



Job Number : EV193027
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/UIS-EV/I/2020

Laboratory Sample I.D :			EV193027-1	EV193027-2	EV193027-3
Customer Sample I.D :			MWB 15	MWB 11	MWB 10
Date Sampled :			26-Nov-19	26-Nov-19	26-Nov-19
Sample Matrix :			Seawater	Seawater	Seawater
No.	Test Description	Units	Results	Results	Results
Physical Tests					
1	Brightness ¹⁾	m	13	14	11
2	Floating Matter ¹⁾	-	None	Present	None
3	Oil Film ¹⁾	-	None	None	None
4	pH ¹⁾	S.U.	8.17	8.18	8.17
5	Salinity ¹⁾	‰	34.1	34.4	32.0
6	Temperature ¹⁾	°C	30.0	29.8	30.3
7	Total Suspended Solids, TSS	mg/L	2	3	2
8	Turbidity ¹⁾	NTU	<0.5	<0.5	<0.5
Anions					
1	Cyanide (Total), CN ⁻	mg/L	<0.005	<0.005	<0.005
2	Sulphide as H ₂ S	mg/L	<0.002	<0.002	<0.002
Nutrients					
1	Total Ammonia, NH ₃ -N	mg/L	<0.02	<0.02	<0.02
2	Nitrate, NO ₃ -N	mg/L	0.058	0.047	0.066
3	Total Phosphorus as PO ₄	mg/L	0.092	0.068	0.076
Dissolved Metals					
1	Arsenic, As	mg/L	0.0021	0.0029	0.0021
2	Cadmium, Cd	mg/L	<0.0001	<0.0001	<0.0001
3	Chromium Hexavalent, Cr ⁶⁺	mg/L	<0.002	<0.002	<0.002
4	Copper, Cu	mg/L	<0.001	<0.001	<0.001
5	Lead, Pb	mg/L	<0.001	<0.001	<0.001
6	Mercury, Hg	mg/L	<0.00005	<0.00005	<0.00005
7	Nickel, Ni	mg/L	<0.001	<0.001	<0.001
8	Zinc, Zn	mg/L	<0.005	<0.005	<0.005
Microbiology					
1	Total Coliforms ¹⁾⁺⁺	CFU/100ml	ND	ND	ND
2	Faecal Coliforms	CFU/100ml	ND	ND	ND



Job Number : EV193027
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Laboratory Sample I.D :			EV193027-1	EV193027-2	EV193027-3
Customer Sample I.D :			MWB 15	MWB 11	MWB 10
Date Sampled :			26-Nov-19	26-Nov-19	26-Nov-19
Sample Matrix :			Seawater	Seawater	Seawater
No.	Test Description	Units	Results	Results	Results
Miscellaneous					
1	Chemical Oxygen Demand, COD	mg/L	6	7	5
2	Biochemical Oxygen Demand, BOD ₅	mg/L	<2	<2	<2
3	Chlorine (Free), Cl ₂	mg/L	<0.01	<0.01	<0.01
4	Dissolved Oxygen, DO ⁽¹⁾	mg/L	5.50	5.50	4.10
5	Oil & Grease	mg/L	<1	<1	<1
6	Surfactants, MBAS	mg/L	<0.01	<0.01	<0.01
7	Total Organic Carbon, TOC	mg/L	2.2	2.7	2.0
8	Total Phenols	mg/L	<0.001	<0.001	<0.001
Organics Tests					
1	Polycyclic Aromatic Hydrocarbons, PAHs Total ⁽²⁾	µg/L	<0.1	<0.1	<0.1
BTEX					
1	Benzene	µg/L	<1	<1	<1
2	Toluene	µg/L	<1	<1	<1
3	Ethyl Benzene	µg/L	<1	<1	<1
4	Xylenes Total	µg/L	<3	<3	<3

Note: Refer to QA/QC – Accuracy page for list of analytical methods used.



Job Number : EV193027
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193027-4	EV193027-5
Customer Sample I.D :			MWB 13	MWB 12
Date Sampled :			26-Nov-19	26-Nov-19
Sample Matrix :			Seawater	Seawater
No.	Test Description	Units	Results	Results
Physical Tests				
1	Brightness ¹⁾	m	11	11
2	Floating Matter ¹⁾	-	None	None
3	Oil Film ¹⁾	-	None	None
4	pH ¹⁾	S.U.	8.18	8.20
5	Salinity ¹⁾	‰	33.1	34.3
6	Temperature ¹⁾	°C	29.0	29.9
7	Total Suspended Solids, TSS	mg/L	3	3
8	Turbidity ¹⁾	NTU	<0.5	<0.5
Anions				
1	Cyanide (Total), CN ⁻	mg/L	<0.005	<0.005
2	Sulphide as H ₂ S	mg/L	<0.002	<0.002
Nutrients				
1	Total Ammonia, NH ₃ -N	mg/L	<0.02	<0.02
2	Nitrate, NO ₃ -N	mg/L	0.051	0.041
3	Total Phosphorus as PO ₄	mg/L	0.039	0.069
Dissolved Metals				
1	Arsenic, As	mg/L	0.0024	0.0026
2	Cadmium, Cd	mg/L	<0.0001	<0.0001
3	Chromium Hexavalent, Cr ⁶⁺	mg/L	<0.002	<0.002
4	Copper, Cu	mg/L	<0.001	<0.001
5	Lead, Pb	mg/L	<0.001	<0.001
6	Mercury, Hg	mg/L	<0.00005	<0.00005
7	Nickel, Ni	mg/L	<0.001	<0.001
8	Zinc, Zn	mg/L	<0.005	<0.005
Microbiology				
1	Total Coliforms ¹⁾⁺⁺	CFU/100ml	ND	ND
2	Faecal Coliforms	CFU/100ml	ND	ND



Job Number : EV193027
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193027-4	EV193027-5
Customer Sample I.D :			MWB 13	MWB 12
Date Sampled :			26-Nov-19	26-Nov-19
Sample Matrix :			Seawater	Seawater
No.	Test Description	Units	Results	Results
Miscellaneous				
1	Chemical Oxygen Demand, COD	mg/L	4	5
2	Biochemical Oxygen Demand, BOD ₅	mg/L	<2	<2
3	Chlorine (Free), Cl ₂	mg/L	<0.01	<0.01
4	Dissolved Oxygen, DO ¹¹	mg/L	5.60	5.50
5	Oil & Grease	mg/L	<1	<1
6	Surfactants, MBAS	mg/L	<0.01	<0.01
7	Total Organic Carbon, TOC	mg/L	1.5	1.9
8	Total Phenols	mg/L	<0.001	<0.001
Organics Tests				
1	Polycyclic Aromatic Hydrocarbons, PAHs Total ⁴⁾	µg/L	<0.1	<0.1
BTEX				
1	Benzene	µg/L	<1	<1
2	Toluene	µg/L	<1	<1
3	Ethyl Benzene	µg/L	<1	<1
4	Xylenes Total	µg/L	<3	<3

Note: Refer to QA/QC – Accuracy page for list of analytical methods used



Job Number : EV193027
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/US-EV/02020

Laboratory Sample I.D :			EV193027-6	EV193027-7	EV193027-8
Customer Sample I.D :			MWB 15	MWB 11	MWB 10
Date Sampled :			26-Nov-19	26-Nov-19	26-Nov-19
Sample Matrix :			Sediment	Sediment	Sediment
No.	Test Description	Units	Results	Results	Results
	Total Metals				
1	Antimony, Sb	mg/dry kg	<0.1	<0.1	<0.1
2	Arsenic, As	mg/dry kg	7.0	3.3	2.7
3	Cadmium, Cd	mg/dry kg	0.14	0.22	0.05
4	Chromium, Cr	mg/dry kg	12.9	8.8	8.6
5	Copper, Cu	mg/dry kg	1.7	2.0	1.9
6	Lead, Pb	mg/dry kg	2.8	3.0	2.8
7	Mercury, Hg	mg/dry kg	0.008	0.012	0.011
8	Nickel, Ni	mg/dry kg	4.1	4.6	3.8
9	Silver, Ag	mg/dry kg	<0.02	<0.02	<0.02
10	Zinc, Zn	mg/dry kg	7	9	8

Note: Refer to QA/QC – Accuracy page for list of analytical methods used



Job Number : EV193027
Customer : PT. EnviroSolutions & Consulting
Project Name : Seawater & Sediment Analysis
Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193027-9
Customer Sample I.D :			MWB 13
Date Sampled :			26-Nov-19
Sample Matrix :			Sediment
No.	Test Description	Units	Results
	Total Metals		
1	Antimony, Sb	mg/dry kg	<0.1
2	Arsenic, As	mg/dry kg	2.2
3	Cadmium, Cd	mg/dry kg	<0.02
4	Chromium, Cr	mg/dry kg	19.4
5	Copper, Cu	mg/dry kg	8.4
6	Lead, Pb	mg/dry kg	3.4
7	Mercury, Hg	mg/dry kg	0.015
8	Nickel, Ni	mg/dry kg	12.2
9	Silver, Ag	mg/dry kg	<0.02
10	Zinc, Zn	mg/dry kg	21

Note: Refer to QA/QC - Accuracy page for list of analytical methods used



QUALITY CONTROL - PRECISION

Job Number : EV193027
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

No	Description	Units	Laboratory Replicate		% RPD
			EV193027-1	EV193027-1 Duplicate	
	Microbiology				
1	Total Coliforms ^{(b)(4)}	CFU/100ml	ND	ND	-
	BTEX				
1	Benzene	µg/L	<1	<1	-
2	Toluene	µg/L	<1	<1	-
3	Ethyl Benzene	µg/L	<1	<1	-
4	Xylenes Total	µg/L	<3	<3	-

The laboratory analyzes duplicate aliquots of one or more samples within each batch.

Results are used to estimate analytical precision for that matrix at that concentration.

RPDs of up to 15% are considered acceptable for many test methods (except for results which are < 10x DL).



QUALITY CONTROL - PRECISION

Job Number : EV193027
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IJS-EV/I/2020

No	Description	Units	Laboratory Replicate		% RPD
			EV193027-5	EV193027-5 Duplicate	
	Physical Tests				
1	Brightness ¹⁾	m	11	-	-
2	Floating Matter ¹⁾	-	None	-	-
3	Oil Film ¹⁾	-	None	-	-
4	pH ²⁾	S.U.	8.20	-	-
5	Salinity ³⁾	‰	34.3	-	-
6	Temperature ¹⁾	°C	29.9	-	-
7	Total Suspended Solids, TSS	mg/L	3	3	0.0%
8	Turbidity	NTU	<0.5	<0.5	-
	Anions				
1	Cyanide (Total), CN ⁻	mg/L	<0.005	<0.005	-
2	Sulphide as H ₂ S	mg/L	<0.002	-	-
	Nutrients				
1	Total Ammonia, NH ₃ -N	mg/L	<0.02	<0.02	-
2	Nitrate, NO ₃ -N	mg/L	0.041	0.042	2.4%
3	Total Phosphorus as PO ₄	mg/L	0.069	0.071	2.8%
	Dissolved Metals				
1	Arsenic, As	mg/L	0.0026	0.0026	0.0%
2	Cadmium, Cd	mg/L	<0.0001	<0.0001	-
3	Chromium Hexavalent, Cr ⁶⁺	mg/L	<0.002	<0.002	-
4	Copper, Cu	mg/L	<0.001	<0.001	-
5	Lead, Pb	mg/L	<0.001	<0.001	-
6	Mercury, Hg	mg/L	<0.00005	<0.00005	-
7	Nickel, Ni	mg/L	<0.001	<0.001	-
8	Zinc, Zn	mg/L	<0.006	<0.006	-
	Microbiology				
1	Total Coliforms ^{1)a)}	CFU/100ml	ND	-	-
2	Faecal Coliforms	CFU/100ml	ND	-	-



QUALITY CONTROL - PRECISION

Job Number : EV193027
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

No	Description	Units	Laboratory Replicate		% RPD
			EV193027-5	EV193027-5 Duplicate	
	Miscellaneous				
1	Chemical Oxygen Demand, COD	mg/L	5	5	0.0%
2	Biochemical Oxygen Demand, BOD ₅	mg/L	<2	<2	-
3	Chlorine (Free), Cl ₂	mg/L	<0.01	<0.01	-
4	Dissolved Oxygen, DO ¹¹	mg/L	5.50	-	-
5	Oil & Grease	mg/L	<1	-	-
6	Surfactants, MBAS	mg/L	<0.01	<0.01	-
7	Total Organic Carbon, TOC	mg/L	1.9	1.9	0.0%
8	Total Phenols	mg/L	<0.001	<0.001	-
	Organics Tests				
1	Polycyclic Aromatic Hydrocarbons, PAHs Total ⁴¹	µg/L	<0.1	-	-
	BTEX				
1	Benzene	µg/L	<1	<1	-
2	Toluene	µg/L	<1	<1	-
3	Ethyl Benzene	µg/L	<1	<1	-
4	Xylenes Total	µg/L	<3	<3	-

The laboratory analyzes duplicate aliquots of one or more samples within each batch.

Results are used to estimate analytical precision for that matrix at that concentration.

RPDs of up to 15% are considered acceptable for many test methods (except for results which are < 10x CL)



QUALITY CONTROL - PRECISION

Job Number : EV193027
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IJS-EV/I/2020

No	Description	Units	Laboratory Replicate		% RPD
			EV183027-8	EV193027-9 Duplicate	
	Total Metals				
1	Antimony, Sb	mg/dry kg	<0.1	<0.1	-
2	Arsenic, As	mg/dry kg	1.7	1.7	0.0%
3	Cadmium, Cd	mg/dry kg	<0.02	<0.02	-
4	Chromium, Cr	mg/dry kg	19.4	18.7	3.7%
5	Copper, Cu	mg/dry kg	8.4	7.9	6.1%
6	Lead, Pb	mg/dry kg	3.4	3.7	8.5%
7	Mercury, Hg	mg/dry kg	0.015	0.015	0.0%
8	Nickel, Ni	mg/dry kg	12.2	11.5	5.9%
9	Silver, Ag	mg/dry kg	<0.02	<0.02	-
10	Zinc, Zn	mg/dry kg	21	20	4.9%

The laboratory analyzes duplicate aliquots of one or more samples within each batch.

Results are used to estimate analytical precision for that matrix at that concentration.

RPDs of up to 15% are considered acceptable for many test methods (except for results which are < 10x DL)



QUALITY CONTROL - ACCURACY

Job Number : EV193027
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

No	Description	Method	Units	Limit of Reporting	Reference Material		% Recovery
					Expected Value	Result	
	Physical Tests						
1	pH ⁽¹⁾	APHA 4500-H+ B	S.U.	-	-	-	-
2	Total Suspended Solids, TSS	APHA 2540 D	mg/L	1	32	31	97%
3	Turbidity ⁽¹⁾	APHA 2130 B	NTU	0.5	-	-	-
	Anions						
1	Cyanide (Total), CN ⁻	APHA 4500CN C,E	mg/L	0.005	0.472	0.444	94%
2	Sulphide as H ₂ S	APHA 4500-S2 G	mg/L	0.002	-	-	-
	Nutrients						
1	Total Ammonia, NH ₃ -N	APHA 4500NH3 D	mg/L	0.02	17.2	16.4	96%
2	Nitrate, NO ₃ -N	APHA 4500NO3-E	mg/L	0.005	16.1	17.7	110%
3	Total Phosphorus as PO ₄	APHA 4500P E	mg/L	0.005	25.46	25.0	98%
	Dissolved Metals						
1	Arsenic, As	APHA 3125 B	mg/L	0.0005	0.11	0.106	97%
2	Cadmium, Cd	APHA 3125 B	mg/L	0.0001	0.389	0.388	100%
3	Chromium Hexavalent, Cr ⁶⁺	APHA 3500-Cr B	mg/L	0.002	0.561	0.561	100%
4	Copper, Cu	APHA 3125 B	mg/L	0.001	0.476	0.477	100%
5	Lead, Pb	APHA 3125 B	mg/L	0.001	0.786	0.813	103%
6	Mercury, Hg	USEPA 245.7	mg/L	0.00005	0.0133	0.0123	93%
7	Nickel, Ni	APHA 3125 B	mg/L	0.001	1.13	1.11	98%
8	Zinc, Zn	APHA 3125 B	mg/L	0.005	0.609	0.609	100%



QUALITY CONTROL - ACCURACY

Job Number : EV193027
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

No	Description	Method	Units	Limit of Reporting	Reference Material		% Recovery
					Expected Value	Result	
	Microbiology						
1	Total Coliforms	APHA 9222B	CFU/100ml	1	-	-	-
2	Faecal Coliforms	APHA 9222D	CFU/100ml	1	-	-	-
	Miscellaneous						
1	Chemical Oxygen Demand, COD	APHA 5220 C	mg/L	2	147	140	95%
2	Biochemical Oxygen Demand, BOD ₅	APHA 5210 B	mg/L	2	91.1	88	97%
3	Chlorine (Free), Cl ₂	APHA 4500-Cl I	mg/L	0.01	1.00	0.99	99%
4	Oil & Grease	APHA 5520 B	mg/L	1	144	126	88%
5	Surfactants, MBAS	APHA 5540 C	mg/L	0.01	0.222	0.23	106%
6	Total Organic Carbon, TOC	APHA 5310 C	mg/L	0.5	58.1	57.5	99%
7	Total Phenols	USEPA 9065	mg/L	0.001	4.95	5.30	107%
	Organics Tests						
1	Polycyclic Aromatic Hydrocarbons, PAHs	USEPA 8270C	µg/L	0.1	8.0	7.3	91%
	BTEX						
1	Benzene	USEPA 8260B	µg/L	1	14.1	13.5	96%
2	Toluene	USEPA 8260B	µg/L	1	7.0	6.6	94%
3	Ethyl Benzene	USEPA 8260B	µg/L	1	7.8	7.4	97%
4	Xylenes Total	USEPA 8260B	µg/L	3	38.2	37.2	98%



QUALITY CONTROL - ACCURACY

Job Number : EV193027
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/US-EV/2020

No	Description	Method	Units	Limit of Reporting	Reference Material		% Recovery
					Expected Value	Result	
	Total Metals						
1	Antimony, Sb	USEPA 3050B/APHA 3125B	mg/dry kg	0.1	133	125	94%
2	Arsenic, As	USEPA 3050B/APHA 3125B	mg/dry kg	0.1	77.2	70.0	91%
3	Cadmium, Cd	USEPA 3050B/APHA 3125B	mg/dry kg	0.02	182	179	99%
4	Chromium, Cr	USEPA 3050B/APHA 3125B	mg/dry kg	0.2	272	262	93%
5	Copper, Cu	USEPA 3050B/APHA 3125B	mg/dry kg	0.2	301	272	91%
6	Lead, Pb	USEPA 3050B/APHA 3125B	mg/dry kg	0.2	241	224	93%
7	Mercury, Hg	USEPA 3050B/USEPA245.7	mg/dry kg	0.001	12.7	12.3	97%
8	Nickel, Ni	USEPA 3050B/APHA 3125B	mg/dry kg	0.2	125	115	92%
9	Silver, Ag	USEPA 3050B/APHA 3125B	mg/dry kg	0.02	66.3	63.1	95%
10	Zinc, Zn	USEPA 3050B/APHA 3125B	mg/dry kg	1	127	119	94%

Reference Materials are QC samples of known concentration prepared independently of the calibration standards.

Results are used to verify that analytical precision is in control and that the level of bias due to calibration is acceptable. Generally speaking, % Recovery should fall between 85% to 115% (except Gas Chromatography methods).

Limit of Reporting means the lowest concentration at which an analyte can be detected in a sample and its concentration can be reported with a reasonable degree of accuracy and precision based on the analytical methodology used.

V1.7-6

ENVIRONMENTAL TEST REPORT

Ms. Yanti Setiakurniasih
PT. EnviroSolutions & Consulting
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Jl. Jend. Sudirman Kav 32 RT 003 RW 002
Jakarta,
INDONESIA

Job Number : EV193027-A
Customer Ref : 7987.r5/IUS-EV/I/2020
Project Name : Seawater & Sediment Analysis

Number of samples : 5

Date received : 28-Nov-2019
Date reported : 26-Dec-2019

Approved Signature for:



Reginald C. de Wit
Manager Environmental Services

All work is performed in accordance with Intertek Standard Terms and Conditions of work <http://www.intertek.com/terms/>

This report relates specifically to the sample(s) tested in so far as that the sample(s) is truly representative of the sample source as received.

This report was prepared solely for the use of the client named in this report. PT Intertek Utama Services accepts no responsibility for any loss, damage or liability suffered by any third party as a result of any reliance upon or use of this report.

DO NOT PHOTOCOPY





SAMPLE INFORMATION

Job Number : EV193027-A
Customer : PT. EnviroSolutions & Consulting
Project Name : Seawater & Sediment Analysis
Customer Ref : 7987.r5/US-EV/I/2020

No.	Laboratory Sample I.D.	Customer Sample I.D.	Sample Matrix	Date Sampled	Time Sampled	Date Received	Sampled By	Coordinates	
1	EV193027-1	MWB 15	Seawater	26-Nov-19	09:45	28-Nov-19	Fahru Roji, Husni, Hilman	S : 08° 01' 34.948"	E : 131° 12' 31.803"
2	EV193027-2	MWB 11	Seawater	26-Nov-19	10:04	28-Nov-19	Fahru Roji, Husni, Hilman	S : 08° 01' 02.130"	E : 131° 14' 32.307"
3	EV193027-3	MWB 10	Seawater	26-Nov-19	10:34	28-Nov-19	Fahru Roji, Husni, Hilman	S : 08° 00' 45.822"	E : 131° 14' 55.210"
4	EV193027-4	MWB 13	Seawater	26-Nov-19	11:07	28-Nov-19	Fahru Roji, Husni, Hilman	S : 08° 01' 53.925"	E : 131° 15' 58.731"
5	EV193027-5	MWB 12	Seawater	26-Nov-19	11:40	28-Nov-19	Fahru Roji, Husni, Hilman	S : 08° 00' 45.420"	E : 131° 16' 26.838"

Notes:

NA = Not Analysed

ND= Not Detected

IS = Insufficient Sample

** = Non Accredited Test

*** = Subcontracted Test

1) = Field Measurement

2) = Field Measurement by Customer

3) = Total Pesticides defined as 30 OCP compounds (list available upon request)

4) = Total PAHs defined as 16 PAH compounds (list available upon request)

5) = Total PCBs defined as 20 PCB congeners (list available upon request)

SNR= Sample Not Received



Job Number : EV193027-A
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193027-1	EV193027-2	EV193027-3
Customer Sample I.D :			MWB 15	MWB 11	MWB 10
Date Sampled :			26-Nov-19	26-Nov-19	26-Nov-19
Sample Matrix :			Seawater	Seawater	Seawater
No.	Test Description	Units	Results	Results	Results
PLANKTON***					
1. PHYTOPLANKTON					
BACILLARIOPHYCEAE					
1	<i>Bacillaria</i> sp.	Cell/m ³	-	354	-
2	<i>Fragilaria</i> sp.	Cell/m ³	708	-	-
3	<i>Liomphora</i> sp.	Cell/m ³	-	177	-
4	<i>Navicula</i> sp.	Cell/m ³	2,124	2,655	5,310
5	<i>Nitzschia</i> sp.	Cell/m ³	29,382	40,002	15,576
6	<i>Platysira</i> sp.	Cell/m ³	-	354	-
7	<i>Thalassiosira</i> sp.	Cell/m ³	1,770	708	354
COSCINODISCOPHYCEAE					
1	<i>Asterodiscus</i> sp.	Cell/m ³	-	177	-
2	<i>Coscinodiscus</i> sp.	Cell/m ³	708	4,602	3,363
3	<i>Guanthalia</i> sp.	Cell/m ³	3,717	3,009	1,947
4	<i>Rhizosolenia</i> sp.	Cell/m ³	88,146	123,015	49,383
5	<i>Triceratium</i> sp.	Cell/m ³	-	177	-
CYANOPHYCEAE					
1	<i>Trichodesmium</i> sp.	Cell/m ³	263,376	499,317	367,629
DICTYOCOPHYCEAE					
1	<i>Dictyocha</i> sp.	Cell/m ³	177	-	-
DINOPHYCEAE					
1	<i>Ceratium</i> sp.	Cell/m ³	4,071	2,478	1,416
2	<i>Dinophysis</i> sp.	Cell/m ³	4,248	1,416	2,655
3	<i>Ornithocercus</i> sp.	Cell/m ³	177	-	-
4	<i>Pardinium</i> sp.	Cell/m ³	1,583	708	885
5	<i>Pyrophacus</i> sp.	Cell/m ³	1,082	-	354



Job Number : EV193027-A
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5IIUS-EV/II2020

Laboratory Sample I.D :			EV193027-1	EV193027-2	EV193027-3
Customer Sample I.D :			MWB 15	MWB 11	MWB 10
Date Sampled :			26-Nov-19	26-Nov-19	26-Nov-19
Sample Matrix :			Seawater	Seawater	Seawater
No.	Test Description	Units	Results	Results	Results
MEDIOPHYCEAE					
1	<i>Bacteriostrium</i> sp.	Cell/m ³	23,364	15,576	21,594
2	<i>Diaduphia</i> sp.	Cell/m ³	885	1,593	708
3	<i>Cerataulina</i> sp.	Cell/m ³	531	885	1,062
4	<i>Chaetoceros</i> sp.	Cell/m ³	383,028	508,698	760,392
5	<i>Eucampia</i> sp.	Cell/m ³	2,655	1,082	-
6	<i>Hemiaulus</i> sp.	Cell/m ³	26,727	13,275	16,815
7	<i>Leptocylindrus</i> sp.	Cell/m ³	24,072	16,461	25,134
Total Taxa (s)			21	22	17
Abundance		Cell/m ³	862,521	1,236,699	1,274,577
Diversity Index			1.54	1.34	1.14
Equitability Index			0.51	0.43	0.40
Dominance Index			0.30	0.34	0.44
2. ZOOPLANKTON					
APPENDICULARIA					
1	<i>Oikopleura</i> sp.	Ind/m ³	177	4,071	531
COPEPODA					
1	<i>Acartia</i> sp.	Ind/m ³	3,009	3,009	3,540
2	<i>Calanopia</i> sp.	Ind/m ³	-	177	177
3	<i>Calanus</i> sp.	Ind/m ³	354	1,593	2,301
4	<i>Corycaeus</i> sp.	Ind/m ³	354	-	-
5	<i>Macrosetella</i> sp.	Ind/m ³	-	-	-
6	<i>Microsetella</i> sp.	Ind/m ³	177	-	177
7	<i>Oithona</i> sp.	Ind/m ³	1,593	-	3,363
8	<i>Oncaea</i> sp.	Ind/m ³	177	-	531
9	<i>Temora</i> sp.	Ind/m ³	2,478	2,301	6,195
GLOBOTHALAMEA					
1	<i>Globigerina</i> sp.	Ind/m ³	-	-	177
2	<i>Globorotalia</i> sp.	Ind/m ³	531	177	354

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Job Number : EV193027-A
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/II2020

Laboratory Sample I.D :			EV193027-1	EV193027-2	EV193027-3
Customer Sample I.D :			MWB 15	MWB 11	MWB 10
Date Sampled :			26-Nov-19	26-Nov-19	26-Nov-19
Sample Matrix :			Seawater	Seawater	Seawater
No.	Test Description	Units	Results	Results	Results
	OLIGOTRICHEA				
1	<i>Codonellopsis</i> sp.	Ind/m ³	-	-	-
2	<i>Eutimurus</i> sp.	Ind/m ³	177	177	177
3	<i>Favella</i> sp.	Ind/m ³	-	-	-
	SAGITTOIDEA				
1	<i>Sagitta</i> sp.	Ind/m ³	-	354	708
Total Taxa (s)			10	8	12
Abundance		Ind/m ²	9,027	11,859	18,231
Diversity Index			1.76	1.60	1.85
Equitability Index			0.78	0.77	0.74
Dominance Index			0.23	0.24	0.21

Note: Refer to QA/QC – Accuracy page for list of analytical methods used



Job Number : EV193627-A
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV1/2020

Laboratory Sample I.D :			EV193627-4	EV193627-5
Customer Sample I.D :			MWB 13	MWB 12
Date Sampled :			26-Nov-19	26-Nov-19
Sample Matrix :			Seawater	Seawater
No.	Test Description	Units	Results	Results
	PLANKTON***			
	1. PHYTOPLANKTON			
	BACILLARIOPHYCEAE			
1	<i>Bacillaria sp.</i>	Cell/m ³	-	-
2	<i>Fragilaria sp.</i>	Cell/m ³	-	-
3	<i>Licmophora sp.</i>	Cell/m ³	177	177
4	<i>Navicula sp.</i>	Cell/m ³	6,018	531
5	<i>Nitzschia sp.</i>	Cell/m ³	18,054	15,753
6	<i>Planothidium sp.</i>	Cell/m ³	354	-
7	<i>Thalassiosira sp.</i>	Cell/m ³	1,239	1,593
	COSCINODISCOPHYCEAE			
1	<i>Asterolampra sp.</i>	Cell/m ³	-	-
2	<i>Coscinodiscus sp.</i>	Cell/m ³	1,416	3,009
3	<i>Guinardia sp.</i>	Cell/m ³	5,487	708
4	<i>Rhizosolenia sp.</i>	Cell/m ³	50,976	37,347
5	<i>Triceratium sp.</i>	Cell/m ³	-	-
	CYANOPHYCEAE			
1	<i>Trichodesmium sp.</i>	Cell/m ³	354,707	318,246
	DICTYOCOPHYCEAE			
1	<i>Dictyocia sp.</i>	Cell/m ³	-	-
	DINOPHYCEAE			
1	<i>Ceratium sp.</i>	Cell/m ³	2,478	2,055
2	<i>Dinophysis sp.</i>	Cell/m ³	1,947	354
3	<i>Ornithocercus sp.</i>	Cell/m ³	-	-
4	<i>Peridinium sp.</i>	Cell/m ³	1,770	354
5	<i>Pyrotheacus sp.</i>	Cell/m ³	531	177



Job Number : EV193027-A
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193027-4	EV193027-5
Customer Sample I.D :			MWB 13	MWB 12
Date Sampled :			26-Nov-19	26-Nov-19
Sample Matrix :			Seawater	Seawater
No.	Test Description	Units	Results	Results
MEDIOPHYCEAE				
1	<i>Bacteriastrium</i> sp.	Cell/m ³	13,629	8,319
2	<i>Biddulphia</i> sp.	Cell/m ³	177	-
3	<i>Cerataulina</i> sp.	Cell/m ³	3,894	1,593
4	<i>Chaetoceros</i> sp.	Cell/m ³	583,746	437,544
5	<i>Eucampia</i> sp.	Cell/m ³	1,593	1,062
6	<i>Hemiaulus</i> sp.	Cell/m ³	13,275	16,992
7	<i>Leptocyndrus</i> sp.	Cell/m ³	18,762	22,125
Total Taxa (s)			20	18
Abundance		Cell/m ³	1,060,230	868,539
Diversity Index			1.24	1.23
Equitability Index			0.41	0.42
Dominance Index			0.41	0.39
2. ZOOPLANKTON				
APPENDICULARIA				
1	<i>Oikopleura</i> sp.	Ind/m ³	531	354
COPEPODA				
1	<i>Acartia</i> sp.	Ind/m ³	3,894	2,478
2	<i>Calinopsis</i> sp.	Ind/m ³	-	177
3	<i>Calanus</i> sp.	Ind/m ³	1,239	531
4	<i>Corycaeus</i> sp.	Ind/m ³	177	354
5	<i>Macrosetella</i> sp.	Ind/m ³	177	-
6	<i>Microsetella</i> sp.	Ind/m ³	177	885
7	<i>Oithona</i> sp.	Ind/m ³	1,416	1,239
8	<i>Oncaea</i> sp.	Ind/m ³	-	-
9	<i>Temora</i> sp.	Ind/m ³	2,655	3,009
GLOBOTHALAMEA				
1	<i>Globigerina</i> sp.	Ind/m ³	-	-
2	<i>Globorotalia</i> sp.	Ind/m ³	177	708



Job Number : EV193027-A
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/US-EV/2020

Laboratory Sample I.D :			EV193027-4	EV193027-5
Customer Sample I.D :			MWB 13	MWB 12
Date Sampled :			26-Nov-19	26-Nov-19
Sample Matrix :			Seawater	Seawater
No.	Test Description	Units	Results	Results
OLIGOTRICHEA				
1	<i>Codonopsis sp.</i>	Ind/m ³	177	177
2	<i>Eutima sp.</i>	Ind/m ³	177	177
3	<i>Favosites sp.</i>	Ind/m ³	177	-
SAGITTOIDEA				
1	<i>Sagitta sp.</i>	Ind/m ³	177	177
Total Taxa (s)			13	12
Abundance		Ind/m ³	11,151	10,286
Diversity Index			1.89	2.02
Equitability Index			0.74	0.61
Dominance Index			0.21	0.18

Note: Refer to QA/QC – Accuracy page for list of analytical methods used



QUALITY CONTROL - ACCURACY

Job Number : EV193027-A
Customer : PT. EnviroSolutions & Consulting
Project Name : Seawater & Sediment Analysis
Customer Ref : 7987.r5/US-EV/1/2020

No	Description	Method	Units	Limit of Reporting	Reference Material		% Recovery
					Expected Value	Result	
	PLANKTON***						
1	Phytoplankton	APHA 10200 F-2012	Cell/m ³	-	-	-	-
2	Zooplankton	SNI 06-3963-1995	Ind/m ³	-	-	-	-

Reference Materials are QC samples of known concentration prepared independently of the calibration standards.

Results are used to verify that analytical precision is in control and that the level of bias due to calibration is acceptable. Generally speaking, % Recovery should fall between 85% to 115% (except Gas Chromatography methods)

Limit of Reporting means the lowest concentration at which an analyte can be detected in a sample and its concentration can be reported with a reasonable degree of accuracy and precision based on the analytical methodology used.

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V1.7-6

ENVIRONMENTAL TEST REPORT

Ms. Yanti Setiakurniasih
PT. EnviroSolutions & Consulting
Intiland Tower Lt. 18
JL. Jend. Sudirman Kav 32 RT 003 RW 002
Jakarta,
INDONESIA

Job Number : EV193027-B
Customer Ref : 7987.r5/IUS-EV/II/2020
Project Name : Seawater & Sediment Analysis

Number of samples : 4

Date received : 28-Nov-2019
Date reported : 26-Dec-2019

Approved Signature for:



for Reginald C. de Wit
Manager Environmental Services

All work is performed in accordance with Intertek Standard Terms and Conditions of work <http://www.intertek.com/terms/>

This report relates specifically to the sample(s) tested in so far as that the sample(s) is truly representative of the sample source as received.

This report was prepared solely for the use of the client named in this report. PT Intertek Utama Services accepts no responsibility for any loss, damage or liability suffered by any third party as a result of any reliance upon or use of this report.

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SAMPLE INFORMATION

Job Number : EV193027-B
Customer : PT. EnviroSolutions & Consulting
Project Name : Seawater & Sediment Analysis
Customer Ref : 7987.r5/IUS-EV/I/2020

No.	Laboratory Sample I.D.	Customer Sample I.D.	Sample Matrix	Date Sampled	Time Sampled	Date Received	Sampled By	Coordinates	
1	EV193027-6	MWB 15	Sediment	26-Nov-19	09:45	28-Nov-19	Fahru Roji, Husni, Hilman	S : 08° 01' 34.948"	E : 131° 12' 31.603"
2	EV193027-7	MWB 11	Sediment	26-Nov-19	10:04	28-Nov-19	Fahru Roji, Husni, Hilman	S : 08° 01' 02.130"	E : 131° 14' 32.907"
3	EV193027-8	MWB 10	Sediment	26-Nov-19	10:34	28-Nov-19	Fahru Roji, Husni, Hilman	S : 08° 00' 45.922"	E : 131° 14' 55.210"
4	EV193027-9	MWB 13	Sediment	26-Nov-19	11:07	28-Nov-19	Fahru Roji, Husni, Hilman	S : 08° 01' 53.925"	E : 131° 15' 58.731"

Notes:

NA = Not Analysed

ND= Not Detected

IS = Insufficient Sample

** = Non Accredited Test

*** = Subcontracted Test

1) = Field Measurement

2) = Field Measurement by Customer

3) = Total Pesticides defined as 30 DCP compounds (list available upon request)

4) = Total PAHs defined as 16 PAH compounds (list available upon request)

5) = Total PCBs defined as 20 PCB congeners (list available upon request)

SNR= Sample Not Received



Job Number : EV193027-B
Customer : PT. EnviroSolutions & Consulting
Project Name : Seawater & Sediment Analysis
Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193027-6	EV193027-7	EV193027-8
Customer Sample I.D :			MWB 15	MWB 11	MWB 10
Date Sampled :			26-Nov-19	26-Nov-19	26-Nov-19
Sample Matrix :			Sediment	Sediment	Sediment
No.	Test Description	Units	Results	Results	Results
	BENTHOS***				
	CRUSTACEA				
1	<i>Alpheus sp.</i>	Ind/m ²	14	-	-
2	<i>Gammarus sp.</i>	Ind/m ²	14	-	-
3	<i>Thalassia sp.</i>	Ind/m ²	14	-	-
	GASTROPODA				
1	<i>Ptychobela sp.</i>	Ind/m ²	-	14	-
	NEMERTEA				
1	<i>Loricus sp.</i>	Ind/m ²	-	70	-
	POLYCHAETA				
1	<i>Eteone sp.</i>	Ind/m ²	-	-	-
2	<i>Morphyra sp.</i>	Ind/m ²	14	-	-
3	<i>Nephtys sp.</i>	Ind/m ²	14	-	-
4	<i>Nereis sp.</i>	Ind/m ²	-	-	14
5	<i>Onuphis sp.</i>	Ind/m ²	-	-	14
	SIPUNCULA				
1	<i>Phascolion sp.</i>	Ind/m ²	14	-	-
	Total Taxa (s)		6	2	2
	Abundance	Ind/m ²	84	84	28
	Diversity Index		2.58	0.65	1.00
	Equitability Index		1.00	0.65	1.00
	Dominance Index		0.17	0.72	0.50

Note: Refer to QA/QC - Accuracy page for list of analytical methods used



Job Number : EV193027-B
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193027-B
Customer Sample I.D :			MWB 13
Date Sampled :			26-Nov-19
Sample Matrix :			Sediment
No.	Test Description	Units	Results
	BENTHOS**		
	CRUSTACEA		
1	<i>Aphorus</i> sp.	Ind/m ²	-
2	<i>Gammarus</i> sp.	Ind/m ²	-
3	<i>Thalassia</i> sp.	Ind/m ²	-
	GASTROPODA		
1	<i>Ptychobela</i> sp.	Ind/m ²	-
	NEMERTEA		
1	<i>Lineus</i> sp.	Ind/m ²	-
	POLYCHAETA		
1	<i>Eteone</i> sp.	Ind/m ²	14
2	<i>Marphysa</i> sp.	Ind/m ²	-
3	<i>Nephtys</i> sp.	Ind/m ²	-
4	<i>Nereis</i> sp.	Ind/m ²	-
5	<i>Onuphis</i> sp.	Ind/m ²	-
	SIPUNCULA		
1	<i>Phascolion</i> sp.	Ind/m ²	-
	Total Taxa (±)		1
	Abundance	Ind/m ²	14
	Diversity Index		0.00
	Equitability Index		0.00
	Dominance Index		1.00

Note: Refer to QA/QC – Accuracy page for list of analytical methods used



QUALITY CONTROL - ACCURACY

Job Number : EV193027-B
Customer : PT. EnviroSolutions & Consulting
Project Name : Seawater & Sediment Analysis
Customer Ref : 7987.r5/IUS-EVII/2020

No	Description	Method	Units	Limit of Reporting	Reference Material		% Recovery
					Expected Value	Result	
1	BENTHOS TM	SNI 03-3401-1994	Indm ²	-	-	-	-

Reference Materials are QC samples of known concentration prepared independently of the calibration standards.

Results are used to verify that analytical precision is in control and that the level of bias due to calibration is acceptable. Generally speaking, % Recovery should fall between 85% to 115% (except Gas Chromatography methods).

Limit of Reporting means the lowest concentration at which an analyte can be detected in a sample and its concentration can be reported with a reasonable degree of accuracy and precision based on the analytical methodology used.

VI.7-7

ENVIRONMENTAL TEST REPORT

Ms. Yanti Setiakurniasih
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Jakarta,
INDONESIA

Job Number : EV193027-C
Customer Ref : 7987.r5/IUS-EV/I/2020
Project Name : Sediment Analysis

Number of samples : 4

Date received : 28-Nov-2019
Date reported : 05-Feb-2020

Approved Signature for:



for **Reginald C. de Wit**
Manager Environmental Services

All work is performed in accordance with Intertek Standard Terms and Conditions of work <http://www.intertek.com/terms/>

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SAMPLE INFORMATION

Job Number : EV193027-C
Customer : PT. EnviroSolutions & Consulting
Project Name : Sediment Analysis
Customer Ref : 7987.r5/IUS-EV/II/2020

No.	Laboratory Sample I.D.	Customer Sample I.D.	Sample Matrix	Date Sampled	Time Sampled	Date Received	Sampled By	Coordinates	
1	EV193027-6	MWB 15	Sediment	26-Nov-19	09:45	28-Nov-19	Fahru Roji, Hilam & Husni	S : 08° 01' 34.948"	E : 131° 12' 31.603"
2	EV193027-7	MWB 11	Sediment	26-Nov-19	10:04	28-Nov-19	Fahru Roji, Hilam & Husni	S : 08° 01' 02.130"	E : 131° 14' 32.307"
3	EV193027-8	MWB 10	Sediment	26-Nov-19	10:34	28-Nov-19	Fahru Roji, Hilam & Husni	S : 08° 00' 45.922"	E : 131° 14' 55.210"
4	EV193027-9	MWB 13	Sediment	26-Nov-19	11:07	28-Nov-19	Fahru Roji, Hilam & Husni	S : 08° 01' 53.925"	E : 131° 15' 58.731"

Notes:

NA = Not Analysed

ND = Not Detected

IS = Insufficient Sample

** = Non Accredited Test

*** = Subcontracted Test

1) = Field Measurement

2) = Field Measurement by Customer

3) = Total Pesticides defined as 30 OCP compounds (list available upon request)

4) = Total PAHs defined as 16 PAH compounds (list available upon request)

5) = Total PCBs defined as 20 PCB congeners (list available upon request)

SNR = Sample Not Received



Job Number : EV193027-C
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/II2020

Laboratory Sample I.D :			EV193027-6	EV193027-7	EV193027-8
Customer Sample I.D :			MWB 15	MWB 11	MWB 10
Date Sampled :			26-Nov-19	28-Nov-19	26-Nov-19
Sample Matrix :			Sediment	Sediment	Sediment
No.	Test Description	Units	Results	Results	Results
	Miscellaneous				
	Particle Size Distribution**				
	Size (µm)				
1	0.357	%	0.00	0.09	0.00
2	0.405	%	0.00	0.20	0.04
3	0.460	%	0.07	0.32	0.12
4	0.523	%	0.10	0.44	0.19
5	0.594	%	0.13	0.52	0.25
6	0.675	%	0.15	0.58	0.28
7	0.767	%	0.15	0.59	0.29
8	0.872	%	0.16	0.59	0.30
9	0.99	%	0.15	0.59	0.30
10	1.13	%	0.16	0.60	0.30
11	1.28	%	0.17	0.65	0.33
12	1.45	%	0.20	0.71	0.36
13	1.65	%	0.24	0.82	0.45
14	1.88	%	0.29	0.92	0.54
15	2.13	%	0.34	1.04	0.67
16	2.42	%	0.41	1.18	0.79
17	2.75	%	0.49	1.31	0.96
18	3.12	%	0.58	1.45	1.13
19	3.55	%	0.69	1.58	1.31
20	4.03	%	0.82	1.73	1.52
21	4.58	%	0.96	1.87	1.71
22	5.21	%	1.11	2.00	1.92
23	5.92	%	1.25	2.14	2.08
24	6.72	%	1.40	2.24	2.25
25	7.64	%	1.53	2.32	2.35
26	8.68	%	1.62	2.35	2.41
27	9.86	%	1.69	2.35	2.42
28	11.2	%	1.71	2.30	2.37
29	12.7	%	1.71	2.23	2.28
30	14.5	%	1.66	2.13	2.19
31	16.4	%	1.61	2.04	2.09
32	18.7	%	1.53	1.94	1.98
33	21.2	%	1.44	1.86	1.89
34	24.1	%	1.35	1.77	1.81



Job Number : EV193027-C
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193027-6	EV193027-7	EV193027-8
Customer Sample I.D :			MWB 15	MWB 11	MWB 10
Date Sampled :			26-Nov-19	26-Nov-19	26-Nov-19
Sample Matrix :			Sediment	Sediment	Sediment
No.	Test Description	Units	Results	Results	Results
35	27.4	%	1.28	1.67	1.72
36	31.1	%	1.15	1.57	1.63
37	35.3	%	1.05	1.45	1.53
38	40.1	%	0.94	1.33	1.42
39	45.6	%	0.84	1.18	1.32
40	51.8	%	0.74	1.07	1.22
41	58.9	%	0.66	0.95	1.16
42	66.9	%	0.60	0.86	1.12
43	76.0	%	0.54	0.80	1.13
44	86.4	%	0.55	0.78	1.17
45	98.1	%	0.52	0.77	1.24
46	111	%	0.57	0.82	1.33
47	127	%	0.68	0.91	1.43
48	144	%	0.86	1.05	1.54
49	163	%	1.13	1.27	1.64
50	186	%	1.50	1.54	1.72
51	211	%	1.94	1.88	1.78
52	240	%	2.44	2.26	1.81
53	272	%	2.95	2.84	1.83
54	310	%	3.42	2.99	1.83
55	352	%	3.81	3.27	1.81
56	400	%	4.06	3.42	1.77
57	454	%	4.20	3.43	1.70
58	516	%	4.18	3.29	1.66
59	586	%	4.06	2.98	1.62
60	666	%	3.84	2.57	1.62
61	756	%	3.59	2.09	1.60
62	859	%	3.32	1.60	1.74
63	976	%	3.06	1.15	1.84
64	1109	%	2.81	0.72	1.94
65	1260	%	2.56	0.50	2.02
66	1432	%	2.31	0.43	2.06
67	1627	%	2.04	0.36	2.00
68	1849	%	1.74	0.30	1.86
69	2100	%	1.43	0.23	1.65
70	2386	%	1.13	0.18	1.39



Job Number : EV193027-C
Customer : PT. EnviroSolutions & Consulting
Project Name : Sediment Analysis
Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193027-6	EV193027-7	EV193027-8
Customer Sample I.D :			MWB 15	MWB 11	MWB 10
Date Sampled :			26-Nov-19	26-Nov-19	26-Nov-19
Sample Matrix :			Sediment	Sediment	Sediment
No.	Test Description	Units	Results	Results	Results
71	2711	%	0.84	0.12	1.07
72	3081	%	0.55	0.06	0.73
73	3500	%	0.28	0.04	0.37

Note: Refer to QA/QC – Accuracy page for list of analytical methods used



Job Number : EV193027-C
Customer : PT. EnviroSolutions & Consulting
Project Name : Sediment Analysis
Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193027-9
Customer Sample I.D :			MWB 13
Date Sampled :			28-Nov-19
Sample Matrix :			Sediment
No.	Test Description	Units	Results
	Miscellaneous		
	Particle Size Distribution**		
	Size (µm)		
1	0.357	%	0.09
2	0.405	%	0.20
3	0.460	%	0.35
4	0.523	%	0.50
5	0.594	%	0.60
6	0.675	%	0.66
7	0.767	%	0.68
8	0.872	%	0.68
9	0.99	%	0.67
10	1.13	%	0.69
11	1.28	%	0.75
12	1.45	%	0.83
13	1.65	%	0.97
14	1.88	%	1.13
15	2.13	%	1.30
16	2.42	%	1.49
17	2.75	%	1.68
18	3.12	%	1.88
19	3.55	%	2.06
20	4.03	%	2.25
21	4.58	%	2.42
22	5.21	%	2.58
23	5.92	%	2.73
24	6.72	%	2.85
25	7.64	%	2.93
26	8.68	%	3.00
27	9.88	%	3.03
28	11.2	%	3.08
29	12.7	%	3.13
30	14.5	%	3.21
31	16.4	%	3.33
32	18.7	%	3.49
33	21.2	%	3.66
34	24.1	%	3.85



Job Number : EV193027-C
Customer : PT. EnviroSolutions & Consulting
Project Name : Sediment Analysis
Customer Ref : 7987.r5/IUS-EV/2020

Laboratory Sample I.D :			EV193027-9
Customer Sample I.D :			MWB 13
Date Sampled :			28-Nov-19
Sample Matrix :			Sediment
No.	Test Description	Units	Results
35	27.4	%	3.98
36	31.1	%	4.04
37	35.3	%	4.00
38	40.1	%	3.88
39	45.6	%	3.62
40	51.8	%	3.32
41	58.9	%	2.96
42	66.9	%	2.58
43	76.0	%	2.19
44	86.4	%	1.81
45	98.1	%	1.45
46	111	%	1.11
47	127	%	0.81
48	144	%	0.55
49	163	%	0.34
50	186	%	0.19
51	211	%	0.10
52	240	%	0.03
53	272	%	0.03
54	310	%	0.02
55	352	%	0.04
56	400	%	0.05
57	454	%	0.05
58	516	%	0.04
59	586	%	0.04
60	666	%	0.02
61	756	%	0.00
62	859	%	0.00
63	976	%	0.00
64	1109	%	0.00
65	1260	%	0.00
66	1432	%	0.00
67	1627	%	0.00
68	1849	%	0.00
69	2100	%	0.00
70	2386	%	0.00



Job Number : EV193027-C
Customer : PT, EnviroSolutions & Consulting
Project Name : Sediment Analysis
Customer Ref : 7987.r5/IUS-EVW/2020

Laboratory Sample I.D :			EV193027-9
Customer Sample I.D :			MWB 13
Date Sampled :			28-Nov-19
Sample Matrix :			Sediment
No.	Test Description	Units	Results
71	2711	%	0.00
72	3081	%	0.00
73	3500	%	0.00

Note: Refer to QA/QC – Accuracy page for list of analytical methods used



PARTICLE SIZE DISTRIBUTION ANALYSIS

ANALYSIS REPORT

Measurement Details

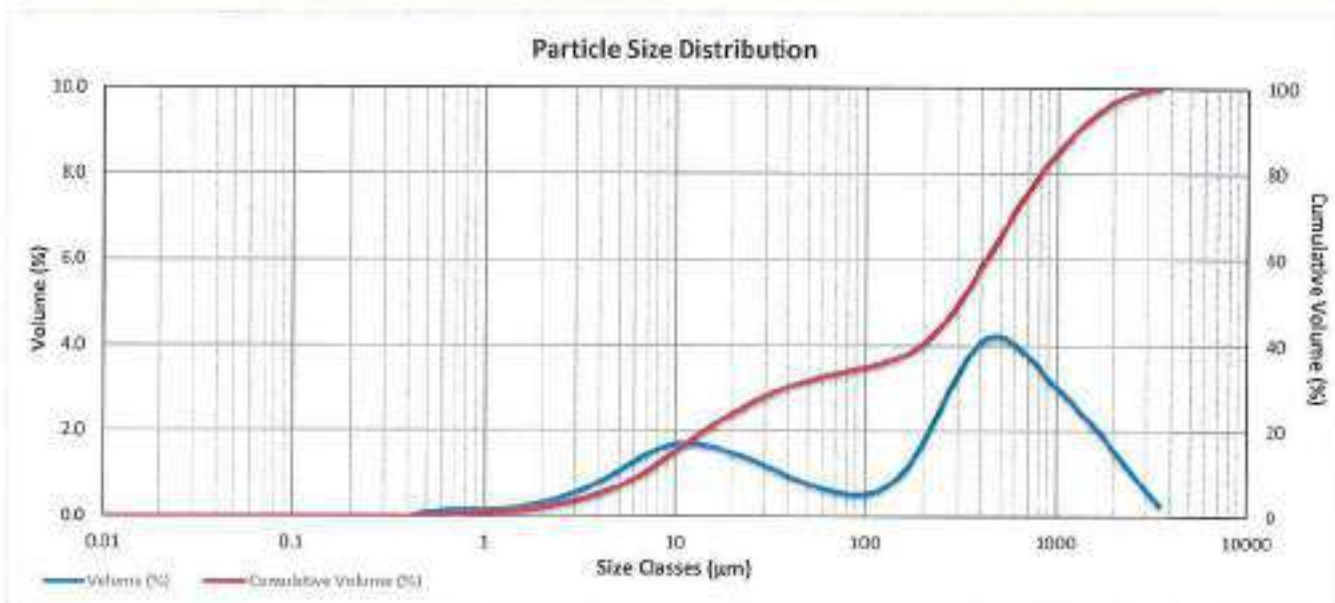
Client PT. EnviroSolutions & Consulting
Sample ID MWB 15

Job Number EV193027-D6

Analysis

Particle Name Solid
Dispersant Liquid

Result



Size (µm)	Volume (%)	Cum. Vol. (%)	Size (µm)	Volume (%)	Cum. Vol. (%)	Size (µm)	Volume (%)	Cum. Vol. (%)	Size (µm)	Volume (%)	Cum. Vol. (%)	Size (µm)	Volume (%)	Cum. Vol. (%)
0.010	0.00	0.00	0.128	0.00	0.00	1.65	0.24	1.68	21.2	1.44	24.52	272	2.95	40.75
0.011	0.00	0.00	0.146	0.00	0.00	1.88	0.29	1.97	24.1	1.35	25.87	310	3.42	50.17
0.013	0.00	0.00	0.166	0.00	0.00	2.13	0.34	2.31	27.4	1.26	27.13	362	3.81	59.98
0.015	0.00	0.00	0.188	0.00	0.00	2.42	0.41	2.72	31.1	1.15	28.28	400	4.08	58.06
0.017	0.00	0.00	0.214	0.00	0.00	2.75	0.49	3.21	35.3	1.05	29.33	454	4.20	62.26
0.019	0.00	0.00	0.243	0.00	0.00	3.12	0.58	3.79	40.1	0.94	30.27	516	4.18	66.44
0.022	0.00	0.00	0.276	0.00	0.00	3.55	0.69	4.48	45.6	0.84	31.11	586	4.08	70.50
0.024	0.00	0.00	0.314	0.00	0.00	4.03	0.82	5.30	51.8	0.74	31.85	665	3.84	74.34
0.028	0.00	0.00	0.357	0.00	0.00	4.58	0.96	6.26	58.9	0.65	32.51	756	3.59	77.93
0.032	0.00	0.00	0.405	0.00	0.00	5.21	1.11	7.37	66.9	0.60	33.11	858	3.32	81.25
0.036	0.00	0.00	0.460	0.07	0.07	5.92	1.25	8.62	76.0	0.54	33.65	976	3.06	84.31
0.041	0.00	0.00	0.523	0.10	0.17	6.72	1.40	10.02	86.4	0.51	34.16	1109	2.81	87.12
0.046	0.00	0.00	0.594	0.13	0.30	7.64	1.53	11.55	98.1	0.52	34.68	1260	2.58	89.68
0.053	0.00	0.00	0.675	0.15	0.45	8.68	1.62	13.17	111	0.57	35.25	1432	2.31	91.99
0.060	0.00	0.00	0.767	0.15	0.60	9.86	1.69	14.86	127	0.65	35.93	1627	2.04	94.03
0.068	0.00	0.00	0.872	0.16	0.76	11.2	1.71	16.57	144	0.66	36.59	1849	1.79	95.77
0.077	0.00	0.00	0.991	0.15	0.91	12.7	1.71	18.28	163	1.13	37.92	2100	1.43	97.20
0.088	0.00	0.00	1.13	0.16	1.07	14.5	1.66	19.94	186	1.50	39.42	2386	1.19	98.39
0.100	0.00	0.00	1.28	0.17	1.24	16.4	1.61	21.55	211	1.94	41.36	2711	0.84	99.17
0.113	0.00	0.00	1.45	0.20	1.44	18.7	1.53	23.08	240	2.44	43.80	3081	0.55	99.72
												3500	0.25	100.00

Remarks:

Foram debris found in the sample with particle size up to >3500 micron.

Percentils:

D_x (5) 3.85 µm
D_x (14) 6.71 µm
D_x (16) 10.7 µm
D_x (20) 14.5 µm
D_x (25) 22.2 µm
D_x (40) 193 µm
D_x (50) 308 µm
D_x (60) 424 µm
D_x (75) 682 µm
D_x (80) 819 µm
D_x (84) 964 µm
D_x (90) 1280 µm
D_x (95) 1750 µm
Mode 446 µm



PARTICLE SIZE DISTRIBUTION ANALYSIS

ANALYSIS REPORT

Measurement Details

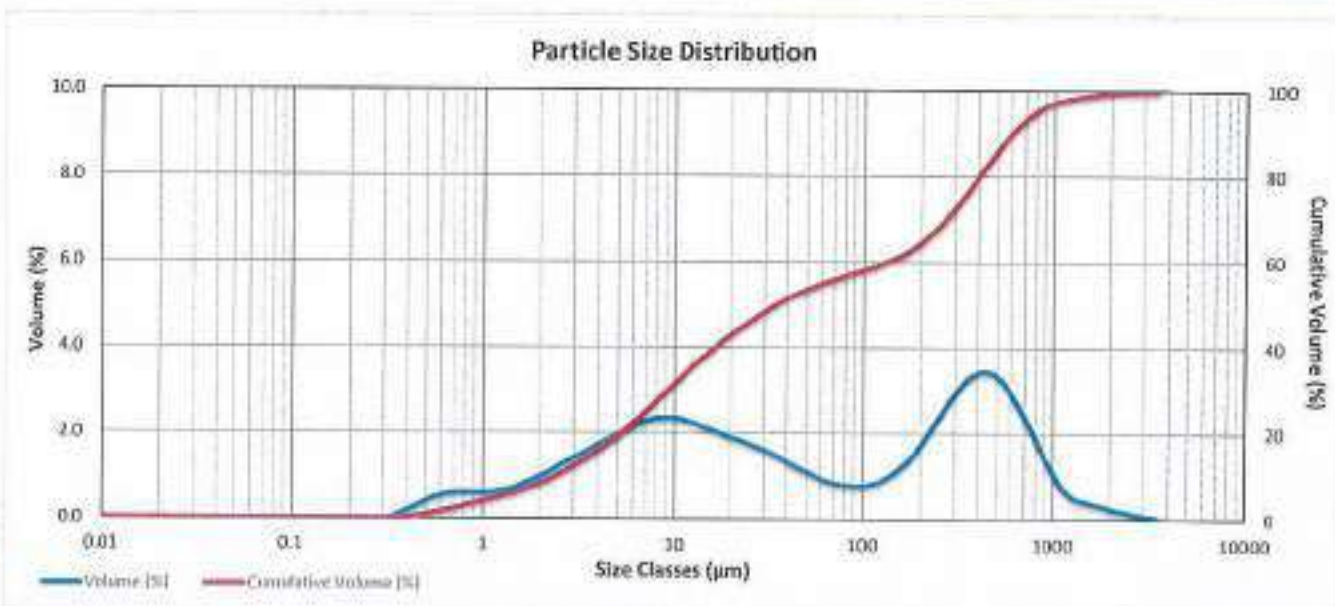
Client: PT. EnviroSolutions & Consulting
Sample ID: MWB 11

Job Number: EV193027-07

Analysis

Particle Name: Solid
Dispersant: Liquid

Result



Size (µm)	Volume (%)	Cum. Vol. (%)	Size (µm)	Volume (%)	Cum. Vol. (%)	Size (µm)	Volume (%)	Cum. Vol. (%)	Size (µm)	Volume (%)	Cum. Vol. (%)	Size (µm)	Volume (%)	Cum. Vol. (%)
0.010	0.00	0.00	0.128	0.00	0.00	1.65	0.82	6.70	21.2	1.88	43.68	272	2.64	70.25
0.011	0.00	0.00	0.146	0.00	0.00	1.88	0.82	7.62	24.1	1.77	45.45	310	2.99	73.24
0.013	0.00	0.00	0.166	0.00	0.00	2.13	1.04	8.66	27.4	1.67	47.12	362	3.27	76.51
0.015	0.00	0.00	0.188	0.00	0.00	2.42	1.18	9.84	31.1	1.57	48.69	400	3.42	79.93
0.017	0.00	0.00	0.214	0.00	0.00	2.75	1.31	11.15	35.3	1.45	50.14	454	3.43	83.36
0.019	0.00	0.00	0.243	0.00	0.00	3.12	1.45	12.60	40.1	1.33	51.47	516	3.29	86.65
0.022	0.00	0.00	0.276	0.00	0.00	3.55	1.58	14.18	45.6	1.18	52.65	588	2.94	89.59
0.024	0.00	0.00	0.314	0.00	0.00	4.03	1.73	15.91	51.8	1.07	53.72	666	2.57	92.20
0.028	0.00	0.00	0.357	0.09	0.09	4.58	1.87	17.78	58.9	0.95	54.67	756	2.09	94.29
0.032	0.00	0.00	0.405	0.20	0.29	5.21	2.09	19.78	66.9	0.86	55.53	859	1.60	96.89
0.035	0.00	0.00	0.460	0.32	0.61	5.92	2.14	21.92	75.0	0.80	56.33	975	1.15	97.04
0.041	0.00	0.00	0.523	0.44	1.05	6.72	2.24	24.16	86.4	0.78	57.11	1109	0.72	97.76
0.048	0.00	0.00	0.584	0.52	1.57	7.84	2.32	26.48	98.1	0.77	57.88	1260	0.50	98.26
0.053	0.00	0.00	0.675	0.58	2.15	8.88	2.35	28.83	111	0.82	58.70	1432	0.43	98.69
0.060	0.00	0.00	0.767	0.58	2.74	9.95	2.35	31.18	127	0.91	59.61	1627	0.36	99.05
0.068	0.00	0.00	0.872	0.59	3.33	11.2	2.30	33.48	144	1.05	60.66	1849	0.30	99.35
0.077	0.00	0.00	0.981	0.68	3.92	12.7	2.23	35.71	163	1.27	61.93	2100	0.23	99.58
0.088	0.00	0.00	1.13	0.60	4.52	14.5	2.13	37.84	186	1.54	63.47	2388	0.14	99.76
0.100	0.00	0.00	1.28	0.65	5.17	16.4	2.04	39.88	211	1.88	65.35	2711	0.12	99.88
0.113	0.00	0.00	1.45	0.71	5.88	18.7	1.94	41.82	240	2.25	67.61	3081	0.08	99.96
												3500	0.04	100.00

Remarks:

Foram debris found in the sample with particle size up to >3500 micron.

Percentils:

Dx (5)	1.24 µm
Dx (10)	2.46 µm
Dx (16)	4.05 µm
Dx (20)	5.27 µm
Dx (25)	7.04 µm
Dx (40)	16.6 µm
Dx (50)	34.9 µm
Dx (60)	133 µm
Dx (75)	352 µm
Dx (80)	401 µm
Dx (84)	465 µm
Dx (90)	587 µm
Dx (95)	801 µm
Mode	402 µm



PARTICLE SIZE DISTRIBUTION ANALYSIS ANALYSIS REPORT

Measurement Details

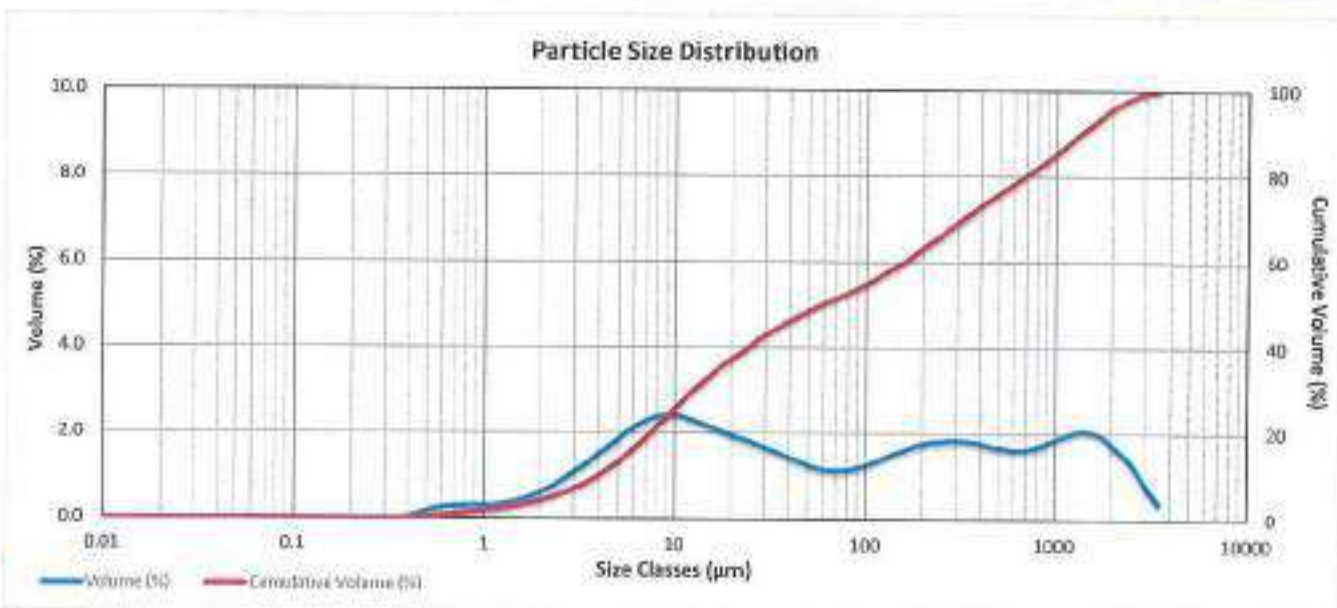
Client: PT. EnviroSolutions & Consulting
Sample ID: MWB 10

Job Number: EV193027-08

Analysis

Particle Name: Solid
Dispersant: Liquid

Result



Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)
0.010	0.00	0.00	0.128	0.00	0.00	1.65	0.45	3.23	21.2	1.89	38.12	272	1.83	67.67
0.011	0.00	0.00	0.146	0.00	0.00	1.80	0.54	3.77	24.1	1.91	39.93	310	1.83	69.50
0.013	0.00	0.00	0.166	0.00	0.00	2.13	0.67	4.44	27.4	1.72	41.65	352	1.81	71.31
0.015	0.00	0.00	0.188	0.00	0.00	2.42	0.79	5.23	31.1	1.63	43.28	400	1.77	73.08
0.017	0.00	0.00	0.214	0.00	0.00	2.75	0.96	6.19	35.3	1.53	44.81	454	1.70	74.78
0.019	0.00	0.00	0.243	0.00	0.00	3.12	1.13	7.32	40.1	1.42	46.23	516	1.66	76.44
0.022	0.00	0.00	0.276	0.00	0.00	3.55	1.31	8.63	45.6	1.32	47.55	586	1.62	78.06
0.024	0.00	0.00	0.314	0.00	0.00	4.03	1.52	10.15	51.8	1.22	48.77	666	1.62	79.68
0.026	0.00	0.00	0.357	0.00	0.00	4.58	1.71	11.86	58.9	1.16	49.93	756	1.66	81.34
0.032	0.00	0.00	0.406	0.04	0.04	5.21	1.92	13.78	68.0	1.12	51.05	869	1.74	83.08
0.036	0.00	0.00	0.460	0.12	0.16	5.92	2.09	15.87	78.0	1.13	52.18	976	1.84	84.92
0.041	0.00	0.00	0.523	0.19	0.35	6.72	2.25	18.12	88.4	1.17	53.35	1109	1.94	86.86
0.046	0.00	0.00	0.594	0.25	0.60	7.64	2.35	20.47	98.1	1.24	54.59	1260	2.02	88.88
0.053	0.00	0.00	0.675	0.28	0.88	8.68	2.41	22.88	111	1.33	55.92	1432	2.05	90.93
0.060	0.00	0.00	0.767	0.29	1.17	9.88	2.42	25.30	127	1.43	57.35	1627	2.09	92.93
0.068	0.00	0.00	0.872	0.30	1.47	11.2	2.37	27.67	144	1.54	58.89	1849	1.86	94.79
0.077	0.00	0.00	0.991	0.30	1.77	12.7	2.29	29.96	163	1.64	60.53	2100	1.68	96.44
0.088	0.00	0.00	1.13	0.30	2.07	14.5	2.19	32.15	186	1.72	62.25	2385	1.39	97.83
0.100	0.00	0.00	1.28	0.33	2.40	16.4	2.09	34.24	211	1.78	64.03	2711	1.07	98.90
0.113	0.00	0.00	1.45	0.35	2.75	18.7	1.99	36.23	240	1.81	65.84	3081	0.73	99.63
												3500	0.07	100.00

Remarks:

Foram debris found in the sample with particle size up to >2500 micron.

Percentils:

Dx (5)	2.33 µm
Dx (10)	3.96 µm
Dx (16)	5.96 µm
Dx (20)	7.44 µm
Dx (25)	9.71 µm
Dx (40)	24.3 µm
Dx (50)	58.3 µm
Dx (60)	157 µm
Dx (75)	462 µm
Dx (80)	682 µm
Dx (84)	916 µm
Dx (90)	1350 µm
Dx (95)	1680 µm
Mode	6.78 µm



PARTICLE SIZE DISTRIBUTION ANALYSIS ANALYSIS REPORT

Measurement Details

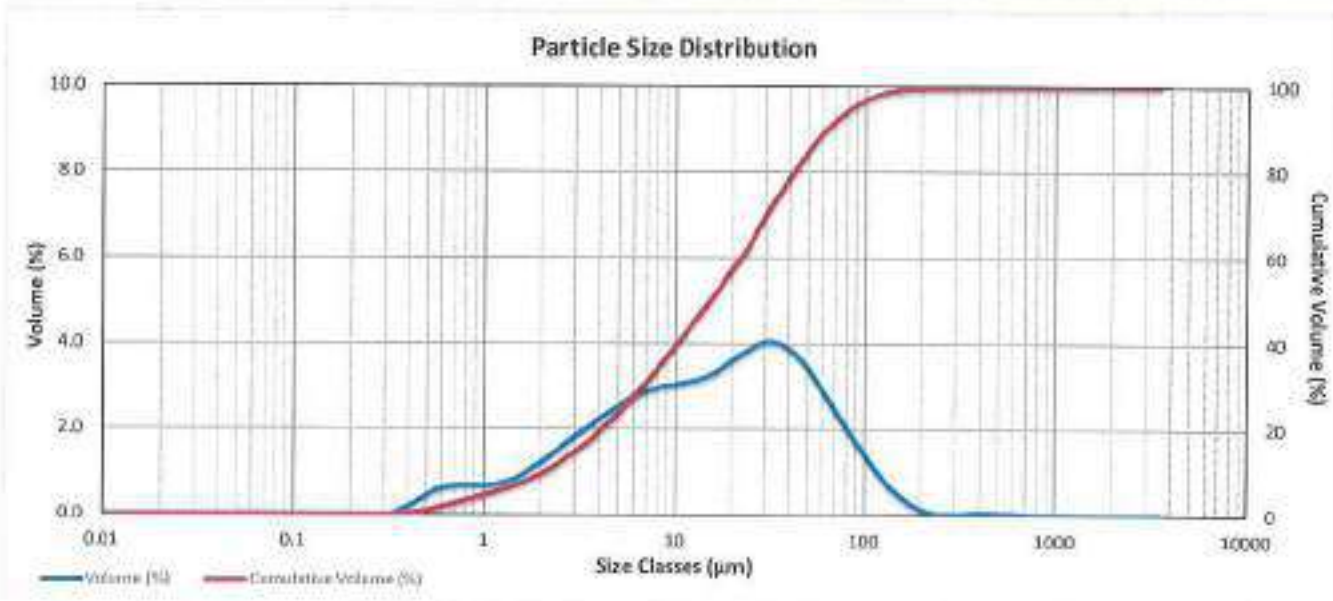
Client PT. EnviroSolutions & Consulting
Sample ID MWB 13

Job Number EV193027-09

Analysis

Particle Name Solid
Dispersant Liquid

Result



Size (µm)	Volume (%)	Cum. Vol. (%)	Size (µm)	Volume (%)	Cum. Vol. (%)	Size (µm)	Volume (%)	Cum. Vol. (%)	Size (µm)	Volume (%)	Cum. Vol. (%)	Size (µm)	Volume (%)	Cum. Vol. (%)
0.010	0.00	0.00	0.128	0.00	0.00	1.65	0.97	7.67	21.2	3.68	68.92	272	0.03	99.74
0.011	0.00	0.00	0.146	0.00	0.00	1.88	1.13	8.80	24.1	3.85	62.77	310	0.02	99.76
0.013	0.00	0.00	0.166	0.00	0.00	2.13	1.30	10.10	27.4	3.98	66.75	362	0.04	99.80
0.015	0.00	0.00	0.188	0.00	0.00	2.42	1.49	11.59	31.1	4.04	70.79	400	0.05	99.85
0.017	0.00	0.00	0.214	0.00	0.00	2.75	1.68	13.27	35.3	4.00	74.79	454	0.05	99.90
0.019	0.00	0.00	0.243	0.00	0.00	3.12	1.86	15.15	40.1	3.88	78.65	516	0.04	99.94
0.022	0.00	0.00	0.276	0.00	0.00	3.55	2.06	17.21	45.6	3.62	82.27	585	0.04	99.98
0.024	0.00	0.00	0.314	0.00	0.00	4.03	2.25	19.46	51.8	3.32	85.59	666	0.02	100.00
0.028	0.00	0.00	0.357	0.09	0.09	4.58	2.42	21.88	58.9	2.96	88.55	756	0.00	100.00
0.032	0.00	0.00	0.405	0.20	0.28	5.21	2.58	24.46	66.9	2.58	91.13	859	0.00	100.00
0.036	0.00	0.00	0.460	0.35	0.64	5.92	2.73	27.19	76.0	2.19	93.32	975	0.00	100.00
0.041	0.00	0.00	0.523	0.50	1.14	6.72	2.85	30.04	86.4	1.81	95.13	1109	0.00	100.00
0.046	0.00	0.00	0.594	0.60	1.74	7.64	2.93	32.97	98.1	1.45	96.58	1280	0.00	100.00
0.053	0.00	0.00	0.675	0.68	2.40	8.68	3.00	35.97	111	1.11	97.69	1432	0.00	100.00
0.060	0.00	0.00	0.767	0.68	3.08	9.98	3.03	39.00	127	0.81	98.50	1627	0.00	100.00
0.068	0.00	0.00	0.872	0.68	3.76	11.2	3.08	42.08	144	0.55	99.05	1849	0.00	100.00
0.077	0.00	0.00	0.991	0.67	4.43	12.7	3.13	45.21	163	0.34	99.39	2100	0.00	100.00
0.088	0.00	0.00	1.13	0.69	5.12	14.5	3.21	48.42	186	0.19	99.58	2389	0.00	100.00
0.100	0.00	0.00	1.28	0.75	5.87	16.4	3.33	51.75	211	0.10	99.68	2711	0.00	100.00
0.113	0.00	0.00	1.45	0.83	6.70	18.7	3.48	55.24	240	0.03	99.71	3081	0.00	100.00
												3500	0.00	100.00

Remarks:

Percentils:

Dx (5) 1.10 µm
Dx (10) 2.11 µm
Dx (16) 3.29 µm
Dx (20) 4.15 µm
Dx (25) 5.34 µm
Dx (40) 10.3 µm
Dx (50) 15.4 µm
Dx (60) 22.0 µm
Dx (75) 35.6 µm
Dx (80) 42.1 µm
Dx (84) 48.8 µm
Dx (90) 63.3 µm
Dx (95) 85.6 µm
Mode 29.5 µm



QUALITY CONTROL - ACCURACY

Job Number : EV193027-C
Customer : PT. EnviroSolutions & Consulting
Project Name : Sediment Analysis
Customer Ref : 7987.r5/IUS-EV/I/2020

No	Description	Method	Units	Limit of Reporting	Reference Material		% Recovery
					Expected Value	Result	
	Miscellaneous						
1	Particle Size Distribution**	Laser Diffraction (LPSA)	%	0.01	-	-	-

Reference Materials are QC samples of known concentration prepared independently of the calibration standards.

Results are used to verify that analytical precision is in control and that the level of bias due to calibration is acceptable. Generally speaking, % Recovery should fall between 85% to 115% (except Gas Chromatography methods).

Limit of Reporting means the lowest concentration at which an analyte can be detected in a sample and its concentration can be reported with a reasonable degree of accuracy and precision based on the analytical methodology used.

ENVIRONMENTAL TEST REPORT

Ms. Yanti Setiakurniasih
PT. EnviroSolutions & Consulting
Intiland Tower Lt. 18
Jl. Jend. Sudirman Kav.32 RT 003 RW 002
Jakarta,
INDONESIA

Job Number : EV193064
Customer Ref : 7987.r5/IUS-EV/I/2020
Project Name : Seawater & Sediment Analysis

Number of samples : 10

Date received : 29-Nov-2019

Date reported : 26-Dec-2019

Approved Signature for:



Reginald C. de Wit
Manager Environmental Services

All work is performed in accordance with Intertek Standard Terms and Conditions of work <http://www.intertek.com/terms/>

This report relates specifically to the sample(s) tested in so far as that the sample(s) is truly representative of the sample source as received.

This report was prepared solely for the use of the client named in this report. PT Intertek Utama Services accepts no responsibility for any loss, damage or liability suffered by any third party as a result of any reliance upon or use of this report.

DO NOT PHOTOCOPY



SAMPLE INFORMATION

Job Number : EV193064
Customer : PT. EnviroSolutions & Consulting
Project Name : Seawater & Sediment Analysis
Customer Ref : 7987.r5/IUS-EV/I/2020

No.	Laboratory Sample I.D.	Customer Sample I.D.	Sample Matrix	Date Sampled	Time Sampled	Date Received	Sampled By	Coordinates
1	EV193064-1	MWB 9	Seawater	27-Nov-19	10:05	29-Nov-19	Fahru Roji, Husni, Hilman	S : 08° 00' 25.708" E : 131° 15' 15.267"
2	EV193064-2	MWB 8	Seawater	27-Nov-19	10:30	29-Nov-19	Fahru Roji, Husni, Hilman	S : 08° 00' 43.034" E : 131° 15' 42.835"
3	EV193064-3	MWB 7	Seawater	27-Nov-19	10:53	29-Nov-19	Fahru Roji, Husni, Hilman	S : 08° 00' 09.523" E : 131° 15' 34.002"
4	EV193064-4	MWB 6	Seawater	27-Nov-19	12:10	29-Nov-19	Fahru Roji, Husni, Hilman	S : 07° 59' 46.585" E : 131° 16' 02.110"
5	EV193064-5	MWB 5	Seawater	27-Nov-19	13:20	29-Nov-19	Fahru Roji, Husni, Hilman	S : 07° 59' 07.586" E : 131° 16' 26.095"
6	EV193064-6	MWB 9	Sediment	27-Nov-19	10:05	29-Nov-19	Fahru Roji, Husni, Hilman	S : 08° 00' 25.708" E : 131° 15' 15.267"
7	EV193064-7	MWB 8	Sediment	27-Nov-19	10:30	29-Nov-19	Fahru Roji, Husni, Hilman	S : 08° 00' 43.034" E : 131° 15' 42.835"
8	EV193064-8	MWB 7	Sediment	27-Nov-19	10:53	29-Nov-19	Fahru Roji, Husni, Hilman	S : 08° 00' 09.523" E : 131° 15' 34.002"
9	EV193064-9	MWB 6	Sediment	27-Nov-19	12:10	29-Nov-19	Fahru Roji, Husni, Hilman	S : 07° 59' 46.585" E : 131° 16' 02.110"
10	EV193064-10	MWB 5	Sediment	27-Nov-19	13:20	29-Nov-19	Fahru Roji, Husni, Hilman	S : 07° 59' 07.586" E : 131° 16' 26.095"

Notes:

- NA = Not Analysed
- ND = Not Detected
- IS = Insufficient Sample
- ** = Non Accredited Test
- *** = Subcontracted Test
- 1) = Field Measurement
- 2) = Field Measurement by Customer
- 3) = Total Pesticides defined as 30 OCP compounds (list available upon request)
- 4) = Total PAHs defined as 16 PAH compounds (list available upon request)
- 5) = Total PCBs defined as 20 PCB congeners (list available upon request)
- SNR= Sample Not Received



Job Number : EV193064
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/II2020

Laboratory Sample I.D :			EV193064-1	EV193064-2	EV193064-3
Customer Sample I.D :			MWB 9	MWB 8	MWB 7
Date Sampled :			27-Nov-19	27-Nov-19	27-Nov-19
Sample Matrix :			Seawater	Seawater	Seawater
No.	Test Description	Units	Results	Results	Results
Physical Tests					
1	Brightness ⁽¹⁾	m	11	10	12
2	Floating Matter ⁽¹⁾	-	None	None	None
3	Oil Film ⁽¹⁾	-	None	None	None
4	pH ⁽¹⁾	S.U.	8.20	8.15	8.14
5	Salinity ⁽¹⁾	‰/100	34.2	34.3	33.9
6	Temperature ⁽¹⁾	°C	29.5	29.5	29.5
7	Total Suspended Solids, TSS	mg/L	3	3	2
8	Turbidity	NTU	<0.5	<0.5	<0.5
Anions					
1	Cyanide (Total), CN ⁻	mg/L	<0.005	<0.005	<0.005
2	Sulphide as H ₂ S	mg/L	<0.002	<0.002	<0.002
Nutrients					
1	Total Ammonia, NH ₃ -N	mg/L	<0.02	<0.02	<0.02
2	Nitrate, NO ₃ -N	mg/L	0.043	0.050	0.057
3	Total Phosphorus as PO ₄	mg/L	0.111	0.067	0.076
Dissolved Metals					
1	Arsenic, As	mg/L	0.0012	0.0015	0.0015
2	Cadmium, Cd	mg/L	<0.0001	<0.0001	<0.0001
3	Chromium Hexavalent, Cr ⁶⁺	mg/L	<0.002	<0.002	<0.002
4	Copper, Cu	mg/L	<0.001	<0.001	<0.001
5	Lead, Pb	mg/L	<0.001	<0.001	<0.001
6	Mercury, Hg	mg/L	<0.00005	<0.00005	<0.00005
7	Nickel, Ni	mg/L	<0.001	<0.001	<0.001
8	Zinc, Zn	mg/L	<0.005	<0.005	<0.005
Microbiology					
1	Total Coliforms ^{(1)&+}	CFU/100ml	ND	ND	ND
2	Faecal Coliforms	CFU/100ml	ND	ND	ND



Job Number : EV193064
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193064-1	EV193064-2	EV193064-3
Customer Sample I.D :			MWB 9	MWB 8	MWB 7
Date Sampled :			27-Nov-19	27-Nov-19	27-Nov-19
Sample Matrix :			Seawater	Seawater	Seawater
No.	Test Description	Units	Results	Results	Results
Miscellaneous					
1	Chemical Oxygen Demand, COD	mg/L	8	5	6
2	Biochemical Oxygen Demand, BOD ₅	mg/L	<2	<2	<2
3	Chlorine (Free), Cl ₂	mg/L	<0.01	<0.01	<0.01
4	Dissolved Oxygen, DO ¹¹	mg/L	5.60	5.80	5.60
5	Oil & Grease	mg/L	<1	<1	<1
6	Surfactants, MBAS	mg/L	<0.01	<0.01	<0.01
7	Total Organic Carbon, TOC	mg/L	3.6	2.5	2.1
8	Total Phenols	mg/L	<0.001	<0.001	<0.001
Organics Tests					
1	Polycyclic Aromatic Hydrocarbons, PAHs Total ⁴¹	µg/L	<0.1	<0.1	<0.1
BTEX					
1	Benzene	µg/L	<1	<1	<1
2	Toluene	µg/L	<1	<1	<1
3	Ethyl Benzene	µg/L	<1	<1	<1
4	Xylenes Total	µg/L	<3	<3	<3

Note: Refer to QA/QC – Accuracy page for list of analytical methods used



Job Number : EV193064
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193064-4	EV193064-5
Customer Sample I.D :			MWB 6	MWB 5
Date Sampled :			27-Nov-19	27-Nov-19
Sample Matrix :			Seawater	Seawater
No.	Test Description	Units	Results	Results
Physical Tests				
1	Brightness ¹¹	m	10	11
2	Floating Matter ¹¹	-	None	None
3	Oil Film ¹¹	-	None	None
4	pH ¹¹	S.U.	8.15	8.20
5	Salinity ¹¹	‰	34.3	34.3
6	Temperature ¹¹	°C	28.3	28.3
7	Total Suspended Solids, TSS	mg/L	2	2
8	Turbidity	NTU	<0.5	<0.5
Anions				
1	Cyanide (Total), CN ⁻	mg/L	<0.005	<0.005
2	Sulphide as H ₂ S	mg/L	<0.002	<0.002
Nutrients				
1	Total Ammonia, NH ₃ -N	mg/L	<0.02	<0.02
2	Nitrate, NO ₃ -N	mg/L	0.050	0.049
3	Total Phosphorus as PO ₄	mg/L	0.108	0.087
Dissolved Metals				
1	Arsenic, As	mg/L	0.0011	0.0015
2	Cadmium, Cd	mg/L	<0.0001	<0.0001
3	Chromium Hexavalent, Cr ⁶⁺	mg/L	<0.002	<0.002
4	Copper, Cu	mg/L	<0.001	<0.001
5	Lead, Pb	mg/L	<0.001	<0.001
6	Mercury, Hg	mg/L	<0.00005	<0.00005
7	Nickel, Ni	mg/L	<0.001	<0.001
8	Zinc, Zn	mg/L	<0.005	<0.005
Microbiology				
1	Total Coliforms ^{11xx}	CFU/100ml	ND	ND
2	Faecal Coliforms	CFU/100ml	ND	ND



Job Number : EV193064
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193064-4	EV193064-5
Customer Sample I.D :			MWB 6	MWB 5
Date Sampled :			27-Nov-19	27-Nov-19
Sample Matrix :			Seawater	Seawater
No.	Test Description	Units	Results	Results
Miscellaneous				
1	Chemical Oxygen Demand, COD	mg/L	4	6
2	Biochemical Oxygen Demand, BOD ₅	mg/L	<2	<2
3	Chlorine (Free), Cl ₂	mg/L	<0.01	<0.01
4	Dissolved Oxygen, DO ^o	mg/L	5.70	5.80
5	Oil & Grease	mg/L	<1	<1
6	Surfactants, MBAS	mg/L	<0.01	<0.01
7	Total Organic Carbon, TOC	mg/L	1.7	2.2
8	Total Phenols	mg/L	<0.001	<0.001
Organics Tests				
1	Polycyclic Aromatic Hydrocarbons, PAHs Total ⁽¹⁾	µg/L	<0.1	<0.1
BTEX				
1	Benzene	µg/L	<1	<1
2	Toluene	µg/L	<1	<1
3	Ethyl Benzene	µg/L	<1	<1
4	Xylenes Total	µg/L	<3	<3

Note: Refer to QA/QC – Accuracy page for list of analytical methods used



Job Number : EV193064
Customer : PT. EnviroSolutions & Consulting
Project Name : Seawater & Sediment Analysis
Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193064-6	EV193064-7	EV193064-8
Customer Sample I.D :			MWB 9	MWB 8	MWB 7
Date Sampled :			27-Nov-19	27-Nov-19	27-Nov-19
Sample Matrix :			Sediment	Sediment	Sediment
No.	Test Description	Units	Results	Results	Results
	Total Metals				
1	Antimony, Sb	mg/dry kg	<0.1	<0.1	<0.1
2	Arsenic, As	mg/dry kg	2.3	2.5	2.9
3	Cadmium, Cd	mg/dry kg	0.15	1.82	0.75
4	Chromium, Cr	mg/dry kg	24.1	22.8	23.4
5	Copper, Cu	mg/dry kg	14.4	15.8	14.4
6	Lead, Pb	mg/dry kg	4.9	4.8	4.9
7	Mercury, Hg	mg/dry kg	0.020	0.021	0.021
8	Nickel, Ni	mg/dry kg	16.8	16.1	17.0
9	Silver, Ag	mg/dry kg	<0.02	<0.02	<0.02
10	Zinc, Zn	mg/dry kg	31	32	33

Note: Refer to QA/QC – Accuracy page for list of analytical methods used



Job Number : EV193064
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/US-EV/U2020

Laboratory Sample I.D :			EV193064-9	EV193064-10
Customer Sample I.D :			MWB 8	MWB 5
Date Sampled :			27-Nov-19	27-Nov-19
Sample Matrix :			Sediment	Sediment
No.	Test Description	Units	Results	Results
	Total Metals			
1	Antimony, Sb	mg/dry kg	<0.1	<0.1
2	Arsenic, As	mg/dry kg	3.8	4.3
3	Cadmium, Cd	mg/dry kg	0.19	0.20
4	Chromium, Cr	mg/dry kg	28.0	28.5
5	Copper, Cu	mg/dry kg	18.8	21.0
6	Lead, Pb	mg/dry kg	7.1	7.6
7	Mercury, Hg	mg/dry kg	0.024	0.028
8	Nickel, Ni	mg/dry kg	20.4	21.2
9	Silver, Ag	mg/dry kg	0.04	0.04
10	Zinc, Zn	mg/dry kg	48	46

Note: Refer to QA/QC – Accuracy page for list of analytical methods used



QUALITY CONTROL - PRECISION

Job Number : EV193064
Customer : PT. EnviroSolutions & Consulting
Project Name : Seawater & Sediment Analysis
Customer Ref : 7987_r5/IUS-EV/II/2020

No	Description	Units	Laboratory Replicate		% RPD
			EV193064-1	EV193064-1 Duplicate	
	Microbiology				
1	Total Coliforms ^{1/100}	CFU/100ml	ND	ND	-
	BTEX				
1	Benzene	µg/L	<1	<1	-
2	Toluene	µg/L	<1	<1	-
3	Ethyl Benzene	µg/L	<1	<1	-
4	Xylenes Total	µg/L	<3	<3	-

The laboratory analyzes duplicate aliquots of one or more samples within each batch.

Results are used to estimate analytical precision for that matrix at that concentration.

RPDs of up to 15% are considered acceptable for many test methods (except for results which are < 10x DL)



QUALITY CONTROL - PRECISION

Job Number : EV193064
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

No	Description	Units	Laboratory Replicate		% RPD
			EV193064-5	EV193064-5 Duplicate	
Physical Tests					
1	Brightness ¹⁾	m	11	-	-
2	Floating Matter ¹⁾	-	None	-	-
3	Oil Film ¹⁾	-	None	-	-
4	pH ²⁾	S.U.	8.20	-	-
5	Salinity ³⁾	‰	34.3	-	-
6	Temperature ³⁾	°C	29.3	-	-
7	Total Suspended Solids, TSS	mg/L	2	2	0.0%
8	Turbidity	NTU	<0.5	<0.5	-
Anions					
1	Cyanide (Total), CN ⁻	mg/L	<0.005	<0.005	-
2	Sulphide as H ₂ S	mg/L	<0.002	-	-
Nutrients					
1	Total Ammonia, NH ₃ -N	mg/L	<0.02	<0.02	-
2	Nitrate, NO ₃ -N	mg/L	0.049	0.049	0.0%
3	Total Phosphorus as PO ₄	mg/L	0.087	0.089	2.4%
Dissolved Metals					
1	Arsenic, As	mg/L	0.0015	0.0014	5.6%
2	Cadmium, Cd	mg/L	<0.0001	<0.0001	-
3	Chromium Hexavalent, Cr ⁶⁺	mg/L	<0.002	<0.002	-
4	Copper, Cu	mg/L	<0.001	<0.001	-
5	Lead, Pb	mg/L	<0.001	<0.001	-
6	Mercury, Hg	mg/L	<0.00005	<0.00005	-
7	Nickel, Ni	mg/L	<0.001	<0.001	-
8	Zinc, Zn	mg/L	<0.005	<0.005	-
Microbiology					
1	Total Coliforms ¹⁾⁺⁺	CFU/100ml	ND	-	-
2	Faecal Coliforms	CFU/100ml	ND	-	-



QUALITY CONTROL - PRECISION

Job Number : EV193064
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

No	Description	Units	Laboratory Replicate		% RPD
			EV193064-5	EV193064-5 Duplicate	
	Miscellaneous				
1	Chemical Oxygen Demand, COD	mg/L	6	6	0.0%
2	Biochemical Oxygen Demand, BOD ₅	mg/L	<2	<2	-
3	Chlorine (Free), Cl ₂	mg/L	<0.01	<0.01	-
4	Dissolved Oxygen, DO ¹¹	mg/L	5.80	-	-
5	Oil & Grease	mg/L	<1	-	-
6	Surfactants, MBAS	mg/L	<0.01	<0.01	-
7	Total Organic Carbon, TOC	mg/L	2.2	2.4	10.3%
8	Total Phenols	mg/L	<0.001	<0.001	-
	Organics Tests				
1	Polycyclic Aromatic Hydrocarbons, PAHs Total ¹⁰	µg/L	<0.1	-	-
	BTEX				
1	Benzene	µg/L	<1	<1	-
2	Toluene	µg/L	<1	<1	-
3	Ethyl Benzene	µg/L	<1	<1	-
4	Xylenes Total	µg/L	<3	<3	-

The laboratory analyzes duplicate aliquots of one or more samples within each batch.

Results are used to estimate analytical precision for that matrix at that concentration.

RPDs of up to 15% are considered acceptable for many test methods (except for results which are < 10x DL)



QUALITY CONTROL - PRECISION

Job Number : EV193064
Customer : PT. EnviroSolutions & Consulting
Project Name : Seawater & Sediment Analysis
Customer Ref : 7987.r5/IUS-EVII/2020

No	Description	Units	Laboratory Replicate		% RPD
			EV193064-10	EV193064-10 Duplicate	
	Total Metals				
1	Antimony, Sb	mg/dry kg	<0.1	<0.1	-
2	Arsenic, As	mg/dry kg	4.3	4.4	2.3%
3	Cadmium, Cd	mg/dry kg	0.20	0.23	14.0%
4	Chromium, Cr	mg/dry kg	28.5	27.7	2.8%
5	Copper, Cu	mg/dry kg	21.0	21.7	3.3%
6	Lead, Pb	mg/dry kg	7.8	7.9	3.9%
7	Mercury, Hg	mg/dry kg	0.028	0.025	11.3%
8	Nickel, Ni	mg/dry kg	21.2	21.0	0.9%
9	Silver, Ag	mg/dry kg	0.04	0.05	12.2%
10	Zinc, Zn	mg/dry kg	46	47	2.2%

The laboratory analyzes duplicate aliquots of one or more samples within each batch.

Results are used to estimate analytical precision for that matrix at that concentration.

RPDs of up to 50% are considered acceptable for many test methods (except for results which are < 10x DL)



QUALITY CONTROL - ACCURACY

Job Number : EV193064
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IJS-EV/I/2020

No	Description	Method	Units	Limit of Reporting	Reference Material		% Recovery
					Expected Value	Result	
	Physical Tests						
1	pH ⁽¹⁾	APHA 4500-H+ B	S.U.	-	-	-	-
2	Total Suspended Solids, TSS	APHA 2540 D	mg/L	1	32	33	103%
3	Turbidity	APHA 2130 B	NTU	0.5	14.8	14.1	95%
	Anions						
1	Cyanide (Total), CN ⁻	APHA 4500CN C,E	mg/L	0.005	0.472	0.436	92%
2	Sulphide as H ₂ S	APHA 4500-S2 G	mg/L	0.002	-	-	-
	Nutrients						
1	Total Ammonia, NH ₃ -N	APHA 4500NH3 D	mg/L	0.02	17.2	16.4	96%
2	Nitrate, NO ₃ -N	APHA 4500NO3-E	mg/L	0.005	16.1	17.7	110%
3	Total Phosphorus as PO ₄	APHA 4500P E	mg/L	0.005	25.46	24.8	98%
	Dissolved Metals						
1	Arsenic, As	APHA 3125 B	mg/L	0.0005	0.11	0.104	94%
2	Cadmium, Cd	APHA 3125 B	mg/L	0.0001	0.389	0.377	97%
3	Chromium Hexavalent, Cr ⁶⁺	APHA 3503-Cr B	mg/L	0.002	0.561	0.561	100%
4	Copper, Cu	APHA 3125 B	mg/L	0.001	0.476	0.501	105%
5	Lead, Pb	APHA 3125 B	mg/L	0.001	0.786	0.747	95%
6	Mercury, Hg	USEPA 245.7	mg/L	0.00005	0.0133	0.0127	96%
7	Nickel, Ni	APHA 3125 B	mg/L	0.001	1.13	1.12	99%
8	Zinc, Zn	APHA 3125 B	mg/L	0.005	0.609	0.612	101%



QUALITY CONTROL - ACCURACY

Job Number : EV193064
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/US-EV/2020

No	Description	Method	Units	Limit of Reporting	Reference Material		% Recovery
					Expected Value	Result	
	Microbiology						
1	Total Coliforms	APHA 9222B	CFU/100ml	1	-	-	-
2	Faecal Coliforms	APHA 9222D	CFU/100ml	1	-	-	-
	Miscellaneous						
1	Chemical Oxygen Demand, COD	APHA 5220 C	mg/L	2	147	141	96%
2	Biochemical Oxygen Demand, BOD ₅	APHA 5210 B	mg/L	2	90.5	89	97%
3	Chlorine (Total), Cl ₂	APHA 4500-Cl I	mg/L	0.01	1.00	0.99	99%
4	Oil & Grease	APHA 5520 B	mg/L	1	144	126	88%
5	Surfactants, MBAS	APHA 5540 C	mg/L	0.01	0.222	0.23	105%
6	Total Organic Carbon, TOC	APHA 5310 C	mg/L	0.5	58.5	57.5	98%
7	Total Phenols	USEPA 8065	mg/L	0.001	4.95	5.30	107%
	Organics Tests						
1	Polycyclic Aromatic Hydrocarbons, PAHs	USEPA 8270C	µg/L	0.1	8.0	7.7	96%
	BTEX						
1	Benzene	USEPA 8260B	µg/L	1	14.1	13.5	96%
2	Toluene	USEPA 8260B	µg/L	1	7.0	6.6	94%
3	Ethyl Benzene	USEPA 8260B	µg/L	1	7.6	7.4	97%
4	Xylenes Total	USEPA 8260B	µg/L	3	38.2	37.2	98%



QUALITY CONTROL - ACCURACY

Job Number : EV193064
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EVI/2020

No	Description	Method	Units	Limit of Reporting	Reference Material		% Recovery
					Expected Value	Result	
	Total Metals						
1	Antimony, Sb	USEPA 3050B/APHA 3125B	mg/dry kg	0.1	-	-	-
2	Arsenic, As	USEPA 3050B/APHA 3125B	mg/dry kg	0.1	221	209	95%
3	Cadmium, Cd	USEPA 3050B/APHA 3125B	mg/dry kg	0.02	126	126	100%
4	Chromium, Cr	USEPA 3050B/APHA 3125B	mg/dry kg	0.2	74.7	75.6	101%
5	Copper, Cu	USEPA 3050B/APHA 3125B	mg/dry kg	0.2	83.3	88.1	106%
6	Lead, Pb	USEPA 3050B/APHA 3125B	mg/dry kg	0.2	79.9	79.3	99%
7	Mercury, Hg	USEPA 3050B/USEPA245.7	mg/dry kg	0.001	13.8	12.7	92%
8	Nickel, Ni	USEPA 3050B/APHA 3125B	mg/dry kg	0.2	178	172	97%
9	Silver, Ag	USEPA 3050B/APHA 3125B	mg/dry kg	0.02	59.6	54.5	91%
10	Zinc, Zn	USEPA 3050B/APHA 3125B	mg/dry kg	1	338	324	96%

Reference Materials are QC samples of known concentration prepared independently of the calibration standards.

Results are used to verify that analytical precision is in control and that the level of bias due to calibration is acceptable. Generally speaking, % Recovery should fall between 85% to 115% (except Gas Chromatography methods).

Limit of Reporting means the lowest concentration at which an analyte can be detected in a sample and its concentration can be reported with a reasonable degree of accuracy and precision based on the analytical methodology used.

V1.7-6

ENVIRONMENTAL TEST REPORT

Ms. Yanti Setiakurniasih
PT. EnviroSolutions & Consulting
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Jakarta,
INDONESIA

Job Number : EV193064-A
Customer Ref : 7987.r5/IUS-EV/I/2020
Project Name : Seawater & Sediment Analysis

Number of samples : 5

Date received : 29-Nov-2019

Date reported : 26-Dec-2019

Approved Signature for:



Reginald C. de Wit
Manager Environmental Services

All work is performed in accordance with Intertek Standard Terms and Conditions of work <http://www.intertek.com/terms/>

This report relates specifically to the sample(s) tested in so far as that the sample(s) is truly representative of the sample source as received.

This report was prepared solely for the use of the client named in this report. PT Intertek Utama Services accepts no responsibility for any loss, damage or liability suffered by any third party as a result of any reliance upon or use of this report.

DO NOT PHOTOCOPY





SAMPLE INFORMATION

Job Number : EV193064-A
Customer : PT. EnviroSolutions & Consulting
Project Name : Seawater & Sediment Analysis
Customer Ref : 7987.r5/IUS-EV/II/2020

No.	Laboratory Sample I.D.	Customer Sample I.D.	Sample Matrix	Date Sampled	Time Sampled	Date Received	Sampled By	Coordinates	
1	EV193064-1	MWB 9	Seawater	27-Nov-19	10:05	29-Nov-19	Fahru Roji, Husni, Hilman	S : 08° 00' 25.708"	E : 131° 15' 15.267"
2	EV193064-2	MWB 8	Seawater	27-Nov-19	10:30	29-Nov-19	Fahru Roji, Husni, Hilman	S : 08° 00' 43.034"	E : 131° 15' 42.835"
3	EV193064-3	MWB 7	Seawater	27-Nov-19	10:53	29-Nov-19	Fahru Roji, Husni, Hilman	S : 08° 00' 09.523"	E : 131° 15' 34.002"
4	EV193064-4	MWB 6	Seawater	27-Nov-19	12:10	29-Nov-19	Fahru Roji, Husni, Hilman	S : 07° 59' 46.585"	E : 131° 16' 02.110"
5	EV193064-5	MWB 5	Seawater	27-Nov-19	13:20	29-Nov-19	Fahru Roji, Husni, Hilman	S : 07° 59' 07.586"	E : 131° 16' 26.085"

Notes:

NA = Not Analysed

ND = Not Detected

IS = Insufficient Sample

** = Non Accredited Test

*** = Subcontracted Test

1) = Field Measurement

2) = Field Measurement by Customer

3) = Total Pesticides defined as 30 OCP compounds (list available upon request)

4) = Total PAHs defined as 16 PAH compounds (list available upon request)

5) = Total PCBs defined as 20 PCB congeners (list available upon request)

SNR = Sample Not Received



Job Number : EV193064-A
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193064-1	EV193064-2	EV193064-3
Customer Sample I.D :			MWB 9	MWB 8	MWB 7
Date Sampled :			27-Nov-19	27-Nov-19	27-Nov-19
Sample Matrix :			Seawater	Seawater	Seawater
No.	Test Description	Units	Results	Results	Results
	PLANKTON***				
	1. PHYTOPLANKTON				
	BACILLARIOPHYCEAE				
1	Bacillaria sp.	Cell/m ³	708	531	708
2	Lucinophora sp.	Cell/m ³	-	354	-
3	Navicula sp.	Cell/m ³	1,062	3,540	885
4	Nitzschia sp.	Cell/m ³	22,656	80,180	5,684
5	Pleurosigma sp.	Cell/m ³	708	-	-
6	Skeletona sp.	Cell/m ³	-	-	-
7	Thalassionema sp.	Cell/m ³	-	1,416	1,062
8	Thalassiothrix sp.	Cell/m ³	708	2,478	1,062
	COSCIODISCOPHYCEAE				
1	Asterionampa sp.	Cell/m ³	177	-	-
2	Coscinodiscus sp.	Cell/m ³	5,487	2,832	2,655
3	Guanardia sp.	Cell/m ³	177	4,779	3,186
4	Rhizosolenia sp.	Cell/m ³	66,375	97,173	374,532
	CYANOPHYCEAE				
1	Trichodesmium sp.	Cell/m ³	241,428	279,837	757,206
	DINOPHYCEAE				
1	Ceratium sp.	Cell/m ³	7,434	5,133	9,204
2	Dinophysis sp.	Cell/m ³	1,770	1,239	1,593
3	Omlthocercus sp.	Cell/m ³	177	-	-
4	Peridinium sp.	Cell/m ³	3,363	3,186	885
5	Pyrophacus sp.	Cell/m ³	177	-	-

R



Job Number : EV193064-A
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193064-1	EV193064-2	EV193064-3
Customer Sample I.D :			MWB 9	MWB 8	MWB 7
Date Sampled :			27-Nov-19	27-Nov-19	27-Nov-19
Sample Matrix :			Seawater	Seawater	Seawater
No.	Test Description	Units	Results	Results	Results
MEDIOPHYCEAE					
1	<i>Bacillaria paxillifera</i> sp.	Cell/m ³	14,337	18,585	8,319
2	<i>Biddulphia</i> sp.	Cell/m ³	177	1,416	-
3	<i>Coastaulina</i> sp.	Cell/m ³	1,593	1,002	-
4	<i>Chaetoceros</i> sp.	Cell/m ³	541,974	453,651	98,235
5	<i>Eucampia</i> sp.	Cell/m ³	-	1,593	1,062
6	<i>Hemiaulus</i> sp.	Cell/m ³	4,425	15,576	5,841
7	<i>Leptocylindrus</i> sp.	Cell/m ³	11,151	15,399	6,195
Total Taxa (s)					
Abundance		Cell/m ³	926,064	969,960	1,278,294
Diversity Index			1.23	1.50	1.08
Equitability Index			0.40	0.50	0.38
Dominance Index			0.42	0.32	0.44
2. ZOOPLANKTON					
APPENDICULARIA					
1	<i>Oikopleura</i> sp.	Ind/m ³	177	531	1,062
COPEPODA					
1	<i>Acartia</i> sp.	Ind/m ³	-	1,770	3,303
2	<i>Balanus</i> sp.	Ind/m ³	531	-	-
3	<i>Calanopia</i> sp.	Ind/m ³	177	-	177
4	<i>Calanus</i> sp.	Ind/m ³	885	1,062	354
5	<i>Corycaeus</i> sp.	Ind/m ³	-	-	177
6	<i>Macrosetella</i> sp.	Ind/m ³	531	-	-
7	<i>Microsetella</i> sp.	Ind/m ³	1,947	177	-
8	<i>Oithona</i> sp.	Ind/m ³	4,248	1,947	1,770
9	<i>Oncaea</i> sp.	Ind/m ³	1,416	177	177
10	<i>Tentara</i> sp.	Ind/m ³	4,425	6,372	3,894
GLOBOTHALAMEA					
1	<i>Globigerina</i> sp.	Ind/m ³	354	-	354
2	<i>Globorotala</i> sp.	Ind/m ³	2,476	708	531



Job Number : EV193064-A
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193064-1	EV193064-2	EV193064-3
Customer Sample I.D :			MWB 9	MWB 8	MWB 7
Date Sampled :			27-Nov-19	27-Nov-19	27-Nov-19
Sample Matrix :			Seawater	Seawater	Seawater
No.	Test Description	Units	Results	Results	Results
OLIGOTRICHEA					
1	<i>Amphorellopsis</i> sp.	Ind/m ³	177	-	-
2	<i>Codonellopsis</i> sp.	Ind/m ³	177	177	-
3	<i>Eutima</i> sp.	Ind/m ³	354	177	177
4	<i>Favea</i> sp.	Ind/m ³	-	354	-
5	<i>Parafavea</i> sp.	Ind/m ³	-	-	-
SAGITTOIDEA					
1	<i>Sagitta</i> sp.	Ind/m ³	354	177	-
Total Taxa (s)			15	12	11
Abundance		Ind/m ³	18,231	13,629	12,036
Diversity Index			2.15	1.75	1.81
Equitability Index			0.80	0.71	0.76
Dominance Index			0.15	0.27	0.22

Note: Refer to QA/QC – Accuracy page for list of analytical methods used



Job Number : EV193064-A
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/2020

Laboratory Sample I.D :			EV193064-4	EV193064-5
Customer Sample I.D :			MWB 6	MWB 5
Date Sampled :			27-Nov-19	27-Nov-19
Sample Matrix :			Seawater	Seawater
No.	Test Description	Units	Results	Results
	PLANKTON**			
	1. PHYTOPLANKTON			
	BACILLARIOPHYCEAE			
1	<i>Bacillaria</i> sp.	Cell/m ³	-	354
2	<i>Licnophora</i> sp.	Cell/m ³	177	177
3	<i>Navicula</i> sp.	Cell/m ³	3,540	885
4	<i>Nitzschia</i> sp.	Cell/m ³	51,861	22,633
5	<i>Pleurosigma</i> sp.	Cell/m ³	354	177
6	<i>Surirella</i> sp.	Cell/m ³	177	-
7	<i>Thalassionema</i> sp.	Cell/m ³	708	531
8	<i>Thalassiothrix</i> sp.	Cell/m ³	1,062	2,632
	COSCINODISCOPHYCEAE			
1	<i>Asterolampra</i> sp.	Cell/m ³	177	-
2	<i>Coscinodiscus</i> sp.	Cell/m ³	2,655	2,124
3	<i>Gumardie</i> sp.	Cell/m ³	5,664	6,372
4	<i>Rhizosolenia</i> sp.	Cell/m ³	111,864	53,808
	CYANOPHYCEAE			
1	<i>Trichodesmium</i> sp.	Cell/m ³	208,506	128,201
	DINOPHYCEAE			
1	<i>Ceratium</i> sp.	Cell/m ³	2,301	5,133
2	<i>Dinophysis</i> sp.	Cell/m ³	708	885
3	<i>Ornithocercus</i> sp.	Cell/m ³	177	-
4	<i>Peridinium</i> sp.	Cell/m ³	1,593	2,655
5	<i>Pyrophacus</i> sp.	Cell/m ³	531	354



Job Number : EV193064-A
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193064-4	EV193064-5
Customer Sample I.D :			MWB 6	MWB 5
Date Sampled :			27-Nov-19	27-Nov-19
Sample Matrix :			Seawater	Seawater
No.	Test Description	Units	Results	Results
MEDIOPHYCEAE				
1	<i>Bacteriastrium sp.</i>	Cell/m ³	28,205	12,390
2	<i>Biddulphia sp.</i>	Cell/m ³	1,239	708
3	<i>Ceratolus sp.</i>	Cell/m ³	1,770	-
4	<i>Chaetoceros sp.</i>	Cell/m ³	666,936	271,872
5	<i>Eucampia sp.</i>	Cell/m ³	708	1,239
6	<i>Hemidulus sp.</i>	Cell/m ³	4,956	6,549
7	<i>Leptocylindrus sp.</i>	Cell/m ³	6,018	7,434
Total Taxa (s)				
Abundance		Cell/m ³	1,102,887	525,513
Diversity Index			1.28	1.50
Equitability Index			0.40	0.49
Dominance Index			0.41	0.34
2. ZOOPLANKTON				
APPENDICULARIA				
1	<i>Oikopleura sp.</i>	Ind/m ³	177	177
COPEPODA				
1	<i>Acartia sp.</i>	Ind/m ³	6,195	5,133
2	<i>Calanus sp.</i>	Ind/m ³	-	-
3	<i>Calanopsis sp.</i>	Ind/m ³	-	177
4	<i>Calanus sp.</i>	Ind/m ³	1,239	1,770
5	<i>Corycaeus sp.</i>	Ind/m ³	-	354
6	<i>Macrosetella sp.</i>	Ind/m ³	-	-
7	<i>Microsetella sp.</i>	Ind/m ³	177	885
8	<i>Oithona sp.</i>	Ind/m ³	4,956	4,071
9	<i>Oncaea sp.</i>	Ind/m ³	-	885
10	<i>Temora sp.</i>	Ind/m ³	5,310	5,664
GLOBOTHALAMEA				
1	<i>Globigerina sp.</i>	Ind/m ³	-	354
2	<i>Globorotalia sp.</i>	Ind/m ³	354	354



Job Number : EV193064-A
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193064-4	EV193064-5
Customer Sample I.D :			MWB 6	MWB 5
Date Sampled :			27-Nov-19	27-Nov-19
Sample Matrix :			Seawater	Seawater
No.	Test Description	Units	Results	Results
	OLIGOTRICHEA			
1	<i>Amphirodopsis</i> sp.	Ind/m ³	-	-
2	<i>Codonellopsis</i> sp.	Ind/m ³	-	-
3	<i>Eulimnoides</i> sp.	Ind/m ³	531	177
4	<i>Favosites</i> sp.	Ind/m ³	177	177
5	<i>Parafavosites</i> sp.	Ind/m ³	-	354
	SAGITTOIDEA			
1	<i>Sagitta</i> sp.	Ind/m ³	-	708
	Total Taxa (s)		9	15
	Abundance	Ind/m ³	19,116	21,240
	Diversity Index		1.55	2.03
	Equitability Index		0.71	0.75
	Dominance Index		0.25	0.18

Note: Refer to QA/QC – Accuracy page for list of analytical methods used



QUALITY CONTROL - ACCURACY

Job Number : EV193064-A
Customer : PT. EnviroSolutions & Consulting
Project Name : Seawater & Sediment Analysis
Customer Ref : 7987.r5/IUS-EV/I/2020

No	Description	Method	Units	Limit of Reporting	Reference Material		% Recovery
					Expected Value	Result	
	PLANKTON***						
1	Phytoplankton	APHA 10200 F.2012	Cell/m ³	-	-	-	-
2	Zooplankton	SNI 06-3963-1995	Ind/m ³	-	-	-	-

Reference Materials are QC samples of known concentration prepared independently of the calibration standards.

Results are used to verify that analytical precision is in control and that the level of bias due to calibration is acceptable. Generally speaking, % Recovery should fall between 85% to 115% (except Gas Chromatography methods)

Limit of Reporting means the lowest concentration at which an analyte can be detected in a sample and its concentration can be reported with a reasonable degree of accuracy and precision based on the analytical methodology used.

ENVIRONMENTAL TEST REPORT

Ms. Yanti Setiakurniasih
PT. EnviroSolutions & Consulting
Intiland Tower Lt. 18
JL. Jend. Sudirman Kav 32 RT 003 RW 002
Jakarta,
INDONESIA

Job Number : EV193064-B
Customer Ref : 7987.r5/IUS-EV/I/2020
Project Name : Seawater & Sediment Analysis

Number of samples : 5

Date received : 29-Nov-2019
Date reported : 26-Dec-2019

Approved Signature for:



for **Reginald C. de Wit**
Manager Environmental Services

All work is performed in accordance with Intertek Standard Terms and Conditions of work <http://www.intertek.com/terms/>

This report relates specifically to the sample(s) tested in so far as that the sample(s) is truly representative of the sample source as received.

This report was prepared solely for the use of the client named in this report. PT Intertek Utama Services accepts no responsibility for any loss, damage or liability suffered by any third party as a result of any reliance upon or use of this report.

DO NOT PHOTOCOPY



SAMPLE INFORMATION

Job Number : EV193064-B
Customer : PT. EnviroSolutions & Consulting
Project Name : Seawater & Sediment Analysis
Customer Ref : 7987.r5/IUS-EV/I/2020

No.	Laboratory Sample I.D.	Customer Sample I.D.	Sample Matrix	Date Sampled	Time Sampled	Date Received	Sampled By	Coordinates
1	EV193064-6	MWB 9	Sediment	27-Nov-19	10:05	29-Nov-19	Fahru Roji, Husni, Hilman	S : 08° 00' 25.708" E : 131° 15' 15.267"
2	EV193064-7	MWB 8	Sediment	27-Nov-19	10:30	29-Nov-19	Fahru Roji, Husni, Hilman	S : 08° 00' 43.034" E : 131° 15' 42.835"
3	EV193064-8	MWB 7	Sediment	27-Nov-19	10:53	29-Nov-19	Fahru Roji, Husni, Hilman	S : 08° 00' 09.523" E : 131° 15' 34.002"
4	EV193064-9	MWB 6	Sediment	27-Nov-19	12:10	29-Nov-19	Fahru Roji, Husni, Hilman	S : 07° 59' 46.585" E : 131° 16' 02.110"
5	EV193064-10	MWB 5	Sediment	27-Nov-19	13:20	29-Nov-19	Fahru Roji, Husni, Hilman	S : 07° 59' 07.586" E : 131° 16' 26.095"

Notes:

NA = Not Analysed

ND = Not Detected

IS = Insufficient Sample

** = Non Accredited Test

*** = Subcontracted Test

1) = Field Measurement

2) = Field Measurement by Customer

3) = Total Pesticides defined as 30 OCP compounds (list available upon request)

4) = Total PAHs defined as 16 PAH compounds (list available upon request)

5) = Total PCBs defined as 20 PCB congeners (list available upon request)

SNR = Sample Not Received



Job Number : EV193064-B
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193064-6	EV193064-7	EV193064-8
Customer Sample I.D :			MWB 9	MWB 8	MWB 7
Date Sampled :			27-Nov-19	27-Nov-19	27-Nov-19
Sample Matrix :			Sediment	Sediment	Sediment
No.	Test Description	Units	Results	Results	Results
	BENTHOS***				
	BIYALVIA				
1	<i>Dosinia sp.</i>	Ind/m ²	-	-	-
2	<i>Periglypta sp.</i>	Ind/m ²	-	14	-
	CRUSTACEA				
1	<i>Acetes sp.</i>	Ind/m ²	14	-	-
2	<i>Penaeus sp.</i>	Ind/m ²	14	-	28
	GASTROPODA				
1	<i>Cavolinia sp.</i>	Ind/m ²	-	14	-
2	<i>Oliva sp.</i>	Ind/m ²	-	14	-
	POLYCHAETA				
1	<i>Eteone sp.</i>	Ind/m ²	-	14	-
2	<i>Glycera sp.</i>	Ind/m ²	-	-	-
3	<i>Maldane sp.</i>	Ind/m ²	14	-	-
4	<i>Notomastus sp.</i>	Ind/m ²	14	-	-
5	<i>Paraonis sp.</i>	Ind/m ²	-	-	-
6	<i>Terebalides sp.</i>	Ind/m ²	-	-	-
Total Taxa (s)			4	4	1
Abundance		Ind/m ²	58	58	28
Diversity Index			2.00	2.00	0.00
Equitability Index			1.00	1.00	0.00
Dominance Index			0.25	0.25	1.00

Note: Refer to QA/QC – Accuracy page for list of analytical methods used



Job Number : EV193064-B
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/2020

Laboratory Sample I.D :			EV193064-9	EV193064-10
Customer Sample I.D :			MWB 6	MWB 5
Date Sampled :			27-Nov-19	27-Nov-19
Sample Matrix :			Sediment	Sediment
No.	Test Description	Units	Results	Results
	BENTHOS***			
	BIVALVIA			
1	<i>Dosinia</i> sp.	Ind/m ²	14	-
2	<i>Periglypta</i> sp.	Ind/m ²	-	-
	CRUSTACEA			
1	<i>Acebes</i> sp.	Ind/m ²	-	-
2	<i>Pennaeus</i> sp.	Ind/m ²	14	-
	GASTROPODA			
1	<i>Cavallina</i> sp.	Ind/m ²	-	-
2	<i>Offia</i> sp.	Ind/m ²	-	-
	POLYCHAETA			
1	<i>Eteone</i> sp.	Ind/m ²	-	28
2	<i>Glycera</i> sp.	Ind/m ²	-	14
3	<i>Maldana</i> sp.	Ind/m ²	-	-
4	<i>Notomastus</i> sp.	Ind/m ²	14	-
5	<i>Paraonis</i> sp.	Ind/m ²	-	28
6	<i>Terebellides</i> sp.	Ind/m ²	-	14
	Total Taxa (s)		3	4
	Abundance	Ind/m ²	42	84
	Diversity Index		1.58	1.92
	Equitability Index		1.00	0.96
	Dominance Index		0.33	0.28

Note: Refer to QA/QC - Accuracy page for list of analytical methods used

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QUALITY CONTROL - ACCURACY

Job Number : EV193064-B
Customer : PT. EnviroSolutions & Consulting
Project Name : Seawater & Sediment Analysis
Customer Ref : 7967.r5/IUS-EV/2020

No	Description	Method	Units	Limit of Reporting	Reference Material		% Recovery
					Expected Value	Result	
1	BENTHOS**	SNI 03-3401-1994	Indm ²	-	-	-	-

Reference Materials are QC samples of known concentration prepared independently of the calibration standards.

Results are used to verify that analytical precision is in control and that the level of bias due to calibration is acceptable. Generally speaking, % Recovery should fall between 85% to 115% (except Gas Chromatography methods)

Limit of Reporting means the lowest concentration at which an analyte can be detected in a sample and its concentration can be reported with a reasonable degree of accuracy and precision based on the analytical methodology used.

R

V1.7-7

ENVIRONMENTAL TEST REPORT

Ms. Yanti Setiakurniasih
PT. EnviroSolutions & Consulting
Intiland Tower Lt. 18
Jl. Jend. Sudirman Kav 32 RT 003 RW 002
Jakarta,
INDONESIA

Job Number : EV193064-C
Customer Ref : 7987.r5/IUS-EV/II/2020
Project Name : Seawater & Sediment Analysis

Number of samples : 5

Date received : 29-Nov-2019
Date reported : 05-Feb-2020

Approved Signature for:


for

Reginald C. de Wit
Manager Environmental Services

All work is performed in accordance with Intertek Standard Terms and Conditions of work: <http://www.intertek.com/terms/>

This report relates specifically to the sample(s) tested in so far as that the sample(s) is truly representative of the sample source as received.

This report was prepared solely for the use of the client named in this report. PT Intertek Utama Services accepts no responsibility for any loss, damage or liability suffered by any third party as a result of any reliance upon or use of this report.

DO NOT PHOTOCOPY





SAMPLE INFORMATION

Job Number : EV193064-C
Customer : PT. EnviroSolutions & Consulting
Project Name : Seawater & Sediment Analysis
Customer Ref : 7987.r5/IUS-EV/I/2020

No.	Laboratory Sample I.D.	Customer Sample I.D.	Sample Matrix	Date Sampled	Time Sampled	Date Received	Sampled By	Coordinates	
1	EV193064-6	MWB 9	Sediment	27-Nov-19	10:05	29-Nov-19	Fahru Roji, Hilam & Husni	S : 08° 00' 25.708"	E : 131° 15' 15.267"
2	EV193064-7	MWB 8	Sediment	27-Nov-19	10:30	29-Nov-19	Fahru Roji, Hilam & Husni	S : 08° 00' 43.034"	E : 131° 15' 42.835"
3	EV193064-8	MWB 7	Sediment	27-Nov-19	10:53	29-Nov-19	Fahru Roji, Hilam & Husni	S : 08° 00' 09.523"	E : 131° 15' 34.002"
4	EV193064-9	MWB 6	Sediment	27-Nov-19	12:10	29-Nov-19	Fahru Roji, Hilam & Husni	S : 07° 59' 46.585"	E : 131° 16' 02.110"
5	EV193064-10	MWB 5	Sediment	27-Nov-19	13:20	29-Nov-19	Fahru Roji, Hilam & Husni	S : 07° 59' 07.586"	E : 131° 16' 26.090"

Notes:

NA = Not Analysed

ND= Not Detected

IS = Insufficient Sample

** = Non Accredited Test

*** = Subcontracted Test

1) = Field Measurement

2) = Field Measurement by Customer

3) = Total Pesticides defined as 30 OCP compounds (list available upon request)

4) = Total PAHs defined as 16 PAH compounds (list available upon request)

5) = Total PCBs defined as 20 PCB congeners (list available upon request)

SNR= Sample Not Received



Job Number : EV193064-C
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/II2020

Laboratory Sample I.D :			EV193064-6	EV193064-7	EV193064-8
Customer Sample I.D :			MWB 9	MWB 8	MWB 7
Date Sampled :			27-Nov-18	27-Nov-19	27-Nov-19
Sample Matrix :			Sediment	Sediment	Sediment
No.	Test Description	Units	Results	Results	Results
	Miscellaneous				
	Particle Size Distribution**				
	Size (µm)				
1	0.405	%	0.10	0.09	0.09
2	0.460	%	0.20	0.18	0.18
3	0.523	%	0.30	0.27	0.27
4	0.594	%	0.38	0.35	0.36
5	0.675	%	0.43	0.40	0.40
6	0.767	%	0.45	0.43	0.43
7	0.872	%	0.48	0.42	0.43
8	0.99	%	0.45	0.43	0.44
9	1.13	%	0.47	0.44	0.44
10	1.26	%	0.51	0.46	0.45
11	1.45	%	0.58	0.53	0.54
12	1.65	%	0.68	0.63	0.63
13	1.88	%	0.80	0.74	0.75
14	2.13	%	0.96	0.89	0.91
15	2.42	%	1.15	1.08	1.06
16	2.75	%	1.35	1.28	1.31
17	3.12	%	1.81	1.54	1.55
18	3.55	%	1.88	1.84	1.84
19	4.03	%	2.19	2.16	2.16
20	4.58	%	2.52	2.51	2.52
21	5.21	%	2.87	2.89	2.88
22	5.92	%	3.20	3.26	3.25
23	6.72	%	3.52	3.60	3.59
24	7.64	%	3.76	3.90	3.86
25	8.68	%	3.96	4.12	4.11
26	9.86	%	4.11	4.27	4.27
27	11.2	%	4.18	4.35	4.34
28	12.7	%	4.19	4.36	4.36
29	14.5	%	4.15	4.33	4.33
30	16.4	%	4.08	4.26	4.25
31	18.7	%	4.00	4.18	4.15
32	21.2	%	3.92	4.08	4.04
33	24.1	%	3.79	3.95	3.89
34	27.4	%	3.65	3.80	3.72



Job Number : EV193064-C
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193064-6	EV193064-7	EV193064-8
Customer Sample I.D :			MWB 9	MWB 8	MWB 7
Date Sampled :			27-Nov-19	27-Nov-19	27-Nov-19
Sample Matrix :			Sediment	Sediment	Sediment
No.	Test Description	Units	Results	Results	Results
35	31.1	%	3.47	3.59	3.50
36	35.3	%	3.23	3.34	3.24
37	40.1	%	2.97	3.05	2.96
38	45.6	%	2.69	2.73	2.65
39	51.8	%	2.41	2.43	2.38
40	58.9	%	2.13	2.13	2.10
41	66.9	%	1.91	1.87	1.88
42	76.0	%	1.70	1.66	1.66
43	86.4	%	1.53	1.46	1.50
44	98.1	%	1.36	1.28	1.35
45	111	%	1.22	1.11	1.19
46	127	%	1.07	0.95	1.03
47	144	%	0.91	0.78	0.86
48	163	%	0.76	0.61	0.69
49	186	%	0.61	0.45	0.52
50	211	%	0.46	0.30	0.36
51	240	%	0.33	0.18	0.22
52	272	%	0.21	0.06	0.08
53	310	%	0.10	0.00	0.00
54	352	%	0.04	0.00	0.00

Note: Refer to QA/QC – Accuracy page for list of analytical methods used



Job Number : EV193064-C
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193064-9	EV193064-10
Customer Sample I.D :			MWB 5	MWB 5
Date Sampled :			27-Nov-19	27-Nov-19
Sample Matrix :			Sediment	Sediment
No.	Test Description	Units	Results	Results
	Miscellaneous			
	Particle Size Distribution**			
	Size (µm)			
1	0.405	%	0.09	0.09
2	0.460	%	0.18	0.19
3	0.523	%	0.28	0.29
4	0.594	%	0.36	0.37
5	0.675	%	0.42	0.43
6	0.767	%	0.44	0.45
7	0.872	%	0.45	0.46
8	0.99	%	0.45	0.46
9	1.13	%	0.46	0.47
10	1.28	%	0.50	0.51
11	1.45	%	0.56	0.57
12	1.65	%	0.66	0.66
13	1.88	%	0.79	0.81
14	2.13	%	0.98	0.97
15	2.42	%	1.15	1.17
16	2.75	%	1.39	1.41
17	3.12	%	1.66	1.68
18	3.55	%	1.97	1.99
19	4.03	%	2.31	2.33
20	4.58	%	2.69	2.89
21	5.21	%	3.07	3.06
22	5.92	%	3.44	3.41
23	6.72	%	3.78	3.74
24	7.64	%	4.06	4.02
25	8.68	%	4.27	4.23
26	9.86	%	4.40	4.37
27	11.2	%	4.45	4.44
28	12.7	%	4.43	4.46
29	14.5	%	4.34	4.42
30	16.4	%	4.24	4.37
31	18.7	%	4.10	4.29
32	21.2	%	3.93	4.18
33	24.1	%	3.75	4.04
34	27.4	%	3.54	3.86



Job Number : EV193064-C
Customer : PT. EnviroSolutions & Consulting
Project Name : Seawater & Sediment Analysis
Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193064-9	EV193064-10
Customer Sample I.D :			MWB 6	MWB 5
Date Sampled :			27-Nov-19	27-Nov-19
Sample Matrix :			Sediment	Sediment
No.	Test Description	Units	Results	Results
35	31.1	%	3.28	3.60
36	35.3	%	2.98	3.31
37	40.1	%	2.67	2.96
38	45.6	%	2.36	2.61
39	51.8	%	2.07	2.27
40	58.9	%	1.81	1.95
41	66.9	%	1.61	1.67
42	76.0	%	1.47	1.45
43	86.4	%	1.30	1.25
44	98.1	%	1.25	1.07
45	111	%	1.17	0.91
46	127	%	1.06	0.73
47	144	%	0.94	0.57
48	163	%	0.79	0.40
49	186	%	0.62	0.25
50	211	%	0.46	0.09
51	240	%	0.30	0.00
52	272	%	0.16	0.00
53	310	%	0.06	0.00
54	352	%	0.00	0.00

Note: Refer to QA/QC – Accuracy page for list of analytical methods used



PARTICLE SIZE DISTRIBUTION ANALYSIS ANALYSIS REPORT

Measurement Details

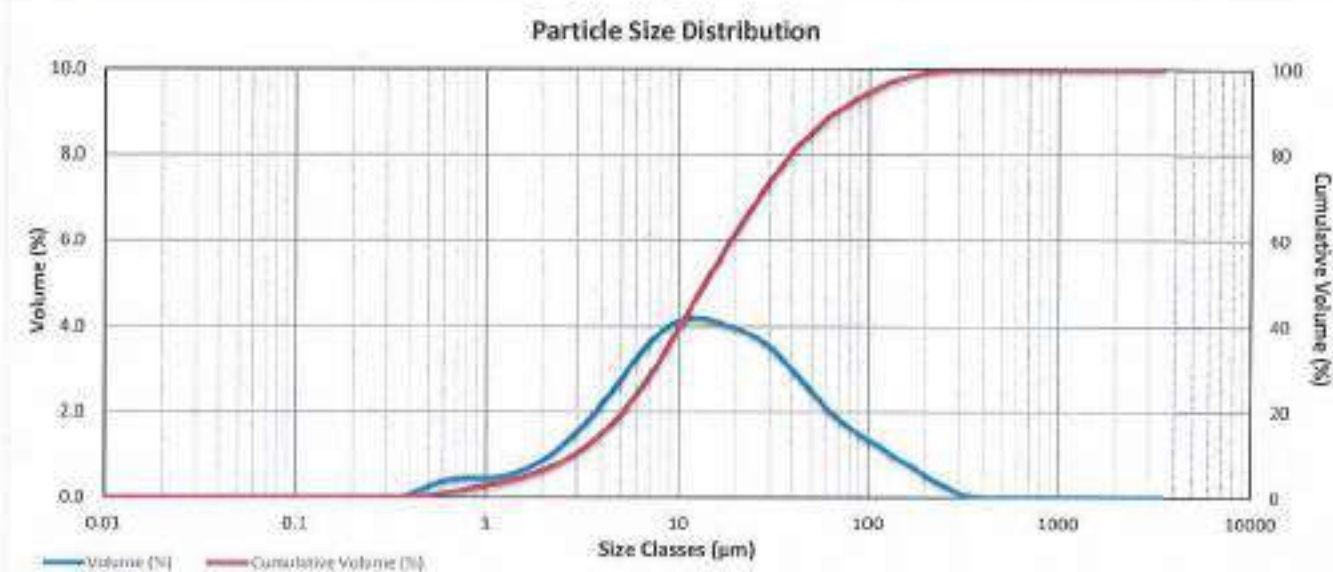
Client PT. EnviroSolutions & Consulting
Sample ID MWB 9

Job Number EV193064-06

Analysis

Particle Name Solid
Dispersant Liquid

Result



Size (µm)	Volume (%)	Cum. Vol. (%)	Size (µm)	Volume (%)	Cum. Vol. (%)	Size (µm)	Volume (%)	Cum. Vol. (%)	Size (µm)	Volume (%)	Cum. Vol. (%)	Size (µm)	Volume (%)	Cum. Vol. (%)
0.010	0.00	0.00	0.128	0.00	0.00	1.65	0.68	5.01	21.2	3.92	63.45	272	0.21	99.88
0.011	0.00	0.00	0.146	0.00	0.00	1.88	0.80	5.81	24.1	3.79	67.24	310	0.10	99.98
0.013	0.00	0.00	0.166	0.00	0.00	2.13	0.86	6.77	27.4	3.65	70.89	352	0.04	100.00
0.015	0.00	0.00	0.188	0.00	0.00	2.42	1.15	7.92	31.1	3.47	74.36	400	0.00	100.00
0.017	0.00	0.00	0.214	0.00	0.00	2.75	1.35	9.27	35.3	3.23	77.59	454	0.00	100.00
0.019	0.00	0.00	0.243	0.00	0.00	3.12	1.61	10.88	40.1	2.97	80.56	516	0.00	100.00
0.022	0.00	0.00	0.278	0.00	0.00	3.55	1.88	12.76	45.6	2.69	83.25	586	0.00	100.00
0.024	0.00	0.00	0.314	0.00	0.00	4.03	2.19	14.95	51.8	2.41	85.66	666	0.00	100.00
0.028	0.00	0.00	0.357	0.00	0.00	4.58	2.52	17.47	58.9	2.13	87.79	756	0.00	100.00
0.032	0.00	0.00	0.405	0.10	0.10	5.21	2.87	20.34	66.9	1.91	89.70	859	0.00	100.00
0.036	0.00	0.00	0.460	0.20	0.30	5.92	3.20	23.54	76.0	1.70	91.40	976	0.00	100.00
0.041	0.00	0.00	0.523	0.30	0.60	6.72	3.52	27.06	86.4	1.53	92.93	1109	0.00	100.00
0.046	0.00	0.00	0.594	0.38	0.98	7.64	3.78	30.84	98.1	1.36	94.29	1260	0.00	100.00
0.053	0.00	0.00	0.675	0.43	1.41	8.68	3.98	34.82	111	1.22	95.51	1432	0.00	100.00
0.060	0.00	0.00	0.767	0.45	1.86	9.86	4.11	38.93	127	1.07	96.58	1627	0.00	100.00
0.068	0.00	0.00	0.872	0.46	2.32	11.2	4.18	43.11	144	0.91	97.49	1849	0.00	100.00
0.077	0.00	0.00	0.991	0.45	2.77	12.7	4.19	47.30	163	0.76	98.25	2100	0.00	100.00
0.088	0.00	0.00	1.13	0.47	3.24	14.6	4.16	51.46	186	0.61	98.86	2366	0.00	100.00
0.100	0.00	0.00	1.28	0.51	3.75	16.4	4.06	55.53	211	0.46	99.32	2711	0.00	100.00
0.113	0.00	0.00	1.45	0.58	4.33	18.7	4.00	59.53	240	0.33	99.65	3081	0.00	100.00
												3500	0.00	100.00

Remarks:

Percentiles:

D _x (5)	1.66 µm
D _x (10)	2.91 µm
D _x (14)	4.26 µm
D _x (25)	5.13 µm
D _x (40)	10.2 µm
D _x (50)	13.8 µm
D _x (60)	18.9 µm
D _x (75)	31.9 µm
D _x (80)	39.2 µm
D _x (84)	47.5 µm
D _x (90)	68.4 µm
D _x (95)	106 µm
Mode	11.4 µm



PARTICLE SIZE DISTRIBUTION ANALYSIS ANALYSIS REPORT

Measurement Details

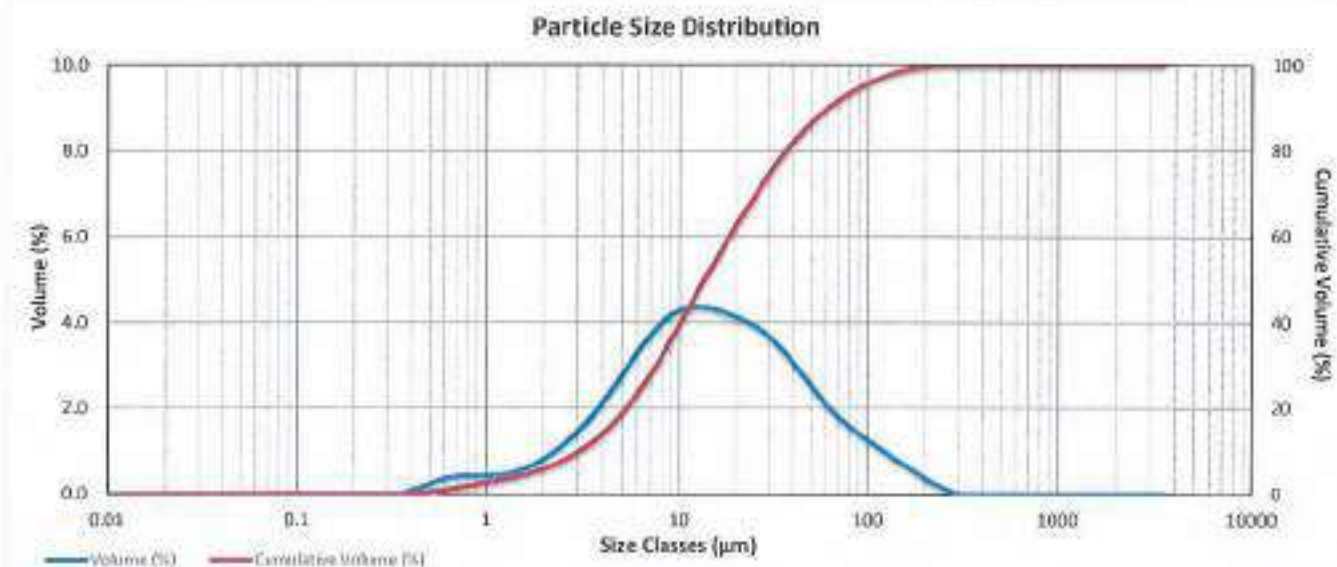
Client PT. EnviroSolutions & Consulting
Sample ID MWB 8

Job Number EV193064-07

Analysis

Particle Name Solid
Dispersant Liquid

Result



Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)
0.010	0.00	0.00	0.128	0.00	0.00	1.65	0.63	4.63	21.2	4.08	64.27	272	0.06	100.00
0.011	0.00	0.00	0.146	0.00	0.00	1.88	0.74	5.37	24.1	3.95	68.22	310	0.00	100.00
0.013	0.00	0.00	0.166	0.00	0.00	2.13	0.89	6.26	27.4	3.80	72.02	352	0.00	100.00
0.015	0.00	0.00	0.188	0.00	0.00	2.42	1.08	7.34	31.1	3.59	75.61	400	0.00	100.00
0.017	0.00	0.00	0.214	0.00	0.00	2.75	1.28	8.62	35.3	3.34	78.95	454	0.00	100.00
0.019	0.00	0.00	0.243	0.00	0.00	3.12	1.54	10.16	40.1	3.05	82.00	516	0.00	100.00
0.022	0.00	0.00	0.276	0.00	0.00	3.55	1.84	12.00	45.6	2.73	84.73	588	0.00	100.00
0.024	0.00	0.00	0.314	0.00	0.00	4.03	2.16	14.16	51.8	2.43	87.16	666	0.00	100.00
0.028	0.00	0.00	0.367	0.00	0.00	4.58	2.51	16.67	58.9	2.13	89.29	756	0.00	100.00
0.032	0.00	0.00	0.405	0.00	0.00	5.21	2.89	19.56	68.0	1.87	91.16	850	0.00	100.00
0.036	0.00	0.00	0.460	0.18	0.27	5.92	3.26	22.82	76.0	1.65	92.82	976	0.00	100.00
0.041	0.00	0.00	0.523	0.27	0.54	6.72	3.60	26.42	86.4	1.46	94.28	1109	0.00	100.00
0.046	0.00	0.00	0.594	0.35	0.89	7.04	3.90	30.32	98.1	1.28	95.56	1260	0.00	100.00
0.053	0.00	0.00	0.675	0.40	1.29	8.68	4.12	34.44	111	1.11	96.67	1432	0.00	100.00
0.060	0.00	0.00	0.767	0.43	1.72	9.96	4.27	38.71	127	0.95	97.62	1627	0.00	100.00
0.068	0.00	0.00	0.872	0.42	2.14	11.2	4.35	43.06	144	0.78	98.40	1849	0.00	100.00
0.077	0.00	0.00	0.991	0.43	2.57	12.7	4.36	47.42	163	0.61	99.01	2100	0.00	100.00
0.088	0.00	0.00	1.13	0.44	3.01	14.5	4.33	51.75	186	0.45	99.46	2385	0.00	100.00
0.100	0.00	0.00	1.28	0.46	3.47	16.4	4.26	56.01	211	0.30	99.76	2711	0.00	100.00
0.113	0.00	0.00	1.45	0.53	4.00	18.7	4.18	60.19	240	0.15	99.94	3081	0.00	100.00
												3600	0.00	100.00

Remarks:

Percentils:

Dx (3) 1.76 µm
Dx (10) 3.08 µm
Dx (16) 4.43 µm
Dx (20) 5.30 µm
Dx (25) 6.39 µm
Dx (40) 10.2 µm
Dx (50) 13.7 µm
Dx (60) 18.6 µm
Dx (75) 30.4 µm
Dx (80) 36.9 µm
Dx (84) 44.1 µm
Dx (90) 61.5 µm
Dx (95) 92.8 µm
Mode 11.6 µm



PARTICLE SIZE DISTRIBUTION ANALYSIS ANALYSIS REPORT

Measurement Details

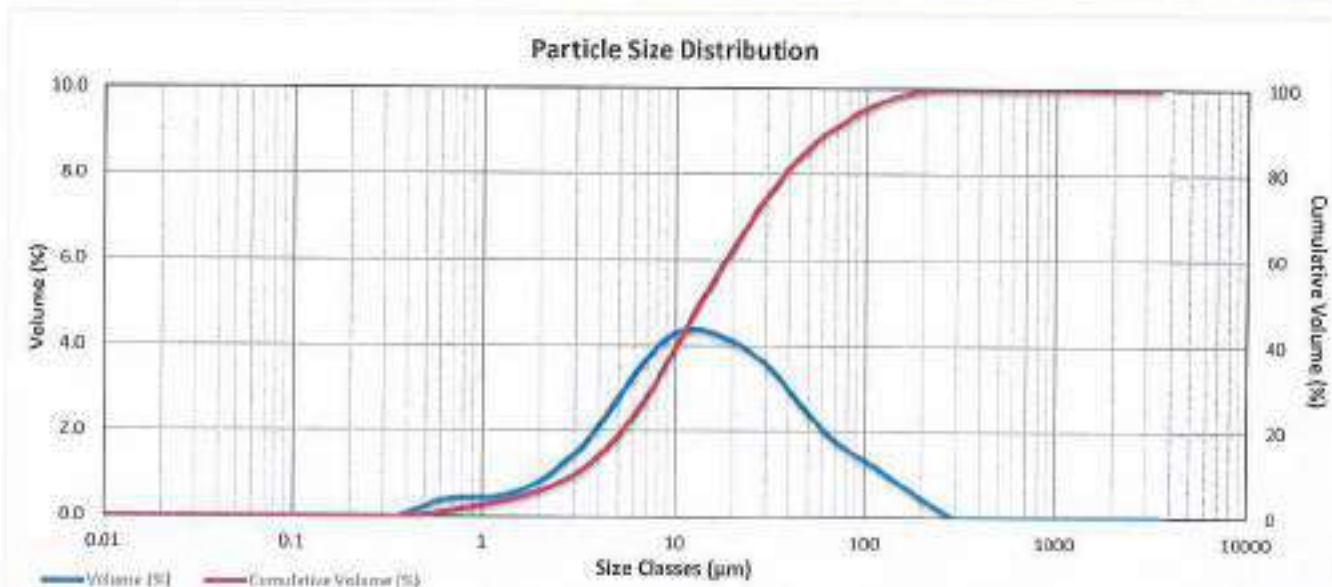
Client PT. EnviroSolutions & Consulting
Sample ID MWS 7

Job Number EV193064-08

Analysis

Particle Name Solid
Dispersant Liquid

Result



Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)
0.010	0.00	0.00	0.128	0.00	0.00	1.55	0.63	4.69	21.2	4.04	64.26	272	0.08	100.00
0.011	0.00	0.00	0.146	0.00	0.00	1.88	0.75	5.44	24.1	3.89	68.15	310	0.00	100.00
0.013	0.00	0.00	0.166	0.00	0.00	2.13	0.91	6.35	27.4	3.72	71.87	352	0.00	100.00
0.015	0.00	0.00	0.188	0.00	0.00	2.42	1.08	7.43	31.1	3.50	75.37	400	0.00	100.00
0.017	0.00	0.00	0.214	0.00	0.00	2.75	1.31	8.74	35.3	3.24	78.61	454	0.00	100.00
0.019	0.00	0.00	0.243	0.00	0.00	3.12	1.56	10.29	40.1	2.90	81.57	516	0.00	100.00
0.022	0.00	0.00	0.276	0.00	0.00	3.55	1.84	12.13	45.8	2.66	84.22	586	0.00	100.00
0.024	0.00	0.00	0.314	0.00	0.00	4.03	2.16	14.29	51.8	2.38	86.60	665	0.00	100.00
0.028	0.00	0.00	0.357	0.00	0.00	4.58	2.52	16.81	58.9	2.10	88.68	755	0.00	100.00
0.032	0.00	0.00	0.405	0.00	0.00	5.21	2.86	19.68	66.9	1.80	90.54	869	0.00	100.00
0.036	0.00	0.00	0.460	0.18	0.27	5.92	3.25	22.94	76.0	1.66	92.20	975	0.00	100.00
0.041	0.00	0.00	0.523	0.27	0.54	6.72	3.59	26.53	86.4	1.50	93.70	1109	0.00	100.00
0.046	0.00	0.00	0.594	0.36	0.80	7.64	3.98	30.41	98.1	1.35	95.05	1260	0.00	100.00
0.053	0.00	0.00	0.675	0.40	1.20	8.68	4.11	34.52	111	1.19	96.24	1432	0.00	100.00
0.060	0.00	0.00	0.767	0.43	1.73	9.86	4.27	38.79	127	1.03	97.27	1627	0.00	100.00
0.068	0.00	0.00	0.872	0.43	2.16	11.2	4.34	43.13	144	0.86	98.13	1849	0.00	100.00
0.077	0.00	0.00	0.991	0.44	2.60	12.7	4.36	47.49	163	0.69	98.82	2100	0.00	100.00
0.088	0.00	0.00	1.13	0.44	3.04	14.5	4.35	51.82	186	0.52	99.34	2386	0.00	100.00
0.100	0.00	0.00	1.28	0.48	3.52	16.4	4.26	56.07	211	0.36	99.70	2711	0.00	100.00
0.113	0.00	0.00	1.45	0.54	4.06	18.7	4.15	60.22	240	0.22	99.92	3081	0.00	100.00
												3500	0.00	100.00

Remarks:

Percentils:

Dx (5) 1.74 µm
Dx (10) 3.05 µm
Dx (16) 4.40 µm
Dx (20) 5.27 µm
Dx (25) 6.37 µm
Dx (40) 10.2 µm
Dx (50) 13.7 µm
Dx (60) 18.5 µm
Dx (75) 30.7 µm
Dx (80) 37.5 µm
Dx (84) 45.1 µm
Dx (90) 64.5 µm
Dx (95) 97.7 µm
Mode 11.6 µm



PARTICLE SIZE DISTRIBUTION ANALYSIS

ANALYSIS REPORT

Measurement Details

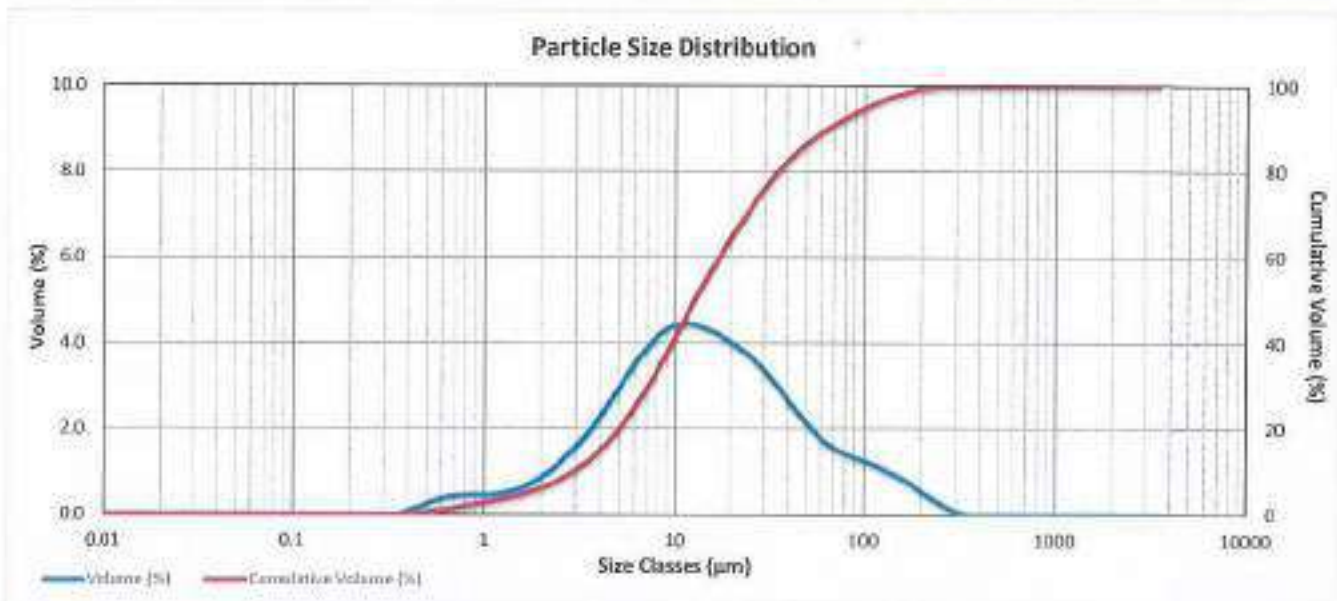
Client PT. EnviroSolutions & Consulting
Sample ID MWB 6

Job Number EV193064-09

Analysis

Particle Name Solid
Dispersant Liquid

Result



Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)
0.010	0.00	0.00	0.128	0.00	0.00	1.65	0.66	4.85	21.2	3.93	66.26	272	0.16	99.94
0.011	0.00	0.00	0.146	0.00	0.00	1.88	0.79	5.64	24.1	3.75	70.03	310	0.06	100.00
0.013	0.00	0.00	0.166	0.00	0.00	2.13	0.96	6.60	27.4	3.54	73.57	352	0.00	100.00
0.015	0.00	0.00	0.188	0.00	0.00	2.42	1.15	7.75	31.1	3.28	76.85	400	0.00	100.00
0.017	0.00	0.00	0.214	0.00	0.00	2.75	1.39	9.14	35.3	2.98	79.83	454	0.00	100.00
0.019	0.00	0.00	0.243	0.00	0.00	3.12	1.68	10.80	40.1	2.67	82.50	516	0.00	100.00
0.022	0.00	0.00	0.276	0.00	0.00	3.55	1.97	12.77	45.6	2.36	84.86	586	0.00	100.00
0.024	0.00	0.00	0.314	0.00	0.00	4.03	2.31	15.08	51.8	2.07	86.93	666	0.00	100.00
0.028	0.00	0.00	0.357	0.00	0.00	4.58	2.69	17.77	58.9	1.81	88.74	758	0.00	100.00
0.032	0.00	0.00	0.405	0.00	0.00	5.21	3.07	20.84	66.9	1.61	90.35	859	0.00	100.00
0.036	0.00	0.00	0.460	0.16	0.27	5.92	3.44	24.28	76.0	1.47	91.82	976	0.00	100.00
0.041	0.00	0.00	0.523	0.28	0.55	6.72	3.78	28.06	86.4	1.30	93.18	1109	0.00	100.00
0.046	0.00	0.00	0.589	0.36	0.91	7.64	4.06	32.12	98.1	1.26	94.44	1260	0.00	100.00
0.053	0.00	0.00	0.675	0.42	1.33	8.68	4.27	36.39	111	1.17	95.61	1432	0.00	100.00
0.060	0.00	0.00	0.767	0.44	1.77	9.86	4.40	40.79	127	1.00	96.67	1627	0.00	100.00
0.068	0.00	0.00	0.872	0.45	2.22	11.2	4.45	45.24	144	0.94	97.61	1849	0.00	100.00
0.077	0.00	0.00	0.991	0.45	2.67	12.7	4.43	49.67	163	0.79	98.40	2100	0.00	100.00
0.088	0.00	0.00	1.13	0.46	3.13	14.5	4.34	54.01	186	0.62	99.02	2385	0.00	100.00
0.100	0.00	0.00	1.28	0.50	3.63	16.4	4.24	58.25	211	0.46	99.48	2711	0.00	100.00
0.113	0.00	0.00	1.45	0.56	4.19	18.7	4.10	62.35	240	0.30	99.78	3081	0.00	100.00
												3500	0.00	100.00

Remarks:

Percentiles:

Dx (5) 1.69 µm
Dx (10) 2.94 µm
Dx (16) 4.21 µm
Dx (20) 5.03 µm
Dx (25) 6.06 µm
Dx (40) 9.63 µm
Dx (50) 12.9 µm
Dx (60) 17.3 µm
Dx (75) 28.9 µm
Dx (80) 35.6 µm
Dx (84) 43.5 µm
Dx (90) 65.1 µm
Dx (95) 104 µm
Mode 10.7 µm



PARTICLE SIZE DISTRIBUTION ANALYSIS ANALYSIS REPORT

Measurement Details

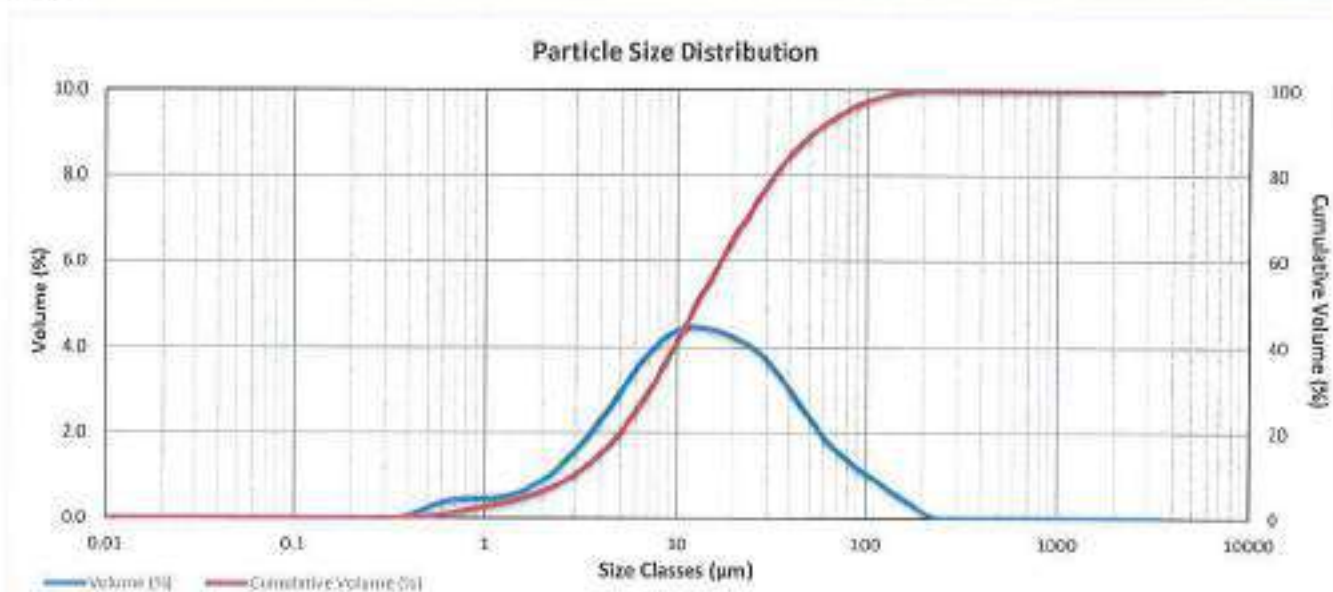
Client PT. EnviroSolutions & Consulting
Sample ID MWB 5

Job Number EV193064-10

Analysis

Particle Name Solid
Dispersant Liquid

Result



Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)
0.070	0.00	0.00	0.128	0.00	0.00	1.65	0.66	4.96	21.2	4.18	66.99	212	0.00	100.00
0.071	0.00	0.00	0.146	0.00	0.00	1.88	0.81	5.76	24.1	4.04	71.03	310	0.00	100.00
0.073	0.00	0.00	0.166	0.00	0.00	2.13	0.97	6.73	27.4	3.68	74.69	352	0.00	100.00
0.075	0.00	0.00	0.188	0.00	0.00	2.42	1.17	7.90	31.1	3.60	78.49	400	0.00	100.00
0.077	0.00	0.00	0.214	0.00	0.00	2.75	1.41	9.31	35.3	3.31	81.80	454	0.00	100.00
0.079	0.00	0.00	0.243	0.00	0.00	3.12	1.68	10.99	40.1	2.96	84.78	516	0.00	100.00
0.022	0.00	0.00	0.276	0.00	0.00	3.55	1.99	12.98	45.6	2.61	87.39	586	0.00	100.00
0.024	0.00	0.00	0.314	0.00	0.00	4.03	2.33	15.31	51.8	2.27	89.66	666	0.00	100.00
0.028	0.00	0.00	0.357	0.00	0.00	4.58	2.69	18.00	58.9	1.95	91.61	756	0.00	100.00
0.032	0.00	0.00	0.405	0.09	0.09	5.21	3.08	21.06	66.9	1.67	93.28	859	0.00	100.00
0.036	0.00	0.00	0.460	0.19	0.28	5.92	3.41	24.47	76.0	1.45	94.75	976	0.00	100.00
0.041	0.00	0.00	0.523	0.29	0.57	6.72	3.74	28.21	86.4	1.25	95.98	1109	0.00	100.00
0.046	0.00	0.00	0.594	0.37	0.94	7.64	4.02	32.23	98.1	1.07	97.05	1260	0.00	100.00
0.050	0.00	0.00	0.675	0.43	1.37	8.68	4.23	36.46	111	0.91	97.96	1432	0.00	100.00
0.060	0.00	0.00	0.767	0.45	1.82	9.86	4.37	40.83	127	0.73	98.69	1627	0.00	100.00
0.068	0.00	0.00	0.872	0.46	2.28	11.2	4.44	45.27	144	0.57	99.26	1849	0.00	100.00
0.077	0.00	0.00	0.991	0.46	2.74	12.7	4.46	49.73	163	0.40	99.66	2100	0.00	100.00
0.088	0.00	0.00	1.13	0.47	3.21	14.6	4.42	54.15	186	0.25	99.91	2366	0.00	100.00
0.100	0.00	0.00	1.28	0.51	3.72	16.4	4.37	58.52	211	0.09	100.00	2711	0.00	100.00
0.113	0.00	0.00	1.45	0.57	4.29	18.7	4.29	62.81	240	0.00	100.00	3061	0.00	100.00
												3500	0.00	100.00

Remarks:

Percentils:

D_x (5) 1.66 µm
D_x (10) 2.90 µm
D_x (16) 4.17 µm
D_x (20) 4.98 µm
D_x (25) 6.02 µm
D_x (40) 9.62 µm
D_x (50) 12.6 µm
D_x (60) 17.2 µm
D_x (75) 27.5 µm
D_x (80) 33.6 µm
D_x (84) 38.8 µm
D_x (90) 53.0 µm
D_x (95) 76.1 µm
Mode 11.7 µm



QUALITY CONTROL - ACCURACY

Job Number : EV193064-C
Customer : PT, EnviroSolutions & Consulting
Project Name : Seawater & Sediment Analysis
Customer Ref : 7987.r5/IUS-EV11/2020

No	Description	Method	Units	Limit of Reporting	Reference Material		% Recovery
					Expected Value	Result	
	Miscellaneous						
1	Particle Size Distribution**	Laser Diffraction (LPSA)	%	0.01	-	-	-

Reference Materials are QC samples of known concentration prepared independently of the calibration standards.

Results are used to verify that analytical precision is in control and that the level of bias due to calibration is acceptable. Generally speaking, % Recovery should fall between 85% to 115% (except Gas Chromatography methods).

Limit of Reporting means the lowest concentration at which an analyte can be detected in a sample and its concentration can be reported with a reasonable degree of accuracy and precision based on the analytical methodology used.

ENVIRONMENTAL TEST REPORT

Ms. Yanti Setiakurniasih
PT. EnviroSolutions & Consulting
Intiland Tower Lt. 18
JL. Jend. Sudirman Kav 32 RT 003 RW 002
Jakarta,
INDONESIA

Job Number : EV193084
Customer Ref : 7987.r5/IUS-EV1/2020
Project Name : Seawater, Surface Water & Sediment Analysis

Number of samples : 11

Date received : 02-Dec-2019

Date reported : 31-Dec-2019

Approved Signature for:



Reginald C. de Wit
Manager Environmental Services

All work is performed in accordance with Intertek Standard Terms and Conditions of work <http://www.intertek.com/terms/>

This report relates specifically to the sample(s) tested in so far as that the sample(s) is truly representative of the sample source as received.

This report was prepared solely for the use of the client named in this report. PT Intertek Utama Services accepts no responsibility for any loss, damage or liability suffered by any third party as a result of any reliance upon or use of this report.

DO NOT PHOTOCOPY



SAMPLE INFORMATION

Job Number : EV193084
Customer : PT. EnviroSolutions & Consulting
Project Name : Seawater, Surface Water & Sediment Analysis
Customer Ref : 7987.r5IUS-EV/I/2020

No.	Laboratory Sample I.D.	Customer Sample I.D.	Sample Matrix	Date Sampled	Time Sampled	Date Received	Sampled By	Coordinates	
1	EV193084-1	MWB 4	Seawater	28-Nov-19	14:30	02-Dec-19	Fahru Roji, Husni, Hilman	S : 07° 59' 27.504"	E : 131° 16' 59.817"
2	EV193084-2	MBW 4 Dup	Seawater	28-Nov-19	14:46	02-Dec-19	Fahru Roji, Husni, Hilman	S : 07° 59' 27.504"	E : 131° 16' 59.817"
3	EV193084-3	MWB 3	Seawater	28-Nov-19	14:58	02-Dec-19	Fahru Roji, Husni, Hilman	S : 07° 58' 24.397"	E : 131° 17' 20.978"
4	EV193084-4	MWB 2	Seawater	28-Nov-19	15:15	02-Dec-19	Fahru Roji, Husni, Hilman	S : 07° 57' 46.496"	E : 131° 17' 07.326"
5	EV193084-5	MWB 1	Seawater	28-Nov-19	14:50	02-Dec-19	Fahru Roji, Husni, Hilman	S : 07° 58' 21.197"	E : 131° 17' 02.818"
6	EV193084-6	GWO 5	Surface Water	28-Nov-19	15:03	02-Dec-19	Fahru Roji, Husni, Hilman	S : 07° 58' 27.4"	E : 131° 13' 01.5"
7	EV193084-7	MWB 4	Sediment	28-Nov-19	14:30	02-Dec-19	Fahru Roji, Husni, Hilman	S : 07° 59' 27.504"	E : 131° 16' 59.817"
8	EV193084-8	MBW 4 Dup	Sediment	28-Nov-19	14:46	02-Dec-19	Fahru Roji, Husni, Hilman	S : 07° 59' 27.504"	E : 131° 16' 59.817"
9	EV193084-9	MWB 3	Sediment	28-Nov-19	14:58	02-Dec-19	Fahru Roji, Husni, Hilman	S : 07° 58' 24.397"	E : 131° 17' 20.978"
10	EV193084-10	MWB 2	Sediment	28-Nov-19	15:15	02-Dec-19	Fahru Roji, Husni, Hilman	S : 07° 57' 46.496"	E : 131° 17' 07.326"
11	EV193084-11	MWB 1	Sediment	28-Nov-19	14:50	02-Dec-19	Fahru Roji, Husni, Hilman	S : 07° 58' 21.197"	E : 131° 17' 02.818"

Notes:

- NA = Not Analysed
- ND= Not Detected
- IS = Insufficient Sample
- ** = Non Accredited Test
- *** = Subcontracted Test
- 1) = Field Measurement
- 2) = Field Measurement by Customer
- 3) = Total Pesticides defined as 30 OCP compounds (list available upon request)
- 4) = Total PAHs defined as 16 PAH compounds (list available upon request)
- 5) = Total PCBs defined as 20 PCB congeners (list available upon request)
- SNR= Sample Not Received



Job Number : EV193084
Customer : PT. EnviroSolutions & Consulting
Project Name : Seawater, Surface Water & Sediment Analysis
Customer Ref : 7987.r5/IUS-EV/II/2020

Laboratory Sample I.D :			EV193084-1	EV193084-2	EV193084-3
Customer Sample I.D :			MWB 4	MBW 4 Dup	MWB 3
Date Sampled :			28-Nov-19	28-Nov-19	28-Nov-19
Sample Matrix :			Seawater	Seawater	Seawater
No.	Test Description	Units	Results	Results	Results
Physical Tests					
1	Brightness ¹⁾	m	10	10	6
2	Floating Matter ¹⁾	-	None	None	None
3	Oil Film ¹⁾	-	None	None	None
4	pH ²⁾	S.U.	8.20	8.24	8.23
5	Salinity ²⁾	g/L	34.2	34.3	34.3
6	Temperature ³⁾	°C	30.0	30.0	29.5
7	Total Suspended Solids, TSS	mg/L	3	3	3
8	Turbidity ¹⁾	NTU	<0.5	<0.5	<0.5
Anions					
1	Cyanide (Total), CN ⁻	mg/L	<0.005	<0.005	<0.005
2	Sulphide as H ₂ S	mg/L	<0.002	<0.002	<0.002
Nutrients					
1	Total Ammonia, NH ₃ -N	mg/L	<0.02	<0.02	<0.02
2	Nitrate, NO ₃ -N	mg/L	0.016	0.024	0.020
3	Total Phosphorus as PO ₄	mg/L	0.078	0.059	0.074
Dissolved Metals					
1	Arsenic, As	mg/L	0.0017	0.0015	0.0017
2	Cadmium, Cd	mg/L	<0.0001	<0.0001	<0.0001
3	Chromium Hexavalent, Cr ⁶⁺	mg/L	<0.002	<0.002	<0.002
4	Copper, Cu	mg/L	<0.001	<0.001	<0.001
5	Lead, Pb	mg/L	<0.001	<0.001	<0.001
6	Mercury, Hg	mg/L	<0.00005	<0.00005	<0.00005
7	Nickel, Ni	mg/L	<0.001	<0.001	<0.001
8	Zinc, Zn	mg/L	<0.005	<0.005	<0.005
Microbiology					
1	Total Coliforms ^{1/2/3)}	CFU/100ml	ND	ND	ND
2	Faecal Coliforms	CFU/100ml	ND	ND	ND



Job Number : EV193084
Customer : PT. EnviroSolutions & Consulting
Project Name : Seawater, Surface Water & Sediment Analysis
Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193084-1	EV193084-2	EV193084-3
Customer Sample I.D :			MWB 4	MBW 4 Dup	MWB 3
Date Sampled :			28-Nov-19	28-Nov-19	28-Nov-19
Sample Matrix :			Seawater	Seawater	Seawater
No.	Test Description	Units	Results	Results	Results
Miscellaneous					
1	Chemical Oxygen Demand, COD	mg/L	7	8	5
2	Biochemical Oxygen Demand, BOD ₅	mg/L	<2	<2	<2
3	Chlorine (Free), Cl ₂	mg/L	<0.01	<0.01	<0.01
4	Dissolved Oxygen, DO ⁽¹⁾	mg/L	5.80	5.80	5.80
5	Oil & Grease	mg/L	<1	<1	<1
6	Surfactants, MBAS	mg/L	<0.01	<0.01	<0.01
7	Total Organic Carbon, TOC	mg/L	2.3	2.8	1.8
8	Total Phenols	mg/L	<0.001	<0.001	<0.001
Organics Tests					
1	Polycyclic Aromatic Hydrocarbons, PAHs Total ⁽¹⁾	µg/L	<0.1	<0.1	<0.1
BTEX					
1	Benzene	µg/L	<1	<1	<1
2	Toluene	µg/L	<1	<1	<1
3	Ethyl Benzene	µg/L	<1	<1	<1
4	Xylenes Total	µg/L	<3	<3	<3

Note: Refer to QA/QC – Accuracy page for list of analytical methods used



Job Number : EV193084
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater, Surface Water & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193084-4	EV193084-5
Customer Sample I.D :			MWB 2	MWB 1
Date Sampled :			28-Nov-19	28-Nov-19
Sample Matrix :			Seawater	Seawater
No.	Test Description	Units	Results	Results
Physical Tests				
1	Brightness ⁽¹⁾	cm	7	5
2	Floating Matter ⁽¹⁾	-	None	None
3	Oil Film ⁽¹⁾	-	None	None
4	pH ⁽¹⁾	S.U.	8.20	8.17
5	Salinity ⁽¹⁾	g/L	34.2	33.9
6	Temperature ⁽¹⁾	°C	30.0	31.0
7	Total Suspended Solids, TSS	mg/L	2	2
8	Turbidity ⁽¹⁾	NTU	<0.5	<0.5
Anions				
1	Cyanide (Total), CN ⁻	mg/L	<0.005	<0.005
2	Sulphide as H ₂ S	mg/L	<0.002	<0.002
Nutrients				
1	Total Ammonia, NH ₃ -N	mg/L	<0.02	<0.02
2	Nitrate, NO ₃ -N	mg/L	0.019	0.020
3	Total Phosphorus as PO ₄	mg/L	0.069	0.058
Dissolved Metals				
1	Arsenic, As	mg/L	0.0015	0.0013
2	Cadmium, Cd	mg/L	<0.0001	<0.0001
3	Chromium Hexavalent, Cr ⁶⁺	mg/L	<0.002	<0.002
4	Copper, Cu	mg/L	<0.001	<0.001
5	Lead, Pb	mg/L	<0.001	<0.001
6	Mercury, Hg	mg/L	<0.00005	<0.00005
7	Nickel, Ni	mg/L	<0.001	<0.001
8	Zinc, Zn	mg/L	<0.005	<0.005
Microbiology				
1	Total Coliforms ⁽²⁺⁾	CFU/100ml	ND	ND
2	Faecal Coliforms	CFU/100ml	ND	ND



Job Number : EV193084
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater, Surface Water & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193084-4	EV193084-5
Customer Sample I.D :			MWB 2	MWB 1
Date Sampled :			28-Nov-19	28-Nov-19
Sample Matrix :			Seawater	Seawater
No.	Test Description	Units	Results	Results
Miscellaneous				
1	Chemical Oxygen Demand, COD	mg/L	5	4
2	Biochemical Oxygen Demand, BOD ₅	mg/L	<2	<2
3	Chlorine (Free), Cl ₂	mg/L	<0.01	<0.01
4	Dissolved Oxygen, DO ¹⁾	mg/L	5.80	5.40
5	Oil & Grease	mg/L	<1	<1
6	Surfactants, MBAS	mg/L	<0.01	<0.01
7	Total Organic Carbon, TOC	mg/L	1.9	1.1
8	Total Phenols	mg/L	<0.001	<0.001
Organics Tests				
1	Polycyclic Aromatic Hydrocarbons, PAHs Total ⁴⁾	µg/L	<0.1	<0.1
BTEX				
1	Benzene	µg/L	<1	<1
2	Toluene	µg/L	<1	<1
3	Ethyl Benzene	µg/L	<1	<1
4	Xylenes Total	µg/L	<3	<3

Note: Refer to QA/QC – Accuracy page for list of analytical methods used



Job Number : EV193084
Customer : PT. EnviroSolutions & Consulting
Project Name : Seawater, Surface Water & Sediment Analysis
Customer Ref : 7987.r5/US-EV/12020

Laboratory Sample I.D :			EV193084-6
Customer Sample I.D :			GWQ 5
Date Sampled :			28-Nov-19
Sample Matrix :			Surface Water
No.	Test Description	Units	Results
Physical Tests			
1	Color	Pl/Co	40
2	pH ⁽¹⁾	S.U.	8.10
3	Temperature °	°C	26.9
4	Total Dissolved Solids, TDS	mg/L	894
5	Total Suspended Solids, TSS	mg/L	92
6	Turbidity ⁽¹⁾	NTU	31.8
Anions			
1	Chloride, Cl ⁻	mg/L	67.1
2	Cyanide (Total), CN ⁻	mg/L	<0.005
3	Fluoride, F ⁻	mg/L	0.34
4	Sulphate, SO ₄ ²⁻	mg/L	<2
5	Sulphide as H ₂ S	mg/L	<0.002
Nutrients			
1	Total Ammonia, NH ₃ -N	mg/L	<0.02
2	Nitrate, NO ₃ -N	mg/L	0.007
3	Nitrite, NO ₂ -N	mg/L	<0.001
4	Total Phosphorus as P	mg/L	0.388
Dissolved Metals			
1	Arsenic, As	mg/L	0.0042
2	Boron, B	mg/L	0.19
3	Cadmium, Cd	mg/L	0.0064
4	Chromium Hexavalent, Cr ⁶⁺	mg/L	<0.002
5	Cobalt, Co	mg/L	0.002
6	Copper, Cu	mg/L	<0.001
7	Iron, Fe	mg/L	0.171
8	Lead, Pb	mg/L	<0.001
9	Manganese, Mn	mg/L	1.83
10	Mercury, Hg	mg/L	<0.00005
11	Selenium, Se	mg/L	0.0008
12	Zinc, Zn	mg/L	<0.005



Job Number : EV193084
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater, Surface Water & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193084-6
Customer Sample I.D :			GWQ 5
Date Sampled :			28-Nov-19
Sample Matrix :			Surface Water
No.	Test Description	Units	Results
Microbiology			
1	Total Coliforms ^{11**}	CFU/100ml	18500
2	Faecal Coliforms ^{11**}	CFU/100ml	8600
Miscellaneous			
1	Chemical Oxygen Demand, COD	mg/L	62
2	Biochemical Oxygen Demand, BOD ₅	mg/L	8
3	Chlorine (Free), Cl ₂ ¹¹	mg/L	<0.01
4	Dissolved Oxygen, DO ¹¹	mg/L	4.03
5	Oil & Grease	mg/L	<1
6	Surfactants, MBAS	mg/L	<0.01
7	Total Phenols	mg/L	<0.001

Note: Refer to QA/QC – Accuracy page for list of analytical methods used



Job Number : EV193084
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater, Surface Water & Sediment Analysis
 Customer Ref : 7987.r5IUS-EV/II/2020

Laboratory Sample I.D :			EV193084-7	EV193084-8	EV193084-9
Customer Sample I.D :			MWB 4	MWB 4 Dup	MWB 3
Date Sampled :			28-Nov-19	28-Nov-19	28-Nov-19
Sample Matrix :			Sediment	Sediment	Sediment
No.	Test Description	Units	Results	Results	Results
	Total Metals				
1	Antimony, Sb	mg/dry kg	<0.1	<0.1	<0.1
2	Arsenic, As	mg/dry kg	3.3	3.7	8.8
3	Cadmium, Cd	mg/dry kg	0.93	0.16	0.19
4	Chromium, Cr	mg/dry kg	19.4	19.2	31.0
5	Copper, Cu	mg/dry kg	10.5	11.2	27.8
6	Lead, Pb	mg/dry kg	5.3	5.4	10.9
7	Mercury, Hg	mg/dry kg	0.023	0.020	0.038
8	Nickel, Ni	mg/dry kg	13.1	12.7	23.4
9	Silver, Ag	mg/dry kg	<0.02	<0.02	<0.02
10	Zinc, Zn	mg/dry kg	32	32	82

Note: Refer to QA/QC – Accuracy page for list of analytical methods used



Job Number : EV193684
Customer : PT. EnviroSolutions & Consulting
Project Name : Seawater, Surface Water & Sediment Analysis
Customer Ref : 7987.r5NIUS-EV/02020

Laboratory Sample I.D :			EV193084-10	EV193084-11
Customer Sample I.D :			MWB 2	MWB 1
Date Sampled :			28-Nov-19	28-Nov-19
Sample Matrix :			Sediment	Sediment
No.	Test Description	Units	Results	Results
	Total Metals			
1	Antimony, Sb	mg/dry kg	<0.1	<0.1
2	Arsenic, As	mg/dry kg	10.7	10.8
3	Cadmium, Cd	mg/dry kg	0.34	0.17
4	Chromium, Cr	mg/dry kg	29.4	26.9
5	Copper, Cu	mg/dry kg	35.2	45.7
6	Lead, Pb	mg/dry kg	12.2	12.3
7	Mercury, Hg	mg/dry kg	0.048	0.053
8	Nickel, Ni	mg/dry kg	25.4	26.5
9	Silver, Ag	mg/dry kg	<0.02	<0.02
10	Zinc, Zn	mg/dry kg	58	61

Note: Refer to QA/QC – Accuracy page for list of analytical methods used



QUALITY CONTROL - PRECISION

Job Number : EV193084
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater, Surface Water & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV19/2020

No	Description	Units	Laboratory Replicate		% RPD
			EV193084-5	EV193084-5 Duplicate	
	Physical Tests				
1	Brightness ¹⁾	m	5	-	-
2	Floating Matter ¹⁾	-	None	-	-
3	Oil Film ¹⁾	-	None	-	-
4	pH ³⁾	S.U.	8.17	-	-
5	Salinity ¹⁾	g/L	33.9	-	-
6	Temperature ³⁾	°C	31.0	-	-
7	Total Suspended Solids, TSS	mg/L	2	2	0.0%
8	Turbidity ¹⁾	NTU	<0.5	-	-
	Anions				
1	Cyanide (Total), CN ⁻	mg/L	<0.005	<0.005	-
2	Sulphide as H ₂ S	mg/L	<0.002	-	-
	Nutrients				
1	Total Ammonia, NH ₃ -N	mg/L	<0.02	<0.02	-
2	Nitrate, NO ₃ -N	mg/L	0.020	0.020	0.0%
3	Total Phosphorus as PO ₄	mg/L	0.058	0.058	0.0%
	Dissolved Metals				
1	Arsenic, As	mg/L	0.0013	0.0012	10.3%
2	Cadmium, Cd	mg/L	<0.0001	<0.0001	-
3	Chromium Hexavalent, Cr ⁶⁺	mg/L	<0.002	<0.002	-
4	Copper, Cu	mg/L	<0.001	<0.001	-
5	Lead, Pb	mg/L	<0.001	<0.001	-
6	Mercury, Hg	mg/L	<0.00005	<0.00005	-
7	Nickel, Ni	mg/L	<0.001	<0.001	-
8	Zinc, Zn	mg/L	<0.005	<0.005	-
	Microbiology				
1	Total Coliforms ¹⁾⁺⁺	CFU/100ml	ND	-	-



QUALITY CONTROL - PRECISION

Job Number : EV193084
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater, Surface Water & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV193084

No	Description	Units	Laboratory Replicate		% RPD
			EV193084-5	EV193084-5 Duplicate	
	Miscellaneous				
1	Chemical Oxygen Demand, COD	mg/L	4	4	0.0%
2	Biochemical Oxygen Demand, BOD ₅	mg/L	<2	<2	-
3	Chlorine (Free), Cl ₂	mg/L	<0.01	<0.01	-
4	Dissolved Oxygen, DO ¹¹	mg/L	5.40	-	-
5	Oil & Grease	mg/L	<1	-	-
6	Surfactants, MBAS	mg/L	<0.01	<0.01	-
7	Total Organic Carbon, TOC	mg/L	1.1	1.0	5.7%
8	Total Phenols	mg/L	<0.001	<0.001	-
	Organics Tests				
1	Polycyclic Aromatic Hydrocarbons, PAHs Total ¹¹	µg/L	<0.1	-	-
	BTEX				
1	Benzene	µg/L	<1	<1	-
2	Toluene	µg/L	<1	<1	-
3	Ethyl Benzene	µg/L	<1	<1	-
4	Xylenes Total	µg/L	<3	<3	-

The laboratory analyzes duplicate aliquots of one or more samples within each batch.

Results are used to estimate analytical precision for that matrix at that concentration.

RPDs of up to 10% are considered acceptable for many test methods (except for results which are < 10x DL)



QUALITY CONTROL - PRECISION

Job Number : EV193084
Customer : PT. EnviroSolutions & Consulting
Project Name : Seawater, Surface Water & Sediment Analysis
Customer Ref : 7987.r5/IUS-EV1/2020

No	Description	Units	Laboratory Replicate		% RPD
			EV193084-6	EV193084-6 Duplicate	
	Microbiology				
1	Total Coliforms ^{11**}	CFU/100ml	16500	-	-
2	Faecal Coliforms ^{11**}	CFU/100ml	8600	9000	4.5%

The laboratory analyzes duplicate aliquots of one or more samples within each batch.

Results are used to estimate analytical precision for that matrix at that concentration.

RPDs of up to 15% are considered acceptable for many test methods (except for results which are < 10x DL)



QUALITY CONTROL - PRECISION

Job Number : EV193084
Customer : PT. EnviroSolutions & Consulting
Project Name : Seawater, Surface Water & Sediment Analysis
Customer Ref : 7987.r5/US-EV/1/2020

No	Description	Units	Laboratory Replicate		% RPD
			EV193084-11	EV193084-11 Duplicate	
	Total Metals				
1	Antimony, Sb	mg/dry kg	<0.1	<0.1	-
2	Arsenic, As	mg/dry kg	10.8	11.1	2.7%
3	Cadmium, Cd	mg/dry kg	0.17	0.16	6.1%
4	Chromium, Cr	mg/dry kg	26.9	27.3	1.5%
5	Copper, Cu	mg/dry kg	45.7	46.0	0.7%
6	Lead, Pb	mg/dry kg	12.3	12.3	0.0%
7	Mercury, Hg	mg/dry kg	0.053	0.052	1.9%
8	Nickel, Ni	mg/dry kg	26.5	27.1	2.2%
9	Silver, Ag	mg/dry kg	<0.02	<0.02	-
10	Zinc, Zn	mg/dry kg	61	63	3.2%

The laboratory analyzes duplicate aliquots of one or more samples within each batch.

Results are used to estimate analytical precision for that matrix at that concentration.

RPDs of up to 15% are considered acceptable for many test methods (except for results which are < 10x DL)



QUALITY CONTROL - ACCURACY

Job Number : EV193684
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater, Surface Water & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/2020

No	Description	Method	Units	Limit of Reporting	Reference Material		% Recovery
					Expected Value	Result	
	Physical Tests						
1	pH ¹¹	APHA 4500-H+ B	S.U.	-	-	-	-
2	Total Dissolved Solids, TDS	APHA 2540 C	mg/L	1	318	312	98%
3	Total Suspended Solids, TSS	APHA 2540 D	mg/L	1	32	30	94%
	Anions						
1	Chloride, Cl ⁻	APHA 4110 B	mg/L	0.5	11.3	11.3	100%
2	Cyanide (Total), CN ⁻	APHA 4500CN C,E	mg/L	0.005	0.472	0.439	93%
3	Fluoride, F ⁻	APHA 4110 B	mg/L	0.02	6.83	6.77	99%
4	Sulphate, SO ₄ ²⁻	APHA 4110 B	mg/L	2	6.95	7	106%
5	Sulphide as H ₂ S	APHA 4500-S2 G	mg/L	0.002	-	-	-
	Nutrients						
1	Total Ammonia, NH ₃ -N	APHA 4500NH3 D	mg/L	0.02	17.2	16.4	96%
2	Nitrate, NO ₃ -N	APHA 4110 B	mg/L	0.005	14.9	15.0	101%
3	Nitrate, NO ₃ -N	APHA 4500 NO3E & APHA 4500 NO2B	mg/L	0.005	16.1	17.2	107%
4	Nitrite, NO ₂ -N	APHA 4110 B	mg/L	0.001	2.9	2.67	92%
6	Total Phosphorus as P	APHA 4500P E	mg/L	0.005	6.32	6.22	99%
7	Total Phosphorus as PO ₄	APHA 4500P E	mg/L	0.005	25.46	24.8	98%



QUALITY CONTROL - ACCURACY

Job Number : EV193084
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater, Surface Water & Sediment Analysis
 Customer Ref : 7967.r5/IUS-EV//2020

No	Description	Method	Units	Limit of Reporting	Reference Material		% Recovery
					Expected Value	Result	
	Dissolved Metals						
1	Arsenic, As	APHA 3125 B	mg/L	0.0005	0.11	0.104	94%
2	Boron, B	APHA 3125 B	mg/L	0.01	1.39	1.35	97%
3	Cadmium, Cd	APHA 3125 B	mg/L	0.0001	0.389	0.377	97%
4	Chromium Hexavalent, Cr ⁶⁺	APHA 3500-Cr B	mg/L	0.002	0.581	0.544	97%
5	Cobalt, Co	APHA 3125 B	mg/L	0.001	0.262	0.267	102%
6	Copper, Cu	APHA 3125 B	mg/L	0.001	0.476	0.501	105%
7	Iron, Fe	APHA 3125 B	mg/L	0.005	1.14	1.19	104%
8	Lead, Pb	APHA 3125 B	mg/L	0.001	0.786	0.747	95%
9	Manganese, Mn	APHA 3125 B	mg/L	0.001	1.42	1.44	101%
10	Mercury, Hg	USEPA 245.7	mg/L	0.00005	0.0133	0.0127	96%
11	Nickel, Ni	APHA 3125 B	mg/L	0.001	1.13	1.12	99%
12	Selenium, Se	APHA 3125 B	mg/L	0.0005	0.259	0.257	99%
13	Zinc, Zn	APHA 3125 B	mg/L	0.005	0.609	0.612	101%
	Microbiology						
1	Total Coliforms ^{3/++}	APHA 9222B	CFU/100ml	1	-	-	-
2	Faecal Coliforms ^{3/++}	APHA 9222D	CFU/100ml	1	-	-	-
	Miscellaneous						
1	Chemical Oxygen Demand, CDD	APHA 5220 C	mg/L	2	147	142	97%
2	Biochemical Oxygen Demand, BOD ₅	APHA 5210 B	mg/L	2	90.5	88	97%
3	Chlorine (Free), Cl ₂	APHA 4500-Cl I	mg/L	0.01	0.732	0.71	97%
4	Oil & Grease	APHA 5520 B	mg/L	1	106	100	98%
5	Surfactants, MBAS	APHA 5540 C	mg/L	0.01	0.222	0.21	93%
6	Total Organic Carbon, TOC	APHA 5310 C	mg/L	0.5	58.5	57.2	98%
7	Total Phenols	USEPA 9065	mg/L	0.001	4.95	4.54	92%



QUALITY CONTROL - ACCURACY

Job Number : EV193084
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater, Surface Water & Sediment Analysis
 Customer Ref : 7967.r5/IUS-EVN/2020

No	Description	Method	Units	Limit of Reporting	Reference Material		% Recovery
					Expected Value	Result	
	Organics Tests						
1	Polycyclic Aromatic Hydrocarbons, PAHs	USEPA 8270C	µg/L	0.1	8.0	7.7	96%
	BTEX						
1	Benzene	USEPA 8260 B	µg/L	1	14.1	13.2	94%
2	Toluene	USEPA 8260 B	µg/L	1	7.0	6.1	87%
3	Ethyl Benzene	USEPA 8260 B	µg/L	1	7.8	7.2	94%
4	Xylenes Total	USEPA 8260 B	µg/L	3	36.2	33.6	88%
	Total Metals						
1	Antimony, Sb	USEPA 3050B/APHA 3125B	mg/dry kg	0.1	-	-	-
2	Arsenic, As	USEPA 3050B/APHA 3125B	mg/dry kg	0.1	221	209	95%
3	Cadmium, Cd	USEPA 3050B/APHA 3125B	mg/dry kg	0.02	126	126	100%
4	Chromium, Cr	USEPA 3050B/APHA 3125B	mg/dry kg	0.2	74.7	75.8	101%
5	Copper, Cu	USEPA 3050B/APHA 3125B	mg/dry kg	0.2	83.3	88.1	106%
6	Lead, Pb	USEPA 3050B/APHA 3125B	mg/dry kg	0.2	79.9	79.3	99%
7	Mercury, Hg	USEPA 3050B/USEPA245.7	mg/dry kg	0.001	13.8	12.7	92%
8	Nickel, Ni	USEPA 3050B/APHA 3125B	mg/dry kg	0.2	178	172	97%
9	Silver, Ag	USEPA 3050B/APHA 3125B	mg/dry kg	0.02	59.6	54.5	91%
10	Zinc, Zn	USEPA 3050B/APHA 3125B	mg/dry kg	1	338	324	86%

Reference Materials are QC samples of known concentration prepared independently of the calibration standards

Results are used to verify that analytical precision is in control and that the level of bias due to calibration is acceptable. Generally speaking, % Recovery should fall between 85% to 115% (except Gas Chromatography methods)

Limit of Reporting means the lowest concentration at which an analyte can be detected in a sample and its concentration can be reported with a reasonable degree of accuracy and precision based on the analytical methodology used.

V1.7-6

ENVIRONMENTAL TEST REPORT

Ms. Yanti Setiakurniasih
PT. EnviroSolutions & Consulting
Intiland Tower Lt. 18
JL. Jend. Sudirman Kav 32 RT 003 RW 002
Jakarta,
INDONESIA

Job Number : EV193084-A
Customer Ref : 7987.r5/IUS-EV/II/2020
Project Name : Seawater, Surface Water & Sediment Analysis

Number of samples : 5

Date received : 02-Dec-2019

Date reported : 31-Dec-2019

Approved Signature for:



for
Reginald C. de Wit
Manager Environmental Services

All work is performed in accordance with Intertek Standard Terms and Conditions of work <http://www.intertek.com/terms/>

This report relates specifically to the sample(s) tested in so far as that the sample(s) is truly representative of the sample source as received.

This report was prepared solely for the use of the client named in this report. PT Intertek Utama Services accepts no responsibility for any loss, damage or liability suffered by any third party as a result of any reliance upon or use of this report.

DO NOT PHOTOCOPY





SAMPLE INFORMATION

Job Number : EV193084-A
Customer : PT. EnviroSolutions & Consulting
Project Name : Seawater, Surface Water & Sediment Analysis
Customer Ref : 7987.r5/IUS-EV/I/2020

No.	Laboratory Sample I.D.	Customer Sample I.D.	Sample Matrix	Date Sampled	Time Sampled	Date Received	Sampled By	Coordinates	
1	EV193084-1	MWB 4	Seawater	28-Nov-19	14:30	02-Dec-19	Fahru Roji, Husni, Hilman	S : 07° 59' 27.504"	E : 131° 16' 59.817"
2	EV193084-2	MWB 4 Dup	Seawater	28-Nov-19	14:46	02-Dec-19	Fahru Roji, Husni, Hilman	S : 07° 58' 27.504"	E : 131° 16' 59.817"
3	EV193084-3	MWB 3	Seawater	28-Nov-19	14:58	02-Dec-19	Fahru Roji, Husni, Hilman	S : 07° 58' 24.397"	E : 131° 17' 20.978"
4	EV193084-4	MWB 2	Seawater	28-Nov-19	15:15	02-Dec-19	Fahru Roji, Husni, Hilman	S : 07° 57' 46.496"	E : 131° 17' 07.326"
5	EV193084-5	MWB 1	Seawater	28-Nov-19	14:50	02-Dec-19	Fahru Roji, Husni, Hilman	S : 07° 56' 21.197"	E : 131° 17' 02.818"

Notes:

- NA = Not Analysed
ND = Not Detected
IS = Insufficient Sample
** = Non Accredited Test
*** = Subcontracted Test
1) = Field Measurement
2) = Field Measurement by Customer
3) = Total Pesticides defined as 30 OCP compounds (list available upon request)
4) = Total PAHs defined as 16 PAH compounds (list available upon request)
5) = Total PCBs defined as 20 PCB congeners (list available upon request)
SNR = Sample Not Received



Job Number : EV193084-A
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater, Surface Water & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/V/2020

Laboratory Sample I.D. :			EV193084-1	EV193084-2	EV193084-3
Customer Sample I.D. :			MWB 4	MBW 4 Cup	MWB 3
Date Sampled :			28-Nov-19	28-Nov-19	28-Nov-19
Sample Matrix :			Seawater	Seawater	Seawater
No.	Test Description	Units	Results	Results	Results
	PLANKTON***				
	1. PHYTOPLANKTON				
	BACILLARIOPHYCEAE				
1	<i>Amphora</i> sp.	Cell/m ³	177	-	-
2	<i>Bacillaria</i> sp.	Cell/m ³	531	531	1,416
3	<i>Cocconeis</i> sp.	Cell/m ³	-	-	354
4	<i>Fragilaria</i> sp.	Cell/m ³	-	708	354
5	<i>Gyrodinium</i> sp.	Cell/m ³	-	177	-
6	<i>Liocithara</i> sp.	Cell/m ³	-	-	-
7	<i>Navicula</i> sp.	Cell/m ³	3,363	531	708
8	<i>Nitzschia</i> sp.	Cell/m ³	43,188	14,514	13,098
9	<i>Pleurosigma</i> sp.	Cell/m ³	354	531	-
10	<i>Rhabdonema</i> sp.	Cell/m ³	-	-	-
11	<i>Surirella</i> sp.	Cell/m ³	-	177	-
12	<i>Thalassionema</i> sp.	Cell/m ³	1,239	-	-
13	<i>Thalassiosira</i> sp.	Cell/m ³	354	3,894	4,425
	COSCIDISCOPHYCEAE				
1	<i>Coscinodiscus</i> sp.	Cell/m ³	3,540	3,363	3,186
2	<i>Gammaria</i> sp.	Cell/m ³	5,310	-	531
3	<i>Rhizosolenia</i> sp.	Cell/m ³	65,844	42,657	25,311
	CYANOPHYCEAE				
1	<i>Trichodesmium</i> sp.		82,305	493,830	471,882
	DINOPHYCEAE				
1	<i>Ceratium</i> sp.	Cell/m ³	1,947	10,974	12,213
2	<i>Ceratocorys</i> sp.	Cell/m ³	-	-	-
3	<i>Dinophysis</i> sp.	Cell/m ³	708	3,894	10,974
4	<i>Ornithocercus</i> sp.	Cell/m ³	-	-	177
5	<i>Pectinium</i> sp.	Cell/m ³	1,416	5,467	6,496
6	<i>Pyrocystis</i> sp.	Cell/m ³	-	-	531
7	<i>Pyrophacus</i> sp.	Cell/m ³	708	1,416	885



Job Number : EV193084-A
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater, Surface Water & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193084-1	EV193084-2	EV193084-3
Customer Sample I.D :			MWB 4	MBW 4 Dup	MWB 3
Date Sampled :			28-Nov-19	28-Nov-19	28-Nov-19
Sample Matrix :			Seawater	Seawater	Seawater
No.	Test Description	Units	Results	Results	Results
MEDIOPHYCEAE					
1	<i>Bacteriasinus</i> sp.	Cell/m ³	23,010	20,886	11,151
2	<i>Biddulphia</i> sp.	Cell/m ³	531	-	-
3	<i>Cerataulina</i> sp.	Cell/m ³	2,124	-	1,770
4	<i>Chaetoceros</i> sp.	Cell/m ³	419,667	739,505	623,925
5	<i>Climacosphentia</i> sp.	Cell/m ³	-	-	-
6	<i>Hemisulcus</i> sp.	Cell/m ³	10,089	12,587	13,629
7	<i>Leptocyndrus</i> sp.	Cell/m ³	17,346	11,682	14,337
Total Taxa (s)			21	19	21
Abundance		Cell/m ³	683,751	1,367,325	1,219,353
Diversity Index			1.41	1.14	1.18
Equitability Index			0.46	0.39	0.39
Dominance Index			0.41	0.42	0.41
2. ZOOPLANKTON					
ACANTHARIA					
1	<i>Acanthomelon</i> sp.	Ind/m ³	177	177	-
APPENDICULARIA					
1	<i>Oikopleura</i> sp.	Ind/m ³	354	354	177
COPEPODA					
1	<i>Acartia</i> sp.	Ind/m ³	1,947	10,620	10,620
2	<i>Balanus</i> sp.	Ind/m ³	531	177	177
3	<i>Calanopia</i> sp.	Ind/m ³	354	354	177
4	<i>Calanus</i> sp.	Ind/m ³	708	3,009	2,655
5	<i>Corycaeus</i> sp.	Ind/m ³	177	177	354
6	<i>Macrosetella</i> sp.	Ind/m ³	-	354	531
7	<i>Microsetella</i> sp.	Ind/m ³	-	1,683	885
8	<i>Oithona</i> sp.	Ind/m ³	2,832	5,487	7,257
9	<i>Oncaea</i> sp.	Ind/m ³	-	354	177
10	<i>Temora</i> sp.	Ind/m ³	3,717	6,195	11,682



Job Number : EV193084-A
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater, Surface Water & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EVW2020

Laboratory Sample I.D :			EV193084-1	EV193084-2	EV193084-3
Customer Sample I.D :			MWB 4	MBW 4 Dup	MWB 3
Date Sampled :			28-Nov-19	28-Nov-19	28-Nov-19
Sample Matrix :			Seawater	Seawater	Seawater
No.	Test Description	Units	Results	Results	Results
GLOBOTHALAMEA					
1	<i>Globigerina sp.</i>	Ind/m ³	-	177	-
2	<i>Globorotalia sp.</i>	Ind/m ³	177	177	2,124
OLIGOTRICHEA					
1	<i>Codonellopsis sp.</i>	Ind/m ³	-	177	708
2	<i>Eufirinnus sp.</i>	Ind/m ³	354	-	-
3	<i>Leprotirinnus sp.</i>	Ind/m ³	-	177	354
4	<i>Parafaveola sp.</i>	Ind/m ³	177	708	531
5	<i>Tintinnopsis sp.</i>	Ind/m ³	177	1,593	2,832
SAGITTOIDEA					
1	<i>Sagitta sp.</i>	Ind/m ³	177	-	177
Total Taxa (s)			14	16	17
Abundance		Ind/m ³	11,859	31,860	41,418
Diversity Index			2.00	2.00	1.98
Equitability Index			0.76	0.69	0.70
Dominance Index			0.19	0.19	0.19

Note: Refer to QA/QC – Accuracy page for list of analytical methods used

2



Job Number : EV193084-A
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater, Surface Water & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193084-4	EV193084-5
Customer Sample I.D :			MWB 2	MWB 1
Date Sampled :			28-Nov-19	28-Nov-19
Sample Matrix :			Seawater	Seawater
No.	Test Description	Units	Results	Results
	PLANKTON**			
	1. PHYTOPLANKTON			
	BACILLARIOPHYCEAE			
1	<i>Amphora</i> sp.	Cell/m ³	-	-
2	<i>Bacillaria</i> sp.	Cell/m ³	708	-
3	<i>Cocconeis</i> sp.	Cell/m ³	531	-
4	<i>Fragilaria</i> sp.	Cell/m ³	354	354
5	<i>Gyrodinium</i> sp.	Cell/m ³	-	-
6	<i>Uromphora</i> sp.	Cell/m ³	177	-
7	<i>Navicula</i> sp.	Cell/m ³	-	5,310
8	<i>Nitzschia</i> sp.	Cell/m ³	12,744	24,957
9	<i>Pleurosigma</i> sp.	Cell/m ³	354	1,062
10	<i>Rhabdonema</i> sp.	Cell/m ³	-	177
11	<i>Siraella</i> sp.	Cell/m ³	-	-
12	<i>Thalassionema</i> sp.	Cell/m ³	354	354
13	<i>Thalassiothrix</i> sp.	Cell/m ³	2,478	708
	COSCINODISCOPHYCEAE			
1	<i>Coscinodiscus</i> sp.	Cell/m ³	1,770	3,363
2	<i>Guanardia</i> sp.	Cell/m ³	885	1,416
3	<i>Rhizosolenia</i> sp.	Cell/m ³	22,302	22,479
	CYANOPHYCEAE			
1	<i>Trichodesmium</i> sp.		246,915	186,558
	DINOPHYCEAE			
1	<i>Ceratium</i> sp.	Cell/m ³	6,903	8,673
2	<i>Ceratocorys</i> sp.	Cell/m ³	177	177
3	<i>Dinophysis</i> sp.	Cell/m ³	4,602	2,832
4	<i>Onithocercus</i> sp.	Cell/m ³	-	-
5	<i>Peridinium</i> sp.	Cell/m ³	5,310	6,195
6	<i>Pyrocystis</i> sp.	Cell/m ³	-	-
7	<i>Pyroplacus</i> sp.	Cell/m ³	1,593	177



Job Number : EV193084-A
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater, Surface Water & Sediment Analysis
 Customer Ref : 7987.r5/US-EV/I/2020

Laboratory Sample I.D :			EV193084-4	EV193084-5
Customer Sample I.D :			MWB 2	MWB 1
Date Sampled :			28-Nov-19	28-Nov-19
Sample Matrix :			Seawater	Seawater
No.	Test Description	Units	Results	Results
MEDIOPHYCEAE				
1	<i>Bacteniasium</i> sp.	Cell/m ³	14,868	8,950
2	<i>Biddulphia</i> sp.	Cell/m ³	177	-
3	<i>Ceratodina</i> sp.	Cell/m ³	-	708
4	<i>Chaetoceros</i> sp.	Cell/m ³	682,158	476,838
5	<i>Climacospheria</i> sp.	Cell/m ³	177	177
6	<i>Hemiaulus</i> sp.	Cell/m ³	12,036	6,726
7	<i>Leptocylindrus</i> sp.	Cell/m ³	4,779	5,664
Total Taxa (s)			23	22
Abundance		Cell/m ³	1,022,352	763,755
Diversity Index			1.04	1.20
Equitability Index			0.33	0.39
Dominance Index			0.50	0.45
2. ZOOPLANKTON				
ACANTHARIA				
1	<i>Acanthometron</i> sp.	Ind/m ³	-	-
APPENDICULARIA				
1	<i>Oikopleura</i> sp.	Ind/m ³	354	531
COPEPODA				
1	<i>Acartia</i> sp.	Ind/m ³	6,903	5,133
2	<i>Balanus</i> sp.	Ind/m ³	-	177
3	<i>Calanopia</i> sp.	Ind/m ³	354	-
4	<i>Calanus</i> sp.	Ind/m ³	1,062	-
5	<i>Corycaeus</i> sp.	Ind/m ³	177	-
6	<i>Macrosetella</i> sp.	Ind/m ³	-	-
7	<i>Microsetella</i> sp.	Ind/m ³	1,062	177
8	<i>Oithona</i> sp.	Ind/m ³	2,655	4,071
9	<i>Oncaea</i> sp.	Ind/m ³	177	-
10	<i>Tentoria</i> sp.	Ind/m ³	9,204	4,779

R



Job Number : EV193084-A
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater, Surface Water & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193084-4	EV193084-5
Customer Sample I.D :			MWB 2	MWB 1
Date Sampled :			28-Nov-19	28-Nov-19
Sample Matrix :			Seawater	Seawater
No.	Test Description	Units	Results	Results
GLOBOTHALAMEA				
1	<i>Globigerina sp.</i>	Ind/m ³	-	-
2	<i>Globorotalia sp.</i>	Ind/m ³	708	708
OLIGOTRICHEA				
1	<i>Codonostopsis sp.</i>	Ind/m ³	-	177
2	<i>Eudotina sp.</i>	Ind/m ³	354	177
3	<i>Leprotina sp.</i>	Ind/m ³	-	-
4	<i>Parafavosites sp.</i>	Ind/m ³	354	1,062
5	<i>Tintinnopsis sp.</i>	Ind/m ³	354	354
SAGITTOIDEA				
1	<i>Sagitta sp.</i>	Ind/m ³	-	-
Total Taxa (s)			13	11
Abundance		Ind/m ³	23,718	17,346
Diversity Index			1.74	1.73
Equitability Index			0.68	0.72
Dominance Index			0.25	0.23

Note: Refer to QAIQC – Accuracy page for list of analytical methods used



QUALITY CONTROL - ACCURACY

Job Number : EV193084-A
Customer : PT. EnviroSolutions & Consulting
Project Name : Seawater, Surface Water & Sediment Analysis
Customer Ref : 7987.r5/IUS-EV/I/2020

No	Description	Method	Units	Limit of Reporting	Reference Material		% Recovery
					Expected Value	Result	
	PLANKTON***						
1	Phytoplankton	APHA 10200 F:2012	Cell/m ³	-	-	-	-
2	Zooplankton	SNI 06-3963-1995	Ind/m ³	-	-	-	-

Reference Materials are QC samples of known concentration prepared independently of the calibration standards

Results are used to verify that analytical precision is in control and that the level of bias due to calibration is acceptable. Generally speaking, % Recovery should fall between 85% to 115% (except Gas Chromatography methods)

Limit of Reporting means the lowest concentration at which an analyte can be detected in a sample and its concentration can be reported with a reasonable degree of accuracy and precision based on the analytical methodology used.

V1.7-6

ENVIRONMENTAL TEST REPORT

Ms. Yanti Setiakurniasih
PT. EnviroSolutions & Consulting
Intiland Tower Lt. 18
JL. Jend. Sudirman Kav 32 RT 003 RW 002
Jakarta,
INDONESIA

Job Number : EV193084-B
Customer Ref : 7987.r5/US-EV1/2020
Project Name : Seawater, Surface Water & Sediment Analysis

Number of samples : 5

Date received : 02-Dec-2019
Date reported : 31-Dec-2019

Approved Signature for:



 **Reginald C. de Wit**
Manager Environmental Services

All work is performed in accordance with Intertek Standard Terms and Conditions of work <http://www.intertek.com/terms/>

This report relates specifically to the sample(s) tested in so far as that the sample(s) is truly representative of the sample source as received.

This report was prepared solely for the use of the client named in this report. PT Intertek Utama Services accepts no responsibility for any loss, damage or liability suffered by any third party as a result of any reliance upon or use of this report.

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SAMPLE INFORMATION

Job Number : EV193084-B
Customer : PT. EnviroSolutions & Consulting
Project Name : Seawater, Surface Water & Sediment Analysis
Customer Ref : 7987.r5/IUS-EV/I/2020

No.	Laboratory Sample I.D.	Customer Sample I.D.	Sample Matrix	Date Sampled	Time Sampled	Date Received	Sampled By	Coordinates
1	EV193084-7	MWB 4	Sediment	28-Nov-19	14:30	02-Dec-19	Fahru Roji, Husni, Hilman	S : 07° 59' 27.504" E : 131° 16' 59.817"
2	EV193084-8	MWB 4 Dup	Sediment	28-Nov-19	14:46	02-Dec-19	Fahru Roji, Husni, Hilman	S : 07° 59' 27.504" E : 131° 16' 59.817"
3	EV193084-9	MWB 3	Sediment	28-Nov-19	14:58	02-Dec-19	Fahru Roji, Husni, Hilman	S : 07° 58' 24.397" E : 131° 17' 20.978"
4	EV193084-10	MWB 2	Sediment	28-Nov-19	15:15	02-Dec-19	Fahru Roji, Husni, Hilman	S : 07° 57' 46.496" E : 131° 17' 07.326"
5	EV193084-11	MWB 1	Sediment	28-Nov-19	14:50	02-Dec-19	Fahru Roji, Husni, Hilman	S : 07° 56' 21.197" E : 131° 17' 02.818"

Notes:

NA = Not Analysed

ND = Not Detected

IS = Insufficient Sample

** = Non Accredited Test

*** = Subcontracted Test

1) = Field Measurement

2) = Field Measurement by Customer

3) = Total Pesticides defined as 30 OCP compounds (list available upon request)

4) = Total PAHs defined as 16 PAH compounds (list available upon request)

5) = Total PCBs defined as 20 PCB congeners (list available upon request)

SNR= Sample Not Received



Job Number : EV193084-B
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Sewater, Surface Water & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193084-7	EV193084-8	EV193084-9
Customer Sample I.D :			MWB 4	MWB 4 Dup	MWB 3
Date Sampled :			28-Nov-19	28-Nov-19	28-Nov-19
Sample Matrix :			Sediment	Sediment	Sediment
No.	Test Description	Units	Results	Results	Results
	BENTHOS***				
	BIVALVIA				
1	<i>Corbula</i> sp.	Ind/m ²	-	14	-
2	<i>Gari</i> sp.	Ind/m ²	14	-	-
	CRUSTACEA				
1	<i>Cardisoma</i> sp.	Ind/m ²	-	-	-
2	<i>Gnathia</i> sp.	Ind/m ²	-	-	-
3	<i>Portunus</i> sp.	Ind/m ²	-	14	-
	NEMERTEA				
1	<i>Micrura</i> sp.	Ind/m ²	-	-	14
	POLYCHAETA				
1	<i>Capitella</i> sp.	Ind/m ²	-	14	-
2	<i>Oranoreis</i> sp.	Ind/m ²	14	-	-
3	<i>Glycera</i> sp.	Ind/m ²	42	-	-
4	<i>Lumbrineris</i> sp.	Ind/m ²	-	14	-
5	<i>Mallore</i> sp.	Ind/m ²	-	14	-
6	<i>Nereis</i> sp.	Ind/m ²	28	14	28
7	<i>Notomastus</i> sp.	Ind/m ²	-	56	14
	SIPUNCULA				
1	<i>Aspidosiphon</i> sp.	Ind/m ²	70	28	-
Total Taxa (s)			5	8	3
Abundance		Ind/m ²	168	168	56
Diversity Index			2.05	2.75	1.50
Equitability Index			0.88	0.92	0.95
Dominance Index			0.28	0.18	0.38

Note: Refer to QA/QC – Accuracy page for list of analytical methods used



Job Number : EV193084-B
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater, Surface Water & Sediment Analysis
 Customer Ref : 7987.r5/US-EV/W/2020

Laboratory Sample I.D :			EV193084-10	EV193084-11
Customer Sample I.D :			MWB 2	MWB 1
Date Sampled :			28-Nov-19	28-Nov-19
Sample Matrix :			Sediment	Sediment
No.	Test Description	Units	Results	Results
	BENTHOS***			
	BIYALVIA			
1	<i>Corbula</i> sp.	Ind/m ²	-	-
2	<i>Geri</i> sp.	Ind/m ²	-	-
	CRUSTACEA			
1	<i>Cardisoma</i> sp.	Ind/m ²	14	-
2	<i>Gnathia</i> sp.	Ind/m ²	14	-
3	<i>Portunus</i> sp.	Ind/m ²	-	-
	NEMERTEA			
1	<i>Micrura</i> sp.	Ind/m ²	-	-
	POLYCHAETA			
1	<i>Capitella</i> sp.	Ind/m ²	-	-
2	<i>Orfonereis</i> sp.	Ind/m ²	-	-
3	<i>Glycera</i> sp.	Ind/m ²	-	14
4	<i>Lumbrineris</i> sp.	Ind/m ²	-	-
5	<i>Medusa</i> sp.	Ind/m ²	-	-
6	<i>Nereis</i> sp.	Ind/m ²	84	42
7	<i>Nelomastus</i> sp.	Ind/m ²	70	28
	SIPUNCULA			
1	<i>Aspidosiphon</i> sp.	Ind/m ²	-	-
Total Taxa (s)			4	3
Abundance		Ind/m ²	162	84
Diversity Index			1.61	1.46
Equitability Index			0.81	0.92
Dominance Index			0.37	0.39

Note: Refer to QA/QC – Accuracy page for list of analytical methods used.



QUALITY CONTROL - ACCURACY

Job Number : EV193084-B
Customer : PT. EnviroSolutions & Consulting
Project Name : Seawater, Surface Water & Sediment Analysis
Customer Ref : 7987.r5/US-EV/I/2020

No	Description	Method	Units	Limit of Reporting	Reference Material		% Recovery
					Expected Value	Result	
1	BENTHOS***	SNL 03-3401-1994	Ind/m ²	-	-	-	-

Reference Materials are QC samples of known concentration prepared independently of the calibration standards

Results are used to verify that analytical precision is in control and that the level of bias due to calibration is acceptable. Generally speaking, % Recovery should fall between 80% to 115% (except Gas Chromatography methods)

Limit of Reporting means the lowest concentration at which an analyte can be detected in a sample and its concentration can be reported with a reasonable degree of accuracy and precision based on the analytical methodology used.

V1.7-7

ENVIRONMENTAL TEST REPORT

Ms. Yanti Setiakurniasih
PT. EnviroSolutions & Consulting
Intiland Tower Lt. 18
JL. Jend. Sudirman Kav 32 RT 003 RW 002
Jakarta,
INDONESIA

Job Number : EV193084-C
Customer Ref : 7987.r5/IUS-EV/I/2020
Project Name : Seawater & Sediment Analysis

Number of samples : 5

Date received : 02-Dec-2019
Date reported : 26-Feb-2020

Approved Signature for:


for Reginald C. de Wit
Manager Environmental Services

All work is performed in accordance with Intertek Standard Terms and Conditions of work <http://www.intertek.com/terms/>

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DO NOT PHOTOCOPY





SAMPLE INFORMATION

Job Number : EV193084-C
Customer : PT. EnviroSolutions & Consulting
Project Name : Seawater & Sediment Analysis
Customer Ref : 7987.r5/IUS-EV/I/2020

No.	Laboratory Sample I.D.	Customer Sample I.D.	Sample Matrix	Date Sampled	Time Sampled	Date Received	Sampled By	Coordinates
1	EV193084-7	MWB 4	Sediment	28-Nov-19	14:30	02-Dec-19	Fahru Roji, Hilam & Husni	S : 07° 59' 27.504" E : 131° 16' 59.817"
2	EV193084-8	MWB 4 Dup	Sediment	28-Nov-19	14:46	02-Dec-19	Fahru Roji, Hilam & Husni	S : 07° 59' 27.504" E : 131° 16' 59.817"
3	EV193084-9	MWB 3	Sediment	28-Nov-19	14:58	02-Dec-19	Fahru Roji, Hilam & Husni	S : 07° 58' 24.397" E : 131° 17' 20.978"
4	EV193084-10	MWB 2	Sediment	28-Nov-19	15:15	02-Dec-19	Fahru Roji, Hilam & Husni	S : 07° 57' 46.496" E : 131° 17' 07.326"
5	EV193084-11	MWB 1	Sediment	28-Nov-19	15:00	02-Dec-19	Fahru Roji, Hilam & Husni	S : 07° 56' 21.197" E : 131° 17' 02.818"

Notes:

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4) = Total PAHs defined as 16 PAH compounds (list available upon request)

5) = Total PCBs defined as 20 PCB congeners (list available upon request)

SNR = Sample Not Received



Job Number : EV193084-C
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample I.D :			EV193084-7	EV193084-8	EV193084-9
Customer Sample I.D :			MWB 4	MWB 4 Dup	MWB 3
Date Sampled :			28-Nov-19	28-Nov-19	28-Nov-19
Sample Matrix :			Sediment	Sediment	Sediment
No.	Test Description	Units	Results	Results	Results
	Miscellaneous				
	Particle Size Distribution**				
	Size (µm)				
1	0.357	%	0.07	0.08	0.00
2	0.405	%	0.18	0.18	0.07
3	0.460	%	0.31	0.31	0.18
4	0.523	%	0.44	0.42	0.23
5	0.594	%	0.54	0.52	0.31
6	0.675	%	0.6	0.57	0.35
7	0.767	%	0.63	0.59	0.38
8	0.872	%	0.62	0.59	0.39
9	0.991	%	0.61	0.58	0.38
10	1.13	%	0.63	0.59	0.4
11	1.28	%	0.68	0.63	0.42
12	1.45	%	0.75	0.72	0.47
13	1.65	%	0.87	0.82	0.55
14	1.88	%	1.02	0.95	0.66
15	2.13	%	1.2	1.12	0.79
16	2.42	%	1.39	1.29	0.95
17	2.75	%	1.61	1.48	1.16
18	3.12	%	1.84	1.69	1.39
19	3.55	%	2.08	1.9	1.67
20	4.03	%	2.32	2.13	1.98
21	4.58	%	2.58	2.36	2.34
22	5.21	%	2.81	2.58	2.72
23	5.92	%	3.02	2.77	3.11
24	6.72	%	3.2	2.94	3.49
25	7.64	%	3.33	3.06	3.83
26	8.68	%	3.41	3.13	4.14
27	9.86	%	3.44	3.17	4.37
28	11.2	%	3.46	3.18	4.54
29	12.7	%	3.47	3.18	4.64
30	14.5	%	3.5	3.19	4.68
31	16.4	%	3.55	3.24	4.65
32	18.7	%	3.65	3.31	4.57
33	21.2	%	3.78	3.42	4.44
34	24.1	%	3.87	3.54	4.23



Job Number : EV193084-C
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

Laboratory Sample ID :			EV193084-7	EV193084-8	EV193084-9
Customer Sample ID :			MWB 4	MWB 4 Dup	MWB 3
Date Sampled :			28-Nov-19	28-Nov-19	28-Nov-19
Sample Matrix :			Sediment	Sediment	Sediment
No.	Test Description	Units	Results	Results	Results
35	27.4	%	3.93	3.62	3.97
36	31.1	%	3.92	3.65	3.64
37	35.3	%	3.8	3.6	3.29
38	40.1	%	3.58	3.48	2.89
39	45.6	%	3.27	3.26	2.52
40	51.8	%	2.89	3.01	2.17
41	58.9	%	2.47	2.7	1.88
42	68.9	%	2.08	2.4	1.65
43	76.0	%	1.7	2.11	1.49
44	86.4	%	1.37	1.84	1.35
45	98.1	%	1.08	1.57	1.24
46	111	%	0.87	1.35	1.13
47	127	%	0.67	1.13	1
48	144	%	0.53	0.96	0.88
49	163	%	0.43	0.81	0.7
50	186	%	0.36	0.7	0.56
51	211	%	0.31	0.63	0.41
52	240	%	0.29	0.59	0.3
53	272	%	0.27	0.56	0.21
54	310	%	0.25	0.52	0.15
55	352	%	0.19	0.46	0.07
56	400	%	0.16	0.37	0.04
57	454	%	0.09	0.25	0.02
58	516	%	0.04	0.14	0.06
59	586	%	0.06	0.06	0.00

Note: Refer to QA/QC – Accuracy page for list of analytical methods used



Job Number : EV193084-C
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/1U5-EVW2020

Laboratory Sample I.D :			EV193084-10	EV193084-11
Customer Sample I.D :			MWB 2	MWB 1
Date Sampled :			28-Nov-19	28-Nov-19
Sample Matrix :			Sediment	Sediment
No.	Test Description	Units	Results	Results
	Miscellaneous			
	Particle Size Distribution**			
	Size (µm)			
1	0.357	%	0.00	0.00
2	0.405	%	0.07	0.1
3	0.460	%	0.15	0.18
4	0.523	%	0.24	0.27
5	0.594	%	0.31	0.43
6	0.675	%	0.36	0.59
7	0.767	%	0.4	0.73
8	0.872	%	0.4	0.81
9	0.991	%	0.4	0.83
10	1.13	%	0.42	0.82
11	1.28	%	0.45	0.84
12	1.45	%	0.51	0.9
13	1.65	%	0.59	1.03
14	1.88	%	0.7	1.21
15	2.13	%	0.85	1.44
16	2.42	%	1.03	1.68
17	2.75	%	1.24	1.93
18	3.12	%	1.49	2.19
19	3.55	%	1.77	2.43
20	4.03	%	2.1	2.89
21	4.58	%	2.46	2.93
22	5.21	%	2.83	3.17
23	5.92	%	3.22	3.37
24	6.72	%	3.56	3.55
25	7.64	%	3.89	3.68
26	8.68	%	4.15	3.74
27	9.86	%	4.34	3.76
28	11.2	%	4.47	3.73
29	12.7	%	4.53	3.65
30	14.5	%	4.54	3.67
31	16.4	%	4.5	3.48
32	18.7	%	4.41	3.39
33	21.2	%	4.29	3.31
34	24.1	%	4.13	3.21



Job Number : EV193084-C
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Seawater & Sediment Analysis
 Customer Ref : 7987.r5/IUS-EV/II2020

Laboratory Sample I.D :			EV193084-10	EV193084-11
Customer Sample I.D :			MWB 2	MWB 1
Date Sampled :			28-Nov-19	29-Nov-19
Sample Matrix :			Sediment	Sediment
No.	Test Description	Units	Results	Results
35	27.4	%	3.9	3.12
36	31.1	%	3.64	2.98
37	35.3	%	3.32	2.82
38	40.1	%	2.99	2.66
39	45.6	%	2.85	2.46
40	51.8	%	2.32	2.28
41	58.9	%	2.04	2.1
42	66.9	%	1.81	1.94
43	76.0	%	1.62	1.79
44	86.4	%	1.45	1.62
45	98.1	%	1.31	1.44
46	111	%	1.14	1.25
47	127	%	0.95	1.03
48	144	%	0.78	0.8
49	163	%	0.59	0.6
50	186	%	0.39	0.43
51	211	%	0.21	0.29
52	240	%	0.06	0.2
53	272	%	0.00	0.17
54	310	%	0.00	0.14
55	352	%	0.00	0.12
56	400	%	0.00	0.09
57	454	%	0.00	0.03
58	516	%	0.00	0.00
59	586	%	0.00	0.00

Note: Refer to QA/QC – Accuracy page for list of analytical methods used



PARTICLE SIZE DISTRIBUTION ANALYSIS

ANALYSIS REPORT

Measurement Details

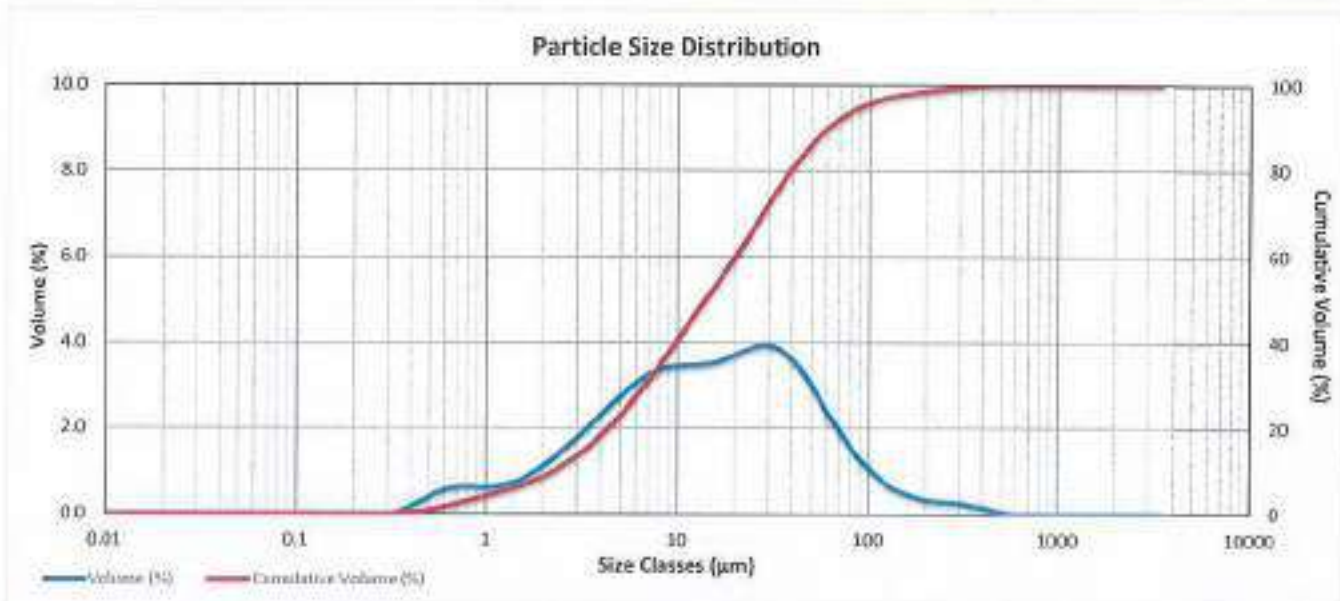
Client PT. EnviroSolutions & Consulting
Sample ID MWB 4

Job Number EV193084-7

Analysis

Particle Name Solid
Dispersant Liquid

Result



Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)
0.010	0.00	0.00	0.128	0.00	0.00	1.85	0.87	6.93	21.2	3.76	61.57	272	0.27	99.27
0.011	0.00	0.00	0.146	0.00	0.00	1.85	1.02	7.95	24.1	3.87	65.44	310	0.25	99.52
0.013	0.00	0.00	0.166	0.00	0.00	2.13	1.20	9.15	27.4	3.93	69.37	362	0.19	99.71
0.015	0.00	0.00	0.188	0.00	0.00	2.42	1.39	10.54	31.1	3.92	73.29	400	0.16	99.87
0.017	0.00	0.00	0.214	0.00	0.00	2.75	1.61	12.15	35.3	3.80	77.09	454	0.09	99.96
0.019	0.00	0.00	0.243	0.00	0.00	3.12	1.84	13.99	40.1	3.58	80.67	518	0.04	100.00
0.022	0.00	0.00	0.276	0.00	0.00	3.55	2.06	16.07	45.6	3.27	83.94	586	0.00	100.00
0.024	0.00	0.00	0.314	0.00	0.00	4.03	2.32	18.39	51.8	2.89	86.83	666	0.00	100.00
0.028	0.00	0.00	0.357	0.07	0.07	4.58	2.58	20.97	58.9	2.47	89.30	756	0.00	100.00
0.032	0.00	0.00	0.405	0.18	0.25	5.21	2.81	23.78	66.9	2.08	91.38	859	0.00	100.00
0.036	0.00	0.00	0.460	0.31	0.56	5.92	3.02	26.80	76.0	1.70	93.08	976	0.00	100.00
0.041	0.00	0.00	0.523	0.44	1.00	6.72	3.20	30.00	86.4	1.37	94.45	1109	0.00	100.00
0.046	0.00	0.00	0.594	0.54	1.54	7.64	3.33	33.33	98.1	1.09	95.54	1260	0.00	100.00
0.053	0.00	0.00	0.675	0.60	2.14	8.68	3.41	36.74	111	0.87	96.41	1432	0.00	100.00
0.060	0.00	0.00	0.767	0.83	2.97	9.86	3.44	40.18	127	0.67	97.08	1627	0.00	100.00
0.068	0.00	0.00	0.872	0.62	3.59	11.2	3.46	43.64	144	0.53	97.61	1849	0.00	100.00
0.077	0.00	0.00	0.991	0.61	4.00	12.7	3.47	47.11	163	0.43	98.04	2100	0.00	100.00
0.088	0.00	0.00	1.13	0.63	4.63	14.5	3.59	50.61	186	0.36	98.40	2368	0.00	100.00
0.100	0.00	0.00	1.28	0.68	5.31	16.4	3.55	54.16	211	0.31	98.71	2711	0.00	100.00
0.113	0.00	0.00	1.45	0.75	6.06	18.7	3.65	57.81	240	0.29	99.00	3081	0.00	100.00
												3500	0.00	100.00

Remarks:

Percentils:

Dx (5)	1.21 µm
Dx (10)	2.30 µm
Dx (16)	3.54 µm
Dx (20)	4.37 µm
Dx (25)	5.48 µm
Dx (40)	9.8 µm
Dx (50)	14.1 µm
Dx (60)	20.1 µm
Dx (75)	32.9 µm
Dx (80)	38.2 µm
Dx (84)	45.7 µm
Dx (90)	61.5 µm
Dx (95)	92.1 µm
Mode	26.7 µm



PARTICLE SIZE DISTRIBUTION ANALYSIS ANALYSIS REPORT

Measurement Details

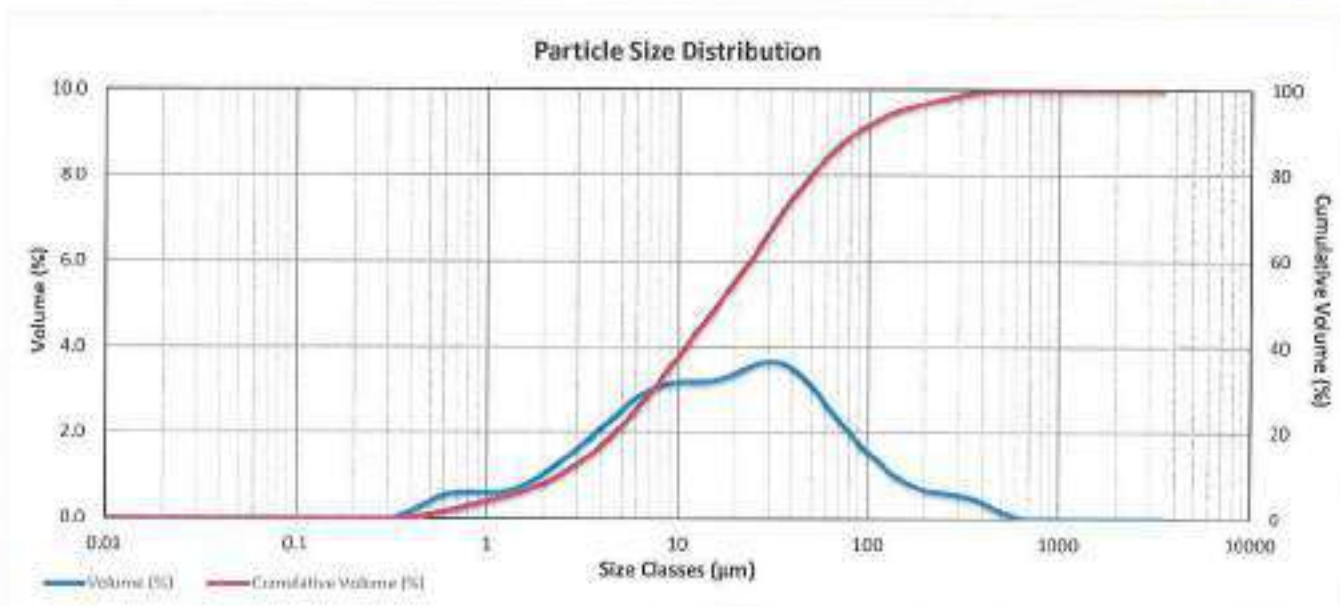
Client PT. EnviroSolutions & Consulting
Sample ID MWB 4 Dup

Job Number EV193084-8

Analysis

Particle Name Solid
Dispersant Liquid

Result



Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)
0.010	0.00	0.00	0.128	0.00	0.00	1.65	0.82	6.60	21.2	3.42	56.69	272	0.59	98.20
0.011	0.00	0.00	0.146	0.00	0.00	1.86	0.85	7.55	24.1	3.54	60.23	310	0.52	98.72
0.013	0.00	0.00	0.166	0.00	0.00	2.13	1.12	8.67	27.4	3.62	63.85	352	0.46	99.18
0.015	0.00	0.00	0.188	0.00	0.00	2.42	1.29	9.96	31.1	3.65	67.50	400	0.37	99.55
0.017	0.00	0.00	0.214	0.00	0.00	2.75	1.48	11.44	35.3	3.68	71.18	454	0.25	99.80
0.019	0.00	0.00	0.243	0.00	0.00	3.12	1.69	13.13	40.1	3.48	74.56	516	0.14	99.94
0.022	0.00	0.00	0.276	0.00	0.00	3.55	1.99	15.03	45.6	3.26	77.84	586	0.06	100.00
0.024	0.00	0.00	0.314	0.00	0.00	4.03	2.13	17.16	51.8	3.01	80.85	666	0.00	100.00
0.028	0.00	0.00	0.357	0.08	0.08	4.58	2.39	19.52	58.9	2.70	83.55	796	0.00	100.00
0.032	0.00	0.00	0.405	0.18	0.26	5.21	2.59	22.10	66.9	2.40	85.95	899	0.00	100.00
0.036	0.00	0.00	0.460	0.31	0.57	5.92	2.77	24.87	76.0	2.11	88.06	976	0.00	100.00
0.041	0.00	0.00	0.523	0.42	0.99	6.72	2.94	27.81	86.4	1.84	89.90	1109	0.00	100.00
0.046	0.00	0.00	0.594	0.52	1.51	7.84	3.09	30.87	98.1	1.57	91.47	1260	0.00	100.00
0.053	0.00	0.00	0.675	0.57	2.08	8.88	3.13	34.00	111	1.35	92.82	1432	0.00	100.00
0.060	0.00	0.00	0.767	0.59	2.67	9.98	3.17	37.17	127	1.13	93.95	1627	0.00	100.00
0.068	0.00	0.00	0.872	0.59	3.26	11.2	3.18	40.35	144	0.96	94.91	1849	0.00	100.00
0.077	0.00	0.00	0.991	0.58	3.84	12.7	3.16	43.53	163	0.81	95.72	2100	0.00	100.00
0.088	0.00	0.00	1.13	0.59	4.43	14.5	3.19	46.72	186	0.70	96.42	2366	0.00	100.00
0.100	0.00	0.00	1.28	0.63	5.06	16.4	3.24	49.96	211	0.63	97.05	2711	0.00	100.00
0.113	0.00	0.00	1.45	0.72	5.78	18.7	3.31	53.27	240	0.59	97.64	3061	0.00	100.00
												3500	0.00	100.00

Remarks:

Percentile:

D ₅ (%)	1.26 µm
D ₅ (10)	2.43 µm
D ₅ (15)	3.76 µm
D ₅ (20)	4.69 µm
D ₅ (25)	5.95 µm
D ₅ (40)	11.0 µm
D ₅ (50)	16.5 µm
D ₅ (60)	23.9 µm
D ₅ (75)	40.8 µm
D ₅ (80)	50.0 µm
D ₅ (84)	60.3 µm
D ₅ (90)	57.1 µm
D ₅ (95)	146.0 µm
Mode	28.6 µm



PARTICLE SIZE DISTRIBUTION ANALYSIS ANALYSIS REPORT

Measurement Details

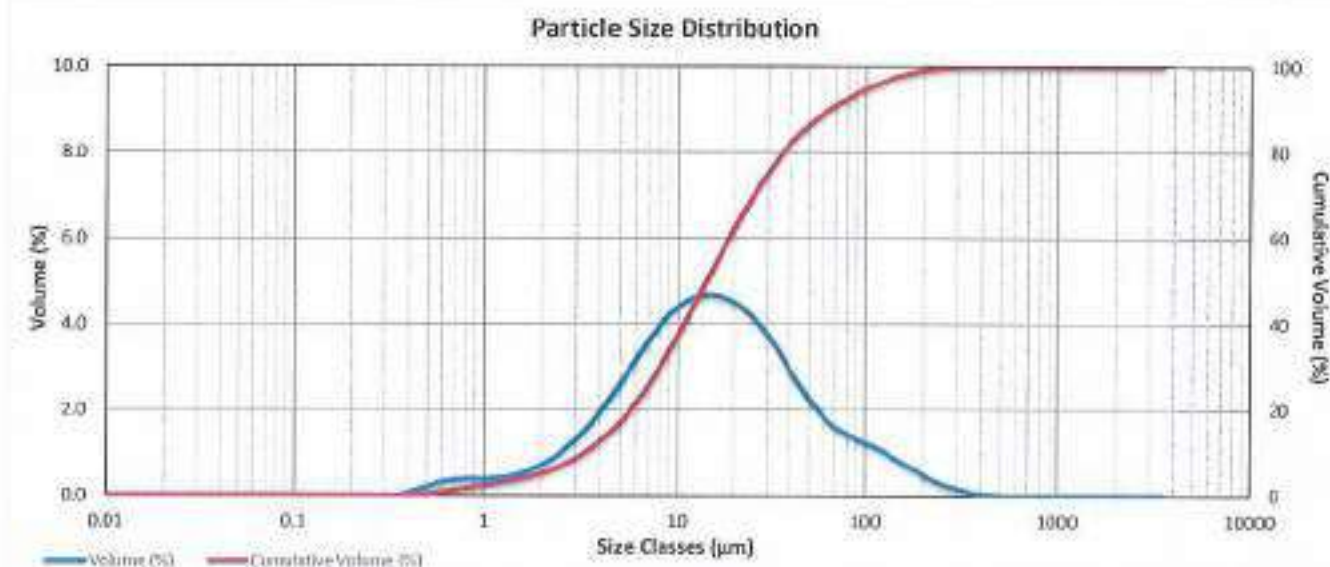
Client PT. EnviroSolutions & Consulting
Sample ID MWB 3

Job Number EV193084-9

Analysis

Particle Name Solid
Dispersant Liquid

Result



Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)
0.010	0.00	0.00	0.120	0.00	0.00	1.00	0.55	4.11	21.2	4.44	84.23	272	0.21	99.72
0.011	0.00	0.00	0.140	0.00	0.00	1.30	0.60	4.77	24.1	4.23	88.46	310	0.15	99.87
0.013	0.00	0.00	0.160	0.00	0.00	2.13	0.79	5.56	27.4	3.97	92.43	352	0.07	99.94
0.015	0.00	0.00	0.180	0.00	0.00	2.42	0.95	6.51	31.1	3.64	96.07	400	0.04	99.98
0.017	0.00	0.00	0.214	0.00	0.00	2.70	1.16	7.67	35.3	3.29	99.36	454	0.02	100.00
0.019	0.00	0.00	0.243	0.00	0.00	3.12	1.39	9.06	40.1	2.89	102.25	516	0.00	100.00
0.022	0.00	0.00	0.276	0.00	0.00	3.55	1.67	10.73	45.6	2.62	104.77	586	0.00	100.00
0.024	0.00	0.00	0.314	0.00	0.00	4.03	1.98	12.71	51.8	2.37	106.94	665	0.00	100.00
0.028	0.00	0.00	0.357	0.00	0.00	4.58	2.34	15.05	58.9	1.88	108.82	756	0.00	100.00
0.032	0.00	0.00	0.405	0.07	0.07	5.21	2.72	17.77	66.9	1.65	110.47	859	0.00	100.00
0.036	0.00	0.00	0.460	0.16	0.23	5.92	3.11	20.88	76.0	1.49	111.96	976	0.00	100.00
0.041	0.00	0.00	0.523	0.23	0.46	6.72	3.49	24.37	86.4	1.35	113.31	1108	0.00	100.00
0.046	0.00	0.00	0.594	0.31	0.77	7.64	3.83	28.20	98.1	1.24	114.55	1260	0.00	100.00
0.053	0.00	0.00	0.675	0.36	1.12	8.68	4.14	32.34	111	1.13	115.68	1432	0.00	100.00
0.060	0.00	0.00	0.767	0.38	1.50	9.86	4.37	36.71	127	1.00	116.68	1627	0.00	100.00
0.066	0.00	0.00	0.872	0.39	1.89	11.2	4.54	41.25	144	0.88	117.54	1849	0.00	100.00
0.077	0.00	0.00	0.991	0.38	2.27	12.7	4.64	45.89	163	0.70	118.24	2100	0.00	100.00
0.086	0.00	0.00	1.13	0.40	2.67	14.5	4.68	50.57	186	0.56	118.80	2386	0.00	100.00
0.100	0.00	0.00	1.28	0.42	3.09	16.4	4.65	55.22	211	0.41	119.21	2711	0.00	100.00
0.113	0.00	0.00	1.45	0.47	3.56	18.7	4.57	59.79	240	0.30	119.51	3081	0.00	100.00
												3600	0.00	100.00

Remarks:

Percentils:

Dx (5)	1.95 µm
Dx (10)	3.36 µm
Dx (16)	4.79 µm
Dx (20)	5.71 µm
Dx (25)	6.86 µm
Dx (40)	10.8 µm
Dx (50)	14.2 µm
Dx (60)	18.8 µm
Dx (75)	30.0 µm
Dx (80)	36.3 µm
Dx (84)	43.9 µm
Dx (90)	64.5 µm
Dx (95)	103.0 µm
Mode	13.7 µm



PARTICLE SIZE DISTRIBUTION ANALYSIS ANALYSIS REPORT

Measurement Details

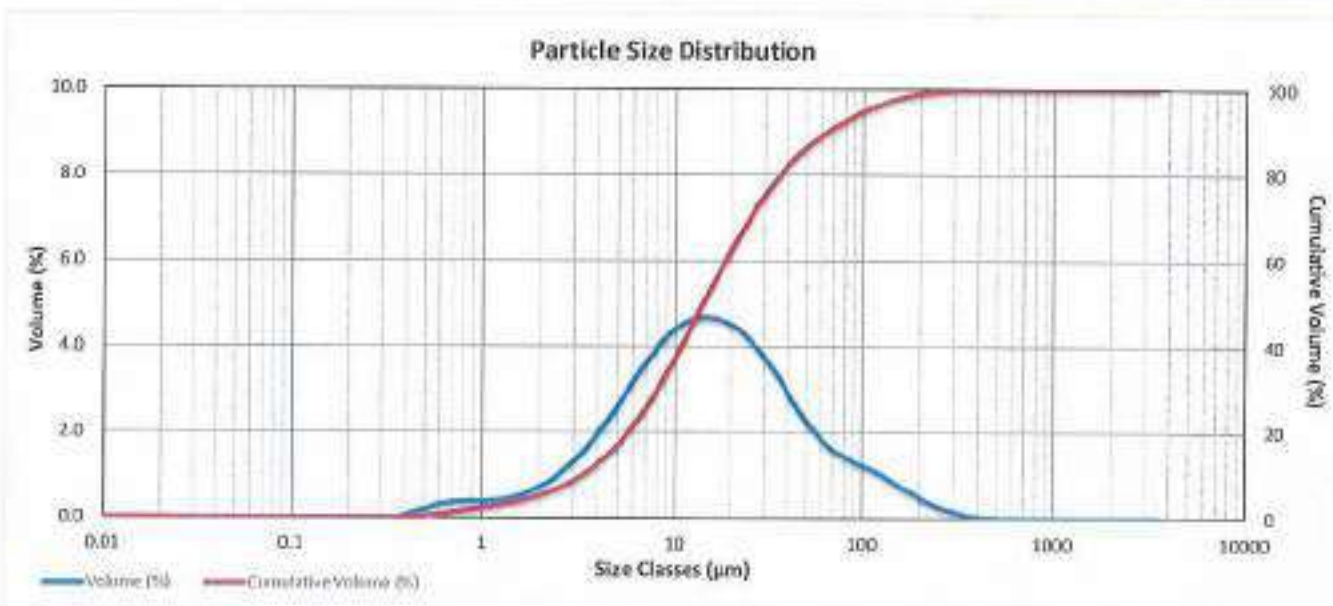
Client: PT. EnviroSolutions & Consulting
Sample ID: MWB 2

Job Number: EV193084-10

Analysis

Particle Name: Solid
Dispersant: Liquid

Result



Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)	Size (µm)	Volume (%)	Cum. Vol (%)
0.010	0.00	0.00	0.120	0.00	0.00	1.65	0.55	4.11	21.2	4.44	64.23	272	0.21	99.72
0.011	0.00	0.00	0.146	0.00	0.00	1.88	0.66	4.77	24.1	4.23	68.46	310	0.15	99.87
0.013	0.00	0.00	0.168	0.00	0.00	2.13	0.79	5.56	27.4	3.97	72.43	352	0.07	99.94
0.015	0.00	0.00	0.188	0.00	0.00	2.42	0.96	6.51	31.1	3.64	76.07	400	0.04	99.98
0.017	0.00	0.00	0.214	0.00	0.00	2.75	1.16	7.67	35.3	3.29	79.36	454	0.02	100.00
0.019	0.00	0.00	0.243	0.00	0.00	3.12	1.39	9.06	40.1	2.89	82.25	516	0.00	100.00
0.022	0.00	0.00	0.276	0.00	0.00	3.55	1.67	10.73	45.6	2.52	84.77	586	0.00	100.00
0.024	0.00	0.00	0.314	0.00	0.00	4.03	1.98	12.71	51.8	2.17	86.94	668	0.00	100.00
0.028	0.00	0.00	0.357	0.00	0.00	4.58	2.34	15.05	58.9	1.88	88.82	756	0.00	100.00
0.032	0.00	0.00	0.405	0.07	0.07	5.21	2.72	17.77	66.9	1.66	90.47	859	0.00	100.00
0.036	0.00	0.00	0.460	0.16	0.23	5.92	3.11	20.88	76.0	1.49	91.96	976	0.00	100.00
0.041	0.00	0.00	0.523	0.23	0.46	6.72	3.49	24.37	86.4	1.35	93.31	1109	0.00	100.00
0.046	0.00	0.00	0.594	0.31	0.77	7.64	3.83	28.20	98.1	1.24	94.55	1260	0.00	100.00
0.053	0.00	0.00	0.675	0.35	1.12	8.68	4.14	32.34	111	1.13	95.68	1432	0.00	100.00
0.060	0.00	0.00	0.767	0.38	1.50	9.86	4.37	36.71	127	1.00	96.68	1627	0.00	100.00
0.066	0.00	0.00	0.872	0.39	1.89	11.2	4.54	41.25	144	0.88	97.54	1849	0.00	100.00
0.077	0.00	0.00	0.991	0.38	2.27	12.7	4.84	45.88	163	0.70	98.24	2100	0.00	100.00
0.088	0.00	0.00	1.13	0.40	2.67	14.5	4.88	50.57	186	0.56	98.80	2386	0.00	100.00
0.100	0.00	0.00	1.28	0.42	3.09	16.4	4.86	55.22	211	0.41	99.21	2711	0.00	100.00
0.113	0.00	0.00	1.45	0.47	3.56	18.7	4.57	59.79	240	0.30	99.51	3081	0.00	100.00
												3500	0.00	100.00

Remarks:

Percentiles:

Dx (5) 1.95 µm
Dx (10) 3.36 µm
Dx (16) 4.79 µm
Dx (20) 5.71 µm
Dx (25) 6.86 µm
Dx (40) 10.8 µm
Dx (50) 14.2 µm
Dx (60) 18.8 µm
Dx (75) 30.0 µm
Dx (80) 36.3 µm
Dx (84) 43.9 µm
Dx (90) 64.5 µm
Dx (95) 103 µm
Mode 13.7 µm



PARTICLE SIZE DISTRIBUTION ANALYSIS ANALYSIS REPORT

Measurement Details

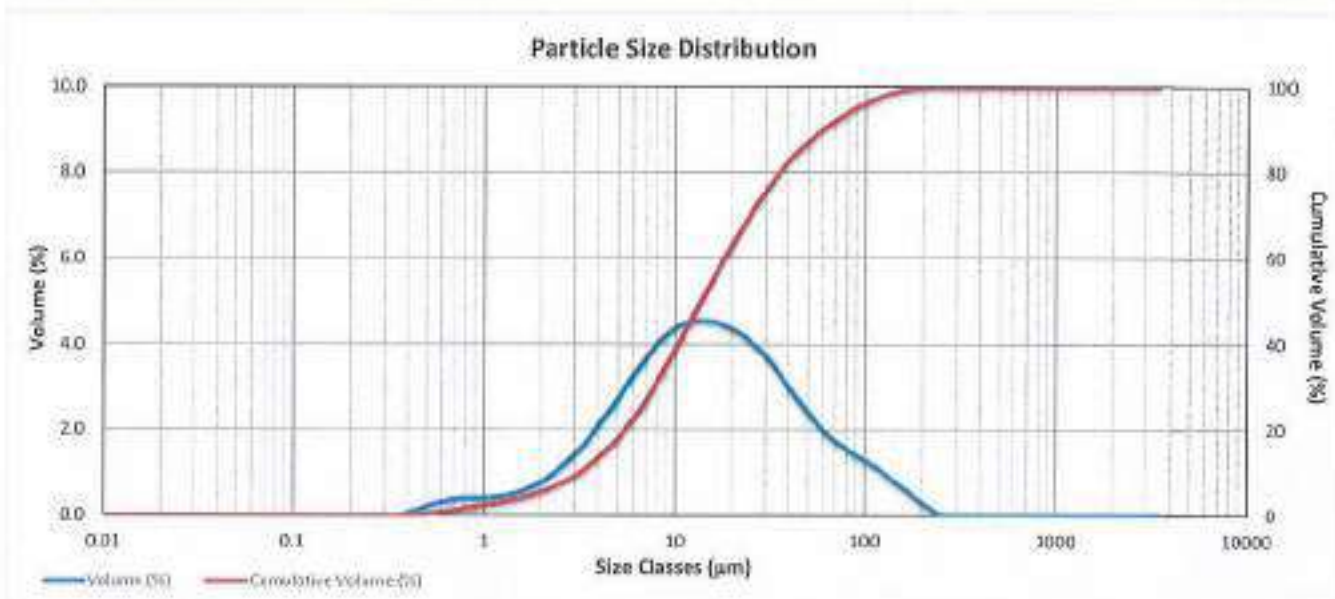
Client PT. EnviroSolutions & Consulting
Sample ID MWB 1

Job Number EV193084-11

Analysis

Particle Name Solid
Dispersant Liquid

Result



Size (µm)	Volume (%)	Cum. Vol. (%)	Size (µm)	Volume (%)	Cum. Vol. (%)	Size (µm)	Volume (%)	Cum. Vol. (%)	Size (µm)	Volume (%)	Cum. Vol. (%)	Size (µm)	Volume (%)	Cum. Vol. (%)
0.010	0.00	0.00	0.128	0.00	0.00	1.65	0.59	4.30	21.2	4.29	64.67	272	0.00	100.00
0.011	0.00	0.00	0.146	0.00	0.00	1.88	0.70	5.00	24.1	4.13	68.80	310	0.00	100.00
0.013	0.00	0.00	0.166	0.00	0.00	2.13	0.85	5.85	27.4	3.90	72.70	362	0.00	100.00
0.015	0.00	0.00	0.188	0.00	0.00	2.42	1.03	6.88	31.1	3.64	76.34	400	0.00	100.00
0.017	0.00	0.00	0.214	0.00	0.00	2.75	1.24	8.12	35.3	3.32	79.66	454	0.00	100.00
0.018	0.00	0.00	0.243	0.00	0.00	3.12	1.49	9.61	40.1	2.99	82.65	516	0.00	100.00
0.022	0.00	0.00	0.276	0.00	0.00	3.55	1.77	11.38	45.6	2.65	85.30	586	0.00	100.00
0.024	0.00	0.00	0.314	0.00	0.00	4.03	2.10	13.48	51.8	2.32	87.62	666	0.00	100.00
0.028	0.00	0.00	0.357	0.00	0.00	4.58	2.46	15.94	58.9	2.04	89.66	756	0.00	100.00
0.032	0.00	0.00	0.405	0.07	0.07	5.21	2.83	18.77	66.9	1.81	91.47	859	0.00	100.00
0.036	0.00	0.00	0.460	0.15	0.22	5.92	3.22	21.99	76.0	1.62	93.09	976	0.00	100.00
0.041	0.00	0.00	0.523	0.24	0.46	6.72	3.58	25.55	86.4	1.45	94.54	1109	0.00	100.00
0.046	0.00	0.00	0.594	0.31	0.77	7.64	3.89	29.44	98.1	1.31	95.85	1260	0.00	100.00
0.053	0.00	0.00	0.675	0.36	1.13	8.68	4.15	33.59	111	1.14	96.99	1432	0.00	100.00
0.060	0.00	0.00	0.767	0.40	1.53	9.86	4.34	37.93	127	0.98	97.97	1627	0.00	100.00
0.068	0.00	0.00	0.872	0.40	1.93	11.2	4.47	42.40	144	0.78	98.75	1849	0.00	100.00
0.077	0.00	0.00	0.991	0.40	2.33	12.7	4.53	46.93	163	0.59	99.34	2100	0.00	100.00
0.088	0.00	0.00	1.13	0.42	2.75	14.5	4.54	51.47	186	0.39	99.73	2386	0.00	100.00
0.100	0.00	0.00	1.28	0.45	3.20	16.4	4.50	55.97	211	0.21	99.94	2711	0.00	100.00
0.113	0.00	0.00	1.45	0.51	3.71	18.7	4.41	60.38	240	0.06	100.00	3081	0.00	100.00
												3500	0.00	100.00

Remarks:

		Percentiles:
		Dx (5)
		Dx (10)
		Dx (15)
		Dx (20)
		Dx (25)
		Dx (40)
		Dx (50)
		Dx (60)
		Dx (75)
		Dx (80)
		Dx (84)
		Dx (90)
		Dx (95)
		Mode

		1.87 µm
		3.21 µm
		4.60 µm
		5.47 µm
		6.59 µm
		10.5 µm
		13.9 µm
		18.5 µm
		29.7 µm
		35.3 µm
		42.3 µm
		60.3 µm
		90 µm
		12.9 µm



QUALITY CONTROL - ACCURACY

Job Number : EV193084-C
Customer : PT. EnviroSolutions & Consulting
Project Name : Seawater & Sediment Analysis
Customer Ref : 7987.r5/US-EV/I/2020

No	Description	Method	Units	Limit of Reporting	Reference Material		% Recovery
					Expected Value	Result	
	Miscellaneous						
1	Particle Size Distribution**		%	0.01	-	-	-

Reference Materials are QC samples of known concentration prepared independently of the calibration standards.

Results are used to verify that analytical precision is in control and that the level of bias due to calibration is acceptable. Generally speaking, % Recovery should fall between 85% to 115% (except Gas Chromatography methods).

Limit of Reporting means the lowest concentration at which an analyte can be detected in a sample and its concentration can be reported with a reasonable degree of accuracy and precision based on the analytical methodology used.

V1.7-6

ENVIRONMENTAL TEST REPORT

Ms. Yanti Setiakurniasih
PT. EnviroSolutions & Consulting
Intiland Tower Lt. 18
JL. Jend. Sudirman Kav 32 RT 003 RW 002
Jakarta,
INDONESIA

Job Number : EV193148
Customer Ref : 7987.r5/IUS-EV/I/2020
Project Name : Ambient and Noise Analysis

Number of samples : 9

Date received : 05-Dec-2019

Date reported : 27-Jan-2020

Approved Signature for:



Reginald C. de Wit
Manager Environmental Services

All work is performed in accordance with Intertek Standard Terms and Conditions of work <http://www.intertek.com/terms/>

This report relates specifically to the sample(s) tested in so far as that the sample(s) is truly representative of the sample source as received.

This report was prepared solely for the use of the client named in this report. PT Intertek Utama Services accepts no responsibility for any loss, damage or liability suffered by any third party as a result of any reliance upon or use of this report.

DO NOT PHOTOCOPY



SAMPLE INFORMATION

Job Number : EV193148
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Ambient and Noise Analysis
 Customer Ref : 7987.r5/IUS-EV/I/2020

No.	Laboratory Sample I.D.	Customer Sample I.D.	Sample Matrix	Date Sampled	Time Sampled	Date Received	Sampled By	Coordinates	
1	EV193148-1	AQ 1	Ambient Air	07-Nov-19	15:00	05-Dec-19	Fahru Roji, Hilam, Husni	S : 08° 00' 15.0"	E : 131° 13' 50.8"
2	EV193148-2	AQ 2	Ambient Air	08-Nov-19	16:00	05-Dec-19	Fahru Roji, Hilam, Husni	S : 07° 59' 57.9"	E : 131° 14' 18.0"
3	EV193148-3	AQ 4	Ambient Air	11-Nov-19	18:00	05-Dec-19	Fahru Roji, Hilam, Husni	S : 07° 58' 44.6"	E : 131° 13' 47.8"
4	EV193148-4	AQ 9	Ambient Air	13-Nov-19	14:00	05-Dec-19	Fahru Roji, Hilam, Husni	S : 07° 59' 22.2"	E : 131° 17' 44.1"
5	EV193148-5	AQ 8	Ambient Air	14-Nov-19	11:00	05-Dec-19	Fahru Roji, Hilam, Husni	S : 07° 55' 14.5"	E : 131° 17' 09.5"
6	EV193148-6	AQ 7	Ambient Air	15-Nov-19	12:00	05-Dec-19	Fahru Roji, Hilam, Husni	S : 07° 57' 35.5"	E : 131° 15' 17.2"
7	EV193148-7	AQ 3	Ambient Air	17-Nov-19	14:00	05-Dec-19	Fahru Roji, Hilam, Husni	S : 07° 58' 54.6"	E : 131° 15' 01.5"
8	EV193148-8	AQ 6	Ambient Air	29-Nov-19	13:00	05-Dec-19	Fahru Roji, Hilam, Husni	S : 07° 57' 48.4"	E : 131° 13' 33.5"
9	EV193148-9	AQ 5	Ambient Air	30-Nov-19	14:00	05-Dec-19	Fahru Roji, Hilam, Husni	S : 07° 58' 17.9"	E : 131° 13' 44.1"

Notes:

NA = Not Analysed

ND = Not Detected

IS = Insufficient Sample

** = Non Accredited Test

*** = Subcontracted Test

1) = Field Measurement

2) = Field Measurement by Customer

3) = Total Pesticides defined as 30 OCP compounds (list available upon request)

4) = Total PAHs defined as 16 PAH compounds (list available upon request)

5) = Total PCBs defined as 20 PCB congeners (list available upon request)

SNR= Sample Not Received



Job Number : EV193148
 Customer : PT. EnviroSolutions & Consulting
 Project Name : Ambient and Noise Analysis
 Customer Ref : 7987.r5/IUS-EV/2020

Laboratory Sample I.D :				EV193148-1	EV193148-2
Customer Sample I.D :				AQ 1	AQ 2
Date Sampled :				07-Nov-19	08-Nov-19
Sample Matrix :				Ambient Air	Ambient Air
No.	Test Description	Units	Regulatory Limit	Results	Results
Ambient Sampling Condition					
1	Temperature	°C	-	26.5 - 33.8	25.1 - 34.0
2	Duration of Sampling	Hours	-	24	24
3	Pressure	mmHg	-	753.4 - 758.7	754.5 - 758.8
4	Humidity	%	-	52.7 - 87.7	66.0 - 97.3
5	Wind Speed	m/s	-	0.4 - 2.9	0.6 - 4.0
6	Dominant Wind Direction from	-	-	East	East
7	Weather	-	-	Clear	Clear
Ambient Air Tests					
1	Carbon Monoxide, CO** (24 Hours)	µg/Nm ³	10000	<100	<100
2	Mercury, Hg (24 Hours)	µg/Nm ³	-	<0.001	<0.001
3	Hydrogen Sulphide, H ₂ S (1 Hours)	µg/Nm ³	-	<20	<20
4	Nitrogen Dioxide, NO ₂ (24 Hours)	µg/Nm ³	150	<5	<5
5	Oxidant, O ₃ (1 Hours)	µg/Nm ³	235	<20	<20
6	Sulfur Dioxide, SO ₂ (24 Hours)	µg/Nm ³	365	21	<20
7	Particulates <2.5µm, PM _{2.5} (24 Hours)	µg/Nm ³	65	40.6	12.8
8	Particulates <10µm, PM ₁₀ (24 Hours)	µg/Nm ³	150	72.5	15.5
9	Total Suspended Particulates, TSP (24 Hours)	µg/Nm ³	230	77.5	17.3
10	Total Hydrocarbons, HC** (3 Hours)	µg/Nm ³	160	<50	<50
BTEX in Air Quality (3 Hours)**					
1	Benzene	mg/Nm ³	-	<0.1	<0.1
2	Toluene	mg/Nm ³	-	<0.25	<0.25
3	Ethyl Benzene	mg/Nm ³	-	<0.1	<0.1
4	Xylenes Total	mg/Nm ³	-	<0.1	<0.1

Note: Refer to QA/QC - Accuracy page for list of analytical methods used
 Regulatory Limit Based on PPRI No.41/1999