

November 4, 2005

HDR Alaska, Inc.
2525 C Street, Suite 305
Anchorage, Alaska 99503

Attn: Mr. Dan Simpson

Fax: (907) 274-2022

**RE: TINA LAKE WATER AND SEDIMENT SAMPLING, DOWLING ROAD
EXTENSION PROJECT, ANCHORAGE, ALASKA**

This letter report documents the results of our water and sediment sampling activities conducted at Tina Lake in Anchorage, Alaska. This project was conducted in support of the Environmental Impact Study (EIS) that HDR Alaska, Inc. (HDR) is preparing for the Dowling Road Extension and Reconstruction Project.

The objective of this project was to address concerns about the water and sediment quality in Tina Lake. Specifically we understand that there are concerns related to the industrial area surrounding the lake and the potential for surface water contamination.

The project was performed under Amendment 1 of Shannon & Wilson's Subconsultant Agreement with HDR. The amendment was authorized on September 9, 2005 by Mr. Duane Hippe, Senior Vice President of HDR. The work was conducted in general accordance with our January 18, 2005 proposal.

SITE ACTIVITIES

On September 27, 2005, two Shannon & Wilson representatives mobilized to the site to conduct sediment and surface water sampling. Two sediment samples, designated Samples S1 and S2, and two surface water samples, designated Samples W1 and W2, were collected from Tina Lake. The approximate sample locations are shown on Figure 1.

A culvert was observed near the northwest portion of the lake. Water was observed flowing out of the lake into the culvert. Sample S1 was collected from sediment in the bottom of the culvert. Sample W1 was collected from water entering the culvert.

Generally, the bottom of the lake is covered by aquatic vegetation. Fill material was observed along the northern portion of the lake. The fill material appears to extend from Tract C3B of Fuller Industrial Subdivision into Tina Lake. Minimal aquatic vegetation was observed in this area. Ponded water was observed within this fill material. Samples S2 and W3 were collected from this area.

The sediment samples were collected from 0 to 0.5 feet below the ground surface using a hand auger. The soil was transferred from the hand auger to the sample containers using decontaminated stainless steel spoons. The surface water samples were collected by placing sample containers into the surface water body sampling locations and allowing the sample containers to fill with water. Clean containers were used to transfer water into the sample containers with preservatives. Care was taken not to disturb the bottom of the sampled water bodies and cause entrainment of settled solids into the sampling containers. The sample descriptions are included in Table 1 and the analytical results are included in Table 2.

The samples were selectively analyzed for gasoline range organics (GRO) by Alaska Method 101 (AK 101), diesel range organics (DRO) by AK 102, residual range organics (RRO) by AK 103, and volatile organic compounds (VOCs) by EPA Method 8260. The sediment samples were also analyzed for polychlorinated biphenyls (PCBs) by EPA Method 8082 and Resource Conservation Recovery Act (RCRA) metals by EPA Method 6020/7241.

DISCUSSION OF RESULTS

The sediment and surface water samples were compared to the soil and groundwater cleanup criteria contained in the May 26, 2004, Oil and Other Hazardous Substances Pollution Control Regulations. The cleanup levels for soil were developed using Table B2 of 18 AAC 75.340 for Method Two 'under 40-inch' precipitation zone cleanup criteria. The surface water samples were compared to the groundwater cleanup levels contained in Table C of 18 AAC 75. The cleanup levels are shown in Table 2. The laboratory results are provided in Attachment 1.

Sediment Samples

The two sediment samples contained concentrations of arsenic and chromium in excess of the applicable cleanup levels of 2 ppm arsenic and 26 ppm chromium. The samples contained a maximum of 2.55 ppm arsenic and 28.5 ppm chromium. It is our opinion that these concentrations are within the range of naturally occurring levels within the Anchorage area. The remainder of the tested analytes were either not detected or were detected at concentrations less than the applicable cleanup levels. It is noted that low levels of petroleum hydrocarbons were detected in Sample S2. Therefore, there is a potential that higher levels of petroleum hydrocarbons are present in the fill material on the northern portion of lake.

Surface Water Samples

Surface Water Sample W1 contained 0.701 ppm RRO which is less than the groundwater cleanup level of 1.1 ppm. Sample W2, contained 1.19 ppm DRO and 2.39 ppm RRO. The RRO concentration is greater than the applicable cleanup level of 1.1 ppm. The remainder of the

tested analytes were not detected. Therefore, petroleum impacted surface water is likely entering Tina Lake from offsite parcels to the north.

CONCLUSIONS

To date, the final Dowling Road extension project has not been determined. If the Dowling Road extension passes along the northern portion of Tina Lake, there is a potential that impacted soil and/or surface water will be encountered during the Dowling Road extension project.

CLOSURE/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 definite conclusions regarding the site's sediment or surface water quality. It is possible that our tests missed higher levels of petroleum hydrocarbon constituents 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 occur with 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 document 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.

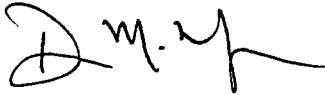
Dowling Road Extension, Anchorage
November 4, 2005
Page 4

SHANNON & WILSON, INC.

We appreciate this opportunity to be of service. Please contact Stafford Glashan, P.E. or the undersigned at (907) 561-2120 if you have any questions regarding the contents of this report.

Sincerely,

SHANNON & WILSON, INC.

A handwritten signature in black ink, appearing to read 'D. P. McMahon', with a stylized flourish at the end.

Dan P. McMahon
Sr. Environmental Scientist

Encl: Tables 1 & 2, Figure 1, and Attachments 1 & 2

TABLE 1 - SAMPLE LOCATIONS AND DESCRIPTIONS

Sample Number	Date	Sample Location (See Figure 1)	Depth (feet)	Sample Classification
Sediment Samples				
* 16881-2-S1	9/27/05	Northwest corner of lake	0-0.5	Brown to gray, silty, gravelly SAND; wet
* 16881-2-S2	9/27/05	North end of lake	0-0.5	Gray to black, silty, sandy GRAVEL; wet; organics
Water Samples				
* 16881-2-W1	9/27/05	Northwest corner of lake	-	Surface water
* 16881-2-W2	9/27/05	North end of lake	-	Surface water

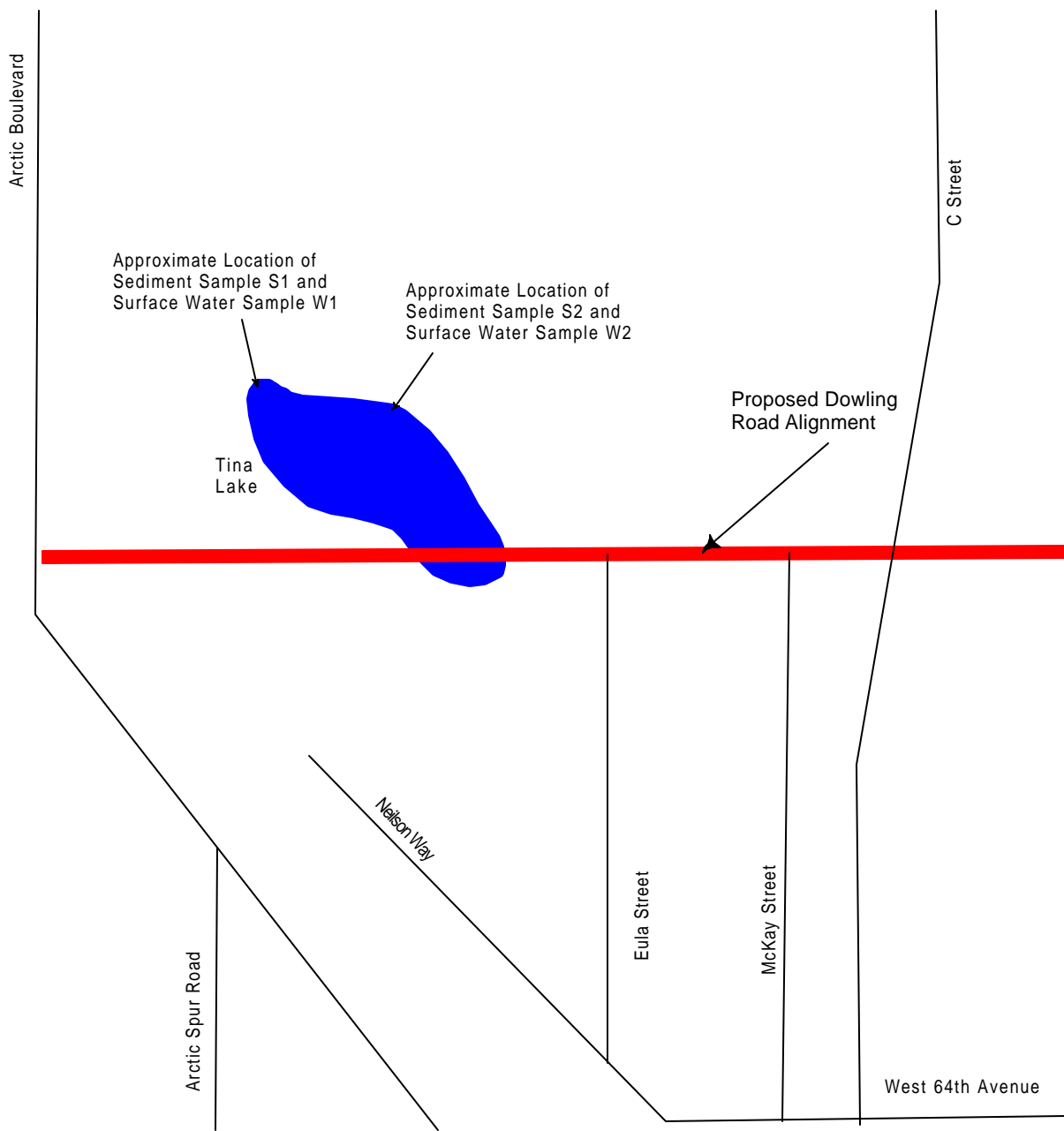
KEY DESCRIPTION

* Sample analyzed by the project laboratory (See Table 2)

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS

Parameter Tested	Method*	Cleanup Level (ppm)** Soil/Water	Sample Number [^] , and Collection Depth in Feet (See Table 1, Figure 1, and Attachment 1)			
			Sediment Samples		Water Samples	
			S1 0-0.5	S2 0-0.5	W1 -	W2 -
Percent Solids	SM20 2540G	-	81.1	86.9	-	-
Gasoline Range Organics (GRO) - ppm	AK 101	300/1.3	<2.27	<2.26	-	-
Diesel Range Organics (DRO) - ppm	AK102	250/1.5	<24.4	130	<0.326	1.19
Residual Range Organics (RRO) - ppm	AK 103	11,000/1.1	117	1,030	0.701	2.39
Aromatic Volatile Organics (BTEX)						
Benzene - ppm	EPA 8260B/8021B	0.02/0.005	<0.0118	<0.0113	<0.000400	-
Toluene - ppm	EPA 8260B/8021B	5.4/1.0	<0.0453	0.139	<0.00100	-
Ethylbenzene - ppm	EPA 8260B/8021B	5.5/0.7	<0.0227	<0.0452	<0.00100	-
Xylenes - ppm	EPA 8260B/8021B	78/10.0	<0.0435	<0.0452	<0.00200	-
Volatile Organic Compounds (VOCs) - ppm	EPA 8260B	Various	ND	-	ND	-
RCRA Metals						
Arsenic - ppm	EPA 6020	2/0.05	2.23	2.55	-	-
Barium - ppm	EPA 6020	1,100/2.0	59.3	81.8	-	-
Cadmium - ppm	EPA 6020	5/0.005	0.303	0.327	-	-
Chromium - ppm	EPA 6020	26/0.1	27.5	28.5	-	-
Lead - ppm	EPA 6020	400/0.015	6.48	25.6	-	-
Mercury - ppm	EPA 7471A	1.4/0.002	<0.0478	<0.0452	-	-
Selenium - ppm	EPA 6020	3.5/0.05	<0.598	<0.562	-	-
Silver - ppm	EPA 6020	21/0.18	<0.120	<0.112	-	-
Polychlorinated Biphenyls (PCBs) - ppm	EPA 8082	1	<0.0610	<0.0560	-	-

KEY	DESCRIPTION
*	See Attachment 1 for compounds tested, methods, and laboratory reporting limits
**	Soil cleanup level is the most stringent standard listed in Table B1 or B2, 18 AAC 75, for the "under 40 inches (precipitation) zone"
	Groundwater cleanup levels are listed in Table C, 18 AAC 75.345
^	Sample ID No. preceded by "16881-2-" on the chain of custody form
<2.27	Analyte not detected; laboratory reporting limit of 2.27 ppm
ND	Not Detected
ppm	Parts per million
2.39	Detected concentration greater than ADEC cleanup level



Dowling Road Extension Project Anchorage, Alaska	
SITE PLAN	
November 2005	32-1-16881-2
 SHANNON & WILSON, INC. Geotechnical & Environmental Consultants	Fig. 1

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



Laboratory Analysis Report

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

Dan McMahon
Shannon & Wilson Inc.
5430 Fairbanks St. Ste.3
Anchorage, AK 99518

Work Order: 1056368
16881-2 Dowling Rd Ext
Client: Shannon & Wilson Inc.
Report Date: October 14, 2005

Released by:


Alaska Division Project Manager

Shane Poston
2005.10.17 09:57:55
-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.# 1056368001
Client Name Shannon & Wilson Inc.
Project Name/# 16881-2 Dowling Rd Ext
Client Sample ID 16881-2-S1
Matrix Soil/Solid

All Dates/Times are Alaska Standard Time
Printed Date/Time 10/14/2005 16:17
Collected Date/Time 09/27/2005 11:55
Received Date/Time 09/27/2005 13:37
Technical Director Stephen C. Ede

Sample Remarks:

RRO - Unknown hydrocarbon with several peaks is present.
 6020 - Detectable amount of Cr in the method blank. Concentration of Cr in the sample is 10X greater.
 8260 - Sample was re-analyzed after method specified holding time had expired. Re-analysis confirmed original analytical results obtained prior to holding time expiration.
 GRO/BTEX - BFB surrogate recovery is biased low. Sample was run twice for confirmation.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<u>Metals Department</u>									
Mercury by Cold Vapor	47.8 U	47.8	ug/Kg	SW7471A	B		10/12/05	10/13/05	JEM
<u>RCRA Metals</u>									
Arsenic	2.23	1.20	mg/Kg	SW6020	B		10/06/05	10/09/05	WAW
Barium	59.3	0.359	mg/Kg	SW6020	B		10/06/05	10/09/05	WAW
Cadmium	0.303	0.239	mg/Kg	SW6020	B		10/06/05	10/09/05	WAW
Chromium	27.5	0.479	mg/Kg	SW6020	B		10/06/05	10/09/05	WAW
Lead	6.45	0.239	mg/Kg	SW6020	B		10/06/05	10/09/05	WAW
Selenium	0.598 U	0.598	mg/Kg	SW6020	B		10/06/05	10/09/05	WAW
Silver	0.120 U	0.120	mg/Kg	SW6020			10/06/05	10/10/05	TK
<u>Volatile Fuels Department</u>									
Gasoline Range Organics	2270 U	2270	ug/Kg	AK101	A		09/27/05	10/10/05	GR
<u>Surrogates</u>									
4-Bromofluorobenzene <surr>	46.4	!	%	AK101	A	50-150	09/27/05	10/10/05	GR
<u>Semivolatile Organic Fuels Department</u>									
Diesel Range Organics	24.4 U	24.4	mg/Kg	AK102/103	B		10/05/05	10/07/05	JC
Residual Range Organics	117	24.4	mg/Kg	AK102/103	B		10/05/05	10/07/05	JC

Surrogates



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Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Semivolatile Organic Fuels Department									
5a Androstane <sur>	118		%	AK102/103	B	50-150	10/05/05	10/07/05	JC
n-Triacontane-d62 <sur>	67.9		%	AK102/103	B	50-150	10/05/05	10/07/05	JC
Polychlorinated Biphenyls									
Aroclor-1016	61.0 U	61.0	ug/Kg	SW8082	B		10/05/05	10/06/05	WAA
Aroclor-1221	61.0 U	61.0	ug/Kg	SW8082	B		10/05/05	10/06/05	WAA
Aroclor-1232	61.0 U	61.0	ug/Kg	SW8082	B		10/05/05	10/06/05	WAA
Aroclor-1242	61.0 U	61.0	ug/Kg	SW8082	B		10/05/05	10/06/05	WAA
Aroclor-1248	61.0 U	61.0	ug/Kg	SW8082	B		10/05/05	10/06/05	WAA
Aroclor-1254	61.0 U	61.0	ug/Kg	SW8082	B		10/05/05	10/06/05	WAA
Aroclor-1260	61.0 U	61.0	ug/Kg	SW8082	B		10/05/05	10/06/05	WAA
Surrogates									
Decachlorobiphenyl <sur>	97.3		%	SW8082	B	60-125	10/05/05	10/06/05	WAA
Volatile Gas Chromatography/Mass Spectroscopy									
Dichlorodifluoromethane	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
Chloromethane	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
Vinyl chloride	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
Bromomethane	90.6 U	90.6	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
Chloroethane	90.6 U	90.6	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
Trichlorofluoromethane	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
1,1-Dichloroethene	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
Acetone	227 U	227	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
Carbon disulfide	90.6 U	90.6	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
Methylene chloride	90.6 U	90.6	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
trans-1,2-Dichloroethene	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
2-Butanone (MEK)	227 U	227	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
2,2-Dichloropropane	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH



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Client Sample ID 16881-2-S1
Matrix Soil/Solid

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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>									
1,1,1-Trichloroethane	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
1,1-Dichloroethane	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
cis-1,2-Dichloroethene	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
Bromochloromethane	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
Chloroform	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
Carbon tetrachloride	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
Benzene	11.8 U	11.8	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
1,1-Dichloropropene	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
1,2-Dichloroethane	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
Trichloroethene	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
1,2-Dichloropropane	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
Dibromomethane	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
Bromodichloromethane	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
1,1,2-Trichloroethane	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
2-Chloroethyl Vinyl Ether	90.6 U	90.6	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
cis-1,3-Dichloropropene	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
4-Methyl-2-pentanone (MIBK)	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
Toluene	45.3 U	45.3	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
trans-1,3-Dichloropropene	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
Tetrachloroethene	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
1,3-Dichloropropane	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
2-Hexanone	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
Dibromochloromethane	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
1,1,1,2-Tetrachloroethane	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
1,2-Dibromoethane	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
Chlorobenzene	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
Ethylbenzene	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
P & M -Xylene	45.3 U	45.3	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
o-Xylene	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
Styrene	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH



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Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<u>Volatile Gas Chromatography/Mass Spectroscopy</u>									
Bromoform	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
Isopropylbenzene (Cumene)	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
Bromobenzene	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
1,2,3-Trichloropropane	45.3 U	45.3	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
1,1,2,2-Tetrachloroethane	45.3 U	45.3	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
n-Propylbenzene	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
2-Chlorotoluene	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
4-Chlorotoluene	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
1,3,5-Trimethylbenzene	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
tert-Butylbenzene	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
1,2,4-Trimethylbenzene	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
sec-Butylbenzene	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
1,3-Dichlorobenzene	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
4-Isopropyltoluene	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
1,4-Dichlorobenzene	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
1,2-Dichlorobenzene	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
n-Butylbenzene	22.7 U	22.7	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
1,2-Dibromo-3-chloropropane	90.6 U	90.6	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
1,2,4-Trichlorobenzene	45.3 U	45.3	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
Hexachlorobutadiene	45.3 U	45.3	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
Naphthalene	45.3 U	45.3	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
1,2,3-Trichlorobenzene	45.3 U	45.3	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH
Methyl-t-butyl ether	36.2 U	36.2	ug/Kg	SW8260B	A		09/27/05	10/12/05	WJH

Surrogates

Dibromofluoromethane <surr>	101		%	SW8260B	A	83-119	09/27/05	10/12/05	WJH
1,2-Dichloroethane-D4 <surr>	103		%	SW8260B	A	85-115	09/27/05	10/12/05	WJH
Toluene-d8 <surr>	98.3		%	SW8260B	A	87-115	09/27/05	10/12/05	WJH
4-Bromofluorobenzene <surr>	64.9		%	SW8260B	A	50-154	09/27/05	10/12/05	WJH



SGS Ref.# 1056368001
Client Name Shannon & Wilson Inc.
Project Name/# 16881-2 Dowling Rd Ext
Client Sample ID 16881-2-S1
Matrix Soil/Solid

All Dates/Times are Alaska Standard Time
Printed Date/Time 10/14/2005 16:17
Collected Date/Time 09/27/2005 11:55
Received Date/Time 09/27/2005 13:37
Technical Director Stephen C. Ede

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Solids									
Total Solids	81.1		%	SM20 2540G	B			10/04/05	HM



SGS Ref.# 1056368002
Client Name Shannon & Wilson Inc.
Project Name/# 16881-2 Dowling Rd Ext
Client Sample ID 16881-2-S2
Matrix Soil/Solid

All Dates/Times are Alaska Standard Time
Printed Date/Time 10/14/2005 16:17
Collected Date/Time 09/27/2005 12:10
Received Date/Time 09/27/2005 13:37
Technical Director Stephen C. Ede

Sample Remarks:

RRO - Surrogate is outside QC goals (biased high) due to hydrocarbon interference.
 DRO/RRO - Unknown hydrocarbon with several peaks is present.
 6020 - Detectable amount of Cr in the method blank. Concentration of Cr in the sample is 10X greater.
 GRO/BTEX - BFB surrogate recovery is biased low. Sample was run twice for confirmation.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<u>Metals Department</u>									
Mercury by Cold Vapor	45.2 U	45.2	ug/Kg	SW7471A	B		10/12/05	10/13/05	JEM
<u>RCRA Metals</u>									
Arsenic	2.55	1.12	mg/Kg	SW6020	B		10/06/05	10/09/05	WAW
Barium	81.8	0.337	mg/Kg	SW6020	B		10/06/05	10/09/05	WAW
Cadmium	0.327	0.225	mg/Kg	SW6020	B		10/06/05	10/09/05	WAW
Chromium	28.5	0.450	mg/Kg	SW6020	B		10/06/05	10/09/05	WAW
Lead	25.6	0.225	mg/Kg	SW6020	B		10/06/05	10/09/05	WAW
Selenium	0.562 U	0.562	mg/Kg	SW6020	B		10/06/05	10/09/05	WAW
Silver	0.112 U	0.112	mg/Kg	SW6020			10/06/05	10/10/05	TK
<u>Volatile Fuels Department</u>									
Gasoline Range Organics	2260 U	2260	ug/Kg	AK101 8021B	A		09/27/05	10/10/05	GR
Benzene	11.3 U	11.3	ug/Kg	AK101 8021B	A		09/27/05	10/10/05	GR
Toluene	139	45.2	ug/Kg	AK101 8021B	A		09/27/05	10/10/05	GR
Ethylbenzene	45.2 U	45.2	ug/Kg	AK101 8021B	A		09/27/05	10/10/05	GR
P & M -Xylene	45.2 U	45.2	ug/Kg	AK101 8021B	A		09/27/05	10/10/05	GR
o-Xylene	45.2 U	45.2	ug/Kg	AK101 8021B	A		09/27/05	10/10/05	GR
<u>Surrogates</u>									
1,4-Difluorobenzene <surr>	100		%	AK101 8021B	A	81-108	09/27/05	10/10/05	GR
4-Bromofluorobenzene <surr>	45.8	!	%	AK101 8021B	A	50-150	09/27/05	10/10/05	GR



SGS Ref.# 1056368002
Client Name Shannon & Wilson Inc.
Project Name/# 16881-2 Dowling Rd Ext
Client Sample ID 16881-2-S2
Matrix Soil/Solid

All Dates/Times are Alaska Standard Time
Printed Date/Time 10/14/2005 16:17
Collected Date/Time 09/27/2005 12:10
Received Date/Time 09/27/2005 13:37
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>									
Diesel Range Organics	130	84.1	mg/Kg	AK102/103	B		10/05/05	10/07/05	JC
Residual Range Organics	1030	84.1	mg/Kg	AK102/103	B		10/05/05	10/07/05	JC
<u>Surrogates</u>									
5a Androstane <surr>	66		%	AK102/103	B	50-150	10/05/05	10/07/05	JC
n-Triacontane-d62 <surr>	334	!	%	AK102/103	B	50-150	10/05/05	10/07/05	JC
<u>Polychlorinated Biphenyls</u>									
Aroclor-1016	56.0 U	56.0	ug/Kg	SW8082	B		10/05/05	10/06/05	WAA
Aroclor-1221	56.0 U	56.0	ug/Kg	SW8082	B		10/05/05	10/06/05	WAA
Aroclor-1232	56.0 U	56.0	ug/Kg	SW8082	B		10/05/05	10/06/05	WAA
Aroclor-1242	56.0 U	56.0	ug/Kg	SW8082	B		10/05/05	10/06/05	WAA
Aroclor-1248	56.0 U	56.0	ug/Kg	SW8082	B		10/05/05	10/06/05	WAA
Aroclor-1254	56.0 U	56.0	ug/Kg	SW8082	B		10/05/05	10/06/05	WAA
Aroclor-1260	56.0 U	56.0	ug/Kg	SW8082	B		10/05/05	10/06/05	WAA
<u>Surrogates</u>									
Decachlorobiphenyl <surr>	84.5		%	SW8082	B	60-125	10/05/05	10/06/05	WAA
<u>Solids</u>									
Total Solids	86.9		%	SM20 2540G	B			10/04/05	HM



SGS Ref.# 1056368003
Client Name Shannon & Wilson Inc.
Project Name/# 16881-2 Dowling Rd Ext
Client Sample ID 16881-2-W1
Matrix Water (Surface, Eff., Ground)

All Dates/Times are Alaska Standard Time
Printed Date/Time 10/14/2005 16:17
Collected Date/Time 09/27/2005 12:00
Received Date/Time 09/27/2005 13:37
Technical Director Stephen C. Ede

Sample Remarks:

RRO - Unknown hydrocarbon with several peaks is present.

8260 - Sample result for 1,2-dichloroethane-D4(surr) is biased high and does not meet laboratory QC goals. There are no target analytes detected above the PQL associated with this surrogate.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Semivolatile Organic Fuels Department									
Diesel Range Organics	0.326 U	0.326	mg/L	AK102/103	D		10/01/05	10/05/05	JC
Residual Range Organics	0.701	0.543	mg/L	AK102/103	D		10/01/05	10/05/05	JC
Surrogates									
5a Androstane <surr>	111		%	AK102/103	D	50-150	10/01/05	10/05/05	JC
n-Triacontane-d62 <surr>	120		%	AK102/103	D	50-150	10/01/05	10/05/05	JC
Volatile Gas Chromatography/Mass Spectroscopy									
Dichlorodifluoromethane	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
Chloromethane	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
Vinyl chloride	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
Bromomethane	3.00 U	3.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
Chloroethane	1.00 U	1.00	ug/L	SW8260B	B		10/10/05	10/11/05	VS
1,1-Dichloroethene	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
Trichlorofluoromethane	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
Methylene chloride	5.00 U	5.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
Carbon disulfide	2.00 U	2.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
Acetone	10.0 U	10.0	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
trans-1,2-Dichloroethene	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
1,1-Dichloroethane	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
2,2-Dichloropropane	1.00 U	1.00	ug/L	SW8260B	B		10/10/05	10/11/05	VS
cis-1,2-Dichloroethene	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
2-Butanone (MEK)	10.0 U	10.0	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
Bromochloromethane	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
Chloroform	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
1,1,1-Trichloroethane	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM



SGS Ref.# 1056368003
Client Name Shannon & Wilson Inc.
Project Name/# 16881-2 Dowling Rd Ext
Client Sample ID 16881-2-W1
Matrix Water (Surface, Eff., Ground)

All Dates/Times are Alaska Standard Time
Printed Date/Time 10/14/2005 16:17
Collected Date/Time 09/27/2005 12:00
Received Date/Time 09/27/2005 13:37
Technical Director Stephen C. Ede

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Gas Chromatography/Mass Spectroscopy									
Carbon tetrachloride	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
1,1-Dichloropropene	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
Benzene	0.400 U	0.400	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
Trichloroethene	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
1,2-Dichloropropane	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
Dibromomethane	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
Bromodichloromethane	0.500 U	0.500	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
2-Chloroethyl Vinyl Ether	10.0 U	10.0	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
cis-1,3-Dichloropropene	0.500 U	0.500	ug/L	SW8260B	B		10/10/05	10/11/05	VS
Toluene	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
trans-1,3-Dichloropropene	1.00 U	1.00	ug/L	SW8260B	B		10/10/05	10/11/05	VS
1,1,2-Trichloroethane	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
Tetrachloroethene	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
1,3-Dichloropropane	0.400 U	0.400	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
Dibromochloromethane	0.500 U	0.500	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
1,2-Dibromoethane	1.00 U	1.00	ug/L	SW8260B	B		10/10/05	10/11/05	VS
Chlorobenzene	0.500 U	0.500	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
1,1,1,2-Tetrachloroethane	0.500 U	0.500	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
Ethylbenzene	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
p & m -Xylene	2.00 U	2.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
Styrene	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
Bromoform	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
Isopropylbenzene (Cumene)	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
Bromobenzene	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
o-Xylene	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
1,1,2,2-Tetrachloroethane	0.500 U	0.500	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
1,2,3-Trichloropropane	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
n-Propylbenzene	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
2-Chlorotoluene	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
4-Chlorotoluene	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM



SGS Ref.# 1056368003
Client Name Shannon & Wilson Inc.
Project Name/# 16881-2 Dowling Rd Ext
Client Sample ID 16881-2-W1
Matrix Water (Surface, Eff., Ground)

All Dates/Times are Alaska Standard Time

Printed Date/Time 10/14/2005 16:17
Collected Date/Time 09/27/2005 12:00
Received Date/Time 09/27/2005 13:37
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>									
1,3,5-Trimethylbenzene	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
tert-Butylbenzene	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
1,2,4-Trimethylbenzene	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
sec-Butylbenzene	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
4-Isopropyltoluene	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
1,4-Dichlorobenzene	0.500 U	0.500	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
1,2-Dichlorobenzene	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
1,3-Dichlorobenzene	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
n-Butylbenzene	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
1,2-Dibromo-3-chloropropane	2.00 U	2.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
1,2,4-Trichlorobenzene	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
Hexachlorobutadiene	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
Naphthalene	2.00 U	2.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
1,2,3-Trichlorobenzene	1.00 U	1.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
4-Methyl-2-pentanone (MIBK)	10.0 U	10.0	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
2-Hexanone	10.0 U	10.0	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
Methyl-t-butyl ether	5.00 U	5.00	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
1,2-Dichloroethane	0.500 U	0.500	ug/L	SW8260B	A		10/10/05	10/11/05	MCM
Surrogates									
Dibromofluoromethane <surr>	116	!	%	SW8260B	A	85-115	10/10/05	10/11/05	MCM
1,2-Dichloroethane-D4 <surr>	123	!	%	SW8260B	A	72-119	10/10/05	10/11/05	MCM
Toluene-d8 <surr>	90.5		%	SW8260B	A	85-120	10/10/05	10/11/05	MCM
4-Bromofluorobenzene <surr>	102		%	SW8260B	A	76-119	10/10/05	10/11/05	MCM



SGS Ref.# 1056368004
Client Name Shannon & Wilson Inc.
Project Name/# 16881-2 Dowling Rd Ext
Client Sample ID 16881-2-W2
Matrix Water (Surface, Eff., Ground)

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Printed Date/Time 10/14/2005 16:17
Collected Date/Time 09/27/2005 12:20
Received Date/Time 09/27/2005 13:37
Technical Director Stephen C. Ede

Sample Remarks:

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

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Semivolatile Organic Fuels Department									
Diesel Range Organics	1.19	0.309	mg/L	AK102/103	A		10/01/05	10/05/05	JC
Residual Range Organics	2.39	0.515	mg/L	AK102/103	A		10/01/05	10/05/05	JC
Surrogates									
5a Androstane <surr>	84.7		%	AK102/103	A	50-150	10/01/05	10/05/05	JC
n-Triacontane-d62 <surr>	82.8		%	AK102/103	A	50-150	10/01/05	10/05/05	JC

ATTACHMENT 2

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



Date: November 2005
To: HDR Alaska, Inc.
Re: Dowling Road Extension Project

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