

Subject:	Lead or Copper exceedance follow up	Orig Date:	6/2016
Unit + init:	Xunit – ks, gb	Revised date:	9/2016gb
Purpose & Scope: This procedure outlines the steps water systems need to take following a lead or copper action level exceedance, to the point of resolution. This replaces the “county responsibilities for LCR” document and applies to all regulating agencies.			

Procedure/Process:

Steps following initial exceedance:

1. Call the water system to determine whether the samples meet any invalidation criteria (see the separate “Procedure for Clarification for Invalidating Lead and Copper Tap Samples” for details). If applicable, an invalidation request must be made to compliance.dw@state.or.us . If the invalidation is approved, replacement sample(s) must be collected within 20 days of invalidation approval.
2. See Section 3 of this document if the system does not have corrosion control installed, Section 4 if they already have approved corrosion control treatment installed, and if it is a NTNC system that owns and controls all plumbing and wants to conduct a Plumbing Replacement Program, see the separate “Plumbing Replacement Program” procedure.
3. If samples are determined to be valid and the water system does not have corrosion control treatment already, a letter will be automatically generated listing out these requirements:
 - a. Collect two rounds (one right away and one two weeks later) of water quality parameter testing (pH, alkalinity, calcium, and temperature) from each entry point and in the distribution system collected at routine coliform sample sites at the number of locations based on population (see “WQP # Sites” at the end of this document). A calibratable, temperature-compensating, electrode-type pH meter must be used and calibrated each day of use.
 - b. Collect a lead and copper sample from each entry point. The entry point must be flushed sufficiently so that the sample is from the source(s) and not the pipes. Results must be collected within 6 months after the end of the monitoring period during which the lead or copper action level was exceeded.
 - c. Community Water Systems must deliver a consumer notice of individual lead tap results to the occupants of the residences where the taps were tested, including those who do not receive water bills. NTNC Water Systems must post the consumer notice in a conspicuous location. See OAR 333-061-0034(5)(e) for required content. Notice is due to the public within 30 days of being notified of an exceedance. A final copy of the notice, and a certification that the notice was distributed as required by the above OAR, is due three months following the end of the monitoring period. *Note that the consumer notice is a requirement regardless of whether the lead and/or copper action levels were exceeded.*
 - d. If the 90th percentile lead action level has been exceeded, Public Education (PE) must be disseminated to all customers, including notification that any customer who wants to have their water tested by a lab can (although, the water system isn’t required to collect and analyze the sample itself or pay for collecting or analyzing it). See EPA templates and/or OAR 333-

061-0034(5) for language and methods of delivery. PE is due to the public within 60 days after the end of the monitoring period in which the exceedance occurred. The regulator *may* want to review a copy before it goes out. A final copy of the PE, and a certification that the PE was distributed as required by the above OAR, is due three months following the end of the monitoring period. Public Education must be repeated yearly as long as the action level is exceeded.

- e. If the lead action level has been exceeded, Community Water Systems must include the following information on or in each water bill as long as the action level is exceeded: {INSERT NAME OF WATER SYSTEM} found high levels of lead in drinking water in some homes. Lead can cause serious health problems. For more information please call {INSERT NAME OF WATER SYSTEM}, {if applicable include the following} or visit our website at {INSERT YOUR WEB SITE HERE}.
 - f. A “letter of recommendation” for the best corrosion control option (i.e., something in writing from the water system notifying DWS which treatment option they would like to pursue) must be submitted to the DWS regional engineer for the system. See **Letter of Recommendation and Corrosion Control Evaluation** below for more information. This is due no later than six months after the end of the monitoring period in which the exceedance occurred.
 - g. Community Water Systems must report the following in their Consumer Confidence Report (CCR): the 90th percentile value of the most recent round of sampling, the number of sample sites exceeding the action level, and the lead-specific information in OAR 333-061-0043(4)(c). *Note that the lead-specific information is required in all CCRs regardless of whether the lead and/or copper action levels were exceeded.*
 - h. Systems $\leq 50,000$ can voluntarily do two 6-month rounds of lead and copper monitoring at the standard number of sites and postpone installation of corrosion control treatment if two subsequent rounds are under the action levels for both lead and copper per OAR 333-061-0034(2)(e). The first round of samples should be collected within the first 6-month round that begins on either January 1 or July 1 following the original exceedance. The second round should be collected 6 months after the first round. If a water supplier has postponed installation of treatment, and any subsequent/future sampling exceeds the action level for lead or copper, the system must recommence the corrosion control treatment installation process beginning where they left off. **Note: the water supplier cannot postpone the activities and deadlines outlined in 2a through g above while conducting the two 6-month rounds of lead and copper testing; these steps must be taken concurrently.** This option is not available to systems that have exercised this option before (that is, they previously exceeded the action level for either lead or copper, conducted two 6-month rounds of lead and copper monitoring that did not exceed the action levels and postponed installation of corrosion control treatment).
4. If samples are determined to be valid and the water system has corrosion control treatment, a letter will be automatically generated listing out these requirements:
- a. Immediately investigate whether there is a problem with the existing corrosion control treatment system. If a problem is found, repair the treatment system and restore it to functionality. Conduct pH monitoring at the entry point daily until required minimum level is consistently met. Notify the regulatory agency if a problem was found with the corrosion control treatment system and corrected. If minimum water quality parameters were met when

the exceedance occurred, minimums may need to be re-evaluated and adjusted (for example, minimum entry point pH raised).

- b. Conduct two 6-month rounds of lead and copper monitoring at the standard number of sites. The first round of samples should be collected within the first 6-month round that begins on either January 1 or July 1 following the original exceedance. The second round should be collected 6 months after the first round.
- c. If the action level for lead or copper continues to be exceeded during 6-month rounds of monitoring, the water supplier may be required to reassess if the current corrosion control treatment system is adequate or whether a different chemical treatment option should be considered.
- d. Two rounds of water quality parameter (WQP) testing that includes pH, alkalinity (if treatment adjusts alkalinity), silica (if a silicate inhibitor is used), and orthophosphate (if a phosphate inhibitor is used), and calcium (if calcium carbonate stabilization is used as part of treatment) must be collected with each round of lead and copper tap sampling. Each round of WQP testing must be collected from the distribution system at routine coliform sample sites at the number of locations based on population (see “WQP # Sites” at the end of this document).
- e. Community Water Systems must deliver a consumer notice of individual lead tap results to the occupants of residences where the taps were tested, including those that do not receive water bills. NTNC water systems must post the consumer notice in a conspicuous location. See OAR 333-061-0034(5)(e) for required notice content. Notice is due to the public within 30 days of being notified of an exceedance. A final copy of the notice, and a certification that the notice was distributed as required by the above OAR, is due three months following the end of the monitoring period. *Note that the consumer notice is a requirement regardless of whether the lead and/or copper action levels were exceeded.*
- f. If the 90th percentile lead action level has been exceeded, Public Education (PE) must be distributed to all customers, including notification that any customer who wants to have their water tested by a lab can (although the water system isn’t required to collect and analyze the sample itself or pay for collecting or analyzing it). See EPA templates and/or OAR 333-061-0034(5) for language and methods of delivery. PE is due to the public within 60 days after the end of the monitoring period in which the exceedance occurred. The regulator *may* want to review a copy before it goes out. A final copy of the PE, and a certification that the PE was distributed as required by the above OAR, is due three months following the end of the monitoring period. Public Education must be repeated yearly as long as the action level is exceeded.
- g. If the lead action level has been exceeded, Community Water Systems must include the following information on or in each water bill as long as the action level is exceeded: *{INSERT NAME OF WATER SYSTEM} found high levels of lead in drinking water in some homes. Lead can cause serious health problems. For more information please call {INSERT NAME OF WATER SYSTEM}, {if applicable include the following} or visit our website at {INSERT YOUR WEBSITE HERE}.*
- h. Community Water Systems must report the following in their Consumer Confidence Report (CCR): the 90th percentile value of the most recent round of sampling, the number of sample sites exceeding the action level, and the lead-specific information in OAR 333-061-

0043(4)(c). *Note that the lead-specific information is required in all CCRs regardless of whether the lead and/or copper action levels were exceeded.*

Letter of Recommendation and Corrosion Control Evaluation:

1. Based on the measured water quality parameters, the regulator, consultant, or the circuit rider (for Community Water Systems $\leq 10,000$ or non-profit NTNC systems) will help the water system determine the best alternative for chemical corrosion control using the EPA ***Optimal Corrosion Control Treatment Evaluation Technical Recommendations for Primacy Agencies*** guidance manual. The plan review engineer will approve the water system's Letter of Recommendation (see (3)(f) above), or

Plan Review:

1. Notify the water system that **plans and a review fee** for chemical corrosion control are required. Refer the water system to DWS Plan Review at (971) 673-0408 for information on what specifically is required for Plan Review. DWS will review and approve plans and provide a follow-up monitoring summary to the system and the regulating agency.
2. Refer to the Plan Review procedure for details on reviewing corrosion control treatment.

After Chemical Corrosion Control Treatment Installation:

Systems should receive instructions in the Plan Review letter, but the regulator should follow-up to make sure the following steps are completed:

1. The water system must collect two consecutive six-month demonstration rounds of tap L&C samples (and WQP monitoring - see #2 below) following installation of corrosion control. The standard (not reduced) number of samples from the original pool of sampling sites must be used.
2. WQP(s) (pH, alkalinity, conductivity, calcium, phosphate, alkalinity, or silica depending on the type of treatment; e.g. phosphate concentration if phosphate is the corrosion control method) must be monitored at the entry point at least once every two weeks (although daily is highly recommended). Distribution WQP monitoring is required with each subsequent round of L&C tap samples (see "Frequency of Lead & Copper Rule Monitoring" chart at the end of this document, "WQ Parameter – Distribution" column). A temperature-compensating, electrode-type pH meter must be used and calibrated at least once each day of readings or per manufacturer's recommendations. The system should be provided with the WQP monitoring forms and instructions from our website.
3. After the demonstration rounds are completed, the regulator must set a minimum WQP (pH, phosphate, alkalinity, or silica) for each entry point and the distribution system. The regulator will review L&C results with corresponding pH, phosphate, alkalinity or silica levels, and set the minimum based on these values. Preferably the minimum pH is set at 7.2 or above, with 7.0 being the absolute minimum. The regulator is to then contact DMCE to have the minimum added to SDWIS and new WQP Monitoring Forms made with the minimum listed. The regulator will write a letter (include the new forms) explaining the water system's new requirements: WQP entry point monitoring once every two weeks (preferably daily) and monitoring forms submitted monthly; L&C tap sampling annually for three years and then triennially (or straight to triennially if demonstration rounds ≤ 0.005 mg/L lead and ≤ 0.65 mg/L copper); and WQP distribution

system monitoring at the same time as the L&C sampling but collected at routine coliform sample sites at the number of locations based on population (see “WQP # Sites” at the end of this document).

4. If the water system drops below the entry point and/or distribution WQP minimum(s) (called an “excursion”) for nine or more days in a six-month period, they receive a violation, have to do a public notice within 30 days, and have to go back to a six-month monitoring schedule for all tap samples (WQPs, L&C) until they are again eligible for reduced monitoring. See the “LCR Corrosion Control WQP Monitoring & Reporting Instructions” for details on WQP reporting requirements and how excursions are determined. Note: systems doing EP WQP monitoring every 2 weeks that have an excursion should be advised to begin daily EP WQP monitoring in order to determine if corrections made to treatment to raise WQPs above minimums are working and to avoid a possible violation (since any day without a WQP reading following an excursion is counted as an excursion).

Compliance and Enforcement:

1. When a water system exceeds the lead or copper action level, an auto-generated letter will be sent and compliance actions and due dates will be entered into SDWIS and displayed online.
2. The Regulator is to track progress and compliance and update DMCE as necessary via compliance.dw@state.or.us.
3. If the water system fails to install corrosion control, the regulator will work with the DMCE Enforcement Coordinator on developing an informal or formal enforcement schedule.

Frequency of Lead & Copper Rule Monitoring:

Parameter	L&C - Tap	L&C – Entry Point	WQ Parameter – Distribution	WQ Parameter – Entry Point
Initial	2 6-month rounds [‡]			
Reduction	Annual [§] , or Triennial [§] (if Pb < 0.005 mg/L and Cu < 0.65 mg/L)			
After Action Level Exceedence		Once	2 rounds, 2 weeks apart [¶]	2 rounds, 2 weeks apart
After Corrosion Control Installed	2 6-month rounds [‡]		2 6-month rounds [¶]	Every 2 weeks (daily preferred)
After minimum WQP’s set	Annual [§] , or Triennial [§] if . . . (see Reduction)		Annual [¶] , or Triennial [¶] if . . . (see Reduction)	Every 2 weeks (daily preferred)
If 9+ WQP excursions in a 6-month period	2 6-month rounds [‡]		2 6-month rounds [¶]	Every 2 weeks (daily preferred)

‡§L&C # of Sites

System size (# People Served)	# of sites (Standard Monitoring)‡	# of sites (Reduced Monitoring)§
>100,000	100	50
10,001 to 100,000	60	30
3,301 to 10,000	40	20
501 to 3,300	20	10
101 to 500	10	5
≤100	5	5

¶WQP # of Sites

System size (# People Served)	# of sites For Water Quality Parameters
>100,000	25
10,001 to 100,000	10
3,301 to 10,000	3
501 to 3,300	2
101 to 500	1
≤100	1

Resources:

1. OAR 333-061-0034 for Corrosion Control and Public Education
2. OAR 333-061-0036(2)(c) for Monitoring Requirements
3. EPA *Lead & Copper Rule Monitoring and Reporting Guidance for Public Water Systems* manual (March 2010)
4. EPA *Optimal Corrosion Control Treatment Evaluation Technical Recommendations for Primacy Agencies* manual (March 2016)
5. DWS website: **Monitoring & Reporting** page
<http://public.health.oregon.gov/HealthyEnvironments/DrinkingWater/Monitoring/Pages/monitoring.aspx> (under “On this page” click on “Lead and Copper”) for the following:
 - a. Corrosion control treatment monitoring and reporting forms and instructions
 - b. Consumer notice of results templates and certification form
 - c. Sample site change form (Form 141-A)
 - d. Tap sampling protocol
 - e. 3Ts for Reducing Lead in Drinking Water in Schools manual
6. DWS website: **Water Systems Operations** page
<http://public.health.oregon.gov/HealthyEnvironments/DrinkingWater/Operations/Pages/publicnotices.aspx> (under “On this page” click on “Lead and Copper Public Education Requirements”) for the following:
 - a. Lead public education brochure
 - b. Public notices for failure to meet minimum corrosion control treatment minimums
7. DWS website: **Partner’s** page
<https://partners.health.oregon.gov/Partners/DrinkingWater/Pages/monitoring.aspx> for the following:
 - a. Lead or Copper Exceedance procedure (this procedure)
 - b. Plumbing Replacement Program procedure
 - c. Tap Sample Invalidation procedure