

Schedule

Analytical Laboratories (S) Pte Ltd
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Certificate No. : LA-1999-0167-F
Issue No. : 25
Date : 11 February 2021
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FIELD OF TESTING : Environmental Testing

MATERIALS/ PRODUCTS TESTED	TESTS/PROPERTIES	METHODS
A. WATERS		<u>APHA/SM Methods are based on the 23rd Edition : 2017</u>
I.a Water for Drinking and Industrial Purposes	1) Acidity	APHA/SM 2310B
I.b Deionized Water	2) Albuminoid ammonia	Lovibond
I.c Reverse Osmosis Water	3) Alkalinity	APHA/SM 2320B
I.d Purified Water	4) Aluminium	APHA/SM 3120B, ICP
	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

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	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
	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

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MATERIALS/ PRODUCTS TESTED	TESTS/PROPERTIES	METHODS
	50) Selenium	APHA/SM 3120B, ICP
	51) Silica (total)	APHA/SM 4500-SiO ₂ C/D, UV-VIS. Gravimetric
	52) Silica	APHA/SM 4500-SiO ₂ F, FIA / 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
	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) <i>Escherichia coli</i>	APHA/SM 9221F (44.5°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)

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MATERIALS/ PRODUCTS TESTED	TESTS/PROPERTIES	METHODS
	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)
	112) Dibromochloromethane)
	113) Bromodichloromethane)

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MATERIALS/ PRODUCTS TESTED	TESTS/PROPERTIES	METHODS
II. Trade Effluent	<ol style="list-style-type: none">1) Acidity2) Alkalinity3) Aluminium4) Ammonia5) Ammonia (nitrogen)6) Antimony7) Arsenic8) Barium9) Beryllium10) Biochemical oxygen demand11) Boron12) Cadmium13) Calcium14) Chemical oxygen demand15) Chloride16) Chlorine, residual and free17) Chromium (Trivalent & Hexavalent)18) Cobalt19) Collection of samples/ Preservation and storage of samples20) Colour21) Copper22) Cyanide23) Detergents24) Fixed and volatile solids25) Fluoride26) Iron27) Kjeldahl nitrogen28) Lead	<p>APHA/SM 2310B APHA/SM 2320B APHA/SM 3120B, ICP APHA/SM 4500-NH₃ B/C/D / 4500-NH₃ F, UV-VIS. IC APHA/SM 4500-N C/E/F APHA/SM 3120B, ICP APHA/SM 3120B, ICP APHA/SM 3120B, ICP APHA/SM 3120B, ICP APHA/SM 3120B, ICP APHA/SM 5210B APHA/SM 4500-B B/C, UV-VIS / 3120B, ICP APHA/SM 3120B, ICP APHA/SM 3500-Ca B / 3120B, ICP. IC APHA/SM 5220B / 5220C APHA/SM 4500-Cl⁻ B/C / 4110C, IC Lovibond Method APHA/SM 3500-Cr B, UV-VIS / 3120B, ICP APHA/SM 3120B, ICP APHA/SM 1060B/C, APHA/SM 9060A/B Lovibond APHA/SM 3120B, ICP APHA/SM 4500-CN⁻ B/C/D/E/F APHA/SM 5540C, UV-VIS APHA/SM 2540E APHA/SM 4500-F⁻ B/C/D / 4110C, IC APHA/SM 3120B, ICP APHA/SM 4500-Norg B APHA/SM 3120B, ICP</p>

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MATERIALS/ PRODUCTS TESTED	TESTS/PROPERTIES	METHODS
	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

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MATERIALS/ PRODUCTS TESTED	TESTS/PROPERTIES	METHODS
	60) Methylene chloride) USEPA 8260C-2006, GC or GC-MS
	61) Trichloroethylene	) USEPA 5021A-2003, GC or GC-MS
	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)
	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	<ol style="list-style-type: none">1) Alkalinity2) Ammonia3) Carbon dioxide4) Chloride5) Chromium (Hexavalent)6) Collection of samples/ Preservation and storage of samples7) Conductivity8) Copper9) Hardness (calcium & total)10) Hydrazine11) Iron12) Nitrite13) pH14) Phosphate15) Silica16) Sodium17) Sulphate18) Sulphite19) Total dissolved solids20) Total solids21) Standard plate count	<p>APHA/SM 2320B APHA/SM 4500-NH₃ B/C/D / 4500-NH₃ F, UV-VIS. IC APHA/SM 4500-CO₂ B/C/D APHA/SM 4500-Cl⁻ B/C APHA/SM 3500-Cr B, UV-VIS / 3120B, ICP APHA/SM 1060B/C, APHA/SM 9060A/B</p> <p>APHA/SM 2510B APHA/SM 3120B, ICP APHA/SM 2340B/C ASTM D1385-07 (2013)e1, UV-VIS APHA/SM 3120B, ICP APHA/SM 4500-NO₂⁻ B, UV-VIS / 4110C, IC APHA/SM 4500-H⁺ B APHA/SM 4500-P C/D/E, UV-VIS APHA/SM 4500-SiO₂ C/D, UV-VIS / 3120B, ICP. Gravimetric APHA/SM 3120B, ICP APHA/SM 4500-SO₄²⁻ C/E / 4110C, IC APHA/SM 4500-SO₃²⁻ B APHA/SM 2540C APHA/SM 2540B APHA/SM 9215C</p>

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MATERIALS/ PRODUCTS TESTED	TESTS/PROPERTIES	METHODS
IV. Water for General and Industrial Purposes (including Sea Water)	1) Ammonia	APHA/SM 4500-NH ₃ H, FIA / 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) Nitrate	APHA/SM 4500-NO ₃ ⁻ I, FIA
	8) Phosphate	APHA/SM 4500-P G, FIA
	9) Salinity	APHA/SM 2520B
	10) Silica	APHA/SM 4500-SiO ₂ F, FIA / 3120B, ICP
	11) Chloroform	) USEPA 8260C-2006, GC-MS
	12) Bromoform)
	13) Dibromochloromethane)
	14) Bromodichloromethane)
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

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	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
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) <i>Escherichia coli</i>	APHA/SM 9221F

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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 USEPA 552.3-2003, GC-ECD
	6) Bromodichloroacetic acid (BDCAA))
	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) <i>Escherichia coli</i>	APHA/SM 9223 B
	21) Arsenic) USEPA 6010D-2018, ICP
	22) Cadmium)
	23) Chromium)
	24) Copper)
	25) Lead)
	26) Nickel)
	27) Vanadium)
	28) Zinc)

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MATERIALS/ PRODUCTS TESTED	TESTS/PROPERTIES	METHODS
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 9213-1996 USEPA 8260C-2006, GC-MS(Refer to Appendix I for listing of specific VOCs)

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C. LEACHATE TESTS OF INDUSTRIAL WASTE FOR LAND FILLED DISPOSAL	1) Arsenic) USEPA 1310B-2004 (extraction)
	2) Barium	) USEPA 1311-1992 (extraction) excluding the ZHE-Zero headspace) extraction)
	3) Cadmium	) USEPA 6010C-2007, ICP) (except for cyanide [total], fluoride) and phenolic compounds [as phenol])
	4) Chromium	) USEPA's office of solid waste SW-846
	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)
	17) Total and amenable cyanide	USEPA 9010C-2004 (distillation) and USEPA 9213-1996, ISE
	18) Fluoride	USEPA 9214-1996, ISE
	19) Phenol	USEPA 420.1-1978, UV-VIS

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MATERIALS/ PRODUCTS TESTED	TESTS/PROPERTIES	METHODS
D. INDUSTRIAL HYGIENE (AIR POLLUTANTS IN WORKPLACE)	1) Acetone	NIOSH 1300-1994, GC
	2) Ammonia	NIOSH 6016-2016, IC
	3) Arsenic & compounds as As	NIOSH 7300-2003, ICP
	4) Butyl acetate	NIOSH 1450-2003, GC
	5) Benzene, Toluene, Ethyl benzene & Xylene (BTEX)	NIOSH 1501-2003, GC
	6) Cadmium	NIOSH 7300-2003, ICP
	7) Chromium & compounds as Cr	NIOSH 7300-2003, ICP
	8) Chromium (Hexavalent)	NIOSH 7600-2015, UV-VIS
	9) Copper (dust & fume)	NIOSH 7300-2003, ICP
	10) Formaldehyde	NIOSH 3500-1994, UV-VIS
	11) Hydrogen bromide	In-house Method AL-SOP-I013, rev.00, IC
	12) Hydrogen chloride	In-house Method AL-SOP-I013, rev.00, IC
	13) Hydrogen cyanide	NIOSH 7904-1994, ISE
	14) Hydrogen fluoride	In-house Method AL-SOP-I013, rev.00, IC
	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)

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	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 7400-1994, phase contrast microscope
	51) Bulk asbestos	NIOSH 9002-1994, polarized light microscope
	52) Mercury	NIOSH 6009 (sorber tube) / OSHA ID-140 (sorber tube/badge)
E. SOURCE EMISSION	1) Stack sampling and velocity traverses	USEPA Method 1-2020
	2) Stack gas velocity and volumetric flow rate	USEPA Method 2-2020
	3) Stack gas composition, oxygen, carbon monoxide, carbon dioxide. Dry gas molecular weight	USEPA Method 3-2020

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MATERIALS/ PRODUCTS TESTED	TESTS/PROPERTIES	METHODS
	4) Stack gas moisture content	USEPA Method 4-2020
	5) Particulate matter emissions	USEPA Method 5-2020
	6) Particular matter emissions from stationary source (In-stack filtration method)	USEPA Method 17-2020
	7) Sulfur dioxide (SO ₂)	USEPA Method 6C-2020
	8) Nitrogen oxides (NO _x)	USEPA Method 7E-2020
	9) Carbon monoxide (CO)	USEPA Method 10-2020
	10) Sulfuric acid and sulfur dioxide emissions from stationary sources	USEPA Method 8-2020
	11) Hydrogen sulfide content of fuel gas streams in petroleum refineries	USEPA Method 11-2020
	12) Sampling for determination of polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans from stationary sources.	USEPA Method 23-2020
	13) Hydrogen halide and halogen emissions from stationary sources non-isokinetic method	USEPA Method 26-2020
	14) Hydrogen halide and halogen emissions from stationary sources isokinetic method	USEPA Method 26A-2020
	15) Metals emissions from stationary sources	USEPA Method 29-2020
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.02
	6) Total viable bacterial count (TVBC)	AL-SOP-I006d, rev.02
	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

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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) Mr Lee Tiam Yong - For accredited section D tests 50, 51, 52 and all accredited tests in section E and section F.
- 7) Mr Zhou Xiang - For accredited section D tests 50, 51, 52, and all accredited tests in section E and section F.
- 8) Ms Than Than Win - For accredited test section A Part I to VI.
- 9) Mr Chiok Kian Soon - For accredited test section A Part II tests 60 to 93 and Part VII tests 1 to 14.
- 10) Mr Yen Chee Choy - For all accredited tests except section D, section E and section F
- 11) Ms Cheong Teck Geok - For all accredited water microbiological tests.

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.

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Appendix I

Test Method : USEPA 8260C-2006

Listing of Specific Volatile Organic Compounds (VOCs)	Water MDL($\mu\text{g/L}$)	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

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Appendix I

Test Method : USEPA 8260C-2006

Listing of Specific Volatile Organic Compounds (VOCs)	Water MDL($\mu\text{g/L}$)	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

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Appendix I

Test Method : USEPA 8260C-2006

Listing of Specific Volatile Organic Compounds (VOCs)	Water MDL($\mu\text{g/L}$)	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