

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 June 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)”

Testing Laboratory Number: **LAS-005**

<p><u>Permanent Address of Laboratory:</u> Unit # 8 Rajkumar Street Mission Road Freeport Trinidad and Tobago. W.I.</p> <p><u>Postal Address</u> Unit # 8 Rajkumar Street Mission Road Freeport Trinidad and Tobago. W.I.</p> <p>Tel : 868-299-0009 Fax : 868-673-6774 e-mail: inquiries@kaizen-tt.com</p>		<p><u>Management Signatories:</u> Douglas De Freitas – Chief Executive Officer Anja Seejoor – Chief Technical Officer Rykiel Smyke – Laboratory Manager</p> <p><u>Technical Signatories:</u> Rykiel Smyke – Laboratory Manager Semone Nicholas – Technical Manager</p> <p><u>Nominated Representative:</u> Rykiel Smyke – Laboratory Manager</p> <p><u>Certificate of Accreditation</u> Issue No. : 05</p>
Materials/Products Tested	Types of Tests/Properties Measured, Range of Measurement	Standard Specifications, Equipment/Techniques Used
<p><i>Instruction: add rows as needed below and enter the <u>FIELD</u> where necessary (e.g. Chemical, Microbiological, Mechanical).</i></p>		
<p><u>CHEMICAL</u> Water & Wastewater</p>	<p>1) Determination of Total Suspended Solids (dried at 103-105°C) Units: mg /L</p>	<p>Standard Methods for the Examination of Water and Wastewater 23rd ed. -2540 D Method No. KLABTM-WC001</p>
Water & Wastewater	<p>2) Determination of Chemical Oxygen Demand (Closed Reflux Colorimetric Method) Units: mg O₂/L</p>	<p>Standard Methods for the Examination of Water and Wastewater 23rd ed. – 5220 D Method No. KLABTM-WC002</p>
Water & Wastewater	<p>3) Determination of Electrical Conductivity in Liquids Units: ms /cm</p>	<p>Standard Methods for the Examination of Water and Wastewater 23rd ed. 2510 B Method No. KLABTM-WC003</p>
Water & Wastewater	<p>4) Determination of Dissolved Oxygen in Liquids (Membrane Electrode Method) Units: mg /L</p>	<p>Standard Methods for the Examination of Water and Wastewater 23rd ed. 4500- O G Method No. KLABTM-WC004</p>

Water & Wastewater	5) Determination of pH in Water and Wastewater Units: pH Value	Standard Methods for the Examination of Water and Wastewater 23 rd 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 23 rd 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 23 rd 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 23 rd 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 23 rd 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 23 rd 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 23 rd 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 23 rd 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 23 rd 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 23 rd 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 <i>Mysidopsis Insularis</i>) Range – 0.001 to 100% LC₅₀	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 <i>Mysidopsis Insularis</i>) Range – 0.001 to 100% LC₅₀	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 23 rd 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 23 rd 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 23 rd ed. Method 4500 Method No. KLABTM-WC025

MICROBIOLOGICAL Water & Wastewater	22) Determination of <i>E. coli</i> in Liquids by Membrane Filtration Units: CFU /100ml	Standard Methods for the Examination of Water and Wastewater 23 rd ed 9213 D Method No. KLABTM-MB002
Water & Wastewater	23) Determination of <i>E. coli</i> in Liquids by Multiple Tube Fermentation Units: MPN /100ml	Standard Methods for the Examination of Water and Wastewater 23 rd ed. 9000, 9221 C, 9221 F Method No. KLABTM-MB003
Water & Wastewater	24) Determination of <i>E. coli</i> in Liquids using Colitag™ (Enumerative and Presumptive Methods) Units: MPN /100ml	Standard methods for the Examination of Water and Waste Water 22 nd 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 23 rd 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 23 rd 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 22 nd 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 23 rd 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 23 rd 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 23 rd 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 <i>E.coli</i> 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