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LABORATORY LOCATION: EUROFINS NM LABORATORY SDN. BHD.

(PERMANENT LABORATORY) NO. 263-267, JALAN NILAI 3/21

**KAWASAN PERINDUSTRIAN NILAI 3** 

71800 NILAI

**NEGERI SEMBILAN** 

**MALAYSIA** 

FIELDS OF TESTING: CHEMICAL AND MICROBIOLOGY

This laboratory has demonstrated its technical competence to operate in accordance with MS ISO/IEC 17025:2017 (ISO/IEC 17025:2017).

This laboratory's fulfillment of the requirements of ISO/IEC 17025 means the laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations. The management system requirements in ISO/IEC 17025 are written in language relevant to laboratory operations and operate generally in accordance with the principles of ISO 9001 (see Joint ISO-ILAC-IAF Communiqué dated April 2017).

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Environmental Monitoring Industrial Effluent	рН	APHA 4500 H+B
Sewage	Chemical Oxygen Demand (COD)	APHA 5220 D
Water Surface Potable	Suspended Solid	APHA 2540 D
Drinking Distilled	Cadmium	APHA 3111 B
Reverse Osmosis Ultrapure	Lead	APHA 3111 B
·	Copper	APHA 3111 B
	Manganese	APHA 3111 B
	Nickel Zinc	APHA 3111 B APHA 3111 B
	Iron	APHA 3111 B
	Tin	APHA 3111 B
	Total Chromium	APHA 3111 B
	Acidity	APHA 2310 B
	Carbon Dioxide	APHA 4500-CO₂ C
	<u> </u>	1

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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Environmental Monitoring Industrial Effluent	Oil & Grease	APHA 5520 B
Sewage	Mercury	APHA 3112 B
Water Surface	Silver	APHA 3111 B
Potable Drinking Water	Cobalt	APHA 3111 B
Distilled Reverse Osmosis Ultrapure	Total Solid Dried at 103°C - 105°C	APHA 2540 B
Olirapure	Total Dissolved Solids Dried at 180°C	APHA 2540 C
	Sulphate	HACH Method 8051
	Cyanide	HACH Method 8027
	Alkalinity (as CaCO <sub>3</sub> )	APHA 2320 B
	Nitrate	HACH Method 8039
	Nitrite	HACH Method 8507
	Formaldehyde	HACH Method 8110

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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Environmental Monitoring Industrial Effluent	Color	APHA 2120 B
Sewage	Turbidity	APHA 2130 B
Water Surface	Arsenic	APHA 3114 C
Potable Drinking Water Distilled	Biochemical Oxygen Demand 5 Day	APHA 5210 B
Reverse Osmosis	Total Phosphorus	APHA 4500-P C
Ultrapure	Hardness	APHA 2340 C
	Total Kjeldahl Nitrogen	APHA 4500-Norg B + APHA 4500-NH₃ F
	Fixed and Volatile Solids Ignited at 550°C	APHA 2540 E
	Total Organic Carbon	APHA 5310 C
	Dissolved Oxygen	APHA 4500-O G
	Potassium	APHA 3120 B
	Sodium	APHA 3120 B
	Silica, Reactive	HACH 8185 and HACH 8282
	Conductivity	APHA 2510 B
	Chloride	HACH 8113
	Fluoride	HACH 8029
	Tin (ICP-OES)	EPA Method 6010 D
	Sodium (ICP-OES)	EPA Method 6010 D
	Potassium (ICP-OES)	EPA Method 6010 D

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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Environmental Monitoring Industrial Effluent	Color	APHA 2120 F
Sewage	Fluoride	APHA 4500-F <sup>-</sup> D
Water Surface	Selenium	APHA 3114 C
Potable Drinking Water	Ammonical Nitrogen	APHA 4500-NH₃ F
Distilled Reverse Osmosis	Chloroamines	APHA 4500-CI G
Ultrapure	Anionic Surfactant MBAS	APHA 5540 C
Environmental Monitoring Waste Water Effluent Sewage Water	COD Open Reflux	APHA 5220 B
Water Potable Water Drinking Water Reverse Osmosis		
Environmental Monitoring Palm Oil Mill Effluent	рН	APHA 4500 H+B
Paini Oii Wiiii Eindent	Chemical Oxygen Demand (COD)	APHA 5220 D
	Oil & Grease	APHA 5520 B
	Suspended Solid	APHA 2540 D
	Total Kjeldahl Nitrogen	APHA 4500-Norg B + APHA 4500-NH₃ F
	Biochemical Oxygen Demand 3 Day	DOE Method (1985) – Alternative Method
Environmental Monitoring Waste and Waste Water	Cyanide	APHA 4500-CN- F
vvasic and vvasic vvaler	Chlorine, Residual	APHA 4500-CI G
	Chromium Hexavalent	APHA 3500-Cr B
	Boron	APHA 4500-B C
	Phenol	APHA 5530 C
	Sulphide	APHA 4500-S2- D



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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Environmental Monitoring Natural Rubber Effluent	рН	APHA 4500 H+B
Natural Nubber Ellident	Chemical Oxygen Demand (COD)	APHA 5220 D
	Oil & Grease	APHA 5520 B
	Suspended Solid	APHA 2540 D
	Total Kjeldahl Nitrogen	APHA 4500-Norg B + APHA 4500-NH₃ F
	Biochemical Oxygen Demand 3 Day	DOE Method (1985) – Alternative Method
Environmental Monitoring Solid and Sludge	Oil & Grease	APHA 5520 E
Environmental Monitoring Industrial Waste Liquid Effluent Water	Aluminum Antimony Barium Bismuth Boron Cadmium Calcium Chromium Cobalt Copper Gold Iron Lead Lithium Magnesium Manganese Nickel Potassium Phosphorus Silica Silver Sodium Tin Titanium Vanadium Zinc	EPA Method 6010 D



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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Water	Turbidity	APHA 2130 B
Drinking Water	Sulfate	HACH 8051
	Nitrate	HACH 8039
	Nitrite	HACH 8507
	Suspended Solid	APHA 2540 D
	Total Solid	APHA 2540 B
	Dissolved Solid	APHA 2540 C
	Total Kjeldahl Nitrogen	APHA 4500-Norg B + APHA 4500-NH₃ F
	Silver	APHA 3111 B
	Hardness	APHA 2340 C
	Mercury	APHA 3112 B
	Nickel	APHA 3111 B
	Reactive Phosphorus	HACH 8048
	Silica, Reactive	HACH 8185 and HACH 8282
	Sodium (ICP-OES)	EPA Method 6010 D
	Potassium (ICP-OES)	EPA Method 6010 D
	Oil & Grease	APHA 5520 B
	Cyanide	HACH 8027
	Iron	APHA 3111 B
	Lead	APHA 3111 B
	Manganese	APHA 3111 B
	Dissolved Oxygen	APHA 4500-O G

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#### SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Water	Conductivity	APHA 2510 B
Drinking Water	Fluoride	HACH 8029
	Tin (ICP-OES)	EPA Method 6010 D
	Total Organic Carbon	APHA 5310 B
	Temperature	APHA 2550 B
	Total Chromium	HACH 8024
	Formaldehyde	HACH 8110
	Acidity	APHA 2310 B
	Carbon Dioxide	APHA 4500-CO₂ C
Water Drinking Water	рН	APHA 4500 H+ B
Drinking water	Total Alkalinity	APHA 2320 B
	Bicarbonate	APHA 2320 B
	Arsenic	APHA 3114 C
	Cadmium	APHA 3111 B
	Chloride	HACH 8113
	Copper	APHA 3111 B
	Color	APHA 2120 B

#### Notes:

APHA – American Public Health Association - 21st Edition, 2005

USEPA – United States Environmental Protection Agency

DOE - Department of Environmental

AS - Australian Standard

MS - Malaysian Standard

ISO – International Organization for Standardization

#### Signatories:

1. Dr. Chong Kok Heng IKM No.: M/2058/3869/98/03

2. Dr. Koh Yew Ming IKM No.: F/0121/4003/99/19 (Non-Resident)



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SCOPE OF TESTING: CHEMICAL

SITE TESTING: CATEGORY I

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Environmental Monitoring Ambient Air		
	Total Suspended Particulate	AS 2724.3
	Lead	AS 2800
	Particulate Matter	
	PM <sub>10</sub>	EPA 40 CFR Part 50, Appendix J
	PM <sub>2.5</sub>	In-house Method TOM 3012, Based on EPA 40 CFR Part 50, Appendix L
Environmental Monitoring Chimney Stack	Sample and Velocity Traverses for Stationary Sources	USEPA Method 1
Ducting Emissions	Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube)	USEPA Method 2
	Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from Stationary Sources (Instrumental Analyzer Procedure)	USEPA Method 3A
	Determination of Moisture Content in Stack Gases	USEPA Method 4
	Determination of Particulate Matter Emissions from Stationary Sources	USEPA Method 5
	Determination of Sulphur Dioxide Emissions from Stationary Sources (Instrumental Analyzer Procedure)	USEPA Method 6C (2006)
	Determination of Concentration and Mass Flow of Particulate Matter in Flue Gas for Stationary Sources Emissions	MS 1596: 2003
	Dark Smoke	Bureau of Mines, Information Circular 8333 (IC)

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SCOPE OF TESTING: CHEMICAL

SITE TESTING: CATEGORY I

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Environmental Monitoring Environmental Noise	Acoustics – Description Measurement and Assessment of Environmental Noise – Part 1 Basic Quantities and Assessment Procedures  Acoustics – Description,	ISO 1996-1 (2nd Edition)  ISO 1996-2 (2nd Edition)
	Measurement and Assessment of Environmental Noise – Part 2: Determination of Environmental Noise Levels	
Environmental Monitoring Effluent	Temperature	APHA 2550 B
Waste Water	рН	APHA 4500 H+B
Water Drinking Water	Conductivity	APHA 2510 B
Difficility water	Free Chlorine	In-House Method TOM 3019 (Based on USEPA 330.5)

#### Notes:

APHA – American Public Health Association - 21st Edition, 2005 USEPA – United States Environmental Protection Agency

DOE - Department of Environmental

AS – Australian Standard

MS - Malaysian Standard

ISO – International Organization for Standardization

#### Signatories:

1. Dr. Chong Kok Heng IKM No.: M/2058/3869/98/03

2. Dr. Koh Yew Ming IKM No.: F/0121/4003/99/19 (Non-Resident)



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### SCOPE OF TESTING: MICROBIOLOGY

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Microbiological	Heterotrophic Plate Count	APHA 9215 B (23 <sup>rd</sup> Edition, 2017)
environmental sample Waste and Waste Water		APHA 9215 C (23 <sup>rd</sup> Edition, 2017)
Drinking Water Potable Water Purified Water		APHA 9215 D (23 <sup>rd</sup> Edition, 2017)
Reverse Osmosis Cooling Water Industrial Effluent Sewage	Total Coliform and Escherichia coli by Chromogenic Substrate	Merck Microbiology Manual 12 <sup>th</sup> Edition
	Thermotolerant Fecal Coliform Membrane Filter Procedure	APHA 9222 D (23 <sup>rd</sup> Edition, 2017)
	Standard Staphylococci Membrane Filter	APHA 9213 B (23 <sup>rd</sup> Edition, 2017)
	Fecal Coliform Rapid Detection Method	APHA 9211 B (23 <sup>rd</sup> Edition, 2017)
	Standard Total Coliform Membrane Filter Method using Endo Media	APHA 9222 B (23 <sup>rd</sup> Edition, 2017)
	Standard Total Coliform Fermentation Technique	APHA 9221 B (23 <sup>rd</sup> Edition, 2017)
	Multiple-Tube Fermentation Technique for Fecal Coliform	APHA 9221 E (23 <sup>rd</sup> Edition, 2017)
	Multiple-Tube Fermentation Technique for Escherichia coli	APHA 9221 F (23 <sup>rd</sup> Edition, 2017)
	Membrane Filter Technique for Pseudomonas aeruginosa	APHA 9213 E (23 <sup>rd</sup> Edition, 2017)
	Membrane Filter Technique for Fecal Streptococci and Enterococci	APHA 9230 C (23 <sup>rd</sup> Edition, 2017)
	Detection of Legionella spp.	APHA 9260 J (23 <sup>rd</sup> Edition, 2017)

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SCOPE OF TESTING: MICROBIOLOGY

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Microbiological environmental sample Waste and Waste Water Drinking Water	Clostridium perfringens by Membrane Filtration Method	APHA 9215 D (23 <sup>rd</sup> Edition, 2017) Ohio Water Microbiology Laboratory, Appendix C10
Potable Water Purified Water Reverse Osmosis Cooling Water Industrial Effluent Sewage	Sulphite Reducing Clostridia by Membrane Filtration Method	APHA 9215 D (23 <sup>rd</sup> Edition, 2017) Environment Agency, The Microbiology of Drinking Water (2010) – Part 6
Microbiological environmental sample Air	Total Plate Count  Total Yeast and Mould	IEST-RP-CC0023.1 IEST-RP-CC0023.1
Microbiological tests on foods Food	Total Plate Count	AS 1766.2.1-1991

# Signatory:

1. Nor Fadzliana Binti Abu Faizal MJMM 1099