

Schedule

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Certificate No. : LA-2015-0595-F-1
Issue No. : 9
Date : 3 April 2023
Expiry Date of Certificate : 18 May 2027
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FIELD OF TESTING : Environmental Testing

MATERIALS / PRODUCTS TESTED	TESTS / PROPERTIES	STANDARD METHODS / TECHNIQUES / EQUIPMENT	SIGNATORIES
A. WATER ANALYSIS <ul style="list-style-type: none"> • Ballast water • Drinking water (Potable) • Non-potable water • Fresh water • Industrial water • Wastewater, Trade effluent • Ground water • RO water • DI water • Swimming pool water • Cooling tower water • Sea water 	1. Detergents (MBAS)	<u>APHA Methods are based on 24th Edition: 2023</u> APHA 5540C	WPH, TTP, UFG, LYH, CVK, LJJ
	2. Fixed Solids (FS)	APHA 2540E	WPH, TTP, UFG, LYH, CVK, LJJ
	3. Oil & Grease	USEPA 1664 (Feb 2010)	WPH, TTP, UFG, LYH, CVK, LJJ
	4. Oil & Grease (Hydrocarbon)	APHA 5520F	WPH, TTP, UFG, LYH, CVK, LJJ
	5. Oil & Grease (Total) by Gravimetric	APHA 5520B	WPH, TTP, UFG, LYH, CVK, LJJ
	6. Total Dissolved Solids	APHA 2540C	WPH, TTP, UFG, LYH, CVK, LJJ
	7. Total Solids	APHA 2540B	WPH, TTP, UFG, LYH, CVK, LJJ
	8. Total Suspended Sediments Concentration (HCTSS)	In-house Method MLS-SOP-SED-004 Rev 0	WPH, TTP, UFG, LYH
	9. Total Suspended Solids	APHA 2540D	WPH, TTP, UFG, LYH, CVK, LJJ
	10. Total Volatile Solids	APHA 2540E	WPH, TTP, UFG, LYH, CVK, LJJ

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B. ENVIRONMENTAL SAMPLES • Water • Soil • Sediment • Sludge	11. Urea in Seawater	In-house Method: MLS-SOP-WQ-041 Rev 0	WPH, TTP, UFG, LYH, CVK, LJJ
	12. Volatile Suspended Solids	APHA 2540E	WPH, TTP, UFG, LYH, CVK, LJJ
	1. Total, Fixed & Volatile Solids in Solid & Semi-solid Samples	APHA 2540G	WPH, TTP, UFG, CVK, LJJ
C. FINE AGGREGATE / SOIL / SEDIMENT	1. Carbonate	BS 1377-3:2018+A1:2021 Section 8	WPH, TTP, UFG, LJJ
	2. Chloride • Acid-soluble • Water-soluble	BS 1377-3:2018+A1:2021 Section 9	WPH, TTP, CVK, LJJ
	3. Conductivity in Soil	Australian Standard (Soil Survey Standard Method: EC-C1-A-3)	WPH, TTP, UFG, CVK, LJJ
	4. Density by Linear Measurement	BS EN ISO 17892-2:2014 Section 5.1	WPH, TTP, UFG, LJJ
	5. Fall Velocity by Owen Tube Method	In-house Method: MLS-SOP-SED-001 Rev 0	WPH, TTP, UFG, CVK
	6. Mass Loss on Ignition (440°C)	BS 1377-3:2018+A1:2021 Section 6	WPH, TTP, CVK, LJJ
	7. Material in Soils Finer than 75 µm	ASTM D1140-17	WPH, TTP, CVK, LJJ
	8. Moisture (Water Content)	BS EN ISO 17892-1: 2014+A1:2022	WPH, TTP, CVK, LJJ
	9. Oil and Grease	USEPA 9071B (1998)	WPH, TTP, UFG, CVK
	10. pH	BS 1377-3:2018+A1:2021 Section 12	WPH, TTP, CVK, LJJ

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D. SOURCE EMISSION	11. Shell / Coral Content	SANS 5840: 2008 Ed 2.2	WPH, TTP, UFG, LJJ
	12. Sulfate • Acid-soluble • Water-soluble	BS 1377-3:2018+A1:2021 Section 7	WPH, TTP, CVK, LJJ
	1. Sampling and Velocity Traverse for Stationary Sources	USEPA Method 1 (Apr 2020)	WPH, TTY, CJQ
	2. Determination of Stack Gas Velocity and Volumetric Flow Rate	USEPA Method 2 (Aug 2017)	WPH, TTY, CJQ
	3. Determination of Oxygen and Carbon Dioxide Concentrations in Emissions From Stationary Sources (Instrumental Analyzer Procedure)	USEPA Method 3A (Aug 2017)	WPH, TTY, CJQ
	4. Determination of Moisture Content in Stack Gases	USEPA Method 4 (Oct 2020)	WPH, TTY, CJQ
	5. Determination of Particulate Matter Emission from Stationary Sources	USEPA Method 5 (Dec 2020)	WPH, TTY, CJQ
	6. Determination of Sulfur Dioxide Emission from Stationary Sources by Gas Analyser	USEPA Method 6C (Aug 2017)	WPH, TTY, CJQ
	7. Determination of Oxides of Nitrogen Emission from Stationary Sources by Gas Analyser	USEPA Method 7E (Oct 2020)	WPH, TTY, CJQ

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	8. Determination of Carbon Monoxide Emission from Stationary Sources by Gas Analyser	USEPA Method 10 (Aug 2017)	WPH, TTY, CJQ
	9. Sampling for Determination of Dioxin and Furan from Stationary Sources	USEPA Method 23 (Aug 2017) (Sampling only)	WPH, TTY, CJQ
	10. Determination of Hydrogen Halide and Halogen Emissions From Stationary Sources Isokinetic Method	USEPA Method 26a (Oct 2020) (Sampling only)	WPH, TTY, CJQ
	11. Determination of Metals Emissions From Stationary Sources	USEPA Method 29 (Aug 2017) (Sampling only)	WPH, TTY, CJQ
E. WATER SAMPLING	1. In-situ Measurements:	In-house Method	WPH, TTY
<ul style="list-style-type: none"> • Drinking water (Potable) • Non-potable water • Fresh water • Industrial water • Wastewater, Trade Effluent • Ground water • RO water • DI water • Swimming pool water • Cooling tower water • Sea water 	<ul style="list-style-type: none"> • Conductivity • Dissolved Oxygen (DO) • Oxidation Reduction Potential (ORP) • pH • Salinity • Temperature • Turbidity 	MLS-SOP-ES-004 Rev 3 (using Multi-parameter Instrument)	
	2. Sampling of Ground Water Samples	In-house Method MLS-SOP-ES-023 Rev 1 (adapted from ISO 5667-11)	WPH, TTY
	3. Sampling of Water Samples	In-house Method MLS-SOP-ES-001 Rev 4	WPH, TTY
	4. Sampling of Water Sample using Remote Autosampler Unit (RAU)	In-house Method MLS-SOP-ES-001 Rev 4	WPH, TTY

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F. WASTEWATER (GREASE TRAP)	1. Sampling of Grease Trap	In-house Method MLS-SOP-ES-013 Rev 1	WPH, TTY
G. AMBIENT AIR QUALITY	1. • Particulate Matter (PM10) • Particulate Matter (PM2.5)	In-house Method MLS-SOP-ES-022 Rev 2	WPH, TTY
H. NOISE MEASUREMENT	1. Boundary Noise Measurement	In-house Method MLS-SOP-ES-014 Rev 3	WPH, TTY
I. LANDFILL GAS / BIOGAS AIR	1. Analysis of Landfill Gas/ Biogas Air Sample Methane (CH ₄) Carbon dioxide (CO ₂) Carbon monoxide (CO) Oxygen (O ₂) Hydrogen sulfide (H ₂ S)	In-house Method MLS-SOP-ES-016 Rev 3	WPH, TTY, CJQ

Approved Signatories

S/N	Names	Initials
1.	Mr Wong Pik Hung	WPH
2.	Mr Tan Thuan Piang	TTP
3.	Mr Toh Teck Yeow	TTY
4.	Ms Umalia Flordelina Gabriel	UFG
5.	Mr Lim Yeu How	LYH
6.	Mr Chong Vui Ket, Xavier	CVK
7.	Mr Lee Yean Jie	LJJ
8.	Mr Cai Junqin	CJQ

Note:

This laboratory is accredited in accordance with the recognised International Standard ISO/IEC 17025. A laboratory's fulfilment 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. 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.