

Your P.O. #: 2012 KITIKMEOT
Your Project #: DLCU/LANDFILL MONITORING
Site Location: CAM-1 JENNY LIND ISLAND

Attention: ANDREW PASSALIS
EGE ENGINEERING LTD.
511 PEPPERLOAF CRESCENT
WINNIPEG, MB
CANADA R3R 1E6

Report Date: 2012/11/12

This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B274602

Received: 2012/08/20, 18:00

Sample Matrix: Water
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/F1 in Water by HS GC/MS	4	N/A	2012/08/25	AB SOP-00039	CCME, EPA 8260C
BTEX/F1 in Water by HS GC/MS	1	N/A	2012/08/27	AB SOP-00039	CCME, EPA 8260C
Cadmium - low level CCME (Total)	5	2012/11/12	2012/11/12	AB SOP-00043	EPA 200.8
CCME Hydrocarbons (F2-F4 in water)	5	2012/08/24	2012/08/24	AB SOP-00040	EPA3510C/CCME PHCCWS
				AB SOP-00037	
Mercury (Total-LowLevel) by CVAf (1)	5	2012/08/28	2012/08/28	65-A-011	EPA 1631B
Elements by ICPMS - Total	5	2012/08/24	2012/08/25	AB SOP-00043	EPA 200.8
Polychlorinated Biphenyls	6	2012/08/23	2012/08/24	CAL SOP-00149	EPA 3510C, EPA 8082A

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Maxxam Vancouver

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Ioana Stoica, Project Manager
Email: IStoica@maxxam.ca
Phone# (403) 291-3077

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Total cover pages: 1



Maxxam Job #: B274602
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EGE ENGINEERING LTD.
Client Project #: DLCU/LANDFILL MONITORING
Site Location: CAM-1 JENNY LIND ISLAND
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Sampler Initials: AP

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		EG5821	EG5870	EG5871	EG5872	EG5873		
Sampling Date		2012/08/17	2012/08/17	2012/08/17	2012/08/17	2012/08/17		
	UNITS	C112-3W	C112-4W	C112-BDW1	C112-FB	TRIP BLANK	RDL	QC Batch

Low Level Elements								
Total Cadmium (Cd)	ug/L	0.026	0.14	0.018	<0.0050	<0.0050	0.0050	6336056

RDL = Reportable Detection Limit

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PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		EG5821	EG5870	EG5871	EG5872	EG5873		
Sampling Date		2012/08/17	2012/08/17	2012/08/17	2012/08/17	2012/08/17		
	UNITS	C112-3W	C112-4W	C112-BDW1	C112-FB	TRIP BLANK	RDL	QC Batch
Ext. Pet. Hydrocarbon								
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	6106573
F3 (C16-C34 Hydrocarbons)	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	6106573
F4 (C34-C50 Hydrocarbons)	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	6106573
Reached Baseline at C50	mg/L	Yes	Yes	Yes	Yes	Yes		6106573
Surrogate Recovery (%)								
O-TERPHENYL (sur.)	%	112	94	106	109	112		6106573
RDL = Reportable Detection Limit								

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POLYCHLORINATED BIPHENYLS BY GC-ECD (WATER)

Maxxam ID		EG5800		EG5821	EG5870	EG5871		
Sampling Date		2012/08/17		2012/08/17	2012/08/17	2012/08/17		
	UNITS	C112-2W	RDL	C112-3W	C112-4W	C112-BDW1	RDL	QC Batch
Polychlorinated Biphenyls								
Aroclor 1016	mg/L	<0.00010	0.00010	<0.000050	<0.000050	<0.000050	0.000050	6109256
Aroclor 1221	mg/L	<0.00010	0.00010	<0.000050	<0.000050	<0.000050	0.000050	6109256
Aroclor 1232	mg/L	<0.00010	0.00010	<0.000050	<0.000050	<0.000050	0.000050	6109256
Aroclor 1242	mg/L	<0.00010	0.00010	<0.000050	<0.000050	<0.000050	0.000050	6109256
Aroclor 1248	mg/L	<0.00010	0.00010	<0.000050	<0.000050	<0.000050	0.000050	6109256
Aroclor 1254	mg/L	<0.00010	0.00010	<0.000050	<0.000050	<0.000050	0.000050	6109256
Aroclor 1260	mg/L	<0.00010	0.00010	<0.000050	<0.000050	<0.000050	0.000050	6109256
Aroclor 1262	mg/L	<0.00010	0.00010	<0.000050	<0.000050	<0.000050	0.000050	6109256
Aroclor 1268	mg/L	<0.00010	0.00010	<0.000050	<0.000050	<0.000050	0.000050	6109256
Total Aroclors	mg/L	<0.00010	0.00010	<0.000050	<0.000050	<0.000050	0.000050	6109256
Surrogate Recovery (%)								
NONACHLOROBIPHENYL (sur.)	%	118		114	114	113		6109256
RDL = Reportable Detection Limit								

Maxxam ID		EG5872	EG5873		
Sampling Date		2012/08/17	2012/08/17		
	UNITS	C112-FB	TRIP BLANK	RDL	QC Batch
Polychlorinated Biphenyls					
Aroclor 1016	mg/L	<0.000050	<0.000050	0.000050	6109256
Aroclor 1221	mg/L	<0.000050	<0.000050	0.000050	6109256
Aroclor 1232	mg/L	<0.000050	<0.000050	0.000050	6109256
Aroclor 1242	mg/L	<0.000050	<0.000050	0.000050	6109256
Aroclor 1248	mg/L	<0.000050	<0.000050	0.000050	6109256
Aroclor 1254	mg/L	<0.000050	<0.000050	0.000050	6109256
Aroclor 1260	mg/L	<0.000050	<0.000050	0.000050	6109256
Aroclor 1262	mg/L	<0.000050	<0.000050	0.000050	6109256
Aroclor 1268	mg/L	<0.000050	<0.000050	0.000050	6109256
Total Aroclors	mg/L	<0.000050	<0.000050	0.000050	6109256
Surrogate Recovery (%)					
NONACHLOROBIPHENYL (sur.)	%	121	115		6109256
RDL = Reportable Detection Limit					



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MERCURY BY COLD VAPOR (WATER)

Maxxam ID		EG5821	EG5870	EG5871	EG5872	EG5873		
Sampling Date		2012/08/17	2012/08/17	2012/08/17	2012/08/17	2012/08/17		
	UNITS	C112-3W	C112-4W	C112-BDW1	C112-FB	TRIP BLANK	RDL	QC Batch

Elements								
Total Mercury (Hg)	ug/L	<0.0020	0.0047	<0.0020	<0.0020	<0.0020	0.0020	6123251

RDL = Reportable Detection Limit

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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		EG5821	EG5870	EG5871	EG5872	EG5873		
Sampling Date		2012/08/17	2012/08/17	2012/08/17	2012/08/17	2012/08/17		
	UNITS	C112-3W	C112-4W	C112-BDW1	C112-FB	TRIP BLANK	RDL	QC Batch

Elements								
Total Arsenic (As)	mg/L	0.0026	0.023	0.0019	<0.00020	<0.00020	0.00020	6113061
Total Chromium (Cr)	mg/L	0.031	0.55	0.021	<0.0010	<0.0010	0.0010	6113061
Total Cobalt (Co)	mg/L	0.00057	0.0073	0.00038	<0.00030	<0.00030	0.00030	6113061
Total Copper (Cu)	mg/L	0.0040	0.055	0.0028	<0.00020	<0.00020	0.00020	6113061
Total Lead (Pb)	mg/L	0.0012	0.015	0.00085	<0.00020	<0.00020	0.00020	6113061
Total Nickel (Ni)	mg/L	0.014	0.27	0.0093	<0.00050	<0.00050	0.00050	6113061
Total Zinc (Zn)	mg/L	<0.0030	0.024	<0.0030	<0.0030	<0.0030	0.0030	6113061

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VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		EG5821	EG5870	EG5871	EG5872		
Sampling Date		2012/08/17	2012/08/17	2012/08/17	2012/08/17		
	UNITS	C112-3W	C112-4W	C112-BDW1	C112-FB	RDL	QC Batch
Volatiles							
Benzene	ug/L	<0.40	<0.40	<0.40	<0.40	0.40	6112918
Toluene	ug/L	<0.40	<0.40	<0.40	<0.40	0.40	6112918
Ethylbenzene	ug/L	<0.40	<0.40	<0.40	<0.40	0.40	6112918
o-Xylene	ug/L	<0.40	<0.40	<0.40	<0.40	0.40	6112918
m & p-Xylene	ug/L	<0.80	<0.80	<0.80	<0.80	0.80	6112918
Xylenes (Total)	ug/L	<0.80	<0.80	<0.80	<0.80	0.80	6112918
F1 (C6-C10) - BTEX	ug/L	<100	<100	<100	<100	100	6112918
(C6-C10)	ug/L	<100	<100	<100	<100	100	6112918
Surrogate Recovery (%)							
1,4-Difluorobenzene (sur.)	%	101	103	97	103		6112918
4-BROMOFLUOROBENZENE (sur.)	%	102	98	102	103		6112918
D4-1,2-DICHLOROETHANE (sur.)	%	117	124	123	126		6112918
RDL = Reportable Detection Limit							

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VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		EG5873		
Sampling Date		2012/08/17		
	UNITS	TRIP BLANK	RDL	QC Batch
Volatiles				
Benzene	ug/L	<0.40	0.40	6115297
Toluene	ug/L	<0.40	0.40	6115297
Ethylbenzene	ug/L	<0.40	0.40	6115297
o-Xylene	ug/L	<0.40	0.40	6115297
m & p-Xylene	ug/L	<0.80	0.80	6115297
Xylenes (Total)	ug/L	<0.80	0.80	6115297
F1 (C6-C10) - BTEX	ug/L	<100	100	6115297
(C6-C10)	ug/L	<100	100	6115297
Surrogate Recovery (%)				
1,4-Difluorobenzene (sur.)	%	98		6115297
4-BROMOFLUOROBENZENE (sur.)	%	95		6115297
D4-1,2-DICHLOROETHANE (sur.)	%	102		6115297
RDL = Reportable Detection Limit				

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POLYCHLORINATED BIPHENYLS BY GC-ECD (WATER) Comments

Sample EG5800-01 Polychlorinated Biphenyls: Detection limits raised due to matrix interference.

Results relate only to the items tested.

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Attention: ANDREW PASSALIS
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Quality Assurance Report
Maxxam Job Number: CB274602

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
6106573 LQ	Matrix Spike	O-TERPHENYL (sur.)	2012/08/23		77	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2012/08/23		67	%	50 - 130
		F3 (C16-C34 Hydrocarbons)	2012/08/23		65	%	50 - 130
		F4 (C34-C50 Hydrocarbons)	2012/08/23		66	%	50 - 130
	Spiked Blank	O-TERPHENYL (sur.)	2012/08/23		98	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2012/08/23		83	%	70 - 130
		F3 (C16-C34 Hydrocarbons)	2012/08/23		78	%	70 - 130
		F4 (C34-C50 Hydrocarbons)	2012/08/23		75	%	70 - 130
	Method Blank	O-TERPHENYL (sur.)	2012/08/24		104	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2012/08/24	<0.10		mg/L	
		F3 (C16-C34 Hydrocarbons)	2012/08/24	<0.10		mg/L	
		F4 (C34-C50 Hydrocarbons)	2012/08/24	<0.10		mg/L	
	RPD	F2 (C10-C16 Hydrocarbons)	2012/08/23	NC		%	40
		F3 (C16-C34 Hydrocarbons)	2012/08/23	NC		%	40
		F4 (C34-C50 Hydrocarbons)	2012/08/23	NC		%	40
6109256 JC7	Spiked Blank	NONACHLOROBIPHENYL (sur.)	2012/08/24		127	%	30 - 130
		Aroclor 1260	2012/08/24		98	%	30 - 130
	Method Blank	NONACHLOROBIPHENYL (sur.)	2012/08/24		130	%	30 - 130
		Aroclor 1016	2012/08/24	<0.000050		mg/L	
		Aroclor 1221	2012/08/24	<0.000050		mg/L	
		Aroclor 1232	2012/08/24	<0.000050		mg/L	
		Aroclor 1242	2012/08/24	<0.000050		mg/L	
		Aroclor 1248	2012/08/24	<0.000050		mg/L	
		Aroclor 1254	2012/08/24	<0.000050		mg/L	
		Aroclor 1260	2012/08/24	<0.000050		mg/L	
		Aroclor 1262	2012/08/24	<0.000050		mg/L	
		Aroclor 1268	2012/08/24	<0.000050		mg/L	
		Total Aroclors	2012/08/24	<0.000050		mg/L	
		1,4-Difluorobenzene (sur.)	2012/08/25		99	%	70 - 130
		4-BROMOFLUOROBENZENE (sur.)	2012/08/25		104	%	70 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/08/25		119	%	70 - 130
6112918 RSU	Matrix Spike	Benzene	2012/08/25		93	%	70 - 130
		Toluene	2012/08/25		91	%	70 - 130
		Ethylbenzene	2012/08/25		93	%	70 - 130
		o-Xylene	2012/08/25		84	%	70 - 130
		m & p-Xylene	2012/08/25		88	%	70 - 130
		(C6-C10)	2012/08/25		84	%	70 - 130
	Spiked Blank	1,4-Difluorobenzene (sur.)	2012/08/25		100	%	70 - 130
		4-BROMOFLUOROBENZENE (sur.)	2012/08/25		111	%	70 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/08/25		124	%	70 - 130
		Benzene	2012/08/25		87	%	70 - 130
		Toluene	2012/08/25		96	%	70 - 130
		Ethylbenzene	2012/08/25		101	%	70 - 130
		o-Xylene	2012/08/25		92	%	70 - 130
		m & p-Xylene	2012/08/25		96	%	70 - 130
		(C6-C10)	2012/08/25		83	%	70 - 130
	Method Blank	1,4-Difluorobenzene (sur.)	2012/08/25		99	%	70 - 130
		4-BROMOFLUOROBENZENE (sur.)	2012/08/25		101	%	70 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/08/25		120	%	70 - 130
		Benzene	2012/08/25	<0.40		ug/L	
		Toluene	2012/08/25	<0.40		ug/L	
		Ethylbenzene	2012/08/25	<0.40		ug/L	
		o-Xylene	2012/08/25	<0.40		ug/L	
		m & p-Xylene	2012/08/25	<0.80		ug/L	
		Xylenes (Total)	2012/08/25	<0.80		ug/L	

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Quality Assurance Report (Continued)

Maxxam Job Number: CB274602

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
6112918 RSU	Method Blank	F1 (C6-C10) - BTEX	2012/08/25	<100		ug/L	
		(C6-C10)	2012/08/25	<100		ug/L	
6113061 PW3	Matrix Spike	Total Arsenic (As)	2012/08/25		115	%	80 - 120
		Total Chromium (Cr)	2012/08/25		112	%	80 - 120
		Total Cobalt (Co)	2012/08/25		113	%	80 - 120
		Total Copper (Cu)	2012/08/25		114	%	80 - 120
		Total Lead (Pb)	2012/08/25		114	%	80 - 120
		Total Nickel (Ni)	2012/08/25		113	%	80 - 120
		Total Zinc (Zn)	2012/08/25		119	%	80 - 120
	Spiked Blank	Total Arsenic (As)	2012/08/25		97	%	80 - 120
		Total Chromium (Cr)	2012/08/25		95	%	80 - 120
		Total Cobalt (Co)	2012/08/25		96	%	80 - 120
		Total Copper (Cu)	2012/08/25		97	%	80 - 120
		Total Lead (Pb)	2012/08/25		97	%	80 - 120
		Total Nickel (Ni)	2012/08/25		97	%	80 - 120
		Total Zinc (Zn)	2012/08/25		97	%	80 - 120
	Method Blank	Total Arsenic (As)	2012/08/25	<0.00020		mg/L	
		Total Chromium (Cr)	2012/08/25	<0.0010		mg/L	
		Total Cobalt (Co)	2012/08/25	<0.00030		mg/L	
		Total Copper (Cu)	2012/08/25	<0.00020		mg/L	
		Total Lead (Pb)	2012/08/25	<0.00020		mg/L	
		Total Nickel (Ni)	2012/08/25	<0.00050		mg/L	
		Total Zinc (Zn)	2012/08/25	<0.0030		mg/L	
	RPD	Total Arsenic (As)	2012/08/25	NC		%	20
		Total Chromium (Cr)	2012/08/25	NC		%	20
		Total Cobalt (Co)	2012/08/25	NC		%	20
		Total Copper (Cu)	2012/08/25	NC		%	20
		Total Lead (Pb)	2012/08/25	NC		%	20
		Total Nickel (Ni)	2012/08/25	NC		%	20
		Total Zinc (Zn)	2012/08/25	NC		%	20
6115297 MZ	Matrix Spike	1,4-Difluorobenzene (sur.)	2012/08/25		93	%	70 - 130
		4-BROMOFLUOROBENZENE (sur.)	2012/08/25		96	%	70 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/08/25		94	%	70 - 130
		Benzene	2012/08/25		96	%	70 - 130
		Toluene	2012/08/25		103	%	70 - 130
		Ethylbenzene	2012/08/25		99	%	70 - 130
		o-Xylene	2012/08/25		100	%	70 - 130
		m & p-Xylene	2012/08/25		102	%	70 - 130
		(C6-C10)	2012/08/25		89	%	70 - 130
	Spiked Blank	1,4-Difluorobenzene (sur.)	2012/08/25		92	%	70 - 130
		4-BROMOFLUOROBENZENE (sur.)	2012/08/25		95	%	70 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/08/25		86	%	70 - 130
		Benzene	2012/08/25		93	%	70 - 130
		Toluene	2012/08/25		100	%	70 - 130
		Ethylbenzene	2012/08/25		98	%	70 - 130
		o-Xylene	2012/08/25		97	%	70 - 130
		m & p-Xylene	2012/08/25		99	%	70 - 130
		(C6-C10)	2012/08/25		114	%	70 - 130
	Method Blank	1,4-Difluorobenzene (sur.)	2012/08/25		99	%	70 - 130
		4-BROMOFLUOROBENZENE (sur.)	2012/08/25		93	%	70 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2012/08/25		98	%	70 - 130
		Benzene	2012/08/25	<0.40		ug/L	
		Toluene	2012/08/25	<0.40		ug/L	
		Ethylbenzene	2012/08/25	<0.40		ug/L	
		o-Xylene	2012/08/25	<0.40		ug/L	

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Quality Assurance Report (Continued)

Maxxam Job Number: CB274602

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
6115297 MZ	Method Blank	m & p-Xylene	2012/08/25	<0.80		ug/L	
		Xylenes (Total)	2012/08/25	<0.80		ug/L	
		F1 (C6-C10) - BTEX	2012/08/25	<100		ug/L	
		(C6-C10)	2012/08/25	<100		ug/L	
	RPD	Benzene	2012/08/25	NC		%	40
		Toluene	2012/08/25	NC		%	40
		Ethylbenzene	2012/08/25	NC		%	40
		o-Xylene	2012/08/25	NC		%	40
		m & p-Xylene	2012/08/25	NC		%	40
		Xylenes (Total)	2012/08/25	NC		%	40
		F1 (C6-C10) - BTEX	2012/08/25	NC		%	40
		(C6-C10)	2012/08/25	NC		%	40
6123251 EF1	Matrix Spike	Total Mercury (Hg)	2012/08/28		90	%	80 - 120
	Spiked Blank	Total Mercury (Hg)	2012/08/28		86	%	80 - 120
	Method Blank	Total Mercury (Hg)	2012/08/28	<0.0020		ug/L	
	RPD	Total Mercury (Hg)	2012/08/28	NC		%	20

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 to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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 (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.

Validation Signature Page

Maxxam Job #: B274602

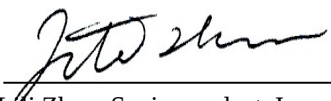
The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Andy Lu, Data Validation Coordinator



Luba Shymushovska, Senior Analyst, Organic Department



Lili Zhou, Senior analyst, Inorganic department.



Michael Sheppard, Organics Supervisor

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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.