



Proficiency Testing Requirements

South Carolina Department of Health and Environmental Control

Office of Environmental Laboratory Certification

Proficiency Testing (PT) samples are used to measure a laboratory's proficiency in analyzing a particular method for specified analytes. The laboratory must participate in Water Supply (WS) and/or Water Pollution (WP) studies annually as required. WP studies are to be used to report PT samples for aqueous wastewater and Solid and Hazardous Waste Methods. The laboratory must obtain samples that are part of an official study obtained from an A2LA-approved provider. A list of approved PT providers may be found on the A2LA website at www.a2la.org. A list of required PT parameters for South Carolina can be located on our website at www.scdhec.gov/labcert.

PT Schedule

In order to maintain certification in South Carolina, acceptable PT sample results for the laboratory must be received by December 31st each year for the Water Supply (WS) and/or Water Pollution (WP) studies. This means that the study the laboratory participates in must begin in the calendar year and end in the calendar year with the results received in our office by December 31. **The PT Provider must submit these studies to this Office.** We cannot accept PT results faxed from laboratories. Also remember to document your EPA Lab Code on the results to your provider. See the information below on how to obtain an EPA Lab Code.

Studies received in January will not be accepted for meeting the annual PT requirement. Our Office will not be able to accept any PT study results after the calendar year (December 31) for instances where SC was not designated to receive a copy of the report. You must designate on the PT results submitted to the provider that SC is to receive a copy of the report when you submit your results. If the results are not received from the PT providers by December 31st, you will be decertified for the applicable parameters and you must reapply for certification. If we were designated to receive a report and there was an error on the PT provider's part, then we must receive a letter from the PT provider identifying the error that occurred.

All PT samples must be part of an official WS and/or WP study. Quick turn-around PT samples are not acceptable. The PT samples must be formulated according to the EPA Criteria Document published December 1998 and the NELAC Fields of Proficiency Testing (FoPT) tables. A2LA has approved PT Providers based on the new criteria. Some PT Providers are not certified for every parameter, so it is necessary to verify the PT provider's certificate which is available on the A2LA website.

Reporting Results to PT Provider

Results must be sent to the provider prior to the study close date. No late results will be accepted. Most providers make results available immediately following the study close date so that laboratories can grade their own data and order repeat samples without waiting three weeks for the final reports to be issued. Because many study results are released immediately, data reported to the PT Provider after the close of the study (even if the PT Provider accepts and grades the data) cannot be used for certification and will be viewed as "Unacceptable" by this Office. Any changes to any of the data reported to the vendor will not be accepted for certification purposes. Be sure that the data is correctly reported when it is submitted.

When completing the reporting forms to be sent to the PT Provider, you must indicate that the results are to be sent directly to this Office. All of the PT Providers have the Office address and will send the reports here. If there are any questions regarding this, please contact the PT Provider to ensure that they have the Office address. The laboratory's EPA Lab Code and the State Lab ID number must also be included. Please be sure to include this information. If this information is not included, the results may be inadvertently credited to the wrong laboratory and you may not get credit for participating in a PT Study. If you do not know or are unsure of your EPA Lab Code and/or State Lab ID numbers, please contact us for assistance.

Correct Method Reporting

When completing the reporting forms, be sure to include the correct method number(s) being used. It is critical that the proper method number be referenced since PT samples are now required for each method for which you are certified. To ensure that you are reporting the correct method, review your certificate. If you are using a method that is not listed on your certificate, please contact this Office so that your certificate can be updated. If you do not report PT results for each method for which you are certified, you will lose certification for the unreported method(s). Results for one method cannot be substituted for another method. Although some wastewater and solid and hazardous waste methods may use the same technology, each method must still be reported. For example, if the laboratory is certified for EPA Method 624 and SW-846 Method 8260B or EPA Method 200.7 and SW-846 Method 6010C, both methods must be reported. This can be accomplished by reporting results for both methods individually in the same study or as a combination such as "EPA 624/8260B" or "EPA 200.7/6010C". The SW-846 Methods will not be accepted in lieu of the wastewater methods since there are different quality control requirements between the methods and since the wastewater methods are required for wastewater compliance reporting. Please also note that the revision letter for the SW-846 Methods must also be noted to ensure the PT sample was analyzed according to the current revision. The method must include the entire method reference as is written on your certificate. For instance, for pH, you must write the entire method whether it is EPA Method 150.1 or SM 4500HB. Writing SM 4500, SM 4500B, SM 4500H, 4500H, or any other combination is not correct. If you have any questions about this, please contact this Office.

What if you have multiple labs?

If you are the laboratory director or employee for more than one laboratory, you must treat each laboratory independently. Samples must be obtained, analyzed, and reported by each individual laboratory. Individual laboratories are determined by their state laboratory ID number and associated certificate(s). If separate ID numbers (5 numerical digits) and certificates are issued by this Office, then separate PT samples are required. The PT sample reports must reference the proper laboratory ID numbers (State and EPA). It is not acceptable to report one result for any sample for two different laboratories. It is also not acceptable to split a sample between laboratories. If you work at two locations, you must analyze one sample at the first location using all of the equipment and reagents at the first location. You must then order and analyze another sample at the second location using the equipment and reagents at the second location.

All sample analyses must be recorded in the daily analysis records. This serves as the permanent laboratory record. Analysis results for the PT samples must be reported as if they are actual samples using the study you are participating in as the sample ID. Also keep a copy of the report that you send to the PT Provider for grading so that if problems arise, you will have a record of what you sent.

Microbiology

Microbiology samples, for the Water Supply study only, are reported as present or absent. This applies whether you are using the membrane filter method or another approved method. All ten bottles that come with a PT sample are to be analyzed using the same method. If the laboratory is certified for multiple methods, then a separate sample (10 bottles) must be analyzed by each method. Results are to be reported for both total coliform and fecal coliform/E. coli for each sample (10 bottles). If you are using the

membrane filter method, you must take the samples through the verification process to determine the presence or absence of total coliform and fecal coliform. Records for these verifications are required.

Laboratories that are certified for microbiological enumeration methods such as membrane filtration (MF) and most probable number (MPN) under the Safe Drinking Water Act are now required to analyze a WS PT sample for enumeration in addition to the presence/absence PT. If your laboratory is certified for either total coliform (MF), fecal coliform (MF), total coliform (MPN), total coliform/E.coli (MPN), fecal coliform (MPN), or any E. coli enumeration method under the Safe Drinking Water Act and enumeration results are being reported for compliance for total coliform, fecal coliform, and/or E. coli, then an additional PT for enumeration must be analyzed. However, if your laboratory is only using the enumeration methods to report results as presence/absence, then the additional enumeration PT is not required. In this case, only the presence/absence WS PT sample is required. Each laboratory must check to see if it is enumerating total coliforms, fecal coliforms, and/or E. coli. for drinking water compliance. This is the determining factor for the additional WS PT requirement.

For the Water Supply Study, heterotrophic bacteria are analyzed using one sample. Results are reported as the number of heterotrophic bacteria observed per mL of sample (cfu/mL). A separate sample is required for each method for which the laboratory is certified.

For the Water Pollution study, one sample is analyzed for each method and analyte. The results are reported as a number of colonies per 100mL (CFU/100mL or MPN/100mL). This applies to both membrane filtration methods and Most Probable Number (MPN) methods. The analytes covered under the WP microbiology are total coliform, fecal coliform, and enterococci.

Whole Effluent Toxicity

One acceptable PT sample for each parameter or method is required annually. Since there is currently only one PT sample (DMR-QA) offered per year for WET, the laboratory must participate in a quick-turnaround or supplemental PT study to satisfy the annual PT certification requirement for WET if the laboratory receives an unacceptable result on the DMR-QA sample. This only applies to the WET parameters as quick-turnaround studies are not allowed for any other parameters.

Solid and Hazardous Waste Proficiency Testing Samples

Laboratories are now required to analyze and report PT sample results for all applicable solid and hazardous waste aqueous parameters and/or methods. Laboratories will be required to use the WP PT study to report results for parameter and/or method they are certified to perform. Although some wastewater and solid and hazardous waste methods may use the same technology, each method must still be reported to ensure that the method required QC is met. For example, if the laboratory is certified for EPA Methods 624 and 8260B or EPA Methods 200.7 and 6010C, both methods must be reported for the PT results. This can be accomplished by reporting results for both methods individually in the same study or as a combination such as "EPA 624/8260B" or "EPA 200.7/6010C". The SW-846 Methods will not be accepted in lieu of the wastewater methods since there are different quality control requirements between the methods and since the wastewater methods are required for wastewater compliance reporting. Please also note that the revision letter for the SW-846 Methods must also be noted to ensure the PT sample was analyzed according to the current revision.

EPA Lab Code

Each laboratory must use their assigned EPA Lab Code on all reported PT results submitted to their PT Provider. Without this EPA Lab Code we are unable to credit the PT results to the correct laboratory. The EPA Lab Codes are assigned by the USEPA. They must be contacted at the phone number provided below.

If you do not have an EPA Lab Code or do not remember your EPA Lab Code call, fax, or write:

Mr. Charles Feldmann
US EPA, M/S 140
26 W. Martin Luther King Drive
Cincinnati, Ohio 45268
(513) 569-7671: fax (513) 569-7191

PT results reported without the correct EPA Lab Code may not be accepted by our office, since the results cannot be credited to appropriate facility or laboratory.

If there are any questions concerning the Proficiency Testing (PT) Requirements, please contact the Office of Environmental Laboratory Certification at (803) 896-0970.

Corrective Action Required for Unacceptable PT Results

Laboratories are now required to submit corrective action for all unacceptable PT results. The corrective action required will be a letter identifying why the failure occurred, what was done to resolve the problem, and the participation in another PT study with an acceptable performance. Letters of corrective action must be submitted within 30 days upon receipt of the final PT report. Acceptable results for any failed parameters must be received in our office by the PT provider by December 31st.

Water Pollution (WP) Study Parameters

This is a list of parameters currently required on the Water Pollution Study. Please review your laboratory's current South Carolina certificate. You must successfully analyze a WP Study sample for each parameter that is listed under the Clean Water Act and Solid and Hazardous Waste (aqueous only) sections on your certificate and on this list. If your laboratory is certified for multiple methods for any one or more parameters, you must analyze and report results using each method which appears on your South Carolina certificate.

Trace Metals:

Aluminum
Antimony
Arsenic
Barium
Beryllium
Boron
Cadmium
Chromium, total
Chromium, VI
Cobalt
Copper
Iron
Lead
Manganese
Mercury
Molybdenum
Nickel
Selenium
Silver
Strontium
Thallium
Tin
Titanium
Vanadium
Zinc

Inorganic - Demands:

Total Organic Carbon
Chem. Oxygen Demand
5-day BOD
Carbonaceous BOD

Inorganic – Misc.

Total Residual Chlorine
Total Cyanide
pH
Non-Filterable Residue
Oil & Grease
Surfactants – MBAS
Settleable Solids
Turbidity

Microbiology:

Total Coliform – MF
Total Coliform – MPN
Fecal Coliform – MF
Fecal Coliform – MPN
E. coli – MF
E. coli – MPN
Enterococci – MF
Enterococci – MPN

Whole Effluent Toxicity:

One PT sample per parameter and method (DMR-QA sample)

Inorganic - Minerals:

Alkalinity
Calcium
Chloride
Fluoride
Magnesium
Potassium
Sodium
Specific Conductance
Sulfate
Sulfide
Total Hardness
Total Dissolved Solids
Total Solids

Inorganic - Nutrients:

Ammonia as N
Nitrate as N
Nitrate-Nitrite as N
Total Phenolics
Nitrite as N
Orthophosphate as P
Total Kjeldahl Nitrogen
Total Phosphorus

Herbicides:

2,4-D
Dicamba
2,4,5-T
2,4,5-TP (silvex)

Pesticides:

Aldrin
Alpha-BHC
Beta-BHC
Delta-BHC
Lindane
Chlordane (total)
Alpha Chlordane
Gamma Chlordane
DDD
DDE
DDT
Dieldrin
Endosulfan I
Endosulfan II
Endosulfan Sulfate
Endrin
Endrin Aldehyde
Heptachlor
Heptachlor Epoxide
Methoxychlor
Toxaphene

PCBs in Water: (Two Samples)

Aroclor 1016
Aroclor 1221
Aroclor 1232
Aroclor 1242
Aroclor 1248
Aroclor 1254
Aroclor 1260

Volatile Aromatics:

Benzene
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
Ethylbenzene
Toluene
Xylenes, total

Volatile Halocarbons:

Bromodichloromethane
Bromoform
Bromomethane
Carbon tetrachloride
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
Dibromochloromethane
1,2-Dichloroethane
1,1-Dichloroethene
trans-1,2-Dichloroethene
1,2-Dichloropropane
trans-1,3-Dichloropropene
4-Methyl-2-pentanone
Methylene Chloride
Styrene
1,1,2,2-Tetrachloroethane
Tetrachloroethene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Trichlorofluoromethane
Vinyl Chloride

Semi-volatile Acids:

4-Chloro-3-methylphenol
2-Chlorophenol
2,4-Dichlorophenol
2,4-Dimethylphenol
2,4-Dinitrophenol
2-Methyl-4,6-dinitrophenol
2-Methylphenol (o-Cresol)
4-Methylphenol (p-Cresol)
2-Nitrophenol
4-Nitrophenol
Phenol
Pentachlorophenol
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol

Semi-volatile Base/Neutrals:

Acenaphthene
Acenaphthylene
Anthracene
Benzidine
Benzo(a)anthracene
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Benzo(g,h,i)perylene
Benzo(a)pyrene
Benzyl butyl phthalate
4-Bromophenyl-phenyl ether
bis(2-Chloroethoxy)methane
bis(2-Chloroethyl)ether
bis(2-Chloroisopropyl)ether
bis(2-Ethylhexyl)phthalate
4-Chlorophenyl-phenyl ether
2-Chloronaphthalene
Chrysene
Dibenz(a,h)anthracene
Dibenzofuran
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
3,3'-Dichlorobenzidine
Diethyl phthalate
Dimethyl phthalate
Di-n-butylphthalate
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Di-n-octylphthalate
Fluoranthene
Fluorene
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Indeno(1,2,3,cd)pyrene
Isophorone
2-Methylnaphthalene
Naphthalene
Nitrobenzene
N-Nitrosodimethylamine
N-Nitroso-di-n-propylamine
N-Nitrosodiphenylamine
Phenanthrene
Pyrene
1,2,4-Trichlorobenzene