SINGAPORE LABORATORY ACCREDITATION SCHEME

Accredited Laboratory SAC-SINGLAS

Schedule

Analytical Laboratories (S) Pte Ltd
8 Kaki Bukit Place
Singapore 416186

Certificate No. : LA-1999-0167-F

Issue No. : 29

Date : 08 October 2024

Expiry of Certificate : 06 October 2027

FIELD OF TESTING : Environmental Testing

MATERIALS / PRODUCTS TESTED	TESTS / PROPERTIES	METHODS
		APHA/SM Methods are based on the 24th Edition : 2023
A. WATERS		
I.a Water for Drinking and Industrial Purposes	1) Acidity	APHA/SM 2310B
	2) Albuminoid ammonia	Lovibond
I.b Deionized Water	3) Alkalinity	APHA/SM 2320B
I.c Reverse Osmosis Water	4) Aluminium	APHA/SM 3120B, ICP
I.d Purified Water	5) Ammonia	APHA/SM 4500-NH_3 B/C/D / 4500-NH_3 F, UV-VIS. IC
	6) Anionic detergents	APHA/SM 5540C, UV-VIS
	7) Antimony	APHA/SM 3120B, ICP
	8) Arsenic	APHA/SM 3120B, ICP
	9) Barium	APHA/SM 3120B, ICP
	10) Beryllium	APHA/SM 3120B, ICP
	11) Bicarbonate	APHA/SM 2320B
	12) Boron	APHA/SM 3500-B / 4500-B B/C, UV-VIS / 3120B, ICP
	13) Bromide	APHA/SM 4500-Br^- B, UV-VIS / 4110C, IC
	14) Cadmium	APHA/SM 3120B, ICP
	15) Calcium	APHA/SM 3500-Ca B / 3120B, ICP. IC
	16) Carbon dioxide	APHA/SM 4500-CO_2 B/C/D
	17) Carbonate	APHA/SM 2320B
	18) Chloramines	Lovibond
	19) Chloride	APHA/SM 4500-Cl^- B/C / 4110C, IC
	20) Chlorine, residual and free	Lovibond Method
	21) Chromium(Hexavalent)	APHA/SM 3500-Cr B, UV-VIS
	22) Chromium	APHA/SM 3500-Cr B, UV-VIS / 3120B, ICP
	23) Cobalt	APHA/SM 3120B, ICP
	24) Collection of samples/ Preservation and storage of samples	APHA/SM 1060B/C, APHA/SM 9060A/B

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MATERIALS / PRODUCTS TESTED	TESTS / PROPERTIES	METHODS
	25) Colour	APHA/SM 2120B
	26) Conductivity	APHA/SM 2510B
	27) Copper	APHA/SM 3120B, ICP
	28) Cyanide	APHA/SM 4500-CN^- B/C/D/E/F
	29) Fixed and volatile solids	APHA/SM 2540E
	30) Fluoride	APHA/SM 4500-F^- B/C/D / 4110C, IC
	31) Hardness (calcium & total)	APHA/SM 2340B/C
	32) Hydrogen sulphide	APHA/SM 4500-S^{2-} C/D/F/G
	33) Hydroxyl ion	APHA/SM 2320B
	34) Iodine	APHA/SM 4500-I B, UV-VIS
	35) Iron	APHA/SM 3120B, ICP
	36) Kjeldahl nitrogen	APHA/SM 4500-Norg B
	37) Lead	APHA/SM 3120B, ICP
	38) Lithium	APHA/SM 3120B, ICP
	39) Magnesium	APHA/SM 3500-Mg B / 3120B, ICP. IC
	40) Manganese	APHA/SM 3120B, ICP
	41) Molybdenum	APHA/SM 3120B, ICP
	42) Nickel	APHA/SM 3120B, ICP
	43) Nitrate	APHA/SM 4500-NO_3^- B/D/E / 4110C, IC
	44) Nitrite	APHA/SM 4500-NO_2^- B, UV-VIS / 4110C, IC
	45) Odour	In-house Method WE 001 (09)
	46) pH	APHA/SM 4500-H^+ B
	47) Phenols	APHA/SM 5530B/C/D, UV-VIS
	48) Phosphate	APHA/SM 4500-P B/C/D/E, UV-VIS / 4110C, IC
	49) Potassium	APHA/SM 3120B, ICP. IC
	50) Selenium	APHA/SM 3120B, ICP
	51) Silica (total)	APHA/SM 4500-SiO_2 C/D, UV-VIS. Gravimetric
	52) Silica	APHA/SM 3120B, ICP
	53) Silt density index	ASTM D4189-07
	54) Silver	APHA/SM 3120B, ICP
	55) Sodium	APHA/SM 3120B, ICP. IC
	56) Strontium	APHA/SM 3120B, ICP
	57) Sulphate	APHA/SM 4500-SO_4^{2-} C/D/E / 4110C, IC
	58) Taste	In-house Method, AL-SOP-WE002, rev.00
	59) Temperature	APHA/SM 2550B
	60) Thallium	APHA/SM 3120B, ICP
	61) Total dissolved solids	APHA/SM 2540C
	62) Total organic carbon	APHA/SM 5310B
	63) Total solids	APHA/SM 2540B
	64) Total suspended solids	APHA/SM 2540D
	65) Turbidity	APHA/SM 2130B
	66) Vanadium	APHA/SM 3120B, ICP
	67) Zinc	APHA/SM 3120B, ICP

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MATERIALS / PRODUCTS TESTED	TESTS / PROPERTIES	METHODS
	68) Faecal coliform count	APHA/SM 9222D / 9221E
	69) Standard plate count	APHA/SM 9215C/D
	70) Total coliform count	APHA/SM 9221B / 9222B
	71) *Escherichia coli*	APHA/SM 9221F (44.5^{0}C/24 hrs, CFU/100 ml)
	72) Aluminium	) USEPA 6010C-2007, ICP
	73) Antimony	)
	74) Arsenic	)
	75) Barium	)
	76) Beryllium	)
	77) Boron	)
	78) Cadmium	)
	79) Calcium	)
	80) Chromium	)
	81) Cobalt	)
	82) Copper	)
	83) Iron	)
	84) Lead	)
	85) Lithium	)
	86) Magnesium	)
	87) Manganese	)
	88) Mercury	)
	89) Molybdenum	)
	90) Nickel	)
	91) Phosphorus	)
	92) Potassium	)
	93) Selenium	)
	94) Silica	)
	95) Silver	)
	96) Sodium	)
	97) Strontium	)
	98) Thallium	)
	99) Tin	)
	100) Titanium	)
	101) Vanadium	)
	102) Zinc	)
	103) Bromide	) USEPA 300.1-1997, IC
	104) Chloride	)
	105) Fluoride	)
	106) Nitrate	)
	107) Nitrite	)
	108) Phosphate	)
	109) Sulphate	)
	110) Chloroform	) USEPA 8260C-2006, GC-MS
	111) Bromoform	)

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MATERIALS / PRODUCTS TESTED	TESTS / PROPERTIES	METHODS
	112) Dibromochloromethane	)
	113) Bromodichloromethane	)
	114) Bromochloroacetic acid (BCAA)	) USEPA 552.3-2003, GC-ECD
	115) Bromodichloroacetic acid (BDCAA)	)
	116) Chlorodibromoacetic acid (CDBAA)	)
	117) Dibromoacetic acid (DBAA)	)
	118) Dichloroacetic acid (DCAA)	)
	119) Monobromoacetic acid (MBAA)	)
	120) Monochloroacetic acid (MCAA)	)
	121) Tribromoacetic acid (TBAA)	)
	122) Trichloroacetic acid (TCAA)	)
	123) Dalapon	)
	124) Toluene	) USEPA 8260D-2018, GC-MS
	125) Ethylbenzene	)
	126) Xylene (o, m, p)	)
	127) Benzene	)
II. Trade Effluent	1) Acidity	APHA/SM 2310B
	2) Alkalinity	APHA/SM 2320B
	3) Aluminium	APHA/SM 3120B, ICP
	4) Ammonia	APHA/SM 4500-NH_3 B/C/D / 4500-NH_3 F, UV-VIS. IC
	5) Ammonia (nitrogen)	APHA/SM 4500-N C/E/F
	6) Antimony	APHA/SM 3120B, ICP
	7) Arsenic	APHA/SM 3120B, ICP
	8) Barium	APHA/SM 3120B, ICP
	9) Beryllium	APHA/SM 3120B, ICP
	10) Biochemical oxygen demand	APHA/SM 5210B
	11) Boron	APHA/SM 4500-B B/C, UV-VIS / 3120B, ICP
	12) Cadmium	APHA/SM 3120B, ICP
	13) Calcium	APHA/SM 3500-Ca B / 3120B, ICP. IC
	14) Chemical oxygen demand	APHA/SM 5220B / 5220C
	15) Chloride	APHA/SM 4500-Cl^- B/C / 4110C, IC
	16) Chlorine, residual and free	Lovibond Method
	17) Chromium (Trivalent & Hexavalent)	APHA/SM 3500-Cr B, UV-VIS / 3120B, ICP
	18) Cobalt	APHA/SM 3120B, ICP

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MATERIALS / PRODUCTS TESTED	TESTS / PROPERTIES	METHODS
	19) Collection of samples/ Preservation and storage of samples	APHA/SM 1060B/C, APHA/SM 9060A/B
	20) Colour	Lovibond
	21) Copper	APHA/SM 3120B, ICP
	22) Cyanide	APHA/SM 4500-CN^- B/C/D/E/F
	23) Detergents	APHA/SM 5540C, UV-VIS
	24) Fixed and volatile solids	APHA/SM 2540E
	25) Fluoride	APHA/SM 4500-F^- B/C/D / 4110C, IC
	26) Iron	APHA/SM 3120B, ICP
	27) Kjeldahl nitrogen	APHA/SM 4500-Norg B
	28) Lead	APHA/SM 3120B, ICP
	29) Lithium	APHA/SM 3120B, ICP
	30) Magnesium	APHA/SM 3500-Mg B / 3120B, ICP. IC
	31) Manganese	APHA/SM 3120B, ICP
	32) Molybdenum	APHA/SM 3120B, ICP
	33) Nickel	APHA/SM 3120B, ICP
	34) Nitrate	APHA/SM 4500-NO_3^- B/D/E / 4110C, IC
	35) Nitrite	APHA/SM 4500-NO_2^- B, UV-VIS / 4110C, IC
	36) Oil and grease	APHA/SM 5520B/D/F
	37) pH	APHA/SM 4500-H^+ B
	38) Phenols	APHA/SM 5530B/C/D, UV-VIS
	39) Phosphate	APHA/SM 4500-P B/C/D/E, UV-VIS / 4110C, IC
	40) Potassium	APHA/SM 3120B, ICP. IC
	41) Selenium	APHA/SM 3120B, ICP
	42) Silica	APHA/SM 4500-SiO_2 C/D, UV-VIS / 3120B, ICP. Gravimetric
	43) Silver	APHA/SM 3120B, ICP
	44) Sodium	APHA/SM 3120B, ICP. IC
	45) Strontium	APHA/SM 3120B, ICP
	46) Sulphate	APHA/SM 4500-SO_4^{2-} C/D/E / 4110C, IC
	47) Sulphide	APHA/SM 4500-S^{2-} C/D/F/G
	48) Sulphite	APHA/SM 4500-SO_3^{2-} B
	49) Temperature	APHA/SM 2550B
	50) Thallium	APHA/SM 3120B, ICP
	51) Total dissolved solids	APHA/SM 2540C
	52) Total organic carbon	APHA/SM 5310B
	53) Total solids	APHA/SM 2540B
	54) Total suspended solids	APHA/SM 2540D
	55) Vanadium	APHA/SM 3120B, ICP
	56) Zinc	APHA/SM 3120B, ICP
	57) Standard plate count	APHA/SM 9215C
	58) Total coliform count	APHA/SM 9222B
	59) Faecal coliform count	APHA/SM 9222D / 9221E

MATERIALS / PRODUCTS TESTED	TESTS / PROPERTIES	METHODS
	60) Methylene chloride 61) Trichloroethylene 62) 1,1,1 – Trichloroethane 63) Perchloroethylene 64) Tetra-chloromethane 65) 1,1,2 – Trichloroethane 66) Toluene 67) Styrene 68) Methyl tert-butyl-ether 69) Acetone 70) Nonane 71) Decane 72) Tetrachloroethylene 73) Ethylbenzene 74) Xylene (o, m, p) 75) Ethanol 76) Hexane 77) Heptane 78) Octane 79) 1, 2, 4 – Trimethylbenzene 80) IPA (iso propyl alcohol) 81) Furan 82) THF (Tetrahydrofuran) 83) DMF (N, N Dimethylformamide) 84) Benzene 85) Turpentine 86) Isobutanol 87) Methyl ethyl ketone 88) Methyl isobutyl ketone 89) Isopropyl ether 90) Diethyl ether 91) Dimethyl sulphide 92) Dimethyl sulphoxide	) USEPA 8260D-2018, GC-MS) USEPA 5021A-2003, GC or GC-MS)
	93) Polybrominated diphenyl ether	USEPA 3510C-1996 (extraction), In-house Method AC/SVOCS/0001 Ver 1.0/07 (extraction and GC-MS)

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MATERIALS / PRODUCTS TESTED	TESTS / PROPERTIES	METHODS
III. Water for Boilers & Cooling Towers	1) Alkalinity	APHA/SM 2320B
	2) Ammonia	APHA/SM 4500-NH_3 B/C/D / 4500-NH_3 F, UV- VIS. IC
	3) Carbon dioxide	APHA/SM 4500-CO_2 B/C/D
	4) Chloride	APHA/SM 4500-Cl^- B/C
	5) Chromium (Hexavalent)	APHA/SM 3500-Cr B, UV-VIS / 3120B, ICP
	6) Collection of samples/ Preservation and storage of samples	APHA/SM 1060B/C, APHA/SM 9060A/B
	7) Conductivity	APHA/SM 2510B
	8) Copper	APHA/SM 3120B, ICP
	9) Hardness (calcium & total)	APHA/SM 2340B/C
	10) Hydrazine	ASTM D1385-07 (2013)e1, UV-VIS
	11) Iron	APHA/SM 3120B, ICP
	12) Nitrite	APHA/SM 4500-NO_2^- B, UV-VIS / 4110C, IC
	13) pH	APHA/SM 4500-H^+ B
	14) Phosphate	APHA/SM 4500-P C/D/E, UV-VIS
	15) Silica	APHA/SM 4500-SiO_2 C/D, UV-VIS / 3120B, ICP. Gravimetric
	16) Sodium	APHA/SM 3120B, ICP
	17) Sulphate	APHA/SM 4500-SO_4^{2-} C/E / 4110C, IC
	18) Sulphite	APHA/SM 4500-SO_3^{2-} B
	19) Total dissolved solids	APHA/SM 2540C
	20) Total solids	APHA/SM 2540B
	21) Standard plate count	APHA/SM 9215C
IV. Water for General and Industrial Purposes (including Sea Water)	1) Ammonia	APHA/SM 4500-NH_3 F, UV-VIS
	2) Carbon dioxide	APHA/SM 4500-CO_2 B/C/D
	3) Chloride	APHA/SM 4500-Cl^- B/C / 4110C, IC
	4) Chemical oxygen demand	Manual on Chemical Analysis of Coastal Water and Sediment, PPD, 1984
	5) Collection of samples/ Preservation and storage of samples	APHA/SM 1060B/C, APHA/SM 9060A/B
	6) Dissolved oxygen	APHA/SM 4500-O C/G
	7) Salinity	APHA/SM 2520B
	8) Silica	APHA/SM 3120B, ICP
	9) Chloroform	) USEPA 8260C-2006, GC-MS
	10) Bromoform	)
	11) Dibromochloromethane	)
	12) Bromodichloromethane	)

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MATERIALS / PRODUCTS TESTED	TESTS / PROPERTIES	METHODS
V. Elements	1) Aluminium	APHA/SM 3125B, ICP-MS / 3120B, ICP
	2) Antimony	APHA/SM 3125B, ICP-MS / 3120B, ICP
	3) Arsenic	APHA/SM 3125B, ICP-MS / 3120B, ICP
	4) Barium	APHA/SM 3125B, ICP-MS / 3120B, ICP
	5) Beryllium	APHA/SM 3125B, ICP-MS / 3120B, ICP
	6) Bismuth	APHA/SM 3125B, ICP-MS
	7) Boron	APHA/SM 3125B, ICP-MS / 3120B, ICP
	8) Cadmium	APHA/SM 3125B, ICP-MS / 3120B, ICP
	9) Calcium	APHA/SM 3125B, ICP-MS / 3120B, ICP
	10) Cerium	APHA/SM 3125B, ICP-MS
	11) Chromium	APHA/SM 3125B, ICP-MS / 3120B, ICP
	12) Cobalt	APHA/SM 3125B, ICP-MS / 3120B, ICP
	13) Copper	APHA/SM 3125B, ICP-MS / 3120B, ICP
	14) Gallium	APHA/SM 3125B, ICP-MS
	15) Germanium	APHA/SM 3125B, ICP-MS
	16) Gold	APHA/SM 3125B, ICP-MS
	17) Holmium	APHA/SM 3125B, ICP-MS
	18) Indium	APHA/SM 3125B, ICP-MS
	19) Iron	APHA/SM 3125B, ICP-MS / 3120B, ICP
	20) Lead	APHA/SM 3125B, ICP-MS / 3120B, ICP
	21) Lithium	APHA/SM 3125B, ICP-MS / 3120B, ICP
	22) Magnesium	APHA/SM 3125B, ICP-MS / 3120B, ICP
	23) Manganese	APHA/SM 3125B, ICP-MS / 3120B, ICP
	24) Mercury	APHA/SM 3125B, ICP-MS
	25) Molybdenum	APHA/SM 3125B, ICP-MS / 3120B, ICP
	26) Nickel	APHA/SM 3125B, ICP-MS / 3120B, ICP
	27) Niobium	APHA/SM 3125B, ICP-MS
	28) Palladium	APHA/SM 3125B, ICP-MS
	29) Phosphorus	APHA/SM 3125B, ICP-MS
	30) Platinum	APHA/SM 3125B, ICP-MS
	31) Potassium	APHA/SM 3125B, ICP-MS / 3120B, ICP
	32) Selenium	APHA/SM 3125B, ICP-MS / 3120B, ICP
	33) Silicon	APHA/SM 3125B, ICP-MS / 3120B, ICP
	34) Silver	APHA/SM 3125B, ICP-MS / 3120B, ICP
	35) Sodium	APHA/SM 3125B, ICP-MS / 3120B, ICP
	36) Strontium	APHA/SM 3125B, ICP-MS / 3120B, ICP
	37) Terbium	APHA/SM 3125B, ICP-MS
	38) Thallium	APHA/SM 3125B, ICP-MS / 3120B, ICP
	39) Thorium	APHA/SM 3125B, ICP-MS
	40) Tin	APHA/SM 3125B, ICP-MS
	41) Titanium	APHA/SM 3125B, ICP-MS
	42) Uranium	APHA/SM 3125B, ICP-MS
	43) Vanadium	APHA/SM 3125B, ICP-MS / 3120B, ICP
	44) Zinc	APHA/SM 3125B, ICP-MS / 3120B, ICP

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MATERIALS / PRODUCTS TESTED	TESTS / PROPERTIES	METHODS
VI. Swimming Pool Water	1) Appearance	APHA/SM 2110
	2) Odour	In-house Method WE 001 (09)
	3) Chlorine, residual and free	Lovibond Method
	4) Collection of samples/ Preservation and storage of samples	APHA/SM 1060B/C, APHA/SM 9060A/B
	5) Colour	APHA/SM 2120B
	6) Copper	APHA/SM 3120B, ICP
	7) pH	APHA/SM 4500-H^+ B
	8) Turbidity	APHA/SM 2130B
	9) Faecal coliform count	APHA/SM 9222D / 9221E
	10) Standard plate count	APHA/SM 9215C/D
	11) Total coliform count	APHA/SM 9221B / 9222B
	12) *Escherichia coli*	APHA/SM 9221F
VII Ballast Water	1) Chloroform	) USEPA 8260C-2006, GC-MS
	2) Bromoform	)
	3) Dibromochloromethane	)
	4) Bromodichloromethane	)
	5) Bromochloroacetic acid (BCAA)	) USEPA 552.2-1997, GC-ECD
	6) Bromodichloroacetic acid (BDCAA)	) USEPA 552.3-2003, GC-ECD
	7) Chlorodibromoacetic acid (CDBAA)	)
	8) Dibromoacetic acid (DBAA)	)
	9) Dichloroacetic acid (DCAA)	)
	10) Monobromoacetic acid (MBAA)	)
	11) Monochloroacetic acid (MCAA)	)
	12) Tribromoacetic acid (TBAA)	)
	13) Trichloroacetic acid (TCAA)	)
	14) Dalapon	)
	15) Chlorite	) USEPA 300.1-1997, IC
	16) Chlorate	)
	17) Total residual oxidizers (TRO) as Cl_2	APHA/SM 4500-Cl G)
	18) Heterotrophic plate count	APHA/SM 9215 C/D
	19) Enterococci	APHA/SM 9230 C
	20) *Escherichia coli*	APHA/SM 9223 B
	21) Arsenic	) USEPA 6010D-2018, ICP
	22) Cadmium	)
	23) Chromium	)

MATERIALS / PRODUCTS TESTED	TESTS / PROPERTIES	METHODS
	24) Copper 25) Lead 26) Nickel 27) Vanadium 28) Zinc	)))
B. **TOXICITY TESTS OF DREDGED SOIL/ SLUDGE FOR DISPOSAL**		
I. Determination of Elements	1) Arsenic 2) Barium 3) Cobalt 4) Copper 5) Cadmium 6) Chromium 7) Lead 8) Mercury 9) Molybdenum 10) Nickel 11) Zinc 12) Selenium	) USEPA 3050B-1996 (acid digestion)) USEPA 3051A-2007 (microwave assisted acid digestion)) USEPA 6010C-2007, ICP) USEPA 6020A-2007, ICP-MS) USEPA's office of solid waste SW-846)))))))
II. Water, Soil and Sludge	1) Cyanide-free / Cyanide complex / Thiocyanates (total) 2) Volatile organic compounds (VOCs)	) USEPA 9010C-2004 (distillation) and } USEPA 9213-1996, ISE USEPA 8260C-2006, GC-MS (Refer to Appendix I for listing of specific VOCs)

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MATERIALS / PRODUCTS TESTED	TESTS / PROPERTIES	METHODS
C. **LEACHATE TESTS OF INDUSTRIAL WASTE FOR LAND FILLED DISPOSAL**	1) Arsenic 2) Barium 3) Cadmium 4) Chromium 5) Copper 6) Cyanide (total) 7) Fluoride 8) Iron 9) Lead 10) Manganese 11) Mercury 12) Nickel 13) Phenolic compounds (as phenol) 14) Selenium 15) Silver 16) Zinc	) USEPA 1310B-2004 (extraction)) USEPA 1311-1992 (extraction) excluding the ZHE-Zero headspace) extraction)) USEPA 6010C-2007, ICP) (except for cyanide [total], fluoride) and phenolic compounds [as phenol])) USEPA's office of solid waste SW-846)) USEPA 9010C-2004 (distillation) and } USEPA 9213-1996, ISE) USEPA 9214-1996, ISE)))))) USEPA 420.1-1978, UV-VIS))))
D. **INDUSTRIAL HYGIENE (AIR POLLUTANTS IN WORKPLACE)**	1) Acetone 2) Ammonia 3) Arsenic & compounds as As 4) Butyl acetate 5) Benzene, Toluene, Ethyl benzene & Xylene (BTEX) 6) Cadmium 7) Chromium & compounds as Cr 8) Chromium (Hexavalent) 9) Copper (dust & fume) 10) Formaldehyde 11) Hydrogen bromide 12) Hydrogen chloride 13) Hydrogen cyanide 14) Hydrogen fluoride	NIOSH 1300-1994, GC NIOSH 6016-2016, IC NIOSH 7300-2003, ICP NIOSH 1450-2003, GC NIOSH 1501-2003, GC NIOSH 7300-2003, ICP NIOSH 7300-2003, ICP NIOSH 7600-2015, UV-VIS NIOSH 7300-2003, ICP NIOSH 3500-1994, UV-VIS In-house Method AL-SOP-I013, rev.00, IC In-house Method AL-SOP-I013, rev.00, IC NIOSH 7904-1994, ISE In-house Method AL-SOP-I013, rev.00, IC

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MATERIALS / PRODUCTS TESTED	TESTS / PROPERTIES	METHODS
	15) Isopropyl alcohol	NIOSH 1400-1994, GC
	16) Lead	NIOSH 7300-2003, ICP
	17) Methylene chloride	NIOSH 1005-1998, GC
	18) Methyl ethyl ketone	NIOSH 2500-1996, GC
	19) Nickel	NIOSH 7300-2003, ICP
	20) Nitric acid	In-house Method AL-SOP-I013, rev.00, IC
	21) Nuisance dust, Particulate	NIOSH 0500-1994, Gravimetric
	22) Phosphoric acid	In-house Method AL-SOP-I013, rev.00, IC
	23) Respirable dust	NIOSH 0600-1998, Gravimetric
	24) Selenium	NIOSH 7300-2003, ICP
	25) Styrene	NIOSH 1501-2003, GC
	26) Sulphuric acid	In-house Method AL-SOP-I013, rev.00, IC
	27) Trichloroethylene	NIOSH 1022-1994, GC
	28) Zinc & compound	NIOSH 7300-2003, ICP
	29) Aluminium	) NIOSH 7300-2003, ICP
	30) Antimony	)
	31) Barium	)
	32) Beryllium	)
	33) Calcium	)
	34) Cobalt	)
	35) Iron	)
	36) Lithium	)
	37) Magnesium	)
	38) Manganese	)
	39) Molybdenum	)
	40) Potassium	)
	41) Phosphorus	)
	42) Silver	)
	43) Strontium	)
	44) Tin	)
	45) Thallium	)
	46) Titanium	)
	47) Vanadium	)
	48) Tetrachloroethylene (also known as Perchloroethylene)	NIOSH 1003-2003, GC
	49) MIBK (Methyl isobutyl ketone)	NIOSH 1300-1994, GC
	50) Asbestos and other fibers (Airborne asbestos)	NIOSH 7400-2019, phase contrast microscope
	51) Bulk asbestos	NIOSH 9002-1994, polarized light microscope
	52) Mercury	NIOSH 6009 (sorbent tube) / OSHA ID-140 (sorbent tube/badge)

Schedule

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MATERIALS / PRODUCTS TESTED	TESTS / PROPERTIES	METHODS
E. **SOURCE EMISSION**		<u>USEPA Title 40 CFR Part 60, 2021</u>
	1) Stack sampling and velocity traverses	USEPA Method 1
	2) Stack gas velocity and volumetric flow rate	USEPA Method 2
	3) Stack gas composition, oxygen, carbon monoxide, carbon dioxide. Dry gas molecular weight	USEPA Method 3
	4) Stack gas moisture content	USEPA Method 4
	5) Particulate matter emissions	USEPA Method 5
	6) Particular matter emissions from stationary source (In-stack filtration method)	USEPA Method 17
	7) Sulfur dioxide (SO_2)	USEPA Method 6C
	8) Nitrogen oxides (NOx)	USEPA Method 7E
	9) Carbon monoxide (CO)	USEPA Method 10
	10) Sulfuric acid and sulfur dioxide emissions from stationary sources	USEPA Method 8
	11) Hydrogen sulfide content of fuel gas streams in petroleum refineries	USEPA Method 11
	12) Sampling for determination of polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans from stationary sources.	USEPA Method 23
	13) Hydrogen halide and halogen emissions from stationary sources non-isokinetic method	USEPA Method 26
	14) Hydrogen halide and halogen emissions from stationary sources isokinetic method	USEPA Method 26A
	15) Metals emissions from stationary sources	USEPA Method 29

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MATERIALS / PRODUCTS TESTED	TESTS / PROPERTIES	METHODS
F. **INDOOR AIR QUALITY**	1) Carbon dioxide (CO_2)	AL-SOP-I006a, rev.02
	2) Carbon monoxide (CO)	AL-SOP-I006a, rev.02
	3) Operative temperature (To)	AL-SOP-I006b, rev.03
	4) Relative humidity (RH)	AL-SOP-I006b, rev.03
	5) Air movement (V)	AL-SOP-I006c, rev.03
	6) Total viable bacterial count (TVBC)	AL-SOP-I006d, rev.03
	7) Total viable mould count (TVMC)	AL-SOP-I006d, rev.02
	8) Formaldehyde (HCHO)	AL-SOP-I006e, rev.02 / I006f, rev.01, UV-VIS
	9) Total volatile organic compounds (TVOCs)	AL-SOP-I006g, rev.02
	10) Respirable suspended particles (RSP)	AL-SOP-I006h, rev.04
	11) Ozone (O_3)	AL-SOP-I006i, rev.03
	12) Air temperature (Ta)	AL-SOP-I006b, rev.03
	13) PM2.5	AL-SOP-I006h, rev.04
	14) PM10	AL-SOP-I006h, rev.04

Approved Signatories

1)	Mr Chua Boon Chun	- For all accredited tests except section D tests 11, 12, 14, 20, 22, 26, 50, 51, section E and section F.
2)	Mr Phang Ken Aun	- For all accredited tests except section D, section E and section F.
3)	Mr Jonathan Goh	- For all accredited tests except section D and section E.
4)	Mr Charles Chin	- For all accredited tests except water microbiological tests, section D (except section D tests 50, 51) and section F.
5)	Mr Liew Kok Yen	- For all accredited tests in section D (except section D tests 50, 51), section E and section F.
6)	Ms Than Than Win	- For accredited test section A Part I to VI.
7)	Mr Chiok Kian Soon	- For accredited test section A Part II tests 60 to 93 and Part VII tests 1 to 14.
8)	Mr Tan Yi Yang	For all accredited tests in Section D (except tests 50, 51), Section E and F

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.

Appendix I

Test Method : USEPA 8260C-2006

Listing of Specific Volatile Organic Compounds (VOCs)	Water MDL(µg/L)	Soil MDL(mg/kg)
1. Benzene	2	0.08
2. Bromobenzene	5	0.12
3. Bromochloromethane	10	0.08
4. Bromodichloromethane	6	0.10
5. Bromoform	49	0.44
6. n-Butyl benzene	0.4	0.02
7. sec-Butylbenzene	0.5	0.01
8. tert-Butyl benzene	1	0.04
9. Carbon tetrachloride	5	0.07
10. Chlorobenzene	6	0.18
11. Chloroethane	8	0.08
12. Chloroform	4	0.07
13. 2-Chlorotoluene	0.4	0.02
14. 4-Chlorotoluene	2	0.08
15. Chlorodibromomethane	12	0.20
16. 1.2-Dibromo-3-chloropropane	-	-
17. 1.2-Dibromoethane	17	0.33
18. Dibromomethane	17	0.15
19. 1.2-Dichlorobenzene	2	0.09
20. 1.3-Dichlorobenzene	1	0.04
21. 1.4-Dichlorobenzene	1	0.04
22. Dichlorodifluoromethane	1	0.04
23. 1.1-Dichloroethane	7	0.09
24. 1.2-Dichloroethane	11	0.14

Appendix I

Test Method : USEPA 8260C-2006

Listing of Specific Volatile Organic Compounds (VOCs)	Water MDL(µg/L)	Soil MDL(mg/kg)
25. 1,1-Dichloroethene	2	0.05
26. cis-1.2-Dichloroethene	7	0.10
27. trans-1.2-Dichloroethene	4	0.07
28. 1.2-Dichloropropane	6	0.11
29. 1.3-Dichloropropane	15	0.28
30. 2.2-Dichloropropane	4	0.08
31. 1.1-Dichloropropene	4	0.13
32. cis-1.3-Dichloropropene	11	0.17
33. trans-1.3-Dichloropropene	4	0.11
34. Ethylbenzene	2	0.05
35. Hexachloro-1, 3-butadiene	2	0.09
36. Isopropyl benzene	1	0.03
37. p-Isopropyltoluene	0.3	0.02
38. Methyl bromide	4	0.06
39. Methyl chloride	2	0.07
40. Methylene chloride	7	0.09
41. Naphthalene	5	0.14
42. n-Propylbenzene	0.4	0.02
43. Styrene	4	0.08
44. 1.1.1.2-Tetrachloroethane	11	0.22
45. 1.1.2.2-Tetrachloroethane	-	-
46. Tetrachloroethene	3	0.15
47. Toluene	2	0.05
48. 1.2.3-Trichlorobenzene	5	0.20

Appendix I

Test Method : USEPA 8260C-2006

Listing of Specific Volatile Organic Compounds (VOCs)	Water MDL(µg/L)	Soil MDL(mg/kg)
49. 1.2.4-Trichlorobenzene	3	0.08
50. 1.1.1-Trichloroethane	3	0.13
51. 1.1.2-Trichloroethane	12	0.18
52. Trichloroethene	4	0.08
53. Trichlorofluoromethane	5	0.10
54. 1.2.3-Trichloropropane	32	0.28
55. 1.2.4-Trimethylbenzene	1	0.02
56. 1.3.5-Trimethylbenzene	1	0.03
57. o-Xylene	2	0.07
58. m-Xylene	3	0.12
59. p-Xylene	3	0.12