

Laboratory Certification Update 2016

Overview

- Lab Number
- Manuals and Benchsheets
- Guidance Documents
- Chlorine Kit Calibrations
- Applications
- Fees
- PT Requirements
- New Lab Cert Email

Lab Number

- Single laboratory number
 - No longer separate numbers for chemical analysis and microbiological analysis
 - Use this number to report all analytical results to OEPA
- Contact lab cert if you do not know your laboratory number.

Manuals and Benchsheets

- Use manuals and benchsheets found in “Ohio EPA Laboratory Manual for Microbiological Analyses of Public Drinking Water, 2014”
 - Website:
<http://epa.ohio.gov/ddagw/labcert.aspx#161815008-resources-and-reporting>

Manuals and Benchsheets



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Division of Drinking and Ground Waters

City of Zanesville
is Recognized for
Protecting their
Drinking Water

Does your community have a drinking
water source protection plan?



QUICK LINKS

- Operator Certification**
Exams, Contact Hours, Operator Lists
- Rules**
Rules, Laws, Policies and Guidance
- Public Water Systems**
Monitoring Schedules, Violations, Engineering



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Air Pollution Control

Local Air Agencies

**Compliance Assistance and
Pollution Prevention**

Director's Office

Districts

**Drinking and Ground
Waters**

Employee Services

Environmental Education

**Environmental and
Financial Assistance**

**Environmental Response
and Revitalization**

Environmental Services

Fiscal Administration

Legal Services

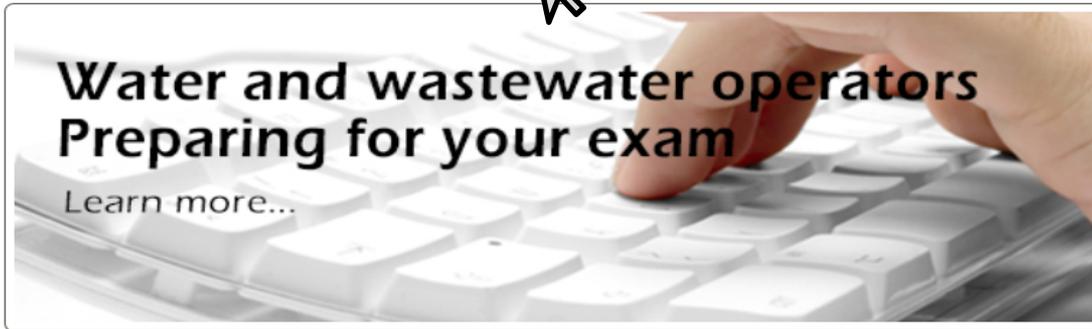
**Materials and Waste
Management**

Public Interest Center

Special Investigations

Surface Water

Division of Drinking and Ground Waters



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What We Do

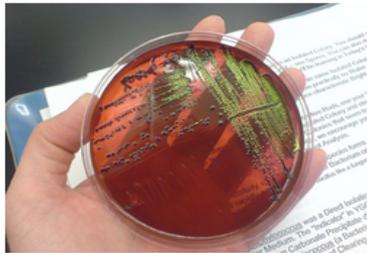
The **Division of Drinking and Ground Waters** ensures compliance with the federal Safe Drinking Water Act and evaluates potential threats to source waters that supply Ohio's more than 4,800 public drinking water systems. The division has a lead role for statewide ground water protection in cooperation with other state and federal agencies, implements a ground water quality monitoring program and provides technical assistance to the Agency's waste management divisions.

Mission Statement

QUICK LINKS

- ▶ **Operator Certification**
Exams, Contact Hours, Operator Lists
- ▶ **Rules**
Rules, Laws, Policies and Guidance
- ▶ **Public Water Systems**
Monitoring Schedules, Violations, Engineering
- ▶ **Harmful Algal Blooms**
Information for Public Water Systems
- ▶ **Revised Total Coliform Rule**
Forms and Instructions
- ▶ **Reporting**
eDWR, eBusiness Center, Forms
- ▶ **Laboratory Certification**
Certified Labs and Sample Analysis
- ▶ **Data Requests**
For Drinking Water Source Protection Areas

Certified Laboratories



Certified laboratories analyze drinking water samples for the presence of specific contaminants to help public water systems demonstrate that their water meets health based standards. Ohio EPA's laboratory certification program ensures laboratories are able to perform accurate testing using specific methods which have been approved by U.S. EPA.

Questions? Contact a member of the Laboratory Certification Section
By phone: 1 (614) 644-4245 or Email: DWLabCert@epa.ohio.gov

[Certified Laboratories](#) | [Lab Certification](#) | [Resources and Reporting](#) | [Contacts](#)

Currently Certified Laboratories

Laboratories are listed in the attached PDF documents by the type of analysis they are certified for (chemical and/or microbiological).

QUICK LINKS

- ▶ **Currently Certified Laboratories**
Microbiological and Chemical
- ▶ **Operator Certification**
Exam Information, Contact Hours, Operator Lists
- ▶ **Electronic Reporting**
Data and Forms
- ▶ **Public Water Systems**
Monitoring Schedules, Violations, Engineering
- ▶ **Apparent Violations**
Public Water Systems

DDAGW Site Links

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Certified Laboratories

Lab Certification

Resources and Reporting

Contacts

Resources and Reporting

▼ Resources

- Laboratory Manual for [Chemical Analyses](#) of Public Drinking Water
- Laboratory Manual for [Microbiological Analyses](#) of Public Drinking Water
- [Chemical Analysis Benchsheets](#)
- [Microbiological Analysis Benchsheets](#)
- [Cyanotoxin Analysis Benchsheets](#)
- [Method Detection Limit Report](#)
- [Approved Proficiency Test Providers](#)
- [Laboratory Certification HAB Rule Update Total Microcystins 2016 - Presentation](#)

▶ [Guidance Documents](#)

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Guidance Documents

Certified Laboratories Lab Certification Resources and Reporting Contacts

Resources and Reporting

- ▶ Resources
- ▼ Guidance Documents
 - [Alternative Chlorine Meter Verification](#)
 - [Analytical Requirements for Secondary Treatment with Chlorine Dioxide](#)
- ▶ Reporting
- ▶ Additional Information

Calibration Verification of Chlorine Meters (an alternate procedure)

The calibration verification of chlorine meters is one of the more difficult and technique dependent procedures performed in many of Ohio's certified laboratories. The calibration verification is required to ensure meters are determining the chlorine concentration properly, not to test the analysts' ability to prepare standards using a micro-pipette. The procedure outlined in the "Ohio EPA Laboratory Manual for Chemical Analyses of Public Drinking Water 2014" is a verification of the meters' calibration; not a calibration of the meter itself. Since laboratories are not establishing the meters' calibration, the Ohio EPA's Laboratory Certification Section is now permitting an alternate procedure to verify the meter is reading within acceptable limits. The use of secondary gel secondary standards for calibration verification is an acceptable alternative to the current method of making up various standards and reading them in the chlorine meters.

What are Secondary Gel Standards?

At this time only a few manufacturers provide secondary gel standards (i.e., Hach and LaMotte). Typically, the secondary gel standard sets contain four vials (a blank and three standards) filled with gels that simulate the test color at various concentrations.

Each set of standards is specific to the meter's manufacturer and analytical range; low-range (LR), mid-range (MR) and high-range (HR). Verification must be performed per manufacturer's instructions. Standards are good until the manufacturer's expiration date and must be stored per manufacturer's instructions.



What are Secondary Gel Standards?

- Gel filled vials simulate test color at various concentrations
- Currently only a few manufacturers
 - Hach
 - Lamotte

Use the manufacturer that matches your meter.

SpecCheck Secondary Gel Standards Set, DPD Chlorine - LR

DPD Chlorine, Low Range, 0-2.00 mg/L as Cl₂.

Used to confirm consistent instrument response.

Set contains four vials filled with gels that simulate the test color at various concentrations.

*This product has not been evaluated to test for chlorine and chloramines in medical applications in the United States.

- Fast and Convenient
- Stable



LaMotte™ DPD Chlorine Secondary Standards Kit for Series 1200 Colorimeters

Used for periodically rechecking calibration of Series 1200 Colorimeters

Manufacturer: LaMotte™ 414002

Includes: Blank and three standards, each with Certificate of Analysis, for low-, mid-, and high-range chlorine calibrations, packaged in a plastic case

What are Secondary Gel Standards?

- Standards are specific to meter's analytical range
 - High Range (HR)
 - ~2.0 - ~6.5mg/L
 - Mid Range (MR)
 - ~0.2 – ~2.7mg/L)
 - Low Range (LR)
 - ~0.2 – ~2.00mg/L
- Can use secondary standards to verify meter calibration.
 - May use as an alternative to the one listed in the manual.
 - Chlorine Free Ampule
 - Potassium Permanganate
- Use within manufacturer's expiration date
 - Approximately 2 years

Calibration Verification Requirements Using Secondary Gel Standards

- Verify all meters at least once per month
 - Laboratory Meters
 - Field Meters
- Acceptance limits $\rightarrow \pm 10\%$ of assigned value
 - Service or replace meter if outside acceptance limits
- Verify meter using all of the vials in the kit
 - Zero meter on provided blank standard

Hach Company
100 Dayton Ave.
Ames, Iowa 50010



Certificate of Analysis

Product : DPD-Chlorine LR Spec Check Secondary Standards Kit

Product Number: 2635300 Lot Number: A4239 Expiration Date: Aug 2016

Instrument (PRGM)	Blank A4237	STD 1 (mg/L) A4237	STD 2 (mg/L) A4237	STD 3 (mg/L) A4237
DR 6000 (80)	0.00	0.21 +/- 0.09	0.84 +/- 0.10	1.53 +/- 0.14
DR 6000 (85)	0.00	0.23 +/- 0.09	0.92 +/- 0.10	1.68 +/- 0.14
DR 6000 (90)	0.00	0.22 +/- 0.09	0.88 +/- 0.10	1.58 +/- 0.14
DR 5000 (85)	0.00	0.24 +/- 0.09	0.94 +/- 0.10	1.73 +/- 0.14
DR 4000 (1450)	0.00	0.21 +/- 0.09	0.84 +/- 0.10	1.53 +/- 0.14
DR 4000 (1460)	0.00	0.23 +/- 0.09	0.90 +/- 0.10	1.64 +/- 0.14
DR 3900 (80)	0.00	0.21 +/- 0.09	0.84 +/- 0.10	1.53 +/- 0.14
DR 3900 (85)	0.00	0.23 +/- 0.09	0.92 +/- 0.10	1.68 +/- 0.14
DR 3800 (80)	0.00	0.21 +/- 0.09	0.84 +/- 0.10	1.53 +/- 0.14
DR 3800 (85)	0.00	0.23 +/- 0.09	0.92 +/- 0.10	1.68 +/- 0.14
DR 2800 (80)	0.00	0.21 +/- 0.09	0.84 +/- 0.10	1.53 +/- 0.14
DR 2800 (85)	0.00	0.23 +/- 0.09	0.92 +/- 0.10	1.68 +/- 0.14
DR 2700 (80)	0.00	0.21 +/- 0.09	0.84 +/- 0.10	1.53 +/- 0.14
DR 2700 (85)	0.00	0.23 +/- 0.09	0.92 +/- 0.10	1.68 +/- 0.14
DR 2500 (80)	0.00	0.23 +/- 0.09	0.90 +/- 0.10	1.65 +/- 0.14
DR 2500 (85)	0.00	0.23 +/- 0.09	0.90 +/- 0.10	1.65 +/- 0.14
DR 2400 (80)	0.00	0.23 +/- 0.09	0.90 +/- 0.10	1.65 +/- 0.14
DR 2400 (85)	0.00	0.23 +/- 0.09	0.90 +/- 0.10	1.65 +/- 0.14
DR 1900 (80)	0.00	0.21 +/- 0.09	0.84 +/- 0.10	1.53 +/- 0.14
DR 1900 (85)	0.00	0.23 +/- 0.09	0.92 +/- 0.10	1.68 +/- 0.14
DR 900 (80)	0.00	0.22 +/- 0.09	0.88 +/- 0.10	1.58 +/- 0.14
DR 900 (85)	0.00	0.22 +/- 0.09	0.88 +/- 0.10	1.58 +/- 0.14
DR 800 (9)	0.00	0.22 +/- 0.09	0.88 +/- 0.10	1.58 +/- 0.14
DR 800 (11)	0.00	0.22 +/- 0.09	0.88 +/- 0.10	1.58 +/- 0.14
Pocket Color II (LR)	0.00	0.23 +/- 0.09	0.90 +/- 0.10	1.65 +/- 0.14

NOTE: Choose the instrument and chlorine program being used. Transfer the control values to the enclosed certificate label and keep the label with your instrument for reference. For example, the test values for using a DR2000 Spectrophotometer and stored program #89 would be 0.21, 0.84, and 1.53 mg/L chlorine for Standard 1, Standard 2, and Standard 3 respectively. File this Certificate of Analysis for safe keeping. Values Traceable to MST SRM 936

Certified by: [Signature] for and on the behalf of Hach Company.

Des. Cat. No. 26353-97



Calibration Verification Requirements Using Secondary Gel Standards

- Bracket the range of chlorine seen in system
 - May need to purchase two kits
 - LR
 - HR
 - Optionally, use a Mid Range meter with MR standards
- Analyze samples in appropriate meter setting

Comparison of Verification Methods

	Verification Using Current Lab Cert Manual	Verification Using Gel Secondary Standards
<u>Verification of Frequency</u>	Every Three Months	Monthly
<u>Range of Acceptance</u>	Prepared standards within 10% of calculated value	Meter reading within 10% of assigned value
<u>Records</u>	Recorded on calibration verification record	Same
<u>Standard Storage Requirement</u>	Refrigerated/per manufacturer	Per manufacturer in original box
<u>Standard Maximum Storage Time</u>	Potassium Permanganate: 1 year after opening Ampule: Manufacturer's expiration	Manufacturer's Expiration
<u>DI Blank Check</u>	Total chlorine prior to calibration	None. Zero meter with blank standard provided in kit

Applications

- Use new applications on the website – dispose of old.
- New applications now in fillable format!!

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Obtaining Laboratory Certification

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- ▶ [Requirements for Analyst Certification](#)
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- ▶ [Issuance of Laboratory Certification](#)
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▼ **Applications**

Submit applications via DWLabCert@epa.ohio.gov or mail to the following address (a hard copy is not required):

**Ohio EPA Division of Environmental Services (DES)
Laboratory Certification Section
8955 East Main Street
Reynoldsburg, OH 43068**

DO NOT SEND PAYMENT WITH APPLICATION, WAIT FOR INVOICE.

To Access Applications, Click on the Links Below:

- [Chemical \(Limited and Standard\)](#)
- [Limited Trace Metals](#)
- [Microbiological](#)
- [Pesticide-SOC](#)
- [Radionuclides](#)
- [THM-HAA-VOC](#)
- [Trace Metals](#)

Interim Authorization, Click on the Links Below:

- [MMO-MUG \(SM 9223\) Tests](#)
- [Plant Control Tests](#)
- [Cyanotoxin Analysis](#)

Fee Structure Changes

- NEW: Limited Trace Metals
 - Only two parameters (Lead and copper; iron and manganese, etc.)
 - **\$1,550**
- Limited chemistry
 - Change from two parameters to three (Chlorine, Fluoride, pH)
 - **\$1,550**
- Addition of total microcystins and cyanotoxin screening (beginning in 2017)
- **DO NOT SEND CHECKS WITH APPLICATIONS!!!**

PT Requirements

- Annual PT required for all contaminants with MCL
 - Fluoride monthly - water treatment plant labs

Required PT Parameters

Inorganics	
Antimony	Must have no unacceptable results
Arsenic	
Asbestos	
Barium	
Beryllium	
Cadmium	
Chromium	
Cyanide	
Fluoride	
Mercury	
Nickel	
Nitrate	
Nitrite	
Selenium	
Thallium	
Lead and Copper	
Lead	Must have no unacceptable results
Copper	Must have no unacceptable results
Disinfection Byproducts	
Bromate	Must have no unacceptable results
Chlorite	Must have no unacceptable results
Total Trihalomethanes (THMs): Bromodichloromethane, Bromoform, Chloroform and Dibromochloromethane. (THMs Requires all compounds be reported)	Must have no unacceptable results.
HAA(5): Monochloroacetic Acid, Dichloroacetic Acid, Trichloroacetic Acid, Monobromoacetic Acid and Dibromoacetic Acid	May have no more than one unacceptable result.
Organics	
Pesticides and other Semivolatile Organic Compounds (SOCs) ¹	Must have no unacceptable results.
Volatile Organic Compounds (VOCs) ²	May have no more than 20% unacceptable results.
Vinyl Chloride	Must have no unacceptable results.
Microbiological	
Total Coliform and <i>E. coli</i> (Presence and Absence)	May have no more than one unacceptable total coliform result, no more than one unacceptable <i>E. coli</i> result and no false negative results.
Total Coliform and <i>E. coli</i> (Quantitation)	Must have no unacceptable results.

Required PT Parameters

Radiochemistry	
Gross alpha	Must have no unacceptable results.
Radium-226	Must have no unacceptable results.
Radium-228	Must have no unacceptable results.
Gross beta	Must have no unacceptable results.
Strontium-89	Must have no unacceptable results.
Strontium-90	Must have no unacceptable results.
Iodine-131	Must have no unacceptable results.
Tritium	Must have no unacceptable results.
Photon Emitters	Must have no unacceptable results.

¹Regulated SOC's

- 1,2-Dibromo-3-Chloropropane (DBCP)
- 2,3,7,8-TCDD (Dioxin)
- 2,4,5-TP (Silvex)
- 2,4-D
- Alachlor
- Aldicarb
- Aldicarb Sulfone
- Aldicarb Sulfoxide
- Atrazine
- Benzo[a]Pyrene
- Carbofuran
- Chlordane - Total
- Dalapon
- Di(2-Ethylhexyl)Adipate
- Di(2-Ethylhexyl)Phthalate
- Dinoseb
- Diquat
- Endothall
- Endrin
- Ethylene Dibromide (EDB)
- Glyphosate
- Heptachlor
- Heptachlor Epoxide
- Hexachlorobenzene
- Hexachlorocyclopentadiene
- Lindane (Gamma-BHC)
- Methoxychlor
- Oxamyl (Vydate)
- Pentachlorophenol
- Picloram
- PCBs as Decachlorobiphenyl
- Simazine
- Toxaphene

²Regulated VOC's

- 1,1,1-Trichloroethane
- 1,1,2-Trichloroethane
- 1,1-Dichloroethylene
- 1,2,4-Trichlorobenzene
- 1,2-Dichloroethane
- 1,2-Dichloropropane
- Benzene
- Carbon Tetrachloride
- cis-1,2-Dichloroethylene
- Dichloromethane (Methylene Chloride)
- Ethylbenzene
- Monochlorobenzene (Chlorobenzene)
- o-Dichlorobenzene (1,2-Dichlorobenzene)
- p-Dichlorobenzene (1,4-Dichlorobenzene)
- Styrene
- Tetrachloroethylene
- Toluene
- trans-1,2-Dichloroethylene
- Trichloroethylene
- Xylenes (Total)



PT Requirements

- Annual PT required for all contaminants with MCL
 - Fluoride monthly for water plants
 - Obtain from an acceptable provider:
nelac-institute.org/content/NEPTP/ptproviders.php
- Time period to complete PT:
 - January 1st – December 31st

PT Requirements

- Submit data to the PT Provider by Study Close Date
 - Late data not accepted by Lab Cert
 - Review data prior to submission – can't revise after data is reported to PT provider
 - Indicate to your PT provider that PT results must be sent to Ohio EPA Laboratory Certification Section
 - Include USEPA lab code and Ohio lab identification number
 - USEPA Lab Code may be obtained from Ms. Michella Karapondo @:
 - (513) 569-7141 or
 - Karapondo.Michella@epa.gov

PT Requirements

- Include in your data package to the PT provider:
 - USEPA lab code and Ohio lab identification number
 - Correct method number
 - Obtained from laboratory certificate – incorrectly recorded method number not accepted
 - SM9223-B vs Colisure (SM 9223-B)
 - Be sure to provide results for each method for which you are certified
 - Failure to report PT results by a certified method may result in loss of certification

PT Requirements

- What do I do if I fail a PT?
 - Obtain makeup PT for parameters with “Unacceptable” result
- What if my makeup fails?
 - Submit corrective action report to Lab Cert Office
 - Prior to obtaining second makeup
 - Obtain/analyze second makeup as soon as possible
- What if my second makeup fails?
 - Immediately cease analysis of failed parameter
 - Notify Laboratory Certification Section where samples will be sent for analysis
- **Certification on hold** until an “Acceptable” evaluation received by the PT Provider

PT Requirements

- What if I do not submit a PT for the year?
 - **Certification suspended** until an “Acceptable” evaluation received
 - Immediately cease analysis
 - Notify Laboratory Certification Section where samples will be sent for analysis
 - Send corrective action to Laboratory Certification Section

New Way to Contact Lab Cert

- New email address DWLabCert@epa.ohio.gov
- Send the following to the new email:
 - Lab plans and lab plan requests
 - Applications
 - PT results
 - General correspondence

Contact

Jen Allen	Jenyfer.Allen@epa.ohio.gov	(614) 644-4222
Mark Tomasi	Mark.Tomasi@epa.ohio.gov	(614) 644-4067
Charles Vasulka	Charles.Vasulka@epa.ohio.gov	(614) 644-4266

Questions?