



# Lead and Copper Rule Optimal Corrosion Control Treatment Steps

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# What is Optimal Corrosion Control Treatment (OCCT)?

- ☉ Corrosion control treatment that minimizes the lead and copper concentrations at user's taps while ensuring that the treatment does not cause the water system to violate any national primary drinking water standard.
- ☉ Required for all large ( $>50,000$ ) systems.
- ☉ Required for all small ( $\leq 3,000$ ) and medium ( $\geq 3,000$  and  $\leq 50,000$ ) systems when they have exceeded the 90 percentile action level.
  - ☉ Can be deemed optimized with two consecutive 6-month rounds of PBCU results  $<AL$ .



# Water Quality Parameters (WQP)

- 💧 What are Water Quality Parameters?
- 💧 Why do we collect them?

# Water Quality Parameters (WQP)

- 💧 What are Water Quality Parameters?
  - 💧 pH
  - 💧 Alkalinity
  - 💧 Calcium
  - 💧 Conductivity
  - 💧 Temperature
  - 💧 Orthophosphate, if used
  - 💧 Silica, if used
- 💧 Why do we collect them?
  - 💧 Use the results to guide you in selecting the corrosion control treatment for your system.
  - 💧 Use the results to determine if the treatment is being properly operated and maintained over time.



# What are some of the CCT methods?

# Type of CCT

CCT can come in many forms:

- 💧 Modification of drinking water chemistry (such as pH and hardness) to prevent the potential for corrosion.
- 💧 Addition of chemicals (such as orthophosphates) to form a barrier between the pipes and the drinking water to prevent leaching of lead and copper.



# How To Evaluate OCCT?

# How To Evaluate OCCT?

- 💧 Source water PBCU results
- 💧 WQP results
- 💧 Trend distribution system pH results
- 💧 Iron and Manganese
- 💧 Other water quality results
- 💧 Refer to the EPA's OCCT Evaluation Technical Recommendations document and OCCT templates for details





# OCCT Steps and Deadlines

- 💧 8 CCT steps after exceeding the PBCU AL
- 💧 Step 1:
  - 💧 System recommends OCCT to state within 6 months after the monitoring period ends.
  - 💧 State reviews and approves OCCT based on system recommendations.

# OCCT Steps and Deadlines (cont.)

## 💧 Step 2:

- 💧 State may require system to perform corrosion control studies to identify OCCT within 12 months after the monitoring period ends. If required, go to Step 3. If not, continue step than skip to Step 6.
- 💧 System installs the recommended OCCT that DPH DWS approved within the specified timeframe:
  - 💧 Large ( $>50,000$ ) systems: no later than 6 months after the monitoring period ends.
  - 💧 Medium ( $>3,300$  and  $\leq 50,000$ ) systems: no later than 18 months after the monitoring period ends.
  - 💧 Small ( $\leq 3,300$ ) systems: no later than 24 months after the monitoring period ends.



# OCCT Steps and Deadlines (cont.)

- 💧 Step 3:
  - 💧 If a corrosion control study is required, the study must be completed within 18 months after the state required such study.
- 💧 Step 4:
  - 💧 State approves OCCT recommendation from corrosion control study within 6 months after the completion of Step 3.
- 💧 Step 5:
  - 💧 System installs the OCCT approved by the state within 24 months after the approval.



# OCCT Steps and Deadlines (cont.)

## 💧 Step 6:

- 💧 System completes follow up monitoring within 36 months after the state's approval of the recommended OCCT.

## 💧 Step 7:

- 💧 State reviews and sets OWQP within 6 months after the completion of Step 6.

## 💧 Step 8:

- 💧 System operates the OCCT within the OWQP set by the state.
- 💧 System continues to conduct tap water sampling
  - 💧 WQP, PBCU
- 💧 System continues to operate and maintain the OCCT



## OCCT Steps and Deadlines (cont.)

- Small and medium system may cease completing the treatment steps if it meets both PBCU ALs in two consecutive 6 month monitoring rounds but,
  - If the system exceeds an AL again, it must complete treatment steps and operate with optimal WQP (yooour out on strike 2)
  - State can require system to start at first treatment step again



# OCCT Steps ≤50K Systems

Requirement <sup>1</sup>	Timetable for Completing Corrosion Control Treatment Steps <sup>1</sup>	Compliance Date (to be completed by the Primacy Agency)
System exceeds the lead or copper action level (AL).	<i>June through September 2015</i>	
<b>STEP 1:</b> System recommends optimal corrosion control treatment (OCCT).	Within 6 months <sup>2</sup>	
<b>STEP 2a:</b> Primacy Agency decides whether system must perform a corrosion control study. If system must conduct a corrosion control study, go to Step 3. If not, go to Step 2b.	Within 12 months <sup>2</sup>	
<b>STEP 2b:</b> The Primacy Agency designates OCCT for systems that were not required to conduct a study. Go to Step 6.	<ul style="list-style-type: none"> <li>• Within 18 months<sup>2</sup> for systems serving 3,301-50,000 people</li> <li>• Within 24 months<sup>2</sup> for systems serving ≤ 3,300 people</li> </ul>	
<b>STEP 3:</b> System completes corrosion control study. <sup>3</sup>	Within 18 months after Primacy Agency requires that such a study be conducted	
<b>STEP 4:</b> Primacy Agency designates OCCT. <sup>3</sup>	Within 6 months after completion of Step 3	
<b>STEP 5:</b> System installs OCCT.	Within 24 months after the Primacy Agency designates such treatment	
<b>STEP 6:</b> System conducts follow-up sampling for 2 consecutive 6-month periods.	Within 36 months after the Primacy Agency designates such treatment	
<b>STEP 7:</b> Primacy Agency designates optimal water quality parameters (OWQP). <sup>4</sup>	Within 6 months after completion of Step 6	
<b>STEP 8:</b> System conducts continued WQP and lead and copper tap sampling.	The schedule for required monitoring is based on whether the system exceeds an AL and/or complies with OWQP ranges or minimum	





# OCCT Steps ≤50K Systems

No CC Study Required

Requirement <sup>1</sup>	Timetable for Completing Corrosion Control Treatment Steps <sup>1</sup>	Compliance Date (to be completed by the Primacy Agency)
System exceeds the lead or copper action level (AL).	<i>June through September 2015</i>	
STEP 1: System recommends optimal corrosion control treatment (OCCT).	Within 6 months <sup>2</sup>	3/31/2016
STEP 2a: Primacy Agency decides whether system must perform a corrosion control study. If system must conduct a corrosion control study, go to Step 3. If not, go to Step 2b.	Within 12 months <sup>2</sup>	N/A
STEP 2b: The Primacy Agency designates OCCT for systems that were not required to conduct a study. Go to Step 6.	<ul style="list-style-type: none"> <li>• Within 18 months<sup>2</sup> for systems serving 3,301-50,000 people</li> <li>• Within 24 months<sup>2</sup> for systems serving ≤ 3,300 people</li> </ul>	9/30/2017
STEP 3: System completes corrosion control study. <sup>3</sup>	Within 18 months after Primacy Agency requires that such a study be conducted	N/A
STEP 4: Primacy Agency designates OCCT. <sup>3</sup>	Within 6 months after completion of Step 3	N/A
STEP 5: System installs OCCT.	Within 24 months after the Primacy Agency designates such treatment	N/A
STEP 6: System conducts follow-up sampling for 2 consecutive 6-month periods.	Within 36 months after the Primacy Agency designates such treatment	9/30/2018
STEP 7: Primacy Agency designates optimal water quality parameters (OWQP). <sup>4</sup>	Within 6 months after completion of Step 6	3/31/2019
STEP 8: System conducts continued WQP and lead and copper tap sampling.	The schedule for required monitoring is based on whether the system exceeds an AL and/or complies with OWQP ranges or minimum	

Exceeded PB (AO)

12/15/2015

4/15/2016

6/30/2017

12/31/2017



# OCCT Steps ≤50K Systems

CC Study required

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<b>STEP 1:</b> System recommends optimal corrosion control treatment (OCCT).	Within 6 months <sup>2</sup>	3/31/2016
<b>STEP 2a:</b> Primacy Agency decides whether system must perform a corrosion control study. If system must conduct a corrosion control study, go to Step 3. If not, go to Step 2b.	Within 12 months <sup>2</sup>	9/30/2016
<b>STEP 2b:</b> The Primacy Agency designates OCCT for systems that were not required to conduct a study. Go to Step 6.	<ul style="list-style-type: none"> <li>• Within 18 months<sup>2</sup> for systems serving 3,301-50,000 people</li> <li>• Within 24 months<sup>2</sup> for systems serving ≤ 3,300 people</li> </ul>	N/A: In this example, the Primacy Agency requires a study.
<b>STEP 3:</b> System completes corrosion control study. <sup>3</sup>	Within 18 months after Primacy Agency requires that such a study be conducted	3/31/2018
<b>STEP 4:</b> Primacy Agency designates OCCT. <sup>3</sup>	Within 6 months after completion of Step 3	9/30/2018
<b>STEP 5:</b> System installs OCCT.	Within 24 months after the Primacy Agency designates such treatment	9/30/2020
<b>STEP 6:</b> System conducts follow-up sampling for 2 consecutive 6-month periods.	Within 36 months after the Primacy Agency designates such treatment	9/30/2021
<b>STEP 7:</b> Primacy Agency designates optimal water quality parameters (OWQP). <sup>4</sup>	Within 6 months after completion of Step 6	3/31/2022
<b>STEP 8:</b> System conducts continued WQP and lead and copper tap sampling.	The schedule for required monitoring is based on whether the system exceeds an AL and/or complies with OWQP ranges or minimum	





# OCCT Steps >50 K Systems

- 💧 For PWSs newly serving  $\geq 50,000$  people
- 💧 6 CC Steps
- 💧 End of the monitoring period is when the system became a system serving > 50,000 people.
- 💧 Step 5 would involve adjusting CCT for PWSs with existing CCT.
- 💧 No deadline in existing LCR – DPH will set compliance date following the schedule for medium size system

Requirement <sup>1</sup>	Timetable for Completing Corrosion Control Treatment Steps <sup>1</sup>	Compliance Date (to be completed by the Primacy Agency)
System exceeds the lead or copper action level (AL).		
STEP 1: System recommends optimal corrosion control treatment (OCCT).	Within 6 months <sup>2</sup>	
STEP 2a: Primacy Agency decides whether system must perform a corrosion control study. If system must conduct a corrosion control study, go to Step 3. If not, go to Step 2b.	Within 12 months <sup>2</sup>	
STEP 2b: The Primacy Agency designates OCCT for systems that were not required to conduct a study. Go to Step 6.	<ul style="list-style-type: none"> <li>• Within 18 months<sup>2</sup> for systems serving 3,301-50,000 people</li> <li>• Within 24 months<sup>2</sup> for systems serving <math>\leq 3,300</math> people</li> </ul>	
STEP 3: System completes corrosion control study. <sup>3</sup>	Within 18 months after Primacy Agency requires that such a study be conducted	
STEP 4: Primacy Agency designates OCCT. <sup>3</sup>	Within 6 months after completion of Step 3	
STEP 5: System installs OCCT.	Within 24 months after the Primacy Agency designates such treatment	
STEP 6: System conducts follow-up sampling for 2 consecutive 6-month periods.	Within 36 months after the Primacy Agency designates such treatment	
STEP 7: Primacy Agency designates optimal water quality parameters (OWQP). <sup>4</sup>	Within 6 months after completion of Step 6	
STEP 8: System conducts continued WQP and lead and copper tap sampling.	The schedule for required monitoring is based on whether the system exceeds an AL and/or complies with OWQP ranges or minimum	



# Questions??



# Thank You!

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