Outline

• Sampling, Reporting and Compliance Requirements
  • Bromate
  • Chlorine Dioxide
  • Chlorite
Bromate and Chlorine Dioxide Systems

Ozone Users - Bromate Monitoring
• 21 public water systems
• 34 plants

Chlorine Dioxide Users - Chlorine Dioxide + Chlorite Monitoring
• 117 public water systems
• 143 plants
Bromate
Bromate Requirements

- Any system that treats with ozone
- Each entry point distributing ozone treated water must be sampled at least once a month

Max Contaminant Level (MCL)
0.010 mg/L
Lab Certification and EPA Approved Methods

• Lab must be **NELAP accredited** by TCEQ
• Analysis method must be EPA approved
Bromate Reporting

• TCEQ MUST receive bromate lab results by the 10th of the following month

• Lab results MUST include:
  - PWS ID and Name
  - Lab Name and ID
  - Collection date
  - Collection location (EP##)
  - Bromate result
  - Analysis method
Bromate Compliance

• MCL Violation - Running Annual Average (RAA) exceeds 0.010 mg/L at the entry point

• Monitoring/Reporting (M/R) Violation - when a system does not monitor or fails to mail results to TCEQ
Calculating RAA

January + February + March
\[ \frac{3}{3} \]

= Average for Quarter 1

Quarter 1 + Quarter 2 + Quarter 3 + Quarter 4
\[ \frac{4}{4} \]

= RAA 4th quarter 2017
Chlorine Dioxide
Chlorine Dioxide Requirements

• Each plant using chlorine dioxide (ClO$_2$) must:
  • Monitor ClO$_2$ at the entry point (EP) at least once a day
  • Report ClO$_2$ use to TCEQ each month

Max Residual Daily Limit (MRDL)
0.8 mg/L
Lab Certification and EPA Approved Methods

- Analyzing lab must be approved by TCEQ
- Analysis method must be EPA approved
Chlorine Dioxide Requirements

• If result at entry point exceeds MRDL of **0.8 mg/L:**
  • **Collect 3 samples** in the distribution system
• Where?
  • **Are there re-chlorination facilities in distribution?**
No Re-chlorination Stations

- Sample at first connection nearest the treatment plant (TP) within 2 hours of exceedance detection at EP, then 6- and 8-hour intervals thereafter.
Yes Re-chlorination Stations

- Sample nearest TP, after re-chlorination, far reaches of distribution
- Sample first location within 2 hours of exceedance detection at EP, then second location at 6-hour, then last location at 8-hour.

EP > 0.8 mg/L

9:00 AM

3:00 PM

11:00 AM

5:00 PM

3:00 PM
Chlorine Dioxide Compliance

• MRDL Violation – If exceedance of 0.8 mg/L occurs at the entry point
  • Non-acute MRDL:
    • none of the distribution sample results exceed 0.8 mg/L
    • Public Notice within 30 days
  • Acute MRDL:
    • at least one of the distribution sample results exceeds 0.8 mg/L
    • no distribution samples were collected
    • Public Notice within 24 hours
Chlorite
Chlorite Requirements

- Chlorite is a disinfection by-product (DBP) formed when chlorine dioxide is used to disinfect water.
- All systems that use chlorine dioxide must sample for chlorite.
Chlorite Requirements

• Each plant using ClO$_2$ must:
  • Monitor chlorite at the entry point at least once a day
  • Collect one 3 sample set in the distribution system each month for each EP that the plant feeds ClO$_2$
  • Report ClO$_2$ use to TCEQ each month

Max Contaminant Level (MCL)
1.0 mg/L
Chlorite Distribution Monitoring

• The 3 sample set is collected at:
  • a location near the first customer and off TP property
  • average water residence time location
  • maximum water residence time location

• Samples must:
  • be collected on the same day
  • be collected on a day that ClO$_2$ is used
Chlorite Requirements

- If a daily chlorite sample exceeds 1.0 mg/L a 3 sample set must be collected within 24 hours
Lab Certification and EPA Approved Methods

- Lab must be NELAP accredited by TCEQ
- Analysis method must be EPA approved
Chlorite Reporting

If your lab sends the chlorite samples to an accredited lab to be analyzed, you only need to mail TCEQ the accredited lab results.
Chlorite Requirements

• **MCL Violation** - when the average of any 3 sample set collected in the distribution system exceeds 1.0 mg/L

\[
\frac{\text{Near result} + \text{Middle result} + \text{Far result}}{3} = > 1.0 \text{ mg/L}
\]
Chlorite Reporting

• TCEQ MUST receive ClO₂ Monthly Operating Report (MOR) and chlorite distribution results by the 10th of the following month

• Lab results MUST include:
  - PWS ID and Name
  - Lab Name and ID
  - Collection date
  - Collection location (123 Main St)
  - Chlorite results
  - Analysis method
### Chlorite Reporting

#### RAW DATA

<table>
<thead>
<tr>
<th>DATE</th>
<th>CI0₂ U₂-Val</th>
<th>CI0₂ POE</th>
<th>CI0₂ Distribution</th>
<th>Chlorite POE</th>
<th>Chlorite Distribution</th>
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#### Chlorite Stock Solution

- g/l chlorite

#### Written approved from TCEQ for:

- Reduced monitoring

#### Operator Chlorination

#### Chlorite Distribution Monitoring

#### Samples Collected

#### Chlorine Dioxide (CI0₂) Violations

#### Acute MRDL

<table>
<thead>
<tr>
<th>Date(s)</th>
<th>No. of Violations</th>
<th>Date(s)</th>
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#### Non Acute MRDL

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<th>Date(s)</th>
<th>No. of Violations</th>
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#### Monitoring

##### TCEQ Notified?

- Date:

##### Public Notified?

- Date:

#### Chlorine M&R Violations

#### NCL Violations TBD by the TCEQ

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### General Remarks About Cl₀₂ Generator

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#### DATA SUMMARY

<table>
<thead>
<tr>
<th>CI0₂ POE</th>
<th>CI0₂ Distribution</th>
<th>Chlorite POE</th>
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#### Total water treated this Month

- MG:

#### Sodium Chlorite used this Month

- lb:

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I certify that I am familiar with the information contained in this report and that, to the best of my knowledge, the information is true, complete, and accurate.

Operator's Signature:

Library No. & Class:

Date:

Submit Report to TCEQ Water Supply Division Public Drinking Water Section (HQ-155) ATTN: Monthly Report, P.O. Box 13887, Austin, TX 78711-3887

The report is due the 10th of the following month.

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Page 1
**PWS Name:** Include only the PWS Name

**Plant Name or Number:** match what we have in Drinking Water Watch  

**PWS ID:** 7 digit PWS ID number

**Report Month and Year:** make sure these match the lab results
If the form indicates a violation then you must contact TCEQ!
When you report the 3 sample set make sure the MOR date matches the lab results
ClO₂ MOR

Make sure you sign and date the MOR, we cannot accept it without a signature.
Questions?
TCEQ Resources

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TCEQ Resources

TX Drinking Water Watch

http://dww2.tceq.texas.gov/DWW/

Public Drinking Water Section

512-239-4691