

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 1 of 64

LABORATORY LOCATION:
(PERMANENT LABORATORY)**ALS TECHNICHEM (M) SDN. BHD. (117964-P)**
WISMA ALS**No. 19 & 21, JALAN ASTAKA U8/84**
SEKSYEN U8, BUKIT JELUTONG
40150 SHAH ALAM, SELANGOR
MALAYSIA**FIELDS OF TESTING:****CHEMICAL, GMO & NUCLEIC ACID,**
MICROBIOLOGY, ZOOLOGY / BIOLOGY,
SITE TESTING (MECHANICAL)

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).

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Sewage & Industrial Effluents/ Waste Water Surface Water Ground Water Natural Water Mineral Water Drinking Water Potable Water Raw Water	pH BOD5 at 20°C COD Suspended Solids Chromium, Hexavalent Chromium, Trivalent Mercury	APHA 4500-H ⁺ B APHA 5210 B, 4500-O B, C, G APHA 5220 B, C, D APHA 2540 D APHA 3500-Cr D 19 th Ed (1995) APHA 3500-Cr B 21 st Ed (2005) In-house Method QWI-CH/17-7 based on APHA 3120 B & 3500-Cr D APHA 3112 B USEPA 7470 A

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)**SCOPE OF TESTING: CHEMICAL**

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Sewage & Industrial Effluents/ Waste Water (continue) Surface Water Ground Water Natural Water Mineral Water Drinking Water Potable Water Raw Water	Arsenic Aluminium Barium Boron Cadmium Copper Iron Lead Manganese Nickel Selenium Silver Tin Zinc Beryllium Calcium Magnesium Potassium Sodium Sulfur Thallium Vanadium Cobalt Chromium Iron Molybdenum Phosphorus Antimony Strontium Tellurium Titanium Bismuth Uranium	APHA 3120 B USEPA 6010 B

NO: SMM 147(Issue 2, 21 April 2020 replacement
of SMM 147 dated 2 March 2020)**SCOPE OF TESTING: CHEMICAL**

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Sewage & Industrial Effluents/ Waste Water (continue) Surface Water Ground Water Natural Water Mineral Water Drinking Water Potable Water Raw Water	Fluoride Formaldehyde Cyanide Weak Acid Dissociable (WAD), Cyanide Free Cyanide Phenol Residual Chlorine (free) Sulphide Oil & Grease Ammonia Nitrogen Color ADMI (pH natural) Color ADMI (pH adjusted to 7.6)	APHA 4500-F C, D In-house Method QWI-CH/17-33 based on Distillation/UV-Vis Spectrometer APHA 4500-CN- C, E APHA 4500-CN- I, E APHA 4500-CN- C, E APHA 5530 B, C, D APHA 4500-CI G APHA 4500-S ²⁻ C, D, F APHA 5520 B APHA 4500-NH ³ B, C, G APHA 2120 E (UV-Vis Spectrometer) & USEPA 110-1
Drinking Water Ground Water Mineral Water Potable Water Reverse Osmosis Water	Bromide Chloride Fluoride Nitrate Nitrite Phosphate Sulphate	APHA 4110 B
Drinking Water Ground Water River Water Waste Water Sea Water	Organochlorine and Organophosphate Pesticides (OCOPs) Refer to Appendix 10	In-house Method QWI-OG/17-52 using GC-MS/MS
	Polycyclic Aromatic Hydrocarbons (PAHs) Refer to Appendix 11	In-house Method QWI-OG/17-51 using GC-MS/MS

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)**SCOPE OF TESTING: CHEMICAL**

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Sewage & Industrial Effluents/ Waste Water (continue) Sea Water Ground Water Waste Water River Water Surface Water	Mixed Liquor Suspended Solids (MLSS) Mixed Liquor Volatile Suspended Solids (MLVSS)	In-house Method QWI-CH/17-79 based on APHA 2540 D & 2540 E
Drinking Water Potable Water Raw Water Surface Water Ground Water Sea Water Natural Water Mineral Water	Aluminium Antimony Arsenic Barium Bismuth Boron Beryllium Calcium Cadmium Chromium Cobalt Copper Gallium Indium Iron Lead Lithium Magnesium Manganese Mercury Molybdenum Nickel Potassium Phosphorus Selenium Silver Sodium Strontium Thallium Tin Tungsten Vanadium Zinc Uranium Titanium	APHA 3125 B USEPA 6020 A

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)**SCOPE OF TESTING: CHEMICAL**

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Sewage & Industrial Effluents/ Waste Water (continue)		
Drinking Water	Sample Pre-Treatment for Metals Analysis	In-house Method QWI-CH/17-4 based on APHA 3030 E & USEPA 3005 A
Potable Water		
Raw Water	Dissolved Oxygen	APHA 4500-O B, C, G
Surface Water	Color	APHA 2120 B
Ground Water	Organic and Volatile Acids	APHA 5560 C
Natural Water	Borate (calculated as H ₃ BO ₃)	APHA 3120 B
Mineral Water	Phosphorus, Total	APHA 4500-P B, F In-house Method QWI-CH/17-58 based on APHA 4500 P – B, F
	Sulphate	In-house Method QWI-CH/17-11 based on APHA 4500-SO ₄ ²⁻ E
	Chloride	APHA 4500-Cl ⁻ B, E
	Detergent, Anionic (MBAS)	In-house Method QWI-CH/17-3 based on APHA 5540 C
	Turbidity	APHA 2130 B
	Hardness (CaCO ₃)	APHA 2340 B, C
	Mineral Oil	APHA 5520 F
	Selenium	In-house Method QWI-CH/17-9 based on APHA 3120 B
	Alkalinity	APHA 2320 B
	Conductivity	APHA 2510 B
	Fixed and Volatile Solids Ignited at 550°C	APHA 2540 E
	Nitrate	APHA 4500-NO ₃ ⁻ E, H
	Nitrite	APHA 4500-NO ₂ ⁻ B
	Total Kjeldahl Nitrogen	APHA 4500-N _{org} B
	Total Dissolved Solids	In-house Method QWI-CH/17-12 based on APHA 2540 C

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)**SCOPE OF TESTING: CHEMICAL**

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Sewage & Industrial Effluents/ Waste Water (continue) Sea Water River Water Ground Water Waste Water Drinking Water Surface Water	Total Hydrocarbon Dissolved / Dispersed Petroleum Hydrocarbon (DDPH) Oil & Grease (Emulsified Oil) Cyanide, Total Cyanide, Weak Acid Dissociable (WAD) Cyanide, Free	In-house Method QWI-OG/17-18 based on APHA 5520F In-house Method QWI-OG/17-44 based on IOC (MARPOLMON-P) In-house Method QWI-CH/17-48 based on APHA 5520 B & APHA 5520F APHA 4500-CN-O APHA 4500-CN-O In-house Method based on QWI-CH/17-97 based on ISO 14402-2
River Water Ground Water Waste Water Drinking Water Surface Water	Carbon Dioxide	APHA 4500 CO ₂ D
Sea Water Ground Water Waste Water River Water Surface Water	Perchlorate	In-house Method QWI-CH/17-80 based on USEPA 6850
Sea Water River Water Ground Water Drinking Water Surface Water	Mercury	In-house Method QWI-CH/17-93 based on USEPA 1631 E
Drinking Water Ground Water River Water Waste Water	Acrylonitrile	In-house Method QWI-OG/17-13 based on USEPA 5030B, 8260B

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)**SCOPE OF TESTING: CHEMICAL**

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Sewage & Industrial Effluents/ Waste Water (continue) Sea Water River Water Ground Water Waste Water Drinking Water Surface Water Soil Sediment Sludge	Carbofuran, Carbaryl 2, 4-D 2, 4, 5-T 2, 4, 5-TP 2, 4, 6-T 2, 4- DP 2, 4- DB Clopyralid Picloram Dicamba Fluroxypyr 4- Chlorophenoxyacetic acid MCPA Triclopyr MCPP MCPB Glyphosate Paraquat, Diquat	In-house Method QWI-OG/17-36 using LC-MS In-house Method QWI-OG/17-38 based on USEPA Method 555 In-house Method QWI-OG/17-43 based on USEPA 547 In-house Method QWI-OG/17-40 based on USEPA 549.2
Drinking Water Ground Water Potable Water Waste Water Sea Water Ground Water Waste Water River Water Surface Water	Purge and Trap Extraction Separatory Funnel Extraction of Liquids Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) Total Petroleum Hydrocarbon Volatile Organic Compound (Refer to Appendix 1) Semivolatile Organic Compound (Refer to Appendix 2)	USEPA 5030 B USEPA 3510 C USEPA 8260 B USEPA 8015 B USEPA 8260 B USEPA 8270 C

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)**SCOPE OF TESTING: CHEMICAL**

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Water Drinking Water Potable Water Raw Water Surface Water Ground Water Natural Water Mineral Water	Total Organic Carbon Total Solids Settleable Solids Silicon Ferrous Ion (Fe ²⁺)	APHA 5310 B, C, D USEPA 9060 APHA 2540 B APHA 2540 F APHA 4500-Si D APHA 3500-Fe D
Surface Water Sea Water	Chlorophyll Organic and Volatile Acids Total Organic Carbon Nitrate Mercury Salinity	APHA 10200 H APHA 5560 C APHA 5310 C, D APHA 4500-NO ₃ -E APHA 3112 B USEPA 7470 A APHA 2520 B
Marine Water	Tributyltin	In-house Method QWI-OG/17-30 based on USEPA 8323 (LC-MSMS)
Sea Water	Nitrate	In-house Method QWI-CH/17-16
Water (Potable Water, Lake Water, Sea Water, Ground Water)	Monomethyl Arsenic Acid Arsenobeteneine DiMethylarsenic Acid Arsenious Acid As (III) Arsenic Acid As (V) Selenite Se (IV) Selenate Se (VI)	In-house Method QWI-CH/17-85 based on Speciation Analyses Handbook by LC-ICPMS

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)**SCOPE OF TESTING: CHEMICAL**

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Water Haemodialysis Water Reverse Osmosis Water	Calcium Magnesium Potassium Sodium Aluminium Antimony Arsenic Barium Beryllium Cadmium Chromium Copper Lead Mercury Selenium Silver Thallium Zinc Chloramines Free Chlorine Chloride Fluoride Nitrate Sulphate Hardness (CaC) Total Dissolved Solids pH Sampling Protocol	APHA 3120 B APHA 3125 B APHA 4500 Cl G APHA 4110 B APHA 2340 B In-house Method QWI-CH/17-12 based on APHA 2540 C APHA 4500-H*B In-house Method QWI-CH/17-20 based on AAMI Guideline
Sea Water Reverse Osmosis Water Drinking Water Ground Water Surface Water	Low Level Metals (Ag, Al, As, B, Ba, Be, Cd, Co, Cr, Cu, Fe, Hg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Tl, U, V, Zn) Mercury, Total Methyl Mercury	In-house Method QWI-CH/17-31 using Octupole Reaction Cell ICPMS USEPA 1631 E USEPA 1630

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)**SCOPE OF TESTING: CHEMICAL**

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Water Ground Water	Lead Cadmium Volatile Organic Compound (Refer to Appendix 4)	Determination Method: Japanese Industrial Standard Method K0102 (54.4) Method K0102 (55.4) Method K0125 (5.1) Sample Preparation Method: Japanese Ministry of Environment: Announcement 18 & 19
Water	Ether Oxygenates (MTBE, TBA, DIPE, TAME and ETBE) TPH Speciation – Aliphatic Hydrocarbon >C5-C6 fraction >C6-C8 fraction >C8-C10 fraction TPH Speciation - Aromatic Hydrocarbon >C5-C7 fraction >C7-C8 fraction >C8-C10 fraction	In-house Method QWI-OG/17-27 based on USEPA 5030B, 8260B In-house Method QWI-OG/17-29 based on TPHCWG
Water	TPH Speciation – Aliphatic Hydrocarbon >C10-C12 fraction >C12-C16 fraction >C16-C35 fraction TPH Speciation - Aromatic Hydrocarbon >C10-C12 fraction >C12-C16 fraction >C16-C21 fraction >C21-C35 fraction	In-house Method QWI-OG/17-28 based on TPHCWG

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 11 of 64

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Environmental Monitoring Soil Sediments Solid Waste	Calorific Value Chromium Hexavalent	In-house Method QWI-CH/17-88 based on ASTM D 5468-95 USEPA 3060A, USEPA 7196 In-house Method QWI-CH/17-120 based on USEPA 3060A, USEPA 6020A
Soil Sediments Sludge Solid Waste	Aluminium Antimony Arsenic Barium Boron Beryllium Calcium Cadmium Chromium Cobalt Copper Iron Lead Lithium Magnesium Manganese Molybdenum Nickel Potassium Phosphorus Selenium Silver Sodium Strontium Thallium Tin Vanadium Zinc	USEPA 3050 B USEPA 6010 B, APHA 3120 B USEPA 200.2, USEPA 6010 B, APHA 3120 B
Soil Sediments Sludge Solid Waste	Mercury	USEPA 3050 B USEPA 7470 A, APHA 3112 B USEPA 200.2 USEPA 7471 A, APHA 3112 B

Scan this QR Code or visit www.ism.gov.my/cab-directories for the current scope of accreditation

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 13 of 64

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Environmental Monitoring Soil Sediments Sludge Solid Waste	Total Organic Carbon	USEPA 9060
	Total Organic Matter	In-house Method QWI-CH/17-14 based on APHA 2540 B, E
	Total Solids at 103 °C – 105 °C	In-house Method QWI-CH/17-8 based on (Oven Drying)
	Moisture at 103 °C – 105 °C	In-house Method QWI-CH/17-8 based on (Oven Drying)
	Oil & Grease	USEPA 9071 B APHA 5520
	Cyanide	APHA 4500-CN- C, E
	pH	USEPA 1311 APHA 4500-H+ B
	Anions (Chloride, Sulphate, Nitrite, Nitrate, Bromide, Phosphate, Fluoride)	In-house Method QWI-CH/17-6 based on APHA 4110 B
	Hydrocarbon, Total	In-house Method QWI-OG/17-18 based on EPA 418.1, APHA 5520 F
	Microscale Solvent Extraction of Solids	USEPA 3570 (Microscale Solvent Extraction) In-house Method QWI-OG/17-16 based on USEPA 3570
	Polyaromatic Hydrocarbon (PAH) (Refer to Appendix 3 for List of PAHs)	USEPA 8270 C
	Semivolatile Organic Compound (Refer to Appendix 2, 5, 6)	USEPA 8270 C
	Total Petroleum Hydrocarbon	USEPA 8015 B

Scan this QR Code or visit www.ism.gov.my/cab-directories for the current scope of accreditation

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 14 of 64

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Environmental Monitoring Soil Sediment Biota	Methyl Mercury	In-house Method QWI-CH/17-34 based on USEPA 1630
Soil Solid Waste	Total Carbon	In-house Method QWI-CH/17-108 based on USEPA 9060
Water & Soil	Total Petroleum Hydrocarbon (TPH C6-C9)	In-house Method QWI-OG/17-11 based on USEPA 8260 B In-house Method QWI-OG/17-10 based on USEPA 5030 B
Seawater & Sediment	Tributyltin	In-house Method QWI-OG/17-33 and QWI-OG/17-34

Scan this QR Code or visit www.ism.gov.my/cab-directories for the current scope of accreditation

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 15 of 64

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Environmental Monitoring Soil Sediment	Ether Oxygenates (MTBE, TBA, DIPE, TAME and ETBE) TPH Speciation – Aliphatic Hydrocarbon >C5-C6 fraction >C6-C8 fraction >C8-C10 fraction TPH Speciation – Aromatic Hydrocarbon >C5-C7 fraction >C7-C8 fraction >C8-C10 fraction TPH Speciation – Aliphatic Hydrocarbon >C10-C12 fraction >C12-C16 fraction >C16-C35 fraction TPH Speciation – Aromatic Hydrocarbon >C10-C12 fraction >C12-C16 fraction >C16-C21 fraction >C21-C35 fraction	In-house Method QWI-OG/17-27 based on USEPA 5030 B, 8260 B In-house Method QWI-OG/17-29 based on TPHCWG In-house Method QWI-OG/17-28 based on TPHCWG
Solid (Soil, Sediment)	Monomethyl Arsenic Acid Arsenobeteneine DiMethylarsenic Acid Arsenious Acid As (III) Arsenic Acid As (V) Selenite Se (IV) Selenate Se (VI)	In-house Method QWI-CH/17-85 based on Speciation Analysis Handbook by LC-ICPMS

Scan this QR Code or visit www.ism.gov.my/cab-directories for the current scope of accreditation

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)**SCOPE OF TESTING: CHEMICAL**

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Environmental Monitoring Soil	Lead	Determination Method: Japanese Industrial Standard Method K0102 (54.4)
	Cadmium	Method K0102 (55.4)
	Volatile Organic Compound (Refer to Appendix 4)	Method K0125 (5.1) Sample Preparation Method: Japanese Ministry of Environment: Announcement 18 & 19
	Organochlorine and Organophosphate Pesticides (OCOPs) Refer to Appendix 10	In-house Method QWI-OG/17-52 using GC-MS/MS
	Polycyclic Aromatic Hydrocarbons (PAHs) Refer to Appendix 11	In-house Method QWI-OG/17-51 using GC-MS/MS

Scan this QR Code or visit www.ism.gov.my/cab-directories for the current scope of accreditation

NO: SMM 147(Issue 2, 21 April 2020 replacement
of SMM 147 dated 2 March 2020)

Page: 17 of 64

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Environmental Monitoring		
Personal Exposure (Sampling Media)	Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)	In-house Method QWI-OG/17-15 based on 3M Organic Vapor Monitor Sampling and Analysis Guide NIOSH 1501 OSHA 1005
	Mercury	NIOSH 6009
	Dust particulates (TSP)	In-house Method QWI-CH/17-83 based on NIOSH 0500
	Dust particulates (PM ₁₀ , PM _{2.5})	In-house Method QWI-CH/17-103 based on NIOSH 0600
Ambient Air (Personal Exposure)	Acid Gases (H ₂ SO ₄ , HNO ₃ , HCl)	NIOSH 7903
	Acid Gases (HBr, HCl, HF, HNO ₃ , H ₃ PO ₄ , H ₂ SO ₄)	In-house Method QWI-CH/17-135 based on OSHA ID 165 SG
	Aluminium Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Molybdenum Nickel Tin Zinc	NIOSH 7303
	Volatile Organic Compounds (Refer to Appendix 1)	US EPA TO-17 NIOSH 2549
	Fluorides	NIOSH 7906

Scan this QR Code or visit www.ism.gov.my/cab-directories for the current scope of accreditation

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 18 of 64

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Environmental Monitoring		
Ambient Air (Sampling Media)	Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)	NIOSH 1501 OSHA 1005
	Mercury	NIOSH 6009
	Dust Particulates (TSP, PM10, PM2.5)	USEPA Method IO 3.1 (Section 5)
	Acid Gases (H ₂ SO ₄ , HNO ₃ , HCl)	NIOSH 7903
	Hydrogen Sulfide	In-house Method QWI-CH/17-87 based on NIOSH 6013
	Sulphur Dioxide	In-house Method QWI-CH/17-36 based on J.P. Lodge 704C
	Nitrogen Dioxide	In-house Method QWI-CH/17-35 based on J.P. Lodge 407
	Ozone	In-house Method QWI-CH/17-106 based on J.P. Lodge 819
	Aluminium Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Molybdenum Nickel Tin Zinc	NIOSH 7303
	Volatile Organic Compounds (Refer to Appendix 1)	US EPA TO-17 NIOSH 2549
	Fluorides	NIOSH 7906

Scan this QR Code or visit www.ism.gov.my/cab-directories for the current scope of accreditation

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)**SCOPE OF TESTING: CHEMICAL**

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Environmental Monitoring Ambient Air (Passive sampler)	Ammonia (NH ₃) Hydrogen Sulfide (H ₂ S) Nitrogen Dioxides (NO ₂) Sulfur Dioxides (SO ₂) Ozone (O ₃) Hydrochloric Acid (HCl) Methyl- Ter-Butyl Ether (MTBE), Benzene, Toluene, Ethylbenzene, o-Xylene, m-&p-Xylene	In-house method QWI-CH/17-129 based on Radiello reference method Ed,01/2006 In-house method QWI-CH/17-130 based on Radiello reference method Ed, 01/2006 In-house method QWI-CH/17-131 based on Radiello reference method Ed, 01/2006 In-house method QWI-CH/17-137 based on Radiello reference method Ed, 01/2006 In-house method QWI-CH/17-132 based on Radiello reference method Ed, 01/2006 In-house method QWI-CH/17-133 based on Radiello reference method Ed, 01/2006 In-house method QWI-CH/17-134 based on Radiello reference method Ed, 01/2006
Stationary Air Emission	Hydrogen Halide and Halogen	USEPA 26A

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 20 of 64

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Environmental Monitoring Air	Total Organic Matter Total Polycyclic Aromatic Hydrocarbons (Total PAHs) (Refer to Appendix 9) Volatile Organic Compounds (Refer to Appendix 8)	In-house Method QWI-CH/17-119 based on USEPA IO-3.1 (Gravimetric) In-house Method QWI-OG/17-47 based on USEPA Method TO-13A In-house Method QWI-OG/17-49 based on USEPA 325
High Volume Sampler (HVS) Filter paper	Silver Aluminum Arsenic Boron Calcium Cobalt Cadmium Chromium Copper Iron Silica Silicon Lead Sulfur Antimony Selenium Zinc Mercury	In-house Method QW I-CH/17-115 based on USEPA IO-3.1 & 3.4
Palm Oil Mill Effluent (POME)	BOD3	In-house Method QWI-CH/17-45 based on APHA 5210 B (21 st ed)

Scan this QR Code or visit www.ism.gov.my/cab-directories for the current scope of accreditation

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 21 of 64

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Biological Specimens Blood Urine	Mercury, Total Aluminium Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Molybdenum Nickel Tin Zinc Methyl Mercury	In-house Method QWI-CH/17-23 based on NIOSH P&CAM 165 and P&CAM 167 In-house Method QWI-CH/17-78 based on Mutagenesis (2005) vol.20 no.6 pg 425-432 In-house Method QWI-CH/17-34 based on USEPA 1630
	S-Phenylmercapturic Acid (SPMA) Monomethyl Arsenic Acid Arsenobeteneine DiMethylarsenic Acid Arsenious Acid As (III) Arsenic Acid As (V) Selenite Se (IV) Selenate Se (VI)	In-house Method QWI-CH/17-81 based on Carcinogenesis (1999) vol.20 no.4 pg 719-726 In-house Method QWI-CH/17-85 based on Speciation Analysis Handbook by LC-ICPMS

Scan this QR Code or visit www.ism.gov.my/cab-directories for the current scope of accreditation

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)**SCOPE OF TESTING: CHEMICAL**

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Biological Specimens Urine	Determination of 2,5 Hexadione in Urine Determination of TTCA in Urine Methanol and Ethanol Analysis in Urine Sample Hippuric Acid (HA) and Methyl Hippuric Acid (MHA) in Urine Sample TTMA in Urine Sample Creatinine Analysis in Urine Sample	In-house Method QWI-CH/17-114 using GC-FID In-house Method QWI-CH/17-123 using HPLC In-house Method QWI-CH/17-136 using GC-FID In-house Method QWI-CH/17-127 based on NIOSH 8301 using LC-MS In-house Method QWI-CH/17-81 using LC-MS In-house Method QWI-CH/17-126 using JAFFE Method
Serum/ Plasma	Cholinesterase Analysis in Serum and Plasma Sample	In-house Method QWI-CH/17-125
Whole Blood	Methyl Mercury Analysis in Blood Sample	In-house Method QWI-CH/17-121

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 23 of 64

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Paper, Paper Board & Wood Pulp Chemicals Metals Paints Papers Plastics	Lead Mercury Cadmium Chromium Hexavalent Chromium Polybrominated Biphenyl Polybrominated Diphenyl Ether	In-house Method QWI-CH/17-18 based on Procedures for Determination of Levels of Regulated Substances in Electro Technical Products IEC ACEA Ad Hoc Working Group
Plastic	Cadmium Mercury	BS EN 1122:2001 In-house Method QWI-CH/17- 18 based on USEPA 7473
Toy Materials	Soluble Metals (Lead, Barium, Cadmium, Arsenic, Antimony, Chromium, Mercury, Selenium)	In-house Method QWI-CH/17-32 based on BSEN 71 Part 3
Food Packaging Material	Leachable Metals (Antimony, Arsenic, Cadmium, Lead)	In-house Method QWI-OF/17-42 based on Malaysian Food Act 13 th Schedule

Scan this QR Code or visit www.ism.gov.my/cab-directories for the current scope of accreditation

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 24 of 64

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Foods Food	Calories (Energy) Ash Moisture Water Activity pH Carbohydrate, Available Carbohydrate, Total Fat, Total Fat, Crude Fatty Acid Composition: Monounsaturated Fat Polyunsaturated Fat Saturated Fat Trans Fatty Acid EPA (Eicosapentaenoic Acid) DHA (Docosahexaenoic Acid) Omega 3,6,9 Cholesterol	In-house Method QWI-OF/ 17-36 based on Methods of Analysis for Nutrition Labeling (1993) Page 5 and 106 In-house Method QWI-OF/17-2 based on Method of Analysis for Nutrition Labeling (1993) Chapter 10 In-house Method QWI-OF/17-7 based on Method of Analysis for Nutrition Labeling (1993) Chapter 23 In-house Method QWI-OF/17-38 Moisture Analyzer In-house Method QWI-OF/17-72 based on AOAC 978.18 In-house Method QWI-OF/17-95 based on AOAC 945.27, 970.21, 943.02 & 981.12 In-house Method QWI-OF/17-37 based on Method of Analysis for Nutritional Labeling and Malaysian Food Act 1983 In-house Method QWI-OF/17-35 based on Method of Analysis for Nutrition Labeling (1993) Page 106 In-house Method QWI-OF/17-10 based on Method of Analysis for Nutrition Labeling (1993) Chapter 18 and Pearson's (1991) Page 24 In-house Method QWI-OF/17-15 based on AOAC Method 963.22 and AOCS Ce-1-62 In-house Method QWI-OF/17-16 based on JAOAC Vol 73, No. 5,1990 and GC – FID

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 25 of 64

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Foods Food	Protein/Total Kjeldahl Nitrogen Fibre, Crude Fibre, Dietary Sugar, Total (As Inverted Sugar) Sugar, Reducing Sucrose	In-house Method QWI-OF/17-6 Based on Method of Analysis for Nutrition Labeling (1993) Chapter 28 and Pearson's (1991) Page 17 & 20 In-house Method QWI-OF/17-9 Based on Pearson's (1991) Page 26-27 In-house Method QWI-OF/17-14 Based on Methods AOAC 985.29 In-house Method QWI-OF/17-1 Based on AOAC 923.09 and Pearson's (1991) Page 197 In-house Method QWI-OF/17-67 based on AOAC 906.03B and Pearson's (1991) Page 197 In-house Method QWI-OF/17- 70 based on AOAC 930.36 and Pearson's (1991) Page 197
Food	Formaldehyde Phthalates Metal Contaminants (As, Pb, Cu, Sn, Zn, Hg, Cd, Sb) Organochlorine Pesticides Organophosphorus Pesticides (Refer to Appendix 5 and 6)	In-house Method QWI-OF/17-43 based on AOAC 931.08 In-house Method QWI-OF/17-63 based on JRC EUR 23682 EN (2009) In-house Method QWI-OF/17-41 based on AOAC 999.11, 986.15 and APHA 3120 B, APHA 3112 B, APHA 3125B In-house Method QWI-OG/17-21 QuEchers Method – Multi Residue Method & GC MS based on AOAC 2007.01

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)**SCOPE OF TESTING: CHEMICAL**

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Foods	Iodine	In-house Method QWI-OF/17-60 based on JAAS (1998)
	Minerals (Ca, Cu, Fe, Mg, Mn, P, K, Na, Zn)	In-house Method QWI-OF/17-41 based on AOAC 984.27 and APHA 3120 B
	Sodium Chloride (Salt)	In-house Method QWI-OF/17-24 Based on AOAC 960.29 and Pearson's Composition & Analysis of Food 9 th Ed. (1991) Pg. 14
	Sorbic Acid and Its Salt Benzoic Acid and Its Salt	In-house Method QWI-OF/17-13 Based on AOAC 979.08 & Pearson's (1991)
	Nitrite	In-house Method QWI-OF/17-69 based on AOAC 993.30
	Caffeine	In-house Method QWI-OF/17-51 based on AOAC 960.25, AOAC 979.08
	Sulphur Dioxide/ Sulphite	In-house Method QWI-OF/17-23 Iodometric Titration Method based on Analytical Chemistry of Food 1 st Ed. (1999) Pg. 148

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 27 of 64

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Foods	Vitamin A (Retinol)	In-house Method QWI-OF/17-20 based on British Standard BS EN 12823 – 1: 2000
	Vitamin A (Beta Carotene)	In-house Method QWI-OF/17-65 based on AOAC 941.15
	Vitamin B1	In-house Method QWI-OF/17-18 based on AOAC Method 942.23, 970.65
	Vitamin B2	In-house Method QWI-OF/17-18 based on AOAC Method 942.23, 970.65
	Vitamin B3	In-house Method QWI-OF/17-48 based on JAOAC (2002)
	Vitamin B5	In-house Method QWI-OF/17-49 based on Food Chem (2000)
	Vitamin B6	In-house Method QWI-OF/17-18 based on JFAC (1996)
	Vitamin B7	In-house Method QWI-OF/17-53 based on AOAC 960.46
	Vitamin B9	In-house Method QWI-OF/17-46 based on AOAC 960.46
	Vitamin B12	In-house Method QWI-OF/17-47 based on AOAC 960.46
	Vitamin C	In-house Method QWI-OF/17-8 based on AOAC 967.21
	Vitamin E	In-house Method QWI-OF/17-19 based on British Standard BS EN 12822: 2000 and HPLC
	Vitamin D3	In-house Method QWI-OF/17-66 based on AOAC 995.05

Scan this QR Code or visit www.ism.gov.my/cab-directories for the current scope of accreditation

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 28 of 64

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Foods Milk & Milk Products	Fat Protein Acidity	In-house Method QWI-OF/17-89 based on GB 5413.3 In-house Method QWI-OF/17-91 based on GB 5009.5 In-house Method QWI-OF/17-90 based on GB 5413.34
Milk Products	Total Milk Solid Non Fat Milk Solid Nitrofurans groups (Furaladone, Furazolidone, Nitrofurantoin, Nitrofurazone) Aflatoxin M1	In-house Method QWI-OF/17-77 based on Official Journal of the European Communities 79/1067/EEC In-house Method QWI-OF/17-78 based on Official Journal of the European Communities 79/1067/EEC In-house Method QWI-OF/17-101 based on AB Sciex Application Note (LC-MSMS) In-house Method QWI-OF/17-92 based on GB 5413.37 (2010, Method 4) ELISA Method
Milk Powder	Melamine/ Cyanuric Acid	In-house Method QWI-OF/17-97 based on USFDA (LC-MSMS)
Dairy Products, Oats	Fructan (Inulin) Beta Glucan	In-house Method QWI-OF/17-57 based on AOAC 999.03 In-house Method QWI-OF/17-86 based on AOAC 995.16

Scan this QR Code or visit www.ism.gov.my/cab-directories for the current scope of accreditation

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 29 of 64

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Foods Coffee, Cocoa	Ochratoxin A	In-house Method QWI-OF/17-81 based on AOAC 2000.09, AOAC 2008.02 HPLC
Water	Acrylamide Tetracycline, Doxycycline, Chlortetracycline & Oxytetracycline Malachite green, lencomalachite green	In-house Method QWI-OF/17-102 based on AB Sciex Application Note (LC-MSMS) In-house Method QWI-OF/17-99 based on AB Sciex Application Note (LC-MSMS) In-house Method QWI-OF/17-96 based on AB Sciex Application Note (LC-MSMS)
Beverages Pickled Food	Sodium Cyclamate	In-house Method QWI-OF/17-130 based on AOAC 993.3 using HPLC
Beverages Honey Milk Product	Sucrose Lactose Fructose Galactose Maltose Glucose	In-house Method QWI-OF/17-129 based on AOAC 995.13 using HPLC
Milk and milk products	3-MCPD esters 2-MCPD esters Glycidol esters	In-house Method QWI-OF/17-140 based on AOAC First Action 2018.03 using GC-MS/MS
Beverage (Cordial, Liqueurs)	Acidity, Total	AOAC 940.15
Food/ Beverage	Artificial Color (Qualitative)	In-house Method QWI-OF/17-76 based on Modern Food Analysis (1971)

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)**SCOPE OF TESTING: CHEMICAL**

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Foods Flour	Bromide	In-house Method QWI-OF/17-93 based on AOAC 993.30 Ion Chromatography Method
Bread & Its Products	Propionic Acid & Its Salts	In-house Method QWI-OF/17-44 based on AOAC 950.35
MSG/ Iodized Salt	Potassium Iodide	In-house Method QWI-OF/17-39 based on AOAC 925.56
Fruit & Vegetables	Pesticide Screen (Refer to Appendix 7)	In-house Method QWI-OF/17-98 based on Method AB Sciex (LC-MSMS)
	Carbamates Screen	In-house Method QWI-OF/17-100 based on Method AB Sciex (LC-MSMS)
Food (Starch based Products), Powder	Maleic Acid	In-house Method QWI-OF/17-80 based on Method of Test for Total Amount of Maleic Acid and Maleic Anhydride in Foods, Department of Health, Taiwan (2013) by HPLC-DAD
Food (Fish and Fishery Products, Grain, Fruit Juice)	Monomethyl Arsenic Acid Arsenobetene Dimethylarsenic Acid Arsenious Acid As (III) Arsenic Acid As (V) Selenite Se (IV) Selenate Se (VI)	In-house Method QWI-CH/17-85 based on Speciation Analysis Handbook by LC-ICPMS
Food and Feed	Protein/ Nitrogen/ Carbon Protein by calculation	In-house Method QWI-OF/17-119 based on AOAC 972.43
Food, Drink and Cosmetic	Ethanol	In-house Method QWI-OF/17-135 based on AOAC 986.12
	Alcohol (Ethanol)	In-house Method QWI-OF/17-71 based on AOAC 973.23

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)**SCOPE OF TESTING: CHEMICAL**

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Foods Canned Food Pickled Food	EDTA	In-house Method QWI-OF/17-82 based on Compendium of Method for Food Analysis, 2003 using HPLC
Peanut & Its Products Cereal and Legumes Grain (Feed)	Aflatoxins, Total Aflatoxins B1, B2, G1, G2	In-house Method QWI-OF/17-50 based on Agraquant ELISA Method In-house Method QWI-OF/17-58 based on AOAC 991.31 & 990.33 HPLC
Potato based product	Acrylamide	In-house Method QWI-OF/17-126 using LC-MSMS
Soy Sauce, Oyster Sauce	Sodium Chloride (Salt)	In-house Method QWI-OF/17-83 based on AOAC 935.47
	3-MCPD	In-house Method QWI-OF/17-79 based on Food Control 18 (2007) by GC-MS
Spices and Chili Sauce	Sudan Red I, II, III, IV	In-house Method QWI-OF/17-22 based on FSA (UK) (Method 145B)
	Rhodamine B, Methyl Yellow, Para Red	In-house Method QWI-OF/17-22 based on FSA (Food Standard Agencies) Method 145B

NO: SMM 147(Issue 2, 21 April 2020 replacement
of SMM 147 dated 2 March 2020)**SCOPE OF TESTING: CHEMICAL**

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Foods Seafood	Tetracycline, Doxycycline, Chlortetracycline, Oxytetracycline Malachite Green, Leucomalachite Green, Crystal Violet, Leucocrystal Violet	In-house Method QWI-OF/17-99 Method B based on AB Sciex Application Note using LC-MSMS In-house Method QWI-OF/17-96 Method B based on AOAC 2012.25 and AB Sciex Application Note using LC-MSMS
Seafood Products Fish Shrimp Meat	Methyl Mercury Chloramphenicol Nitrofurantoin AOZ, AMOZ	In-house Method QWI-CH/17-34 based on USEPA 1630 In-house Method QWI-OF/17-28 based on ELISA Method In-house Method QWI-OF/17-29 based on ELISA Method
Fish Seafood	Histamine	In-house Method QWI-OF/17-132 based on ELISA Method (Aqua Quant)
Seafood, Oil and Fats	Organochlorine and Organophosphate Pesticides (OCOPs) Refer Appendix 10	In-house Method QWI-OF/17-139 using GC-MS/MS
Shrimp	Ochratoxin A	In-house Method QWI-OF/17-81 Method E based on AOAC 2000.09 using HPLC
Bird nest	Sialic Acid	In-house Method QWI-OF/17-137 based on GB30636-2014 using IC
Animal Premixes	Vitamin A and E Acetate 25-Hydroxy Vitamin D3	In-house Method QWI-OF/17-136 based on DSM Method using HPLC In-house Method QWI-OF/17-152 based on DSM Method using LC-MS

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)**SCOPE OF TESTING: CHEMICAL**

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Foods Water, Food, Food Ingredients	Allergen of Almond	In-house Method QWI-OF/17-107 based on ELISA Method
	Allergen of Egg	In-house Method QWI-OF/17-108 based on ELISA Method
	Allergen of Hazelnut	In-house Method QWI-OF/17-109 based on ELISA Method
	Allergen of Crustacean	In-house Method QWI-OF/17-110 based on ELISA Method
	Allergen of Sesame	In-house Method QWI-OF/17-111 based on ELISA Method
	Allergen of Mustard	In-house Method QWI-OF/17-112 based on ELISA Method
	Allergen of Walnut	In-house Method QWI-OF/17-113 based on ELISA Method
	Allergen of Pistachio	In-house Method QWI-OF/17-114 based on ELISA Method
Washing Water, Allergen & Raw Material	Allergen of Soy	In-house Method QWI-OF/17-85 based on ELISA Method
	Allergen of Gluten	In-house Method QWI-OF/17-86 based on ELISA Method
	Allergen of Peanut	In-house Method QWI-OF/17-87 based on ELISA Method
	Allergen of Milk	In-house Method QWI-OF/17-88 based on ELISA Method

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)**SCOPE OF TESTING: CHEMICAL**

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Drugs and Pharmaceuticals		
Food, Nutraceuticals & Pharmaceutical Products	Conditioning of Stability Study	Conditioning of Stability Study
Pharmaceutical products	Uniformity of Weight	Procedure 5.2 Uniformity of Mass based on The International Pharmacopoeia 4 th edition
Tablets and Capsules	Disintegration	In-house Method QWI-OF/17-105 based on BP 2010
Health Supplement	Collagen	In-house Method QWI-OF/17-117 using LC-MS
Traditional Medicine	Arsenic Cadmium Lead Mercury Copper	In-house Method QWI-OF/17-41 based on AOAC 986.15 Section D, APHA 3120 B, APHA 3112 B and APHA 3125 B
Oil	Total Polar Compound	In-house Method QWI-OF/17-73 based on AOCS Cd 20-91 and Pure Appl. Chem., Vol. 72 (2000)
	Polycyclic Aromatic Hydrocarbons (PAHs) Refer to Appendix 11	In-house Method QWI-OF/17-138 using GC-MS/MS
Oil Products	Lipid Composition: Monoglycerides Diglycerides	In-house Method QWI-OF/17-68 based on AOCS Cd 11b-91
Oil and Fat	Free Fatty Acids	In-house Method QWI-OF/17-121 based on AOCS Ca 5a-40
	Anisidine Value	In-house Method QWI-OF/17-122 based on AOCS Cd 18-90
	Peroxide Value	In-house Method QWI-OF/17-123 based on AOCS Cd 8-53
	2-MCPD esters, 3-MCPD esters and glycidol esters	In-house Method QWI-OF/17-133 based on AOCS Cd 29a-13 In-house Method QWI-OF/17-134 based on AOCS Cd 29b-13
	3-MCPD esters and glycidol esters	In-house Method QWI-OF/17-131 based on AOCS Cd 29c-13
Medical Devices	Ethylene Oxide (ETO), Ethylene Chlorohydrin (EC) and Ethylene Glycol (EG)	In-house Method QWI-OF/17-150 based on ISO 10993-7 using GC-FID

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 35 of 64

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Tribology Lubricant Oil Includes Petrol Engine Oil Diesel Engine & Marine Engine Oil Gas Engine Oil Hydraulic/Transmission Oil, Turbine Oil, Gear/Gearbox Oil Differential/Final Drive and Transmission Oil Refrigeration Compressor Oil, Air Compressor Oil & Grease	Metal (ICP) - Al, Cr, Cu, Fe, Pb, Sn, Si, Mg, Mo, B, Na, K, Ca, Zn, P, Ni	In-house Method QWI-WC/17-04 based on ASTM D5185-13 by ICP-AES
Diesel Engine, Marine Engine Oil, Gas Engine Oil	Kinematic Viscosity @ 40 °C & 100 °C	ASTM D7042-16e ²
Diesel Engine & Marine Engine Oil	Flash Point	ASTM D93-16a (Procedure A)
Petrol Engine Oil, Gas Engine Oil, Hydraulic / Transmission Oil Turbine Oil Differential/Final Drive Transmission Oil Refrigeration Compressor Oil Air Compressor Oil	Kinematic Viscosity @ 40 °C	ASTM D7042-16e ²
Gas Engine Oil, Diesel Engine & Marine Engine Oil	Total Base Number	ASTM D2896-15 (Method B)
Gas Engine Oil	Viscosity Index	ASTM D2270-10 (Reapproved 2016)
Turbine Oil, Air Compressor Oil Gas Engine Oil	Total Acid Number	ASTM D664-17 (Method A)

Scan this QR Code or visit www.ism.gov.my/cab-directories for the current scope of accreditation

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)**SCOPE OF TESTING: CHEMICAL****SITE: CATEGORY I**

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Sewage & Industrial Effluents/ Waste Water Sea Water River Water Ground Water Waste Water Drinking Water Surface Water	pH Measurement (In-Situ)	In-house Method QWI-SP/21-017 based on APHA 4500-H ⁺ B, 21 st Edition
	Temperature Measurement (In-Situ)	In-house Method QWI-SP/21-018 based on APHA 2550, 21 st Edition
	Dissolved Oxygen Measurement (In-Situ)	In-house Method QWI-SP/21-019 based on APHA 4500-O G, 21 st Edition
	Conductivity Measurement (In-Situ)	In-house Method QWI-SP/21-020 based on APHA 2510 B, 21 st Edition
Environmental Monitoring Stationary Air Emission	Sample and Velocity Traverses	USEPA 1
	Stack Gas Velocity Volumetric Flow Rate	USEPA 2
	Dry Molecular Weight (Oxygen and Carbon Dioxide)	USEPA 3A
	Moisture Content	USEPA 4
	Particulate Emission	USEPA 5
	Sulfur Dioxide	USEPA 6C
	Nitrogen Oxide	USEPA 7E
	Sulfuric Acid and Sulfur Dioxide	USEPA 8
	Carbon Monoxide	USEPA 10
	PCDDs and PCDF Dioxin and Furan (Sampling)	USEPA 23A
	Hydrogen Halide and Halogen	USEPA 26A
Metals Emission	USEPA 29	

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 37 of 64

SCOPE OF TESTING: CHEMICAL**SITE: CATEGORY I**

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Environmental Monitoring Stationary Air Emission	Volatile Organic Compounds (Sampling) Ammonia (NH ₃)	In-house Method QWI-SP/21-027 based on USEPA 30 In-house Method QWI-SP/21-026 based on CTM 0027
Ambient Air	Dust particulates (TSP, PM10, PM2.5)	In-house method QWI-SP/21-021 based on 40 CFR part 50, Appendix J & L
Noise	Environmental Noise Level	ISO 1996
Soil	Rapid On-Site Total Petroleum Hydrocarbon Measurement (RemScan)	In-house Method QWI-SP/21-022 based on RemScan Operation Manual and RemScan ISO 14034 Verification Statement

Note:

APHA - Standard Methods for the Examination of Water and Wastewater, 19th Edition (1995), 20th Edition (1998) and 21st Edition (2005)

FDA - Food and Drugs Administration - Bacteriological Analytical Manual, 8th Edition (1995)

AOAC - Association of Official Analytical Chemists, 16th Edition (1995)

ASTM - American Society for Testing and Material

USEPA - United States Environmental Protection Agency

OSHA - Occupational Safety Health Administration

NIOSH - National Institute of Occupational Safety and Health

Signatories:

- | | | |
|----|--------------------------|--|
| 1. | Dr. Chin Teen Teen | MMIC No.: M/1545/2772/97 |
| 2. | Lee Yiu Lay | MMIC No.: M/2712/4566/04/08 |
| 3. | Dr. Ch'ng Ai Ying | LMIC No.: L/2082/7060/15, MJMM No.: 0120 |
| 4. | Nazirah Binti Ariffin | MMIC No.: M/3878/6603/13 |
| 5. | Norain Binti Yahya | MMIC No.: M/4233/7042/15 |
| 6. | Natasha Ain Binti Jamian | LMIC No.: L/2509/7481/16 |

Schedule

Issue date: 21 April 2020
Valid until: 01 August 2021



NO: SMM 147

(Issue 2, 21 April 2020 replacement
of SMM 147 dated 2 March 2020)

Page: 38 of 64

7.	Halinazeti Binti Abu Hazar	MMIC No.: M/2037/4477/03 (Tribology)
8.	Hamizah Binti Hussin	LMIC No.: L/2750/8149/18
9.	Nur Hidayah Binti Mohd Rosli	LMIC No.: L/2742/8123/18
10.	Mohamad Hamizan Bin Mahmud	LMIC No.: L/2904/8607/19
11.	Nur Adibah Faizah Binti Ariffin	MMIC No.: M/5251/8606/19
12.	Nurul Aqila Binti Samsudin	MJMM No.: 0201
13.	Prassanna Devi a/p Chandra Sejara Rao	MJMM No.: 0202
14.	Rohaieza Binti Razali	MJMM No.: 0467
15.	Nuramira Shareen Binti Abd Malek	MMIC No.: M/4867/8027/18
16.	Nur Dyana Binti Misrudin	MJMM No.: 0596
17.	Qeis Haziq Bin Ahmad Yunus	MJMM No.: 0362
18.	Ema Binti Muksin	MJMM No.: 0669
19.	Nuramin Bin Abdullah	MJMM No: 0679

Scan this QR Code or visit www.ism.gov.my/cab-directories for the current scope of accreditation

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)**SCOPE OF TESTING: GMO & NUCLEIC ACID**

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Food	GMO Screening	In-house Method QWI-NA/17-02 based on Real Time PCR Technology
	Porcine DNA	In-house Method QWI-NA/17-01 based on Real Time PCR Technology
Food and Food Related Product	Porcine DNA	In-house Method QWI-NA/17-11 using Ultra-fast Real-Time PCR
	Salmonella	In-house Method QWI-NA/17-12 using Ultra-fast Real-Time PCR
	Listeria	In-house Method QWI-NA/17-13 using Ultra-fast Real-Time PCR
Shrimp	White Spot Syndrome Virus (WSSV)	In-house Method QWI-NA/17-07 using Real-Time PCR
	Taura Syndrome Virus (TSV)	In-house Method QWI-NA/17-08 using Real-Time PCR
	Yellow Head Disease Virus (YHV)	In-house Method QWI-NA/17-09 using Real-Time PCR
Fish	Spring Viraemia of Carp Virus (SVCV)	In-house Method QWI-NA/17-14 using Real-Time PCR

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 40 of 64

SCOPE OF TESTING: GMO & NUCLEIC ACID

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Saliva	Microarray Processing	In-house Method QWI-NA/17-15 based on Illumina Infinium HTS Assay

Signatories:

- | | | |
|----|---------------------------------------|----------------|
| 1. | Dr. Ch'ng Ai Ying | MJMM No.: 0120 |
| 2. | Siti Aisha Binti Abd. Aziz | MJMM No.: 0289 |
| 3. | Nurnadira Binti Abdul Rashid | MJMM No.: 0290 |
| 4. | Prassanna Devi a/p Chandra Sejara Rao | MJMM No.: 0202 |
| 5. | Hamidah Binti Mohd Yusof | MJMM No.: 0670 |

NO: SMM 147(Issue 2, 21 April 2020 replacement
of SMM 147 dated 2 March 2020)**SCOPE OF TESTING: ZOOLOGY / BIOLOGY**

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Sea Water	Zooplankton	In-house Method QWI-BI/17-001 based on APHA 10200 G (23 rd Edition, 2017)
Marine Water Fresh Water	Phytoplankton	In-house Method QWI-BI/17-002 based on APHA 10200 F (23 rd Edition, 2017)

Signatory:

1. Yee Yoke Sim

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 42 of 64

SCOPE OF TESTING: MICROBIOLOGY

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Water	Heterotrophic Plate Count/ Total Plate Count	APHA 9215 B (Pour Plate Technique)
Waste Water Potable Water Drinking Water Industrial Water	Total Coliform Count	APHA 9221 B (Fermentation Technique) APHA 9222 B (Membrane Filtration Technique)
	Total Faecal Coliform Count	APHA 9221 E (Fermentation Technique) APHA 9222 D (Membrane Filtration Technique)
	<i>Pseudomonas aeruginosa</i>	In-house Method QWI-MB/17-55 based on APHA 9213 E (Membrane Filtration Technique)
	Fecal Streptococci	In-house Method QWI-MB/17-60 based on APHA 9230 B (Fermentation Technique)
	<i>Legionella spp.</i> <i>Legionella pneumophila</i>	APHA 9260 J
	Total Coliform Count	In-house Method QWI-MB/17-25 based on APHA 9222 B (Membrane Filtration Technique)
	Total Escherichia coli Count	In-house Method QWI-MB/17-22 based on APHA 9222 D (Membrane Filtration Technique)
Drinking Water	<i>Escherichia coli</i>	In-house Method QWI-MB/17-59 based on APHA 9221 E (Fermentation Technique)
	Faecal Streptococci	In-house Method QWI-MB/17-23 based on APHA 9230 C (Membrane Filtration Technique)
	Sulfite-reducing Anaerobes	ISO 6461-2:1986
	<i>Clostridium perfringens</i>	ISO 14189:2013

Scan this QR Code or visit www.ism.gov.my/cab-directories for the current scope of accreditation

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)**SCOPE OF TESTING: MICROBIOLOGY**

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Reverse Osmosis Water	Total Plate Count Endotoxin	APHA 9215 D (Membrane Filtration Technique) USP <85> Bacterial Endotoxins Test (Kinetic-Turbidimetric Technique)
Sea Water Ground Water Waste Water River Water Surface Water Soil, Sludge	Acute Toxicity Screening	In-house Method QWI-MB/17-92 based on Microtox™ System
Marine Water Drinking Water	Total Coliforms Escherichia coli Faecal Coliforms Enterococci	APHA 9223 B (Colilert®, Multi well Procedure) APHA 9223 B (Colilert®, Multi well Procedure) APHA 9223 B (Colilert-18®, Multi well Procedure) APHA 9230 D (Enterolert®, Multi well Procedure)
Food	<i>Shigella spp.</i> <i>Bacillus cereus</i> Aerobic Plate Count/ Total Plate Count Total Escherichia coli Count and Total Coliform Count Total Yeast and Mold Count	Compendium of Methods for The Microbiological Examination of Foods, 5 th Edition, 2015, Chapter 37 FDA-BAM Online, Chapter 14 (2012), (Spread Plate Technique) AOAC 990.12 (Petrifilm Method) AOAC 991.14 (Petrifilm Method) AOAC 997.02 (Petrifilm Method)

Schedule

Issue date: 21 April 2020
Valid until: 01 August 2021



NO: SAMM 147

(Issue 2, 21 April 2020 replacement of SAMM 147 dated 2 March 2020)

Page: 44 of 64

SCOPE OF TESTING: MICROBIOLOGY

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Food and Food Related Products	<i>Cronobacter (Enterobacter) sakazakii</i>	In-house Method QWI-MB/17-51 based on ISO/TS 22964 (2005)
	<i>Listeria spp.</i> <i>Listeria monocytogenes</i>	FDA-BAM Online, Chapter 10 (2017)
	Total Enterobacteriaceae Count	AOAC 2003.01 (Petrifilm Method)
	<i>Staphylococcus aureus</i>	In-house Method QWI-MB/17-73 based on DIN EN ISO 6888-1 and 6888-2 (1999)
	<i>Bacillus cereus</i>	In-house Method QWI-MB/17-74 based on ISO 7932 (1993)
	<i>Clostridium perfringens</i>	In-house Method QWI-MB/17-75 based on CEN 13401(1999)
	Enterobacteriaceae	In-house Method QWI-MB/17-76 based on ISO 8523 (1991)
	Total Escherichia coli Count	In-house Method QWI-MB/17-77 based on ISO 8523 (1991), ISO 4831(1991), ISO 7251 (1993)
	Aerobic Mesophilic Count	ISO 4833-1:2013
Total Yeast and Mold Count	AOAC 2014.05 (3M™ Petrifilm Rapid Yeast and Mold)	
Food and Food Products and Environmental samples	<i>Salmonella spp.</i>	ISO 6579-1:2017
	Enterobacteriaceae	ISO 21528-2:2004
Food and Food related Products and Environmental Swabs	<i>Salmonella spp.</i> (Rapid Method)	AOAC 2016.01 (3M™ Molecular Detection Assay 2 - Salmonella)

Scan this QR Code or visit www.ism.gov.my/cab-directories for the current scope of accreditation

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)**SCOPE OF TESTING: MICROBIOLOGY**

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Food Environmental Swabs	<i>Salmonella spp.</i> (Rapid Method)	In-house Method QWI-MB/17-100 based on ELISA Method
Environmental Swabs	<i>Enterobacteriaceae</i> <i>Listeria spp.</i> (Rapid Method) <i>Cronobacter spp.</i> (Rapid Method)	ISO 21528-1:2017 AOAC 2016.07 (3M™ Molecular Detection Assay 2-Listeria) AOAC 2018.01 (3M™ Molecular Detection Assay 2-Cronobacter)
Milk and Milk Product Special Purpose Food	<i>Cronobacter spp.</i> (Rapid Method)	AOAC 2018.01 (3M™ Molecular Detection Assay 2-Cronobacter)
Confection Milk and Milk Product Special Purpose Food Vegetable and Vegetable Product	<i>Listeria spp.</i> (Rapid Method)	AOAC 2016.07 (3M™ Molecular Detection Assay 2-Listeria)
Confection Meat and Meat Product Milk and Milk Product Salt and Spice Special Purpose Food Tea, Coffee, Chicory and Related Product	<i>Clostridium perfringens</i>	ISO 7937:2004

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 46 of 64

SCOPE OF TESTING: MICROBIOLOGY

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Cereal, Cereal Product, Starch and Bread Cocoa and Cocoa Product Meat and Meat Product Poultry and Poultry Product Special Propose Food	Coagulase-positive <i>Staphylococci</i>	ISO 6888-1:1999/Amd.2:2018
Cereal, Cereal Product, Starch and Bread Cocoa and Cocoa Product Confection Meat and Meat Product Milk and Milk Product Poultry and Poultry Product Special Propose Food	<i>Enterobacteriaceae</i>	ISO 21528-1:2017
Food and Toiletries	Total Plate Count <i>Staphylococcus aureus</i> Total Coliform Count Total <i>Escherichia coli</i> Count Total Yeast and Mold Count <i>Salmonella spp.</i>	FDA-BAM Online, Chapter 3 (2001) (Pour Plate Technique) FDA-BAM Online, Chapter 12 (2016) (Spread Plate Technique) FDA-BAM Online, Chapter 4 (2017) (MPN Technique) FDA-BAM Online, Chapter 4 (2017) (MPN Technique) FDA-BAM Online, Chapter 18 (2001) (Spread Plate Technique) FDA-BAM Online, Chapter 5 (2016)

Scan this QR Code or visit www.ism.gov.my/cab-directories for the current scope of accreditation

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 47 of 64

SCOPE OF TESTING: MICROBIOLOGY

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Pharmaceutical Products/ Traditional Medicines/ Toiletries	Total Aerobic Microbial Count Total Yeast and Mold Count <i>Candida albicans</i> Bile Tolerant Gram Negative Bacteria <i>Escherichia coli</i> <i>Staphylococcus aureus</i> <i>Pseudomonas aeruginosa</i> <i>Salmonella spp.</i>	BP 2015
Medical Devices	Sterility Test Biological Indicator Sterility Test Bioburden Test Endotoxin Bioburden Test Sterility Test	ISO 11737:1995 Part 2 (A 5.2) In-house Method QWI-MB/17-70 ISO 11737:1995 Part 1 (A 4.6.2 & 4.6.3) USP <85> Bacterial Endotoxins Test (Kinetic-Turbidimetric Technique) ISO 11737-1:2018 ISO 11737-2:2009

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)**SCOPE OF TESTING: MICROBIOLOGY**

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Environmental Air Sampling	Bioaerosol Test: Total Plate Count Total Yeast and Mold Count	In-house Method QWI-MB/17-7 based on NIOSH Manual Analytical Method, Method 0800, 4 th Ed. (1995)
	Settle Plate Test: Total Plate Count Total Yeast and Mold Count Coliform <i>Escherichia coli</i>	In-house Method QWI-MB/17-80 based on Compendium of Methods for Microbiological Examination of Foods, 5 th Edition, 2015, Chapter 3
Surface, Equipment and Personnel Hand	Swab Test: Total Plate Count Total Yeast and Mold Count Coliform Count <i>E. coli</i> Count <i>Staphylococcus aureus</i> <i>Enterobacteriaceae</i> <i>Salmonella spp.</i> <i>Enterobacter sakazakii</i> <i>Listeria spp.</i> <i>Listeria monocytogenes</i>	In-house Method QWI-MB17-81 based on Compendium of Methods for Microbiological Examination of Foods, 5 th Edition, 2015, Chapter 3
Surface ATP Swab	ATP	In-house Method QWI-MB/17-109 based on 3M Clean-Trace Surface ATP Swab Technique

Scan this QR Code or visit www.ism.gov.my/cab-directories for the current scope of accreditation

Signatories:

- | | | |
|----|------------------------------|----------------|
| 1. | Lee Su Ann | MJMM No.: 0288 |
| 2. | Siti Aisha Binti Abd. Aziz | MJMM No.: 0289 |
| 3. | Dr. Ch'ng Ai Ying | MJMM No.: 0120 |
| 4. | Nurnadira Binti Abdul Rashid | MJMM No.: 0290 |

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)**SCOPE OF TESTING: SITE TESTING (MECHANICAL)**

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Vibration	Environmental Vibration Monitoring Peak Particle Velocity (PPV): 0.12 mm/s to 10 mm/s Frequency: 1 Hz to 250 Hz	In-house Method QWI-SP/21-016 based on DIN 4150-3:1999-02 Method for Vibration (Minimate Plus Seismograph)

Signatories:

1. Lee Yiu Lay MMIC No.: M/2712/4566/04/08
2. Chua Yao Jun MMIC No: M/4213 /7041/15

Schedule

Issue date: 21 April 2020
Valid until: 01 August 2021



MS ISO/IEC 17025

NO: SAMM 147

(Issue 2, 21 April 2020 replacement of SAMM 147 dated 2 March 2020)

Page: 50 of 64

LABORATORY LOCATION:
(BRANCH LABORATORY)

ALS TECHNICHEM (M) SDN. BHD.
NO.12 A, PERSIARAN MUTIARA 1
PUSAT KOMERSIAL BANDAR TASEK MUTIARA
14120 SIMPANG AMPAT
PULAU PINANG
MALAYSIA

SCOPE OF TESTING: MICROBIOLOGY

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Food and food related products	Aerobic Plate Count	FDA-BAM Online, Chapter 3 (2001) (Pour Plate Technique)
	Total Yeast and Mold Count	FDA-BAM Online, Chapter 18 (2001) (Spread Plate Technique)
	Total Coliform Count	FDA-BAM Online, Chapter 4 (2017) (MPN Technique)
	Total <i>Escherichia coli</i> Count	FDA-BAM Online, Chapter 4 (2017) (MPN Technique)
	<i>Staphylococcus aureus</i> Count	FDA-BAM Online, Chapter 12 (2016) (Spread Plate Technique)
	<i>Salmonella spp.</i> <i>Listeria spp.</i> <i>Listeria monocytogenes</i> Detection	FDA-BAM Online, Chapter 5 (2016) FDA-BAM Online, Chapter 10 (2017)
Environmental Swabs	<i>Salmonella spp.</i>	FDA-BAM Online, Chapter 5 (2016)
	<i>Listeria spp.</i> <i>Listeria monocytogenes</i> Detection	FDA-BAM Online, Chapter 10 (2017)
Natural Water Potable Water Drinking Water	Heterotrophic Plate Count / Total Plate Count	APHA 9215 B (Pour Plate Technique)
	Total Coliform Count	APHA 9221 B (Fermentation Technique)
	Total Coliform Count	In-house Method QWI-MB/17-25 based on APHA 9222 B (Membrane Filtration Technique)

Scan this QR Code or visit www.ism.gov.my/cab-directories for the current scope of accreditation

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 51 of 64

SCOPE OF TESTING: MICROBIOLOGY

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Natural Water Potable Water Drinking Water	<i>Escherichia coli</i>	In-house Method QWI-MB/17-59 based on APHA 9221 E (Fermentation Technique)
	<i>Escherichia coli</i>	In-house Method QWI-MB/17-22 based on APHA 9222 D (Membrane Filtration Technique)
	<i>Fecal Enterococci / Streptococci</i>	In-house Method QWI-MB/17-23 based on APHA 9230 C (Membrane Filtration Technique)
	<i>Pseudomonas aeruginosa</i>	In-house Method QWI-MB/17-55 based on APHA 9213 E (Membrane Filtration Technique)

Signatories:

- Lee Su Ann MJMM No.: 0288
- Siti Aisha Binti Abd. Aziz MJMM No.: 0289

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 52 of 64

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/ Techniques
Environmental Monitoring		
Waste water	Biochemical Oxygen Demand	APHA 5210 B
River water	pH	APHA 4500-H ⁺ B
Ground water	Conductivity	APHA 2510 B
Sea water	Total Dissolved Solids	APHA 2540 C
	Total Suspended Solids	APHA 2540 D
	Oil & Grease	APHA 5520 B

Signatories:

- Natasha Ain Binti Jamian LMIC No.: L/2509/7481/16
- Nazirah Binti Ariffin MMIC No.: M/3878/6603/13 Non-resident Signatory

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 53 of 64

APPENDIX 1**TABLE 1: VOLATILE ORGANIC COMPOUND (VOC)**

1. 1,1,1,2-Tetrachloroethane	36. Chloroethane
2. 1,1,1-Trichloroethane	37. Chloroform
3. 1,1,2,2-Tetrachloroethane	38. Chloromethane
4. 1,1,2-Trichloroethane	39. cis-1,3-Dichloropropylene
5. 1,1-Dichloroethane	40. cis-1,4-Dichloro-2-butene
6. 1,1-Dichloroethene	41. Dibromochloromethene
7. 1,1-Dichloropropylene	42. 1,2 - Dibromomethane
8. 1,2,3-Trichlorobenzene	43. Dichlorodifluoromethane
9. 1,2,3-Trichloropropane	44. Ethylbenzene
10. 1,2,4-Trichlorobenzene	45. Hexachlorobutadiene
11. 1,2,4-Trimethylbenzene	46. Iodomethane
12. 1,2-Dibromo-3-chloropropane	47. Isopropylbenzene
13. 1,2-Dibromoethane	48. meta- & para-Xylene
14. 1,2-Dichlorobenzene	49. Methylene chloride
15. 1,2-Dichloroethane	50. Naphtalene
16. 1,2-Dichloropropane	51. N-Butylbenzene
17. 1,3,5-Trimethylbenzene	52. n-Propylbenzene
18. 1,3-Dichlorobenzene	53. ortho-Xylene
19. 1,3-Dichloropropane	54. Pentachloroethane
20. 1,4-Dichlorobenzene	55. P-Isopropyltoluene
21. 2,2-Dichloropropane	56. sec-Butylbenzene
22. 2-Butanone (MEK)	57. Styrene
23. 2-Chlorotoluene	58. Tert-Butylbenzene
24. 2-Hexanone (MBK)	59. Tetrachloroethene
25. 2-Propanone (Acetone)	60. Toluene
26. 4-Chlorotoluene	61. Trans-1,2-Dichloroethene
27. 4-Methyl-2-pentanone (MIBK)	62. trans-1,3-Dichloropropylene
28. Benzene	63. trans-1,4-Dichloro-2-butene
29. Bromobenzene	64. Trichloroethene
30. Bromodichloromethane	65. Trichlorofluoromethane
31. Bromoform	66. Vinyl acetate
32. Bromomethane	67. Vinyl chloride
33. Carbon disulfide	68. cis-1,2-Dichloroethene
34. Carbon tetrachloride	69. Methyl-t-butyl ether
35. Chlorobenzene	

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 54 of 64

APPENDIX 2**TABLE 2: SEMIVOLATILE ORGANIC COMPOUND (SVOC)**

1. 1,2-Dichlorobenzene	48. Bis (2-ethylhexyl) phthalate	97. N-Nitrosodibutylamine
2. 1,2,4-Trichlorobenzene	49. Butyl benzyl phthalate	98. N-Nitrosodiethylamine
3. 1,3,5-Trinitrobenzene	50. Carbazole	99. N-Nitrosodi-n-propylamine
4. 1,3-Dichlorobenzene	51. Chlorfenvinphos-E	100. N-Nitrosomethylethylamine
5. 1,4-Dichlorobenzene	52. Chlorfenvinphos-Z	101. N-Nitrosomorpholine
6. 1-Naphthylamine	53. Chlorobenzilate	102. N-Nitrosopiperidine
7. 2,4,5-Trichlorophenol	54. Chlorpyrifos	103. N-Nitrosopyrrolidine
8. 2,4,6-Trichlorophenol	55. Chlorpyrifos methyl	104. p,p'-DDD
9. 2,4-Dichlorophenol	56. Chrysene	105. p,p'-DDE
10. 2,4-Dimethylphenol	57. cis-Isosafrole	106. p,p'-DDT
11. 2,4-Dinitrotoluene	58. delta-BHC	107. Pentachlorobenzene
12. 2,6-Dichlorophenol	59. Diallate	108. Pentachloronitrobenzene
13. 2,6-Dinitrotoluene	60. Diazinon	109. Pentachlorophenol
14. 2-Chloronaphthalene	61. Dibenz (a,h) anthracene	110. Phenacetin
15. 2-Chlorophenol	62. Dibenzofuran	111. Phenanthrene
16. 2-Methylnaphthalene	63. Dichlorvos	112. Phenol
17. 2-Methylphenol	64. Dieldrin	113. Pirimphos ethyl
18. 2-Nitroaniline	65. Diethyl phthalate	114. Pronamide
19. 2-Nitrophenol	66. Dimethoate	115. Prothiofos
20. 2-Picoline	67. Dimethyl phthalate	116. Pyrene
21. 3,3' Dichlorobenzidine	68. Dimethylaminoazobenzene	117. Safrole
22. 3-Methylchloanthrene	69. Di-n-butyl phthalate	118. trans-isosafrole
23. 3-Nitroaniline	70. Di-n-octyl phthalate	119. 2-Chlorobiphenyl
24. 4-Aminobiphenyl	71. Diphenylamine & NNitrosodiphenylamine	120. 3,3'-Dichlorobiphenyl
25. 4-Bromophenyl phenyl ether	72. Endosulfan 1	121. 2,4,5-Trichlorobiphenyl
26. 4-Chloro-3-methylphenol	73. Endosulfan 2	122. 2,2',4,4'-Tetrachlorobiphenyl
27. 4-Chloroaniline	74. Endosulfan sulfate	123. 2,3',4,5',6'-Pentachlorobiphenyl
28. 4-Chlorophenyl phenyl ether	75. Endrin	124. 2,2',3,3',6,6'-Hexachlorobiphenyl
29. 4-Nitroaniline	76. Ethion	125. 2,2',3,4,5,5',6'-Heptachlorobiphenyl
30. 4-Nitroquinoline-N-oxide	77. Fenthion	126. 2,2',3,3',4,4',5,5'-Octachlorobiphenyl
31. 5-Nitro-o-toluidine	78. Fluoranthrene	127. 2,2',3,3',4,4',5,5',6'-Nonachlorobiphenyl
32. 7,12-Dimethyl benz (a) anthracene	79. Fluorene	128. 2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl
33. Acenaphthylene	80. gamma-BHC	129. 3&4 Methylphenol
34. Acenaphthene	81. Heptachlor	
35. Acetophenone	82. Heptachlor epoxide	
36. Aldrin	83. Hexachlorobenzene	
37. alpha-BHC	84. Hexachlorobutadiene	
38. Aniline	85. Hexachlorocyclopentadiene	
39. Anthracene	86. Hexachloroethane	
40. Azobenzene	87. Hexachloropropylene	
41. Benz (a) anthracene	88. Indeno (1,2,3-cd) pyrene	
42. Benzo (a) pyrene	89. Isophorone	
43. Benzo (b) & (k) fluoroanthene	90. Malathion	
44. Benzo (g,h,i) perylene	91. Methanesulfonate ethyl	
45. beta BHC	92. Methanesulfonate methyl	
46. Bis (2-chloroethyl) ether	93. Methapyrilene	
47. Bis (2-chloroethoxy) methane	94. N-2-Fluorenylacetamide	
	95. Naphthalene	
	96. Nitrobenzene	

NO: SAMM 147

(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 55 of 64

APPENDIX 3**TABLE 3: POLYAROMATIC HYDROCARBONS (PAHs)**

1. 2 - Chloronaphthalene
2. 2 - Methyl naphthalene
3. 3 - Methyl chloanthrene
4. 7, 12 - Dimethyl benz (a) anthracene
5. Acenaphthylene
6. Acenaphthene
7. Anthracene
8. Benz (a) anthracene
9. Benzo (a) pyrene
10. Benzo (b) & (k) fluoroanthene
11. Benzo (g, h, i) perylene
12. Chrysene
13. Dibenz (a,h) anthracene
14. Fluoranthrene
15. Fluorene
16. Indeno (1, 2, 3 - cd) pyrene
17. N -2 - Fluorenylacetamide
18. Naphthalene
19. Phenanthrene
20. Pyrene

NO: SAMM 147

(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 56 of 64

APPENDIX 4**TABLE 4: VOLATILE ORGANIC COMPOUND (VOC)**

1. 1, 1, 1 - Trichloroethane
2. 1, 1, 2 - Trichloroethane
3. Trans - 1, 2 - Dichloroethene
4. cis - 1, 2 - Dichloroethene
5. cis - 1, 3 - Dichloro - 1 - propene
6. 1, 1 - Dichloroethane
7. 1, 2 - Dimethylbenzene (o - xylene)
8. 1, 2 - Dichloroethane
9. 1, 2 - Dichloropropane
10. 1, 3 - Dimethylbenzene (m - xylene)
11. 1, 4 - Dimethylbenzene (p - xylene)
12. 1, 4 - Dichlorobenzene
13. Benzene
14. Bromodichloromethane
15. Bromoform
16. Carbon tetrachloride
17. Chloroform
18. Dibromochloromethane
19. Dichloromethane
20. Tetrachloroethene
21. Toluene
22. Trichloroethene

NO: SAMM 147

(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 57 of 64

APPENDIX 5**TABLE 5: ORGANOCHLORINE PESTICIDES**

1. α -BHC
2. HCB
3. β - & γ -BHC
4. d-BHC
5. Heptachlor
6. Aldrin
7. Heptachlor epoxide
8. Chlordane-trans
9. Endosulfan 1
10. Chlordane-cis
11. Dieldrin
12. DDE
13. Endrin
14. Endosulfan 2
15. DDD
16. Endrin aldehyde
17. Endosulfan sulfate
18. DDT
19. Endrin ketone
20. Methoxychlor

NO: SAMM 147

(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 58 of 64

APPENDIX 6**TABLE 6: ORGANOPHOSPHORUS PESTICIDES**

1. Dichlorvos
2. Demeton-S-methyl
3. Monocrotophos
4. Dimethoate
5. Diazinon
6. Chlorpyrifos-methyl
7. Parathion-methyl
8. Malathion
9. Fenthion
10. Chlorpyrifos
11. Parathion
12. Pirimphos-ethyl
13. Chlorfenvinphos E
14. Chlorfenvinphos Z
15. Bromophos-ethyl
16. Fenamiphos
17. Prothiofos
18. Ethion
19. Carbofenthion
20. Azinphos-methyl

TABLE 7: CYPERMETHRIN

1. Simazine
2. Atrazine
3. Cypermethrins

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 59 of 64

APPENDIX 7**TABLE 8: PESTICIDES LIST**

1. 3-Hydroxycarbofuran	44. Cyproconazole (isomer)	87. Fluquinconazole
2. Acephate	45. Cyprodinil	88. Flusilazole
3. Acetamiprid	46. Desmedipham	89. Flutolanil
4. Acibenzolar-S-methyl	47. Diclobutrazol	90. Flutriafol
5. Alanycarb	48. Dicrotophos	91. Forchlorfenuron
6. Aldicarb	49. Diethofencarb	92. Formetanate
7. Aldicarb-sulfoxide	50. Difenconazole	93. Fuberidazole
8. Aldoxycarb	51. Difenconazole (isomer)	94. Furalaxyl
9. Ametryn	52. Diflubenzuron	95. Furathiocarb
10. Aminocarb	53. Dimethoate	96. Halofenozide
11. Amitraz	54. Dimethomorph	97. Hexaconazole
12. Azoxystrobin	55. Dimoxystrobin	98. Hexaflumuron
13. Benalaxyl	56. Diniconazole	99. Hexythiazox
14. Bendiocarb	57. Dinotefuran	100. Hydramethylnon
15. Benfuracarb	58. Dioxacarb	101. Imazalil
16. Benzoximate	59. Diuron	102. Imidacloprid
17. Bifenazate	60. Emamectin B1a	103. Indoxacarb
18. Bitertanol	61. Emamectin B1b	104. Ipconazole
19. Boscalid	62. Epoxiconazole	105. Iprovalicarb
20. Bromuconazole-cis	63. Etaconazole	106. Isoprocarb
21. Bromuconazole-trans	64. Ethiofencarb	107. Isoproturon
22. Bupirimate	65. Ethiprole	108. Isoxaflutole
23. Buprofezin	66. Ethirimol	109. Kresoxim-methyl
24. Butafenacil	67. Ethofumesate	110. Linuron
25. Butoxycarboxim	68. Etoazole	111. Lufenuron
26. Carbaryl	69. Famoxadone	112. Mandipropamid
27. Carbendazim	70. Fenamidone	113. Mefenacet
28. Carbetamide	71. Fenarimol	114. Mepanipyrim
29. Carbofuran	72. Fenazaquin	115. Mepronil
30. Carboxin	73. Fenbuconazole	116. Mesotrione
31. Carfentrazone-ethyl	74. Fenhexamid	117. Metaflumizone
32. Chlorantraniliprole	75. Fenobucarb	118. Metalaxyl
33. Chlorfluazuron	76. Fenoxycarb	119. Metconazole
34. Chlorotoluron	77. Fenpropimorph	120. Methabenzthiazuron
35. Chloroxuron	78. Fenpyroximate	121. Methamidophos
36. Clethodim E	79. Fenuron	122. Methiocarb
37. Clethodim Z	80. Fipronil	123. Methomyl
38. Clofentezine	81. Flonicamid	124. Methoprotrotryne
39. Clothianidin	82. Fludioxonil	125. Methoxyfenozide
40. Cyazofamid	83. Flufenacet	126. Metobromuron
41. Cycluron	84. Flufenoxuron	127. Metribuzin
42. Cymoxanil	85. Fluometuron	128. Mevinphos E
43. Cyproconazole	86. Fluoxastrobin	129. Mevinphos Z

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 60 of 64

TABLE 8: PESTICIDES LIST (continue)

130. Mexacarbate	173. Spiromesifen
131. Monocrotophos	174. Spirotetramat
132. Monolinuron	175. Spiroxamine
133. Myclobutanil	176. Spiroxamine (isomer)
134. Neburon	177. Sulfentrazone
135. Nitenpyram	178. Tebuconazole
136. Novaluron	179. Tebufenozide
137. Nuarimol	180. Tebufenpyrad
138. Omethoate	181. Tebuthiuron
139. Oxadixyl	182. Teflubenzuron
140. Oxamyl	183. Temephos
141. Paclobutrazol	184. Terbumeton
142. Penconazole	185. Terbutryn
143. Pencycuron	186. Tetraconazole
144. Phenmedipham	187. Thiabendazole
145. Picoxystrobin	188. Thiacloprid
146. Piperonyl-butoxide	189. Thiamethoxam
147. Pirimicarb	190. Thidiazuron
148. Prochloraz	191. Thiobencarb
149. Promecarb	192. Thiofanox
150. Prometon	193. Thiophanate-methyl
151. Prometryne	194. Triadimefon
152. Propamocarb	195. Triadimenol
153. Propargite	196. Trichlorfon
154. Propham	197. Tricyclazole
155. Propiconazole	198. Trifloxystrobin
156. Propoxur	199. Triflumizole
157. Pymetrozine	200. Triflumuron
158. Pyracarbolid	201. Triticonazole
159. Pyraclostrobin	202. Vamidothion
160. Pyridaben	203. Zoxamide
161. Pyrimethanil	204. Avermectin B1a
162. Pyriproxyfen	205. Avermectin B1b
163. Quinoxifen	206. Doramectin
164. Rotenone	207. Ivermectin B1a
165. Secbumeton	208. Ivermectin B1b
166. Siduron	209. Moxidectin
167. Simetryn	210. Eprinomectin B1a
168. Spinetoram A	211. Eprinomectin B1b
169. Spinetoram B	212. Cyromazine
170. Spinosyn A	
171. Spinosyn D	
172. Spirodiclofen	

NO: SAMM 147

(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 61 of 64

APPENDIX 8**TABLE 9: VOLATILE ORGANIC COMPOUNDS**

1. Benzene
2. 1, 3-Butadiene
3. 3-Chloropropene
4. Toluene
5. Ethylbenzene
6. m- & p-Xylene
7. Styrene
8. o-Xylene
9. 1, 2-Dichloropropane
10. 1, 1-Dichloroethylene
11. 1, 1-Dichloroethane
12. 1, 1, 1-Trichloroethane
13. Carbon Tetrachloride
14. 1, 2-Dichloroethane
15. Trichloroethylene
16. 1, 1, 2- Trichloroethane
17. Tetrachloroethylene
18. Chlorobenzene
19. 1,4-Dichlorobenzene

NO: SAMM 147

(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 62 of 64

APPENDIX 9**TABLE 10: TOTAL POLYCYCLIC AROMATIC HYDROCARBON (TOTAL PAHs)**

1. Fluoranthene
2. Chrysene
3. Dibenzo (a,h) anthracene
4. Acenaphthylene
5. Fluorene
6. Anthracene
7. Pyrene
8. Benzo (a) anthracene
9. Benzo (b) & (K) fluoranthene
10. Benzo (a) pyrene
11. Indeno (1,2,3-cd) pyrene
12. Benzo (ghi) perylene
13. Naphthalene
14. Acenaphthene
15. Phenanthrene

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 63 of 64

APPENDIX 10**TABLE 11: PESTICIDES LIST**

1. Dichlorvos
2. Dimethon-S-methyl
3. Monocrotophos
4. Phorate
5. α -BHC
6. HCB
7. Dimethoate
8. Simazine
9. Atrazine
10. β -BHC
11. γ -BHC
12. Diazinon
13. δ -BHC
14. Chlorpyrifos-methyl
15. Heptachlor
16. Malathion
17. Parathion-methyl
18. Fenthion
19. Aldrin
20. Chlorpyrifos
21. Parathion
22. Primiphos-ethyl
23. Heptachlor epoxide
24. Chlorfenvinphos-E
25. Chlorfenvinphos-Z
26. Bromophos-ethyl
27. Chlordane-Cis
28. Chlordane-Trans
29. Fenamiphos
30. Prothiofos
31. P', p - DDE
32. Dieldrin
33. Endosulfan I
34. Endrin
35. p',p-DDD
36. Ethion
37. Endrin aldehyde
38. Endosulfan II
39. Endosulfan sulfate
40. Carbofenthion
41. p',p'-DDT
42. Endrin Ketone
43. Phosmet
44. Methoxychlor
45. Azinophos-methyl
46. Mirex
47. Cypermethrin (multipeaks)
48. Chlordecone (Kepone)
49. Deltamethrin

NO: SAMM 147(Issue 2, 21 April 2020 replacement
of SAMM 147 dated 2 March 2020)

Page: 64 of 64

APPENDIX 11**TABLE 12: TOTAL POLYCYCLIC AROMATIC HYDROCARBON (TOTAL PAHs)**

1. Trans-Decalin
2. Cis-Decalin
3. Isophorone
4. Naphthalene
5. 2-Metylnaphthalene
6. 2-Chloronaphthalene
7. Acenaphtylene
8. Benzo(b)thiophene
9. 1-Methylnaphthalene
10. Biphenyl
11. 2,6-Dimethylnaphthalene
12. Acenaphthene
13. Fluorene
14. Dibenzofuran
15. 2,3,5-Trimethylnaphthalene
16. Dibenzothiophene
17. Carbazole
18. Phenanthrene
19. Anthracene
20. Fluoranthene
21. Pyrene
22. Benz(a)anthracene
23. Chrysene
24. 1-Methylphenanthrene
25. 3,6-Dimethylphenanthrene
26. Benzo(b)fluoranthene
27. Benzo(k)fluoranthene
28. Benzo(b)&(k)fluoranthene
29. Benzo(a)pyrene
30. Benzo(e)pyrene
31. Indeno(1,2,3-cd) pyrene
32. Dibenz(a,h)anthracene
33. Benzo(g,h,i) perylene
34. Perylene