Issue date: 06 April 2025

Valid Until: -



NO: SAMM 892

Page: 1 of 7

LABORATORY LOCATION/ CENTRAL OFFICE:	Plantations Central Laboratory, Hap Seng Plantations (River Estates) Sdn. Bhd. Sungai Segama Jalan Jeroco 91109 Lahad Datu, Sabah , 91109, SABAH MALAYSIA
ACCREDITED SINCE :	06 APRIL 2025
FIELD(S) OF TESTING:	CHEMICAL

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).

CENTRAL LOCATION:	Plantations Central Laboratory, Hap Seng Plantations (River Estates) Sdn. Bhd. Sungai Segama Jalan Jeroco 91109 Lahad Datu, Sabah , 91109, Sabah
FIELD(S) OF TESTING:	CHEMICAL,

SCOPE OF TESTING: CHEMICAL

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
(continued)	Boron (as % B2Os)	In-house Method P02-10 based on
	None	and Management unit PORIM
		pg.31
	None	1994
	None	None
	Seal Degradation Test	AS/NZS 4284: 2008 (Clause 8.10)
	Seismic and Wind Induced Inter	AAMA 501.4-2018 (Clause 7.0)
	None	None
	Escherichia coli	APHA 9221.F (MPN) APHA
		9222.H (Membrane Filter)

Issue date: 06 April 2025 Valid Until: -



NO: SAMM 892

Page: 2 of 7

Material / Product Tested	Type Of Test / Properties	Standard Test Methods /
	Measured / Range Of Measurement	Equipment / Techniques
	Fecal Streptococci	APHA 9230.C (Membrane Filter)
	Clostridium perfringens	HPA NSM WS5 Issue 3
		(Membrane Filter)
	Pseudomonas aeruginosa	APHA 9213.E (Membrane Filter)
	Sulphite reducing anaerobes	ISO 6461-2:1986 (Membrane
		Filter)
	penetration)	None
	Dynamic Water Penetration Test	AAMA 501.1-17
	Seal Degradation Test	AS/NZS 4284:2008
	Seismic and Wind Induced Inter	AAMA 501.4-2009
	None	ASTM E330/ E330M-14
	of Transparent and Opaque Liquids	None
	Smoke Point	ASTM D1322
	Determination of Calcium	MS 679: Part - V: Part IV, Clause 5,
	Force at Break(0-500N) Elongation at break (0 -" 1000%)	None
	None	ASTM E 190:2014
	a. Vickers (HvN)	ASTM E384-2017
	Nitrofuran residues:	In-house Method, Ref. No. MOH D03-
	None	DIN ISO 34-1:2016 AS 1683.12: 2001 (2018)
	Abrasion Resistance	ASTM D5963-04 (2019) (Method A) ISO 4649: 2017 (Method A) DIN ISO 4649:2014 (Method A)
	DC to 1 kHz	(of reading) 0.0035 Q
	at Frequency: 2.5 MHz to 1.3 GHz	1
	1 kHz	0.000048 nF
	100 Q DC to 1 kHz	0.023 Q
	None	0.5 bar
	None	None
	Liquid Limit	None
	None	None
	None	None
	None	None
(pome)	5 Days @ 30°C	Revised Standard Methods for
Agricultural Products	Moisture Content	MS 417: Part 2:1994-Clause 3,
-	None	None
	Exchangeable Cation	In-House Method, P02-33 based on
	None	None
Agricultural Products And	Sample preparation	MS 677: Part I(a):1980

Issue date: 06 April 2025 Valid Until: -



NO: SAMM 892

Page: 3 of 7

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
Materials	Ashing and Preparation of Ash	MS 677: Part
	Solution	
	Nitrogen (N)	MS 677: Part
	None	None
	Nitrogen Ammoniacal Nitrogen -	MS 417:Part 3: 1994 Clause 5
	None	None
	None	None
Agricultural Products And	рН	MS 2457:2012
Materials Soil E	Conductivity	MS 2458: 2012
	Organic Carbon & Organic	In-House Method, P02-38 based on
And Materials	None	None
	Magnesium (Mg)	Laboratory Manual Crop
		Protection
	Total Nitrogen	In-House Method, P02-45 based
	To take the agent	on
And Materials Fertilizer E	None	Method 1
, and materials i stanzer z	Ammoniacal Nitrogen (as % N)	In-house Method P02-02 based on
	/es	MS 417: Part 3:1994-Clause 5
	Nitrate Nitrogen	In-house Method P02-03 based
Compost E	None	Method
	Organic Matter and Organic	MS 417: Part 8:1997- Clause 12
Drinking Water	Biochemical Oxygen Demand	APHA 5210 B & 4500-0 G,
Dimaily Water	Zinc as Zn	APHA 3120 B, (2017)
	None	Multiple-Tube Fermentation
	None	Multiple-Tube Fermentation
	None	None
	None	None
	Temperature	APHA 2550 B
	None	None
	None	None
	Epichlorohydrin	In-house JKM W 0413 by Purge
	L piornororiy arm	and
	Determination of PAHs in	In-house Method JKM W 0414,
	Organochlorine Pesticides	In-house Method JKM W 0502,
	Determination of Anions by Ion	In-house Method JKM W 0303,
	Coliform and Escherichia coli	JKM M 2032
	Turbidity	APHA - 2130B
	Total Nitrogen as N	APHA - 4500Norg B & APHA -
	Oil & Grease	APHA - 5520B or APHA - 5520D
	Antimony as Sb	Plasma Optical Emission
	Antimony as Sb	None
	Selenium as Se	None
	Fluoride as F	
		Chromatography with Chemical
	Dichlorobromomethane	None
	None	None
	Organophosphorus Pesticides	In-House No. G11 based on EPA
	Organochlorine Pesticides	EPA 525.3 (GCMS)

Issue date: 06 April 2025 Valid Until: -



NO: SAMM 892

Page: 4 of 7

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	Total Hardness as CaCO3	APHA-2340B
	Poly Aromatic Hydrocarbons	In-House No. G5 (based on World
	Polychlorobiphenyls(PCB)	In-House No. G2 based on EPA
	nC29 to nC35	None
	n-Tetracontane	None
	None	Method)
	Sulphite-reducing Anaerobes	ISO 6461/2: 1986
	Aluminium as Al	None
	None	None
	рН	APHA 4500-H + B, 21% Edition
	Trivalent Chromium	In-House Method SOP-0217-2029
	None	None
	Chloride as Cl	Suppression of Eluent
		Conductivity
	Conductivity	APHA 2510 B, 21% Edition
	Combined Chlorine as Cl2	APHA 4500-CI G, 21st Edition
		2005
	None	None
	Staphylococcus aureus	AOAC OMA 2003.08
	Chlorite (ClO2)	In House Method 6023, based on
	None	None
	None	None
	Mineral Oil	APHA 5520 F
	Fluoride	АРНА С
	None	None
	Heterotrophic Plate Count	APHA 9215 D
	None	None
	None	126, based on Thermo Fisher Application Noted 154
	Phenol	APHA 6420C, 24" Edition
	None	In-house method SGS-TM-ENVI-W-
	Organochlorine Pesticide	APHA 6630B, 24" Edition
	Conductivity	APHA 2510 B
	None	Boiling Cell Method
	None	QIAGEN Mericon? Bacteria Kit
	None	spp. by Gel Electrophoresis
	None	monocytogenes by Gel
	None	Real Time Polymerase Chain
	INOITE	
		· · · · · · · · · · · · · · · · · · ·
	and Escherichia coli count Coliform and Escherichia coli	9222 H Presence/absence Technique

Issue date: 06 April 2025 Valid Until: -



NO: SAMM 892

Page: 5 of 7

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	Colour	APHA 2120B
	Turbidity	APHA 2130B
	Free Chlorine	HACH Method No . 8021
	Ammonia as N	HACH Method No . 8038
	as Fe	HACH Method No . 8008
	Manganese as Mn	HACH Method No . 8149
	Fluoride as F	HACH Method No . 8029
	Aluminium as Al	HACH Method No . 8326
	pH	APHA 4500-H* B
	Colour	APHA 2120B
	Turbidity	APHA 2130B
	Free Chlorine	HACH Method No . 8021
	Ammonia as N	HACH Method No . 8038
	as Fe	HACH Method No . 8008
	Manganese as Mn	HACH Method No . 8149
	Fluoride as F	HACH Method No . 8029
	Aluminium as Al	HACH Method No . 8326
	Total Dissolved Solids	APHA 2540. C
	Total Dissolved Solids Total Dissolved Solids	APHA 2540. C
Environmental Monitoring Palm Oil		APHA B, 23 Edition (2017)
Effluent E	Total Solids	APHA 5, 23 Edition (2017) APHA 2540 B, 23" Edition (2017)
Ellident		` '
	Total Dissolved Solids	APHA 2540 C, 23" Edition (2017)
	Total Suspended Solids	APHA 2540 D, Edition (2017)
Fertilizer E	Turbidity None	APHA 2130 B, Edition (2017)
		MS 417: Part 7:2001-Clause 6.2.3
Foliar E	None	Clause 2 (Distillation Method)
la direttial Efficant	Phosphorus (P)	In-house Method P02-14 based on
Industrial Effluent	None	(based on MN Method 985026,
	(COD)	None
	Lead (Pb)	None
	None	None
	Metals by ICP	APHA 3120 B
	None	None
	None	2540D&E
	Aluminium, Al Chromium, Cr	None
	Fluoride	APHA 4500-F- D
	Fecal Coliform Rapid Detection	APHA 9211 B
Palm Oil Mill Effluent	Biochemical Oxygen Demand	DOE Method: 2011,
	Chemical Oxygen Demand	APHA 5220 D
Raw Water Domestic Water	Chemical Oxygen Demand	In-House Method, P02-51
River Water	5 Days @ 20°C	23°4 Edition (2017)
	Iron (Fe)	None
	Conductivity	APHA 2510 B
	Temperature (in situ)	In House OEL ? SP/23-01 Based On
	Fecal Coliform	APHA 9222 D
		APHA - 2120B
	Colour	APTA - ZIZUD

Issue date: 06 April 2025

Valid Until: -



NO: SAMM 892

Page: 6 of 7

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	Metals:	APHA - 3120B; Inductive Coupled
	Metals:	USEPA 200.8(ICPMS)
	Nickel as Ni	USEPA 200.8(ICPMS)
	Anions:	APHA - 4110 B; lon
	Trihalomethanes:	APHA - 6200 B (GCMS)
	Phorate	None
	Beta-lindane	None
	Free Carbon Dioxide	APHA-4500CO2-C
		None
	Acenaphthene Trichlorophenoxypropionic Acid)	University of Technology (HPLC)
	n-Hentriacontane	None
	Heterotrophic Plate Count (35°C)	APHA - 9215B; 2017 (Pour Plate
	None	None
	Uranium (U)	In House Method 0582 based on
	Oil and Grease (Emulsified	APHA 5520 B & F, 2017
	None	None
	Total Phosphorus	USEPA Method 200.7
	Total Phosphate	USEPA Method 200.7
	None	None
	Enumeration of Escherichia coli	APHA 9221 G
	Standard Total Coliform	APHA 9222 B
	Colour (ADMI)	APHA 2120 F, 24" Edition
	Petroleum Hydrocarbon (C6-C10)	In-house method SGS-TM-ENVI- S- 001 (Solvent Extraction / Purge-
	None	and- Trap GC-MS) 018 based on APHA 9222 B
	Culphite " Daducing Angershee	(Membrane Filtration)
	Sulphite -" Reducing Anaerobes	ISO 6461/2:1986 (Membrane
	Total Coliform Count	APHA 9222 B
	Total Dissolved Solid	APHA 2540 C
	Barium as Ba	None
	None	None
D. W. D. W. D. J.	None	None
River Water Raw Water Domestic	Manganese as Mn	APHA 3120 B, (2017)
Water Industrial Effluent	Aluminium as Al	APHA 3120 B, (2017)
(continued)	Cadmium as Cd	APHA 3120 B, (2017)
	Hardness	APHA 2340 B (By Calculation) Edition (2017)
Soil E	Exchangeable Cation Sodium	In-House Method, P02-34 based on
Water River Water E Domestic Water E	pH	APHA 4500-H¢+ B, 23 Edition (2017)
	Total Solids	APHA 2540 B, 23° Edition (2017)
	Total Dissolved Solids	APHA 2540 C, 23 Edition (2017)
	Total Suspended Solids	APHA 2540 D, 23 Edition (2017)
	Turbidity	APHA 2130 B, 23" Edition (2017)

Issue date: 06 April 2025 Valid Until: -



NO: SAMM 892

Page: 7 of 7