

MY CO2 GROUP SDN BHD
202201032134 (1477831-M)
MY CO2 (PG) SDN BHD | SAMM No. 384
201701042071 (1256244-P)
MY CO2 (KL) SDN BHD | SAMM No. 564
20150102098201 (155142-M)
MY CO2 (JB) SDN BHD | SAMM No. 752
2015010209979 (155302-A)
MY CO2 CERTIFICATION SDN BHD
201601026813 (1197752-X)
MY CO2 SDN BHD
200801024884 (7444318-W)

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Certificate of Analysis

Lab Ref No.: **PL2401-D87844**

SN: **RS6180707591176015**

Page 1 / 2

Nurul Afiqah Bt Ibrahim
Chemist
IKM No.: M/5117/8403/19
AN1: RA1660735530946208

YES BIZS SDN BHD

4936, JALAN SIRAM, DESA SIRAM,
12100 BUTTERWORTH PULAU PINANG
MALAYSIA

Kee Kai Loon
Microbiologist & Biotechnologist
Food Analyst No: MJMM 0469
AN2: RA7214882350066080

Date of Received: 2024-01-04
Date of Commence: 2024-01-04
Date of Completion: 2024-01-10
Date of Issue: 2024-01-10

Sample Marking: **PLB/DW1**

ND denotes Not Detected

Test Description	Unit	Result(s)	Method or Equipment Used
Suspended Solid	mg/L	16.0	APHA 2540 D (2005)
Oil & Grease	mg/L	ND < 0.2	APHA 5520 B (2005)
Dissolved Oxygen*	mg/L	1.63	APHA 4500-O G
Phosphate	mg/L	2.3	APHA 4500-P B & C (2005)
Ammoniacal Nitrogen	mg/L	2.6	APHA 4500 NH ₃ B & C (2005)
Nitrate (as NO ₃ -)	mg/L	4.72	APHA 4500-NO ₃ B (2005)
Nitrite (as NO ₂ -)	mg/L	0.02	APHA 4500-NO ₂ B (2005)
Lead	mg/L	ND < 0.01	APHA 3111 B (2005)
Cyanide	mg/L	ND < 0.02	APHA 4500 CN E (2005)
Zinc	mg/L	0.91	APHA 3111 B (2005)
Arsenic	mg/L	ND < 0.001	APHA 3500-As B (2005)
Copper	mg/L	0.01	APHA 3111 B (2005)
Chromium	mg/L	ND < 0.1	APHA 3111 B (2005)
Phenol	mg/L	ND < 0.001	In house method MY/STP/069 based on Manual UDK 126D & APHA 5530 D (2005)
Mercury	mg/L	ND < 0.001	APHA 3112 B (2005)
Fecal Coliform (Multiple Tube Method)	MPN / 100ml	14000	APHA 9221 E/F, 21st Edition, 2005

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0.0055kgCO₂e/COA

Authentication

MY CO2 GROUP SDN BHD

202201032134 (1477931-A0)

MY CO2 (PG) SDN BHD | SAMM No. 384

201701042071 (1256244-P)

MY CO2 (KL) SDN BHD | SAMM No. 564

201501029620 (1155142-M)

MY CO2 (JB) SDN BHD | SAMM No. 752

201501029979 (1155302-A)

MY CO2 CERTIFICATION SDN BHD

201601026813 (1197752-X)

MY CO2 SDN BHD

200601024684 (744438-M)

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Certificate of AnalysisLab Ref No.: **PL2401-D87844**SN: **RS6180707591176015**

Page 2 / 2

Nurul Afqah Bt Ibrahim

Chemist

IKM No.: M/5117/8403/19

AN1: RA1660735530946208

Kee Kai Loon

Microbiologist & Biotechnologist

Food Analyst No: MJMM 0469

AN2: RA7214882350066080

- END OF REPORT -

The above result(s) based on sample submitted. We shall not be responsible or liable for any damages or losses arising thereof.

0.0055kgCO₂e/COA

Authentication

MY CO2 GROUP SDN BHD

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201701042071 (1256244-P)

MY CO2 (KL) SDN BHD | SAMM No. 564

201501029820 (1155142-M)

MY CO2 (JB) SDN BHD | SAMM No. 752

201501029979 (1155302-A)

MY CO2 CERTIFICATION SDN BHD

201601026813 (1197752-K)

MY CO2 SDN BHD

200601024684 (1744438-M)



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Certificate of AnalysisLab Ref No.: **PL2401-D87845**SN: **RS1832537243017755**

Page 1 / 2

Nurul Afiqah Bt Ibrahim
Chemist

IKM No.: M/5117/8403/19

AN1: RA6917831611318421

YES BIZS SDN BHD

4936, JALAN SIRAM, DESA SIRAM,
12100 BUTTERWORTH PULAU PINANG
MALAYSIA

Kee Kai Loon
Microbiologist & Biotechnologist

Food Analyst No: MJMM 0469

AN2: RA7144987771139211

Date of Received: 2024-01-04
Date of Commence: 2024-01-04
Date of Completion: 2024-01-10
Date of Issue: 2024-01-10

Sample Marking:

PLB/DW2

ND denotes Not Detected

Test Description	Unit	Result(s)	Method or Equipment Used
Suspended Solid	mg/L	17.0	APHA 2540 D (2005)
Oil & Grease	mg/L	ND < 0.2	APHA 5520 B (2005)
Dissolved Oxygen*	mg/L	1.85	APHA 4500-O G
Phosphate	mg/L	2.4	APHA 4500-P B & C (2005)
Ammoniacal Nitrogen	mg/L	2.7	APHA 4500 NH ₃ B & C (2005)
Nitrate (as NO ₃ -)	mg/L	3.29	APHA 4500-NO ₃ B (2005)
Nitrite (as NO ₂ -)	mg/L	0.03	APHA 4500-NO ₂ B (2005)
Lead	mg/L	ND < 0.01	APHA 3111 B (2005)
Cyanide	mg/L	ND < 0.02	APHA 4500 CN E (2005)
Zinc	mg/L	0.37	APHA 3111 B (2005)
Arsenic	mg/L	ND < 0.001	APHA 3500-As B (2005)
Copper	mg/L	0.01	APHA 3111 B (2005)
Chromium	mg/L	ND < 0.1	APHA 3111 B (2005)
Phenol	mg/L	ND < 0.001	In house method MY/STP/069 based on Manual UDK 126D & APHA 5530 D (2005)
Mercury	mg/L	ND < 0.001	APHA 3112 B (2005)
Fecal Coliform (Multiple Tube Method)	MPN / 100ml	14000	APHA 9221 E/F, 21st Edition, 2005



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MY CO2 (KL) SDN BHD | SAMM No. 564
201501029820 (1155142-4)
MY CO2 (JB) SDN BHD | SAMM No. 752
201501029979 (1155302-A)
MY CO2 CERTIFICATION SDN BHD
201501026613 (1199752-K)
MY CO2 SDN BHD
200601024684 (744438-M)

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Certificate of Analysis

Lab Ref No.: PL2401-D87845

SN: RS1832537243017755

Page 2 / 2

Nurul Afqah Bt Ibrahim
Chemist
IKM No.: M/5117/8403/19
AN1: RA6917831611318421

Kee Kai Loon
Microbiologist & Biotechnologist
Food Analyst No: MJMM 0469
AN2: RA7144987771139211

– END OF REPORT –

The above result(s) based on sample submitted. We shall not be responsible or liable for any damages or losses arising thereof.



MY CO2 GROUP SDN BHD

202201032134 (1477831-M)

MY CO2 (PG) SDN BHD | SAMM No. 384

201701042071 (1256244-P)

MY CO2 (KL) SDN BHD | SAMM No. 564

201501029820 (1155142-M)

MY CO2 (JB) SDN BHD | SAMM No. 752

201501029979 (1155302-A)

MY CO2 CERTIFICATION SDN BHD

201601026813 (1197752-X)

MY CO2 SDN BHD

200601024064 (144438-M)

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SAMM 564
SAMM 752ACB QMS 26
ACB OSH 10
ACB PSMS 09

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Certificate of AnalysisLab Ref No.: **PL2401-D87846**SN: **RS1208206632887944**

Page 1 / 2

Nurul Afiah Bt Ibrahim

Chemist

IKM No.: M/5117/8403/19

AN1: RA8288566022703851

YES BIZS SDN BHD4936, JALAN SIRAM, DESA SIRAM,
12100 BUTTERWORTH PULAU PINANG
MALAYSIA

Kee Kai Loon

Microbiologist & Biotechnologist

Food Analyst No: MJMM 0469

AN2: RA5974839323000654

Date of Received: 2024-01-04

Date of Commence: 2024-01-04

Date of Completion: 2024-01-10

Date of Issue: 2024-01-10

Sample Marking: **PLB/DW3**

ND denotes Not Detected

Test Description	Unit	Result(s)	Method or Equipment Used
Suspended Solid	mg/L	18.0	APHA 2540 D (2005)
Oil & Grease	mg/L	ND < 0.2	APHA 5520 B (2005)
Dissolved Oxygen*	mg/L	1.83	APHA 4500-O G
Phosphate	mg/L	1.8	APHA 4500-P B & C (2005)
Ammoniacal Nitrogen	mg/L	2.9	APHA 4500 NH ₃ B & C (2005)
Nitrate (as NO ₃ -)	mg/L	3.50	APHA 4500-NO ₃ B (2005)
Nitrite (as NO ₂ -)	mg/L	0.01	APHA 4500-NO ₂ B (2005)
Lead	mg/L	ND < 0.01	APHA 3111 B (2005)
Cyanide	mg/L	ND < 0.02	APHA 4500 CN E (2005)
Zinc	mg/L	0.17	APHA 3111 B (2005)
Arsenic	mg/L	ND < 0.001	APHA 3500-As B (2005)
Copper	mg/L	0.03	APHA 3111 B (2005)
Chromium	mg/L	ND < 0.1	APHA 3111 B (2005)
Phenol	mg/L	ND < 0.001	In house method MY/STP/069 based on Manual UDK 126D & APHA 5530 D (2005)
Mercury	mg/L	ND < 0.001	APHA 3112 B (2005)
Fecal Coliform (Multiple Tube Method)	MPN / 100ml	18000	APHA 9221 E/F, 21st Edition, 2005

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0.0055kgCO₂e/COA

Authentication

MY CO2 GROUP SDN BHD

202201032134 (1477831-M)

MY CO2 (PG) SDN BHD | SAMM No. 384

201701042071 (1254244-P)

MY CO2 (KL) SDN BHD | SAMM No. 564

2015010229820 (1155142-M)

MY CO2 (JB) SDN BHD | SAMM No. 752

2015010229979 (1155302-A)

MY CO2 CERTIFICATION SDN BHD

2016010226013 (1197752-K)

MY CO2 SDN BHD

200601024684 (7444338-M)

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Page 2 / 2

Nurul Afiqah Bt Ibrahim
Chemist
IKM No.: M/5117/8403/19
AN1: RA8288566022703851

Kee Kai Loon
Microbiologist & Biotechnologist
Food Analyst No: MJMM 0469
AN2: RA5974839323000654

- END OF REPORT -

The above result(s) based on sample submitted. We shall not be responsible or liable for any damages or losses arising thereof.

0.0055kgCO₂e/COA

Authentication

MY CO2 GROUP SDN BHD

2022010121:34 (1477831-M)

MY CO2 (PG) SDN BHD : SAMM No. 384

201701042071:1256244-P1

MY CO2 (KL) SDN BHD : SAMM No. 564

201501029820:1155142-M1

MY CO2 (JB) SDN BHD : SAMM No. 752

201501029979:1155302-M1

MY CO2 CERTIFICATION SDN BHD

201601026813:1197752-K1

MY CO2 SDN BHD

200601024684:744438-M1



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Ooi Kah Wai

Chemist

IKM No.: L/2452/7352/16

AN1: RA1441562523806664

YES BIZS SDN BHD

4936, JALAN SIRAM, DESA SIRAM,

12100 BUTTERWORTH PULAU PINANG

MALAYSIA

Date of Received: 2024-01-12

Date of Commence: 2024-01-15

Date of Completion: 2024-01-18

Date of Issue: 2024-01-18

Sample Marking: **PLB/01-24 (AQ1)**

ND denotes Not Detected

Test Description	Unit	Result(s)	Method or Equipment Used
Sulfur Dioxide*	µg/m ³	ND <0.01	NAAQS Monitoring & Analysis Guildlines Volume-I
Nitrogen Dioxide*	µg/m ³	ND <5.0	NAAQS Monitoring & Analysis Guildlines Volume-I
Carbon Monoxide*	mg/m ³	4.70	Direct Reading
Ozone*	µg/m ³	20	Electrochemical detector

- END OF REPORT -

The above result(s) based on sample submitted. We shall not be responsible or liable for any damages or losses arising thereof.

0.0019kgCO₂e/COA

Authentication

MY CO2 GROUP SDN BHD

202201032134 1477831 M)

MY CO2 (PG) SDN BHD : SAMM No. 384

201701042071 1256244-P1

MY CO2 (KL) SDN BHD : SAMM No. 564

201501029820 155142-M1

MY CO2 (JB) SDN BHD : SAMM No. 752

201501029979 155302-A1

MY CO2 CERTIFICATION SDN BHD

201501026813 1197752-X1

MY CO2 SDN BHD

300601024684 744438-M1



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Page 1 / 1

Ooi Kah Wai

Chemist

IKM No.: L/2452/7352/16

AN1: RA1193914912786148

YES BIZS SDN BHD

4936, JALAN SIRAM, DESA SIRAM,

12100 BUTTERWORTH PULAU PINANG

MALAYSIA

Date of Received:

2024-01-12

Date of Commence:

2024-01-15

Date of Completion:

2024-01-18

Date of Issue:

2024-01-18

Sample Marking:

PLB/01-24 (AQ2)

ND denotes Not Detected

Test Description	Unit	Result(s)	Method or Equipment Used
Sulfur Dioxide*	µg/m3	ND <0.01	NAAQS Monitoring & Analysis Guildlines Volume-I
Nitrogen Dioxide*	µg/m3	ND <5.0	NAAQS Monitoring & Analysis Guildlines Volume-I
Carbon Monoxide*	mg/m ³	4.47	Direct Reading
Ozone*	µg/m3	14	Electrochemical detector

- END OF REPORT -

The above result(s) based on sample submitted. We shall not be responsible or liable for any damages or losses arising thereof.

0.0019kgCO₂e/COA

Authentication

MY CO2 GROUP SDN BHD

202201032134 (1477831-M)

MY CO2 (PG) SDN BHD | SAMM No. 384

201701042071 (1256244-P)

MY CO2 (KL) SDN BHD | SAMM No. 564

201501029820 (1155142-M)

MY CO2 (JB) SDN BHD | SAMM No. 752

201501029979 (1155302-A)

MY CO2 CERTIFICATION SDN BHD

201601026873 (1197752-K)

MY CO2 SDN BHD

200501024684 (744438-W)



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Certificate of AnalysisLab Ref No.: **PL2401-D89690**SN: **RS1668574661261625**

Page 1 / 1

Ooi Kah Wai

Chemist

IKM No.: L/2452/7352/16

AN1: RA5724108282534118

YES BIZS SDN BHD4936, JALAN SIRAM, DESA SIRAM,
12100 BUTTERWORTH PULAU PINANG
MALAYSIA

Date of Received:	2024-01-12
Date of Commence:	2024-01-15
Date of Completion:	2024-01-18
Date of Issue:	2024-01-18

Sample Marking: **PLB/01-24 (AQ3)**

ND denotes Not Detected

Test Description	Unit	Result(s)	Method or Equipment Used
Sulfur Dioxide*	µg/m3	ND <0.01	NAAQS Monitoring & Analysis Guildlines Volume-I
Nitrogen Dioxide*	µg/m3	ND<5.0	NAAQS Monitoring & Analysis Guildlines Volume-I
Carbon Monoxide*	mg/m ³	4.58	Direct Reading
Ozone*	µg/m3	16	Electrochemical detector

- END OF REPORT -

The above result(s) based on sample submitted. We shall not be responsible or liable for any damages or losses arising thereof.

0.0019kgCO₂e/COA

Authentication

Project Name : PLB Engineering Berhad
Location: Seksyen 8, Bandar Jelutong, Daerah Timur Laut, Pulau Pinang

Calculation For $PM_{2.5}$ And PM_{10}

To calculate the value for $PM_{2.5}$, the following formulas are used:-

- (1) Calculate the volume of air sampled (m^3)

$$V_{act} = \frac{t \text{ (min)} \times Q_{act} \text{ (L/min)}}{1000}$$

Whereby,

V_{act} = Actual air volume, m^3

Q_{act} = Calibrated flow rate (5 L/min)

t = Sampling period (1440 mins)

$$V_{act} = \frac{1440 \text{ min} \times 5 \text{ L/min}}{1000} = 7.2 \text{ m}^3$$

- (2) Calculate volume of air sampled (m^3) corrected to S.T.P

$$V_{std} = V_{act} \left(\frac{P_{act}}{P_{std}} \right) \times \left(\frac{T_{std}}{T_{act}} \right)$$

Whereby,

V_{std} = Volume of air at standard condition (760 mm Hg, 298°K)

P_{std} = Standard Atmosphere Pressure (760 mm Hg)

P_{act} = Actual ambient pressure, mm/Hg

T_{std} = Standard Temperature (298°K)

T_{act} = Actual ambient temperature (°K)

$$V_{std} = 7.2 \times \frac{757.6}{760} \times \frac{298}{305} = 7.01 \text{ m}^3 \text{ (Assume 7 m}^3\text{)}$$

- (3) Calculate concentration ($\mu g/m^3$)

$$C = \frac{W_F - W_i \text{ (g)} \times 1000,000 \mu g}{V_{std}}$$

Where W_F - Final Weight of Filter Paper
 W_i - Initial Weight of Fiter Paper
 V_{std} - Volume in m^3 at S.T.P

(a) $PM_{2.5}$

Sampling Location	Sampling Date	$W_F - W_i \text{ (g)}^*$	$PM_{2.5}$
AQ1	15.1.2024	0.00017	$\frac{0.00017}{7} \times 1000000 = 24.2 \mu g/Nm^3$
AQ2	15.1.2024	0.00019	$\frac{0.00019}{7} \times 1000000 = 27.1 \mu g/Nm^3$
AQ3	15.1.2024	0.00014	$\frac{0.00014}{7} \times 1000000 = 20.0 \mu g/Nm^3$

To calculate the value for PM₁₀, the following formulas are used:-

(1) Calculate the volume of air sampled (m³)

$$V_{act} = \frac{t \text{ (min)} \times Q_{act} \text{ (L/min)}}{1000}$$

Whereby,

V_{act} = Actual air volume, m³

Q_{act} = Calibrated flow rate (5 L/min)

t = Sampling period (1440 mins)

$$\begin{aligned} V_{act} &= \frac{1440 \text{ min} \times 5 \text{ L/min}}{1000} \\ &= 7.2 \text{ m}^3 \end{aligned}$$

(2) Calculate volume of air sampled (m³) corrected to S.T.P

$$V_{std} = V_{act} \left(\frac{P_{act}}{P_{std}} \right) \times \left(\frac{T_{std}}{T_{act}} \right)$$

Whereby,

V_{std} = Volume of air at standard condition (760 mm Hg, 298°K)

P_{std} = Standard Atmosphere Pressure (760 mm Hg)

P_{act} = Actual ambient pressure, mm/Hg

T_{std} = Standard Temperature (298°K)

T_{act} = Actual ambient temperature (°K)

$$\begin{aligned} V_{std} &= 7.2 \times \frac{757.6}{760} \times \frac{298}{305} \\ &= 7.01 \text{ m}^3 \text{ (Assume 7 m}^3\text{)} \end{aligned}$$

(3) Calculate concentration (µg/m³)

$$C = \frac{W_F - W_i \text{ (g)} \times 1000,000 \text{ } \mu\text{g}}{V_{std}}$$

Where W_F = Final Weight of Filter Paper

W_i = Initial Weight of Filter Paper

V_{std} = Volume in m³ at S.T.P

(b) PM₁₀

Sampling Location	Sampling Date	$W_F - W_i \text{ (g)}^*$	PM ₁₀
AQ1	15.1.2024	0.00021	$\frac{0.00021}{7} \times 1000000 = 30.0 \text{ } \mu\text{g/Nm}^3$
AQ2	15.1.2024	0.00024	$\frac{0.00024}{7} \times 1000000 = 34.2 \text{ } \mu\text{g/Nm}^3$
AQ3	15.1.2024	0.00027	$\frac{0.00027}{7} \times 1000000 = 38.5 \text{ } \mu\text{g/Nm}^3$

Note: * Primary data in laboratory report

Noise Measurement Data Record

Project Title : Proposed Landfill Rehabilitation And Land Reclamation Works For Mixed Development
At Seksyen 8, Bandar Jelutong, Daerah Timur Laut, Pulau Pinang

Project ID : PLB

Client Name : PLB Engineering Berhad

Station ID : NL1

Device ID :

Instrument Setting

RMS Time Weighting : F
RMS Frequency Weighting : A
Peak Frequency Weighting : C
Measurement Range : 30-90 dB

Test Started: 12/01/2024 07:00:00 AM
Test Ended: 13/01/2024 07:00:00 AM
Run Time: 24:00:00

Summary of Measurement Results

Lmin : 32.50 dB, 13/01/2024 04:29:14 AM
Lmax : 88.20 dB, 12/01/2024 12:33:37 PM

Total Leq : 57.3 dB(A)
Daytime Leq : 58.6 dB(A)
Nighttime Leq : 53.3 dB(A)

L10 : 60.0 dB(A)
L90 : 48.6 dB(A)

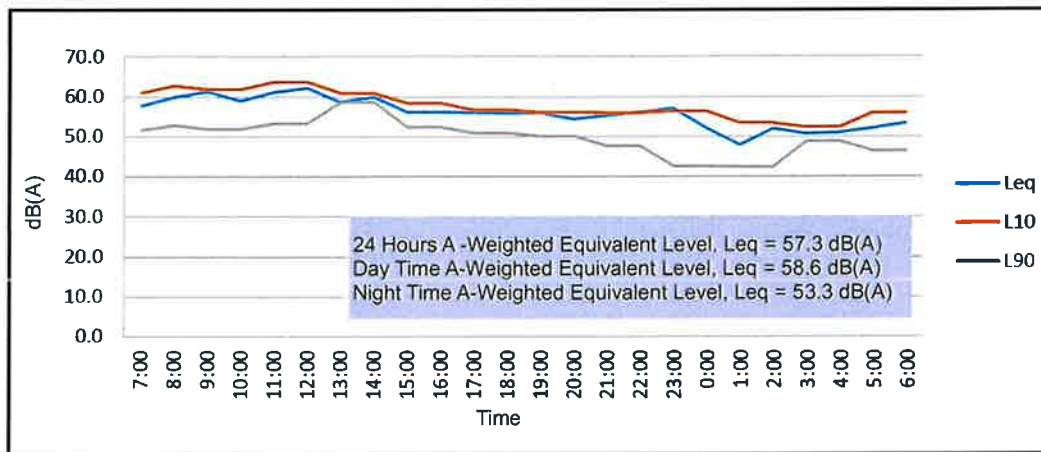


Figure 1: Noise Output Trend

Noise Measurement Data Record

Project Title : Proposed Landfill Rehabilitation And Land Reclamation Works For Mixed Development
At Seksyen 8, Bandar Jelutong, Daerah Timur Laut, Pulau Pinang

Project ID : PLB

Client Name : PLB Engineering Berhad

Station ID : NL2

Device ID :

Instrument Setting

RMS Time Weighting : F
RMS Frequency Weighting : A
Peak Frequency Weighting : C
Measurement Range : 30-90 dB

Test Started: 12/01/2024 07:00:00 AM
Test Ended: 13/01/2024 07:00:00 AM
Run Time: 24:00:00

Summary of Measurement Results

Lmin : 41.30 dB, 13/01/2024 04:21:06 AM
Lmax : 79.60 dB, 13/01/2024 02:11:35 AM

Total Leq : 55.1 dB(A)
Daytime Leq : 55.8 dB(A)
Nighttime Leq : 53.4 dB(A)

L10 : 57.1 dB(A)
L90 : 46.9 dB(A)

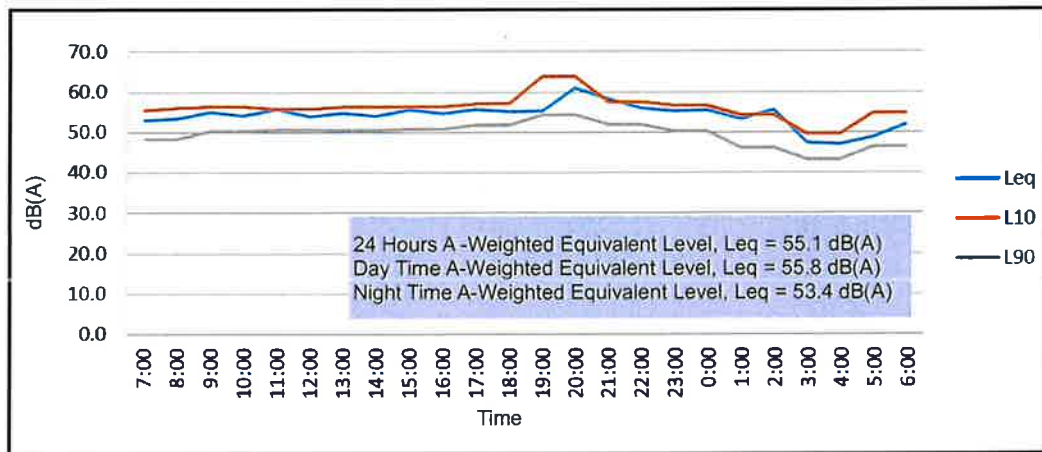


Figure 1: Noise Output Trend

Noise Measurement Data Record

Project Title : Proposed Landfill Rehabilitation And Land Reclamation Works For Mixed Development
At Seksyen 8, Bandar Jelutong, Daerah Timur Laut, Pulau Pinang

Project ID : PLB

Client Name : PLB Engineering Berhad

Station ID : NL3

Device ID :

Instrument Setting

RMS Time Weighting : F
RMS Frequency Weighting : A
Peak Frequency Weighting : C
Measurement Range : 30-90 dB

Test Started: 12/01/2024 07:00:00 AM
Test Ended: 13/01/2024 07:00:00 AM
Run Time: 24:00:00

Summary of Measurement Results

Lmin : 23.50 dB, 13/01/2024 03:21:15 AM
Lmax : 93.90 dB, 12/01/2024 14:46:31 PM

Total Leq : 51.8 dB(A)
Daytime Leq : 53.5 dB(A)
Nighttime Leq : 45.1 dB(A)

L10 : 51.9 dB(A)
L90 : 31.5 dB(A)

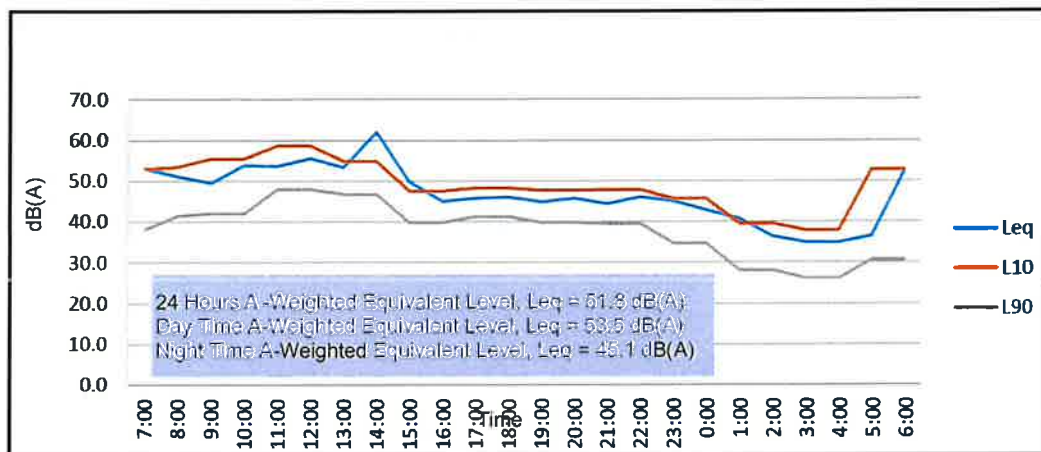


Figure 1: Noise Output Trend

CERTIFICATE OF ANALYSIS

COMPANY : DZS MARINE SDN BHD
NO. 9A, TINGKAT ATAS, JALAN MULIA 17/KS8,
TAMAN SETIA, OFF JALAN JOHAN SETIA,
42100 KLANG, SELANGOR DARUL EHSAN.

LAB REF NO. : MIZU/0629/4669/23
ISSUED DATE: 30 JUNE 2023
PAGE : 01 OF 01

NO. OF SAMPLE : ONE (1) NO.
CONTAINER TYPE : 1.5L PLASTIC BOTTLE
SAMPLE DESCRIPTION : SEA WATER
SAMPLE MARKING : WS 1- 0.2D
SAMPLING DATE : 18 JUNE 2023 (11:20 AM)
RECEIVED DATE : 19 JUNE 2023

ANALYSIS RESULTS

TEST PARAMETER	RESULT	DATE OF ANALYSIS	UNIT	METHOD REF.
TEMPERATURE	32.9	19/06/23	°C	APHA 2550B
pH	7.9	19/06/23	-	APHA 4500-H B
COLOUR	<1	22/06/23	TCU	APHA 2120C
TURBIDITY	20	20/06/23	NTU	APHA 2130B
TOTAL SUSPENDED SOLIDS	35	19/06/23	mg/l	APHA 2540D
DISSOLVED OXYGEN	8.5	19/06/23	mg/l	APHA 4500 O-G
SALINITY	33.34	20/06/23	g/kg	APHA 4500CI B
NITRATE NITROGEN as N	14.3	21/06/23	mg/l	APHA 4500NO ₃ D
AMMONIA as N	0.03	21/06/23	mg/l	APHA 4500NH ₃ -B&F
PHOSPHATE as PO ₄	3.49	20/06/23	mg/l	APHA 4500P-D
ALUMINIUM as Al	ND (<0.01)	21/06/23	mg/l	APHA 3500Al-B
Fecal Coliform [#]	Absent [*]	19/06/23	MPN/100ml	APHA 9221E
OIL & GREASE	ND (<0.5)	30/06/23	mg/l	APHA 5520D
PHENOL	ND (<0.001)	22/06/23	mg/l	APHA 5530 B&C
MERCURY as Hg	ND (<0.001)	30/06/23	mg/l	APHA 3112B
CYANIDE as C _N	ND (<0.01)	21/06/23	mg/l	APHA 4500-CN C&F
CADMIUM as Cd	ND (<0.001)	23/06/23	mg/l	APHA 3111B
LEAD as Pb	ND (<0.01)	23/06/23	mg/l	APHA 3111B
CHROMIUM as Cr ⁶⁺	ND (<0.005)	23/06/23	mg/l	APHA 3500CrB
ARSENIC as As ³⁺	ND (<0.001)	28/06/23	mg/l	INHOUSE NO.MW01 (BASED ON APHA 3114C)
COPPER as Cu	0.02	23/06/23	mg/l	APHA 3111B
ZINC as Zn	0.11	23/06/23	mg/l	APHA 3111B
Fecal Streptococci [#]	1.7x10	21/06/23	MPN/100ml	APHA 9230 B

NOTE:

- (1) RESULTS RELATE TO THE SAMPLE AS RECEIVED.
(2) ND - NOT DETECTED, < - LESS THAN THE MINIMUM DETECTION LIMIT REPORTED.
(3) MPN - MOST PROBABLE NUMBER, *MINIMUM DETECTION LIMIT IS <2 MPN/100ml.
(4) *NOT ACCREDITED

METHOD REFERENCES

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTE WATER (2005) 21ST EDITION, APHA, AWWA, WEF.

ChM. LAW CHER KEN (M.M.I.C)
IKM NO.: M/3144/5944/11

COMPANY : DZS MARINE SDN BHD
NO. 9A, TINGKAT ATAS, JALAN MULIA 17/KS8,
TAMAN SETIA, OFF JALAN JOHAN SETIA,
42100 KLANG, SELANGOR DARUL EHSAN.

LAB REF NO. : MIZU/0629/4670/23

ISSUED DATE: 30 JUNE 2023

PAGE : 01 OF 01

NO. OF SAMPLE : ONE (1) NO.
CONTAINER TYPE : 1.5L PLASTIC BOTTLE
SAMPLE DESCRIPTION : SEA WATER
SAMPLE MARKING : WS 1- 0.8D
SAMPLING DATE : 18 JUNE 2023 (11:13 AM)
RECEIVED DATE : 19 JUNE 2023

ANALYSIS RESULTS

TEST PARAMETER	RESULT	DATE OF ANALYSIS	UNIT	METHOD REF.
TEMPERATURE	32.9	19/06/23	°C	APHA 2550B
pH	7.8	19/06/23	-	APHA 4500-H B
COLOUR	<1	22/06/23	TCU	APHA 2120C
TURBIDITY	26.2	20/06/23	NTU	APHA 2130B
TOTAL SUSPENDED SOLIDS	28	19/06/23	mg/l	APHA 2540D
DISSOLVED OXYGEN	7.9	19/06/23	mg/l	APHA 4500 O-G
SALINITY	35.51	20/06/23	g/kg	APHA 4500CI B
NITRATE NITROGEN as N	9.99	21/06/23	mg/l	APHA 4500NO ₃ D
AMMONIA as N	ND (<0.02)	21/06/23	mg/l	APHA 4500NH ₃ -B&F
PHOSPHATE as PO ₄	4.47	20/06/23	mg/l	APHA 4500P-D
ALUMINIUM as Al	ND (<0.01)	21/06/23	mg/l	APHA 3500Al-B
Fecal Coliform [#]	Absent [*]	19/06/23	MPN/100ml	APHA 9221E
OIL & GREASE	ND (<0.5)	30/06/23	mg/l	APHA 5520D
PHENOL	ND (<0.001)	22/06/23	mg/l	APHA 5530 B&C
MERCURY as Hg	ND (<0.001)	30/06/23	mg/l	APHA 3112B
CYANIDE as C _N	ND (<0.01)	21/06/23	mg/l	APHA 4500-CN C&F
CADMIUM as Cd	ND (<0.001)	23/06/23	mg/l	APHA 3111B
LEAD as Pb	ND (<0.01)	23/06/23	mg/l	APHA 3111B
CHROMIUM as Cr ⁶⁺	ND (<0.005)	23/06/23	mg/l	APHA 3500CrB
ARSENIC as As ³⁺	ND (<0.001)	28/06/23	mg/l	INHOUSE NO.MW01 (BASED ON APHA 3114C)
COPPER as Cu	0.03	23/06/23	mg/l	APHA 3111B
ZINC as Zn	0.12	23/06/23	mg/l	APHA 3111B
Fecal Streptococci [#]	1.0x10	21/06/23	MPN/100ml	APHA 9230 B

NOTE:

- (1) RESULTS RELATE TO THE SAMPLE AS RECEIVED.
(2) ND -NOT DETECTED; < - LESS THAN THE MINIMUM DETECTION LIMIT REPORTED.
(3) MPN - MOST PROBABLE NUMBER; *MINIMUM DETECTION LIMIT IS <2 MPN/100ml.
(4) *NOT ACCREDITED.

METHOD REFERENCES

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTE WATER (2005) 21ST EDITION, APHA, AWWA, WEF.

ChM. LAW CHER KEN (M.M.I.C)
IKM NO.: M/3144/5944/11



SDN BHD 200801026652 (827976-D)

CERTIFICATE OF ANALYSIS

SMM 423

COMPANY : DZS MARINE SDN BHD
NO. 9A, TINGKAT ATAS, JALAN MULIA 17/KS8,
TAMAN SETIA, OFF JALAN JOHAN SETIA,
42100 KLANG, SELANGOR DARUL EHSAN.

NO. OF SAMPLE : ONE (1) NO.
CONTAINER TYPE : 1.5L PLASTIC BOTTLE
SAMPLE DESCRIPTION : SEA WATER
SAMPLE MARKING : WS 2 - 0.2D
SAMPLING DATE : 18 JUNE 2023 (11:35 AM)
RECEIVED DATE : 19 JUNE 2023

LAB REF NO. : MIZU/0629/4671/23

ISSUED DATE: 30 JUNE 2023

PAGE : 01 OF 01

ANALYSIS RESULTS

TEST PARAMETER	RESULT	DATE OF ANALYSIS	UNIT	METHOD REF.
TEMPERATURE	32.9	19/06/23	°C	APHA 2550B
pH	7.8	19/06/23	-	APHA 4500-H B
COLOUR	<1	22/06/23	TCU	APHA 2120C
TURBIDITY	16.5	20/06/23	NTU	APHA 2130B
TOTAL SUSPENDED SOLIDS	8	19/06/23	mg/l	APHA 2540D
DISSOLVED OXYGEN	7.6	19/06/23	mg/l	APHA 4500 O-G
SALINITY	31.06	20/06/23	g/kg	APHA 4500CI B
NITRATE NITROGEN as N	5.39	21/06/23	mg/l	APHA 4500NO ₃ D
AMMONIA as N	ND (<0.02)	21/06/23	mg/l	APHA 4500NH ₃ -B&F
PHOSPHATE as PO ₄	3.65	20/06/23	mg/l	APHA 4500P-D
ALUMINIUM as Al	ND (<0.01)	21/06/23	mg/l	APHA 3500Al-B
Fecal Coliform [#]	Absent [*]	19/06/23	MPN/100ml	APHA 9221E
OIL & GREASE	ND (<0.5)	30/06/23	mg/l	APHA 5520D
PHENOL	ND (<0.001)	22/06/23	mg/l	APHA 5530 B&C
MERCURY as Hg	ND (<0.001)	30/06/23	mg/l	APHA 3112B
CYANIDE as C _N	ND (<0.01)	21/06/23	mg/l	APHA 4500-CN C&F
CADMIUM as Cd	ND (<0.001)	23/06/23	mg/l	APHA 3111B
LEAD as Pb	ND (<0.01)	23/06/23	mg/l	APHA 3111B
CHROMIUM as Cr ⁶⁺	ND (<0.005)	23/06/23	mg/l	APHA 3500CrB
ARSENIC as As ³⁺	ND (<0.001)	28/06/23	mg/l	INHOUSE NO.MW01 (BASED ON APHA 3114C)
COPPER as Cu	0.03	23/06/23	mg/l	APHA 3111B
ZINC as Zn	0.11	23/06/23	mg/l	APHA 3111B
Fecal Streptococci [#]	4.8x10	21/06/23	MPN/100ml	APHA 9230 B

NOTE:

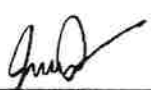
(1) RESULTS RELATE TO THE SAMPLE AS RECEIVED

(2) ND - NOT DETECTED; < - LESS THAN THE MINIMUM DETECTION LIMIT REPORTED.

(3) MPN - MOST PROBABLE NUMBER; * MINIMUM DETECTION LIMIT IS <2 MPN/100ml.

(4) *NOT ACCREDITED

METHOD REFERENCESSTANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTE WATER (2005) 21ST EDITION, APHA, AWWA, WEF.


ChM. LAW CHER KEN (M.M.I.C)
IKM NO.: M/3144/5944/11

COMPANY : DZS MARINE SDN BHD
NO. 9A, TINGKAT ATAS, JALAN MULIA 17/KS8,
TAMAN SETIA, OFF JALAN JOHAN SETIA,
42100 KLANG, SELANGOR DARUL EHSAN.

LAB REF NO. : MIZU/0629/4672/23

ISSUED DATE: 30 JUNE 2023

PAGE : 01 OF 01

NO. OF SAMPLE : ONE (1) NO.
CONTAINER TYPE : 1.5L PLASTIC BOTTLE
SAMPLE DESCRIPTION : SEA WATER
SAMPLE MARKING : WS 2 - 0.8D
SAMPLING DATE : 18 JUNE 2023 (11:35 AM)
RECEIVED DATE : 19 JUNE 2023

ANALYSIS RESULTS

TEST PARAMETER	RESULT	DATE OF ANALYSIS	UNIT	METHOD REF.
TEMPERATURE	32.9	19/06/23	°C	APHA 2550B
pH	7.9	19/06/23	-	APHA 4500-H B
COLOUR	<1	22/06/23	TCU	APHA 2120C
TURBIDITY	13	20/06/23	NTU	APHA 2130B
TOTAL SUSPENDED SOLIDS	21	19/06/23	mg/l	APHA 2540D
DISSOLVED OXYGEN	7.3	19/06/23	mg/l	APHA 4500 O-G
SALINITY	14,552	20/06/23	g/kg	APHA 4500Cl B
NITRATE NITROGEN as N	4.34	21/06/23	mg/l	APHA 4500NO ₃ D
AMMONIA as N	ND (<0.02)	21/06/23	mg/l	APHA 4500NH ₃ -B&F
PHOSPHATE as PO ₄	4.38	20/06/23	mg/l	APHA 4500P-D
ALUMINIUM as Al	ND (<0.01)	21/06/23	mg/l	APHA 3500Al-B
Fecal Coliform [#]	Absent [*]	19/06/23	MPN/100ml	APHA 9221E
OIL & GREASE	ND (<0.5)	30/06/23	mg/l	APHA 5520D
PHENOL	ND (<0.001)	22/06/23	mg/l	APHA 5530 B&C
MERCURY as Hg	ND (<0.001)	30/06/23	mg/l	APHA 3112B
CYANIDE as C _N	ND (<0.01)	21/06/23	mg/l	APHA 4500-CN C&F
CADMIUM as Cd	ND (<0.001)	23/06/23	mg/l	APHA 3111B
LEAD as Pb	ND (<0.01)	23/06/23	mg/l	APHA 3111B
CHROMIUM as Cr ⁶⁺	ND (<0.005)	23/06/23	mg/l	APHA 3500CrB
ARSENIC as As ³⁺	ND (<0.001)	28/06/23	mg/l	INHOUSE NO.MW01 (BASED ON APHA 3114C)
COPPER as Cu	0.03	23/06/23	mg/l	APHA 3111B
ZINC as Zn	0.12	23/06/23	mg/l	APHA 3111B
Fecal <i>Streptococci</i> [#]	3.3x10	21/06/23	MPN/100ml	APHA 9230 B

NOTE:

- (1) RESULTS RELATE TO THE SAMPLE AS RECEIVED
(2) ND - NOT DETECTED; < - LESS THAN THE MINIMUM DETECTION LIMIT REPORTED.
(3) MPN - MOST PROBABLE NUMBER, *MINIMUM DETECTION LIMIT IS <2 MPN/100ml.
(4) *NOT ACCREDITED.

METHOD REFERENCES

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTE WATER (2005) 21ST EDITION, APHA, AWWA, WEF.

ChM. LAW CHER KEN (M.M.I.C)
IKM NO.: M/3144/5944/11

COMPANY : DZS MARINE SDN BHD
NO. 9A, TINGKAT ATAS, JALAN MULIA 17/KS8,
TAMAN SETIA, OFF JALAN JOHAN SETIA,
42100 KLANG, SELANGOR DARUL EHSAN.

LAB REF NO. : MIZU/0629/4674/23
ISSUED DATE: 30 JUNE 2023
PAGE : 01 OF 01

NO. OF SAMPLE : ONE (1) NO.
CONTAINER TYPE : 1.5L PLASTIC BOTTLE
SAMPLE DESCRIPTION : SEA WATER
SAMPLE MARKING : WS 3 - 0.8D
SAMPLING DATE : 18 JUNE 2023 (11:05 AM)
RECEIVED DATE : 19 JUNE 2023

ANALYSIS RESULTS

TEST PARAMETER	RESULT	DATE OF ANALYSIS	UNIT	METHOD REF.
TEMPERATURE	32.9	19/06/23	°C	APHA 2550B
pH	7.3	19/06/23	-	APHA 4500-H B
COLOUR	<1	22/06/23	TCU	APHA 2120C
TURBIDITY	14	20/06/23	NTU	APHA 2130B
TOTAL SUSPENDED SOLIDS	28	19/06/23	mg/l	APHA 2540D
DISSOLVED OXYGEN	4.6	19/06/23	mg/l	APHA 4500 O-G
SALINITY	30.25	20/06/23	g/kg	APHA 4500Cl B
NITRATE NITROGEN as N	2.51	21/06/23	mg/l	APHA 4500NO ₃ D
AMMONIA as N	ND (<0.02)	21/06/23	mg/l	APHA 4500NH ₃ -B&F
PHOSPHATE as PO ₄	2.24	20/06/23	mg/l	APHA 4500P-D
ALUMINIUM as Al	ND (<0.01)	21/06/23	mg/l	APHA 3500Al-B
Fecal Coliform [#]	1.8	19/06/23	MPN/100ml	APHA 9221E
OIL & GREASE	ND (<0.5)	30/06/23	mg/l	APHA 5520D
PHENOL	ND (<0.001)	22/06/23	mg/l	APHA 5530 B&C
MERCURY as Hg	ND (<0.001)	30/06/23	mg/l	APHA 3112B
CYANIDE as C _N	ND (<0.01)	21/06/23	mg/l	APHA 4500-CN C&F
CADMIUM as Cd	ND (<0.001)	23/06/23	mg/l	APHA 3111B
LEAD as Pb	ND (<0.01)	23/06/23	mg/l	APHA 3111B
CHROMIUM as Cr ⁶⁺	ND (<0.005)	23/06/23	mg/l	APHA 3500CrB
ARSENIC as As ³⁺	ND (<0.001)	28/06/23	mg/l	INHOUSE NO.MW01 (BASED ON APHA 3114C)
COPPER as Cu	0.04	23/06/23	mg/l	APHA 3111B
ZINC as Zn	0.12	23/06/23	mg/l	APHA 3111B
Fecal <i>Streptococci</i> [#]	2.8x10 ²	21/06/23	MPN/100ml	APHA 9230 B

NOTE:

- (1) RESULTS RELATE TO THE SAMPLE AS RECEIVED
(2) ND - NOT DETECTED, < - LESS THAN THE MINIMUM DETECTION LIMIT REPORTED.
(3) MPN - MOST PROBABLE NUMBER; * MINIMUM DETECTION LIMIT IS <2 MPN/100ml.
(4) *NOT ACCREDITED

METHOD REFERENCES

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTE WATER (2005) 21ST EDITION, APHA, AWWA, WEF.

ChM. LAW CHER KEN (M.M.I.C)
IKM NO.: M/3144/5944/11

COMPANY : DZS MARINE SDN BHD
NO. 9A, TINGKAT ATAS, JALAN MULIA 17/KS8,
TAMAN SETIA, OFF JALAN JOHAN SETIA,
42100 KLANG, SELANGOR DARUL EHSAN.

LAB REF NO. : MIZU/0629/4673/23

ISSUED DATE: 30 JUNE 2023

PAGE : 01 OF 01

NO. OF SAMPLE : ONE (1) NO.
CONTAINER TYPE : 1.5L PLASTIC BOTTLE
SAMPLE DESCRIPTION : SEA WATER
SAMPLE MARKING : WS 3 - 0.2D
SAMPLING DATE : 18 JUNE 2023 (11:05 AM)
RECEIVED DATE : 19 JUNE 2023

ANALYSIS RESULTS

TEST PARAMETER	RESULT	DATE OF ANALYSIS	UNIT	METHOD REF.
TEMPERATURE	32.9	19/06/23	°C	APHA 2550B
pH	7.3	19/06/23	-	APHA 4500-H B
COLOUR	<1	22/06/23	TCU	APHA 2120C
TURBIDITY	14	20/06/23	NTU	APHA 2130B
TOTAL SUSPENDED SOLIDS	25	19/06/23	mg/l	APHA 2540D
DISSOLVED OXYGEN	4.2	19/06/23	mg/l	APHA 4500 O-G
SALINITY	18.92	20/06/23	g/kg	APHA 4500CI B
NITRATE NITROGEN as N	2.67	21/06/23	mg/l	APHA 4500NO ₃ D
AMMONIA as N	0.05	21/06/23	mg/l	APHA 4500NH ₃ -B&F
PHOSPHATE as PO ₄	3.65	20/06/23	mg/l	APHA 4500P-D
ALUMINIUM as Al	ND (<0.01)	21/06/23	mg/l	APHA 3500Al-B
Fecal Coliform [#]	6.8	19/06/23	MPN/100ml	APHA 9221E
OIL & GREASE	ND (<0.5)	30/06/23	mg/l	APHA 5520D
PHENOL	ND (<0.001)	22/06/23	mg/l	APHA 5530 B&C
MERCURY as Hg	ND (<0.001)	30/06/23	mg/l	APHA 3112B
CYANIDE as C _N	ND (<0.01)	21/06/23	mg/l	APHA 4500-CN C&F
CADMIUM as Cd	ND (<0.001)	23/06/23	mg/l	APHA 3111B
LEAD as Pb	ND (<0.01)	23/06/23	mg/l	APHA 3111B
CHROMIUM as Cr ⁶⁺	ND (<0.005)	23/06/23	mg/l	APHA 3500CrB
ARSENIC as As ³⁺	ND (<0.001)	28/06/23	mg/l	INHOUSE NO.MW01 (BASED ON APHA 3114C)
COPPER as Cu	0.04	23/06/23	mg/l	APHA 3111B
ZINC as Zn	0.11	23/06/23	mg/l	APHA 3111B
Fecal Streptococci [#]	1.3x10 ²	21/06/23	MPN/100ml	APHA 9230 B

NOTE:

- (1) RESULTS RELATE TO THE SAMPLE AS RECEIVED
(2) ND - NOT DETECTED; < - LESS THAN THE MINIMUM DETECTION LIMIT REPORTED
(3) MPN - MOST PROBABLE NUMBER, *MINIMUM DETECTION LIMIT IS <2 MPN/100ml
(4) *NOT ACCREDITED

METHOD REFERENCES

STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTE WATER (2005) 21ST EDITION, APHA, AWWA, WEF.

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CERTIFICATE OF ANALYSIS

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Company : PLB ENGINEERING BERHAD

Lab. No : S / 2307 / 00646

Date Sample Received : 20 / 07 / 2023

Date Sample Reported : 16 / 08 / 2023

Date of Testing : 21 / 07 / 2023 – 16 / 08 / 2023

Sample Description : Soil

Sample Marking : Jelutong, Pulau Pinang.

<u>PARAMETER</u>	<u>METHODS</u>	<u>SAMPLE MARIKING</u>	
		<u>BH-2 / UD 1</u>	<u>BH-2 / UD 2</u>
*Aluminium as Al, mg/kg	EPA 3050 B / APHA 3120 B	16,778	2,812
*Silver as Ag, mg/kg	EPA 3050 B / APHA 3120 B	3.77	0.23
*Arsenic as As, mg/kg	EPA 3050 B / APHA 3120 B	26.6	10.8
*Barium as Ba, mg/kg	EPA 3050 B / APHA 3120 B	101.6	3.12
*Boron as B, mg/kg	EPA 3050 B / APHA 3120 B	150.7	80.2
*Cadmium as Cd, mg/kg	EPA 3050 B / APHA 3120 B	3.11	1.75
*Calcium as Ca as Ca, mg/kg	EPA 3050 B / APHA 3120 B	56,205	1,907
*Chromium as Cr, mg/kg	EPA 3050 B / APHA 3120 B	223.2	26.8
*Cobalt as Co, mg/kg	EPA 3050 B / APHA 3120 B	146.1	1.17
*Copper as Cu, mg/kg	EPA 3050 B / APHA 3120 B	398.1	17.5
**Cyanide Total Complex, mg/kg	In House Method Based On APHA 4500-CN ⁻ C, F	ND < 0.2	ND < 0.2
**Cyanide Total Free, mg/kg	In House Method Based On APHA 4500-CN ⁻ C, F	ND < 0.2	ND < 0.2
**Fluoride as F, mg/kg	APHA 4500 F C	0.92	1.10
*Iron as Fe, mg/kg	EPA 3050 B / APHA 3120 B	91,051	25,194
*Lead as Pb, mg/kg	EPA 3050 B / APHA 3120 B	149.8	9.64
*Magnesium as Mg, mg/kg	EPA 3050 B / APHA 3120 B	15,884	1,451
*Manganese as Mn, mg/kg	EPA 3050 B / APHA 3120 B	792	325.1
*Mercury as Hg, mg/kg	EPA 3050B; In House Method No.3 Based On APHA 3120 B	< 0.01	< 0.01
*Nickel as Ni, mg/kg	EPA 3050 B / APHA 3120 B	67.0	9.33
*Potassium as K, mg/l	EPA 3050 B / APHA 3120 B	5,923	996
*Selenium as Se, mg/kg	EPA 3050 B (APHA 3120 B)	< 0.1	3.13
*Tin as Sn, mg/kg	EPA 3050 B / APHA 3120 B	867	44.5
*Strontium as Sr, mg/l	EPA 3050 B / APHA 3120 B	184.3	16.8
**Total Hydrocarbon, %	APHA 5520 F	0.03	2.92
*Vanadium as V, mg/kg	EPA 3050 B (APHA 3120 B)	37.1	18.5
*Zinc as Zn, mg/kg	EPA 3050 B (APHA 3120 B)	775	64.2

NOTE : APHA means Standard Methods for the Examination of Water and Wastewater,
(American Public Health Association), 21st Edition, 2005.
EPA means Environmental Protection Agency.
* means Based On Dry Basis.
** means As per received.

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CERTIFICATE OF ANALYSIS

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Company : PLB ENGINEERING BERHAD

Lab. No : S / 2306 / 00974

Date Sample Received : 27 / 06 / 2023

Date Sample Reported : 18 / 07 / 2023

Date of Testing : 28 / 06 / 2023 – 18 / 07 / 2023

Sample Description : Soil

Sample Marking : Jelutong, Pulau Pinang.

PARAMETER	METHODS	SAMPLE MARIKING	
		BH-4/ UD 1 & UD 2	BH-6/ UD 1 & UD 2
*Aluminium as Al, mg/kg	EPA 3050 B / APHA 3120 B	5,283	1,224
*Silver as Ag, mg/kg	EPA 3050 B / APHA 3120 B	< 0.1	10.3
*Arsenic as As, mg/kg	EPA 3050 B / APHA 3120 B	< 0.1	< 0.1
*Barium as Ba, mg/kg	EPA 3050 B / APHA 3120 B	12.1	7.61
*Boron as B, mg/kg	EPA 3050 B / APHA 3120 B	5.15	< 0.1
*Cadmium as Cd, mg/kg	EPA 3050 B / APHA 3120 B	0.62	< 0.1
*Calcium as Ca as Ca, mg/kg	EPA 3050 B / APHA 3120 B	4,357	802
*Chromium as Cr, mg/kg	EPA 3050 B / APHA 3120 B	7.75	1.45
*Cobalt as Co, mg/kg	EPA 3050 B / APHA 3120 B	3.81	< 0.1
*Copper as Cu, mg/kg	EPA 3050 B / APHA 3120 B	35.0	< 0.1
**Cyanide Total Complex, mg/kg	In House Method Based On APHA 4500-CN ⁻ C, F	ND < 0.02	ND < 0.02
**Cyanide Total Free, mg/kg	In House Method Based On APHA 4500-CN ⁻ C, F	ND < 0.02	ND < 0.02
**Fluoride as F, mg/kg	APHA 4500 F C	0.34	1.77
*Iron as Fe, mg/kg	EPA 3050 B / APHA 3120 B	6,442	2,833
*Lead as Pb, mg/kg	EPA 3050 B / APHA 3120 B	2.10	5.04
*Magnesium as Mg, mg/kg	EPA 3050 B / APHA 3120 B	584	382.0
*Manganese as Mn, mg/kg	EPA 3050 B / APHA 3120 B	87.2	16.0
*Mercury as Hg, mg/kg	EPA 3050B; In House Method No.3 Based On APHA 3120 B	< 0.01	< 0.01
*Nickel as Ni, mg/kg	EPA 3050 B / APHA 3120 B	17.4	0.15
*Potassium as K, mg/l	EPA 3050 B / APHA 3120 B	466.3	184.3
*Selenium as Se, mg/kg	EPA 3050 B (APHA 3120 B)	< 0.1	< 0.1
*Tin as Sn, mg/kg	EPA 3050 B / APHA 3120 B	< 0.1	< 0.1
*Strontium as Sr, mg/l	EPA 3050 B / APHA 3120 B	11.5	3.60
**Total Hydrocarbon, %	APHA 5520 F	0.01	0.02
*Vanadium as V, mg/kg	EPA 3050 B (APHA 3120 B)	1.66	< 0.1
*Zinc as Zn, mg/kg	EPA 3050 B (APHA 3120 B)	79.0	51.1

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EPA means Environmental Protection Agency.

ND means Not Detected.

* means Based On Dry Basis.

* means As Per Received.

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CERTIFICATE OF ANALYSIS

Company	: PLB ENGINEERING BERHAD
Lab. No	: S / 2306 / 00974
Date Sample Received	: 27 / 06 / 2023
Date Sample Reported	: 18 / 07 / 2023
Date of Testing	: 28 / 06 / 2023 – 18 / 07 / 2023
Sample Description	: Soil
Sample Marking	: Jelutong, Pulau Pinang.

<u>PARAMETER</u>	<u>METHODS</u>	<u>SAMPLE MARIKING</u>
		<u>BH-8 /</u>
		<u>UD 1 & UD 3</u>
*Aluminium as Al, mg/kg	EPA 3050 B / APHA 3120 B	4,426
*Silver as Ag, mg/kg	EPA 3050 B / APHA 3120 B	< 0.1
*Arsenic as As, mg/kg	EPA 3050 B / APHA 3120 B	1.78
*Barium as Ba, mg/kg	EPA 3050 B / APHA 3120 B	15.9
*Boron as B, mg/kg	EPA 3050 B / APHA 3120 B	8.00
*Cadmium as Cd, mg/kg	EPA 3050 B / APHA 3120 B	0.90
*Calcium as Ca as Ca, mg/kg	EPA 3050 B / APHA 3120 B	6,396
*Chromium as Cr, mg/kg	EPA 3050 B / APHA 3120 B	6.20
*Cobalt as Co, mg/kg	EPA 3050 B / APHA 3120 B	2.07
*Copper as Cu, mg/kg	EPA 3050 B / APHA 3120 B	5.21
**Cyanide Total Complex, mg/kg	In House Method Based On APHA 4500-CN ⁻ C, F	ND < 0.02
**Cyanide Total Free, mg/kg	In House Method Based On APHA 4500-CN ⁻ C, F	ND < 0.02
**Fluoride as F, mg/kg	APHA 4500 F C	1.16
*Iron as Fe, mg/kg	EPA 3050 B / APHA 3120 B	7,765
*Lead as Pb, mg/kg	EPA 3050 B / APHA 3120 B	12.5
*Magnesium as Mg, mg/kg	EPA 3050 B / APHA 3120 B	1,645
*Manganese as Mn, mg/kg	EPA 3050 B / APHA 3120 B	116.9
*Mercury as Hg, mg/kg	EPA 3050B; In House Method No.3 Based On APHA 3120 B	< 0.01
*Nickel as Ni, mg/kg	EPA 3050 B / APHA 3120 B	4.39
*Potassium as K, mg/l	EPA 3050 B / APHA 3120 B	584
*Selenium as Se, mg/kg	EPA 3050 B (APHA 3120 B)	< 0.1
*Tin as Sn, mg/kg	EPA 3050 B / APHA 3120 B	< 0.1
*Strontium as Sr, mg/l	EPA 3050 B / APHA 3120 B	17.3
**Total Hydrocarbon, %	APHA 5520 F	0.02
*Vanadium as V, mg/kg	EPA 3050 B (APHA 3120 B)	5.64
*Zinc as Zn, mg/kg	EPA 3050 B (APHA 3120 B)	42.6

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ND means Not Detected.

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CERTIFICATE OF ANALYSIS

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Company : PLB ENGINEERING BERHAD

Lab. No : W / 2306 / 00984

Date Sample Received : 27 / 06 / 2023

Date Sample Reported : 03 / 08 / 2023

Date of Testing : 01 / 07 / 2023 – 03 / 08 / 2023

Sample Description : Water

Sample Marking : Jelutong, Pulau Pinang – 27/06/2023

<u>PARAMETER</u>	<u>METHODS</u>	<u>SAMPLE MARKING</u>	
		<u>BH-04</u>	<u>BH-08</u>
Aluminium as Al, mg/l	APHA 3120-B	83.16	0.188
Ammonia as N, mg/l	APHA 4500-NH ₃ D	20.30	11.04
Ammoniacal Nitrogen as NH ₃ N, mg/l	APHA 4500-NH ₃ D	37.01	20.13
Silver as Ag, mg/l	APHA 3120-B	ND < 0.001	ND < 0.001
Arsenic as As, mg/l	APHA 3120-B	ND < 0.003	ND < 0.003
Barium as Ba, mg/l	APHA 3120-B	0.140	0.332
BOD*5 days@20°C, mg/l	APHA 5210-B	52	10
Boron as B, mg/l	APHA 3120-B	1.614	1.554
Cadmium as Cd, mg/l	APHA 3120-B	ND < 0.001	ND < 0.001
Calcium as Ca, mg/l	APHA 3120-B	331.03	258.40
Chromium as Cr, mg/l	APHA 3120-B	ND < 0.001	ND < 0.001
Hexa-Chromium, mg/l	APHA 3500-Cr B	ND < 0.02	ND < 0.02
Tri-Chromium, mg/l	In House Method No.5 Based On APHA 3500-Cr B	ND < 0.02	ND < 0.02
Cobalt as Co, mg/l	APHA 3120-B	0.045	ND < 0.001
COD, mg/l	APHA 5220-D	657	265
Color, ADMI at Original pH	APHA 2120 F	234	-
Color, ADMI at pH 7.0	APHA 2120 F	234	-
Conductivity, µS/cm	APHA 2510 B	6,160	17,180
Copper as Cu, mg/l	APHA 3120-B	ND < 0.001	0.012
Cyanide as CN, mg/l	APHA 4500-CN ⁻ C, F	ND < 0.02	ND < 0.02
Fluoride as F, mg/l	APHA 4500 F-D	1.36	0.75
Formaldehyde, mg/l	OSRMA p458	ND < 0.02	ND < 0.02
Hardness as mg CaCO ₃ /l	APHA 2340 C	1,350	2,376
Iron as Fe, mg/l	APHA 3120-B	0.269	0.213
Lead as Pb, mg/l	APHA 3120-B	ND < 0.003	ND < 0.003
Magnesium as Mg, mg/l	APHA 3120-B	96.36	259.71
Manganese as Mn, mg/l	APHA 3120-B	0.102	0.493
Anionic Detergent as MBAS, mg/l	APHA 5540-C	ND < 0.01	ND < 0.01
Mercury as Hg, mg/l	In House Method No.3 Based On APHA 3120-B	ND < 0.001	ND < 0.001
Mineral Oil, mg/l	APHA 5520 B	ND	ND
Nickel as Ni, mg/l	APHA 3120-B	0.024	0.004
Nitrate as NO ₃ , mg/l	APHA 4500 NO ₃ F	1.19	0.55
Nitrite as NO ₂ , mg/l	APHA 4500 NO ₃ F	0.072	0.059
Oil & Grease, mg/l	APHA 5520-B	7.8	32.4

Lab Report No : W / 2306 / 00984
Date : 27 / 06 / 2023

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<u>PARAMETER</u>	<u>METHODS</u>	<u>SAMPLE MARKING</u>	
		<u>BH-04</u>	<u>BH-08</u>
pH	APHA 4500 H ⁺ B	6.9	6.5
Turbidity, NTU	APHA 2130 B	3,400	380
Phenol, mg/l	USEPA 420.4 Rev.1.0	0.010	ND < 0.001
Potassium as K, mg/l	APHA 3120-B	369.38	225.20
Selenium as Se, mg/l	APHA 3120-B	ND < 0.004	ND < 0.004
Sodium as Na, mg/l	APHA 3120-B	793	899
Tin as Sn, mg/l	In House Method No.4 Based On APHA 3120-B	ND < 0.020	ND < 0.020
Strontium as Sr, mg/l	APHA 3120 B	1.029	1.913
Sulfate as SO ₄ , mg/l	APHA 4500 SO ₄ E	95.1	470.5
Sulphide as S ²⁻ , mg/l	APHA 4500-S ²⁻ , F	2.2	0.2
Temperature °C	APHA 2550 B	29.1	29.0
Total Dissolved Solid, mg/l	APHA 2540 C	4,190	11,684
Total Suspended Solids, mg/l	APHA 2540-D	8,640	348
Zinc as Zn, mg/l	APHA 3120-B	0.009	0.001
Vanadium as V, mg/l	APHA 3120-B	0.003	ND < 0.001
+ Salinity, ‰	APHA 209-B (14 th)	13.6	17.5
Escherichia coli, MPN/100ml	APHA 9221 F	< 1.8	< 1.8
Total Coliform, MPN/100ml	APHA 9221 B, C	17	4.5

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USEPA means United States Environmental Protection Agency
OSRMA means Official, Standardised & Recommended Methods of Analysis, 2nd Edition, 1973.
ND means Not Detected.
+ means Not SAMM accredited.
* Sample for BOD was preserved at <4°C and tested on 28/06/2023.

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Company : PLB ENGINEERING BERHAD

Lab. No : W / 2306 / 00984

Date Sample Received : 27 / 06 / 2023

Date Sample Reported : 03 / 08 / 2023

Date of Testing : 01 / 07 / 2023 – 03 / 08 / 2023

Sample Description : Water

Sample Marking : Jelutong, Pulau Pinang – 27/06/2023

PARAMETER**METHODS****SAMPLE MARKING****BH-06****Spring Flood****Tide****(07/06/2023)****BH-06****Neap Flood****Tide****(13/06/2023)**

Aluminium as Al, mg/l	APHA 3120-B	0.449	0.430
Ammonia as N, mg/l	APHA 4500-NH ₃ D	46.66	86.65
Ammoniacal Nitrogen as NH ₃ N, mg/l	APHA 4500-NH ₃ D	85.09	158.01
Silver as Ag, mg/l	APHA 3120-B	ND < 0.001	ND < 0.001
Arsenic as As, mg/l	APHA 3120-B	0.009	0.007
Barium as Ba, mg/l	APHA 3120-B	0.197	0.204
BOD*5 days@20°C, mg/l	APHA 5210-B	116	152
Boron as B, mg/l	APHA 3120-B	1.962	1.927
Cadmium as Cd, mg/l	APHA 3120-B	ND < 0.001	ND < 0.001
Calcium as Ca, mg/l	APHA 3120-B	118.04	105.10
Chromium as Cr, mg/l	APHA 3120-B	0.013	0.009
Hexa-Chromium, mg/l	APHA 3500-Cr B	ND < 0.02	ND < 0.02
Tri-Chromium, mg/l	In House Method No.5 Based On APHA 3500-Cr B	ND < 0.02	ND < 0.02
Cobalt as Co, mg/l	APHA 3120-B	0.002	0.001
COD, mg/l	APHA 5220-D	599	580
Color, ADMI at Original pH	APHA 2120 F	550	550
Color, ADMI at pH 7.0	APHA 2120 F	525	467
Conductivity, µS/cm	APHA 2510 B	5,520	5,400
Copper as Cu, mg/l	APHA 3120-B	ND < 0.001	0.010
Cyanide as CN, mg/l	APHA 4500-CN ⁻ C, F	ND < 0.02	ND < 0.02
Fluoride as F, mg/l	APHA 4500 F-D	0.77	0.70
Formaldehyde, mg/l	OSRMA p458	ND < 0.02	ND < 0.02
Hardness as mg CaCO ₃ /l	APHA 2340 C	1,026	750
Iron as Fe, mg/l	APHA 3120-B	1.599	2.547
Lead as Pb, mg/l	APHA 3120-B	0.025	0.047
Magnesium as Mg, mg/l	APHA 3120-B	92.37	72.55
Manganese as Mn, mg/l	APHA 3120-B	0.018	0.101
Anionic Detergent as MBAS, mg/l	APHA 5540-C	ND < 0.01	ND < 0.01
Mercury as Hg, mg/l	In House Method No.3 Based On APHA 3120-B	ND < 0.001	ND < 0.001
Mineral Oil, mg/l	APHA 5520 B	ND	ND
Nickel as Ni, mg/l	APHA 3120-B	0.020	0.021
Nitrate as NO ₃ , mg/l	APHA 4500 NO ₃ F	ND < 0.02	0.19
Nitrite as NO ₂ , mg/l	APHA 4500 NO ₃ F	0.148	0.108

<u>PARAMETER</u>	<u>METHODS</u>	<u>SAMPLE MARKING</u>	
		<u>BH-06</u> <u>Spring Flood</u> <u>Tide</u>	<u>BH-06</u> <u>Neap Flood</u> <u>Tide</u>
Oil & Grease, mg/l	APHA 5520-B	6.4	8.2
pH	APHA 4500 H ⁺ B	7.5	7.5
Turbidity, NTU	APHA 2130 B	35	23
Phenol, mg/l	USEPA 420.4 Rev.1.0	ND < 0.001	ND < 0.001
Potassium as K, mg/l	APHA 3120-B	422.95	396.57
Selenium as Se, mg/l	APHA 3120-B	ND < 0.004	ND < 0.004
Sodium as Na, mg/l	APHA 3120-B	622	470.50
Tin as Sn, mg/l	In House Method No.4	ND < 0.020	ND < 0.020
	Based On APHA 3120-B		
Strontium as Sr, mg/l	APHA 3120 B	0.697	0.699
Sulfate as SO ₄ , mg/l	APHA 4500 SO ₄ E	133.2	95.5
Sulphide as S ²⁻ , mg/l	APHA 4500-S ²⁻ , F	1.4	0.9
Temperature °C	APHA 2550 B	28.9	28.8
Total Dissolved Solid, mg/l	APHA 2540 C	3,758	3,676
Total Suspended Solids, mg/l	APHA 2540-D	6	28
Zinc as Zn, mg/l	APHA 3120-B	0.014	0.009
Vanadium as V, mg/l	APHA 3120-B	0.007	0.006
+ Salinity, ‰	APHA 209-B (14 th)	8.2	5.5
Escherichia coli, MPN/100ml	APHA 9221 F	< 1.8	< 1.8
Total Coliform, MPN/100ml	APHA 9221 B, C	2.0	< 1.8
<u>Pesticides:</u>			
** Aldrin, mg/l	APHA 6630-B	-	ND < 0.00002
** Chlordane, mg/l	APHA 6630-B	-	ND < 0.00002
** DDT, mg/l	APHA 6630-B	-	ND < 0.0002
** 2,4-D, mg/l	APHA 6640-B (18 th Edition)	-	ND < 0.03
** Dieldrin, mg/l	APHA 6630-B	-	ND < 0.00001
** Endosulfan, mg/l	APHA 6630-B	-	ND < 0.001
** Heptachlor, mg/l	APHA 6630-B	-	ND < 0.00002
** Heptachlor Epoxide, mg/l	APHA 6630-B	-	ND < 0.00001
** Hexachlorobenzene, mg/l	APHA 6630-B	-	ND < 0.00001
** Methoxychlor, mg/l	APHA 6630-B	-	ND < 0.0004
** Lindane, mg/l	APHA 6630-B	-	ND < 0.0001
** Chloroform, mg/l	APHA 6232 C	-	ND < 0.005
** Bromoform, mg/l	APHA 6232 C	-	ND < 0.005
** Dibromochloromethane, mg/l	APHA 6232 C	-	ND < 0.005
** Bromodichloromethane, mg/l	APHA 6232 C	-	ND < 0.005

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OSRMA means Official, Standardised & Recommended Methods of Analysis, 2nd Edition, 1973.
ND means Not Detected.
+ means Not SAMM accredited.
** means Subcontracted.
* Sample for BOD was preserved at <4°C and tested on 28/06/2023.

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CERTIFICATE OF ANALYSIS

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Company	: PLB ENGINEERING BERHAD
Lab. No	: W / 2307 / 00065
Date Sample Received	: 04 / 07 / 2023
Date Sample Reported	: 30 / 08 / 2023
Date of Testing	: 04 / 07 / 2023 – 30 / 08 / 2023
Sample Description	: Water
Sample Marking	: Jelutong, Pulau Pinang – Neap flood tide, 28/06/2023

<u>PARAMETER</u>	<u>METHODS</u>	<u>SAMPLE MARKING</u>	
		<u>BH-04</u>	<u>BH-08</u>
Aluminium as Al, mg/l	APHA 3120-B	68.23	18.30
Ammonia as N, mg/l	APHA 4500-NH ₃ D	73.37	46.02
Ammoniacal Nitrogen as NH ₃ N, mg/l	APHA 4500-NH ₃ D	133.40	83.68
Silver as Ag, mg/l	APHA 3120-B	ND < 0.001	0.002
Arsenic as As, mg/l	APHA 3120-B	0.074	0.026
Barium as Ba, mg/l	APHA 3120-B	0.382	1.562
BOD*5 days@20°C, mg/l	APHA 5210-B	75	43
Boron as B, mg/l	APHA 3120-B	0.653	1.169
Cadmium as Cd, mg/l	APHA 3120-B	0.008	0.003
Calcium as Ca, mg/l	APHA 3120-B	171.23	164.93
Chloride as Cl ⁻ , mg/l	APHA 4500 Cl C	1,529	2,804
Chromium as Cr, mg/l	APHA 3120-B	0.182	0.022
Hexa-Chromium, mg/l	APHA 3500-Cr B	ND < 0.02	ND < 0.02
Tri-Chromium, mg/l	In House Method No.5 Based On APHA 3500-Cr B	0.18	0.02
Cobalt as Co, mg/l	APHA 3120-B	0.030	0.002
COD, mg/l	APHA 5220-D	615	366
Color, ADMI at Original pH	APHA 2120 F	241	112
Color, ADMI at pH 7.0	APHA 2120 F	238	114
Conductivity, µS/cm	APHA 2510 B	6,150	8,780
Copper as Cu, mg/l	APHA 3120-B	0.260	0.039
Cyanide as CN, mg/l	APHA 4500-CN ⁻ C, F	ND < 0.02	ND < 0.02
Fluoride as F, mg/l	APHA 4500 F-D	0.96	0.62
Formaldehyde, mg/l	OSRMA p458	ND < 0.02	ND < 0.02
Hardness as mg CaCO ₃ /l	APHA 2340 C	1,026	1,037
Iron as Fe, mg/l	APHA 3120-B	56.39	29.76
Lead as Pb, mg/l	APHA 3120-B	0.191	0.067
Magnesium as Mg, mg/l	APHA 3120-B	62.73	119.40
Manganese as Mn, mg/l	APHA 3120-B	1.354	0.753
Anionic Detergent as MBAS, mg/l	APHA 5540-C	ND < 0.001	ND < 0.001
Mercury as Hg, mg/l	In House Method No.3 Based On APHA 3120-B	ND < 0.001	ND < 0.001
Mineral Oil, mg/l	APHA 5520 B	ND	ND
Nickel as Ni, mg/l	APHA 3120-B	0.095	0.026
Nitrate as NO ₃ , mg/l	APHA 4500 NO ₃ F	0.34	0.78
Nitrite as NO ₂ , mg/l	APHA 4500 NO ₃ F	0.134	0.064
Oil & Grease, mg/l	APHA 5520-B	5.2	2.6
pH	APHA 4500 H ⁺ B	6.8	6.8
Turbidity, NTU	APHA 2130 B	4.100	650
Phenol, mg/l	USEPA 420.4 Rev.1.0	0.027	ND < 0.001

PARAMETER	METHODS	SAMPLE MARKING	
		BH-04	BH-08
Potassium as K, mg/l	APHA 3120-B	273.48	180.70
Selenium as Se, mg/l	APHA 3120-B	0.077	ND < 0.004
Sodium as Na, mg/l	APHA 3120-B	546	685
Tin as Sn, mg/l	In House Method No.4 Based On APHA 3120-B	0.301	ND < 0.020
Strontium as Sr, mg/l	APHA 3120 B	0.972	1.181
Sulfate as SO ₄ , mg/l	APHA 4500 SO ₄ E	139.3	125.5
Sulphide as S ²⁻ , mg/l	APHA 4500-S ²⁻ , F	1.0	0.5
Temperature °C	APHA 2550 B	29.3	29.2
Total Dissolved Solid, mg/l	APHA 2540 C	4,186	5,976
Total Suspended Solids, mg/l	APHA 2540-D	1,580	610
Zinc as Zn, mg/l	APHA 3120-B	0.347	0.078
Vanadium as V, mg/l	APHA 3120-B	0.006	0.004
+ Salinity, ‰	APHA 209-B (14 th)	12.9	11.6
Dissolved Oxygen, mg/l	APHA 4500-O, G	7.0	7.5
Escherichia coli, MPN/100ml	APHA 9221 F	< 1.8	< 1.8
Total Coliform, MPN/100ml	APHA 9221 B, C	26	4.5
**Gross α, Bq/L	Direct Measurement Using Low Background Gross αβ Counting System	0.22 ± 0.08	0.16 ± 0.08
**Gross β, Bq/L	Direct Measurement Using Low Background Gross αβ Counting System	2.82 ± 0.09	2.27 ± 0.09
Pesticides:			
** Aldrin, mg/l	APHA 6630-B	ND < 0.00002	ND < 0.00002
** Chlordane, mg/l	APHA 6630-B	ND < 0.00002	ND < 0.00002
** DDT, mg/l	APHA 6630-B	ND < 0.0002	ND < 0.0002
** 2,4-D, mg/l	APHA 6640-B (18 th Edition)	ND < 0.03	ND < 0.03
** Dieldrin, mg/l	APHA 6630-B	ND < 0.00001	ND < 0.00001
** Endosulfan, mg/l	APHA 6630-B	ND < 0.001	ND < 0.001
** Heptachlor, mg/l	APHA 6630-B	ND < 0.00002	ND < 0.00002
** Heptachlor Epoxide, mg/l	APHA 6630-B	ND < 0.00001	ND < 0.00001
** Hexachlorobenzene, mg/l	APHA 6630-B	ND < 0.00001	ND < 0.00001
** Methoxychlor, mg/l	APHA 6630-B	ND < 0.0004	ND < 0.0004
** Lindane, mg/l	APHA 6630-B	ND < 0.0001	ND < 0.0001
**Chloroform, mg/l	APHA 6232 C	ND < 0.005	ND < 0.005
** Bromoform, mg/l	APHA 6232 C	ND < 0.005	ND < 0.005
** Dibromochloromethane, mg/l	APHA 6232 C	ND < 0.005	ND < 0.005
** Bromodichloromethane, mg/l	APHA 6232 C	ND < 0.005	ND < 0.005

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USEPA means United States Environmental Protection Agency
OSRMA means Official, Standardised & Recommended Methods of Analysis, 2nd Edition, 1973.
ND means Not Detected.
+ means Not SAMM accredited.
** means Subcontracted.
* Sample for BOD was preserved at <4°C and tested on 05/07/2023.

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CERTIFICATE OF ANALYSIS

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Company	: PLB ENGINEERING BERHAD
Lab. No	: W / 2307 / 00066
Date Sample Received	: 04 / 07 / 2023
Date Sample Reported	: 13 / 07 / 2023
Date of Testing	: 05 / 07 / 2023 – 13 / 07 / 2023
Sample Description	: Water
Sample Marking	: Jelutong, Pulau Pinang – Spring Flood Tide, 18/06/2023

<u>PARAMETER</u>	<u>METHODS</u>	<u>SAMPLE MARKING</u>	
		<u>BH-4</u>	<u>BH-8</u>
Aluminium as Al, mg/l	APHA 3120-B	191.92	8.306
Ammonia as N, mg/l	APHA 4500-NH ₃ D	56.47	58.67
Ammoniacal Nitrogen as NH ₃ N, mg/l	APHA 4500-NH ₃ D	102.68	106.68
Silver as Ag, mg/l	APHA 3120-B	ND < 0.001	ND < 0.001
Arsenic as As, mg/l	APHA 3120-B	0.130	0.054
Barium as Ba, mg/l	APHA 3120-B	0.653	1.399
BOD*5 days@20°C, mg/l	APHA 5210-B	20	37
Boron as B, mg/l	APHA 3120-B	0.662	1.208
Cadmium as Cd, mg/l	APHA 3120-B	0.022	0.004
Calcium as Ca, mg/l	APHA 3120-B	256.70	246.35
Chloride as Cl ⁻ , mg/l	APHA 4500 Cl C	1,696	3.275
Chromium as Cr, mg/l	APHA 3120-B	0.758	0.038
Hexa-Chromium, mg/l	APHA 3500-Cr B	ND < 0.02	ND < 0.02
Tri-Chromium, mg/l	In House Method No.5 Based On APHA 3500-Cr B	0.76	0.04
Cobalt as Co, mg/l	APHA 3120-B	0.100	ND < 0.001
COD, mg/l	APHA 5220-D	699	690
Color, ADMI at Original pH	APHA 2120 F	111	1,220
Color, ADMI at pH 7.0	APHA 2120 F	111	1,220
Conductivity, µS/cm	APHA 2510 B	6,210	11,640
Copper as Cu, mg/l	APHA 3120-B	0.783	0.049
Cyanide as CN, mg/l	APHA 4500-CN ⁻ C, F	ND < 0.02	ND < 0.02
Fluoride as F, mg/l	APHA 4500 F-D	0.88	0.54
Formaldehyde, mg/l	OSRMA p458	ND < 0.02	ND < 0.02
Hardness as mg CaCO ₃ /l	APHA 2340 C	832	1,890
Iron as Fe, mg/l	APHA 3120-B	221.33	55.12
Lead as Pb, mg/l	APHA 3120-B	0.468	0.074
Magnesium as Mg, mg/l	APHA 3120-B	98.66	167.65
Manganese as Mn, mg/l	APHA 3120-B	3.585	1.036
Anionic Detergent as MBAS, mg/l	APHA 5540-C	ND < 0.01	ND < 0.01

<u>PARAMETER</u>	<u>METHODS</u>	<u>SAMPLE MARKING</u>	
		<u>BH-4</u>	<u>BH-8</u>
Mercury as Hg, mg/l	In House Method No.3 Based On APHA 3120-B	ND < 0.001	ND < 0.001
Mineral Oil, mg/l	APHA 5520 B	ND	ND
Nickel as Ni, mg/l	APHA 3120-B	0.298	0.013
Nitrate as NO ₃ , mg/l	APHA 4500 NO ₃ F	0.85	0.98
Nitrite as NO ₂ , mg/l	APHA 4500 NO ₃ F	0.052	0.135
Oil & Grease, mg/l	APHA 5520-B	5.4	6.2
pH	APHA 4500 H ⁺ B	7.2	6.8
Turbidity, NTU	APHA 2130 B	18,500	400
Phenol, mg/l	USEPA 420.4 Rev.1.0	0.016	0.349
Potassium as K, mg/l	APHA 3120-B	614	237.83
Selenium as Se, mg/l	APHA 3120-B	0.092	ND < 0.004
Sodium as Na, mg/l	APHA 3120-B	571	718
Tin as Sn, mg/l	In House Method No.4 Based On APHA 3120-B	0.286	ND < 0.020
Strontium as Sr, mg/l	APHA 3120 B	1.240	1.607
Sulfate as SO ₄ , mg/l	APHA 4500 SO ₄ E	179.3	589
Sulphide as S ²⁻ , mg/l	APHA 4500-S ²⁻ , F	1.6	ND < 0.2
Temperature °C	APHA 2550 B	29.7	29.5
Total Dissolved Solid, mg/l	APHA 2540 C	4,228	7,920
Total Suspended Solids, mg/l	APHA 2540-D	16,400	400
Zinc as Zn, mg/l	APHA 3120-B	0.938	0.094
Vanadium as V, mg/l	APHA 3120-B	0.008	0.007
+ Salinity, ‰	APHA 209-B (14 th)	14.2	11.4
Dissolved Oxygen, mg/l	APHA 4500-O, G	7.7	4.9
Escherichia coli, MPN/100ml	APHA 9221 F	< 1.8	< 1.8
Total Coliform, MPN/100ml	APHA 9221 B, C	< 1.8	11

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ND means Not Detected.

+ means Not SAMM accredited.

* Sample for BOD was preserved at <4°C and tested on 05/07/2023.

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CERTIFICATE OF ANALYSIS

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Company	: PLB ENGINEERING BERHAD
Lab. No	: W / 2307 / 00370
Date Sample Received	: 12 / 07 / 2023
Date Sample Reported	: 03 / 08 / 2023
Date of Testing	: 13 / 07 / 2023 – 03 / 08 / 2023
Sample Description	: Water
Sample Marking	: Jelutong, Pulau Pinang – Neap Flood Tide, BH-06, 12/07/2023

<u>PARAMETER</u>	<u>METHODS</u>	<u>RESULT</u>
Aluminium as Al, mg/l	APHA 3120-B	0.685
Ammonia as N, mg/l	APHA 4500-NH ₃ D	151.96
Ammoniacal Nitrogen as NH ₃ N, mg/l	APHA 4500-NH ₃ D	277.10
Silver as Ag, mg/l	APHA 3120-B	ND < 0.001
Arsenic as As, mg/l	APHA 3120-B	0.027
Barium as Ba, mg/l	APHA 3120-B	0.348
BOD*5 days@20°C, mg/l	APHA 5210-B	77
Boron as B, mg/l	APHA 3120-B	3.594
Cadmium as Cd, mg/l	APHA 3120-B	ND < 0.001
Calcium as Ca, mg/l	APHA 3120-B	161.53
Chloride as Cl ⁻ , mg/l	APHA 4500 Cl C	588
Chromium as Cr, mg/l	APHA 3120-B	0.008
Hexa-Chromium, mg/l	APHA 3500-Cr B	ND < 0.02
Tri-Chromium, mg/l	In House Method No.5 Based On APHA 3500-Cr B	ND < 0.02
Cobalt as Co, mg/l	APHA 3120-B	0.002
COD, mg/l	APHA 5220-D	699
Color, ADMI at Original pH	APHA 2120 F	530
Color, ADMI at pH 7.0	APHA 2120 F	530
Conductivity, µS/cm	APHA 2510 B	5,330
Copper as Cu, mg/l	APHA 3120-B	0.551
Cyanide as CN, mg/l	APHA 4500-CN ⁻ C, F	ND < 0.02
Fluoride as F, mg/l	APHA 4500 F-D	0.68
Formaldehyde, mg/l	OSRMA p458	ND < 0.02
Hardness as mg CaCO ₃ /l	APHA 2340 C	680
Iron as Fe, mg/l	APHA 3120-B	2.933
Lead as Pb, mg/l	APHA 3120-B	0.089
Magnesium as Mg, mg/l	APHA 3120-B	77.31
Manganese as Mn, mg/l	APHA 3120-B	0.175
Anionic Detergent as MBAS, mg/l	APHA 5540-C	ND < 0.01
Mercury as Hg, mg/l	In House Method No.3 Based On APHA 3120-B	ND < 0.001
Mineral Oil, mg/l	APHA 5520 B	ND
Nickel as Ni, mg/l	APHA 3120-B	0.027
Nitrate as NO ₃ , mg/l	APHA 4500 NO ₃ F	1.18
Nitrite as NO ₂ , mg/l	APHA 4500 NO ₃ F	0.269
Oil & Grease, mg/l	APHA 5520-B	7.4

Lab Report No : W / 2307 / 00370
Date : 12 / 07 / 2023

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<u>PARAMETER</u>	<u>METHODS</u>	<u>RESULT</u>
pH	APHA 4500 H ⁺ B	7.4
Turbidity, NTU	APHA 2130 B	32
Phenol, mg/l	USEPA 420.4 Rev.1.0	ND < 0.001
Potassium as K, mg/l	APHA 3120-B	372.00
Selenium as Se, mg/l	APHA 3120-B	ND < 0.004
Sodium as Na, mg/l	APHA 3120-B	335.70
Tin as Sn, mg/l	In House Method No.4 Based On APHA 3120-B	ND < 0.020
Strontium as Sr, mg/l	APHA 3120 B	0.925
Sulfate as SO ₄ , mg/l	APHA 4500 SO ₄ E	66.0
Sulphide as S ²⁻ , mg/l	APHA 4500-S ²⁻ , F	1.7
Temperature °C	APHA 2550 B	28.5
Total Dissolved Solid, mg/l	APHA 2540 C	3,628
Total Suspended Solids, mg/l	APHA 2540-D	70
Zinc as Zn, mg/l	APHA 3120-B	0.546
Vanadium as V, mg/l	APHA 3120-B	0.008
+ Salinity, ‰	APHA 209-B (14 th)	8.5
Dissolved Oxygen, mg/l	APHA 4500-O, G	4.7
Escherichia coli, MPN/100ml	APHA 9221 F	< 1.8
Total Coliform, MPN/100ml	APHA 9221 B, C	34
<u>Pesticides:</u>		
** Aldrin, mg/l	APHA 6630-B	ND < 0.00002
** Chlordane, mg/l	APHA 6630-B	ND < 0.00002
** DDT, mg/l	APHA 6630-B	ND < 0.0002
** 2,4-D, mg/l	APHA 6640-B (18 th Edition)	ND < 0.03
** Dieldrin, mg/l	APHA 6630-B	ND < 0.00001
** Endosulfan, mg/l	APHA 6630-B	ND < 0.001
** Heptachlor, mg/l	APHA 6630-B	ND < 0.00002
** Heptachlor Epoxide, mg/l	APHA 6630-B	ND < 0.00001
** Hexachlorobenzene, mg/l	APHA 6630-B	ND < 0.00001
** Methoxychlor, mg/l	APHA 6630-B	ND < 0.0004
** Lindane, mg/l	APHA 6630-B	ND < 0.0001
** Chloroform, mg/l	APHA 6232 C	ND < 0.005
** Bromoform, mg/l	APHA 6232 C	ND < 0.005
** Dibromochloromethane, mg/l	APHA 6232 C	ND < 0.005
** Bromodichloromethane, mg/l	APHA 6232 C	ND < 0.005

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ND means Not Detected.
+ means Not SAMM accredited.
** means Subcontracted.
* Sample for BOD was preserved at <4°C and tested on 13/07/2023.

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CERTIFICATE OF ANALYSIS

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Company : PLB ENGINEERING BERHAD
Lab. No : W / 2307 / 00489
Date Sample Received : 14 / 07 / 2023
Date Sample Reported : 03 / 08 / 2023
Date of Testing : 15 / 07 / 2023 – 03 / 08 / 2023
Sample Description : Water
Sample Marking : Jelutong, Pulau Pinang – 14/07/2023

<u>PARAMETER</u>	<u>METHODS</u>	<u>SAMPLE MARKING</u>	
		<u>BH-02</u>	<u>BH-05</u>
Aluminium as Al, mg/l	APHA 3120-B	0.982	2.338
Ammonia as N, mg/l	APHA 4500-NH ₃ D	137.41	234.47
Ammoniacal Nitrogen as NH ₃ N, mg/l	APHA 4500-NH ₃ D	250.57	427.57
Silver as Ag, mg/l	APHA 3120-B	ND < 0.001	ND < 0.001
Arsenic as As, mg/l	APHA 3120-B	ND < 0.003	ND < 0.003
Barium as Ba, mg/l	APHA 3120-B	0.213	0.437
BOD*5 days@20°C, mg/l	APHA 5210-B	41	65
Boron as B, mg/l	APHA 3120-B	0.915	3.504
Cadmium as Cd, mg/l	APHA 3120-B	ND < 0.001	ND < 0.001
Calcium as Ca, mg/l	APHA 3120-B	213.72	160.65
Chloride as Cl ⁻ , mg/l	APHA 4500 Cl C	274.50	641
Chromium as Cr, mg/l	APHA 3120-B	ND < 0.001	0.016
Hexa-Chromium, mg/l	APHA 3500-Cr B	ND < 0.02	ND < 0.02
Tri-Chromium, mg/l	In House Method No.5 Based On APHA 3500-Cr B	ND < 0.02	ND < 0.02
Cobalt as Co, mg/l	APHA 3120-B	0.002	0.006
COD, mg/l	APHA 5220-D	302	978
Color, ADMI at Original pH	APHA 2120 F	99	655
Color, ADMI at pH 7.0	APHA 2120 F	99	615
Conductivity, µS/cm	APHA 2510 B	3,680	6,920
Copper as Cu, mg/l	APHA 3120-B	ND < 0.001	0.310
Cyanide as CN, mg/l	APHA 4500-CN C, F	ND < 0.02	ND < 0.02
Fluoride as F, mg/l	APHA 4500 F-D	ND < 0.04	0.04
Formaldehyde, mg/l	OSRMA p458	ND < 0.02	ND < 0.02
Hardness as mg CaCO ₃ /l	APHA 2340 C	605	562
Iron as Fe, mg/l	APHA 3120-B	18.94	10.71
Lead as Pb, mg/l	APHA 3120-B	ND < 0.003	ND < 0.003
Magnesium as Mg, mg/l	APHA 3120-B	38.92	72.69
Manganese as Mn, mg/l	APHA 3120-B	0.657	0.230
Anionic Detergent as MBAS, mg/l	APHA 5540-C	ND < 0.001	ND < 0.001
Mercury as Hg, mg/l	In House Method No.3 Based On APHA 3120-B	ND < 0.001	ND < 0.001
Mineral Oil, mg/l	APHA 5520 B	ND	ND
Nickel as Ni, mg/l	APHA 3120-B	0.013	0.035
Nitrate as NO ₃ , mg/l	APHA 4500 NO ₃ F	1.96	1.32
Nitrite as NO ₂ , mg/l	APHA 4500 NO ₃ F	0.097	0.185
Oil & Grease, mg/l	APHA 5520-B	6.2	5.2

PARAMETER	METHODS	SAMPLE MARKING	
		BH-02	BH-05
pH	APHA 4500 H ⁺ B	7.0	7.2
Turbidity, NTU	APHA 2130 B	950	140
Phenol, mg/l	USEPA 420.4 Rev.1.0	0.008	0.076
Potassium as K, mg/l	APHA 3120-B	220.71	493.33
Selenium as Se, mg/l	APHA 3120-B	ND < 0.004	ND < 0.004
Sodium as Na, mg/l	APHA 3120-B	157.94	454.83
Tin as Sn, mg/l	In House Method No.4 Based On APHA 3120-B	ND < 0.020	ND < 0.020
Strontium as Sr, mg/l	APHA 3120 B	0.697	0.976
Sulfate as SO ₄ , mg/l	APHA 4500 SO ₄ E	61.1	13.4
Sulphide as S ²⁻ , mg/l	APHA 4500-S ²⁻ , F	0.8	ND < 0.2
Temperature °C	APHA 2550 B	28.5	28.6
Total Dissolved Solid, mg/l	APHA 2540 C	2,506	4,706
Total Suspended Solids, mg/l	APHA 2540-D	228	270
Zinc as Zn, mg/l	APHA 3120-B	0.025	0.285
Vanadium as V, mg/l	APHA 3120-B	0.003	0.010
+ Salinity, ‰	APHA 209-B (14 th)	7.6	7.3
Dissolved Oxygen, mg/l	APHA 4500-O, G	2.2	3.1
Escherichia coli, MPN/100ml	APHA 9221 F	2.0	< 1.8
Total Coliform, MPN/100ml	APHA 9221 B, C	34	2.0
Pesticides:			
** Aldrin, mg/l	APHA 6630-B	ND < 0.00002	ND < 0.00002
** Chlordane, mg/l	APHA 6630-B	ND < 0.00002	ND < 0.00002
** DDT, mg/l	APHA 6630-B	ND < 0.0002	ND < 0.0002
** 2,4-D, mg/l	APHA 6640-B (18 th Edition)	ND < 0.03	ND < 0.03
** Dieldrin, mg/l	APHA 6630-B	ND < 0.00001	ND < 0.00001
** Endosulfan, mg/l	APHA 6630-B	ND < 0.001	ND < 0.001
** Heptachlor, mg/l	APHA 6630-B	ND < 0.00002	ND < 0.00002
** Heptachlor Epoxide, mg/l	APHA 6630-B	ND < 0.00001	ND < 0.00001
** Hexachlorobenzene, mg/l	APHA 6630-B	ND < 0.00001	ND < 0.00001
** Methoxychlor, mg/l	APHA 6630-B	ND < 0.0004	ND < 0.0004
** Lindane, mg/l	APHA 6630-B	ND < 0.0001	ND < 0.0001
** Chloroform, mg/l	APHA 6232 C	ND < 0.005	ND < 0.005
** Bromoform, mg/l	APHA 6232 C	ND < 0.005	ND < 0.005
** Dibromochloromethane, mg/l	APHA 6232 C	ND < 0.005	ND < 0.005
** Bromodichloromethane, mg/l	APHA 6232 C	ND < 0.005	ND < 0.005

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** means Subcontracted.
* Sample for BOD was preserved at <4°C and tested on 15/07/2023.

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CERTIFICATE OF ANALYSIS

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Company	: PLB ENGINEERING BERHAD
Lab. No	: W / 2307 / 00591
Date Sample Received	: 18 / 07 / 2023
Date Sample Reported	: 03 / 08 / 2023
Date of Testing	: 20 / 07 / 2023 – 03 / 08 / 2023
Sample Description	: Water
Sample Marking	: Jelutong, Pulau Pinang – BH-02, 18/07/2023

<u>PARAMETER</u>	<u>METHODS</u>	<u>RESULT</u>
Aluminium as Al, mg/l	APHA 3120-B	0.582
Ammonia as N, mg/l	APHA 4500-NH ₃ D	124.03
Ammoniacal Nitrogen as NH ₃ N, mg/l	APHA 4500-NH ₃ D	226.18
Silver as Ag, mg/l	APHA 3120-B	ND < 0.001
Arsenic as As, mg/l	APHA 3120-B	ND < 0.003
Barium as Ba, mg/l	APHA 3120-B	0.366
BOD*5 days@20°C, mg/l	APHA 5210-B	38
Boron as B, mg/l	APHA 3120-B	1.388
Cadmium as Cd, mg/l	APHA 3120-B	ND < 0.001
Calcium as Ca, mg/l	APHA 3120-B	322.18
Chloride as Cl ⁻ , mg/l	APHA 4500 Cl ⁻ C	243.42
Chromium as Cr, mg/l	APHA 3120-B	ND < 0.001
Hexa-Chromium, mg/l	APHA 3500-Cr B	ND < 0.02
Tri-Chromium, mg/l	In House Method No.5 Based On APHA 3500-Cr B	ND < 0.02
Cobalt as Co, mg/l	APHA 3120-B	ND < 0.001
COD, mg/l	APHA 5220-D	313
Color, ADMI at Original pH	APHA 2120 F	119
Color, ADMI at pH 7.0	APHA 2120 F	119
Conductivity, µS/cm	APHA 2510 B	3.640
Copper as Cu, mg/l	APHA 3120-B	0.216
Cyanide as CN, mg/l	APHA 4500-CN ⁻ C, F	ND < 0.02
Fluoride as F, mg/l	APHA 4500 F-D	0.31
Formaldehyde, mg/l	OSRMA p458	ND < 0.02
Hardness as mg CaCO ₃ /l	APHA 2340 C	832
Iron as Fe, mg/l	APHA 3120-B	17.78
Lead as Pb, mg/l	APHA 3120-B	ND < 0.003
Magnesium as Mg, mg/l	APHA 3120-B	54.33
Manganese as Mn, mg/l	APHA 3120-B	0.462
Anionic Detergent as MBAS, mg/l	APHA 5540-C	ND < 0.01
Mercury as Hg, mg/l	In House Method No.3 Based On APHA 3120-B	ND < 0.001
Mineral Oil, mg/l	APHA 5520 B	ND
Nickel as Ni, mg/l	APHA 3120-B	0.012
Nitrate as NO ₃ , mg/l	APHA 4500 NO ₃ F	3.19
Nitrite as NO ₂ , mg/l	APHA 4500 NO ₃ F	ND < 0.005
Oil & Grease, mg/l	APHA 5520-B	2.0
pH	APHA 4500 H ⁺ B	6.7

Lab Report No : W / 2307 / 00591
Date : 18 / 07 / 2023

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<u>PARAMETER</u>	<u>METHODS</u>	<u>RESULT</u>
Turbidity, NTU	APHA 2130 B	50
Phenol, mg/l	USEPA 420.4 Rev.1.0	0.005
Potassium as K, mg/l	APHA 3120-B	264.22
Selenium as Se, mg/l	APHA 3120-B	ND < 0.004
Sodium as Na, mg/l	APHA 3120-B	182.85
Tin as Sn, mg/l	In House Method No.4 Based On APHA 3120-B	ND < 0.020
Strontium as Sr, mg/l	APHA 3120 B	0.973
Sulfate as SO ₄ , mg/l	APHA 4500 SO ₄ E	15.2
Sulphide as S ²⁻ , mg/l	APHA 4500-S ²⁻ , F	1.4
Temperature °C	APHA 2550 B	28.3
Total Dissolved Solid, mg/l	APHA 2540 C	2,480
Total Suspended Solids, mg/l	APHA 2540-D	140
Zinc as Zn, mg/l	APHA 3120-B	0.310
Vanadium as V, mg/l	APHA 3120-B	0.005
+ Salinity, ‰	APHA 209-B (14 th)	10.8
Dissolved Oxygen, mg/l	APHA 4500-O, G	3.9
Escherichia coli, MPN/100ml	APHA 9221 F	< 1.8
Total Coliform, MPN/100ml	APHA 9221 B, C	70
<u>Pesticides:</u>		
** Aldrin, mg/l	APHA 6630-B	ND < 0.00002
** Chlordane, mg/l	APHA 6630-B	ND < 0.00002
** DDT, mg/l	APHA 6630-B	ND < 0.0002
** 2,4-D, mg/l	APHA 6640-B (18 th Edition)	ND < 0.03
** Dieldrin, mg/l	APHA 6630-B	ND < 0.00001
** Endosulfan, mg/l	APHA 6630-B	ND < 0.001
** Heptachlor, mg/l	APHA 6630-B	ND < 0.00002
** Heptachlor Epoxide, mg/l	APHA 6630-B	ND < 0.00001
** Hexachlorobenzene, mg/l	APHA 6630-B	ND < 0.00001
** Methoxychlor, mg/l	APHA 6630-B	ND < 0.0004
** Lindane, mg/l	APHA 6630-B	ND < 0.0001
** Chloroform, mg/l	APHA 6232 C	ND < 0.005
** Bromoform, mg/l	APHA 6232 C	ND < 0.005
** Dibromochloromethane, mg/l	APHA 6232 C	ND < 0.005
** Bromodichloromethane, mg/l	APHA 6232 C	ND < 0.005

NOTE : APHA means Standard Methods for the Examination of Water and Wastewater, (American Public Health Association), 21st Edition, 2005.
OSRMA means Official, Standardised & Recommended Methods of Analysis, 2nd Edition, 1973.
ND means Not Detected.
+ means Not SAMM accredited.
** means Subcontracted.
* Sample for BOD was preserved at <4°C and tested on 20/07/2023.

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CERTIFICATE OF ANALYSIS

Page 1 of 4

Company	: PLB ENGINEERING BERHAD
Lab. No	: W / 2308 / 00096
Date Sample Received	: 02 / 08 / 2023
Date Sample Reported	: 04 / 09 / 2023
Date of Testing	: 03 / 08 / 2023 – 04 / 09 / 2023
Sample Description	: Water
Sample Marking	: Jelutong, Pulau Pinang – 04/07/2023, Spring flood tide, 28/06/2023

<u>PARAMETER</u>	<u>METHODS</u>	<u>SAMPLE MARKING</u>	
		<u>BH-04</u>	<u>BH-05</u>
Aluminium as Al, mg/l	APHA 3120-B	30.27	0.388
Ammonia as N, mg/l	APHA 4500-NH ₃ D	116.53	315.87
Ammoniacal Nitrogen as NH ₃ N, mg/l	APHA 4500-NH ₃ D	212.50	576
Silver as Ag, mg/l	APHA 3120-B	0.014	ND < 0.001
Arsenic as As, mg/l	APHA 3120-B	0.077	0.194
Barium as Ba, mg/l	APHA 3120-B	0.821	0.676
BOD*5 days@20°C, mg/l	APHA 5210-B	157	231
Boron as B, mg/l	APHA 3120-B	1.696	2.609
Cadmium as Cd, mg/l	APHA 3120-B	0.004	ND < 0.001
Calcium as Ca, mg/l	APHA 3120-B	175.76	221.76
Chloride as Cl ⁻ , mg/l	APHA 4500 Cl C	1.831	839
Chromium as Cr, mg/l	APHA 3120-B	0.077	0.034
Hexa-Chromium, mg/l	APHA 3500-Cr B	ND < 0.02	ND < 0.02
Tri-Chromium, mg/l	In House Method No.5 Based On APHA 3500-Cr B	0.08	0.04
Cobalt as Co, mg/l	APHA 3120-B	0.007	0.009
COD, mg/l	APHA 5220-D	1,489	1,605
Color, ADMI at Original pH	APHA 2120 F	248	553
Color, ADMI at pH 7.0	APHA 2120 F	248	553
Conductivity, µS/cm	APHA 2510 B	6,880	8,150
Copper as Cu, mg/l	APHA 3120-B	0.142	0.071
Cyanide as CN, mg/l	APHA 4500-CN°C, F	ND < 0.02	ND < 0.02
Fluoride as F, mg/l	APHA 4500 F-D	1.26	0.55
Formaldehyde, mg/l	OSRMA p458	ND < 0.02	ND < 0.02
Hardness as mg CaCO ₃ /l	APHA 2340 C	832	562
Iron as Fe, mg/l	APHA 3120-B	28.36	3.057
Lead as Pb, mg/l	APHA 3120-B	0.095	0.036
Magnesium as Mg, mg/l	APHA 3120-B	47.12	37.97
Manganese as Mn, mg/l	APHA 3120-B	0.772	0.155
Anionic Detergent as MBAS, mg/l	APHA 5540-C	ND < 0.001	ND < 0.001
Mercury as Hg, mg/l	In House Method No.3 Based On APHA 3120-B	ND < 0.001	ND < 0.001
Mineral Oil, mg/l	APHA 5520 B	ND	ND
Nickel as Ni, mg/l	APHA 3120-B	0.045	0.028
Nitrate as NO ₃ , mg/l	APHA 4500 NO ₃ F	ND < 0.02	ND < 0.02
Nitrite as NO ₂ , mg/l	APHA 4500 NO ₃ F	0.096	0.214
Oil & Grease, mg/l	APHA 5520-B	7.2	6.0
pH	APHA 4500 H ⁺ B	6.7	7.3
Turbidity, NTU	APHA 2130 B	4,800	75
Phenol, mg/l	USEPA 420.4 Rev.1.0	0.012	0.079

Lab Report No : W / 2307 / 00096
Date : 02 / 08 / 2023

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PARAMETER	METHODS	SAMPLE MARKING	
		BH-04	BH-05
Potassium as K, mg/l	APHA 3120-B	248.60	309.59
Selenium as Se, mg/l	APHA 3120-B	0.100	0.045
Sodium as Na, mg/l	APHA 3120-B	662	395.30
Tin as Sn, mg/l	In House Method No.4 Based On APHA 3120-B	ND < 0.020	ND < 0.020
Strontium as Sr, mg/l	APHA 3120 B	0.863	0.679
Sulfate as SO ₄ , mg/l	APHA 4500 SO ₄ E	6.7	253.7
Sulphide as S ²⁻ , mg/l	APHA 4500-S ²⁻ , F	2.1	ND < 0.2
Temperature °C	APHA 2550 B	29.0	29.0
Total Dissolved Solid, mg/l	APHA 2540 C	4,682	5,546
Total Suspended Solids, mg/l	APHA 2540-D	6,160	163
Zinc as Zn, mg/l	APHA 3120-B	0.147	0.043
Vanadium as V, mg/l	APHA 3120-B	0.030	0.006
* Salinity, ‰	APHA 209-B (14 th)	9.6	7.9
Dissolved Oxygen, mg/l	APHA 4500-O, G	5.1	4.9
Escherichia coli, MPN/100ml	APHA 9221 F	< 1.8	< 1.8
Total Coliform, MPN/100ml	APHA 9221 B, C	4.5	79
**Gross α, Bq/L	Direct Measurement Using Low Background Gross αβ Counting System	0.21 ± 0.07	< 0.03
**Gross β, Bq/L	Direct Measurement Using Low Background Gross αβ Counting System	2.57 ± 0.08	1.41 ± 0.05
Pesticides:			
** Aldrin, mg/l	APHA 6630-B	ND < 0.00002	ND < 0.00002
** Chlordane, mg/l	APHA 6630-B	ND < 0.00002	ND < 0.00002
** DDT, mg/l	APHA 6630-B	ND < 0.0002	ND < 0.0002
** 2,4-D, mg/l	APHA 6640-B (18 th Edition)	ND < 0.03	ND < 0.03
** Dieldrin, mg/l	APHA 6630-B	ND < 0.00001	ND < 0.00001
** Endosulfan, mg/l	APHA 6630-B	ND < 0.001	ND < 0.001
** Heptachlor, mg/l	APHA 6630-B	ND < 0.00002	ND < 0.00002
** Heptachlor Epoxide, mg/l	APHA 6630-B	ND < 0.00001	ND < 0.00001
** Hexachlorobenzene, mg/l	APHA 6630-B	ND < 0.00001	ND < 0.00001
** Methoxychlor, mg/l	APHA 6630-B	ND < 0.0004	ND < 0.0004
** Lindane, mg/l	APHA 6630-B	ND < 0.0001	ND < 0.0001
**Chloroform, mg/l	APHA 6232 C	ND < 0.005	ND < 0.005
** Bromoform, mg/l	APHA 6232 C	ND < 0.005	ND < 0.005
** Dibromochloromethane, mg/l	APHA 6232 C	ND < 0.005	ND < 0.005
** Bromodichloromethane, mg/l	APHA 6232 C	ND < 0.005	ND < 0.005

NOTE : APHA means Standard Methods for the Examination of Water and Wastewater, (American Public Health Association), 21st Edition, 2005.
OSRMA means Official, Standardised & Recommended Methods of Analysis, 2nd Edition, 1973.
ND means Not Detected.
+ means Not SAMM accredited.
** means Subcontracted.
* Sample for BOD was preserved at <4°C and tested on 03/08/2023.

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CERTIFICATE OF ANALYSIS

Page 3 of 4

Company	: PLB ENGINEERING BERHAD
Lab. No	: W / 2308 / 00096
Date Sample Received	: 02 / 08 / 2023
Date Sample Reported	: 04 / 09 / 2023
Date of Testing	: 03 / 08 / 2023 – 04 / 09 / 2023
Sample Description	: Water
Sample Marking	: Jelutong, Pulau Pinang – 04/07/2023, Spring flood tide

<u>PARAMETER</u>	<u>METHODS</u>	<u>SAMPLE MARKING</u>	
		<u>BH-06</u>	<u>BH-08</u>
Aluminium as Al, mg/l	APHA 3120-B	0.183	1.899
Ammonia as N, mg/l	APHA 4500-NH ₃ D	118.73	40.83
Ammoniacal Nitrogen as NH ₃ N, mg/l	APHA 4500-NH ₃ D	216.5	74.45
Silver as Ag, mg/l	APHA 3120-B	ND < 0.001	ND < 0.001
Arsenic as As, mg/l	APHA 3120-B	ND < 0.003	0.012
Barium as Ba, mg/l	APHA 3120-B	0.206	0.278
BOD*5 days@20°C, mg/l	APHA 5210-B	47	40
Boron as B, mg/l	APHA 3120-B	2.536	1.994
Cadmium as Cd, mg/l	APHA 3120-B	ND < 0.001	ND < 0.001
Calcium as Ca, mg/l	APHA 3120-B	65.18	272.92
Chloride as Cl ⁻ , mg/l	APHA 4500 Cl C	707	2,303
Chromium as Cr, mg/l	APHA 3120-B	0.006	0.005
Hexa-Chromium, mg/l	APHA 3500-Cr B	ND < 0.02	ND < 0.02
Tri-Chromium, mg/l	In House Method No.5 Based On APHA 3500-Cr B	ND < 0.02	ND < 0.02
Cobalt as Co, mg/l	APHA 3120-B	0.003	0.001
COD, mg/l	APHA 5220-D	551	420
Color, ADMI at Original pH	APHA 2120 F	580	201
Color, ADMI at pH 7.0	APHA 2120 F	580	201
Conductivity, µS/cm	APHA 2510 B	5,080	8,020
Copper as Cu, mg/l	APHA 3120-B	0.072	0.056
Cyanide as CN, mg/l	APHA 4500-CN ⁻ C, F	ND < 0.02	ND < 0.02
Fluoride as F, mg/l	APHA 4500 F-D	0.50	0.48
Formaldehyde, mg/l	OSRMA p458	ND < 0.02	ND < 0.02
Hardness as mg CaCO ₃ /l	APHA 2340 C	572	1,166
Iron as Fe, mg/l	APHA 3120-B	1.651	2.885
Lead as Pb, mg/l	APHA 3120-B	0.012	0.006
Magnesium as Mg, mg/l	APHA 3120-B	38.73	85.36
Manganese as Mn, mg/l	APHA 3120-B	0.115	0.538
Anionic Detergent as MBAS, mg/l	APHA 5540-C	ND < 0.001	ND < 0.001
Mercury as Hg, mg/l	In House Method No.3 Based On APHA 3120-B	ND < 0.001	ND < 0.001
Mineral Oil, mg/l	APHA 5520 B	ND	ND
Nickel as Ni, mg/l	APHA 3120-B	0.013	0.004
Nitrate as NO ₃ , mg/l	APHA 4500 NO ₃ F	0.03	ND < 0.02
Nitrite as NO ₂ , mg/l	APHA 4500 NO ₃ F	0.090	0.044
Oil & Grease, mg/l	APHA 5520-B	4.8	13.0
pH	APHA 4500 H ⁺ B	7.5	7.0
Turbidity, NTU	APHA 2130 B	10	120
Phenol, mg/l	USEPA 420.4 Rev.1.0	ND < 0.001	ND < 0.001

PARAMETER	METHODS	SAMPLE MARKING	
		BH-06	BH-08
Potassium as K, mg/l	APHA 3120-B	274.76	194.22
Selenium as Se, mg/l	APHA 3120-B	0.017	0.014
Sodium as Na, mg/l	APHA 3120-B	340.70	894
Tin as Sn, mg/l	In House Method No.4 Based On APHA 3120-B	ND < 0.020	ND < 0.020
Strontium as Sr, mg/l	APHA 3120 B	0.620	1.001
Sulfate as SO ₄ , mg/l	APHA 4500 SO ₄ E	110.8	277.6
Sulphide as S ²⁻ , mg/l	APHA 4500-S ²⁻ , F	0.9	0.8
Temperature °C	APHA 2550 B	29.0	29.0
Total Dissolved Solid, mg/l	APHA 2540 C	3,458	5,454
Total Suspended Solids, mg/l	APHA 2540-D	24	155
Zinc as Zn, mg/l	APHA 3120-B	0.008	0.033
Vanadium as V, mg/l	APHA 3120-B	0.004	0.004
+ Salinity, ‰	APHA 209-B (14 th)	8.2	6.8
Dissolved Oxygen, mg/l	APHA 4500-O, G	5.4	4.2
Escherichia coli, MPN/100ml	APHA 9221 F	< 1.8	< 1.8
Total Coliform, MPN/100ml	APHA 9221 B, C	< 1.8	< 1.8
**Gross α, Bq/L	Direct Measurement Using Low Background Gross αβ Counting System	0.20 ± 0.07	< 0.03
**Gross β, Bq/L	Direct Measurement Using Low Background Gross αβ Counting System	4.25 ± 0.11	0.90 ± 0.04
Pesticides:			
** Aldrin, mg/l	APHA 6630-B	ND < 0.00002	ND < 0.00002
** Chlordane, mg/l	APHA 6630-B	ND < 0.00002	ND < 0.00002
** DDT, mg/l	APHA 6630-B	ND < 0.0002	ND < 0.0002
** 2,4-D, mg/l	APHA 6640-B (18 th Edition)	ND < 0.03	ND < 0.03
** Dieldrin, mg/l	APHA 6630-B	ND < 0.00001	ND < 0.00001
** Endosulfan, mg/l	APHA 6630-B	ND < 0.001	ND < 0.001
** Heptachlor, mg/l	APHA 6630-B	ND < 0.00002	ND < 0.00002
** Heptachlor Epoxide, mg/l	APHA 6630-B	ND < 0.00001	ND < 0.00001
** Hexachlorobenzene, mg/l	APHA 6630-B	ND < 0.00001	ND < 0.00001
** Methoxychlor, mg/l	APHA 6630-B	ND < 0.0004	ND < 0.0004
** Lindane, mg/l	APHA 6630-B	ND < 0.0001	ND < 0.0001
**Chloroform, mg/l	APHA 6232 C	ND < 0.005	ND < 0.005
** Bromoform, mg/l	APHA 6232 C	ND < 0.005	ND < 0.005
** Dibromochloromethane, mg/l	APHA 6232 C	ND < 0.005	ND < 0.005
** Bromodichloromethane, mg/l	APHA 6232 C	ND < 0.005	ND < 0.005

NOTE : APHA means Standard Methods for the Examination of Water and Wastewater, (American Public Health Association), 21st Edition, 2005.
OSRMA means Official, Standardised & Recommended Methods of Analysis, 2nd Edition, 1973.
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** means Subcontracted.
* Sample for BOD was preserved at <4°C and tested on 03/08/2023.

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IKM No. M / 2132 / 4619 / 04





CERTIFICATE OF ANALYSIS

Work Order	: KL2307992	Page	: 1 of 3
Amendment	: 1	Laboratory	: ALS Technichem (M) Sdn. Bhd.
Client	: YES BIZS SDN BHD	Contact	: AbdulQaiyum Musa
Contact	: MS. MICHELLE GOH	Address	: WISMA ALS, 21, Jalan Astaka U8/84, Bukit Jelutong Shah
Address	: 4936 JALAN SIRAM BUTTERWORTH		: Alam Selangor Malaysia 40150
	PENANG 12100	E-mail	: AbdulQaiyum.Musa@alsglobal.com
	ms@yesenviro.com	Telephone	: +60175552985
		Facsimile	: +603 7845 8258
		QC Level	: ALS Malaysia Standard Quality Schedule
Project	: LANDFILL GAS MONITORING	Date Samples Received	: 06-Jul-2023 17:00
Order number	: YES-HOME/ALSTSB/PO 8965-23	Date Analysis Commenced	: 10-Jul-2023
C-O-C number		Issue Date	: 26-Aug-2023 10:25
Sampler		No. of samples received	: 3
Site		No. of samples analysed	: 3
Quote number	: KL2023YESBIZS0001		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results



Signatories

This laboratory is accredited under STANDARDS MALAYSIA. The tests reported herein have been performed in accordance with laboratory's Terms of Accreditation. This document has been electronically signed by authorized signatories indicated below. Electronic signing has been carried out in compliance with procedure specified in 21 CFR Part 11.

Signatories

Position

ChM. Nur Adibah Faizah Binti Ariffin Chemist (IKM No: M/5251/8606/19)

SAMM 147



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, ASTM, NIOSH and BS EN. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key

CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

Ø = ALS is not accredited for these tests.

~ = Indicates an estimated value.

- ALS TECHNICHEM prepares this Test Report based on the tests requested and on the specific sample(s) submitted for analysis. The significance of this Report is subject to the adequacy and representative character of the sample(s) and to the comprehensiveness of the tests requested or made. ALS TECHNICHEM assumes no responsibility for variations in quality or other characteristic of the product produced or supplied under conditions over which ALS TECHNICHEM has no control.
- ALS TECHNICHEM acts for the customer from whom the instructions to act have originated. No other party is entitled to give instructions, particularly on the scope of analysis or delivery of report or certificate, unless so authorized by the customer.
- ALS TECHNICHEM undertakes to exercise due care and skill in the performance of its analytical and consultancy services but no warranties are given and none may be implied directly or indirectly relating to ALS TECHNICHEM's test results, services or facilities. In no event shall ALS TECHNICHEM be liable to collateral, special or consequential damage.
- Result < LOR = Not Detected (ND)
- This report shall not be reproduced except in full without the written approval of the laboratory.
- Where moisture determination has been performed, results are reported on a dry weight basis.



Analytical Results

Sub-Matrix: AIR

Sub-Matrix: AIR																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
Compound	Method	Sample ID				LOR	Unit	Sampling date/time	BH-6 27-Jun-2023 09:00 KL2307992-001	BH-8 28-Jun-2023 11:00 KL2307992-002	BH-4 29-Jun-2023 10:00 KL2307992-003																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												





CERTIFICATE OF ANALYSIS

Work Order	Page
: KL2309698	: 1 of 2
Client	: ALS Technichem (M) Sdn. Bhd.
Contact	: AbdulQaiyum Musa
Address	: WISMA ALS, 21, Jalan Astaka U8/84, Bukit Jelutong Shah Alam Selangor Malaysia 40150
E-mail	: AbdulQaiyum.Musa@alsglobal.com
Telephone	: +60175552985
Facsimile	: +603 7845 8258
Project	: ALS Malaysia Standard Quality Schedule
Order number	: 11-Aug-2023 12:54
C-O-C number	: 15-Aug-2023
Sampler	: 23-Sep-2023 15:36
Site	
Quote number	: 2
	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Signatories

Signatories	Position
ChM. Nur Adibah Faizah Binti Ariffin	Chemist (IKM No: M/5251/8606/19)
ChM. Nur Adibah Faizah Binti Ariffin	Chemist (IKM No: M/5251/8606/19)

*Please direct all technical queries to the laboratory (Reports.KL@alsglobal.com)

right solutions. right partner.



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, ASTM, NIOSH and BS EN. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

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

▲ = This result is computed from individual analyte detections at or above the level of reporting
~ = Indicates an estimated value.

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- Result < LOR = Not Detected (ND)
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- Where moisture determination has been performed, results are reported on a dry weight basis.

Analytical Results

Sub-Matrix: AIR

Sub-Matrix: AIR		Sample ID							
Compound	Method	Sampling date/time		LOR	Unit	BH-2 07-Aug-2023 KL2309698-001	BH-5 07-Aug-2023 KL2309698-002		
Volatile Organic Compounds									
NM VOC as Non-halogenated Compounds	NIOSH1501 Mod	0.017	mg/m³	<0.017	<0.017				
NM VOC as Halogenated Compounds	NIOSH1501 Mod	0.017	mg/m³	<0.017	<0.017				
Inorganic gases and Inorganic acid mists									
Ammonia	NIOSH6015	0.4	µg/m³	1.4	61.5				



CERTIFICATE OF ANALYSIS

Work Order	: KL2310450	Page	: 1 of 2
Client	: YES BIZS SDN BHD	Laboratory	: ALS Technichem (M) Sdn. Bhd.
Contact	: MS. MICHELLE GOH	Contact	: AbdulQaiyum Musa
Address	: 4936 JALAN SIRAM BUTTERWORTH PENANG 12100	Address	: WISMA ALS, 21, Jalan Astaka U8/84, Bukit Jelutong Shah Alam Selangor Malaysia 40150
E-mail	: ms@yesenviro.com	E-mail	: AbdulQaiyum.Musa@alsglobal.com
Telephone		Telephone	: +60175552985
Facsimile		Facsimile	: +603 7845 8258
Project	: LANDFILL GAS MONITORING	QC Level	: ALS Malaysia Standard Quality Schedule
Order number		Date Samples Received	: 25-Aug-2023 13:30
C-O-C number		Date Analysis Commenced	: 02-Sep-2023
Sampler		Issue Date	: 03-Oct-2023 16:52
Site	: JELUTONG	No. of samples received	: 2
Quote number	: KL2023YESBIZS0001	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results



Signatories

This laboratory is accredited under STANDARDS MALAYSIA. The tests reported herein have been performed in accordance with laboratory's Terms of Accreditation. This document has been electronically signed by authorized signatories indicated below. Electronic signing has been carried out in compliance with procedure specified in 21 CFR Part 11.

Signatories

Position

SAMM 147

ChM. Nur Adibah Faizah Binti Ariffin

Chemist (IKM No: M/5251/8606/19)

Sub-Matrix: AIR		Sample ID		Sampling date/time		LOR		Unit		Method		Compound	
BH-2		22-Aug-2023 10:00		BH-5		22-Aug-2023 10:00		KL2310450-001		KL2310450-002			
Subcontracted Analyte													
Hydrogen Sulfide		ASTM D 5504-12		10		µg/m³							
Hydrogen Sulfide		ASTM D 5504-12		9.8		µg/m³							
Methane		EPA 3C (Mod)		920		mg/m³							
Methane		EPA 3C (Mod)		980		mg/m³							
Carbon Dioxide		EPA 3C (Mod)		2500		mg/m³							
Carbon Dioxide		EPA 3C (Mod)		2700		mg/m³							