



Catherine E. Heigel, Director

Promoting and protecting the health of the public and the environment

July 28, 2015

RENEE' BAKER
EQC REGION 3 LANCASTER
2475 DHEC RD
LANCASTER, SOUTH CAROLINA 29720

Re: Laboratory I. D. # 29206
Certificate # 29206001

Dear Ms. Baker:

The report of the on-site laboratory evaluation performed on June 22, 2015 by the South Carolina Department of Health and Environmental Control is enclosed.

The report format provides a brief overview of the equipment and practices in place at the laboratory and lists the findings noted. If a response is required, please follow the report format by using the corresponding heading and finding number(s). Mail your response to the Office of Environmental Laboratory Certification at 2600 Bull Street, Columbia, SC 29201.

Your cooperation was greatly appreciated. Please contact me at 803-896-0976, if you have any questions concerning this report.

Sincerely,




James C Berry
Office of Environmental Laboratory Certification
Bureau of Environmental Health Services

cc: Carol F. Smith, Director
Office of Environmental Laboratory Certification

Register on our website at www.scdhec.gov/labcert to receive e-mail updates for the Laboratory Certification Program. Subscribing is easy and you'll automatically receive new posts to our website.

Introduction

On June 22, 2015 in accordance with State Regulation 61-81, James C Berry and Susan E Butts, Laboratory Certification Officers with the South Carolina Department of Health and Environmental Control conducted an on-site laboratory evaluation of EQC Region 3 Lancaster Laboratory. Renee' Baker and Betsy Carter were available for the on-site evaluation.

The on-site evaluation includes a review of the record keeping practices, methodology, equipment, and quality control procedures. The evaluation was based on the applicable methodology as published in the Federal Register 40 CFR Parts 122, 136, 503, et. al.; 40 CFR Parts 141,143 and the EPA's "Manual for the Certification of Laboratories Analyzing Drinking Water"; 40 CFR Part 260; and SW-846. Other regulations, as applicable, are also used to evaluate the laboratory practices. The sample preservation, types of containers, and maximum holding times specified in these regulations are considered minimum requirements of the program.

State Regulation 61-81 requires the formal certification of all laboratories reporting data to the Department. Certification is issued on an analyte-by-analyte basis. Certification is maintained by undergoing an on-site evaluation at least once every three years. Appropriate records must be retained to demonstrate that analytical proficiency and the required standard of quality are maintained throughout the certification period. Laboratory participation in annual Proficiency Testing (PT) studies is required for all applicable parameters for which it is certified.

Laboratories that are not issued certification for specific parameters will be required to contract those analyses to an approved laboratory with the required parameter certification. Environmental monitoring data submitted to the Department is subject to review to ensure the reporting laboratory has the necessary certification. Data reported by laboratories without proper certification will be handled by the enforcement programs.

This report reflects the conditions which existed at the laboratory at the time of the evaluation. The findings and recommendations discussed on the day of the evaluation are listed below. The findings included in this report were those observed during this on-site evaluation. Others may exist and their omission from this report does not constitute endorsement by this Office. The laboratory is encouraged to correct any existing deficiencies even if they are not included in this report. Please address each request for documentation.

Personnel and Training Records

A current personnel list with responsibilities must be maintained and available upon request. A signature page should also be available for each person performing analyses with their printed name, signature, and initials used in the analysis records.

Training records must be maintained for all personnel. These records should include all job-related formal education and training taken by the analyst that pertains to any aspect to his/her responsibilities, including but not limited to analytical methodology, SOP review, laboratory safety, sampling, quality assurance, and data analysis.

Current Personnel

At the time of the evaluation the laboratory certification officer was provided a current personnel listing for all analysts performing analyses in the field or laboratory. See attached personnel listing.

Proficiency Testing (PT) Studies

The laboratory is reminded that Water Pollution (WP) and/or Water Supply (WS) Studies must be performed each year in order to maintain certification for the time period specified on the certification certificate. It is important that the laboratory participate in these studies as early as possible to avoid potential loss of certification. The studies must be part of an official WP and/or WS study, begin and end within the calendar year, and be graded and reported by the PT Provider to this Office no later than December 31 of each calendar year. Results received after December 31 cannot be used for compliance with the PT requirement. Split studies may be used for recertifying a laboratory but may not be used to meet the annual PT requirement. Split studies are those studies that open in one year and are graded and reported the following year or open in one year and close in another year. If the laboratory has questions regarding the submission of PT data, the acceptability of specific studies, or has questions about the annual requirement, please contact this Office.

Please also note that if you fax, e-mail, or enter your results on-line, we strongly recommend that you also mail them via postal mail or contact the Provider to ensure that the e-mail, internet data entry, or fax was received in its entirety. There have been instances where the PT Provider did not receive the results and the laboratory was decertified.

Refer to our website at www.scdhec.gov/labcert for the required PTs and additional information.

Proficiency Testing Studies Reviewed

Proficiency testing (PT) sample results analyzed in the past year and applicable calibration and analysis records were available for review: WP-235 and WS-225 from ERA.

Sample Collection, Handling, and Preservation

Chain-of-Custody

Chain-of-custody forms (completed) for all types of samples collected for regulatory compliance determinations were available for review at the time of the evaluation. The forms documented the required information.

Field Analyses

The following analyses are being performed in the field at the time of sample collection: DO, pH, Temperature, and Residual Chlorine.

Contract Laboratories

The chain-of-custody records for the contract laboratories being used for regulatory analyses documented the required information and the Certificates of Analysis were available for review. At the time of the evaluation the following contract laboratories were being used for the documented parameters.

Lab Id	Lab Name	Parameters
23105001	ARESD ROGERS & CALLCOTT ENGINEERS INC	Trace Metals, Nutrients, Organics, and etc. THMs and HAAs

Quality Assurance Plan

A Quality Assurance Plan with the date of last revision was available and provided to the laboratory certification officer at the time of the evaluation. Periodically this document must be updated to reflect any changes in the laboratory operations.

Laboratory Ethics and Fraud Detection/Deterrence

Laboratories are encouraged to have an ethics policy and implement a fraud detection and deterrence policy/program. A laboratory's ethics program would include a policy statement, training, and signed code of conduct. Laboratories are encouraged to have a Laboratory Ethics SOP which documents where employees can report suspected fraud.

Standard Operating Procedures (SOP) Manual

A Standard Operating Procedure (SOP) must be available for each certified method. Copies of the SOPs with current revision dates were provided to the evaluator at the time of the evaluation. The SOPs should periodically be updated to reflect changes in the procedure, equipment, and reagents. Each time the SOP is updated, the revision date must be updated and a copy with the changes identified submitted to our office for review.

The SOPs provided to the evaluator at the time of the evaluation are complete and up-to-date.

CLEAN WATER ACT

DISSOLVED OXYGEN - SM 4500-O G-2011

Laboratory instrumentation and/or equipment: 2 – YSI model 550A DO meters

No Finding.

BIOCHEMICAL OXYGEN DEMAND(BOD) - SM 5210 B-2011

Laboratory instrumentation and/or equipment: YSI model 5100 DO meter, Thermo Scientific model 3721 incubator

Finding: The QC sample analyzed on 8/28/14 did not have the pH adjusted to the correct range of 7.0 – 7.2 SU.

Requirement: All samples must have an initial pH between 6.0 – 8.0 SU. If not the sample pH must be adjusted to 7.0 – 7.2 SU. **A response is not required.**

ALKALINITY - SM 2320 B-2011

Laboratory instrumentation and/or equipment: 25 and 10 ml burets

No Finding.

HYDROGEN-ION CONC. (PH) - SM 4500-H B-2011

Laboratory instrumentation and/or equipment: Laboratory – VWR model Symphony SB70P, Field – 2- Thermo Orion model 3 Star

Finding: The laboratory reported the incorrect value for the WP-235 pH result.

Requirement: The laboratory reported the QC sample result for the WP-235 pH result. The PT sample met the acceptance criteria, but the laboratory must pay close attention to which result is being reported. The result for the WP-235 pH would have passed. **A response is not required.**

TURBIDITY - EPA 180.1 (1993)

Laboratory instrumentation and/or equipment: HACH model 2100N Turbidimeter

No Finding.

TEMPERATURE - SM 2550 B-2010

Laboratory instrumentation and/or equipment: H-B Instrument Company NIST-traceable reference thermometer -1-51°C, 0.1°C increments

Finding: The thermometer in the spore ampule incubator has not been verified for accuracy since 3/2014.

Requirement: All thermometers must be verified for accuracy against a NIST-traceable reference thermometer annually. **Submit the record for the comparison of the spore incubator thermometer against the NIST-traceable reference thermometer.**

RESIDUAL CHLORINE - SM 4500-CL G-2011

Laboratory instrumentation and/or equipment: Laboratory - HACH Pocket II Colorimeter, Field – 6 - HACH Pocket II Colorimeter

Finding: The laboratory is not analyzing a 0.05 mg/L (Reporting Limit (RL)) standard with the daily calibration check.

Requirement: The daily calibration check must include the 0.05 mg/L RL standard. **Submit daily calibration check records showing this finding has been corrected.**

RESIDUE, NONFILTERABLE (TSS) - SM 2540 D-2011

Laboratory instrumentation and/or equipment: VWR drying oven, Mettler Toledo model XS205 analytical balance

No Finding.

CLEAN WATER ACT - FECAL COLIFORM (MPN) - COLILERT-18 ATP
CLEAN WATER ACT - E.COLI (MPN) - SM 9223 B-2004
SAFE DRINKING WATER ACT - HETEROTROPHIC BACTERIA - SIMPLATE
SAFE DRINKING WATER ACT - HETEROTROPHIC BACTERIA - SM 9215 B-2004
SAFE DRINKING WATER ACT - TOTAL COLIFORM (P-A) - SM 9221 D-1999
SAFE DRINKING WATER ACT - E. COLI CONFIRMATION - SM 9221 F-2006
SAFE DRINKING WATER ACT - TOTAL COLIFORM/E.COLI - SM 9223 B-2004
SAFE DRINKING WATER ACT - TOTAL COLIFORM/E.COLI - COLISURE TEST

Laboratory instrumentation and/or equipment: Market Forge Sterilmatic autoclave, VWR dry air incubator, Thermo Scientific Precision small and large water baths equipped with gable covers, VWR IR thermometer, 3M Attest spore incubator, BT Sure biological indicators, Quebec colony counter, disposable plastic loops, Hardy Diagnostics dilution water, Colilert and Colilert-18 media, Hardy Diagnostic TSA slants, Colisure, Hach PA medium, BBL BGLBB medium, Northeast Laboratories EC plus MUG medium, Microbiologics control cultures, BBL plate count agar, Simplate, VWR HPC plates, Quanti-Tray 2X sealer, IDEXX sample bottles, and amber sample bottles prepared in lab

Finding: The current Simplate HPC medium lot in use (CK324) is not listed in the sample analysis book in the reagent section documenting when the medium was put into use.

Requirement: The medium in use must be traceable to the sample analysis records. **Add the current Simplate medium lot number to the sample analysis records. A response is not required.**

SAFE DRINKING WATER ACT

ALKALINITY - SM 2320 B-2011

See "ALKALINITY - SM 2320 B-2011" under the Clean Water Act section of this report.

HYDROGEN-ION CONC. (PH) - SM 4500-H B-2011

See "HYDROGEN-ION CONC. (PH) - SM 4500-H B-2011" under the Clean Water Act section of this report.

TURBIDITY - EPA 180.1 (1993)

See "TURBIDITY - EPA 180.1 (1993)" under the Clean Water Act section of this report.

TEMPERATURE - SM 2550 B-2010

See "TEMPERATURE - SM 2550 B-2010" under the Clean Water Act section of this report.

RESIDUAL CHLORINE - SM 4500-CL G-2011

See "RESIDUAL CHLORINE - SM 4500-CL G-2011" under the Clean Water Act section of this report.

Conclusion

The laboratory will have a thirty-day period upon receipt of this report to address the recommendations, adjustments, and requests for documentation listed in the report. The laboratory response should be received by August 31, 2015.



James C Berry
Laboratory Certification Officer
Bureau of Environmental Health Services



Susan E Butts
Laboratory Certification Officer
Bureau of Environmental Services

Employee	Time employed	Lab/Field	Parameters- Method
Renee' Baker	Oct-86	Lab	BOD pH turbidity TSS Colilert, Colisure Colilert ATP -18 Simplate, HPC P/A
Betsy Carter	Aug-99	Lab	Residual Chlorine BOD pH, alkalinity turbidity TSS Residual Chlorine Colilert, Colisure Colilert ATP -18 Simplate, HPC P/A
Chad Johnson	Oct -05	Field-WW	DO pH Residual Chlorine
Erin Leighton	Oct -14	Field-WW	
Stephen Whisonant	May-13	Field-DW	Residual Chlorine
Samantha Burdette	Aug-13	Field-DW	Residual Chlorine

S.C. DHEC ENVIRONMENTAL

JUN 22 2015

LAB CERTIFICATION PROGRAM

