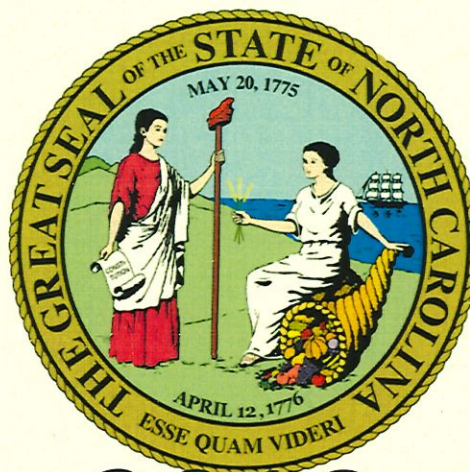


DIVISION OF WATER RESOURCES LABORATORY CERTIFICATION BRANCH

In accordance with the provisions of N.C.G.S. 143-215.3 (a) (1), 143-215.3 (a)(10) and NCAC 2H.0800:



2018

Microbac Laboratories Inc. Ohio Valley Division

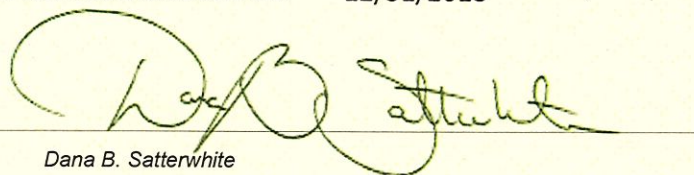
Is hereby certified to perform environmental analysis as listed on Attachment I and report monitoring data to DEQ for compliance with NPDES effluent, surface water, groundwater, and pretreatment regulations.

By reference 15A NCAC 2H .0800 is made a part of this certificate.

This certificate does not guarantee validity of data generated, but indicates the methodology, equipment, quality control procedures, records, and proficiency of the laboratory have been examined and found to be acceptable.

This certificate shall be valid until 12/31/2018

Certificate No. 583


Dana B. Satterwhite

North Carolina Wastewater/Groundwater Laboratory Certification

Certified Parameters Listing

Lab Name: Microbac Laboratories Inc. Ohio Valley Division
 Address: 158 Starlite Drive
 Marietta, OH 45750-

Certificate Number: 583
 Effective Date: 1/1/2018
 Expiration Date: 12/31/2018
 Date of Last Amendment: 9/27/2018

The above named laboratory, having duly met the requirements of 15A NCAC 2H.0800, is hereby certified for the measurement of the parameters listed below.

CERTIFIED PARAMETERS

<p>INORGANIC</p> <p>ALKALINITY SM 2320 B-2011 (Aqueous)</p> <p>BROMIDE EPA 300.0, Rev. 2.1, 1993 (Aqueous)</p> <p>CHLORIDE SM 4500 Cl⁻ E-2011 (Aqueous) EPA 300.0, Rev. 2.1, 1993 (Aqueous) EPA 300.0, Rev. 2.1, 1993 (Non-Aqueous) SW-846 9056 A (Aqueous) SW-846 9056 A (Non-Aqueous)</p> <p>COD EPA 410.4, Rev. 2.0, 1993 (Aqueous) Hach 8000 (Aqueous)</p> <p>CYANIDE SW-846 9014 (Amenable) (Colorimetric) (Aqueous) SW-846 9014 (Amenable) (Colorimetric) (Non-Aqueous) SW-846 9014 (Total) (Colorimetric) (Aqueous) SW-846 9014 (Total) (Colorimetric) (Non-Aqueous) SM 4500 CN⁻ E-2011 (Total) (Aqueous)</p> <p>FLUORIDE EPA 300.0, Rev. 2.1, 1993 (Aqueous) SW-846 9056 A (Aqueous)</p> <p>HARDNESS TOTAL SM 2340 C-2011 (Aqueous)</p> <p>IGNITABILITY SW-846 1010 A (Pensky-Martens) (Aqueous)</p> <p>INORGANIC PHENOLS EPA 420.1, Rev. 1978 (Aqueous)</p> <p>LEACHATE PROCEDURE SW-846 1312 Metals (Aqueous) SW-846 1312 Metals (Non-Aqueous) SW-846 1312 Organics (Aqueous) SW-846 1312 Organics (Non-Aqueous) SW-846 1311 Metals (Aqueous)</p>	<p>SW-846 1311 Metals (Non-Aqueous)</p> <p>SW-846 1311 Organics (Aqueous) SW-846 1311 Organics (Non-Aqueous)</p> <p>NITROGEN, AMMONIA EPA 350.1, Rev. 2.0, 1993 (Aqueous)</p> <p>NITROGEN, NITRATE EPA 300.0, Rev. 2.1, 1993 (Aqueous) SW-846 9056 A (Aqueous)</p> <p>NITROGEN, NITRITE EPA 300.0, Rev. 2.1, 1993 (Aqueous) EPA 300.0, Rev. 2.1, 1993 (Non-Aqueous) SW-846 9056 A (Aqueous) SW-846 9056 A (Non-Aqueous)</p> <p>NITROGEN, NO₃ + NO₂ EPA 353.2, Rev. 2.0, 1993 (Aqueous)</p> <p>NITROGEN, TOTAL KJELDAHL EPA 351.2, Rev. 2.0, 1993 (Aqueous)</p> <p>OIL & GREASE EPA 1664 Rev. B (Aqueous)</p> <p>ORGANIC CARBON, TOTAL SM 5310 C-2011 (UV Oxidation) (Aqueous)</p> <p>PAINT FILTER LIQUIDS SW-846 9095B</p> <p>pH SM 4500 H+B-2011 (Aqueous) SW-846 9040 C (Aqueous) SW-846 9045 D (Non-Aqueous)</p> <p>PHOSPHATE, ORTHO SM 4500 P E-2011 (Aqueous)</p> <p>PHOSPHORUS, TOTAL EPA 365.4, 1974 (Aqueous)</p> <p>RESIDUE, DISSOLVED 180 C SM 2540 C-2011 (Aqueous)</p> <p>RESIDUE, SUSPENDED SM 2540 D-2011 (Aqueous)</p>
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North Carolina Wastewater/Groundwater Laboratory Certification

Certified Parameters Listing

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Marietta, OH 45750-

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CERTIFIED PARAMETERS

SULFATE	EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 300.0, Rev. 2.1, 1993 (Aqueous)	EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
EPA 300.0, Rev. 2.1, 1993 (Non-Aqueous)	CALCIUM
SW-846 9056 A (Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 9056 A (Non-Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SULFIDE	CHROMIUM HEXAVALENT
SW-846 9034 (Non-Aqueous)	SM 3500-Cr-B-2011 (Aqueous)
METAL	SW-846 7196 A (Aqueous)
ALUMINUM	SW-846 7196 A (Non-Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Aqueous)	CHROMIUM TOTAL
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Aqueous)
ANTIMONY	EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Aqueous)	EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)	EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)	COBALT
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Aqueous)
ARSENIC	EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Aqueous)	EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)	EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)	COPPER
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Aqueous)
BARIUM	EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Aqueous)	EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)	EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)	IRON
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Aqueous)
BERYLLIUM	EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Aqueous)	LEAD
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Aqueous)
BORON	EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Aqueous)	EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)	EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
CADMIUM	MAGNESIUM
EPA 200.7, Rev. 4.4, 1994 (Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)	EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)

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CERTIFIED PARAMETERS

MANGANESE

EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)

MERCURY

EPA 245.1, Rev. 3.0, 1994 (Aqueous)
SW-846 7470 A (Aqueous)
SW-846 7471 B (Non-Aqueous)

MOLYBDENUM

EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)

NICKEL

EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)

POTASSIUM

EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)

SELENIUM

EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)

SILVER

EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)

SODIUM

EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)

STRONTIUM

EPA 200.7, Rev. 4.4, 1994 (Aqueous)

EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)

THALLIUM

EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)

TIN

EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)

TITANIUM

EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)

VANADIUM

EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)

ZINC

EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)

ORGANIC

BASE NEUTRAL/ACID, ORGANICS

EPA 625.1 (Aqueous)
SW-846 8270 D (Aqueous)
SW-846 8270 D (Non-Aqueous)

CHLORINATED ACID HERBICIDES

SW-846 8151 A (Aqueous)
SW-846 8151 A (Non-Aqueous)

NITROAROMATICS & NITRAMINES

SW-846 8330 A (Aqueous)
SW-846 8330 A (Non-Aqueous)

PESTICIDES, ORGANOCHLORINE

EPA 608.3 (Aqueous)
SW-846 8081 B (Aqueous)
SW-846 8081 B (Non-Aqueous)

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CERTIFIED PARAMETERS

POLYCHLORINATED BIPHENYLS (PCBs)

- EPA 608.3 (Aqueous)
- SW-846 8082 A (Aqueous)
- SW-846 8082 A (Non-Aqueous)

PURGEABLE, ORGANICS

- EPA 624.1 (Aqueous)
- SW-846 8260 B (Aqueous)
- SW-846 8260 B (Non-Aqueous)

TPH DIESEL RANGE, ORGANICS

- SW-846 8015 C (Aqueous)
- SW-846 8015 C (Non-Aqueous)

TPH GASOLINE RANGE, ORGANICS

- SW-846 8015 C (Aqueous)
- SW-846 8015 C (Non-Aqueous)