# Service Connection

The Maine Drinking Water Program Newsletter

"Working Together for Safe Drinking Water"

Fall 2016 • Volume 24, Issue 3

# The 2016 Drought How Bad Is It?

Michael Abbott, Assistant Program Director & Chief Engineer

It has been a "wicked dry year" in Maine. Well, in some parts of Maine. The low snowfall and warm temperatures we experienced last winter resulted in minimal spring melt and runoff. That, combined with the relative lack of spring rainfall, set us up for what some would consider a real drought. In fact it has been dry – too dry for lawns and gardens (at least my garden) to thrive. And too dry to keep rivers flowing, lakes filled to their normal levels, and groundwater levels in wells up where they should be. But I always thought that in Maine if you didn't like the weather you only had to wait a few minutes, right? This hasn't been the case as the warm sunny weather has continued in the southern and central parts of the state. Good for the tourism industry; not so good for recharging water supplies.

As of September 26, 2016, the National Drought Mitigation Center's U.S. Drought Monitor estimated that approximately sixty-five percent of Maine's population resides in drought areas. However, the dry conditions appear to be limited to the southern half of the state. The bad news for some is that portions of York, Cumberland, Androscoggin, Kennebec, Waldo, and Knox counties, and all of Sagadahoc and Lincoln counties are in "severe drought". The southern portions of York and Cumberland counties are now considered to be in "extreme drought". And what might be even worse news for water suppliers in the southwest corner of the state is that the longer term effects of the drought, namely the dropping groundwater levels, might not be corrected quickly even with a wet fall season.

To give some historical perspective, the last major drought in Maine lasted several years, from 1999-2002, with the most severe period between 2001 and 2002, where groundwater levels and stream flows reached record lows. During this period, thirty-five public water suppliers, including eight large community systems, reported

Continued on page 7...



### Inside This Issue:

Director's Corner 2

PWS Inspector Districts 3

DWP Introductions 4

2015 Annual Report 4

Monthly Operating Reports 5

Optimized Corrosion Control 6

Operator News 7

## Review of Lead and Copper Sample Sites at Schools

Carlton Gardner

Since February 2016, lead in drinking water has been highlighted in the news due to high lead levels in drinking water in Flint, Michigan, as well as some schools across the nation. The Maine Drinking Water Program (DWP) has been undertaking an onsite review of the lead & copper sampling locations at the approximately 250 schools that are regulated as public water systems. This project is to ensure the schools are collecting lead and copper samples from appropriate sites that are used to obtain drinking water for consumption and/or food preparation.

During August and September, 2016, the DWP contracted with Maine Rural Water Association (MRWA) to schedule and conduct onsite surveys at schools that are required to monitor in 2016. The information gathered during the surveys will be reviewed by DWP staff and letters will be sent to schools with the approved sample locations.

Continued on page 6...



Maine Center for Disease Control and Prevention

An Office of the Department of Health and Human Services

Paul R. LePage, Governor

Mary C. Mayhew, Commissioner



### Reducing the Risk of Violations by Understanding the Whole System

In 2015 approximately 73 percent of public water systems in Maine did not receive any violations. The remaining 27 percent of systems were issued approximately 1,500 violations (an average of just under 3 violations per system).

The vast majority of the of the violations (more than 80 percent) were related to water systems' failure to collect water samples when required, failure to report, and/or failure

to inform customers of a violation. All of these violations were preventable. Health-based violations (water quality issues) were issued to approximately eight percent of Maine's public water systems<sup>1</sup>. Although water quality issues can at times be hard to anticipate, the majority of health-based violations could also be avoided.

Considering your water source, pumps, water treatment and distribution piping and storage as one connected and interdependent system is essential in anticipating and preventing water quality issues.

Examples of changes in one area that could affect another include:

- Shock disinfection of your water system, to address a total coliform positive, could temporarily disrupt the protective scale built-up on your water pipes. If lead and copper samples are taken before the scale on the pipe has been sufficiently rebuilt, you may find that your lead and/or copper samples exceed acceptable levels.
- Failure to regularly evaluate the effectiveness of water treatment generally results in a water quality violation.
- Adding treatment to remove a contaminant without considering the impacts on water chemistry could result in more corrosive water.
- Making chemical changes at the treatment plant to improve the efficiency of your treatment process could impact the effectiveness of your disinfection residual out in the distribution system.

Continued on next page...

### **Service Connection**

The Maine Drinking Water Program Newsletter

The Department of Health and Human Services (DHHS) does not discriminate on the basis of disability, race, color, creed, gender, sexual orientation, age, or national origin, in admission to, access to, or operations of its programs, services, or activities, or its hiring or employment practices. This notice is provided as required by Title II of the Americans with Disabilities Act of 1990 and in accordance with the Civil Rights Act of 1964 as amended, Section 504 of the Rehabilitation Act of 1973, as amended, the Age Discrimination Act of 1975 and the Maine Human Rights Act. Questions, concerns, complaints, or requests for additional information regarding the ADA may be forwarded to DHHS's ADA Compliance/EEO Coordinator, State House Station #11, Augusta, Maine 04333, (207) 287-4289 (V), 711 (Maine Relay) (TTY). Individuals who need auxiliary aids for effective communication in program and services of DHHS are invited to make their needs and preferences known to the ADA Compliance/EEO Coordinator. This notice is available in alternate formats.

Published by the Drinking Water Program to provide technical and regulatory information on drinking water issues. Articles may be reprinted without restriction if credit is given to their source. To be added to the mailing or email list, contact:

Sara Flanagan, Editor **Drinking Water Program** Division of Environmental Health Maine Center for Disease Control and Prevention Department of Health and Human Services 11 State House Station - 286 Water Street, 3rd Floor Augusta, Maine 04333-0011 TEL: (207) 287-5678 TTY users: Dial 711 (Maine Relay)

FAX: (207) 287-4172 E-mail: <a href="mailto:sara.m.flanagan@maine.gov">sara.m.flanagan@maine.gov</a>

Web Address: http://www.medwp.com



#### Continued from 'Director's Corner'...

• Making improvements or repairs in the distribution system without taking appropriate precautions to prevent contamination from entering the water system or getting contamination out will likely result in water quality problems putting your customers at risk.

All public water systems must have a person(s) in responsible charge of their water system to ensure water compliance standards are being met as well as to protect public health. Community water systems, non-transient/non-community water systems, and some transient water systems must have a licensed water operator in responsible charge.

For those in responsible charge of a public water system, some questions you should regularly consider include:

- Am I confident that there have not been any changes to my water system's source that would adversely impact water quality?
- Do I know the water treatment system is working properly each day, and am I documenting the treatment operation?
- Do I know when and where to collect water compliance samples, as well as operation and maintenance samples, do I collect them on-time, and do I carefully review the results of these water quality tests?
- Am I aware of changes in the distribution system that could impact water quality and am I taking necessary steps to ensure these impacts are not putting the health of my customers at risk?

Whether it be a violation for failure to collect a sample or a violation due to a water quality issue, violations will cost you time and likely money. The old adage of "an ounce of prevention is worth a pound of cure" applies to your water system. Taking the time to properly monitor, operate, and maintain your water system will save you much effort in the long run.

As always, my staff and I are here to provide you with information and technical assistance if you need it.

Yours for safe drinking water,



1. Information about public water system compliance rates in Maine can be found in the 2015 *Drinking Water Annual Report*. Turn to page 4 for details.

### **Public Water System Inspector Districts**

Contact information for the Drinking Water Program's Public Water System Inspectors

**District A:** Kate Tufts - 207-215-0624 kate.tufts@maine.gov

District B: Jeremiah 'Jed' Haws - 207-441-6458 jeremiah.haws@maine.gov

**District C:** Jason Pushard - 207-441-0381 jason.pushard@maine.gov

District D: Haig Broshu - 207-592-0954 haig.brochu@maine.gov

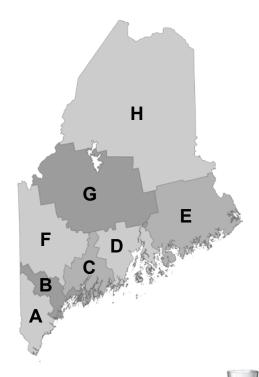
**District E:** Scott Whitney - 207-592-0578 scott.whitney@maine.gov

**District F:** Darren Brann - 207-441-6473 darren.brann@maine.gov

**District G:** Greg DuMonthier - 207-592-1674 greg.dumonthier@maine.gov

District H: Mark Tucker - 207-760-3155 mark.tucker@maine.gov

**Municipal Systems:** Denise Douin - 207-592-2165 denise.douin@maine.gov



### A Note from Michael Abbott

Assistant Program Director and Chief Engineer

As some of you already know, I recently moved into the position of Chief Engineer and Assistant Program Director here at the Drinking Water Program. I've met many of you in the water industry over the last three years as I served in the position of Hydrogeologist for the DWP. For those I haven't had the pleasure to get to know, I thought I'd take the opportunity to tell you a little about myself.

After receiving a bachelor of science degree in Civil Engineering at Worcester Polytechnic Institute in 1991, I started my career as a Sanitation Facilities Engineer for the U.S. Public Health Service in northern Wisconsin, where I worked on a variety of water supply and wastewater treatment projects. In 1997 I completed a master's degree in Geology to help round out my understanding of groundwater flow and geochemistry.

Prior to coming to the DWP, I worked for Sevee & Maher Engineers, Inc., and later with Ransom Consulting, Inc., on a variety of water supply development projects, hazardous waste remediation, and civil engineering design for construction work in Maine and other states in the Northeast

I have been fortunate to have a varied education and work background behind me. But as I write this, I realize I have a tremendous amount to learn in my new position managing the DWSRF projects and helping the Engineering and Water Resources Team to tackle the numerous challenges that come to our attention on an almost daily basis. I look forward to working with all of you as we collectively strive to improve public drinking water quality and service in Maine through installation and upgrades to our sources, treatment facilities and distribution networks.

### **DWP Welcomes Mike Plaziak**

Public Water System Inspection Team Supervisor

Mike Plaziak joined the Drinking Water Program as the Public Water System Inspection Team supervisor in August, 2016. Mike comes to us from the California EPA where he worked as a supervising engineering geologist for the Lahontan Water Board in the Mojave Desert of



southern California from 1995 to 2016. In this capacity he worked in a number of regulatory programs to protect groundwater and surface resources from mining operations, landfills, underground storage tanks, and wastewater treatment plant discharges. He also worked on Department of Defense cleanup activities under the Comprehensive Environmental Response, Compensation, and Liability Act, and oversight of a variety of remediation activities involving low-level radioactive wastes, exotic fuels, hexavalent chromium, and nitrates.

A native of Aroostook County, Mike attended Vanderbilt University and earned his B.S. degree in the Geological

Sciences in 1985. Following graduation, Mike entered the US Marine Corps and served as an Intelligence Officer until 2012, when he retired from service as a Lieutenant Colonel in the reserves. In 2004 Mike earned a Master's Degree in the Geological Sciences from San Diego State University with an emphasis in hydrogeology. Mike is a registered as both a professional geologist in California and a certified geologist in Maine. He is an avid hiker, dual sport motorcyclist, volunteer fire lookout, and holds an Extra class amateur radio license. Mike has three daughters who reside in California.

### Public Drinking Water in Maine Annual Report: 2015

The Drinking Water Program's *Public Drinking Water in Maine Annual Report: 2015* is now available. The report is intended to provide an overview of public water system compliance, quality of public drinking water and the efforts of the Maine Drinking Water Program in ensuring safe drinking water in Maine. The report can be found on the DWP website by going to www.medwp.com, clicking on the "Public Water Systems" link, and then on "Public Drinking Water in Maine Annual Report 2015."



### **Monthly Operating Reports**

Holly Hockertlotz, Rule Specialist

Monthly Operating Reports (MORs) are a record of system operation, and are helpful for optimizing the disinfection, corrosion control, or other health or aesthetic qualities of water served to consumers. They are required of all Public Water Systems (PWS) that add chemical(s) or use ultraviolet (UV), and must be submitted to the Drinking Water Program (DWP) no later than the 10th of each month following the month or quarter¹ that they cover. MORs are reviewed by the Drinking Water Program for completeness and are indications of poor or improper treatment.

There are fourteen MOR forms, each relating to specific PWS configurations. MORs are required for:

- Surface water and groundwater under the influence of surface water (GUI) PWS (MOR-001)
- Groundwater PWS (MOR-002)
- PWS subject to the Surface Water Treatment Rule (SWTR) (MOR-003, MOR-004, MOR-010, MOR-011)
- PWS regulated for disinfection byproducts (DBPs) (MOR-005, MOR-006, MOR-009)
- PWS that have fluoride addition (MOR-008)
- PWS that use chlorine dioxide (MOR-007).

Simplified MORs are available for small PWS:

- Small system chlorination (MOR-012),
- Small and medium system corrosion control (MOR-013)
- Small water system UV (MOR-014).

Municipal water systems that use UV have a more specialized MOR requirement, which includes additional data collection requirements.

MOR guidance and forms can be found on the DWP website (http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/pws/mor.shtml). The forms are available in both Excel and PDF formats.

### How do I know if I am submitting the correct MOR(s)?

The DWP is currently reviewing all MORs submissions and MOR requirements based on our records of treatment

in use at your PWS. Based on this review, your system will receive a letter indicating your MOR requirements. Should you feel there is a discrepancy between the MOR the DWP indicates is required and the MOR your PWS feels more accurately captures your treatment system; please contact your Public Water System Inspector.

### What information is required to be included on MORs each month?

All MORs should include your PWS name, PWS identification number, the month and year the MORs covers, the name and license number of your licensed operator, the signature of your operator (or be emailed directly to the DWP by your operator). For systems that have chemical addition, the name of the chemical, the purpose, the target concentration or pH (corrosion control), the chemical strength, amount of chemical added, and residual (or pH) must be included. If you are completing the small system UV form (MOR-014), please include the dates of your most recent maintenance activities and ensure equipment checks are performed no less than twice per week. In addition, sample collection dates and any issues encountered during the month should be noted in the space provided. Should your system encounter a treatment failure during the month, please contact your Public Water System Inspector immediately. The DWP is committed to protecting public health and would rather work with your system on response activities when a treatment failure occurs than issue violations. Technical assistance is available to you through both the DWP and Maine Rural Water Association (MRWA).

# What do I do if my PWS closes for the season part way through a month or a well/treatment plant is not in use during part or all of a month?

Please submit MORs for all wells and treatment plants during all months of operation. If your PWS is closed during a portion of the month or a well/treatment plant was not in use, you must indicate this on your MOR to avoid receiving a violation for an incomplete MOR. Failure to submit an MOR by the 10th of the month following the month or quarter covered on the MOR will result in a reporting violation, which may affect your water sampling requirements.

1. Quarterly MORs use forms MOR-005 and MOR-006 only.

## Optimized Corrosion Control: It's more than just pH and Alkalinity

Holly Hockertlotz, Rule Specialist

Drinking water chemistry is complex and includes a number of compounds and elements that influence both aesthetic and health qualities of the drinking water your Public Water System (PWS) produces. Water quality parameters (WQP) – a term used to refer to the concentration of compounds, elements, and other measurable qualities of drinking water – affect how finished water interacts with the distribution, including service lines, pipes, and fixtures. Several water quality parameters play a role in the corrosivity of water including pH, alkalinity, hardness, conductivity, oxidation-reduction potential (ORP), temperature, total dissolved solids, disinfectant residual, sulfate, chloride, manganese, and iron.

While the Lead and Copper Rule only requires PWSs to monitor for pH, alkalinity, calcium, conductivity, temperature, and inhibitor dosage/residual, many additional WQPs, including those listed above, should be considered when developing or optimizing corrosion control. The Environmental Protection Agency (EPA) published updated guidance on Optimal Corrosion Control Treatment in March, 2016, which can be found online at http://tinyurl.com/epa-recommendations. This document includes additional details pertaining to the above water quality parameters and their impact on optimizing corrosion control treatment.

When a lead or copper action level exceedance occurs, the Drinking Water Program will require measurements of total alkalinity, calcium, conductivity, pH, and temperature at both the entry point to distribution and at tap locations within the distribution, in accordance with the Lead and Copper Rule. Your PWS will also need to develop an initial or revised corrosion control treatment plan within 6 months. Your corrosion control treatment plan should be developed with a water quality specialist (such as an engineer or other professional experienced in evaluating water chemistry, including the impacts on other treatment processes), who will likely want to evaluate the components of any treatment system(s) you have in place, your distribution system, and water quality parameters. Please note that all corrosion control treatment plans must include a recommendation for chemical addition

and recommended operational ranges for water quality parameters.

Once your system has developed a corrosion control treatment plan, the DWP will evaluate both your plan and water quality parameter data. This will enable the Drinking Water Program to work with your system to establish optimal water quality parameters to expedite a return to compliance with the Lead and Copper Rule. The installation of corrosion control treatment may not be required if the water system has been able to sufficiently remove sources of lead or copper (such as fixture replacement) and the PWS successfully passes two rounds of lead and copper testing before the deadline for treatment installation has passed.

For all systems using chemical addition to return to compliance with the lead and copper rule, a minimum pH of 7.0 is required in all tap samples unless the Drinking Water Program determines that meeting a pH of 7.0 is not technologically feasible or is not necessary for the system to optimize corrosion control. The Drinking Water Program will also establish a minimum pH or range at each entry point to the distribution system. Your system may also be required to monitor for alkalinity, calcium carbonate, silicate, corrosion inhibitor, or other water quality parameters depending on what corrosion control technology your system employs to reduce the corrosivity of water in your public water system. If you are unsure of what minimums or ranges you must maintain for your current corrosion control treatment, please contact your Public Water System Inspector for guidance.

### **Lead and Copper**

Continued from Page 1...

Lead and copper sample site selections are based on frequency of use, fixture type, age of the plumbing and/ or fixture, and age of the population served. Schools that are required to collect lead and copper samples in 2017 or 2018 will be surveyed at a later date

Remember: if any system needs to collect lead and copper samples from locations other than approved locations, you must contact the DWP before sampling.

If you have any questions, please contact your Public Water System Inspector.



### **Operator News**

Julia Kimball, Water Operator Board Clerk

#### Renewals

License renewal notices will be mailed by November 1, 2016, for those operators whose licenses expire on December 31, 2016. Remember: any approved training received *after* your license renews, but before the end of 2016, can be applied to the following renewal cycle.

### **Training Credit Hours (TCH)**

A reminder for those operators who are renewing their licenses: training contact hours recorded to your license can be checked online. To review the number of TCHs you have achieved, please visit the Water Operator Board page on www.medwp.com: from the Drinking Water Program home page, select the link for 'Professionals'; from there, proceed to the Water Operator Board (Licensure) page. Under 'Maintaining Your Operator's License' you will see a link to review TCH records. TCHs are listed next to the operator's license number. Most training providers submit attendance lists following training sessions, however if you see that some of your trainings have not been recorded, please contact Julia Kimball in order to submit training certificates. The report is updated weekly.

### **Training Courses**

Safety training courses relevant to managing or operating a public water system can count toward license renewal. There is no limit on the number of TCHs allowed for safety training, but keep in mind that any approved training course may be used only once in a renewal cycle.

Contact Julia Kimball with any questions: email julia. kimball@maine.gov or phone 207-287-5699.

### The 2016 Drought

Continued from Page 1...

severe effects. In addition, approximately 17,000 private wells went dry and farmers lost an estimated \$32M in crop failures. According to the USGS, the Palmer Drought Severity Index (which depicts prolonged drought conditions) for Maine is in the "near normal" range. Unfortunately, drought conditions are forecast to persist

in the southern part of the state through at least the end of this year. And it is somewhat alarming to report that less than a year into the 2016 drought, groundwater levels in some USGS monitoring wells are already lower than they were during the last drought.

What we need to get out of this is a quick return to "normal" conditions: some moderate rain events this fall, followed by a winter with normal (or maybe a bit above normal) precipitation and a wet spring. Rainfall or snow melt when vegetation is dormant is the best timing to get water into the ground and recharge the aquifers. Although big storms might provide a lot of water to help fill lakes and ponds, most of it runs off too quickly to use. And as those with surface water supplies know, this can lead to all kinds of water quality challenges, from turbidity to harmful algal blooms.

If you are experiencing problems related to drought, please contact the DWP to let us know. We can't change the weather but we can offer assistance in terms of identification of emergency bulk water transport options or financial help through the DWSRF Emergency Construction Fund Loan program. Also, please visit the MEDWP website (www.medwp.com), which contains a new fact sheet on "Preparing, Responding, and Recovering from a Drought". This guidance document lists several options that a public water supplier might be able to use to adjust to drought conditions, including:

- Implementing voluntary or mandatory water conservation measures;
- Bulk water hauling;
- Use of an interconnection with a neighboring water system;
- Extending a surface water intake deeper into the water;
- Lowering well pumps; and/or
- New well construction or modifications to existing wells.

Links to several resources for drought planning and response are also included.

Good luck and let's hope for some rain! But not this weekend; I have plans.



## Department of Health and Human Services

Maine People Living Safe, Healthy and Productive Lives

Paul R. LePage, Governor

Mary C. Mayhew, Commissioner

### **Service Connection**

Newsletter of the Maine Drinking Water Program Maine CDC 286 Water Street, 3rd Floor 11 State House Station Augusta, Maine 04333-0011 PRESORTED
FIRST-CLASS MAIL
U.S. POSTAGE
PAID
PERMIT NO..8..
AUGUSTA, MAINE

Michael Abbott	287-6196	Assistant Program Director and Chief Engineer	michael.abbott@maine.gov
Glenn Angell	592-2084	State Site Evaluator	glenn.b.angell@maine.gov
Peter Bernard	287-6471	Assistant Environmental Analyst	peter.bernard@maine.gov
Christine Blais	287-3220	Assistant Laboratory Certification Officer	christine.blais@maine.gov
vacant	287-5681	Education & Outreach Coordinator	
David Braley	441-5324	Senior Geologist	david.braley@maine.gov
Darren Brann	441-6573	Public Water System Inspector	darren.brann@maine.gov
Haig Brochu	592-0954	Public Water System Inspector	haig.brochu@maine.gov
Roger Crouse	287-5684	Drinking Water Program Director	roger.crouse@maine.gov
Denise Douin	592-2165	Public Water System Inspector	denise.douin@maine.gov
Greg DuMonthier	592-1674	Public Water System Inspector	greg.dumonthier@maine.gov
Sara Flanagan	287-5678	Capacity Development & Security Coordinator	sara.m.flanagan@maine.gov
Robin Frost	287-8411	Data Mgmt & Program Support Team Supervisor	robin.frost@maine.gov
Mike Plaziak	287-8403	Public Water System Inspection Team Supervisor	michael.plaziak@maine.gov
Larry Girvan	592-7386	DWSRF Project Manager	larry.girvan@maine.gov
Jeremiah Haws	441-6458	Public Water System Inspector	jeremiah.haws@maine.gov
Holly Hockertlotz	287-1979	Rule Specialist	holly.hockertlotz@maine.gov
James Jacobsen	287-5695	Project Manager/Webmaster	james.jacobsen@maine.gov
Jennifer Jamison	287-1929	Laboratory Certification Officer	jennifer.jamison@maine.gov
Julia Kimball	287-5699	Operator Certification/ Well Drillers Board Clerk	julia.kimball@maine.gov
vacant	287-2647	Water Resources Team Supervisor	
Brent Lawson	592-7376	State Plumbing Inspector	brent.lawson@maine.gov
Martha Nadeau	287-5683	Assistant Environmental Analyst	martha.nadeau@maine.gov
McKenzie Parker	557-2255	DWSRF Project Manager	mckenzie.parker@maine.gov
Jason Pushard	441-0381	Public Water System Inspector	jason.pushard@maine.gov
Nathan Saunders	287-5685	Senior Environmental Engineer	nathan.saunders@maine.gov
Fran Simard	287-8074	Office Associate	fran.simard@maine.gov
Amilyn Stillings	287-6472	Quality Assurance Specialist	amilyn.stillings@maine.gov
Daniel Thompson	287-2070	Office Assistant	daniel.thompson@maine.gov
Teresa Trott	287-7485	Rule Administrator	teresa.trott@maine.gov
Mark Tucker	760-3155	Public Water System Inspector	mark.tucker@maine.gov
Kate Tufts	215-0624	Public Water System Inspector	kate.tufts@maine.gov
David Welch	287-3056	Environmental Analyst	david.welch@maine.gov
Scott Whitney	592-0578	Public Water System Inspector	scott.whitney@maine.gov
Jim Willis	287-5694	Office Associate	james.willis@maine.gov

DWP main line: (207) 287-2070 • TTY users: Dial 711 (Maine Relay) • Fax: (207) 287-4172

After hours emergency: (207) 557-4214 • Visit us on the web: <a href="www.medwp.com">www.medwp.com</a>

DWP MOR submittals: <a href="www.medwp.com">dwpmor@maine.gov</a>
• DWP lab submittals: <a href="www.medwp.com">dwplabsubmit@maine.gov</a>