SCHEDULE OF ACCREDITATION

KAIZEN ENVIRONMENTAL SERVICES (TRINIDAD) LTD

Testing Laboratory No.: LAS-005

is an accredited Laboratory which fulfils the requirements of *ISO/IEC 17025:2017 – General requirements for the competence of testing and calibration laboratories*, and has demonstrated competence to carry out tests for:

CHEMICAL AND MICROBIOLOGICAL TESTING

as specified in and at locations identified in this schedule. This document may be revised from time to time based on accreditation requirements. The most current issue is available on TTLABS website: https:\\gottbs.com/ttlabs

While this schedule remains valid, the Accredited Laboratory named above is authorized to issue TTLABS-endorsed certificates.

Karlene Carolyn Lewis

Manager, TTLABS

"Recognised as the official national laboratory accrediting body by the Ministry of Trade and Industry of the Republic of Trinidad and Tobago."

Initial Accreditation date: 3rd September 2014

This schedule was re-issued on: 5th October 2020 **This schedule expires on: 17th December 2023**

"This accreditation demonstrates that the laboratory fulfils both the technical competence and management system requirements for it to consistently deliver technically valid test results. The language of the management system requirements in ISO/IEC 17025 is written to be relevant to laboratory operations and are generally in accordance with the principles of ISO 9001. (Refer to joint ISO-ILAC-IAF Communiqué dated April 2017)"

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Testing Laboratory Number: **LAS-005**

Permanent Address of Laboratory: Unit # 8 Rajkumar Street Mission Road Freeport Trinidad and Tobago. W.I. **Postal Address** Unit # 8 Rajkumar Street Mission Road Freeport Trinidad and Tobago. W.I. Tel : 868-299-0009 Fax : 868-673-6774 e-mail: inquiries@kaizen-tt.com	**Management Signatories:** Douglas De Freitas – Chief Executive Officer Anja Seejoor – Country Manager (Ag) Shantel Charles – Division Manager (IT) **Technical Signatories:** Shantel Charles – Division Manager (IT) **Nominated Representative:** Shantel Charles – Division Manager (IT) **Certificate of Accreditation** Issue No. : 05

Materials/Products Tested	Types of Tests/Properties Measured, Range of Measurement	Standard Specifications, Equipment/Techniques Used
Instruction: add rows as needed below and enter the FIELD where necessary (e.g. Chemical, Microbiological, Mechanical).		
CHEMICAL Water & Wastewater	1) Determination of Total Suspended Solids (dried at 103-105°C) **Units: mg /L**	Standard Methods for the Examination of Water and Wastewater 23rd ed. -2540 D **Method No. KLABTM-WC001**
Water & Wastewater	2) Determination of Chemical Oxygen Demand (Closed Reflux Colorimetric Method) **Units: mg O_2 /L**	Standard Methods for the Examination of Water and Wastewater 23rd ed. – 5220 D **Method No. KLABTM-WC002**
Water & Wastewater	3) Determination of Electrical Conductivity in Liquids **Units: ms /cm**	Standard Methods for the Examination of Water and Wastewater 23rd ed. 2510 B **Method No. KLABTM-WC003**
Water & Wastewater	4) Determination of Dissolved Oxygen in Liquids (Membrane Electrode Method) **Units: mg /L**	Standard Methods for the Examination of Water and Wastewater 23rd ed. 4500- O G **Method No. KLABTM-WC004**
Water & Wastewater	5) Determination of pH in Water and Wastewater **Units: pH Value**	Standard Methods for the Examination of Water and Wastewater 23nd ed. – 4500 H_+ B

Water & Wastewater	5) Determination of pH in Water and Wastewater **Units: pH Value**	Standard Methods for the Examination of Water and Wastewater 23nd ed. – 4500 H^+ B **Method No. KLABTM-WC005**
Water & Wastewater	6) Determination of Total/Residual Chlorine (DPD Colorimetric Method) **Units: mg /L**	Standard Methods for the Examination of Water and Wastewater 23rd ed. 4500 Cl G- DPD Colorimetric Method **Method No. KLABTM-WC006**
Water & Wastewater	7) Determination of Temperature (Field Laboratory Method) **Units: °Celcius**	Standard Methods for the Examination of Water and Wastewater 23rd ed. – 2550 B **Method No. KLABTM-WC008**
Water & Wastewater	8) Determination of Chloride (Argentometric Method) **Units: mg Cl^- /L**	Standard Methods for the Examination of Water and Wastewater 23rd ed. – 4500 Cl^- B **Method No. KLABTM-WC009**
Water & Wastewater	9) Determination of Colour in Liquids (Platinum-Cobalt Standard Method) **Range – 15 to 500 Pt-Co Units**	Standard Methods for the Examination of Water and Wastewater 23rd ed. 2120 **Method No. KLABTM-WC011**
Water & Wastewater	10) Determination of Dissolved Hexavalent Chromium Liquids (1,5- Diphenylcarbohydrazide Method using powder pillows) **Range – 0.01 to 0.70mg/L^{-1}**	Standard Methods for the Examination of Water and Wastewater 23rd ed. 3500-Cr B **Method No. KLABTM-WC014**
Water & Wastewater	11) Determination of Total Dissolved Solids (TDS) in Liquids (dried at 180°C) **Units: mg /L**	Standard Methods for the Examination of Water and Wastewater 23rd ed. 2540 C **Method No. KLABTM-WC030**
Water & Wastewater	12) Determination of Total Solids (TS) in Liquids (dried at 103-105°C) **Units: mg /L**	Standard Methods for the Examination of Water and Wastewater 23rd ed. 2540 B **Method No. KLABTM-WC033**
Water & Wastewater	13) Determination of Phenols (4-Aminoantipyrine Method) **Units: mg /L**	Standard Methods for the Examination of Water and Wastewater 23rd ed. – 5530 B, C **Method No. KLABTM-LP001**

Water & Wastewater	14) Determination of Ammoniacal Nitrogen in Liquids by Titrimetric Method **Units: mg /L**	Standard Methods for the Examination of Water and Wastewater 23rd ed. 4500-NH_3-N C **Method No. KLABTM-LP003**
Water & Wastewater	15) Determination of Total Oil and Grease (Hexane Extractable Material) and Total Petroleum Hydrocarbons (Silica Gel Treated n-Hexane Extractable Material) in Liquids **Range – 5 to 1000mg /L^{-1}**	US Environmental Protection Agency, U.S. EPA 1664 **Method No. KLABTM-SOL001**
Water & Wastewater	16) Determination of Total Oil and Grease (Hexane Extractable Material) and Total Petroleum Hydrocarbons (Silica Gel Treated n-Hexane Extractable Material) in Liquids using the End- Over Rotary Method **Range - 5 to 1000 mg /L^{-1}**	US Environmental Protection Agency, USEPA 1664 **Method No. KLABTM-SOL003**
Water & Wastewater	17) Determination of Acute Toxicity by Static Testing in Liquids (Use of *Mysidopsis Insularis*) **Range – 0.001 to 100% LC_{50}**	US Environmental Protection Agency, EPA- 821-R-02-012 **Method No. KLABTM-TOX001**
Water & Wastewater	18) Determination of Acute Toxicity for Drilling Fluids by Static Testing (Use of *Mysidopsis Insularis*) **Range – 0.001 to 100% LC_{50}**	US Environmental Protection Agency, EPA- 821-R-02-012 and EPA-821-R-11-004 **Method No. KLABTM-TOX003**
Water & Wastewater	19) Determination of Biological Oxygen Demand in Liquids (Five-day Method) **Units: mg /L**	Standard Methods for the Examination of Water and Wastewater 23rd ed. 5210 B **Method No. KLABTM-MB001**
Water & Wastewater	20) Determination of Nitrate in Liquids (Cadmium Reduction Method) **Units: mg /L**	Standard Methods for the Examination of Water and Wastewater 23rd ed. Method 4500 **Method No. KLABTM-WC018**
Water & Wastewater	21) Determination of Sulphate in Liquids (Turbidimetric Method) **Units: mg /L**	Standard Methods for the Examination of Water and Wastewater 23rd ed. Method 4500 **Method No. KLABTM-WC025**

MICROBIOLOGICAL Water & Wastewater	22) Determination of *E. coli* in Liquids by Membrane Filtration **Units: CFU /100ml**	Standard Methods for the Examination of Water and Wastewater 23rd ed 9213 D **Method No. KLABTM-MB002**
Water & Wastewater	23) Determination of *E. coli* in Liquids by Multiple Tube Fermentation **Units: MPN /100ml**	Standard Methods for the Examination of Water and Wastewater 23rd ed. 9000, 9221 C, 9221 F **Method No. KLABTM-MB003**
Water & Wastewater	24) Determination of *E. coli* in Liquids using Colitag™ (Enumerative and Presumptive Methods) **Units: MPN /100ml**	Standard methods for the Examination of Water and Waste Water 22nd ed. Method 9223 B **Method No. KLABTM-MB004**
Water & Wastewater	25) Determination of Faecal Coliforms in Liquids by Multiple Tube Fermentation **Units: MPN /100ml**	Standard Methods for the Examination of Water and Wastewater 23rd ed. 9000, 9221 B, 9221 E **Method No. KLABTM-MB007**
Water & Wastewater	26) Determination of Faecal Coliforms in Liquids by Membrane Filtration **Units: CFU /100ml**	Standard Methods for the Examination of Water and Wastewater 23rd ed. 9222 D **Method No. KLABTM-MB006**
Water & Wastewater	27) Determination of Total Coliforms in Liquids using Colitag™ (Enumerative and Presumptive Methods) **Units: MPN /100ml**	Standard Methods for the Examination of Water and Wastewater 22nd ed. 9223 B Colitag™ Presence and Absence water test kit CPI International **Method No. KLABTM-MB013**
Water & Wastewater	28) Determination of Total Coliforms in Liquids by Multiple Tube Fermentation **Units: MPN /100ml**	Standard Methods for the Examination of Water and Wastewater 23rd ed. 9000, 9221 B **Method No. KLABTM-MB014**
Water & Wastewater	29) Determination of Total Coliforms in water by Membrane Filtration **Units: CFU /100ml**	Standard methods for the Examination of Water and Waste Water 23rd ed. Part 9000, 9222 B **Method No. KLABTM-MB015**
Water & Wastewater	30) Heterotrophic Plate Count in Liquids by Membrane Filtration **CFU/mL**	Standard Methods for the Examination of Water and Wastewater 23rd ed. Part 9215D **Method No. KLABTM-MB022**

Cereals, pasta chocolate, meat and meat products and beverages	31) Determination of Aerobic Plate Count in foods and swabs by Hydrophobic Grid Membrane Filtration **Units: MPN /ml or MPN/g**	AOAC Official Method 986.32 - 1987 **Method No. KLABTM-FA001**
Cereals, pasta chocolate, meat and meat products and beverages	32) Determination of *E.coli* in foods and swabs by Hydrophobic Grid Membrane Filtration **Units: MPN /ml or MPN/g**	AOAC Official Method 997.11-2001 **Method No. KLABTM-FA002**
Cereals, pasta chocolate, meat and meat products and beverages	33) Determination of Total Coliform in foods and swabs by Hydrophobic Grid Membrane Filtration **Units: MPN /ml or MPN/g**	AOAC Official Method 990.11-1993 **Method No. KLABTM-FA003**

END OF SCHEDULE OF ACCREDITATION