Maxxam Job #: B375531
Report Date: 2013/09/12

FRANZ ENVIRONMENTAL INC.
Client Project #: 1697-1301

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7116412	O-TERPHENYL (sur.)	2013/08/27	99	50 - 130	109	50 - 130	101	%		
7116412	F2 (C10-C16 Hydrocarbons)	2013/08/27	98	50 - 130	104	70 - 130	<0.10	mg/L	57.7(1)	40
7116412	F3 (C16-C34 Hydrocarbons)	2013/08/27	98	50 - 130	96	70 - 130	<0.20	mg/L	64.4(1)	40
7116412	F4 (C34-C50 Hydrocarbons)	2013/08/27	93	50 - 130	106	70 - 130	<0.20	mg/L	68.5(1)	40
7117522	NONACHLOROBIPHENYL (sur.)	2013/08/27	110	30 - 130	111	30 - 130	101	%		
7117522	Aroclor 1260	2013/08/27	113	30 - 130	111	30 - 130	<0.000050	mg/L	NC	40
7117522	Aroclor 1016	2013/08/27					<0.000050	mg/L	NC	40
7117522	Aroclor 1221	2013/08/27					<0.000050	mg/L	NC	40
7117522	Aroclor 1232	2013/08/27					<0.000050	mg/L	NC	40
7117522	Aroclor 1242	2013/08/27					<0.000050	mg/L	NC	40
7117522	Aroclor 1248	2013/08/27					<0.000050	mg/L	NC	40
7117522	Aroclor 1254	2013/08/27					<0.000050	mg/L	NC	40
7117522	Aroclor 1262	2013/08/27					<0.000050	mg/L	NC	40
7117522	Aroclor 1268	2013/08/27					<0.000050	mg/L	NC	40
7117522	Total Aroclors	2013/08/27					<0.000050	mg/L	NC	40
7117948	1,4-Difluorobenzene (sur.)	2013/08/28	104	70 - 130	111	70 - 130	122	%		
7117948	4-BROMOFLUOROBENZENE (sur.)	2013/08/28	106	70 - 130	104	70 - 130	87	%		
7117948	D4-1,2-DICHLOROETHANE (sur.)	2013/08/28	117	70 - 130	123	70 - 130	127	%		
7117948	Benzene	2013/08/28	90	70 - 130	100	70 - 130	<0.40	ug/L	NC	40
7117948	Toluene	2013/08/28	80	70 - 130	94	70 - 130	<0.40	ug/L	NC	40
7117948	Ethylbenzene	2013/08/28	82	70 - 130	98	70 - 130	<0.40	ug/L	NC	40
7117948	m & p-Xylene	2013/08/28	99	70 - 130	122	70 - 130	<0.80	ug/L	NC	40
7117948	o-Xylene	2013/08/28	98	70 - 130	108	70 - 130	<0.40	ug/L	NC	40
7117948	(C6-C10)	2013/08/28	79	70 - 130	117	70 - 130	<100	ug/L	NC	40
7117948	Xylenes (Total)	2013/08/28					<0.80	ug/L	NC	40
7117948	F1 (C6-C10) - BTEX	2013/08/28					<100	ug/L	NC	40
7118830	Dissolved Nitrite (N)	2013/08/27	99	80 - 120	102	90 - 110	<0.0030	mg/L	7.5	20
7118830	Dissolved Nitrate (N)	2013/08/27	99	80 - 120	104	90 - 110	<0.0030	mg/L	12.8	20
7120649	Dissolved Aluminum (Al)	2013/08/27	98	80 - 120	97	80 - 120	<0.040	mg/L		
7120649	Dissolved Barium (Ba)	2013/08/27	92	80 - 120	92	80 - 120	<0.010	mg/L		
7120649	Dissolved Boron (B)	2013/08/27	94	80 - 120	93	80 - 120	<0.020	mg/L		
7120649	Dissolved Calcium (Ca)	2013/08/27	NC	80 - 120	101	80 - 120	<0.30	mg/L	6.2	20
7120649	Dissolved Chromium (Cr)	2013/08/27	92	80 - 120	92	80 - 120	<0.010	mg/L		
7120649	Dissolved Iron (Fe)	2013/08/27	103	80 - 120	102	80 - 120	<0.060	mg/L	NC	20
7120649	Dissolved Lithium (Li)	2013/08/27	96	80 - 120	95	80 - 120	<0.020	mg/L		
7120649	Dissolved Magnesium (Mg)	2013/08/27	93	80 - 120	95	80 - 120	<0.20	mg/L	5.3	20
7120649	Dissolved Manganese (Mn)	2013/08/27	97	80 - 120	96	80 - 120	<0.0040	mg/L	NC	20
7120649	Dissolved Phosphorus (P)	2013/08/27	101	80 - 120	97	80 - 120	<0.10	mg/L		
7120649	Dissolved Potassium (K)	2013/08/27	94	80 - 120	95	80 - 120	<0.30	mg/L	NC	20
7120649	Dissolved Silicon (Si)	2013/08/27	99	80 - 120	100	80 - 120	<0.10	mg/L		

Maxxam Job #: B375531
Report Date: 2013/09/12

FRANZ ENVIRONMENTAL INC.
Client Project #: 1697-1301

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7120649	Dissolved Sodium (Na)	2013/08/27	92	80 - 120	93	80 - 120	<0.50	mg/L	6.1	20
7120649	Dissolved Strontium (Sr)	2013/08/27	94	80 - 120	94	80 - 120	<0.020	mg/L		
7120649	Dissolved Sulphur (S)	2013/08/27					<0.20	mg/L		
7121037	Alkalinity (Total as CaCO3)	2013/08/27			92	80 - 120	0.51, RDL=0.50	mg/L	0.7	20
7121037	Alkalinity (PP as CaCO3)	2013/08/27					<0.50	mg/L	NC	20
7121037	Bicarbonate (HCO3)	2013/08/27					0.62, RDL=0.50	mg/L	0.7	20
7121037	Carbonate (CO3)	2013/08/27					<0.50	mg/L	NC	20
7121037	Hydroxide (OH)	2013/08/27					<0.50	mg/L	NC	20
7121041	Conductivity	2013/08/27			99	90 - 110	<1.0	uS/cm	0.1	20
7121043	pH	2013/08/27			100	97 - 102			0.5	5
7121045	Dissolved Fluoride (F)	2013/08/27	93	80 - 120	92	80 - 120	<0.050	mg/L	NC	20
7121131	True Colour	2013/08/27			99	80 - 120	<2.0	PtCo units	NC	20
7121901	Total Dissolved Solids	2013/08/28			99	80 - 120	<10	mg/L	0.8	20
7122868	Dissolved Aluminum (Al)	2013/08/29	103	80 - 120	106	80 - 120	<0.50	ug/L	0.2	20
7122868	Dissolved Antimony (Sb)	2013/08/29	103	80 - 120	101	80 - 120	<0.020	ug/L	NC	20
7122868	Dissolved Arsenic (As)	2013/08/29	103	80 - 120	98	80 - 120	<0.020	ug/L	3.0	20
7122868	Dissolved Barium (Ba)	2013/08/29	NC	80 - 120	96	80 - 120	<0.020	ug/L	1	20
7122868	Dissolved Beryllium (Be)	2013/08/29	96	80 - 120	101	80 - 120	<0.010	ug/L	NC	20
7122868	Dissolved Bismuth (Bi)	2013/08/29	96	80 - 120	96	80 - 120	<0.0050	ug/L	NC	20
7122868	Dissolved Cadmium (Cd)	2013/08/29	100	80 - 120	97	80 - 120	<0.0050	ug/L	NC	20
7122868	Dissolved Chromium (Cr)	2013/08/29	98	80 - 120	98	80 - 120	<0.10	ug/L	NC	20
7122868	Dissolved Cobalt (Co)	2013/08/29	96	80 - 120	99	80 - 120	<0.0050	ug/L	0.9	20
7122868	Dissolved Copper (Cu)	2013/08/29	98	80 - 120	99	80 - 120	<0.050	ug/L	5.7	20
7122868	Dissolved Iron (Fe)	2013/08/29	106	80 - 120	105	80 - 120	<1.0	ug/L	NC	20
7122868	Dissolved Lead (Pb)	2013/08/29	94	80 - 120	99	80 - 120	<0.0050	ug/L	NC	20
7122868	Dissolved Lithium (Li)	2013/08/29	85	80 - 120	98	80 - 120	<0.50	ug/L	NC	20
7122868	Dissolved Manganese (Mn)	2013/08/29	NC	80 - 120	97	80 - 120	<0.050	ug/L	0.2	20
7122868	Dissolved Molybdenum (Mo)	2013/08/29	NC	80 - 120	95	80 - 120	<0.050	ug/L	7.6	20
7122868	Dissolved Nickel (Ni)	2013/08/29	96	80 - 120	100	80 - 120	<0.020	ug/L	4.1	20
7122868	Dissolved Selenium (Se)	2013/08/29	107	80 - 120	98	80 - 120	<0.040	ug/L	7.7	20
7122868	Dissolved Silver (Ag)	2013/08/29	104	80 - 120	84	80 - 120	<0.0050	ug/L	NC	20
7122868	Dissolved Strontium (Sr)	2013/08/29	NC	80 - 120	93	80 - 120	<0.050	ug/L	0.9	20
7122868	Dissolved Thallium (Tl)	2013/08/29	96	80 - 120	104	80 - 120	<0.0020	ug/L	8.7	20
7122868	Dissolved Tin (Sn)	2013/08/29	97	80 - 120	98	80 - 120	<0.20	ug/L	NC	20
7122868	Dissolved Titanium (Ti)	2013/08/29	113	80 - 120	96	80 - 120	<0.50	ug/L	NC	20
7122868	Dissolved Uranium (U)	2013/08/29	NC	80 - 120	102	80 - 120	<0.0020	ug/L	2.8	20
7122868	Dissolved Vanadium (V)	2013/08/29	106	80 - 120	97	80 - 120	<0.20	ug/L	NC	20
7122868	Dissolved Zinc (Zn)	2013/08/29	93	80 - 120	104	80 - 120	<0.10	ug/L		
7122868	Dissolved Boron (B)	2013/08/29					<50	ug/L	NC	20
7122868	Dissolved Silicon (Si)	2013/08/29					<100	ug/L	1.9	20

Maxxam Job #: B375531
Report Date: 2013/09/12

FRANZ ENVIRONMENTAL INC.
Client Project #: 1697-1301

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7122868	Dissolved Zirconium (Zr)	2013/08/29					<0.10	ug/L	NC	20
7122900	Total Aluminum (Al)	2013/08/29	96	80 - 120	104	80 - 120	<0.50	ug/L	10.8	20
7122900	Total Antimony (Sb)	2013/08/29	101	80 - 120	103	80 - 120	<0.020	ug/L	NC	20
7122900	Total Arsenic (As)	2013/08/29	106	80 - 120	102	80 - 120	<0.020	ug/L	6.8	20
7122900	Total Barium (Ba)	2013/08/29	NC	80 - 120	99	80 - 120	<0.020	ug/L	2.7	20
7122900	Total Beryllium (Be)	2013/08/29	97	80 - 120	99	80 - 120	<0.010	ug/L	NC	20
7122900	Total Bismuth (Bi)	2013/08/29	101	80 - 120	95	80 - 120	<0.0050	ug/L	NC	20
7122900	Total Cadmium (Cd)	2013/08/29	102	80 - 120	99	80 - 120	<0.0050	ug/L	NC	20
7122900	Total Chromium (Cr)	2013/08/29	104	80 - 120	102	80 - 120	<0.10	ug/L	NC	20
7122900	Total Cobalt (Co)	2013/08/29	102	80 - 120	101	80 - 120	<0.0050	ug/L	NC	20
7122900	Total Copper (Cu)	2013/08/29	103	80 - 120	101	80 - 120	<0.050	ug/L	2.4	20
7122900	Total Iron (Fe)	2013/08/29	NC	80 - 120	106	80 - 120	<1.0	ug/L	2.2	20
7122900	Total Lead (Pb)	2013/08/29	97	80 - 120	97	80 - 120	<0.0050	ug/L	9.0	20
7122900	Total Lithium (Li)	2013/08/29	88	80 - 120	96	80 - 120	<0.50	ug/L	NC	20
7122900	Total Manganese (Mn)	2013/08/29	NC	80 - 120	101	80 - 120	<0.050	ug/L	1.5	20
7122900	Total Molybdenum (Mo)	2013/08/29	98	80 - 120	94	80 - 120	<0.050	ug/L	NC	20
7122900	Total Nickel (Ni)	2013/08/29	103	80 - 120	101	80 - 120	<0.020	ug/L	1.7	20
7122900	Total Selenium (Se)	2013/08/29	110	80 - 120	109	80 - 120	<0.040	ug/L	NC	20
7122900	Total Silver (Ag)	2013/08/29	104	80 - 120	86	80 - 120	<0.0050	ug/L	NC	20
7122900	Total Strontium (Sr)	2013/08/29	NC	80 - 120	100	80 - 120	<0.050	ug/L	2.0	20
7122900	Total Thallium (Tl)	2013/08/29	100	80 - 120	99	80 - 120	<0.0020	ug/L	NC	20
7122900	Total Tin (Sn)	2013/08/29	NC	80 - 120	102	80 - 120	<0.20	ug/L	NC	20
7122900	Total Titanium (Ti)	2013/08/29	108	80 - 120	113	80 - 120	<0.50	ug/L	NC	20
7122900	Total Uranium (U)	2013/08/29	99	80 - 120	97	80 - 120	<0.0020	ug/L	NC	20
7122900	Total Vanadium (V)	2013/08/29	109	80 - 120	100	80 - 120	<0.20	ug/L	NC	20
7122900	Total Zinc (Zn)	2013/08/29	103	80 - 120	102	80 - 120	<0.10	ug/L	0.6	20
7122900	Total Boron (B)	2013/08/29					<50	ug/L	NC	20
7122900	Total Silicon (Si)	2013/08/29					<100	ug/L	1.9	20
7122900	Total Zirconium (Zr)	2013/08/29					<0.10	ug/L	NC	20
7125504	Orthophosphate (P)	2013/08/28	97	80 - 120	102	80 - 120	<0.0030	mg/L	NC	20
7126554	Total Suspended Solids	2013/08/29			87	80 - 120	<0.40	mg/L		
7127559	Dissolved Calcium (Ca)	2013/08/29	103	80 - 120	103	80 - 120	<0.30	mg/L	0.03	20
7127559	Dissolved Magnesium (Mg)	2013/08/29	93	80 - 120	106	80 - 120	<0.20	mg/L	0.1	20
7127559	Dissolved Potassium (K)	2013/08/29	92	80 - 120	109	80 - 120	<0.30	mg/L	0.4	20
7127559	Dissolved Sodium (Na)	2013/08/29	118	80 - 120	106	80 - 120	<0.50	mg/L	0.2	20
7129391	Dissolved Chloride (Cl)	2013/08/29	104	80 - 120	101	80 - 120	<1.0	mg/L	NC	20
7129396	Dissolved Sulphate (SO4)	2013/08/29	115	80 - 120	108	80 - 120	<1.0	mg/L	NC	20
7130839	Dissolved Chloride (Cl)	2013/08/30	104	80 - 120	102	80 - 120	<1.0	mg/L	NC	20
7130847	Dissolved Sulphate (SO4)	2013/08/30	108	80 - 120	99	80 - 120	<1.0	mg/L	NC	20
7137476	Dissolved Cobalt (Co)	2013/09/03			105	80 - 120	<0.0050	ug/L		

Maxxam Job #: B375531
Report Date: 2013/09/12

FRANZ ENVIRONMENTAL INC.
Client Project #: 1697-1301

QUALITY ASSURANCE REPORT

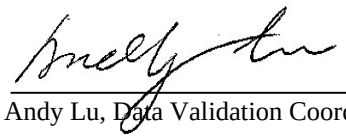
			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7137476	Dissolved Copper (Cu)	2013/09/03			106	80 - 120	<0.050	ug/L		
7137476	Dissolved Zinc (Zn)	2013/09/03			105	80 - 120	<0.10	ug/L		

N/A = Not Applicable
RDL = Reportable Detection Limit
RPD = Relative Percent Difference
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.
(1) - Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

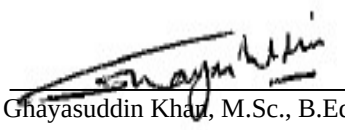
Validation Signature Page

Maxxam Job #: B375531

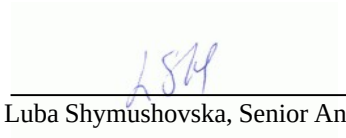
The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



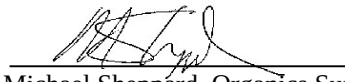
Andy Lu, Data Validation Coordinator



Ghayasuddin Khan, M.Sc., B.Ed., P.Chem, Scientific Specialist



Luba Shymushovska, Senior Analyst, Organic Department



Michael Sheppard, Organics Supervisor

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Analytics International Corporation o/a Maxxam Analytics
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-653-6266 Fax:(905) 817-5779 www.maxxam.ca

CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#10988 Franz Environmental Inc	Company Name:		Quotation #:	B33178	MAXXAM JOB #:	BOTTLE ORDER #: 427711
Contact Name:	Invoices, Lillian & Julie	Contact Name:	Julie Dittburner	P.O. #:			
Address:	329 Churchill Ave N Suite 200 Ottawa ON K1Z 5B8	Address:		Project #:	1697-1301		
Phone:	(613)721-0555 Fax: (613)721-0029	Phone:	Fax:	Project Name:		CHAIN OF CUSTODY #:	PROJECT MANAGER:
Email:	jdittburner@franzenvironmental.com, lellis@franzen	Email:	jdittburner@franzenvironmental.com	Site #:	~~Cambridge Bay, NU~~ PIN-D & PIN-B	C#427711-03-01	Parnian Baber
				Sampled By:			

Regulation 153 (2011): ☐ Table 1 ☐ Table 2 ☐ Table 3 ☐ Table ___ ☐ Res/Park ☐ Ind/Comm ☐ Agri/Other ☐ Medium/Fine ☐ Coarse ☐ For RSC

Other Regulations: ☒ CCME ☐ Reg. 558 ☐ MISA ☐ PWQO ☐ Other ___ ☐ Sanitary Sewer Bylaw ☐ Storm Sewer Bylaw Municipality ___

SPECIAL INSTRUCTIONS

Include Criteria on Certificate of Analysis (Y/N)? ___

Note: For MOE regulated drinking water samples - please use the Drinking Water Chain of Custody Form

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Regulated Drinking Water ? (Y/N)	Metals Field Filtered ? (Y/N)	BTEX, F1-F4	CCME Low Level Diss. Metals & Hardness	CCME Low Level Total Metals	Colour, Conductivity & pH	Low Level Polychlorinated Biphenyl (PCB)	Low Level Total Suspended Solids	MAJOR IONS (Cl, F, NO2/NO3, SO4, PO4)	Total Dissolved Solids	# of Bottles	Comments
1		MW3-D	Aug 21/13	PM	GW	N	Y	X	X	X	X	X	X	X	X	12	
2		DUP2	Aug 21/13	PM	GW	N	Y		X	X	X	X	X	X	X	7	
3		MW2-D	Aug 21/13	PM	GW	N	Y	X	X	X	X	X		X		8	-limited sample for F2-F4 & PCBs, gen. chem & major ions.
4		DUP1	Aug 21/13	PM	GW	N	Y	X								4	-limited sample for F2-F4
5		MW3-B	Aug 22/13	PM	GW	N	Y	X	X	X	X	X	X	X	X	12	
6																	
7																	
8																	
9																	
10																	

22-Aug-13 16:25
Parminder Virk
B375531 AD
FL5 INS-0102

RECEIVED IN YELLOWKNIFE
By: [signature]
2013-08-22 16:25
3 6 7
Temp: 10 9 10

*RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	# Jars Used and Not Submitted	Laboratory Use Only: Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
J. Dittburner	13/08/22	16:00	Krish Balkaran	13/08/24	09:00			5/5/13 4/4/7	Present	✓	
									Intact	✓	

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

White: Maxxam Yellow: Client

2x08-931

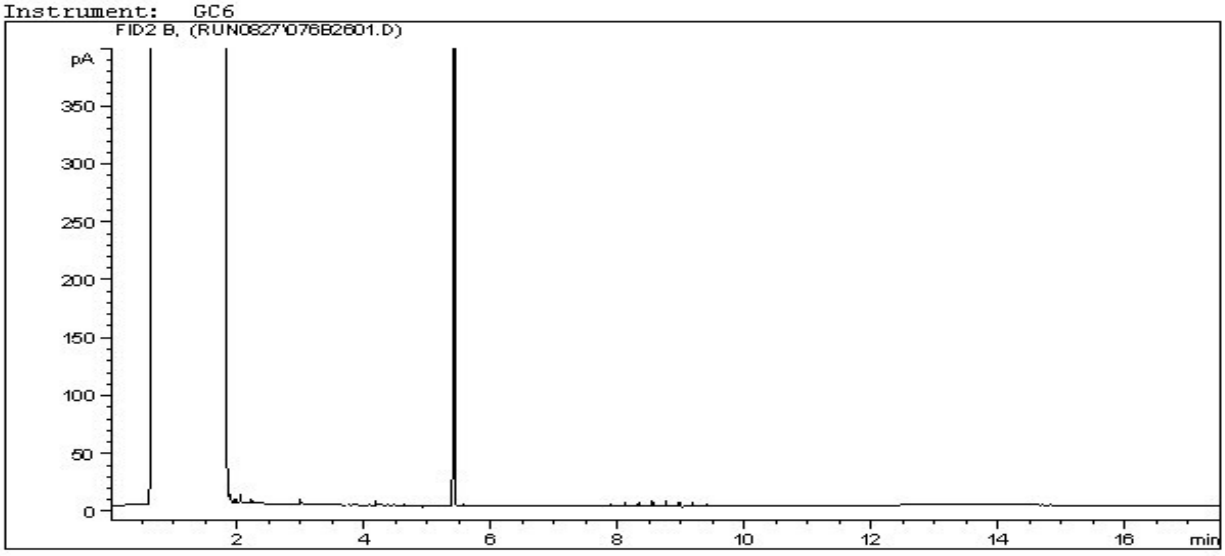
Report Date: 2013/09/12
Maxxam Job #: B375531
Maxxam Sample: HH7504

FRANZ ENVIRONMENTAL INC.
Client Project #: 1697-1301

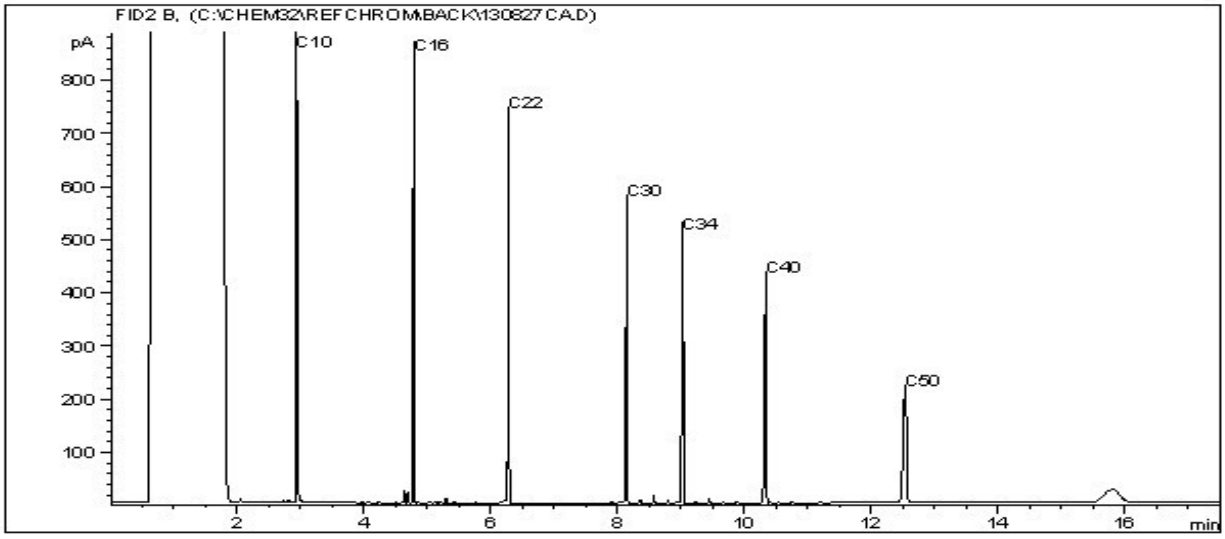
Client ID: MW3-D

CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Page 1 of 1

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

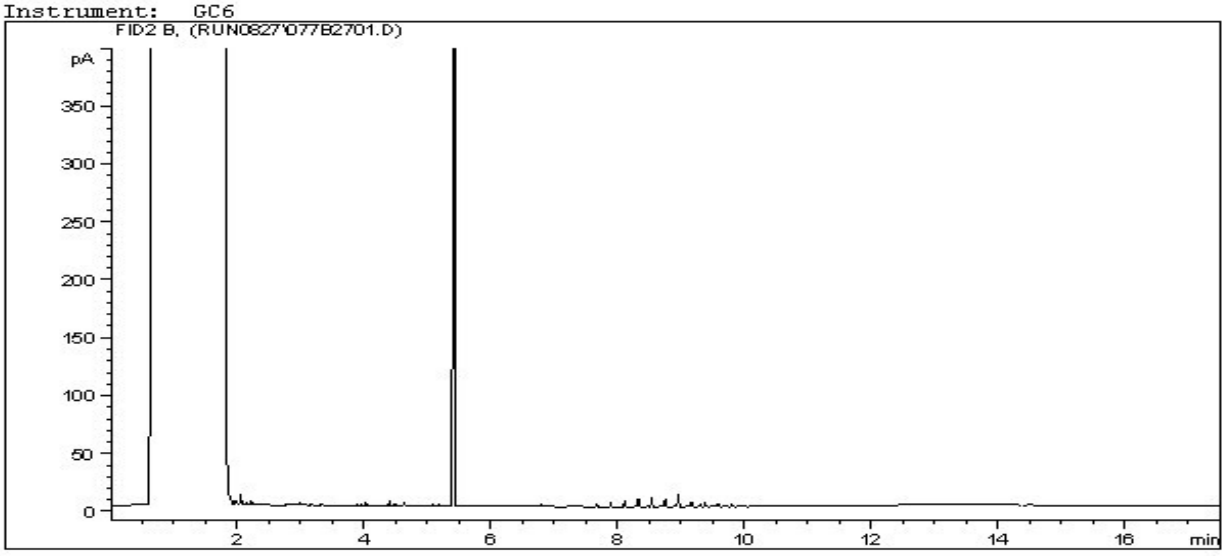
Report Date: 2013/09/12
Maxxam Job #: B375531
Maxxam Sample: HH7506

FRANZ ENVIRONMENTAL INC.
Client Project #: 1697-1301

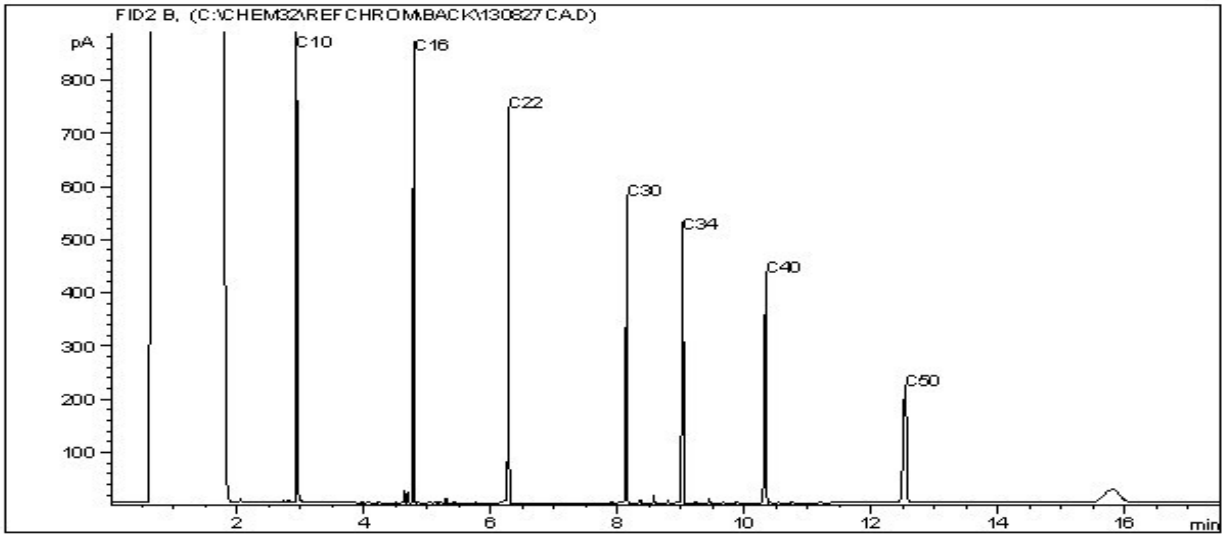
Client ID: MW2-D

CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	C12	Diesel:	C8	C22
Varsol:	C8	C12	Lubricating Oils:	C20	C40
Kerosene:	C7	C16	Crude Oils:	C3	C60+

Page 1 of 1

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

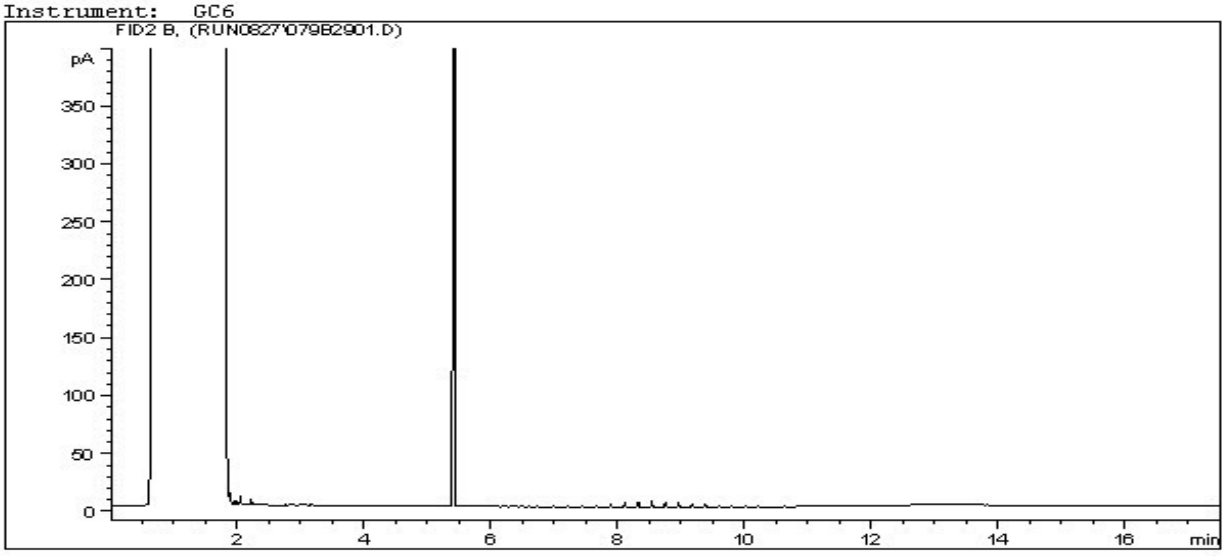
Report Date: 2013/09/12
Maxxam Job #: B375531
Maxxam Sample: HH7507

FRANZ ENVIRONMENTAL INC.
Client Project #: 1697-1301

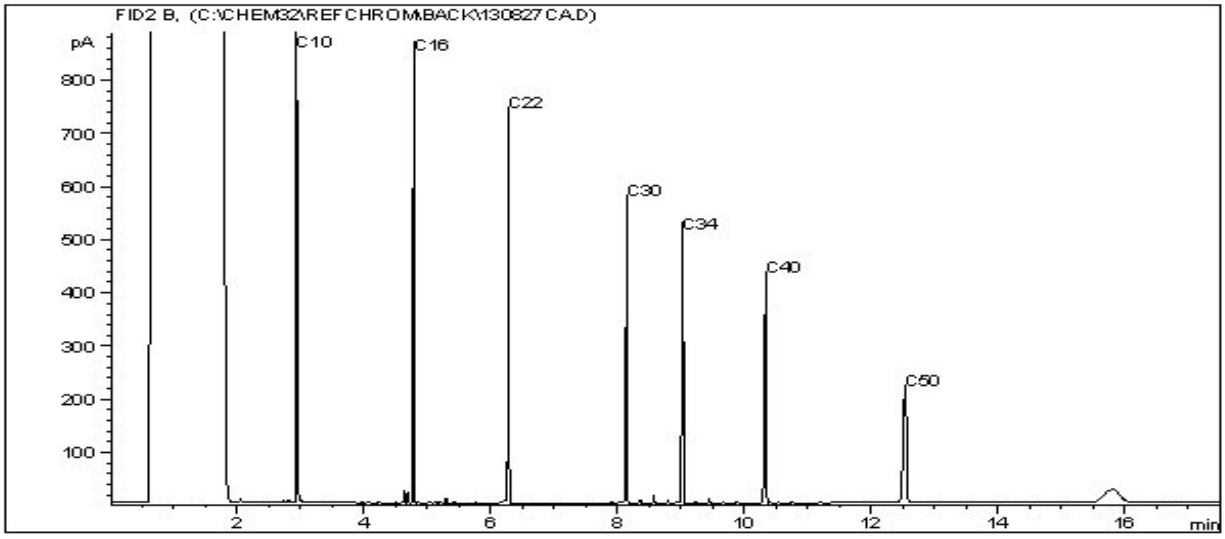
Client ID: DUP1

CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Page 1 of 1

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

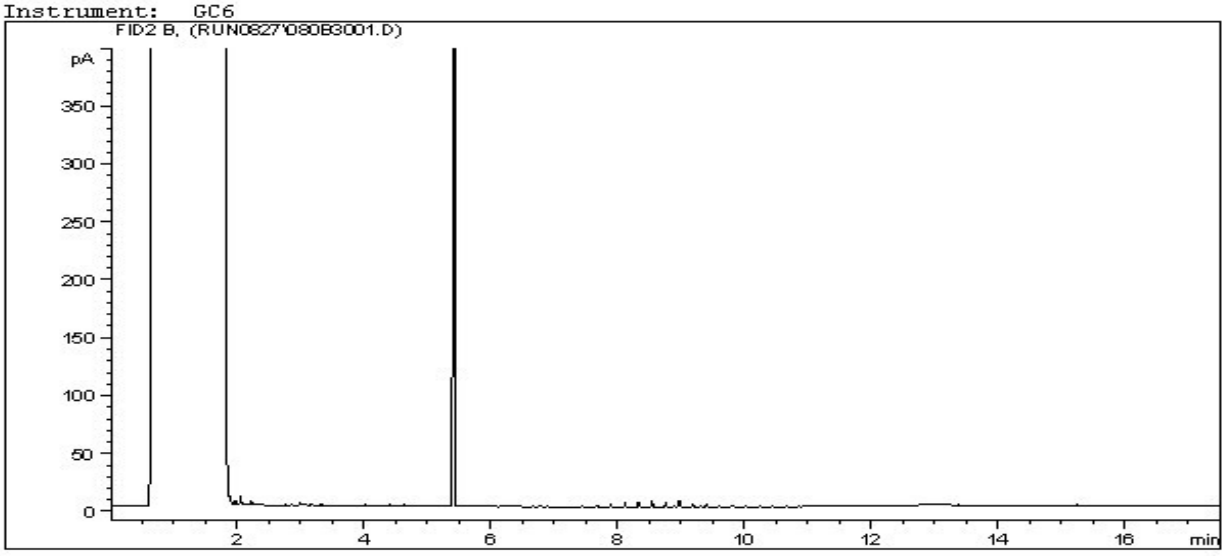
Report Date: 2013/09/12
Maxxam Job #: B375531
Maxxam Sample: HH7508

FRANZ ENVIRONMENTAL INC.
Client Project #: 1697-1301

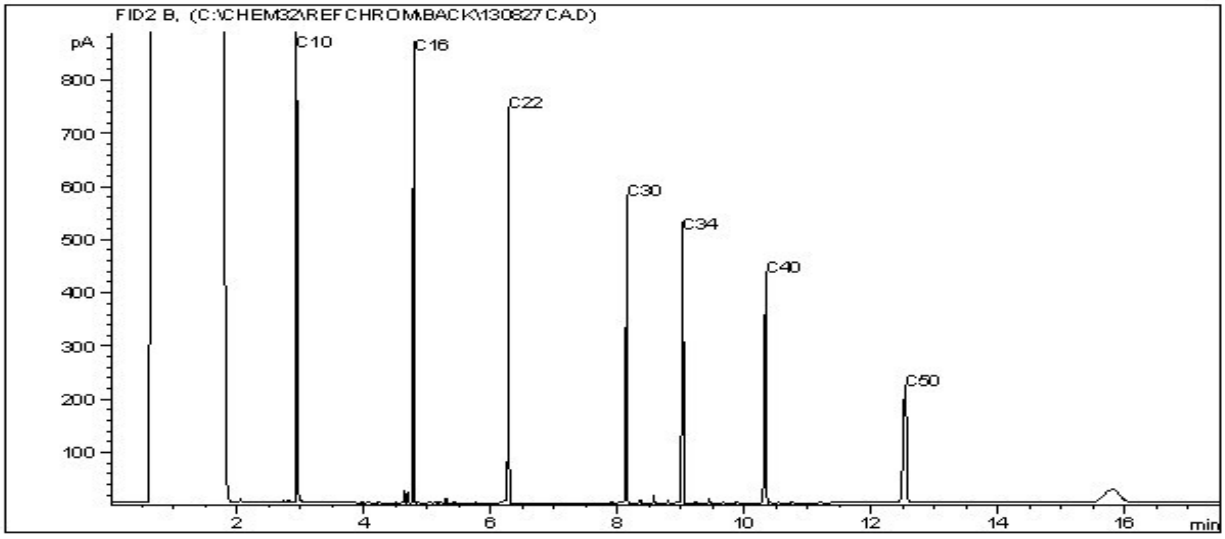
Client ID: MW3-B

CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Page 1 of 1

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

APPENDIX E

Field Notes

Groundwater Sampling

Project: 1697-1301

Franz Personnel: KK
Weather: 6°C, Sunny

Development of Monitoring Wells

Name of Area:	PIN1-B		Sector:
Date of Sampling:	Day: 22	Month: 08	Year: 1989
Monitoring Well ID:	MW1		
Coordinates of Well	Easting:		Northing:
	GPS unit:		WP #:
Type of Well:	Stick Up	Drive Point	
Condition of Well:	Good	Broken Casing	Bailer stuck in well
	Waterra tubing stuck in well		Missing Cap
Volume Purged (L):			
Sampling Equipment:			

Measured Data

Well Depth (m):	1.986 m		Sample Analysis	Y/N	# of Bottles	Duplicate Information
Water Depth (m):	1.940m					
Stick Up (m):	0.442m					
Field Chemistry						
Name and # unit:	**Readings ***					
pH:	1		PHC			
	2					
	3					
	4					
	5					
	6					
Temperature (°C):	1		PCB Total			
	2					
	3					
	4					
	5					
	6					
Conductivity (mS/cm):	1		VOC			
	2					
	3					
	4					
	5					
	6					
DO:	1		PAH			
	2					
	3					
	4					
	5					
	6					
ORP:	1		Hardness			
	2					
	3					
	4					
	5					
	6					
Turbidity:	1		Other			
	2					
	3					
	4					
	5					
	6					

Comments/ Notes:

- Pumped dry at 10:00 am, approx 80mL to pump dry
- Came back to check water level at 10:33 am and well completely dry.

(*) Field Chemistry Readings should be taken every 30 seconds until parameters stabilize

Groundwater Sampling

Project: 1697-1301

Franz Personnel: KK
Weather: 6°C, Sunny

Development of Monitoring Wells

Name of Area:	PIN-B		Sector:
Date of Sampling:	Day: 22	Month: 08	Year: 2013
Monitoring Well ID:	MW2		
Coordinates of Well	Easting:		Northing:
	GPS unit:		WP #:
Type of Well:	Stick Up	Drive Point	
Condition of Well:	Good	Broken Casing	Bailer stuck in well
	Waterra tubing stuck in well		Missing Cap
Volume Purged (L):			
Sampling Equipment:			

Measured Data

Well Depth (m):	1.991		Sample Analysis	Y/N	# of Bottles	Duplicate Information
Water Depth (m):	1.935m					
Stick Up (m):	0.345m					
Field Chemistry						
Name and # unit:	**Readings ***					
pH:	1		PHC			
	2					
	3					
	4					
	5		PCB Total			
	6					
Temperature (°C):	1					
	2					
	3					
	4		VOC			
	5					
	6					
Conductivity (mS/cm):	1					
	2					
	3		PAH			
	4					
	5					
	6					
DO:	1					
	2		Hardness			
	3					
	4					
	5					
	6					
ORP:	1		Other			
	2					
	3					
	4					
	5					
	6					
Turbidity:	1					
	2					
	3					
	4					
	5					
	6					

Comments/ Notes:

- pumped dry at 10:08am, approx 90mL to pump dry
- came back at 10:37am to check water level and well completely dry.

(*) Field Chemistry Readings should be taken every 30 seconds until parameters stabilize

Groundwater Sampling

Project: 1697-1301

Franz Personnel: KK
Weather: 6°C, Sunny

Development of Monitoring Wells

Name of Area:	PIN-B		Sector:
Date of Sampling:	Day: 22	Month: 08	Year: 2013
Monitoring Well ID:	MW3		
Coordinates of Well	Easting:		Northing:
	GPS unit:		WP #:
Type of Well:	Stick Up	Drive Point	
Condition of Well:	Good	Broken Casing	Bailer stuck in well
	Waterra tubing stuck in well		Missing Cap
Volume Purged (L):			
Sampling Equipment:			

Measured Data

Well Depth (m):	1.585m		Sample Analysis	Y/N	# of Bottles	Duplicate Information
Water Depth (m):	1.504m					
Stick Up (m):	0.395m					
Field Chemistry						
Name and # unit:	**Readings ***					
pH:	11:01 1 350mL	8.09	PHC			
	11:06 2 700mL	8.13				
	3					
	4					
	5					
	6					
Temperature (°C):	1	2.70	PCB Total			
	2	1.91				
	3					
	4					
	5		VOC			
	6					
Conductivity (mS/cm):	1	0.358				
	2	0.346				
	3					
	4					
	5		PAH			
	6					
DO: %	1	97.6				
	2	90.8	Hardness			
	3					
	4					
	5					
	6					
ORP:	1	-98.2				
	2	-112.2				
	3					
	4					
	5					
	6		Other			
Turbidity: Sol	1	0.30				
	2	0.30				
	3					
	4					
	5					
	6					

Comments/ Notes:

pumped dry at 10:17am, approx 875mL to pump dry. Come back at 10:40am - water level is 1.505m not enough water to stabilize parameters so sampled after purging ~1075mL

(*) Field Chemistry Readings should be taken every 30 seconds until parameters stabilize

Groundwater Sampling

Project: 1697-1301

Franz Personnel: KK
Weather: 6°C, sunny

Development of Monitoring Wells

Name of Area: PIN-B			Sector:
Date of Sampling:	Day: ~~22~~ 22	Month: 08	Year: 2013
Monitoring Well ID:	MW4		
Coordinates of Well	Easting:		Northing:
	GPS unit:		WP #:
Type of Well:	Stick Up	Drive Point	
Condition of Well:	Good	Broken Casing	Bailer stuck in well
	Waterra tubing stuck in well		Missing Cap
Volume Purged (L):			
Sampling Equipment:			

Measured Data

Well Depth (m):	2.044m		Sample Analysis	Y/N	# of Bottles	Duplicate Information
Water Depth (m):	— dry					
Stick Up (m):	0.515m					
Field Chemistry						
Name and # unit:	**Readings ***					
pH:	1		PHC			
	2					
	3					
	4					
	5		PCB Total			
	6					
Temperature (°C):	1					
	2					
	3					
	4		VOC			
	5					
	6					
Conductivity (mS/cm):	1					
	2					
	3		PAH			
	4					
	5					
	6					
DO:	1					
	2					
	3		Hardness			
	4					
	5					
	6					
ORP:	1					
	2					
	3					
	4		Other			
	5					
	6					
Turbidity:	1					
	2					
	3					
	4					
	5					
	6					

Comments/ Notes:

- no water but ice at bottom of well that came up on water level meter

(*) Field Chemistry Readings should be taken every 30 seconds until parameters stabilize

1697-1301 PIN-B Clifton Pt Aug 22/13

9:00: Depart Kug airport in Twin Otter for PIN-B.
- with Franz (J. Dillburner + K. Krg)
AANDC (A. Dunn)
Tindi (Mike + John)
B.M (D.J. Berndhardt)

Purpose: Year 3 of LTM at this site.
- we will conduct GW monitoring at the 4 wells
- conduct photographic record
- natural environment monitoring
- NHWL integrity inspection.

9:00am: on-site at PIN-B

- Kim is starting WL readings
- Julie photo record.
for photos # 85 = # 1 photo

Rite in the Rain

1697-1301 PIN-B Aug 22/13

Wildlife

tracks - caribou
scat - caribou, sik sik, snowy owl w/ lemming bones
visual - caribou, grizzly bear (near site), bunting bird, falcon nest

O.J (B.M) stated that they use the area for hunting caribou & muskox
- he thinks the number of animals hasn't changed too much over the years - he has not heard of any talk like that either.

Monitoring wells.

MW1, ~~MW2~~ MW2 did not have enough water to sample
MW4 - DRY
MW3 - sampled for all PHC/BTEX, metals, PCBs

1697-1301 PIN-B Aug 22/13

Overall - landfill is in good condition, surface is not graded smoothly but can tell that is a result of construction.
- 2 minor depressions noted - one on southeast corner of footprint & one on NE corner by burrow.

- 3 features previously noted have remained the same.

- Allison walked down path to look at construction camp & dumping areas noted in 2011. No features/impacts to note.

- Saw falcon nest near beach.

12:30: off-site & back to Kugluktuk to drop off OJ.

1:46: leaving Kugluktuk & back to Yellowknife

Rite in the Rain