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LABORATORY LOCATION/ CENTRAL OFFICE:	ESF Lab Sdn. Bhd. No.18-1, Jalan Impian Mahkota 1, Saujana Impian 43000 Kajang, Selangor , 43000, SELANGOR 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:	ESF Lab Sdn. Bhd. No.18-1, Jalan Impian Mahkota 1, Saujana Impian 43000 Kajang, Selangor , 43000, Selangor
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
Ambient Air	Particulates Matter (PM10) in the Atmosphere	Appendix B and J) and Methods of Air Sampling and Analysis
	Determination of Nitrogen	JKM E 0320
	Total Suspended Particulate	ASTM D 4096-17
	Total Suspended Particulates	APHA IC (11101-01-70T)(74R)
	Nitrogen Dioxide (NO ₂)	APHA IC (42602-01-68T)(74R)
	Determination of suspended particulate	USEPA 40 Part 50, Appendix B
	Dust Particulate	In-house Method E/ENV/005 based on MiniVol TAS
	Total Suspended Particulate Matter (TSP) PM10	EPA Compendium Method (HVS): 1999

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	None	In-house method SGS-SOP-IND-006
	Total Suspended Particulate	AS 2724.3
	Particulate Matter	None
	*Cadmium	NIOSH 7303
	Total suspended particulate in ambient air	ISC Method 501
	Nitrogen dioxide in ambient air	ISC Method 406
	Sulfur dioxide in ambient air	ISC Method 704C & APHA
	Sulfur dioxide in ambient air	4500-SO4 E
	Total Suspend Particulates	AS/NZS 3580 9.3: 2015
	PM10	AS/NZS 3580 9.6: 2015
	PM2.5	AS/NZS 3580 9.14: 2013
	Total Suspend Particulates	AS/NZS 3580.9.3:2015
	PM10	AS/NZS 3580 9.6:2015
	PM2.5	AS/NZS 3580.9.14:2013
	Sulfur Dioxide, SO ₂	Method 704A of Air Sampling and Analysis, 3rd Edition
	Nitrogen Dioxide,	Method 406 of Air Sampling and Analysis, 3rd Edition (Bubbler Method)
	co	In House Method 6019 based on Passive Dosi-Tube
	Oxidizing Substances In the Atmosphere (as Ozone, Os)	Method 411 of Air Sampling and Analysis, 3rd Edition
Drinking Water	CO, H ₂ S	In House Method 6020 based on Instrumentation- Direct Reading Aeroqual 500
	None	None
	None	None
	Chloride	HACH 8113
	Total Plate Count	APHA 9215 B
	None	None
	None	None
	None	None
	None	None
	None	None
	Calcium	3120 B
	Cyanide	APHA? 4500 & F
	Formaldehyde	APHA? 6252 B
	Phenol	APHA? 5530 B & C
	Hardness	2340B
	Aluminium (Al)	None
	Biochemical Oxygen Demand	APHA 5210 B & 4500-O G,
	Zinc as Zn	APHA 3120 B, (2017)
	None	Multiple-Tube Fermentation
	None	Multiple-Tube Fermentation
	None	None
	None	None

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	Temperature	APHA 2550 B
	None	None
	None	None
	Epichlorohydrin	In-house JKM W 0413 by Purge 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)
	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
	pH	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-Cl 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	APHA C
	None	None
	Heterotrophic Plate Count	APHA 9215 D
	None	None
	None	None

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	None	None
	None	None
	None	None
	None	None
	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
	and Escherichia coli count	9222 H
	Coliform and Escherichia coli	Presence/absence Technique
	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
	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	APHA 2540. C
Drinking Water Marine Water	None	None
Fresh Water	None	None
Ground Effluent	None	None
Industrial Wastes Treated Effluent	(5 days @ 20 °C)	None
Industrial Wastewater	Oil & Grease	APHA 5520 D
Marine Water	None	None
	Fluoride	HACH 8029
	Semivolatile Organic	USEPA 3510C
	Staphylococcus aureus	APHA 9213 B-7

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	None	None
	None	None
	Biochemical Oxygen Demand (BOD)	APHA 5210 B & APHA 4500- 0 G
	None	APHA 2550 B
	Escherichia coli	None
	Organophosphorus Pesticides	In-House No. G11 based on EPA
	None	None
	Salinity	APHA 2520B
	Anthracene	None
	n-Tritriacontane	None
	None	None
	None	(Membrane Filtration Procedure)
	Cobalt (Co)	None
	Iodide	None
	None	APHA 3120 B, 2017
	Unionised Ammonia	In House Method 0590 adopted
	None	None
	Total Suspended Solids	APHA 2540 D
	Chromium (III)	based on APHA 3120 B, APHA 3125 B and APHA 3500-Cr B (Calculation)
	Copper (Cu)	In-house method SGS-TM-ENVI-003 based on APHA 3125 B
	Cyanide (CN)	APHA 4500-CN C & E, 24" Edition
	Unionized Ammonia (NH3)	In-house method SGS-TM-ENVI-W- 097 based on APHA 4500-NHs F
	Ammoniacal nitrogen (NH3-N).	APHA 4500-NHs F, Edition
	Nitrite (NO2)	APHA 4500-NOz B, 24" Edition
	Nitrate (NO3)	APHA E, 24' Edition
	Ortho-Phosphate (as POs or P)	APHA 4500-P E, Edition
	Total Phosphate (as POs or P)	APHA 4500-P B & E, Edition
	Phenol	APHA 5530 B & C, Edition
	Total Suspended Solids	APHA 2540 D, 24" Edition
	Dissolved Oxygen (In-Situ)	APHA 4500-0 G, Edition
	Temperature (In-Situ)	APHA 2550 B, 24" Edition
	pH	APHA 4500-H* B, Edition
	Colour	APHA 2120 F, 24" Edition
	Paraquat & Diquat	In-house method SGS-TM-ENVI-109 based on EPA 549.2
	Chlorinated Phenoxyacid Compounds - 2,4-D, 2,4,5-TP, 2,4,5-T & Dinoseb	In-house method SGS-TM-ENVI-004 based on EPA 8321 B
	Lead, Pb	None
	Uranium, U	None
	None	In-house method, SGS-TM-MICR-
	Turbidity	APHA 2130 B, 2005

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	Free, Combined and Total	In-House Method 0501 based on
	Free, Combined and Total	In House Method 0501 based on
	Salinity	APHA 2520. B
	Salinity	APHA 2520. B
Natural Water	None	None
Noise Level Measurement	Noise Level (Intensity and	In-house method, Ref No.
Polluted Water	None	None
River Water	None	None
	Colour ADMI	APHA 2120 F
	Fecal Coliform	APHA 9221 E
	Escherichia coli (Membrane Filter Technique)	APHA 9222 G, Edition, 2005
	Nickel (Ni)	None
	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
	Colour	APHA - 2120B
	Sulphide	APHA - 4500S-F
	Metals:	APHA - 3120B; Inductive Coupled
	Metals:	USEPA 200.8(ICPMS)
	Nickel as Ni	USEPA 200.8(ICPMS)
	Anions:	APHA - 4110 B; Ion
	Trihalomethanes:	APHA - 6200 B (GCMS)
	Phorate	None
	Beta-lindane	None
	Free Carbon Dioxide	APHA-4500CO2-C
	Acenaphthene	None
	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-and- Trap GC-MS)
	None	018 based on APHA 9222 B (Membrane Filtration)

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	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
	None	None
Treated Effluent	None	APHA 5220 D
	None	None
Ultrapure Water	None	None
	None	None
	Hardness	APHA 2340 B
	None	None
	None	None
	Color PtCo	APHA 2120 C
	None	(MPN Technique)
Wastewater	Biochemical Oxygen Demand	APHA 5210 B
	Chemical Oxygen Demand	APHA 5220 C
	Ammoniacal Nitrogen	APHA 4500-NH ₃ N (B&F)
	Temperature	APHA 2550 B
	Turbidity	APHA 2130 B
	Dissolved Oxygen	APHA 4500 O-G
	Temperature	APHA 2550B-2017 / Liquid in Glass Thermometer
	pH	APHA 4500H+B-2017 / pH Meter
	Conductivity	APHA 2510B-2017 / Conductivity Meter
	Iron, Fe	None
	None	None
	None	house test method MKA TM04 by Ion
	None	Chromatography
	Total Phosphorus	HACH Method 8190, 10" Edition, 2017
	pH	APHA 4500 H*B
	BODs	APHA 5210 B
	pH	APHA 4500 H*B Electrometric
	(Continued)	None
	Cadmium (Cd)	None
	Aluminium (Al)	APHA 3111 D. Direct Nitrous-Oxide
	Temperature (On Site)	APHA 2550 B
	None	based on APHA 2510 B, Edition
	Boron	APHA 3125 B, 21st Edition 2005
	pH	None
	Hexavalent Chromium	APHA 3500-Cr B
	Fixed and Volatile Solids	APHA 2540 G
	Digestion	None
	- on Metals	APHA 3030 E

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	None	None
	None	None
	None	None
	None	None
	Ammonia	ASTM D1293
	None	None
	None	None
	None	None
	and Escherichia coli	None
	None	filtration)
	Clostridium perfringens	ISO 14189: 2013 (E)
	None	None
	None	None
	None	None
	None	(2005)
	None	21% Edition (2005)
	Colour	APHA 2120 C 2005
	Determination of Volatile	Method EPA 524.2 By Purge & Trap
	Oxygen Demand (COD) for High	APHA Method 5220D
	None	In-house Method JKM W 0502,
	None	on APHA 4110 B-"lon
	Colony Count at 36°C	JKM M 2038, ISO 6222:1999 (E)
	Intestinal Enterococci	i) WI 16 -" Sample Preparation for
	Enumeration of Clostridium	JKM M 2035
	Detection of pathogenic	JKM B 0201 Detection of pathogenic
	Identification and Quantification	JKM B 0406
	pH	APHA - 4500-H B
	None	None
	None	None
	None	None
	None	None
	Boron	HACH METHOD 8015
	None	None
	E. coli	APHA 9221 F (MPN Method)
	None	None
	Total Organic Carbon	APHA 5310 C
	Heterotropic plate count	APHA 9215 B, 22"4 Edition (2012)
	None	(Membrane Filtration Technique)
	None	None
	Metals by ICP	None
	None	None
	None	None
	None	None
	None	None
	None	None
	None	None

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
	pH	ASTM D 1293-2005 (Method B) APHA 4500 H* B 2005/2017
	pH	ASTM D1293-2005 (Method B) APHA 4500 H* B 2005/2017
	None	None
	Turbidity	APHA 2130B
	On-site Sampling & Testing (pH Temperature, Turbidity)	In-house Method SOP-0222-2001 & SOP-0222-2003
	Coliform	APHA 9221 B, Edition, 2005
	Heterotrophic plate count in	APHA Method 9215 D, Edition,
	None	None
	None	None
	pH Value	BS 1377-3 : 2018 Clause 12
	pH Value	BS 1377-3 : 2018 Clause 12
	None	None
	Calcium Hardness as CaCO ₃ ,	APHA 3500-Ca B, 2017
	Magnesium (by Calculation Method)	APHA 3500-Mg B, 2017
	Nitrate	APHA E, 2017
	None	None
	None	None
	None	None
	None	None
	None	None
	None	None
	None	None
	None	None
	None	None
	None	None
	None	None
	Aluminium	None
	None	None
	Organochlorine Pesticide	APHA 6630 B, Edition
	Ammoniacal Nitrogen	APHA F, 24" Edition
	Arsenic	APHA 3125 B, Edition
	Mercury	In-house method, SGS-TM-ENVI-003, based on APHA 3125 B
	2,4-dichlorophenoxyacetic acid (2,4-D)	In-house method, SGS-TM-02-045, based on Agilent Application Note 5991-5731 EN (LCMSMS)
	Heavy Metals by ICP-MS	None
	Endotoxin	Test for Bacterial Endotoxin, BP 2022
	pH	APHA 4500 H*B
	Oil & Grease	APHA 5520 B
	Color	APHA 2120 B
	Color	APHA 2120 F

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	pH	APHA 4500 H* B
	Turbidity	APHA 2130 B
	Conductivity	APHA 2510 B
	None	None
	None	None
	None	None
	Escherichia coli and coliform	ISO 9308-1: 2014 (E) / Enumeration
	Pseudomonas aeruginosa	ISO 16266:2006 (E) / Detection and
	Ammonium nitrogen	BS 6068: Section 2.7:1984 ISO 5664:1984
	Chemical Oxygen Demand	BS 6068: Section 2.34:1988
	Suspended solids	BS 2690-Part 120:1981
	Dissolved solids	BS 2690-Part 121:1981
	None	ASTM D 523-82
	COD	APHA 5220 D
	None	None
	Free Chlorine	APHA' 4500 -" CI G
	Count	(Pour Plate, Spread Plate and
	Anaerobes (Clostridia)	BS 6068-4:9: 1993
	Gross Alpha & Gross Beta	None
	Arsenic as As	None
	Antimony as Sb	None
	Aluminium as Al	None
	Beryllium as Be	None
	Cadmium as Cd	None
	Chromium as Cr	None
	Lead as Pb	None
	Silver as Ag	None
	Selenium as Se	None
	Thallium as TI	None
	Mercury as Hg	In-house Method LWI-MWE 037 based on APHA 3112 B by
	Mercury as Hg	Mercury Analyser
	Nitrate	In-house Method LWI-MWE 032 based on HACH Nitrate
	Nitrate	Test Comparator
	Sulfide	HACH Method 8131
	Chlorine, Free Residual	In-house Method LWI-MWE
	Chlorine, Free Residual	034 based on DPD-Palintest
	Chlorine, Free Residual	Test Comparator
	Total Chlorine	In-house Method LWI-MWE
	Total Chlorine	035 based on DPD-Palintest
	Total Chlorine	Test Comparator
	Colour (ADMI)	APHA 2120 F
	Heterotrophic Plate Count	None

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	Pseudomonas aeruginosa	In-house Method LWI-MME (APHA) 007
	Pseudomonas aeruginosa	based on APHA 9213 E, 2020
	Escherichia coli and Coliform	Escherichia coli and Coliform Bacteria. Part 1: Membrane filtration
	Escherichia coli and Coliform	method
	Escherichia coli and Coliform	Method No: MOH (1)
	Escherichia coli and Coliform	ISO 29981 : 2010 (E), IDF 220 :
	Escherichia coli and Coliform	2010 (E) Milk Products -
	None	None
	None	None
	None	None
	None	None
Water Wastewater	Total Suspended Solid	APHA 2540 D

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