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DEPT. OF ENVIRONMENTAL
CONSERVATION

October 31, 2005

Alaska Department of Transportation & Public Facilities
4111 Aviation Drive
Anchorage, Alaska 99519

Attn: Mr. Ron Stroman

Fax: (907) 269-0489

RE: OCTOBER 2005 GROUNDWATER MONITORING, FORMER MARKAIR FACILITY, KING SALMON, ALASKA; ADEC DATABASE RECORD KEY NO. 1993250120601

This letter report presents the results of our October 2005 groundwater sampling efforts at the former MarkAir Facility located in King Salmon, Alaska. As previously documented by Shannon & Wilson, impacted soil and groundwater has been encountered across the site. In addition, free product has been observed in two of the onsite wells during previous monitoring events. The purpose of this effort was to document the current levels of petroleum hydrocarbons in the groundwater at the site. Authorization to proceed with this project was received in an e-mail from Mr. Ron Stroman of the Alaska Department of Transportation and Public Facilities (ADOT&PF) on August 26, 2005.

FIELD ACTIVITIES

The field activities consisted of collecting groundwater samples from four monitoring wells and measuring the thickness of free-phase product in two wells located on site. The approximate well locations are shown in Figure 1. The following sections describe the conducted field activities which were conducted on October 6, 2005.

Groundwater Sampling

Groundwater samples were collected from Monitoring Wells B1MW, B2MW, B3MW, and B6MW. Due to the presence of free petroleum product, groundwater samples were not collected from Monitoring Wells B4MW and B5MW. Prior to sampling the monitoring wells, the static water levels were obtained using an electronic water level indicator. With the exception of Well B1MW, groundwater sampling was conducted by purging the wells of a minimum of three well volumes of water using disposable bailers. Monitoring Well B1MW was purged dry after approximately one well volume. Water quality parameters, including pH, conductivity, temperature, and dissolved oxygen were measured during the purging and sampling process. Following purging, groundwater samples were collected after allowing the wells to recover to within 80 percent of the pre-purging volumes. The water sampling and

purging data are included in Table 1. The purgewater removed from the wells was placed in a labeled 35-gallon drum. This drum also contained purgewater from previous sampling events. The drum was transported to Emerald Alaska, Inc. of Anchorage, Alaska for treatment and disposal. A copy of the Non-Hazardous Waste Manifest for the disposal of the purgewater is included in Attachment 1.

During the October 2005 sampling event, groundwater was measured at depths ranging from about 8.0 feet to 26.8 feet below the top of the well casings. Free product was encountered in Wells B4MW and B5MW at thicknesses of 0.59 feet and 3.33 feet, respectively. During the October 2005 sampling event, groundwater flow direction was generally to the north/northeast, based on depth to water measurements and a level loop survey that was conducted at the site in March 2004. This groundwater flow direction is consistent with past events. The approximate groundwater flow direction measured in October 2005 is shown on Figure 1.

ANALYTICAL TESTING

Four groundwater samples were submitted to SGS Environmental Services (SGS) of Anchorage, Alaska, using chain-of-custody procedures. The groundwater samples were analyzed for diesel range organics (DRO) by Alaska Method AK 102 and aromatic volatile organics (BTEX) by Environmental Protection Agency (EPA) Method 8021B. For quality control purposes, a trip blank accompanied the samples and was analyzed for BTEX by EPA Method 8021B.

DISCUSSION OF RESULTS

The results of the groundwater testing are discussed below. The applicable groundwater cleanup levels are contained in the May 26, 2004 Oil and Other Hazardous Substances Pollution Control Regulations of 18 AAC 75. The groundwater cleanup levels are shown in Table 2.

Groundwater Samples

Petroleum hydrocarbons were detected in three of the four wells sampled. The DRO cleanup level of 1.5 parts per million (ppm) was exceeded in the samples collected from Wells B1MW and B2MW which contained 4.35 ppm and 19.0 ppm DRO, respectively. Sample B3MW contained 0.840 ppm DRO. DRO was not detected in Sample B6MW. The sample collected from Well B2MW contained 0.220 ppm benzene, which exceeds the cleanup level of 0.005 ppm. Ethylbenzene and xylenes were detected in Sample B2MW at concentrations below their respective cleanup levels. Benzene was detected in Sample B1MW at a concentration below the cleanup level. BTEX constituents were not detected in samples collected from the

remaining wells. A summary of the current and cumulative groundwater sample results is shown in Tables 2 and 3, respectively. The upgradient wells, B3MW and B6MW, have a generally decreasing DRO concentration trend since groundwater monitoring began in March 2004. The DRO and benzene concentrations measured in Wells B1MW and B2MW have not changed significantly since monitoring began. Free product was encountered in Wells B4MW and B5MW, and both have increased product thicknesses since monitoring began in March 2004. Included on Table 3 is a summary of samples collected from the former onsite drinking water well.

Quality Control

A water trip blank accompanied the groundwater sample containers to and from the laboratory. BTEX concentrations were not detected, indicating that the groundwater samples were not cross contaminated or exposed to contamination from the sample handling and storage process. The quality control analytical sample results are summarized in Table 2 and the laboratory reports are included in Attachment 2.

CONCLUSIONS

As previously documented, groundwater impacted above the appropriate ADEC cleanup levels was encountered in two of the site's six wells, B1MW and B2MW. Free product was measured in Wells B4MW and B5MW. Based on the groundwater flow direction, impacted groundwater likely extends underneath the former MarkAir building and potentially offsite.

Per 18 AAC 75, Shannon & Wilson recommends that you submit a copy of this report to the ADEC for their review and comment.

CLOSURE/LIMITATIONS

This report was prepared for the exclusive use of our client and their representatives in the study of this site. The findings we have presented in this report are based on limited research and on the sampling and analyses that we conducted. They should not be construed as a definite conclusion regarding the site's groundwater quality. It is possible that our subsurface tests missed higher levels of petroleum hydrocarbon constituents and/or hazardous substances, although our intention was to sample areas likely to be impacted. As a result, the sampling and analyses performed can only provide you with 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

Former MarkAir Site, King Salmon, Alaska
October 31, 2005
Page 4

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 for this site may need to be revised.

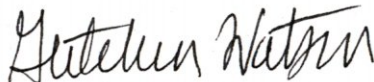
Shannon and Wilson has prepared the information in Attachment 3, "Important Information About Your Geotechnical/Environmental Report," to assist you and others in understanding the use and limitations of our reports.

We appreciate this opportunity to be of service. Please call Stafford Glashan, P.E. or the undersigned at 907-561-2120 with questions or comments concerning the contents of this report.

Sincerely,

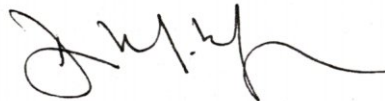
SHANNON & WILSON, INC.

Prepared by:



Gretchen Watson
Environmental Engineer II

Reviewed by:



Dan P. McMahon
Sr. Environmental Scientist

Enc: Tables 1 through 3, Figure 1, and Attachments 1 through 3

TABLE 1 - WELL SAMPLING LOG

WATER LEVEL MEASUREMENT DATA

Well Number	B1MW	B2MW	B3MW	B4MW	B5MW	B6MW
Date Water Level Measured	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005
Time Water Level Measured	11:55	12:05	9:50	10:25	10:10	12:00
Surveyed MP Elevation (ft)	100.00	100.60	99.54	99.16	99.84	98.18
Measured Depth to Water (ft below MP)	19.78	26.84	10.20	15.73	16.75	8.02
Water Level Elevation (ft)	80.22	73.76	89.34	83.94*	85.99*	90.16

Note: Recent survey conducted by Shannon and Wilson in March 2004.

PURGING DATA

Well Number	B1MW	B2MW	B3MW	B4MW	B5MW	B6MW
Date Sampled	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005
Time Sampled	15:00	14:40	14:25	NS	NS	14:00
Measured Depth to Water (ft below MP)	19.78	26.84	10.20	15.73	16.75	8.02
Total Depth of Well (ft below MP)	29.50	31.50	22.00	23.65	27.21	24.10
Water Column in Well (ft)	9.72	4.66	11.80	7.92	10.46	16.08
Gallons per Foot	0.16	0.16	0.16	0.16	0.16	0.16
Water Column Volume (gallons)	1.56	0.75	1.89	1.27	1.67	2.57
Total Volume Pumped/Bailed (gallons)	2.5	2.3	6.0	0.0	0.0	8.0
Purging/Sampling Method	Bailer	Bailer	Bailer	NS	NS	Bailer
Diameter of Well Casing	2-inch	2-inch	2-inch	2-inch	2-inch	2-inch
Remarks	HC Odor/ Purged Dry	HC Odor		0.59' free product	3.33' free product	

WATER QUALITY DATA

WELL NUMBER	B1MW	B2MW	B3MW	B4MW	B5MW	B6MW
Temperature (°C)	9.4	9.7	9.3	-	-	8.3
Specific Conductance (mS/cm)	483	1,223	232	-	-	115
pH (Standard Units)	6.64	6.70	5.76	-	-	5.82
DO (mg/L)	2.19	1.49	2.02	-	-	6.86

Note: Water quality parameters were measured with a Horiba U10 Meter

KEY	DESCRIPTION
°C	Degrees Celsius
ft	Feet
mS/cm	Millisiemens per centimeter
MP	Measuring Point
NS	Not Sampled
NTU	Nephelometric Turbidity Units
Mg/L	Milligrams per Liter
-	Not Measured/Not Applicable
*	Elevation Corrected for Product
HC	Hydrocarbon

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS

Parameter Tested	Method*	Cleanup Level (ppm)**	Sample ID Number^ and Water Depth in Feet (See Table 1, Figure 1, and Attachment 2)				
			B1MW 19.78	B2MW 26.84	B3MW 10.20	B6MW 8.02	Trip Blank TBW
Diesel Range Organics (DRO) - ppm	AK 102	1.5	4.35	19.0	0.840	<0.330	-
Aromatic Volatile Organics (BTEX)							
Benzene - ppm	EPA 8021B	0.005	0.00271	0.220	<0.000500	<0.000500	<0.000500
Toluene - ppm	EPA 8021B	1.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
Ethylbenzene - ppm	EPA 8021B	0.7	<0.00200	0.0351	<0.00200	<0.00200	<0.00200
Xylenes - ppm	EPA 8021B	10.0	<0.00200	0.0312	<0.00200	<0.00200	<0.00200

KEY DESCRIPTION

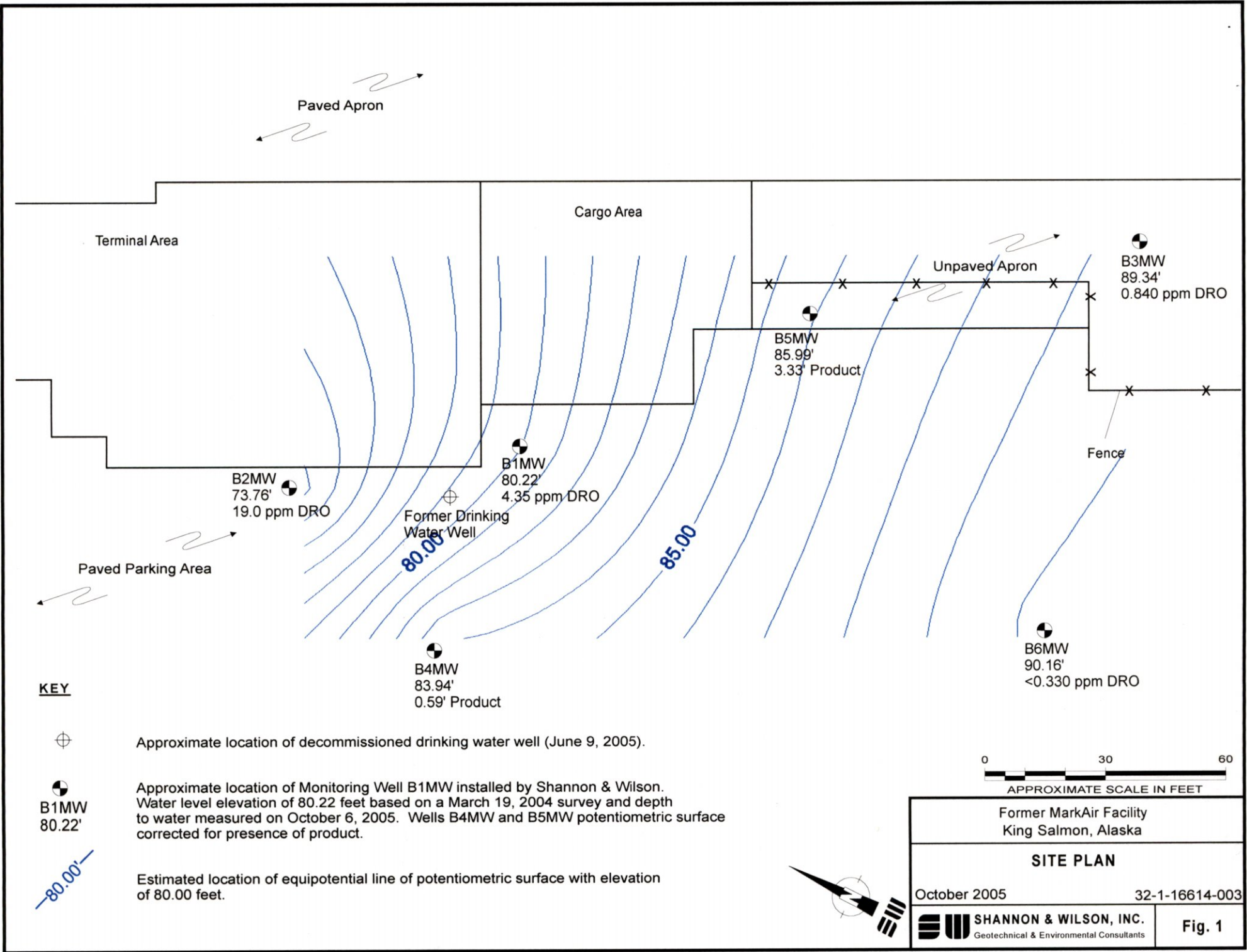
*	See Attachment 2 for compounds tested, methods, and laboratory reporting limits
**	Groundwater cleanup levels are listed in Table C, 18 AAC 75.345
^	Sample ID No. preceded by "16614-3-" on the chain of custody form
<0.00200	Analyte not detected; laboratory reporting limit of 0.00200 ppm
-	Not applicable or sample not tested for this analyte
ppm	Parts per million
4.35	Reported concentration exceeds the regulated cleanup level

TABLE 3 - CUMULATIVE SUMMARY OF ANALYTICAL RESULTS

Monitoring Well	Date	Depth to Water (ft)	Product Thickness (ft)	DRO ppm	Benzene ppm	Toluene ppm	Ethylbenzene ppm	Xylenes ppm
B1MW	3/17/2004	21.19	NP	9.85	0.00246	<0.00200	<0.00200	0.00331
	6/9/2004	22.06	NP	15.2	0.000748	<0.00200	<0.00200	<0.00200
	5/18/2005	20.82	NP	9.88	<0.00500	<0.0200	<0.0200	<0.0200
	10/6/2005	19.78	NP	4.35	0.00271	<0.00200	<0.00200	<0.00200
B2MW	3/19/2004	28.15	NP	19.9	0.155	<0.00200	0.00798	0.0111
	6/9/2004	28.34	NP	32.3	0.229	0.00205	0.0518	0.0860
	5/17/2005	28.12	NP	61.0	0.189	<0.0200	0.0322	0.0246
	10/6/2005	26.84	NP	19.0	0.220	<0.00200	0.0351	0.0312
B3MW	3/19/2004	14.72	NP	1.02	<0.000500	<0.00200	<0.00200	<0.00200
	6/9/2004	14.81	NP	1.37	<0.000500	<0.00200	<0.00200	<0.00200
	5/17/2005	13.39	NP	0.836	<0.000500	<0.00200	<0.00200	<0.00200
	10/6/2005	10.20	NP	0.840	<0.000500	<0.00200	<0.00200	<0.00200
B4MW	3/20/2004	17.03	0.02	-	-	-	-	-
	6/9/2004	12.52	0.24	-	-	-	-	-
	5/17/2005	17.24	0.61	-	-	-	-	-
	10/6/2005	15.73	0.59	-	-	-	-	-
B5MW	3/20/2004	16.96	0.15	-	-	-	-	-
	6/9/2004	19.25	2.12	-	-	-	-	-
	5/17/2005	18.63	3.12	-	-	-	-	-
	10/6/2005	16.75	3.33	-	-	-	-	-
B6MW	3/20/2004	14.03	NP	0.569	<0.000500	<0.00200	<0.00200	<0.00200
	6/9/2004	13.43	NP	0.471	<0.000500	<0.00200	<0.00200	<0.00200
	5/17/2005	11.97	NP	0.380	<0.000500	<0.00200	<0.00200	<0.00200
	10/6/2005	8.02	NP	<0.330	<0.000500	<0.00200	<0.00200	<0.00200
DW	6/28/2003	-	NP	0.529	<0.000500	<0.00200	<0.00200	<0.00200
	10/30/2003	-	NP	1.37	<0.000500	<0.00200	<0.00200	<0.00200
	3/20/2004	-	NP	1.76	-	-	-	-
	6/9/2004	-	NP	1.08	-	-	-	-

KEY	DESCRIPTION
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-	Not tested for this parameter
<0.0010	Reported analyte concentration less than laboratory reporting limit of 0.0010 ppm
9.85	Concentration exceeds the regulated cleanup level
ppm	Parts per million
DRO	Diesel Range Organics
NP	No Product



KEY



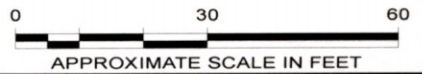
Approximate location of decommissioned drinking water well (June 9, 2005).



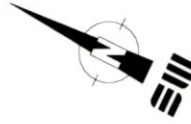
Approximate location of Monitoring Well B1MW installed by Shannon & Wilson. Water level elevation of 80.22 feet based on a March 19, 2004 survey and depth to water measured on October 6, 2005. Wells B4MW and B5MW potentiometric surface corrected for presence of product.



Estimated location of equipotential line of potentiometric surface with elevation of 80.00 feet.



Former MarkAir Facility King Salmon, Alaska	
SITE PLAN	
October 2005	32-1-16614-003
SHANNON & WILSON, INC. Geotechnical & Environmental Consultants	Fig. 1



ATTACHMENT 1

NON-HAZARDOUS WASTE MANIFEST

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. C F S Q G		Manifest Document No. 03678		2. Page 1 of 1	
3. Generator's Name and Mailing Address STATE OF ALASKA DOT&PF 5300 EAST TUDOR ROAD ANCHORAGE, AK 99507							
4. Generator's Phone (907) 338-1482							
5. Transporter 1 Company Name NORTHERN AIR CARGO, INC.		6. US EPA ID Number AK0003845526		A. State Transporter's ID			
7. Transporter 2 Company Name EMERALD SERVICES, INC.		8. US EPA ID Number WA0058364647		B. Transporter 1 Phone			
				C. State Transporter's ID			
				D. Transporter 2 Phone			
9. Designated Facility Name and Site Address EMERALD ALASKA, INC. 2020 VIKING DRIVE ANCHORAGE, AK 99501		10. US EPA ID Number AKR000004184		E. State Facility's ID			
				F. Facility's Phone (907) 238-1558			
11. WASTE DESCRIPTION			12. Containers		13. Total Quantity	14. Unit Wt./Vol.	
			No.	Type			
a. MATERIAL NOT REGULATED BY D.O.T.			1	DM	35 gallons		
b.							
c.							
d.							
G. Additional Descriptions for Materials Listed Above a) AK02906 GROUNDWATER / IDW WATER				H. Handling Codes for Wastes Listed Above			
15. Special Handling Instructions and Additional Information							
<p style="text-align: center;">16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.</p>							
Printed/Typed Name Darsen Gaughan				Signature <i>Darsen Gaughan</i>		Date 10 06 05	
17. Transporter 1 Acknowledgement of Receipt of Materials				Signature <i>Barbara Oatman</i>		Date 10 06 05	
Printed/Typed Name BARBARA OATMAN				Signature		Date	
18. Transporter 2 Acknowledgement of Receipt of Materials				Signature		Date	
Printed/Typed Name				Signature		Date	
19. Discrepancy Indication Space							
GENERATOR COPY							
20. Facility Owner or Operator; Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.				Signature		Date	
Printed/Typed Name				Signature		Date	

NON-HAZARDOUS WASTE GENERATOR TRANSPORTER FACILITY

ATTACHMENT 2
RESULTS OF ANALYTICAL TESTING BY
SGS ENVIRONMENTAL SERVICE INC. OF
ANCHORAGE, ALASKA

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

Darsen Gaughan
Shannon & Wilson Inc.
5430 Fairbanks St Ste 3
Anchorage, AK 99518

Work Order: 1056692
32-1-16614-3 Mark Air KS
Client: Shannon & Wilson Inc.
Report Date: October 20, 2005

Released by:


Alaska Division Project Manager

Shane Poston
2005.10.21 13:03:36 -
08'00'

Enclosed are the analytical results associated with the above workorder.

As required by the state of Alaska and the USEPA, a formal Quality Assurance/Quality Control Program is maintained by SGS. A copy of our Quality Control Manual that outlines this program is available at your request. The laboratory ADEC certification numbers are AK971-05 (DW), UST-005 (CS) and AK00971 (Micro).

The laboratory NELAC certification number is 001327.

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

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

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

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



SGS Ref.# 1056692001
Client Name Shannon & Wilson Inc.
Project Name/# 32-1-16614-3 Mark Air KS
Client Sample ID 16614-3-B1MW
Matrix Water (Surface, Eff., Ground)

All Dates/Times are Alaska Standard Time
Printed Date/Time 10/20/2005 14:31
Collected Date/Time 10/06/2005 15:00
Received Date/Time 10/07/2005 8:32
Technical Director Stephen C. Ede

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

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<u>Volatile Fuels Department</u>									
Benzene	2.71	0.500	ug/L	SW8021B	B		10/18/05	10/18/05	jaa
Toluene	2.00 U	2.00	ug/L	SW8021B	B		10/18/05	10/18/05	jaa
Ethylbenzene	2.00 U	2.00	ug/L	SW8021B	B		10/18/05	10/18/05	jaa
P & M -Xylene	2.00 U	2.00	ug/L	SW8021B	B		10/18/05	10/18/05	jaa
o-Xylene	2.00 U	2.00	ug/L	SW8021B	B		10/18/05	10/18/05	jaa
Surrogates									
1,4-Difluorobenzene <surr>	98.5		%	SW8021B	B	74-120	10/18/05	10/18/05	jaa
<u>Semivolatile Organic Fuels Department</u>									
Diesel Range Organics	4.35	0.326	mg/L	AK102	D		10/11/05	10/12/05	JC
Surrogates									
5a Androstane <surr>	58.2		%	AK102	D	50-150	10/11/05	10/12/05	JC



SGS Ref.# 1056692002
Client Name Shannon & Wilson Inc.
Project Name/# 32-1-16614-3 Mark Air KS
Client Sample ID 16614-3-B2MW
Matrix Water (Surface, Eff., Ground)

All Dates/Times are Alaska Standard Time

Printed Date/Time 10/20/2005 14:31
Collected Date/Time 10/06/2005 14:40
Received Date/Time 10/07/2005 8:32
Technical Director Stephen C. Ede

Sample Remarks:

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

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<u>Volatile Fuels Department</u>									
Benzene	220	0.500	ug/L	SW8021B	B		10/18/05	10/18/05	jaa
Toluene	2.00 U	2.00	ug/L	SW8021B	B		10/18/05	10/18/05	jaa
Ethylbenzene	35.1	2.00	ug/L	SW8021B	B		10/18/05	10/18/05	jaa
P & M -Xylene	26.2	2.00	ug/L	SW8021B	B		10/18/05	10/18/05	jaa
o-Xylene	5.01	2.00	ug/L	SW8021B	B		10/18/05	10/18/05	jaa
Surrogates									
1,4-Difluorobenzene <surr>	109		%	SW8021B	B	74-120	10/18/05	10/18/05	jaa
<u>Semivolatile Organic Fuels Department</u>									
Diesel Range Organics	19.0	0.319	mg/L	AK102	D		10/11/05	10/12/05	JC
Surrogates									
5a Androstane <surr>	69.2		%	AK102	D	50-150	10/11/05	10/12/05	JC



SGS Ref.# 1056692003
Client Name Shannon & Wilson Inc.
Project Name/# 32-1-16614-3 Mark Air KS
Client Sample ID 16614-3-B3MW
Matrix Water (Surface, Eff., Ground)

All Dates/Times are Alaska Standard Time
Printed Date/Time 10/20/2005 14:31
Collected Date/Time 10/06/2005 14:25
Received Date/Time 10/07/2005 8:32
Technical Director Stephen C. Ede

Sample Remarks:

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

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<u>Volatile Fuels Department</u>									
Benzene	0.500 U	0.500	ug/L	SW8021B	A		10/17/05	10/17/05	MCM
Toluene	2.00 U	2.00	ug/L	SW8021B	A		10/17/05	10/17/05	MCM
Ethylbenzene	2.00 U	2.00	ug/L	SW8021B	A		10/17/05	10/17/05	MCM
P & M -Xylene	2.00 U	2.00	ug/L	SW8021B	A		10/17/05	10/17/05	MCM
o-Xylene	2.00 U	2.00	ug/L	SW8021B	A		10/17/05	10/17/05	MCM
Surrogates									
1,4-Difluorobenzene <surr>	99.3		%	SW8021B	A	74-120	10/17/05	10/17/05	MCM
<u>Semivolatile Organic Fuels Department</u>									
Diesel Range Organics	0.840	0.326	mg/L	AK102	D		10/11/05	10/12/05	JC
Surrogates									
5a Androstane <surr>	120		%	AK102	D	50-150	10/11/05	10/12/05	JC



SGS Ref# 1056692004
Client Name Shannon & Wilson Inc.
Project Name/# 32-1-16614-3 Mark Air KS
Client Sample ID 16614-3-B6MW
Matrix Water (Surface, Eff., Ground)

All Dates/Times are Alaska Standard Time

Printed Date/Time 10/20/2005 14:31
Collected Date/Time 10/06/2005 14:00
Received Date/Time 10/07/2005 8:32
Technical Director Stephen C. Ede

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<u>Volatile Fuels Department</u>									
Benzene	0.500 U	0.500	ug/L	SW8021B	A		10/17/05	10/17/05	MCM
Toluene	2.00 U	2.00	ug/L	SW8021B	A		10/17/05	10/17/05	MCM
Ethylbenzene	2.00 U	2.00	ug/L	SW8021B	A		10/17/05	10/17/05	MCM
P & M -Xylene	2.00 U	2.00	ug/L	SW8021B	A		10/17/05	10/17/05	MCM
o-Xylene	2.00 U	2.00	ug/L	SW8021B	A		10/17/05	10/17/05	MCM
Surrogates									
1,4-Difluorobenzene <surr>	98.9		%	SW8021B	A	74-120	10/17/05	10/17/05	MCM
<u>Semivolatile Organic Fuels Department</u>									
Diesel Range Organics	0.330 U	0.330	mg/L	AK102	D		10/11/05	10/12/05	JC
Surrogates									
5a Androstane <surr>	70.7		%	AK102	D	50-150	10/11/05	10/12/05	JC



SGS Ref.# 1056692005
Client Name Shannon & Wilson Inc.
Project Name/# 32-1-16614-3 Mark Air KS
Client Sample ID 16614-3-TBW
Matrix Water (Surface, Eff., Ground)

All Dates/Times are Alaska Standard Time

Printed Date/Time 10/20/2005 14:31
Collected Date/Time 10/06/2005 16:05
Received Date/Time 10/07/2005 8:32
Technical Director Stephen C. Ede

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<u>Volatile Fuels Department</u>									
Benzene	0.500 U	0.500	ug/L	SW8021B	A		10/17/05	10/17/05	MCM
Toluene	2.00 U	2.00	ug/L	SW8021B	A		10/17/05	10/17/05	MCM
Ethylbenzene	2.00 U	2.00	ug/L	SW8021B	A		10/17/05	10/17/05	MCM
P & M -Xylene	2.00 U	2.00	ug/L	SW8021B	A		10/17/05	10/17/05	MCM
o-Xylene	2.00 U	2.00	ug/L	SW8021B	A		10/17/05	10/17/05	MCM
Surrogates									
1,4-Difluorobenzene <sur>	96.2		%	SW8021B	A	74-120	10/17/05	10/17/05	MCM

1056692



SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

CHAIN-OF-CUSTODY RECORD

Laboratory SGS Page 1 of 1
Attn: Shane

400 N. 34th Street, Suite 100 Seattle, WA 98103 (206) 632-8020
2055 Hill Road Fairbanks, AK 99709 (907) 479-0600
2265 S.W. Canyon Road Portland, OR 97201-2498 (503) 223-6147

2043 Westport Center Drive St. Louis, MO 63146-3564 (314) 392-0050
5430 Fairbanks Street, Suite 3 Anchorage, AK 99518 (907) 561-2120
1200 17th Street, Suite 1024 Denver, Co 80202 (303) 825-3800

303 Wellsian Way Richland, WA 99352 (509) 946-6309

Analysis Parameters/Sample Container Description
(include preservative if used)

Sample Identity	Lab No.	Time	Date Sampled	Comp.			Total Number of Containers	Remarks/Matrix
				Grab	BTX	PAHs		
16617-3-B1MW	①	1500	10-6-05	X	X	X	5	Water
" " - B2MW	②	1440	10-6-05	X	X	X	5	"
" " - B3MW	③	1425	"	X	X	X	5	"
" " - B6MW	④	1400	"	X	X	X	5	"
TBW	⑤	1605	"	-	X		3	"

Project Information:		Sample Receipt:		Relinquished By: 1		Relinquished By: 2		Relinquished By: 3	
Project Number: <u>82-1-16617-3</u>		Total Number of Containers: _____		Signature: <u>Darsen Gaughan</u> Time: <u>8:30</u>		Signature: _____ Time: _____		Signature: _____ Time: _____	
Project Name: <u>Mark Air - KS</u>		COC Seals/Intact? Y/N/NA _____		Printed Name: <u>Darsen Gaughan</u> Date: <u>10-7-05</u>		Printed Name: _____ Date: _____		Printed Name: _____ Date: _____	
Contact: <u>Darsen Gaughan</u>		Received Good Cond./Cold _____		Company: <u>StW</u>		Company: _____		Company: _____	
Ongoing Project? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Delivery Method: _____		Received By: 1		Received By: 2		Received By: 3	
Sampler: <u>KRC6</u>		(attach shipping bill, if any)		Signature: _____ Time: _____		Signature: _____ Time: _____		Signature: <u>Jane Johnson</u> Time: <u>0832</u>	
Instructions:		Requested Turnaround Time: <u>Standard</u>		Printed Name: _____ Date: _____		Printed Name: _____ Date: _____		Printed Name: <u>Jane Johnson</u> Date: <u>10-7-05</u>	
Special Instructions: _____		Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report Yellow - w/shipment - for consignee files Pink - Shannon & Wilson - Job File		Company: _____		Company: _____		Company: <u>SGS</u>	

ATTACHMENT 3

IMPORTANT INFORMATION ABOUT YOUR

GEOTECHNICAL/ENVIRONMENTAL REPORT



Date: October 2005
To: ADOT&PF
Re: Former MarkAir Facility, King Salmon, AK

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