



## *Accredited Laboratory*

A2LA has accredited

# **MICROBAC LABORATORIES, INC., KTL DIVISION**

*Louisville, KY*

for technical competence in the field of

## **Chemical Testing**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009).



Presented this 28<sup>th</sup> day of December 2017.

A handwritten signature in black ink, written over a horizontal line.

President and CEO  
For the Accreditation Council  
Certificate Number 0085.04  
Valid to December 31, 2019

*For the tests to which this accreditation applies, please refer to the laboratory's Chemical Scope of Accreditation.*



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

MICROBAC LABORATORIES, INC., KTL DIVISION  
3323 Gilmore Industrial Blvd.  
Louisville, KY 40213  
Megan Rothgerber Phone: 502 962 6400

CHEMICAL

Valid To: December 31, 2019

Certificate Number: 0085.04

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform recognized EPA methods using the following testing on non-potable water, soil, stillage, coating, paper, polymers, petroleum (oil, tar, lubricants) and metals:

Testing Technologies: ICP AES Spectrometry, ICP-MS, Discrete Analyzer, Gas Chromatography, Gas Chromatography/Mass Spectrometry, Gravimetry, Ion Chromatography, Methylene Blue Active Substances, Microbiology, Misc.- Electronic Probes (pH, O<sub>2</sub>, Redox), Oxygen Demand, Hazardous Waste Characteristics Tests, Spectrophotometry (Visible), Titrimetry, Turbidity, TKN Gas Dispersion Skalar.

<u>Parameter/Analyte</u>	<u>Method(s)</u>
<b><u>Metals</u></b>	
Aluminum	EPA 200.7 EPA 6010D
Antimony	EPA 200.7 EPA 6010D
Arsenic	EPA 200.7 EPA 6010D
Barium	EPA 200.7 EPA 6010D
Beryllium	EPA 200.7 EPA 6010D
Boron	EPA 200.7 EPA 6010D
Cadmium	EPA 200.7 EPA 6010D
Calcium	EPA 200.7 EPA 6010D
Chromium	EPA 200.7 EPA 6010D

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<b><u>Parameter/Analyte</u></b>	<b><u>Method(s)</u></b>
Cobalt	EPA 200.7 EPA 6010D
Copper	EPA 200.7 EPA 6010D
Iron	EPA 200.7 EPA 6010D
Lead	EPA 200.7 EPA 6010D
Magnesium	EPA 200.7 EPA 6010D
Manganese	EPA 200.7 EPA 6010D
Molybdenum	EPA 200.7 EPA 6010D
Nickel	EPA 200.7 EPA 6010D
Phosphorous	EPA 200.7 EPA 6010D
Potassium	EPA 200.7 EPA 6010D
Selenium	EPA 200.7 EPA 6010D
Silver	EPA 200.7 EPA 6010D
Sodium	EPA 200.7 EPA 6010D
Strontium	EPA 200.7 EPA 6010D
Thallium	EPA 200.7 EPA 6010D
Tin	EPA 200.7 EPA 6010D
Titanium	EPA 200.7 EPA 6010D
Vanadium	EPA 200.7 EPA 6010D
Zinc	EPA 200.7 EPA 6010D
<b><u>Nutrients</u></b>	
Ammonia (as N)	SM 4500-NH <sub>3</sub> G
Nitrogen (Kjeldahl)	SM 4500-NH <sub>3</sub> G
Nitrate (as N)	EPA 300.0 EPA 9056A



<b><u>Parameter/Analyte</u></b>	<b><u>Method(s)</u></b>
Nitrite (as N)	EPA 300.0 EPA 9056A
Nitrate-Nitrite (as N)	EPA 300.0 EPA 9056A
Orthophosphate (as P)	EPA 300.0 EPA 365.1 EPA 9056A
Total Phosphorus	EPA 365.1
<b><u>Demands</u></b>	
Biochemical Oxygen Demand	SM 5210B
Carbonaceous BOD	SM 5210B
Chemical Oxygen Demand	SM 5220D
Total Organic Carbon	SM 5310C
<b><u>Wet Chemistry</u></b>	
Acidity	SM 2310B
Alkalinity	SM 2320B
Bromide	EPA 300.0 EPA 9056A
Chloride	EPA 300.0 EPA 9056A SM 4500-Cl G
Chromium, hexavalent	SM 3500-Cr B
Color, ADMI	SM 2120C
Conductivity (Specific Conductance)	SM 2510B
Fluoride	EPA 300.0 EPA 9056A
Hardness	SM 2340B
pH	EPA 9040C EPA 9045D SM 4500-H+ B
MBAS (Surfactants)	SM 5540C
Oil & Grease	EPA 1664B
Solids, total	USGS I-3750-85
Solids, total suspended	USGS I-3765-85
Solids, dissolved	SM 2540C
Solids, settleable	SM 2540F
Solids, volatile	USGS I-3753-85
Sulfate	EPA 300.0 EPA 9056A
Sulfide	SM 4500-S <sup>2</sup> D
Sulfite	SM 4500-SO <sub>3</sub> <sup>2</sup> B
Turbidity	SM 2130B

<b><u>Parameter/Analyte</u></b>	<b><u>Method(s)</u></b>
<b><u>Microbiology</u></b>	
Coliforms, total	SM 9223B (Colilert and Colilert 18)
<i>Escherichia coli</i>	SM 9223B (Colilert and Colilert 18)
Coliforms, fecal	SM 9222D (Colilert and Colilert 18)
Enterococci	ASTM D6503-99
Pseudomonas	SM 9213E
<b><u>Pureable Organics (Volatiles)</u></b>	
Acetone	EPA 624 EPA 8260B
Acrolein	EPA 624 EPA 8260B
Benzene	EPA 624 EPA 8260B
Bromobenzene	EPA 624 EPA 8260B
Bromochloromethane	EPA 624 EPA 8260B
Bromodichloromethane	EPA 624 EPA 8260B
Bromoform	EPA 624 EPA 8260B
Bromomethane	EPA 624 EPA 8260B
2-Butanone	EPA 624 EPA 8260B
n-Butylbenzene	EPA 624 EPA 8260B
sec-Butylbenzene	EPA 624 EPA 8260B
tert-Butylbenzene	EPA 624 EPA 8260B
Carbon disulfide	EPA 624 EPA 8260B
Carbon tetrachloride	EPA 624 EPA 8260B
Chlorobenzene	EPA 624 EPA 8260B
Chloroethane	EPA 624 EPA 8260B
2-Chloroethyl vinyl ether	EPA 624 EPA 8260B
Chloroform	EPA 624 EPA 8260B



<u>Parameter/Analyte</u>	<u>Method(s)</u>
Chloromethane	EPA 624 EPA 8260B
2-Chlorotoluene	EPA 624 EPA 8260B
4-Chlorotoluene	EPA 624 EPA 8260B
Dibromochloromethane	EPA 624 EPA 8260B
1,2-Dibromo-3-chloropropane (DBCP)	EPA 624 EPA 8260B
Dibromomethane	EPA 624 EPA 8260B
1,2 Dibromomethane (EDB)	EPA 624 EPA 8260B
1,2-Dichlorobenzene	EPA 624 EPA 8260B
1,3-Dichlorobenzene	EPA 624 EPA 8260B
1,4-Dichlorobenzene	EPA 624 EPA 8260B
Dichlorodifluoromethane	EPA 624 EPA 8260B
1,1-Dichloroethane	EPA 624 EPA 8260B
1,2-Dichloroethane	EPA 624 EPA 8260B
1,1-Dichloroethene	EPA 624 EPA 8260B
cis-1,2-Dichloroethene	EPA 624 EPA 8260B
trans-1,2-Dichloroethene	EPA 624 EPA 8260B
1,2-Dichloropropane	EPA 624 EPA 8260B
1,3-Dichloropropane	EPA 624 EPA 8260B
2,2-Dichloropropane	EPA 624 EPA 8260B
1,1-Dichloropropene	EPA 624 EPA 8260B
cis-1,3-Dichloropropene	EPA 624 EPA 8260B
trans-1,3-Dichloropropene	EPA 624 EPA 8260B



<u>Parameter/Analyte</u>	<u>Method(s)</u>
trans-1,4-Dichloro-2-butene	EPA 624 EPA 8260B
Ethyl benzene	EPA 624 EPA 8260B
2-Hexanone	EPA 624 EPA 8260B
Hexachlorobutadiene	EPA 624 EPA 8260B
Isopropylbenzene	EPA 624 EPA 8260B
p-Isopropyltoluene	EPA 624 EPA 8260B
Iodomethane	EPA 624 EPA 8260B
Methylene chloride	EPA 624 EPA 8260B
Methyl ethyl ketone (MEK)	EPA 624 EPA 8260B
Methyl isobutyl ketone	EPA 624 EPA 8260B
Methyl-t-butylether (MTBE)	EPA 624 EPA 8260B
4-Methyl-2-pentanone	EPA 624 EPA 8260B
Naphthalene	EPA 624 EPA 8260B
n-Propylbenzene	EPA 624 EPA 8260B
Styrene	EPA 624 EPA 8260B
1,1,1,2-Tetrachloroethane	EPA 624 EPA 8260B
1,1,2,2-Tetrachloroethane	EPA 624 EPA 8260B
Tetrachloroethene	EPA 624 EPA 8260B
Toluene	EPA 624 EPA 8260B
Total Petroleum Hydrocarbons (TPH)	EPA 624 EPA 8260B
1,1,1-Trichloroethane	EPA 624 EPA 8260B
1,1,2-Trichloroethane	EPA 624 EPA 8260B

<b><u>Parameter/Analyte</u></b>	<b><u>Method(s)</u></b>
1,2,3-Trichlorobenzene	EPA 624 EPA 8260B
1,2,4-Trichlorobenzene	EPA 624 EPA 8260B
1,3,5-Trichlorobenzene	EPA 624 EPA 8260B
Trichloroethene	EPA 624 EPA 8260B
Trichlorofluoromethane	EPA 624 EPA 8260B
1,2,4-Trimethylbenzene	EPA 624 EPA 8260B
1,3,5-Trimethylbenzene	EPA 624 EPA 8260B
Vinyl acetate	EPA 624 EPA 8260B
Vinyl chloride	EPA 624 EPA 8260B
Xylenes, total	EPA 624 EPA 8260B
1,2-Xylene	EPA 624 EPA 8260B
1,3-Xylene	EPA 624 EPA 8260B
1,4 Xylene	EPA 624 EPA 8260B
<b>Sample Preparation/Extraction Methods</b>	
Metals	EPA 3005 EPA 3050B
Nutrients	SM 4500 NH-B
Ignitability	EPA 1010A
Synthetic Precipitation Leaching Procedure	EPA 1312 ASTM D3987
Toxicity Characteristic Leaching Procedure	EPA 1311
Paint Filter Liquids Test	EPA 9095