesel odor, however, soils were not saturated and exhibited characteristics typical of older releases. During excavation and removal of the 300-gallon UST (Tank # 2) approximately 80 cubic yards (77 tons) of petroleum-contaminated soils were removed and hauled off-site for thermal remediation. The remainder of the excavated contaminated soils (approximately 216 yds<sup>3</sup>) was stockpiled on-site and landfarmed in accordance with ADEC approved Work Plan. Soil sample results for the 300-gallon UST site indicate that soils remain in place within the vadose zone (10' bgs) above ADEC cleanup levels for soil. Soil samples collected from the sidewalls and endwalls of the 300-gallon UST site were found to be below ADEC target cleanup levels.

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As stipulated by ADEC regulations, groundwater samples are required for Site Characterization purposes.

### **Topography**

The United States Geological Survey (USGS) Fairbanks Quadrangle (D-2) provides topographic map coverage of the site (Figure 1). Fairbanks is located in the northern part of the Tanana Basin, which is a relatively flat floodplain of the Tanana River. The subject property is situated approximately 2.5 miles north of the Tanana River and 0.5 miles south of the Chena River. Based upon the topographic map of the Fairbanks Quadrangle, the site elevation is approximately 446 feet above the mean sea level.

### **Regional Hydrology**

The Chena and Tanana rivers are the dominant influence on ground-water flow in the subject area. Two discharge peaks characterize the Chena River: spring snowmelt runoff and late summer precipitation. The stage of Chena River typically rises and falls in response to stage changes of the Tanana River. The depth to groundwater varies in response to these controlling factors. Based on interpretation of USGS data, regional groundwater flow direction is generally to the west-northwest.

### **Site Hydrology**

The groundwater table at the time of sampling was approximately 12' bgs. Well elevation measurements were collected and a closed loop survey conducted to determine groundwater flow direction at the site. Based on the groundwater elevation survey, the groundwater flow direction is to the southwest with a relatively flat gradient of 0.00476 feet/feet.

## **GROUNDWATER SAMPLING**

### **Scope of Work**

To achieve the stated objectives, ARES performed the following tasks:

- Installed and developed groundwater monitoring wells MW-1, MW-2 and MW-3;
- Collected groundwater elevations and water quality parameter measurements to include temperature, pH, conductivity, turbidity, dissolved oxygen, and salinity;
- Verified groundwater flow direction by conducting a closed loop survey using well elevation data;
- Collection of three groundwater samples from MW-1, MW-2 and MW-3 and collected duplicate samples for QA/QC purposes. Samples were analyzed for diesel range organics (DRO) by method AK 102 and benzene, toluene, ethylbenzene and xylenes (BTEX) constituents by method EPA 8260B; and
- Data review and report preparation.

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### **Installation of Monitoring Wells**

In order to assess potential impacts to groundwater at the site, ARES installed three permanent groundwater monitoring wells, MW-1, MW-2 and MW-3 at the subject property located at 1401 Kellum Street. Monitoring well MW-1 was located down-gradient from the source area (UST site) along the west property boundary; MW-2 was located in the source area; and MW-3 was located cross-gradient from the source area on the east property boundary. The monitoring wells were installed and samples collected to assess groundwater conditions at the site and to determine if contaminants were migrating onto and/or off of the property. Monitoring well locations are shown in Figures 2, 3.

Groundwater monitoring wells MW-1, MW-2, and MW-3 were pre-pack, direct-push type wells installed by The Drilling Company. MW-1 was installed, developed and sampled on June 15, 2009. MW-2 and MW-3 was installed and developed on June 25, 2009 and sampled on July 6, 2009.

Placement of the well screen was roughly centered at the soil/groundwater interface. The monitoring well casing was set above grade. Monitoring well design characteristics are as follows:

Material = galvanized pipe  
Well screen = 10 ft  
Slot size = 0.010 in.  
Inside diameter = 1.0 in.  
Outside diameter = 1.25 in.

### **Field Observations**

There were no petroleum odors or sheen detected in purge water during sampling activities. Purge water was almost clear in appearance. Groundwater was approximately 12' below ground surface at the time of sampling.

### **Sampling Method**

The monitoring wells were developed, purged and sampled in accordance with the UST Procedures Manual and standard procedures. A peristaltic pump, with new polyethylene tubing and new nitrile gloves were used during the sampling events. Before sampling, the groundwater elevation was measured to 0.010 feet using a Heron Model D-T Interface Meter. Well volume was then calculated, and at least three times the well volume was purged prior to sampling. Purge water was placed in drums and stored at an off-site location pending laboratory results.

Recharge rates were observed during purging, and water levels measurements taken following sampling. Water parameters were recorded to include temperature, pH, conductivity, turbidity, dissolved oxygen, and salinity using a Horiba Water Meter Model U-10. Groundwater parameter measurements are shown in Appendix B.

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Once well was sufficiently recharged and groundwater parameters stabilized, samples were collected in order of decreasing volatility. The tubing was carefully lowered in to the well to avoid loss of volatiles and water collected from the peristaltic pump was placed directly into lab supplied sample bottles. Volatile samples were collected to avoid any headspace in the bottle. All bottles were labeled and placed in a pre-chilled cooler (at approximately 4°C) and submitted to ADEC approved laboratory following chain of custody (COC) procedures.

Groundwater samples were collected from MW-1 on June 15, 2009. A blind duplicate sample (ID SW-W1-62009) was collected from monitoring well MW-1 for quality assurance/quality control purposes. Groundwater samples for MW-2 and MW-3 were collected on July 6, 2009. A blind duplicate sample (ID DUP) was collected from monitoring well MW-2 for quality assurance/quality control purposes.

**Analytical Results**

Groundwater samples were collected and laboratory analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX ) by EPA method 8260B and diesel range organics (DRO) by method AK 102. A summary of analytical results are shown in Table 1. Complete laboratory results are included in Appendix C.

**Table 1**  
**Groundwater Analytical Results Summary**  
 (Results shown as mg/L)

Sample ID	Matrix	EPA Method 8260B				Alaska Method AK 102
		Benzene	Toluene	Ethylbenzene	Total xylenes	DRO
SW-W1-62009	Water	<b>0.0828</b>	.0194	.00443	ND	ND
MW2-72009	Water	ND	ND	ND	ND	<b>6.44</b>
MW3-72009	Water	ND	ND	ND	ND	ND
SW-WDUP-62009 (Blind Duplicate to SW-W1-62009)	Water	<b>0.0534</b>	.0120	.00270	ND	ND
DUP (Blind Duplicate to MW2-72009)	Water	ND	ND	ND	ND	<b>7.52</b>
ADEC Cleanup Level <sup>1</sup> (mg/L)	Water	.005	1.0	0.7	10.0	1.5

<sup>1</sup> Title 18 of the Alaska Administrative Code, Chapter 75. Section 345.

ND= Not detected at the MRL (Method Reporting Limit).

N/A = Not Analyzed.

Results above ADEC Regulatory Limit in **Bold**.

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Analytical results indicate that groundwater collected from MW-1 is above ADEC target cleanup levels for benzene and that groundwater collected from monitoring well MW-2 is above ADEC target cleanup levels for DRO. All remaining constituents were below ADEC cleanup levels.

**Quality Assurance / Quality Control**

Field quality control (QC) procedures for this project included the collection and analysis of a one field duplicate sample and trip blank per sampling event, which accompanied the samples in the field. Two field duplicate samples (SW-WDUP-62009, and DUP) were collected for quality control purposes. Sample ID SW-WDUP-62009 was a blind duplicate to SW-W1-62009 from monitoring well MW-1. Sample ID DUP was a blind duplicate to MW2-72009 from monitoring well MW-2. The QC sample was analyzed to assess the quality of sample collection and handling, as well as the accuracy and precision of the laboratory's analytical procedures.

Precision, expressed as the relative percent difference (RPD) between field duplicate sample results, is an indication of the consistency of sampling, sample handling, preservation, and laboratory analysis. As required by the 18AAC 78 and the UST Procedures Manual, field quality control sampling consisted of 10% field duplicates and 5% trip blanks. The RPD's for duplicates collected as part of this investigation fell within our acceptable range or were not calculable. Analysis of the trip blanks showed no analytes above the practical quantitation limit (PQL). Thus, there is no indication that cross-contamination among samples occurred.

The following blind field duplicates and associated RFD calculations are as follows:

**SW-W1-62009 and SW-WDUP-62009 (Field Duplicate)**

DRO (AK102): Not calculable due to non-detect value for one or both samples.

Benzene:  $(0.0828 - 0.0534) / [(0.0828 + 0.0534) / 2] \times 100 = 43.2 \%$

Toluene: Not calculable due to non-detect value for one or both samples.

Ethylbenzene: Not calculable due to non-detect value for one or both samples.

Total Xylenes: Not calculable due to non-detect value for one or both samples.

**MW2-708 and DUP (Field Duplicate)**

DRO (AK102):  $(7.52 - 6.44) / [(7.52 + 6.44) / 2] \times 100 = 15.5 \%$

Benzene: Not calculable due to non-detect value for one or both samples.

Toluene: Not calculable due to non-detect value for one or both samples.

Ethylbenzene: Not calculable due to non-detect value for one or both samples.

Total Xylenes: Not calculable due to non-detect value for one or both samples.

The recommended range for RPD for water analysis is < 30%. The RPD fell outside the recommended range for sample SW-W1-62009 and SW-WDUP-62009 for DRO analysis with a RPD of 43.2%. Data quality however is not expected to be adversely affected. All other RPD calculations were within the recommended range for all analytes.

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Laboratory quality assurance included the procedures outlined in the laboratory's ADEC-approved standard operating procedures documentation. As presented in the laboratory report's QC summary sheet, the laboratory QC parameters fell within the acceptable limits.

### **Conclusions and Recommendations**

Sample results indicate that benzene and DRO exceeds ADEC target cleanup levels for groundwater on the subject property. DRO was detected in MW-2 in the vicinity of the former heating oil UST above cleanup levels but was non-detect in down-gradient well MW-1 indicating that DRO is not migrating off-site. MW-3 was non-detect for DRO and benzene indicating that contaminants found on the site did not originate from an up-gradient source.

Analytical results indicate that benzene was non-detect in the source area well, but above ADEC cleanup levels in the down-gradient well (MW-1) placed along the west property boundary. It is likely that benzene is migrating onto the subject property from the adjacent parcel based on available records from ADEC contaminated sites database.

According to the Alaska Department of Environmental Conservation's (ADEC) Contaminated Sites database, a SHWS and LUST site (ADEC file number 102.38.140) is listed as USFWS Office located at 1412 Airport Way, Fairbanks, Alaska. This parcel is located adjacent and cross-gradient to the subject property. Records indicate that in September 1990 a 500-gallon gasoline UST was removed with analytical results indicating that soil was above ADEC cleanup levels for benzene. Approximately 36-40 cubic yds of contaminated soils was removed and thermal treated. Records indicate that the excavation pit was backfilled before sample results were obtained. Additional site investigation on the USFWS property located at 1412 Airport Way would be required to determine if benzene in groundwater is migrating off-site to adjacent properties to include the subject property.

ARES recommends the following:

- ARES recommends a semi-annual groundwater sampling event of permanent groundwater monitoring wells during period of low seasonal groundwater conditions (March 2010) and period of high seasonal groundwater conditions (August 2010) for DRO and BTEX analysis. Groundwater results will be used for trend analysis to determine if the plume has stabilized or is in a decreasing or increasing trend.

### **Limitations**

This report presents the analytical results from a limited number of groundwater samples, and should not be construed as a comprehensive study of groundwater quality at the site. The samples were intended to evaluate the presence or absence of contaminants at the locations selected. Detectable levels of petroleum hydrocarbons may be present at other locations. It was also not the intent of our sampling and testing to detect the presence of

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groundwater affected by contaminants other than those for which laboratory analysis were performed. No conclusions can be drawn on the presence or absence of other contaminants. This is not a geotechnical study.

The data presented in this report should be considered representative of the time of our site observations and sample collection. Changes in site conditions can occur with time because of natural forces or human activity. ARES reserves the right to modify or alter conclusions and recommendations should additional data become available.

This report was prepared for the exclusive use of Mr. Jeff Zuckerman of Sahn Investments and his representatives. If it is made available to others, it should be for information on factual data only and not as a warranty of subsurface conditions.

**Qualifications & Signature of Environmental Professional**

Lyle Gresehover is a ADEC ‘Qualified Person’ and has extensive field experience as an environmental project manager and has worked on all aspects of environmental assessments, investigations, and clean-up efforts.

Lyle Gresehover  
Project Manager

Sincerely,



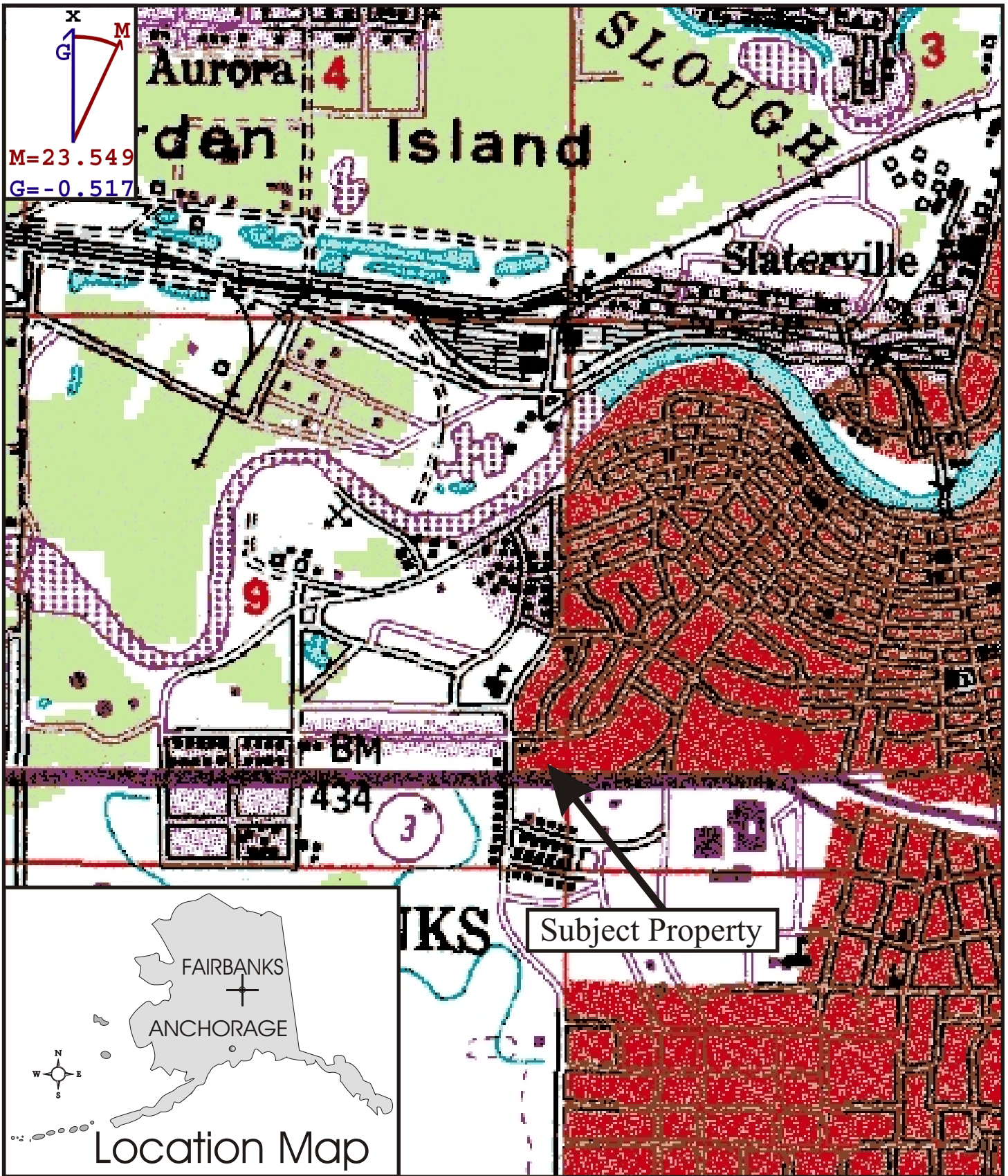
Lyle Gresehover  
Alaska Resources and Environmental Services, LLC

Enclosure:   Appendix A – Figures  
                  Appendix B – Water Quality Measurements  
                  Appendix C – Analytical Results



# **Appendix A**

## Figures



X  
G M  
M=23.549  
G=-0.517

BM  
434

Subject Property

1973 Topo Map  
Fairbanks, Alaska  
Quad D-2

Scale in Miles:  
1/8 0 1/8 1/4 1/2

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**FIGURE 1**

**ARES**  
Alaska Resources and  
Environmental Services, LLC  
284 Topside  
Fairbanks AK 99701



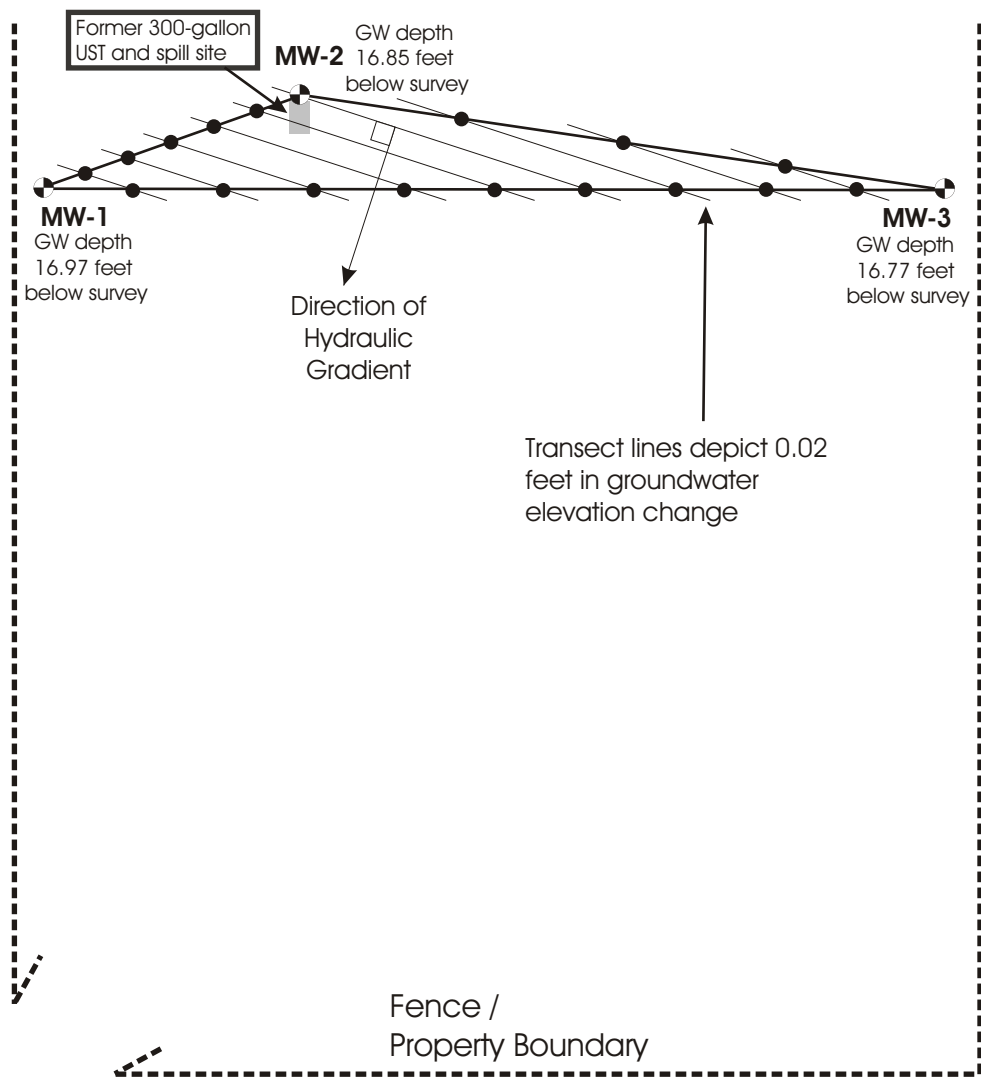
	<b>2003 Aerial Photograph Fairbanks, Alaska</b>
	Scale in Feet: 0 50 100 200 

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**FIGURE 2**

**ARES**  
Alaska Resources and  
Environmental Services, LLC  
284 Topside  
Fairbanks AK 99701



Airport Way (Not to Scale)

Hydraulic Gradient

$$\frac{\Delta h}{\Delta l} = 0.00476$$

Direction of Hydraulic Gradient  
17.9° West of South



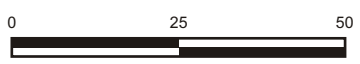
GPS Coordinates:

GPS Coordinates:		
MW 1 64° 50.270' N -147° 44.724' W	MW 2 64° 50.272' N -147° 44.711' W	MW 3 64° 50.270' N -147° 44.678' W



MW Location Map / Hydraulic Gradient Calculations

Scale in Feet:



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**FIGURE 3**

**ARES**  
Alaska Resources and  
Environmental Services, LLC  
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Fairbanks AK 99701

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# **Appendix B**

## Groundwater Parameter Measurements

ALASKA RESOURCES AND ENVIRONMENTAL SERVICES, LLC

**GROUNDWATER SAMPLING FIELD DATA SHEET**

**Client** Sahn Investments  
**Location** 1401 Kellum Street

**Samplers** Lyle Gresehover, Jason Gresehover  
**Date** 6/15/09, 7/6/09

Well No.	Water Level (feet)	Casing Depth (feet)	Volume Purged (gallons)	Temp. (C°)	pH	Cond. (mS/cm)	Turb. (NTUs)	DO (mg/l)	Salinity (%)	Recharged Water Level (feet)	Sample Appearance and Comments
MW-1	15.19	19.97	4.0	7.3	7.53	0.889	7	1.68	0.03	15.19	No odor / clear
MW-2	15.93	20.18	4.0	9.2	8.03	0.904	11	1.54	0.03	15.93	No odor / clear
MW-3	15.41	20.10	4.0	6.6	7.16	0.870	3	2.57	0.03	15.41	No odor / clear

**Water Quality Meter**  
**Water Level Indicator**  
**Bailer / Pump**  
**Dissolved Oxygen Meter**

**Make / Model** Horiba U-10  
**Make / Model** Heron dipper-T  
**Make / Model** Geopump2 900-1280  
**Make / Model** YSI 55-25 FT

**Serial ID** 809020  
**Serial ID** \_\_\_\_\_  
**Serial ID** A03005887  
**Serial ID** 06M1284 AA

Purge Calculation Data (3x) 1.5" casing = 0.092 gal/ft 2" casing = 0.164 gal/ft 3 " casing = 0.367 gal/ft 4" casing = 0.648 gal/ft 5" casing = 1.020 gal/ft 6" casing = 1.469 gal/ft
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**Sample Time**  
**Sample Analysis**  
**Comments**

\_\_\_\_\_

DRO/BTEX \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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# **Appendix C**

## **Analytical Results**

June 22, 2009

Lyle Gresehover  
Alaska Resources & Environmental Services  
P.O. Box 83050  
Fairbanks, AK 99708

RE: Sahn Investments

Enclosed are the results of analyses for samples received by the laboratory on 06/16/09 13:50.  
The following list is a summary of the Work Orders contained in this report, generated on 06/22/09  
16:33.

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

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<u>Work Order</u>	<u>Project</u>	<u>ProjectNumber</u>
ASF0033	Sahn Investments	[none]

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TestAmerica Anchorage

*Johanna Dreher*

Johanna L Dreher, Client Services Manager

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



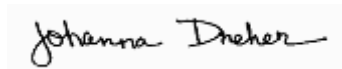


<b>Alaska Resources &amp; Environmental Services</b> P.O. Box 83050 Fairbanks, AK 99708	Project Name:	<b>Sahn Investments</b>	Report Created:
	Project Number:	[none]	06/22/09 16:33
	Project Manager:	Lyle Gresehover	

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SI-1-62009	ASF0033-01	Soil	06/12/09 16:02	06/16/09 13:50
SI-2-62009	ASF0033-02	Soil	06/12/09 16:20	06/16/09 13:50
SI-3-62009	ASF0033-03	Soil	06/12/09 16:29	06/16/09 13:50
SI-4-62009	ASF0033-04	Soil	06/12/09 16:47	06/16/09 13:50
SI-5-62009	ASF0033-05	Soil	06/12/09 17:10	06/16/09 13:50
SI-DUP-62009	ASF0033-06	Soil	06/12/09 17:30	06/16/09 13:50
SI-W1-62009	ASF0033-07	Water	06/15/09 13:10	06/16/09 13:50
SI-WDUP-62009	ASF0033-08	Water	06/15/09 13:20	06/16/09 13:50
Trip Blank Soil	ASF0033-09	Soil	06/15/09 00:00	06/16/09 13:50
Trip Blank Water	ASF0033-10	Water	06/15/09 00:00	06/16/09 13:50

TestAmerica Anchorage



Johanna L Dreher, Client Services Manager

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<b>Alaska Resources &amp; Environmental Services</b>	Project Name: <b>Sahn Investments</b>	
P.O. Box 83050	Project Number: [none]	Report Created:
Fairbanks, AK 99708	Project Manager: Lyle Gresehover	06/22/09 16:33

**Diesel Range Organics (C10-C25) per AK102**  
 TestAmerica Anchorage

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
<b>ASF0033-01 (SI-1-62009)</b>		<b>Soil</b>			<b>Sampled: 06/12/09 16:02</b>						
Diesel Range Organics	AK 102	<b>669</b>	----	21.0	mg/kg dry	1x	9060047	06/17/09 08:48	06/18/09 16:33	JN	
Surrogate(s): 1-Chlorooctadecane			85.7%		50 - 150 %		"				"
<b>ASF0033-02 (SI-2-62009)</b>		<b>Soil</b>			<b>Sampled: 06/12/09 16:20</b>						
Diesel Range Organics	AK 102	<b>376</b>	----	20.8	mg/kg dry	1x	9060047	06/17/09 08:48	06/18/09 17:06	JN	
Surrogate(s): 1-Chlorooctadecane			77.7%		50 - 150 %		"				"
<b>ASF0033-03 (SI-3-62009)</b>		<b>Soil</b>			<b>Sampled: 06/12/09 16:29</b>						
Diesel Range Organics	AK 102	<b>527</b>	----	21.3	mg/kg dry	1x	9060047	06/17/09 08:48	06/18/09 17:06	JN	
Surrogate(s): 1-Chlorooctadecane			72.4%		50 - 150 %		"				"
<b>ASF0033-04 (SI-4-62009)</b>		<b>Soil</b>			<b>Sampled: 06/12/09 16:47</b>						
Diesel Range Organics	AK 102	<b>320</b>	----	21.4	mg/kg dry	1x	9060047	06/17/09 08:48	06/18/09 17:38	JN	
Surrogate(s): 1-Chlorooctadecane			75.4%		50 - 150 %		"				"
<b>ASF0033-05 (SI-5-62009)</b>		<b>Soil</b>			<b>Sampled: 06/12/09 17:10</b>						
Diesel Range Organics	AK 102	<b>568</b>	----	21.1	mg/kg dry	1x	9060047	06/17/09 08:48	06/18/09 17:38	JN	
Surrogate(s): 1-Chlorooctadecane			74.1%		50 - 150 %		"				"
<b>ASF0033-06 (SI-DUP-62009)</b>		<b>Soil</b>			<b>Sampled: 06/12/09 17:30</b>						
Diesel Range Organics	AK 102	<b>552</b>	----	20.4	mg/kg dry	1x	9060047	06/17/09 08:48	06/18/09 19:15	JN	
Surrogate(s): 1-Chlorooctadecane			85.5%		50 - 150 %		"				"
<b>ASF0033-07 (SI-W1-62009)</b>		<b>Water</b>			<b>Sampled: 06/15/09 13:10</b>						
Diesel Range Organics	AK 102	ND	----	0.397	mg/l	1x	9060052	06/17/09 13:11	06/19/09 13:40	JN	
Surrogate(s): 1-Chlorooctadecane			80.1%		50 - 150 %		"				"
<b>ASF0033-08 (SI-WDUP-62009)</b>		<b>Water</b>			<b>Sampled: 06/15/09 13:20</b>						
Diesel Range Organics	AK 102	ND	----	0.420	mg/l	1x	9060052	06/17/09 13:11	06/19/09 13:40	JN	
Surrogate(s): 1-Chlorooctadecane			71.8%		50 - 150 %		"				"

TestAmerica Anchorage

*Johanna Dreher*

Johanna L Dreher, Client Services Manager

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



**Alaska Resources & Environmental Services**

P.O. Box 83050  
 Fairbanks, AK 99708

Project Name: **Sahn Investments**

Project Number: [none]

Project Manager: Lyle Gresehover

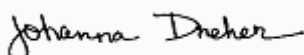
Report Created:

06/22/09 16:33

**Selected Volatile Organic Compounds per EPA Method 8260B**  
 TestAmerica Anchorage

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
<b>ASF0033-01 (SI-1-62009)</b>		<b>Soil</b>		<b>Sampled: 06/12/09 16:02</b>							
Benzene	EPA 8260B	ND	----	0.0205	mg/kg dry	1x	9060054	06/15/09 15:13	06/19/09 02:32	KC	
Toluene	"	ND	----	0.0513	"	"	"	"	"	KC	
Ethylbenzene	"	ND	----	0.0513	"	"	"	"	"	KC	
Xylenes (total)	"	ND	----	0.0770	"	"	"	"	"	KC	
<i>Surrogate(s):</i>											
<i>Dibromofluoromethane</i>				91.0%	75 - 125 %	"					"
<i>a,a,a-TFT</i>				107%	50 - 150 %	"					"
<i>Toluene-d8</i>				95.2%	75 - 125 %	"					"
<i>4-BFB</i>				102%	75 - 125 %	"					"
<b>ASF0033-02 (SI-2-62009)</b>		<b>Soil</b>		<b>Sampled: 06/12/09 16:20</b>							
Benzene	EPA 8260B	ND	----	0.0142	mg/kg dry	1x	9060054	06/15/09 15:13	06/19/09 03:06	KC	
Toluene	"	ND	----	0.0356	"	"	"	"	"	KC	
Ethylbenzene	"	ND	----	0.0356	"	"	"	"	"	KC	
Xylenes (total)	"	ND	----	0.0534	"	"	"	"	"	KC	
<i>Surrogate(s):</i>											
<i>Dibromofluoromethane</i>				90.1%	75 - 125 %	"					"
<i>a,a,a-TFT</i>				115%	50 - 150 %	"					"
<i>Toluene-d8</i>				94.8%	75 - 125 %	"					"
<i>4-BFB</i>				105%	75 - 125 %	"					"
<b>ASF0033-03 (SI-3-62009)</b>		<b>Soil</b>		<b>Sampled: 06/12/09 16:29</b>							
Benzene	EPA 8260B	ND	----	0.0133	mg/kg dry	1x	9060054	06/15/09 15:13	06/19/09 08:50	KC	
Toluene	"	ND	----	0.0333	"	"	"	"	"	KC	
Ethylbenzene	"	ND	----	0.0333	"	"	"	"	"	KC	
Xylenes (total)	"	ND	----	0.0499	"	"	"	"	"	KC	
<i>Surrogate(s):</i>											
<i>Dibromofluoromethane</i>				87.6%	75 - 125 %	"					"
<i>a,a,a-TFT</i>				118%	50 - 150 %	"					"
<i>Toluene-d8</i>				95.8%	75 - 125 %	"					"
<i>4-BFB</i>				105%	75 - 125 %	"					"
<b>ASF0033-04 (SI-4-62009)</b>		<b>Soil</b>		<b>Sampled: 06/12/09 16:47</b>							
Benzene	EPA 8260B	ND	----	0.0239	mg/kg dry	1x	9060054	06/15/09 15:13	06/19/09 07:43	KC	
Toluene	"	ND	----	0.0597	"	"	"	"	"	KC	
Ethylbenzene	"	ND	----	0.0597	"	"	"	"	"	KC	
Xylenes (total)	"	ND	----	0.0896	"	"	"	"	"	KC	
<i>Surrogate(s):</i>											
<i>Dibromofluoromethane</i>				88.6%	75 - 125 %	"					"

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<b>Alaska Resources &amp; Environmental Services</b>	Project Name: <b>Sahn Investments</b>	
P.O. Box 83050	Project Number: [none]	Report Created:
Fairbanks, AK 99708	Project Manager: Lyle Gresehover	06/22/09 16:33

**Selected Volatile Organic Compounds per EPA Method 8260B**  
 TestAmerica Anchorage

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
<b>ASF0033-04 (SI-4-62009)</b>		<b>Soil</b>			<b>Sampled: 06/12/09 16:47</b>						
<i>a,a,a-TFT</i>			110%		50 - 150 %	1x			06/19/09 07:43		
<i>Toluene-d8</i>			93.4%		75 - 125 %	"					
<i>4-BFB</i>			105%		75 - 125 %	"					
<b>ASF0033-05 (SI-5-62009)</b>		<b>Soil</b>			<b>Sampled: 06/12/09 17:10</b>						
Benzene	EPA 8260B	ND	----	0.0158	mg/kg dry	1x	9060054	06/15/09 15:13	06/19/09 03:39		KC
Toluene	"	ND	----	0.0396	"	"	"	"	"		KC
Ethylbenzene	"	ND	----	0.0396	"	"	"	"	"		KC
Xylenes (total)	"	ND	----	0.0594	"	"	"	"	"		KC
<i>Surrogate(s): Dibromofluoromethane</i>			87.4%		75 - 125 %	"					"
<i>a,a,a-TFT</i>			110%		50 - 150 %	"					"
<i>Toluene-d8</i>			94.9%		75 - 125 %	"					"
<i>4-BFB</i>			106%		75 - 125 %	"					"
<b>ASF0033-06 (SI-DUP-62009)</b>		<b>Soil</b>			<b>Sampled: 06/12/09 17:30</b>						
Benzene	EPA 8260B	ND	----	0.0210	mg/kg dry	1x	9060054	06/15/09 15:13	06/19/09 08:17		KC
Toluene	"	ND	----	0.0525	"	"	"	"	"		KC
Ethylbenzene	"	ND	----	0.0525	"	"	"	"	"		KC
Xylenes (total)	"	ND	----	0.0788	"	"	"	"	"		KC
<i>Surrogate(s): Dibromofluoromethane</i>			87.8%		75 - 125 %	"					"
<i>a,a,a-TFT</i>			109%		50 - 150 %	"					"
<i>Toluene-d8</i>			94.8%		75 - 125 %	"					"
<i>4-BFB</i>			105%		75 - 125 %	"					"
<b>ASF0033-07 (SI-W1-62009)</b>		<b>Water</b>			<b>Sampled: 06/15/09 13:10</b>						
<b>Benzene</b>	EPA 8260B	<b>82.8</b>	----	0.500	ug/l	1x	9060055	06/18/09 18:24	06/18/09 22:00		KC
<b>Toluene</b>	"	<b>19.4</b>	----	0.500	"	"	"	"	"		KC
<b>Ethylbenzene</b>	"	<b>4.43</b>	----	0.500	"	"	"	"	"		KC
Xylenes (total)	"	ND	----	1.50	"	"	"	"	"		KC
<i>Surrogate(s): 4-BFB</i>			103%		85 - 115 %	"					"
<i>Dibromofluoromethane</i>			94.5%		81 - 124 %	"					"
<i>Toluene-d8</i>			95.1%		83 - 115 %	"					"

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**Alaska Resources & Environmental Services**

P.O. Box 83050  
 Fairbanks, AK 99708

Project Name: **Sahn Investments**

Project Number: [none]

Project Manager: Lyle Gresehover

Report Created:

06/22/09 16:33

**Selected Volatile Organic Compounds per EPA Method 8260B**  
 TestAmerica Anchorage

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
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**ASF0033-08 (SI-WDUP-62009)**

**Water**

**Sampled: 06/15/09 13:20**

Benzene	EPA 8260B	53.4	----	0.500	ug/l	1x	9060055	06/18/09 18:24	06/18/09 22:35	KC	
Toluene	"	12.0	----	0.500	"	"	"	"	"	KC	
Ethylbenzene	"	2.70	----	0.500	"	"	"	"	"	KC	
Xylenes (total)	"	ND	----	1.50	"	"	"	"	"	KC	

Surrogate(s):	4-BFB	104%		85 - 115 %	"					"	
	Dibromofluoromethane	94.3%		81 - 124 %	"					"	
	Toluene-d8	94.1%		83 - 115 %	"					"	

**ASF0033-09 (Trip Blank Soil)**

**Soil**

**Sampled: 06/15/09 00:00**

Benzene	EPA 8260B	ND	----	0.0133	mg/kg wet	1x	9060054	06/15/09 15:13	06/19/09 01:59	KC	
Toluene	"	0.492	----	0.0333	"	"	"	"	"	KC	
Ethylbenzene	"	ND	----	0.0333	"	"	"	"	"	KC	
Xylenes (total)	"	ND	----	0.0500	"	"	"	"	"	KC	

Surrogate(s):	Dibromofluoromethane	91.3%		75 - 125 %	"					"	
	a,a,a-TFT	105%		50 - 150 %	"					"	
	Toluene-d8	94.4%		75 - 125 %	"					"	
	4-BFB	103%		75 - 125 %	"					"	

**ASF0033-10 (Trip Blank Water)**

**Water**

**Sampled: 06/15/09 00:00**

Benzene	EPA 8260B	ND	----	0.500	ug/l	1x	9060055	06/18/09 18:24	06/18/09 21:26	KC	
Toluene	"	ND	----	0.500	"	"	"	"	"	KC	
Ethylbenzene	"	ND	----	0.500	"	"	"	"	"	KC	
Xylenes (total)	"	ND	----	1.50	"	"	"	"	"	KC	

Surrogate(s):	4-BFB	105%		85 - 115 %	"					"	
	Dibromofluoromethane	92.6%		81 - 124 %	"					"	
	Toluene-d8	95.0%		83 - 115 %	"					"	

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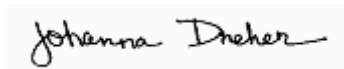


<b>Alaska Resources &amp; Environmental Services</b>	Project Name: <b>Sahn Investments</b>	
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Fairbanks, AK 99708	Project Manager: Lyle Gresehover	06/22/09 16:33

**Physical Parameters by APHA/ASTM/EPA Methods**  
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Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
<b>ASF0033-01 (SI-1-62009)</b>		<b>Soil</b>					<b>Sampled: 06/12/09 16:20</b>				
Dry Weight	TA-SOP	92.7	----	1.00	%	1x	9060051	06/17/09 12:26	06/18/09 09:00	JN	
<b>ASF0033-02 (SI-2-62009)</b>		<b>Soil</b>					<b>Sampled: 06/12/09 16:20</b>				
Dry Weight	TA-SOP	92.2	----	1.00	%	1x	9060051	06/17/09 12:26	06/18/09 09:00	JN	
<b>ASF0033-03 (SI-3-62009)</b>		<b>Soil</b>					<b>Sampled: 06/12/09 16:29</b>				
Dry Weight	TA-SOP	92.7	----	1.00	%	1x	9060051	06/17/09 12:26	06/18/09 09:00	JN	
<b>ASF0033-04 (SI-4-62009)</b>		<b>Soil</b>					<b>Sampled: 06/12/09 16:47</b>				
Dry Weight	TA-SOP	92.8	----	1.00	%	1x	9060051	06/17/09 12:26	06/18/09 09:00	JN	
<b>ASF0033-05 (SI-5-62009)</b>		<b>Soil</b>					<b>Sampled: 06/12/09 17:10</b>				
Dry Weight	TA-SOP	93.4	----	1.00	%	1x	9060051	06/17/09 12:26	06/18/09 09:00	JN	
<b>ASF0033-06 (SI-DUP-62009)</b>		<b>Soil</b>					<b>Sampled: 06/12/09 17:30</b>				
Dry Weight	TA-SOP	93.4	----	1.00	%	1x	9060051	06/17/09 12:26	06/18/09 09:00	JN	

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Fairbanks, AK 99708	Project Manager: Lyle Gresehover	06/22/09 16:33

**Diesel Range Organics (C10-C25) per AK102 - Laboratory Quality Control Results**  
 TestAmerica Anchorage

**QC Batch: 9060047**      **Soil Preparation Method: EPA 3545**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>Blank (9060047-BLK1)</b>								<b>Extracted: 06/17/09 08:48</b>						
Diesel Range Organics	AK 102	ND	---	20.0	mg/kg wet	1x	--	--	--	--	--	--	06/18/09 12:46	
<i>Surrogate(s): 1-Chlorooctadecane</i>		<i>Recovery: 79.4%</i>			<i>Limits: 50-150%</i>	<i>"</i>							<i>06/18/09 12:46</i>	
<b>LCS (9060047-BS1)</b>								<b>Extracted: 06/17/09 08:48</b>						
Diesel Range Organics	AK 102	141	---	20.0	mg/kg wet	1x	--	132	106%	(75-125)	--	--	06/18/09 13:18	
<i>Surrogate(s): 1-Chlorooctadecane</i>		<i>Recovery: 82.0%</i>			<i>Limits: 60-120%</i>	<i>"</i>							<i>06/18/09 13:18</i>	
<b>LCS Dup (9060047-BSD1)</b>								<b>Extracted: 06/17/09 08:48</b>						
Diesel Range Organics	AK 102	141	---	20.0	mg/kg wet	1x	--	132	107%	(75-125)	0.311% (20)		06/18/09 13:51	
<i>Surrogate(s): 1-Chlorooctadecane</i>		<i>Recovery: 77.2%</i>			<i>Limits: 60-120%</i>	<i>"</i>							<i>06/18/09 13:51</i>	
<b>Duplicate (9060047-DUP1)</b>				<b>QC Source: ASF0030-15</b>				<b>Extracted: 06/17/09 08:48</b>						
Diesel Range Organics	AK 102	ND	---	21.3	mg/kg dry	1x	ND	--	--	--	16.4% (20)		06/18/09 12:46	
<i>Surrogate(s): 1-Chlorooctadecane</i>		<i>Recovery: 73.6%</i>			<i>Limits: 50-150%</i>	<i>"</i>							<i>06/18/09 12:46</i>	
<b>Matrix Spike (9060047-MS1)</b>				<b>QC Source: ASF0030-15</b>				<b>Extracted: 06/17/09 08:48</b>						
Diesel Range Organics	AK 102	190	---	21.1	mg/kg dry	1x	18.5	139	123%	(75-125)	--	--	06/18/09 13:51	
<i>Surrogate(s): 1-Chlorooctadecane</i>		<i>Recovery: 80.5%</i>			<i>Limits: 50-150%</i>	<i>"</i>							<i>06/18/09 13:51</i>	
<b>Matrix Spike Dup (9060047-MSD1)</b>				<b>QC Source: ASF0030-15</b>				<b>Extracted: 06/17/09 08:48</b>						
Diesel Range Organics	AK 102	190	---	21.7	mg/kg dry	1x	18.5	144	119%	(75-125)	0.0816% (25)		06/18/09 14:23	
<i>Surrogate(s): 1-Chlorooctadecane</i>		<i>Recovery: 82.4%</i>			<i>Limits: 50-150%</i>	<i>"</i>							<i>06/18/09 14:23</i>	

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P.O. Box 83050	Project Number: [none]	Report Created:
Fairbanks, AK 99708	Project Manager: Lyle Gresehover	06/22/09 16:33

**Diesel Range Organics (C10-C25) per AK102 - Laboratory Quality Control Results**  
 TestAmerica Anchorage

**QC Batch: 9060052      Water Preparation Method: EPA 3510**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>Blank (9060052-BLK1)</b>										Extracted: 06/17/09 13:11				
Diesel Range Organics	AK 102	ND	---	0.500	mg/l	1x	--	--	--	--	--	--	06/17/09 23:53	
<i>Surrogate(s): 1-Chlorooctadecane</i>		<i>Recovery: 76.2%</i>		<i>Limits: 50-150%</i>		<i>"</i>							<i>06/17/09 23:53</i>	
<b>LCS (9060052-BS1)</b>										Extracted: 06/17/09 13:11				
Diesel Range Organics	AK 102	10.9	---	0.500	mg/l	1x	--	10.6	103%	(75-125)	--	--	06/17/09 17:57	
<i>Surrogate(s): 1-Chlorooctadecane</i>		<i>Recovery: 77.2%</i>		<i>Limits: 60-120%</i>		<i>"</i>							<i>06/17/09 17:57</i>	
<b>LCS Dup (9060052-BSD1)</b>										Extracted: 06/17/09 13:11				
Diesel Range Organics	AK 102	10.7	---	0.500	mg/l	1x	--	10.6	101%	(75-125)	1.49%	(20)	06/17/09 18:29	
<i>Surrogate(s): 1-Chlorooctadecane</i>		<i>Recovery: 61.5%</i>		<i>Limits: 60-120%</i>		<i>"</i>							<i>06/17/09 18:29</i>	
<b>Duplicate (9060052-DUP1)</b>										QC Source: ASF0029-44      Extracted: 06/17/09 13:11				
Diesel Range Organics	AK 102	3.15	---	0.403	mg/l	1x	3.24	--	--	--	2.85%	(20)	06/17/09 19:34	
<i>Surrogate(s): 1-Chlorooctadecane</i>		<i>Recovery: 73.5%</i>		<i>Limits: 50-150%</i>		<i>"</i>							<i>06/17/09 19:34</i>	
<b>Matrix Spike (9060052-MS1)</b>										QC Source: ASF0029-44      Extracted: 06/17/09 13:11				
Diesel Range Organics	AK 102	10.8	---	0.400	mg/l	1x	3.24	8.48	88.8%	(75-125)	--	--	06/17/09 20:39	
<i>Surrogate(s): 1-Chlorooctadecane</i>		<i>Recovery: 67.2%</i>		<i>Limits: 50-150%</i>		<i>"</i>							<i>06/17/09 20:39</i>	
<b>Matrix Spike Dup (9060052-MSD1)</b>										QC Source: ASF0029-44      Extracted: 06/17/09 13:11				
Diesel Range Organics	AK 102	12.9	---	0.400	mg/l	1x	3.24	8.48	114%	(75-125)	17.9%	(25)	06/17/09 21:11	
<i>Surrogate(s): 1-Chlorooctadecane</i>		<i>Recovery: 75.0%</i>		<i>Limits: 50-150%</i>		<i>"</i>							<i>06/17/09 21:11</i>	

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P.O. Box 83050	Project Number: [none]	Report Created:
Fairbanks, AK 99708	Project Manager: Lyle Gresehover	06/22/09 16:33

**Selected Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results**  
 TestAmerica Anchorage

**QC Batch: 9060054      Soil Preparation Method: AK101 Field Prep**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
---------	--------	--------	------	-----	-------	-----	---------------	-----------	-------	----------	-------	----------	----------	-------

**Blank (9060054-BLK1)**

Extracted: 06/18/09 15:13

Benzene	EPA 8260B	ND	---	0.0133	mg/kg wet	1x	--	--	--	--	--	--	06/18/09 20:52	
Toluene	"	ND	---	0.0333	"	"	--	--	--	--	--	--	"	
Ethylbenzene	"	ND	---	0.0333	"	"	--	--	--	--	--	--	"	
Xylenes (total)	"	ND	---	0.0500	"	"	--	--	--	--	--	--	"	
<i>Surrogate(s): Dibromofluoromethane</i>		<i>Recovery:</i>	<i>88.5%</i>	<i>Limits: 75-125%</i>		<i>"</i>							<i>06/18/09 20:52</i>	
<i>a,a,a-TFT</i>			<i>101%</i>	<i>50-150%</i>		<i>"</i>							<i>"</i>	
<i>Toluene-d8</i>			<i>95.0%</i>	<i>75-125%</i>		<i>"</i>							<i>"</i>	
<i>4-BFB</i>			<i>104%</i>	<i>75-125%</i>		<i>"</i>							<i>"</i>	

**LCS (9060054-BS1)**

Extracted: 06/18/09 15:13

Benzene	EPA 8260B	0.711	---	0.0133	mg/kg wet	1x	--	0.800	88.9%	(70-130)	--	--	06/19/09 09:24	
Toluene	"	0.686	---	0.0333	"	"	--	"	85.8%	"	--	--	"	
Ethylbenzene	"	0.681	---	0.0333	"	"	--	"	85.1%	"	--	--	"	
Xylenes (total)	"	2.01	---	0.0500	"	"	--	2.40	83.7%	"	--	--	"	
<i>Surrogate(s): Dibromofluoromethane</i>		<i>Recovery:</i>	<i>87.5%</i>	<i>Limits: 75-125%</i>		<i>"</i>							<i>06/19/09 09:24</i>	
<i>a,a,a-TFT</i>			<i>109%</i>	<i>50-150%</i>		<i>"</i>							<i>"</i>	
<i>Toluene-d8</i>			<i>95.4%</i>	<i>75-125%</i>		<i>"</i>							<i>"</i>	
<i>4-BFB</i>			<i>104%</i>	<i>75-125%</i>		<i>"</i>							<i>"</i>	

**LCS (9060054-BS2)**

Extracted: 06/18/09 15:13

<i>Dibromofluoromethane</i>			<i>88.4%</i>	<i>75-125%</i>		<i>1x</i>							<i>06/19/09 10:31</i>	
<i>Surrogate(s): a,a,a-TFT</i>		<i>Recovery:</i>	<i>112%</i>	<i>Limits: 50-150%</i>		<i>"</i>							<i>06/19/09 10:31</i>	
<i>Toluene-d8</i>			<i>93.8%</i>	<i>75-125%</i>		<i>"</i>							<i>"</i>	
<i>4-BFB</i>			<i>105%</i>	<i>75-125%</i>		<i>"</i>							<i>"</i>	

**LCS Dup (9060054-BSD1)**

Extracted: 06/18/09 15:13

Benzene	EPA 8260B	0.693	---	0.0133	mg/kg wet	1x	--	0.800	86.7%	(70-130)	2.56%	(20)	06/19/09 09:57	
Toluene	"	0.680	---	0.0333	"	"	--	"	85.0%	"	0.926%	"	"	
Ethylbenzene	"	0.680	---	0.0333	"	"	--	"	85.0%	"	0.147%	"	"	
Xylenes (total)	"	2.01	---	0.0500	"	"	--	2.40	83.6%	"	0.116%	"	"	
<i>Surrogate(s): Dibromofluoromethane</i>		<i>Recovery:</i>	<i>88.4%</i>	<i>Limits: 75-125%</i>		<i>"</i>							<i>06/19/09 09:57</i>	
<i>a,a,a-TFT</i>			<i>111%</i>	<i>50-150%</i>		<i>"</i>							<i>"</i>	
<i>Toluene-d8</i>			<i>95.0%</i>	<i>75-125%</i>		<i>"</i>							<i>"</i>	
<i>4-BFB</i>			<i>105%</i>	<i>75-125%</i>		<i>"</i>							<i>"</i>	

TestAmerica Anchorage

*Johanna Dreher*

Johanna L Dreher, Client Services Manager

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<b>Alaska Resources &amp; Environmental Services</b>	Project Name: <b>Sahn Investments</b>	
P.O. Box 83050	Project Number: [none]	Report Created:
Fairbanks, AK 99708	Project Manager: Lyle Gresehover	06/22/09 16:33

**Selected Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results**  
 TestAmerica Anchorage

**QC Batch: 9060054**      **Soil Preparation Method: AK101 Field Prep**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>LCS Dup (9060054-BSD2)</b>													<b>Extracted: 06/18/09 15:13</b>	
	Dibromofluoromethane	86.8%			75-125%	1x							06/19/09 11:06	
Surrogate(s):	a,a,a-TFT	Recovery: 113%			Limits: 50-150%	"							06/19/09 11:06	
	Toluene-d8	95.2%			75-125%	"							"	
	4-BFB	105%			75-125%	"							"	

**QC Batch: 9060055**      **Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>Blank (9060055-BLK1)</b>													<b>Extracted: 06/18/09 16:24</b>	
Benzene	EPA 8260B	ND	---	0.500	ug/l	1x	--	--	--	--	--	--	06/18/09 20:17	
Toluene	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Ethylbenzene	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Xylenes (total)	"	ND	---	1.50	"	"	--	--	--	--	--	--	"	
Surrogate(s):	4-BFB	Recovery: 105%			Limits: 85-115%	"							06/18/09 20:17	
	Dibromofluoromethane	92.9%			81-124%	"							"	
	Toluene-d8	94.8%			83-115%	"							"	

<b>LCS (9060055-BS1)</b>													<b>Extracted: 06/18/09 16:24</b>	
Benzene	EPA 8260B	20.1	---	0.500	ug/l	1x	--	20.0	100%	(67-125)	--	--	06/18/09 17:58	
Toluene	"	19.9	---	0.500	"	"	--	"	99.3%	(80-120)	--	--	"	
Ethylbenzene	"	19.9	---	0.500	"	"	--	"	99.4%	"	--	--	"	
Xylenes (total)	"	59.8	---	1.50	"	"	--	60.0	99.7%	"	--	--	"	
Surrogate(s):	4-BFB	Recovery: 106%			Limits: 85-115%	"							06/18/09 17:58	
	Dibromofluoromethane	91.8%			81-124%	"							"	
	Toluene-d8	96.2%			83-115%	"							"	

<b>LCS Dup (9060055-BSD1)</b>													<b>Extracted: 06/18/09 16:24</b>	
Benzene	EPA 8260B	21.2	---	0.500	ug/l	1x	--	20.0	106%	(67-125)	5.71% (20)		06/19/09 06:03	
Toluene	"	20.7	---	0.500	"	"	--	"	103%	(80-120)	4.09%	"	"	
Ethylbenzene	"	20.5	---	0.500	"	"	--	"	103%	"	3.17%	"	"	
Xylenes (total)	"	61.1	---	1.50	"	"	--	60.0	102%	"	2.18%	"	"	
Surrogate(s):	4-BFB	Recovery: 107%			Limits: 85-115%	"							06/19/09 06:03	
	Dibromofluoromethane	90.8%			81-124%	"							"	
	Toluene-d8	95.6%			83-115%	"							"	

TestAmerica Anchorage

*Johanna Dreher*

Johanna L Dreher, Client Services Manager

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<b>Alaska Resources &amp; Environmental Services</b>	Project Name: <b>Sahn Investments</b>	
P.O. Box 83050	Project Number: [none]	Report Created:
Fairbanks, AK 99708	Project Manager: Lyle Gresehover	06/22/09 16:33

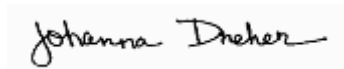
**Selected Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results**  
 TestAmerica Anchorage

**QC Batch: 9060055      Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes	
<b>Matrix Spike (9060055-MS1)</b>			QC Source: ASF0033-08					Extracted: 06/18/09 16:24							
Benzene	EPA 8260B	81.8	---	0.500	ug/l	1x	53.4	20.0	142%	(65-138)	--	--	06/18/09 23:43	M7	
Toluene	"	34.6	---	0.500	"	"	12.0	"	113%	(80-120)	--	--	"		
Ethylbenzene	"	23.4	---	0.500	"	"	2.70	"	103%	(76-130)	--	--	"		
Xylenes (total)	"	60.3	---	1.50	"	"	ND	60.0	100%	(65-140)	--	--	"		
<i>Surrogate(s): 4-BFB</i>		<i>Recovery: 106%</i>		<i>Limits: 85-115%</i>		"		<i>06/18/09 23:43</i>							
<i>Dibromofluoromethane</i>		<i>93.8%</i>		<i>81-124%</i>		"		<i>"</i>							
<i>Toluene-d8</i>		<i>95.6%</i>		<i>83-115%</i>		"		<i>"</i>							

<b>Matrix Spike Dup (9060055-MSD1)</b>			QC Source: ASF0033-08					Extracted: 06/18/09 16:24							
Benzene	EPA 8260B	67.8	---	0.500	ug/l	1x	53.4	20.0	71.9%	(65-138)	18.8% (20)		06/19/09 00:17		
Toluene	"	31.8	---	0.500	"	"	12.0	"	99.0%	(80-120)	8.62%	"	"		
Ethylbenzene	"	23.1	---	0.500	"	"	2.70	"	102%	(76-130)	1.25%	"	"		
Xylenes (total)	"	61.6	---	1.50	"	"	ND	60.0	103%	(65-140)	2.23%	"	"		
<i>Surrogate(s): 4-BFB</i>		<i>Recovery: 103%</i>		<i>Limits: 85-115%</i>		"		<i>06/19/09 00:17</i>							
<i>Dibromofluoromethane</i>		<i>96.0%</i>		<i>81-124%</i>		"		<i>"</i>							
<i>Toluene-d8</i>		<i>95.4%</i>		<i>83-115%</i>		"		<i>"</i>							

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Johanna L Dreher, Client Services Manager

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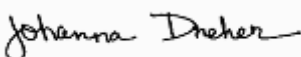
<b>Alaska Resources &amp; Environmental Services</b>	Project Name: <b>Sahn Investments</b>	
P.O. Box 83050	Project Number: [none]	Report Created:
Fairbanks, AK 99708	Project Manager: Lyle Gresehover	06/22/09 16:33

**Physical Parameters by APHA/ASTM/EPA Methods - Laboratory Quality Control Results**  
 TestAmerica Anchorage

**QC Batch: 9060051      Soil Preparation Method: \*\*\* DEFAULT PREP**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>Duplicate (9060051-DUP1)</b>			QC Source: ASF0030-15				Extracted: 06/17/09 12:26							
Dry Weight	TA-SOP	91.7	---	1.00	%	1x	91.9	--	--	--	0.215% (25)		06/18/09 09:00	

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Johanna L Dreher, Client Services Manager

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**Alaska Resources & Environmental Services**

P.O. Box 83050  
Fairbanks, AK 99708

Project Name: **Sahn Investments**  
Project Number: [none]  
Project Manager: Lyle Gresehover

Report Created:  
06/22/09 16:33

## Notes and Definitions

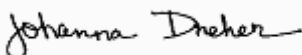
### Report Specific Notes:

M7 - The MS and/or MSD were above the acceptance limits. See Blank Spike (LCS).

### Laboratory Reporting Conventions:

- DET - Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.
- ND - Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).
- NR/NA - Not Reported / Not Available
- dry - Sample results reported on a Dry Weight Basis. Results and Reporting Limits have been corrected for Percent Dry Weight.
- wet - Sample results and reporting limits reported on a Wet Weight Basis (as received). Results with neither 'wet' nor 'dry' are reported on a Wet Weight Basis.
- RPD - RELATIVE PERCENT DIFFERENCE (RPDs calculated using Results, not Percent Recoveries).
- MRL - METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table.
- MDL\* - METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B. \*MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated Results.
- Dil - Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data.
- Reporting Limits - Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.
- Electronic Signature - Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy*. Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

TestAmerica Anchorage



Johanna L Dreher, Client Services Manager

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**ALASKA  
RESOURCES AND  
ENVIRONMENTAL  
SERVICES**

ARES  
P.O. Box 83050  
Fairbanks, Alaska 99708  
Phone: 907.374.3226  
Fax: 907.374.2319

AST0033

**Chain of Custody Report**

Client: Alaska Resources and Environmental Services  
 Report To: Lyle Gresehover  
 Address: ARES, P.O. Box 83050, Fairbanks, Alaska 99708  
 Email: lyle@ak-res.com  
 Phone: (907) 374-3226 Fax: (907) 374-3219

Invoice To: ARES, P.O. Box 83050, Fairbanks, Alaska 99708  
 Laboratory Name: Test America Inc.  
 Address: 2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119

**Turnaround Request**  
 In Business Days  
 Organic & Inorganic Analyses  
 Petroleum Hydrocarbon Analyses

Project Name: Sahn Investments  
 Project Number:  
 Sampled By: Lyle Gresehover

Preservative  
 Requested Analyses

Sample Identification	Sampling Date/ Time	Meth		N/A		HCL		HCL		AK 102 DRO	AK 102 BTEX	AK 102 DRO	AK 102 BTEX	Matrix (W,S,O)	# of Cont.	Location/ Comments	Lab ID
		EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B										
SI-1-62009	06/12/2009 1602	X	X											S	2		01
SI-2-62009	06/12/2009 1620	X	X											S	2		02
SI-3-62009	06/12/2009 1629	X	X											S	2		03
SI-4-62009	06/12/2009 1647	X	X											S	2		04
SI-5-62009	06/12/2009 1710	X	X											S	2		05
SI-DUP-62009	06/12/2009 1730	X	X											S	2		06
SI-W1-62009	06/15/2009 1310							X	X					W	5		07
SI-WDUP-62009	06/15/2009 1320							X	X					W	5		08
Trip blank Soil		X												S	1		09
Trip blank Water								X						W	3		10

Released By: [Signature]  
 Print Name: Jason Gresehover  
 Firm: ARES  
 Date: 06/15/2009  
 Time: 1500

Received By: [Signature]  
 Print Name: Kelsey Carberoff  
 Firm: TA Anchorage  
 Date: 6/16/09  
 Time: 1350

Released By: [Signature]  
 Print Name:  
 Firm:  
 Date:  
 Time:

Additional Remarks: Please note 3 day rush on samples.

Temp: 3.0

Page 1 of 1

# Test America Anchorage Cooler Receipt Form

(Army Corps. Compliant)

WORK ORDER # AST0033 CLIENT: ARES PROJECT: Sahn Investment

Date /Time Cooler Arrived 6 / 16 / 09 13:50 Cooler signed for by: Kelsey Gerbrandt  
(Print name)

## Preliminary Examination Phase:

Date cooler opened:  same as date received or \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_

Cooler opened by (print) Kelsey Gerbrandt (sign) [Signature]

1. Delivered by  ALASKA AIRLINES  Fed-Ex  UPS  NAC  LYNDEN  CLIENT  Other: \_\_\_\_\_

Shipment Tracking # if applicable 027 ~~FBI~~ 7393 9084 (include copy of shipping papers in file)

2. Number of Custody Seals 1 Signed by Jason Greeshorer Date 6 / 15 / 09

Were custody seals unbroken and intact on arrival?  Yes  No

3. Were custody papers sealed in a plastic bag?  Yes  No

4. Were custody papers filled out properly (ink, signed, etc.)?  Yes  No

5. Did you sign the custody papers in the appropriate place?  Yes  No

6. Was ice used?  Yes  No Type of ice:  blue ice  gel ice  real ice  dry ice Condition of ice: Frozen

Temperature by Digi-Thermo Probe 3.0 °C Thermometer # 3  
Acceptance Criteria: 0 - 6°C

7. Packing in Cooler:  bubble wrap  styrofoam  cardboard  Other: \_\_\_\_\_

8. Did samples arrive in plastic bags?  Yes  No

9. Did all bottles arrive unbroken, and with labels in good condition?  Yes  No

10. Are all bottle labels complete (ID, date, time, etc.)  Yes  No

11. Do bottle labels and Chain of Custody agree?  Yes  No

12. Are the containers and preservatives correct for the tests indicated?  Yes  No

13. Conoco Phillips, Alyeska, BP H2O samples only: pH < 2?  Yes  No  N/A

14. Is there adequate volume for the tests requested?  Yes  No

15. Were VOA vials free of bubbles?  N/A  Yes  No

If "NO" which containers contained "head space" or bubbles? \_\_\_\_\_

## Log-in Phase:

Date of sample log-in 06 / 16 / 09

Samples logged in by (print) Anastacia Gumula (sign) [Signature]

1. Was project identifiable from custody papers?  Yes  No

2. Do Turn Around Times and Due Dates agree?  Yes  No

3. Was the Project Manager notified of status?  Yes  No

4. Was the Lab notified of status?  Yes  No

5. Was the COC scanned and copied?  Yes  No

AST 0033

**Cistody Seal** 6/13/09

D/E

*Jan Hebebrand*

SIGNATURE

**TestAmerica**

THE LEADER IN ENVIRONMENTAL TESTING  
362754

THE LEADER  
**Test**

*Alaska Air Cargo*

**Goldstreak**

**027 FAI 7393 9084**

<b>ANC</b>		<b>SHIPPER</b>	
<b>AS 190</b>	<b>ANC 1700</b>	<b>Date</b>	<b>PHONE #</b>
		15 JUN 09	330 497 9396
		<b>Pieces</b>	<b>CONSIGNEE</b>
		1	<b>PHONE #</b>
		<b>Total Weight</b>	907-563-9200
		38	
		<b>Piece Weight</b>	
		<b>Box Number</b>	
		1	

**Goldstreak**



July 10, 2009

Lyle Gresehover  
Alaska Resources & Environmental Services  
P.O. Box 83050  
Fairbanks, AK 99708

RE: Sahn Investments

Enclosed are the results of analyses for samples received by the laboratory on 07/06/09 16:45.  
The following list is a summary of the Work Orders contained in this report, generated on 07/10/09  
16:44.

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

---

<u>Work Order</u>	<u>Project</u>	<u>ProjectNumber</u>
ASG0010	Sahn Investments	[none]

---

---

TestAmerica Anchorage

*Johanna Dreher*

Johanna L Dreher, Client Services Manager

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**Alaska Resources & Environmental Services**

P.O. Box 83050  
Fairbanks, AK 99708

Project Name: **Sahn Investments**

Project Number: [none]

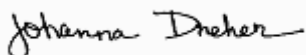
Project Manager: Lyle Gresehover

Report Created:  
07/10/09 16:44

## ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW2-72009	ASG0010-01	Water	07/06/09 09:02	07/06/09 16:45
MW3-72009	ASG0010-02	Water	07/06/09 09:54	07/06/09 16:45
DUP	ASG0010-03	Water	07/06/09 10:24	07/06/09 16:45
Trip Blank	ASG0010-04	Water	07/06/09 00:00	07/06/09 16:45

TestAmerica Anchorage



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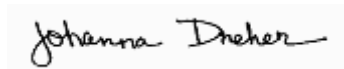


<b>Alaska Resources &amp; Environmental Services</b>	Project Name: <b>Sahn Investments</b>	
P.O. Box 83050	Project Number: [none]	Report Created:
Fairbanks, AK 99708	Project Manager: Lyle Gresehover	07/10/09 16:44

**Diesel Range Organics (C10-C25) per AK102**  
 TestAmerica Anchorage

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
<b>ASG0010-01 (MW2-72009)</b>		<b>Water</b>			<b>Sampled: 07/06/09 09:02</b>						
Diesel Range Organics	AK 102	<b>6.44</b>	----	0.397	mg/l	1x	9070017	07/07/09 13:20	07/09/09 04:01	JN	
<i>Surrogate(s): 1-Chlorooctadecane</i>			78.0%		50 - 150 %		"				"
<b>ASG0010-02 (MW3-72009)</b>		<b>Water</b>			<b>Sampled: 07/06/09 09:54</b>						
Diesel Range Organics	AK 102	ND	----	0.407	mg/l	1x	9070017	07/07/09 13:20	07/09/09 04:33	JN	
<i>Surrogate(s): 1-Chlorooctadecane</i>			81.2%		50 - 150 %		"				"
<b>ASG0010-03 (DUP)</b>		<b>Water</b>			<b>Sampled: 07/06/09 10:24</b>						
Diesel Range Organics	AK 102	<b>7.52</b>	----	0.397	mg/l	1x	9070017	07/07/09 13:20	07/09/09 04:33	JN	
<i>Surrogate(s): 1-Chlorooctadecane</i>			73.7%		50 - 150 %		"				"

TestAmerica Anchorage



Johanna L Dreher, Client Services Manager

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**Alaska Resources & Environmental Services**

P.O. Box 83050  
 Fairbanks, AK 99708

Project Name: **Sahn Investments**

Project Number: [none]

Project Manager: Lyle Gresehover

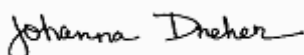
Report Created:

07/10/09 16:44

**Selected Volatile Organic Compounds per EPA Method 8260B**  
 TestAmerica Anchorage

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
<b>ASG0010-01 (MW2-72009)</b>		<b>Water</b>			<b>Sampled: 07/06/09 09:02</b>						
Benzene	EPA 8260B	ND	----	0.500	ug/l	1x	9070015	07/07/09 09:50	07/07/09 11:05	kc	
Toluene	"	ND	----	1.00	"	"	"	"	"	kc	
Ethylbenzene	"	ND	----	1.00	"	"	"	"	"	kc	
Xylenes (total)	"	ND	----	3.00	"	"	"	"	"	kc	
<i>Surrogate(s): 4-BFB</i>				103%		85 - 115 %	"			"	
<i>Dibromofluoromethane</i>				91.6%		81 - 124 %	"			"	
<i>Toluene-d8</i>				91.8%		83 - 115 %	"			"	
<b>ASG0010-02 (MW3-72009)</b>		<b>Water</b>			<b>Sampled: 07/06/09 09:54</b>						
Benzene	EPA 8260B	ND	----	0.500	ug/l	1x	9070015	07/07/09 09:50	07/07/09 10:35	kc	
Toluene	"	ND	----	1.00	"	"	"	"	"	kc	
Ethylbenzene	"	ND	----	1.00	"	"	"	"	"	kc	
Xylenes (total)	"	ND	----	3.00	"	"	"	"	"	kc	
<i>Surrogate(s): 4-BFB</i>				106%		85 - 115 %	"			"	
<i>Dibromofluoromethane</i>				94.4%		81 - 124 %	"			"	
<i>Toluene-d8</i>				92.6%		83 - 115 %	"			"	
<b>ASG0010-03 (DUP)</b>		<b>Water</b>			<b>Sampled: 07/06/09 10:24</b>						
Benzene	EPA 8260B	ND	----	0.500	ug/l	1x	9070015	07/07/09 09:50	07/07/09 11:35	kc	
Toluene	"	ND	----	1.00	"	"	"	"	"	kc	
Ethylbenzene	"	ND	----	1.00	"	"	"	"	"	kc	
Xylenes (total)	"	ND	----	3.00	"	"	"	"	"	kc	
<i>Surrogate(s): 4-BFB</i>				106%		85 - 115 %	"			"	
<i>Dibromofluoromethane</i>				88.4%		81 - 124 %	"			"	
<i>Toluene-d8</i>				91.2%		83 - 115 %	"			"	
<b>ASG0010-04 (Trip Blank)</b>		<b>Water</b>			<b>Sampled: 07/06/09 00:00</b>						
Benzene	EPA 8260B	ND	----	0.500	ug/l	1x	9070015	07/07/09 09:50	07/07/09 10:05	kc	
Toluene	"	ND	----	1.00	"	"	"	"	"	kc	
Ethylbenzene	"	ND	----	1.00	"	"	"	"	"	kc	
Xylenes (total)	"	ND	----	3.00	"	"	"	"	"	kc	
<i>Surrogate(s): 4-BFB</i>				107%		85 - 115 %	"			"	
<i>Dibromofluoromethane</i>				94.5%		81 - 124 %	"			"	
<i>Toluene-d8</i>				93.6%		83 - 115 %	"			"	

TestAmerica Anchorage



Johanna L Dreher, Client Services Manager

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<b>Alaska Resources &amp; Environmental Services</b>	Project Name: <b>Sahn Investments</b>	
P.O. Box 83050	Project Number: [none]	Report Created:
Fairbanks, AK 99708	Project Manager: Lyle Gresehover	07/10/09 16:44

**Diesel Range Organics (C10-C25) per AK102 - Laboratory Quality Control Results**  
 TestAmerica Anchorage

**QC Batch: 9070017**      **Water Preparation Method: EPA 3510**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
---------	--------	--------	------	-----	-------	-----	---------------	-----------	-------	----------	-------	----------	----------	-------

**Blank (9070017-BLK1)**

Extracted: 07/07/09 13:20

Diesel Range Organics	AK 102	ND	---	0.500	mg/l	1x	--	--	--	--	--	--	07/09/09 00:46	
<i>Surrogate(s): 1-Chlorooctadecane</i>		<i>Recovery: 84.8%</i>											<i>07/09/09 00:46</i>	

**LCS (9070017-BS1)**

Extracted: 07/07/09 13:20

Diesel Range Organics	AK 102	9.12	---	0.500	mg/l	1x	--	10.6	86.1%	(75-125)	--	--	07/08/09 23:41	
<i>Surrogate(s): 1-Chlorooctadecane</i>		<i>Recovery: 77.3%</i>											<i>07/08/09 23:41</i>	

**LCS Dup (9070017-BSD1)**

Extracted: 07/07/09 13:20

Diesel Range Organics	AK 102	10.3	---	0.500	mg/l	1x	--	10.6	96.9%	(75-125)	11.9%	(20)	07/09/09 00:13	
<i>Surrogate(s): 1-Chlorooctadecane</i>		<i>Recovery: 89.8%</i>											<i>07/09/09 00:13</i>	

**Duplicate (9070017-DUP1)**

QC Source: ASF0074-06

Extracted: 07/07/09 13:20

Diesel Range Organics	AK 102	ND	---	0.394	mg/l	1x	ND	--	--	--	6.04%	(20)	07/08/09 23:41	
<i>Surrogate(s): 1-Chlorooctadecane</i>		<i>Recovery: 79.7%</i>											<i>07/08/09 23:41</i>	

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*Johanna Dreher*

Johanna L Dreher, Client Services Manager

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<b>Alaska Resources &amp; Environmental Services</b>	Project Name: <b>Sahn Investments</b>	
P.O. Box 83050	Project Number: [none]	Report Created:
Fairbanks, AK 99708	Project Manager: Lyle Gresehover	07/10/09 16:44

**Selected Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results**  
 TestAmerica Anchorage

**QC Batch: 9070015      Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
---------	--------	--------	------	-----	-------	-----	---------------	-----------	-------	----------	-------	----------	----------	-------

**Blank (9070015-BLK1)**

Extracted: 07/06/09 09:50

Benzene	EPA 8260B	ND	---	0.500	ug/l	1x	--	--	--	--	--	--	07/07/09 19:34	
Toluene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Ethylbenzene	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Xylenes (total)	"	ND	---	3.00	"	"	--	--	--	--	--	--	"	
<i>Surrogate(s): 4-BFB</i>		<i>Recovery:</i>		<i>106%</i>		<i>Limits: 85-115%</i>	<i>"</i>						<i>07/07/09 19:34</i>	
<i>Dibromofluoromethane</i>		<i>97.4%</i>				<i>81-124%</i>	<i>"</i>						<i>"</i>	
<i>Toluene-d8</i>		<i>93.2%</i>				<i>83-115%</i>	<i>"</i>						<i>"</i>	

**LCS (9070015-BS1)**

Extracted: 07/06/09 09:50

Benzene	EPA 8260B	22.0	---	0.500	ug/l	1x	--	20.0	110%	(67-125)	--	--	07/07/09 16:34	
Toluene	"	19.5	---	1.00	"	"	--	"	97.4%	(80-120)	--	--	"	
Ethylbenzene	"	22.9	---	1.00	"	"	--	"	114%	"	--	--	"	
Xylenes (total)	"	67.0	---	3.00	"	"	--	60.0	112%	"	--	--	"	
<i>Surrogate(s): 4-BFB</i>		<i>Recovery:</i>		<i>106%</i>		<i>Limits: 85-115%</i>	<i>"</i>						<i>07/07/09 16:34</i>	
<i>Dibromofluoromethane</i>		<i>94.0%</i>				<i>81-124%</i>	<i>"</i>						<i>"</i>	
<i>Toluene-d8</i>		<i>99.6%</i>				<i>83-115%</i>	<i>"</i>						<i>"</i>	

**LCS (9070015-BS2)**

Extracted: 07/06/09 09:50

<i>4-BFB</i>		<i>105%</i>				<i>85-115%</i>	<i>1x</i>						<i>07/07/09 17:04</i>	
<i>Surrogate(s): Dibromofluoromethane</i>		<i>Recovery:</i>		<i>91.0%</i>		<i>Limits: 81-124%</i>	<i>"</i>						<i>07/07/09 17:04</i>	
<i>Toluene-d8</i>		<i>97.0%</i>				<i>83-115%</i>	<i>"</i>						<i>"</i>	

**LCS Dup (9070015-BSD1)**

Extracted: 07/06/09 09:50

Benzene	EPA 8260B	21.3	---	0.500	ug/l	1x	--	20.0	107%	(67-125)	3.32% (20)		07/07/09 18:04	
Toluene	"	18.5	---	1.00	"	"	--	"	92.4%	(80-120)	5.37%	"	"	
Ethylbenzene	"	21.9	---	1.00	"	"	--	"	109%	"	4.56%	"	"	
Xylenes (total)	"	64.3	---	3.00	"	"	--	60.0	107%	"	4.19%	"	"	
<i>Surrogate(s): 4-BFB</i>		<i>Recovery:</i>		<i>105%</i>		<i>Limits: 85-115%</i>	<i>"</i>						<i>07/07/09 18:04</i>	
<i>Dibromofluoromethane</i>		<i>96.4%</i>				<i>81-124%</i>	<i>"</i>						<i>"</i>	
<i>Toluene-d8</i>		<i>99.4%</i>				<i>83-115%</i>	<i>"</i>						<i>"</i>	

**LCS Dup (9070015-BSD2)**

Extracted: 07/06/09 09:50

<i>4-BFB</i>		<i>107%</i>				<i>85-115%</i>	<i>1x</i>						<i>07/07/09 18:34</i>	
<i>Surrogate(s): Dibromofluoromethane</i>		<i>Recovery:</i>		<i>90.4%</i>		<i>Limits: 81-124%</i>	<i>"</i>						<i>07/07/09 18:34</i>	
<i>Toluene-d8</i>		<i>95.6%</i>				<i>83-115%</i>	<i>"</i>						<i>"</i>	

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*Johanna Dreher*

Johanna L Dreher, Client Services Manager

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<b>Alaska Resources &amp; Environmental Services</b>	Project Name: <b>Sahn Investments</b>	
P.O. Box 83050	Project Number: [none]	Report Created:
Fairbanks, AK 99708	Project Manager: Lyle Gresehover	07/10/09 16:44

**Selected Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results**  
 TestAmerica Anchorage

**QC Batch: 9070015      Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
---------	--------	--------	------	-----	-------	-----	---------------	-----------	-------	----------	-------	----------	----------	-------

<b>Duplicate (9070015-DUP1)</b>			QC Source: ASG0010-03					Extracted: 07/06/09 09:50						
4-BFB		104%			85-115%	1x								07/07/09 21:05
Surrogate(s): Dibromofluoromethane		Recovery: 104%			Limits: 81-124%	"								07/07/09 21:05
Toluene-d8		88.8%			83-115%	"								"

<b>Matrix Spike (9070015-MS1)</b>			QC Source: ASG0010-01					Extracted: 07/06/09 09:50						
Benzene	EPA 8260B	19.1	---	0.500	ug/l	1x	ND	20.0	95.7%	(65-138)	--	--	07/07/09 21:35	
Toluene	"	17.0	---	1.00	"	"	0.360	"	83.4%	(80-120)	--	--	"	
Ethylbenzene	"	20.2	---	1.00	"	"	ND	"	101%	(76-130)	--	--	"	
Xylenes (total)	"	61.8	---	3.00	"	"	1.90	60.0	99.8%	(65-140)	--	--	"	
Surrogate(s): 4-BFB		Recovery: 106%			Limits: 85-115%	"								07/07/09 21:35
Dibromofluoromethane		96.8%			81-124%	"								"
Toluene-d8		90.6%			83-115%	"								"

<b>Matrix Spike Dup (9070015-MSD1)</b>			QC Source: ASG0010-01					Extracted: 07/06/09 09:50						
Benzene	EPA 8260B	18.1	---	0.500	ug/l	1x	ND	20.0	90.6%	(65-138)	5.53% (20)		07/07/09 22:05	
Toluene	"	16.4	---	1.00	"	"	0.360	"	80.4%	(80-120)	3.70%	"	"	
Ethylbenzene	"	19.3	---	1.00	"	"	ND	"	96.6%	(76-130)	4.21%	"	"	
Xylenes (total)	"	59.1	---	3.00	"	"	1.90	60.0	95.4%	(65-140)	4.43%	"	"	
Surrogate(s): 4-BFB		Recovery: 107%			Limits: 85-115%	"								07/07/09 22:05
Dibromofluoromethane		91.4%			81-124%	"								"
Toluene-d8		91.1%			83-115%	"								"

TestAmerica Anchorage

*Johanna Dreher*

Johanna L Dreher, Client Services Manager

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**Alaska Resources & Environmental Services**

P.O. Box 83050  
Fairbanks, AK 99708

Project Name: **Sahn Investments**  
Project Number: [none]  
Project Manager: Lyle Gresehover

Report Created:  
07/10/09 16:44

## Notes and Definitions

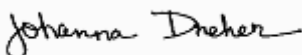
### Report Specific Notes:

None

### Laboratory Reporting Conventions:

- DET - Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.
- ND - Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).
- NR/NA - Not Reported / Not Available
- dry - Sample results reported on a Dry Weight Basis. Results and Reporting Limits have been corrected for Percent Dry Weight.
- wet - Sample results and reporting limits reported on a Wet Weight Basis (as received). Results with neither 'wet' nor 'dry' are reported on a Wet Weight Basis.
- RPD - RELATIVE PERCENT DIFFERENCE (RPDs calculated using Results, not Percent Recoveries).
- MRL - METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table.
- MDL\* - METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B. \*MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated Results.
- Dil - Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data.
- Reporting Limits - Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.
- Electronic Signature - Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy*. Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

TestAmerica Anchorage



Johanna L Dreher, Client Services Manager

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# Test America Cooler Receipt Form

(Army Corps. Compliant)

WORK ORDER # ASG0010 CLIENT: ARES PROJECT: Sahn Investments  
Date /Time Cooler Arrived 7/6/09 16:45 Cooler signed for by: Kelsey Gerbrandt  
(Print name)

## Preliminary Examination Phase:

Date cooler opened:  same as date received or \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_

Cooler opened by (print) Kelsey Gerbrandt (sign) [Signature]

1. Delivered by  ALASKA AIRLINES  Fed-Ex  UPS  NAC  LYNDEN  CLIENT  Other: \_\_\_\_\_

Shipment Tracking # if applicable 7192 8054 (include copy of shipping papers in file)

2. Number of Custody Seals 1 Signed by Jason Greeshorer Date 7/6/09

Were custody seals unbroken and intact on arrival?  Yes  No

3. Were custody papers sealed in a plastic bag?  Yes  No

4. Were custody papers filled out properly (ink, signed, etc.)?  Yes  No

5. Did you sign the custody papers in the appropriate place?  Yes  No

6. Was ice used?  Yes  No Type of ice:  blue ice  gel ice  real ice  dry ice Condition of Ice: solid

Temperature by Digi-Thermo Probe 3.5 °C Thermometer # 4  
Acceptance Criteria: 0 - 6°C

7. Packing in Cooler:  bubble wrap  styrofoam  cardboard  Other: \_\_\_\_\_

8. Did samples arrive in plastic bags?  Yes  No

9. Did all bottles arrive unbroken, and with labels in good condition?  Yes  No

10. Are all bottle labels complete (ID, date, time, etc.)?  Yes  No

11. Do bottle labels and Chain of Custody agree?  Yes  No

*missing trip blank on COC, bottle # incorrect*

12. Are the containers and preservatives correct for the tests indicated?  Yes  No

13. Conoco Phillips, Alyeska, BP H2O samples only: pH < 2?  Yes  No  N/A

14. Is there adequate volume for the tests requested?  Yes  No

15. Were VOA vials free of bubbles?  N/A  Yes  No

If "NO" which containers contained "head space" or bubbles? 04A

## Log-in Phase:

Date of sample log-in 7/7/09

Samples logged in by (print) Kelsey Gerbrandt (sign) [Signature]

1. Was project identifiable from custody papers?  Yes  No

2. Do Turn Around Times and Due Dates agree?  Yes  No

3. Was the Project Manager notified of status?  Yes  No

4. Was the Lab notified of status?  Yes  No

5. Was the COC scanned and copied?  Yes  No

ASG0010

**Custody Seal**

DATE 7/6/09 [Signature]  
SIGNATURE

**TestAmerica**

THE LEADER IN ENVIRONMENTAL TESTING  
362756

**ANC**

Goldstreak

027 FAI 7192 8054

AS	156	ANC	1459
<i>North Creek Test Area</i>			



Date	06 JUL 09	SHIPPER	PHONE #
Pieces	1		330 497 9396
Total Weight	18	CONSIGNEE	PHONE #
Piece Weight			330 497 9396
Box Number	1		

Goldstreak

Goldstreak

Alaska Air Cargo

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