

## This Training Session:

Whether you are ground water, surface water, or wastewater, this is a superb class to learn everything about working with chlorine. All forms of chlorine; gas, liquid, and solid, will be covered. Learn about the properties, history, applications, feed equipment, handling, maintenance, and how to be safe when working with chlorine.

What do you do if your system is required to meet 4 log disinfection criteria? Or maybe you have a problem with disinfection by products! In this class you will also be introduced to UV & Ozone as alternative or additional disinfection measures.

Remember, disinfection training applies to both Water & Wastewater Operators!

### For additional information:

Phone  
**406-438-2070**

-or-

Visit our website  
<http://www.mrws.org>

### **Montana Rural Water Systems**

**925 7th Avenue South  
Great Falls, MT. 59405**

Phone: 406-454-1151

Fax: 406-454-3116

E-mail: [mrws@bresnan.net](mailto:mrws@bresnan.net)

*"This training session is designed for "Awareness Training" and is not intended to be your only source of information!"*

**IF YOU PLAN ON ATTENDING THIS  
WORKSHOP, PLEASE E-MAIL THE MRWS  
OFFICE AT**

**[MTRuralWater@mrws.org](mailto:MTRuralWater@mrws.org)**

I need a headcount for refreshments and for the speakers to have a count for handouts.

### **Speaker Contact Info:**



Greg Peterson  
President

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Helena, MT 59601

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Toll Free MT (800) 242-6515

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**Montana Rural Water  
Systems Inc.**

*Presents*

# **2020 Chlorination & Alternative Disinfection Options**

### Training Conducted by:

**Greg Peterson,  
Chemical Montana Company**

**Nick Clos & Julie Allen  
Montana Rural Water Systems**

Recommended for Operators, Managers,  
& First Responders

**No Registration Fee !!  
CEC's: 0.6 Dual**

## *Date & Location:*

Missoula, MT.

Thursday

January 16, 2020

@

Missoula Water  
1345 W. Broadway  
Missoula, MT 59802

Montana Rural Water  
Systems, Inc  
-Technical Assistance  
-Training  
Friends helping friends!

**DANGER**

CHLORINE  
SEE MATERIAL SAFETY  
DATA SHEETS  
FOR INFORMATION

### ADA Meeting Announcement Statement:

MRWS will make reasonable modifications for persons with disabilities who wish to participate in this public training. If you would like to request an accommodation, contact the MRWS office 5 days prior to the event to advise us of the nature of the accommodation that you need.

### Morning Session:

8:30—9:00 AM REGISTRATION

*Greg Peterson — Chemical Montana Company*

9:00—10:00 AM — GAS CHLORINE

- ◆ Physical Properties
- ◆ O & M
- ◆ Safety

10:00—11:00 AM — SODIUM HYPOCHLORITE

- ◆ Physical Properties.
- ◆ O & M
- ◆ Safety

11:00—12:00 PM — CALCIUM HYPOCHORITE

- ◆ Physical Properties
- ◆ O & M
- ◆ Safety

12:00—1:00 PM — >>>> LUNCH <<<<

### Afternoon Session

*Nick Clos/Julie Allen— MRWS*

1:00—2:00 PM UV 101—Introduction to Ultraviolet Light & Ozone Disinfection Systems.

- ◆ History
- ◆ Fundamentals
- ◆ Microbial Response
- ◆ Planning & Design Elements
- ◆ Validation Testing
- ◆ VIDEO: Ozone & UV (produced by AWWA) (15 Min.)

2:00—2:30 PM DISINFECTION STRATEGIES: A Video by AWWA

- ◆ Why disinfection is necessary
- ◆ Types of waterborne disease
- ◆ Review of 2001 Walkerton, Ontario, and 1993 Milwaukee, Wisconsin, outbreaks
- ◆ Operational issues, advantages, and disadvantages
- ◆ Disinfectant residuals and DBP formation

2:30—4:00 PM — PROPER CARE OF CI2 EQUIPMENT

- ◆ Troubleshooting Chlorinators
- ◆ Troubleshooting Chemical Feed Pumps
- ◆ Troubleshooting Common Problems
- ◆ Demonstration on Rebuilding a Chemical Feed Pump

4:00 PM — Turn in CEC Forms & Evaluations

>>>> Adjourn <<<<

**BE CAREFUL**

**Learning May Occur at  
This Workshop**

### About Our Speakers:

**Greg Peterson** is the owner of **Chemical Montana Company**. He has been in the chemical business for over 30 years, so he has a vast knowledge of chlorine and other chemicals used in the water treatment industry. Additionally, Greg has generously participated as a speaker at numerous training sessions and conferences for MRWS over the years.

**Nick Clos** is a Circuit Rider with Montana Rural Water Systems (MRWS) for over 20 years and has been in the water and/or wastewater industry for over 31 years. He has worked with hundreds of communities in troubleshooting chlorine systems and helping set up new chlorination systems.

**Quality  
On Tap!**

For professionals in fields other than water or wastewater that need continuing education credit for this training, please contact your training authority and bring appropriate forms needed to receive credit. I will be happy to provide needed information or verify your attendance.