CITY OF VANCOUVER

CITY CLERK'S DEPARTMENT
Access to Information & Privacy

File No.: 04-1000-20-2018-391

August 1, 2018

s.22(1)

Dear s.22(1)

Re: **Request for Access to Records under the Freedom of Information and Protection of Privacy Act (the "Act")**

I am responding to your request of July 17, 2018 for:

> **Environmental reports in the vicinity of 4464 Dunbar Street for work completed on City lands from January 1, 2016 to July 17, 2018.**

All responsive records are attached.

Under section 52 of the Act you may ask the Information & Privacy Commissioner to review any matter related to the City's response to your request. The Act allows you 30 business days from the date you receive this notice to request a review by writing to: Office of the Information & Privacy Commissioner, info@oipc.bc.ca or by phoning 250-387-5629.

If you request a review, please provide the Commissioner's office with: 1) the request number assigned to your request (#04-1000-20-2018-391); 2) a copy of this letter; 3) a copy of your original request for information sent to the City of Vancouver; and 4) detailed reasons or grounds on which you are seeking the review.

Please do not hesitate to contact the Freedom of Information Office at foi@vancouver.ca if you have any questions.

Yours truly,

Barbara J. Van Fraassen, BA
Director, Access to Information & Privacy

Barbara.vanfraassen@vancouver.ca
453 W. 12th Avenue Vancouver BC V5Y 1V4
Phone: 604 .873.7999
Fax: 604.873.7419

Encl.

:kt

CITY OF VANCOUVER

TEST HOLE INVESTIGATION REPORT

This Test Hole Investigation Report is required to be completed as part of the Test Hole Permitting process. The report must be submitted electronically to the City's Contaminated Sites Team (CST) within two months of completing the drilling investigation in City streets and laneways.

In addition to completing and submitting this report, please attach a site plan (scale = 1:200) that includes the following information: north arrow, nearby buildings, roads, subsurface utilities, test pit, borehole, monitoring well, and vapour probe locations. Please also provide tables and figures that summarize the soil, groundwater, and vapour laboratory analytical results compared to applicalbe City standards, as well as copies of certified laboratory analytical reports.

Please email the Test Hole Investigation Report and associated attachments as one stand-alone PDF to the CST at: contaminated.sites@vancouver.ca

1. Site Owner Information:

Name of Site Owner	Qualex-Landmark Dunbar Ltd.
Company (if applicable)	Keystone Environmental Ltd
Contact (if different from Owner)	Francini Martins
Address	320-4400 Dominion Street
Phone Number	604-430-0671
Email Address	fmartins@keystoneenviro.com

2. Summary of Investigation:

Please provide a brief summary of the environmental site investigation scope of work and the key results of the investigation.

Please see attached page.

3. Investigation Location Completion Details

In the following tables please summarize the groundwater monitoring well, borehole, vapour probe, and test pit completion details as appropriate. If you require additional space please attach a separate page. Please also attach groundwater monitoring well, borehole, vapour probe, and test pit logs to this report.

A. Groundwater Monitoring Well Completion Details:

MW I.D.	Depth to well bottom (m bgs)	Well screen length (m)	Depth to water (m bgs)	NAPL Thickness (if applicable)	CHV Readings (ppm / % LEL)
MW17-1S/D	12.7 / 17.4	1.5 / 1.5	11.2 / dry	N/A	3.1 / 3.0
MW17-2S/D	13.6 / 18.3	1.5 / 1.5	11.4 / dry	N/A	1.2 / 2.7
MW17-4S/D	11.9 / 17.9	1.5 / 1.5	10.2 / dry	N/A	0 / 0
MW17-5S/D	11.4 / 17.9	1.5 / 1.5	9.2 / dry	N/A	0 / 0
MW17-6S/D	12.7 / 21.0	1.5 / 1.5	9.0 / dry	N/A	0 / 0
MW17-7S/D	11.3 / 14.3	1.5 / 1.5	10.4 / 12.6	N/A	3.6 / 0

Notes: MW = monitoring well; m bgs = metres below ground surface; NAPL = non-aqueous phase liquid; CHV = combustible headspace vapour readings; ppm = parts per million; %LEL = lower explosive limit

B. Borehole / Test Pit Completion Details:

BH / TP I.D.	Depth of BH / TP (m bgs)	Foreign debris / Staining Observed? (Yes / No)
N/A	N/A	N/A

Notes: BH = Borehole; TP = Test pit; m bgs = metres below ground surface

MW ID	DEPTH (m)	SCREEN	DTW	NAPL	CHV
MW17-8S/D	11.0 / 15.2	1.5/1.5	9.0 dry	N/A	4.4/0 ppm

C. Soil Vapour Probe Completion Details:

Vapour Probe I.D.	Vapour Probe Installation Depth (m bgs)	Screen length (m)
SV17-1	1.5	0.15
SV17-2	1.5	0.15
SV17-4	3.0	0.15
SV17-5	1.2	0.15
SV17-6	1.7	0.15
SV17-7	7.0	0.15

4. Laboratory Analytical Results Summary

In the following table please list the substance(s) and substance concentration(s) for soil, groundwater, and vapour that were measured to be greater than the *Environmental Management Act* (EMA) Contaminated Sites Regulation (CSR) standard(s), as required by City Policies[1].

Media	Location I.D.	Sample I.D.	Sample Depth (m bgs)	Substance	Maximum Concentration (specify units)
groundwater	MW17-5S	N/A	11.9	1,2-dichloroethane	82 µg/L
groundwater	MW17-5S	N/A	11.9	tetrachloroethane	500 µg/L
groundwater	MW17-5S	N/A	11.9	trichloroethane	6 µg/L
groundwater	MW17-8S	N/A	11.0	1,2-dichloroethane	94 µg/L
groundwater	MW17-8S	N/A	11.0	tetrachloroethane	650 µg/L
groundwater	MW17-8S	N/A	11.0	trichloroethane	7.5 µg/L

[1] The BC CSR soil, groundwater, and vapour standards that apply to City streets and laneways are:

1. Soil contamination in City streets and laneways must be remediated to Industrial Land Use standards, as defined in the CSR.
2. To protect soil quality for urban agriculture, the top 1m of soil in boulevards and street medians must be remediated to Residential Land Use standards, with Industrial Land Use below the first 1m.
3. Groundwater is to be remediated in accordance with the standards that apply under the CSR.
4. Soil vapour must be remediated to Industrial Land Use standards.

5. **BC Ministry of Environment Forms:**

Was a Notification of Likely or Actual Migration (NOM) and Site Risk Classification report submitted to the City as per BC MOE notification requirements? Yes ☐ No ☐ N/A ☑

6. **Monitoring Well Sampling and Decommissioning Schedule:**

Please list the proposed monitoring well sampling frequency as well as an estimated monitoring well decommissioning date.

Sampling Frequency (semi-annual, annual, etc.):	unknown at this time
Estimated Monitoring Well Decommissioning Date:	unknown at this time

7. **Conclusion Statement:**

"I confirm that all of the information contained in this report is true and accurate. Based on laboratory analytical results from environmental investigations carried out on City property, the following conditions are present in soil, groundwater, and vapour". Please select the checkboxes that reflect current site conditions:

- Substance concentrations measured in soil samples collected on City street / laneway were:
  - less than the CSR IL soil standards ☑
  - greater than the CSR IL soil standards ☐
- Substance concentrations measured in soil samples collected at a depth of 0-1mbgs beneath street medians, boulevards or sidewalks were:
  - less than the CSR RL soil standards ☐
  - greater than the CSR RL soil standards ☐ n/a
- Substance concentrations measured in groundwater samples collected were:
  - less than the standards that apply under the CSR ☐
  - greater than the standards that apply under the CSR ☑
- Substance concentrations measured in vapour samples collected were:
  - less than the CSR Schedule 11 IL standards ☑
  - greater than the CSR Schedule 11 IL standards ☐

Francini Martins
Name

Keystone Environmental Ltd.
Company Name

Signature

2017 Oct 31
Date

2. Summary of investigation

The permits included the drilling of five new groundwater monitoring wells (MW17-1S/D, MW17-2S/D, MW17-4S/D through MW17-6S/D) on City property under permit UMB-621 and one additional groundwater monitoring well (MW17-8S/D) under permit UMB-647. Monitoring well locations are presented on Figure 1.

During the first sampling event, the groundwater concentration of tetrachloroethene (PCE), trichloroethene (TCE) and cis-1,2-dichloroethene (DCE) at one off-Site monitoring well (MW17-5) was greater than the Contaminated Sites Regulation (CSR) drinking water use (DW) standard.

The PCE is a dry-cleaning solvent and the TCE and DCE are degradation products of PCE. During the Site visit, groundwater monitoring wells were identified at the intersection of Dunbar Street and West 28th Avenue in proximity to 3641 West 28th Avenue, between 12 m and 25 m from the Site. Keystone Environmental conducted a Ministry of Environment and Climate Change Strategy (BC ENV) Site Registry search and it was identified that a Notification of Likely or Actual Migration (NOM) and a Site Risk Classification (SRC) was submitted to the MOE by 3641 West 28th Avenue property. A copy of the NOM and SRC were obtained from the MOE and a concentration of 9,920 µg/L for PCE was reported to be present along West 28th Avenue.

Therefore, a second drilling event was completed and one existing well (identified as UN-2) installed by others was re-sampled (UN-1 was dry and could not be sampled)

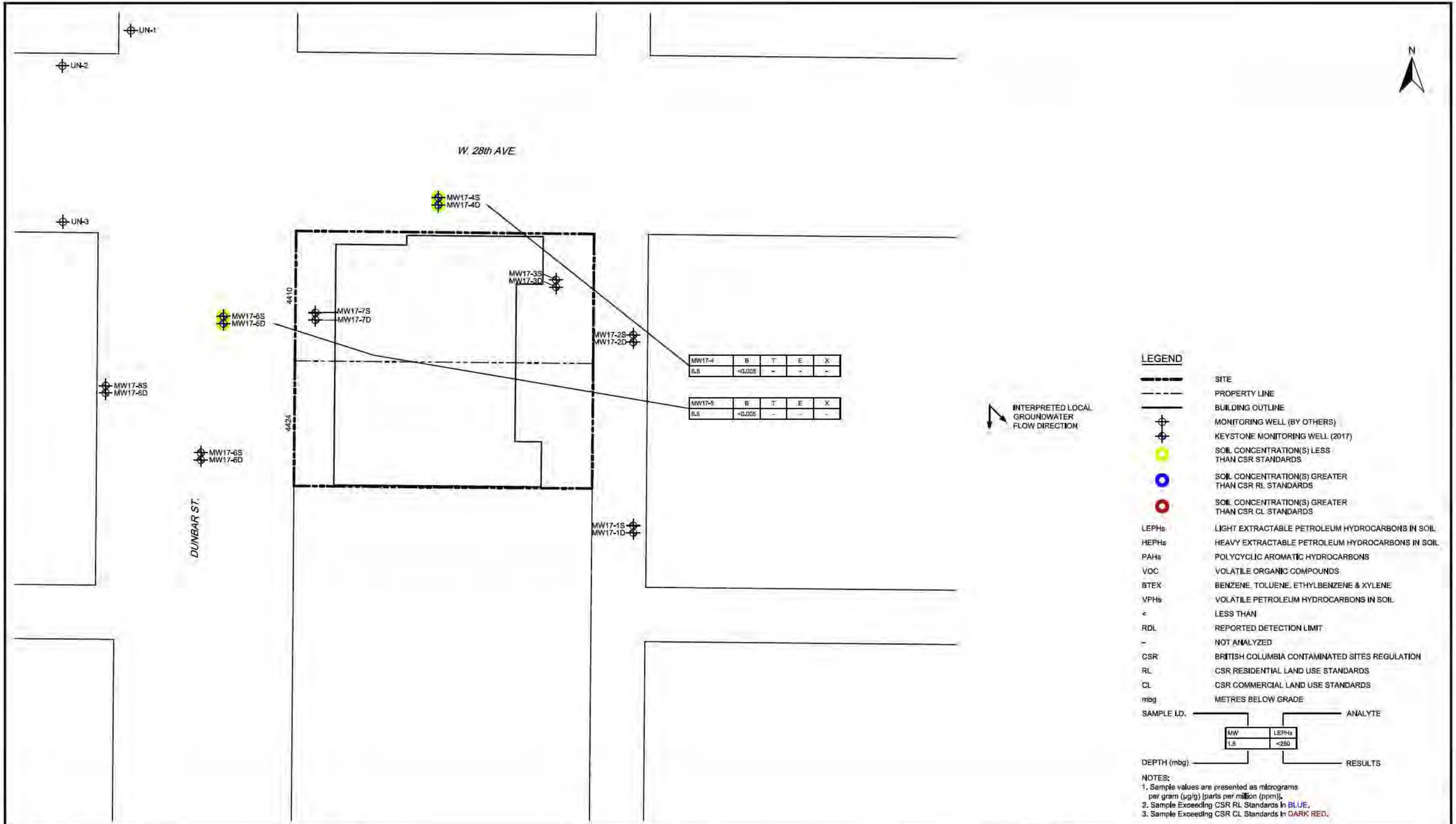
Groundwater PCE, TCE and DCE were identified at MW17-8 and the existing well installed by others on West 28th Avenue (identified in the figure as UN-2).

Based on the following lines of evidence, it is our opinion that the source of the groundwater contamination identified along Dunbar Street is associated with the former or current off-Site dry-cleaner and not the on-Site:

- Groundwater elevation conducted by Keystone Environmental on July 13, 2017 indicates the local groundwater flow to be south to southeast, and therefore off-Site exceedances along Dunbar Street are down-gradient to the off-Site dry-cleaning and cross-gradient to the on-Site dry-cleaning;
- A NOM was issued by the off-Site property to the City of Vancouver, reporting a concentration of 9,920 µg/L, which is greater than the 1% non-aqueous phase liquids (NPL) indicator;
- The concentration of PCE is higher at the monitoring wells closer to the off-Site dry cleaners and the concentrations of TCE and 1,2-DCE, degradation of PCE, are higher in the down-gradient locations.
- The concentration of dry cleaning solvent contaminants at MW17-7, on and closest to the Site, is less than the CSR DW standards.

Remaining parameters sampled in groundwater are less than the CSR DW standards.

Furthermore predicted indoor and outdoor air concentrations in vapour are less than the CSR commercial (CL) use standards.



MW17-4	B	T	E	X
6.5	<0.005	–	–	–

MW17-5	B	T	E	X
6.5	<0.005	-	-	-

MW	LEPHs
1.5	<250

Keystone Environmental

NOTES:
1. THIS DRAWING IS FOR GENERAL INFORMATION ONLY. LOT BOUNDARIES AND FEATURES ARE APPROXIMATE.

5m 0 20m

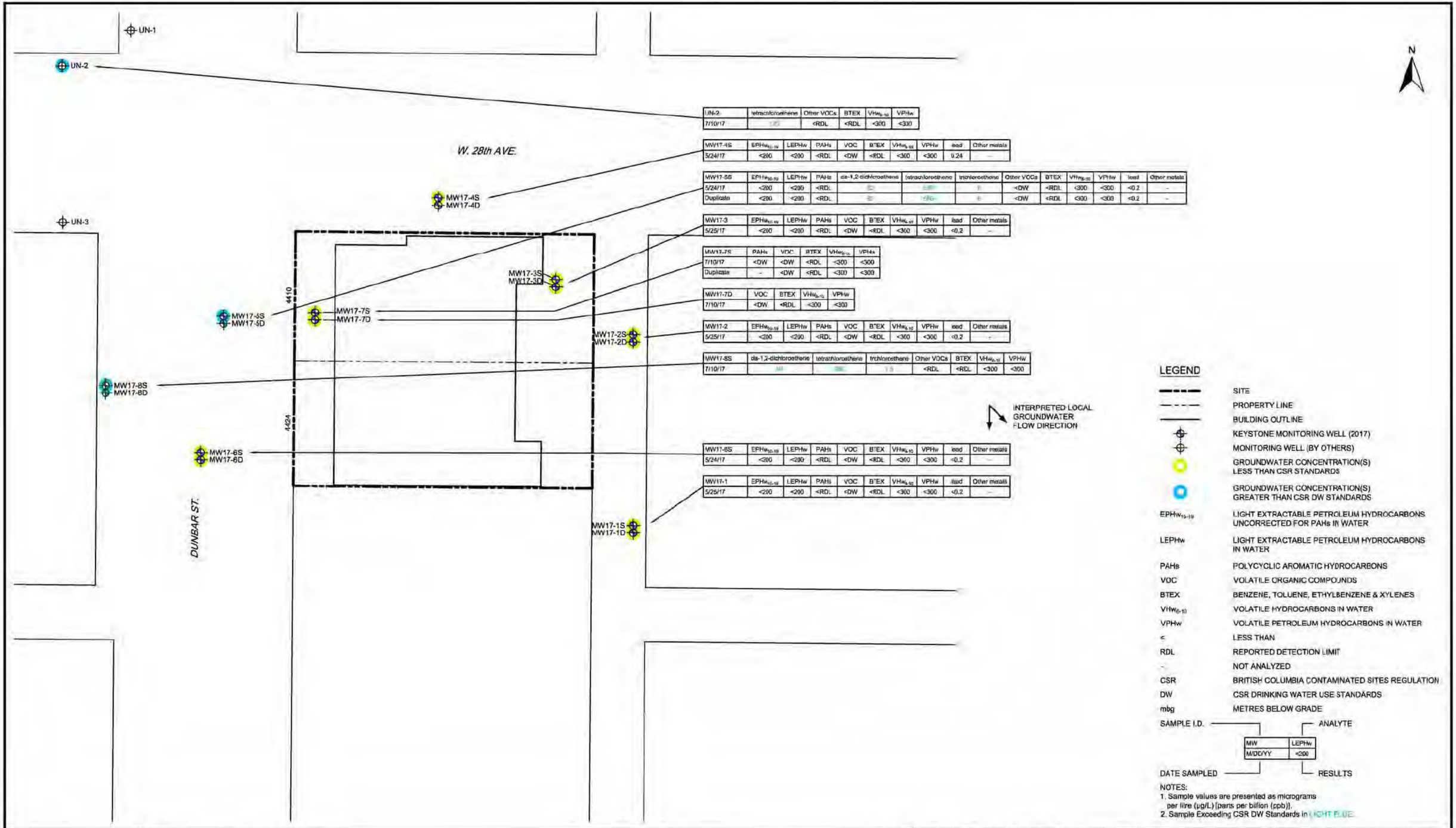
SCALE: 1:400(approx.)

4410 - 4424 Dunbar Street
Vancouver, B C
Qualex Landmark Dunbar Ltd.

REVISION No.	DATE	PROJECT No.
00	Oct. 2017	13526-02

Figure 1
Soil Analytical Results - Current

PLOT SCALE: 1:1 DRAWN BY: AB CADD FILE No. I:\13500-13599\13526\Figs\Test hole report\Fig1-Soil Analytical-R0.dwg



UN-2	tetrachloroethene	Other VOCs	BTEX	VHw_{6-10}	VPHw
7/10/17	[illegible]	<RDL	<RDL	<300	<300

MW17-4S	$EPHw_{10-19}$	LEPHw	PAHs	VOC	BTEX	VHw_{6-10}	VPHw	lead	Other metals
5/24/17	<200	<200	<RDL	<DW	<RDL	<300	<300	9.24	-

MW17-5S	$EPHw_{10-19}$	LEPHw	PAHs	cis-1,2-dichloroethene	tetrachloroethene	trichloroethene	Other VOCs	BTEX	VHw_{6-10}	VPHw	lead	Other metals
5/24/17	<200	<200	<RDL	[illegible]	[illegible]	[illegible]	<DW	<RDL	<300	<300	<0.2	-
Duplicate	<200	<200	<RDL	[illegible]	[illegible]	[illegible]	<DW	<RDL	<300	<300	<0.2	-

MW17-3	$EPHw_{10-19}$	LEPHw	PAHs	VOC	BTEX	VHw_{6-10}	VPHw	lead	Other metals
5/25/17	<200	<200	<RDL	<DW	<RDL	<300	<300	<0.2	-

MW17-7S	PAHs	VOC	BTEX	VHw_{6-10}	VPHw
7/10/17	<DW	<DW	<RDL	<300	<300
Duplicate	-	<DW	<RDL	<300	<300

MW17-7D	VOC	BTEX	VHw_{6-10}	VPHw
7/10/17	<DW	<RDL	<300	<300

MW17-2	$EPHw_{10-19}$	LEPHw	PAHs	VOC	BTEX	VHw_{6-10}	VPHw	lead	Other metals
5/25/17	<200	<200	<RDL	<DW	<RDL	<300	<300	<0.2	-

MW17-8S	cis-1,2-dichloroethene	tetrachloroethene	trichloroethene	Other VOCs	BTEX	VHw_{6-10}	VPHw
7/10/17	[illegible]	[illegible]	[illegible]	<RDL	<RDL	<300	<300

MW17-6S	$EPHw_{10-19}$	LEPHw	PAHs	VOC	BTEX	VHw_{6-10}	VPHw	lead	Other metals
5/24/17	<200	<200	<RDL	<DW	<RDL	<300	<300	<0.2	-

MW17-1	$EPHw_{10-19}$	LEPHw	PAHs	VOC	BTEX	VHw_{6-10}	VPHw	lead	Other metals
5/25/17	<200	<200	<RDL	<DW	<RDL	<300	<300	<0.2	-

LEGEND

- SITE
- PROPERTY LINE
- BUILDING OUTLINE
- KEYSTONE MONITORING WELL (2017)
- MONITORING WELL (BY OTHERS)
- GROUNDWATER CONCENTRATION(S) LESS THAN CSR STANDARDS
- GROUNDWATER CONCENTRATION(S) GREATER THAN CSR DW STANDARDS

$EPHw_{10-19}$	LIGHT EXTRACTABLE PETROLEUM HYDROCARBONS UNCORRECTED FOR PAHs IN WATER
LEPHw	LIGHT EXTRACTABLE PETROLEUM HYDROCARBONS IN WATER
PAHs	POLYCYCLIC AROMATIC HYDROCARBONS
VOC	VOLATILE ORGANIC COMPOUNDS
BTEX	BENZENE, TOLUENE, ETHYLBENZENE & XYLENES
VHw_{6-10}	VOLATILE HYDROCARBONS IN WATER
VPHw	VOLATILE PETROLEUM HYDROCARBONS IN WATER
<	LESS THAN
RDL	REPORTED DETECTION LIMIT
-	NOT ANALYZED
CSR	BRITISH COLUMBIA CONTAMINATED SITES REGULATION
DW	CSR DRINKING WATER USE STANDARDS
mbg	METRES BELOW GRADE

SAMPLE I.D. — ANALYTE

MW	LEPHw
M/DD/YY	<200

DATE SAMPLED — RESULTS

NOTES:
1. Sample values are presented as micrograms per litre (µg/L) (parts per billion (ppb)).
2. Sample Exceeding CSR DW Standards in LIGHT BLUE.

Keystone Environmental

NOTES:
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5m 0 20m

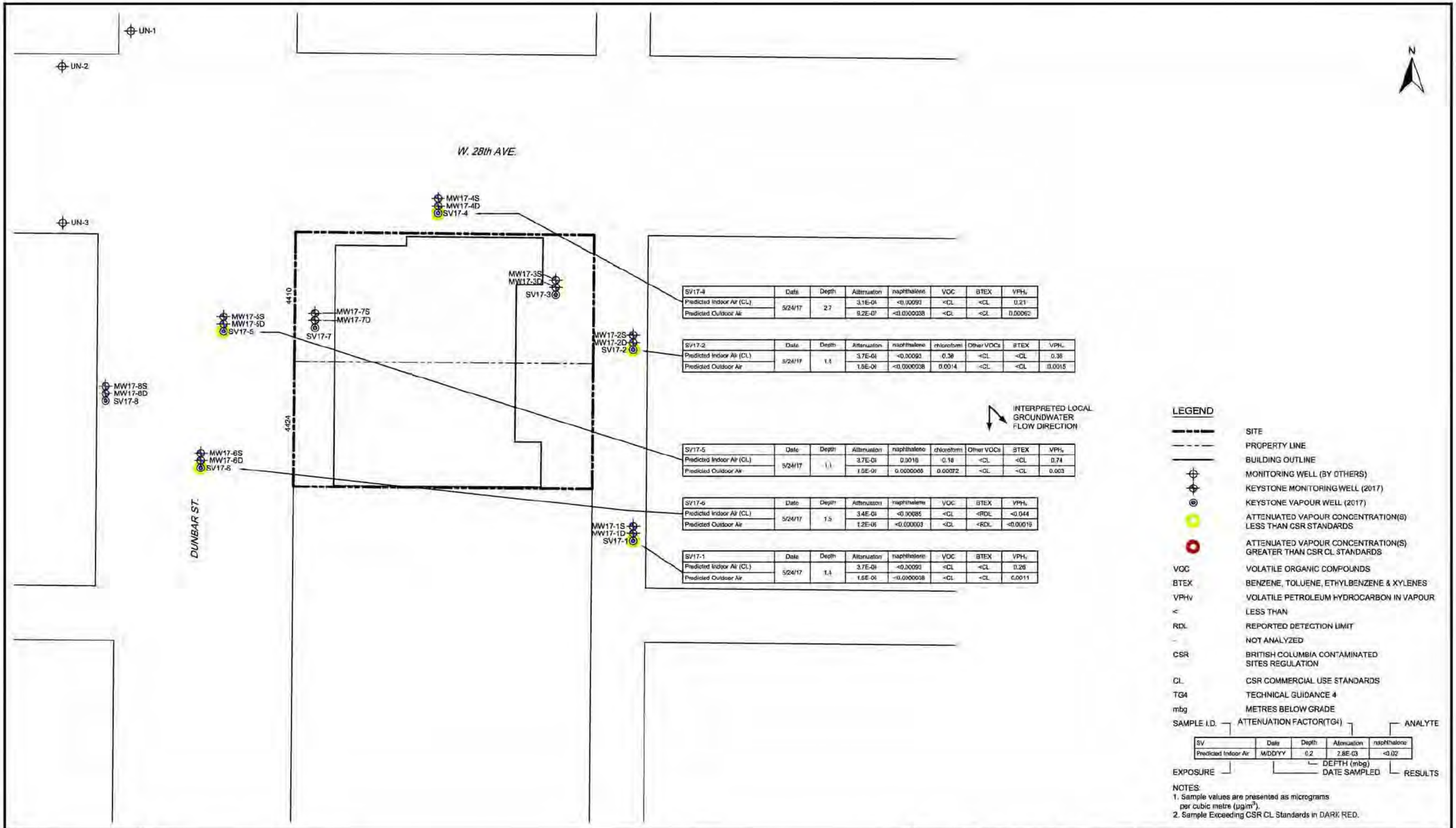
SCALE: 1:400(approx.)

4410 - 4424 Dunbar Street
Vancouver, B C
Qualex Landmark Dunbar Ltd.

REVISION No.	DATE	PROJECT No.
00	Oct. 2017	13526-02

Figure 2
Groundwater Analytical Results

PLOT SCALE: 1:1 DRAWN BY: AB CADD FILE No. I:\13500-13599\13526\Figs\Test hole report\Fig2-GW Analytical-R0.dwg



SV17-4	Date	Depth	Attenuation	naphthalene	VOC	BTEX	VPH_v
Predicted Indoor Air (CL)	5/24/17	2.7	3.1E-04	<0.00093	<CL	<CL	0.21
Predicted Outdoor Air			9.2E-07	<0.0000038	<CL	<CL	0.00062

SV17-2	Date	Depth	Attenuation	naphthalene	chloroform	Other VOCs	BTEX	VPH_v
Predicted Indoor Air (CL)	5/24/17	1.1	3.7E-04	<0.00093	0.38	<CL	<CL	0.38
Predicted Outdoor Air			1.5E-06	<0.0000038	0.0014	<CL	<CL	0.0015

SV17-5	Date	Depth	Attenuation	naphthalene	chloroform	Other VOCs	BTEX	VPH_v
Predicted Indoor Air (CL)	5/24/17	1.1	3.7E-04	0.0016	0.16	<CL	<CL	0.74
Predicted Outdoor Air			1.5E-06	0.0000065	0.00072	<CL	<CL	0.003

SV17-6	Date	Depth	Attenuation	naphthalene	VOC	BTEX	VPH_v
Predicted Indoor Air (CL)	5/24/17	1.5	3.4E-04	<0.00085	<CL	<RDL	<0.044
Predicted Outdoor Air			1.2E-06	<0.000003	<CL	<RDL	<0.00015

SV17-1	Date	Depth	Attenuation	naphthalene	VOC	BTEX	VPH_v
Predicted Indoor Air (CL)	5/24/17	1.4	3.7E-04	<0.00093	<CL	<CL	0.26
Predicted Outdoor Air			1.5E-06	<0.0000038	<CL	<CL	0.0011

LEGEND

- SITE
- PROPERTY LINE
- BUILDING OUTLINE
- MONITORING WELL (BY OTHERS)
- KEYSTONE MONITORING WELL (2017)
- KEYSTONE VAPOUR WELL (2017)
- ATTENUATED VAPOUR CONCENTRATION(S) LESS THAN CSR STANDARDS
- ATTENUATED VAPOUR CONCENTRATION(S) GREATER THAN CSR CL STANDARDS

VOC	VOLATILE ORGANIC COMPOUNDS
BTEX	BENZENE, TOLUENE, ETHYLBENZENE & XYLENES
VPH_v	VOLATILE PETROLEUM HYDROCARBON IN VAPOUR
<	LESS THAN
RDL	REPORTED DETECTION LIMIT
-	NOT ANALYZED
CSR	BRITISH COLUMBIA CONTAMINATED SITES REGULATION
CL	CSR COMMERCIAL USE STANDARDS
TG4	TECHNICAL GUIDANCE 4
mbg	METRES BELOW GRADE

SAMPLE I.D. — ATTENUATION FACTOR(TG4) — ANALYTE

SV	Date	Depth	Attenuation	naphthalene
Predicted Indoor Air	M/DD/YY	0.2	2.8E-03	<0.02

EXPOSURE — DEPTH (mbg) — DATE SAMPLED — RESULTS

NOTES:
1. Sample values are presented as micrograms per cubic metre ($\mu g/m^3$).
2. Sample Exceeding CSR CL Standards in DARK RED.

Keystone Environmental

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5m 0 20m

SCALE: 1:400(approx.)

4410 - 4424 Dunbar Street
Vancouver, B C
Qualex Landmark Dunbar Ltd.

REVISION No.	DATE	PROJECT No.
00	Oct. 2017	13526-02

Figure 3
Vapour Analytical Results - Current

PLOT SCALE: 1:1 DRAWN BY: AS CADD FILE No. I:\13500-13599\13526\Figs\Test hole report\Fig3-SV Analytical-R0.dwg

Maxxam
A Bureau Veritas Group Company

Success Through Science®

Your Project #: 13526
Your C.O.C. #: K017240, K017241

Attention:Kevin Wong
KEYSTONE ENVIRONMENTAL LTD
SUITE 320
4400 DOMINION STREET
BURNABY, BC
CANADA V5G 4G3

Report Date: 2017/07/13
Report #: R2411847
Version: 1 Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B739920
Received: 2017/05/18, 15:45

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE LH VH F1 in Soil - Field Pres. (1)	1	N/A	2017/07/12	BBY8SOP-00010/11/12	PBM BC Lab Manual m
Moisture	1	2017/07/13	2017/07/13	BBY8SOP-00017	BCMOE BCLM Dec2000 m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) The extraction date for VOC, BTEX, VH, or F1 samples that are field preserved with methanol equals the date sampled, unless otherwise stated.

Maxxam Analytics International Corporation o/a Maxxam Analytics Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Your Project #: 13526
Your C.O.C. #: K017240, K017241

Attention:Kevin Wong
KEYSTONE ENVIRONMENTAL LTD
SUITE 320
4400 DOMINION STREET
BURNABY, BC
CANADA V5G 4G3

Report Date: 2017/07/13
Report #: R2411847
Version: 1 Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B739920
Received: 2017/05/18, 15:45

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Amandeep Nagra, Account Specialist
Email: ANagra@maxxam.ca
Phone# (604)639 2602

==========

This report has been generated and distributed using a secure automated process.
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 Job #: B739920
Report Date: 2017/07/13

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526

PHYSICAL TESTING (SOIL)

Maxxam ID		RC8869	RC8869		
Sampling Date		2017/05/18 10:30	2017/05/18 10:30		
COC Number		K017240	K017240		
	UNITS	MW17-5(6.5)	MW17-5(6.5) Lab-Dup	RDL	QC Batch
Physical Properties					
Moisture	%	18	18	0.30	8693486

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Maxxam Analytics International Corporation o/a Maxxam Analytics Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Maxxam Job #: B739920
Report Date: 2017/07/13

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526

BTEX BY GC-MS (SOIL)

Maxxam ID		RC8869		
Sampling Date		2017/05/18 10:30		
COC Number		K017240		
	UNITS	MW17-5(6.5)	RDL	QC Batch
Volatiles				
Benzene	mg/kg	<0.0050	0.0050	8692655
Surrogate Recovery (%)				
1,4-Difluorobenzene (sur.)	%	97		8692655
4-Bromofluorobenzene (sur.)	%	98		8692655
D10-ETHYLBENZENE (sur.)	%	105		8692655
D4-1,2-Dichloroethane (sur.)	%	108		8692655
RDL = Reportable Detection Limit				

Maxxam Analytics International Corporation o/a Maxxam Analytics Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Maxxam Job #: B739920
Report Date: 2017/07/13

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	22.7°C

Sample RC8869 [MW17-5(6.5)] : Sample was extracted past method specified hold time for Moisture. {Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised.} Sample was analyzed past method specified hold time for BTEX/MTBE LH VH F1 in Soil - Field Pres..

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Maxxam Job #: B739920
Report Date: 2017/07/13

QUALITY ASSURANCE REPORT

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8692655	1,4-Difluorobenzene (sur.)	2017/07/12	90	60 - 140	91	60 - 140	93	%		
8692655	4-Bromofluorobenzene (sur.)	2017/07/12	102	60 - 140	102	60 - 140	103	%		
8692655	D10-ETHYLBENZENE (sur.)	2017/07/12	128	60 - 130	110	60 - 130	120	%		
8692655	D4-1,2-Dichloroethane (sur.)	2017/07/12	111	60 - 140	108	60 - 140	115	%		
8692655	Benzene	2017/07/12	117	60 - 140	120	70 - 130	<0.0050	mg/kg	3.4	40
8693486	Moisture	2017/07/13					<0.30	%	0.55	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 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.

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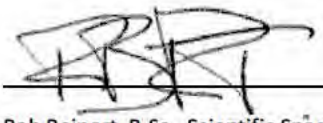
Maxxam Job #: B739920
Report Date: 2017/07/13

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526

VALIDATION SIGNATURE PAGE

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



Rob Reinert, B.Sc., Scientific Specialist

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.

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CHAIN OF CUSTODY RECORD

BBY FCD-00077/07

Page 1 of 2

Burnaby: 4606 Canada Way, Burnaby, BC V5G 1K5. Toll Free (800) 665-8566

Invoice Information	Report Information (if differs from invoice)	Project Information (where applicable)	Turnaround Time (TAT) Required
Company Name: 3763 - Keystone Environmental Ltd.	Company Name: Keystone Environmental	Quotation #:	☐ Regular TAT 5 days (Most analyses)
Contact Name: Kevin Wong	Contact Name: Kevin W./Francini M./JasonG.	P.O. #/ AFE#:	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address: #320 - 4400 Dominion Street	Address:	Project #: 13526	Rush TAT (Surcharges will be applied)
Burnaby, BC PC: V5G 4G3	PC:	Site Location:	☐ Same Day ☐ 2 Days
Phone: (604) 430-0671	Phone:	Site #:	☐ 1 Day ☐ 3 Days
Email:	Email:	Sampled By: Jason Grafstrom	Date Required:

Regulatory Criteria	Special Instructions
☐ BC CSR Soil ☐ BC CSR Water	☐ Return Cooler
☐ YK CSR Soil ☐ YK CSR Water	☐ Ship Sample Bottles (Please Specify)
☐ CCME (Specify) ☐ Other (Specify)	
☐ Drinking Water ☐ BC Water Quality	

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

Rush Confirmation #:

LABORATORY USE ONLY — CUSTODY SEAL Y / N — Present / Intact — COOLER TEMPERATURES: 222224 | 1 1 — COOLING MEDIA PRESENT Y / N

#	Sample Identification	Date Sampled (YYYY/MM/DD)	Time Sampled (HH:MM)	Matrix	# OF CONTAINERS SUBMITTED	HOLD - DO NOT ANALYZE	COMMENTS
1	MW17-S(0.7)	2017/05/18	10:30	soil	4	✓	
2	MW17-S(1.5)				4	✓	
3	MW17-S(2.5)				4	✓	
4	MW17-S(3.5)				4	✓	
5	MW17-S(4.5)				4	✓	
6	MW17-I				4	✓	
7	MW17-S(5.5)				4	✓	
8	MW17-S(6.5)				4	✓	
9	MW17-S(7.5)				4	✓	
10	MW17-S(8.5)		11:30		4	✓	

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)
Jason Grafstrom	2017/05/18	15:30	Laurel DeAbreu	2017/05/18	15:45

COC-1027 Keystone

B739920_COC

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CHAIN OF CUSTODY RECORD

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BBY FCD-00077/07
Page 2 of 2

Invoice Information	Report Information (if differs from invoice)	Project Information (where applicable)	Turnaround Time (TAT) Required
Company Name: 3763 - Keystone Environmental Ltd.	Company Name: Keystone Environmental	Quotation #:	☐ Regular TAT 5 days (Most analyses)
Contact Name: Kevin Wong	Contact Name: Kevin W./Francini M./Jason G	P.O. #/ AFE#:	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address: #320 - 4400 Dominion Street	Address:	Project #: 13526	Rush TAT (Surcharges will be applied)
Burnaby, BC PC: V5G 4G3	PC:	Site Location:	☐ Same Day ☐ 2 Days
Phone: (604) 430-0671	Phone:	Site #:	☐ 1 Day ☐ 3 Days
Email:	Email:	Sampled By: Jason Grafstrom	Date Required:

Regulatory Criteria	Special Instructions
☐ BC CSR Soil ☐ BC CSR Water	☐ Return Cooler
☐ YK CSR Soil ☐ YK CSR Water	☐ Ship Sample Bottles (Please Specify)
☐ CCME (Specify) ☐ Other (Specify)	
☐ Drinking Water ☐ BC Water Quality	

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

Rush Confirmation #:

LABORATORY USE ONLY
CUSTODY SEAL Y / N (Present / Intact)
COOLER TEMPERATURES: 22.7.24
COOLING MEDIA PRESENT Y / N
COMMENTS

	Sample Identification	Date Sampled (YYYY/MM/DD)	Time Sampled (HH:MM)	Matrix	# OF CONTAINERS SUBMITTED	HOLD - DO NOT ANALYZE
1	MW17-5(9.5)	2017/05/18	11:30	soil	4	X
2	MW17-5(10.5)				4	X
3	MW17-5				4	X
4	MW17-5(11.5)				4	X
5	MW17-5(12.5)				4	X
6	MW17-5(13.5)				4	X
7	MW17-5(14.5)				4	X
8	MW17-5(15.5)				4	X
9	MW17-5(16.5)				4	X
10	MW17-5(17.5)		12:30		4	X

Analysis Requested: ☐ MTBE; ☐ VOC / BTEX/ VPH; ☐ VOC / BTEX / F1; ☐ LEPH/MEPH/PAH; ☐ F2 - F4; ☐ TEH; ☐ Preserved?; ☐ Preserved?; ☐ Sulphate; ☐ COD; ☐ Alkalinity; ☐ Ammonia; ☐ BTEX/VPH; ☐ BTEX / F1; ☐ PAH; ☐ EPH; ☐ Filtered?; ☐ Filtered?; ☐ Field Preserved?; ☐ Field Preserved?; ☐ Fluoride; ☐ BOD; ☐ Conductivity; ☐ Nitrate; ☐ Dissolved Metals; ☐ Dissolved Mercury; ☐ Total Metals; ☐ Total Mercury; ☐ Chloride; ☐ TDS; ☐ pH; ☐ Nitrite; ☐ TSS

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)
Jason Grafstrom	2017/05/19	15:30	[illegible]	2017/05/18	15:45

COC-1027 Keystone

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CHAIN OF CUSTODY RECORD

BBY FCD-00077/07

Page 1 of 2

Burnaby: 4606 Canada Way, Burnaby, BC V5G 1K5. Toll Free (800) 665-8566

Invoice Information	Report Information (if differs from invoice)	Project Information (where applicable)	Turnaround Time (TAT) Required
Company Name: 3763 - Keystone Environmental Ltd.	Company Name: Keystone Environmental	Quotation #:	☐ Regular TAT 5 days (Most analyses)
Contact Name: Kevin Wong	Contact Name: Kevin W./Francini M./Jason G.	P.O. #/ AFE#:	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address: #320 - 4400 Dominion Street	Address:	Project #: 13526	Rush TAT (Surcharges will be applied)
Burnaby, BC PC: V5G 4G3	PO:	Site Location:	☐ Same Day ☐ 2 Days
Phone: (604) 430-0671	Phone:	Site #:	☐ 1 Day ☐ 3 Days
Email:	Email:	Sampled By: Jason Grafstrom	Date Required:
			Rush Confirmation #:

Regulatory Criteria	Special Instructions
☐ BC CSR Soil ☐ BC CSR Water	☐ Return Cooler
☐ YK CSR Soil ☐ YK CSR Water	☐ Ship Sample Bottles (Please Specify)
☐ CCME (Specify) ☐ Other (Specify)	
☐ Drinking Water ☐ BC Water Quality	

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

	Sample Identification	Date Sampled (YYYY/MM/DD)	Time Sampled (HH:MM)	Matrix	# OF CONTAINERS SUBMITTED	HOLD - DO NOT ANALYZE
1	MW17-5(0.7)	2017/05/18	10:30	soil	4	✓
2	MW17-5(1.5)				4	✓
3	MW17-5(2.5)				4	✓
4	MW17-5(3.5)				4	✓
5	MW17-5(4.5)				4	✓
6	MW17-I				4	✓
7	MW17-5(5.5)				4	✓
8	MW17-5(6.5)				4	see FOM
9	MW17-5(7.5)				4	✓
10	MW17-5(8.5)		11:30		4	✓

Analysis Requested: MTBE; VOC / BTEXS / VPH; VOC / BTEX / F1; LEPH/HEPH/PAH; F2 - F4; TEH; Preserved?; Filtered?; Dissolved Metals; Preserved?; Filtered?; Dissolved Mercury; Field Preserved?; Total Metals; Field Preserved?; Total Mercury; Sulphate; Chloride; Fluoride; COD; BOD; TDS; Alkalinity; Conductivity; pH; Ammonia; Nitrate; Nitrite; Benzene

LABORATORY USE ONLY		
CUSTODY SEAL Y / N		COOLER TEMPERATURES
Present	Intact	
NA		22.2 22.4
COOLING MEDIA PRESENT Y / N		

COMMENTS

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)
Jason Grafstrom	2017/05/18	15:30	Michael DeAthen	2017/05/18	15:45

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COC-1027 Keystone

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CHAIN OF CUSTODY RECORD

BBY FCD-00077/07
Page 2 of 2

Burnaby: 4606 Canada Way, Burnaby, BC V5G 1K5. Toll Free (800) 665-8566

Invoice Information	Report Information (if differs from invoice)	Project Information (where applicable)	Turnaround Time (TAT) Required
Company Name: 3763 - Keystone Environmental Ltd.	Company Name: Keystone Environmental	Quotation #:	☐ Regular TAT 5 days (Most analyses)
Contact Name: Kevin Wong	Contact Name: Kevin W./Francini M./Jason G	P.O. #/ AFE#:	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address: #320 - 4400 Dominion Street	Address:	Project #: 13526	Rush TAT (Surcharges will be applied)
Burnaby, BC PC: V5G 4G3	PC:	Site Location:	☐ Same Day ☐ 2 Days
Phone: (604) 430-0671	Phone:	Site #:	☐ 1 Day ☐ 3 Days
Email:	Email:	Sampled By: Jason Grafstrom	Date Required:

Regulatory Criteria	Special Instructions	Rush Confirmation #:
☐ BC CSR Soil ☐ BC CSR Water	☐ Return Cooler	
☐ YK CSR Soil ☐ YK CSR Water	☐ Ship Sample Bottles (Please Specify)	
☐ CCME (Specify) ☐ Other (Specify)		
☐ Drinking Water ☐ BC Water Quality		

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

	Sample Identification	Date Sampled (YYYY/MM/DD)	Time Sampled (HH:MM)	Matrix	# OF CONTAINERS SUBMITTED	HOLD - DO NOT ANALYZE
1	MW17-5(9.5)	2017/05/18	11:30	soil	4	X
2	MW17-5(10.5)				4	X
3	MW17-5				4	X
4	MW17-5(11.5)				4	X
5	MW17-5(12.5)				4	X
6	MW17-5(13.5)				4	X
7	MW17-5(14.5)				4	X
8	MW17-5(15.5)				4	X
9	MW17-5(16.5)				4	X
10	MW17-5(17.5)		12:30		4	X

Analysis Requested: MTBE; VOC/BTEX/VPH; VOC/BTEX/F1; LEPH/HEPH/PAH; F2-F4; TEH; PAH; EPH; Dissolved Metals (Filtered?); Dissolved Mercury (Filtered?); Total Metals (Field Preserved?); Total Mercury (Field Preserved?); Chloride; Fluoride; TSS; Sulphate; BOD; COD; pH; Conductivity; Alkalinity; Nitrate; Ammonia; Nitrite

LABORATORY USE ONLY

CUSTODY SEAL Y / (N)		COOLER TEMPERATURES
Present	Intact	
NA		22,22,24

COOLING MEDIA PRESENT (Y) / N

COMMENTS

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)
Jason Grafstrom	2017/05/18	15:30	Laurel Brother	2017/05/18	15:45

MAXXAM JOB #

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COC-1027 Keystone

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Success Through Science®

Your Project #: 13526
Your C.O.C. #: K017310

Attention:Kevin Wong
KEYSTONE ENVIRONMENTAL LTD
SUITE 320
4400 DOMINION STREET
BURNABY, BC
CANADA V5G 4G3

Report Date: 2017/05/26
Report #: R2388487
Version: 1 Partial

CERTIFICATE OF ANALYSIS – PARTIAL RESULTS

MAXXAM JOB #: B740009
Received: 2017/05/24, 17:40

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
VOCs, VH, F1, LH in Water by HS GC/MS	1	2017/05/25	2017/05/26	BBY8SOP-00009/11/12	BC Lab Manual 2007
Volatile HC-BTEX	1	N/A	2017/05/26	BBY WI-00033	Auto Calc

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

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Your Project #: 13526
Your C.O.C. #: K017310

Attention:Kevin Wong
KEYSTONE ENVIRONMENTAL LTD
SUITE 320
4400 DOMINION STREET
BURNABY, BC
CANADA V5G 4G3

Report Date: 2017/05/26
Report #: R2388487
Version: 1 Partial

CERTIFICATE OF ANALYSIS – PARTIAL RESULTS

MAXXAM JOB #: B740009
Received: 2017/05/24, 17:40

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Amandeep Nagra, Account Specialist
Email: ANagra@maxxam.ca
Phone# (604)639 2602

==========

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Maxxam Job #: B740009
Report Date: 2017/05/26

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

CSR VOC + VPH IN WATER (WATER)

Maxxam ID		RC9357		
Sampling Date		2017/05/24 12:30		
COC Number		K017310		
	UNITS	MW17-6S	RDL	QC Batch
Volatiles				
VPH (VHW6 to 10 - BTEX)	ug/L	<300	300	8640109
Chloromethane	ug/L	<1.0	1.0	8640941
Vinyl chloride	ug/L	<0.50	0.50	8640941
Chloroethane	ug/L	<1.0	1.0	8640941
Trichlorofluoromethane	ug/L	<4.0	4.0	8640941
1,1,2Trichloro-1,2,2Trifluoroethane	ug/L	<2.0	2.0	8640941
Dichlorodifluoromethane	ug/L	<2.0	2.0	8640941
1,1-dichloroethene	ug/L	<0.50	0.50	8640941
Dichloromethane	ug/L	<2.0	2.0	8640941
trans-1,2-dichloroethene	ug/L	<1.0	1.0	8640941
1,1-dichloroethane	ug/L	<0.50	0.50	8640941
cis-1,2-dichloroethene	ug/L	<1.0	1.0	8640941
Chloroform	ug/L	25	1.0	8640941
1,1,1-trichloroethane	ug/L	<0.50	0.50	8640941
1,2-dichloroethane	ug/L	<0.50	0.50	8640941
Carbon tetrachloride	ug/L	<0.50	0.50	8640941
Benzene	ug/L	<0.40	0.40	8640941
Methyl-tert-butylether (MTBE)	ug/L	<4.0	4.0	8640941
1,2-dichloropropane	ug/L	<0.50	0.50	8640941
cis-1,3-dichloropropene	ug/L	<1.0	1.0	8640941
trans-1,3-dichloropropene	ug/L	<1.0	1.0	8640941
Bromomethane	ug/L	<1.0	1.0	8640941
1,1,2-trichloroethane	ug/L	<0.50	0.50	8640941
Trichloroethene	ug/L	<0.50	0.50	8640941
Chlorodibromomethane	ug/L	<1.0	1.0	8640941
1,2-dibromoethane	ug/L	<0.20	0.20	8640941
1,3-Butadiene	ug/L	<5.0	5.0	8640941
Tetrachloroethene	ug/L	7.5	0.50	8640941
Bromodichloromethane	ug/L	<1.0	1.0	8640941
Toluene	ug/L	<0.40	0.40	8640941
Ethylbenzene	ug/L	<0.40	0.40	8640941
m & p-Xylene	ug/L	<0.40	0.40	8640941
RDL = Reportable Detection Limit				

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Maxxam Job #: B740009
Report Date: 2017/05/26

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

CSR VOC + VPH IN WATER (WATER)

Maxxam ID		RC9357		
Sampling Date		2017/05/24 12:30		
COC Number		K017310		
	UNITS	MW17-6S	RDL	QC Batch
Bromoform	ug/L	<1.0	1.0	8640941
Styrene	ug/L	<0.50	0.50	8640941
o-Xylene	ug/L	<0.40	0.40	8640941
Xylenes (Total)	ug/L	<0.40	0.40	8640941
1,1,1,2-tetrachloroethane	ug/L	<0.50	0.50	8640941
1,1,2,2-tetrachloroethane	ug/L	<0.50	0.50	8640941
1,2-dichlorobenzene	ug/L	<0.50	0.50	8640941
1,3-dichlorobenzene	ug/L	<0.50	0.50	8640941
1,4-dichlorobenzene	ug/L	<0.50	0.50	8640941
Chlorobenzene	ug/L	<0.50	0.50	8640941
Dibromomethane	ug/L	<0.90	0.90	8640941
Bromobenzene	ug/L	<2.0	2.0	8640941
VH C6-C10	ug/L	<300	300	8640941
Surrogate Recovery (%)				
1,4-Difluorobenzene (sur.)	%	100		8640941
4-Bromofluorobenzene (sur.)	%	97		8640941
D4-1,2-Dichloroethane (sur.)	%	93		8640941
RDL = Reportable Detection Limit				

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Maxxam Job #: B740009
Report Date: 2017/05/26

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

GENERAL COMMENTS

Sample RC9357 [MW17-6S] : Sediment present in excess (>20% v/v). Results have a potential for high bias for VOC.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Maxxam Job #: B740009
Report Date: 2017/05/26

QUALITY ASSURANCE REPORT

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

			Matrix Spike		Spiked Blank		Method Blank	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS
8640941	1,4-Difluorobenzene (sur.)	2017/05/26	100	70 - 130	99	70 - 130	98	%
8640941	4-Bromofluorobenzene (sur.)	2017/05/26	114	70 - 130	112	70 - 130	107	%
8640941	D4-1,2-Dichloroethane (sur.)	2017/05/26	114	70 - 130	116	70 - 130	108	%
8640941	1,1,1,2-tetrachloroethane	2017/05/26	122	70 - 130	113	70 - 130	<0.50	ug/L
8640941	1,1,1-trichloroethane	2017/05/26	112	70 - 130	110	70 - 130	<0.50	ug/L
8640941	1,1,2,2-tetrachloroethane	2017/05/26	113	70 - 130	108	70 - 130	<0.50	ug/L
8640941	1,1,2Trichloro-1,2,2Trifluoroethane	2017/05/26					<2.0	ug/L
8640941	1,1,2-trichloroethane	2017/05/26	119	70 - 130	116	70 - 130	<0.50	ug/L
8640941	1,1-dichloroethane	2017/05/26	115	70 - 130	111	70 - 130	<0.50	ug/L
8640941	1,1-dichloroethene	2017/05/26	129	70 - 130	123	70 - 130	<0.50	ug/L
8640941	1,2-dibromoethane	2017/05/26	119	70 - 130	116	70 - 130	<0.20	ug/L
8640941	1,2-dichlorobenzene	2017/05/26	119	70 - 130	116	70 - 130	<0.50	ug/L
8640941	1,2-dichloroethane	2017/05/26	95	70 - 130	96	70 - 130	<0.50	ug/L
8640941	1,2-dichloropropane	2017/05/26	124	70 - 130	120	70 - 130	<0.50	ug/L
8640941	1,3-Butadiene	2017/05/26					<5.0	ug/L
8640941	1,3-dichlorobenzene	2017/05/26	96	70 - 130	107	70 - 130	<0.50	ug/L
8640941	1,4-dichlorobenzene	2017/05/26	110	70 - 130	112	70 - 130	<0.50	ug/L
8640941	Benzene	2017/05/26	112	70 - 130	116	70 - 130	<0.40	ug/L
8640941	Bromobenzene	2017/05/26	115	N/A	111	70 - 130	<2.0	ug/L
8640941	Bromodichloromethane	2017/05/26	113	70 - 130	110	70 - 130	<1.0	ug/L
8640941	Bromoform	2017/05/26	103	70 - 130	99	70 - 130	<1.0	ug/L
8640941	Bromomethane	2017/05/26	99	60 - 140	109	60 - 140	<1.0	ug/L
8640941	Carbon tetrachloride	2017/05/26	111	70 - 130	109	70 - 130	<0.50	ug/L
8640941	Chlorobenzene	2017/05/26	122	70 - 130	116	70 - 130	<0.50	ug/L
8640941	Chlorodibromomethane	2017/05/26	119	70 - 130	115	70 - 130	<1.0	ug/L
8640941	Chloroethane	2017/05/26	95	60 - 140	83	60 - 140	<1.0	ug/L
8640941	Chloroform	2017/05/26	115	70 - 130	110	70 - 130	<1.0	ug/L
8640941	Chloromethane	2017/05/26	107	60 - 140	103	60 - 140	<1.0	ug/L
8640941	cis-1,2-dichloroethene	2017/05/26	124	70 - 130	119	70 - 130	<1.0	ug/L
8640941	cis-1,3-dichloropropene	2017/05/26	106	70 - 130	101	70 - 130	<1.0	ug/L
8640941	Dibromomethane	2017/05/26	118	N/A	114	70 - 130	<0.90	ug/L

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Maxxam Job #: B740009
Report Date: 2017/05/26

QUALITY ASSURANCE REPORT(CONT'D)

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

			Matrix Spike		Spiked Blank		Method Blank	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS
8640941	Dichlorodifluoromethane	2017/05/26	106	N/A	100	60 - 140	<2.0	ug/L
8640941	Dichloromethane	2017/05/26	107	70 - 130	104	70 - 130	<2.0	ug/L
8640941	Ethylbenzene	2017/05/26	127	70 - 130	122	70 - 130	<0.40	ug/L
8640941	m & p-Xylene	2017/05/26	128	70 - 130	128	70 - 130	<0.40	ug/L
8640941	Methyl-tert-butylether (MTBE)	2017/05/26	127	70 - 130	127	70 - 130	<4.0	ug/L
8640941	o-Xylene	2017/05/26	130	70 - 130	128	70 - 130	<0.40	ug/L
8640941	Styrene	2017/05/26	116	70 - 130	113	70 - 130	<0.50	ug/L
8640941	Tetrachloroethene	2017/05/26	119	70 - 130	119	70 - 130	<0.50	ug/L
8640941	Toluene	2017/05/26	126	70 - 130	123	70 - 130	<0.40	ug/L
8640941	trans-1,2-dichloroethene	2017/05/26	115	70 - 130	112	70 - 130	<1.0	ug/L
8640941	trans-1,3-dichloropropene	2017/05/26	90	70 - 130	87	70 - 130	<1.0	ug/L
8640941	Trichloroethene	2017/05/26	119	70 - 130	115	70 - 130	<0.50	ug/L
8640941	Trichlorofluoromethane	2017/05/26	120	60 - 140	129	60 - 140	<4.0	ug/L
8640941	VH C6-C10	2017/05/26			81	70 - 130	<300	ug/L
8640941	Vinyl chloride	2017/05/26	104	60 - 140	101	60 - 140	<0.50	ug/L
8640941	Xylenes (Total)	2017/05/26					<0.40	ug/L

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.

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Maxxam Job #: B740009
Report Date: 2017/05/26

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

VALIDATION SIGNATURE PAGE

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

Andy Lu, Ph.D., P.Chem., Scientific Specialist

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.

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K 017310

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CHAIN OF CUSTODY RECORD

BBY FCD-00077/07
Page 1 of 1

Burnaby: 4606 Canada Way, Burnaby, BC V5G 1K5. Toll Free (800) 665-8566

Invoice Information	Report Information (if differs from invoice)	Project Information (where applicable)	Turnaround Time (TAT) Required
Company Name: 3763 - Keystone Environmental Ltd.	Company Name: Keystone Environmental	Quotation #:	☒ Regular TAT 5 days (Most analyses)
Contact Name: Kevin Wong	Contact Name: Kevin W./Francini M./Jason G	P.O. #/ AFE#:	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address: #320 - 4400 Dominion Street	Address:	Project #: 13526	Rush TAT (Surcharges will be applied)
Burnaby, BC PC: V5G 4G3	PC:	Site Location:	☐ Same Day ☐ 2 Days
Phone: (604) 430-0671	Phone:	Site #:	☐ 1 Day ☐ 3 Days
Email:	Email:	Sampled By: Jason Grafstrom	Date Required:

Regulatory Criteria	Special Instructions
☐ BC CSR Soil ☒ BC CSR Water	☐ Return Cooler
☐ YK CSR Soil ☐ YK CSR Water	☐ Ship Sample Bottles (Please Specify)
☐ CCME (Specify) ☐ Other (Specify)	
☐ Drinking Water ☐ BC Water Quality	

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

	Sample Identification	Date Sampled (YYYY/MM/DD)	Time Sampled (HH:MM)	Matrix	BTEXS / VPH	BTEX / F1	PAH	EPH	Dissolved Metals	Dissolved Mercury	Total Metals	Total Mercury	Chloride	TSS	pH	Nitrite	Lead limited sample			# OF CONTAINERS SUBMITTED	HOLD - DO NOT ANALYZE	COMMENTS
1	MW17-4S	2017/05/24	15:15	GW	X		X		X							X	X			6		
2	MW17-5S	"	14:00	"	X		X		X							X	X			6		
3	MW17-6S	"	12:30	"	X		X		X							X	X			5		
4	MW17-A	"	14:00	"	X		X		X							X	X			6		
5				"																		
6																						
7																						
8																						
9																						
10																						

LABORATORY USE ONLY

CUSTODY SEAL Y / N		COOLER TEMPERATURES
Present	Intact	
		9, 9, 10

COOLING MEDIA PRESENT Y / N

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)
Jason Grafstrom	2017/05/24	17:30	JWAHNNE NOH	2017/05/24	17:40

Unless otherwise agreed to in writing, work submitted on this Chain of Custody is subject to Maxxam's standard Terms and Conditions. Signing of this Chain of Custody document is acknowledgment and acceptance of our terms which are available for viewing.

B740009_COC

COC-1027 Keystone

Maxxam
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Success Through Science®

Your Project #: 13526
Your C.O.C. #: K017310

Attention:Kevin Wong

KEYSTONE ENVIRONMENTAL LTD
SUITE 320
4400 DOMINION STREET
BURNABY, BC
CANADA V5G 4G3

Report Date: 2017/06/01
Report #: R2391166
Version: 2 Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B740009
Received: 2017/05/24, 17:40

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Hardness (calculated as CaCO3)	1	N/A	2017/05/26	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3)	3	N/A	2017/05/31	BBY WI-00033	Auto Calc
EPH in Water when PAH required	4	2017/05/25	2017/05/25	BBY8SOP-00029	BCMOE EPH w 12/00 m
Elements by CRC ICPMS (dissolved)	1	N/A	2017/05/26	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved)	3	N/A	2017/05/31	BBY7SOP-00002	EPA 6020B R2 m
PAH in Water by GC/MS (SIM)	4	2017/05/25	2017/05/27	BBY8SOP-00021	EPA 8270d R5 m
Total LMW, HMW, Total PAH Calc	4	N/A	2017/05/28	BBY WI-00033	Auto Calc
Filter and HNO3 Preserve for Metals	4	N/A	2017/05/29	BBY7 WI-00004	BCMOE Reqs 08/14
EPH less PAH in Water by GC/FID	4	N/A	2017/05/28	BBY WI-00033	Auto Calc
Extra VOCs in Water by HS GC/MS	1	N/A	2017/05/26	BBY8SOP-00040	EPA 8260c R3 m
Extra VOCs in Water by HS GC/MS	3	N/A	2017/05/29	BBY8SOP-00040	EPA 8260c R3 m
VOCs, VH, F1, LH in Water by HS GC/MS	1	2017/05/25	2017/05/26	BBY8SOP-00009/11/12	BC Lab Manual 2007
VOCs, VH, F1, LH in Water by HS GC/MS	3	2017/05/29	2017/06/01	BBY8SOP-00009/11/12	BC Lab Manual 2007
Volatile HC-BTEX	1	N/A	2017/05/26	BBY WI-00033	Auto Calc
Volatile HC-BTEX	3	N/A	2017/06/01	BBY WI-00033	Auto Calc

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Your Project #: 13526
Your C.O.C. #: K017310

Attention:Kevin Wong
KEYSTONE ENVIRONMENTAL LTD
SUITE 320
4400 DOMINION STREET
BURNABY, BC
CANADA V5G 4G3

Report Date: 2017/06/01
Report #: R2391166
Version: 2 Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B740009
Received: 2017/05/24, 17:40

Results relate to samples tested.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

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

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Amandeep Nagra, Account Specialist
Email: ANagra@maxxam.ca
Phone# (604)639 2602

==========

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 Job #: B740009
Report Date: 2017/06/01

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		RC9355	RC9356	RC9357	RC9358	
Sampling Date		2017/05/24 15:15	2017/05/24 14:00	2017/05/24 12:30	2017/05/24 14:00	
COC Number		K017310	K017310	K017310	K017310	
	UNITS	MW17-4S	MW17-5S	MW17-6S	MW17-A	QC Batch
Calculated Parameters						
Filter and HNO3 Preservation	N/A	FIELD	FIELD	FIELD	FIELD	ONSITE

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Maxxam Job #: B740009
Report Date: 2017/06/01

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		RC9355	RC9356		RC9357	RC9357		RC9358		
Sampling Date		2017/05/24 15:15	2017/05/24 14:00		2017/05/24 12:30	2017/05/24 12:30		2017/05/24 14:00		
COC Number		K017310	K017310		K017310	K017310		K017310		
	UNITS	MW17-4S	MW17-5S	QC Batch	MW17-6S	MW17-6S Lab-Dup	QC Batch	MW17-A	RDL	QC Batch
Volatiles										
2-Butanone (MEK)	ug/L	<10	<10	8644468	<10	<10	8642198	<10	10	8644468
4-Methyl-2-pentanone (MIBK)	ug/L	<10	<10	8644468	<10	<10	8642198	<10	10	8644468
Surrogate Recovery (%)										
1,4-Difluorobenzene (sur.)	%	88	90	8644468	102	101	8642198	90		8644468
4-Bromofluorobenzene (sur.)	%	105	101	8644468	100	100	8642198	103		8644468
D4-1,2-Dichloroethane (sur.)	%	106	105	8644468	100	99	8642198	106		8644468

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Maxxam Job #: B740009
Report Date: 2017/06/01

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

LEPH & HEPH WITH CSR/CCME PAH IN WATER (WATER)

Maxxam ID		RC9355	RC9356	RC9356	RC9357	RC9358		
Sampling Date		2017/05/24 15:15	2017/05/24 14:00	2017/05/24 14:00	2017/05/24 12:30	2017/05/24 14:00		
COC Number		K017310	K017310	K017310	K017310	K017310		
	UNITS	MW17-4S	MW17-5S	MW17-5S Lab-Dup	MW17-6S	MW17-A	RDL	QC Batch
Polycyclic Aromatics								
Low Molecular Weight PAH`s	ug/L	<0.10	<0.10		<0.10	<0.10	0.10	8640106
High Molecular Weight PAH`s	ug/L	<0.050	<0.050		<0.050	<0.050	0.050	8640106
Total PAH	ug/L	<0.10	<0.10		<0.10	<0.10	0.10	8640106
Quinoline	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	8640281
Naphthalene	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	8640281
2-Methylnaphthalene	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	8640281
Acenaphthylene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8640281
Acenaphthene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8640281
Fluorene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8640281
Phenanthrene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8640281
Anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	8640281
Acridine	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8640281
Fluoranthene	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	8640281
Pyrene	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	8640281
Benzo(a)anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	8640281
Chrysene	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	8640281
Benzo(b&j)fluoranthene	ug/L	<0.030	<0.030	<0.030	<0.030	<0.030	0.030	8640281
Benzo(k)fluoranthene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8640281
Benzo(a)pyrene	ug/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	8640281
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8640281
Dibenz(a,h)anthracene	ug/L	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0030	8640281
Benzo(g,h,i)perylene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8640281
Calculated Parameters								
LEPH (C10-C19 less PAH)	mg/L	<0.20	<0.20		<0.20	<0.20	0.20	8640107
HEPH (C19-C32 less PAH)	mg/L	<0.20	<0.20		<0.20	<0.20	0.20	8640107
Ext. Pet. Hydrocarbon								
EPH (C10-C19)	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	8640296
EPH (C19-C32)	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	8640296
Surrogate Recovery (%)								
O-TERPHENYL (sur.)	%	87	86	93	87	86		8640296
D10-ANTHRACENE (sur.)	%	101	120	109	103	116		8640281

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Maxxam Job #: B740009
Report Date: 2017/06/01

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

LEPH & HEPH WITH CSR/CCME PAH IN WATER (WATER)

Maxxam ID		RC9355	RC9356	RC9356	RC9357	RC9358		
Sampling Date		2017/05/24 15:15	2017/05/24 14:00	2017/05/24 14:00	2017/05/24 12:30	2017/05/24 14:00		
COC Number		K017310	K017310	K017310	K017310	K017310		
	UNITS	MW17-4S	MW17-5S	MW17-5S Lab-Dup	MW17-6S	MW17-A	RDL	QC Batch
D8-ACENAPHTHYLENE (sur.)	%	108	121	109	103	121		8640281
D8-NAPHTHALENE (sur.)	%	79	98	90	84	102		8640281
D9-Acridine (sur.)	%	97	109	96	91	102		8640281
TERPHENYL-D14 (sur.)	%	103	126	113	105	122		8640281

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Maxxam Job #: B740009
Report Date: 2017/06/01

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

CSR DISSOLVED METALS IN WATER (WATER)

Maxxam ID		RC9355	RC9355	RC9356		RC9357		RC9358		
Sampling Date		2017/05/24 15:15	2017/05/24 15:15	2017/05/24 14:00		2017/05/24 12:30		2017/05/24 14:00		
COC Number		K017310	K017310	K017310		K017310		K017310		
	UNITS	MW17-4S	MW17-4S Lab-Dup	MW17-5S	QC Batch	MW17-6S	QC Batch	MW17-A	RDL	QC Batch
Misc. Inorganics										
Dissolved Hardness (CaCO3)	mg/L	94.4		141	8640105	6.72	8640105	153	0.50	8640105
Dissolved Metals by ICPMS										
Dissolved Lead (Pb)	ug/L	0.24	0.25	<0.20	8645356	<0.20	8640865	<0.20	0.20	8645356

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Maxxam Job #: B740009
Report Date: 2017/06/01

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

CSR VOC + VPH IN WATER (WATER)

Maxxam ID		RC9355	RC9356		RC9357		RC9358		
Sampling Date		2017/05/24 15:15	2017/05/24 14:00		2017/05/24 12:30		2017/05/24 14:00		
COC Number		K017310	K017310		K017310		K017310		
	UNITS	MW17-4S	MW17-5S	QC Batch	MW17-6S	QC Batch	MW17-A	RDL	QC Batch
Volatiles									
VPH (VHW6 to 10 - BTEX)	ug/L	<300	<300	8640109	<300	8640109	<300	300	8640109
Chloromethane	ug/L	<1.0	<1.0	8644622	<1.0	8640941	<1.0	1.0	8644622
Vinyl chloride	ug/L	<0.50	<0.50	8644622	<0.50	8640941	<0.50	0.50	8644622
Chloroethane	ug/L	<1.0	<1.0	8644622	<1.0	8640941	<1.0	1.0	8644622
Trichlorofluoromethane	ug/L	<4.0	<4.0	8644622	<4.0	8640941	<4.0	4.0	8644622
1,1,2Trichloro-1,2,2Trifluoroethane	ug/L	<2.0	<2.0	8644622	<2.0	8640941	<2.0	2.0	8644622
Dichlorodifluoromethane	ug/L	<2.0	<2.0	8644622	<2.0	8640941	<2.0	2.0	8644622
1,1-dichloroethene	ug/L	<0.50	<0.50	8644622	<0.50	8640941	<0.50	0.50	8644622
Dichloromethane	ug/L	<2.0	<2.0	8644622	<2.0	8640941	<2.0	2.0	8644622
trans-1,2-dichloroethene	ug/L	<1.0	1.2	8644622	<1.0	8640941	1.2	1.0	8644622
1,1-dichloroethane	ug/L	<0.50	<0.50	8644622	<0.50	8640941	<0.50	0.50	8644622
cis-1,2-dichloroethene	ug/L	<1.0	82	8644622	<1.0	8640941	83	1.0	8644622
Chloroform	ug/L	<1.0	<1.0	8644622	25	8640941	<1.0	1.0	8644622
1,1,1-trichloroethane	ug/L	<0.50	<0.50	8644622	<0.50	8640941	<0.50	0.50	8644622
1,2-dichloroethane	ug/L	<0.50	<0.50	8644622	<0.50	8640941	<0.50	0.50	8644622
Carbon tetrachloride	ug/L	<0.50	<0.50	8644622	<0.50	8640941	<0.50	0.50	8644622
Benzene	ug/L	<0.40	<0.40	8644622	<0.40	8640941	<0.40	0.40	8644622
Methyl-tert-butylether (MTBE)	ug/L	<4.0	<4.0	8644622	<4.0	8640941	<4.0	4.0	8644622
1,2-dichloropropane	ug/L	<0.50	<0.50	8644622	<0.50	8640941	<0.50	0.50	8644622
cis-1,3-dichloropropene	ug/L	<1.0	<1.0	8644622	<1.0	8640941	<1.0	1.0	8644622
trans-1,3-dichloropropene	ug/L	<1.0	<1.0	8644622	<1.0	8640941	<1.0	1.0	8644622
Bromomethane	ug/L	<1.0	<1.0	8644622	<1.0	8640941	<1.0	1.0	8644622
1,1,2-trichloroethane	ug/L	<0.50	<0.50	8644622	<0.50	8640941	<0.50	0.50	8644622
Trichloroethene	ug/L	<0.50	6.0	8644622	<0.50	8640941	6.0	0.50	8644622
Chlorodibromomethane	ug/L	<1.0	<1.0	8644622	<1.0	8640941	<1.0	1.0	8644622
1,2-dibromoethane	ug/L	<0.20	<0.20	8644622	<0.20	8640941	<0.20	0.20	8644622
1,3-Butadiene	ug/L	<5.0	<5.0	8644622	<5.0	8640941	<5.0	5.0	8644622
Tetrachloroethene	ug/L	5.5	500	8644622	7.5	8640941	500	0.50	8644622
Bromodichloromethane	ug/L	<1.0	<1.0	8644622	<1.0	8640941	<1.0	1.0	8644622
Toluene	ug/L	<0.40	<0.40	8644622	<0.40	8640941	<0.40	0.40	8644622
Ethylbenzene	ug/L	<0.40	<0.40	8644622	<0.40	8640941	<0.40	0.40	8644622
m & p-Xylene	ug/L	<0.40	<0.40	8644622	<0.40	8640941	<0.40	0.40	8644622
RDL = Reportable Detection Limit									

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KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

CSR VOC + VPH IN WATER (WATER)

Maxxam ID		RC9355	RC9356		RC9357		RC9358		
Sampling Date		2017/05/24 15:15	2017/05/24 14:00		2017/05/24 12:30		2017/05/24 14:00		
COC Number		K017310	K017310		K017310		K017310		
	UNITS	MW17-4S	MW17-5S	QC Batch	MW17-6S	QC Batch	MW17-A	RDL	QC Batch
Bromoform	ug/L	<1.0	<1.0	8644622	<1.0	8640941	<1.0	1.0	8644622
Styrene	ug/L	<0.50	<0.50	8644622	<0.50	8640941	<0.50	0.50	8644622
o-Xylene	ug/L	<0.40	<0.40	8644622	<0.40	8640941	<0.40	0.40	8644622
Xylenes (Total)	ug/L	<0.40	<0.40	8644622	<0.40	8640941	<0.40	0.40	8644622
1,1,1,2-tetrachloroethane	ug/L	<0.50	<0.50	8644622	<0.50	8640941	<0.50	0.50	8644622
1,1,2,2-tetrachloroethane	ug/L	<0.50	<0.50	8644622	<0.50	8640941	<0.50	0.50	8644622
1,2-dichlorobenzene	ug/L	<0.50	<0.50	8644622	<0.50	8640941	<0.50	0.50	8644622
1,3-dichlorobenzene	ug/L	<0.50	<0.50	8644622	<0.50	8640941	<0.50	0.50	8644622
1,4-dichlorobenzene	ug/L	<0.50	<0.50	8644622	<0.50	8640941	<0.50	0.50	8644622
Chlorobenzene	ug/L	<0.50	<0.50	8644622	<0.50	8640941	<0.50	0.50	8644622
Dibromomethane	ug/L	<0.90	<0.90	8644622	<0.90	8640941	<0.90	0.90	8644622
Bromobenzene	ug/L	<2.0	<2.0	8644622	<2.0	8640941	<2.0	2.0	8644622
VH C6-C10	ug/L	<300	<300	8644622	<300	8640941	<300	300	8644622
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	107	93	8644622	100	8640941	93		8644622
4-Bromofluorobenzene (sur.)	%	96	85	8644622	97	8640941	82		8644622
D4-1,2-Dichloroethane (sur.)	%	105	93	8644622	93	8640941	93		8644622

RDL = Reportable Detection Limit

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	9.3°C

Sample RC9357 [MW17-6S] : Sediment present in excess (>20% v/v). Results have a potential for high bias for VOC.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8640281	D10-ANTHRACENE (sur.)	2017/05/26	115	60 - 130	110	60 - 130	113	%		
8640281	D8-ACENAPHTHYLENE (sur.)	2017/05/26	118	50 - 130	110	50 - 130	116	%		
8640281	D8-NAPHTHALENE (sur.)	2017/05/26	107	50 - 130	96	50 - 130	93	%		
8640281	D9-Acridine (sur.)	2017/05/26	105	50 - 130	97	50 - 130	102	%		
8640281	TERPHENYL-D14 (sur.)	2017/05/26	121	60 - 130	114	60 - 130	120	%		
8640296	O-TERPHENYL (sur.)	2017/05/25	85	60 - 140	92	60 - 140	90	%		
8640941	1,4-Difluorobenzene (sur.)	2017/05/26	100	70 - 130	99	70 - 130	98	%		
8640941	4-Bromofluorobenzene (sur.)	2017/05/26	114	70 - 130	112	70 - 130	107	%		
8640941	D4-1,2-Dichloroethane (sur.)	2017/05/26	114	70 - 130	116	70 - 130	108	%		
8642198	1,4-Difluorobenzene (sur.)	2017/05/26	98	70 - 130	97	70 - 130	102	%		
8642198	4-Bromofluorobenzene (sur.)	2017/05/26	100	70 - 130	101	70 - 130	100	%		
8642198	D4-1,2-Dichloroethane (sur.)	2017/05/26	99	70 - 130	96	70 - 130	98	%		
8644468	1,4-Difluorobenzene (sur.)	2017/05/29	74	70 - 130	80	70 - 130	91	%		
8644468	4-Bromofluorobenzene (sur.)	2017/05/29	88	70 - 130	90	70 - 130	99	%		
8644468	D4-1,2-Dichloroethane (sur.)	2017/05/29	87	70 - 130	92	70 - 130	105	%		
8644622	1,4-Difluorobenzene (sur.)	2017/06/01	106	70 - 130	113	70 - 130	106	%		
8644622	4-Bromofluorobenzene (sur.)	2017/06/01	111	70 - 130	109	70 - 130	91	%		
8644622	D4-1,2-Dichloroethane (sur.)	2017/06/01	112	70 - 130	102	70 - 130	101	%		
8640281	2-Methylnaphthalene	2017/05/27	104	50 - 130	101	50 - 130	<0.10	ug/L	NC	40
8640281	Acenaphthene	2017/05/27	109	50 - 130	109	50 - 130	<0.050	ug/L	NC	40
8640281	Acenaphthylene	2017/05/27	105	50 - 130	104	50 - 130	<0.050	ug/L	NC	40
8640281	Acridine	2017/05/27	93	50 - 130	93	50 - 130	<0.050	ug/L	NC	40
8640281	Anthracene	2017/05/27	106	60 - 130	110	60 - 130	<0.010	ug/L	NC	40
8640281	Benzo(a)anthracene	2017/05/27	104	60 - 130	104	60 - 130	<0.010	ug/L	NC	40
8640281	Benzo(a)pyrene	2017/05/27	105	60 - 130	107	60 - 130	<0.0050	ug/L	NC	40
8640281	Benzo(b&j)fluoranthene	2017/05/27	112	60 - 130	110	60 - 130	<0.030	ug/L	NC	40
8640281	Benzo(g,h,i)perylene	2017/05/27	99	60 - 130	103	60 - 130	<0.050	ug/L	NC	40
8640281	Benzo(k)fluoranthene	2017/05/27	105	60 - 130	109	60 - 130	<0.050	ug/L	NC	40
8640281	Chrysene	2017/05/27	109	60 - 130	109	60 - 130	<0.020	ug/L	NC	40
8640281	Dibenz(a,h)anthracene	2017/05/27	99	60 - 130	103	60 - 130	<0.0030	ug/L	NC	40
8640281	Fluoranthene	2017/05/27	106	60 - 130	107	60 - 130	<0.020	ug/L	NC	40

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QUALITY ASSURANCE REPORT(CONT'D)

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8640281	Fluorene	2017/05/27	103	50 - 130	102	50 - 130	<0.050	ug/L	NC	40
8640281	Indeno(1,2,3-cd)pyrene	2017/05/27	102	60 - 130	104	60 - 130	<0.050	ug/L	NC	40
8640281	Naphthalene	2017/05/27	97	50 - 130	94	50 - 130	<0.10	ug/L	NC	40
8640281	Phenanthrene	2017/05/27	103	60 - 130	103	60 - 130	<0.050	ug/L	NC	40
8640281	Pyrene	2017/05/27	108	60 - 130	110	60 - 130	<0.020	ug/L	NC	40
8640281	Quinoline	2017/05/27	104	50 - 130	112	50 - 130	<0.020	ug/L	NC	40
8640296	EPH (C10-C19)	2017/05/25	84	60 - 140	89	70 - 130	<0.20	mg/L	NC	30
8640296	EPH (C19-C32)	2017/05/25	77	60 - 140	84	70 - 130	<0.20	mg/L	NC	30
8640865	Dissolved Lead (Pb)	2017/05/26	99	80 - 120	101	80 - 120	<0.20	ug/L	0.71	20
8640941	1,1,1,2-tetrachloroethane	2017/05/29	122	70 - 130	113	70 - 130	<0.50	ug/L	NC	30
8640941	1,1,1-trichloroethane	2017/05/29	112	70 - 130	110	70 - 130	<0.50	ug/L	NC	30
8640941	1,1,2,2-tetrachloroethane	2017/05/29	113	70 - 130	108	70 - 130	<0.50	ug/L	NC	30
8640941	1,1,2Trichloro-1,2,2Trifluoroethane	2017/05/29					<2.0	ug/L	NC	30
8640941	1,1,2-trichloroethane	2017/05/29	119	70 - 130	116	70 - 130	<0.50	ug/L	NC	30
8640941	1,1-dichloroethane	2017/05/29	115	70 - 130	111	70 - 130	<0.50	ug/L	NC	30
8640941	1,1-dichloroethene	2017/05/29	129	70 - 130	123	70 - 130	<0.50	ug/L	NC	30
8640941	1,2-dibromoethane	2017/05/29	119	70 - 130	116	70 - 130	<0.20	ug/L	NC	30
8640941	1,2-dichlorobenzene	2017/05/29	119	70 - 130	116	70 - 130	<0.50	ug/L	NC	30
8640941	1,2-dichloroethane	2017/05/29	95	70 - 130	96	70 - 130	<0.50	ug/L	NC	30
8640941	1,2-dichloropropane	2017/05/29	124	70 - 130	120	70 - 130	<0.50	ug/L	NC	30
8640941	1,3-Butadiene	2017/05/26					<5.0	ug/L		
8640941	1,3-dichlorobenzene	2017/05/29	96	70 - 130	107	70 - 130	<0.50	ug/L	NC	30
8640941	1,4-dichlorobenzene	2017/05/29	110	70 - 130	112	70 - 130	<0.50	ug/L	NC	30
8640941	Benzene	2017/05/29	112	70 - 130	116	70 - 130	<0.40	ug/L	NC	30
8640941	Bromobenzene	2017/05/26	115	N/A	111	70 - 130	<2.0	ug/L		
8640941	Bromodichloromethane	2017/05/29	113	70 - 130	110	70 - 130	<1.0	ug/L	NC	30
8640941	Bromoform	2017/05/29	103	70 - 130	99	70 - 130	<1.0	ug/L	NC	30
8640941	Bromomethane	2017/05/29	99	60 - 140	109	60 - 140	<1.0	ug/L	NC	30
8640941	Carbon tetrachloride	2017/05/29	111	70 - 130	109	70 - 130	<0.50	ug/L	NC	30
8640941	Chlorobenzene	2017/05/29	122	70 - 130	116	70 - 130	<0.50	ug/L	NC	30
8640941	Chlorodibromomethane	2017/05/29	119	70 - 130	115	70 - 130	<1.0	ug/L	NC	30

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QUALITY ASSURANCE REPORT(CONT'D)

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8640941	Chloroethane	2017/05/29	95	60 - 140	83	60 - 140	<1.0	ug/L	NC	30
8640941	Chloroform	2017/05/29	115	70 - 130	110	70 - 130	<1.0	ug/L	NC	30
8640941	Chloromethane	2017/05/29	107	60 - 140	103	60 - 140	<1.0	ug/L	NC	30
8640941	cis-1,2-dichloroethene	2017/05/29	124	70 - 130	119	70 - 130	<1.0	ug/L	NC	30
8640941	cis-1,3-dichloropropene	2017/05/29	106	70 - 130	101	70 - 130	<1.0	ug/L	NC	30
8640941	Dibromomethane	2017/05/26	118	N/A	114	70 - 130	<0.90	ug/L		
8640941	Dichlorodifluoromethane	2017/05/29	106	N/A	100	60 - 140	<2.0	ug/L	NC	30
8640941	Dichloromethane	2017/05/29	107	70 - 130	104	70 - 130	<2.0	ug/L	NC	30
8640941	Ethylbenzene	2017/05/29	127	70 - 130	122	70 - 130	<0.40	ug/L	NC	30
8640941	m & p-Xylene	2017/05/29	128	70 - 130	128	70 - 130	<0.40	ug/L	NC	30
8640941	Methyl-tert-butylether (MTBE)	2017/05/29	127	70 - 130	127	70 - 130	<4.0	ug/L	NC	30
8640941	o-Xylene	2017/05/29	130	70 - 130	128	70 - 130	<0.40	ug/L	NC	30
8640941	Styrene	2017/05/29	116	70 - 130	113	70 - 130	<0.50	ug/L	NC	30
8640941	Tetrachloroethene	2017/05/29	119	70 - 130	119	70 - 130	<0.50	ug/L	NC	30
8640941	Toluene	2017/05/29	126	70 - 130	123	70 - 130	<0.40	ug/L	NC	30
8640941	trans-1,2-dichloroethene	2017/05/29	115	70 - 130	112	70 - 130	<1.0	ug/L	NC	30
8640941	trans-1,3-dichloropropene	2017/05/29	90	70 - 130	87	70 - 130	<1.0	ug/L	NC	30
8640941	Trichloroethene	2017/05/29	119	70 - 130	115	70 - 130	<0.50	ug/L	NC	30
8640941	Trichlorofluoromethane	2017/05/29	120	60 - 140	129	60 - 140	<4.0	ug/L	NC	30
8640941	VH C6-C10	2017/05/29			81	70 - 130	<300	ug/L	NC	30
8640941	Vinyl chloride	2017/05/29	104	60 - 140	101	60 - 140	<0.50	ug/L	NC	30
8640941	Xylenes (Total)	2017/05/29					<0.40	ug/L	NC	30
8642198	2-Butanone (MEK)	2017/05/26	103	70 - 130	103	70 - 130	<10	ug/L	NC	40
8642198	4-Methyl-2-pentanone (MIBK)	2017/05/26	97	70 - 130	100	70 - 130	<10	ug/L	NC	40
8644468	2-Butanone (MEK)	2017/05/29	121	70 - 130	122	70 - 130	<10	ug/L	NC	40
8644468	4-Methyl-2-pentanone (MIBK)	2017/05/29	108	70 - 130	116	70 - 130	<10	ug/L	NC	40
8644622	1,1,1,2-tetrachloroethane	2017/06/01	108	70 - 130	94	70 - 130	<0.50	ug/L	NC	30
8644622	1,1,1-trichloroethane	2017/06/01	109	70 - 130	94	70 - 130	<0.50	ug/L	NC	30
8644622	1,1,2,2-tetrachloroethane	2017/06/01	92	70 - 130	86	70 - 130	<0.50	ug/L	NC	30
8644622	1,1,2Trichloro-1,2,2Trifluoroethane	2017/06/01					<2.0	ug/L	NC	30
8644622	1,1,2-trichloroethane	2017/06/01	107	70 - 130	93	70 - 130	<0.50	ug/L	NC	30

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			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8644622	1,1-dichloroethane	2017/06/01	104	70 - 130	90	70 - 130	<0.50	ug/L	3.7	30
8644622	1,1-dichloroethene	2017/06/01	110	70 - 130	99	70 - 130	<0.50	ug/L	NC	30
8644622	1,2-dibromoethane	2017/06/01	108	70 - 130	95	70 - 130	<0.20	ug/L	NC	30
8644622	1,2-dichlorobenzene	2017/06/01	101	70 - 130	93	70 - 130	<0.50	ug/L	21	30
8644622	1,2-dichloroethane	2017/06/01	98	70 - 130	87	70 - 130	<0.50	ug/L	NC	30
8644622	1,2-dichloropropane	2017/06/01	113	70 - 130	93	70 - 130	<0.50	ug/L	NC	30
8644622	1,3-Butadiene	2017/06/01					<5.0	ug/L		
8644622	1,3-dichlorobenzene	2017/06/01	97	70 - 130	92	70 - 130	<0.50	ug/L	NC	30
8644622	1,4-dichlorobenzene	2017/06/01	93	70 - 130	92	70 - 130	<0.50	ug/L	NC	30
8644622	Benzene	2017/06/01	106	70 - 130	93	70 - 130	<0.40	ug/L	NC	30
8644622	Bromobenzene	2017/06/01	102	70 - 130	93	70 - 130	<2.0	ug/L		
8644622	Bromodichloromethane	2017/06/01	106	70 - 130	92	70 - 130	<1.0	ug/L	NC	30
8644622	Bromoform	2017/06/01	96	70 - 130	84	70 - 130	<1.0	ug/L	NC	30
8644622	Bromomethane	2017/06/01	111	60 - 140	106	60 - 140	<1.0	ug/L	NC	30
8644622	Carbon tetrachloride	2017/06/01	137 (1)	70 - 130	96	70 - 130	<0.50	ug/L	NC	30
8644622	Chlorobenzene	2017/06/01	97	70 - 130	89	70 - 130	<0.50	ug/L	0.83	30
8644622	Chlorodibromomethane	2017/06/01	112	70 - 130	97	70 - 130	<1.0	ug/L	NC	30
8644622	Chloroethane	2017/06/01	126	60 - 140	92	60 - 140	<1.0	ug/L	NC	30
8644622	Chloroform	2017/06/01	107	70 - 130	93	70 - 130	<1.0	ug/L	NC	30
8644622	Chloromethane	2017/06/01	111	60 - 140	101	60 - 140	<1.0	ug/L	NC	30
8644622	cis-1,2-dichloroethene	2017/06/01	123	70 - 130	97	70 - 130	<1.0	ug/L	2.4	30
8644622	cis-1,3-dichloropropene	2017/06/01	102	70 - 130	96	70 - 130	<1.0	ug/L	NC	30
8644622	Dibromomethane	2017/06/01	122	70 - 130	97	70 - 130	<0.90	ug/L		
8644622	Dichlorodifluoromethane	2017/06/01	112	60 - 140	95	60 - 140	<2.0	ug/L	NC	30
8644622	Dichloromethane	2017/06/01	114	70 - 130	100	70 - 130	<2.0	ug/L	NC	30
8644622	Ethylbenzene	2017/06/01	95	70 - 130	89	70 - 130	<0.40	ug/L	NC	30
8644622	m & p-Xylene	2017/06/01	102	70 - 130	97	70 - 130	<0.40	ug/L	NC	30
8644622	Methyl-tert-butylether (MTBE)	2017/06/01	115	70 - 130	102	70 - 130	<4.0	ug/L	NC	30
8644622	o-Xylene	2017/06/01	102	70 - 130	93	70 - 130	<0.40	ug/L	NC	30
8644622	Styrene	2017/06/01	86	70 - 130	81	70 - 130	<0.50	ug/L	NC	30
8644622	Tetrachloroethene	2017/06/01	104	70 - 130	96	70 - 130	<0.50	ug/L	NC	30

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Maxxam Job #: B740009
Report Date: 2017/06/01

QUALITY ASSURANCE REPORT(CONT'D)

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8644622	Toluene	2017/06/01	95	70 - 130	88	70 - 130	<0.40	ug/L	NC	30
8644622	trans-1,2-dichloroethene	2017/06/01	99	70 - 130	93	70 - 130	<1.0	ug/L	NC	30
8644622	trans-1,3-dichloropropene	2017/06/01	77	70 - 130	72	70 - 130	<1.0	ug/L	NC	30
8644622	Trichloroethene	2017/06/01	102	70 - 130	94	70 - 130	<0.50	ug/L	NC	30
8644622	Trichlorofluoromethane	2017/06/01	132	60 - 140	115	60 - 140	<4.0	ug/L	NC	30
8644622	VH C6-C10	2017/06/01			101	70 - 130	<300	ug/L	NC	30
8644622	Vinyl chloride	2017/06/01	115	60 - 140	104	60 - 140	<0.50	ug/L	NC	30
8644622	Xylenes (Total)	2017/06/01					<0.40	ug/L	NC	30
8645356	Dissolved Lead (Pb)	2017/05/31	99	80 - 120	97	80 - 120	<0.20	ug/L	3.7	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 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 (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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Maxxam Job #: B740009
Report Date: 2017/06/01

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

VALIDATION SIGNATURE PAGE

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

Andy Lu, Ph.D., P.Chem., Scientific Specialist

Rob Reinert, B.Sc., Scientific Specialist

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K 017310

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CHAIN OF CUSTODY RECORD

BBY FCD-00077/07
Page 1 of 1

Burnaby: 4606 Canada Way, Burnaby, BC V5G 1K5. Toll Free (800) 665-8566

Invoice Information	Report Information (if differs from invoice)	Project Information (where applicable)	Turnaround Time (TAT) Required
Company Name: 3763 - Keystone Environmental Ltd.	Company Name: Keystone Environmental	Quotation #:	☒ Regular TAT 5 days (Most analyses)
Contact Name: Kevin Wong	Contact Name: Kevin W./Francini M./Jason G	P.O. #/ AFE#:	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address: #320 - 4400 Dominion Street	Address:	Project #: 13526	Rush TAT (Surcharges will be applied)
Burnaby, BC PC: V5G 4G3	PC:	Site Location:	☐ Same Day ☐ 2 Days
Phone: (604) 430-0671	Phone:	Site #:	☐ 1 Day ☐ 3 Days
Email:	Email:	Sampled By: Jason Grafstrom	Date Required:

Regulatory Criteria	Special Instructions
☐ BC CSR Soil ☒ BC CSR Water	☐ Return Cooler
☐ YK CSR Soil ☐ YK CSR Water	☐ Ship Sample Bottles (Please Specify)
☐ CCME (Specify) ☐ Other (Specify)	
☐ Drinking Water ☐ BC Water Quality	

Rush Confirmation #:

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

	Sample Identification	Date Sampled (YYYY/MM/DD)	Time Sampled (HH:MM)	Matrix	BTEXS / VPH	BTEX / F1	PAH	EPH	Dissolved Metals	Dissolved Mercury	Total Metals	Total Mercury	Chloride	TSS	pH	Nitrite	Lead				# OF CONTAINERS SUBMITTED	HOLD - DO NOT ANALYZE
1	MW17-4S	2017/05/24	15:15	GW	X		X		X								X				6	
2	MW17-5S		14:00		X		X		X								X				6	
3	MW17-6S		12:30		X		X		X								X	X			5	
4	MW17-A		14:00		X		X		X								X				6	
5																						
6																						
7																						
8																						
9																						
10																						

LABORATORY USE ONLY

CUSTODY SEAL Y / N		COOLER TEMPERATURES
Present	Intact	
		9, 9, 10

COOLING MEDIA PRESENT Y / N

COMMENTS

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)
Jason Grafstrom	2017/05/24	17:30	JWAHNNE NOM	2017/05/24	17:40

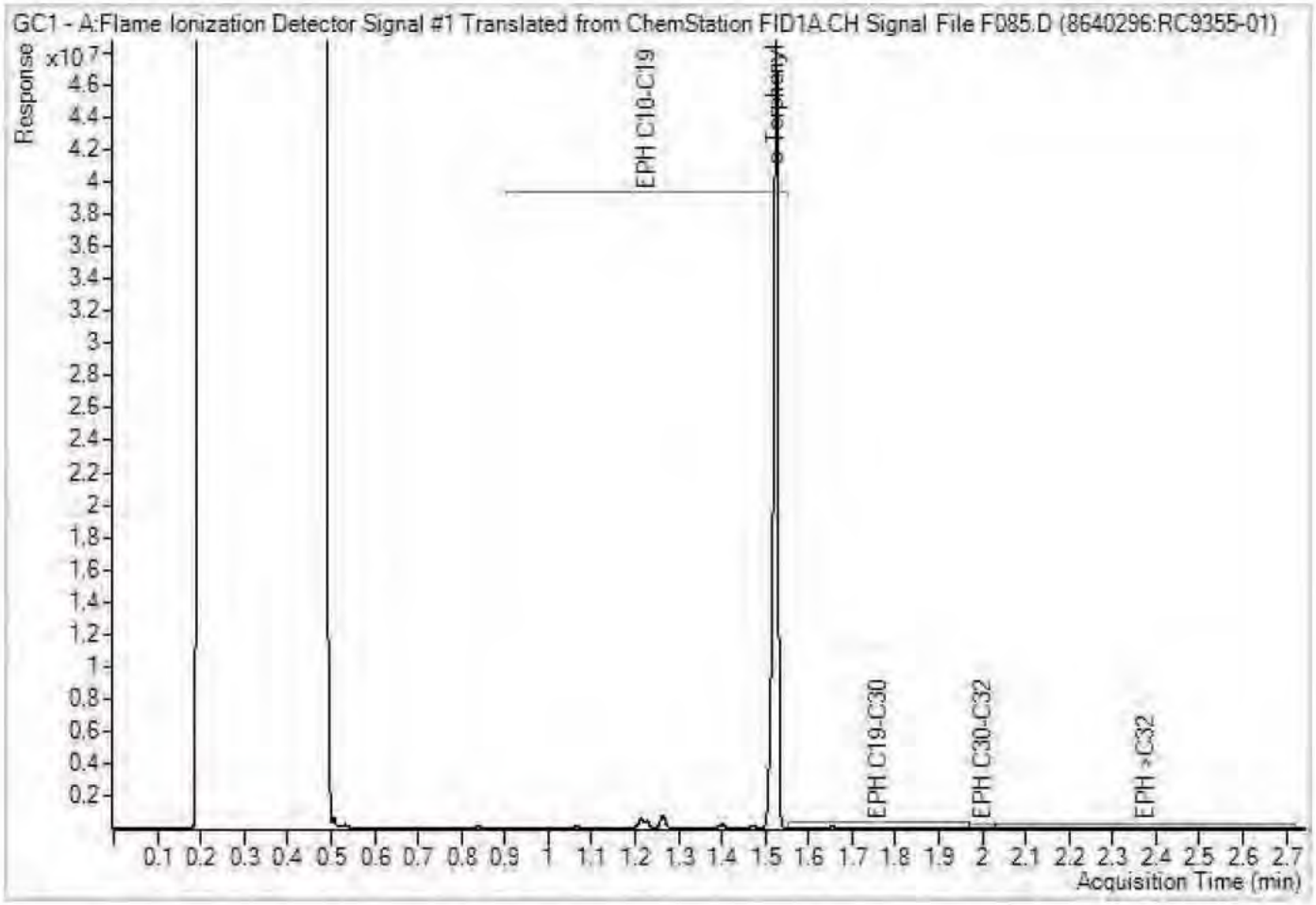
B740009_COC

COC-1027 Keystone

Maxxam Job #: B740009
Report Date: 2017/06/01
Maxxam Sample: RC9355

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Client ID: MW17-4S

EPH in Water when PAH required Chromatogram

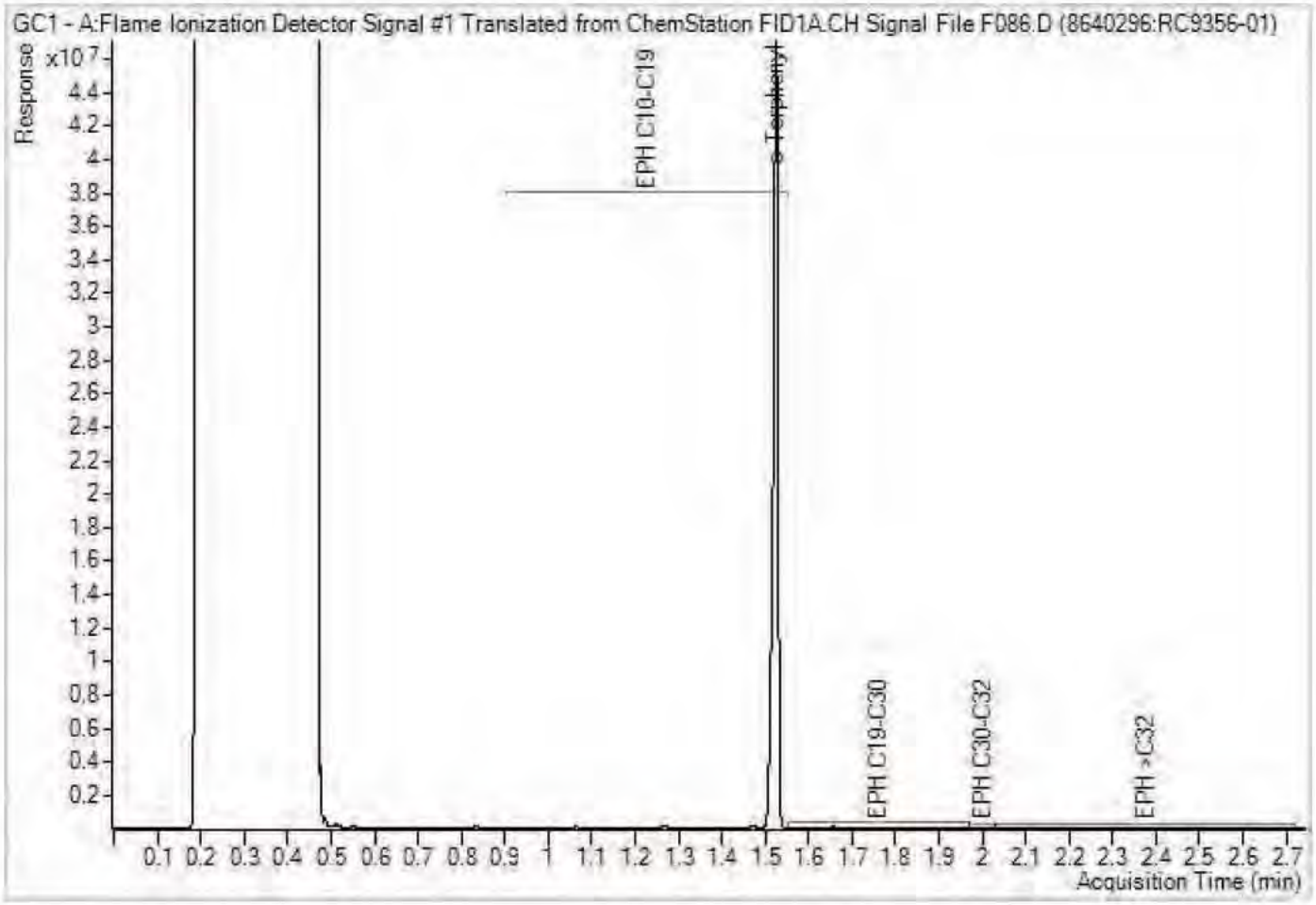


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B740009
Report Date: 2017/06/01
Maxxam Sample: RC9356

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Client ID: MW17-5S

EPH in Water when PAH required Chromatogram

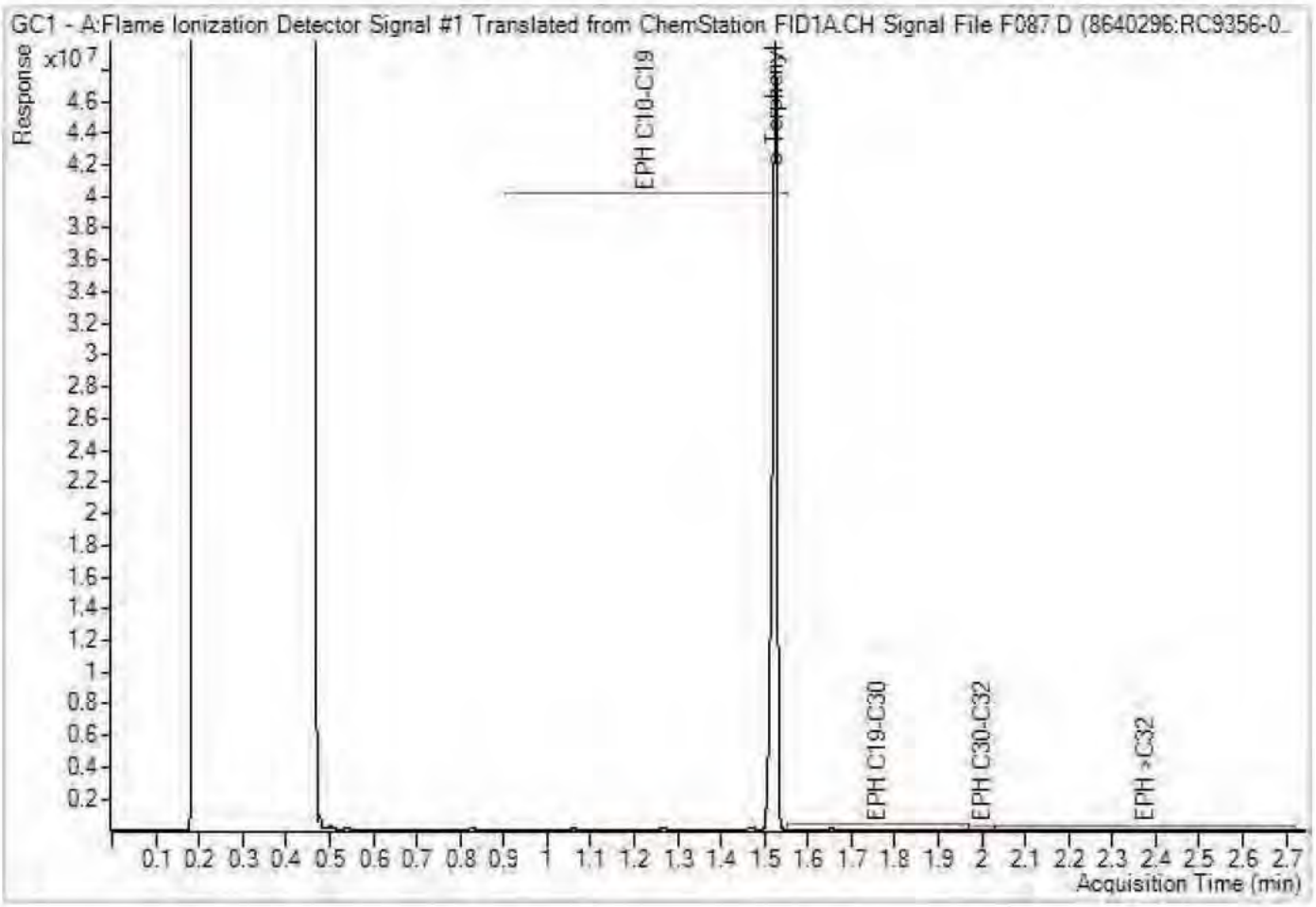


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B740009
Report Date: 2017/06/01
Maxxam Sample: RC9356 Lab-Dup

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Client ID: MW17-5S

EPH in Water when PAH required Chromatogram

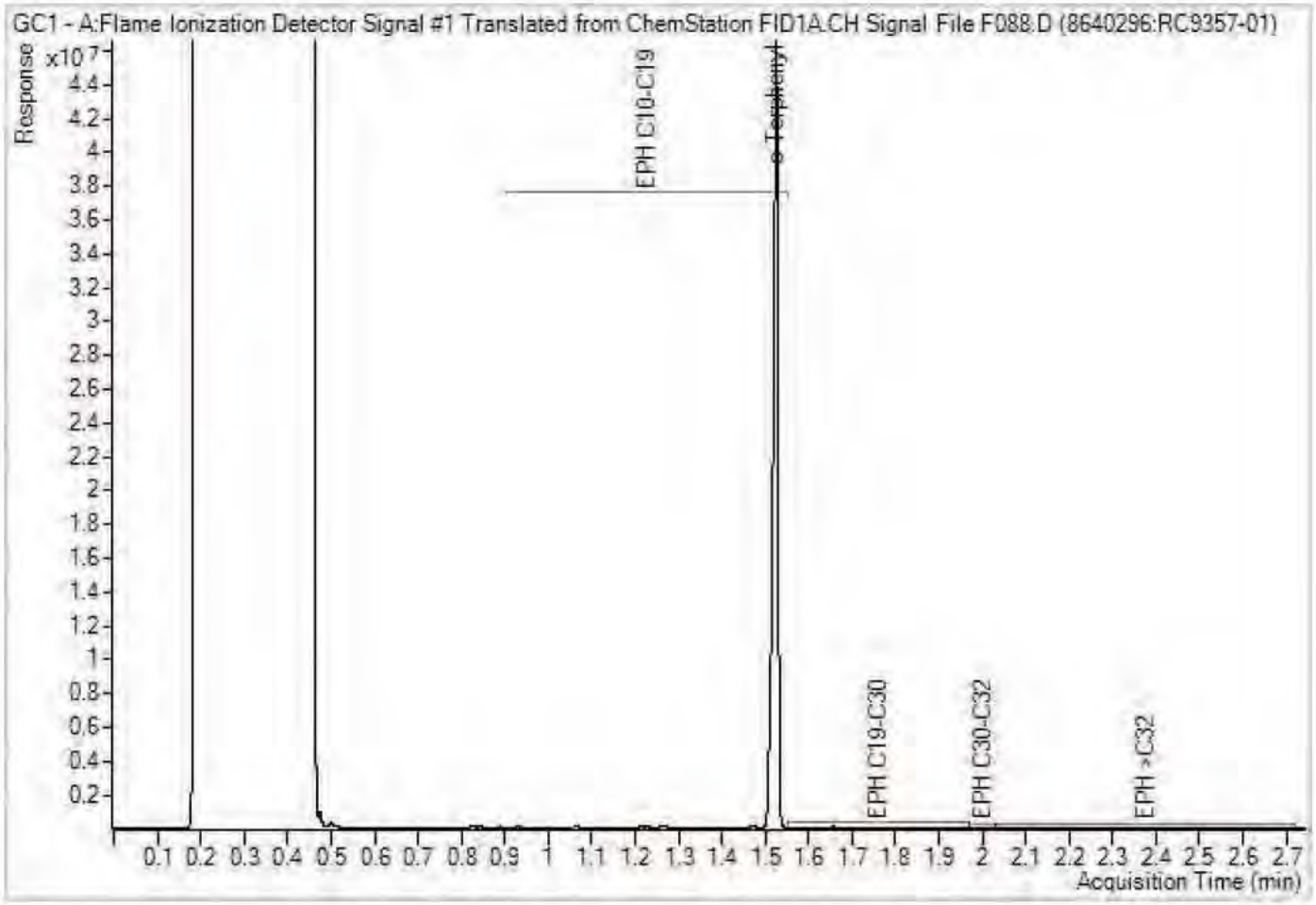


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B740009
Report Date: 2017/06/01
Maxxam Sample: RC9357

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Client ID: MW17-6S

EPH in Water when PAH required Chromatogram

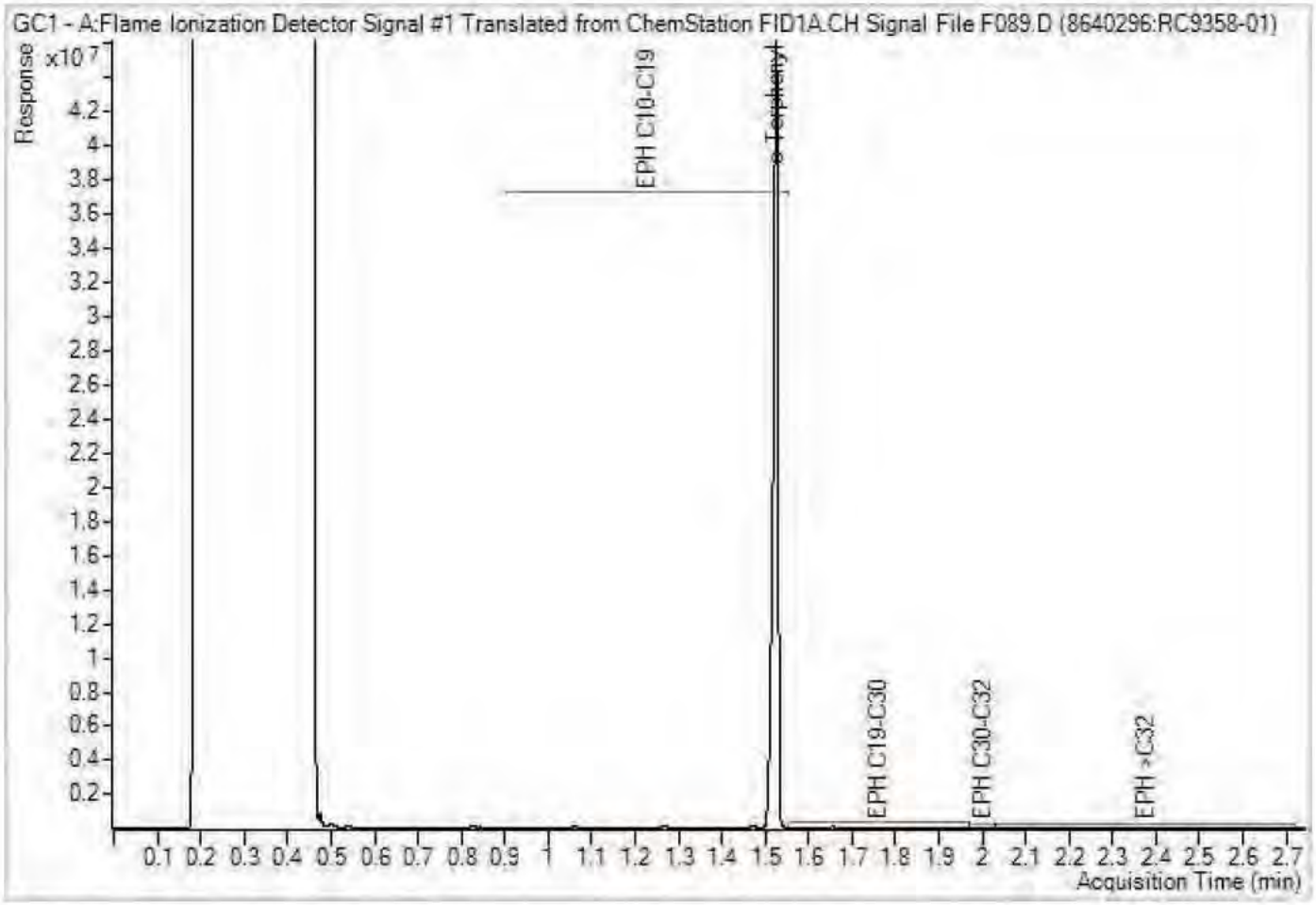


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B740009
Report Date: 2017/06/01
Maxxam Sample: RC9358

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Client ID: MW17-A

EPH in Water when PAH required Chromatogram



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

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Your Project #: 13526
Your C.O.C. #: K017309

Attention:Kevin Wong

KEYSTONE ENVIRONMENTAL LTD
SUITE 320
4400 DOMINION STREET
BURNABY, BC
CANADA V5G 4G3

Report Date: 2017/05/31
Report #: R2390589
Version: 1 Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B740395
Received: 2017/05/25, 13:40

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Hardness (calculated as CaCO3)	3	N/A	2017/05/31	BBY WI-00033	Auto Calc
EPH in Water when PAH required	3	2017/05/26	2017/05/26	BBY8SOP-00029	BCMOE EPH w 12/00 m
Elements by CRC ICPMS (dissolved)	3	N/A	2017/05/31	BBY7SOP-00002	EPA 6020B R2 m
PAH in Water by GC/MS (SIM)	3	2017/05/26	2017/05/29	BBY8SOP-00021	EPA 8270d R5 m
Total LMW, HMW, Total PAH Calc	3	N/A	2017/05/30	BBY WI-00033	Auto Calc
Filter and HNO3 Preserve for Metals	3	N/A	2017/05/30	BBY7 WI-00004	BCMOE Reqs 08/14
EPH less PAH in Water by GC/FID	3	N/A	2017/05/30	BBY WI-00033	Auto Calc
Extra VOCs in Water by HS GC/MS	3	N/A	2017/05/29	BBY8SOP-00040	EPA 8260c R3 m
VOCs, VH, F1, LH in Water by HS GC/MS	3	2017/05/29	2017/05/31	BBY8SOP-00009/11/12	BC Lab Manual 2007
Volatile HC-BTEX	3	N/A	2017/05/31	BBY WI-00033	Auto Calc

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Your Project #: 13526
Your C.O.C. #: K017309

Attention:Kevin Wong
KEYSTONE ENVIRONMENTAL LTD
SUITE 320
4400 DOMINION STREET
BURNABY, BC
CANADA V5G 4G3

Report Date: 2017/05/31
Report #: R2390589
Version: 1 Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B740395
Received: 2017/05/25, 13:40

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Amandeep Nagra, Account Specialist
Email: ANagra@maxxam.ca
Phone# (604)639 2602

==========

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Maxxam Job #: B740395
Report Date: 2017/05/31

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		RD1756	RD1757	RD1758	
Sampling Date		2017/05/25 09:15	2017/05/25 10:05	2017/05/25 11:00	
COC Number		K017309	K017309	K017309	
	UNITS	MW17-1	MW17-2	MW17-3	QC Batch
Calculated Parameters					
Filter and HNO3 Preservation	N/A	FIELD	FIELD	FIELD	ONSITE

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Maxxam Job #: B740395
Report Date: 2017/05/31

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		RD1756	RD1757	RD1758		
Sampling Date		2017/05/25 09:15	2017/05/25 10:05	2017/05/25 11:00		
COC Number		K017309	K017309	K017309		
	UNITS	MW17-1	MW17-2	MW17-3	RDL	QC Batch
Volatiles						
2-Butanone (MEK)	ug/L	<10	<10	<10	10	8644468
4-Methyl-2-pentanone (MIBK)	ug/L	<10	<10	<10	10	8644468
Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	%	93	94	94		8644468
4-Bromofluorobenzene (sur.)	%	102	106	102		8644468
D4-1,2-Dichloroethane (sur.)	%	107	106	109		8644468
RDL = Reportable Detection Limit						

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Maxxam Job #: B740395
Report Date: 2017/05/31

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

LEPH & HEPH WITH CSR/CCME PAH IN WATER (WATER)

Maxxam ID		RD1756	RD1757	RD1757	RD1758		
Sampling Date		2017/05/25 09:15	2017/05/25 10:05	2017/05/25 10:05	2017/05/25 11:00		
COC Number		K017309	K017309	K017309	K017309		
	UNITS	MW17-1	MW17-2	MW17-2 Lab-Dup	MW17-3	RDL	QC Batch
Polycyclic Aromatics							
Low Molecular Weight PAH`s	ug/L	<0.10	<0.10		<0.10	0.10	8640106
High Molecular Weight PAH`s	ug/L	<0.050	<0.050		<0.050	0.050	8640106
Total PAH	ug/L	<0.10	<0.10		<0.10	0.10	8640106
Quinoline	ug/L	<0.020	<0.020	<0.020	<0.020	0.020	8641519
Naphthalene	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	8641519
2-Methylnaphthalene	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	8641519
Acenaphthylene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	8641519
Acenaphthene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	8641519
Fluorene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	8641519
Phenanthrene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	8641519
Anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	8641519
Acridine	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	8641519
Fluoranthene	ug/L	<0.020	<0.020	<0.020	<0.020	0.020	8641519
Pyrene	ug/L	<0.020	<0.020	<0.020	<0.020	0.020	8641519
Benzo(a)anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	8641519
Chrysene	ug/L	<0.020	<0.020	<0.020	<0.020	0.020	8641519
Benzo(b&j)fluoranthene	ug/L	<0.030	<0.030	<0.030	<0.030	0.030	8641519
Benzo(k)fluoranthene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	8641519
Benzo(a)pyrene	ug/L	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	8641519
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	8641519
Dibenz(a,h)anthracene	ug/L	<0.0030	<0.0030	<0.0030	<0.0030	0.0030	8641519
Benzo(g,h,i)perylene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	8641519
Calculated Parameters							
LEPH (C10-C19 less PAH)	mg/L	<0.20	<0.20		<0.20	0.20	8640107
HEPH (C19-C32 less PAH)	mg/L	<0.20	<0.20		<0.20	0.20	8640107
Ext. Pet. Hydrocarbon							
EPH (C10-C19)	mg/L	<0.20	<0.20		<0.20	0.20	8641515
EPH (C19-C32)	mg/L	<0.20	<0.20		<0.20	0.20	8641515
Surrogate Recovery (%)							
O-TERPHENYL (sur.)	%	96	94		91		8641515
D10-ANTHRACENE (sur.)	%	110	113	102	116		8641519

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Maxxam Job #: B740395
Report Date: 2017/05/31

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

LEPH & HEPH WITH CSR/CCME PAH IN WATER (WATER)

Maxxam ID		RD1756	RD1757	RD1757	RD1758		
Sampling Date		2017/05/25 09:15	2017/05/25 10:05	2017/05/25 10:05	2017/05/25 11:00		
COC Number		K017309	K017309	K017309	K017309		
	UNITS	MW17-1	MW17-2	MW17-2 Lab-Dup	MW17-3	RDL	QC Batch
D8-ACENAPHTHYLENE (sur.)	%	114	118	106	121		8641519
D8-NAPHTHALENE (sur.)	%	103	106	95	107		8641519
D9-Acridine (sur.)	%	97	99	89	104		8641519
TERPHENYL-D14 (sur.)	%	117	120	109	123		8641519

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Maxxam Job #: B740395
Report Date: 2017/05/31

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

CSR DISSOLVED METALS IN WATER (WATER)

Maxxam ID		RD1756	RD1756	RD1757	RD1758		
Sampling Date		2017/05/25 09:15	2017/05/25 09:15	2017/05/25 10:05	2017/05/25 11:00		
COC Number		K017309	K017309	K017309	K017309		
	UNITS	MW17-1	MW17-1 Lab-Dup	MW17-2	MW17-3	RDL	QC Batch
Misc. Inorganics							
Dissolved Hardness (CaCO3)	mg/L	79.7		51.2	79.2	0.50	8641082
Dissolved Metals by ICPMS							
Dissolved Lead (Pb)	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	8645575

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Maxxam Job #: B740395
Report Date: 2017/05/31

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

CSR VOC + VPH IN WATER (WATER)

Maxxam ID		RD1756	RD1757	RD1758		
Sampling Date		2017/05/25 09:15	2017/05/25 10:05	2017/05/25 11:00		
COC Number		K017309	K017309	K017309		
	UNITS	MW17-1	MW17-2	MW17-3	RDL	QC Batch
Volatiles						
VPH (VHW6 to 10 - BTEX)	ug/L	<300	<300	<300	300	8640109
Chloromethane	ug/L	<1.0	<1.0	<1.0	1.0	8644195
Vinyl chloride	ug/L	<0.50	<0.50	<0.50	0.50	8644195
Chloroethane	ug/L	<1.0	<1.0	<1.0	1.0	8644195
Trichlorofluoromethane	ug/L	<4.0	<4.0	<4.0	4.0	8644195
1,1,2Trichloro-1,2,2Trifluoroethane	ug/L	<2.0	<2.0	<2.0	2.0	8644195
Dichlorodifluoromethane	ug/L	<2.0	<2.0	<2.0	2.0	8644195
1,1-dichloroethene	ug/L	<0.50	<0.50	<0.50	0.50	8644195
Dichloromethane	ug/L	<2.0	<2.0	<2.0	2.0	8644195
trans-1,2-dichloroethene	ug/L	<1.0	<1.0	<1.0	1.0	8644195
1,1-dichloroethane	ug/L	<0.50	<0.50	<0.50	0.50	8644195
cis-1,2-dichloroethene	ug/L	<1.0	1.3	<1.0	1.0	8644195
Chloroform	ug/L	<1.0	<1.0	6.1	1.0	8644195
1,1,1-trichloroethane	ug/L	<0.50	<0.50	<0.50	0.50	8644195
1,2-dichloroethane	ug/L	<0.50	<0.50	<0.50	0.50	8644195
Carbon tetrachloride	ug/L	<0.50	<0.50	<0.50	0.50	8644195
Benzene	ug/L	<0.40	<0.40	<0.40	0.40	8644195
Methyl-tert-butylether (MTBE)	ug/L	<4.0	<4.0	<4.0	4.0	8644195
1,2-dichloropropane	ug/L	<0.50	<0.50	<0.50	0.50	8644195
cis-1,3-dichloropropene	ug/L	<1.0	<1.0	<1.0	1.0	8644195
trans-1,3-dichloropropene	ug/L	<1.0	<1.0	<1.0	1.0	8644195
Bromomethane	ug/L	<1.0	<1.0	<1.0	1.0	8644195
1,1,2-trichloroethane	ug/L	<0.50	<0.50	<0.50	0.50	8644195
Trichloroethene	ug/L	<0.50	0.54	<0.50	0.50	8644195
Chlorodibromomethane	ug/L	<1.0	<1.0	<1.0	1.0	8644195
1,2-dibromoethane	ug/L	<0.20	<0.20	<0.20	0.20	8644195
1,3-Butadiene	ug/L	<5.0	<5.0	<5.0	5.0	8644195
Tetrachloroethene	ug/L	11	12	2.2	0.50	8644195
Bromodichloromethane	ug/L	<1.0	<1.0	<1.0	1.0	8644195
Toluene	ug/L	<0.40	<0.40	<0.40	0.40	8644195
Ethylbenzene	ug/L	<0.40	<0.40	<0.40	0.40	8644195
m & p-Xylene	ug/L	<0.40	<0.40	<0.40	0.40	8644195
RDL = Reportable Detection Limit						

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Maxxam Job #: B740395
Report Date: 2017/05/31

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

CSR VOC + VPH IN WATER (WATER)

Maxxam ID		RD1756	RD1757	RD1758		
Sampling Date		2017/05/25 09:15	2017/05/25 10:05	2017/05/25 11:00		
COC Number		K017309	K017309	K017309		
	UNITS	MW17-1	MW17-2	MW17-3	RDL	QC Batch
Bromoform	ug/L	<1.0	<1.0	<1.0	1.0	8644195
Styrene	ug/L	<0.50	<0.50	<0.50	0.50	8644195
o-Xylene	ug/L	<0.40	<0.40	<0.40	0.40	8644195
Xylenes (Total)	ug/L	<0.40	<0.40	<0.40	0.40	8644195
1,1,1,2-tetrachloroethane	ug/L	<0.50	<0.50	<0.50	0.50	8644195
1,1,2,2-tetrachloroethane	ug/L	<0.50	<0.50	<0.50	0.50	8644195
1,2-dichlorobenzene	ug/L	<0.50	<0.50	<0.50	0.50	8644195
1,3-dichlorobenzene	ug/L	<0.50	<0.50	<0.50	0.50	8644195
1,4-dichlorobenzene	ug/L	<0.50	<0.50	<0.50	0.50	8644195
Chlorobenzene	ug/L	<0.50	<0.50	<0.50	0.50	8644195
Dibromomethane	ug/L	<0.90	<0.90	<0.90	0.90	8644195
Bromobenzene	ug/L	<2.0	<2.0	<2.0	2.0	8644195
VH C6-C10	ug/L	<300	<300	<300	300	8644195
Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	%	106	106	106		8644195
4-Bromofluorobenzene (sur.)	%	88	87	90		8644195
D4-1,2-Dichloroethane (sur.)	%	99	102	100		8644195
RDL = Reportable Detection Limit						

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Maxxam Job #: B740395
Report Date: 2017/05/31

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	12.7°C

Results relate only to the items tested.

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Maxxam Job #: B740395
Report Date: 2017/05/31

QUALITY ASSURANCE REPORT

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8641515	O-TERPHENYL (sur.)	2017/05/26	101	60 - 140	94	60 - 140	97	%		
8641519	D10-ANTHRACENE (sur.)	2017/05/26	112	60 - 130	105	60 - 130	109	%		
8641519	D8-ACENAPHTHYLENE (sur.)	2017/05/26	117	50 - 130	119	50 - 130	114	%		
8641519	D8-NAPHTHALENE (sur.)	2017/05/26	103	50 - 130	99	50 - 130	95	%		
8641519	D9-Acridine (sur.)	2017/05/26	102	50 - 130	92	50 - 130	98	%		
8641519	TERPHENYL-D14 (sur.)	2017/05/26	122	60 - 130	112	60 - 130	116	%		
8644195	1,4-Difluorobenzene (sur.)	2017/05/31			107	70 - 130	90	%		
8644195	4-Bromofluorobenzene (sur.)	2017/05/31			107	70 - 130	71	%		
8644195	D4-1,2-Dichloroethane (sur.)	2017/05/31			96	70 - 130	82	%		
8644468	1,4-Difluorobenzene (sur.)	2017/05/29	74	70 - 130	80	70 - 130	91	%		
8644468	4-Bromofluorobenzene (sur.)	2017/05/29	88	70 - 130	90	70 - 130	99	%		
8644468	D4-1,2-Dichloroethane (sur.)	2017/05/29	87	70 - 130	92	70 - 130	105	%		
8641515	EPH (C10-C19)	2017/05/26	107	60 - 140	99	70 - 130	<0.20	mg/L	NC	30
8641515	EPH (C19-C32)	2017/05/26	98	60 - 140	94	70 - 130	<0.20	mg/L	NC	30
8641519	2-Methylnaphthalene	2017/05/29	105	50 - 130	109	50 - 130	<0.10	ug/L	NC	40
8641519	Acenaphthene	2017/05/29	108	50 - 130	107	50 - 130	<0.050	ug/L	NC	40
8641519	Acenaphthylene	2017/05/29	105	50 - 130	109	50 - 130	<0.050	ug/L	NC	40
8641519	Acridine	2017/05/29	93	50 - 130	89	50 - 130	<0.050	ug/L	NC	40
8641519	Anthracene	2017/05/29	105	60 - 130	94	60 - 130	<0.010	ug/L	NC	40
8641519	Benzo(a)anthracene	2017/05/29	102	60 - 130	109	60 - 130	<0.010	ug/L	NC	40
8641519	Benzo(a)pyrene	2017/05/29	101	60 - 130	104	60 - 130	<0.0050	ug/L	NC	40
8641519	Benzo(b&j)fluoranthene	2017/05/29	107	60 - 130	102	60 - 130	<0.030	ug/L	NC	40
8641519	Benzo(g,h,i)perylene	2017/05/29	96	60 - 130	95	60 - 130	<0.050	ug/L	NC	40
8641519	Benzo(k)fluoranthene	2017/05/29	104	60 - 130	106	60 - 130	<0.050	ug/L	NC	40
8641519	Chrysene	2017/05/29	102	60 - 130	116	60 - 130	<0.020	ug/L	NC	40
8641519	Dibenz(a,h)anthracene	2017/05/29	99	60 - 130	94	60 - 130	<0.0030	ug/L	NC	40
8641519	Fluoranthene	2017/05/29	106	60 - 130	95	60 - 130	<0.020	ug/L	NC	40
8641519	Fluorene	2017/05/29	102	50 - 130	96	50 - 130	<0.050	ug/L	NC	40
8641519	Indeno(1,2,3-cd)pyrene	2017/05/29	100	60 - 130	96	60 - 130	<0.050	ug/L	NC	40
8641519	Naphthalene	2017/05/29	100	50 - 130	104	50 - 130	<0.10	ug/L	NC	40
8641519	Phenanthrene	2017/05/29	101	60 - 130	102	60 - 130	<0.050	ug/L	NC	40

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Maxxam Job #: B740395
Report Date: 2017/05/31

QUALITY ASSURANCE REPORT(CONT'D)

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8641519	Pyrene	2017/05/29	108	60 - 130	105	60 - 130	<0.020	ug/L	NC	40
8641519	Quinoline	2017/05/29	104	50 - 130	109	50 - 130	<0.020	ug/L	NC	40
8644195	1,1,1,2-tetrachloroethane	2017/05/31			87	70 - 130	<0.50	ug/L		
8644195	1,1,1-trichloroethane	2017/05/31			86	70 - 130	<0.50	ug/L		
8644195	1,1,2,2-tetrachloroethane	2017/05/31			89	70 - 130	<0.50	ug/L		
8644195	1,1,2Trichloro-1,2,2Trifluoroethane	2017/05/31					<2.0	ug/L		
8644195	1,1,2-trichloroethane	2017/05/31			88	70 - 130	<0.50	ug/L		
8644195	1,1-dichloroethane	2017/05/31			83	70 - 130	<0.50	ug/L		
8644195	1,1-dichloroethene	2017/05/31			90	70 - 130	<0.50	ug/L		
8644195	1,2-dibromoethane	2017/05/31			89	70 - 130	<0.20	ug/L		
8644195	1,2-dichlorobenzene	2017/05/31			94	70 - 130	<0.50	ug/L		
8644195	1,2-dichloroethane	2017/05/31			84	70 - 130	<0.50	ug/L		
8644195	1,2-dichloropropane	2017/05/31			87	70 - 130	<0.50	ug/L		
8644195	1,3-Butadiene	2017/05/31					<5.0	ug/L		
8644195	1,3-dichlorobenzene	2017/05/31			92	70 - 130	<0.50	ug/L		
8644195	1,4-dichlorobenzene	2017/05/31			92	70 - 130	<0.50	ug/L		
8644195	Benzene	2017/05/31			86	70 - 130	<0.40	ug/L		
8644195	Bromobenzene	2017/05/31			92	70 - 130	<2.0	ug/L		
8644195	Bromodichloromethane	2017/05/31			86	70 - 130	<1.0	ug/L		
8644195	Bromoform	2017/05/31			85	70 - 130	<1.0	ug/L		
8644195	Bromomethane	2017/05/31			99	60 - 140	<1.0	ug/L		
8644195	Carbon tetrachloride	2017/05/31			84	70 - 130	<0.50	ug/L		
8644195	Chlorobenzene	2017/05/31			83	70 - 130	<0.50	ug/L		
8644195	Chlorodibromomethane	2017/05/31			92	70 - 130	<1.0	ug/L		
8644195	Chloroethane	2017/05/31			99	60 - 140	<1.0	ug/L		
8644195	Chloroform	2017/05/31			85	70 - 130	<1.0	ug/L		
8644195	Chloromethane	2017/05/31			93	60 - 140	<1.0	ug/L		
8644195	cis-1,2-dichloroethene	2017/05/31			90	70 - 130	<1.0	ug/L		
8644195	cis-1,3-dichloropropene	2017/05/31			98	70 - 130	<1.0	ug/L		
8644195	Dibromomethane	2017/05/31			90	70 - 130	<0.90	ug/L		
8644195	Dichlorodifluoromethane	2017/05/31			88	60 - 140	<2.0	ug/L		

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Maxxam Job #: B740395
Report Date: 2017/05/31

QUALITY ASSURANCE REPORT(CONT'D)

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8644195	Dichloromethane	2017/05/31			91	70 - 130	<2.0	ug/L		
8644195	Ethylbenzene	2017/05/31			82	70 - 130	<0.40	ug/L		
8644195	m & p-Xylene	2017/05/31			89	70 - 130	<0.40	ug/L		
8644195	Methyl-tert-butylether (MTBE)	2017/05/31			93	70 - 130	<4.0	ug/L		
8644195	o-Xylene	2017/05/31			85	70 - 130	<0.40	ug/L		
8644195	Styrene	2017/05/31			76	70 - 130	<0.50	ug/L		
8644195	Tetrachloroethene	2017/05/31			88	70 - 130	<0.50	ug/L		
8644195	Toluene	2017/05/31			80	70 - 130	<0.40	ug/L		
8644195	trans-1,2-dichloroethene	2017/05/31			86	70 - 130	<1.0	ug/L		
8644195	trans-1,3-dichloropropene	2017/05/31			78	70 - 130	<1.0	ug/L		
8644195	Trichloroethene	2017/05/31			85	70 - 130	<0.50	ug/L		
8644195	Trichlorofluoromethane	2017/05/31			105	60 - 140	<4.0	ug/L		
8644195	VH C6-C10	2017/05/31			77	70 - 130	<300	ug/L		
8644195	Vinyl chloride	2017/05/31			96	60 - 140	<0.50	ug/L		
8644195	Xylenes (Total)	2017/05/31					<0.40	ug/L		
8644468	2-Butanone (MEK)	2017/05/29	121	70 - 130	122	70 - 130	<10	ug/L	NC	40
8644468	4-Methyl-2-pentanone (MIBK)	2017/05/29	108	70 - 130	116	70 - 130	<10	ug/L	NC	40
8645575	Dissolved Lead (Pb)	2017/05/31	100	80 - 120	113	80 - 120	<0.20	ug/L	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 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 (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

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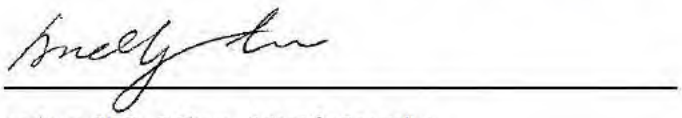
Maxxam Job #: B740395
Report Date: 2017/05/31

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

VALIDATION SIGNATURE PAGE

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



Andy Lu, Ph.D., P.Chem., Scientific Specialist

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.

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K 017309

Maxxam
A Bureau Veritas Group Company

CHAIN OF CUSTODY RECORD

BBY FCD-00077/07
Page 1 of 1

Burnaby: 4606 Canada Way, Burnaby, BC V5G 1K5. Toll Free (800) 665-8566

Invoice Information		Report Information (if differs from invoice)		Project Information (where applicable)		Turnaround Time (TAT) Required
Company Name:	3763 - Keystone Environmental Ltd.	Company Name:	Keystone Environmental	Quotation #:		☒ Regular TAT 5 days (Most analyses)
Contact Name:	Kevin Wong	Contact Name:	Kevin W./Francini M./Jason G.	P.O. #/ AFE#:		PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address:	#320 - 4400 Dominion Street	Address:		Project #:	13526	Rush TAT (Surcharges will be applied)
	Burnaby, BC PC: V5G 4G3		PC:	Site Location:		☐ Same Day ☐ 2 Days
Phone:	(604) 430-0671	Phone:		Site #:		☐ 1 Day ☐ 3 Days
Email:		Email:		Sampled By:	Jason Gratstrom	Date Required:

Regulatory Criteria	Special Instructions
☐ BC CSR Soil ☒ BC CSR Water	☐ Return Cooler
☐ YK CSR Soil ☐ YK CSR Water	☐ Ship Sample Bottles (Please Specify)
☐ CCME (Specify) ☐ Other (Specify)	
☐ Drinking Water ☐ BC Water Quality	

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

Rush Confirmation #:

LABORATORY USE ONLY
CUSTODY SEAL Y / N — Present / Intact
COOLER TEMPERATURES: 12, 13, 13
COOLING MEDIA PRESENT Y / N

	Sample Identification	Date Sampled (YYYY/MM/DD)	Time Sampled (HH:MM)	Matrix	BTEX/VPH	BTEX/F1	PAH	EPH	Dissolved Metals	Dissolved Mercury	Total Metals	Total Mercury	Chloride	TSS	pH	Nitrite	Lead (Filtered & Preserved)	limited sample			# OF CONTAINERS SUBMITTED	HOLD - DO NOT ANALYZE	COMMENTS
	Analysis Requested: MTBE ☒; VOC/BTEX/VPH ☒; VOC/BTEX/F1 ☐; LEPH/HEPH/PAH ☒; F2-F4 ☐; TEH ☐; Filtered? ☐; Preserved? ☐; Filtered? ☐; Preserved? ☐; Field Preserved? ☐; Field Preserved? ☐; Sulphate ☐; COD ☐; Fluoride ☐; BOD ☐; Conductivity ☐; Alkalinity ☐; Ammonia ☐																						
1	MW17-1	2017/05/25	09:15	GW	X		X										X				6		(dissolved lead only for metals analysis)
2	MW17-2	↓	10:05	↓	X		X										X				6		
3	MW17-3	↓	11:00	↓	X		X										X	X			4		
4																							
5																							
6																							
7																							
8																							
9																							
10																							

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)
Jason Gratstrom	2017/05/25	13:40	JONATHAN MOY	2017/05/25	13:46

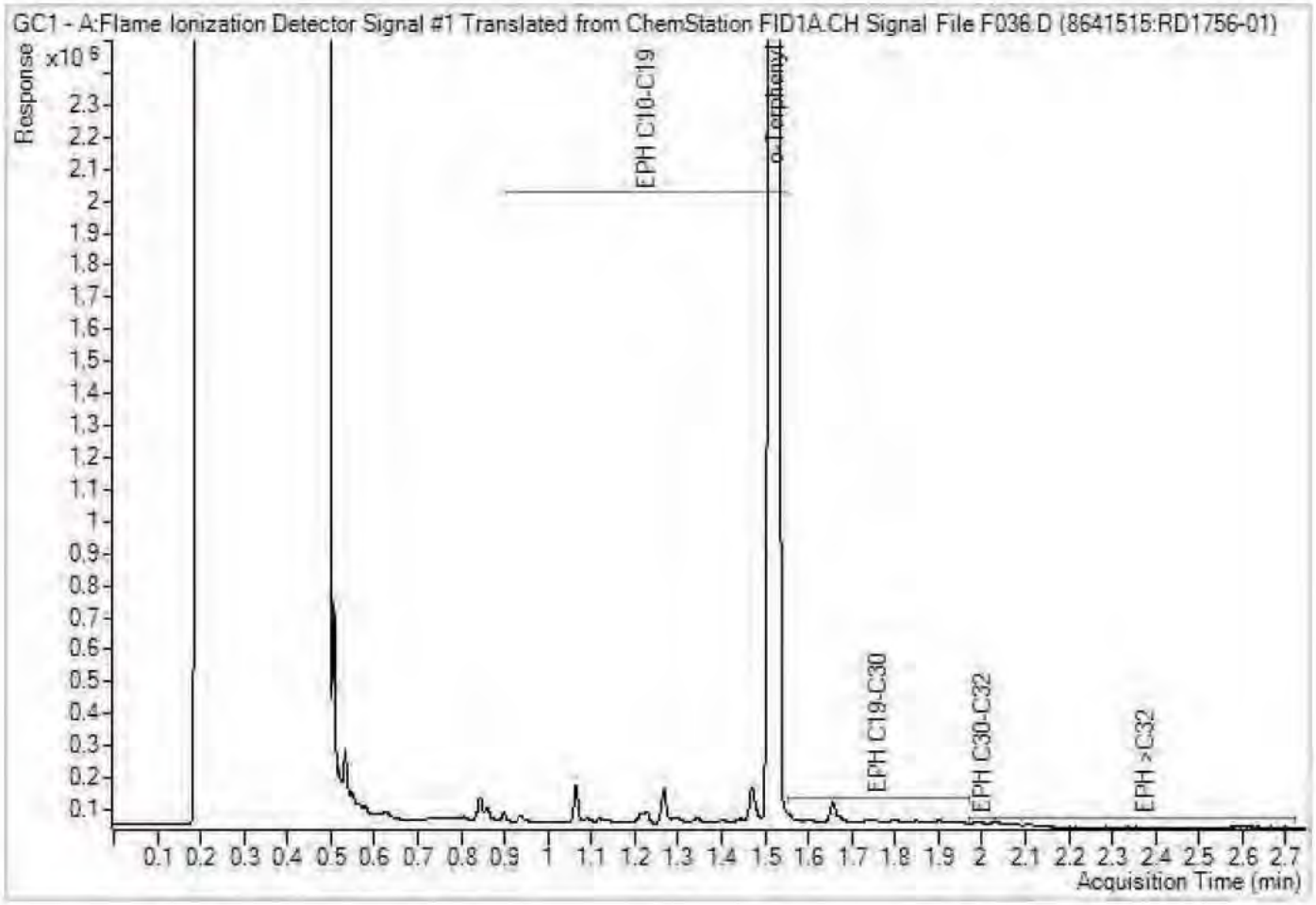
B740395_COC

COC-1027 Keystone

Maxxam Job #: B740395
Report Date: 2017/05/31
Maxxam Sample: RD1756

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Client ID: MW17-1

EPH in Water when PAH required Chromatogram

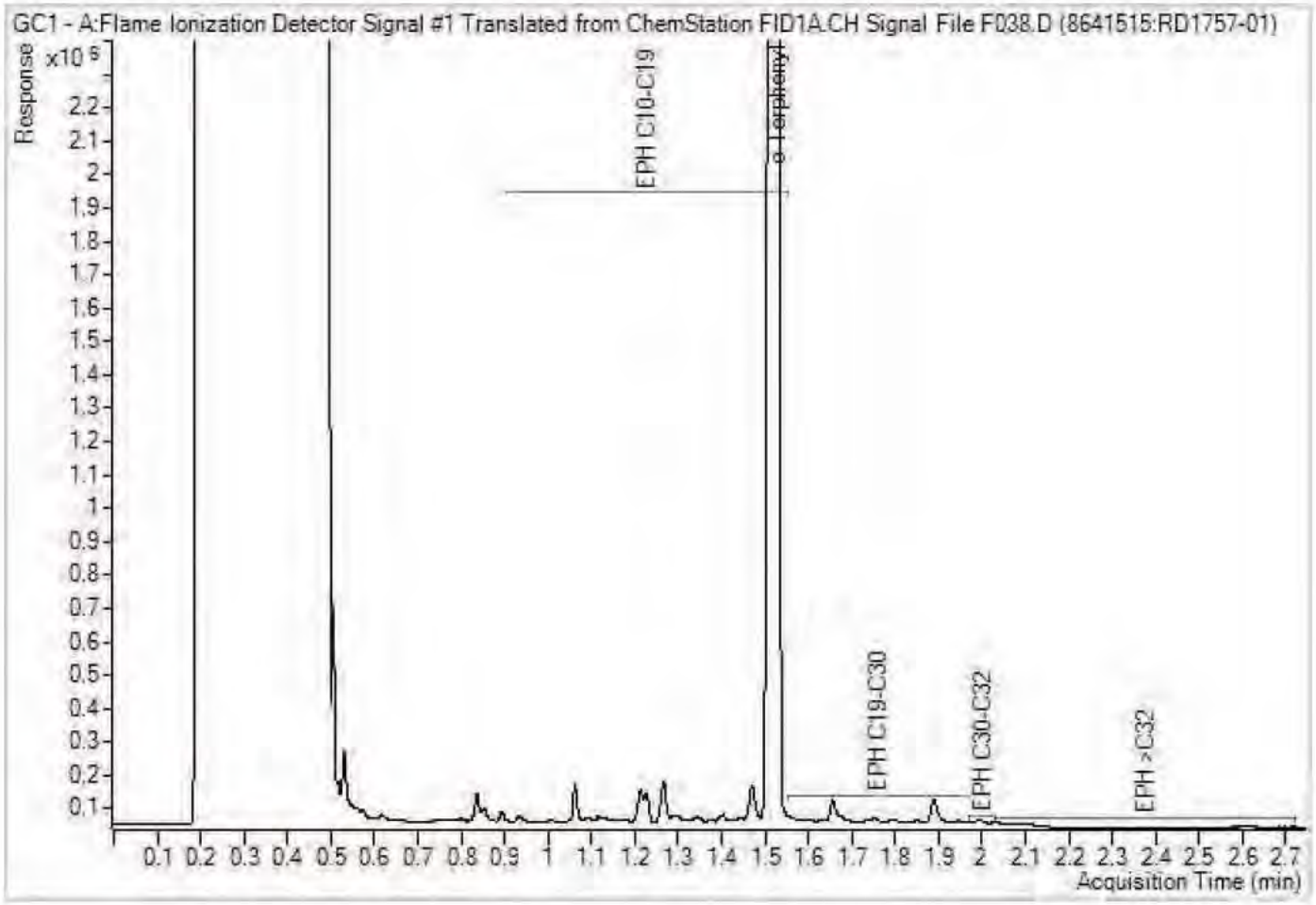


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B740395
Report Date: 2017/05/31
Maxxam Sample: RD1757

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Client ID: MW17-2

EPH in Water when PAH required Chromatogram

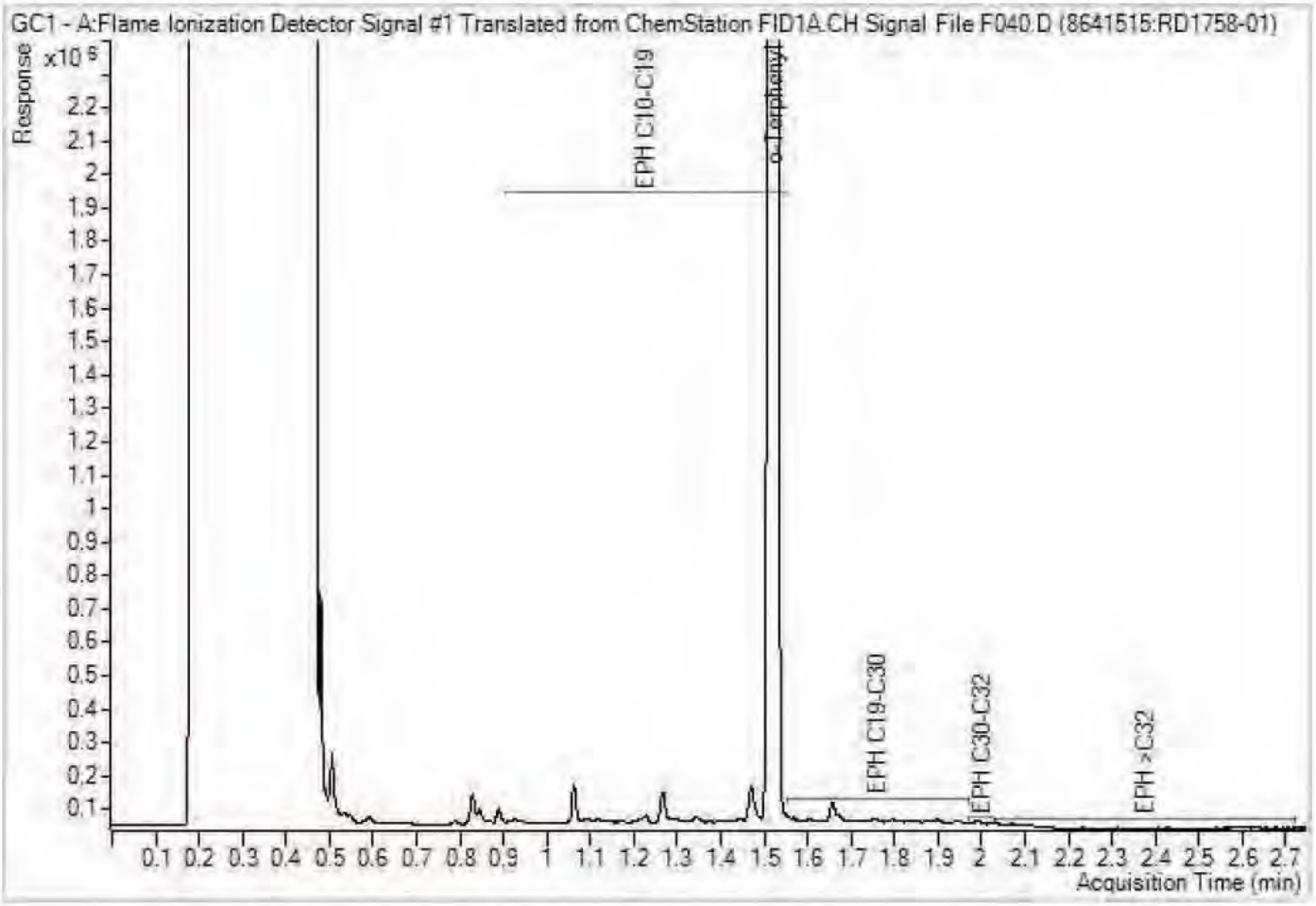


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B740395
Report Date: 2017/05/31
Maxxam Sample: RD1758

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Client ID: MW17-3

EPH in Water when PAH required Chromatogram



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

Your Project #: 13526-3
Your C.O.C. #: K017716

Attention:Francini Martins

KEYSTONE ENVIRONMENTAL LTD
SUITE 320
4400 DOMINION STREET
BURNABY, BC
CANADA V5G 4G3

Report Date: 2017/07/13
Report #: R2412191
Version: 2 Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B756208
Received: 2017/07/10, 13:10

Sample Matrix: Water
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
PAH in Water by GC/MS (SIM)	1	2017/07/13	2017/07/13	BBY8SOP-00021	EPA 8270d R5 m
Total LMW, HMW, Total PAH Calc	1	N/A	2017/07/13	BBY WI-00033	Auto Calc
Extra VOCs in Water by HS GC/MS	5	N/A	2017/07/10	BBY8SOP-00040	EPA 8260c R3 m
VOCs, VH, F1, LH in Water by HS GC/MS	5	2017/07/10	2017/07/11	BBY8SOP-00009/11/12	BC Lab Manual 2007
Volatile HC-BTEX	5	N/A	2017/07/11	BBY WI-00033	Auto Calc

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Maxxam Analytics International Corporation o/a Maxxam Analytics Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Your Project #: 13526-3
Your C.O.C. #: K017716

Attention:Francini Martins

KEYSTONE ENVIRONMENTAL LTD
SUITE 320
4400 DOMINION STREET
BURNABY, BC
CANADA V5G 4G3

Report Date: 2017/07/13
Report #: R2412191
Version: 2 Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B756208
Received: 2017/07/10, 13:10

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Amandeep Nagra, Account Specialist
Email: ANagra@maxxam.ca
Phone# (604)639 2602

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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.

Maxxam Job #: B756208
Report Date: 2017/07/13

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526-3
Sampler Initials: JG

VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		RM0209	RM0210	RM0211	RM0212	RM0212	RM0213		
Sampling Date		2017/07/10 09:00	2017/07/10 09:00	2017/07/10 09:00	2017/07/10 09:00	2017/07/10 09:00	2017/07/10 10:45		
COC Number		K017716	K017716	K017716	K017716	K017716	K017716		
	UNITS	MW17-7S	MW17-B	MW17-7D	MW17-8S	MW17-8S Lab-Dup	UN-2	RDL	QC Batch
Volatiles									
2-Butanone (MEK)	ug/L	<10	<10	<10	<10	<10	<10	10	8690240
4-Methyl-2-pentanone (MIBK)	ug/L	<10	<10	<10	<10	<10	<10	10	8690240
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	95	94	95	96	94	98		8690240
4-Bromofluorobenzene (sur.)	%	94	104	102	101	102	110		8690240
D4-1,2-Dichloroethane (sur.)	%	105	108	104	101	104	117		8690240

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Maxxam Job #: B756208
Report Date: 2017/07/13

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526-3
Sampler Initials: JG

CSR PAH IN WATER BY GC-MS (WATER)

Maxxam ID		RM0209		
Sampling Date		2017/07/10 09:00		
COC Number		K017716		
	UNITS	MW17-7S	RDL	QC Batch
Polycyclic Aromatics				
Low Molecular Weight PAH`s	ug/L	0.19	0.10	8692138
High Molecular Weight PAH`s	ug/L	<0.050	0.050	8692138
Total PAH	ug/L	0.19	0.10	8692138
Quinoline	ug/L	0.023	0.020	8693459
Naphthalene	ug/L	0.17	0.10	8693459
2-Methylnaphthalene	ug/L	<0.10	0.10	8693459
Acenaphthylene	ug/L	<0.050	0.050	8693459
Acenaphthene	ug/L	<0.050	0.050	8693459
Fluorene	ug/L	<0.050	0.050	8693459
Phenanthrene	ug/L	<0.050	0.050	8693459
Anthracene	ug/L	<0.010	0.010	8693459
Acridine	ug/L	<0.050	0.050	8693459
Fluoranthene	ug/L	<0.020	0.020	8693459
Pyrene	ug/L	<0.020	0.020	8693459
Benzo(a)anthracene	ug/L	<0.010	0.010	8693459
Chrysene	ug/L	<0.020	0.020	8693459
Benzo(b&j)fluoranthene	ug/L	<0.030	0.030	8693459
Benzo(k)fluoranthene	ug/L	<0.050	0.050	8693459
Benzo(a)pyrene	ug/L	<0.0050	0.0050	8693459
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	0.050	8693459
Dibenz(a,h)anthracene	ug/L	<0.0030	0.0030	8693459
Benzo(g,h,i)perylene	ug/L	<0.050	0.050	8693459
Surrogate Recovery (%)				
D10-ANTHRACENE (sur.)	%	95		8693459
D8-ACENAPHTHYLENE (sur.)	%	97		8693459
D8-NAPHTHALENE (sur.)	%	96		8693459
TERPHENYL-D14 (sur.)	%	98		8693459
RDL = Reportable Detection Limit				

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Maxxam Job #: B756208
Report Date: 2017/07/13

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526-3
Sampler Initials: JG

CSR VOC + VPH IN WATER (WATER)

Maxxam ID		RM0209	RM0210	RM0211		RM0212	RM0213		
Sampling Date		2017/07/10 09:00	2017/07/10 09:00	2017/07/10 09:00		2017/07/10 09:00	2017/07/10 10:45		
COC Number		K017716	K017716	K017716		K017716	K017716		
	UNITS	MW17-7S	MW17-B	MW17-7D	QC Batch	MW17-8S	UN-2	RDL	QC Batch
Volatiles									
VPH (VHW6 to 10 - BTEX)	ug/L	<300	<300	<300	8689980	<300	<300	300	8689980
Chloromethane	ug/L	<1.0	<1.0	<1.0	8689919	<1.0	<1.0	1.0	8689712
Vinyl chloride	ug/L	<0.50	<0.50	<0.50	8689919	<0.50	<0.50	0.50	8689712
Chloroethane	ug/L	<1.0	<1.0	<1.0	8689919	<1.0	<1.0	1.0	8689712
Trichlorofluoromethane	ug/L	<4.0	<4.0	<4.0	8689919	<4.0	<4.0	4.0	8689712
1,1,2Trichloro-1,2,2Trifluoroethane	ug/L	<2.0	<2.0	<2.0	8689919	<2.0	<2.0	2.0	8689712
Dichlorodifluoromethane	ug/L	<2.0	<2.0	<2.0	8689919	<2.0	<2.0	2.0	8689712
1,1-dichloroethene	ug/L	<0.50	<0.50	<0.50	8689919	<0.50	<0.50	0.50	8689712
Dichloromethane	ug/L	<2.0	<2.0	<2.0	8689919	<2.0	<2.0	2.0	8689712
trans-1,2-dichloroethene	ug/L	<1.0	<1.0	<1.0	8689919	<1.0	<1.0	1.0	8689712
1,1-dichloroethane	ug/L	<0.50	<0.50	<0.50	8689919	<0.50	<0.50	0.50	8689712
cis-1,2-dichloroethene	ug/L	<1.0	<1.0	<1.0	8689919	94	<1.0	1.0	8689712
Chloroform	ug/L	13	14	27	8689919	<1.0	<1.0	1.0	8689712
1,1,1-trichloroethane	ug/L	<0.50	<0.50	<0.50	8689919	<0.50	<0.50	0.50	8689712
1,2-dichloroethane	ug/L	<0.50	<0.50	<0.50	8689919	<0.50	<0.50	0.50	8689712
Carbon tetrachloride	ug/L	<0.50	<0.50	<0.50	8689919	<0.50	<0.50	0.50	8689712
Benzene	ug/L	<0.40	<0.40	<0.40	8689919	<0.40	<0.40	0.40	8689712
1,2-dichloropropane	ug/L	<0.50	<0.50	<0.50	8689919	<0.50	<0.50	0.50	8689712
cis-1,3-dichloropropene	ug/L	<1.0	<1.0	<1.0	8689919	<1.0	<1.0	1.0	8689712
trans-1,3-dichloropropene	ug/L	<1.0	<1.0	<1.0	8689919	<1.0	<1.0	1.0	8689712
Bromomethane	ug/L	<1.0	<1.0	<1.0	8689919	<1.0	<1.0	1.0	8689712
1,1,2-trichloroethane	ug/L	<0.50	<0.50	<0.50	8689919	<0.50	<0.50	0.50	8689712
Trichloroethene	ug/L	<0.50	<0.50	<0.50	8689919	7.5	<0.50	0.50	8689712
Chlorodibromomethane	ug/L	<1.0	<1.0	<1.0	8689919	<1.0	<1.0	1.0	8689712
1,2-dibromoethane	ug/L	<0.20	<0.20	<0.20	8689919	<0.20	<0.20	0.20	8689712
1,3-Butadiene	ug/L	<5.0	<5.0	<5.0	8689919	<5.0	<5.0	5.0	8689712
Tetrachloroethene	ug/L	21	23	9.3	8689919	650	720	0.50	8689712
Bromodichloromethane	ug/L	<1.0	<1.0	<1.0	8689919	<1.0	<1.0	1.0	8689712
Toluene	ug/L	<0.40	<0.40	<0.40	8689919	<0.40	<0.40	0.40	8689712
Ethylbenzene	ug/L	<0.40	<0.40	<0.40	8689919	<0.40	<0.40	0.40	8689712
m & p-Xylene	ug/L	<0.40	<0.40	<0.40	8689919	<0.40	<0.40	0.40	8689712
Bromoform	ug/L	<1.0	<1.0	<1.0	8689919	<1.0	<1.0	1.0	8689712
RDL = Reportable Detection Limit									

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Maxxam Job #: B756208
Report Date: 2017/07/13

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526-3
Sampler Initials: JG

CSR VOC + VPH IN WATER (WATER)

Maxxam ID		RM0209	RM0210	RM0211		RM0212	RM0213		
Sampling Date		2017/07/10 09:00	2017/07/10 09:00	2017/07/10 09:00		2017/07/10 09:00	2017/07/10 10:45		
COC Number		K017716	K017716	K017716		K017716	K017716		
	UNITS	MW17-7S	MW17-B	MW17-7D	QC Batch	MW17-8S	UN-2	RDL	QC Batch
Styrene	ug/L	<0.50	<0.50	<0.50	8689919	<0.50	<0.50	0.50	8689712
o-Xylene	ug/L	<0.40	<0.40	<0.40	8689919	<0.40	<0.40	0.40	8689712
Xylenes (Total)	ug/L	<0.40	<0.40	<0.40	8689919	<0.40	<0.40	0.40	8689712
1,1,1,2-tetrachloroethane	ug/L	<0.50	<0.50	<0.50	8689919	<0.50	<0.50	0.50	8689712
1,1,2,2-tetrachloroethane	ug/L	<0.50	<0.50	<0.50	8689919	<0.50	<0.50	0.50	8689712
1,2-dichlorobenzene	ug/L	<0.50	<0.50	<0.50	8689919	<0.50	<0.50	0.50	8689712
1,3-dichlorobenzene	ug/L	<0.50	<0.50	<0.50	8689919	<0.50	<0.50	0.50	8689712
1,4-dichlorobenzene	ug/L	<0.50	<0.50	<0.50	8689919	<0.50	<0.50	0.50	8689712
Chlorobenzene	ug/L	<0.50	<0.50	<0.50	8689919	<0.50	<0.50	0.50	8689712
Dibromomethane	ug/L	<0.90	<0.90	<0.90	8689919	<0.90	<0.90	0.90	8689712
Bromobenzene	ug/L	<2.0	<2.0	<2.0	8689919	<2.0	<2.0	2.0	8689712
VH C6-C10	ug/L	<300	<300	<300	8689919	<300	<300	300	8689712
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	94	94	104	8689919	87	104		8689712
4-Bromofluorobenzene (sur.)	%	88	90	97	8689919	85	100		8689712
D4-1,2-Dichloroethane (sur.)	%	90	92	101	8689919	84	102		8689712

RDL = Reportable Detection Limit

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Maxxam Job #: B756208
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KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526-3
Sampler Initials: JG

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	16.7°C

Revised Report (Version: 2): Sample MW17-7S analyzed for PAH as requested by Francini Martins (GP5).

Results relate only to the items tested.

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Maxxam Job #: B756208
Report Date: 2017/07/13

QUALITY ASSURANCE REPORT

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526-3
Sampler Initials: JG

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8689712	1,4-Difluorobenzene (sur.)	2017/07/10	97	70 - 130	104	70 - 130	104	%		
8689712	4-Bromofluorobenzene (sur.)	2017/07/10	95	70 - 130	103	70 - 130	96	%		
8689712	D4-1,2-Dichloroethane (sur.)	2017/07/10	93	70 - 130	100	70 - 130	96	%		
8689919	1,4-Difluorobenzene (sur.)	2017/07/11	104	70 - 130	104	70 - 130	104	%		
8689919	4-Bromofluorobenzene (sur.)	2017/07/11	99	70 - 130	99	70 - 130	94	%		
8689919	D4-1,2-Dichloroethane (sur.)	2017/07/11	99	70 - 130	99	70 - 130	97	%		
8690240	1,4-Difluorobenzene (sur.)	2017/07/10	89	70 - 130	93	70 - 130	96	%		
8690240	4-Bromofluorobenzene (sur.)	2017/07/10	97	70 - 130	100	70 - 130	103	%		
8690240	D4-1,2-Dichloroethane (sur.)	2017/07/10	101	70 - 130	104	70 - 130	105	%		
8693459	D10-ANTHRACENE (sur.)	2017/07/13			91	60 - 130	99	%		
8693459	D8-ACENAPHTHYLENE (sur.)	2017/07/13			93	50 - 130	98	%		
8693459	D8-NAPHTHALENE (sur.)	2017/07/13			94	50 - 130	98	%		
8693459	TERPHENYL-D14 (sur.)	2017/07/13			90	60 - 130	99	%		
8689712	1,1,1,2-tetrachloroethane	2017/07/10	88	70 - 130	92	70 - 130	<0.50	ug/L		
8689712	1,1,1-trichloroethane	2017/07/10	90	70 - 130	94	70 - 130	<0.50	ug/L		
8689712	1,1,2,2-tetrachloroethane	2017/07/10	98	70 - 130	95	70 - 130	<0.50	ug/L		
8689712	1,1,2Trichloro-1,2,2Trifluoroethane	2017/07/10					<2.0	ug/L		
8689712	1,1,2-trichloroethane	2017/07/10	90	70 - 130	95	70 - 130	<0.50	ug/L		
8689712	1,1-dichloroethane	2017/07/10	88	70 - 130	92	70 - 130	<0.50	ug/L		
8689712	1,1-dichloroethene	2017/07/10	94	70 - 130	98	70 - 130	<0.50	ug/L		
8689712	1,2-dibromoethane	2017/07/10	91	70 - 130	95	70 - 130	<0.20	ug/L	NC	30
8689712	1,2-dichlorobenzene	2017/07/10	100	70 - 130	96	70 - 130	<0.50	ug/L		
8689712	1,2-dichloroethane	2017/07/10	83	70 - 130	92	70 - 130	<0.50	ug/L	NC	30
8689712	1,2-dichloropropane	2017/07/10	94	70 - 130	97	70 - 130	<0.50	ug/L		
8689712	1,3-Butadiene	2017/07/10					<5.0	ug/L		
8689712	1,3-dichlorobenzene	2017/07/10	97	70 - 130	93	70 - 130	<0.50	ug/L		
8689712	1,4-dichlorobenzene	2017/07/10	92	70 - 130	89	70 - 130	<0.50	ug/L		
8689712	Benzene	2017/07/10	90	70 - 130	91	70 - 130	<0.40	ug/L	NC	30
8689712	Bromobenzene	2017/07/10	96	70 - 130	92	70 - 130	<2.0	ug/L		
8689712	Bromodichloromethane	2017/07/10	88	70 - 130	93	70 - 130	<1.0	ug/L		
8689712	Bromoform	2017/07/10	92	70 - 130	91	70 - 130	<1.0	ug/L		

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Maxxam Job #: B756208
Report Date: 2017/07/13

QUALITY ASSURANCE REPORT(CONT'D)

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526-3
Sampler Initials: JG

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8689712	Bromomethane	2017/07/10	114	60 - 140	114	60 - 140	<1.0	ug/L		
8689712	Carbon tetrachloride	2017/07/10	84	70 - 130	83	70 - 130	<0.50	ug/L		
8689712	Chlorobenzene	2017/07/10	87	70 - 130	90	70 - 130	<0.50	ug/L		
8689712	Chlorodibromomethane	2017/07/10	92	70 - 130	96	70 - 130	<1.0	ug/L		
8689712	Chloroethane	2017/07/10	120	60 - 140	116	60 - 140	<1.0	ug/L		
8689712	Chloroform	2017/07/10	89	70 - 130	94	70 - 130	<1.0	ug/L		
8689712	Chloromethane	2017/07/10	125	60 - 140	129	60 - 140	<1.0	ug/L		
8689712	cis-1,2-dichloroethene	2017/07/10	93	70 - 130	96	70 - 130	<1.0	ug/L		
8689712	cis-1,3-dichloropropene	2017/07/10	99	70 - 130	104	70 - 130	<1.0	ug/L		
8689712	Dibromomethane	2017/07/10	87	70 - 130	92	70 - 130	<0.90	ug/L		
8689712	Dichlorodifluoromethane	2017/07/10			163 (1)	60 - 140	<2.0	ug/L		
8689712	Dichloromethane	2017/07/10	92	70 - 130	96	70 - 130	<2.0	ug/L		
8689712	Ethylbenzene	2017/07/10	90	70 - 130	93	70 - 130	<0.40	ug/L	NC	30
8689712	m & p-Xylene	2017/07/10	93	70 - 130	96	70 - 130	<0.40	ug/L	NC	30
8689712	o-Xylene	2017/07/10	90	70 - 130	94	70 - 130	<0.40	ug/L	NC	30
8689712	Styrene	2017/07/10	96	70 - 130	101	70 - 130	<0.50	ug/L	NC	30
8689712	Tetrachloroethene	2017/07/10	88	70 - 130	92	70 - 130	<0.50	ug/L		
8689712	Toluene	2017/07/10	92	70 - 130	96	70 - 130	<0.40	ug/L	NC	30
8689712	trans-1,2-dichloroethene	2017/07/10	88	70 - 130	92	70 - 130	<1.0	ug/L		
8689712	trans-1,3-dichloropropene	2017/07/10	82	70 - 130	85	70 - 130	<1.0	ug/L		
8689712	Trichloroethene	2017/07/10	87	70 - 130	90	70 - 130	<0.50	ug/L		
8689712	Trichlorofluoromethane	2017/07/10	118	60 - 140	125	60 - 140	<4.0	ug/L		
8689712	VH C6-C10	2017/07/10			101	70 - 130	<300	ug/L	NC	30
8689712	Vinyl chloride	2017/07/10	122	60 - 140	127	60 - 140	<0.50	ug/L		
8689712	Xylenes (Total)	2017/07/10					<0.40	ug/L	NC	30
8689919	1,1,1,2-tetrachloroethane	2017/07/11	95	70 - 130	94	70 - 130	<0.50	ug/L	NC	30
8689919	1,1,1-trichloroethane	2017/07/11	100	70 - 130	98	70 - 130	<0.50	ug/L	NC	30
8689919	1,1,2,2-tetrachloroethane	2017/07/11	94	70 - 130	90	70 - 130	<0.50	ug/L	NC	30
8689919	1,1,2Trichloro-1,2,2Trifluoroethane	2017/07/11					<2.0	ug/L	NC	30
8689919	1,1,2-trichloroethane	2017/07/11	98	70 - 130	97	70 - 130	<0.50	ug/L	NC	30
8689919	1,1-dichloroethane	2017/07/11	98	70 - 130	95	70 - 130	<0.50	ug/L	NC	30

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QUALITY ASSURANCE REPORT(CONT'D)

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526-3
Sampler Initials: JG

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8689919	1,1-dichloroethene	2017/07/11	103	70 - 130	101	70 - 130	<0.50	ug/L	NC	30
8689919	1,2-dibromoethane	2017/07/11	97	70 - 130	97	70 - 130	<0.20	ug/L	NC	30
8689919	1,2-dichlorobenzene	2017/07/11	97	70 - 130	92	70 - 130	<0.50	ug/L	NC	30
8689919	1,2-dichloroethane	2017/07/11	95	70 - 130	93	70 - 130	<0.50	ug/L	NC	30
8689919	1,2-dichloropropane	2017/07/11	108	70 - 130	101	70 - 130	<0.50	ug/L	NC	30
8689919	1,3-Butadiene	2017/07/11					<5.0	ug/L		
8689919	1,3-dichlorobenzene	2017/07/11	94	70 - 130	90	70 - 130	<0.50	ug/L	NC	30
8689919	1,4-dichlorobenzene	2017/07/11	89	70 - 130	83	70 - 130	<0.50	ug/L	NC	30
8689919	Benzene	2017/07/11	96	70 - 130	94	70 - 130	<0.40	ug/L	NC	30
8689919	Bromobenzene	2017/07/11	94	N/A	93	70 - 130	<2.0	ug/L		
8689919	Bromodichloromethane	2017/07/11	97	70 - 130	95	70 - 130	<1.0	ug/L	NC	30
8689919	Bromoform	2017/07/11	91	70 - 130	91	70 - 130	<1.0	ug/L	NC	30
8689919	Bromomethane	2017/07/11	131	60 - 140	126	60 - 140	<1.0	ug/L	NC	30
8689919	Carbon tetrachloride	2017/07/11	90	70 - 130	92	70 - 130	<0.50	ug/L	NC	30
8689919	Chlorobenzene	2017/07/11	92	70 - 130	89	70 - 130	<0.50	ug/L	NC	30
8689919	Chlorodibromomethane	2017/07/11	99	70 - 130	98	70 - 130	<1.0	ug/L	NC	30
8689919	Chloroethane	2017/07/11	128	60 - 140	114	60 - 140	<1.0	ug/L	NC	30
8689919	Chloroform	2017/07/11	100	70 - 130	97	70 - 130	<1.0	ug/L	NC	30
8689919	Chloromethane	2017/07/11	137	60 - 140	133	60 - 140	<1.0	ug/L	NC	30
8689919	cis-1,2-dichloroethene	2017/07/11	100	70 - 130	98	70 - 130	<1.0	ug/L	NC	30
8689919	cis-1,3-dichloropropene	2017/07/11	100	70 - 130	99	70 - 130	<1.0	ug/L	NC	30
8689919	Dibromomethane	2017/07/11	102	N/A	97	70 - 130	<0.90	ug/L		
8689919	Dichlorodifluoromethane	2017/07/11	174	N/A	172 (1)	60 - 140	<2.0	ug/L	NC	30
8689919	Dichloromethane	2017/07/11	102	70 - 130	100	70 - 130	<2.0	ug/L	NC	30
8689919	Ethylbenzene	2017/07/11	95	70 - 130	93	70 - 130	<0.40	ug/L	NC	30
8689919	m & p-Xylene	2017/07/11	98	70 - 130	95	70 - 130	<0.40	ug/L	NC	30
8689919	o-Xylene	2017/07/11	96	70 - 130	94	70 - 130	<0.40	ug/L	NC	30
8689919	Styrene	2017/07/11	102	70 - 130	99	70 - 130	<0.50	ug/L	NC	30
8689919	Tetrachloroethene	2017/07/11	95	70 - 130	93	70 - 130	<0.50	ug/L	NC	30
8689919	Toluene	2017/07/11	98	70 - 130	96	70 - 130	<0.40	ug/L	NC	30
8689919	trans-1,2-dichloroethene	2017/07/11	94	70 - 130	91	70 - 130	<1.0	ug/L	NC	30

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Maxxam Job #: B756208
Report Date: 2017/07/13

QUALITY ASSURANCE REPORT(CONT'D)

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526-3
Sampler Initials: JG

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8689919	trans-1,3-dichloropropene	2017/07/11	82	70 - 130	81	70 - 130	<1.0	ug/L	NC	30
8689919	Trichloroethene	2017/07/11	93	70 - 130	91	70 - 130	<0.50	ug/L	NC	30
8689919	Trichlorofluoromethane	2017/07/11	133	60 - 140	130	60 - 140	<4.0	ug/L	NC	30
8689919	VH C6-C10	2017/07/11			102	70 - 130	<300	ug/L		
8689919	Vinyl chloride	2017/07/11	134	60 - 140	129	60 - 140	<0.50	ug/L	NC	30
8689919	Xylenes (Total)	2017/07/11					<0.40	ug/L	NC	30
8690240	2-Butanone (MEK)	2017/07/10	117	70 - 130	110	70 - 130	<10	ug/L	NC	40
8690240	4-Methyl-2-pentanone (MIBK)	2017/07/10	114	70 - 130	110	70 - 130	<10	ug/L	NC	40
8693459	2-Methylnaphthalene	2017/07/13			86	50 - 130	<0.10	ug/L		
8693459	Acenaphthene	2017/07/13			91	50 - 130	<0.050	ug/L		
8693459	Acenaphthylene	2017/07/13			86	50 - 130	<0.050	ug/L		
8693459	Acridine	2017/07/13			97	50 - 130	<0.050	ug/L		
8693459	Anthracene	2017/07/13			83	60 - 130	<0.010	ug/L		
8693459	Benzo(a)anthracene	2017/07/13			83	60 - 130	<0.010	ug/L		
8693459	Benzo(a)pyrene	2017/07/13			85	60 - 130	<0.0050	ug/L		
8693459	Benzo(b&j)fluoranthene	2017/07/13			91	60 - 130	<0.030	ug/L		
8693459	Benzo(g,h,i)perylene	2017/07/13			85	60 - 130	<0.050	ug/L		
8693459	Benzo(k)fluoranthene	2017/07/13			88	60 - 130	<0.050	ug/L		
8693459	Chrysene	2017/07/13			88	60 - 130	<0.020	ug/L		
8693459	Dibenz(a,h)anthracene	2017/07/13			88	60 - 130	<0.0030	ug/L		
8693459	Fluoranthene	2017/07/13			84	60 - 130	<0.020	ug/L		
8693459	Fluorene	2017/07/13			86	50 - 130	<0.050	ug/L		
8693459	Indeno(1,2,3-cd)pyrene	2017/07/13			86	60 - 130	<0.050	ug/L		
8693459	Naphthalene	2017/07/13			82	50 - 130	<0.10	ug/L		
8693459	Phenanthrene	2017/07/13			91	60 - 130	<0.050	ug/L		
8693459	Pyrene	2017/07/13			86	60 - 130	<0.020	ug/L		

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Maxxam Job #: B756208
Report Date: 2017/07/13

QUALITY ASSURANCE REPORT(CONT'D)

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526-3
Sampler Initials: JG

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8693459	Quinoline	2017/07/13			106	50 - 130	<0.020	ug/L		

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 (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Spike recovery exceeds acceptance criteria (high recovery). As results are non-detect, there is no impact on data quality.

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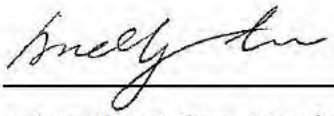
Maxxam Job #: B756208
Report Date: 2017/07/13

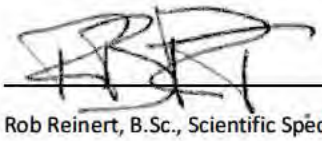
KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526-3
Sampler Initials: JG

VALIDATION SIGNATURE PAGE

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



Andy Lu, Ph.D., P.Chem., Scientific Specialist



Rob Reinert, B.Sc., Scientific Specialist

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.

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K 017716

Maxxam
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CHAIN OF CUSTODY RECORD

Burnaby: 4606 Canada Way, Burnaby, BC V5G 1K5. Toll Free (800) 665-8566

BBY FCD-00077/07

Page 1 of 1

Invoice Information	Report Information (if differs from invoice)	Project Information (where applicable)	Turnaround Time (TAT) Required
Company Name: 3763 - Keystone Environmental Ltd.	Company Name: Keystone Environmental	Quotation #:	☐ Regular TAT 5 days (Most analyses)
Contact Name: Francini Martins	Contact Name: Francini M. / Jason G.	P.O. #/ AFE#:	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address: #320 - 4400 Dominion Street	Address:	Project #: 13526-3	Rush TAT (Surcharges will be applied)
Burnaby, BC PC: V5G 4G3	PC:	Site Location:	☐ Same Day ☐ 2 Days
Phone: (604) 430-0671	Phone:	Site #:	☒ 1 Day ☐ 3 Days
Email:	Email:	Sampled By: Jason Gratston	Date Required: 2017/07/11

Regulatory Criteria	Special Instructions
☐ BC CSR Soil ☒ BC CSR Water	☐ Return Cooler
☐ YK CSR Soil ☐ YK CSR Water	☐ Ship Sample Bottles (Please Specify)
☐ CCME (Specify) ☐ Other (Specify)	
☐ Drinking Water ☐ BC Water Quality	

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

Rush Confirmation #:

LABORATORY USE ONLY

CUSTODY SEAL Y / N (Present / Intact) — COOLER TEMPERATURES

COOLING MEDIA PRESENT Y / N

	Sample Identification	Date Sampled (YYYY/MM/DD)	Time Sampled (HH:MM)	Matrix	BTEXS / VPH	BTEX / F1	PAH	EPH	Dissolved Metals	Dissolved Mercury	Total Metals	Total Mercury	Chloride	TSS	pH	Nitrite	# OF CONTAINERS SUBMITTED	HOLD - DO NOT ANALYZE	COMMENTS
1	MW17-7S	2017/07/10	0900	GW	X												3	X	4/4P on hold
2	MW17-B				X												2		
3	MW17-7D				X												2		
4	MW17-8S				X												2		
5	~~MW~~UN-2		1045		X												2		
6																			
7																			
8																			
9																			
10																			

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)
Jason Gratston	2017/07/10	13:10	Laurel Heather	2017/07/10	13:10

Unless otherwise agreed to in writing, work submitted on this Chain of Custody is subject to Maxxam's standard Terms and Conditions. Signing of this Chain of Custody document is acknowledgment and acceptance of our terms which are available for viewing at w

B756208_COC

COC-1027 Keystone

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Success Through Science®

Your Project #: 13526
Your C.O.C. #: 517035-31-01

Attention:Kevin Wong

KEYSTONE ENVIRONMENTAL LTD
SUITE 320
4400 DOMINION STREET
BURNABY, BC
CANADA V5G 4G3

Report Date: 2017/05/31
Report #: R2390388
Version: 1 Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B739990
Received: 2017/05/24, 17:40

Sample Matrix: Air
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
VOCs by TD – Complete List Calc (ug/m3)	7	N/A	2017/05/31	BBY5SOP-00031	BCMOE BCLM Jun2009 m
VOCs by TD Tube – Complete List (ug)	3	N/A	2017/05/26	BBY5SOP-00031	BCMOE BCLM Jun2009 m
VOCs by TD Tube – Complete List (ug)	4	N/A	2017/05/27	BBY5SOP-00031	BCMOE BCLM Jun2009 m
Duration	1	N/A	2017/05/26	N/A	Field Data
Duration	1	N/A	2017/05/27	N/A	Field Data
Duration	5	N/A	2017/05/29	N/A	Field Data
Flow Rate (L/min)	1	N/A	2017/05/26	N/A	Field Data
Flow Rate (L/min)	1	N/A	2017/05/27	N/A	Field Data
Flow Rate (L/min)	5	N/A	2017/05/29	N/A	Field Data
Volatile HC-BTEX Calculation for Air	1	N/A	2017/05/26		
Volatile HC-BTEX Calculation for Air	2	N/A	2017/05/28		
Volatile HC-BTEX Calculation for Air	4	N/A	2017/05/29		

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

Maxxam Analytics International Corporation o/a Maxxam Analytics Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Your Project #: 13526
Your C.O.C. #: 517035-31-01

Attention:Kevin Wong
KEYSTONE ENVIRONMENTAL LTD
SUITE 320
4400 DOMINION STREET
BURNABY, BC
CANADA V5G 4G3

Report Date: 2017/05/31
Report #: R2390388
Version: 1 Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B739990
Received: 2017/05/24, 17:40
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Amandeep Nagra, Account Specialist
Email: ANagra@maxxam.ca
Phone# (604)639 2602
==========
This report has been generated and distributed using a secure automated process.
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 Job #: B739990
Report Date: 2017/05/31

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

ORGANIC VAPOURS (AIR)

Maxxam ID		RC9234	RC9235	RC9236	RC9237	RC9238	RC9239		
Sampling Date		2017/05/24 09:25	2017/05/24 09:55	2017/05/24 10:30	2017/05/24 10:55	2017/05/24 13:55	2017/05/24 12:05		
COC Number		517035-31-01	517035-31-01	517035-31-01	517035-31-01	517035-31-01	517035-31-01		
	UNITS	SV17-1	SV17-2	SV17-3	SV17-4	SV17-5	SV17-6	RDL	QC Batch
Volatiles									
C6-C13 Hydrocarbons (VPHv)	ug	2.8	3.9	3.2	2.7	8.0	<0.50	0.50	8640050
RDL = Reportable Detection Limit									

Maxxam ID		RC9240		
Sampling Date		2017/05/24 10:30		
COC Number		517035-31-01		
	UNITS	SV17-A	RDL	QC Batch
Volatiles				
C6-C13 Hydrocarbons (VPHv)	ug	4.5	0.50	8640050
RDL = Reportable Detection Limit				

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Maxxam Job #: B739990
Report Date: 2017/05/31

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

DRYCLEANING ORGANICS IN AIR BY TD (AIR)

Maxxam ID		RC9234		RC9235	RC9236		RC9237		
Sampling Date		2017/05/24 09:25		2017/05/24 09:55	2017/05/24 10:30		2017/05/24 10:55		
COC Number		517035-31-01		517035-31-01	517035-31-01		517035-31-01		
	UNITS	SV17-1	RDL	SV17-2	SV17-3	RDL	SV17-4	RDL	QC Batch
Field Parameters									
Duration	min	20	N/A	20	20	N/A	20	N/A	ONSITE
Flow Rate	L/min	0.2	N/A	0.2	0.2	N/A	0.2	N/A	ONSITE
Air Analysis									
Benzene	ug/m3	8.5	0.38	3.6	4.3	0.38	3.3	0.38	8640049
1,3-Butadiene	ug/m3	14	1.3	370	49	1.3	26	1.3	8640049
C6-C13 Hydrocarbons (VHv)	ug/m3	770	130	980	810	130	680	130	8640049
C6-C13 Hydrocarbons (VPHv)	ug/m3	700	130	970	800	130	670	130	8640049
Carbon tetrachloride	ug/m3	<0.38	0.38	<0.75	1.1	0.75	<0.75	0.75	8640049
Chloroethane	ug/m3	<2.5	2.5	<5.0	<5.0	5.0	<5.0	5.0	8640049
Chloroform	ug/m3	81	0.50	960	510	25	380	0.50	8640049
n-Decane	ug/m3	3.8	2.5	4.2	<2.5	2.5	2.7	2.5	8640049
1,2-dibromoethane	ug/m3	<0.50	0.50	<0.50	<0.50	0.50	<0.50	0.50	8640049
1,1-dichloroethane	ug/m3	<0.50	0.50	<0.50	<0.50	0.50	<0.50	0.50	8640049
1,2-dichloroethane	ug/m3	<0.25	0.25	<0.25	<0.25	0.25	<0.25	0.25	8640049
1,1-dichloroethene	ug/m3	8.1	0.50	<0.50	0.60	0.50	<0.50	0.50	8640049
cis-1,2-dichloroethene	ug/m3	<0.50	0.50	0.93	1.8	0.50	<0.50	0.50	8640049
trans-1,2-dichloroethene	ug/m3	<0.50	0.50	18	86	0.50	1.0	0.50	8640049
Dichloromethane	ug/m3	<5.0	5.0	<5.0	<5.0	5.0	<5.0	5.0	8640049
Ethylbenzene	ug/m3	<2.5	2.5	<2.5	<2.5	2.5	<2.5	2.5	8640049
n-Hexane	ug/m3	56	2.5	<2.5	8.1	2.5	<2.5	2.5	8640049
Isopropylbenzene	ug/m3	<0.50	0.50	<0.50	<0.50	0.50	<0.50	0.50	8640049
Methylcyclohexane	ug/m3	12	0.50	1.6	8.4	0.50	1.6	0.50	8640049
Methyl-tert-butylether (MTBE)	ug/m3	<2.5	2.5	<2.5	<2.5	2.5	<2.5	2.5	8640049
Naphthalene	ug/m3	<2.5	2.5	<2.5	<2.5	2.5	<2.5	2.5	8640049
Styrene	ug/m3	<2.5	2.5	<2.5	<2.5	2.5	<2.5	2.5	8640049
Tetrachloroethene	ug/m3	78	0.50	660	4000	25	480	0.50	8640049
Toluene	ug/m3	2.9	0.50	2.8	3.2	0.50	1.1	0.50	8640049
1,1,1-trichloroethane	ug/m3	<0.50	0.50	<0.50	<0.50	0.50	<0.50	0.50	8640049
Trichloroethene	ug/m3	1.1	0.25	15	140	0.25	3.1	0.25	8640049
1,2,4-trimethylbenzene	ug/m3	0.65	0.50	<0.50	<0.50	0.50	0.83	0.50	8640049
1,3,5-trimethylbenzene	ug/m3	<0.50	0.50	<0.50	<0.50	0.50	<0.50	0.50	8640049

RDL = Reportable Detection Limit
N/A = Not Applicable

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Maxxam Job #: B739990
Report Date: 2017/05/31

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

DRYCLEANING ORGANICS IN AIR BY TD (AIR)

Maxxam ID		RC9234		RC9235	RC9236		RC9237		
Sampling Date		2017/05/24 09:25		2017/05/24 09:55	2017/05/24 10:30		2017/05/24 10:55		
COC Number		517035-31-01		517035-31-01	517035-31-01		517035-31-01		
	UNITS	SV17-1	RDL	SV17-2	SV17-3	RDL	SV17-4	RDL	QC Batch
Vinyl chloride	ug/m3	1.5	0.50	1.9	2.3	0.50	<0.50	0.50	8640049
m & p-Xylene	ug/m3	<2.5	2.5	<2.5	<2.5	2.5	<2.5	2.5	8640049
o-Xylene	ug/m3	<2.5	2.5	<2.5	<2.5	2.5	<2.5	2.5	8640049
Xylenes (Total)	ug/m3	<2.5	2.5	<2.5	<2.5	2.5	<2.5	2.5	8640049
Volatiles									
Benzene	ug	0.034 (1)	0.0015	0.014	0.017 (1)	0.0015	0.013	0.0015	8638082
1,3-Butadiene	ug	0.057 (1)	0.0050	1.5	0.20	0.0050	0.10	0.0050	8638082
C6-C13 Hydrocarbons (VHv)	ug	3.1	0.50	3.9	3.3	0.50	2.7	0.50	8638082
Carbon tetrachloride	ug	<0.0015	0.0015	<0.0030 (2)	0.0043 (3)	0.0030	<0.0030 (2)	0.0030	8638082
Chloroethane	ug	<0.010	0.010	<0.020 (2)	<0.020 (2)	0.020	<0.020 (2)	0.020	8638082
Chloroform	ug	0.32	0.0020	3.8 (4)	2.0 (4)	0.10	1.5	0.0020	8638082
n-Decane	ug	0.015 (1)	0.010	0.017	<0.010	0.010	0.011	0.010	8638082
1,2-dibromoethane	ug	<0.0020	0.0020	<0.0020	<0.0020	0.0020	<0.0020	0.0020	8638082
1,1-dichloroethane	ug	<0.0020	0.0020	<0.0020	<0.0020	0.0020	<0.0020	0.0020	8638082
1,2-dichloroethane	ug	<0.0010	0.0010	<0.0010	<0.0010	0.0010	<0.0010	0.0010	8638082
1,1-dichloroethene	ug	0.033	0.0020	<0.0020	0.0024	0.0020	<0.0020	0.0020	8638082
cis-1,2-dichloroethene	ug	<0.0020	0.0020	0.0037	0.0072	0.0020	<0.0020	0.0020	8638082
trans-1,2-dichloroethene	ug	<0.0020	0.0020	0.072	0.35	0.0020	0.0041	0.0020	8638082
Dichloromethane	ug	<0.020	0.020	<0.020	<0.020	0.020	<0.020	0.020	8638082
Ethylbenzene	ug	<0.010	0.010	<0.010	<0.010	0.010	<0.010	0.010	8638082
n-Hexane	ug	0.23	0.010	<0.010	0.033	0.010	<0.010	0.010	8638082
Isopropylbenzene	ug	<0.0020	0.0020	<0.0020	<0.0020	0.0020	<0.0020	0.0020	8638082
Methylcyclohexane	ug	0.047	0.0020	0.0062	0.033	0.0020	0.0064	0.0020	8638082
Methyl-tert-butylether (MTBE)	ug	<0.010	0.010	<0.010	<0.010	0.010	<0.010	0.010	8638082
Naphthalene	ug	<0.010	0.010	<0.010	<0.010	0.010	<0.010	0.010	8638082
Styrene	ug	<0.010	0.010	<0.010	<0.010	0.010	<0.010	0.010	8638082
Tetrachloroethene	ug	0.31	0.0020	2.7 (4)	16 (4)	0.10	1.9	0.0020	8638082
Toluene	ug	0.011	0.0020	0.011	0.013	0.0020	0.0043	0.0020	8638082
1,1,1-trichloroethane	ug	<0.0020	0.0020	<0.0020	<0.0020	0.0020	<0.0020	0.0020	8638082

RDL = Reportable Detection Limit

(1) Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.

(2) CCV below acceptance criteria. RDL raised due to potential for low bias.

(3) CCV below acceptance criteria. RDL raised due to potential for low bias.
The result may be biased low.

(4) Detection limits raised due to dilution to bring analyte within the calibrated range.

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Maxxam Job #: B739990
Report Date: 2017/05/31

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

DRYCLEANING ORGANICS IN AIR BY TD (AIR)

Maxxam ID		RC9234		RC9235	RC9236		RC9237		
Sampling Date		2017/05/24 09:25		2017/05/24 09:55	2017/05/24 10:30		2017/05/24 10:55		
COC Number		517035-31-01		517035-31-01	517035-31-01		517035-31-01		
	UNITS	SV17-1	RDL	SV17-2	SV17-3	RDL	SV17-4	RDL	QC Batch
Trichloroethene	ug	0.0042	0.0010	0.059	0.57	0.0010	0.013	0.0010	8638082
1,2,4-trimethylbenzene	ug	0.0026	0.0020	<0.0020	<0.0020	0.0020	0.0033	0.0020	8638082
1,3,5-trimethylbenzene	ug	<0.0020	0.0020	<0.0020	<0.0020	0.0020	<0.0020	0.0020	8638082
Vinyl chloride	ug	0.0059	0.0020	0.0075	0.0091	0.0020	<0.0020	0.0020	8638082
m & p-Xylene	ug	<0.010	0.010	<0.010	<0.010	0.010	<0.010	0.010	8638082
o-Xylene	ug	<0.010	0.010	<0.010	<0.010	0.010	<0.010	0.010	8638082
Xylenes (Total)	ug	<0.010	0.010	<0.010	<0.010	0.010	<0.010	0.010	8638082
RDL = Reportable Detection Limit									

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Maxxam Job #: B739990
Report Date: 2017/05/31

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

DRYCLEANING ORGANICS IN AIR BY TD (AIR)

Maxxam ID		RC9238		RC9239		RC9240		
Sampling Date		2017/05/24 13:55		2017/05/24 12:05		2017/05/24 10:30		
COC Number		517035-31-01		517035-31-01		517035-31-01		
	UNITS	SV17-5	RDL	SV17-6	RDL	SV17-A	RDL	QC Batch
Field Parameters								
Duration	min	20	N/A	20	N/A	20	N/A	ONSITE
Flow Rate	L/min	0.2	N/A	0.2	N/A	0.2	N/A	ONSITE
Air Analysis								
Benzene	ug/m3	8.7	0.38	<0.38	0.38	5.8	0.38	8640049
1,3-Butadiene	ug/m3	310	1.3	<1.3	1.3	81	1.3	8640049
C6-C13 Hydrocarbons (VHv)	ug/m3	2100	130	<130	130	1100	130	8640049
C6-C13 Hydrocarbons (VPHv)	ug/m3	2000	130	<130	130	1100	130	8640049
Carbon tetrachloride	ug/m3	0.78	0.75	<0.38	0.38	1.4	0.75	8640049
Chloroethane	ug/m3	<5.0	5.0	<5.0	5.0	<5.0	5.0	8640049
Chloroform	ug/m3	480	25	<0.50	0.50	440	25	8640049
n-Decane	ug/m3	<2.5	2.5	<2.5	2.5	<2.5	2.5	8640049
1,2-dibromoethane	ug/m3	<0.50	0.50	<0.50	0.50	<0.50	0.50	8640049
1,1-dichloroethane	ug/m3	<0.50	0.50	<0.50	0.50	<0.50	0.50	8640049
1,2-dichloroethane	ug/m3	<0.25	0.25	<0.25	0.25	<0.25	0.25	8640049
1,1-dichloroethene	ug/m3	0.55	0.50	<0.50	0.50	<0.50	0.50	8640049
cis-1,2-dichloroethene	ug/m3	1.2	0.50	<0.50	0.50	3.4	0.50	8640049
trans-1,2-dichloroethene	ug/m3	22	0.50	<0.50	0.50	240	0.50	8640049
Dichloromethane	ug/m3	<5.0	5.0	<5.0	5.0	<5.0	5.0	8640049
Ethylbenzene	ug/m3	<2.5	2.5	<2.5	2.5	<2.5	2.5	8640049
n-Hexane	ug/m3	130	2.5	<2.5	2.5	4.0	2.5	8640049
Isopropylbenzene	ug/m3	<0.50	0.50	<0.50	0.50	<0.50	0.50	8640049
Methylcyclohexane	ug/m3	12	0.50	0.53	0.50	7.9	0.50	8640049
Methyl-tert-butylether (MTBE)	ug/m3	<2.5	2.5	<2.5	2.5	<2.5	2.5	8640049
Naphthalene	ug/m3	4.4	2.5	<2.5	2.5	<2.5	2.5	8640049
Styrene	ug/m3	<2.5	2.5	<2.5	2.5	<2.5	2.5	8640049
Tetrachloroethene	ug/m3	5600	25	2.2	0.50	4700	25	8640049
Toluene	ug/m3	1.8	0.50	<0.50	0.50	2.6	0.50	8640049
1,1,1-trichloroethane	ug/m3	<0.50	0.50	<0.50	0.50	<0.50	0.50	8640049
Trichloroethene	ug/m3	10	0.25	<0.25	0.25	250	0.25	8640049
1,2,4-trimethylbenzene	ug/m3	1.2	0.50	<0.50	0.50	<0.50	0.50	8640049
1,3,5-trimethylbenzene	ug/m3	<0.50	0.50	<0.50	0.50	<0.50	0.50	8640049

RDL = Reportable Detection Limit
N/A = Not Applicable

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Maxxam Job #: B739990
Report Date: 2017/05/31

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

DRYCLEANING ORGANICS IN AIR BY TD (AIR)

Maxxam ID		RC9238		RC9239		RC9240		
Sampling Date		2017/05/24 13:55		2017/05/24 12:05		2017/05/24 10:30		
COC Number		517035-31-01		517035-31-01		517035-31-01		
	UNITS	SV17-5	RDL	SV17-6	RDL	SV17-A	RDL	QC Batch
Vinyl chloride	ug/m3	1.9	0.50	<0.50	0.50	2.5	0.50	8640049
m & p-Xylene	ug/m3	<2.5	2.5	<2.5	2.5	<2.5	2.5	8640049
o-Xylene	ug/m3	<2.5	2.5	<2.5	2.5	<2.5	2.5	8640049
Xylenes (Total)	ug/m3	<2.5	2.5	<2.5	2.5	<2.5	2.5	8640049
Volatiles								
Benzene	ug	0.035 (1)	0.0015	<0.0015	0.0015	0.023 (1)	0.0015	8638082
1,3-Butadiene	ug	1.2	0.0050	<0.0050	0.0050	0.32	0.0050	8638082
C6-C13 Hydrocarbons (VHv)	ug	8.6	0.50	<0.50	0.50	4.5	0.50	8638082
Carbon tetrachloride	ug	0.0031 (2)	0.0030	<0.0015	0.0015	0.0054 (2)	0.0030	8638082
Chloroethane	ug	<0.020 (3)	0.020	<0.020 (3)	0.020	<0.020 (3)	0.020	8638082
Chloroform	ug	1.9 (4)	0.10	<0.0020	0.0020	1.8 (4)	0.10	8638082
n-Decane	ug	<0.010	0.010	<0.010	0.010	<0.010	0.010	8638082
1,2-dibromoethane	ug	<0.0020	0.0020	<0.0020	0.0020	<0.0020	0.0020	8638082
1,1-dichloroethane	ug	<0.0020	0.0020	<0.0020	0.0020	<0.0020	0.0020	8638082
1,2-dichloroethane	ug	<0.0010	0.0010	<0.0010	0.0010	<0.0010	0.0010	8638082
1,1-dichloroethene	ug	0.0022	0.0020	<0.0020	0.0020	<0.0020	0.0020	8638082
cis-1,2-dichloroethene	ug	0.0047	0.0020	<0.0020	0.0020	0.014	0.0020	8638082
trans-1,2-dichloroethene	ug	0.087	0.0020	<0.0020	0.0020	0.96	0.0020	8638082
Dichloromethane	ug	<0.020	0.020	<0.020	0.020	<0.020	0.020	8638082
Ethylbenzene	ug	<0.010	0.010	<0.010	0.010	<0.010	0.010	8638082
n-Hexane	ug	0.52	0.010	<0.010	0.010	0.016	0.010	8638082
Isopropylbenzene	ug	<0.0020	0.0020	<0.0020	0.0020	<0.0020	0.0020	8638082
Methylcyclohexane	ug	0.047	0.0020	0.0021	0.0020	0.032	0.0020	8638082
Methyl-tert-butylether (MTBE)	ug	<0.010	0.010	<0.010	0.010	<0.010	0.010	8638082
Naphthalene	ug	0.017	0.010	<0.010	0.010	<0.010	0.010	8638082
Styrene	ug	<0.010	0.010	<0.010	0.010	<0.010	0.010	8638082
Tetrachloroethene	ug	22 (4)	0.10	0.0087 (5)	0.0020	19 (4)	0.10	8638082

RDL = Reportable Detection Limit

(1) Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.

(2) CCV below acceptance criteria. RDL raised due to potential for low bias.
The result may be biased low.

(3) CCV below acceptance criteria. RDL raised due to potential for low bias.

(4) Detection limits raised due to dilution to bring analyte within the calibrated range.

(5) Result may be biased high due to carry over contamination from previous high sample (RC9238-01).

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Maxxam Job #: B739990
Report Date: 2017/05/31

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

DRYCLEANING ORGANICS IN AIR BY TD (AIR)

Maxxam ID		RC9238		RC9239		RC9240		
Sampling Date		2017/05/24 13:55		2017/05/24 12:05		2017/05/24 10:30		
COC Number		517035-31-01		517035-31-01		517035-31-01		
	UNITS	SV17-5	RDL	SV17-6	RDL	SV17-A	RDL	QC Batch
Toluene	ug	0.0072	0.0020	<0.0020	0.0020	0.010	0.0020	8638082
1,1,1-trichloroethane	ug	<0.0020	0.0020	<0.0020	0.0020	<0.0020	0.0020	8638082
Trichloroethene	ug	0.041	0.0010	<0.0010	0.0010	0.99	0.0010	8638082
1,2,4-trimethylbenzene	ug	0.0046	0.0020	<0.0020	0.0020	<0.0020	0.0020	8638082
1,3,5-trimethylbenzene	ug	<0.0020	0.0020	<0.0020	0.0020	<0.0020	0.0020	8638082
Vinyl chloride	ug	0.0076	0.0020	<0.0020	0.0020	0.0099	0.0020	8638082
m & p-Xylene	ug	<0.010	0.010	<0.010	0.010	<0.010	0.010	8638082
o-Xylene	ug	<0.010	0.010	<0.010	0.010	<0.010	0.010	8638082
Xylenes (Total)	ug	<0.010	0.010	<0.010	0.010	<0.010	0.010	8638082
RDL = Reportable Detection Limit								

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Maxxam Job #: B739990
Report Date: 2017/05/31

KEYSTONE ENVIRONMENTAL LTD
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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	7.7°C

Results relate only to the items tested.

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Maxxam Job #: B739990
Report Date: 2017/05/31

QUALITY ASSURANCE REPORT

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

			Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8638082	1,1,1-trichloroethane	2017/05/26	91	60 - 140	<0.0020	ug	NC	40
8638082	1,1-dichloroethane	2017/05/26	100	60 - 140	<0.0020	ug	NC	40
8638082	1,1-dichloroethene	2017/05/26	92	60 - 140	<0.0020	ug	NC	40
8638082	1,2,4-trimethylbenzene	2017/05/26	87	60 - 140	<0.0020	ug	78 (2)	40
8638082	1,2-dibromoethane	2017/05/26	100	60 - 140	<0.0020	ug	NC	40
8638082	1,2-dichloroethane	2017/05/26	104	60 - 140	<0.0010	ug	NC	40
8638082	1,3,5-trimethylbenzene	2017/05/26	112	60 - 140	<0.0020	ug	NC	40
8638082	1,3-Butadiene	2017/05/26	82	50 - 150	<0.0050	ug	NC	40
8638082	Benzene	2017/05/26	89	60 - 140	<0.0015	ug	39	40
8638082	C6-C13 Hydrocarbons (VHv)	2017/05/26	97	60 - 140	<0.50	ug	39	40
8638082	Carbon tetrachloride	2017/05/26	125	60 - 140	<0.0015	ug	29	40
8638082	Chloroethane	2017/05/23	81	50 - 150	<0.020 (1)	ug		
8638082	Chloroform	2017/05/23	87	60 - 140	<0.0020	ug		
8638082	cis-1,2-dichloroethene	2017/05/26	97	60 - 140	<0.0020	ug	NC	40
8638082	Dichloromethane	2017/05/26	93	50 - 150	<0.020	ug	NC	40
8638082	Ethylbenzene	2017/05/26	84	60 - 140	<0.010	ug	NC	40
8638082	Isopropylbenzene	2017/05/26	91	60 - 140	<0.0020	ug	NC	40
8638082	m & p-Xylene	2017/05/26	78	60 - 140	<0.010	ug	NC	40
8638082	Methylcyclohexane	2017/05/26	76	60 - 140	<0.0020	ug	11	40
8638082	Methyl-tert-butylether (MTBE)	2017/05/26	86	50 - 150	<0.010	ug	NC	40
8638082	Naphthalene	2017/05/26	128	60 - 140	<0.010	ug	NC	40
8638082	n-Decane	2017/05/26	95	60 - 140	<0.010	ug	61 (2)	40
8638082	n-Hexane	2017/05/26	72	60 - 140	<0.010	ug	NC	40
8638082	o-Xylene	2017/05/26	98	60 - 140	<0.010	ug	NC	40
8638082	Styrene	2017/05/26			<0.010	ug	NC	40
8638082	Tetrachloroethene	2017/05/26	90	60 - 140	<0.0020	ug	147 (2)	40
8638082	Toluene	2017/05/26	82	60 - 140	<0.0020	ug	16	40
8638082	trans-1,2-dichloroethene	2017/05/26	92	60 - 140	<0.0020	ug	NC	40
8638082	Trichloroethene	2017/05/26	88	60 - 140	<0.0010	ug	NC	40
8638082	Vinyl chloride	2017/05/26	80	50 - 150	<0.0020	ug	NC	40

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QUALITY ASSURANCE REPORT(CONT'D)

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

			Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8638082	Xylenes (Total)	2017/05/26			<0.010	ug	NC	40

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

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.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) CCV below acceptance criteria. RDL raised due to potential for low bias.

(2) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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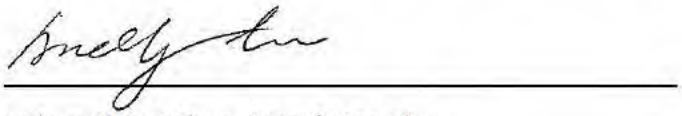
Maxxam Job #: B739990
Report Date: 2017/05/31

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526
Sampler Initials: JG

VALIDATION SIGNATURE PAGE

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



Andy Lu, Ph.D., P.Chem., Scientific Specialist

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.

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Maxxam Analytics International Corporation o/a Maxxam Analytics
4606 Canada Way, Burnaby, British Columbia Canada V5G 1K5 Tel:(604) 734 7276 Toll-free:800-563-6266 Fax:(604) 731 2386 www.maxxam.ca

Chain Of Custody Record

Page 1 of 1

INVOICE TO:		Report Information		Project Information		Laboratory Use Only	
Company Name	#3763 KEYSTONE ENVIRONMENTAL LTD	Company Name	Keystone Environmental	Quotation #	B41651	Maxxam Job #	Bottle Order #:
Contact Name	Kevin Wong	Contact Name	Kevin W./ Franchi M./ Jason G.	P.O. #		B739990	517035
Address	SUITE 320 4400 DOMINION STREET	Address		Project #	19526	Chain Of Custody Record	Project Manager
	BURNABY BC V5G 4G3			Project Name		C#517035-01-01	Amandeep Nagra
Phone	(604) 430-0671 x Fax: (604) 430-0672 x	Phone	Fax:	Site #			
Email		Email		Sampled By	Jason Crafstrom		

Regulatory Criteria:
- [x] CSR
- [ ] CCME
- [ ] BC Water Quality
- [ ] Other: _____

Special Instructions:

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

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

Regular (Standard) TAT: [x]
(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)
1 DAY [ ] 2 Day [ ] 3 Day [ ] Date Required: _____ [ ]
Rush Confirmation Number: _____ (call lab for #)

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered ? (Y / N)	PUMP FLOW RATE (L/MINUTE)	PUMP NUMBER	PUMP RUN TIME (MINUTES)	SV - *FULL SCAN VOCS (NO MTBE)	SV - *BTEX/VPH	SV - *CSAP LIST - DIESEL (INCL. NAPTH)	SV - *CSAP LIST - GASOLINE (INCL. NAPHT.)	SV - *CSAP LIST - DRYCLEANER	SV - *ISOPROPANOL	SV - *NAPHTHALENE	# of Bottles	Comments
1		SV17-1	17/05/24	0925	SV		0.2	3242	20				X	X			1	G0151824
2		SV17-2		0955			0.2	3237	20				X	X			1	G0155764
3		SV17-3		1030			0.2	3250	20				X	X			1	G0152271
4		SV17-4		1055			0.2	3242	20				X	X			1	G0154678
5		SV17-5		1355			0.2	3242	20				X	X			1	G0151976
6		SV17-6		1205			0.2	3242	20				X	X			1	G0154684
7		SV17-A		1030			0.2	3250	20				X	X			1	G0150947
8																		
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	Lab Use Only: Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
Jason Crafstrom	17/05/24	17:35	JWAHNE NOV	2017/05/24	17:40	N/A	[ ]	7.8, 8	[ ] Yes [ ] No

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO MAXXAM'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.MAXXAM.CA/TERMS.

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

White: Maxxam Yellow: Client

B739990_COC

Maxxam Analytics International Corporation o/a Maxxam Analytics

Maxxam
A Bureau Veritas Group Company

Success Through Science®

Your Project #: 13526-3
Your C.O.C. #: 524892-34-01

Attention:Francini Martins

KEYSTONE ENVIRONMENTAL LTD
SUITE 320
4400 DOMINION STREET
BURNABY, BC
CANADA V5G 4G3

Report Date: 2017/07/11
Report #: R2410552
Version: 1 Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B756205
Received: 2017/07/10, 13:10

Sample Matrix: Air
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
VOCs by TD – Complete List Calc (ug/m3)	1	N/A	2017/07/10	BBY5SOP-00031	BCMOE BCLM Jun2009 m
VOCs by TD Tube – Complete List (ug)	1	N/A	2017/07/10	BBY5SOP-00031	BCMOE BCLM Jun2009 m
Duration	1	N/A	2017/07/10	N/A	Field Data
Flow Rate (L/min)	1	N/A	2017/07/10	N/A	Field Data
Volatile HC-BTEX Calculation for Air	1	N/A	2017/07/11		

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Maxxam Analytics International Corporation o/a Maxxam Analytics Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Your Project #: 13526-3
Your C.O.C. #: 524892-34-01

Attention:Francini Martins

KEYSTONE ENVIRONMENTAL LTD
SUITE 320
4400 DOMINION STREET
BURNABY, BC
CANADA V5G 4G3

Report Date: 2017/07/11
Report #: R2410552
Version: 1 Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B756205
Received: 2017/07/10, 13:10

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Amandeep Nagra, Account Specialist
Email: ANagra@maxxam.ca
Phone# (604)639 2602

==========

This report has been generated and distributed using a secure automated process.
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.

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Maxxam Job #: B756205
Report Date: 2017/07/11

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526-3
Sampler Initials: JG

DRYCLEANING ORGANICS IN AIR BY TD (AIR)

Maxxam ID		RM0186		
Sampling Date		2017/07/10 11:45		
COC Number		524892-34-01		
	UNITS	SV17-7	RDL	QC Batch
Field Parameters				
Duration	min	20	N/A	ONSITE
Flow Rate	L/min	0.2	N/A	ONSITE
Air Analysis				
Benzene	ug/m3	2.8	0.38	8689978
1,3-Butadiene	ug/m3	<0.50	0.50	8689978
C6-C13 Hydrocarbons (VHv)	ug/m3	<130	130	8689978
C6-C13 Hydrocarbons (VPHv)	ug/m3	<130	130	8689978
Carbon tetrachloride	ug/m3	1.1	0.25	8689978
Chloroethane	ug/m3	<25	25	8689978
Chloroform	ug/m3	<0.50	0.50	8689978
n-Decane	ug/m3	<25	25	8689978
1,2-dibromoethane	ug/m3	<0.13	0.13	8689978
1,1-dichloroethane	ug/m3	<2.5	2.5	8689978
1,2-dichloroethane	ug/m3	<0.50	0.50	8689978
1,1-dichloroethene	ug/m3	<2.5	2.5	8689978
cis-1,2-dichloroethene	ug/m3	<2.5	2.5	8689978
trans-1,2-dichloroethene	ug/m3	<2.5	2.5	8689978
Dichloromethane	ug/m3	<13	13	8689978
Ethylbenzene	ug/m3	<25	25	8689978
n-Hexane	ug/m3	<25	25	8689978
Isopropylbenzene	ug/m3	<0.50	0.50	8689978
Methylcyclohexane	ug/m3	<25	25	8689978
Methyl-tert-butylether (MTBE)	ug/m3	<25	25	8689978
Naphthalene	ug/m3	5.4	0.75	8689978
Styrene	ug/m3	<25	25	8689978
Tetrachloroethene	ug/m3	8.1	2.5	8689978
Toluene	ug/m3	<25	25	8689978
1,1,1-trichloroethane	ug/m3	<0.50	0.50	8689978
Trichloroethene	ug/m3	<0.25	0.25	8689978
1,2,4-trimethylbenzene	ug/m3	5.7	0.50	8689978
1,3,5-trimethylbenzene	ug/m3	1.6	0.50	8689978

RDL = Reportable Detection Limit
N/A = Not Applicable

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Maxxam Job #: B756205
Report Date: 2017/07/11

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526-3
Sampler Initials: JG

DRYCLEANING ORGANICS IN AIR BY TD (AIR)

Maxxam ID		RM0186		
Sampling Date		2017/07/10 11:45		
COC Number		524892-34-01		
	UNITS	SV17-7	RDL	QC Batch
Vinyl chloride	ug/m3	<0.25	0.25	8689978
m & p-Xylene	ug/m3	16	2.5	8689978
o-Xylene	ug/m3	3.4	2.5	8689978
Xylenes (Total)	ug/m3	20	2.5	8689978
Volatiles				
Benzene	ug	0.011	0.0015	8682052
1,3-Butadiene	ug	<0.0020	0.0020	8682052
C6-C13 Hydrocarbons (VPHv)	ug	<0.50	0.50	8689981
C6-C13 Hydrocarbons (VHv)	ug	<0.50	0.50	8682052
Carbon tetrachloride	ug	0.0043	0.0010	8682052
Chloroethane	ug	<0.10	0.10	8682052
Chloroform	ug	<0.0020	0.0020	8682052
n-Decane	ug	<0.10	0.10	8682052
1,2-dibromoethane	ug	<0.00050	0.00050	8682052
1,1-dichloroethane	ug	<0.010	0.010	8682052
1,2-dichloroethane	ug	<0.0020	0.0020	8682052
1,1-dichloroethene	ug	<0.010	0.010	8682052
cis-1,2-dichloroethene	ug	<0.010	0.010	8682052
trans-1,2-dichloroethene	ug	<0.010	0.010	8682052
Dichloromethane	ug	<0.050	0.050	8682052
Ethylbenzene	ug	<0.10	0.10	8682052
n-Hexane	ug	<0.10	0.10	8682052
Isopropylbenzene	ug	<0.0020	0.0020	8682052
Methylcyclohexane	ug	<0.10	0.10	8682052
Methyl-tert-butylether (MTBE)	ug	<0.10	0.10	8682052
Naphthalene	ug	0.022	0.0030	8682052
Styrene	ug	<0.10	0.10	8682052
Tetrachloroethene	ug	0.033	0.010	8682052
Toluene	ug	<0.10	0.10	8682052
1,1,1-trichloroethane	ug	<0.0020	0.0020	8682052
Trichloroethene	ug	<0.0010	0.0010	8682052
1,2,4-trimethylbenzene	ug	0.023	0.0020	8682052
1,3,5-trimethylbenzene	ug	0.0063	0.0020	8682052
RDL = Reportable Detection Limit				

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Maxxam Job #: B756205
Report Date: 2017/07/11

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526-3
Sampler Initials: JG

DRYCLEANING ORGANICS IN AIR BY TD (AIR)

Maxxam ID		RM0186		
Sampling Date		2017/07/10 11:45		
COC Number		524892-34-01		
	UNITS	SV17-7	RDL	QC Batch
Vinyl chloride	ug	<0.0010	0.0010	8682052
m & p-Xylene	ug	0.065	0.010	8682052
o-Xylene	ug	0.014	0.010	8682052
Xylenes (Total)	ug	0.078	0.010	8682052
RDL = Reportable Detection Limit				

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Maxxam Job #: B756205
Report Date: 2017/07/11

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526-3
Sampler Initials: JG

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	13.7°C

Sample RM0186 [SV17-7] : Signal suppression was observed on internal standards added to TD-VOC samples as a result of matrix interference. Results may be biased high. Detection limits not impacted.

Results relate only to the items tested.

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Maxxam Job #: B756205
Report Date: 2017/07/11

QUALITY ASSURANCE REPORT

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526-3
Sampler Initials: JG

			Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8682052	1,1,1-trichloroethane	2017/07/02	108	60 - 140	<0.0020	ug	NC	40
8682052	1,1-dichloroethane	2017/06/30	104	60 - 140	<0.0020	ug		
8682052	1,1-dichloroethene	2017/07/02	95	60 - 140	<0.0020	ug	NC	40
8682052	1,2,4-trimethylbenzene	2017/07/02	79	60 - 140	<0.0020	ug	NC	40
8682052	1,2-dibromoethane	2017/07/02	95	60 - 140	<0.0020	ug	NC	40
8682052	1,2-dichloroethane	2017/07/02	86	60 - 140	<0.0010	ug	NC	40
8682052	1,3,5-trimethylbenzene	2017/07/02	79	60 - 140	<0.0020	ug	NC	40
8682052	1,3-Butadiene	2017/07/02	99	50 - 150	<0.0050	ug	NC	40
8682052	Benzene	2017/07/02	85	60 - 140	<0.0015	ug	NC	40
8682052	C6-C13 Hydrocarbons (VHv)	2017/07/02	102	60 - 140	<0.50	ug	NC	40
8682052	Carbon tetrachloride	2017/06/30	114	60 - 140	<0.0015	ug		
8682052	Chloroethane	2017/07/02	134	50 - 150	<0.010	ug	NC	40
8682052	Chloroform	2017/06/30	90	60 - 140	<0.0020	ug		
8682052	cis-1,2-dichloroethene	2017/07/02	97	60 - 140	<0.0020	ug	NC	40
8682052	Dichloromethane	2017/06/30	98	50 - 150	<0.020	ug		
8682052	Ethylbenzene	2017/07/02	64	60 - 140	<0.010	ug	NC	40
8682052	Isopropylbenzene	2017/07/02	99	60 - 140	<0.0020	ug	NC	40
8682052	m & p-Xylene	2017/07/02	61	60 - 140	<0.010	ug	NC	40
8682052	Methylcyclohexane	2017/07/02	76	60 - 140	<0.0020	ug	NC	40
8682052	Methyl-tert-butylether (MTBE)	2017/07/02	92	50 - 150	<0.010	ug	NC	40
8682052	Naphthalene	2017/07/02	111	60 - 140	<0.010	ug	NC	40
8682052	n-Decane	2017/07/02	86	60 - 140	<0.010	ug	NC	40
8682052	n-Hexane	2017/07/02	92	60 - 140	<0.010	ug	13	40
8682052	o-Xylene	2017/07/02	72	60 - 140	<0.010	ug	NC	40
8682052	Styrene	2017/07/02			<0.010	ug	NC	40
8682052	Tetrachloroethene	2017/07/02	86	60 - 140	<0.0020	ug	NC	40
8682052	Toluene	2017/07/02	59 (1)	60 - 140	<0.0020	ug	68 (2)	40
8682052	trans-1,2-dichloroethene	2017/07/02	85	60 - 140	<0.0020	ug	NC	40
8682052	Trichloroethene	2017/07/02	85	60 - 140	<0.0010	ug	NC	40
8682052	Vinyl chloride	2017/07/02	98	50 - 150	<0.0020	ug	NC	40

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Maxxam Job #: B756205
Report Date: 2017/07/11

QUALITY ASSURANCE REPORT(CONT'D)

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526-3
Sampler Initials: JG

			Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8682052	Xylenes (Total)	2017/07/02			<0.010	ug	NC	40

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

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.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Blank Spike outside acceptance criteria (10% of analytes failure allowed).

(2) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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Maxxam Job #: B756205
Report Date: 2017/07/11

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 13526-3
Sampler Initials: JG

VALIDATION SIGNATURE PAGE

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

Andy Lu, Ph.D., P.Chem., Scientific Specialist

Dijana Bradaric

Dijana Bradaric, BBY Customer Service

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4606 Canada Way, Burnaby, British Columbia Canada V5G 1K5 Tel (604) 734 7276 Toll-free 800-563-6266 Fax (604) 731 2386 www.maxxam.ca

B756205_COC

INVOICE TO:		Report Information		Project Information		Bottle Order #
Company Name	#3763 KEYSTONE ENVIRONMENTAL LTD	Company Name	Keystone Environmental	Quotation #	B41651	
Contact Name	Francini Martins	Contact Name	Francini M. / Jason G.	P.O. #		
Address	SUITE 320 4400 DOMINION STREET	Address		Project #	13526-3	
	BURNABY BC V5G 4G3			Project Name		Project Manager
Phone	(604) 430-0671 x Fax (604) 430-0672 x	Phone	Fax	Site #		Amandeep Nagra
Email		Email		Sampled By	Jason Gratton	

C#524802 34-0

Regulatory Criteria:
- [X] CSR
- [ ] CCME
- [ ] BC Water Quality
- [ ] Other

Special Instructions

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

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered ? (Y / N)	PUMP FLOW RATE (L/MINUTE)	PUMP NUMBER	PUMP RUN TIME (MINUTES)	SV - *FULL SCAN VOCS (NO MTBE)	SV - *BTEX/VPH	SV - *CSAP LIST - DIESEL (INCL NAPTH)	SV - *CSAP LIST - GASOLINE (INCL. NAPHT.)	SV - *CSAP LIST - DRYCLEANER	SV - *ISOPROPANOL	SV - *NAPHTHALENE	# (1 Bottles	Comments
1		SV17-7	2017/07/10	1145	SV		0.2	D00026	20				X	X			1	G0151974
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

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)
1 DAY [X] 2 Day [ ] 3 Day [ ] Date Required: _____
Rush Confirmation Number: _____ (call lab for #)

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	* RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Lab Use Only: Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
Jason Gratton	17/07/10	13:10	Laurel Bolmer	2017/07/10	13:10	N/A	[ ]	14 13 14	[ ] Yes [ ] No NA

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO MAXXAM'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGEMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.MAXXAM.CA/TERMS.
* 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.

Ice present

White: Maxxam Yellow: Client