ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2407945
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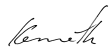
Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 28-Feb-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 13-Mar-2024
C-O-C number	: ----			No. of samples received	: 5
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			No. of samples analysed	: 5

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 Ka Yu , Karen	Manager - Organics	Organics_ENV
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Lin Wai Yu , Iris	Assistant Manager - Inorganics	Inorganics
 Wong Wing , Kenneth	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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 28-Feb-2024 to 13-Mar-2024.

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: HK2407945

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

TBT result(s) (Method: EP390) is/are reported on as received basis.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID	MEA1 Surface	MEA1 0.20-0.90m	MEA1 0.90-1.90m	MEA1 1.90-2.90m	MEA1 2.90-5.90m
				Sampling date / time	28-Feb-2024 09:15	28-Feb-2024 10:00	28-Feb-2024 10:00	28-Feb-2024 10:00	28-Feb-2024 10:00
					HK2407945-001	HK2407945-002	HK2407945-003	HK2407945-004	HK2407945-005
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%		56.1	36.5	38.4	29.8	33.3
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1	mg/kg		9	6	8	4	5
EG020: Cadmium	7440-43-9	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EG020: Chromium	7440-47-3	1	mg/kg		29	34	31	20	23
EG020: Copper	7440-50-8	1	mg/kg		39	41	22	6	6
EG020: Lead	7439-92-1	1	mg/kg		52	56	44	17	15
EG020: Mercury	7439-97-6	0.05	mg/kg		0.14	0.39	1.76	<0.05	<0.05
EG020: Nickel	7440-02-0	1	mg/kg		17	18	19	16	18
EG020: Silver	7440-22-4	0.1	mg/kg		0.4	0.4	0.3	<0.1	<0.1
EG020: Zinc	7440-66-6	1	mg/kg		112	99	92	46	50
EP-065: PCB Single Congeners									
EP065: PCB 8	34883-43-7	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 18	37680-65-2	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 28	7012-37-5	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 44	41464-39-5	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 52	35693-99-3	3	µg/kg		<3	6	3	<3	<3
EP065: PCB 66	32598-10-0	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 77	32598-13-3	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 101	37680-73-2	3	µg/kg		<3	4	<3	<3	<3
EP065: PCB 105	32598-14-4	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 118	31508-00-6	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 126	57465-28-8	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 128	38380-07-3	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 138	35065-28-2	3	µg/kg		<3	3	<3	<3	<3
EP065: PCB 153	35065-27-1	3	µg/kg		<3	5	<3	<3	<3
EP065: PCB 169	32774-16-6	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 170	35065-30-6	3	µg/kg		<3	<3	<3	<3	<3

Sub-Matrix: SEDIMENT				Sample ID	MEA1 Surface	MEA1 0.20-0.90m	MEA1 0.90-1.90m	MEA1 1.90-2.90m	MEA1 2.90-5.90m
				Sampling date / time	28-Feb-2024 09:15	28-Feb-2024 10:00	28-Feb-2024 10:00	28-Feb-2024 10:00	28-Feb-2024 10:00
Compound	CAS Number	LOR	Unit		HK2407945-001	HK2407945-002	HK2407945-003	HK2407945-004	HK2407945-005
EP-065: PCB Single Congeners - Continued									
EP065: PCB 180	35065-29-3	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 187	52663-68-0	3	µg/kg		<3	<3	<3	<3	<3
EP065: Total Polychlorinated biphenyls	----	18	µg/kg		<18	34	<18	<18	<18
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg		<50	<50	<50	<50	<50
EP076HK: Acenaphthylene	208-96-8	50	µg/kg		<50	<50	<50	<50	<50
EP076HK: Acenaphthene	83-32-9	50	µg/kg		<50	<50	<50	<50	<50
EP076HK: Fluorene	86-73-7	50	µg/kg		<50	<50	<50	<50	<50
EP076HK: Phenanthrene	85-01-8	50	µg/kg		<50	<50	<50	<50	<50
EP076HK: Anthracene	120-12-7	50	µg/kg		<50	<50	<50	<50	<50
EP076HK: Fluoranthene	206-44-0	150	µg/kg		<150	150	<150	<150	<150
EP076HK: Pyrene	129-00-0	150	µg/kg		<150	245	<150	<150	<150
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Chrysene	218-01-9	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg		<150	196	<150	<150	<150
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg		<150	169	<150	<150	<150
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Low M.W. PAHs	----	550	µg/kg		<550	<550	<550	<550	<550
EP076HK: High M.W. PAHs	----	1700	µg/kg		<1700	<1700	<1700	<1700	<1700
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%		96.1	100	96.9	96.4	79.6
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%		85.8	88.8	83.3	85.4	78.2
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%		92.4	103	108	99.0	82.7

Sub-Matrix: INTERSTITIAL WATER				Sample ID	MEA1 Surface	MEA1 0.20-0.90m	MEA1 0.90-1.90m	MEA1 1.90-2.90m	MEA1 2.90-5.90m
				Sampling date / time	28-Feb-2024 09:15	28-Feb-2024 10:00	28-Feb-2024 10:00	28-Feb-2024 10:00	28-Feb-2024 10:00
Compound	CAS Number	LOR	Unit		HK2407945-001	HK2407945-002	HK2407945-003	HK2407945-004	HK2407945-005
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L		<0.015	<0.015	<0.015	<0.015	<0.015

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting "0.0" denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5654972)								
HK2407945-001	MEA1 Surface	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	56.1	56.0	0.0
HK2408056-002	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	25.4	26.4	3.8
EG: Metals and Major Cations (QC Lot: 5639866)								
HK2407902-005	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	<1	<1	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	4	3	0.0
		EG020: Copper	7440-50-8	1	mg/kg	1	<1	0.0
		EG020: Lead	7439-92-1	1	mg/kg	11	12	0.0
		EG020: Nickel	7440-02-0	1	mg/kg	2	1	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	13	12	0.0
EP-065: PCB Single Congeners (QC Lot: 5637486)								
HK2407870-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5637486) - Continued								
HK2407870-001	Anonymous	PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5637485)								
HK2407870-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 5637557)								
HK2407945-001	MEA1 Surface	Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.015	<0.015	0.0

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

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
EG: Metals and Major Cations (QC Lot: 5639866)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	97.3	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	100	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	95.3	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	104	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	95.1	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	100	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	99.3	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	97.2	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	101	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5637486)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	98.1	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	96.2	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	99.0	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	112	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	108	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	117	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	79.7	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	75.7	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	80.6	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	81.8	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	120	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	119	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	121	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	82.9	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	84.6	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	85.3	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	87.0	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	120	----	68.0	132	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----

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: 5637485)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	91.2	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	100	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	103	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	98.6	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	106	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	98.1	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	107	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	107	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	109	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	113	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	106	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	107	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	101	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	117	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	118	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	120	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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-390: Triorganotins (QC Lot: 5637557)											
Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.012	0.0122 µg TBT /L	107	----	70.0	130	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5639866)										
HK2407902-004	Anonymous	EG020: Arsenic	7440-38-2	10 mg/kg	100	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	104	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	108	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	108	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	77.9	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	97.9	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	106	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	98.0	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	92.0	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5637486)										
HK2407876-001	Anonymous	PCB 8	34883-43-7	5 µg/kg	85.3	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	83.0	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	101	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	108	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	108	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	115	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	104	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	102	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	106	----	50.0	130	----	----
		PCB 118	31508-00-6	5 µg/kg	112	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-065: PCB Single Congeners (QC Lot: 5637486) - Continued										
HK2407876-001	Anonymous	PCB 126	57465-28-8	5 µg/kg	111	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	107	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	107	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	112	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	108	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	107	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	108	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	111	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5637485)										
HK2407870-001	Anonymous	Naphthalene	91-20-3	250 µg/kg	76.0	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	85.2	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	84.6	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	83.1	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	89.0	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	84.5	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	93.3	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	92.1	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	96.2	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	104	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	93.8	----	50.0	130	----	----
		Benzo(k)fluoranthene	207-08-9	250 µg/kg	89.6	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	84.2	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5637485) - Continued										
HK2407870-001	Anonymous	Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	92.3	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	92.6	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	93.8	----	50.0	130	----	----

Matrix: **WATER**

Laboratory sample ID	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-390: Triorganotins (QC Lot: 5637557)										
HK2407945-001	MEA1 Surface	Tributyltin	56573-85-4	0.0122 µg TBT /L	101	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2408107
Address	: EAST DEVELOPMENT OFFICE 8F, WEST KOWLOON GOVERNMENT OFFICES SOUTH TOWER YAU MA TEI, KOWLOON HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: MhyLee@cedd.gov.hk	E-mail	: richard.fung@alsglobal.com		
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Facsimile	: +852 2739 0076	Facsimile	: +852 2610 2021		
Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 27-Feb-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 14-Mar-2024
C-O-C number	: ----			No. of samples received	: 5
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			No. of samples analysed	: 5

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 Ka Yu , Karen	Manager - Organics	Organics_ENV
Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
Lin Wai Yu , Iris	Assistant Manager - Inorganics	Inorganics
Wong Wing , Kenneth	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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 27-Feb-2024 to 13-Mar-2024.

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: HK2408107

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Analysis of Tributyltin in interstitial water was cancelled for HK2408107 #005 due to insufficient volume of interstitial water.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

TBT result(s) (Method: EP390) is/are reported on as received basis.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID	MEA3 Surface	MEA3a 0.40-0.90m	MEA3a 0.90-1.90m	MEA3a 1.90-2.90m	MEA3a 2.90-5.90m
				Sampling date / time	27-Feb-2024 09:15	27-Feb-2024 13:20	27-Feb-2024 13:20	27-Feb-2024 13:20	27-Feb-2024 13:20
							HK2408107-003	HK2408107-004	HK2408107-005
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%				27.1	31.5	33.7
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1	mg/kg				7	10	6
EG020: Cadmium	7440-43-9	0.2	mg/kg				0.2	0.4	<0.2
EG020: Chromium	7440-47-3	1	mg/kg				31	34	25
EG020: Copper	7440-50-8	1	mg/kg				30	121	7
EG020: Lead	7439-92-1	1	mg/kg				57	112	17
EG020: Mercury	7439-97-6	0.05	mg/kg				0.15	1.41	<0.05
EG020: Nickel	7440-02-0	1	mg/kg				16	18	20
EG020: Silver	7440-22-4	0.1	mg/kg				0.7	0.6	<0.1
EG020: Zinc	7440-66-6	1	mg/kg		Samples collected were not sediment.		55	222	55
EP-065: PCB Single Congeners									
EP065: PCB 8	34883-43-7	3	µg/kg				<3	<3	<3
EP065: PCB 18	37680-65-2	3	µg/kg				<3	11	<3
EP065: PCB 28	7012-37-5	3	µg/kg				3	18	<3
EP065: PCB 44	41464-39-5	3	µg/kg				4	14	<3
EP065: PCB 52	35693-99-3	3	µg/kg				9	29	<3
EP065: PCB 66	32598-10-0	3	µg/kg				4	13	<3
EP065: PCB 77	32598-13-3	3	µg/kg				<3	<3	<3
EP065: PCB 101	37680-73-2	3	µg/kg				8	24	<3
EP065: PCB 105	32598-14-4	3	µg/kg				<3	6	<3
EP065: PCB 118	31508-00-6	3	µg/kg				6	17	<3
EP065: PCB 126	57465-28-8	3	µg/kg				<3	<3	<3
EP065: PCB 128	38380-07-3	3	µg/kg				<3	<3	<3
EP065: PCB 138	35065-28-2	3	µg/kg				4	14	<3
EP065: PCB 153	35065-27-1	3	µg/kg				6	18	<3
EP065: PCB 169	32774-16-6	3	µg/kg				<3	<3	<3
EP065: PCB 170	35065-30-6	3	µg/kg				<3	4	<3

Sub-Matrix: SEDIMENT				Sample ID	MEA3 Surface	MEA3a 0.40-0.90m	MEA3a 0.90-1.90m	MEA3a 1.90-2.90m	MEA3a 2.90-5.90m
				Sampling date / time	27-Feb-2024 09:15	27-Feb-2024 13:20	27-Feb-2024 13:20	27-Feb-2024 13:20	27-Feb-2024 13:20
Compound	CAS Number	LOR	Unit				HK2408107-003	HK2408107-004	HK2408107-005
EP-065: PCB Single Congeners - Continued									
EP065: PCB 180	35065-29-3	3	µg/kg				<3	6	<3
EP065: PCB 187	52663-68-0	3	µg/kg				<3	3	<3
EP065: Total Polychlorinated biphenyls	----	18	µg/kg				53	184	<18
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg				<50	<50	<50
EP076HK: Acenaphthylene	208-96-8	50	µg/kg				<50	<50	<50
EP076HK: Acenaphthene	83-32-9	50	µg/kg				<50	<50	<50
EP076HK: Fluorene	86-73-7	50	µg/kg				<50	<50	<50
EP076HK: Phenanthrene	85-01-8	50	µg/kg				<50	69	<50
EP076HK: Anthracene	120-12-7	50	µg/kg				<50	<50	<50
EP076HK: Fluoranthene	206-44-0	150	µg/kg				<150	183	<150
EP076HK: Pyrene	129-00-0	150	µg/kg				<150	294	<150
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg				<150	<150	<150
EP076HK: Chrysene	218-01-9	150	µg/kg				<150	<150	<150
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg				<150	303	<150
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg				<150	<150	<150
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg				<150	221	<150
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg				<150	171	<150
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg				<150	<150	<150
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg				<150	170	<150
EP076HK: Low M.W. PAHs	----	550	µg/kg				<550	<550	<550
EP076HK: High M.W. PAHs	----	1700	µg/kg				<1700	1700	<1700
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%				104	93.0	99.2
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%				90.3	83.9	84.3
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%				113	102	108

Samples collected were not sediment.

Sub-Matrix: INTERSTITIAL WATER				Sample ID	MEA3 Surface	MEA3a 0.40-0.90m	MEA3a 0.90-1.90m	MEA3a 1.90-2.90m	----
				Sampling date / time	27-Feb-2024 09:15	27-Feb-2024 13:20	27-Feb-2024 13:20	27-Feb-2024 13:20	----
Compound	CAS Number	LOR	Unit				HK2408107-003	HK2408107-004	--------
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L		Samples collected were not sediment.		<0.015	<0.015	----

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting “0.0” denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5653638)								
HK2408539-030	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	4.2	4.2	0.0
HK2408581-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	54.8	54.5	0.5
EG: Metals and Major Cations (QC Lot: 5639867)								
HK2408058-013	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	0.1	0.1	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	0.3	0.3	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	10	10	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	15	13	13.0
		EG020: Copper	7440-50-8	1	mg/kg	25	23	7.0
		EG020: Lead	7439-92-1	1	mg/kg	64	58	10.1
		EG020: Nickel	7440-02-0	1	mg/kg	9	7	22.8
		EG020: Zinc	7440-66-6	1	mg/kg	133	134	0.8
EP-065: PCB Single Congeners (QC Lot: 5637486)								
HK2407870-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5637486) - Continued								
HK2407870-001	Anonymous	PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5637485)								
HK2407870-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 5659123)								
HK2408107-001	MEA3 Surface	Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.015	<0.015	0.0

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

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
EG: Metals and Major Cations (QC Lot: 5639867)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	98.5	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	98.7	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	93.8	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	107	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	92.4	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	100	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	100	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	97.3	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	101	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5637486)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	98.1	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	96.2	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	99.0	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	112	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	108	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	117	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	79.7	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	75.7	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	80.6	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	81.8	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	120	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	119	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	121	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	82.9	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	84.6	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	85.3	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	87.0	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	120	----	68.0	132	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----

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: 5637485)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	91.2	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	100	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	103	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	98.6	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	106	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	98.1	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	107	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	107	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	109	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	113	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	106	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	107	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	101	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	117	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	118	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	120	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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-390: Triorganotins (QC Lot: 5659123)											
Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.012	0.0122 µg TBT /L	103	----	70.0	130	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5639867)										
HK2408056-003	Anonymous	EG020: Arsenic	7440-38-2	10 mg/kg	98.4	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	100	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	114	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	96.7	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	75.2	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	102	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	120	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	97.0	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	85.9	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5637486)										
HK2407876-001	Anonymous	PCB 8	34883-43-7	5 µg/kg	85.3	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	83.0	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	101	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	108	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	108	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	115	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	104	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	102	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	106	----	50.0	130	----	----
		PCB 118	31508-00-6	5 µg/kg	112	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-065: PCB Single Congeners (QC Lot: 5637486) - Continued										
HK2407876-001	Anonymous	PCB 126	57465-28-8	5 µg/kg	111	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	107	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	107	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	112	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	108	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	107	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	108	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	111	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5637485)										
HK2407870-001	Anonymous	Naphthalene	91-20-3	250 µg/kg	76.0	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	85.2	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	84.6	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	83.1	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	89.0	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	84.5	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	93.3	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	92.1	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	96.2	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	104	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	93.8	----	50.0	130	----	----
		Benzo(k)fluoranthene	207-08-9	250 µg/kg	89.6	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	84.2	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5637485) - Continued										
HK2407870-001	Anonymous	Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	92.3	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	92.6	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	93.8	----	50.0	130	----	----

Matrix: **WATER**

Laboratory sample ID	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-390: Triorganotins (QC Lot: 5659123)										
HK2408107-001	MEA3 Surface	Tributyltin	56573-85-4	0.0122 µg TBT /L	101	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2408816
Address	: EAST DEVELOPMENT OFFICE 8F, WEST KOWLOON GOVERNMENT OFFICES SOUTH TOWER YAU MA TEI, KOWLOON HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
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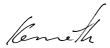
Facsimile	: +852 2739 0076	Facsimile	: +852 2610 2021		
Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 05-Mar-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 19-Mar-2024
C-O-C number	: ----			No. of samples received	: 2
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			No. of samples analysed	: 2

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

Signatories	*Position*	*Authorised results for*
 Chan Siu Ming , Vico	Assistant Laboratory Manager	Inorganics
 Chan Wai Hung , Mannix	Laboratory Manager	Organics_ENV
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Wong Wing , Kenneth	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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 05-Mar-2024 to 19-Mar-2024.

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: HK2408816

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

TBT result(s) (Method: EP390) is/are reported on as received basis.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID	MEA17 Surface	MEA17 0.00-0.55m	----	----	----
				Sampling date / time	05-Mar-2024 13:00	05-Mar-2024 13:50	----	----	----
							-------	-------	-------
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%				----	----	----
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1	mg/kg				----	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg				----	----	----
EG020: Chromium	7440-47-3	1	mg/kg				----	----	----
EG020: Copper	7440-50-8	1	mg/kg				----	----	----
EG020: Lead	7439-92-1	1	mg/kg				----	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg				----	----	----
EG020: Nickel	7440-02-0	1	mg/kg				----	----	----
EG020: Silver	7440-22-4	0.1	mg/kg				----	----	----
EG020: Zinc	7440-66-6	1	mg/kg	Samples collected were not sediment.			----	----	----
EP-065: PCB Single Congeners									
EP065: PCB 8	34883-43-7	3	µg/kg				----	----	----
EP065: PCB 18	37680-65-2	3	µg/kg				----	----	----
EP065: PCB 28	7012-37-5	3	µg/kg				----	----	----
EP065: PCB 44	41464-39-5	3	µg/kg				----	----	----
EP065: PCB 52	35693-99-3	3	µg/kg				----	----	----
EP065: PCB 66	32598-10-0	3	µg/kg				----	----	----
EP065: PCB 77	32598-13-3	3	µg/kg				----	----	----
EP065: PCB 101	37680-73-2	3	µg/kg				----	----	----
EP065: PCB 105	32598-14-4	3	µg/kg				----	----	----
EP065: PCB 118	31508-00-6	3	µg/kg				----	----	----
EP065: PCB 126	57465-28-8	3	µg/kg				----	----	----
EP065: PCB 128	38380-07-3	3	µg/kg				----	----	----
EP065: PCB 138	35065-28-2	3	µg/kg				----	----	----
EP065: PCB 153	35065-27-1	3	µg/kg				----	----	----
EP065: PCB 169	32774-16-6	3	µg/kg				----	----	----
EP065: PCB 170	35065-30-6	3	µg/kg				----	----	----

Sub-Matrix: SEDIMENT			Sample ID	MEA17 Surface	MEA17 0.00-0.55m	----	----	----
			Sampling date / time	05-Mar-2024 13:00	05-Mar-2024 13:50	----	----	----
Compound	CAS Number	LOR	Unit			-------	-------	-------
EP-065: PCB Single Congeners - Continued								
EP065: PCB 180	35065-29-3	3	µg/kg			----	----	----
EP065: PCB 187	52663-68-0	3	µg/kg			----	----	----
EP065: Total Polychlorinated biphenyls	----	18	µg/kg			----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)								
EP076HK: Naphthalene	91-20-3	50	µg/kg			----	----	----
EP076HK: Acenaphthylene	208-96-8	50	µg/kg			----	----	----
EP076HK: Acenaphthene	83-32-9	50	µg/kg			----	----	----
EP076HK: Fluorene	86-73-7	50	µg/kg			----	----	----
EP076HK: Phenanthrene	85-01-8	50	µg/kg			----	----	----
EP076HK: Anthracene	120-12-7	50	µg/kg			----	----	----
EP076HK: Fluoranthene	206-44-0	150	µg/kg			----	----	----
EP076HK: Pyrene	129-00-0	150	µg/kg			----	----	----
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg			----	----	----
EP076HK: Chrysene	218-01-9	150	µg/kg			----	----	----
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg			----	----	----
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg			----	----	----
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg			----	----	----
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg			----	----	----
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg			----	----	----
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg			----	----	----
EP076HK: Low M.W. PAHs	----	550	µg/kg			----	----	----
EP076HK: High M.W. PAHs	----	1700	µg/kg			----	----	----
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates								
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%			----	----	----
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%			----	----	----
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate								
EP065: Decachlorobiphenyl	2051-24-3	0.1	%			----	----	----

Samples collected were not sediment.

Sub-Matrix: INTERSTITIAL WATER				Sample ID	MEA17 Surface	MEA17 0.00-0.55m	----	----	----
				Sampling date / time	05-Mar-2024 13:00	05-Mar-2024 13:50	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*				-------	-------	-------
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L				----	----	----

Samples collected were not sediment.

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting "0.0" denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5660624)								
HK2408769-003	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	40.6	41.0	0.8
EG: Metals and Major Cations (QC Lot: 5652455)								
HK2408816-002	MEA17 0.00-0.55m	EG020: Mercury	7439-97-6	0.05	mg/kg	0.09	0.07	24.6
		EG020: Silver	7440-22-4	0.1	mg/kg	0.1	<0.1	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	4	4	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	13	12	0.0
		EG020: Copper	7440-50-8	1	mg/kg	14	11	21.8
		EG020: Lead	7439-92-1	1	mg/kg	20	17	12.0
		EG020: Nickel	7440-02-0	1	mg/kg	8	7	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	32	29	8.3
EP-065: PCB Single Congeners (QC Lot: 5653744)								
HK2408769-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5653744) - Continued								
HK2408769-001	Anonymous	PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5653743)								
HK2408769-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 5659123)								
HK2408107-001	Anonymous	Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.015	<0.015	0.0

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

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
EG: Metals and Major Cations (QC Lot: 5652455)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	96.5	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	110	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	98.4	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	99.8	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	98.2	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	97.4	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	98.9	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	96.6	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	94.3	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5653744)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	88.1	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	62.8	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	87.3	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	87.8	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	88.0	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	112	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	84.1	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	77.4	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	84.3	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	83.6	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	91.8	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	90.9	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	86.6	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	84.9	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	89.0	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	89.2	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	83.4	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	89.6	----	68.0	132	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----

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: 5653743)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	104	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	118	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	119	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	115	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	114	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	109	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	122	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	120	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	128	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	118	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	120	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	117	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	113	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	118	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	122	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	122	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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-390: Triorganotins (QC Lot: 5659123)											
Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.012	0.0122 µg TBT /L	103	----	70.0	130	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5652455)										
HK2408816-001	MEA17 Surface	EG020: Arsenic	7440-38-2	10 mg/kg	96.0	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	108	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	88.3	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	88.6	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	88.2	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	93.1	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	90.9	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	98.3	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5653744)										
HK2408769-003	Anonymous	PCB 8	34883-43-7	5 µg/kg	86.9	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	79.6	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	72.4	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	80.2	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	81.5	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	58.9	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	86.4	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	86.2	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	86.7	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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
EP-065: PCB Single Congeners (QC Lot: 5653744) - Continued										
HK2408769-003	Anonymous	PCB 118	31508-00-6	5 µg/kg	87.6	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	88.2	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	88.0	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	88.1	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	88.1	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	80.3	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	82.0	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	82.8	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	88.8	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5653743)										
HK2408769-002	Anonymous	Naphthalene	91-20-3	250 µg/kg	84.7	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	95.7	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	94.9	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	93.7	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	93.9	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	96.8	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	101	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	99.4	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	103	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	118	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	96.0	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5653743) - Continued										
HK2408769-002	Anonymous	Benzo(k)fluoranthene	207-08-9	250 µg/kg	99.7	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	96.6	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	91.6	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	90.5	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	90.8	----	50.0	130	----	----

Matrix: **WATER**

Laboratory sample ID	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-390: Triorganotins (QC Lot: 5659123)										
HK2408107-001	Anonymous	Tributyltin	56573-85-4	0.0122 µg TBT /L	101	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2408823
Address	: EAST DEVELOPMENT OFFICE 8F, WEST KOWLOON GOVERNMENT OFFICES SOUTH TOWER YAU MA TEI, KOWLOON HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
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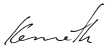
Telephone	: +852 3842 7134	Telephone	: +852 2610 1044		
Facsimile	: +852 2739 0076	Facsimile	: +852 2610 2021		
Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 05-Mar-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 19-Mar-2024
C-O-C number	: ----			No. of samples received	: 5
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			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*
 Chan Siu Ming , Vico	Assistant Laboratory Manager	Inorganics
 Chan Wai Hung , Mannix	Laboratory Manager	Organics_ENV
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Wong Wing , Kenneth	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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 05-Mar-2024 to 15-Mar-2024.

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: HK2408823

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Analysis of Tributyltin in interstitial water was cancelled for HK2408823 #005 due to insufficient volume of interstitial water.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

TBT result(s) (Method: EP390) is/are reported on as received basis.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID	MEA19 Surface	MEA19 0.00-0.90m	MEA19 0.90-1.90m	MEA19 1.90-2.90m	MEA19 2.90-3.66m
				Sampling date / time	05-Mar-2024 09:50	05-Mar-2024 10:50	05-Mar-2024 10:50	05-Mar-2024 10:50	05-Mar-2024 10:50
					HK2408823-001	HK2408823-002	HK2408823-003	HK2408823-004	
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%		46.3	31.2	32.4	32.2	
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1	mg/kg		8	3	4	5	
EG020: Cadmium	7440-43-9	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	
EG020: Chromium	7440-47-3	1	mg/kg		30	14	14	15	
EG020: Copper	7440-50-8	1	mg/kg		27	4	4	4	
EG020: Lead	7439-92-1	1	mg/kg		34	12	12	14	
EG020: Mercury	7439-97-6	0.05	mg/kg		0.10	<0.05	<0.05	<0.05	
EG020: Nickel	7440-02-0	1	mg/kg		18	10	10	11	
EG020: Silver	7440-22-4	0.1	mg/kg		0.3	<0.1	<0.1	<0.1	
EG020: Zinc	7440-66-6	1	mg/kg		84	27	27	27	
EP-065: PCB Single Congeners									
EP065: PCB 8	34883-43-7	3	µg/kg		<3	<3	<3	<3	
EP065: PCB 18	37680-65-2	3	µg/kg		<3	<3	<3	<3	
EP065: PCB 28	7012-37-5	3	µg/kg		<3	<3	<3	<3	
EP065: PCB 44	41464-39-5	3	µg/kg		<3	<3	<3	<3	
EP065: PCB 52	35693-99-3	3	µg/kg		<3	<3	<3	<3	
EP065: PCB 66	32598-10-0	3	µg/kg		<3	<3	<3	<3	
EP065: PCB 77	32598-13-3	3	µg/kg		<3	<3	<3	<3	
EP065: PCB 101	37680-73-2	3	µg/kg		<3	<3	<3	<3	
EP065: PCB 105	32598-14-4	3	µg/kg		<3	<3	<3	<3	
EP065: PCB 118	31508-00-6	3	µg/kg		<3	<3	<3	<3	
EP065: PCB 126	57465-28-8	3	µg/kg		<3	<3	<3	<3	
EP065: PCB 128	38380-07-3	3	µg/kg		<3	<3	<3	<3	
EP065: PCB 138	35065-28-2	3	µg/kg		<3	<3	<3	<3	
EP065: PCB 153	35065-27-1	3	µg/kg		<3	<3	<3	<3	
EP065: PCB 169	32774-16-6	3	µg/kg		<3	<3	<3	<3	
EP065: PCB 170	35065-30-6	3	µg/kg		<3	<3	<3	<3	

Samples collected were not sediment.

Sub-Matrix: SEDIMENT				Sample ID	MEA19 Surface	MEA19 0.00-0.90m	MEA19 0.90-1.90m	MEA19 1.90-2.90m	MEA19 2.90-3.66m
				Sampling date / time	05-Mar-2024 09:50	05-Mar-2024 10:50	05-Mar-2024 10:50	05-Mar-2024 10:50	05-Mar-2024 10:50
Compound	CAS Number	LOR	Unit		HK2408823-001	HK2408823-002	HK2408823-003	HK2408823-004	
EP-065: PCB Single Congeners - Continued									
EP065: PCB 180	35065-29-3	3	µg/kg		<3	<3	<3	<3	
EP065: PCB 187	52663-68-0	3	µg/kg		<3	<3	<3	<3	
EP065: Total Polychlorinated biphenyls	----	18	µg/kg		<18	<18	<18	<18	
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg		<50	<50	<50	<50	
EP076HK: Acenaphthylene	208-96-8	50	µg/kg		<50	<50	<50	<50	
EP076HK: Acenaphthene	83-32-9	50	µg/kg		<50	<50	<50	<50	
EP076HK: Fluorene	86-73-7	50	µg/kg		<50	<50	<50	<50	
EP076HK: Phenanthrene	85-01-8	50	µg/kg		<50	<50	<50	<50	
EP076HK: Anthracene	120-12-7	50	µg/kg		<50	<50	<50	<50	
EP076HK: Fluoranthene	206-44-0	150	µg/kg		<150	<150	<150	<150	
EP076HK: Pyrene	129-00-0	150	µg/kg		<150	<150	<150	<150	
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg		<150	<150	<150	<150	
EP076HK: Chrysene	218-01-9	150	µg/kg		<150	<150	<150	<150	
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg		<150	<150	<150	<150	
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg		<150	<150	<150	<150	
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg		<150	<150	<150	<150	
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg		<150	<150	<150	<150	
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg		<150	<150	<150	<150	
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg		<150	<150	<150	<150	
EP076HK: Low M.W. PAHs	----	550	µg/kg		<550	<550	<550	<550	
EP076HK: High M.W. PAHs	----	1700	µg/kg		<1700	<1700	<1700	<1700	
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%		76.6	98.6	86.9	94.2	
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%		67.1	83.0	75.4	80.4	
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%		60.1	91.2	78.3	71.1	

Samples collected were not sediment.

Sub-Matrix: INTERSTITIAL WATER				Sample ID	MEA19 Surface	MEA19 0.00-0.90m	MEA19 0.90-1.90m	MEA19 1.90-2.90m	----
				Sampling date / time	05-Mar-2024 09:50	05-Mar-2024 10:50	05-Mar-2024 10:50	05-Mar-2024 10:50	----
Compound	CAS Number	LOR	Unit		HK2408823-001	HK2408823-002	HK2408823-003	HK2408823-004	-------
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L		<0.015	<0.015	<0.015	<0.015	----

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting "0.0" denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5657901)								
HK2408725-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	54.1	53.4	1.3
HK2408823-001	MEA19 Surface	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	46.3	46.1	0.4
EG: Metals and Major Cations (QC Lot: 5652455)								
HK2408816-002	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	0.09	0.07	24.6
		EG020: Silver	7440-22-4	0.1	mg/kg	0.1	<0.1	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	4	4	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	13	12	0.0
		EG020: Copper	7440-50-8	1	mg/kg	14	11	21.8
		EG020: Lead	7439-92-1	1	mg/kg	20	17	12.0
		EG020: Nickel	7440-02-0	1	mg/kg	8	7	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	32	29	8.3
EP-065: PCB Single Congeners (QC Lot: 5653744)								
HK2408769-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5653744) - Continued								
HK2408769-001	Anonymous	PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5653743)								
HK2408769-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 5659123)								
HK2408107-001	Anonymous	Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.015	<0.015	0.0

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

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
EG: Metals and Major Cations (QC Lot: 5652455)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	96.5	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	110	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	98.4	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	99.8	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	98.2	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	97.4	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	98.9	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	96.6	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	94.3	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5653744)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	88.1	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	62.8	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	87.3	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	87.8	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	88.0	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	112	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	84.1	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	77.4	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	84.3	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	83.6	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	91.8	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	90.9	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	86.6	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	84.9	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	89.0	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	89.2	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	83.4	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	89.6	----	68.0	132	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----

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: 5653743)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	104	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	118	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	119	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	115	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	114	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	109	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	122	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	120	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	128	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	118	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	120	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	117	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	113	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	118	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	122	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	122	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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-390: Triorganotins (QC Lot: 5659123)											
Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.012	0.0122 µg TBT /L	103	----	70.0	130	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5652455)										
HK2408816-001	Anonymous	EG020: Arsenic	7440-38-2	10 mg/kg	96.0	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	108	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	88.3	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	88.6	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	88.2	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	93.1	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	90.9	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	98.3	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5653744)										
HK2408769-003	Anonymous	PCB 8	34883-43-7	5 µg/kg	86.9	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	79.6	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	72.4	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	80.2	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	81.5	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	58.9	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	86.4	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	86.2	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	86.7	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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
EP-065: PCB Single Congeners (QC Lot: 5653744) - Continued										
HK2408769-003	Anonymous	PCB 118	31508-00-6	5 µg/kg	87.6	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	88.2	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	88.0	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	88.1	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	88.1	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	80.3	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	82.0	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	82.8	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	88.8	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5653743)										
HK2408769-002	Anonymous	Naphthalene	91-20-3	250 µg/kg	84.7	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	95.7	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	94.9	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	93.7	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	93.9	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	96.8	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	101	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	99.4	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	103	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	118	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	96.0	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5653743) - Continued										
HK2408769-002	Anonymous	Benzo(k)fluoranthene	207-08-9	250 µg/kg	99.7	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	96.6	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	91.6	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	90.5	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	90.8	----	50.0	130	----	----

Matrix: **WATER**

Laboratory sample ID	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-390: Triorganotins (QC Lot: 5659123)										
HK2408107-001	Anonymous	Tributyltin	56573-85-4	0.0122 µg TBT /L	101	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2411003
Address	: EAST DEVELOPMENT OFFICE 8F, WEST KOWLOON GOVERNMENT OFFICES SOUTH TOWER YAU MA TEI, KOWLOON HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: MhyLee@cedd.gov.hk	E-mail	: richard.fung@alsglobal.com		
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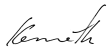
Facsimile	: +852 2739 0076	Facsimile	: +852 2610 2021		
Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 19-Mar-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 05-Apr-2024
C-O-C number	: ----			No. of samples received	: 5
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			No. of samples analysed	: 5

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

Signatories	*Position*	*Authorised results for*
 Chan Wai Hung , Mannix	Laboratory Manager	Organics_ENV
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Lin Wai Yu , Iris	Assistant Manager - Inorganics	Inorganics
 Wong Wing , Kenneth	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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 19-Mar-2024 to 05-Apr-2024.

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: HK2411003

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Analysis of Tributyltin in interstitial water was cancelled for HK2411003 #001, 003 to 005 due to insufficient volume of interstitial water.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

TBT result(s) (Method: EP390) is/are reported on as received basis.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID	EA1 14.60-15.50m	EA1 15.60-16.50m	EA1 16.60-17.50m	EA1 17.60-18.50m	EA1 18.60-19.50m
				Sampling date / time	19-Mar-2024 11:20	19-Mar-2024 13:30	19-Mar-2024 14:40	19-Mar-2024 15:20	19-Mar-2024 16:20
					HK2411003-001	HK2411003-002	HK2411003-003	HK2411003-004	HK2411003-005
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%		24.5	24.7	25.7	25.6	26.7
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1	mg/kg		3	3	4	3	3
EG020: Cadmium	7440-43-9	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EG020: Chromium	7440-47-3	1	mg/kg		11	12	15	14	16
EG020: Copper	7440-50-8	1	mg/kg		5	3	4	4	4
EG020: Lead	7439-92-1	1	mg/kg		16	10	10	10	11
EG020: Mercury	7439-97-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EG020: Nickel	7440-02-0	1	mg/kg		7	8	10	9	11
EG020: Silver	7440-22-4	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EG020: Zinc	7440-66-6	1	mg/kg		39	33	68	48	48
EP-065: PCB Single Congeners									
EP065: PCB 8	34883-43-7	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 18	37680-65-2	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 28	7012-37-5	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 44	41464-39-5	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 52	35693-99-3	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 66	32598-10-0	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 77	32598-13-3	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 101	37680-73-2	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 105	32598-14-4	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 118	31508-00-6	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 126	57465-28-8	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 128	38380-07-3	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 138	35065-28-2	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 153	35065-27-1	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 169	32774-16-6	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 170	35065-30-6	3	µg/kg		<3	<3	<3	<3	<3

Sub-Matrix: SEDIMENT				Sample ID	EA1 14.60-15.50m	EA1 15.60-16.50m	EA1 16.60-17.50m	EA1 17.60-18.50m	EA1 18.60-19.50m
				Sampling date / time	19-Mar-2024 11:20	19-Mar-2024 13:30	19-Mar-2024 14:40	19-Mar-2024 15:20	19-Mar-2024 16:20
Compound	CAS Number	LOR	Unit		HK2411003-001	HK2411003-002	HK2411003-003	HK2411003-004	HK2411003-005
EP-065: PCB Single Congeners - Continued									
EP065: PCB 180	35065-29-3	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 187	52663-68-0	3	µg/kg		<3	<3	<3	<3	<3
EP065: Total Polychlorinated biphenyls	----	18	µg/kg		<18	<18	<18	<18	<18
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg		<50	<50	<50	<50	<50
EP076HK: Acenaphthylene	208-96-8	50	µg/kg		<50	<50	<50	<50	<50
EP076HK: Acenaphthene	83-32-9	50	µg/kg		<50	<50	<50	<50	<50
EP076HK: Fluorene	86-73-7	50	µg/kg		<50	<50	<50	<50	<50
EP076HK: Phenanthrene	85-01-8	50	µg/kg		<50	<50	<50	<50	<50
EP076HK: Anthracene	120-12-7	50	µg/kg		<50	<50	<50	<50	<50
EP076HK: Fluoranthene	206-44-0	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Pyrene	129-00-0	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Chrysene	218-01-9	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Low M.W. PAHs	----	550	µg/kg		<550	<550	<550	<550	<550
EP076HK: High M.W. PAHs	----	1700	µg/kg		<1700	<1700	<1700	<1700	<1700
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%		92.1	87.6	84.8	101	91.8
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%		93.9	87.4	91.1	101	91.2
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%		96.8	87.0	62.9	112	88.0

Sub-Matrix: INTERSTITIAL WATER				Sample ID	EA1 15.60-16.50m	----	----	----	----
				Sampling date / time	19-Mar-2024 13:30	----	----	----	----
Compound	CAS Number	LOR	Unit		HK2411003-002	-------	-------	-------	-------
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L		<0.015	----	----	----	----

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting "0.0" denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5689090)								
HK2410860-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	23.2	22.7	2.0
HK2411003-003	EA1 16.60-17.50m	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	25.7	25.7	0.0
EG: Metals and Major Cations (QC Lot: 5677618)								
HK2410747-022	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	11	10	11.9
		EG020: Chromium	7440-47-3	1	mg/kg	132	124	5.8
		EG020: Copper	7440-50-8	1	mg/kg	32	28	12.3
		EG020: Lead	7439-92-1	1	mg/kg	8	6	24.3
		EG020: Nickel	7440-02-0	1	mg/kg	198	181	9.0
		EG020: Zinc	7440-66-6	1	mg/kg	60	59	0.0
EP-065: PCB Single Congeners (QC Lot: 5678288)								
HK2410852-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5678288) - Continued								
HK2410852-001	Anonymous	PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5678289)								
HK2410852-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	337	292	14.4
		Pyrene	129-00-0	150	µg/kg	450	393	13.5
		Benz(a)anthracene	56-55-3	150	µg/kg	168	157	6.8
		Chrysene	218-01-9	150	µg/kg	162	<150	8.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	222	207	7.1
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	216	206	4.7
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	157	151	4.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	1920	1740	9.6
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	50	60	18.7
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	68	57	17.9
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 5694797)								
HK2410308-001	Anonymous	Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.015	<0.015	0.0

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

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
EG: Metals and Major Cations (QC Lot: 5677618)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	97.6	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	97.8	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	94.9	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	108	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	92.4	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	98.6	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	106	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	96.2	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	97.7	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5678288)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	89.8	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	105	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	113	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	111	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	117	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	100	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	108	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	110	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	106	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	105	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	106	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	106	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	104	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	105	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	104	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	104	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	105	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	105	----	68.0	132	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----

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: 5678289)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	112	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	114	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	113	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	110	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	106	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	104	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	105	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	104	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	110	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	110	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	115	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	106	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	108	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	131	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	117	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	115	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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-390: Triorganotins (QC Lot: 5694797)											
Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.012	0.0122 µg TBT /L	108	----	70.0	130	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5677618)										
HK2410747-021	Anonymous	EG020: Arsenic	7440-38-2	10 mg/kg	97.6	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	104	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	110	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	94.4	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	102	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	94.4	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5678288)										
HK2410852-002	Anonymous	PCB 8	34883-43-7	5 µg/kg	82.9	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	88.5	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	80.6	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	86.3	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	92.0	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	84.8	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	92.3	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	93.9	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-065: PCB Single Congeners (QC Lot: 5678288) - Continued										
HK2410852-002	Anonymous	PCB 105	32598-14-4	5 µg/kg	92.2	----	50.0	130	----	----
		PCB 118	31508-00-6	5 µg/kg	92.6	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	94.0	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	93.2	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	92.7	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	97.6	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	93.8	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	93.3	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	95.8	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	93.1	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5678289)										
HK2410852-003	Anonymous	Naphthalene	91-20-3	250 µg/kg	91.6	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	95.2	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	92.2	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	95.6	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	128	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	83.6	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	112	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	114	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	91.1	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5678289) - Continued										
HK2410852-003	Anonymous	**Chrysene**	218-01-9	250 µg/kg	96.2	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	106	----	50.0	130	----	----
		Benzo(k)fluoranthene	207-08-9	250 µg/kg	88.8	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	98.5	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	114	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	91.4	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	94.3	----	50.0	130	----	----

Matrix: **WATER**

Laboratory sample ID	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-390: Triorganotins (QC Lot: 5694797)										
HK2410308-001	Anonymous	**Tributyltin**	56573-85-4	0.0122 µg TBT /L	114	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 11
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2411099
Address	: EAST DEVELOPMENT OFFICE 8F, WEST KOWLOON GOVERNMENT OFFICES SOUTH TOWER YAU MA TEI, KOWLOON HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
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Facsimile	: +852 2739 0076	Facsimile	: +852 2610 2021		
Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 20-Mar-2021
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 08-Apr-2024
C-O-C number	: ----			No. of samples received	: 3
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			No. of samples analysed	: 3

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*
Chan Ka Yu , Karen	Manager - Organics	Organics_ENV
Lin Wai Yu , Iris	Assistant Manager - Inorganics	Inorganics
Wong Wing , Kenneth	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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 20-Mar-2021 to 05-Apr-2024.

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: HK2411099

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Analysis of Tributyltin in interstitial water was cancelled for HK2411099 #001 to 003 due to insufficient volume of interstitial water.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID	EA1 19.60-20.50m	EA1 20.60-21.50m	EA1 21.60-22.50m	----	----
				Sampling date / time	20-Mar-2024 09:20	20-Mar-2024 10:15	20-Mar-2024 11:30	----	----
					HK2411099-001	HK2411099-002	HK2411099-003	-------	-------
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%		26.2	25.7	25.6	----	----
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1	mg/kg		4	4	5	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
EG020: Chromium	7440-47-3	1	mg/kg		25	20	25	----	----
EG020: Copper	7440-50-8	1	mg/kg		7	5	7	----	----
EG020: Lead	7439-92-1	1	mg/kg		17	15	19	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
EG020: Nickel	7440-02-0	1	mg/kg		18	13	17	----	----
EG020: Silver	7440-22-4	0.1	mg/kg		<0.1	<0.1	<0.1	----	----
EG020: Zinc	7440-66-6	1	mg/kg		56	70	101	----	----
EP-065: PCB Single Congeners									
EP065: PCB 8	34883-43-7	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 18	37680-65-2	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 28	7012-37-5	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 44	41464-39-5	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 52	35693-99-3	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 66	32598-10-0	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 77	32598-13-3	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 101	37680-73-2	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 105	32598-14-4	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 118	31508-00-6	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 126	57465-28-8	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 128	38380-07-3	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 138	35065-28-2	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 153	35065-27-1	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 169	32774-16-6	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 170	35065-30-6	3	µg/kg		<3	<3	<3	----	----

Sub-Matrix: SEDIMENT				Sample ID	EA1 19.60-20.50m	EA1 20.60-21.50m	EA1 21.60-22.50m	----	----
				Sampling date / time	20-Mar-2024 09:20	20-Mar-2024 10:15	20-Mar-2024 11:30	----	----
Compound	CAS Number	LOR	Unit		HK2411099-001	HK2411099-002	HK2411099-003	----------	----------
EP-065: PCB Single Congeners - Continued									
EP065: PCB 180	35065-29-3	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 187	52663-68-0	3	µg/kg		<3	<3	<3	----	----
EP065: Total Polychlorinated biphenyls	----	18	µg/kg		<18	<18	<18	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg		<50	<50	<50	----	----
EP076HK: Acenaphthylene	208-96-8	50	µg/kg		<50	<50	<50	----	----
EP076HK: Acenaphthene	83-32-9	50	µg/kg		<50	<50	<50	----	----
EP076HK: Fluorene	86-73-7	50	µg/kg		<50	<50	<50	----	----
EP076HK: Phenanthrene	85-01-8	50	µg/kg		<50	<50	<50	----	----
EP076HK: Anthracene	120-12-7	50	µg/kg		<50	<50	<50	----	----
EP076HK: Fluoranthene	206-44-0	150	µg/kg		<150	<150	<150	----	----
EP076HK: Pyrene	129-00-0	150	µg/kg		<150	<150	<150	----	----
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg		<150	<150	<150	----	----
EP076HK: Chrysene	218-01-9	150	µg/kg		<150	<150	<150	----	----
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg		<150	<150	<150	----	----
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg		<150	<150	<150	----	----
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg		<150	<150	<150	----	----
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg		<150	<150	<150	----	----
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg		<150	<150	<150	----	----
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg		<150	<150	<150	----	----
EP076HK: Low M.W. PAHs	----	550	µg/kg		<550	<550	<550	----	----
EP076HK: High M.W. PAHs	----	1700	µg/kg		<1700	<1700	<1700	----	----
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%		97.2	83.4	90.6	----	----
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%		95.8	97.3	93.5	----	----
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%		119	97.2	98.5	----	----

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting "0.0" denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5697859)								
HK2411099-001	EA1 19.60-20.50m	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	26.2	26.9	2.9
HK2411220-003	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	33.5	34.5	3.0
EG: Metals and Major Cations (QC Lot: 5685002)								
HK2411099-002	EA1 20.60-21.50m	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	4	4	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	20	21	7.3
		EG020: Copper	7440-50-8	1	mg/kg	5	4	23.5
		EG020: Lead	7439-92-1	1	mg/kg	15	13	14.8
		EG020: Nickel	7440-02-0	1	mg/kg	13	14	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	70	88	22.6
EP-065: PCB Single Congeners (QC Lot: 5690588)								
HK2411019-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5690588) - Continued								
HK2411019-001	Anonymous	PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5690589)								
HK2411019-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

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

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
EG: Metals and Major Cations (QC Lot: 5685002)											

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
EG: Metals and Major Cations (QC Lot: 5685002) - Continued											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	98.4	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	103	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	102	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	108	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	96.8	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	104	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	106	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	96.6	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	103	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5690588)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	95.1	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	90.8	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	83.9	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	95.7	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	80.9	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	102	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	101	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	106	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	101	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	99.4	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	98.6	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	98.2	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	99.0	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	102	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	97.8	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	98.1	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	100	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	97.0	----	68.0	132	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----

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: 5690589)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	116	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	113	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	118	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	116	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	109	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	104	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	109	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	106	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	112	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	113	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	115	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	106	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	101	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	129	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	120	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	119	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5685002)										
HK2411099-001	EA1 19.60-20.50m	**EG020: Arsenic**	7440-38-2	10 mg/kg	102	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	101	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	115	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	95.3	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	95.2	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	94.8	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	104	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	93.7	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5690588)										
HK2411099-001	EA1 19.60-20.50m	**PCB 8**	34883-43-7	5 µg/kg	83.5	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	85.1	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	71.9	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	84.7	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	87.6	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	62.2	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	95.1	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	102	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	94.6	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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
EP-065: PCB Single Congeners (QC Lot: 5690588) - Continued										
HK2411099-001	EA1 19.60-20.50m	PCB 118	31508-00-6	5 µg/kg	94.0	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	94.0	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	93.5	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	94.2	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	96.6	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	90.0	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	90.4	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	91.0	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	95.2	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5690589)										
HK2411099-002	EA1 20.60-21.50m	Naphthalene	91-20-3	250 µg/kg	97.6	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	96.9	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	98.3	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	96.8	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	90.9	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	87.6	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	92.2	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	89.5	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	95.4	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	95.4	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	104	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5690589) - Continued										
HK2411099-002	EA1 20.60-21.50m	Benzo(k)fluoranthene	207-08-9	250 µg/kg	90.3	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	97.3	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	115	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	101	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	99.8	----	50.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 12
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2411019
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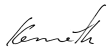
Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 19-Mar-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 05-Apr-2024
C-O-C number	: ----			No. of samples received	: 2
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			No. of samples analysed	: 2

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

Signatories	*Position*	*Authorised results for*
 Chan Ka Yu , Karen	Manager - Organics	Organics_ENV
 Chan Wai Hung , Mannix	Laboratory Manager	Organics_ENV
 Lin Wai Yu , Iris	Assistant Manager - Inorganics	Inorganics
 Wong Wing , Kenneth	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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 19-Mar-2024 to 05-Apr-2024.

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: HK2411019

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Analysis of Tributyltin in interstitial water was cancelled for HK2411019 #001 and 002 due to insufficient volume of interstitial water.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID	EA2 22.00-22.90m	EA2 23.00-23.90m	----	----	----
				Sampling date / time	19-Mar-2024 13:00	19-Mar-2024 15:35	----	----	----
					HK2411019-001	HK2411019-002	-------	-------	-------
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%		25.2	22.2	----	----	----
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1	mg/kg		6	4	----	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg		<0.2	<0.2	----	----	----
EG020: Chromium	7440-47-3	1	mg/kg		30	30	----	----	----
EG020: Copper	7440-50-8	1	mg/kg		9	7	----	----	----
EG020: Lead	7439-92-1	1	mg/kg		23	16	----	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg		<0.05	<0.05	----	----	----
EG020: Nickel	7440-02-0	1	mg/kg		24	24	----	----	----
EG020: Silver	7440-22-4	0.1	mg/kg		<0.1	<0.1	----	----	----
EG020: Zinc	7440-66-6	1	mg/kg		72	66	----	----	----
EP-065: PCB Single Congeners									
EP065: PCB 8	34883-43-7	3	µg/kg		<3	<3	----	----	----
EP065: PCB 18	37680-65-2	3	µg/kg		<3	<3	----	----	----
EP065: PCB 28	7012-37-5	3	µg/kg		<3	<3	----	----	----
EP065: PCB 44	41464-39-5	3	µg/kg		<3	<3	----	----	----
EP065: PCB 52	35693-99-3	3	µg/kg		<3	<3	----	----	----
EP065: PCB 66	32598-10-0	3	µg/kg		<3	<3	----	----	----
EP065: PCB 77	32598-13-3	3	µg/kg		<3	<3	----	----	----
EP065: PCB 101	37680-73-2	3	µg/kg		<3	<3	----	----	----
EP065: PCB 105	32598-14-4	3	µg/kg		<3	<3	----	----	----
EP065: PCB 118	31508-00-6	3	µg/kg		<3	<3	----	----	----
EP065: PCB 126	57465-28-8	3	µg/kg		<3	<3	----	----	----
EP065: PCB 128	38380-07-3	3	µg/kg		<3	<3	----	----	----
EP065: PCB 138	35065-28-2	3	µg/kg		<3	<3	----	----	----
EP065: PCB 153	35065-27-1	3	µg/kg		<3	<3	----	----	----
EP065: PCB 169	32774-16-6	3	µg/kg		<3	<3	----	----	----
EP065: PCB 170	35065-30-6	3	µg/kg		<3	<3	----	----	----

Sub-Matrix: SEDIMENT			Sample ID	EA2 22.00-22.90m	EA2 23.00-23.90m	----	----	----
			Sampling date / time	19-Mar-2024 13:00	19-Mar-2024 15:35	----	----	----
Compound	CAS Number	LOR	Unit	HK2411019-001	HK2411019-002	-------	-------	-------
EP-065: PCB Single Congeners - Continued								
EP065: PCB 180	35065-29-3	3	µg/kg	<3	<3	----	----	----
EP065: PCB 187	52663-68-0	3	µg/kg	<3	<3	----	----	----
EP065: Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)								
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	<50	----	----	----
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	<50	----	----	----
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	<50	----	----	----
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	<50	----	----	----
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	<50	----	----	----
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	<50	----	----	----
EP076HK: Fluoranthene	206-44-0	150	µg/kg	<150	<150	----	----	----
EP076HK: Pyrene	129-00-0	150	µg/kg	<150	<150	----	----	----
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	----	----	----
EP076HK: Chrysene	218-01-9	150	µg/kg	<150	<150	----	----	----
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	----	----	----
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	----	----	----
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	----	----	----
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	----	----	----
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	----	----	----
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	----	----	----
EP076HK: Low M.W. PAHs	----	550	µg/kg	<550	<550	----	----	----
EP076HK: High M.W. PAHs	----	1700	µg/kg	<1700	<1700	----	----	----
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates								
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	**93.7**	**88.8**	----	----	----
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	**96.7**	**96.9**	----	----	----
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate								
EP065: Decachlorobiphenyl	2051-24-3	0.1	%	**104**	**106**	----	----	----

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting "0.0" denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5689090)								
HK2410860-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	23.2	22.7	2.0
HK2411003-003	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	25.7	25.7	0.0
EG: Metals and Major Cations (QC Lot: 5677618)								
HK2410747-022	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	11	10	11.9
		EG020: Chromium	7440-47-3	1	mg/kg	132	124	5.8
		EG020: Copper	7440-50-8	1	mg/kg	32	28	12.3
		EG020: Lead	7439-92-1	1	mg/kg	8	6	24.3
		EG020: Nickel	7440-02-0	1	mg/kg	198	181	9.0
		EG020: Zinc	7440-66-6	1	mg/kg	60	59	0.0
EP-065: PCB Single Congeners (QC Lot: 5690588)								
HK2411019-001	EA2 22.00-22.90m	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5690588) - Continued								
HK2411019-001	EA2 22.00-22.90m	PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5690589)								
HK2411019-001	EA2 22.00-22.90m	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

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

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
EG: Metals and Major Cations (QC Lot: 5677618)											

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
EG: Metals and Major Cations (QC Lot: 5677618) - Continued											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	97.6	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	97.8	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	94.9	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	108	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	92.4	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	98.6	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	106	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	96.2	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	97.7	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5690588)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	95.1	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	90.8	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	83.9	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	95.7	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	80.9	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	102	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	101	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	106	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	101	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	99.4	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	98.6	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	98.2	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	99.0	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	102	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	97.8	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	98.1	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	100	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	97.0	----	68.0	132	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----

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: 5690589)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	116	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	113	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	118	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	116	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	109	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	104	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	109	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	106	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	112	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	113	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	115	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	106	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	101	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	129	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	120	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	119	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5677618)										
HK2410747-021	Anonymous	EG020: Arsenic	7440-38-2	10 mg/kg	97.6	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	104	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	110	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	94.4	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	102	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	94.4	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5690588)										
HK2411099-001	Anonymous	PCB 8	34883-43-7	5 µg/kg	83.5	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	85.1	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	71.9	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	84.7	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	87.6	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	62.2	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	95.1	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	102	----	50.0	130	----	----

Matrix: **SOIL**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number		MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 5690588) - Continued										
HK2411099-001	Anonymous	PCB 105	32598-14-4	5 µg/kg	94.6	----	50.0	130	----	----
		PCB 118	31508-00-6	5 µg/kg	94.0	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	94.0	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	93.5	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	94.2	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	96.6	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	90.0	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	90.4	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	91.0	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	95.2	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5690589)										
HK2411099-002	Anonymous	Naphthalene	91-20-3	250 µg/kg	97.6	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	96.9	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	98.3	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	96.8	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	90.9	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	87.6	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	92.2	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	89.5	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	95.4	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5690589) - Continued										
HK2411099-002	Anonymous	Chrysene	218-01-9	250 µg/kg	95.4	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	104	----	50.0	130	----	----
		Benzo(k)fluoranthene	207-08-9	250 µg/kg	90.3	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	97.3	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	115	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	101	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	99.8	----	50.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 11
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2411114
Address	: EAST DEVELOPMENT OFFICE 8F, WEST KOWLOON GOVERNMENT OFFICES SOUTH TOWER YAU MA TEI, KOWLOON HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong	Amendment	: 1
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Telephone	: +852 3842 7134	Telephone	: +852 2610 1044		
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Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 20-Mar-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 10-Apr-2024
C-O-C number	: ----			No. of samples received	: 5
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			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*
Chan Wai Hung , Mannix	Laboratory Manager	Organics_ENV
Lin Wai Yu , Iris	Assistant Manager - Inorganics	Inorganics
Wong Wing , Kenneth	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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 20-Mar-2024 to 05-Apr-2024.

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: HK2411114

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Analysis of Tributyltin in interstitial water was cancelled for HK2411114 #001 - #005 due to insufficient volume of interstitial water.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID	EA2 24.00-24.90m	EA2 25.00-25.90m	EA2 26.00-26.90m	EA2 27.00-27.90m	EA2 28.00-28.90m
				Sampling date / time	20-Mar-2024 09:10	20-Mar-2024 10:30	20-Mar-2024 13:10	20-Mar-2024 15:00	20-Mar-2024 16:00
					HK2411114-001	HK2411114-002	HK2411114-003	HK2411114-004	HK2411114-005
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%		27.6	27.1	24.9	32.0	31.5
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1	mg/kg		6	5	4	7	8
EG020: Cadmium	7440-43-9	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EG020: Chromium	7440-47-3	1	mg/kg		32	30	30	39	40
EG020: Copper	7440-50-8	1	mg/kg		8	8	7	12	12
EG020: Lead	7439-92-1	1	mg/kg		18	18	17	30	32
EG020: Mercury	7439-97-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EG020: Nickel	7440-02-0	1	mg/kg		22	23	23	29	30
EG020: Silver	7440-22-4	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EG020: Zinc	7440-66-6	1	mg/kg		81	65	75	78	83
EP-065: PCB Single Congeners									
EP065: PCB 8	34883-43-7	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 18	37680-65-2	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 28	7012-37-5	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 44	41464-39-5	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 52	35693-99-3	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 66	32598-10-0	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 77	32598-13-3	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 101	37680-73-2	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 105	32598-14-4	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 118	31508-00-6	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 126	57465-28-8	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 128	38380-07-3	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 138	35065-28-2	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 153	35065-27-1	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 169	32774-16-6	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 170	35065-30-6	3	µg/kg		<3	<3	<3	<3	<3

Sub-Matrix: SEDIMENT				Sample ID	EA2 24.00-24.90m	EA2 25.00-25.90m	EA2 26.00-26.90m	EA2 27.00-27.90m	EA2 28.00-28.90m
				Sampling date / time	20-Mar-2024 09:10	20-Mar-2024 10:30	20-Mar-2024 13:10	20-Mar-2024 15:00	20-Mar-2024 16:00
Compound	CAS Number	LOR	Unit		HK2411114-001	HK2411114-002	HK2411114-003	HK2411114-004	HK2411114-005
EP-065: PCB Single Congeners - Continued									
EP065: PCB 180	35065-29-3	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 187	52663-68-0	3	µg/kg		<3	<3	<3	<3	<3
EP065: Total Polychlorinated biphenyls	----	18	µg/kg		<18	<18	<18	<18	<18
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg		<50	<50	<50	<50	<50
EP076HK: Acenaphthylene	208-96-8	50	µg/kg		<50	<50	<50	<50	<50
EP076HK: Acenaphthene	83-32-9	50	µg/kg		<50	<50	<50	<50	<50
EP076HK: Fluorene	86-73-7	50	µg/kg		<50	<50	<50	<50	<50
EP076HK: Phenanthrene	85-01-8	50	µg/kg		<50	<50	<50	<50	<50
EP076HK: Anthracene	120-12-7	50	µg/kg		<50	<50	<50	<50	<50
EP076HK: Fluoranthene	206-44-0	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Pyrene	129-00-0	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Chrysene	218-01-9	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Low M.W. PAHs	----	550	µg/kg		<550	<550	<550	<550	<550
EP076HK: High M.W. PAHs	----	1700	µg/kg		<1700	<1700	<1700	<1700	<1700
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%		92.3	77.9	87.8	91.0	94.6
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%		100	91.2	93.0	103	96.4
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%		98.3	98.2	114	108	116

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting "0.0" denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5697859)								
HK2411099-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	26.2	26.9	2.9
HK2411220-003	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	33.5	34.5	3.0
EG: Metals and Major Cations (QC Lot: 5685002)								
HK2411099-002	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	4	4	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	20	21	7.3
		EG020: Copper	7440-50-8	1	mg/kg	5	4	23.5
		EG020: Lead	7439-92-1	1	mg/kg	15	13	14.8
		EG020: Nickel	7440-02-0	1	mg/kg	13	14	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	70	88	22.6
EP-065: PCB Single Congeners (QC Lot: 5690588)								
HK2411019-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5690588) - Continued								
HK2411019-001	Anonymous	PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5690589)								
HK2411019-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

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: 5685002)											

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
EG: Metals and Major Cations (QC Lot: 5685002) - Continued											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	98.4	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	103	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	102	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	108	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	96.8	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	104	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	106	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	96.6	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	103	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5690588)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	95.1	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	90.8	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	83.9	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	95.7	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	80.9	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	102	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	101	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	106	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	101	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	99.4	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	98.6	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	98.2	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	99.0	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	102	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	97.8	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	98.1	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	100	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	97.0	----	68.0	132	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----

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: 5690589)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	116	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	113	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	118	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	116	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	109	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	104	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	109	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	106	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	112	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	113	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	115	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	106	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	101	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	129	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	120	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	119	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5685002)										
HK2411099-001	Anonymous	EG020: Arsenic	7440-38-2	10 mg/kg	102	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	101	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	115	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	95.3	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	95.2	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	94.8	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	104	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	93.7	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5690588)										
HK2411099-001	Anonymous	PCB 8	34883-43-7	5 µg/kg	83.5	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	85.1	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	71.9	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	84.7	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	87.6	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	62.2	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	95.1	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	102	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	94.6	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-065: PCB Single Congeners (QC Lot: 5690588) - Continued										
HK2411099-001	Anonymous	PCB 118	31508-00-6	5 µg/kg	94.0	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	94.0	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	93.5	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	94.2	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	96.6	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	90.0	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	90.4	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	91.0	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	95.2	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5690589)										
HK2411099-002	Anonymous	Naphthalene	91-20-3	250 µg/kg	97.6	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	96.9	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	98.3	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	96.8	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	90.9	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	87.6	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	92.2	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	89.5	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	95.4	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	95.4	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	104	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5690589) - Continued										
HK2411099-002	Anonymous	Benzo(k)fluoranthene	207-08-9	250 µg/kg	90.3	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	97.3	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	115	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	101	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	99.8	----	50.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

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Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 21-Mar-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 10-Apr-2024
C-O-C number	: ----			No. of samples received	: 4
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			No. of samples analysed	: 4

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*
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General Comments

This report supersedes any previous report(s) with the same work order number. 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 21-Mar-2024 to 05-Apr-2024.

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: HK2411220

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Analysis of Tributyltin in interstitial water was cancelled for HK2411220 #001 - #004 due to insufficient volume of interstitial water.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID	EA2 29.00-29.90m	EA2 30.00-30.90m	EA2 31.00-31.45m	EA2 31.45-31.90m	----
				Sampling date / time	21-Mar-2024 09:50	21-Mar-2024 11:00	21-Mar-2024 14:00	21-Mar-2024 14:00	----
					HK2411220-001	HK2411220-002	HK2411220-003	HK2411220-004	--------
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%		33.6	28.8	33.5	32.4	----
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1	mg/kg		8	11	12	7	----
EG020: Cadmium	7440-43-9	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
EG020: Chromium	7440-47-3	1	mg/kg		41	38	37	31	----
EG020: Copper	7440-50-8	1	mg/kg		14	14	12	10	----
EG020: Lead	7439-92-1	1	mg/kg		31	32	32	33	----
EG020: Mercury	7439-97-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
EG020: Nickel	7440-02-0	1	mg/kg		31	29	25	22	----
EG020: Silver	7440-22-4	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	----
EG020: Zinc	7440-66-6	1	mg/kg		85	74	75	72	----
EP-065: PCB Single Congeners									
EP065: PCB 8	34883-43-7	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 18	37680-65-2	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 28	7012-37-5	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 44	41464-39-5	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 52	35693-99-3	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 66	32598-10-0	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 77	32598-13-3	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 101	37680-73-2	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 105	32598-14-4	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 118	31508-00-6	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 126	57465-28-8	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 128	38380-07-3	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 138	35065-28-2	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 153	35065-27-1	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 169	32774-16-6	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 170	35065-30-6	3	µg/kg		<3	<3	<3	<3	----

Sub-Matrix: SEDIMENT				Sample ID	EA2 29.00-29.90m	EA2 30.00-30.90m	EA2 31.00-31.45m	EA2 31.45-31.90m	----
				Sampling date / time	21-Mar-2024 09:50	21-Mar-2024 11:00	21-Mar-2024 14:00	21-Mar-2024 14:00	----
Compound	CAS Number	LOR	Unit		HK2411220-001	HK2411220-002	HK2411220-003	HK2411220-004	-------
EP-065: PCB Single Congeners - Continued									
EP065: PCB 180	35065-29-3	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 187	52663-68-0	3	µg/kg		<3	<3	<3	<3	----
EP065: Total Polychlorinated biphenyls	----	18	µg/kg		<18	<18	<18	<18	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg		115	<50	<50	<50	----
EP076HK: Acenaphthylene	208-96-8	50	µg/kg		<50	<50	<50	<50	----
EP076HK: Acenaphthene	83-32-9	50	µg/kg		<50	<50	<50	<50	----
EP076HK: Fluorene	86-73-7	50	µg/kg		<50	<50	<50	<50	----
EP076HK: Phenanthrene	85-01-8	50	µg/kg		<50	<50	<50	<50	----
EP076HK: Anthracene	120-12-7	50	µg/kg		<50	<50	<50	<50	----
EP076HK: Fluoranthene	206-44-0	150	µg/kg		<150	<150	<150	<150	----
EP076HK: Pyrene	129-00-0	150	µg/kg		<150	<150	<150	<150	----
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg		<150	<150	<150	<150	----
EP076HK: Chrysene	218-01-9	150	µg/kg		<150	<150	<150	<150	----
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg		<150	<150	<150	<150	----
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg		<150	<150	<150	<150	----
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg		<150	<150	<150	<150	----
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg		<150	<150	<150	<150	----
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg		<150	<150	<150	<150	----
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg		<150	<150	<150	<150	----
EP076HK: Low M.W. PAHs	----	550	µg/kg		<550	<550	<550	<550	----
EP076HK: High M.W. PAHs	----	1700	µg/kg		<1700	<1700	<1700	<1700	----
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%		89.7	89.5	98.4	97.0	----
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%		94.6	95.3	101	103	----
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%		106	108	106	69.5	----

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting "0.0" denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5697859)								
HK2411099-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	26.2	26.9	2.9
HK2411220-003	EA2 31.00-31.45m	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	33.5	34.5	3.0
EG: Metals and Major Cations (QC Lot: 5685002)								
HK2411099-002	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	4	4	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	20	21	7.3
		EG020: Copper	7440-50-8	1	mg/kg	5	4	23.5
		EG020: Lead	7439-92-1	1	mg/kg	15	13	14.8
		EG020: Nickel	7440-02-0	1	mg/kg	13	14	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	70	88	22.6
EP-065: PCB Single Congeners (QC Lot: 5690588)								
HK2411019-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5690588) - Continued								
HK2411019-001	Anonymous	PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5690589)								
HK2411019-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

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: 5685002)											

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
EG: Metals and Major Cations (QC Lot: 5685002) - Continued											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	98.4	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	103	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	102	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	108	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	96.8	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	104	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	106	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	96.6	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	103	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5690588)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	95.1	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	90.8	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	83.9	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	95.7	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	80.9	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	102	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	101	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	106	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	101	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	99.4	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	98.6	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	98.2	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	99.0	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	102	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	97.8	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	98.1	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	100	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	97.0	----	68.0	132	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----

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: 5690589)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	116	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	113	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	118	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	116	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	109	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	104	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	109	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	106	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	112	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	113	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	115	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	106	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	101	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	129	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	120	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	119	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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

Matrix: **SOIL**

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report										
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number		MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 5685002)										
HK2411099-001	Anonymous	EG020: Arsenic	7440-38-2	10 mg/kg	102	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	101	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	115	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	95.3	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	95.2	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	94.8	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	104	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	93.7	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5690588)										
HK2411099-001	Anonymous	PCB 8	34883-43-7	5 µg/kg	83.5	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	85.1	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	71.9	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	84.7	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	87.6	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	62.2	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	95.1	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	102	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	94.6	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-065: PCB Single Congeners (QC Lot: 5690588) - Continued										
HK2411099-001	Anonymous	PCB 118	31508-00-6	5 µg/kg	94.0	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	94.0	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	93.5	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	94.2	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	96.6	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	90.0	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	90.4	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	91.0	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	95.2	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5690589)										
HK2411099-002	Anonymous	Naphthalene	91-20-3	250 µg/kg	97.6	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	96.9	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	98.3	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	96.8	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	90.9	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	87.6	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	92.2	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	89.5	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	95.4	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	95.4	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	104	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5690589) - Continued										
HK2411099-002	Anonymous	Benzo(k)fluoranthene	207-08-9	250 µg/kg	90.3	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	97.3	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	115	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	101	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	99.8	----	50.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2410864
Address	: EAST DEVELOPMENT OFFICE 8F, WEST KOWLOON GOVERNMENT OFFICES SOUTH TOWER YAU MA TEI, KOWLOON HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: MhyLee@cedd.gov.hk	E-mail	: richard.fung@alsglobal.com		
Telephone	: +852 3842 7134	Telephone	: +852 2610 1044		
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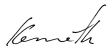
Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 18-Mar-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 03-Apr-2024
C-O-C number	: ----			No. of samples received	: 2
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			No. of samples analysed	: 2

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

Signatories	*Position*	*Authorised results for*
 Chan Wai Hung , Mannix	Laboratory Manager	Organics_ENV
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Lin Wai Yu , Iris	Assistant Manager - Inorganics	Inorganics
 Wong Wing , Kenneth	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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 18-Mar-2024 to 02-Apr-2024.

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: HK2410864

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Analysis of Tributyltin in interstitial water was cancelled for HK2410864 #002 due to insufficient volume of interstitial water.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

TBT result(s) (Method: EP390) is/are reported on as received basis.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID	MEB1 Surface	MEB1 0.00-0.42m	----	----	----
				Sampling date / time	18-Mar-2024 11:15	18-Mar-2024 11:45	----	----	----
					HK2410864-001	HK2410864-002	-------	-------	-------
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%		38.3	21.2	----	----	----
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1	mg/kg		11	8	----	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg		<0.2	<0.2	----	----	----
EG020: Chromium	7440-47-3	1	mg/kg		24	18	----	----	----
EG020: Copper	7440-50-8	1	mg/kg		40	36	----	----	----
EG020: Lead	7439-92-1	1	mg/kg		55	44	----	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg		0.11	0.08	----	----	----
EG020: Nickel	7440-02-0	1	mg/kg		13	7	----	----	----
EG020: Silver	7440-22-4	0.1	mg/kg		0.4	0.3	----	----	----
EG020: Zinc	7440-66-6	1	mg/kg		105	90	----	----	----
EP-065: PCB Single Congeners									
EP065: PCB 8	34883-43-7	3	µg/kg		<3	<3	----	----	----
EP065: PCB 18	37680-65-2	3	µg/kg		<3	<3	----	----	----
EP065: PCB 28	7012-37-5	3	µg/kg		<3	<3	----	----	----
EP065: PCB 44	41464-39-5	3	µg/kg		<3	<3	----	----	----
EP065: PCB 52	35693-99-3	3	µg/kg		<3	<3	----	----	----
EP065: PCB 66	32598-10-0	3	µg/kg		<3	<3	----	----	----
EP065: PCB 77	32598-13-3	3	µg/kg		<3	<3	----	----	----
EP065: PCB 101	37680-73-2	3	µg/kg		<3	<3	----	----	----
EP065: PCB 105	32598-14-4	3	µg/kg		<3	<3	----	----	----
EP065: PCB 118	31508-00-6	3	µg/kg		<3	<3	----	----	----
EP065: PCB 126	57465-28-8	3	µg/kg		<3	<3	----	----	----
EP065: PCB 128	38380-07-3	3	µg/kg		<3	<3	----	----	----
EP065: PCB 138	35065-28-2	3	µg/kg		<3	<3	----	----	----
EP065: PCB 153	35065-27-1	3	µg/kg		<3	<3	----	----	----
EP065: PCB 169	32774-16-6	3	µg/kg		<3	<3	----	----	----
EP065: PCB 170	35065-30-6	3	µg/kg		<3	<3	----	----	----

Sub-Matrix: SEDIMENT			Sample ID	MEB1 Surface	MEB1 0.00-0.42m	----	----	----
			Sampling date / time	18-Mar-2024 11:15	18-Mar-2024 11:45	----	----	----
Compound	CAS Number	LOR	Unit	HK2410864-001	HK2410864-002	-------	-------	-------
EP-065: PCB Single Congeners - Continued								
EP065: PCB 180	35065-29-3	3	µg/kg	<3	<3	----	----	----
EP065: PCB 187	52663-68-0	3	µg/kg	<3	<3	----	----	----
EP065: Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)								
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	<50	----	----	----
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	<50	----	----	----
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	<50	----	----	----
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	<50	----	----	----
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	<50	----	----	----
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	<50	----	----	----
EP076HK: Fluoranthene	206-44-0	150	µg/kg	<150	<150	----	----	----
EP076HK: Pyrene	129-00-0	150	µg/kg	<150	172	----	----	----
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	----	----	----
EP076HK: Chrysene	218-01-9	150	µg/kg	<150	<150	----	----	----
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	155	----	----	----
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	----	----	----
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg	<150	155	----	----	----
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	----	----	----
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	----	----	----
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	----	----	----
EP076HK: Low M.W. PAHs	----	550	µg/kg	<550	<550	----	----	----
EP076HK: High M.W. PAHs	----	1700	µg/kg	<1700	<1700	----	----	----
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates								
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	89.8	86.9	----	----	----
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	94.4	88.9	----	----	----
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate								
EP065: Decachlorobiphenyl	2051-24-3	0.1	%	102	109	----	----	----

Sub-Matrix: INTERSTITIAL WATER				Sample ID	MEB1 Surface	----	----	----	----
				Sampling date / time	18-Mar-2024 11:15	----	----	----	----
Compound	CAS Number	LOR	Unit		HK2410864-001	-------	-------	-------	-------
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L		<0.015	----	----	----	----

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting “0.0” denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5689090)								
HK2410860-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	23.2	22.7	2.0
HK2411003-003	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	25.7	25.7	0.0
EG: Metals and Major Cations (QC Lot: 5674500)								
HK2410852-002	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	7	7	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	2	2	0.0
		EG020: Copper	7440-50-8	1	mg/kg	7	8	0.0
		EG020: Lead	7439-92-1	1	mg/kg	105	95	10.0
		EG020: Nickel	7440-02-0	1	mg/kg	2	2	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	44	45	3.3
EP-065: PCB Single Congeners (QC Lot: 5678288)								
HK2410852-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5678288) - Continued								
HK2410852-001	Anonymous	PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5678289)								
HK2410852-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	337	292	14.4
		Pyrene	129-00-0	150	µg/kg	450	393	13.5
		Benz(a)anthracene	56-55-3	150	µg/kg	168	157	6.8
		Chrysene	218-01-9	150	µg/kg	162	<150	8.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	222	207	7.1
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	216	206	4.7
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	157	151	4.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	1920	1740	9.6
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	50	60	18.7
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	68	57	17.9
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 5694797)								
HK2410308-001	Anonymous	Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.015	<0.015	0.0

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

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
EG: Metals and Major Cations (QC Lot: 5674500)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	101	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	94.2	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	103	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	115	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	94.6	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	101	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	108	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	93.3	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	106	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5678288)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	89.8	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	105	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	113	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	111	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	117	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	100	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	108	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	110	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	106	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	105	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	106	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	106	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	104	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	105	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	104	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	104	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	105	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	105	----	68.0	132	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----

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: 5678289)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	112	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	114	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	113	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	110	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	106	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	104	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	105	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	104	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	110	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	110	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	115	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	106	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	108	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	131	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	117	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	115	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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-390: Triorganotins (QC Lot: 5694797)											
Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.012	0.0122 µg TBT /L	108	----	70.0	130	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5674500)										
HK2410852-001	Anonymous	EG020: Arsenic	7440-38-2	10 mg/kg	101	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	92.7	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	88.5	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	114	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	121	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	95.7	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	112	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	90.4	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5678288)										
HK2410852-002	Anonymous	PCB 8	34883-43-7	5 µg/kg	82.9	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	88.5	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	80.6	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	86.3	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	92.0	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	84.8	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	92.3	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	93.9	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	92.2	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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
EP-065: PCB Single Congeners (QC Lot: 5678288) - Continued										
HK2410852-002	Anonymous	PCB 118	31508-00-6	5 µg/kg	92.6	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	94.0	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	93.2	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	92.7	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	97.6	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	93.8	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	93.3	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	95.8	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	93.1	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5678289)										
HK2410852-003	Anonymous	Naphthalene	91-20-3	250 µg/kg	91.6	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	95.2	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	92.2	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	95.6	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	128	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	83.6	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	112	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	114	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	91.1	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	96.2	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	106	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5678289) - Continued										
HK2410852-003	Anonymous	Benzo(k)fluoranthene	207-08-9	250 µg/kg	88.8	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	98.5	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	114	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	91.4	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	94.3	----	50.0	130	----	----

Matrix: **WATER**

Laboratory sample ID	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-390: Triorganotins (QC Lot: 5694797)										
HK2410308-001	Anonymous	Tributyltin	56573-85-4	0.0122 µg TBT /L	114	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2410448
Address	: EAST DEVELOPMENT OFFICE 8F, WEST KOWLOON GOVERNMENT OFFICES SOUTH TOWER YAU MA TEI, KOWLOON HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: MhyLee@cedd.gov.hk	E-mail	: richard.fung@alsglobal.com		
Telephone	: +852 3842 7134	Telephone	: +852 2610 1044		
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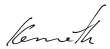
Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 13-Mar-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 27-Mar-2024
C-O-C number	: ----			No. of samples received	: 1
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			No. of samples analysed	: 1

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

Signatories	*Position*	*Authorised results for*
 Chan Wai Hung , Mannix	Laboratory Manager	Organics_ENV
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Lin Wai Yu , Iris	Assistant Manager - Inorganics	Inorganics
 Wong Wing , Kenneth	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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 13-Mar-2024 to 25-Mar-2024.

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: HK2410448

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

TBT result(s) (Method: EP390) is/are reported on as received basis.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID	MEB2 Surface	----	----	----	----
				Sampling date / time	13-Mar-2024 11:30	----	----	----	----
					HK2410448-001	-------	-------	-------	-------
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%		36.7	----	----	----	----
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1	mg/kg		12	----	----	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg		<0.2	----	----	----	----
EG020: Chromium	7440-47-3	1	mg/kg		22	----	----	----	----
EG020: Copper	7440-50-8	1	mg/kg		27	----	----	----	----
EG020: Lead	7439-92-1	1	mg/kg		55	----	----	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg		0.09	----	----	----	----
EG020: Nickel	7440-02-0	1	mg/kg		12	----	----	----	----
EG020: Silver	7440-22-4	0.1	mg/kg		0.3	----	----	----	----
EG020: Zinc	7440-66-6	1	mg/kg		88	----	----	----	----
EP-065: PCB Single Congeners									
EP065: PCB 8	34883-43-7	3	µg/kg		<3	----	----	----	----
EP065: PCB 18	37680-65-2	3	µg/kg		<3	----	----	----	----
EP065: PCB 28	7012-37-5	3	µg/kg		<3	----	----	----	----
EP065: PCB 44	41464-39-5	3	µg/kg		<3	----	----	----	----
EP065: PCB 52	35693-99-3	3	µg/kg		<3	----	----	----	----
EP065: PCB 66	32598-10-0	3	µg/kg		<3	----	----	----	----
EP065: PCB 77	32598-13-3	3	µg/kg		<3	----	----	----	----
EP065: PCB 101	37680-73-2	3	µg/kg		<3	----	----	----	----
EP065: PCB 105	32598-14-4	3	µg/kg		<3	----	----	----	----
EP065: PCB 118	31508-00-6	3	µg/kg		<3	----	----	----	----
EP065: PCB 126	57465-28-8	3	µg/kg		<3	----	----	----	----
EP065: PCB 128	38380-07-3	3	µg/kg		<3	----	----	----	----
EP065: PCB 138	35065-28-2	3	µg/kg		<3	----	----	----	----
EP065: PCB 153	35065-27-1	3	µg/kg		<3	----	----	----	----
EP065: PCB 169	32774-16-6	3	µg/kg		<3	----	----	----	----
EP065: PCB 170	35065-30-6	3	µg/kg		<3	----	----	----	----

Sub-Matrix: SEDIMENT				Sample ID	MEB2 Surface	----	----	----	----
				Sampling date / time	13-Mar-2024 11:30	----	----	----	----
Compound	CAS Number	LOR	Unit		HK2410448-001	-------	-------	-------	-------
EP-065: PCB Single Congeners - Continued									
EP065: PCB 180	35065-29-3	3	µg/kg		<3	----	----	----	----
EP065: PCB 187	52663-68-0	3	µg/kg		<3	----	----	----	----
EP065: Total Polychlorinated biphenyls	----	18	µg/kg		<18	----	----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg		<50	----	----	----	----
EP076HK: Acenaphthylene	208-96-8	50	µg/kg		<50	----	----	----	----
EP076HK: Acenaphthene	83-32-9	50	µg/kg		<50	----	----	----	----
EP076HK: Fluorene	86-73-7	50	µg/kg		<50	----	----	----	----
EP076HK: Phenanthrene	85-01-8	50	µg/kg		<50	----	----	----	----
EP076HK: Anthracene	120-12-7	50	µg/kg		<50	----	----	----	----
EP076HK: Fluoranthene	206-44-0	150	µg/kg		<150	----	----	----	----
EP076HK: Pyrene	129-00-0	150	µg/kg		<150	----	----	----	----
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg		<150	----	----	----	----
EP076HK: Chrysene	218-01-9	150	µg/kg		<150	----	----	----	----
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg		<150	----	----	----	----
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg		<150	----	----	----	----
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg		<150	----	----	----	----
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg		<150	----	----	----	----
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg		<150	----	----	----	----
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg		<150	----	----	----	----
EP076HK: Low M.W. PAHs	----	550	µg/kg		<550	----	----	----	----
EP076HK: High M.W. PAHs	----	1700	µg/kg		<1700	----	----	----	----
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%		90.6	----	----	----	----
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%		93.3	----	----	----	----
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%		103	----	----	----	----

Sub-Matrix: INTERSTITIAL WATER				Sample ID	MEB2 Surface	---	---	---	---
				Sampling date / time	13-Mar-2024 11:30	----	----	----	----
Compound	CAS Number	LOR	Unit		HK2410448-001	-------	-------	-------	-------
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L		<0.015	---	---	---	---

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting “0.0” denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5676261)								
HK2410294-003	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	33.7	33.8	0.0
EG: Metals and Major Cations (QC Lot: 5668590)								
HK2410229-002	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	0.12	0.12	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	0.3	0.3	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	4	4	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	23	22	0.0
		EG020: Copper	7440-50-8	1	mg/kg	32	34	3.6
		EG020: Lead	7439-92-1	1	mg/kg	40	37	7.5
		EG020: Nickel	7440-02-0	1	mg/kg	11	12	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	68	70	3.3
EP-065: PCB Single Congeners (QC Lot: 5668765)								
HK2409913-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5668765) - Continued								
HK2409913-001	Anonymous	PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5668766)								
HK2409913-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 5683319)								
HK2408585-001	Anonymous	Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.015	<0.015	0.0

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

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
EG: Metals and Major Cations (QC Lot: 5668590)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	95.8	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	94.1	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	98.8	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	108	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	93.4	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	94.3	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	104	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	91.9	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	99.6	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5668765)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	95.3	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	93.4	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	109	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	122	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	117	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	126	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	116	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	108	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	115	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	114	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	107	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	112	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	115	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	118	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	113	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	114	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	113	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	108	----	68.0	132	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----

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: 5668766)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	92.9	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	90.9	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	96.2	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	95.0	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	93.0	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	88.0	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	91.1	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	89.8	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	98.0	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	101	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	110	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	95.1	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	101	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	126	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	107	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	107	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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-390: Triorganotins (QC Lot: 5683319)											
Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.012	0.0122 µg TBT /L	110	----	70.0	130	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5668590)										
HK2410229-001	Anonymous	EG020: Arsenic	7440-38-2	10 mg/kg	101	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	96.6	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	117	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	90.8	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	89.0	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	97.0	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	109	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	92.9	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	75.1	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5668765)										
HK2409913-002	Anonymous	PCB 8	34883-43-7	5 µg/kg	80.6	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	79.2	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	83.7	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	94.4	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	90.8	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	106	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	104	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	108	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	102	----	50.0	130	----	----
		PCB 118	31508-00-6	5 µg/kg	100	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-065: PCB Single Congeners (QC Lot: 5668765) - Continued										
HK2409913-002	Anonymous	PCB 126	57465-28-8	5 µg/kg	101	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	100	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	84.9	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	80.2	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	91.0	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	74.7	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	76.9	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	88.0	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5668766)										
HK2409913-003	Anonymous	Naphthalene	91-20-3	250 µg/kg	92.3	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	93.4	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	95.4	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	93.9	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	89.2	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	86.6	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	91.0	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	90.0	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	99.8	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	95.1	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	109	----	50.0	130	----	----
		Benzo(k)fluoranthene	207-08-9	250 µg/kg	89.9	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	101	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5668766) - Continued										
HK2409913-003	Anonymous	Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	120	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	98.6	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	100	----	50.0	130	----	----

Matrix: **WATER**

Laboratory sample ID	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-390: Triorganotins (QC Lot: 5683319)										
HK2408585-001	Anonymous	Tributyltin	56573-85-4	0.0122 µg TBT /L	109	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2410455
Address	: EAST DEVELOPMENT OFFICE 8F, WEST KOWLOON GOVERNMENT OFFICES SOUTH TOWER YAU MA TEI, KOWLOON HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
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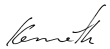
Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 13-Mar-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 27-Mar-2024
C-O-C number	: ----			No. of samples received	: 1
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			No. of samples analysed	: 1

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

Signatories	*Position*	*Authorised results for*
 Chan Wai Hung , Mannix	Laboratory Manager	Organics_ENV
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Lin Wai Yu , Iris	Assistant Manager - Inorganics	Inorganics
 Wong Wing , Kenneth	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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 13-Mar-2024 to 25-Mar-2024.

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: HK2410455

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

TBT result(s) (Method: EP390) is/are reported on as received basis.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID	MEB3 Surface	----	----	----	----
				Sampling date / time	13-Mar-2024 11:45	----	----	----	----
					HK2410455-001	-------	-------	-------	-------
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%		41.1	----	----	----	----
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1	mg/kg		8	----	----	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg		<0.2	----	----	----	----
EG020: Chromium	7440-47-3	1	mg/kg		27	----	----	----	----
EG020: Copper	7440-50-8	1	mg/kg		48	----	----	----	----
EG020: Lead	7439-92-1	1	mg/kg		40	----	----	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg		0.28	----	----	----	----
EG020: Nickel	7440-02-0	1	mg/kg		14	----	----	----	----
EG020: Silver	7440-22-4	0.1	mg/kg		0.7	----	----	----	----
EG020: Zinc	7440-66-6	1	mg/kg		97	----	----	----	----
EP-065: PCB Single Congeners									
EP065: PCB 8	34883-43-7	3	µg/kg		<3	----	----	----	----
EP065: PCB 18	37680-65-2	3	µg/kg		<3	----	----	----	----
EP065: PCB 28	7012-37-5	3	µg/kg		<3	----	----	----	----
EP065: PCB 44	41464-39-5	3	µg/kg		<3	----	----	----	----
EP065: PCB 52	35693-99-3	3	µg/kg		<3	----	----	----	----
EP065: PCB 66	32598-10-0	3	µg/kg		<3	----	----	----	----
EP065: PCB 77	32598-13-3	3	µg/kg		<3	----	----	----	----
EP065: PCB 101	37680-73-2	3	µg/kg		<3	----	----	----	----
EP065: PCB 105	32598-14-4	3	µg/kg		<3	----	----	----	----
EP065: PCB 118	31508-00-6	3	µg/kg		<3	----	----	----	----
EP065: PCB 126	57465-28-8	3	µg/kg		<3	----	----	----	----
EP065: PCB 128	38380-07-3	3	µg/kg		<3	----	----	----	----
EP065: PCB 138	35065-28-2	3	µg/kg		<3	----	----	----	----
EP065: PCB 153	35065-27-1	3	µg/kg		<3	----	----	----	----
EP065: PCB 169	32774-16-6	3	µg/kg		<3	----	----	----	----
EP065: PCB 170	35065-30-6	3	µg/kg		<3	----	----	----	----

Sub-Matrix: SEDIMENT				Sample ID	MEB3 Surface	----	----	----	----
				Sampling date / time	13-Mar-2024 11:45	----	----	----	----
Compound	CAS Number	LOR	Unit		HK2410455-001	-------	-------	-------	-------
EP-065: PCB Single Congeners - Continued									
EP065: PCB 180	35065-29-3	3	µg/kg		<3	----	----	----	----
EP065: PCB 187	52663-68-0	3	µg/kg		<3	----	----	----	----
EP065: Total Polychlorinated biphenyls	----	18	µg/kg		<18	----	----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg		<50	----	----	----	----
EP076HK: Acenaphthylene	208-96-8	50	µg/kg		<50	----	----	----	----
EP076HK: Acenaphthene	83-32-9	50	µg/kg		<50	----	----	----	----
EP076HK: Fluorene	86-73-7	50	µg/kg		<50	----	----	----	----
EP076HK: Phenanthrene	85-01-8	50	µg/kg		<50	----	----	----	----
EP076HK: Anthracene	120-12-7	50	µg/kg		<50	----	----	----	----
EP076HK: Fluoranthene	206-44-0	150	µg/kg		<150	----	----	----	----
EP076HK: Pyrene	129-00-0	150	µg/kg		<150	----	----	----	----
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg		<150	----	----	----	----
EP076HK: Chrysene	218-01-9	150	µg/kg		<150	----	----	----	----
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg		<150	----	----	----	----
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg		<150	----	----	----	----
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg		<150	----	----	----	----
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg		<150	----	----	----	----
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg		<150	----	----	----	----
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg		<150	----	----	----	----
EP076HK: Low M.W. PAHs	----	550	µg/kg		<550	----	----	----	----
EP076HK: High M.W. PAHs	----	1700	µg/kg		<1700	----	----	----	----
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%		92.1	----	----	----	----
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%		95.6	----	----	----	----
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%		105	----	----	----	----

Sub-Matrix: INTERSTITIAL WATER				Sample ID	MEB3 Surface	----	----	----	----
				Sampling date / time	13-Mar-2024 11:45	----	----	----	----
Compound	CAS Number	LOR	Unit		HK2410455-001	-------	-------	-------	-------
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L		<0.015	----	----	----	----

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting "0.0" denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5676264)								
HK2410300-003	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	33.7	33.8	0.0
HK2410995-003	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	12.4	11.8	4.9
EG: Metals and Major Cations (QC Lot: 5668590)								
HK2410229-002	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	0.12	0.12	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	0.3	0.3	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	4	4	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	23	22	0.0
		EG020: Copper	7440-50-8	1	mg/kg	32	34	3.6
		EG020: Lead	7439-92-1	1	mg/kg	40	37	7.5
		EG020: Nickel	7440-02-0	1	mg/kg	11	12	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	68	70	3.3
EP-065: PCB Single Congeners (QC Lot: 5668765)								
HK2409913-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5668765) - Continued								
HK2409913-001	Anonymous	PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5668766)								
HK2409913-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 5683319)								
HK2408585-001	Anonymous	Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.015	<0.015	0.0

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

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
EG: Metals and Major Cations (QC Lot: 5668590)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	95.8	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	94.1	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	98.8	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	108	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	93.4	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	94.3	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	104	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	91.9	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	99.6	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5668765)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	95.3	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	93.4	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	109	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	122	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	117	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	126	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	116	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	108	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	115	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	114	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	107	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	112	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	115	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	118	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	113	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	114	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	113	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	108	----	68.0	132	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----

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: 5668766)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	92.9	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	90.9	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	96.2	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	95.0	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	93.0	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	88.0	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	91.1	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	89.8	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	98.0	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	101	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	110	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	95.1	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	101	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	126	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	107	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	107	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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-390: Triorganotins (QC Lot: 5683319)											
Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.012	0.0122 µg TBT /L	110	----	70.0	130	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5668590)										
HK2410229-001	Anonymous	EG020: Arsenic	7440-38-2	10 mg/kg	101	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	96.6	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	117	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	90.8	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	89.0	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	97.0	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	109	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	92.9	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	75.1	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5668765)										
HK2409913-002	Anonymous	PCB 8	34883-43-7	5 µg/kg	80.6	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	79.2	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	83.7	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	94.4	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	90.8	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	106	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	104	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	108	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	102	----	50.0	130	----	----
		PCB 118	31508-00-6	5 µg/kg	100	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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
EP-065: PCB Single Congeners (QC Lot: 5668765) - Continued										
HK2409913-002	Anonymous	PCB 126	57465-28-8	5 µg/kg	101	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	100	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	84.9	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	80.2	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	91.0	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	74.7	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	76.9	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	88.0	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5668766)										
HK2409913-003	Anonymous	Naphthalene	91-20-3	250 µg/kg	92.3	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	93.4	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	95.4	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	93.9	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	89.2	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	86.6	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	91.0	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	90.0	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	99.8	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	95.1	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	109	----	50.0	130	----	----
		Benzo(k)fluoranthene	207-08-9	250 µg/kg	89.9	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	101	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5668766) - Continued										
HK2409913-003	Anonymous	**Indeno(1.2.3.cd)pyrene**	193-39-5	250 µg/kg	120	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	98.6	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	100	----	50.0	130	----	----

Matrix: **WATER**

Laboratory sample ID	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-390: Triorganotins (QC Lot: 5683319)										
HK2408585-001	Anonymous	**Tributyltin**	56573-85-4	0.0122 µg TBT /L	109	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2410458
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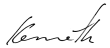
Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 13-Mar-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 27-Mar-2024
C-O-C number	: ----			No. of samples received	: 1
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			No. of samples analysed	: 1

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

Signatories	*Position*	*Authorised results for*
 Chan Wai Hung , Mannix	Laboratory Manager	Organics_ENV
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Lin Wai Yu , Iris	Assistant Manager - Inorganics	Inorganics
 Wong Wing , Kenneth	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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 13-Mar-2024 to 25-Mar-2024.

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: HK2410458

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

TBT result(s) (Method: EP390) is/are reported on as received basis.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID	MEB4 Surface	----	----	----	----
				Sampling date / time	13-Mar-2024 12:00	----	----	----	----
					HK2410458-001	-------	-------	-------	-------
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%		58.6	----	----	----	----
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1	mg/kg		8	----	----	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg		<0.2	----	----	----	----
EG020: Chromium	7440-47-3	1	mg/kg		38	----	----	----	----
EG020: Copper	7440-50-8	1	mg/kg		53	----	----	----	----
EG020: Lead	7439-92-1	1	mg/kg		46	----	----	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg		0.16	----	----	----	----
EG020: Nickel	7440-02-0	1	mg/kg		21	----	----	----	----
EG020: Silver	7440-22-4	0.1	mg/kg		0.6	----	----	----	----
EG020: Zinc	7440-66-6	1	mg/kg		122	----	----	----	----
EP-065: PCB Single Congeners									
EP065: PCB 8	34883-43-7	3	µg/kg		<3	----	----	----	----
EP065: PCB 18	37680-65-2	3	µg/kg		<3	----	----	----	----
EP065: PCB 28	7012-37-5	3	µg/kg		<3	----	----	----	----
EP065: PCB 44	41464-39-5	3	µg/kg		<3	----	----	----	----
EP065: PCB 52	35693-99-3	3	µg/kg		<3	----	----	----	----
EP065: PCB 66	32598-10-0	3	µg/kg		<3	----	----	----	----
EP065: PCB 77	32598-13-3	3	µg/kg		<3	----	----	----	----
EP065: PCB 101	37680-73-2	3	µg/kg		<3	----	----	----	----
EP065: PCB 105	32598-14-4	3	µg/kg		<3	----	----	----	----
EP065: PCB 118	31508-00-6	3	µg/kg		<3	----	----	----	----
EP065: PCB 126	57465-28-8	3	µg/kg		<3	----	----	----	----
EP065: PCB 128	38380-07-3	3	µg/kg		<3	----	----	----	----
EP065: PCB 138	35065-28-2	3	µg/kg		<3	----	----	----	----
EP065: PCB 153	35065-27-1	3	µg/kg		<3	----	----	----	----
EP065: PCB 169	32774-16-6	3	µg/kg		<3	----	----	----	----
EP065: PCB 170	35065-30-6	3	µg/kg		<3	----	----	----	----

Sub-Matrix: SEDIMENT				Sample ID	MEB4 Surface	---	---	---	---
				Sampling date / time	13-Mar-2024 12:00	----	----	----	----
Compound	CAS Number	LOR	Unit		HK2410458-001	-------	-------	-------	-------
EP-065: PCB Single Congeners - Continued									
EP065: PCB 180	35065-29-3	3	µg/kg		<3	---	---	---	---
EP065: PCB 187	52663-68-0	3	µg/kg		<3	---	---	---	---
EP065: Total Polychlorinated biphenyls	----	18	µg/kg		<18	---	---	---	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg		<50	---	---	---	---
EP076HK: Acenaphthylene	208-96-8	50	µg/kg		<50	---	---	---	---
EP076HK: Acenaphthene	83-32-9	50	µg/kg		<50	---	---	---	---
EP076HK: Fluorene	86-73-7	50	µg/kg		<50	---	---	---	---
EP076HK: Phenanthrene	85-01-8	50	µg/kg		<50	---	---	---	---
EP076HK: Anthracene	120-12-7	50	µg/kg		<50	---	---	---	---
EP076HK: Fluoranthene	206-44-0	150	µg/kg		<150	---	---	---	---
EP076HK: Pyrene	129-00-0	150	µg/kg		156	---	---	---	---
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg		<150	---	---	---	---
EP076HK: Chrysene	218-01-9	150	µg/kg		<150	---	---	---	---
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg		<150	---	---	---	---
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg		<150	---	---	---	---
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg		<150	---	---	---	---
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg		<150	---	---	---	---
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg		<150	---	---	---	---
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg		<150	---	---	---	---
EP076HK: Low M.W. PAHs	----	550	µg/kg		<550	---	---	---	---
EP076HK: High M.W. PAHs	----	1700	µg/kg		<1700	---	---	---	---
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%		86.8	---	---	---	---
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%		94.4	---	---	---	---
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%		110	---	---	---	---

Sub-Matrix: INTERSTITIAL WATER				Sample ID	MEB4 Surface	----	----	----	----
				Sampling date / time	13-Mar-2024 12:00	----	----	----	----
Compound	CAS Number	LOR	Unit		HK2410458-001	-------	-------	-------	-------
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L		<0.015	----	----	----	----

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting “0.0” denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5676261)								
HK2410294-003	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	33.7	33.8	0.0
EG: Metals and Major Cations (QC Lot: 5668590)								
HK2410229-002	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	0.12	0.12	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	0.3	0.3	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	4	4	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	23	22	0.0
		EG020: Copper	7440-50-8	1	mg/kg	32	34	3.6
		EG020: Lead	7439-92-1	1	mg/kg	40	37	7.5
		EG020: Nickel	7440-02-0	1	mg/kg	11	12	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	68	70	3.3
EP-065: PCB Single Congeners (QC Lot: 5668778)								
HK2410458-001	MEB4 Surface	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5668778) - Continued								
HK2410458-001	MEB4 Surface	PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5668779)								
HK2410458-001	MEB4 Surface	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	156	<150	3.6
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 5683319)								
HK2408585-001	Anonymous	Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.015	<0.015	0.0

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

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
EG: Metals and Major Cations (QC Lot: 5668590)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	95.8	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	94.1	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	98.8	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	108	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	93.4	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	94.3	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	104	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	91.9	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	99.6	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5668778)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	115	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	118	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	89.4	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	83.2	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	87.2	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	94.4	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	87.2	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	80.8	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	87.8	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	83.7	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	84.6	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	85.8	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	86.2	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	87.1	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	88.5	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	88.7	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	87.3	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	81.8	----	68.0	132	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----

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: 5668779)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	88.1	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	88.4	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	99.9	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	88.9	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	89.8	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	85.8	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	88.7	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	87.9	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	84.2	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	87.5	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	95.3	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	79.1	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	87.8	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	86.1	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	89.9	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	87.4	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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-390: Triorganotins (QC Lot: 5683319)											
Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.012	0.0122 µg TBT /L	110	----	70.0	130	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5668590)										
HK2410229-001	Anonymous	EG020: Arsenic	7440-38-2	10 mg/kg	101	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	96.6	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	117	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	90.8	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	89.0	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	97.0	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	109	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	92.9	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	75.1	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5668778)										
HK2410462-001	Anonymous	PCB 8	34883-43-7	5 µg/kg	98.4	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	98.7	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	76.7	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	76.8	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	97.3	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	85.6	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	89.4	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	94.2	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	86.7	----	50.0	130	----	----
		PCB 118	31508-00-6	5 µg/kg	83.7	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-065: PCB Single Congeners (QC Lot: 5668778) - Continued										
HK2410462-001	Anonymous	PCB 126	57465-28-8	5 µg/kg	92.2	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	85.1	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	87.3	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	93.0	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	87.1	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	87.2	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	87.1	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	85.1	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5668779)										
HK2410505-001	Anonymous	Naphthalene	91-20-3	250 µg/kg	75.3	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	74.4	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	84.9	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	77.5	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	62.0	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	75.7	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	65.3	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	64.9	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	73.8	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	80.3	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	84.6	----	50.0	130	----	----
		Benzo(k)fluoranthene	207-08-9	250 µg/kg	75.1	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	82.9	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5668779) - Continued										
HK2410505-001	Anonymous	Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	80.1	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	87.4	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	81.4	----	50.0	130	----	----

Matrix: **WATER**

Laboratory sample ID	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-390: Triorganotins (QC Lot: 5683319)										
HK2408585-001	Anonymous	Tributyltin	56573-85-4	0.0122 µg TBT /L	109	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

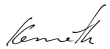
ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2410852
Address	: EAST DEVELOPMENT OFFICE 8F, WEST KOWLOON GOVERNMENT OFFICES SOUTH TOWER YAU MA TEI, KOWLOON HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: MhyLee@cedd.gov.hk	E-mail	: richard.fung@alsglobal.com		
Telephone	: +852 3842 7134	Telephone	: +852 2610 1044		
Facsimile	: +852 2739 0076	Facsimile	: +852 2610 2021		
Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 18-Mar-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 03-Apr-2024
C-O-C number	: ----			No. of samples received	: 3
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			No. of samples analysed	: 3

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

Signatories	*Position*	*Authorised results for*
 Chan Siu Ming , Vico	Assistant Laboratory Manager	Inorganics
 Chan Wai Hung , Mannix	Laboratory Manager	Organics_ENV
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Wong Wing , Kenneth	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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 18-Mar-2024 to 02-Apr-2024.

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: HK2410852

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

TBT result(s) (Method: EP390) is/are reported on as received basis.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID	MEB5 Surface	MEB5 0.00-0.90m	MEB5 0.90-1.65m	----	----
				Sampling date / time	18-Mar-2024 10:00	18-Mar-2024 10:30	18-Mar-2024 10:30	----	----
					HK2410852-001	HK2410852-002	HK2410852-003	-------	-------
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%		37.8	23.4	29.6	----	----
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1	mg/kg		6	7	6	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
EG020: Chromium	7440-47-3	1	mg/kg		22	2	10	----	----
EG020: Copper	7440-50-8	1	mg/kg		28	7	23	----	----
EG020: Lead	7439-92-1	1	mg/kg		37	105	113	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg		0.09	<0.05	0.06	----	----
EG020: Nickel	7440-02-0	1	mg/kg		12	2	4	----	----
EG020: Silver	7440-22-4	0.1	mg/kg		0.3	<0.1	0.2	----	----
EG020: Zinc	7440-66-6	1	mg/kg		79	44	79	----	----
EP-065: PCB Single Congeners									
EP065: PCB 8	34883-43-7	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 18	37680-65-2	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 28	7012-37-5	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 44	41464-39-5	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 52	35693-99-3	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 66	32598-10-0	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 77	32598-13-3	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 101	37680-73-2	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 105	32598-14-4	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 118	31508-00-6	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 126	57465-28-8	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 128	38380-07-3	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 138	35065-28-2	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 153	35065-27-1	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 169	32774-16-6	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 170	35065-30-6	3	µg/kg		<3	<3	<3	----	----

Sub-Matrix: SEDIMENT				Sample ID	MEB5 Surface	MEB5 0.00-0.90m	MEB5 0.90-1.65m	----	----
				Sampling date / time	18-Mar-2024 10:00	18-Mar-2024 10:30	18-Mar-2024 10:30	----	----
Compound	CAS Number	LOR	Unit		HK2410852-001	HK2410852-002	HK2410852-003	----------	----------
EP-065: PCB Single Congeners - Continued									
EP065: PCB 180	35065-29-3	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 187	52663-68-0	3	µg/kg		<3	<3	<3	----	----
EP065: Total Polychlorinated biphenyls	----	18	µg/kg		<18	<18	<18	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg		<50	<50	<50	----	----
EP076HK: Acenaphthylene	208-96-8	50	µg/kg		50	<50	<50	----	----
EP076HK: Acenaphthene	83-32-9	50	µg/kg		<50	<50	<50	----	----
EP076HK: Fluorene	86-73-7	50	µg/kg		<50	<50	<50	----	----
EP076HK: Phenanthrene	85-01-8	50	µg/kg		68	<50	<50	----	----
EP076HK: Anthracene	120-12-7	50	µg/kg		<50	<50	<50	----	----
EP076HK: Fluoranthene	206-44-0	150	µg/kg		337	<150	<150	----	----
EP076HK: Pyrene	129-00-0	150	µg/kg		450	<150	<150	----	----
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg		168	<150	<150	----	----
EP076HK: Chrysene	218-01-9	150	µg/kg		162	<150	<150	----	----
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg		222	<150	<150	----	----
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg		<150	<150	<150	----	----
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg		216	<150	<150	----	----
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg		157	<150	<150	----	----
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg		<150	<150	<150	----	----
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg		<150	<150	<150	----	----
EP076HK: Low M.W. PAHs	----	550	µg/kg		<550	<550	<550	----	----
EP076HK: High M.W. PAHs	----	1700	µg/kg		1920	<1700	<1700	----	----
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%		73.7	87.6	78.9	----	----
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%		74.7	91.1	85.0	----	----
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%		115	113	116	----	----

Sub-Matrix: INTERSTITIAL WATER			Sample ID	MEB5 Surface	MEB5 0.00-0.90m	MEB5 0.90-1.65m	----	----
			Sampling date / time	18-Mar-2024 10:00	18-Mar-2024 10:30	18-Mar-2024 10:30	----	----
Compound	CAS Number	LOR	Unit	HK2410852-001	HK2410852-002	HK2410852-003	--------	--------
EP-390: Triorganotins								
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L	<0.015	<0.015	<0.015	----	----

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting "0.0" denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5687877)								
HK2410861-005	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	30.7	29.7	3.3
EG: Metals and Major Cations (QC Lot: 5674500)								
HK2410852-002	MEB5 0.00-0.90m	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	7	7	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	2	2	0.0
		EG020: Copper	7440-50-8	1	mg/kg	7	8	0.0
		EG020: Lead	7439-92-1	1	mg/kg	105	95	10.0
		EG020: Nickel	7440-02-0	1	mg/kg	2	2	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	44	45	3.3
EP-065: PCB Single Congeners (QC Lot: 5678288)								
HK2410852-001	MEB5 Surface	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5678288) - Continued								
HK2410852-001	MEB5 Surface	PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5678289)								
HK2410852-001	MEB5 Surface	Fluoranthene	206-44-0	150	µg/kg	337	292	14.4
		Pyrene	129-00-0	150	µg/kg	450	393	13.5
		Benz(a)anthracene	56-55-3	150	µg/kg	168	157	6.8
		Chrysene	218-01-9	150	µg/kg	162	<150	8.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	222	207	7.1
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	216	206	4.7
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	157	151	4.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	1920	1740	9.6
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	50	60	18.7
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	68	57	17.9
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 5694796)								
HK2410606-001	Anonymous	Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.015	<0.015	0.0

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

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
EG: Metals and Major Cations (QC Lot: 5674500)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	101	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	94.2	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	103	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	115	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	94.6	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	101	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	108	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	93.3	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	106	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5678288)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	89.8	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	105	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	113	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	111	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	117	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	100	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	108	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	110	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	106	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	105	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	106	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	106	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	104	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	105	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	104	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	104	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	105	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	105	----	68.0	132	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----

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: 5678289)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	112	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	114	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	113	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	110	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	106	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	104	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	105	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	104	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	110	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	110	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	115	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	106	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	108	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	131	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	117	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	115	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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-390: Triorganotins (QC Lot: 5694796)											
Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.012	0.0122 µg TBT /L	116	----	70.0	130	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5674500)										
HK2410852-001	MEB5 Surface	EG020: Arsenic	7440-38-2	10 mg/kg	101	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	92.7	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	88.5	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	114	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	121	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	95.7	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	112	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	90.4	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5678288)										
HK2410852-002	MEB5 0.00-0.90m	PCB 8	34883-43-7	5 µg/kg	82.9	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	88.5	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	80.6	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	86.3	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	92.0	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	84.8	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	92.3	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	93.9	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	92.2	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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
EP-065: PCB Single Congeners (QC Lot: 5678288) - Continued										
HK2410852-002	MEB5 0.00-0.90m	PCB 118	31508-00-6	5 µg/kg	92.6	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	94.0	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	93.2	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	92.7	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	97.6	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	93.8	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	93.3	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	95.8	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	93.1	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5678289)										
HK2410852-003	MEB5 0.90-1.65m	Naphthalene	91-20-3	250 µg/kg	91.6	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	95.2	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	92.2	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	95.6	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	128	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	83.6	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	112	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	114	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	91.1	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	96.2	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	106	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5678289) - Continued										
HK2410852-003	MEB5 0.90-1.65m	Benzo(k)fluoranthene	207-08-9	250 µg/kg	88.8	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	98.5	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	114	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	91.4	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	94.3	----	50.0	130	----	----

Matrix: **WATER**

Laboratory sample ID	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-390: Triorganotins (QC Lot: 5694796)										
HK2410606-001	Anonymous	Tributyltin	56573-85-4	0.0122 µg TBT /L	115	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2410606
Address	: EAST DEVELOPMENT OFFICE 8F, WEST KOWLOON GOVERNMENT OFFICES SOUTH TOWER YAU MA TEI, KOWLOON HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
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Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 16-Mar-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 02-Apr-2024
C-O-C number	: ----			No. of samples received	: 3
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			No. of samples analysed	: 3

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

Signatories	*Position*	*Authorised results for*
Chan Siu Ming , Vico	Assistant Laboratory Manager	Inorganics
Chan Wai Hung , Mannix	Laboratory Manager	Organics_ENV
Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
Leung Chak Cheong , Mike	Assistant Manager - Metals	Metals_ENV
Wong Wing , Kenneth	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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-2024 to 02-Apr-2024.

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: HK2410606

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

TBT result(s) (Method: EP390) is/are reported on as received basis.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID	MEB6 Surface	MEB6 0.00-0.90m	MEB6 0.90-1.82m	----	----
				Sampling date / time	16-Mar-2024 10:30	16-Mar-2024 11:15	16-Mar-2024 11:15	----	----
					HK2410606-001	HK2410606-002	HK2410606-003	-------	-------
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%		36.7	30.2	33.8	----	----
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1	mg/kg		6	5	6	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg		<0.2	0.2	<0.2	----	----
EG020: Chromium	7440-47-3	1	mg/kg		32	19	30	----	----
EG020: Copper	7440-50-8	1	mg/kg		50	28	24	----	----
EG020: Lead	7439-92-1	1	mg/kg		44	56	46	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg		0.14	0.15	0.38	----	----
EG020: Nickel	7440-02-0	1	mg/kg		17	11	21	----	----
EG020: Silver	7440-22-4	0.1	mg/kg		0.4	0.2	0.1	----	----
EG020: Zinc	7440-66-6	1	mg/kg		98	185	84	----	----
EP-065: PCB Single Congeners									
EP065: PCB 8	34883-43-7	3	µg/kg		<3	<3	8	----	----
EP065: PCB 18	37680-65-2	3	µg/kg		<3	<3	4	----	----
EP065: PCB 28	7012-37-5	3	µg/kg		<3	<3	7	----	----
EP065: PCB 44	41464-39-5	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 52	35693-99-3	3	µg/kg		<3	<3	7	----	----
EP065: PCB 66	32598-10-0	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 77	32598-13-3	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 101	37680-73-2	3	µg/kg		<3	<3	6	----	----
EP065: PCB 105	32598-14-4	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 118	31508-00-6	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 126	57465-28-8	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 128	38380-07-3	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 138	35065-28-2	3	µg/kg		<3	<3	6	----	----
EP065: PCB 153	35065-27-1	3	µg/kg		<3	<3	8	----	----
EP065: PCB 169	32774-16-6	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 170	35065-30-6	3	µg/kg		<3	<3	<3	----	----

Sub-Matrix: SEDIMENT				Sample ID	MEB6 Surface	MEB6 0.00-0.90m	MEB6 0.90-1.82m	----	----
				Sampling date / time	16-Mar-2024 10:30	16-Mar-2024 11:15	16-Mar-2024 11:15	----	----
Compound	CAS Number	LOR	Unit		HK2410606-001	HK2410606-002	HK2410606-003	-------	-------
EP-065: PCB Single Congeners - Continued									
EP065: PCB 180	35065-29-3	3	µg/kg		<3	<3	3	----	----
EP065: PCB 187	52663-68-0	3	µg/kg		<3	<3	<3	----	----
EP065: Total Polychlorinated biphenyls	----	18	µg/kg		<18	<18	58	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg		<50	<50	<50	----	----
EP076HK: Acenaphthylene	208-96-8	50	µg/kg		<50	<50	101	----	----
EP076HK: Acenaphthene	83-32-9	50	µg/kg		<50	<50	56	----	----
EP076HK: Fluorene	86-73-7	50	µg/kg		<50	<50	<50	----	----
EP076HK: Phenanthrene	85-01-8	50	µg/kg		<50	96	500	----	----
EP076HK: Anthracene	120-12-7	50	µg/kg		<50	<50	172	----	----
EP076HK: Fluoranthene	206-44-0	150	µg/kg		<150	290	1040	----	----
EP076HK: Pyrene	129-00-0	150	µg/kg		200	378	1160	----	----
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg		<150	179	1060	----	----
EP076HK: Chrysene	218-01-9	150	µg/kg		<150	171	1030	----	----
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg		<150	313	1370	----	----
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg		<150	<150	307	----	----
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg		<150	285	1400	----	----
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg		<150	213	758	----	----
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg		<150	<150	522	----	----
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg		<150	178	960	----	----
EP076HK: Low M.W. PAHs	----	550	µg/kg		<550	<550	867	----	----
EP076HK: High M.W. PAHs	----	1700	µg/kg		<1700	2100	9610	----	----
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%		78.4	72.8	90.1	----	----
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%		82.3	77.6	92.8	----	----
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%		70.1	66.2	94.9	----	----

Sub-Matrix: INTERSTITIAL WATER			Sample ID	MEB6 Surface	MEB6 0.00-0.90m	MEB6 0.90-1.82m	----	----
			Sampling date / time	16-Mar-2024 10:30	16-Mar-2024 11:15	16-Mar-2024 11:15	----	----
Compound	CAS Number	LOR	Unit	HK2410606-001	HK2410606-002	HK2410606-003	--------	--------
EP-390: Triorganotins								
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L	<0.015	<0.015	<0.015	----	----

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting "0.0" denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5679183)								
HK2410570-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	43.2	42.2	2.2
HK2410606-003	MEB6 0.90-1.82m	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	33.8	32.7	3.3
EG: Metals and Major Cations (QC Lot: 5671557)								
HK2410606-002	MEB6 0.00-0.90m	EG020: Mercury	7439-97-6	0.05	mg/kg	0.15	0.15	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	0.2	0.2	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	5	5	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	19	23	16.2
		EG020: Copper	7440-50-8	1	mg/kg	28	24	12.1
		EG020: Lead	7439-92-1	1	mg/kg	56	47	18.4
		EG020: Nickel	7440-02-0	1	mg/kg	11	12	11.6
		EG020: Zinc	7440-66-6	1	mg/kg	185	151	20.1
EP-065: PCB Single Congeners (QC Lot: 5674478)								
HK2410570-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5674478) - Continued								
HK2410570-001	Anonymous	PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5674479)								
HK2410570-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 5694796)								
HK2410606-001	MEB6 Surface	Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.015	<0.015	0.0

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

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
EG: Metals and Major Cations (QC Lot: 5671557)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	103	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	95.1	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	106	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	115	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	95.0	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	95.5	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	106	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	94.2	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	105	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5674478)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	124	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	124	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	100	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	116	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	114	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	124	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	102	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	102	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	103	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	98.0	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	109	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	103	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	103	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	103	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	107	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	105	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	104	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	101	----	68.0	132	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----

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: 5674479)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	97.6	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	92.6	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	91.0	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	89.2	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	84.9	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	81.5	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	83.7	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	81.7	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	80.8	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	82.0	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	87.3	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	75.9	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	79.3	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	93.6	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	80.8	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	80.3	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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-390: Triorganotins (QC Lot: 5694796)											
Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.012	0.0122 µg TBT /L	116	----	70.0	130	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5671557)										
HK2410606-001	MEB6 Surface	EG020: Arsenic	7440-38-2	10 mg/kg	98.3	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	97.3	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	86.6	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	82.9	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	81.5	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	84.2	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	100	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	93.6	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5674478)										
HK2410570-002	Anonymous	PCB 8	34883-43-7	5 µg/kg	108	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	102	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	89.9	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	109	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	112	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	113	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	92.0	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	90.1	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	102	----	50.0	130	----	----

Matrix: **SOIL**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number		MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 5674478) - Continued										
HK2410570-002	Anonymous	PCB 118	31508-00-6	5 µg/kg	98.2	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	95.5	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	90.6	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	103	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	78.0	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	80.5	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	94.6	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	74.0	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	84.2	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5674479)										
HK2410570-003	Anonymous	Naphthalene	91-20-3	250 µg/kg	115	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	119	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	117	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	116	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	125	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	109	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	130	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	109	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	103	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	106	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	93.5	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5674479) - Continued										
HK2410570-003	Anonymous	**Benzo(k)fluoranthene**	207-08-9	250 µg/kg	96.3	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	90.1	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	112	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	104	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	97.4	----	50.0	130	----	----

Matrix: **WATER**

Laboratory sample ID	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-390: Triorganotins (QC Lot: 5694796)										
HK2410606-001	MEB6 Surface	**Tributyltin**	56573-85-4	0.0122 µg TBT /L	115	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2410609
Address	: EAST DEVELOPMENT OFFICE 8F, WEST KOWLOON GOVERNMENT OFFICES SOUTH TOWER YAU MA TEI, KOWLOON HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
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Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 16-Mar-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 02-Apr-2024
C-O-C number	: ----			No. of samples received	: 4
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			No. of samples analysed	: 4

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*
Chan Siu Ming , Vico	Assistant Laboratory Manager	Inorganics
Chan Wai Hung , Mannix	Laboratory Manager	Organics_ENV
Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
Leung Chak Cheong , Mike	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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-2024 to 28-Mar-2024.

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: HK2410609

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

TBT result(s) (Method: EP390) is/are reported on as received basis.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID	MEB7 Surface	MEB7 0.00-0.90m	MEB7 0.90m-1.90m	MEB7 1.90m-2.90m	----
				Sampling date / time	16-Mar-2024 09:15	16-Mar-2024 10:00	16-Mar-2024 10:00	16-Mar-2024 10:00	----
					HK2410609-001	HK2410609-002	HK2410609-003	HK2410609-004	--------
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%		45.0	37.6	40.2	37.4	----
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1	mg/kg		7	6	6	6	----
EG020: Cadmium	7440-43-9	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
EG020: Chromium	7440-47-3	1	mg/kg		32	32	28	26	----
EG020: Copper	7440-50-8	1	mg/kg		57	9	8	7	----
EG020: Lead	7439-92-1	1	mg/kg		43	19	16	21	----
EG020: Mercury	7439-97-6	0.05	mg/kg		0.16	<0.05	<0.05	<0.05	----
EG020: Nickel	7440-02-0	1	mg/kg		17	25	21	19	----
EG020: Silver	7440-22-4	0.1	mg/kg		0.5	<0.1	<0.1	<0.1	----
EG020: Zinc	7440-66-6	1	mg/kg		99	66	54	51	----
EP-065: PCB Single Congeners									
EP065: PCB 8	34883-43-7	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 18	37680-65-2	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 28	7012-37-5	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 44	41464-39-5	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 52	35693-99-3	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 66	32598-10-0	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 77	32598-13-3	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 101	37680-73-2	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 105	32598-14-4	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 118	31508-00-6	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 126	57465-28-8	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 128	38380-07-3	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 138	35065-28-2	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 153	35065-27-1	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 169	32774-16-6	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 170	35065-30-6	3	µg/kg		<3	<3	<3	<3	----

Sub-Matrix: SEDIMENT				Sample ID	MEB7 Surface	MEB7 0.00-0.90m	MEB7 0.90m-1.90m	MEB7 1.90m-2.90m	----
				Sampling date / time	16-Mar-2024 09:15	16-Mar-2024 10:00	16-Mar-2024 10:00	16-Mar-2024 10:00	----
Compound	CAS Number	LOR	Unit		HK2410609-001	HK2410609-002	HK2410609-003	HK2410609-004	-------
EP-065: PCB Single Congeners - Continued									
EP065: PCB 180	35065-29-3	3	µg/kg		<3	<3	<3	<3	----
EP065: PCB 187	52663-68-0	3	µg/kg		<3	<3	<3	<3	----
EP065: Total Polychlorinated biphenyls	----	18	µg/kg		<18	<18	<18	<18	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg		<50	<50	<50	<50	----
EP076HK: Acenaphthylene	208-96-8	50	µg/kg		<50	<50	<50	<50	----
EP076HK: Acenaphthene	83-32-9	50	µg/kg		<50	<50	<50	<50	----
EP076HK: Fluorene	86-73-7	50	µg/kg		<50	<50	<50	<50	----
EP076HK: Phenanthrene	85-01-8	50	µg/kg		<50	<50	<50	<50	----
EP076HK: Anthracene	120-12-7	50	µg/kg		<50	<50	<50	<50	----
EP076HK: Fluoranthene	206-44-0	150	µg/kg		<150	<150	<150	<150	----
EP076HK: Pyrene	129-00-0	150	µg/kg		<150	<150	<150	<150	----
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg		<150	<150	<150	<150	----
EP076HK: Chrysene	218-01-9	150	µg/kg		<150	<150	<150	<150	----
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg		<150	<150	<150	<150	----
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg		<150	<150	<150	<150	----
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg		<150	<150	<150	<150	----
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg		<150	<150	<150	<150	----
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg		<150	<150	<150	<150	----
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg		<150	<150	<150	<150	----
EP076HK: Low M.W. PAHs	----	550	µg/kg		<550	<550	<550	<550	----
EP076HK: High M.W. PAHs	----	1700	µg/kg		<1700	<1700	<1700	<1700	----
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%		80.4	74.9	85.3	88.4	----
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%		89.1	83.2	84.2	87.5	----
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%		95.5	65.1	57.0	66.2	----

Sub-Matrix: INTERSTITIAL WATER				Sample ID	MEB7 Surface	MEB7 0.00-0.90m	MEB7 0.90m-1.90m	MEB7 1.90m-2.90m	----
				Sampling date / time	16-Mar-2024 09:15	16-Mar-2024 10:00	16-Mar-2024 10:00	16-Mar-2024 10:00	----
Compound	*CAS Number*	*LOR*	*Unit*		HK2410609-001	HK2410609-002	HK2410609-003	HK2410609-004	-------
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L		<0.015	<0.015	<0.015	<0.015	----

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting "0.0" denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5682415)								
HK2410747-025	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	6.6	6.5	2.7
HK2410655-003	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	40.2	39.2	2.4
EA/ED: Physical and Aggregate Properties (QC Lot: 5682418)								
HK2410609-003	MEB7 0.90m-1.90m	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	40.2	39.2	2.4
EG: Metals and Major Cations (QC Lot: 5671557)								
HK2410606-002	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	0.15	0.15	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	0.2	0.2	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	5	5	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	19	23	16.2
		EG020: Copper	7440-50-8	1	mg/kg	28	24	12.1
		EG020: Lead	7439-92-1	1	mg/kg	56	47	18.4
		EG020: Nickel	7440-02-0	1	mg/kg	11	12	11.6
		EG020: Zinc	7440-66-6	1	mg/kg	185	151	20.1
EP-065: PCB Single Congeners (QC Lot: 5674478)								
HK2410570-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5674478) - Continued								
HK2410570-001	Anonymous	PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5674479)								
HK2410570-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 5694796)								
HK2410606-001	Anonymous	Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.015	<0.015	0.0

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

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
EG: Metals and Major Cations (QC Lot: 5671557)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	103	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	95.1	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	106	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	115	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	95.0	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	95.5	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	106	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	94.2	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	105	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5674478)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	124	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	124	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	100	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	116	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	114	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	124	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	102	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	102	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	103	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	98.0	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	109	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	103	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	103	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	103	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	107	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	105	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	104	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	101	----	68.0	132	----	----

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-065: PCB Single Congeners (QC Lot: 5674478) - Continued											
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5674479)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	97.6	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	92.6	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	91.0	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	89.2	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	84.9	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	81.5	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	83.7	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	81.7	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	80.8	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	82.0	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	87.3	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	75.9	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	79.3	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	93.6	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	80.8	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	80.3	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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-390: Triorganotins (QC Lot: 5694796)											
Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.012	0.0122 µg TBT /L	116	----	70.0	130	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5671557)										
HK2410606-001	Anonymous	EG020: Arsenic	7440-38-2	10 mg/kg	98.3	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	97.3	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	86.6	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	82.9	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	81.5	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	84.2	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	100	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	93.6	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5674478)										
HK2410570-002	Anonymous	PCB 8	34883-43-7	5 µg/kg	108	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	102	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	89.9	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	109	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	112	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	113	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	92.0	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	90.1	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	102	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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
EP-065: PCB Single Congeners (QC Lot: 5674478) - Continued										
HK2410570-002	Anonymous	PCB 118	31508-00-6	5 µg/kg	98.2	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	95.5	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	90.6	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	103	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	78.0	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	80.5	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	94.6	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	74.0	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	84.2	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5674479)										
HK2410570-003	Anonymous	Naphthalene	91-20-3	250 µg/kg	115	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	119	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	117	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	116	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	125	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	109	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	130	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	109	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	103	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	106	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	93.5	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5674479) - Continued										
HK2410570-003	Anonymous	Benzo(k)fluoranthene	207-08-9	250 µg/kg	96.3	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	90.1	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	112	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	104	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	97.4	----	50.0	130	----	----

Matrix: **WATER**

Laboratory sample ID	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-390: Triorganotins (QC Lot: 5694796)										
HK2410606-001	Anonymous	Tributyltin	56573-85-4	0.0122 µg TBT /L	115	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2408725
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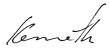
Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 01-Mar-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 15-Mar-2024
C-O-C number	: ----			No. of samples received	: 1
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			No. of samples analysed	: 1

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

Signatories	*Position*	*Authorised results for*
 Chan Siu Ming , Vico	Assistant Laboratory Manager	Inorganics
 Chan Wai Hung , Mannix	Laboratory Manager	Organics_ENV
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Wong Wing , Kenneth	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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 01-Mar-2024 to 14-Mar-2024.

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: HK2408725

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

TBT result(s) (Method: EP390) is/are reported on as received basis.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID	MEB8 Surface	----	----	----	----
				Sampling date / time	01-Mar-2024 14:15	----	----	----	----
					HK2408725-001	-------	-------	-------	-------
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%		54.1	----	----	----	----
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1	mg/kg		9	----	----	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg		<0.2	----	----	----	----
EG020: Chromium	7440-47-3	1	mg/kg		37	----	----	----	----
EG020: Copper	7440-50-8	1	mg/kg		61	----	----	----	----
EG020: Lead	7439-92-1	1	mg/kg		50	----	----	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg		0.17	----	----	----	----
EG020: Nickel	7440-02-0	1	mg/kg		20	----	----	----	----
EG020: Silver	7440-22-4	0.1	mg/kg		0.8	----	----	----	----
EG020: Zinc	7440-66-6	1	mg/kg		132	----	----	----	----
EP-065: PCB Single Congeners									
EP065: PCB 8	34883-43-7	3	µg/kg		<3	----	----	----	----
EP065: PCB 18	37680-65-2	3	µg/kg		<3	----	----	----	----
EP065: PCB 28	7012-37-5	3	µg/kg		<3	----	----	----	----
EP065: PCB 44	41464-39-5	3	µg/kg		<3	----	----	----	----
EP065: PCB 52	35693-99-3	3	µg/kg		<3	----	----	----	----
EP065: PCB 66	32598-10-0	3	µg/kg		<3	----	----	----	----
EP065: PCB 77	32598-13-3	3	µg/kg		<3	----	----	----	----
EP065: PCB 101	37680-73-2	3	µg/kg		<3	----	----	----	----
EP065: PCB 105	32598-14-4	3	µg/kg		<3	----	----	----	----
EP065: PCB 118	31508-00-6	3	µg/kg		<3	----	----	----	----
EP065: PCB 126	57465-28-8	3	µg/kg		<3	----	----	----	----
EP065: PCB 128	38380-07-3	3	µg/kg		<3	----	----	----	----
EP065: PCB 138	35065-28-2	3	µg/kg		<3	----	----	----	----
EP065: PCB 153	35065-27-1	3	µg/kg		<3	----	----	----	----
EP065: PCB 169	32774-16-6	3	µg/kg		<3	----	----	----	----
EP065: PCB 170	35065-30-6	3	µg/kg		<3	----	----	----	----

Sub-Matrix: SEDIMENT				Sample ID	MEB8 Surface	----	----	----	----
				Sampling date / time	01-Mar-2024 14:15	----	----	----	----
Compound	CAS Number	LOR	Unit		HK2408725-001	-------	-------	-------	-------
EP-065: PCB Single Congeners - Continued									
EP065: PCB 180	35065-29-3	3	µg/kg		<3	----	----	----	----
EP065: PCB 187	52663-68-0	3	µg/kg		<3	----	----	----	----
EP065: Total Polychlorinated biphenyls	----	18	µg/kg		<18	----	----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg		<50	----	----	----	----
EP076HK: Acenaphthylene	208-96-8	50	µg/kg		<50	----	----	----	----
EP076HK: Acenaphthene	83-32-9	50	µg/kg		<50	----	----	----	----
EP076HK: Fluorene	86-73-7	50	µg/kg		<50	----	----	----	----
EP076HK: Phenanthrene	85-01-8	50	µg/kg		<50	----	----	----	----
EP076HK: Anthracene	120-12-7	50	µg/kg		<50	----	----	----	----
EP076HK: Fluoranthene	206-44-0	150	µg/kg		<150	----	----	----	----
EP076HK: Pyrene	129-00-0	150	µg/kg		<150	----	----	----	----
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg		<150	----	----	----	----
EP076HK: Chrysene	218-01-9	150	µg/kg		<150	----	----	----	----
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg		<150	----	----	----	----
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg		<150	----	----	----	----
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg		<150	----	----	----	----
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg		<150	----	----	----	----
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg		<150	----	----	----	----
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg		<150	----	----	----	----
EP076HK: Low M.W. PAHs	----	550	µg/kg		<550	----	----	----	----
EP076HK: High M.W. PAHs	----	1700	µg/kg		<1700	----	----	----	----
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%		85.8	----	----	----	----
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%		72.0	----	----	----	----
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%		106	----	----	----	----

Sub-Matrix: INTERSTITIAL WATER				Sample ID	MEB8 Surface	---	---	---	---
				Sampling date / time	01-Mar-2024 14:15	----	----	----	----
Compound	CAS Number	LOR	Unit		HK2408725-001	-------	-------	-------	-------
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L		<0.015	---	---	---	---

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting "0.0" denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5657901)								
HK2408725-001	MEB8 Surface	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	54.1	53.4	1.3
HK2408823-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	46.3	46.1	0.4
EG: Metals and Major Cations (QC Lot: 5648489)								
HK2408717-001	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	0.08	0.07	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	0.3	0.2	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	5	5	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	21	20	5.5
		EG020: Copper	7440-50-8	1	mg/kg	24	21	11.6
		EG020: Lead	7439-92-1	1	mg/kg	26	25	5.3
		EG020: Nickel	7440-02-0	1	mg/kg	13	12	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	64	58	9.6
EP-065: PCB Single Congeners (QC Lot: 5647062)								
HK2408575-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5647062) - Continued								
HK2408575-001	Anonymous	PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5647063)								
HK2408575-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 5659123)								
HK2408107-001	Anonymous	Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.015	<0.015	0.0

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

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
EG: Metals and Major Cations (QC Lot: 5648489)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	97.5	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	98.3	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	94.8	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	106	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	91.6	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	100	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	102	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	91.6	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	103	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5647062)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	114	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	106	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	111	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	112	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	115	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	123	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	91.8	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	87.7	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	93.4	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	95.1	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	99.3	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	83.8	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	95.7	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	94.1	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	90.9	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	90.9	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	92.3	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	95.9	----	68.0	132	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----

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: 5647063)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	104	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	111	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	112	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	109	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	113	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	106	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	117	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	117	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	118	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	120	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	116	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	120	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	106	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	122	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	118	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	120	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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-390: Triorganotins (QC Lot: 5659123)											
Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.012	0.0122 µg TBT /L	103	----	70.0	130	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5648489)										
HK2408680-001	Anonymous	EG020: Arsenic	7440-38-2	10 mg/kg	87.7	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	105	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	113	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	106	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	114	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	106	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	115	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	94.5	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5647062)										
HK2408576-001	Anonymous	PCB 8	34883-43-7	5 µg/kg	76.4	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	77.0	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	83.4	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	86.8	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	106	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	91.7	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	98.8	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	104	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	101	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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
EP-065: PCB Single Congeners (QC Lot: 5647062) - Continued										
HK2408576-001	Anonymous	PCB 118	31508-00-6	5 µg/kg	97.6	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	101	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	89.7	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	101	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	103	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	98.1	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	98.3	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	104	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	99.1	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5647063)										
HK2408717-001	Anonymous	Naphthalene	91-20-3	250 µg/kg	102	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	116	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	110	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	111	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	111	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	110	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	120	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	120	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	124	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	124	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	114	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5647063) - Continued										
HK2408717-001	Anonymous	Benzo(k)fluoranthene	207-08-9	250 µg/kg	108	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	105	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	119	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	113	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	114	----	50.0	130	----	----

Matrix: **WATER**

Laboratory sample ID	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-390: Triorganotins (QC Lot: 5659123)										
HK2408107-001	Anonymous	Tributyltin	56573-85-4	0.0122 µg TBT /L	101	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2410505
Address	: EAST DEVELOPMENT OFFICE 8F, WEST KOWLOON GOVERNMENT OFFICES SOUTH TOWER YAU MA TEI, KOWLOON HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: MhyLee@cedd.gov.hk	E-mail	: richard.fung@alsglobal.com		
Telephone	: +852 3842 7134	Telephone	: +852 2610 1044		
Facsimile	: +852 2739 0076	Facsimile	: +852 2610 2021		
Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 14-Mar-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 28-Mar-2024
C-O-C number	: ----			No. of samples received	: 2
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			No. of samples analysed	: 2

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*
Chan Siu Ming , Vico	Assistant Laboratory Manager	Inorganics
Chan Wai Hung , Mannix	Laboratory Manager	Organics_ENV
Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
Leung Chak Cheong , Mike	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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 14-Mar-2024 to 28-Mar-2024.

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: HK2410505

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

TBT result(s) (Method: EP390) is/are reported on as received basis.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID	MEB9 Surface	MEB9 0.02m-0.75m	----	----	----
				Sampling date / time	14-Mar-2024 09:30	14-Mar-2024 11:45	----	----	----
					HK2410505-001	HK2410505-002	-------	-------	-------
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%		51.5	28.9	----	----	----
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1	mg/kg		14	10	----	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg		<0.2	<0.2	----	----	----
EG020: Chromium	7440-47-3	1	mg/kg		42	19	----	----	----
EG020: Copper	7440-50-8	1	mg/kg		90	34	----	----	----
EG020: Lead	7439-92-1	1	mg/kg		64	44	----	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg		0.16	0.09	----	----	----
EG020: Nickel	7440-02-0	1	mg/kg		20	9	----	----	----
EG020: Silver	7440-22-4	0.1	mg/kg		1.1	0.3	----	----	----
EG020: Zinc	7440-66-6	1	mg/kg		128	77	----	----	----
EP-065: PCB Single Congeners									
EP065: PCB 8	34883-43-7	3	µg/kg		<3	<3	----	----	----
EP065: PCB 18	37680-65-2	3	µg/kg		<3	<3	----	----	----
EP065: PCB 28	7012-37-5	3	µg/kg		<3	<3	----	----	----
EP065: PCB 44	41464-39-5	3	µg/kg		<3	<3	----	----	----
EP065: PCB 52	35693-99-3	3	µg/kg		<3	<3	----	----	----
EP065: PCB 66	32598-10-0	3	µg/kg		<3	<3	----	----	----
EP065: PCB 77	32598-13-3	3	µg/kg		<3	<3	----	----	----
EP065: PCB 101	37680-73-2	3	µg/kg		<3	<3	----	----	----
EP065: PCB 105	32598-14-4	3	µg/kg		<3	<3	----	----	----
EP065: PCB 118	31508-00-6	3	µg/kg		<3	<3	----	----	----
EP065: PCB 126	57465-28-8	3	µg/kg		<3	<3	----	----	----
EP065: PCB 128	38380-07-3	3	µg/kg		<3	<3	----	----	----
EP065: PCB 138	35065-28-2	3	µg/kg		<3	<3	----	----	----
EP065: PCB 153	35065-27-1	3	µg/kg		<3	<3	----	----	----
EP065: PCB 169	32774-16-6	3	µg/kg		<3	<3	----	----	----
EP065: PCB 170	35065-30-6	3	µg/kg		<3	<3	----	----	----

Sub-Matrix: SEDIMENT			Sample ID	MEB9 Surface	MEB9 0.02m-0.75m	----	----	----
			Sampling date / time	14-Mar-2024 09:30	14-Mar-2024 11:45	----	----	----
Compound	CAS Number	LOR	Unit	HK2410505-001	HK2410505-002	-------	-------	-------
EP-065: PCB Single Congeners - Continued								
EP065: PCB 180	35065-29-3	3	µg/kg	<3	<3	----	----	----
EP065: PCB 187	52663-68-0	3	µg/kg	<3	<3	----	----	----
EP065: Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)								
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	<50	----	----	----
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	<50	----	----	----
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	<50	----	----	----
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	<50	----	----	----
EP076HK: Phenanthrene	85-01-8	50	µg/kg	124	<50	----	----	----
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	<50	----	----	----
EP076HK: Fluoranthene	206-44-0	150	µg/kg	<150	<150	----	----	----
EP076HK: Pyrene	129-00-0	150	µg/kg	171	<150	----	----	----
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	----	----	----
EP076HK: Chrysene	218-01-9	150	µg/kg	<150	<150	----	----	----
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	----	----	----
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	----	----	----
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	----	----	----
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	----	----	----
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	----	----	----
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	----	----	----
EP076HK: Low M.W. PAHs	----	550	µg/kg	<550	<550	----	----	----
EP076HK: High M.W. PAHs	----	1700	µg/kg	<1700	<1700	----	----	----
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates								
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	81.6	85.6	----	----	----
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	95.6	95.1	----	----	----
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate								
EP065: Decachlorobiphenyl	2051-24-3	0.1	%	101	114	----	----	----

Sub-Matrix: INTERSTITIAL WATER				Sample ID	MEB9 Surface	MEB9 0.02m-0.75m	----	----	----
				Sampling date / time	14-Mar-2024 09:30	14-Mar-2024 11:45	----	----	----
Compound	CAS Number	LOR	Unit		HK2410505-001	HK2410505-002	-------	-------	-------
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L		<0.015	<0.015	----	----	----

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting "0.0" denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5673265)								
HK2410229-005	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	28.5	28.7	0.8
HK2410508-004	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	35.6	36.3	1.8
EG: Metals and Major Cations (QC Lot: 5668590)								
HK2410229-002	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	0.12	0.12	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	0.3	0.3	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	4	4	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	23	22	0.0
		EG020: Copper	7440-50-8	1	mg/kg	32	34	3.6
		EG020: Lead	7439-92-1	1	mg/kg	40	37	7.5
		EG020: Nickel	7440-02-0	1	mg/kg	11	12	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	68	70	3.3
EP-065: PCB Single Congeners (QC Lot: 5668778)								
HK2410458-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5668778) - Continued								
HK2410458-001	Anonymous	PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5668779)								
HK2410458-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	156	<150	3.6
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 5694795)								
HK2410571-002	Anonymous	Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.015	<0.015	0.0

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

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
EG: Metals and Major Cations (QC Lot: 5668590)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	95.8	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	94.1	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	98.8	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	108	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	93.4	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	94.3	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	104	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	91.9	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	99.6	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5668778)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	115	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	118	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	89.4	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	83.2	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	87.2	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	94.4	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	87.2	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	80.8	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	87.8	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	83.7	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	84.6	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	85.8	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	86.2	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	87.1	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	88.5	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	88.7	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	87.3	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	81.8	----	68.0	132	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----

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: 5668779)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	88.1	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	88.4	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	99.9	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	88.9	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	89.8	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	85.8	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	88.7	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	87.9	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	84.2	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	87.5	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	95.3	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	79.1	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	87.8	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	86.1	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	89.9	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	87.4	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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-390: Triorganotins (QC Lot: 5694795)											
Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.012	0.0122 µg TBT /L	110	----	70.0	130	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5668590)										
HK2410229-001	Anonymous	EG020: Arsenic	7440-38-2	10 mg/kg	101	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	96.6	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	117	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	90.8	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	89.0	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	97.0	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	109	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	92.9	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	75.1	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5668778)										
HK2410462-001	Anonymous	PCB 8	34883-43-7	5 µg/kg	98.4	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	98.7	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	76.7	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	76.8	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	97.3	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	85.6	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	89.4	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	94.2	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	86.7	----	50.0	130	----	----
		PCB 118	31508-00-6	5 µg/kg	83.7	----	50.0	130	----	----

Matrix: **SOIL**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number		MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 5668778) - Continued										
HK2410462-001	Anonymous	PCB 126	57465-28-8	5 µg/kg	92.2	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	85.1	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	87.3	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	93.0	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	87.1	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	87.2	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	87.1	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	85.1	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5668779)										
HK2410505-001	MEB9 Surface	Naphthalene	91-20-3	250 µg/kg	75.3	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	74.4	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	84.9	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	77.5	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	62.0	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	75.7	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	65.3	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	64.9	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	73.8	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	80.3	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	84.6	----	50.0	130	----	----
		Benzo(k)fluoranthene	207-08-9	250 µg/kg	75.1	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	82.9	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5668779) - Continued										
HK2410505-001	MEB9 Surface	Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	80.1	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	87.4	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	81.4	----	50.0	130	----	----

Matrix: **WATER**

Laboratory sample ID	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-390: Triorganotins (QC Lot: 5694795)										
HK2410571-002	Anonymous	Tributyltin	56573-85-4	0.0122 µg TBT /L	107	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2410570
Address	: EAST DEVELOPMENT OFFICE 8F, WEST KOWLOON GOVERNMENT OFFICES SOUTH TOWER YAU MA TEI, KOWLOON HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: MhyLee@cedd.gov.hk	E-mail	: richard.fung@alsglobal.com		
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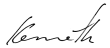
Facsimile	: +852 2739 0076	Facsimile	: +852 2610 2021		
Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 15-Mar-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 02-Apr-2024
C-O-C number	: ----			No. of samples received	: 3
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			No. of samples analysed	: 3

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

Signatories	*Position*	*Authorised results for*
 Chan Wai Hung , Mannix	Laboratory Manager	Organics_ENV
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Lin Wai Yu , Iris	Assistant Manager - Inorganics	Inorganics
 Wong Wing , Kenneth	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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 15-Mar-2024 to 28-Mar-2024.

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: HK2410570

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

TBT result(s) (Method: EP390) is/are reported on as received basis.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID	MEB10 Surface	MEB10 0.00-0.90m	MEB10 0.90-1.30m	----	----
				Sampling date / time	15-Mar-2024 09:00	15-Mar-2024 09:30	15-Mar-2024 09:30	----	----
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%					----	----
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1	mg/kg					----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg					----	----
EG020: Chromium	7440-47-3	1	mg/kg					----	----
EG020: Copper	7440-50-8	1	mg/kg					----	----
EG020: Lead	7439-92-1	1	mg/kg					----	----
EG020: Mercury	7439-97-6	0.05	mg/kg					----	----
EG020: Nickel	7440-02-0	1	mg/kg					----	----
EG020: Silver	7440-22-4	0.1	mg/kg					----	----
EG020: Zinc	7440-66-6	1	mg/kg					----	----
EP-065: PCB Single Congeners									
EP065: PCB 8	34883-43-7	3	µg/kg					----	----
EP065: PCB 18	37680-65-2	3	µg/kg					----	----
EP065: PCB 28	7012-37-5	3	µg/kg					----	----
EP065: PCB 44	41464-39-5	3	µg/kg					----	----
EP065: PCB 52	35693-99-3	3	µg/kg					----	----
EP065: PCB 66	32598-10-0	3	µg/kg					----	----
EP065: PCB 77	32598-13-3	3	µg/kg					----	----
EP065: PCB 101	37680-73-2	3	µg/kg					----	----
EP065: PCB 105	32598-14-4	3	µg/kg					----	----
EP065: PCB 118	31508-00-6	3	µg/kg					----	----
EP065: PCB 126	57465-28-8	3	µg/kg					----	----
EP065: PCB 128	38380-07-3	3	µg/kg					----	----
EP065: PCB 138	35065-28-2	3	µg/kg					----	----
EP065: PCB 153	35065-27-1	3	µg/kg					----	----
EP065: PCB 169	32774-16-6	3	µg/kg					----	----
EP065: PCB 170	35065-30-6	3	µg/kg					----	----

Samples collected were not sediment.

Sub-Matrix: SEDIMENT				Sample ID	MEB10 Surface	MEB10 0.00-0.90m	MEB10 0.90-1.30m	----	----
				Sampling date / time	15-Mar-2024 09:00	15-Mar-2024 09:30	15-Mar-2024 09:30	----	----
Compound	CAS Number	LOR	Unit					----------	----------
EP-065: PCB Single Congeners - Continued									
EP065: PCB 180	35065-29-3	3	µg/kg					----	----
EP065: PCB 187	52663-68-0	3	µg/kg					----	----
EP065: Total Polychlorinated biphenyls	----	18	µg/kg					----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg					----	----
EP076HK: Acenaphthylene	208-96-8	50	µg/kg					----	----
EP076HK: Acenaphthene	83-32-9	50	µg/kg					----	----
EP076HK: Fluorene	86-73-7	50	µg/kg					----	----
EP076HK: Phenanthrene	85-01-8	50	µg/kg					----	----
EP076HK: Anthracene	120-12-7	50	µg/kg					----	----
EP076HK: Fluoranthene	206-44-0	150	µg/kg					----	----
EP076HK: Pyrene	129-00-0	150	µg/kg					----	----
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg					----	----
EP076HK: Chrysene	218-01-9	150	µg/kg					----	----
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg					----	----
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg					----	----
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg					----	----
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg					----	----
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg					----	----
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg					----	----
EP076HK: Low M.W. PAHs	----	550	µg/kg					----	----
EP076HK: High M.W. PAHs	----	1700	µg/kg					----	----
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%					----	----
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%					----	----
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%					----	----

Samples collected were not sediment.

Sub-Matrix: INTERSTITIAL WATER				Sample ID	MEB10 Surface	MEB10 0.00-0.90m	MEB10 0.90-1.30m	----	----
				Sampling date / time	15-Mar-2024 09:00	15-Mar-2024 09:30	15-Mar-2024 09:30	----	----
Compound	CAS Number	LOR	Unit					-------	-------
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L					----	----

Samples collected were not sediment.

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting "0.0" denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5679183)								
HK2410570-001	MEB10 Surface	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	43.2	42.2	2.2
HK2410606-003	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	33.8	32.7	3.3
EG: Metals and Major Cations (QC Lot: 5668591)								
HK2410509-001	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	0.07	0.07	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	0.2	0.2	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	4	4	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	20	24	20.0
		EG020: Copper	7440-50-8	1	mg/kg	17	17	0.0
		EG020: Lead	7439-92-1	1	mg/kg	23	19	21.6
		EG020: Nickel	7440-02-0	1	mg/kg	8	7	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	61	77	23.3
EP-065: PCB Single Congeners (QC Lot: 5674478)								
HK2410570-001	MEB10 Surface	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5674478) - Continued								
HK2410570-001	MEB10 Surface	**PCB 153**	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5674479)								
HK2410570-001	MEB10 Surface	**Fluoranthene**	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 5694795)								
HK2410571-002	Anonymous	**Tributyltin**	56573-85-4	0.0122	µg TBT /L	<0.015	<0.015	0.0

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

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
EG: Metals and Major Cations (QC Lot: 5668591)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	98.1	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	95.0	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	101	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	110	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	92.8	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	96.5	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	106	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	92.5	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	100	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5674478)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	124	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	124	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	100	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	116	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	114	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	124	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	102	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	102	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	103	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	98.0	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	109	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	103	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	103	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	103	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	107	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	105	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	104	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	101	----	68.0	132	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----

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: 5674479)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	97.6	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	92.6	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	91.0	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	89.2	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	84.9	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	81.5	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	83.7	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	81.7	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	80.8	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	82.0	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	87.3	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	75.9	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	79.3	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	93.6	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	80.8	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	80.3	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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-390: Triorganotins (QC Lot: 5694795)											
Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.012	0.0122 µg TBT /L	110	----	70.0	130	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5668591)										
HK2410508-004	Anonymous	EG020: Arsenic	7440-38-2	10 mg/kg	104	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	92.2	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	119	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	82.6	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	78.3	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	79.4	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	104	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	88.8	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5674478)										
HK2410570-002	MEB10 0.00-0.90m	PCB 8	34883-43-7	5 µg/kg	108	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	102	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	89.9	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	109	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	112	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	113	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	92.0	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	90.1	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	102	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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
EP-065: PCB Single Congeners (QC Lot: 5674478) - Continued										
HK2410570-002	MEB10 0.00-0.90m	PCB 118	31508-00-6	5 µg/kg	98.2	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	95.5	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	90.6	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	103	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	78.0	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	80.5	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	94.6	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	74.0	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	84.2	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5674479)										
HK2410570-003	MEB10 0.90-1.30m	Naphthalene	91-20-3	250 µg/kg	115	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	119	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	117	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	116	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	125	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	109	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	130	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	109	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	103	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	106	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	93.5	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5674479) - Continued										
HK2410570-003	MEB10 0.90-1.30m	Benzo(k)fluoranthene	207-08-9	250 µg/kg	96.3	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	90.1	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	112	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	104	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	97.4	----	50.0	130	----	----

Matrix: **WATER**

Laboratory sample ID	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-390: Triorganotins (QC Lot: 5694795)										
HK2410571-002	Anonymous	Tributyltin	56573-85-4	0.0122 µg TBT /L	107	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2410569
Address	: EAST DEVELOPMENT OFFICE 8F, WEST KOWLOON GOVERNMENT OFFICES SOUTH TOWER YAU MA TEI, KOWLOON HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
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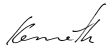
Facsimile	: +852 2739 0076	Facsimile	: +852 2610 2021		
Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 15-Mar-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 02-Apr-2024
C-O-C number	: ----			No. of samples received	: 3
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			No. of samples analysed	: 3

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

Signatories	*Position*	*Authorised results for*
 Chan Siu Ming , Vico	Assistant Laboratory Manager	Inorganics
 Chan Wai Hung , Mannix	Laboratory Manager	Organics_ENV
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Wong Wing , Kenneth	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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 15-Mar-2024 to 28-Mar-2024.

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: HK2410569

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

TBT result(s) (Method: EP390) is/are reported on as received basis.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID	MEB11 Surface	MEB11 0.00-0.90m	MEB11 0.90-1.20m	----	----
				Sampling date / time	15-Mar-2024 10:30	15-Mar-2024 11:00	15-Mar-2024 11:00	----	----
					HK2410569-001	HK2410569-002	HK2410569-003	-------	-------
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%		40.9	28.0	22.8	----	----
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1	mg/kg		9	4	7	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
EG020: Chromium	7440-47-3	1	mg/kg		27	27	13	----	----
EG020: Copper	7440-50-8	1	mg/kg		41	70	89	----	----
EG020: Lead	7439-92-1	1	mg/kg		45	37	133	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg		0.11	0.80	0.10	----	----
EG020: Nickel	7440-02-0	1	mg/kg		14	11	25	----	----
EG020: Silver	7440-22-4	0.1	mg/kg		0.5	0.5	0.3	----	----
EG020: Zinc	7440-66-6	1	mg/kg		92	77	57	----	----
EP-065: PCB Single Congeners									
EP065: PCB 8	34883-43-7	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 18	37680-65-2	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 28	7012-37-5	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 44	41464-39-5	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 52	35693-99-3	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 66	32598-10-0	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 77	32598-13-3	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 101	37680-73-2	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 105	32598-14-4	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 118	31508-00-6	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 126	57465-28-8	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 128	38380-07-3	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 138	35065-28-2	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 153	35065-27-1	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 169	32774-16-6	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 170	35065-30-6	3	µg/kg		<3	<3	<3	----	----

Sub-Matrix: SEDIMENT				Sample ID	MEB11 Surface	MEB11 0.00-0.90m	MEB11 0.90-1.20m	----	----
				Sampling date / time	15-Mar-2024 10:30	15-Mar-2024 11:00	15-Mar-2024 11:00	----	----
Compound	CAS Number	LOR	Unit		HK2410569-001	HK2410569-002	HK2410569-003	--------	--------
EP-065: PCB Single Congeners - Continued									
EP065: PCB 180	35065-29-3	3	µg/kg		<3	<3	<3	----	----
EP065: PCB 187	52663-68-0	3	µg/kg		<3	<3	<3	----	----
EP065: Total Polychlorinated biphenyls	----	18	µg/kg		<18	<18	<18	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg		<50	<50	<50	----	----
EP076HK: Acenaphthylene	208-96-8	50	µg/kg		<50	<50	<50	----	----
EP076HK: Acenaphthene	83-32-9	50	µg/kg		<50	<50	<50	----	----
EP076HK: Fluorene	86-73-7	50	µg/kg		<50	<50	<50	----	----
EP076HK: Phenanthrene	85-01-8	50	µg/kg		<50	<50	<50	----	----
EP076HK: Anthracene	120-12-7	50	µg/kg		<50	<50	<50	----	----
EP076HK: Fluoranthene	206-44-0	150	µg/kg		<150	<150	<150	----	----
EP076HK: Pyrene	129-00-0	150	µg/kg		<150	<150	<150	----	----
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg		<150	<150	<150	----	----
EP076HK: Chrysene	218-01-9	150	µg/kg		<150	<150	<150	----	----
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg		<150	<150	<150	----	----
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg		<150	<150	<150	----	----
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg		<150	<150	<150	----	----
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg		<150	<150	<150	----	----
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg		<150	<150	<150	----	----
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg		<150	<150	<150	----	----
EP076HK: Low M.W. PAHs	----	550	µg/kg		<550	<550	<550	----	----
EP076HK: High M.W. PAHs	----	1700	µg/kg		<1700	<1700	<1700	----	----
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%		**83.8**	**86.7**	**91.3**	----	----
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%		**95.3**	**92.2**	**93.6**	----	----
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%		**76.6**	**95.0**	**93.1**	----	----

Sub-Matrix: INTERSTITIAL WATER			Sample ID	MEB11 Surface	MEB11 0.00-0.90m	MEB11 0.90-1.20m	----	----
			Sampling date / time	15-Mar-2024 10:30	15-Mar-2024 11:00	15-Mar-2024 11:00	----	----
Compound	CAS Number	LOR	Unit	HK2410569-001	HK2410569-002	HK2410569-003	--------	--------
EP-390: Triorganotins								
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L	<0.015	<0.015	<0.015	----	----

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting "0.0" denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5679183)								
HK2410570-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	43.2	42.2	2.2
HK2410606-003	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	33.8	32.7	3.3
EG: Metals and Major Cations (QC Lot: 5668591)								
HK2410509-001	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	0.07	0.07	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	0.2	0.2	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	4	4	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	20	24	20.0
		EG020: Copper	7440-50-8	1	mg/kg	17	17	0.0
		EG020: Lead	7439-92-1	1	mg/kg	23	19	21.6
		EG020: Nickel	7440-02-0	1	mg/kg	8	7	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	61	77	23.3
EP-065: PCB Single Congeners (QC Lot: 5668778)								
HK2410458-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5668778) - Continued								
HK2410458-001	Anonymous	PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5668779)								
HK2410458-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	156	<150	3.6
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 5694795)								
HK2410571-002	Anonymous	Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.015	<0.015	0.0

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

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
EG: Metals and Major Cations (QC Lot: 5668591)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	98.1	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	95.0	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	101	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	110	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	92.8	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	96.5	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	106	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	92.5	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	100	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5668778)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	115	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	118	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	89.4	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	83.2	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	87.2	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	94.4	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	87.2	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	80.8	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	87.8	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	83.7	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	84.6	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	85.8	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	86.2	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	87.1	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	88.5	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	88.7	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	87.3	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	81.8	----	68.0	132	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----

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: 5668779)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	88.1	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	88.4	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	99.9	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	88.9	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	89.8	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	85.8	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	88.7	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	87.9	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	84.2	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	87.5	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	95.3	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	79.1	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	87.8	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	86.1	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	89.9	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	87.4	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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-390: Triorganotins (QC Lot: 5694795)											
Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.012	0.0122 µg TBT /L	110	----	70.0	130	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5668591)										
HK2410508-004	Anonymous	EG020: Arsenic	7440-38-2	10 mg/kg	104	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	92.2	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	119	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	82.6	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	78.3	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	79.4	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	104	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	88.8	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5668778)										
HK2410462-001	Anonymous	PCB 8	34883-43-7	5 µg/kg	98.4	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	98.7	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	76.7	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	76.8	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	97.3	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	85.6	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	89.4	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	94.2	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	86.7	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-065: PCB Single Congeners (QC Lot: 5668778) - Continued										
HK2410462-001	Anonymous	PCB 118	31508-00-6	5 µg/kg	83.7	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	92.2	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	85.1	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	87.3	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	93.0	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	87.1	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	87.2	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	87.1	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	85.1	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5668779)										
HK2410505-001	Anonymous	Naphthalene	91-20-3	250 µg/kg	75.3	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	74.4	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	84.9	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	77.5	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	62.0	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	75.7	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	65.3	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	64.9	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	73.8	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	80.3	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	84.6	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5668779) - Continued										
HK2410505-001	Anonymous	Benzo(k)fluoranthene	207-08-9	250 µg/kg	75.1	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	82.9	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	80.1	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	87.4	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	81.4	----	50.0	130	----	----

Matrix: **WATER**

Laboratory sample ID	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-390: Triorganotins (QC Lot: 5694795)										
HK2410571-002	Anonymous	Tributyltin	56573-85-4	0.0122 µg TBT /L	107	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2408581
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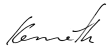
Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 29-Feb-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 15-Mar-2024
C-O-C number	: ----			No. of samples received	: 1
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			No. of samples analysed	: 1

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

Signatories	*Position*	*Authorised results for*
 Chan Wai Hung , Mannix	Laboratory Manager	Organics_ENV
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Lin Wai Yu , Iris	Assistant Manager - Inorganics	Inorganics
 Wong Wing , Kenneth	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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 29-Feb-2024 to 14-Mar-2024.

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: HK2408581

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

TBT result(s) (Method: EP390) is/are reported on as received basis.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID: MEB12 Surface	----	----	----	----
				Sampling date / time: 29-Feb-2024 13:50	----	----	----	----
				HK2408581-001	-------	-------	-------	-------
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103°C)	----	0.1	%	**54.8**	----	----	----	----
EG: Metals and Major Cations								
EG020: Arsenic	7440-38-2	1	mg/kg	**9**	----	----	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	----	----	----	----
EG020: Chromium	7440-47-3	1	mg/kg	**41**	----	----	----	----
EG020: Copper	7440-50-8	1	mg/kg	**66**	----	----	----	----
EG020: Lead	7439-92-1	1	mg/kg	**53**	----	----	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	**0.24**	----	----	----	----
EG020: Nickel	7440-02-0	1	mg/kg	**22**	----	----	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	**0.8**	----	----	----	----
EG020: Zinc	7440-66-6	1	mg/kg	**131**	----	----	----	----
EP-065: PCB Single Congeners								
EP065: PCB 8	34883-43-7	3	µg/kg	<3	----	----	----	----
EP065: PCB 18	37680-65-2	3	µg/kg	<3	----	----	----	----
EP065: PCB 28	7012-37-5	3	µg/kg	<3	----	----	----	----
EP065: PCB 44	41464-39-5	3	µg/kg	<3	----	----	----	----
EP065: PCB 52	35693-99-3	3	µg/kg	**3**	----	----	----	----
EP065: PCB 66	32598-10-0	3	µg/kg	<3	----	----	----	----
EP065: PCB 77	32598-13-3	3	µg/kg	<3	----	----	----	----
EP065: PCB 101	37680-73-2	3	µg/kg	**8**	----	----	----	----
EP065: PCB 105	32598-14-4	3	µg/kg	<3	----	----	----	----
EP065: PCB 118	31508-00-6	3	µg/kg	**3**	----	----	----	----
EP065: PCB 126	57465-28-8	3	µg/kg	<3	----	----	----	----
EP065: PCB 128	38380-07-3	3	µg/kg	<3	----	----	----	----
EP065: PCB 138	35065-28-2	3	µg/kg	**9**	----	----	----	----
EP065: PCB 153	35065-27-1	3	µg/kg	**20**	----	----	----	----
EP065: PCB 169	32774-16-6	3	µg/kg	<3	----	----	----	----
EP065: PCB 170	35065-30-6	3	µg/kg	**9**	----	----	----	----

Sub-Matrix: SEDIMENT				Sample ID	MEB12 Surface	---	---	---	---
				Sampling date / time	29-Feb-2024 13:50	----	----	----	----
Compound	CAS Number	LOR	Unit		HK2408581-001	-------	-------	-------	-------
EP-065: PCB Single Congeners - Continued									
EP065: PCB 180	35065-29-3	3	µg/kg		14	---	---	---	---
EP065: PCB 187	52663-68-0	3	µg/kg		6	---	---	---	---
EP065: Total Polychlorinated biphenyls	----	18	µg/kg		74	---	---	---	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg		<50	---	---	---	---
EP076HK: Acenaphthylene	208-96-8	50	µg/kg		<50	---	---	---	---
EP076HK: Acenaphthene	83-32-9	50	µg/kg		<50	---	---	---	---
EP076HK: Fluorene	86-73-7	50	µg/kg		<50	---	---	---	---
EP076HK: Phenanthrene	85-01-8	50	µg/kg		84	---	---	---	---
EP076HK: Anthracene	120-12-7	50	µg/kg		<50	---	---	---	---
EP076HK: Fluoranthene	206-44-0	150	µg/kg		308	---	---	---	---
EP076HK: Pyrene	129-00-0	150	µg/kg		402	---	---	---	---
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg		197	---	---	---	---
EP076HK: Chrysene	218-01-9	150	µg/kg		198	---	---	---	---
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg		242	---	---	---	---
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg		<150	---	---	---	---
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg		209	---	---	---	---
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg		<150	---	---	---	---
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg		<150	---	---	---	---
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg		<150	---	---	---	---
EP076HK: Low M.W. PAHs	----	550	µg/kg		<550	---	---	---	---
EP076HK: High M.W. PAHs	----	1700	µg/kg		1870	---	---	---	---
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%		73.6	---	---	---	---
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%		64.5	---	---	---	---
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%		90.8	---	---	---	---

Sub-Matrix: INTERSTITIAL WATER				Sample ID	MEB12 Surface	----	----	----	----
				Sampling date / time	29-Feb-2024 13:50	----	----	----	----
Compound	CAS Number	LOR	Unit		HK2408581-001	-------	-------	-------	-------
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L		<0.015	----	----	----	----

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting "0.0" denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5653638)								
HK2408539-030	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	4.2	4.2	0.0
HK2408581-001	MEB12 Surface	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	54.8	54.5	0.5
EG: Metals and Major Cations (QC Lot: 5648487)								
HK2408539-022	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	20	17	19.6
		EG020: Chromium	7440-47-3	1	mg/kg	2	2	0.0
		EG020: Copper	7440-50-8	1	mg/kg	18	16	12.4
		EG020: Lead	7439-92-1	1	mg/kg	21	20	6.3
		EG020: Nickel	7440-02-0	1	mg/kg	2	<1	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	20	19	7.6
EP-065: PCB Single Congeners (QC Lot: 5647062)								
HK2408575-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5647062) - Continued								
HK2408575-001	Anonymous	PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5647063)								
HK2408575-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 5659118)								
HK2407714-003	Anonymous	Tributyltin	56573-85-4	0.0122	µg TBT /L	<15 ngTBT/L	<0.015	0.0

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

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
EG: Metals and Major Cations (QC Lot: 5648487)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	99.8	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	103	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	99.8	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	105	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	95.8	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	100	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	105	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	93.3	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	102	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5647062)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	114	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	106	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	111	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	112	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	115	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	123	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	91.8	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	87.7	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	93.4	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	95.1	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	99.3	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	83.8	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	95.7	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	94.1	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	90.9	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	90.9	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	92.3	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	95.9	----	68.0	132	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----

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: 5647063)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	104	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	111	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	112	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	109	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	113	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	106	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	117	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	117	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	118	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	120	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	116	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	120	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	106	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	122	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	118	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	120	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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-390: Triorganotins (QC Lot: 5659118)											
Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.012	0.0122 µg TBT /L	106	----	70.0	130	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5648487)										
HK2408539-021	Anonymous	EG020: Arsenic	7440-38-2	10 mg/kg	92.5	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	101	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	97.7	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	116	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	123	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	98.1	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	97.4	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	93.5	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	116	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5647062)										
HK2408576-001	Anonymous	PCB 8	34883-43-7	5 µg/kg	76.4	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	77.0	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	83.4	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	86.8	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	106	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	91.7	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	98.8	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	104	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	101	----	50.0	130	----	----
		PCB 118	31508-00-6	5 µg/kg	97.6	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-065: PCB Single Congeners (QC Lot: 5647062) - Continued										
HK2408576-001	Anonymous	PCB 126	57465-28-8	5 µg/kg	101	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	89.7	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	101	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	103	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	98.1	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	98.3	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	104	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	99.1	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5647063)										
HK2408717-001	Anonymous	Naphthalene	91-20-3	250 µg/kg	102	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	116	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	110	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	111	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	111	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	110	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	120	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	120	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	124	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	124	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	114	----	50.0	130	----	----
		Benzo(k)fluoranthene	207-08-9	250 µg/kg	108	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	105	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5647063) - Continued										
HK2408717-001	Anonymous	Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	119	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	113	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	114	----	50.0	130	----	----

Matrix: **WATER**

Laboratory sample ID	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-390: Triorganotins (QC Lot: 5659118)										
HK2407714-003	Anonymous	Tributyltin	56573-85-4	0.0122 µg TBT /L	108	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

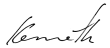
ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2410462
Address	: EAST DEVELOPMENT OFFICE 8F, WEST KOWLOON GOVERNMENT OFFICES SOUTH TOWER YAU MA TEI, KOWLOON HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: MhyLee@cedd.gov.hk	E-mail	: richard.fung@alsglobal.com		
Telephone	: +852 3842 7134	Telephone	: +852 2610 1044		
Facsimile	: +852 2739 0076	Facsimile	: +852 2610 2021		
Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 13-Mar-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 27-Mar-2024
C-O-C number	: ----			No. of samples received	: 1
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			No. of samples analysed	: 1

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*
 Chan Wai Hung , Mannix	Laboratory Manager	Organics_ENV
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Lin Wai Yu , Iris	Assistant Manager - Inorganics	Inorganics
 Wong Wing , Kenneth	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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 13-Mar-2024 to 25-Mar-2024.

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: HK2410462

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

TBT result(s) (Method: EP390) is/are reported on as received basis.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID	MEB13 Surface	----	----	----	----
				Sampling date / time	13-Mar-2024 14:00	----	----	----	----
					HK2410462-001	-------	-------	-------	-------
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%		42.8	----	----	----	----
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1	mg/kg		7	----	----	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg		<0.2	----	----	----	----
EG020: Chromium	7440-47-3	1	mg/kg		25	----	----	----	----
EG020: Copper	7440-50-8	1	mg/kg		42	----	----	----	----
EG020: Lead	7439-92-1	1	mg/kg		38	----	----	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg		0.14	----	----	----	----
EG020: Nickel	7440-02-0	1	mg/kg		13	----	----	----	----
EG020: Silver	7440-22-4	0.1	mg/kg		0.5	----	----	----	----
EG020: Zinc	7440-66-6	1	mg/kg		93	----	----	----	----
EP-065: PCB Single Congeners									
EP065: PCB 8	34883-43-7	3	µg/kg		<3	----	----	----	----
EP065: PCB 18	37680-65-2	3	µg/kg		<3	----	----	----	----
EP065: PCB 28	7012-37-5	3	µg/kg		<3	----	----	----	----
EP065: PCB 44	41464-39-5	3	µg/kg		<3	----	----	----	----
EP065: PCB 52	35693-99-3	3	µg/kg		<3	----	----	----	----
EP065: PCB 66	32598-10-0	3	µg/kg		<3	----	----	----	----
EP065: PCB 77	32598-13-3	3	µg/kg		<3	----	----	----	----
EP065: PCB 101	37680-73-2	3	µg/kg		<3	----	----	----	----
EP065: PCB 105	32598-14-4	3	µg/kg		<3	----	----	----	----
EP065: PCB 118	31508-00-6	3	µg/kg		<3	----	----	----	----
EP065: PCB 126	57465-28-8	3	µg/kg		<3	----	----	----	----
EP065: PCB 128	38380-07-3	3	µg/kg		<3	----	----	----	----
EP065: PCB 138	35065-28-2	3	µg/kg		<3	----	----	----	----
EP065: PCB 153	35065-27-1	3	µg/kg		<3	----	----	----	----
EP065: PCB 169	32774-16-6	3	µg/kg		<3	----	----	----	----
EP065: PCB 170	35065-30-6	3	µg/kg		<3	----	----	----	----

Sub-Matrix: SEDIMENT				Sample ID	MEB13 Surface	---	---	---	---
				Sampling date / time	13-Mar-2024 14:00	----	----	----	----
Compound	CAS Number	LOR	Unit		HK2410462-001	-------	-------	-------	-------
EP-065: PCB Single Congeners - Continued									
EP065: PCB 180	35065-29-3	3	µg/kg		<3	---	---	---	---
EP065: PCB 187	52663-68-0	3	µg/kg		<3	---	---	---	---
EP065: Total Polychlorinated biphenyls	----	18	µg/kg		<18	---	---	---	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg		<50	---	---	---	---
EP076HK: Acenaphthylene	208-96-8	50	µg/kg		<50	---	---	---	---
EP076HK: Acenaphthene	83-32-9	50	µg/kg		<50	---	---	---	---
EP076HK: Fluorene	86-73-7	50	µg/kg		<50	---	---	---	---
EP076HK: Phenanthrene	85-01-8	50	µg/kg		<50	---	---	---	---
EP076HK: Anthracene	120-12-7	50	µg/kg		<50	---	---	---	---
EP076HK: Fluoranthene	206-44-0	150	µg/kg		<150	---	---	---	---
EP076HK: Pyrene	129-00-0	150	µg/kg		<150	---	---	---	---
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg		<150	---	---	---	---
EP076HK: Chrysene	218-01-9	150	µg/kg		<150	---	---	---	---
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg		<150	---	---	---	---
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg		<150	---	---	---	---
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg		<150	---	---	---	---
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg		<150	---	---	---	---
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg		<150	---	---	---	---
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg		<150	---	---	---	---
EP076HK: Low M.W. PAHs	----	550	µg/kg		<550	---	---	---	---
EP076HK: High M.W. PAHs	----	1700	µg/kg		<1700	---	---	---	---
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%		**74.9**	---	---	---	---
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%		**85.4**	---	---	---	---
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%		**93.3**	---	---	---	---

Sub-Matrix: INTERSTITIAL WATER				Sample ID	MEB13 Surface	----	----	----	----
				Sampling date / time	13-Mar-2024 14:00	----	----	----	----
Compound	CAS Number	LOR	Unit		HK2410462-001	-------	-------	-------	-------
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L		<0.015	----	----	----	----

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting “0.0” denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5676261)								
HK2410294-003	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	33.7	33.8	0.0
EG: Metals and Major Cations (QC Lot: 5668590)								
HK2410229-002	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	0.12	0.12	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	0.3	0.3	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	4	4	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	23	22	0.0
		EG020: Copper	7440-50-8	1	mg/kg	32	34	3.6
		EG020: Lead	7439-92-1	1	mg/kg	40	37	7.5
		EG020: Nickel	7440-02-0	1	mg/kg	11	12	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	68	70	3.3
EP-065: PCB Single Congeners (QC Lot: 5668778)								
HK2410458-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5668778) - Continued								
HK2410458-001	Anonymous	PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5668779)								
HK2410458-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	156	<150	3.6
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 5683319)								
HK2408585-001	Anonymous	Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.015	<0.015	0.0

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

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
EG: Metals and Major Cations (QC Lot: 5668590)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	95.8	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	94.1	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	98.8	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	108	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	93.4	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	94.3	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	104	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	91.9	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	99.6	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5668778)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	115	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	118	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	89.4	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	83.2	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	87.2	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	94.4	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	87.2	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	80.8	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	87.8	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	83.7	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	84.6	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	85.8	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	86.2	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	87.1	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	88.5	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	88.7	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	87.3	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	81.8	----	68.0	132	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----

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: 5668779)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	88.1	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	88.4	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	99.9	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	88.9	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	89.8	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	85.8	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	88.7	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	87.9	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	84.2	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	87.5	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	95.3	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	79.1	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	87.8	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	86.1	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	89.9	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	87.4	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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-390: Triorganotins (QC Lot: 5683319)											
Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.012	0.0122 µg TBT /L	110	----	70.0	130	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5668590)										
HK2410229-001	Anonymous	EG020: Arsenic	7440-38-2	10 mg/kg	101	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	96.6	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	117	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	90.8	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	89.0	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	97.0	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	109	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	92.9	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	75.1	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5668778)										
HK2410462-001	MEB13 Surface	PCB 8	34883-43-7	5 µg/kg	98.4	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	98.7	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	76.7	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	76.8	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	97.3	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	85.6	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	89.4	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	94.2	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	86.7	----	50.0	130	----	----
		PCB 118	31508-00-6	5 µg/kg	83.7	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-065: PCB Single Congeners (QC Lot: 5668778) - Continued										
HK2410462-001	MEB13 Surface	**PCB 126**	57465-28-8	5 µg/kg	92.2	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	85.1	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	87.3	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	93.0	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	87.1	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	87.2	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	87.1	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	85.1	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5668779)										
HK2410505-001	Anonymous	**Naphthalene**	91-20-3	250 µg/kg	75.3	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	74.4	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	84.9	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	77.5	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	62.0	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	75.7	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	65.3	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	64.9	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	73.8	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	80.3	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	84.6	----	50.0	130	----	----
		Benzo(k)fluoranthene	207-08-9	250 µg/kg	75.1	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	82.9	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5668779) - Continued										
HK2410505-001	Anonymous	Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	80.1	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	87.4	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	81.4	----	50.0	130	----	----

Matrix: **WATER**

Laboratory sample ID	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-390: Triorganotins (QC Lot: 5683319)										
HK2408585-001	Anonymous	Tributyltin	56573-85-4	0.0122 µg TBT /L	109	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2408579
Address	: EAST DEVELOPMENT OFFICE 8F, WEST KOWLOON GOVERNMENT OFFICES SOUTH TOWER YAU MA TEI, KOWLOON HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
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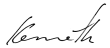
Facsimile	: +852 2739 0076	Facsimile	: +852 2610 2021		
Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 29-Feb-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 15-Mar-2024
C-O-C number	: ----			No. of samples received	: 1
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			No. of samples analysed	: 1

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

Signatories	*Position*	*Authorised results for*
 Chan Wai Hung , Mannix	Laboratory Manager	Organics_ENV
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Lin Wai Yu , Iris	Assistant Manager - Inorganics	Inorganics
 Wong Wing , Kenneth	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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 29-Feb-2024 to 14-Mar-2024.

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: HK2408579

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

TBT result(s) (Method: EP390) is/are reported on as received basis.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID: MEB14 Surface	----	----	----	----
				Sampling date / time: 29-Feb-2024 13:15	----	----	----	----
				HK2408579-001	-------	-------	-------	-------
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103°C)	----	0.1	%	**44.5**	----	----	----	----
EG: Metals and Major Cations								
EG020: Arsenic	7440-38-2	1	mg/kg	**6**	----	----	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	----	----	----	----
EG020: Chromium	7440-47-3	1	mg/kg	**30**	----	----	----	----
EG020: Copper	7440-50-8	1	mg/kg	**41**	----	----	----	----
EG020: Lead	7439-92-1	1	mg/kg	**45**	----	----	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	**0.16**	----	----	----	----
EG020: Nickel	7440-02-0	1	mg/kg	**16**	----	----	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	**0.5**	----	----	----	----
EG020: Zinc	7440-66-6	1	mg/kg	**100**	----	----	----	----
EP-065: PCB Single Congeners								
EP065: PCB 8	34883-43-7	3	µg/kg	<3	----	----	----	----
EP065: PCB 18	37680-65-2	3	µg/kg	<3	----	----	----	----
EP065: PCB 28	7012-37-5	3	µg/kg	<3	----	----	----	----
EP065: PCB 44	41464-39-5	3	µg/kg	<3	----	----	----	----
EP065: PCB 52	35693-99-3	3	µg/kg	<3	----	----	----	----
EP065: PCB 66	32598-10-0	3	µg/kg	<3	----	----	----	----
EP065: PCB 77	32598-13-3	3	µg/kg	<3	----	----	----	----
EP065: PCB 101	37680-73-2	3	µg/kg	<3	----	----	----	----
EP065: PCB 105	32598-14-4	3	µg/kg	<3	----	----	----	----
EP065: PCB 118	31508-00-6	3	µg/kg	<3	----	----	----	----
EP065: PCB 126	57465-28-8	3	µg/kg	<3	----	----	----	----
EP065: PCB 128	38380-07-3	3	µg/kg	<3	----	----	----	----
EP065: PCB 138	35065-28-2	3	µg/kg	<3	----	----	----	----
EP065: PCB 153	35065-27-1	3	µg/kg	<3	----	----	----	----
EP065: PCB 169	32774-16-6	3	µg/kg	<3	----	----	----	----
EP065: PCB 170	35065-30-6	3	µg/kg	<3	----	----	----	----

Sub-Matrix: SEDIMENT				Sample ID	MEB14 Surface	----	----	----	----
				Sampling date / time	29-Feb-2024 13:15	----	----	----	----
Compound	CAS Number	LOR	Unit		HK2408579-001	-------	-------	-------	-------
EP-065: PCB Single Congeners - Continued									
EP065: PCB 180	35065-29-3	3	µg/kg		<3	----	----	----	----
EP065: PCB 187	52663-68-0	3	µg/kg		<3	----	----	----	----
EP065: Total Polychlorinated biphenyls	----	18	µg/kg		<18	----	----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg		<50	----	----	----	----
EP076HK: Acenaphthylene	208-96-8	50	µg/kg		59	----	----	----	----
EP076HK: Acenaphthene	83-32-9	50	µg/kg		<50	----	----	----	----
EP076HK: Fluorene	86-73-7	50	µg/kg		<50	----	----	----	----
EP076HK: Phenanthrene	85-01-8	50	µg/kg		94	----	----	----	----
EP076HK: Anthracene	120-12-7	50	µg/kg		59	----	----	----	----
EP076HK: Fluoranthene	206-44-0	150	µg/kg		291	----	----	----	----
EP076HK: Pyrene	129-00-0	150	µg/kg		403	----	----	----	----
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg		177	----	----	----	----
EP076HK: Chrysene	218-01-9	150	µg/kg		182	----	----	----	----
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg		212	----	----	----	----
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg		<150	----	----	----	----
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg		193	----	----	----	----
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg		<150	----	----	----	----
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg		<150	----	----	----	----
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg		<150	----	----	----	----
EP076HK: Low M.W. PAHs	----	550	µg/kg		<550	----	----	----	----
EP076HK: High M.W. PAHs	----	1700	µg/kg		1730	----	----	----	----
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%		84.1	----	----	----	----
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%		69.1	----	----	----	----
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%		97.0	----	----	----	----

Sub-Matrix: INTERSTITIAL WATER				Sample ID	MEB14 Surface	---	---	---	---
				Sampling date / time	29-Feb-2024 13:15	----	----	----	----
Compound	CAS Number	LOR	Unit		HK2408579-001	-------	-------	-------	-------
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L		<0.015	---	---	---	---

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting “0.0” denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5654972)								
HK2407945-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	56.1	56.0	0.0
HK2408056-002	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	25.4	26.4	3.8
EG: Metals and Major Cations (QC Lot: 5648487)								
HK2408539-022	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	20	17	19.6
		EG020: Chromium	7440-47-3	1	mg/kg	2	2	0.0
		EG020: Copper	7440-50-8	1	mg/kg	18	16	12.4
		EG020: Lead	7439-92-1	1	mg/kg	21	20	6.3
		EG020: Nickel	7440-02-0	1	mg/kg	2	<1	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	20	19	7.6
EP-065: PCB Single Congeners (QC Lot: 5647062)								
HK2408575-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5647062) - Continued								
HK2408575-001	Anonymous	PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5647063)								
HK2408575-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 5659118)								
HK2407714-003	Anonymous	Tributyltin	56573-85-4	0.0122	µg TBT /L	<15 ngTBT/L	<0.015	0.0

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

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
EG: Metals and Major Cations (QC Lot: 5648487)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	99.8	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	103	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	99.8	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	105	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	95.8	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	100	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	105	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	93.3	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	102	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5647062)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	114	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	106	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	111	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	112	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	115	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	123	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	91.8	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	87.7	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	93.4	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	95.1	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	99.3	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	83.8	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	95.7	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	94.1	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	90.9	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	90.9	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	92.3	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	95.9	----	68.0	132	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----

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: 5647063)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	104	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	111	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	112	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	109	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	113	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	106	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	117	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	117	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	118	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	120	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	116	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	120	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	106	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	122	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	118	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	120	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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-390: Triorganotins (QC Lot: 5659118)											
Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.012	0.0122 µg TBT /L	106	----	70.0	130	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5648487)										
HK2408539-021	Anonymous	EG020: Arsenic	7440-38-2	10 mg/kg	92.5	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	101	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	97.7	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	116	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	123	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	98.1	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	97.4	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	93.5	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	116	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5647062)										
HK2408576-001	Anonymous	PCB 8	34883-43-7	5 µg/kg	76.4	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	77.0	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	83.4	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	86.8	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	106	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	91.7	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	98.8	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	104	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	101	----	50.0	130	----	----
		PCB 118	31508-00-6	5 µg/kg	97.6	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-065: PCB Single Congeners (QC Lot: 5647062) - Continued										
HK2408576-001	Anonymous	PCB 126	57465-28-8	5 µg/kg	101	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	89.7	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	101	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	103	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	98.1	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	98.3	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	104	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	99.1	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5647063)										
HK2408717-001	Anonymous	Naphthalene	91-20-3	250 µg/kg	102	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	116	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	110	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	111	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	111	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	110	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	120	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	120	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	124	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	124	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	114	----	50.0	130	----	----
		Benzo(k)fluoranthene	207-08-9	250 µg/kg	108	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	105	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5647063) - Continued										
HK2408717-001	Anonymous	Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	119	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	113	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	114	----	50.0	130	----	----

Matrix: **WATER**

Laboratory sample ID	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-390: Triorganotins (QC Lot: 5659118)										
HK2407714-003	Anonymous	Tributyltin	56573-85-4	0.0122 µg TBT /L	108	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

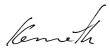
ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2408578
Address	: EAST DEVELOPMENT OFFICE 8F, WEST KOWLOON GOVERNMENT OFFICES SOUTH TOWER YAU MA TEI, KOWLOON HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: MhyLee@cedd.gov.hk	E-mail	: richard.fung@alsglobal.com		
Telephone	: +852 3842 7134	Telephone	: +852 2610 1044		
Facsimile	: +852 2739 0076	Facsimile	: +852 2610 2021		
Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 29-Feb-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 15-Mar-2024
C-O-C number	: ----			No. of samples received	: 1
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			No. of samples analysed	: 1

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

Signatories	*Position*	*Authorised results for*
 Chan Wai Hung , Mannix	Laboratory Manager	Organics_ENV
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Lin Wai Yu , Iris	Assistant Manager - Inorganics	Inorganics
 Wong Wing , Kenneth	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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 29-Feb-2024 to 14-Mar-2024.

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: HK2408578

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

TBT result(s) (Method: EP390) is/are reported on as received basis.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID: MEB15 Surface	----	----	----	----
				Sampling date / time: 29-Feb-2024 12:45	----	----	----	----
				HK2408578-001	-------	-------	-------	-------
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103°C)	----	0.1	%	**41.7**	----	----	----	----
EG: Metals and Major Cations								
EG020: Arsenic	7440-38-2	1	mg/kg	**7**	----	----	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	----	----	----	----
EG020: Chromium	7440-47-3	1	mg/kg	**36**	----	----	----	----
EG020: Copper	7440-50-8	1	mg/kg	**54**	----	----	----	----
EG020: Lead	7439-92-1	1	mg/kg	**46**	----	----	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	**0.18**	----	----	----	----
EG020: Nickel	7440-02-0	1	mg/kg	**18**	----	----	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	**0.5**	----	----	----	----
EG020: Zinc	7440-66-6	1	mg/kg	**98**	----	----	----	----
EP-065: PCB Single Congeners								
EP065: PCB 8	34883-43-7	3	µg/kg	<3	----	----	----	----
EP065: PCB 18	37680-65-2	3	µg/kg	<3	----	----	----	----
EP065: PCB 28	7012-37-5	3	µg/kg	**6**	----	----	----	----
EP065: PCB 44	41464-39-5	3	µg/kg	<3	----	----	----	----
EP065: PCB 52	35693-99-3	3	µg/kg	**5**	----	----	----	----
EP065: PCB 66	32598-10-0	3	µg/kg	<3	----	----	----	----
EP065: PCB 77	32598-13-3	3	µg/kg	<3	----	----	----	----
EP065: PCB 101	37680-73-2	3	µg/kg	<3	----	----	----	----
EP065: PCB 105	32598-14-4	3	µg/kg	<3	----	----	----	----
EP065: PCB 118	31508-00-6	3	µg/kg	<3	----	----	----	----
EP065: PCB 126	57465-28-8	3	µg/kg	<3	----	----	----	----
EP065: PCB 128	38380-07-3	3	µg/kg	<3	----	----	----	----
EP065: PCB 138	35065-28-2	3	µg/kg	<3	----	----	----	----
EP065: PCB 153	35065-27-1	3	µg/kg	<3	----	----	----	----
EP065: PCB 169	32774-16-6	3	µg/kg	<3	----	----	----	----
EP065: PCB 170	35065-30-6	3	µg/kg	<3	----	----	----	----

Sub-Matrix: SEDIMENT				Sample ID	MEB15 Surface	---	---	---	---
				Sampling date / time	29-Feb-2024 12:45	----	----	----	----
Compound	CAS Number	LOR	Unit		HK2408578-001	-------	-------	-------	-------
EP-065: PCB Single Congeners - Continued									
EP065: PCB 180	35065-29-3	3	µg/kg		<3	---	---	---	---
EP065: PCB 187	52663-68-0	3	µg/kg		<3	---	---	---	---
EP065: Total Polychlorinated biphenyls	----	18	µg/kg		30	---	---	---	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg		<50	---	---	---	---
EP076HK: Acenaphthylene	208-96-8	50	µg/kg		<50	---	---	---	---
EP076HK: Acenaphthene	83-32-9	50	µg/kg		<50	---	---	---	---
EP076HK: Fluorene	86-73-7	50	µg/kg		<50	---	---	---	---
EP076HK: Phenanthrene	85-01-8	50	µg/kg		<50	---	---	---	---
EP076HK: Anthracene	120-12-7	50	µg/kg		<50	---	---	---	---
EP076HK: Fluoranthene	206-44-0	150	µg/kg		<150	---	---	---	---
EP076HK: Pyrene	129-00-0	150	µg/kg		<150	---	---	---	---
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg		<150	---	---	---	---
EP076HK: Chrysene	218-01-9	150	µg/kg		<150	---	---	---	---
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg		<150	---	---	---	---
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg		<150	---	---	---	---
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg		<150	---	---	---	---
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg		<150	---	---	---	---
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg		<150	---	---	---	---
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg		<150	---	---	---	---
EP076HK: Low M.W. PAHs	----	550	µg/kg		<550	---	---	---	---
EP076HK: High M.W. PAHs	----	1700	µg/kg		<1700	---	---	---	---
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%		85.6	---	---	---	---
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%		69.5	---	---	---	---
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%		103	---	---	---	---

Sub-Matrix: INTERSTITIAL WATER				Sample ID	MEB15 Surface	----	----	----	----
				Sampling date / time	29-Feb-2024 12:45	----	----	----	----
Compound	CAS Number	LOR	Unit		HK2408578-001	-------	-------	-------	-------
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L		<0.015	----	----	----	----

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting "0.0" denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5653666)								
HK2408584-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	54.8	54.5	0.5
EG: Metals and Major Cations (QC Lot: 5648487)								
HK2408539-022	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	20	17	19.6
		EG020: Chromium	7440-47-3	1	mg/kg	2	2	0.0
		EG020: Copper	7440-50-8	1	mg/kg	18	16	12.4
		EG020: Lead	7439-92-1	1	mg/kg	21	20	6.3
		EG020: Nickel	7440-02-0	1	mg/kg	2	<1	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	20	19	7.6
EP-065: PCB Single Congeners (QC Lot: 5647062)								
HK2408575-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5647062) - Continued								
HK2408575-001	Anonymous	PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5647063)								
HK2408575-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 5659118)								
HK2407714-003	Anonymous	Tributyltin	56573-85-4	0.0122	µg TBT /L	<15 ngTBT/L	<0.015	0.0

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

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
EG: Metals and Major Cations (QC Lot: 5648487)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	99.8	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	103	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	99.8	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	105	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	95.8	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	100	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	105	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	93.3	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	102	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5647062)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	114	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	106	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	111	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	112	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	115	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	123	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	91.8	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	87.7	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	93.4	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	95.1	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	99.3	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	83.8	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	95.7	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	94.1	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	90.9	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	90.9	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	92.3	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	95.9	----	68.0	132	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----

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: 5647063)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	104	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	111	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	112	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	109	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	113	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	106	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	117	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	117	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	118	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	120	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	116	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	120	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	106	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	122	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	118	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	120	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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-390: Triorganotins (QC Lot: 5659118)											
Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.012	0.0122 µg TBT /L	106	----	70.0	130	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5648487)										
HK2408539-021	Anonymous	EG020: Arsenic	7440-38-2	10 mg/kg	92.5	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	101	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	97.7	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	116	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	123	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	98.1	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	97.4	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	93.5	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	116	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5647062)										
HK2408576-001	Anonymous	PCB 8	34883-43-7	5 µg/kg	76.4	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	77.0	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	83.4	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	86.8	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	106	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	91.7	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	98.8	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	104	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	101	----	50.0	130	----	----
		PCB 118	31508-00-6	5 µg/kg	97.6	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-065: PCB Single Congeners (QC Lot: 5647062) - Continued										
HK2408576-001	Anonymous	PCB 126	57465-28-8	5 µg/kg	101	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	89.7	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	101	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	103	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	98.1	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	98.3	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	104	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	99.1	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5647063)										
HK2408717-001	Anonymous	Naphthalene	91-20-3	250 µg/kg	102	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	116	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	110	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	111	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	111	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	110	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	120	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	120	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	124	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	124	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	114	----	50.0	130	----	----
		Benzo(k)fluoranthene	207-08-9	250 µg/kg	108	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	105	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5647063) - Continued										
HK2408717-001	Anonymous	Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	119	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	113	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	114	----	50.0	130	----	----

Matrix: **WATER**

Laboratory sample ID	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-390: Triorganotins (QC Lot: 5659118)										
HK2407714-003	Anonymous	Tributyltin	56573-85-4	0.0122 µg TBT /L	108	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2408577
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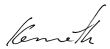
Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 29-Feb-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 15-Mar-2024
C-O-C number	: ----			No. of samples received	: 1
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			No. of samples analysed	: 1

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

Signatories	*Position*	*Authorised results for*
 Chan Wai Hung , Mannix	Laboratory Manager	Organics_ENV
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Lin Wai Yu , Iris	Assistant Manager - Inorganics	Inorganics
 Wong Wing , Kenneth	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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 29-Feb-2024 to 15-Mar-2024.

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: HK2408577

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

TBT result(s) (Method: EP390) is/are reported on as received basis.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID	MEB16 Surface	----	----	----	----
				Sampling date / time	29-Feb-2024 11:35	----	----	----	----
					HK2408577-001	-------	-------	-------	-------
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%		53.9	----	----	----	----
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1	mg/kg		9	----	----	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg		<0.2	----	----	----	----
EG020: Chromium	7440-47-3	1	mg/kg		42	----	----	----	----
EG020: Copper	7440-50-8	1	mg/kg		62	----	----	----	----
EG020: Lead	7439-92-1	1	mg/kg		50	----	----	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg		0.18	----	----	----	----
EG020: Nickel	7440-02-0	1	mg/kg		22	----	----	----	----
EG020: Silver	7440-22-4	0.1	mg/kg		0.7	----	----	----	----
EG020: Zinc	7440-66-6	1	mg/kg		123	----	----	----	----
EP-065: PCB Single Congeners									
EP065: PCB 8	34883-43-7	3	µg/kg		<3	----	----	----	----
EP065: PCB 18	37680-65-2	3	µg/kg		<3	----	----	----	----
EP065: PCB 28	7012-37-5	3	µg/kg		<3	----	----	----	----
EP065: PCB 44	41464-39-5	3	µg/kg		<3	----	----	----	----
EP065: PCB 52	35693-99-3	3	µg/kg		<3	----	----	----	----
EP065: PCB 66	32598-10-0	3	µg/kg		<3	----	----	----	----
EP065: PCB 77	32598-13-3	3	µg/kg		<3	----	----	----	----
EP065: PCB 101	37680-73-2	3	µg/kg		<3	----	----	----	----
EP065: PCB 105	32598-14-4	3	µg/kg		<3	----	----	----	----
EP065: PCB 118	31508-00-6	3	µg/kg		<3	----	----	----	----
EP065: PCB 126	57465-28-8	3	µg/kg		<3	----	----	----	----
EP065: PCB 128	38380-07-3	3	µg/kg		<3	----	----	----	----
EP065: PCB 138	35065-28-2	3	µg/kg		<3	----	----	----	----
EP065: PCB 153	35065-27-1	3	µg/kg		<3	----	----	----	----
EP065: PCB 169	32774-16-6	3	µg/kg		<3	----	----	----	----
EP065: PCB 170	35065-30-6	3	µg/kg		<3	----	----	----	----

Sub-Matrix: SEDIMENT				Sample ID	MEB16 Surface	---	---	---	---
				Sampling date / time	29-Feb-2024 11:35	----	----	----	----
Compound	CAS Number	LOR	Unit		HK2408577-001	-------	-------	-------	-------
EP-065: PCB Single Congeners - Continued									
EP065: PCB 180	35065-29-3	3	µg/kg		<3	---	---	---	---
EP065: PCB 187	52663-68-0	3	µg/kg		<3	---	---	---	---
EP065: Total Polychlorinated biphenyls	----	18	µg/kg		<18	---	---	---	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg		<50	---	---	---	---
EP076HK: Acenaphthylene	208-96-8	50	µg/kg		<50	---	---	---	---
EP076HK: Acenaphthene	83-32-9	50	µg/kg		<50	---	---	---	---
EP076HK: Fluorene	86-73-7	50	µg/kg		<50	---	---	---	---
EP076HK: Phenanthrene	85-01-8	50	µg/kg		83	---	---	---	---
EP076HK: Anthracene	120-12-7	50	µg/kg		<50	---	---	---	---
EP076HK: Fluoranthene	206-44-0	150	µg/kg		228	---	---	---	---
EP076HK: Pyrene	129-00-0	150	µg/kg		289	---	---	---	---
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg		<150	---	---	---	---
EP076HK: Chrysene	218-01-9	150	µg/kg		<150	---	---	---	---
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg		179	---	---	---	---
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg		<150	---	---	---	---
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg		161	---	---	---	---
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg		<150	---	---	---	---
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg		<150	---	---	---	---
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg		<150	---	---	---	---
EP076HK: Low M.W. PAHs	----	550	µg/kg		<550	---	---	---	---
EP076HK: High M.W. PAHs	----	1700	µg/kg		<1700	---	---	---	---
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%		110	---	---	---	---
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%		93.7	---	---	---	---
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%		93.3	---	---	---	---

Sub-Matrix: INTERSTITIAL WATER				Sample ID	MEB16 Surface	----	----	----	----
				Sampling date / time	29-Feb-2024 11:35	----	----	----	----
Compound	CAS Number	LOR	Unit		HK2408577-001	-------	-------	-------	-------
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L		<0.015	----	----	----	----

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting "0.0" denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5654972)								
HK2407945-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	56.1	56.0	0.0
HK2408056-002	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	25.4	26.4	3.8
EG: Metals and Major Cations (QC Lot: 5648487)								
HK2408539-022	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	20	17	19.6
		EG020: Chromium	7440-47-3	1	mg/kg	2	2	0.0
		EG020: Copper	7440-50-8	1	mg/kg	18	16	12.4
		EG020: Lead	7439-92-1	1	mg/kg	21	20	6.3
		EG020: Nickel	7440-02-0	1	mg/kg	2	<1	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	20	19	7.6
EP-065: PCB Single Congeners (QC Lot: 5647062)								
HK2408575-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5647062) - Continued								
HK2408575-001	Anonymous	PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5647063)								
HK2408575-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 5659118)								
HK2407714-003	Anonymous	Tributyltin	56573-85-4	0.0122	µg TBT /L	<15 ngTBT/L	<0.015	0.0

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

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
EG: Metals and Major Cations (QC Lot: 5648487)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	99.8	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	103	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	99.8	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	105	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	95.8	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	100	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	105	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	93.3	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	102	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5647062)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	114	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	106	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	111	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	112	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	115	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	123	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	91.8	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	87.7	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	93.4	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	95.1	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	99.3	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	83.8	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	95.7	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	94.1	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	90.9	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	90.9	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	92.3	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	95.9	----	68.0	132	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----

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: 5647063)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	104	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	111	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	112	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	109	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	113	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	106	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	117	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	117	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	118	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	120	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	116	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	120	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	106	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	122	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	118	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	120	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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-390: Triorganotins (QC Lot: 5659118)											
Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.012	0.0122 µg TBT /L	106	----	70.0	130	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5648487)										
HK2408539-021	Anonymous	EG020: Arsenic	7440-38-2	10 mg/kg	92.5	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	101	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	97.7	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	116	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	123	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	98.1	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	97.4	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	93.5	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	116	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5647062)										
HK2408576-001	Anonymous	PCB 8	34883-43-7	5 µg/kg	76.4	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	77.0	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	83.4	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	86.8	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	106	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	91.7	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	98.8	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	104	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	101	----	50.0	130	----	----
		PCB 118	31508-00-6	5 µg/kg	97.6	----	50.0	130	----	----

Matrix: **SOIL**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number		MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 5647062) - Continued										
HK2408576-001	Anonymous	PCB 126	57465-28-8	5 µg/kg	101	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	89.7	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	101	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	103	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	98.1	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	98.3	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	104	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	99.1	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5647063)										
HK2408717-001	Anonymous	Naphthalene	91-20-3	250 µg/kg	102	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	116	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	110	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	111	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	111	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	110	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	120	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	120	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	124	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	124	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	114	----	50.0	130	----	----
		Benzo(k)fluoranthene	207-08-9	250 µg/kg	108	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	105	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5647063) - Continued										
HK2408717-001	Anonymous	Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	119	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	113	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	114	----	50.0	130	----	----

Matrix: **WATER**

Laboratory sample ID	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-390: Triorganotins (QC Lot: 5659118)										
HK2407714-003	Anonymous	Tributyltin	56573-85-4	0.0122 µg TBT /L	108	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2410568
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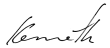
Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 15-Mar-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 02-Apr-2024
C-O-C number	: ----			No. of samples received	: 2
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			No. of samples analysed	: 2

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*
 Chan Siu Ming , Vico	Assistant Laboratory Manager	Inorganics
 Chan Wai Hung , Mannix	Laboratory Manager	Organics_ENV
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Wong Wing , Kenneth	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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 15-Mar-2024 to 28-Mar-2024.

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: HK2410568

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Analysis of Tributyltin in interstitial water was cancelled for HK2410568 #002 due to insufficient volume of interstitial water.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

TBT result(s) (Method: EP390) is/are reported on as received basis.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID	MEB17 Surface	MEB17 0.00m-0.45m	----	----	----
				Sampling date / time	15-Mar-2024 14:00	15-Mar-2024 13:30	----	----	----
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%				----	----	----
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1	mg/kg				----	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg				----	----	----
EG020: Chromium	7440-47-3	1	mg/kg				----	----	----
EG020: Copper	7440-50-8	1	mg/kg				----	----	----
EG020: Lead	7439-92-1	1	mg/kg				----	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg				----	----	----
EG020: Nickel	7440-02-0	1	mg/kg				----	----	----
EG020: Silver	7440-22-4	0.1	mg/kg				----	----	----
EG020: Zinc	7440-66-6	1	mg/kg	Samples collected were not sediment.			----	----	----
EP-065: PCB Single Congeners									
EP065: PCB 8	34883-43-7	3	µg/kg				----	----	----
EP065: PCB 18	37680-65-2	3	µg/kg				----	----	----
EP065: PCB 28	7012-37-5	3	µg/kg				----	----	----
EP065: PCB 44	41464-39-5	3	µg/kg				----	----	----
EP065: PCB 52	35693-99-3	3	µg/kg				----	----	----
EP065: PCB 66	32598-10-0	3	µg/kg				----	----	----
EP065: PCB 77	32598-13-3	3	µg/kg				----	----	----
EP065: PCB 101	37680-73-2	3	µg/kg				----	----	----
EP065: PCB 105	32598-14-4	3	µg/kg				----	----	----
EP065: PCB 118	31508-00-6	3	µg/kg				----	----	----
EP065: PCB 126	57465-28-8	3	µg/kg				----	----	----
EP065: PCB 128	38380-07-3	3	µg/kg				----	----	----
EP065: PCB 138	35065-28-2	3	µg/kg				----	----	----
EP065: PCB 153	35065-27-1	3	µg/kg				----	----	----
EP065: PCB 169	32774-16-6	3	µg/kg				----	----	----
EP065: PCB 170	35065-30-6	3	µg/kg				----	----	----

Sub-Matrix: SEDIMENT				Sample ID	MEB17 Surface	MEB17 0.00m-0.45m	----	----	----
				Sampling date / time	15-Mar-2024 14:00	15-Mar-2024 13:30	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*				-------	-------	-------
EP-065: PCB Single Congeners - Continued									
EP065: PCB 180	35065-29-3	3	µg/kg				----	----	----
EP065: PCB 187	52663-68-0	3	µg/kg				----	----	----
EP065: Total Polychlorinated biphenyls	----	18	µg/kg				----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg				----	----	----
EP076HK: Acenaphthylene	208-96-8	50	µg/kg				----	----	----
EP076HK: Acenaphthene	83-32-9	50	µg/kg				----	----	----
EP076HK: Fluorene	86-73-7	50	µg/kg				----	----	----
EP076HK: Phenanthrene	85-01-8	50	µg/kg				----	----	----
EP076HK: Anthracene	120-12-7	50	µg/kg				----	----	----
EP076HK: Fluoranthene	206-44-0	150	µg/kg				----	----	----
EP076HK: Pyrene	129-00-0	150	µg/kg				----	----	----
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg				----	----	----
EP076HK: Chrysene	218-01-9	150	µg/kg				----	----	----
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg				----	----	----
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg				----	----	----
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg				----	----	----
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg				----	----	----
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg				----	----	----
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg				----	----	----
EP076HK: Low M.W. PAHs	----	550	µg/kg				----	----	----
EP076HK: High M.W. PAHs	----	1700	µg/kg				----	----	----
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%				----	----	----
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%				----	----	----
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%				----	----	----

Samples collected were not sediment.

Sub-Matrix: INTERSTITIAL WATER				Sample ID	MEB17 Surface	----	----	----	----
				Sampling date / time	15-Mar-2024 14:00	----	----	----	----
Compound	CAS Number	LOR	Unit		Samples collected were not sediment.	-------	-------	-------	-------
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L			----	----	----	----

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting "0.0" denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5679183)								
HK2410570-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	43.2	42.2	2.2
HK2410606-003	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	33.8	32.7	3.3
EG: Metals and Major Cations (QC Lot: 5668591)								
HK2410509-001	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	0.07	0.07	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	0.2	0.2	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	4	4	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	20	24	20.0
		EG020: Copper	7440-50-8	1	mg/kg	17	17	0.0
		EG020: Lead	7439-92-1	1	mg/kg	23	19	21.6
		EG020: Nickel	7440-02-0	1	mg/kg	8	7	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	61	77	23.3
EP-065: PCB Single Congeners (QC Lot: 5668778)								
HK2410458-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5668778) - Continued								
HK2410458-001	Anonymous	PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5668779)								
HK2410458-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	156	<150	3.6
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 5694795)								
HK2410571-002	Anonymous	Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.015	<0.015	0.0

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

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
EG: Metals and Major Cations (QC Lot: 5668591)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	98.1	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	95.0	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	101	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	110	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	92.8	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	96.5	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	106	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	92.5	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	100	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5668778)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	115	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	118	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	89.4	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	83.2	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	87.2	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	94.4	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	87.2	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	80.8	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	87.8	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	83.7	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	84.6	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	85.8	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	86.2	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	87.1	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	88.5	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	88.7	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	87.3	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	81.8	----	68.0	132	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----

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: 5668779)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	88.1	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	88.4	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	99.9	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	88.9	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	89.8	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	85.8	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	88.7	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	87.9	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	84.2	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	87.5	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	95.3	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	79.1	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	87.8	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	86.1	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	89.9	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	87.4	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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-390: Triorganotins (QC Lot: 5694795)											
Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.012	0.0122 µg TBT /L	110	----	70.0	130	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5668591)										
HK2410508-004	Anonymous	EG020: Arsenic	7440-38-2	10 mg/kg	104	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	92.2	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	119	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	82.6	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	78.3	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	79.4	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	104	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	88.8	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5668778)										
HK2410462-001	Anonymous	PCB 8	34883-43-7	5 µg/kg	98.4	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	98.7	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	76.7	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	76.8	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	97.3	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	85.6	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	89.4	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	94.2	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	86.7	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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
EP-065: PCB Single Congeners (QC Lot: 5668778) - Continued										
HK2410462-001	Anonymous	PCB 118	31508-00-6	5 µg/kg	83.7	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	92.2	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	85.1	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	87.3	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	93.0	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	87.1	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	87.2	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	87.1	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	85.1	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5668779)										
HK2410505-001	Anonymous	Naphthalene	91-20-3	250 µg/kg	75.3	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	74.4	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	84.9	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	77.5	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	62.0	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	75.7	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	65.3	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	64.9	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	73.8	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	80.3	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	84.6	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5668779) - Continued										
HK2410505-001	Anonymous	Benzo(k)fluoranthene	207-08-9	250 µg/kg	75.1	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	82.9	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	80.1	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	87.4	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	81.4	----	50.0	130	----	----

Matrix: **WATER**

Laboratory sample ID	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-390: Triorganotins (QC Lot: 5694795)										
HK2410571-002	Anonymous	Tributyltin	56573-85-4	0.0122 µg TBT /L	107	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

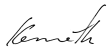
ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2410610
Address	: EAST DEVELOPMENT OFFICE 8F, WEST KOWLOON GOVERNMENT OFFICES SOUTH TOWER YAU MA TEI, KOWLOON HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: MhyLee@cedd.gov.hk	E-mail	: richard.fung@alsglobal.com		
Telephone	: +852 3842 7134	Telephone	: +852 2610 1044		
Facsimile	: +852 2739 0076	Facsimile	: +852 2610 2021		
Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 16-Mar-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 02-Apr-2024
C-O-C number	: ----			No. of samples received	: 5
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			No. of samples analysed	: 5

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

Signatories	*Position*	*Authorised results for*
 Chan Siu Ming , Vico	Assistant Laboratory Manager	Inorganics
 Chan Wai Hung , Mannix	Laboratory Manager	Organics_ENV
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Wong Wing , Kenneth	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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-2024 to 02-Apr-2024.

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: HK2410610

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Analysis of Tributyltin in interstitial water was cancelled for HK2410610 #001 and 004 due to insufficient volume of interstitial water.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

TBT result(s) (Method: EP390) is/are reported on as received basis.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID	MEB18 Surface	MEB18 0.25-0.90m	MEB18 0.90-1.90m	MEB18 1.90-2.90m	MEB18 2.90-5.90m
				Sampling date / time	16-Mar-2024 09:50	16-Mar-2024 11:00	16-Mar-2024 11:00	16-Mar-2024 11:00	16-Mar-2024 11:00
							HK2410610-003	HK2410610-004	HK2410610-005
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%				31.5	34.2	18.6
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1	mg/kg				10	6	2
EG020: Cadmium	7440-43-9	0.2	mg/kg				<0.2	0.3	<0.2
EG020: Chromium	7440-47-3	1	mg/kg				28	37	20
EG020: Copper	7440-50-8	1	mg/kg				10	43	4
EG020: Lead	7439-92-1	1	mg/kg				32	38	21
EG020: Mercury	7439-97-6	0.05	mg/kg				<0.05	0.21	<0.05
EG020: Nickel	7440-02-0	1	mg/kg				19	24	10
EG020: Silver	7440-22-4	0.1	mg/kg				<0.1	0.5	<0.1
EG020: Zinc	7440-66-6	1	mg/kg	Samples collected were not sediment.			59	190	42
EP-065: PCB Single Congeners									
EP065: PCB 8	34883-43-7	3	µg/kg				<3	<3	<3
EP065: PCB 18	37680-65-2	3	µg/kg				<3	5	<3
EP065: PCB 28	7012-37-5	3	µg/kg				<3	7	<3
EP065: PCB 44	41464-39-5	3	µg/kg				<3	5	<3
EP065: PCB 52	35693-99-3	3	µg/kg				<3	23	<3
EP065: PCB 66	32598-10-0	3	µg/kg				<3	5	<3
EP065: PCB 77	32598-13-3	3	µg/kg				<3	<3	<3
EP065: PCB 101	37680-73-2	3	µg/kg				<3	26	<3
EP065: PCB 105	32598-14-4	3	µg/kg				<3	6	<3
EP065: PCB 118	31508-00-6	3	µg/kg				<3	20	<3
EP065: PCB 126	57465-28-8	3	µg/kg				<3	<3	<3
EP065: PCB 128	38380-07-3	3	µg/kg				<3	5	<3
EP065: PCB 138	35065-28-2	3	µg/kg				<3	24	<3
EP065: PCB 153	35065-27-1	3	µg/kg				<3	25	<3
EP065: PCB 169	32774-16-6	3	µg/kg				<3	<3	<3
EP065: PCB 170	35065-30-6	3	µg/kg				<3	4	<3

Sub-Matrix: SEDIMENT				Sample ID	MEB18 Surface	MEB18 0.25-0.90m	MEB18 0.90-1.90m	MEB18 1.90-2.90m	MEB18 2.90-5.90m
				Sampling date / time	16-Mar-2024 09:50	16-Mar-2024 11:00	16-Mar-2024 11:00	16-Mar-2024 11:00	16-Mar-2024 11:00
Compound	CAS Number	LOR	Unit				HK2410610-003	HK2410610-004	HK2410610-005
EP-065: PCB Single Congeners - Continued									
EP065: PCB 180	35065-29-3	3	µg/kg				<3	6	<3
EP065: PCB 187	52663-68-0	3	µg/kg				<3	<3	<3
EP065: Total Polychlorinated biphenyls	----	18	µg/kg				<18	141	<18
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg				<50	99	<50
EP076HK: Acenaphthylene	208-96-8	50	µg/kg				<50	116	<50
EP076HK: Acenaphthene	83-32-9	50	µg/kg				<50	<50	<50
EP076HK: Fluorene	86-73-7	50	µg/kg				<50	<50	<50
EP076HK: Phenanthrene	85-01-8	50	µg/kg				<50	162	<50
EP076HK: Anthracene	120-12-7	50	µg/kg				<50	107	<50
EP076HK: Fluoranthene	206-44-0	150	µg/kg				<150	407	<150
EP076HK: Pyrene	129-00-0	150	µg/kg				<150	672	<150
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg				<150	321	<150
EP076HK: Chrysene	218-01-9	150	µg/kg				<150	219	<150
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg				<150	660	<150
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg				<150	207	<150
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg				<150	482	<150
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg				<150	432	<150
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg				<150	<150	<150
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg				<150	340	<150
EP076HK: Low M.W. PAHs	----	550	µg/kg				<550	573	<550
EP076HK: High M.W. PAHs	----	1700	µg/kg				<1700	3810	<1700
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%				89.9	89.3	82.5
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%				92.5	95.5	87.0
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%				101	125	95.0

Samples collected were not sediment.

Sub-Matrix: INTERSTITIAL WATER				Sample ID	MEB18 0.25-0.90m	MEB18 0.90-1.90m	MEB18 2.90-5.90m	----	----
				Sampling date / time	16-Mar-2024 11:00	16-Mar-2024 11:00	16-Mar-2024 11:00	----	----
Compound	CAS Number	LOR	Unit		Samples collected were not sediment.	HK2410610-003	HK2410610-005	--------	--------
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L			<0.015	<0.015	----	----

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting “0.0” denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5682418)								
HK2410609-003	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	40.2	39.2	2.4
EG: Metals and Major Cations (QC Lot: 5671557)								
HK2410606-002	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	0.15	0.15	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	0.2	0.2	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	5	5	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	19	23	16.2
		EG020: Copper	7440-50-8	1	mg/kg	28	24	12.1
		EG020: Lead	7439-92-1	1	mg/kg	56	47	18.4
		EG020: Nickel	7440-02-0	1	mg/kg	11	12	11.6
		EG020: Zinc	7440-66-6	1	mg/kg	185	151	20.1
EP-065: PCB Single Congeners (QC Lot: 5674478)								
HK2410570-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5674478) - Continued								
HK2410570-001	Anonymous	PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5674479)								
HK2410570-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 5694796)								
HK2410606-001	Anonymous	Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.015	<0.015	0.0

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

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
EG: Metals and Major Cations (QC Lot: 5671557)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	103	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	95.1	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	106	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	115	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	95.0	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	95.5	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	106	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	94.2	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	105	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5674478)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	124	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	124	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	100	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	116	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	114	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	124	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	102	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	102	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	103	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	98.0	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	109	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	103	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	103	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	103	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	107	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	105	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	104	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	101	----	68.0	132	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----

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: 5674479)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	97.6	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	92.6	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	91.0	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	89.2	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	84.9	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	81.5	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	83.7	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	81.7	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	80.8	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	82.0	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	87.3	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	75.9	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	79.3	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	93.6	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	80.8	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	80.3	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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-390: Triorganotins (QC Lot: 5694796)											
Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.012	0.0122 µg TBT /L	116	----	70.0	130	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5671557)										
HK2410606-001	Anonymous	EG020: Arsenic	7440-38-2	10 mg/kg	98.3	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	97.3	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	86.6	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	82.9	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	81.5	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	84.2	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	100	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	93.6	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5674478)										
HK2410570-002	Anonymous	PCB 8	34883-43-7	5 µg/kg	108	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	102	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	89.9	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	109	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	112	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	113	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	92.0	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	90.1	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	102	----	50.0	130	----	----

Matrix: **SOIL**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number		MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 5674478) - Continued										
HK2410570-002	Anonymous	PCB 118	31508-00-6	5 µg/kg	98.2	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	95.5	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	90.6	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	103	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	78.0	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	80.5	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	94.6	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	74.0	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	84.2	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5674479)										
HK2410570-003	Anonymous	Naphthalene	91-20-3	250 µg/kg	115	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	119	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	117	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	116	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	125	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	109	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	130	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	109	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	103	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	106	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	93.5	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5674479) - Continued										
HK2410570-003	Anonymous	Benzo(k)fluoranthene	207-08-9	250 µg/kg	96.3	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	90.1	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	112	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	104	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	97.4	----	50.0	130	----	----

Matrix: **WATER**

Laboratory sample ID	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-390: Triorganotins (QC Lot: 5694796)										
HK2410606-001	Anonymous	Tributyltin	56573-85-4	0.0122 µg TBT /L	115	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2410860
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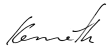
Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 18-Mar-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 03-Apr-2024
C-O-C number	: ----			No. of samples received	: 5
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			No. of samples analysed	: 5

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

Signatories	*Position*	*Authorised results for*
 Chan Wai Hung , Mannix	Laboratory Manager	Organics_ENV
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Lin Wai Yu , Iris	Assistant Manager - Inorganics	Inorganics
 Wong Wing , Kenneth	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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 18-Mar-2024 to 03-Apr-2024.

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: HK2410860

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

TBT result(s) (Method: EP390) is/are reported on as received basis.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID	MEB19 Surface	MEB19 0.25-0.9m	MEB19 0.9-1.9m	MEB19 1.9-2.9m	MEB19 2.9-5.9m
				Sampling date / time	18-Mar-2024 11:30	18-Mar-2024 10:00	18-Mar-2024 10:00	18-Mar-2024 10:00	18-Mar-2024 10:00
					HK2410860-001	HK2410860-002	HK2410860-003	HK2410860-004	HK2410860-005
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%		23.2	29.1		30.7	23.6
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1	mg/kg		3	6		5	6
EG020: Cadmium	7440-43-9	0.2	mg/kg		<0.2	<0.2		<0.2	0.3
EG020: Chromium	7440-47-3	1	mg/kg		8	38		23	23
EG020: Copper	7440-50-8	1	mg/kg		9	50		8	42
EG020: Lead	7439-92-1	1	mg/kg		73	81		18	85
EG020: Mercury	7439-97-6	0.05	mg/kg		<0.05	0.33		<0.05	0.62
EG020: Nickel	7440-02-0	1	mg/kg		4	16		17	11
EG020: Silver	7440-22-4	0.1	mg/kg		<0.1	0.6		<0.1	0.3
EG020: Zinc	7440-66-6	1	mg/kg		28	118		49	134
EP-065: PCB Single Congeners									
EP065: PCB 8	34883-43-7	3	µg/kg		<3	<3		<3	<3
EP065: PCB 18	37680-65-2	3	µg/kg		<3	<3		<3	<3
EP065: PCB 28	7012-37-5	3	µg/kg		<3	5		<3	<3
EP065: PCB 44	41464-39-5	3	µg/kg		<3	<3		<3	<3
EP065: PCB 52	35693-99-3	3	µg/kg		<3	6		<3	6
EP065: PCB 66	32598-10-0	3	µg/kg		<3	<3		<3	<3
EP065: PCB 77	32598-13-3	3	µg/kg		<3	<3		<3	<3
EP065: PCB 101	37680-73-2	3	µg/kg		<3	4		<3	5
EP065: PCB 105	32598-14-4	3	µg/kg		<3	<3		<3	<3
EP065: PCB 118	31508-00-6	3	µg/kg		<3	<3		<3	4
EP065: PCB 126	57465-28-8	3	µg/kg		<3	<3		<3	<3
EP065: PCB 128	38380-07-3	3	µg/kg		<3	<3		<3	<3
EP065: PCB 138	35065-28-2	3	µg/kg		<3	4		<3	4
EP065: PCB 153	35065-27-1	3	µg/kg		<3	6		<3	5
EP065: PCB 169	32774-16-6	3	µg/kg		<3	<3		<3	<3
EP065: PCB 170	35065-30-6	3	µg/kg		<3	<3		<3	<3

Samples collected were not sediment.

Sub-Matrix: SEDIMENT				Sample ID	MEB19 Surface	MEB19 0.25-0.9m	MEB19 0.9-1.9m	MEB19 1.9-2.9m	MEB19 2.9-5.9m
				Sampling date / time	18-Mar-2024 11:30	18-Mar-2024 10:00	18-Mar-2024 10:00	18-Mar-2024 10:00	18-Mar-2024 10:00
Compound	CAS Number	LOR	Unit		HK2410860-001	HK2410860-002	HK2410860-003	HK2410860-004	HK2410860-005
EP-065: PCB Single Congeners - Continued									
EP065: PCB 180	35065-29-3	3	µg/kg		<3	<3		<3	<3
EP065: PCB 187	52663-68-0	3	µg/kg		<3	<3		<3	<3
EP065: Total Polychlorinated biphenyls	----	18	µg/kg		<18	39		<18	31
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg		<50	<50		<50	<50
EP076HK: Acenaphthylene	208-96-8	50	µg/kg		<50	<50		<50	<50
EP076HK: Acenaphthene	83-32-9	50	µg/kg		<50	<50		<50	<50
EP076HK: Fluorene	86-73-7	50	µg/kg		<50	<50		<50	<50
EP076HK: Phenanthrene	85-01-8	50	µg/kg		<50	<50		<50	<50
EP076HK: Anthracene	120-12-7	50	µg/kg		<50	<50		<50	<50
EP076HK: Fluoranthene	206-44-0	150	µg/kg		<150	<150		<150	<150
EP076HK: Pyrene	129-00-0	150	µg/kg		<150	<150		<150	<150
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg		<150	<150		<150	<150
EP076HK: Chrysene	218-01-9	150	µg/kg		<150	<150		<150	<150
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg		<150	<150		<150	152
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg		<150	<150		<150	<150
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg		<150	<150		<150	<150
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg		<150	<150		<150	<150
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg		<150	<150		<150	<150
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg		<150	<150		<150	<150
EP076HK: Low M.W. PAHs	----	550	µg/kg		<550	<550		<550	<550
EP076HK: High M.W. PAHs	----	1700	µg/kg		<1700	<1700		<1700	<1700
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%		88.7	93.7		101	96.8
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%		92.6	97.8		99.4	98.1
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%		114	116		125	124

Samples collected were not sediment.

Sub-Matrix: INTERSTITIAL WATER				Sample ID	MEB19 Surface	MEB19 0.25-0.9m	MEB19 0.9-1.9m	MEB19 1.9-2.9m	MEB19 2.9-5.9m
				Sampling date / time	18-Mar-2024 11:30	18-Mar-2024 10:00	18-Mar-2024 10:00	18-Mar-2024 10:00	18-Mar-2024 10:00
Compound	CAS Number	LOR	Unit		HK2410860-001	HK2410860-002	HK2410860-003	HK2410860-004	HK2410860-005
EP-390: Triorganotins							Samples collected were not sediment.		
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L		<0.015	<0.015		<0.015	<0.015

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting "0.0" denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5689090)								
HK2410860-001	MEB19 Surface	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	23.2	22.7	2.0
HK2411003-003	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	25.7	25.7	0.0
EG: Metals and Major Cations (QC Lot: 5674500)								
HK2410852-002	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	7	7	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	2	2	0.0
		EG020: Copper	7440-50-8	1	mg/kg	7	8	0.0
		EG020: Lead	7439-92-1	1	mg/kg	105	95	10.0
		EG020: Nickel	7440-02-0	1	mg/kg	2	2	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	44	45	3.3
EP-065: PCB Single Congeners (QC Lot: 5678288)								
HK2410852-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5678288) - Continued								
HK2410852-001	Anonymous	PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5678289)								
HK2410852-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	337	292	14.4
		Pyrene	129-00-0	150	µg/kg	450	393	13.5
		Benz(a)anthracene	56-55-3	150	µg/kg	168	157	6.8
		Chrysene	218-01-9	150	µg/kg	162	<150	8.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	222	207	7.1
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	216	206	4.7
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	157	151	4.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	1920	1740	9.6
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	50	60	18.7
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	68	57	17.9
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 5694796)								
HK2410606-001	Anonymous	Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.015	<0.015	0.0

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

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
EG: Metals and Major Cations (QC Lot: 5674500)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	101	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	94.2	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	103	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	115	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	94.6	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	101	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	108	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	93.3	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	106	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5678288)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	89.8	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	105	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	113	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	111	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	117	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	100	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	108	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	110	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	106	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	105	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	106	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	106	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	104	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	105	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	104	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	104	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	105	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	105	----	68.0	132	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----

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: 5678289)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	112	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	114	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	113	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	110	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	106	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	104	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	105	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	104	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	110	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	110	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	115	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	106	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	108	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	131	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	117	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	115	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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-390: Triorganotins (QC Lot: 5694796)											
Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.012	0.0122 µg TBT /L	116	----	70.0	130	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5674500)										
HK2410852-001	Anonymous	EG020: Arsenic	7440-38-2	10 mg/kg	101	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	92.7	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	88.5	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	114	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	121	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	95.7	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	112	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	90.4	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5678288)										
HK2410852-002	Anonymous	PCB 8	34883-43-7	5 µg/kg	82.9	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	88.5	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	80.6	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	86.3	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	92.0	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	84.8	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	92.3	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	93.9	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	92.2	----	50.0	130	----	----

Matrix: **SOIL**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number		MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 5678288) - Continued										
HK2410852-002	Anonymous	PCB 118	31508-00-6	5 µg/kg	92.6	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	94.0	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	93.2	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	92.7	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	97.6	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	93.8	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	93.3	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	95.8	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	93.1	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5678289)										
HK2410852-003	Anonymous	Naphthalene	91-20-3	250 µg/kg	91.6	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	95.2	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	92.2	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	95.6	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	128	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	83.6	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	112	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	114	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	91.1	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	96.2	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	106	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5678289) - Continued										
HK2410852-003	Anonymous	Benzo(k)fluoranthene	207-08-9	250 µg/kg	88.8	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	98.5	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	114	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	91.4	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	94.3	----	50.0	130	----	----

Matrix: **WATER**

Laboratory sample ID	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-390: Triorganotins (QC Lot: 5694796)										
HK2410606-001	Anonymous	Tributyltin	56573-85-4	0.0122 µg TBT /L	115	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 14
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2410861
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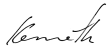
Facsimile	: +852 2739 0076	Facsimile	: +852 2610 2021		
Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 18-Mar-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 03-Apr-2024
C-O-C number	: ----			No. of samples received	: 5
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			No. of samples analysed	: 5

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

Signatories	*Position*	*Authorised results for*
 Chan Siu Ming , Vico	Assistant Laboratory Manager	Inorganics
 Chan Wai Hung , Mannix	Laboratory Manager	Organics_ENV
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Wong Wing , Kenneth	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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 18-Mar-2024 to 02-Apr-2024.

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: HK2410861

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

TBT result(s) (Method: EP390) is/are reported on as received basis.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID	MEB20 Surface	MEB20 0.20-0.90m	MEB20 0.90-1.90m	MEB20 1.90-2.90m	MEB20 2.90-5.90m
				Sampling date / time	18-Mar-2024 13:30	18-Mar-2024 15:00	18-Mar-2024 15:00	18-Mar-2024 15:00	18-Mar-2024 15:00
					HK2410861-001	HK2410861-002	HK2410861-003	HK2410861-004	HK2410861-005
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%		33.2	29.3	31.8	27.6	30.7
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1	mg/kg		4	6	8	4	6
EG020: Cadmium	7440-43-9	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EG020: Chromium	7440-47-3	1	mg/kg		18	25	14	22	29
EG020: Copper	7440-50-8	1	mg/kg		28	34	23	9	9
EG020: Lead	7439-92-1	1	mg/kg		26	38	46	17	24
EG020: Mercury	7439-97-6	0.05	mg/kg		0.16	0.26	0.12	0.08	<0.05
EG020: Nickel	7440-02-0	1	mg/kg		10	13	10	15	22
EG020: Silver	7440-22-4	0.1	mg/kg		0.2	0.3	0.1	<0.1	<0.1
EG020: Zinc	7440-66-6	1	mg/kg		118	75	90	48	63
EP-065: PCB Single Congeners									
EP065: PCB 8	34883-43-7	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 18	37680-65-2	3	µg/kg		<3	<3	4	<3	<3
EP065: PCB 28	7012-37-5	3	µg/kg		<3	<3	7	<3	<3
EP065: PCB 44	41464-39-5	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 52	35693-99-3	3	µg/kg		<3	5	4	<3	<3
EP065: PCB 66	32598-10-0	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 77	32598-13-3	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 101	37680-73-2	3	µg/kg		<3	4	<3	<3	<3
EP065: PCB 105	32598-14-4	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 118	31508-00-6	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 126	57465-28-8	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 128	38380-07-3	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 138	35065-28-2	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 153	35065-27-1	3	µg/kg		<3	4	<3	<3	<3
EP065: PCB 169	32774-16-6	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 170	35065-30-6	3	µg/kg		<3	<3	<3	<3	<3

Sub-Matrix: SEDIMENT				Sample ID	MEB20 Surface	MEB20 0.20-0.90m	MEB20 0.90-1.90m	MEB20 1.90-2.90m	MEB20 2.90-5.90m
				Sampling date / time	18-Mar-2024 13:30	18-Mar-2024 15:00	18-Mar-2024 15:00	18-Mar-2024 15:00	18-Mar-2024 15:00
Compound	CAS Number	LOR	Unit		HK2410861-001	HK2410861-002	HK2410861-003	HK2410861-004	HK2410861-005
EP-065: PCB Single Congeners - Continued									
EP065: PCB 180	35065-29-3	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 187	52663-68-0	3	µg/kg		<3	<3	<3	<3	<3
EP065: Total Polychlorinated biphenyls	----	18	µg/kg		<18	22	26	<18	<18
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg		<50	<50	<50	<50	<50
EP076HK: Acenaphthylene	208-96-8	50	µg/kg		<50	<50	156	<50	<50
EP076HK: Acenaphthene	83-32-9	50	µg/kg		<50	<50	<50	<50	<50
EP076HK: Fluorene	86-73-7	50	µg/kg		<50	<50	55	<50	<50
EP076HK: Phenanthrene	85-01-8	50	µg/kg		<50	<50	396	<50	<50
EP076HK: Anthracene	120-12-7	50	µg/kg		<50	<50	102	<50	<50
EP076HK: Fluoranthene	206-44-0	150	µg/kg		<150	<150	487	<150	<150
EP076HK: Pyrene	129-00-0	150	µg/kg		<150	<150	530	<150	<150
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg		<150	<150	282	<150	<150
EP076HK: Chrysene	218-01-9	150	µg/kg		<150	<150	214	<150	<150
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg		<150	<150	348	<150	<150
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg		<150	<150	301	<150	<150
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg		<150	<150	222	<150	<150
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg		<150	<150	163	<150	<150
EP076HK: Low M.W. PAHs	----	550	µg/kg		<550	<550	709	<550	<550
EP076HK: High M.W. PAHs	----	1700	µg/kg		<1700	<1700	2710	<1700	<1700
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%		93.6	89.8	92.0	96.2	100
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%		96.8	90.3	95.0	100	99.6
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%		119	122	109	111	119

Sub-Matrix: INTERSTITIAL WATER				Sample ID	MEB20 Surface	MEB20 0.20-0.90m	MEB20 0.90-1.90m	MEB20 1.90-2.90m	MEB20 2.90-5.90m
				Sampling date / time	18-Mar-2024 13:30	18-Mar-2024 15:00	18-Mar-2024 15:00	18-Mar-2024 15:00	18-Mar-2024 15:00
Compound	CAS Number	LOR	Unit		HK2410861-001	HK2410861-002	HK2410861-003	HK2410861-004	HK2410861-005
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L		<0.015	<0.015	<0.015	<0.015	<0.015

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting "0.0" denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5687877)								
HK2410861-005	MEB20 2.90-5.90m	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	30.7	29.7	3.3
EG: Metals and Major Cations (QC Lot: 5674500)								
HK2410852-002	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	7	7	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	2	2	0.0
		EG020: Copper	7440-50-8	1	mg/kg	7	8	0.0
		EG020: Lead	7439-92-1	1	mg/kg	105	95	10.0
		EG020: Nickel	7440-02-0	1	mg/kg	2	2	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	44	45	3.3
EP-065: PCB Single Congeners (QC Lot: 5678288)								
HK2410852-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5678288) - Continued								
HK2410852-001	Anonymous	PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5678289)								
HK2410852-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	337	292	14.4
		Pyrene	129-00-0	150	µg/kg	450	393	13.5
		Benz(a)anthracene	56-55-3	150	µg/kg	168	157	6.8
		Chrysene	218-01-9	150	µg/kg	162	<150	8.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	222	207	7.1
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	216	206	4.7
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	157	151	4.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	1920	1740	9.6
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	50	60	18.7
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	68	57	17.9
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 5694796)								
HK2410606-001	Anonymous	Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.015	<0.015	0.0
EP-390: Triorganotins (QC Lot: 5694797)								
HK2410308-001	Anonymous	Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.015	<0.015	0.0

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

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
EG: Metals and Major Cations (QC Lot: 5674500)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	101	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	94.2	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	103	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	115	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	94.6	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	101	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	108	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	93.3	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	106	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5678288)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	89.8	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	105	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	113	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	111	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	117	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	100	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	108	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	110	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	106	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	105	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	106	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	106	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	104	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	105	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	104	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	104	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	105	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	105	----	68.0	132	----	----

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-065: PCB Single Congeners (QC Lot: 5678288) - Continued											
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5678289)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	112	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	114	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	113	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	110	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	106	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	104	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	105	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	104	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	110	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	110	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	115	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	106	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	108	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	131	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	117	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	115	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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-390: Triorganotins (QC Lot: 5694796)											
Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.012	0.0122 µg TBT /L	116	----	70.0	130	----	----
EP-390: Triorganotins (QC Lot: 5694797)											

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-390: Triorganotins (QC Lot: 5694797) - Continued											
Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.012	0.0122 µg TBT /L	108	----	70.0	130	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5674500)										
HK2410852-001	Anonymous	**EG020: Arsenic**	7440-38-2	10 mg/kg	101	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	92.7	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	88.5	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	114	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	121	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	95.7	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	112	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	90.4	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5678288)										
HK2410852-002	Anonymous	**PCB 8**	34883-43-7	5 µg/kg	82.9	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	88.5	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	80.6	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	86.3	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	92.0	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	84.8	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	92.3	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	93.9	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	92.2	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-065: PCB Single Congeners (QC Lot: 5678288) - Continued										
HK2410852-002	Anonymous	PCB 118	31508-00-6	5 µg/kg	92.6	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	94.0	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	93.2	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	92.7	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	97.6	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	93.8	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	93.3	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	95.8	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	93.1	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5678289)										
HK2410852-003	Anonymous	Naphthalene	91-20-3	250 µg/kg	91.6	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	95.2	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	92.2	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	95.6	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	128	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	83.6	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	112	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	114	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	91.1	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	96.2	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	106	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5678289) - Continued										
HK2410852-003	Anonymous	**Benzo(k)fluoranthene**	207-08-9	250 µg/kg	88.8	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	98.5	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	114	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	91.4	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	94.3	----	50.0	130	----	----

Matrix: **WATER**

Laboratory sample ID	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-390: Triorganotins (QC Lot: 5694796)										
HK2410606-001	Anonymous	**Tributyltin**	56573-85-4	0.0122 µg TBT /L	115	----	70.0	130	----	----
EP-390: Triorganotins (QC Lot: 5694797)										
HK2410308-001	Anonymous	**Tributyltin**	56573-85-4	0.0122 µg TBT /L	114	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

HOKLAS 066 TEST

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 14
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2410571
Address	: EAST DEVELOPMENT OFFICE 8F, WEST KOWLOON GOVERNMENT OFFICES SOUTH TOWER YAU MA TEI, KOWLOON HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: MhyLee@cedd.gov.hk	E-mail	: richard.fung@alsglobal.com		
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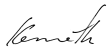
Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 15-Mar-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 02-Apr-2024
C-O-C number	: ----			No. of samples received	: 4
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			No. of samples analysed	: 4

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

Signatories	*Position*	*Authorised results for*
 Chan Wai Hung , Mannix	Laboratory Manager	Organics_ENV
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Lin Wai Yu , Iris	Assistant Manager - Inorganics	Inorganics
 Wong Wing , Kenneth	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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 15-Mar-2024 to 28-Mar-2024.

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: HK2410571

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Analysis of Tributyltin in interstitial water was cancelled for HK2410571 #001 due to insufficient volume of interstitial water.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

TBT result(s) (Method: EP390) is/are reported on as received basis.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID	MEB21 Surface	MEB21 0.10-0.90m	MEB21 0.90-1.90m	MEB21 1.90-2.30m	----
				Sampling date / time	15-Mar-2024 10:30	15-Mar-2024 11:00	15-Mar-2024 11:00	15-Mar-2024 11:00	----
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%						----
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1	mg/kg						----
EG020: Cadmium	7440-43-9	0.2	mg/kg						----
EG020: Chromium	7440-47-3	1	mg/kg						----
EG020: Copper	7440-50-8	1	mg/kg						----
EG020: Lead	7439-92-1	1	mg/kg						----
EG020: Mercury	7439-97-6	0.05	mg/kg						----
EG020: Nickel	7440-02-0	1	mg/kg						----
EG020: Silver	7440-22-4	0.1	mg/kg						----
EG020: Zinc	7440-66-6	1	mg/kg						----
EP-065: PCB Single Congeners									
EP065: PCB 8	34883-43-7	3	µg/kg						----
EP065: PCB 18	37680-65-2	3	µg/kg						----
EP065: PCB 28	7012-37-5	3	µg/kg						----
EP065: PCB 44	41464-39-5	3	µg/kg						----
EP065: PCB 52	35693-99-3	3	µg/kg						----
EP065: PCB 66	32598-10-0	3	µg/kg						----
EP065: PCB 77	32598-13-3	3	µg/kg						----
EP065: PCB 101	37680-73-2	3	µg/kg						----
EP065: PCB 105	32598-14-4	3	µg/kg						----
EP065: PCB 118	31508-00-6	3	µg/kg						----
EP065: PCB 126	57465-28-8	3	µg/kg						----
EP065: PCB 128	38380-07-3	3	µg/kg						----
EP065: PCB 138	35065-28-2	3	µg/kg						----
EP065: PCB 153	35065-27-1	3	µg/kg						----
EP065: PCB 169	32774-16-6	3	µg/kg						----
EP065: PCB 170	35065-30-6	3	µg/kg						----

Samples collected were not sediment.

Sub-Matrix: SEDIMENT				Sample ID	MEB21 Surface	MEB21 0.10-0.90m	MEB21 0.90-1.90m	MEB21 1.90-2.30m	----
				Sampling date / time	15-Mar-2024 10:30	15-Mar-2024 11:00	15-Mar-2024 11:00	15-Mar-2024 11:00	----
Compound	CAS Number	LOR	Unit						-------
EP-065: PCB Single Congeners - Continued									
EP065: PCB 180	35065-29-3	3	µg/kg						----
EP065: PCB 187	52663-68-0	3	µg/kg						----
EP065: Total Polychlorinated biphenyls	----	18	µg/kg						----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg						----
EP076HK: Acenaphthylene	208-96-8	50	µg/kg						----
EP076HK: Acenaphthene	83-32-9	50	µg/kg						----
EP076HK: Fluorene	86-73-7	50	µg/kg						----
EP076HK: Phenanthrene	85-01-8	50	µg/kg						----
EP076HK: Anthracene	120-12-7	50	µg/kg						----
EP076HK: Fluoranthene	206-44-0	150	µg/kg						----
EP076HK: Pyrene	129-00-0	150	µg/kg						----
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg						----
EP076HK: Chrysene	218-01-9	150	µg/kg						----
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg						----
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg						----
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg						----
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg						----
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg						----
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg						----
EP076HK: Low M.W. PAHs	----	550	µg/kg						----
EP076HK: High M.W. PAHs	----	1700	µg/kg						----
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%						----
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%						----
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%						----

Samples collected were not sediment.

Sub-Matrix: INTERSTITIAL WATER				Sample ID	MEB21 0.10-0.90m	MEB21 0.90-1.90m	MEB21 1.90-2.30m	----	----
				Sampling date / time	15-Mar-2024 11:00	15-Mar-2024 11:00	15-Mar-2024 11:00	----	----
Compound	CAS Number	LOR	Unit					----------	----------
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L					----	----

Samples collected were not sediment.

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting "0.0" denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5679183)								
HK2410570-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	43.2	42.2	2.2
HK2410606-003	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	33.8	32.7	3.3
EG: Metals and Major Cations (QC Lot: 5668591)								
HK2410509-001	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	0.07	0.07	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	0.2	0.2	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	4	4	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	20	24	20.0
		EG020: Copper	7440-50-8	1	mg/kg	17	17	0.0
		EG020: Lead	7439-92-1	1	mg/kg	23	19	21.6
		EG020: Nickel	7440-02-0	1	mg/kg	8	7	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	61	77	23.3
EP-065: PCB Single Congeners (QC Lot: 5674478)								
HK2410570-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5674478) - Continued								
HK2410570-001	Anonymous	PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5674479)								
HK2410570-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 5694795)								
HK2410571-002	MEB21 0.10-0.90m	Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.015	<0.015	0.0
EP-390: Triorganotins (QC Lot: 5694796)								
HK2410606-001	Anonymous	Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.015	<0.015	0.0

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

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
EG: Metals and Major Cations (QC Lot: 5668591)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	98.1	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	95.0	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	101	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	110	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	92.8	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	96.5	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	106	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	92.5	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	100	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5674478)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	124	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	124	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	100	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	116	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	114	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	124	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	102	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	102	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	103	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	98.0	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	109	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	103	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	103	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	103	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	107	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	105	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	104	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	101	----	68.0	132	----	----

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-065: PCB Single Congeners (QC Lot: 5674478) - Continued											
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5674479)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	97.6	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	92.6	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	91.0	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	89.2	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	84.9	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	81.5	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	83.7	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	81.7	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	80.8	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	82.0	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	87.3	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	75.9	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	79.3	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	93.6	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	80.8	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	80.3	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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-390: Triorganotins (QC Lot: 5694795)											
Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.012	0.0122 µg TBT /L	110	----	70.0	130	----	----
EP-390: Triorganotins (QC Lot: 5694796)											

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-390: Triorganotins (QC Lot: 5694796) - Continued											
Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.012	0.0122 µg TBT /L	116	----	70.0	130	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5668591)										
HK2410508-004	Anonymous	EG020: Arsenic	7440-38-2	10 mg/kg	104	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	92.2	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	119	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	82.6	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	78.3	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	79.4	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	104	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	88.8	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5674478)										
HK2410570-002	Anonymous	PCB 8	34883-43-7	5 µg/kg	108	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	102	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	89.9	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	109	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	112	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	113	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	92.0	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	90.1	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	102	----	50.0	130	----	----

Matrix: **SOIL**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number		MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 5674478) - Continued										
HK2410570-002	Anonymous	PCB 118	31508-00-6	5 µg/kg	98.2	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	95.5	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	90.6	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	103	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	78.0	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	80.5	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	94.6	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	74.0	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	84.2	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5674479)										
HK2410570-003	Anonymous	Naphthalene	91-20-3	250 µg/kg	115	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	119	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	117	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	116	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	125	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	109	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	130	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	109	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	103	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	106	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	93.5	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5674479) - Continued										
HK2410570-003	Anonymous	Benzo(k)fluoranthene	207-08-9	250 µg/kg	96.3	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	90.1	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	112	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	104	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	97.4	----	50.0	130	----	----

Matrix: **WATER**

Laboratory sample ID	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-390: Triorganotins (QC Lot: 5694795)										
HK2410571-002	MEB21 0.10-0.90m	Tributyltin	56573-85-4	0.0122 µg TBT /L	107	----	70.0	130	----	----
EP-390: Triorganotins (QC Lot: 5694796)										
HK2410606-001	Anonymous	Tributyltin	56573-85-4	0.0122 µg TBT /L	115	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

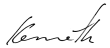
ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 16
Contact	: MARCO, HUEN YIU LEE E/12(E)	Contact	: Richard Fung	Work Order	: HK2410509
Address	: EAST DEVELOPMENT OFFICE 8F, WEST KOWLOON GOVERNMENT OFFICES SOUTH TOWER YAU MA TEI, KOWLOON HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: MhyLee@cedd.gov.hk	E-mail	: richard.fung@alsglobal.com		
Telephone	: +852 3842 7134	Telephone	: +852 2610 1044		
Facsimile	: +852 2739 0076	Facsimile	: +852 2610 2021		
Project	: SERVICE CONTRACT NO. EDO1/2024 - ENVIRONMENTAL TESTING FOR SITE INVESTIGATION AT TSEUNG KWAN O SOUTH			Date Samples Received	: 14-Mar-2024
Order number	: ----	Quote number	: HKE/1224/2024	Issue Date	: 28-Mar-2024
C-O-C number	: ----			No. of samples received	: 7
Site	: TSEUNG KWAN O AREA 132 AND AREA 137			No. of samples analysed	: 7

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*
 Chan Siu Ming , Vico	Assistant Laboratory Manager	Inorganics
 Chan Wai Hung , Mannix	Laboratory Manager	Organics_ENV
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Wong Wing , Kenneth	Assistant Manager - Metals	Metals_ENV

General Comments

This report supersedes any previous report(s) with the same work order number. 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 14-Mar-2024 to 28-Mar-2024.

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: HK2410509

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

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

Result(s) of soil/sediment sample(s) is/are reported on dry weight basis.

Analysis of Tributyltin in interstitial water was cancelled for HK2410509 #003 due to insufficient volume of interstitial water.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a.h)anthracene, Benzo(g.h.i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

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.

TBT result(s) (Method: EP390) is/are reported on as received basis.

Interstitial water (porewater) was prepared by centrifugation of sample received.

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	Sample ID	MEB22 Surface	MEB22 0.62-0.90m	MEB22 0.90-1.90m	MEB22 1.90-2.90m	MEB22 2.90-3.90m
				Sampling date / time	14-Mar-2024 10:30	14-Mar-2024 11:35	14-Mar-2024 11:35	14-Mar-2024 11:35	14-Mar-2024 11:35
					HK2410509-001	HK2410509-002	HK2410509-003	HK2410509-004	HK2410509-005
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%		24.6	23.3	35.0	25.2	30.2
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1	mg/kg		4	6	11	4	7
EG020: Cadmium	7440-43-9	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EG020: Chromium	7440-47-3	1	mg/kg		20	18	28	18	30
EG020: Copper	7440-50-8	1	mg/kg		17	7	10	10	10
EG020: Lead	7439-92-1	1	mg/kg		23	26	31	30	39
EG020: Mercury	7439-97-6	0.05	mg/kg		0.07	<0.05	<0.05	0.14	0.09
EG020: Nickel	7440-02-0	1	mg/kg		8	12	20	12	20
EG020: Silver	7440-22-4	0.1	mg/kg		0.2	<0.1	<0.1	<0.1	<0.1
EG020: Zinc	7440-66-6	1	mg/kg		61	40	58	46	63
EP-065: PCB Single Congeners									
EP065: PCB 8	34883-43-7	3	µg/kg		<3	<3	<3	<3	18
EP065: PCB 18	37680-65-2	3	µg/kg		<3	<3	<3	<3	18
EP065: PCB 28	7012-37-5	3	µg/kg		<3	<3	<3	<3	29
EP065: PCB 44	41464-39-5	3	µg/kg		<3	<3	<3	<3	6
EP065: PCB 52	35693-99-3	3	µg/kg		<3	<3	<3	<3	18
EP065: PCB 66	32598-10-0	3	µg/kg		<3	<3	<3	<3	9
EP065: PCB 77	32598-13-3	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 101	37680-73-2	3	µg/kg		<3	<3	<3	<3	6
EP065: PCB 105	32598-14-4	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 118	31508-00-6	3	µg/kg		<3	<3	<3	<3	3
EP065: PCB 126	57465-28-8	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 128	38380-07-3	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 138	35065-28-2	3	µg/kg		<3	<3	<3	<3	3
EP065: PCB 153	35065-27-1	3	µg/kg		<3	<3	<3	<3	4
EP065: PCB 169	32774-16-6	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 170	35065-30-6	3	µg/kg		<3	<3	<3	<3	<3

Sub-Matrix: SEDIMENT				Sample ID	MEB22 Surface	MEB22 0.62-0.90m	MEB22 0.90-1.90m	MEB22 1.90-2.90m	MEB22 2.90-3.90m
				Sampling date / time	14-Mar-2024 10:30	14-Mar-2024 11:35	14-Mar-2024 11:35	14-Mar-2024 11:35	14-Mar-2024 11:35
Compound	CAS Number	LOR	Unit		HK2410509-001	HK2410509-002	HK2410509-003	HK2410509-004	HK2410509-005
EP-065: PCB Single Congeners - Continued									
EP065: PCB 180	35065-29-3	3	µg/kg		<3	<3	<3	<3	<3
EP065: PCB 187	52663-68-0	3	µg/kg		<3	<3	<3	<3	<3
EP065: Total Polychlorinated biphenyls	----	18	µg/kg		<18	<18	<18	<18	117
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg		<50	<50	<50	<50	<50
EP076HK: Acenaphthylene	208-96-8	50	µg/kg		<50	<50	<50	105	<50
EP076HK: Acenaphthene	83-32-9	50	µg/kg		<50	<50	<50	<50	<50
EP076HK: Fluorene	86-73-7	50	µg/kg		<50	<50	<50	<50	<50
EP076HK: Phenanthrene	85-01-8	50	µg/kg		<50	<50	<50	<50	<50
EP076HK: Anthracene	120-12-7	50	µg/kg		<50	<50	<50	52	<50
EP076HK: Fluoranthene	206-44-0	150	µg/kg		<150	<150	<150	185	<150
EP076HK: Pyrene	129-00-0	150	µg/kg		<150	<150	<150	294	<150
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Chrysene	218-01-9	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg		<150	<150	<150	488	<150
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg		<150	<150	<150	347	<150
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg		<150	<150	<150	170	<150
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg		<150	<150	<150	<150	<150
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg		<150	<150	<150	171	<150
EP076HK: Low M.W. PAHs	----	550	µg/kg		----	----	----	<550	----
EP076HK: Low M.W. PAHs	----	550	µg/kg		<550	<550	<550	----	<550
EP076HK: High M.W. PAHs	----	1700	µg/kg		----	----	----	2070	----
EP076HK: High M.W. PAHs	----	1700	µg/kg		<1700	<1700	<1700	----	<1700
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%		70.4	81.6	83.3	89.6	74.5
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%		78.7	91.2	90.4	94.6	82.8
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%		93.1	85.2	62.5	76.8	99.9

Sub-Matrix: SEDIMENT				Sample ID	MEB22 3.90-4.90m	MEB22 4.90-5.90m	----	----	----
				Sampling date / time	14-Mar-2024 11:35	14-Mar-2024 11:35	----	----	----
Compound	CAS Number	LOR	Unit		HK2410509-006		-------	-------	-------
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%		31.1		----	----	----
EG: Metals and Major Cations									
EG020: Arsenic	7440-38-2	1	mg/kg		5		----	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg		<0.2		----	----	----
EG020: Chromium	7440-47-3	1	mg/kg		28		----	----	----
EG020: Copper	7440-50-8	1	mg/kg		11		----	----	----
EG020: Lead	7439-92-1	1	mg/kg		31		----	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg		0.16		----	----	----
EG020: Nickel	7440-02-0	1	mg/kg		21		----	----	----
EG020: Silver	7440-22-4	0.1	mg/kg		<0.1		----	----	----
EG020: Zinc	7440-66-6	1	mg/kg		71		----	----	----
EP-065: PCB Single Congeners									
EP065: PCB 8	34883-43-7	3	µg/kg		<3		----	----	----
EP065: PCB 18	37680-65-2	3	µg/kg		<3		----	----	----
EP065: PCB 28	7012-37-5	3	µg/kg		<3		----	----	----
EP065: PCB 44	41464-39-5	3	µg/kg		<3		----	----	----
EP065: PCB 52	35693-99-3	3	µg/kg		<3		----	----	----
EP065: PCB 66	32598-10-0	3	µg/kg		<3		----	----	----
EP065: PCB 77	32598-13-3	3	µg/kg		<3		----	----	----
EP065: PCB 101	37680-73-2	3	µg/kg		<3		----	----	----
EP065: PCB 105	32598-14-4	3	µg/kg		<3		----	----	----
EP065: PCB 118	31508-00-6	3	µg/kg		<3		----	----	----
EP065: PCB 126	57465-28-8	3	µg/kg		<3		----	----	----
EP065: PCB 128	38380-07-3	3	µg/kg		<3		----	----	----
EP065: PCB 138	35065-28-2	3	µg/kg		<3		----	----	----
EP065: PCB 153	35065-27-1	3	µg/kg		3		----	----	----
EP065: PCB 169	32774-16-6	3	µg/kg		<3		----	----	----
EP065: PCB 170	35065-30-6	3	µg/kg		<3		----	----	----
EP065: PCB 180	35065-29-3	3	µg/kg		3		----	----	----

Samples collected were not sediment.

Sub-Matrix: SEDIMENT				Sample ID	MEB22 3.90-4.90m	MEB22 4.90-5.90m	----	----	----
				Sampling date / time	14-Mar-2024 11:35	14-Mar-2024 11:35	----	----	----
Compound	CAS Number	LOR	Unit		HK2410509-006		-------	-------	-------
EP-065: PCB Single Congeners - Continued									
EP065: PCB 187	52663-68-0	3	µg/kg		<3		----	----	----
EP065: Total Polychlorinated biphenyls	----	18	µg/kg		<18		----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg		<50		----	----	----
EP076HK: Acenaphthylene	208-96-8	50	µg/kg		<50		----	----	----
EP076HK: Acenaphthene	83-32-9	50	µg/kg		<50		----	----	----
EP076HK: Fluorene	86-73-7	50	µg/kg		<50		----	----	----
EP076HK: Phenanthrene	85-01-8	50	µg/kg		<50		----	----	----
EP076HK: Anthracene	120-12-7	50	µg/kg		<50		----	----	----
EP076HK: Fluoranthene	206-44-0	150	µg/kg		<150		----	----	----
EP076HK: Pyrene	129-00-0	150	µg/kg		<150		----	----	----
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg		<150		----	----	----
EP076HK: Chrysene	218-01-9	150	µg/kg		<150		----	----	----
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg		<150		----	----	----
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg		<150		----	----	----
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg		<150		----	----	----
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg		<150		----	----	----
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg		<150		----	----	----
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg		<150		----	----	----
EP076HK: Low M.W. PAHs	----	550	µg/kg		<550		----	----	----
EP076HK: High M.W. PAHs	----	1700	µg/kg		<1700		----	----	----
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%		89.9		----	----	----
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%		94.8		----	----	----
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%		100		----	----	----

Samples collected were not sediment.

Sub-Matrix: INTERSTITIAL WATER				Sample ID	MEB22 Surface	MEB22 0.62-0.90m	MEB22 1.90-2.90m	MEB22 2.90-3.90m	MEB22 3.90-4.90m
				Sampling date / time	14-Mar-2024 10:30	14-Mar-2024 11:35	14-Mar-2024 11:35	14-Mar-2024 11:35	14-Mar-2024 11:35
Compound	CAS Number	LOR	Unit		HK2410509-001	HK2410509-002	HK2410509-004	HK2410509-005	HK2410509-006
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L		<0.015	<0.015	<0.015	<0.015	<0.015

Sub-Matrix: INTERSTITIAL WATER				Sample ID	MEB22 4.90-5.90m	----	----	----	----
				Sampling date / time	14-Mar-2024 11:35	----	----	----	----
Compound	CAS Number	LOR	Unit		-------	-------	-------	-------	-------
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L		----	----	----	----	----

Samples collected were not sediment.

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting "0.0" denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 5673265)								
HK2410229-005	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	28.5	28.7	0.8
HK2410508-004	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	35.6	36.3	1.8
EG: Metals and Major Cations (QC Lot: 5668591)								
HK2410509-001	MEB22 Surface	EG020: Mercury	7439-97-6	0.05	mg/kg	0.07	0.07	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	0.2	0.2	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	4	4	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	20	24	20.0
		EG020: Copper	7440-50-8	1	mg/kg	17	17	0.0
		EG020: Lead	7439-92-1	1	mg/kg	23	19	21.6
		EG020: Nickel	7440-02-0	1	mg/kg	8	7	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	61	77	23.3
EP-065: PCB Single Congeners (QC Lot: 5668778)								
HK2410458-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0

Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 5668778) - Continued								
HK2410458-001	Anonymous	PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5668779)								
HK2410458-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	156	<150	3.6
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report: LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 5694795)								
HK2410571-002	Anonymous	Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.015	<0.015	0.0

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

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
EG: Metals and Major Cations (QC Lot: 5668591)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	98.1	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	95.0	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	10 mg/kg	101	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	110	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	92.8	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	96.5	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	106	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	10 mg/kg	92.5	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	100	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 5668778)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	115	----	37.0	131	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	118	----	36.0	140	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	89.4	----	66.0	125	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	83.2	----	64.0	138	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	87.2	----	63.0	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	94.4	----	71.0	133	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	87.2	----	69.0	126	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	80.8	----	65.0	127	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	87.8	----	69.0	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	83.7	----	70.0	127	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	84.6	----	70.0	132	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	85.8	----	69.0	133	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	86.2	----	68.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	87.1	----	69.0	130	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	88.5	----	67.0	134	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	88.7	----	66.0	136	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	87.3	----	65.0	134	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	81.8	----	68.0	132	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----

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: 5668779)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	88.1	----	72.0	119	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	88.4	----	64.0	125	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	99.9	----	69.0	127	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	88.9	----	71.0	127	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	89.8	----	76.0	115	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	85.8	----	72.0	115	----	----
Fluoranthene	206-44-0	150	µg/kg	<150	250 µg/kg	88.7	----	75.0	122	----	----
Pyrene	129-00-0	150	µg/kg	<150	250 µg/kg	87.9	----	71.0	123	----	----
Benz(a)anthracene	56-55-3	150	µg/kg	<150	250 µg/kg	84.2	----	68.0	132	----	----
Chrysene	218-01-9	150	µg/kg	<150	250 µg/kg	87.5	----	74.0	120	----	----
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	250 µg/kg	95.3	----	61.0	141	----	----
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	250 µg/kg	79.1	----	68.0	125	----	----
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	250 µg/kg	87.8	----	61.0	132	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	250 µg/kg	86.1	----	62.0	150	----	----
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	250 µg/kg	89.9	----	52.0	145	----	----
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	250 µg/kg	87.4	----	57.0	150	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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-390: Triorganotins (QC Lot: 5694795)											
Tributyltin	56573-85-4	0.0122	µg TBT /L	<0.012	0.0122 µg TBT /L	110	----	70.0	130	----	----

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

Matrix: **SOIL**

Laboratory sample ID	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: 5668591)										
HK2410508-004	Anonymous	EG020: Arsenic	7440-38-2	10 mg/kg	104	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	92.2	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	10 mg/kg	119	----	75.0	125	----	----
		EG020: Copper	7440-50-8	10 mg/kg	82.6	----	75.0	125	----	----
		EG020: Lead	7439-92-1	10 mg/kg	78.3	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	79.4	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	10 mg/kg	104	----	75.0	125	----	----
		EG020: Silver	7440-22-4	10 mg/kg	88.8	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	10 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 5668778)										
HK2410462-001	Anonymous	PCB 8	34883-43-7	5 µg/kg	98.4	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	98.7	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	76.7	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	76.8	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	97.3	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	85.6	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	89.4	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	94.2	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	86.7	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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
EP-065: PCB Single Congeners (QC Lot: 5668778) - Continued										
HK2410462-001	Anonymous	PCB 118	31508-00-6	5 µg/kg	83.7	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	92.2	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	85.1	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	87.3	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	93.0	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	87.1	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	87.2	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	87.1	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	85.1	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5668779)										
HK2410505-001	Anonymous	Naphthalene	91-20-3	250 µg/kg	75.3	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	74.4	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	84.9	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	77.5	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	62.0	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	75.7	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	65.3	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	64.9	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	73.8	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	80.3	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	84.6	----	50.0	130	----	----

Matrix: **SOIL**

Laboratory sample ID	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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 5668779) - Continued										
HK2410505-001	Anonymous	Benzo(k)fluoranthene	207-08-9	250 µg/kg	75.1	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	82.9	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	80.1	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	87.4	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	81.4	----	50.0	130	----	----

Matrix: **WATER**

Laboratory sample ID	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-390: Triorganotins (QC Lot: 5694795)										
HK2410571-002	Anonymous	Tributyltin	56573-85-4	0.0122 µg TBT /L	107	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**

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-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130