

NO: SAMM 997

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LABORATORY LOCATION:
(PERMANENT LABORATORY)

**AWWAM ENVIRONMENTAL LABORATORY SERVICES
AIRWASTEWATER MANAGEMENT SDN. BHD.
NO. 176, JALAN S2 C9, SEKSYEN C
GREEN TECHNOLOGY PARK, SEREMBAN 2
70300 SEREMBAN
NEGERI SEMBILAN, MALAYSIA**

FIELD OF TESTING: CHEMICAL

This laboratory has demonstrated its technical competence to operate in accordance with MS ISO/IEC 17025:2017 (ISO/IEC 17025:2017).

This laboratory's fulfillment of the requirements of ISO/IEC 17025 means the laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations. The management system requirements in ISO/IEC 17025 are written in language relevant to laboratory operations and operate generally in accordance with the principles of ISO 9001 (see Joint ISO-ILAC-IAF Communiqué dated April 2017).

SCOPE OF TESTING: CHEMICAL

| Materials/ Products Tested | Type of Test/ Properties Measured/ Range of Measurement | Standard Test Methods/ Equipment/Techniques |
|---|--|--|
| Wastewater (Industrial Effluent, Leachate & Sewage) | pH | APHA 4500 H ⁺ B |
| | Suspended Solids | APHA 2540 D |
| | Color | APHA 2120 F |
| | Chemical Oxygen Demand (COD) | APHA 5220 C |
| | Chromium, Hexavalent | APHA 3500-Cr B |
| | Mercury | In-house method AELS/QWI/FIMS/02 based on APHA 3112 B |
| | Aluminium Barium Cadmium Chromium Copper Iron Lead Manganese Nickel Silver Tin Zinc Boron Arsenic Selenium | APHA 3120 B |

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SCOPE OF TESTING: CHEMICAL

| Materials/ Products Tested | Type of Test/ Properties Measured/ Range of Measurement | Standard Test Methods/ Equipment/Techniques |
|---|---|---|
| Wastewater (Industrial Effluent, Leachate & Sewage) | BOD ₅ | APHA 5210 B |
| | Oxygen (Dissolved) | APHA 4500-O G |
| | Oil and Grease | APHA 5520B |
| | Formaldehyde | In-house method 002 based on Spectroquant® Formaldehyde test 114678 |
| | Nitrogen (Ammonia) | APHA 4500-NH ₃ B&C |
| | Cyanide | APHA 4500-CN ⁻ C& E |
| | Phenol | APHA 5530 B&D |
| | Free Chlorine | APHA 4500-Cl G |
| | Fluoride | APHA 4500-F ⁻ B&D |
| Soil, Sludge & Sediments | Mercury | In-house method AELS/QWI/FIMS/03 based on USEPA 3051 A and USEPA 7471 B |
| | pH | USEPA 9045 D |
| | Thallium Barium Cadmium Chromium Copper Molybdenum Lead Cobalt Nickel Silver Antimony Zinc Beryllium Arsenic Selenium Vanadium | USEPA 6010 D |
| | Acid digestion for Toxicity Characteristic Leaching Procedure (TCLP) and Total Threshold Limit Concentration (TTLC) | USEPA 3051 A |
| | | |

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SCOPE OF TESTING: CHEMICAL

| Materials/ Products Tested | Type of Test/ Properties Measured/ Range of Measurement | Standard Test Methods/ Equipment/Techniques |
|---------------------------------------|--|--|
| Soil, Sludge & Sediments | Toxicity Characteristic Leaching Procedure | In-house method 001 based on USEPA 1311 |
| Liquid Hydrocarbon Fuel | Calorific Value | ASTM D 240-14 |
| Liquid Waste | Flash Point | ASTM D 93-16 |

Notes:

APHA: American Public Health Association

US EPA: United States Environmental Protection Agency

ASTM: American Society for Testing and Material

Signatories:

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|----|-------------------------------------|--------------------------------|
| 1. | Dr. Ahyar bin Idris | IKM No.: M/0971/1751/86 |
| 2. | Mariadatulazima binti Johar | IKM No.: M/5454/8889/20 |
| 3. | Nurulhayati binti Mohd Azman | IKM No.: M/5453/8888/20 |
| 4. | Afiqah binti Abdul Razak | IKM No.: L/2979/8822/20 |