Disclaimer on Preliminary Ground Investigation (GI) and Marine Sediment Results

The preliminary GI results and marine sediment are for reference only and are under review for finalization. All information provided is subject to change in the final fieldwork report without notice. The preliminary log provided shall not be taken as representation in relation to the tendering, design, construction and operation of any contract works in relation to I·PARK2. Neither the HKSAR Government nor its agents or representatives owe any duty of care or is otherwise liable to the participants or anybody in respect of any errors, omissions, discrepancies and/or deficiencies relating to any information provided in the preliminary log. In case of discrepancies, the information in the tender documents shall prevail.

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Report No. : 235812EN233691

HOKLAS 015 TEST

Test Report on Analysis of Sediment

Information Supplied by Client

Client	:	BINNIES HONG KONG LIMITED
Client's address	:	43/F AIA Kowloon Tower, 100 How Ming Street, Kwun Tong, Kowloon, Hong Kong
Project	:	Tsang Tsui Ash Lagoon, Tuen Mun
Sample description	:	Two samples of sediment
Sample identification	:	GS1 and GS2
Tests required	:	1. Heavy metals content – As, Cd, Cr, Cu, Pb, Ni, Ag, Hg and Zn 2. Polyaromatic hydrocarbons (PAHs) content 3. Polychlorinated biphenyl (PCBs) content 4. Tributyltin (TBT) content

Laboratory Information

Laboratory sample ID.	:	EN233691/1-2
Date of receipt of sample	:	01/12/2023
Date test commenced	:	02/12/2023
Date test completed	:	11/12/2023
Test methods used	:	1. In-house method E-T-186 (Acid digestion) In-house method E-T-187 (ICPMS) 2. In-house method E-T-071 (Extraction & cleanup) In-house method E-T-072 (GC/MS) 3. In-house method E-T-089 (GC/MS) In-house method E-T-101 (Preparation of Interstitial Water)

Note : This report refers only to the sample(s) tested and the result(s) applied to the sample(s) as received.

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Report No. : 235812EN233691

HOKLAS 015 TEST

Result:

Compound	LOR	Unit	Client sample ID/Sampling depth: GS1 Surface Grab Client sampling date/time: 01/12/2023; 09:40 E809773.3; N831666.2	Client sample ID/Sampling depth: GS2 Surface Grab Client sampling date/time: 01/12/2023; 10:20 E810101.5; N831744.1
E-T-186& E-T-187 : Heavy metals				
Arsenic (As)	1	mg/kg	10	12
Cadmium (Cd)	0.1	mg/kg	0.1	< 0.1
Chromium (Cr)	1	mg/kg	24	23
Copper (Cu)	1	mg/kg	24	20
Lead (Pb)	1	mg/kg	32	36
Mercury (Hg)	0.05	mg/kg	0.08	0.07
Nickel (Ni)	1	mg/kg	16	15
Silver (Ag)	0.1	mg/kg	0.2	0.2
Zinc (Zn)	1	mg/kg	79	100
E-T-071 & E-T-072 Polycyclic Aromatic Hydrocarbons(PAHs)				
Naphthalene	15	µg/kg	< 15	< 15
Acenaphthylene	7.5	µg/kg	< 7.5	< 7.5
Acenaphthene	7.5	µg/kg	< 7.5	< 7.5
Fluorene	7.5	µg/kg	< 7.5	< 7.5
Phenanthrene	7.5	µg/kg	< 7.5	< 7.5
Anthracene	7.5	µg/kg	< 7.5	< 7.5
LMW PAHs	55	µg/kg	**< 55**	**< 55**
Fluoranthene	7.5	µg/kg	8.2	10
Pyrene	7.5	µg/kg	8.8	12
Benzo[a]anthracene	7.5	µg/kg	< 7.5	< 7.5
Chrysene	7.5	µg/kg	< 7.5	8.6
Benzo[b]fluoranthene	7.5	µg/kg	< 7.5	< 7.5
Benzo[k]fluoranthene	7.5	µg/kg	< 7.5	< 7.5
benzo[a]pyrene	7.5	µg/kg	< 7.5	< 7.5
Indeno[1,2,3-c,d]pyrene	7.5	µg/kg	< 7.5	< 7.5
Dibenzo[a,h]anthracene	7.5	µg/kg	< 7.5	< 7.5
Benzo[g,h,i]perylene	7.5	µg/kg	< 7.5	< 7.5
HMW PAHs	75	µg/kg	**< 75**	**< 75**
2-Fluorobiphenyl (surrogate)		%	67	66
p-Terphenyl-d14 (surrogate)		%	73	69

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FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Report No. : 235812EN233691

HOKLAS 015 TEST

Result:

			Client sample ID/Sampling depth	GS1 Surface Grab	GS2 Surface Grab
			Client sampling date/time	01/12/2023; 09:40	01/12/2023; 10:20
Compound	LOR	Unit		E809773.3; N831666.2	E810101.5; N831744.1
E-T-088: Polychlorinated biphenyl (PCBs)					
2,4'-dichlorobiphenyl (8)	3	µg/kg		<3	<3
2,2',5-trichlorobiphenyl (18)	3	µg/kg		<3	<3
2,4,4'-trichlorobiphenyl (28)	3	µg/kg		<3	<3
2,2',5,5'-tetrachlorobiphenyl (52)	3	µg/kg		<3	<3
2,2',3,5'-tetrachlorobiphenyl (44)	3	µg/kg		<3	<3
2,3',4,4'-tetrachlorobiphenyl (66)	3	µg/kg		<3	<3
2,2',4,5,5'-pentachlorobiphenyl (101)	3	µg/kg		<3	<3
3,3',4,4'-tetrachlorobiphenyl (77)	3	µg/kg		<3	<3
2,3',4,4',5-pentachlorobiphenyl (118)	3	µg/kg		<3	<3
2,2',4,4',5,5'-hexachlorobiphenyl (153)	3	µg/kg		<3	<3
2,3,3'4,4'-pentachlorobiphenyl (105)	3	µg/kg		<3	<3
2,2',3,4,4',5'-hexachlorobiphenyl (138)	3	µg/kg		<3	<3
3,3',4,4',5-pentachlorobiphenyl (126)	3	µg/kg		<3	<3
2,2',3,4',5,5',6-heptachlorobiphenyl (187)	3	µg/kg		<3	<3
2,2',3,3',4,4'-hexachlorobiphenyl (128)	3	µg/kg		<3	<3
2,2',3,4,4',5,5'-heptachlorobiphenyl (180)	3	µg/kg		<3	<3
3,3',4,4',5,5'-hexachlorobiphenyl (169)	3	µg/kg		<3	<3
2,2',3,3',4,4',5-heptachlorobiphenyl (170)	3	µg/kg		<3	<3
Total PCBs	23	µg/kg		<23	<23
PCB-209 (surrogate)		%		85	99
E-T-089: Tributyl-tin					
TBT	0.015	µg/L		< 0.015	< 0.015

Note : This report refers only to the sample(s) tested and the result(s) applied to the sample(s) as received.

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

HOKLAS 015 TEST

QC data:

Compound	Sample ID: Blank, mg/kg	GS2 Surface Grab: Original result, mg/kg	Matrix spike, %	Acceptable range, %	Matrix spike duplicate precision, %	Acceptable range, %
E-T-186& E-T-187 :Heavy metals						
Arsenic (As)	< 1	12	95	75 ~ 125	100	80 ~ 100
Cadmium (Cd)	< 0.1	< 0.1	96	75 ~ 125	98	80 ~ 100
Chromium (Cr)	< 1	23	93	75 ~ 125	99	80 ~ 100
Copper (Cu)	< 1	20	93	75 ~ 125	99	80 ~ 100
Lead (Pb)	< 1	36	91	75 ~ 125	99	80 ~ 100
Mercury (Hg)	< 0.05	0.07	92	75 ~ 125	98	80 ~ 100
Nickel (Ni)	< 1	15	89	75 ~ 125	99	80 ~ 100
Silver (Ag)	< 0.1	0.2	101	75 ~ 125	98	80 ~ 100
Zinc (Zn)	< 1	100	97	75 ~ 125	100	80 ~ 100

Compound	Sample ID: Blank, µg/kg	GS1 Surface Grab: Original result, µg/kg	Duplicate result, µg/kg	% of diff.	Matrix spike, %	Acceptable range, %
E-T-071 & E-T-072 Polycyclic Aromatic Hydrocarbons (PAHs)						
Naphthalene	<15	< 15	< 15	0.0	71	70 ~ 130
Acenaphthylene	<7.5	< 7.5	< 7.5	0.0	73	70 ~ 130
Acenaphthene	<7.5	< 7.5	< 7.5	0.0	72	70 ~ 130
Fluorene	<7.5	< 7.5	< 7.5	0.0	74	70 ~ 130
Phenanthrene	<7.5	< 7.5	< 7.5	0.0	78	70 ~ 130
Anthracene	<7.5	< 7.5	< 7.5	0.0	79	70 ~ 130
Fluoranthene	<7.5	8.2	8.3	1.0	82	70 ~ 130
Pyrene	<7.5	8.8	7.6	-15.4	89	70 ~ 130
Benzo[a]anthracene	<7.5	< 7.5	< 7.5	0.0	86	70 ~ 130
Chrysene	<7.5	< 7.5	< 7.5	0.0	84	70 ~ 130
Benzo[b]fluoranthene	<7.5	< 7.5	< 7.5	0.0	82	70 ~ 130
Benzo[k]fluoranthene	<7.5	< 7.5	< 7.5	0.0	80	70 ~ 130
benzo[a]pyrene	<7.5	< 7.5	< 7.5	0.0	83	70 ~ 130
Indeno[1,2,3-c,d]pyrene	<7.5	< 7.5	< 7.5	0.0	83	70 ~ 130
Dibenzo[a,h]anthracene	<7.5	< 7.5	< 7.5	0.0	88	70 ~ 130
Benzo[g,h,i]perylene	<7.5	< 7.5	< 7.5	0.0	86	70 ~ 130
2-Fluorobiphenyl (surrogate), %	81	67	74	-	84	52.3 ~99.4
p-Terphenyl-d14 (surrogate), %	78	73	77	-	93	62.0 ~ 104.1

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FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Report No. : 235812EN233691

HOKLAS 015 TEST

QC data:

Compound	Sample ID: Blank, µg/kg	GS1 Surface Grab: Original result, µg/kg	Duplicate result, µg/kg	% of diff.	Matrix spike, %	Acceptable range, %
E-T-088: Polychlorinated biphenyl (PCBs)						
2,4'-dichlorobiphenyl (8)	<3	<3	<3	0.0	72	70 ~ 130
2,2',5-trichlorobiphenyl (18)	<3	<3	<3	0.0	74	70 ~ 130
2,4,4'-trichlorobiphenyl (28)	<3	<3	<3	0.0	72	70 ~ 130
2,2',5,5'-tetrachlorobiphenyl (52)	<3	<3	<3	0.0	72	70 ~ 130
2,2',3,5'-tetrachlorobiphenyl (44)	<3	<3	<3	0.0	74	70 ~ 130
2,3',4,4'-tetrachlorobiphenyl (66)	<3	<3	<3	0.0	84	70 ~ 130
2,2',4,5,5'-pentachlorobiphenyl (101)	<3	<3	<3	0.0	82	70 ~ 130
3,3',4,4'-tetrachlorobiphenyl (77)	<3	<3	<3	0.0	96	70 ~ 130
2,3',4,4',5-pentachlorobiphenyl (118)	<3	<3	<3	0.0	94	70 ~ 130
2,2',4,4',5,5'-hexachlorobiphenyl (153)	<3	<3	<3	0.0	98	70 ~ 130
2,3,3'4,4'-pentachlorobiphenyl (105)	<3	<3	<3	0.0	98	70 ~ 130
2,2',3,4,4',5'-hexachlorobiphenyl (138)	<3	<3	<3	0.0	98	70 ~ 130
3,3',4,4',5-pentachlorobiphenyl (126)	<3	<3	<3	0.0	104	70 ~ 130
2,2',3,4',5,5',6-heptachlorobiphenyl (187)	<3	<3	<3	0.0	92	70 ~ 130
2,2',3,3',4,4'-hexachlorobiphenyl (128)	<3	<3	<3	0.0	94	70 ~ 130
2,2',3,4,4',5,5'-heptachlorobiphenyl (180)	<3	<3	<3	0.0	96	70 ~ 130
3,3',4,4',5,5'-hexachlorobiphenyl (169)	<3	<3	<3	0.0	122	70 ~ 130
2,2',3,3',4,4',5-heptachlorobiphenyl (170)	<3	<3	<3	0.0	96	70 ~ 130
PCB-209 (surrogate), %	88	85	98	-	87	62.3 ~ 111.1

Compound	Sample ID: Blank, µg/L	GS1 Elutriate blank: Original result, µg/L	Duplicate result, µg/L	% of diff.	Matrix spike, %	Acceptable range, %
E-T-089 & E-T-101: Tributyl-tin						
TBT	< 0.015	< 0.015	< 0.015	0.0	108	70 ~ 130

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FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Report No. : 235812EN233691

HOKLAS 015 TEST

Moisture Content:

Sample ID	Moisture Content (%)
GS1 Surface Grab	45.2
GS2 Surface Grab	49.9

Certified by : _____

Approved Signatory : HO Kin Man, John
Director

Date : 30/9/2019

** End of Report **

Note : This report refers only to the sample(s) tested and the result(s) applied to the sample(s) as received.

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Conclusion:

For the test report #235812EN233691:

Sample ID	Metalloid (mg/kg dry wt.)	Metals (mg/kg dry wt.)							Organic-PAHs (µg/kg dry wt.)		Organic-non-PAHs (µg/kg dry wt.)	Organo-metallics (µg/L in interstitial water)	Category
	As	Cd	Cr	Cu	Pb	Hg	Ni	Ag	Zn	LMW PAH	HMW PAH	Total PCBs	TBT	
GS1 Surface Grab	10	0.1	24	24	32	0.08	16	0.2	79	< 55	<75	< 23	< 0.015	L
GS2 Surface Grab	12	< 0.1	23	20	36	0.07	15	0.2	100	< 55	<75	< 23	< 0.015	L

ETWB TCW No. 34/2002	As	Cd	Cr	Cu	Pb	Hg	Ni	Ag	Zn	LMW PAH	HMW PAH	Total PCBs	TBT
Lower Chemical Exceedance Level	12	1.5	80	65	75	0.5	40	1	200	550	1700	23	0.15
Upper Chemical Exceedance Level	42	4	160	110	110	1	40	2	270	3160	9600	180	0.15
10x Lower Chemical Exceedance Level	120	15	800	650	750	5	400	10	2000	5500	17000	230	1.5

Note:
Sample is categorized according to ETWB TCW No. 34/2002
Category L: Material ≤ Lower Chemical Exceedance Level
Category M: Material > Lower & ≤ Upper Chemical Exceedance Level
Category H: Material > Upper Chemical Exceedance Level
Category H (>10xLCEL): Material > 10 x Lower Chemical Exceedance Level

Note : This report refers only to the sample(s) tested and the result(s) applied to the sample(s) as received.

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Conclusion:

From the test results obtained, the samples were classified in the following categories according to **Appendix C of ETWB TCW No 34/2002.**

Client sample ID	Category	Biological test required (Yes/No)	Disposal type
GS1 Surface Grab	L	No	Type 1 - Open Sea Disposal
GS2 Surface Grab	L	No	Type 1 - Open Sea Disposal

Certified by : _____

Approved Signatory : HO Kin Man, John
Director

Date : 30/6/2014

** End of Report **

Note : This report refers only to the sample(s) tested and the result(s) applied to the sample(s) as received.

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Report No. : 235812EN233691(1)

Test Report on Analysis of Sediment

Information Supplied by Client

Client	:	BINNIES HONG KONG LIMITED
Client's address	:	43/F AIA Kowloon Tower, 100 How Ming Street, Kwun Tong, Kowloon, Hong Kong
Project	:	Tsang Tsui Ash Lagoon, Tuen Mun
Sample description	:	Two samples of sediment
Sample identification	:	GS1 and GS2
Tests required	:	Additional Sediment Quality Parameters: 1. Ammonia Nitrogen (NH_3-N) 2. Nitrate Nitrogen (NO_3-N) 3. Nitrite Nitrogen (NO_2-N) 4. Total Kjeldahl Nitrogen (TKN) 5. Total Phosphorus (TP) 6. Otho-phosphate Phosphorus (PO_4-P) 7. Sediment Oxygen Demand (SOD), 20 days 8. Acid Volatile Sulphide (AVS)

Laboratory Information

Laboratory sample ID.	:	EN233691/1-2
Date of receipt of sample	:	01/12/2023
Date test commenced	:	02/12/2023
Date test completed	:	27/12/2023
Test methods used	:	1. APHA 4500-NH_3 2. APHA 4500-NO_3 3. APHA 4500-NO_2 4. APHA 4500-Norg + APHA 4500-NH_3 5. In-house method E-T-056 6. In-house method E-T-055 7. APHA 5210B 8. APHA 4500-S^{2-}J

Note : This report refers only to the sample(s) tested and the result(s) applied to the sample(s) as received.

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Report No. : 235812EN233691(1)

Result:

			Client sample ID	GS1 Surface Grab	GS2 Surface Grab
			Sampling date/time	01/12/2023; 09:40	01/12/2023; 10:20
Compound	LOR	Unit		E809773.3; N831666.2	E810101.5; N831744.1
Additional Sediment Quality Parameters					
Ammonia Nitrogen (NH_3-N)	10	mg/kg		<10	<10
Nitrate Nitrogen (NO_3-N)	0.1	mg/kg		<0.1	<0.1
Nitrite Nitrogen (NO_2-N)	0.1	mg/kg		<0.1	<0.1
Total Kjeldahl Nitrogen(TKN)	20	mg/kg		630	790
Total Phosphorus (TP)	20	mg/kg		370	250
Otho-phosphate Phosphorus (PO_4-P)	10	mg/kg		<10	<10
Sediment Oxygen Demand (SOD), 20days	10	mg/kg		460	140
Acid Volatile Sulphide (AVS)	1	mg/kg		6.7	15

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FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

QC data:

	Sample ID	WA233403/1G				
Compound	Blank	Original result	Duplicate result	% of diff.	Matrix spike, %	Acceptable range, %
Ammonia Nitrogen (NH_3-N), mg/kg	<10	<10	<10	0.0	100	70 ~ 130

	Sample ID	WA233403/1G				
Compound	Blank	Original result	Duplicate result	% of diff.	Matrix spike, %	Acceptable range, %
Nitrate Nitrogen (NO_3-N), mg/kg	<0.1	<0.1	<0.1	0.0	99	70 ~ 130

	Sample ID	WA233403/1G				
Compound	Blank	Original result	Duplicate result	% of diff.	Matrix spike, %	Acceptable range, %
Nitrite Nitrogen (NO_2-N), mg/kg	<0.1	<0.1	<0.1	0.0	96	70 ~ 130

	Sample ID	WA233403/1G				
Compound	Blank	Original result	Duplicate result	% of diff.	Matrix spike, %	Acceptable range, %
Total Kjeldahl Nitrogen(TKN), mg/kg	<20	789	788	0.0	100	70 ~ 130

	Sample ID	WA233403/1G				
Compound	Blank	Original result	Duplicate result	% of diff.	Matrix spike, %	Acceptable range, %
Total Phosphorus (TP), mg/kg	<20	375	370	1.3	100	70 ~ 130

	Sample ID	WA233403/1G				
Compound	Blank	Original result	Duplicate result	% of diff.	Matrix spike, %	Acceptable range, %
Otho-phosphate Phosphorus (PO_4-P), mg/kg	<10	<10	<10	0	100	70 ~ 130

Note : This report refers only to the sample(s) tested and the result(s) applied to the sample(s) as received.

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Report No. : 235812EN233691(1)

QC data:

	Sample ID	WA233403/1G				
Compound	Blank	Original result	Duplicate result	% of diff.	Matrix spike, %	Acceptable range, %
Sediment Oxygen Demand (SOD), 20 days, mg/kg	<10	456	451	1.1	-	-

	Sample ID	WA233403/2G				
Compound	Blank	Original result	Duplicate result	% of diff.	Matrix spike, %	Acceptable range, %
Acid Volatile Sulphide (AVS), mg/kg	<1	14	16	13	96	70 ~ 130

Certified by : _____
Approved Signatory : HO Kin Man, John
Director

Date : 30/9/2019

** End of Report **

Note : This report refers only to the sample(s) tested and the result(s) applied to the sample(s) as received.

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Report No.: 235812EN233691(2)

Test Report on Analysis of Elutriate

Information Supplied by Client

Client	:	BINNIES HONG KONG LIMITED
Client's address	:	43/F AIA Kowloon Tower, 100 How Ming Street, Kwun Tong, Kowloon, Hong Kong
Project	:	Tsang Tsui Ash Lagoon, Tuen Mun
Sample description	:	Two samples of sediment and 2 bottles of sea water
Sample identification	:	GS1 Elutriate blank, GS1 Elutriate sample, GS2 Elutriate blank and GS2 Elutriate sample
Tests required	:	1. Metals/metalloid: - Cd, Cr (Cr(III) & Cr(VI)), Cu, Hg, Ni, Pb, Ag, Zn & As 2. Polyaromatic hydrocarbons (PAHs) content 3. Polychlorinated biphenyl (PCBs) content 4. Tributyltin (TBT) content 5. Nutrients a) Ammonia Nitrogen (NH_3-N) b) Nitrate Nitrogen (NO_3-N) c) Nitrite Nitrogen (NO_2-N) d) Total Kjeldahl Nitrogen(TKN) e) Unionized Ammonia (UIA) f) Total Phosphorus (TP) g) Otho-phosphate Phosphorus (PO_4-P)

Laboratory Information

Laboratory sample ID.	:	EN233691/3-6
Date of receipt of sample	:	01/12/2023
Date test commenced	:	02/12/2023
Date test completed	:	14/12/2023

Note : This report refers only to the sample(s) tested and the result(s) applied to the sample(s) as received.

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Test Method used:

Analyte – Elutriate	Method Reference
Preparation of Elutriate	The in-situ composite marine water sample will be mixed with the sediment sample collected in the same station in a sediment-to-water ratio of 1:4 on a volume basis. The mixture will be mechanically shaken vigorously for 30 minutes and then settled undisturbed for 1 hour. The liquid phase is then centrifuged at a rotation speed of approximately 2000 rpm for 30 minutes to remove all suspended particulate matter. The extracted liquid filtrate is the elutriate to be used for further analysis.
1. Metals/metalloid: - Cd, Cr (Cr(III) & Cr(VI)), Cu, Hg, Ni, Pb, Ag, Zn & As	USEPA 6020
2. Polyaromatic hydrocarbons (PAHs) content	8270E – GC/MSD
3. Polychlorinated biphenyl (PCBs) content	8270E – GC/MSD
4. Tributyltin (TBT) content	UNEP – GC/MSD
5. Nutrients	
a) Ammonia Nitrogen (NH_3-N)	APHA 23e 4500-NH_3-FIA
b) Nitrate Nitrogen (NO_3-N)	APHA 23e 4500-NO_3-FIA
c) Nitrite Nitrogen (NO_2-N)	APHA 23e 4500-NO_2^- A & NO_3^- I
d) Total Kjeldahl Nitrogen(TKN)	APHA 4500-Norg + APHA 4500 NH_3 - FIA
e) Unionized Ammonia (UIA)	By calculation
f) Total Phosphorus (TP)	In-house method E-T-056
g) Otho-phosphate Phosphorus (PO_4-P)	In-house method E-T-055

Note : This report refers only to the sample(s) tested and the result(s) applied to the sample(s) as received.

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Report No. : 235812EN233691(2)

Result:

Client sample ID (sampling location/date/time)			GS1 Elutriate blank	GS1 Elutriate	GS2 Elutriate blank	GS2 Elutriate
Sampling Depth			01/12/2023; 09:30	01/12/2023; 09:40	01/12/2023; 10:15	01/12/2023; 10:20
Compound	LOR	Unit	E809773.3; N831666.2		E810101.5; N831744.1	
Metals and Metalloid						
Arsenic (As)	1	µg/L	3	3	2	4
Cadmium (Cd)	0.2	µg/L	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (Cr)	1	µg/L	< 1	< 1	1	< 1
Copper (Cu)	1	µg/L	9	1	9	< 1
Lead (Pb)	1	µg/L	< 1	< 1	1	< 1
Mercury (Hg)	0.05	µg/L	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (Ni)	1	µg/L	2	1	2	2
Silver (Ag)	1	µg/L	< 1	< 1	< 1	< 1
Zinc (Zn)	1	µg/L	60	< 1	20	< 1
Organic PAHs						
Naphthalene	0.1	µg/L	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	0.1	µg/L	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	0.1	µg/L	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	0.1	µg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	0.1	µg/L	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	0.1	µg/L	< 0.1	< 0.1	< 0.1	< 0.1
LMW PAHs	0.6	µg/L	< 0.6	< 0.6	< 0.6	< 0.6
Fluoranthene	0.1	µg/L	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	0.1	µg/L	< 0.1	< 0.1	< 0.1	< 0.1
Benzo[a]anthracene	0.1	µg/L	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	0.1	µg/L	< 0.1	< 0.1	< 0.1	< 0.1
Benzo[b]fluoranthene	0.1	µg/L	< 0.1	< 0.1	< 0.1	< 0.1
Benzo[k]fluoranthene	0.1	µg/L	< 0.1	< 0.1	< 0.1	< 0.1
benzo[a]pyrene	0.1	µg/L	< 0.1	< 0.1	< 0.1	< 0.1
Indeno[1,2,3-c,d]pyrene	0.1	µg/L	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo[a,h]anthracene	0.1	µg/L	< 0.1	< 0.1	< 0.1	< 0.1
Benzo[g,h,i]perylene	0.1	µg/L	< 0.1	< 0.1	< 0.1	< 0.1
HMW PAHs	1.0	µg/L	< 1.0	< 1.0	< 1.0	< 1.0

Note : This report refers only to the sample(s) tested and the result(s) applied to the sample(s) as received.

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Report No. : 235812EN233691(2)

Result:

Client sample ID (sampling location/date/time)			GS1 Elutriate blank	GS1 Elutriate	GS2 Elutriate blank	GS2 Elutriate
Sampling Depth			01/12/2023; 09:30	01/12/2023; 09:40	01/12/2023; 10:15	01/12/2023; 10:20
Compound	LOR	Unit	E809773.3; N831666.2		E810101.5; N831744.1	
Organic Non-PAHs (Total PCBs)						
2,4'-dichlorobiphenyl (8)	0.01	µg/L	< 0.01	< 0.01	< 0.01	< 0.01
2,2',5-trichlorobiphenyl (18)	0.01	µg/L	< 0.01	< 0.01	< 0.01	< 0.01
2,4,4'-trichlorobiphenyl (28)	0.01	µg/L	< 0.01	< 0.01	< 0.01	< 0.01
2,2',5,5'-tetrachlorobiphenyl (52)	0.01	µg/L	< 0.01	< 0.01	< 0.01	< 0.01
2,2',3,5'-tetrachlorobiphenyl (44)	0.01	µg/L	< 0.01	< 0.01	< 0.01	< 0.01
2,3',4,4'-tetrachlorobiphenyl (66)	0.01	µg/L	< 0.01	< 0.01	< 0.01	< 0.01
2,2',4,5,5'-pentachlorobiphenyl (101)	0.01	µg/L	< 0.01	< 0.01	< 0.01	< 0.01
3,3',4,4'-tetrachlorobiphenyl (77)	0.01	µg/L	< 0.01	< 0.01	< 0.01	< 0.01
2,3',4,4',5-pentachlorobiphenyl (118)	0.01	µg/L	< 0.01	< 0.01	< 0.01	< 0.01
2,2',4,4',5,5'-hexachlorobiphenyl (153)	0.01	µg/L	< 0.01	< 0.01	< 0.01	< 0.01
2,3,3'4,4'-pentachlorobiphenyl (105)	0.01	µg/L	< 0.01	< 0.01	< 0.01	< 0.01
2,2',3,4,4',5'-hexachlorobiphenyl (138)	0.01	µg/L	< 0.01	< 0.01	< 0.01	< 0.01
3,3',4,4',5-pentachlorobiphenyl (126)	0.01	µg/L	< 0.01	< 0.01	< 0.01	< 0.01
2,2',3,4',5,5',6-heptachlorobiphenyl (187)	0.01	µg/L	< 0.01	< 0.01	< 0.01	< 0.01
2,2',3,3',4,4'-hexachlorobiphenyl (128)	0.01	µg/L	< 0.01	< 0.01	< 0.01	< 0.01
2,2',3,4,4',5,5'-heptachlorobiphenyl (180)	0.01	µg/L	< 0.01	< 0.01	< 0.01	< 0.01
3,3',4,4',5,5'-hexachlorobiphenyl (169)	0.01	µg/L	< 0.01	< 0.01	< 0.01	< 0.01
2,2',3,3',4,4',5-heptachlorobiphenyl (170)	0.01	µg/L	< 0.01	< 0.01	< 0.01	< 0.01
Total PCBs	0.2	µg/L	< 0.2	< 0.2	< 0.2	< 0.2
Tributyl-tin (TBT)						
TBT	0.015	µg/L	< 0.015	< 0.015	< 0.015	< 0.015

Note : This report refers only to the sample(s) tested and the result(s) applied to the sample(s) as received.

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Report No. : 235812EN233691(2)

Result:

Client sample ID (sampling location/date/time)			GS1 Elutriate blank	GS1 Elutriate	GS2 Elutriate blank	GS2 Elutriate
Sampling Depth			01/12/2023; 09:30	01/12/2023; 09:40	01/12/2023; 10:15	01/12/2023; 10:20
Compound	LOR	Unit	E809773.3; N831666.2		E810101.5; N831744.1	
Nutrients:						
Ammonia Nitrogen (NH_3-N)	0.01	mg/L	0.12	0.21	0.12	0.41
Nitrate Nitrogen (NO_3-N)	0.01	mg-N/L	0.48	0.46	0.47	0.41
Nitrite Nitrogen (NO_2-N)	0.01	mg-N/L	0.039	0.032	0.045	0.042
Total Kjeldahl Nitrogen(TKN)	0.1	mg-N/L	0.33	0.98	0.66	1.7
Unionized Ammonia (UIA)	0.01	mg/L	<0.01	0.011	<0.01	<0.01
Total Phosphorus (TP)	0.1	mg-P/L	<0.1	0.18	<0.1	0.13
Otho-phosphate Phosphorus (PO_4-P)	0.1	mg-P/L	<0.1	0.14	<0.1	<0.1

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FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Report No. : 235812EN233691(2)

QC data:

Compound	Sample ID: Blank, µg/L	GS2 Elutriate blank: Original result, µg/L	Matrix Spike, %	Acceptable range, %	Matrix spike duplicate precision, %	Acceptable range, %
Metals and Metalloid						
Arsenic (As)	<1	2	100	75 ~ 125	97	80 ~ 100
Cadmium (Cd)	<0.2	< 0.2	92	75 ~ 125	96	80 ~ 100
Chromium (Cr)	<1	1	96	75 ~ 125	97	80 ~ 100
Copper (Cu)	<1	9	86	75 ~ 125	99	80 ~ 100
Lead (Pb)	<1	1	76	75 ~ 125	98	80 ~ 100
Mercury (Hg)	<0.05	< 0.05	82	75 ~ 125	98	80 ~ 100
Nickel (Ni)	<1	2	90	75 ~ 125	99	80 ~ 100
Silver (Ag)	<1	< 1	81	75 ~ 125	96	80 ~ 100
Zinc (Zn)	<1	20	91	75 ~ 125	98	80 ~ 100

Compound	Sample ID: Blank, µg/L	GS1 Elutriate blank: Original result, µg/L	Duplicate result, µg/L	% of diff.	Matrix spike, %	Acceptable range, %
Organic PAHs						
Naphthalene	< 0.1	< 0.1	< 0.1	0.0	87	70 ~ 130
Acenaphthylene	< 0.1	< 0.1	< 0.1	0.0	86	70 ~ 130
Acenaphthene	< 0.1	< 0.1	< 0.1	0.0	86	70 ~ 130
Fluorene	< 0.1	< 0.1	< 0.1	0.0	92	70 ~ 130
Phenanthrene	< 0.1	< 0.1	< 0.1	0.0	90	70 ~ 130
Anthracene	< 0.1	< 0.1	< 0.1	0.0	85	70 ~ 130
Fluoranthene	< 0.1	< 0.1	< 0.1	0.0	103	70 ~ 130
Pyrene	< 0.1	< 0.1	< 0.1	0.0	101	70 ~ 130
Benzo[a]anthracene	< 0.1	< 0.1	< 0.1	0.0	96	70 ~ 130
Chrysene	< 0.1	< 0.1	< 0.1	0.0	92	70 ~ 130
Benzo[b]fluoranthene	< 0.1	< 0.1	< 0.1	0.0	96	70 ~ 130
Benzo[k]fluoranthene	< 0.1	< 0.1	< 0.1	0.0	98	70 ~ 130
benzo[a]pyrene	< 0.1	< 0.1	< 0.1	0.0	90	70 ~ 130
Indeno[1,2,3-c,d]pyrene	< 0.1	< 0.1	< 0.1	0.0	97	70 ~ 130
Dibenzo[a,h]anthracene	< 0.1	< 0.1	< 0.1	0.0	95	70 ~ 130
Benzo[g,h,i]perylene	< 0.1	< 0.1	< 0.1	0.0	86	70 ~ 130

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FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Report No. : 235812EN233691(2)

QC data:

Compound	Sample ID: Blank, µg/L	GS1 Elutriate blank: Original result, µg/L	Duplicate result, µg/L	% of diff.	Matrix spike, %	Acceptable range, %
Organic Non-PAHs (Total PCBs)						
2,4'-dichlorobiphenyl (8)	< 0.01	< 0.01	< 0.01	0.0	74	70 ~ 130
2,2',5-trichlorobiphenyl (18)	< 0.01	< 0.01	< 0.01	0.0	84	70 ~ 130
2,4,4'-trichlorobiphenyl (28)	< 0.01	< 0.01	< 0.01	0.0	84	70 ~ 130
2,2',5,5'-tetrachlorobiphenyl (52)	< 0.01	< 0.01	< 0.01	0.0	82	70 ~ 130
2,2',3,5'-tetrachlorobiphenyl (44)	< 0.01	< 0.01	< 0.01	0.0	84	70 ~ 130
2,3',4,4'-tetrachlorobiphenyl (66)	< 0.01	< 0.01	< 0.01	0.0	100	70 ~ 130
2,2',4,5,5'-pentachlorobiphenyl (101)	< 0.01	< 0.01	< 0.01	0.0	92	70 ~ 130
3,3',4,4'-tetrachlorobiphenyl (77)	< 0.01	< 0.01	< 0.01	0.0	108	70 ~ 130
2,3',4,4',5-pentachlorobiphenyl (118)	< 0.01	< 0.01	< 0.01	0.0	94	70 ~ 130
2,2',4,4',5,5'-hexachlorobiphenyl (153)	< 0.01	< 0.01	< 0.01	0.0	92	70 ~ 130
2,3,3'4,4'-pentachlorobiphenyl (105)	< 0.01	< 0.01	< 0.01	0.0	96	70 ~ 130
2,2',3,4,4',5'-hexachlorobiphenyl (138)	< 0.01	< 0.01	< 0.01	0.0	92	70 ~ 130
3,3',4,4',5-pentachlorobiphenyl (126)	< 0.01	< 0.01	< 0.01	0.0	112	70 ~ 130
2,2',3,4',5,5',6-heptachlorobiphenyl (187)	< 0.01	< 0.01	< 0.01	0.0	86	70 ~ 130
2,2',3,3',4,4'-hexachlorobiphenyl (128)	< 0.01	< 0.01	< 0.01	0.0	90	70 ~ 130
2,2',3,4,4',5,5'-heptachlorobiphenyl (180)	< 0.01	< 0.01	< 0.01	0.0	98	70 ~ 130
3,3',4,4',5,5'-hexachlorobiphenyl (169)	< 0.01	< 0.01	< 0.01	0.0	114	70 ~ 130
2,2',3,3',4,4',5-heptachlorobiphenyl (170)	< 0.01	< 0.01	< 0.01	0.0	102	70 ~ 130

Compound	Sample ID: Blank, µg/L	GS1 Elutriate blank: Original result, µg/L	Duplicate result, µg/L	% of diff.	Matrix spike, %	Acceptable range, %
E-T-089 & E-T-101: Tributyl-tin						
TBT	< 0.015	< 0.015	< 0.015	0.0	108	70 ~ 130

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FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Report No. : 235812EN233691(2)

QC data:

	Sample ID	WA233403(1)/3				
Compound	Blank	Original result	Duplicate result	% of diff.	Matrix spike, %	Acceptable range, %
Ammonia Nitrogen (NH_3-N), mg/L	<0.01	0.409	0.414	1.2	96.7	70 ~ 130

	Sample ID	WA233340(2)/74				
Compound	Blank	Original result	Duplicate result	% of diff.	Matrix spike, %	Acceptable range, %
Nitrate Nitrogen (NO_3-N), mg-N/L	<0.01	0.0083	0.0083	0.0	102	70 ~ 130

	Sample ID	WA233340(5)/74				
Compound	Blank	Original result	Duplicate result	% of diff.	Matrix spike, %	Acceptable range, %
Nitrite Nitrogen (NO_2-N), mg-N/L	<0.01	0.0049	0.0048	2.1	99.1	70 ~ 130

	Sample ID	WA233354/1				
Compound	Blank	Original result	Duplicate result	% of diff.	Matrix spike, %	Acceptable range, %
Total Kjeldahl Nitrogen(TKN), mg-N/L	<0.1	0.787	0.770	2.2	99.6	70 ~ 130

	Sample ID	WA233403(1)/3				
Compound	Blank	Original result	Duplicate result	% of diff.	Matrix spike, %	Acceptable range, %
Unionized Ammonia (UIA), mg/L	<0.01	0.020	0.021	4.8	-	-

	Sample ID	WA233360/1				
Compound	Blank	Original result	Duplicate result	% of diff.	Matrix spike, %	Acceptable range, %
Total Phosphorus (TP), mg-P/L	<0.1	2.41	2.35	2.5	100	70 ~ 130

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FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Report No. : 235812EN233691(2)

QC data:

	Sample ID	WA233403/2				
Compound	Blank	Original result	Duplicate result	% of diff.	Matrix spike, %	Acceptable range, %
Otho-phosphate Phosphorus (PO_4-P), mg-P/L	<0.1	0.10	0.10	0.0	99.9	70 ~ 130

Certified by :

Approved Signatory : HO Kin Man, John
Director

Date : 30/9/2014

** End of Report **

Note : This report refers only to the sample(s) tested and the result(s) applied to the sample(s) as received.

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Report No. : 235812EN233691(3)

Test Report

Information Supplied by Client

Client	:	BINNIES HONG KONG LIMITED
Client's address	:	43/F AIA Kowloon Tower, 100 How Ming Street, Kwun Tong, Kowloon, Hong Kong
Project	:	Tsang Tsui Ash Lagoon, Tuen Mun
Sample description	:	one sample of sediment
Sample identification	:	Reference sediment
Tests required	:	1. Heavy metals content – As, Cd, Cr, Cu, Pb, Ni, Ag, Hg and Zn 2. Polyaromatic hydrocarbons (PAHs) content 3. Polychlorinated biphenyl (PCBs) content 4. Tributyltin (TBT) content

Laboratory Information

Laboratory sample ID.	:	EN233691/7
Date of receipt of sample	:	05/12/2023
Date test commenced	:	08/12/2023
Date test completed	:	14/12/2023
Test methods used	:	1. In-house method E-T-093 (Microwave digestion) In-house method E-T-094 (ICPMS) 2. In-house method E-T-071 (Extraction & cleanup) In-house method E-T-072 (GC/MS) 3. In-house method E-T-088 (GC/MS) 4. In-house method E-T-089 (GC/MS) In-house method E-T-101 (Preparation of Interstitial Water)

Note : This report refers only to the sample(s) tested and the result(s) applied to the sample(s) as received.

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Report No. : 235812EN233691(3)

HOKLAS 015 TEST

Result:

			Sample ID	Reference Sediment
			Client sampling date	05/12/2023
Compound	LOR	Unit		E850237.1; N820060.7
E-T-093 & E-T-094 : Heavy metals				
Arsenic (As)	1	mg/kg		3
Cadmium (Cd)	0.2	mg/kg		< 0.1
Chromium (Cr)	1	mg/kg		21
Copper (Cu)	1	mg/kg		10
Lead (Pb)	1	mg/kg		31
Mercury (Hg)	0.05	mg/kg		< 0.05
Nickel (Ni)	1	mg/kg		14
Silver (Ag)	0.1	mg/kg		< 0.1
Zinc (Zn)	10	mg/kg		59
E-T-071 & E-T-072 Polycyclic Aromatic Hydrocarbons(PAHs)				
Naphthalene	15	µg/kg		< 15
Acenaphthylene	7.5	µg/kg		< 7.5
Acenaphthene	7.5	µg/kg		< 7.5
Fluorene	7.5	µg/kg		< 7.5
Phenanthrene	7.5	µg/kg		< 7.5
Anthracene	7.5	µg/kg		< 7.5
LMW PAHs	55	µg/kg		**< 55**
Fluoranthene	7.5	µg/kg		< 7.5
Pyrene	7.5	µg/kg		< 7.5
Benzo[a]anthracene	7.5	µg/kg		< 7.5
Chrysene	7.5	µg/kg		< 7.5
Benzo[b]fluoranthene	7.5	µg/kg		< 7.5
Benzo[k]fluoranthene	7.5	µg/kg		< 7.5
benzo[a]pyrene	7.5	µg/kg		< 7.5
Indeno[1,2,3-c,d]pyrene	7.5	µg/kg		< 7.5
Dibenzo[a,h]anthracene	7.5	µg/kg		< 7.5
Benzo[g,h,i]perylene	7.5	µg/kg		< 7.5
HMW PAHs	75	µg/kg		**< 75**
2-Fluorobiphenyl (surrogate)		%		80
p-Terphenyl-d14 (surrogate)		%		92

Note : This report refers only to the sample(s) tested and the result(s) applied to the sample(s) as received.

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Report No. : 235812EN233691(3)

HOKLAS 015 TEST

Result:

			Sample ID	Reference Sediment
			Client sampling date	05/12/2023
Compound	LOR	Unit		E850237.1; N820060.7
E-T-088: Polychlorinated biphenyl (PCBs)				
2,4'-dichlorobiphenyl (8)	3	µg/kg		< 3
2,2',5-trichlorobiphenyl (18)	3	µg/kg		< 3
2,4,4'-trichlorobiphenyl (28)	3	µg/kg		< 3
2,2',5,5'-tetrachlorobiphenyl (52)	3	µg/kg		< 3
2,2',3,5'-tetrachlorobiphenyl (44)	3	µg/kg		< 3
2,3',4,4'-tetrachlorobiphenyl (66)	3	µg/kg		< 3
2,2',4,5,5'-pentachlorobiphenyl (101)	3	µg/kg		< 3
3,3',4,4'-tetrachlorobiphenyl (77)	3	µg/kg		< 3
2,3',4,4',5-pentachlorobiphenyl (118)	3	µg/kg		< 3
2,2',4,4',5,5'-hexachlorobiphenyl (153)	3	µg/kg		< 3
2,3,3'4,4'-pentachlorobiphenyl (105)	3	µg/kg		< 3
2,2',3,4,4',5'-hexachlorobiphenyl (138)	3	µg/kg		< 3
3,3',4,4',5-pentachlorobiphenyl (126)	3	µg/kg		< 3
2,2',3,4',5,5',6-heptachlorobiphenyl (187)	3	µg/kg		< 3
2,2',3,3',4,4'-hexachlorobiphenyl (128)	3	µg/kg		< 3
2,2',3,4,4',5,5'-heptachlorobiphenyl (180)	3	µg/kg		< 3
3,3',4,4',5,5'-hexachlorobiphenyl (169)	3	µg/kg		< 3
2,2',3,3',4,4',5-heptachlorobiphenyl (170)	3	µg/kg		< 3
Total PCBs	23	µg/kg		< 23
PCB-209 (surrogate)		%		78
E-T-089: Tributyl-tin (TBT)				
Tributyl-tin	0.015	µg/L		< 0.015

Certified by : _____
Approved Signatory : HO Kin Man, John
Director

Date : 30/9/2024

** End of Report **

Note : This report refers only to the sample(s) tested and the result(s) applied to the sample(s) as received.

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Report No. : 235812EN233691(3)

HOKLAS 015 TEST

QC data:

	Sample ID	Reference sediment				
	Blank	Original result	Average matrix spike	Acceptable range	Matrix spike duplicate precision	Acceptable range
Compound	mg/kg	mg/kg	%	%	%	%
E-T-093 & E-T-094 :Heavy metals						
Arsenic (As)	< 1	3	109	75 ~ 125	99	80 ~ 100
Cadmium (Cd)	< 0.1	< 0.1	94	75 ~ 125	100	80 ~ 100
Chromium (Cr)	< 1	21	89	75 ~ 125	99	80 ~ 100
Copper (Cu)	< 1	10	86	75 ~ 125	98	80 ~ 100
Lead (Pb)	< 1	31	96	75 ~ 125	100	80 ~ 100
Mercury (Hg)	< 0.05	< 0.05	90	75 ~ 125	99	80 ~ 100
Nickel (Ni)	< 1	14	84	75 ~ 125	99	80 ~ 100
Silver (Ag)	< 0.1	< 0.1	99	75 ~ 125	86	80 ~ 100
Zinc (Zn)	< 1	59	79	75 ~ 125	92	80 ~ 100

	Sample ID	GS1 Surface Grab				
	Blank	Original result	Duplicate result	% of diff.	Matrix spike	Acceptable range
Compound	µg/kg	µg/kg	µg/kg	%	%	%
E-T-071 & E-T-072 Polycyclic Aromatic Hydrocarbons(PAHs)						
Naphthalene	<15	< 15	< 15	0.0	71	70 ~ 130
Acenaphthylene	<7.5	< 7.5	< 7.5	0.0	73	70 ~ 130
Acenaphthene	<7.5	< 7.5	< 7.5	0.0	72	70 ~ 130
Fluorene	<7.5	< 7.5	< 7.5	0.0	74	70 ~ 130
Phenanthrene	<7.5	< 7.5	< 7.5	0.0	78	70 ~ 130
Anthracene	<7.5	< 7.5	< 7.5	0.0	79	70 ~ 130
Fluoranthene	<7.5	8.2	8.3	1.0	82	70 ~ 130
Pyrene	<7.5	8.8	7.6	-15.4	89	70 ~ 130
Benzo[a]anthracene	<7.5	< 7.5	< 7.5	0.0	86	70 ~ 130
Chrysene	<7.5	< 7.5	< 7.5	0.0	84	70 ~ 130
Benzo[b]fluoranthene	<7.5	< 7.5	< 7.5	0.0	82	70 ~ 130
Benzo[k]fluoranthene	<7.5	< 7.5	< 7.5	0.0	80	70 ~ 130
benzo[a]pyrene	<7.5	< 7.5	< 7.5	0.0	83	70 ~ 130
Indeno[1,2,3-c,d]pyrene	<7.5	< 7.5	< 7.5	0.0	83	70 ~ 130
Dibenzo[a,h]anthracene	<7.5	< 7.5	< 7.5	0.0	88	70 ~ 130
Benzo[g,h,i]perylene	<7.5	< 7.5	< 7.5	0.0	86	70 ~ 130
2-Fluorobiphenyl (surrogate), %	81	67	74	-	84	52.3 ~99.4
p-Terphenyl-d14 (surrogate), %	78	73	77	-	93	62.0 ~ 104.1

Note : This report refers only to the sample(s) tested and the result(s) applied to the sample(s) as received.

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Report No. : 235812EN233691(3)

HOKLAS 015 TEST

QC data:

	Sample ID	GS1 Surface Grab				
	Blank	Original result	Duplicate result	% of diff.	Matrix spike	Acceptable range
Compound	µg/kg	µg/kg	µg/kg	%	%	%
E-T-088: Polychlorinated biphenyl (PCBs)						
2,4'-dichlorobiphenyl (8)	<3	<3	<3	0.0	72	70 ~ 130
2,2',5-trichlorobiphenyl (18)	<3	<3	<3	0.0	74	70 ~ 130
2,4,4'-trichlorobiphenyl (28)	<3	<3	<3	0.0	72	70 ~ 130
2,2',5,5'-tetrachlorobiphenyl (52)	<3	<3	<3	0.0	72	70 ~ 130
2,2',3,5'-tetrachlorobiphenyl (44)	<3	<3	<3	0.0	74	70 ~ 130
2,3',4,4'-tetrachlorobiphenyl (66)	<3	<3	<3	0.0	84	70 ~ 130
2,2',4,5,5'-pentachlorobiphenyl (101)	<3	<3	<3	0.0	82	70 ~ 130
3,3',4,4'-tetrachlorobiphenyl (77)	<3	<3	<3	0.0	96	70 ~ 130
2,3',4,4',5-pentachlorobiphenyl (118)	<3	<3	<3	0.0	94	70 ~ 130
2,2',4,4',5,5'-hexachlorobiphenyl (153)	<3	<3	<3	0.0	98	70 ~ 130
2,3,3'4,4'-pentachlorobiphenyl (105)	<3	<3	<3	0.0	98	70 ~ 130
2,2',3,4,4',5'-hexachlorobiphenyl (138)	<3	<3	<3	0.0	98	70 ~ 130
3,3',4,4',5-pentachlorobiphenyl (126)	<3	<3	<3	0.0	104	70 ~ 130
2,2',3,4',5,5',6-heptachlorobiphenyl (187)	<3	<3	<3	0.0	92	70 ~ 130
2,2',3,3',4,4'-hexachlorobiphenyl (128)	<3	<3	<3	0.0	94	70 ~ 130
2,2',3,4,4',5,5'-heptachlorobiphenyl (180)	<3	<3	<3	0.0	96	70 ~ 130
3,3',4,4',5,5'-hexachlorobiphenyl (169)	<3	<3	<3	0.0	122	70 ~ 130
2,2',3,3',4,4',5-heptachlorobiphenyl (170)	<3	<3	<3	0.0	96	70 ~ 130
PCB-209 (surrogate), %	88	85	98	-	87	62.3 ~ 111.1

	Sample ID	GS1 Elutriate blank				
	Blank	Original result	Duplicate result	% of diff.	Matrix spike	Acceptable range
Compound	µg/L	µg/L	µg/L	%	%	%
E-T-089: Tributyl-tin (TBT)						
Tributyl-tin	< 0.015	< 0.015	< 0.015	0.0	108	70 ~ 130

Note : This report refers only to the sample(s) tested and the result(s) applied to the sample(s) as received.

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Report No. : 235812EN233691(3)

HOKLAS 015 TEST

Moisture Content:

Sample ID	Moisture Content (%)
Reference Sediment	53.8

Certified by : _____
Approved Signatory : HO Kin Man, John
Director

Date : 30/9/2019

** End of Report **

Note : This report refers only to the sample(s) tested and the result(s) applied to the sample(s) as received.

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Conclusion:

For the test report #235812EN233691(3):

Sample ID	Metalloid (mg/kg dry wt.)	Metals (mg/kg dry wt.)								Organic-PAHs (µg/kg dry wt.)		Organic-non-PAHs (µg/kg dry wt.)	Organo-metallics (µg/L in interstitial water)	Category
	As	Cd	Cr	Cu	Pb	Hg	Ni	Ag	Zn	LMW PAH	HMW PAH	Total PCBs	TBT	
Reference Sediment	3	< 0.1	21	10	31	< 0.05	14	< 0.1	59	< 55	< 75	< 23	< 0.015	L

ETWB TCW No. 34/2002	As	Cd	Cr	Cu	Pb	Hg	Ni	Ag	Zn	LMW PAH	HMW PAH	Total PCBs	TBT
Lower Chemical Exceedance Level	12	1.5	80	65	75	0.5	40	1	200	550	1700	23	0.15
Upper Chemical Exceedance Level	42	4	160	110	110	1	40	2	270	3160	9600	180	0.15
10x Lower Chemical Exceedance Level	120	15	800	650	750	5	400	10	2000	5500	17000	230	1.5

Note:
Sample is categorized according to ETWB TCW No. 34/2002
Category L: Material ≤ Lower Chemical Exceedance Level
Category M: Material > Lower & ≤ Upper Chemical Exceedance Level
Category H: Material > Upper Chemical Exceedance Level
Category H (>10xLCEL): Material > 10 x Lower Chemical Exceedance Level

From the test results obtained, the samples were classified in the following categories according to **Appendix C of ETWB TCW No 34/2002.**

Client sample ID	Category	Biological test required (Yes/No)	Disposal type
Reference Sediment	L	No	Type 1 - Open Sea Disposal

Certified by : _____
Approved Signatory : HO Kin Man, John
Director

Date : 30/9/2014

** End of Report **

Note : This report refers only to the sample(s) tested and the result(s) applied to the sample(s) as received.

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Test Report No. : 235812SL233027 Page 1 of 1

TEST REPORT ON PARTICLE SIZE DISTRIBUTION OF SOIL

Information supplied by Client

Client : BINNIES HONG KONG LIMITED
Client's Address : -
Project : Development of Integrated Waste Management Faeilitles Phase 2 - 1DC(SA1)
Service/Works Order No. : -

Client sample No. : -
Borehole No. : GS1
Depth (m) From : -
To : -
Sample origin : -
Description : -

Laboratory Information

Date sample received : 01-12-2023
Date test commenced : 07-12-2023
Date test completed : 08-12-2023
Test method used : Geospec 3 (November 2001) Test Method 8.1
Method of preparation : Method B
Visual description : Moist, grey, silty/clayey, very gravelly SAND.

Laboratory sample I.D. : SL233027/1
Specimen reference : A
Sample type : D
Location and Orientation within original sample (m)
From : -
To : -

Test Result (Sieve Analysis)

Initial dry mass (m_1) g : 601.79

		Sieve size mm	Mass retained (g)	Percent passing (%)
		100	0.00	100
		75	0.00	100
		63	0.00	100
		50	0.00	100
		37.5	0.00	100
		28	0.00	100
		20	0.00	100
Passing	(m_2)	20	601.79	
Riffled passing	(m_3)	20	601.79	
Wash passing	(m_4)	20	521.11	
		14	0.00	100
		10	0.00	100
		6.3	13.80	98
Passing	(m_5)	6.3	507.31	
Riffled passing	(m_6)	6.3	126.83	
		5.0	14.66	88
		3.35	17.61	76
		2.00	22.66	61
		1.18	19.86	48
		0.600	20.84	34
		0.425	8.25	29
		0.300	6.59	24
		0.212	5.85	20
		0.150	4.01	18
		0.063	5.20	14
Pan	(m_f)		1.30	

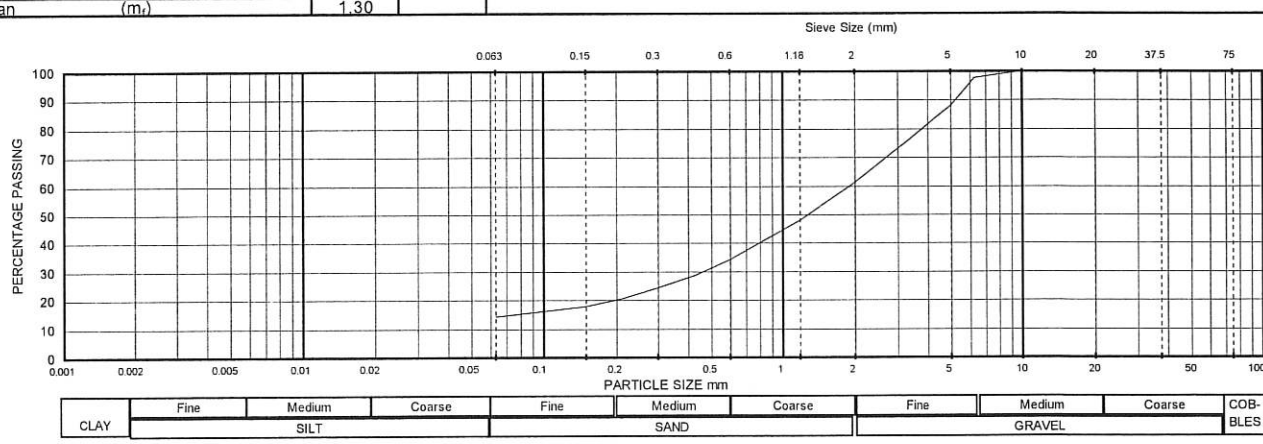
Test Result (Sedimentation Analysis)

N / A

(Test is not requested)

SUMMATION :

GRAVEL	%	:	39
SAND	%	:	47
SILT & CLAY	%	:	14



Abbreviations used : Sample type : U = undisturbed, P = piston, M = mazier, BLK = block, D = disturbed (bulk)

Remarks :

- The results apply to the sample as received.

Approved Signatory : Lo Tsz Kuen - Assistant Manager Date : 15/2/2024

SL-R-72 (15/09/2021)

End of Report

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Test Report No. : 235812SL233027(1) Page 1 of 1

TEST REPORT ON PARTICLE SIZE DISTRIBUTION OF SOIL

Information supplied by Client

Client : BINNIES HONG KONG LIMITED
Client's Address : -
Project : Development of Integrated Waste Management Faeilitles Phase 2 - 1DC(SA1)
Service/Works Order No. : -

Client sample No. : -
Borehole No. : GS2
Depth (m) From : -
To : -
Sample origin : -
Description : -

Laboratory Information

Date sample received : 01-12-2023
Date test commenced : 07-12-2023
Date test completed : 08-12-2023
Test method used : Geospec 3 (November 2001) Test Method 8.1
Method of preparation : Method B
Visual description : Moist, light grey, slightly silty/clayey, slightly sandy GRAVEL.

Laboratory sample I.D. : SL233027/2
Specimen reference : A
Sample type : D
Location and Orientation within original sample (m)
From : -
To : -

Test Result (Sieve Analysis)

Initial dry mass (m_1) g : 6446.4

		Sieve size mm	Mass retained (g)	Percent passing (%)
		100	0.0	100
		75	0.0	100
		63	0.0	100
		50	0.0	100
		37.5	0.0	100
		28	0.0	100
		20	5128.4	20
Passing	(m_2)	20	1318.0	
Riffled passing	(m_3)	20	1318.0	
Wash passing	(m_4)	20	1296.3	
		14	1256.8	1
		10	35.0	0
		6.3	0.1	0
Passing	(m_5)	6.3	4.4	
Riffled passing	(m_6)	6.3	4.4	
		5.0	0.0	0
		3.35	0.3	0
		2.00	0.1	0
		1.18	0.1	0
		0.600	0.2	0
		0.425	0.1	0
		0.300	0.2	0
		0.212	0.3	0
		0.150	0.5	0
		0.063	0.8	0
Pan	(m_7)		1.8	

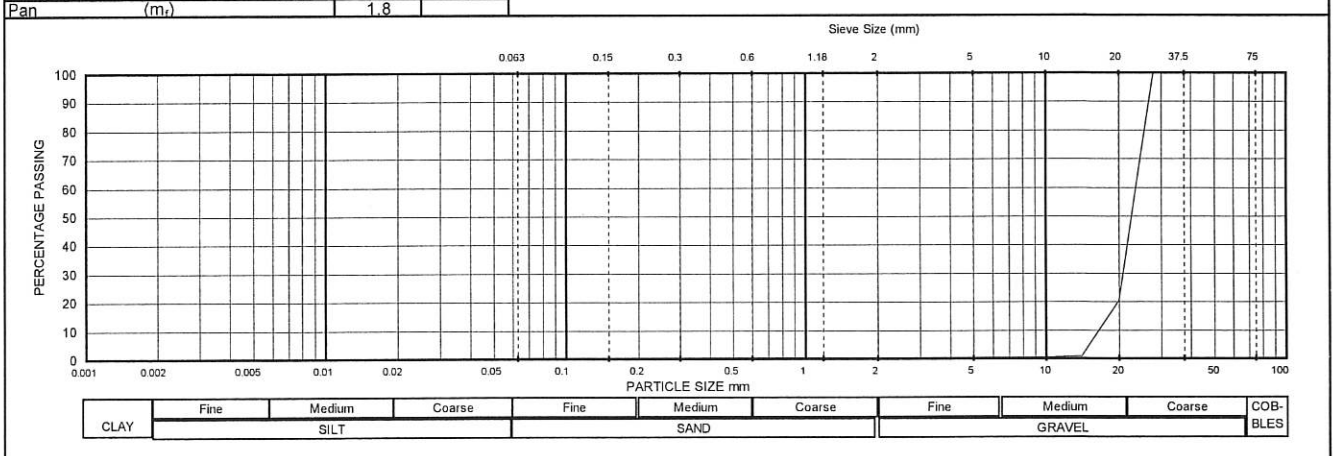
Test Result (Sedimentation Analysis)

N / A

(Test is not requested)

SUMMATION :

GRAVEL	%	:	100
SAND	%	:	0
SILT & CLAY	%	:	0



Abbreviations used : Sample type : U = undisturbed, P = piston, M = mazier, BLK = block, D = disturbed (bulk)
Remarks : Coefficient of Uniformity = 1.43

- The results apply to the sample as received.

Approved Signatory : Lo Tsz Kuen - Assistant Manager Date : 15/2/2024

SL-R-72 (15/09/2021)

End of Report