



Healthy People. Healthy Communities.

S.C. Department of Health and
Environmental Control

Environmental Laboratory Certification Program

In accordance with the provisions of Regulation 61-81, entitled "State Environmental Laboratory Certification Regulations"

**DAVIS & BROWN INC
124 W MCIVER RD
FLORENCE, SOUTH CAROLINA 29501-1515**

is hereby certified to perform analyses as documented on the attached parameter list(s). This certification does not guarantee validity of the data generated, but indicates the laboratory's adherence to prescribed methodology, quality control, records keeping, and reporting procedures. This certificate is the property of S.C. DHEC and must be surrendered upon demand. This certificate is non-transferable and is valid only for the parameters and methodology listed on the attached parameter list(s).

Laboratory Director: WILLIAM V WARD
Certifying Authority: SC
Date of Issue: March 25, 2019
Date of Expiration: January 12, 2022
Certificate Number: 21117001



Program Manager
Office of Environmental Laboratory Certification

**SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
ENVIRONMENTAL LABORATORY CERTIFICATION PROGRAM**

**DAVIS & BROWN INC (Laboratory ID 21117)
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Certificate Number: 21117001**

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CLEAN WATER ACT

INORGANIC - DEMAND

BIOCHEMICAL OXYGEN DEMAND(BOD)	SM 5210 B-2011	5 DAY DO DEPLETION
CARBONACEOUS BOD	SM 5210 B-2011	5 DAY DO DEPLETION
CHEMICAL OXYGEN DEMAND (COD)	EPA 410.4 (1993)	SPECTROPHOTOMETRIC, MANUAL OR AUTOMATED
DISSOLVED OXYGEN	HACH 10360 (2011)	LUMINESCENCE BASED SENSOR
DISSOLVED OXYGEN	SM 4500-O G-2011	ELECTRODE
TOTAL ORGANIC CARBON (TOC)	SM 5310 B-2011	HIGH TEMPERATURE COMBUSTION (TOC)

INORGANIC - MINERAL

ALKALINITY	SM 2320 B-2011	TITRIMETRIC
CHLORIDE	EPA 300.0 (1993)	ION CHROMATOGRAPHY
HYDROGEN-ION CONC. (PH)	SM 4500-H B-2011	ELECTROMETRIC MEASUREMENT
SPECIFIC CONDUCTANCE	SM 2510 B-2011	CONDUCTANCE AT 25 DEGREES C
SULFATE	EPA 300.0 (1993)	ION CHROMATOGRAPHY

INORGANIC - MISCELLANEOUS

CYANIDE	SM 4500-CN B,C-2011	SAMPLE PRETREATMENT, MANUAL DISTILLATION
CYANIDE	SM 4500-CN E-2011	SPECTROPHOTOMETRIC (MANUAL)
OIL & GREASE	EPA 1664B (2010)	OIL & GREASE - HEM/SGT-HEM
PHENOLICS, TOTAL RECOVERABLE	EPA 420.1 (1978)	MANUAL DISTILLATION WITH COLORIMETRIC(4AAP)
RESIDUAL CHLORINE	SM 4500-CL G-2011	DPD COLORIMETRIC METHOD
SULFIDE	SM 4500-S2 F-2011	TITRIMETRIC (IODINE)
TEMPERATURE	SM 2550 B-2010	THERMOMETRIC

INORGANIC - NUTRIENT

AMMONIA-NITROGEN	SM 4500-NH3 B-2011	DISTILLATION
AMMONIA-NITROGEN	SM 4500-NH3 D-2011	ELECTRODE
KJELDAHL-NITROGEN	SM 4500-NH3 B-2011	DISTILLATION
KJELDAHL-NITROGEN	SM 4500-NH3 D-2011	ELECTRODE
NITRATE-NITROGEN	EPA 300.0 (1993)	ION CHROMATOGRAPHY
NITRITE-NITROGEN	EPA 300.0 (1993)	ION CHROMATOGRAPHY
NITRITE-NITROGEN	SM 4500-NO2 B-2011	SPECTROPHOTOMETRIC (MANUAL)
PHOSPHORUS	SM 4500-P B(5)-2011	DIGESTION
PHOSPHORUS	SM 4500-P E-2011	ASCORBIC ACID (MANUAL SINGLE REAGENT)
TOTAL ORGANIC NITROGEN	EPA TKN-NH3-N	TOTAL KJELDAHL-N MINUS AMMONIA-N

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CLEAN WATER ACT

INORGANIC - RESIDUE

RESIDUE, FILTERABLE (TDS)	SM 2540 C-2011	GRAVIMETRIC (180)
RESIDUE, NONFILTERABLE (TSS)	SM 2540 D-2011	GRAVIMETRIC 103-105
RESIDUE, TOTAL (TS)	SM 2540 B-2011	GRAVIMETRIC 103-105
RESIDUE, VOLATILE (VS)	EPA 160.4 (1979)	GRAVIMETRIC (550)
TOTAL, FIXED & VOLATILE SOLIDS	SM 2540G (18TH)	PERCENT SOLIDS FOR BIOSOLIDS

INORGANIC - TRACE METAL

ALUMINUM	EPA 200.7 (1994)	ICP/AES
ANTIMONY	EPA 200.7 (1994)	ICP/AES
ANTIMONY	SM 3113 B-2010	AA FURNACE
ARSENIC	EPA 200.7 (1994)	ICP/AES
ARSENIC	SM 3113 B-2010	AA FURNACE
BARIUM	EPA 200.7 (1994)	ICP/AES
BERYLLIUM	EPA 200.7 (1994)	ICP/AES
BORON	EPA 200.7 (1994)	ICP/AES
CADMIUM	EPA 200.7 (1994)	ICP/AES
CADMIUM	SM 3113 B-2010	AA FURNACE
CALCIUM	EPA 200.7 (1994)	ICP/AES
CHROMIUM	EPA 200.7 (1994)	ICP/AES
CHROMIUM	SM 3113 B-2010	AA FURNACE
CHROMIUM, HEXAVALENT	SM 3500-CR B-2011	COLORIMETRIC (DIPHYENYL CARBAZIDE)
COBALT	EPA 200.7 (1994)	ICP/AES
COPPER	EPA 200.7 (1994)	ICP/AES
COPPER	SM 3113 B-2010	AA FURNACE
IRON	EPA 200.7 (1994)	ICP/AES
LEAD	EPA 200.7 (1994)	ICP/AES
LEAD	SM 3113 B-2010	AA FURNACE
MAGNESIUM	EPA 200.7 (1994)	ICP/AES
MANGANESE	EPA 200.7 (1994)	ICP/AES
MERCURY	EPA 245.1 (1994)	COLD VAPOR (MANUAL)
MOLYBDENUM	EPA 200.7 (1994)	ICP/AES
NICKEL	EPA 200.7 (1994)	ICP/AES
POTASSIUM	EPA 200.7 (1994)	ICP/AES
SAMPLING FOR LOW-LEVEL METALS	EPA 1669 (1996)	SAMPLING FOR LOW-LEVEL METALS
SELENIUM	EPA 200.7 (1994)	ICP/AES
SELENIUM	SM 3113 B-2010	AA FURNACE
SILVER	EPA 200.7 (1994)	ICP/AES
SILVER	SM 3113 B-2010	AA FURNACE
SODIUM	EPA 200.7 (1994)	ICP/AES

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INORGANIC - TRACE METAL

THALLIUM	EPA 279.2 (1978)	AA FURNACE
VANADIUM	EPA 200.7 (1994)	ICP/AES
ZINC	EPA 200.7 (1994)	ICP/AES

MICROBIOLOGY

BIOSOLIDS PREPARATION	EPA/625/R-92/013 APP F	SLUDGE ANALYSIS PREPARATION
E.COLI (MPN)	SM 9223 B-2004	COLILERT/COLILERT-18
FECAL COLIFORM (MF)	SM 9222 D-2006	MEMBRANE FILTRATION
FECAL COLIFORM (MPN)	COLILERT-18 (2010)	MULTIPLE WELL
FECAL COLIFORM (MPN)	SM 9221-C E-2006	MULTIPLE TUBE FERMENTATION

SAFE DRINKING WATER ACT

INORGANIC - DEMAND

TOTAL AND DISSOLVED ORGANIC CARBON	SM 5310 B-2011	HIGH TEMPERATURE COMBUSTION (TOC)
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INORGANIC - MINERAL

ALKALINITY	SM 2320 B-2011	TITRIMETRIC
CHLORIDE	EPA 300.0 (1993)	ION CHROMATOGRAPHY
FLUORIDE	SM 4500-F C-2011	ELECTRODE (MANUAL)
HYDROGEN-ION CONC. (PH)	SM 4500-H B-2011	ELECTROMETRIC MEASUREMENT
SPECIFIC CONDUCTANCE	SM 2510 B-2011	CONDUCTANCE AT 25 DEGREES C
SULFATE	EPA 300.0 (1993)	ION CHROMATOGRAPHY

INORGANIC - MISCELLANEOUS

COLOR	SM 2120 B-2011	VISUAL - PLATINUM COBALT
RESIDUAL CHLORINE	SM 4500-CL G-2011	DPD COLORIMETRIC METHOD
TEMPERATURE	SM 2550 B-2010	THERMOMETRIC
TURBIDITY	EPA 180.1 (1993)	NEPHELOMETRIC

INORGANIC - NUTRIENT

NITRATE-NITROGEN	EPA 300.0 (1993)	ION CHROMATOGRAPHY
NITRITE-NITROGEN	EPA 300.0 (1993)	ION CHROMATOGRAPHY
NITRITE-NITROGEN	SM 4500-NO2 B-2011	SPECTROPHOTOMETRIC (MANUAL)
ORTHOPHOSPHATE	SM 4500-P E-2011	ASCORBIC ACID (MANUAL SINGLE REAGENT)

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SAFE DRINKING WATER ACT

INORGANIC - RESIDUE

RESIDUE, FILTERABLE (TDS)	SM 2540 C-2011	GRAVIMETRIC (180)
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INORGANIC - TRACE METAL

ALUMINUM	EPA 200.7 (1994)	ICP/AES
ANTIMONY	SM 3113 B-2010	AA FURNACE
ARSENIC	SM 3113 B-2010	AA FURNACE
BARIIUM	EPA 200.7 (1994)	ICP/AES
BERYLLIUM	EPA 200.7 (1994)	ICP/AES
CADMIUM	EPA 200.7 (1994)	ICP/AES
CADMIUM	SM 3113 B-2010	AA FURNACE
CALCIUM	EPA 200.7 (1994)	ICP/AES
CHROMIUM	EPA 200.7 (1994)	ICP/AES
COPPER	EPA 200.7 (1994)	ICP/AES
COPPER	SM 3113 B-2010	AA FURNACE
IRON	EPA 200.7 (1994)	ICP/AES
LEAD	SM 3113 B-2010	AA FURNACE
MAGNESIUM	EPA 200.7 (1994)	ICP/AES
MANGANESE	EPA 200.7 (1994)	ICP/AES
MERCURY	SM 3112 B-2011	COLD VAPOR (MANUAL)
NICKEL	EPA 200.7 (1994)	ICP/AES
SELENIUM	SM 3113 B-2010	AA FURNACE
SILVER	EPA 200.7 (1994)	ICP/AES
SILVER	SM 3113 B-2010	AA FURNACE
SODIUM	EPA 200.7 (1994)	ICP/AES
ZINC	EPA 200.7 (1994)	ICP/AES

MICROBIOLOGY

E. COLI CONFIRMATION	SM 9222G.1C(2)-1997	EC + MUG
HETEROTROPHIC BACTERIA	SM 9215 B-2004	POUR PLATE METHOD
TOTAL COLIFORM (MF)	SM 9222 B-1997	MEMBRANE FILTRATION
TOTAL COLIFORM/E.COLI	SM 9223 B-2004	COLILERT/COLILERT-18
TOTAL COLIFORM/E.COLI(MPN)	SM 9223 B-2004	COLILERT/COLILERT-18

SOLID & HAZARDOUS WASTES

INORGANIC - DEMAND

TOTAL ORGANIC CARBON (TOC)	EPA 9060A (2004)	CARBONACEOUS ANALYZER
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SOLID & HAZARDOUS WASTES

INORGANIC - HAZARDOUS WASTE CHARACTERISTICS

IGNITABILITY (PENSKY MARTENS) TCLP - BOTTLE EXTRACTION	EPA 1010A (2004) EPA 1311 (1992)	PENSKY-MARTENS CLOSED-CUP TOXICITY CHARACTERISTIC LEACHING PROCEDURE
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INORGANIC - MINERAL

CHLORIDE HYDROGEN-ION CONC. (PH) HYDROGEN-ION CONC. (PH) SULFATE	EPA 9056A (2007) EPA 9040C (2004) EPA 9045D (2004) EPA 9056A (2007)	ION CHROMATOGRAPHY ELECTROMETRIC SOIL AND WASTE ION CHROMATOGRAPHY
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INORGANIC - MISCELLANEOUS

PAINT FILTER LIQUIDS TEST	EPA 9095B (2004)	FILTRATION
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INORGANIC - NUTRIENT

NITRATE-NITROGEN NITRITE-NITROGEN	EPA 9056A (2007) EPA 9056A (2007)	ION CHROMATOGRAPHY ION CHROMATOGRAPHY
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INORGANIC - TRACE METAL

ALUMINUM	EPA 6010D (2014)	ICP/AES
ANTIMONY	EPA 6010D (2014)	ICP/AES
ANTIMONY	EPA 7010 (2007)	GRAPHITE FURNACE AA SPECTROPHOTOMETRY
ARSENIC	EPA 6010D (2014)	ICP/AES
ARSENIC	EPA 7010 (2007)	GRAPHITE FURNACE AA SPECTROPHOTOMETRY
BARIUM	EPA 6010D (2014)	ICP/AES
BERYLLIUM	EPA 6010D (2014)	ICP/AES
BORON	EPA 6010D (2014)	ICP/AES
CADMIUM	EPA 6010D (2014)	ICP/AES
CADMIUM	EPA 7010 (2007)	GRAPHITE FURNACE AA SPECTROPHOTOMETRY
CALCIUM	EPA 6010D (2014)	ICP/AES
CHROMIUM	EPA 6010D (2014)	ICP/AES
CHROMIUM	EPA 7010 (2007)	GRAPHITE FURNACE AA SPECTROPHOTOMETRY
CHROMIUM, HEXAVALENT	EPA 7196A (1992)	COLORIMETRIC
COBALT	EPA 6010D (2014)	ICP/AES
COPPER	EPA 6010D (2014)	ICP/AES
IRON	EPA 6010D (2014)	ICP/AES
LEAD	EPA 6010D (2014)	ICP/AES
LEAD	EPA 7010 (2007)	GRAPHITE FURNACE AA SPECTROPHOTOMETRY

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SOLID & HAZARDOUS WASTES

INORGANIC - TRACE METAL

MAGNESIUM	EPA 6010D (2014)	ICP/AES
MANGANESE	EPA 6010D (2014)	ICP/AES
MERCURY	EPA 7470A (1994)	COLD VAPOR TECHNIQUE LIQUID
METALS DIGESTION	EPA 3005A (1992)	AQUEOUS ACID DIGESTION TOTAL OR DISSOLVED METALS FLAA OR ICP
METALS DIGESTION	EPA 3010A (1992)	AQUEOUS ACID DIGESTION TOTAL METALS FLAA OR ICP
METALS DIGESTION	EPA 3015A (2007)	AQUEOUS MICROWAVE ACID DIGESTION TOTAL METALS FLAA OR ICP
METALS DIGESTION	EPA 3020A (1992)	AQUEOUS ACID DIGESTION TOTAL METALS GFAA
METALS DIGESTION	EPA 3050B (1996)	SOLID ACID DIGESTION
METALS DIGESTION	EPA 3051A (2007)	NON-AQUEOUS MICROWAVE ACID DIGESTION
METALS DIGESTION	EPA 3060A (1996)	ALKALINE DIGESTION HEX CHROM
MOLYBDENUM	EPA 6010D (2014)	ICP/AES
NICKEL	EPA 6010D (2014)	ICP/AES
POTASSIUM	EPA 6010D (2014)	ICP/AES
SELENIUM	EPA 6010D (2014)	ICP/AES
SELENIUM	EPA 7010 (2007)	GRAPHITE FURNACE AA SPECTROPHOTOMETRY
SILVER	EPA 6010D (2014)	ICP/AES
SILVER	EPA 7010 (2007)	GRAPHITE FURNACE AA SPECTROPHOTOMETRY
THALLIUM	EPA 7010 (2007)	GRAPHITE FURNACE AA SPECTROPHOTOMETRY
VANADIUM	EPA 6010D (2014)	ICP/AES
ZINC	EPA 6010D (2014)	ICP/AES