H. Laboratory Testing Results of Underground Pipeline Trench of EPSS1 (i.e. NCTS2)

CERTIFICATE OF ANALYSIS

Client	: MOTT MACDONALD HONG KONG LIMITED	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
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Project	: SOIL TESTING AT HONG KONG AIRPORT			Date Samples Received	: 16-Mar-2020
Order number	: ----	Quote number	: HKE/1861c/2018_V2	Issue Date	: 25-Mar-2020
C-O-C number	: H014977			No. of samples received	: 5
Site	: CONTRACT NO. C3503 TERMINAL 2 FOUNDATION AND SUBSTRUCTURE WORKS			No. of samples analysed	: 5

Hong Kong Accreditation Service (HKAS) has accredited this laboratory, ALS Technichem (HK) Pty Ltd (Reg. No. HOKLAS 066) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories.

This document has been signed by those names that appear on this report and are the authorised signatories.

Signatories	*Position*	*Authorised results for*
Anh Ngoc Huynh .	Senior Chemist	Organics_ENV
Chan Siu Ming , Vico	Manager - Inorganics	Inorganics
Wong Wing , Kenneth	Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with this reference. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Testing period is from 16-Mar-2020 to 24-Mar-2020.

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order: HK2009791

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc., if any) is provided by client.

The result(s) of soil sample(s) was / were reported on dry weight basis.

Water sample(s) were filtered prior to dissolved metal analysis.

EP070 is the numeric code for internal use. Test method for C6-C9 Fraction of TPH is EP071.

Sample(s) as received, digested by In-house method E-ASTM D3974-09 prior to determination of metals. The In-house method is developed based on ASTM D3974-09 method.

Analytical Results

Sub-Matrix: SOIL			Client sample ID	NCTS2	NCTS2 (Duplicate)	----	----	----
			Client sampling date / time	16-Mar-2020	16-Mar-2020	----	----	----
Compound	CAS Number	LOR	Unit	HK2009791-004	HK2009791-005	-------	-------	-------
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103°C)	----	0.1	%	4.4	4.5	----	----	----
EG: Metals and Major Cations								
EG020: Lead	7439-92-1	1	mg/kg	26	28	----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)								
EP076HK: Naphthalene	91-20-3	0.500	mg/kg	<0.500	<0.500	----	----	----
EP076HK: Acenaphthylene	208-96-8	0.500	mg/kg	<0.500	<0.500	----	----	----
EP076HK: Acenaphthene	83-32-9	0.500	mg/kg	<0.500	<0.500	----	----	----
EP076HK: Fluorene	86-73-7	0.500	mg/kg	<0.500	<0.500	----	----	----
EP076HK: Phenanthrene	85-01-8	0.500	mg/kg	<0.500	<0.500	----	----	----
EP076HK: Anthracene	120-12-7	0.500	mg/kg	<0.500	<0.500	----	----	----
EP076HK: Fluoranthene	206-44-0	0.500	mg/kg	<0.500	<0.500	----	----	----
EP076HK: Pyrene	129-00-0	0.500	mg/kg	<0.500	<0.500	----	----	----
EP076HK: Benz(a)anthracene	56-55-3	0.500	mg/kg	<0.500	<0.500	----	----	----
EP076HK: Chrysene	218-01-9	0.500	mg/kg	<0.500	<0.500	----	----	----
EP076HK: Benzo(b)fluoranthene	205-99-2	0.500	mg/kg	<0.500	<0.500	----	----	----
EP076HK: Benzo(k)fluoranthene	207-08-9	0.500	mg/kg	<0.500	<0.500	----	----	----
EP076HK: Benzo(a)pyrene	50-32-8	0.500	mg/kg	<0.500	<0.500	----	----	----
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	0.500	mg/kg	<0.500	<0.500	----	----	----
EP076HK: Dibenz(a.h)anthracene	53-70-3	0.500	mg/kg	<0.500	<0.500	----	----	----
EP076HK: Benzo(g.h.i)perylene	191-24-2	0.500	mg/kg	<0.500	<0.500	----	----	----
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH)								
EP070HK_SR: C6 - C8 Fraction	----	5	mg/kg	<5	<5	----	----	----
EP071HK_SR: C9 - C16 Fraction	----	200	mg/kg	<200	<200	----	----	----
EP071HK_SR: C17 - C35 Fraction	----	500	mg/kg	<500	<500	----	----	----
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH)								
EP074_SR: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	----	----	----
EP074_SR: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	----	----	----
EP074_SR: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	----	----	----

Sub-Matrix: SOIL			Client sample ID	NCTS2	NCTS2 (Duplicate)	----	----	----
			Client sampling date / time	16-Mar-2020	16-Mar-2020	----	----	----
Compound	CAS Number	LOR	Unit	HK2009791-004	HK2009791-005	-------	-------	-------
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) - Continued								
EP074_SR: meta- & para-Xylene	108-38-3 106-42-3	1.0	mg/kg	<1.0	<1.0	----	----	----
EP074_SR: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	----	----	----
EP074_SR: Xylenes (Total)	----	2.0	mg/kg	<2.0	<2.0	----	----	----
EP-074_SR-I: Methyl-tert-butyl Ether								
EP074_SR: Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.2	mg/kg	<0.2	<0.2	----	----	----
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates								
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	75.8	81.5	----	----	----
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	79.9	84.2	----	----	----
EP-080_SRS: TPH(Volatile)/BTEX Surrogate								
EP070HK_SR: Dibromofluoromethane	1868-53-7	0.1	%	92.8	92.7	----	----	----
EP070HK_SR: Toluene-D8	2037-26-5	0.1	%	93.7	102	----	----	----
EP070HK_SR: 4-Bromofluorobenzene	460-00-4	0.1	%	104	108	----	----	----
EP-074_SR-S: VOC Surrogates								
EP074_SR: Dibromofluoromethane	1868-53-7	0.1	%	92.8	92.7	----	----	----
EP074_SR: Toluene-D8	2037-26-5	0.1	%	93.7	102	----	----	----
EP074_SR: 4-Bromofluorobenzene	460-00-4	0.1	%	104	108	----	----	----

Sub-Matrix: WATER			Client sample ID	Trip Blank	Equipment Blank	Field Blank	----	----
			Client sampling date / time	16-Mar-2020	16-Mar-2020	16-Mar-2020	----	----
Compound	CAS Number	LOR	Unit	HK2009791-001	HK2009791-002	HK2009791-003	-------	-------
EG: Metals and Major Cations - Filtered								
EG020: Lead	7439-92-1	1	µg/L	----	<1	<1	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)								
EP076HK: Naphthalene	91-20-3	2.0	µg/L	----	<2.0	<2.0	----	----
EP076HK: Acenaphthylene	208-96-8	2.0	µg/L	----	<2.0	<2.0	----	----
EP076HK: Acenaphthene	83-32-9	2.0	µg/L	----	<2.0	<2.0	----	----
EP076HK: Fluorene	86-73-7	2.0	µg/L	----	<2.0	<2.0	----	----
EP076HK: Phenanthrene	85-01-8	2.0	µg/L	----	<2.0	<2.0	----	----
EP076HK: Anthracene	120-12-7	2.0	µg/L	----	<2.0	<2.0	----	----
EP076HK: Fluoranthene	206-44-0	2.0	µg/L	----	<2.0	<2.0	----	----
EP076HK: Pyrene	129-00-0	2.0	µg/L	----	<2.0	<2.0	----	----
EP076HK: Benz(a)anthracene	56-55-3	2.0	µg/L	----	<2.0	<2.0	----	----
EP076HK: Chrysene	218-01-9	1.0	µg/L	----	<1.0	<1.0	----	----
EP076HK: Benzo(b)fluoranthene	205-99-2	1.0	µg/L	----	<1.0	<1.0	----	----
EP076HK: Benzo(k)fluoranthene	207-08-9	1.0	µg/L	----	<1.0	<1.0	----	----
EP076HK: Benzo(a)pyrene	50-32-8	2.0	µg/L	----	<2.0	<2.0	----	----
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	2.0	µg/L	----	<2.0	<2.0	----	----
EP076HK: Dibenz(a.h)anthracene	53-70-3	2.0	µg/L	----	<2.0	<2.0	----	----
EP076HK: Benzo(g.h.i)perylene	191-24-2	2.0	µg/L	----	<2.0	<2.0	----	----
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH)								
EP070HK_SR: C6 - C8 Fraction	----	20	µg/L	<20	<20	<20	----	----
EP071HK_SR: C9 - C16 Fraction	----	500	µg/L	----	<500	<500	----	----
EP071HK_SR: C17 - C35 Fraction	----	500	µg/L	----	<500	<500	----	----
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH)								
EP074_SR: Benzene	71-43-2	5.0	µg/L	<5.0	<5.0	<5.0	----	----
EP074_SR: Toluene	108-88-3	5.0	µg/L	<5.0	<5.0	<5.0	----	----
EP074_SR: Ethylbenzene	100-41-4	5.0	µg/L	<5.0	<5.0	<5.0	----	----
EP074_SR: meta- & para-Xylene	108-38-3 106-42-3	10	µg/L	<10	<10	<10	----	----
EP074_SR: ortho-Xylene	95-47-6	5.0	µg/L	<5.0	<5.0	<5.0	----	----
EP074_SR: Xylenes (Total)	----	20	µg/L	<20	<20	<20	----	----

Sub-Matrix: WATER			Client sample ID	Trip Blank	Equipment Blank	Field Blank	----	----
			Client sampling date / time	16-Mar-2020	16-Mar-2020	16-Mar-2020	----	----
Compound	*CAS Number*	*LOR*	*Unit*	HK2009791-001	HK2009791-002	HK2009791-003	-------	-------
EP-074_SR-I: Methyl-tert-butyl Ether								
EP074_SR: Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	µg/L	<0.5	<0.5	<0.5	----	----
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates								
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	----	**55.9**	**71.2**	----	----
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	----	**76.8**	**86.6**	----	----
EP-080_SRS: TPH(Volatile)/BTEX Surrogate								
EP070HK_SR: Dibromofluoromethane	1868-53-7	0.1	%	**96.0**	**96.0**	**98.4**	----	----
EP070HK_SR: Toluene-D8	2037-26-5	0.1	%	**94.2**	**93.0**	**95.1**	----	----
EP070HK_SR: 4-Bromofluorobenzene	460-00-4	0.1	%	**108**	**110**	**108**	----	----
EP-074_SR-S: VOC Surrogates								
EP074_SR: Dibromofluoromethane	1868-53-7	0.1	%	**96.0**	**96.0**	**98.4**	----	----
EP074_SR: Toluene-D8	2037-26-5	0.1	%	**94.2**	**93.0**	**95.1**	----	----
EP074_SR: 4-Bromofluorobenzene	460-00-4	0.1	%	**108**	**110**	**108**	----	----

Laboratory Duplicate (DUP) Report

Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 2922433)								
HK2009782-011	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	13.5	13.5	0.00
HK2009946-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	15.2	15.8	3.89
EG: Metals and Major Cations (QC Lot: 2919201)								
HK2009784-026	Anonymous	EG020: Lead	7439-92-1	1	mg/kg	10	12	19.1
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 2914108)								
HK2009471-001	Anonymous	EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	<50	0.00
		EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.00
		EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.00
		EP076HK: Fluorene	86-73-7	50	µg/kg	<50	<50	0.00
		EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.00
		EP076HK: Anthracene	120-12-7	50	µg/kg	<50	<50	0.00
		EP076HK: Fluoranthene	206-44-0	50	µg/kg	<50	<50	0.00
		EP076HK: Pyrene	129-00-0	50	µg/kg	<50	<50	0.00
		EP076HK: Benz(a)anthracene	56-55-3	50	µg/kg	<50	<50	0.00
		EP076HK: Chrysene	218-01-9	50	µg/kg	<50	<50	0.00
		EP076HK: Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	<50	0.00
		EP076HK: Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	<50	0.00
		EP076HK: Benzo(a)pyrene	50-32-8	50	µg/kg	<0.500 mg/kg	<500	0.00
		EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	<50	0.00
		EP076HK: Dibenz(a.h)anthracene	53-70-3	50	µg/kg	<50	<50	0.00
		EP076HK: Benzo(g.h.i)perylene	191-24-2	50	µg/kg	<50	<50	0.00
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 2916873)								
HK2009757-001	Anonymous	C9 - C16 Fraction	----	200	mg/kg	428	441	2.96
		C17 - C35 Fraction	----	500	mg/kg	1700	1720	0.984
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 2916874)								
HK2009757-001	Anonymous	C6 - C8 Fraction	----	5	mg/kg	<5	<5	0.00
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 2917791)								
HK2009791-004	NCTS2	Benzene	71-43-2	0.1	mg/kg	<0.2	<0.2	0.00
		Toluene	108-88-3	0.2	mg/kg	<0.5	<0.5	0.00
		Ethylbenzene	100-41-4	0.2	mg/kg	<0.5	<0.5	0.00

Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 2917791) - Continued								
HK2009791-004	NCTS2	ortho-Xylene	95-47-6	0.2	mg/kg	<0.5	<0.5	0.00
		meta- & para-Xylene	108-38-3 106-42-3	0.4	mg/kg	<1.0	<1.0	0.00
		Xylenes (Total)	----	1	mg/kg	<2.0	<2.0	0.00
EP-074_SR-I: Methyl-tert-butyl Ether (QC Lot: 2917791)								
HK2009791-004	NCTS2	Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.2	mg/kg	<0.2	<0.2	0.00

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EG: Metals and Major Cations - Filtered (QC Lot: 2919217)								
HK2009784-002	Anonymous	EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.00

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **SOIL**

Method: Compound	CAS Number	Method Blank (MB) Report: LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%): LCS	DCS	Recovery Limits(%): Low	High	RPD (%): Value	Control Limit
EG: Metals and Major Cations (QC Lot: 2919201)											
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	93.2	----	90.0	110	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 2914108)											
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	25 µg/kg	105	----	68.0	119	----	----
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	25 µg/kg	111	----	59.0	123	----	----
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	25 µg/kg	104	----	68.0	121	----	----
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	25 µg/kg	108	----	70.0	128	----	----
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	25 µg/kg	104	----	69.0	125	----	----
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	25 µg/kg	110	----	35.0	131	----	----
EP076HK: Fluoranthene	206-44-0	50	µg/kg	<50	25 µg/kg	106	----	72.0	128	----	----
EP076HK: Pyrene	129-00-0	50	µg/kg	<50	25 µg/kg	104	----	70.0	128	----	----
EP076HK: Benz(a)anthracene	56-55-3	50	µg/kg	<50	25 µg/kg	105	----	46.0	142	----	----
EP076HK: Chrysene	218-01-9	50	µg/kg	<50	25 µg/kg	102	----	55.0	134	----	----
EP076HK: Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	25 µg/kg	79.8	----	59.0	136	----	----

Matrix: **SOIL**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits(%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 2914108) - Continued											
EP076HK: Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	25 µg/kg	74.8	----	68.0	126	----	----
EP076HK: Benzo(a)pyrene	50-32-8	50	µg/kg	<50	25 µg/kg	65.0	----	30.0	126	----	----
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	25 µg/kg	63.4	----	55.0	133	----	----
EP076HK: Dibenz(a.h)anthracene	53-70-3	50	µg/kg	<50	25 µg/kg	61.9	----	52.0	134	----	----
EP076HK: Benzo(g.h.i)perylene	191-24-2	50	µg/kg	<50	25 µg/kg	56.5	----	45.0	144	----	----
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 2916873)											
C9 - C16 Fraction	----	200	mg/kg	<200	31.5 mg/kg	88.7	----	73.0	114	----	----
C17 - C35 Fraction	----	500	mg/kg	<500	67.5 mg/kg	81.7	----	71.0	115	----	----
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 2916874)											
C6 - C8 Fraction	----	5	mg/kg	<5	4.5 mg/kg	99.1	----	87.0	122	----	----
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 2917791)											
Benzene	71-43-2	0.1	mg/kg	<0.1	0.25 mg/kg	89.9	----	84.0	123	----	----
Toluene	108-88-3	0.2	mg/kg	<0.2	0.25 mg/kg	93.9	----	82.0	122	----	----
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	0.25 mg/kg	88.9	----	86.0	123	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.4	mg/kg	<0.4	0.5 mg/kg	90.6	----	84.0	118	----	----
ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	0.25 mg/kg	91.2	----	84.0	125	----	----
Xylenes (Total)	----	1	mg/kg	<1.0	0.75 mg/kg	90.8	----	86.0	119	----	----
EP-074_SR-I: Methyl-tert-butyl Ether (QC Lot: 2917791)											
Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.2	mg/kg	<0.2	0.25 mg/kg	88.8	----	72.0	120	----	----

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits(%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 2919217)											
EG020: Lead	7439-92-1	1	µg/L	<1	50 µg/L	98.1	----	85.0	113	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 2910880)											
EP076HK: Naphthalene	91-20-3	0.1	µg/L	<0.1	0.5 µg/L	105	----	19.0	144	----	----
EP076HK: Acenaphthylene	208-96-8	0.1	µg/L	<0.1	0.5 µg/L	110	----	32.0	140	----	----

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits(%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 2910880) - Continued											
EP076HK: Acenaphthene	83-32-9	0.1	µg/L	<0.1	0.5 µg/L	106	----	13.0	153	----	----
EP076HK: Fluorene	86-73-7	0.1	µg/L	<0.1	0.5 µg/L	108	----	35.0	151	----	----
EP076HK: Phenanthrene	85-01-8	0.1	µg/L	<0.1	0.5 µg/L	106	----	49.0	128	----	----
EP076HK: Anthracene	120-12-7	0.1	µg/L	<0.1	0.5 µg/L	101	----	60.0	103	----	----
EP076HK: Fluoranthene	206-44-0	0.1	µg/L	<0.1	0.5 µg/L	108	----	65.0	131	----	----
EP076HK: Pyrene	129-00-0	0.1	µg/L	<0.1	0.5 µg/L	107	----	64.0	131	----	----
EP076HK: Benz(a)anthracene	56-55-3	0.1	µg/L	<0.1	0.5 µg/L	108	----	66.0	142	----	----
EP076HK: Chrysene	218-01-9	0.1	µg/L	<0.1	0.5 µg/L	106	----	78.0	144	----	----
EP076HK: Benzo(b)fluoranthene	205-99-2	0.1	µg/L	<0.1	0.5 µg/L	114	----	67.0	144	----	----
EP076HK: Benzo(k)fluoranthene	207-08-9	0.1	µg/L	<0.1	0.5 µg/L	104	----	73.0	139	----	----
EP076HK: Benzo(a)pyrene	50-32-8	0.1	µg/L	<0.1	0.5 µg/L	108	----	64.0	127	----	----
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	0.1	µg/L	<0.1	0.5 µg/L	125	----	62.0	141	----	----
EP076HK: Dibenz(a.h)anthracene	53-70-3	0.1	µg/L	<0.1	0.5 µg/L	118	----	59.0	136	----	----
EP076HK: Benzo(g.h.i)perylene	191-24-2	0.1	µg/L	<0.1	0.5 µg/L	122	----	56.0	147	----	----
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 2914598)											
C6 - C8 Fraction	----	0.02	mg/L	<0.02	0.03 mg/L	107	----	59.0	136	----	----
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 2924950)											
C9 - C16 Fraction	----	0.5	mg/L	<0.5	0.21 mg/L	89.0	----	80.0	114	----	----
C17 - C35 Fraction	----	0.5	mg/L	<0.5	0.45 mg/L	80.4	----	59.0	123	----	----
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 2914597)											
Benzene	71-43-2	0.5	µg/L	<0.5	2 µg/L	106	----	83.0	131	----	----
Toluene	108-88-3	0.5	µg/L	<0.5	2 µg/L	96.7	----	76.0	130	----	----
Ethylbenzene	100-41-4	0.5	µg/L	<0.5	2 µg/L	96.4	----	79.0	130	----	----
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	4 µg/L	96.7	----	84.0	118	----	----
ortho-Xylene	95-47-6	0.5	µg/L	<0.5	2 µg/L	98.9	----	79.0	130	----	----
Xylenes (Total)	----	2	µg/L	<2	6 µg/L	97.4	----	82.0	123	----	----
EP-074_SR-I: Methyl-tert-butyl Ether (QC Lot: 2914597)											
Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	µg/L	<0.5	2 µg/L	112	----	64.0	135	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 2919201)										
HK2009784-025	Anonymous	**EG020: Lead**	7439-92-1	50 mg/kg	83.5	----	75.0	125	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 2914108)										
HK2009474-001	Anonymous	**EP076HK: Naphthalene**	91-20-3	250 µg/kg	81.3	----	50.0	130	----	----
		EP076HK: Acenaphthylene	208-96-8	250 µg/kg	86.3	----	50.0	130	----	----
		EP076HK: Acenaphthene	83-32-9	250 µg/kg	81.0	----	50.0	130	----	----
		EP076HK: Fluorene	86-73-7	250 µg/kg	83.0	----	50.0	130	----	----
		EP076HK: Phenanthrene	85-01-8	250 µg/kg	75.6	----	50.0	130	----	----
		EP076HK: Anthracene	120-12-7	250 µg/kg	84.7	----	50.0	130	----	----
		EP076HK: Fluoranthene	206-44-0	250 µg/kg	68.0	----	50.0	130	----	----
		EP076HK: Pyrene	129-00-0	250 µg/kg	70.0	----	50.0	130	----	----
		EP076HK: Benz(a)anthracene	56-55-3	250 µg/kg	76.0	----	50.0	130	----	----
		EP076HK: Chrysene	218-01-9	250 µg/kg	69.8	----	50.0	130	----	----
		EP076HK: Benzo(b)fluoranthene	205-99-2	250 µg/kg	61.8	----	50.0	130	----	----
		EP076HK: Benzo(k)fluoranthene	207-08-9	250 µg/kg	58.8	----	50.0	130	----	----
		EP076HK: Benzo(a)pyrene	50-32-8	250 µg/kg	51.6	----	50.0	130	----	----
		EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	52.9	----	50.0	130	----	----
		EP076HK: Dibenz(a.h)anthracene	53-70-3	250 µg/kg	51.3	----	50.0	130	----	----
		EP076HK: Benzo(g.h.i)perylene	191-24-2	250 µg/kg	52.0	----	50.0	130	----	----
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 2916873)										
HK2009759-001	Anonymous	**C9 - C16 Fraction**	----	31.5 mg/kg	# Not Determined	----	50.0	130	----	----
		C17 - C35 Fraction	----	67.5 mg/kg	# Not Determined	----	50.0	130	----	----
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 2916874)										
HK2009759-001	Anonymous	**C6 - C8 Fraction**	----	4.5 mg/kg	106	----	50.0	130	----	----
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 2917791)										
HK2009791-005	NCTS2 (Duplicate)	**Benzene**	71-43-2	0.25 mg/kg	81.6	----	50.0	130	----	----
		Toluene	108-88-3	0.25 mg/kg	86.2	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report: Spike Concentration	Spike Recovery (%): MS	Spike Recovery (%): MSD	Recovery Limits (%): Low	Recovery Limits (%): High	RPD (%): Value	RPD (%): Control Limit
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 2917791) - Continued										
HK2009791-005	NCTS2 (Duplicate)	**Ethylbenzene**	100-41-4	0.25 mg/kg	94.5	----	50.0	130	----	----
		meta- & para-Xylene	108-38-3 106-42-3	0.5 mg/kg	99.1	----	50.0	130	----	----
		ortho-Xylene	95-47-6	0.25 mg/kg	96.5	----	50.0	130	----	----
		Xylenes (Total)	----	0.75 mg/kg	98.3	----	50.0	130	----	----
EP-074_SR-I: Methyl-tert-butyl Ether (QC Lot: 2917791)										
HK2009791-005	NCTS2 (Duplicate)	**Methyl tert-Butyl Ether (MTBE)**	1634-04-4	0.25 mg/kg	93.3	----	50.0	130	----	----

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report: Spike Concentration	Spike Recovery (%): MS	Spike Recovery (%): MSD	Recovery Limits (%): Low	Recovery Limits (%): High	RPD (%): Value	RPD (%): Control Limit
EG: Metals and Major Cations - Filtered (QC Lot: 2919217)										
HK2009784-001	Anonymous	**EG020: Lead**	7439-92-1	50 µg/L	98.0	----	75.0	125	----	----

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%): Low	Recovery Limits (%): High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-080_SRS: TPH(Volatile)/BTEX Surrogate			
Dibromofluoromethane	1868-53-7	80	120
Toluene-D8	2037-26-5	81	117
4-Bromofluorobenzene	460-00-4	74	121
EP-074_SR-S: VOC Surrogates			
Dibromofluoromethane	1868-53-7	80	120
Toluene-D8	2037-26-5	81	117
4-Bromofluorobenzene	460-00-4	74	121

Sub-Matrix: **WATER**

Compound	*CAS Number*	*Recovery Limits (%) Low*	*High*
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-080_SRS: TPH(Volatile)/BTEX Surrogate			
Dibromofluoromethane	1868-53-7	86	118
Toluene-D8	2037-26-5	88	110
4-Bromofluorobenzene	460-00-4	86	115
EP-074_SR-S: VOC Surrogates			
Dibromofluoromethane	1868-53-7	86	118
Toluene-D8	2037-26-5	88	110
4-Bromofluorobenzene	460-00-4	86	115