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October 19, 2006

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Alaska Department of Natural Resources
550 West 7th Avenue, Suite 1020
Anchorage, Alaska 99501-3566

DEPT. OF ENVIRONMENTAL
CONSERVATION

Attn: Mike Sullivan

Fax: (907) 269-8931

**RE: SURFACE STAIN CHARACTERIZATION, MENTAL HEALTH TRUST
AUTHORITY LAND, KNIK, ALASKA**

This letter report presents Shannon & Wilson's surface stain characterization activities at the Mental Health Trust (MHT) Authority-owned land in the vicinity of Goose Bay in Knik, Alaska. The legal description of the parcel is the South ½, Southwest ¼, Section 8, Township 15 North, Range 3 West, Seward Meridian. The parcel has been used without permission as a shooting range and miscellaneous items have been abandoned at the site. This work was conducted under our Statewide Hazardous Materials Contract with the Alaska Department of Transportation & Public Facilities (ADOT&PF) numbered PSA 42081. We conducted this portion of the work as a negotiated change to our scope that was authorized with Notice To Proceed (NTP) 04c.

BACKGROUND

During a site visit in September 2005, four 55-gallon drums were observed by a representative of Shannon & Wilson. The drums were empty and had numerous holes. Stained surface soil was noted in the vicinity of the drums, as shown in Figure 1. During a second visit on June 1, 2006, we observed that two of the drums had been moved to different areas of the site. Staining was not observed at the new location of these two drums. The project purpose was to characterize the stained soil observed in the former leaking-drum location.

FIELD ACTIVITIES

The field scope consisted of collecting soil samples and obtaining global positioning system (GPS) coordinates of sampling locations. The field activities were conducted in general accordance with the 18 AAC 75 Oil and Other Hazardous Substances regulations, as amended through October 16, 2005.

A Shannon & Wilson representative mobilized to the site on August 1, 2006, to collect a characterization sample and GPS coordinates of the stain location. The stained soil area was

Mental Health Trust Authority Land, Knik, Alaska

October 19, 2006

Page 2

approximately 15-feet long and 10-feet wide. No drums were observed at the time of our site visit. Based on readings obtained using a handheld GPS unit, the stain is located at $58^{\circ}16.381' N$ and $134^{\circ}22.759' W$ (NAD83 Datum). One soil sample, designated Sample SS1, was collected from the stained surface soil. A second sample, designated Sample SS2, was collected from approximately 1 foot below the stained surface soil. The two soil samples were delivered to SGS Environmental Services in Anchorage, Alaska, using chain-of-custody procedures.

*this is
in
general!*

LABORATORY ANALYSES

Two soil samples were submitted to SGS Environmental Services Inc (SGS) and analyzed for gasoline range organics (GRO) by Alaska Method 101 (AK 101); volatile organic compounds (VOCs) by Environmental Protection Agency (EPA) Method 8260B (EPA 8260B); diesel range organics (DRO) by AK 102; residual range organics (RRO) by AK 103; and Resource Conservation and Recovery Act (RCRA) Metals by EPA 6000/7000 series. For quality control purposes, one soil trip blank was analyzed for GRO/VOCs by AK 101/EPA 8260B. The analytical soil results are summarized below.

DISCUSSION OF ANALYTICAL RESULTS

Sample SS1 contained 98,400 mg/kg residual range organics (RRO), exceeding the Alaska Department of Environmental Conservation (ADEC) cleanup criterion of 11,000 mg/kg RRO. Additionally, concentrations of 0.701 and 0.545 mg/kg tetrachloroethene (PCE) were detected in Samples SS1 and SS2, respectively. The PCE concentrations exceed the ADEC cleanup criterion of 0.03 mg/kg. Concentrations of arsenic reported as 6.03 mg/kg and 6.11 mg/kg were detected in Samples SS1 and SS2, respectively, which are greater than the applicable ADEC cleanup criterion of 2 mg/kg. It is Shannon & Wilson's opinion that the arsenic concentrations detected in the samples are consistent with background arsenic concentrations typically found in the area. The remaining analytes were either not detected or not detected at concentrations greater than the applicable ADEC cleanup criteria. The approximate sample location is shown on Figure 1. The analytical results for these samples and completed ADEC Laboratory Data Review Checklist are included in Attachment 1.

For quality control purposes, a soil trip blank accompanied the sample jars to the project site and back to SGS. The soil trip blank did not contain detectable concentrations of VOCs, indicating that the samples were not cross contaminated or exposed to contamination from the sample handling and storage process. As indicated in ADEC Laboratory Data Review Checklist in Attachment 1, the laboratory detection limit for Sample SS1 was elevated. As a result, the practical quantitation limit (PQL), 4,260 mg/kg, is greater than the applicable ADEC DRO

cleanup criteria of 250 mg/kg. Consequently, the DRO concentration for Sample SS1 is unknown and could also exceed the ADEC cleanup levels.

CONCLUSIONS AND RECOMMENDATIONS

Based on the analytical results, RRO impacted soil is present in the surface soils in concentrations greater than the ADEC cleanup criterion. Additionally, PCE contaminated soil exceeding ADEC cleanup criterion extends to a depth of at least 1 foot below ground surface. The extent of the contaminated soil is unknown. We recommend excavating and thermally treating the stained soil in the vicinity of the former leaking drums. Note that this area is reportedly a former military landfill/dump site. Potential exists for encountering additional contaminants and potential environmental concerns not identified or beyond the scope of our stained soil characterization efforts.

LIMITATIONS

This report was prepared for the exclusive use of our clients and their representatives in the study of this site. The findings we have presented within this report are based on the limited research, sampling, and analyses that we conducted. They should not be construed as a definite conclusion regarding the site's soil conditions. It is possible that our subsurface tests missed higher levels of petroleum hydrocarbon constituents, although our intention was to sample areas likely to be impacted. In addition, it is noted that our limited assessment was focused on only one portion of the site, and may not be representative of conditions across the site. As a result, the sampling and analyses performed can provide you with only our professional judgment as to the environmental characteristics of this site, and in no way guarantees that an agency or its staff will reach the same conclusions as Shannon & Wilson, Inc. The data presented in this report should be considered representative of the time of our site assessment. Changes in site conditions can occur over time, due to natural forces or human activity. In addition, changes in government codes, regulations, or laws may occur. Because of such changes beyond our control, our observations and interpretations may need to be revised.

Shannon & Wilson has prepared the attachments in Attachment 2 "Important Information About Your Geotechnical/Environmental Report," to assist you and others in understanding the use and limitations of our reports. You are advised that various state and federal agencies (ADEC, EPA, etc.) may require the reporting of this information. Shannon & Wilson does not assume the responsibility for reporting these findings and therefore, has not, and will not, disclose the results of this study, except with your permission or as required by law.

Mental Health Trust Authority Land, Knik, Alaska
October 19, 2006
Page 4

SHANNON & WILSON, INC.

We appreciate the opportunity to be of service. Please call Jessica Busey or the undersigned at (907) 561-2120 with questions or comments concerning the contents of this report.

Sincerely,

SHANNON & WILSON, INC.



Stafford Glashan, P.E.
Vice President

encl: Figure 1, and Attachments 1 and 2

Approximate location of Sample SS1 collected on August 1, 2006.

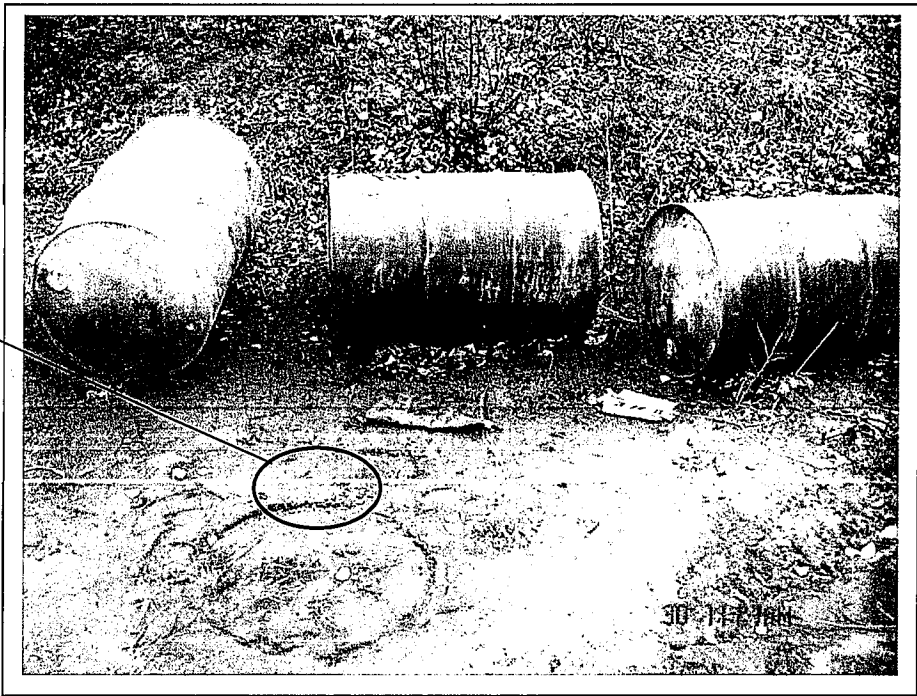



Photo 1: During a site visit in September 2005, stained soil was noted in the vicinity of some leaking drums.

Mental Health Trust Authority Land Knik, Alaska	
SITE PLAN	
October 2006	32-1-16973-005
 SHANNON & WILSON, INC. Geotechnical & Environmental Consultants	Fig. 1

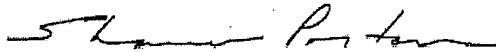
ATTACHMENT 1
RESULTS OF ANALYTICAL TESTING
BY SGS ENVIRONMENTAL SERVICES INC.
OF ANCHORAGE, ALASKA



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

Project: 32-1-16973-005 Goose Bay
Client: Shannon & Wilson Inc.
SGS Work Order: 1064381

Released by:


Alaska Division Project Manager

Shane Poston
2006.10.10 10:31:24 -08'00'

Contents:

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

Note:

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

*Note: Sample 16973-005-SS1 collected from an adjacent site,
and reported under separate cover. Lab review checklist
only applies to samples 16973-005-SS1 +SS2*



Case Narrative

Client SHANNOT Shannon & Wilson Inc.
Workorder 1064381 32-1-16973-005 Goose Bay

Printed Date/Time 10/10/2006 10:27

Sample ID Client Sample ID

720371 MSD B5-10(1064181001MSD)

6020 - MSD recovery for Ba was outside of acceptance criteria. Post digestion spike was successful.

720398 CCV LABQC

8260 - CCV recoveries for several non-target analytes do not meet QC recovery goals. Sample results are not affected.



SGS Ref.# 1064381001
 Client Name Shannon & Wilson Inc.
 Project Name/# 32-1-16973-005 Goose Bay
 Client Sample ID 16973-005-SPS1
 Matrix Other Solids (Wet Weight)

All Dates/Times are Alaska Standard Time
 Printed Date/Time 10/10/2006 10:27
 Collected Date/Time 08/01/2006 11:50
 Received Date/Time 08/01/2006 15:25
 Technical Director Stephen C. Ede

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Characterization									
Aqueous Phase, Total	0.0		%	TCLP	A			08/03/06	BSJ
Oil Phase, Total	0.0		%	TCLP	A			08/03/06	BSJ
Solid Phase, Total	100		%	TCLP	A			08/03/06	BSJ
TCLP Volatiles GC/MS									
1,1-Dichloroethene	ND	50.0	ug/L	SW8260B TCLP	A	(<700)	08/14/06	08/14/06	WAW
1,2-Dichloroethane	ND	25.0	ug/L	SW8260B TCLP	A	(<500)	08/14/06	08/14/06	WAW
1,4-Dichlorobenzene	ND	25.0	ug/L	SW8260B TCLP	A	(<7500)	08/14/06	08/14/06	WAW
2-Butanone (MEK)	ND	500	ug/L	SW8260B TCLP	A	(<200000)	08/14/06	08/14/06	WAW
Benzene	ND	20.0	ug/L	SW8260B TCLP	A	(<500)	08/14/06	08/14/06	WAW
Carbon tetrachloride	ND	50.0	ug/L	SW8260B TCLP	A	(<500)	08/14/06	08/14/06	WAW
Chlorobenzene	ND	25.0	ug/L	SW8260B TCLP	A	(<100000)	08/14/06	08/14/06	WAW
Chloroform	ND	50.0	ug/L	SW8260B TCLP	A	(<6000)	08/14/06	08/14/06	WAW
Hexachlorobutadiene	ND	50.0	ug/L	SW8260B TCLP	A	(<500)	08/14/06	08/14/06	WAW
Tetrachloroethene	ND	50.0	ug/L	SW8260B TCLP	A	(<700)	08/14/06	08/14/06	WAW
Trichloroethene	ND	50.0	ug/L	SW8260B TCLP	A	(<500)	08/14/06	08/14/06	WAW
Vinyl chloride	ND	50.0	ug/L	SW8260B TCLP	A	(<200)	08/14/06	08/14/06	WAW
Surrogates									
1,2-Dichloroethane-D4 <surr>	104		%	SW8260B TCLP	A	72-119	08/14/06	08/14/06	WAW
4-Bromofluorobenzene <surr>	101		%	SW8260B TCLP	A	79-119	08/14/06	08/14/06	WAW
Dibromofluoromethane <surr>	99.9		%	SW8260B TCLP	A	85-115	08/14/06	08/14/06	WAW
Toluene-d8 <surr>	99.6		%	SW8260B TCLP	A	85-120	08/14/06	08/14/06	WAW



SGS Ref.# 1064381002
 Client Name Shannon & Wilson Inc.
 Project Name/# 32-1-16973-005 Goose Bay
 Client Sample ID 16973-005-SS1
 Matrix Soil/Solid

All Dates/Times are Alaska Standard Time
 Printed Date/Time 10/10/2006 10:27
 Collected Date/Time 08/01/2006 12:45
 Received Date/Time 08/01/2006 15:25
 Technical Director Stephen C. Ede

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<u>Semivolatile Organic Fuels Department</u>									
<u>Volatile Gas Chromatography/Mass Spectroscopy</u>									
Dichlorodifluoromethane	ND	22.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Chloromethane	ND	22.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Vinyl chloride	ND	22.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Bromomethane	ND	176	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Chloroethane	ND	176	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Trichlorofluoromethane	ND	22.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
1,1-Dichloroethene	ND	22.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Acetone	ND	220	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Carbon disulfide	ND	88.2	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Methylene chloride	ND	88.2	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
trans-1,2-Dichloroethene	ND	22.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
2-Butanone (MEK)	ND	220	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
2,2-Dichloropropane	ND	22.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
1,1,1-Trichloroethane	ND	22.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
1,1-Dichloroethane	ND	22.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
cis-1,2-Dichloroethene	ND	22.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Bromochloromethane	ND	22.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Chloroform	ND	22.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Carbon tetrachloride	ND	22.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Benzene	ND	11.5	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
1,1-Dichloropropene	ND	22.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
1,2-Dichloroethane	ND	22.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Trichloroethene	ND	22.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
1,2-Dichloropropane	ND	22.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Dibromomethane	ND	22.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Bromodichloromethane	ND	22.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
1,1,2-Trichloroethane	ND	22.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
2-Chloroethyl Vinyl Ether	ND	88.2	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM



SGS Ref.# 1064381002
 Client Name Shannon & Wilson Inc.
 Project Name/# 32-1-16973-005 Goose Bay
 Client Sample ID 16973-005-SS1
 Matrix Soil/Solid

All Dates/Times are Alaska Standard Time

Printed Date/Time 10/10/2006 10:27
 Collected Date/Time 08/01/2006 12:45
 Received Date/Time 08/01/2006 15:25
 Technical Director Stephen C. Ede

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<u>Volatile Gas Chromatography/Mass Spectroscopy</u>									
1,2-Dichlorobenzene	ND	22.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
n-Butylbenzene	ND	22.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
1,2-Dibromo-3-chloropropane	ND	88.2	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
1,2,4-Trichlorobenzene	ND	44.1	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Hexachlorobutadiene	ND	44.1	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Naphthalene	ND	44.1	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
1,2,3-Trichlorobenzene	ND	44.1	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Methyl-t-butyl ether	ND	35.3	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Xylenes (total)	ND	88.2	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
<u>Surrogates</u>									
Dibromofluoromethane <surr>	103		%	SW8260B	A	83-119	08/01/06	08/05/06	SPM
1,2-Dichloroethane-D4 <surr>	111		%	SW8260B	A	85-115	08/01/06	08/05/06	SPM
Toluene-d8 <surr>	112		%	SW8260B	A	87-115	08/01/06	08/05/06	SPM
4-Bromofluorobenzene <surr>	76.6		%	SW8260B	A	50-154	08/01/06	08/05/06	SPM

<u>Solids</u>									
Total Solids	93.6		%	SM20 2540G	B			08/07/06	BNE



GS Ref.# 1064381003
 Client Name Shannon & Wilson Inc.
 Project Name/# 32-1-16973-005 Goose Bay
 Client Sample ID 16973-005-SS2
 Matrix Soil/Solid

All Dates/Times are Alaska Standard Time
 Printed Date/Time 10/10/2006 10:27
 Collected Date/Time 08/01/2006 12:50
 Received Date/Time 08/01/2006 15:25
 Technical Director Stephen C. Ede

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<u>Volatile Gas Chromatography/Mass Spectroscopy</u>									
Dichlorodifluoromethane	ND	23.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Chloromethane	ND	23.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Vinyl chloride	ND	23.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Bromomethane	ND	184	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Chloroethane	ND	184	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Trichlorofluoromethane	ND	23.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
1,1-Dichloroethene	ND	23.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Acetone	ND	230	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Carbon disulfide	ND	91.8	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Methylene chloride	ND	91.8	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
trans-1,2-Dichloroethene	ND	23.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
2-Butanone (MEK)	ND	230	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
2,2-Dichloropropane	ND	23.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
1,1,1-Trichloroethane	ND	23.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
1,1-Dichloroethane	ND	23.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
cis-1,2-Dichloroethene	ND	23.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Bromochloromethane	ND	23.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Chloroform	ND	23.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Carbon tetrachloride	ND	23.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Benzene	ND	11.9	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
1,2-Dichloroethane	ND	23.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
1,1-Dichloropropene	ND	23.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Trichloroethene	ND	23.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
1,2-Dichloropropane	ND	23.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Dibromomethane	ND	23.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Bromodichloromethane	ND	23.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
2-Chloroethyl Vinyl Ether	ND	91.8	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
1,1,2-Trichloroethane	ND	23.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
cis-1,3-Dichloropropene	ND	23.0	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
4-Methyl-2-pentanone (MIBK)	ND	230	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM



SGS Ref.# 1064381003
Client Name Shannon & Wilson Inc.
Project Name/# 32-1-16973-005 Goose Bay
Client Sample ID 16973-005-SS2
Matrix Soil/Solid

All Dates/Times are Alaska Standard Time

Printed Date/Time 10/10/2006 10:27
Collected Date/Time 08/01/2006 12:50
Received Date/Time 08/01/2006 15:25
Technical Director Stephen C. Ede

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<u>Volatile Gas Chromatography/Mass Spectroscopy</u>									
1,2-Dibromo-3-chloropropane	ND	91.8	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
1,2,4-Trichlorobenzene	ND	45.9	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Hexachlorobutadiene	ND	45.9	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Naphthalene	ND	45.9	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
1,2,3-Trichlorobenzene	ND	45.9	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Methyl-t-butyl ether	ND	36.7	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Xylenes (total)	ND	91.8	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
<u>Surrogates</u>									
Dibromofluoromethane <surr>	104		%	SW8260B	A	83-119	08/01/06	08/05/06	SPM
1,2-Dichloroethane-D4 <surr>	112		%	SW8260B	A	85-115	08/01/06	08/05/06	SPM
Toluene-d8 <surr>	110		%	SW8260B	A	87-115	08/01/06	08/05/06	SPM
4-Bromofluorobenzene <surr>	112		%	SW8260B	A	50-154	08/01/06	08/05/06	SPM
<u>Solids</u>									
Total Solids	91.3		%	SM20.2540G	B			08/07/06	BNE



GS Ref.# 1064381004
 Client Name Shannon & Wilson Inc.
 Project Name/# 32-1-16973-005 Goose Bay
 Client Sample ID TB1
 Matrix Soil/Solid

All Dates/Times are Alaska Standard Time

Printed Date/Time 10/10/2006 10:27
 Collected Date/Time 08/01/2006 12:45
 Received Date/Time 08/01/2006 15:25
 Technical Director Stephen C. Ede

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Gas Chromatography/Mass Spectroscopy									
1,2-Dichloroethane	ND	25.4	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Trichloroethene	ND	25.4	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
1,2-Dichloropropane	ND	25.4	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Dibromomethane	ND	25.4	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Bromodichloromethane	ND	25.4	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
1,1,2-Trichloroethane	ND	25.4	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
2-Chloroethyl Vinyl Ether	ND	102	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
cis-1,3-Dichloropropene	ND	25.4	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
4-Methyl-2-pentanone (MIBK)	ND	254	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Toluene	ND	50.8	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
trans-1,3-Dichloropropene	ND	25.4	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Tetrachloroethene	ND	25.4	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
1,3-Dichloropropane	ND	25.4	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
2-Hexanone	ND	254	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Dibromochloromethane	ND	25.4	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
1,1,1,2-Tetrachloroethane	ND	25.4	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
1,2-Dibromoethane	ND	25.4	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Chlorobenzene	ND	25.4	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Ethylbenzene	ND	25.4	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
P & M -Xylene	ND	50.8	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
o-Xylene	ND	50.8	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Styrene	ND	25.4	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Bromoform	ND	25.4	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Isopropylbenzene (Cumene)	ND	25.4	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
Bromobenzene	ND	25.4	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
1,2,3-Trichloropropane	ND	50.8	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
1,1,2,2-Tetrachloroethane	ND	50.8	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
n-Propylbenzene	ND	25.4	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
2-Chlorotoluene	ND	25.4	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM
4-Chlorotoluene	ND	25.4	ug/Kg	SW8260B	A		08/01/06	08/05/06	SPM



SGS Ref.# 718190 Method Blank
Client Name Shannon & Wilson Inc.
Project Name/# 32-1-16973-005 Goose Bay
Matrix Soil/Solid

Printed Date/Time 10/10/2006 10:27
Prep Batch VXX15727
Method SW5035A
Date 08/04/2006

QC results affect the following production samples:
1064381002, 1064381003, 1064381004

Parameter	Results	Reporting/Control Limit	MDL	Units	Analysis Date
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Volatile Gas Chromatography/Mass Spectroscopy



SGS Ref.# 718190 Method Blank
Client Name Shannon & Wilson Inc.
Project Name/# 32-1-16973-005 Goose Bay
Matrix Soil/Solid

Printed Date/Time 10/10/2006 10:27
Prep Batch VXX15727
Method SW5035A
Date 08/04/2006

Parameter	Results	Reporting/Control Limit	MDL	Units	Analysis Date
Volatile Gas Chromatography/Mass Spectroscopy					
Ethylbenzene	ND	25.0	7.80	ug/Kg	08/04/06
P & M -Xylene	ND	50.0	15.0	ug/Kg	08/04/06
o-Xylene	ND	50.0	15.0	ug/Kg	08/04/06
Styrene	ND	25.0	7.80	ug/Kg	08/04/06
Bromoform	ND	25.0	7.80	ug/Kg	08/04/06
Isopropylbenzene (Cumene)	ND	25.0	7.80	ug/Kg	08/04/06
Bromobenzene	ND	25.0	7.80	ug/Kg	08/04/06
1,2,3-Trichloropropane	ND	50.0	15.0	ug/Kg	08/04/06
n-Propylbenzene	ND	25.0	7.80	ug/Kg	08/04/06
1,1,2,2-Tetrachloroethane	ND	50.0	15.0	ug/Kg	08/04/06
2-Chlorotoluene	ND	25.0	7.80	ug/Kg	08/04/06
4-Chlorotoluene	ND	25.0	7.80	ug/Kg	08/04/06
1,3,5-Trimethylbenzene	ND	25.0	7.80	ug/Kg	08/04/06
tert-Butylbenzene	ND	25.0	7.80	ug/Kg	08/04/06
1,2,4-Trimethylbenzene	ND	25.0	7.80	ug/Kg	08/04/06
sec-Butylbenzene	ND	25.0	7.80	ug/Kg	08/04/06
1,3-Dichlorobenzene	ND	25.0	7.80	ug/Kg	08/04/06
4-Isopropyltoluene	ND	25.0	7.80	ug/Kg	08/04/06
1,4-Dichlorobenzene	ND	25.0	7.80	ug/Kg	08/04/06
1,2-Dichlorobenzene	ND	25.0	7.80	ug/Kg	08/04/06
n-Butylbenzene	ND	25.0	7.80	ug/Kg	08/04/06
1,2-Dibromo-3-chloropropane	ND	100	31.0	ug/Kg	08/04/06
1,2,4-Trichlorobenzene	ND	50.0	15.0	ug/Kg	08/04/06
Hexachlorobutadiene	ND	50.0	15.0	ug/Kg	08/04/06
Naphthalene	ND	50.0	15.0	ug/Kg	08/04/06
Methyl-t-butyl ether	ND	40.0	12.0	ug/Kg	08/04/06
1,2,3-Trichlorobenzene	ND	50.0	15.0	ug/Kg	08/04/06
Xylenes (total)	ND	100	30.0	ug/Kg	08/04/06
Surrogates					
Dibromofluoromethane <surr>	104	83-119		%	08/04/06
1,2-Dichloroethane-D4 <surr>	117	* 85-115		%	08/04/06
Toluene-d8 <surr>	111	87-115		%	08/04/06
4-Bromofluorobenzene <surr>	116	50-154		%	08/04/06

Batch VMS8563
Method SW8260B
Instrument HP 5890 Series II MS1 VMA



SGS Ref.# 718608 Method Blank
Client Name Shannon & Wilson Inc.
Project Name/# 32-1-16973-005 Goose Bay
Matrix Soil/Solid

Printed Date/Time 10/10/2006 10:27
Prep Batch
Method
Date

QC results affect the following production samples:
1064381002, 1064381003, 1064381004

Parameter	Results	Reporting/Control Limit	MDL	Units	Analysis Date
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<u>Solids</u>					
Total Solids	99.9			%	08/07/06

Batch SPT6887
Method SM20 2540G
Instrument



GS Ref.# 719553 Method Blank
Client Name Shannon & Wilson Inc.
Project Name/# 32-1-16973-005 Goose Bay
Matrix Soil/Solid

Printed Date/Time 10/10/2006 10:27
Prep Batch MXX17966
Method METHOD
Date 08/10/2006

QC results affect the following production samples:
1064381002, 1064381003

Parameter	Results	Reporting/Control Limit	MDL	Units	Analysis Date
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Metals Department

Mercury	ND	40.0	12.0	ug/Kg	08/11/06
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Batch MCV3465
Method SW7471A
Instrument HgAA Leeman AutoAnalyzer PS200



GS Ref.# 719989 Method Blank
Client Name Shannon & Wilson Inc.
Project Name/# 32-1-16973-005 Goose Bay
Matrix Water (Surface, Eff., Ground)

Printed Date/Time 10/10/2006 10:27
Prep Batch VXX15775
Method SW5030B
Date 08/14/2006

QC results affect the following production samples:
1064381001

Parameter	Results	Reporting/Control Limit	MDL	Units	Analysis Date
<u>Volatile Gas Chromatography/Mass Spectroscopy</u>					
Vinyl chloride	ND	1.00	0.310	ug/L	08/14/06
1,1-Dichloroethene	ND	1.00	0.310	ug/L	08/14/06
2-Butanone (MEK)	ND	10.0	3.10	ug/L	08/14/06
Chloroform	ND	1.00	0.300	ug/L	08/14/06
Carbon tetrachloride	ND	1.00	0.310	ug/L	08/14/06
Benzene	ND	0.400	0.120	ug/L	08/14/06
Trichloroethene	ND	1.00	0.310	ug/L	08/14/06
Tetrachloroethene	ND	1.00	0.310	ug/L	08/14/06
Chlorobenzene	ND	0.500	0.150	ug/L	08/14/06
1,4-Dichlorobenzene	ND	0.500	0.150	ug/L	08/14/06
Hexachlorobutadiene	ND	1.00	0.310	ug/L	08/14/06
1,2-Dichloroethane	ND	0.500	0.150	ug/L	08/14/06
Surrogates					
Dibromofluoromethane <surr>	99.9	85-115		%	08/14/06
1,2-Dichloroethane-D4 <surr>	107	72-119		%	08/14/06
Toluene-d8 <surr>	99.3	85-120		%	08/14/06
4-Bromofluorobenzene <surr>	102	76-119		%	08/14/06
Batch	VMS8591				
Method	SW8260B TCLP				
Instrument	HP 5890 Series II MS3 VNA				



GS Ref.# 720368 Method Blank
Client Name Shannon & Wilson Inc.
Project Name/# 32-1-16973-005 Goose Bay
Matrix Soil/Solid

Printed Date/Time 10/10/2006 10:27
Prep Batch MXX17986
Method SW3050B
Date 08/14/2006

QC results affect the following production samples:
1064381002, 1064381003

Parameter	Results	Reporting/Control Limit	MDL	Units	Analysis Date
<u>Metals by ICP/MS</u>					
Arsenic	ND	1.00	0.310	mg/Kg	08/16/06
Barium	ND	0.300	0.0940	mg/Kg	08/16/06
Cadmium	0.0893 J	0.200	0.0620	mg/Kg	08/16/06
Chromium	ND	0.400	0.120	mg/Kg	08/16/06
Lead	ND	0.200	0.0620	mg/Kg	08/16/06
Selenium	ND	0.500	0.150	mg/Kg	08/16/06
Silver	ND	0.100	0.0310	mg/Kg	08/16/06

Batch MMS4346
Method SW6020
Instrument Perkin Elmer Sciex ICP-MS P3



SGS Ref.# 718191 Lab Control Sample
718192 Lab Control Sample Duplicate
Client Name Shannon & Wilson Inc.
Project Name/# 32-1-16973-005 Goose Bay
Matrix Soil/Solid

Printed Date/Time 10/10/2006 10:27
Prep Batch VXX15727
Method SW5035A
Date 08/04/2006

QC results affect the following production samples:

1064381002, 1064381003, 1064381004

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
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Volatile Gas Chromatography/Mass Spectroscopy

SGS Ref.# 718191 Lab Control Sample
 718192 Lab Control Sample Duplicate
 Client Name Shannon & Wilson Inc.
 Project Name/# 32-1-16973-005 Goose Bay
 Matrix Soil/Solid

Printed Date/Time 10/10/2006 10:27
 Prep Batch VXX15727
 Method SW5035A
 Date 08/04/2006

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
<u>Volatile Gas Chromatography/Mass Spectroscopy</u>							
1,1,1-Trichloroethane	LCS 772	103	(85-118)			750 ug/Kg	08/04/2006
	LCSD 785	105		2	(< 20)	750 ug/Kg	08/04/2006
1,1-Dichloroethane	LCS 780	104	(85-120)			750 ug/Kg	08/04/2006
	LCSD 789	105		1	(< 20)	750 ug/Kg	08/04/2006
Bromochloromethane	LCS 706	94	(82-125)			750 ug/Kg	08/04/2006
	LCSD 736	98		4	(< 20)	750 ug/Kg	08/04/2006
Chloroform	LCS 742	99	(80-122)			750 ug/Kg	08/04/2006
	LCSD 761	101		3	(< 20)	750 ug/Kg	08/04/2006
Carbon tetrachloride	LCS 788	105	(81-127)			750 ug/Kg	08/04/2006
	LCSD 800	107		2	(< 20)	750 ug/Kg	08/04/2006
Benzene	LCS 746	100	(85-121)			750 ug/Kg	08/04/2006
	LCSD 766	102		3	(< 20)	750 ug/Kg	08/04/2006
1,2-Dichloroethane	LCS 803	107	(85-125)			750 ug/Kg	08/04/2006
	LCSD 825	110		3	(< 20)	750 ug/Kg	08/04/2006
1,1-Dichloropropene	LCS 777	104	(88-118)			750 ug/Kg	08/04/2006
	LCSD 782	104		1	(< 20)	750 ug/Kg	08/04/2006
Trichloroethene	LCS 738	98	(85-123)			750 ug/Kg	08/04/2006
	LCSD 744	99		1	(< 20)	750 ug/Kg	08/04/2006
1,2-Dichloropropane	LCS 821	109	(80-116)			750 ug/Kg	08/04/2006
	LCSD 816	109		1	(< 20)	750 ug/Kg	08/04/2006
Dibromomethane	LCS 724	97	(84-124)			750 ug/Kg	08/04/2006
	LCSD 753	100		4	(< 20)	750 ug/Kg	08/04/2006
Bromodichloromethane	LCS 758	101	(85-119)			750 ug/Kg	08/04/2006
	LCSD 766	102		1	(< 20)	750 ug/Kg	08/04/2006
2-Chloroethyl Vinyl Ether	LCS 1150	102	(70-139)			1130 ug/Kg	08/04/2006
	LCSD 1190	106		4	(< 20)	1130 ug/Kg	08/04/2006
1,1,2-Trichloroethane	LCS 806	107	(81-111)			750 ug/Kg	08/04/2006

GS Ref.# 718191 Lab Control Sample
 718192 Lab Control Sample Duplicate
 Client Name Shannon & Wilson Inc.
 Project Name/# 32-1-16973-005 Goose Bay
 Matrix Soil/Solid

Printed Date/Time 10/10/2006 10:27
 Prep Batch VXX15727
 Method SW5035A
 Date 08/04/2006

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
<u>Volatile Gas Chromatography/Mass Spectroscopy</u>							
Xylene	LCS 787	105	(85-115)			750 ug/Kg	08/04/2006
	LCSD 746	100		5	(< 20)	750 ug/Kg	08/04/2006
Styrene	LCS 789	105	(87-121)			750 ug/Kg	08/04/2006
	LCSD 755	101		4	(< 20)	750 ug/Kg	08/04/2006
Bromoform	LCS 708	94	(70-130)			750 ug/Kg	08/04/2006
	LCSD 715	95		1	(< 20)	750 ug/Kg	08/04/2006
Isopropylbenzene (Cumene)	LCS 757	101	(85-115)			750 ug/Kg	08/04/2006
	LCSD 728	97		4	(< 20)	750 ug/Kg	08/04/2006
Bromobenzene	LCS 701	93	(85-115)			750 ug/Kg	08/04/2006
	LCSD 696	93		1	(< 20)	750 ug/Kg	08/04/2006
1,2,3-Trichloropropane	LCS 724	97	(75-121)			750 ug/Kg	08/04/2006
	LCSD 758	101		5	(< 20)	750 ug/Kg	08/04/2006
n-Propylbenzene	LCS 734	98	(88-120)			750 ug/Kg	08/04/2006
	LCSD 746	100		2	(< 20)	750 ug/Kg	08/04/2006
1,1,2,2-Tetrachloroethane	LCS 729	97	(71-118)			750 ug/Kg	08/04/2006
	LCSD 762	102		4	(< 20)	750 ug/Kg	08/04/2006
2-Chlorotoluene	LCS 713	95	(85-120)			750 ug/Kg	08/04/2006
	LCSD 728	97		2	(< 20)	750 ug/Kg	08/04/2006
4-Chlorotoluene	LCS 736	98	(86-115)			750 ug/Kg	08/04/2006
	LCSD 741	99		1	(< 20)	750 ug/Kg	08/04/2006
1,3,5-Trimethylbenzene	LCS 717	96	(85-125)			750 ug/Kg	08/04/2006
	LCSD 720	96		1	(< 20)	750 ug/Kg	08/04/2006
tert-Butylbenzene	LCS 735	98	(85-120)			750 ug/Kg	08/04/2006
	LCSD 731	98		0	(< 20)	750 ug/Kg	08/04/2006
1,2,4-Trimethylbenzene	LCS 743	99	(86-115)			750 ug/Kg	08/04/2006
	LCSD 750	100		1	(< 20)	750 ug/Kg	08/04/2006
sec-Butylbenzene	LCS 775	103	(85-115)			750 ug/Kg	08/04/2006
	LCSD 800	107		3	(< 20)	750 ug/Kg	08/04/2006



SGS Ref.# 718191 Lab Control Sample
718192 Lab Control Sample Duplicate
Client Name Shannon & Wilson Inc.
Project Name/# 32-1-16973-005 Goose Bay
Matrix Soil/Solid

Printed Date/Time 10/10/2006 10:27
Prep Batch VXX15727
Method SW5035A
Date 08/04/2006

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
<u>Volatile Gas Chromatography/Mass Spectroscopy</u>							
,2-Dichloroethane-D4 <surr>	LCS	111	(85-115)				08/04/2006
	LCSD	115		4			08/04/2006
Toluene-d8 <surr>	LCS	112	(87-115)				08/04/2006
	LCSD	107		4			08/04/2006
4-Bromofluorobenzene <surr>	LCS	103	(50-154)				08/04/2006
	LCSD	106		3			08/04/2006

Batch VMS8563
Method SW8260B
Instrument HP 5890 Series II MS1 VMA



GS Ref.# 719554 Lab Control Sample

Printed Date/Time 10/10/2006 10:27

Client Name Shannon & Wilson Inc.

Prep Batch MXX17966

Project Name/# 32-1-16973-005 Goose Bay

Method METHOD

Matrix Soil/Solid

Date 08/10/2006

QC results affect the following production samples:

1064381002, 1064381003

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

Mercury	LCS 168	101	(83-118)			167 ug/Kg	08/11/2006
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Batch MCV3465

Method SW7471A

Instrument HgAA Leeman AutoAnalyzer PS200

GS Ref.# 719990 Lab Control Sample
719991 Lab Control Sample Duplicate
Client Name Shannon & Wilson Inc.
Project Name/# 32-1-16973-005 Goose Bay
Matrix Water (Surface, Eff., Ground)

Printed Date/Time 10/10/2006 10:27
Prep Batch VXX15775
Method SW5030B
Date 08/14/2006

QC results affect the following production samples:

1064381001

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
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Volatile Gas Chromatography/Mass Spectroscopy

GS Ref.# 719990 Lab Control Sample
 719991 Lab Control Sample Duplicate
Client Name Shannon & Wilson Inc.
Project Name/# 32-1-16973-005 Goose Bay
Matrix Water (Surface, Eff., Ground)

Printed Date/Time 10/10/2006 10:27
Prep Batch VXX15775
Method SW5030B
Date 08/14/2006

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
<u>Volatile Gas Chromatography/Mass Spectroscopy</u>							
	LCSD	105		0			08/14/2006
Toluene-d8 <sur>	LCS	98	(85-120)				08/14/2006
	LCSD	99		0			08/14/2006
4-Bromofluorobenzene <sur>	LCS	101	(76-119)				08/14/2006
	LCSD	102		1			08/14/2006

Batch VMS8591
Method SW8260B TCLP
Instrument HP 5890 Series II MS3 VNA



GS Ref.# 720369 Lab Control Sample

Printed Date/Time 10/10/2006 10:27
Prep Batch MXX17986
Method SW3050B
Date 08/14/2006

Client Name Shannon & Wilson Inc.
Project Name/# 32-1-16973-005 Goose Bay
Matrix Soil/Solid

QC results affect the following production samples:

1064381002, 1064381003

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Metals by ICP/MS							
Arsenic	LCS 46.4	93	(80-120)			50 mg/Kg	08/16/2006
Barium	LCS 45.4	91	(80-120)			50 mg/Kg	08/16/2006
Cadmium	LCS 46.9	94	(80-120)			50 mg/Kg	08/16/2006
Chromium	LCS 45.4	91	(80-120)			50 mg/Kg	08/16/2006
Lead	LCS 45.6	91	(80-120)			50 mg/Kg	08/16/2006
Selenium	LCS 47.9	96	(80-120)			50 mg/Kg	08/16/2006
Silver	LCS 9.28	93	(80-120)			10 mg/Kg	08/16/2006

Batch MMS4346
Method SW6020
Instrument Perkin Elmer Sciex ICP-MS P3

SGS Ref.# 719555 Matrix Spike
 719556 Matrix Spike Duplicate

Printed Date/Time 10/10/2006 10:28
 Prep Batch MXX17966
 Method Digestion Mercury (S)
 Date 08/10/2006

Original 1064381002
 Matrix Soil/Solid

QC results affect the following production samples:

1064381002, 1064381003

Parameter	Qualifiers	Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
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Metals Department

Mercury	MS ND	394		113	(83-118)			349	ug/Kg 08/11/2006
	MSD	391		111		1	(< 20)	353	ug/Kg 08/11/2006

Batch MCV3465
 Method SW7471A
 Instrument HgAA Leeman AutoAnalyzer PS200

SGS Ref.# 720145 Matrix Spike
 720146 Matrix Spike Duplicate

Printed Date/Time 10/10/2006 10:28
 Prep Batch VXX15780
 Method AK101 Extraction (S)
 Date 08/14/2006

Original 1064402001
 Matrix Soil/Solid

QC results affect the following production samples:

1064381002

Parameter	Qualifiers	Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
<u>Volatile Fuels Department</u>									
Gasoline Range Organics	MS	ND	19400	92	(60-120)			21200	ug/Kg 08/14/2006
	MSD		19300	92		0	(<20)	21200	ug/Kg 08/14/2006
<u>Surrogates</u>									
1-Bromofluorobenzene <surrogate>	MS		1890	80	(50-150)				08/14/2006
	MSD		1910	81		1			08/14/2006

Batch VFC7967
 Method AK101
 Instrument HP 5890 Series II PID+FID VDA



SGS Ref.# 720372 Bench Spike DIGESTED

Printed Date/Time 10/10/2006 10:28
Prep Batch MXX17986
Method Soils/Solids Digest for Metals b
Date 08/14/2006

Original 1064181001
Matrix Soil/Solid

QC results affect the following production samples:

1064381002, 1064381003

Parameter	Qualifiers	Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Metals by ICP/MS									
Arsenic	BND	2.88	441	89	(75-125)			494	mg/Kg08/16/2006
Barium	BND	54.7	506	92	(75-125)			494	mg/Kg08/16/2006
Cadmium	BND	ND	464	94	(75-125)			494	mg/Kg08/16/2006
Chromium	BND	11.6	438	86	(75-125)			494	mg/Kg08/16/2006
Lead	BND	3.35	406	82	(75-125)			494	mg/Kg08/16/2006
Selenium	BND	ND	448	91	(75-125)			494	mg/Kg08/16/2006
Silver	BND	ND	112	91	(75-125)			123	mg/Kg08/16/2006

Batch MMS4346
Method SW6020
Instrument Perkin Elmer Sciex ICP-MS P3



SAMPLE RECEIPT FORM : SGS WO#:

Yes No NA

- Are samples RUSH, priority, or w/n 72 hrs. of hold time?
- If yes have you done e-mail notification?
- Are samples within 24 hrs. of hold time or due date?
- If yes, have you spoken with Supervisor?
- Archiving bottles - if req., are they properly marked?
- Are there any problems? PM Notified?
- Were samples preserved correctly and pH verified? 5/2

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

Due Date: 8-15-06
 Received Date: 8-1-06
 Received Time: 1525
 Is date/time conversion necessary? N
 # of hours to AK Local Time: _____
 Thermometer ID: 69D

Cooler ID	Temp Blank	Cooler Temp
<u>1</u>	<u>6.5</u> °C	<u>6.1</u> °C
<u>2</u>	<u>6.3</u> °C	<u>6.0</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 / Carlie
 Lynden / SGS / Other: _____

Airbill #

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

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

Yes No

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

This section must be filled if problems are found.

Yes No

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

Notes:

Completed by (sign):

(print): James Johnson

Login proof (check one): waived required _____ performed by: _____

TCLP SAMPLE CHARACTERIZATION

HSN#: 4381-1a Date: 8/3/06 Analyst: BJS
 Sample Vol. (mL): 250 Container Volume (mL): 250
 Top _____ % (xylene miscible) Description / Notes: _____
 Middle _____ % (water miscible) Description / Notes: _____
 Bottom 100 % (solids) Description / Notes: Sandy soil

Percent Solids Determination:

Original Sample & Container weight (g):	_____	Solid % of sample:	_____
Empty Original Container weight (g):	_____	Liquid % of sample:	_____
Clean Container weight (g):	_____	Weight solids extracted (g):	_____
Original Sample weight (g):	_____	Extraction Fluid:	_____
Filter weight (g):	_____	Vol. Original Liquid Added Back (mL):	_____
Clean Container & Liquid weight (g):	_____	Liquid Volume (mL):	_____
Liquid weight (g):	_____		
Filter & Solid Sample weight (g):	_____		
Solid weight (g):	_____		

Notes: _____

HSN#: _____ Date: _____ Analyst: _____
 Sample Volume (mL): _____ Container Volume (mL): _____
 Top _____ % (xylene miscible) Description / Notes: _____
 Middle _____ % (water miscible) Description / Notes: _____
 Bottom _____ % (solids) Description / Notes: _____

Percent Solids Determination:

Original Sample & Container weight (g):	_____	Solid % of sample:	_____
Empty Original Container weight (g):	_____	Liquid % of sample:	_____
Clean Container weight (g):	_____	Weight solids extracted (g):	_____
Original Sample weight (g):	_____	Extraction Fluid:	_____
Filter weight (g):	_____	Vol. Original Liquid Added Back (mL):	_____
Clean Container & Liquid weight (g):	_____	Liquid Volume (mL):	_____
Liquid weight (g):	_____		
Filter & Solid Sample weight (g):	_____		
Solid weight (g):	_____		

Notes: _____

5. Samples Results

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

Yes No Comments:

b. All applicable holding times met?

Yes No Comments:

c. All soils reported on a dry weight basis?

Yes No Comments:

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

Yes No Comments: DRD PQL elevated ^{sample extract} - did not concentrate below a volume of 10 mL for sample SSI

e. Data quality or usability affected? Explain

DRD concentration for sample SSI is ND @ 4,260 mg/kg DRD (DRD conc. unknown)

6. QC Samples

a. Method Blank

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

Yes No Comments:

ii. All method blank results less than PQL?

Yes No Comments:

iii. If above PQL, what samples are affected? NA

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

Yes No Comments:

v. Data quality or usability affected? Explain

None

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

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

Yes No Comments:

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

Yes No Comments:

iii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? Or project specified DQOs? (AK Petroleum methods 75-125 %R; all other analyses see the laboratory QC pages)

Yes No Comments:

LCS + LCSD recoveries for dichlorodifluoromethane, chloromethane, and vinyl chloride are biased high and don't meet QC recovery goals. Results aren't affected since these analytes were not detected in associated samples.

e. Field Duplicate

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

Yes No

Comments: *Samples collected for characterization for potential disposal purposes not as confirmation samples*

ii. Submitted blind to lab? *NA*

Yes No

Comments:

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

Yes No

Comments: *NA*

iv. Data quality or usability affected? Explain *None*

f. Decontamination or Equipment Blank (if applicable)

Yes No Not Applicable

i. All results less than PQL?

Yes No

Comments: *NA*

ii. If above PQL, what samples are affected? *NA*

iii. Data quality or usability affected? Explain *NA*

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

a. Defined and appropriate

Yes No

Comments: *NA*

Completed by: JESSICA BUSEY

Title: ENVIRONMENTAL SCIENTIST II

Date: 10/12/06

Report Name: Surface Stain Characterization, MHTA
land, Knik, Alaska

Report Date: October 2006

Firm: Shannon & Wilson, Inc

File Number: 2226.38.001

ATTACHMENT 2

**“IMPORTANT INFORMATION ABOUT YOUR
GEOTECHNICAL/ENVIRONMENTAL REPORT”**



Date: October 2006
To: Alaska Department of Natural Resources
Re: Mental Health Trust Authority Land, Knik,
Alaska

Important Information About Your Geotechnical/Environmental Report

CONSULTING SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND FOR SPECIFIC CLIENTS.

Consultants prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your consultant prepared your report expressly for you and expressly for the purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the consultant. No party should apply this report for any purpose other than that originally contemplated without first conferring with the consultant.

THE CONSULTANT'S REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.

A geotechnical/environmental report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. Depending on the project, these may include: the general nature of the structure and property involved; its size and configuration; its historical use and practice; the location of the structure on the site and its orientation; other improvements such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask the consultant to evaluate how any factors that change subsequent to the date of the report may affect the recommendations. Unless your consultant indicates otherwise, your report should not be used: (1) when the nature of the proposed project is changed (for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one, or chemicals are discovered on or near the site); (2) when the size, elevation, or configuration of the proposed project is altered; (3) when the location or orientation of the proposed project is modified; (4) when there is a change of ownership; or (5) for application to an adjacent site. Consultants cannot accept responsibility for problems that may occur if they are not consulted after factors, which were considered in the development of the report, have changed.

SUBSURFACE CONDITIONS CAN CHANGE.

Subsurface conditions may be affected as a result of natural processes or human activity. Because a geotechnical/environmental report is based on conditions that existed at the time of subsurface exploration, construction decisions should not be based on a report whose adequacy may have been affected by time. Ask the consultant to advise if additional tests are desirable before construction starts; for example, groundwater conditions commonly vary seasonally.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes, or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical/environmental report. The consultant should be kept apprised of any such events, and should be consulted to determine if additional tests are necessary.

MOST RECOMMENDATIONS ARE PROFESSIONAL JUDGMENTS.

Site exploration and testing identifies actual surface and subsurface conditions only at those points where samples are taken. The data were extrapolated by your consultant, who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your consultant can work together to help reduce their impacts. Retaining your consultant to observe subsurface construction operations can be particularly beneficial in this respect.

A REPORT'S CONCLUSIONS ARE PRELIMINARY.

The conclusions contained in your consultant's report are preliminary because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Actual subsurface conditions can be discerned only during earthwork; therefore, you should retain your consultant to observe actual conditions and to provide conclusions. Only the consultant who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations based on those conclusions are valid and whether or not the contractor is abiding by applicable recommendations. The consultant who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

THE CONSULTANT'S REPORT IS SUBJECT TO MISINTERPRETATION.

Costly problems can occur when other design professionals develop their plans based on misinterpretation of a geotechnical/environmental report. To help avoid these problems, the consultant should be retained to work with other project design professionals to explain relevant geotechnical, geological, hydrogeological, and environmental findings, and to review the adequacy of their plans and specifications relative to these issues.

BORING LOGS AND/OR MONITORING WELL DATA SHOULD NOT BE SEPARATED FROM THE REPORT.

Final boring logs developed by the consultant are based upon interpretation of field logs (assembled by site personnel), field test results, and laboratory and/or office evaluation of field samples and data. Only final boring logs and data are customarily included in geotechnical/environmental reports. These final logs should not, under any circumstances, be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process.

To reduce the likelihood of boring log or monitoring well misinterpretation, contractors should be given ready access to the complete geotechnical engineering/environmental report prepared or authorized for their use. If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared, and that developing construction cost estimates was not one of the specific purposes for which it was prepared. While a contractor may gain important knowledge from a report prepared for another party, the contractor should discuss the report with your consultant and perform the additional or alternative work believed necessary to obtain the data specifically appropriate for construction cost estimating purposes. Some clients hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes that aggravate them to a disproportionate scale.

READ RESPONSIBILITY CLAUSES CLOSELY.

Because geotechnical/environmental engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, consultants have developed a number of clauses for use in their contracts, reports and other documents. These responsibility clauses are not exculpatory clauses designed to transfer the consultant's liabilities to other parties; rather, they are definitive clauses that identify where the consultant's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your report, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to your questions.

The preceding paragraphs are based on information provided by the
ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland