Drinking Water Operators Workshop– Hood River County

April 10, 2012

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Drinking Water Program

Oregon Health Authority

Outline of Presentation

- What Drinking Water Looks Like in Hood River County
- Water System Operations and Maintenance Manuals
  - What is one?
  - Reasons to have one
  - Key components / what to include in the manual
  - Resources to help develop one
- Questions/Comments

Hood River County – Public Water Systems

- 21 Public Water Systems
  - 2 using surface water (spring, lake)
  - 19 using groundwater (well or spring)
- Serving a Population of almost 23,000
- Mixture of Community and Non-Community (Transient) Systems
- (5) regulated directly by DWP, (16) by Hood River County

State Drinking Water Program Roles

- Regulatory Oversight at:
  - Large systems (> 3300 population)
  - Systems using a surface water source
- Responsibilities:
  - Conducting field surveys
  - Reviewing plans for new facilities and major modifications at all public systems
  - Receiving, processing water quality monitoring and determining compliance

County Health Department Roles

- Regulatory oversight at:
  - Most systems using a groundwater source
  - Most systems serving a population < 3300
- Drinking Water Responsibilities
  - Conducting field surveys
  - Assisting and troubleshooting with operators
  - Updating system statistics and records
  - Verifying plan review project completion on site

Operation and Maintenance Manual – What is One?

- Written manual of how to delivery safe drinking water to your customers
- Includes daily, weekly, monthly, & annual tasks performed by operator
  - Source (well/spring)
  - Treatment (chlorination)
  - Storage (tank)
  - Distribution (valves, pumps, pipes)
- Is current and dynamic (updated as water system changes)

Why Have One?

- Ability to continue to deliver safe drinking water if main operator is absent
- Succession planning – training new staff
- Ensures consistency amongst staff
- Streamlines efforts and costs
- Required for State Revolving Loan Fund $
- All Public Water Systems are required to have a current manual
- They are reviewed during field inspections

Scenario Below

- Main operator out of town on unexpected family emergency
- Possible scenarios:

  - Routine sample returns coliform positive, repeats and source samples need to be taken
  - Need to repair or replace sections of water line
  - Need to shock chlorinate well, storage tank, or pipeline to address contamination
  - Chemical samples need to be taken this year

Coliform Sampling Plan - Narrative

1. This water system must collect 1 (Number) routine coliform samples every Monthly (Month/Quarter).

2. Sampling Technique:
   - Using a non-swivel faucet flush for 5 minutes.
   - Use only sample bottle supplied by lab. Do Not open bottle until ready to fill.
   - Reduce water flow to a steady stream and gently fill bottle to between lines
   - Replace cap immediately.
   - Label bottle with all pertinent information including: system name and ID number, date + time, location of sample.
   - Fill out laboratories sheet, for "Routine" sample. Put sheet and sample bottle in container
   - Drop off sample at Clatskanie Courthouse by 10:00am on Wednesday

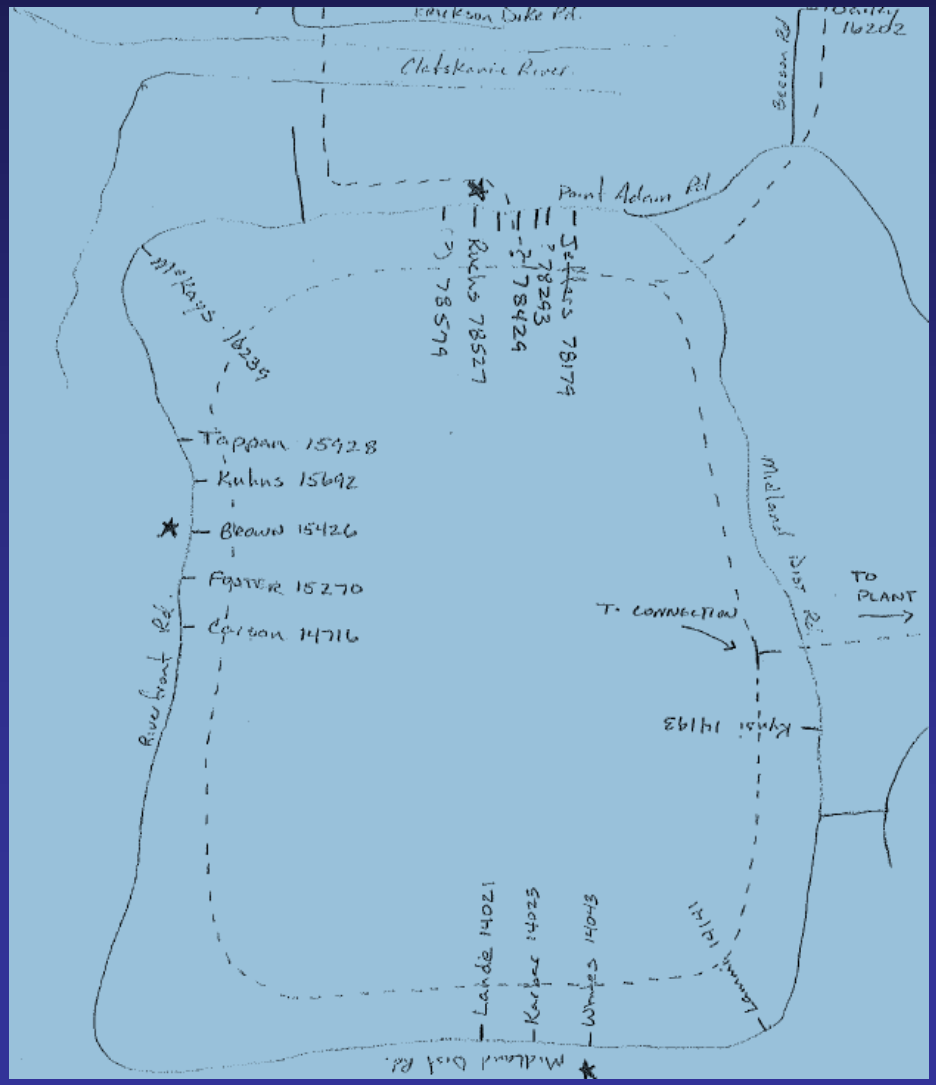
3. Sample Collection Site Rotation:

Coliform Sampling Plan – Sample Rotation

3. Sample Collection Site Rotation: [illegible] by 10:00am on Wednesday

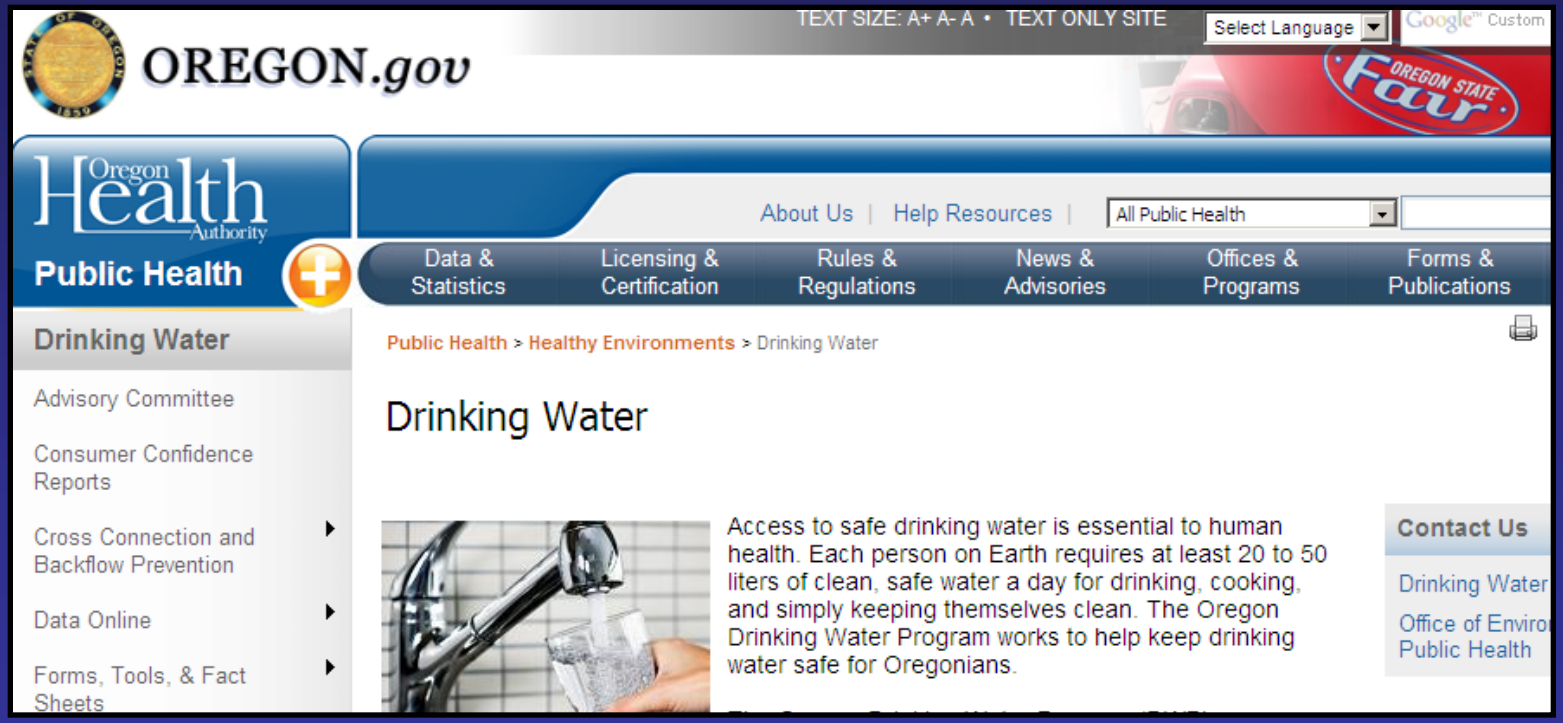
Routine		Address/Location
Routine Site #1 Whites 14043 Midland Dist.	Repeat Site A*	14043 Midland Dist (White)
	Repeat Site B	14141 Midland Dist (Lammi)
	Repeat Site C	14023 Midland Dist (Karber)
	Repeat Site D	14193 Midland Dist (Kynsi)
Routine Site #2 Browns 15426 Riverfront	Repeat Site A*	15426 Riverfront (Browns)
	Repeat Site B	15270 Riverfront (Foster)
	Repeat Site C	15692 Riverfront (Kuhns)
	Repeat Site D	14716 Riverfront (Carson)
Routine Site #3 Ruchs 78527 Pt. Adams	Repeat Site A*	78527 Pt. Adams (Ruchs)
	Repeat Site B	78429 Pt Adams (?)
	Repeat Site C	78579 Pt Adams (?)
	Repeat Site D	78293 Pt Adams (?)

Coliform Sampling Plan – Sample Map

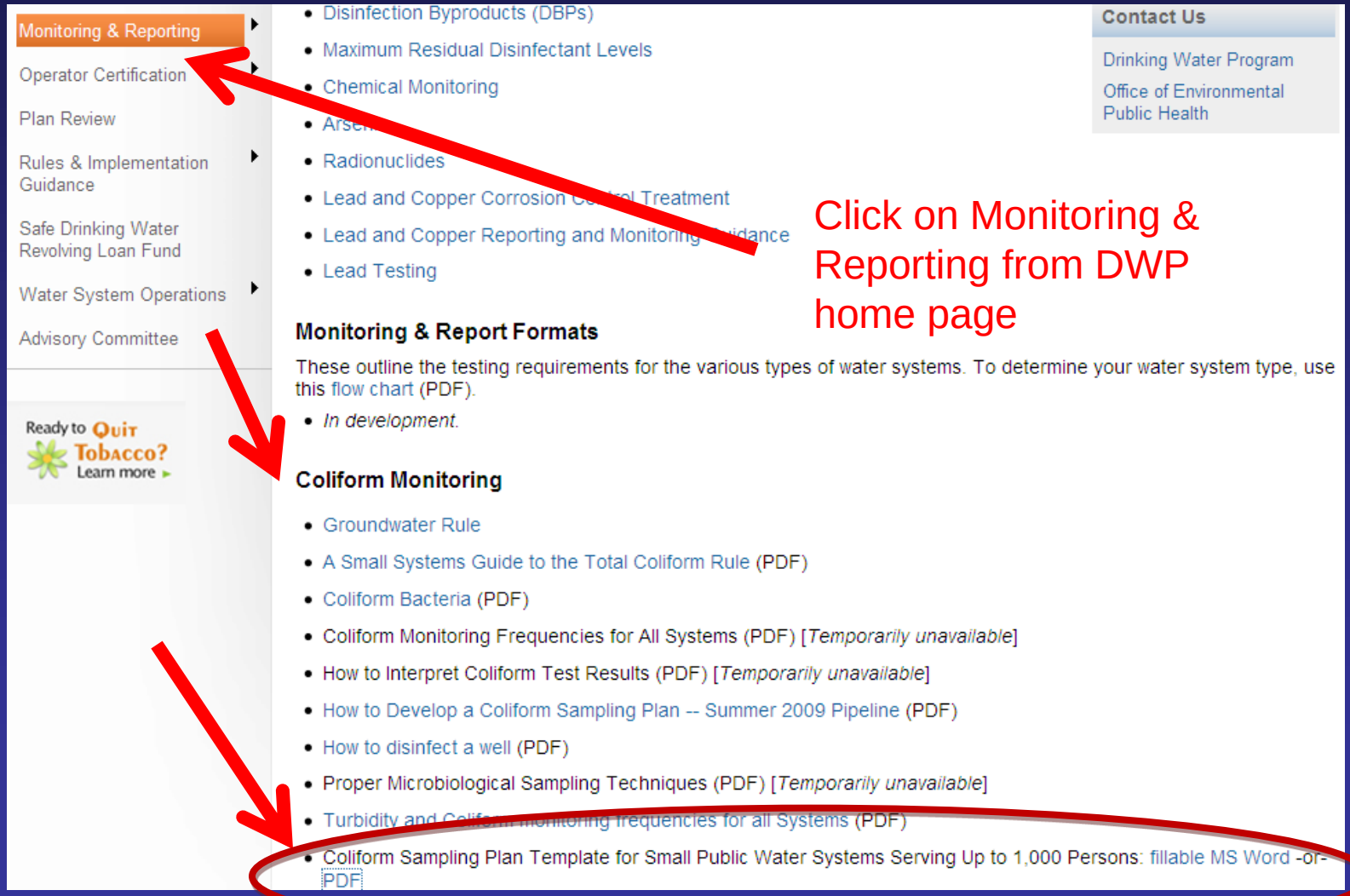


Drinking Water Program Website

- http://healthoregon.org/dwp



Coliform Sampling Plan Template



Coliform Sampling Plan Template

Oregon Health Authority - Drinking Water Program

COLIFORM SAMPLING PLAN

For small public water systems serving populations up to 1,000 persons

1. **System:**_____ **PWS ID#: 41**__ __ __ __ __

2. **System Operator:**_____ **(** **)** _____ **Date:**_____
(Phone Number)

3. This water system must collect _____ routine coliform samples every _____.
(Number) (Month/Quarter)

3. This water system must collect _____ routine coliform samples every _____.
(Number) (Month/Quarter)

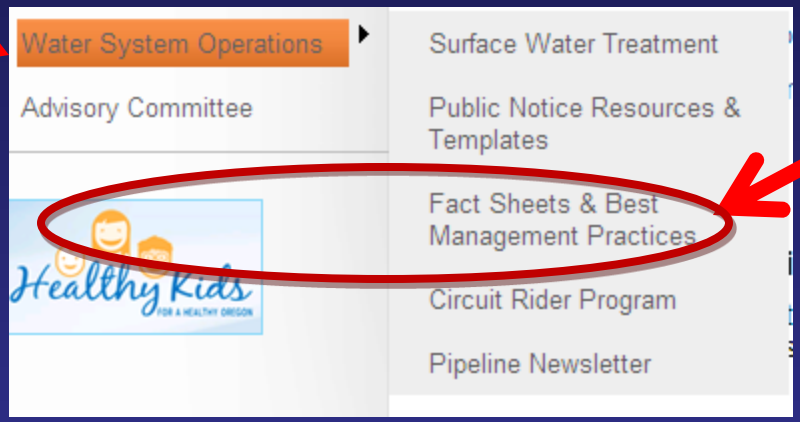
Replacing or Repairing Water Line

Standard Procedure – Line Repair/Replacement

- Describe the distribution system (length, diameter and material of pipe, location of valves, blow-off's, hydrants, or dead-ends)
- Consider a map of distribution system
- Describe how the process occurs step by step
- Keep a log of maintenance work done to date

Best Management Practices Available to Operators

From DWP's home website



Best Management Practices (BMPs)

Developed and prepared by the Drinking Water Advisory Committee (DWAC), these guidelines describe best practices for water systems and water suppliers. Systems and suppliers are encouraged to incorporate these BMPs into their routine operations.

- Cutting Into or Repairing Existing Water Mains (PDF)
- Disinfection or Filtration Treatment Interruptions (PDF)
- Service Outages Due to Reduced Pressure Events (PDF)

Cutting Into / Repairing Water Mains

Oregon Drinking Water Program
Best Management Practices for
Cutting Into or Repairing Existing Water Mains

Repair Scenarios:

1. Make repair while maintaining positive pressure - *best*
2. Make repair without pressure using best management practices - *desirable*
3. Make repair without pressure without using best management practices - *least desirable*

Maintenance Record Card – Line Repair/Replacement

Water Line Repairs Log*

Date	Location	Size	Replaced/Repaired	Comments

From U.S. EPA Preventative Maintenance Card for Small Public Water Systems Using Groundwater - http://water.epa.gov/type/drink/pws/smallsystems/technical_help.cfm

Preparing to Shock Chlorinate Your System

Items you will need to know for chlorination to address potential contamination:

- Water depth, casing diameter of your well
- Volume of water in storage reservoir
- Pipe lengths, diameters, and volume
- How you would valve sections of system

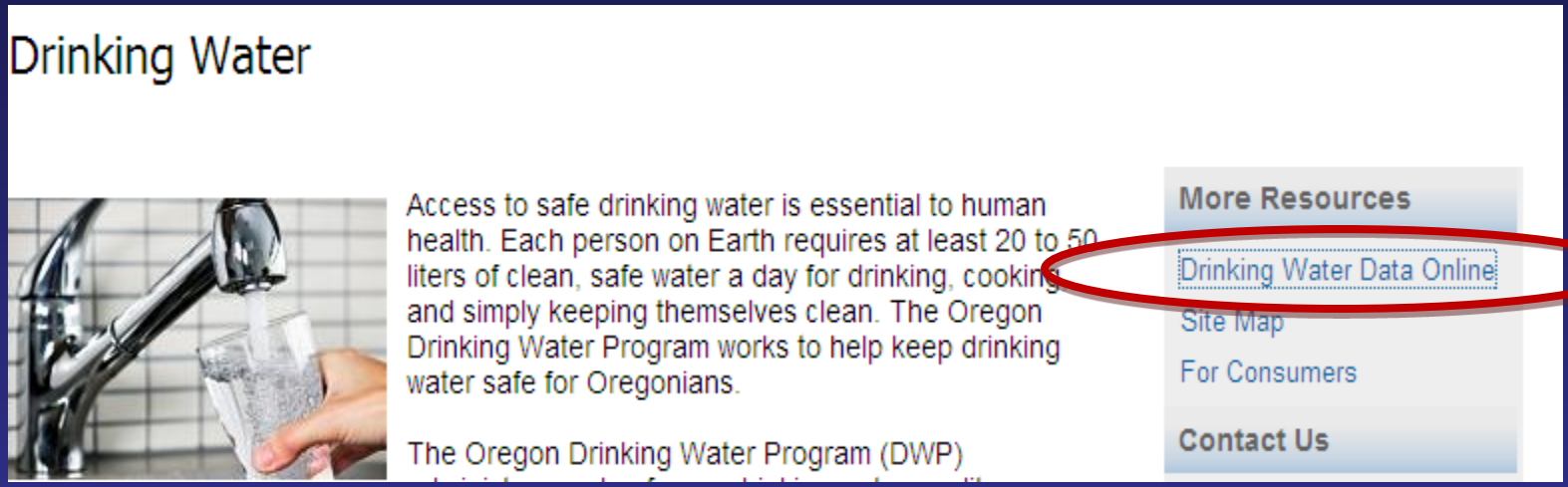
Chemical Sampling – Standard Procedure

Consider including

- Sample type (Nitrate, Arsenic, Organics, Inorganics)
- Sample location (Well, entry point/first user, distribution)
- Monitoring schedule (annual, quarterly, monthly)
- Name, address, and contact info for lab

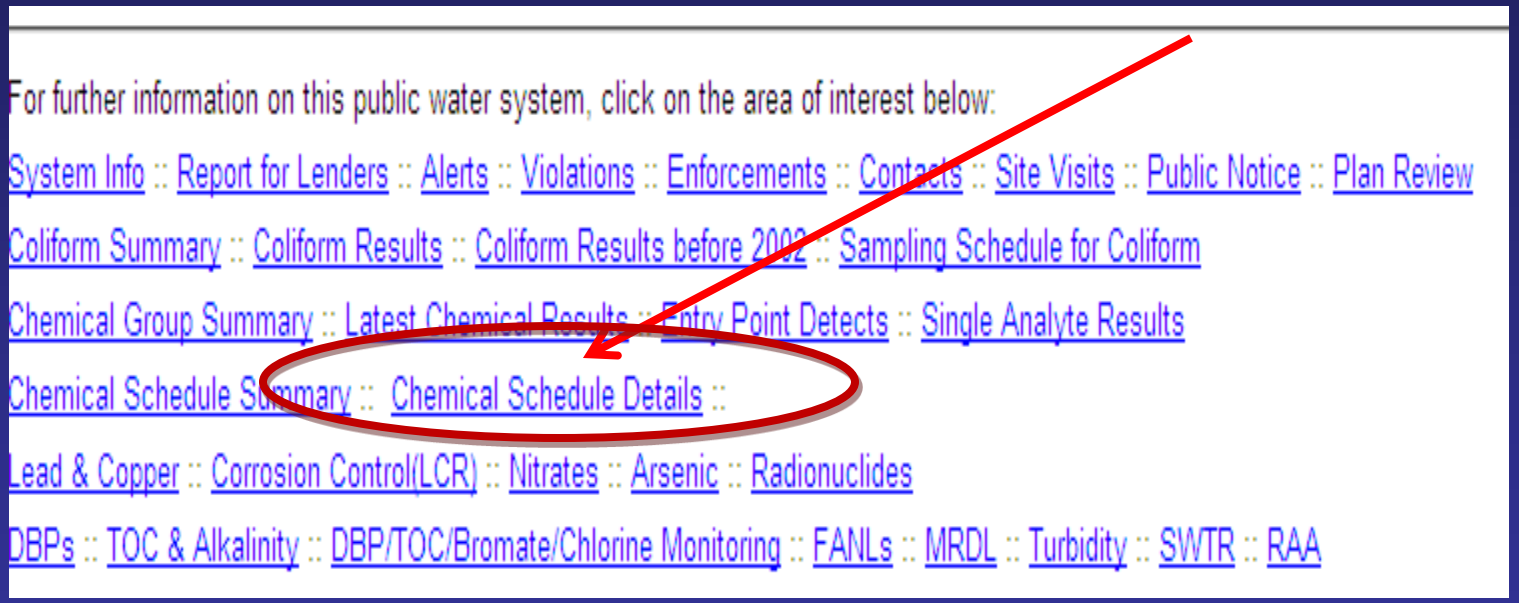
Let Your Fingers do the Walking

DWP website – Drinking Water Online



Look up by system name or system ID number

Chemical Schedule Detail Tab



Detailed Monitoring Schedule and Compliance Status

Sample Point ID	Analyte Group or Analyte		Sampling Interval	Monitoring Period Start	Monitoring Period End	Days Until End	Samples Required	Samples Received	Last Sample Date
DIST-A Distribution System	LEAD & COPPER	notes	3 Years				5	done	09/26/2011
					Seasonal sampling period:		**06/01** thru **09/30**		
EP-A EP for WELL	ARSENIC		Quarterly	04/01/2012 -	**06/30/2012**	82	**1**	**incomplete**	02/13/2012
EP-A EP for WELL	IOC	notes	9 Years	01/01/2011 -	**12/31/2019**	2822	**1**	**incomplete**	10/21/2005
EP-A EP for WELL	NITRATE		Yearly	01/01/2012 -	**12/31/2012**	266	**1**	**incomplete**	07/11/2011
EP-A EP for WELL	NITRITE	notes	9 Years	01/01/2011 -	**12/31/2019**	2822	**1**	**incomplete**	10/21/2005
EP-A EP for WELL	RAD - GROSS ALPHA	notes	9 Years	01/01/2008 -	**12/31/2016**	1727	1	done	06/13/2011
EP-A EP for WELL	RAD - RADIUM 226/228	notes	9 Years	01/01/2008 -	**12/31/2016**	1727	1	done	06/13/2011
EP-A EP for WELL	RAD - URANIUM	notes	9 Years	01/01/2008 -	**12/31/2016**	1727	1	done	06/13/2011
EP-A EP for WELL	SOC		3 Years	01/01/2011 -	**12/31/2013**	631	**1**	**incomplete**	05/06/2009
EP-A EP for WELL	VOLATILE ORGANICS		3 Years	01/01/2011 -	**12/31/2013**	631	**1**	**incomplete**	05/06/2009

Nitrate Schedule Details

Sample Point ID	Analyte Group or Analyte	Sampling Interval	Monitoring Period Start	Monitoring Period End	Days Until End	Samples Required	Samples Received	Last Sample Date
EP-A EP for WELL	NITRATE	Yearly	01/01/2012	12/31/2012	266	1	incomplete	07/11/2011

Additional Resources for Operators

- Basics for Small Water Systems in Oregon – Developing and Maintaining an Operations and Maintenance Manual: http://public.health.oregon.gov/HealthyEnvironments/DrinkingWater/OperatorCertification/SmallWaterSystems/Documents/BasicsForSmallPWS.pdf
- Developing an Operations and Maintenance Manual Course: www.oawu.net

Thank you

For more information contact:

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