APPENDIX C

LEAD AND COPPER RULE
FACT SHEETS

Fact Sheet on the Revisions to the Regulations Controlling Lead in Drinking Water

EPA-815-F-07-03
September 2007

EPA is promulgating a rule that makes several targeted regulatory revisions to the existing national primary drinking water regulations (NPDWRs) for lead and copper. The purpose of the Lead and Copper Rule (LCR) is to protect public water system consumers from exposure to lead and copper in drinking water. The revisions to the LCR will:

- enhance the implementation of the LCR in the areas of monitoring, treatment, customer awareness, lead service line replacement; and
- improve compliance with the public education requirements of the LCR and ensure drinking water consumers receive meaningful, timely, and useful information needed to help them limit their exposure to lead in drinking water.

What are the basic requirements of the Lead and Copper Rule?

The LCR has four basic requirements:

1. require water suppliers to optimize their treatment system to control corrosion in customer's plumbing;
2. determine tap water levels of lead and copper for customers who have lead service lines or lead-based solder in their plumbing system;
3. rule out the source water as a source of significant lead levels; and,
4. if lead action levels are exceeded, require the suppliers to educate their customers about lead and suggest actions they can take to reduce their exposure to lead through public notices and public education programs.

If a water system, after installing and optimizing corrosion control treatment, continues to fail to meet the lead action level, it must begin replacing the lead service lines under its ownership.

Who will be affected by these revisions to the Lead and Copper Rule?

The entities potentially affected by this final rule are public water systems that are classified as community water systems (e.g., systems that provide water to year-round residents in places like homes or apartment buildings) or non-transient, non-community water systems (e.g., systems that provide water to people in locations such as schools, office buildings, restaurants, etc.); State Primacy Agencies; and local and tribal governments.

How would these revisions change monitoring requirements?

The rule addresses confusion about sample collection by clarifying language that speaks to the number of samples required and the number of sites from which samples should be collected. The rule also modifies definitions for monitoring and compliance periods to make it clear that all samples must be taken within the same calendar year. Finally, the rule adds a new reduced monitoring requirement, which prevents water systems above the lead action level to remain on a reduced monitoring schedule.

How would these revisions change requirements for water treatment?

The new rule requires water systems to provide advanced notification and gain the approval of the primacy agency for intended changes in treatment or source water that could increase corrosion of lead. The primacy agency must approve the planned changes using a process that will allow regulators and water systems to take as much time as needed to consult about potential problems.

How do these revisions change requirements related to customer awareness?

While many water utilities indicate that they provide the results of monitoring to customers, there is no requirement in the regulations for them to do so. All utilities must now provide a notification of tap water monitoring results for lead to owners and/or occupants of homes and buildings who consume water from the taps that are part of the utility's sampling program.

How do these revisions change lead service line replacement requirements?

The current regulations allow utilities to consider lead service lines that test below the action level as "replaced" for the purposes of compliance. The new rule adds a requirement for utilities to reconsider previously "tested-out" lines when resuming lead service line replacement programs. This provision only applies to systems that had:

1. initiated a lead service line replacement program;
2. complied with the lead action level for two consecutive monitoring periods and discontinued the lead service line replacement program; and
3. subsequently were re-triggered into lead service line replacement.

All previously "tested-out" lines would then have to be tested again or added back into the sampling pool and considered for replacement.

How do these revisions change the public education requirements?

EPA requires water systems to deliver public education materials after a lead action level exceedance. The new rule changes the content of the message to be provided to consumers, changes how the materials are delivered to consumers, and the timeframe in which materials must be delivered. Also, there are changes to the delivery requirements which include additional organizations that systems must partner with to disseminate the message to at-risk populations as well as changes in the ways information is disseminated to ensure water systems reach consumers when there is an action level exceedance. The new rule also requires educational statements about lead in drinking water to be included in all Consumer Confidence Reports. Many of the changes to the public education requirements were based on recommendations from the National Drinking Water Advisory Council.

For more information:

- Consumer Confidence Reports Web site
- National Drinking Water Advisory Council Web site

How much will these revisions cost water suppliers and consumers?

The total annual direct costs to water systems are estimated between $5.4 and $5.7 million. The majority of these costs to water systems are from the monitoring and public education requirements of the revisions. For primacy agencies, the annual direct costs are estimated between $471,000 and $657,000. The majority of the costs to primacy agencies arise from the review and approval requirement for treatment changes included in the revisions. The initial one time costs for water system and State personnel to familiarize themselves with the rule changes and begin implementation are approximately $11 million for water systems and $1.7 million for States.

How did EPA identify the changes to the LCR?

In early 2004, EPA began a wide-range review of implementation of the Lead and Copper Rule to determine if there was a national problem related to elevated levels of lead in drinking water. The review identified several areas in which there was confusion about implementation in the existing regulations. As part of its national review, EPA also held expert workshops to discuss the effectiveness of the regulations. After reviewing findings from the workshops and implementation review, EPA released a Drinking Water Lead Reduction Plan in March 2005. This plan outlined short-term and long-term goals for improving implementation of the Lead and Copper Rule, including several targeted changes to the regulations, which are now being promulgated.

What are the longer-term goals of the Drinking Water Lead Reduction Plan?

EPA identified a number of issues that will be reviewed as part of potentially more comprehensive revisions to the rule. The issues require additional data collection, research, analysis, and stakeholder involvement to support decisions. The issues include, but are not limited to, requirements for consecutive systems, and broader revisions to monitoring and lead service line replacement requirements.

- For more information on the Drinking Water Lead Reduction Plan visit the national review page.

How can I get more information?

For additional information about the rule, contact:

- Jeffrey Kempic (phone (202) 564-4880; e-mail: kempic.jeffrey @epa.gov), or
- Eric Burneson (phone: (202) 564-5250; e-mail: burneson.eric@epa.gov).

Lead and Copper Rule: A Quick Reference Guide

United States Environmental Protection Agency

[1]The June 1991 LCR was revised with the following Technical Amendments: 56 FR 32112, July 15, 1991; 57 FR 28785, June 29, 1992; 59 FR 33860, June 30, 1994.

It was subsequently revised by: the LCR Minor Revisions 65 FR 1950, January 12, 2000; and the LCR Short-Term Revisions 72, FR 57782, October 10, 2007.

Overview of the Rule

Title	Lead and Copper Rule (LCR)[1], 56 FR 26460 - 26564, June 7, 1991
Purpose	Protect public health by minimizing lead (Pb) and copper (Cu) levels in drinking water, primarily by reducing water corrosivity. Pb and Cu enter drinking water mainly from corrosion of Pb and Cu containing plumbing materials.
General Description	Establishes action level (AL) of 0.015 mg/L for Pb and 1.3 mg/L for Cu based on 90th percentile level of tap water samples. An AL exceedance is not a violation but can trigger other requirements that include water quality parameter (WQP) monitoring, corrosion control treatment (CCT), source water monitoring/treatment, public education, and lead service line replacement (LSLR).
Utilities Covered	All community water systems (CWSs) and non-transient non-community water systems (NTNCWSs) are subject to the LCR requirements.

Public Health Benefits

Implementation of the LCR has resulted in:	► Reduction in risk of exposure to Pb that can cause damage to brain, red blood cells, and kidneys, especially for young children and pregnant women. ► Reduction in risk of exposure to Cu that can cause stomach and intestinal distress, liver or kidney damage, and complications of Wilson's disease in genetically predisposed people.

Major Monitoring Provisions

Lead and Copper Tap

Applicability	► All CWSs and NTNCWSs.
Standard	► CWSs and NTNCWSs must collect first-draw samples at taps in homes/buildings that are at high risk of Pb/Cu contamination as identified in 40 CFR 141.86(a). ► Number of samples is based on system size (see Table 1). ► Systems must conduct monitoring every 6 months unless they qualify for reduced monitoring.
Reduced	► See Table 1 for sample number and Table 2 for criteria.

Water Quality Parameter (WQP)

Applicability	► Systems serving > 50,000 people. ► Systems serving ≤ 50,000 during monitoring periods in which either AL is exceeded.
Standard	► WQP samples at taps are collected every 6 months. ► WQPs at entry points to distribution system (EPTDS) are collected every 6 months prior to CCT installation, then every 2 weeks.
Reduced	► See Table 1 for sample number and page 2 for criteria. Does not apply to EPTDS WQP monitoring.

Table 1: Lead and Copper Tap and WQP Tap Monitoring

Size Category	System Size	Number of Pb/Cu Tap Sample Sites[1]		Number of WQP Tap Sample Sites[2]	
		Standard	Reduced	Standard	Reduced
Large	> 100K	100	50	25	10
	50,000 - 100K	60	30	10	7
Medium	10,001 - 50K	60	30	10	7
	3,301 - 10K	40	20	3	3
Small	501 - 3,300	20	10	2	2
	101 - 500	10	5	1	1
	≤ 100	5	5	1	1

[1] With written State approval, PWSs can collect < 5 samples if all taps used for human consumption are sampled.
[2] Two WQP tap samples are collected at each site.

Table 2: Criteria for Reduced Pb/Cu Tap Monitoring

Annual	1. PWS serves ≤ 50,000 people and is ≤ both ALs for 2 consecutive 6-month monitoring periods; or 2. Any PWS that meets optimal WQPs (OWQPs) and is ≤ Pb AL for 2 consecutive 6-month monitoring periods.
Triennial	1. PWS serves ≤ 50,000 people and is ≤ both ALs for 3 consecutive years of monitoring; or 2. Any PWS that meets OWQP specifications and is ≤ Pb AL for 3 consecutive years of monitoring; or 3. Any PWS with 90th percentile Pb and Cu levels ≤ 0.005 mg/L and ≤ 0.65 mg/L, respectively, for 2 consecutive 6-month monitoring periods (i.e., accelerated reduced Pb/Cu tap monitoring).
Every 9 years	PWS serves ≤ 3,300 people and meets monitoring waiver criteria found at 40 CFR 141.86(g).

Lead Consumer Notice

Within 30 days of learning the results, all systems must provide individual Pb tap results to people who receive water from sites that were sampled, *regardless of whether the results exceed the Pb AL*, as required by 40 CFR 141.85(d).

Consumer Confidence Report (CCR)

All CWSs, irrespective of their lead levels, must provide educational statements about lead in drinking water in their CCRs as required by 40 CFR 141.154.

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For additional information on the LCR, call the Safe Drinking Water Hotline at 1-800-426-4791; visit the EPA web site at www.epa.gov/safewater/lcrmr/implement.html or contact your State drinking water representative.

Treatment Technique and Sampling Requirements if the AL is Exceeded[3]

[3]Based on 90th percentile level. Multiple number of valid samples by 0.9 (e.g., 10 samples x 0.9 = 9; thus, use 9th highest Pb and Cu test result to compare to AL). For 5 samples, average 4th and 5th highest results. For < 5 samples, use highest result.

Water Quality Parameter (WQP)

Applicability	Refer to page 1.
Parameters	▶ pH, alkalinity, calcium *(initial only, unless calcium carbonate stabilization is used)*, conductivity *(initial monitoring only)*, orthophosphate *(if inhibitor is phosphate-based)*; silica *(if inhibitor is silicate-based)*, and temperature *(initial monitoring only)*.
Frequency	▶ Systems installing CCT, must conduct follow-up monitoring for 2 consecutive 6-month periods. ▶ WQP tap monitoring is conducted semi-annually, EPTDS monitoring increases to every 2 weeks. ▶ After follow-up monitoring, State sets OWQP specifications that define optimal CCT.
Reduced Tap Monitoring	▶ Collect reduced number of sites (see Table 1) if meet OWQPs for 2 consecutive 6-month periods. ▶ Collect reduced number of sites at reduced frequency if meet OWQPs for: - 6 consecutive 6-month monitoring periods can monitor annually; - 3 consecutive years of annual monitoring can monitor triennially.

Public Education (PE)

Applicability	▶ Systems that exceed the Pb AL *(not required if only the Cu AL is exceeded)*.
Purpose	▶ Educates consumers about lead health effects, sources, and steps to minimize exposure.
Delivery Method	▶ CWSs: deliver materials to bill-paying customers and post lead information on water bills, work in concert with local health agencies to reach at-risk populations (children, pregnant woman), deliver to other organizations serving "at-risk" populations, provide press releases, include new outreach activities from list in 40 CFR 141.85(a)(2)(vi), and post to Web site (CWSs serving> 100,000 only). ▶ NTNCWSs: posting and distribution to all consumers (can be electronic with State permission). Can apply to CWSs such as hospitals and prisons where population cannot make improvements.
Timing	▶ Within 60 days *after the end of monitoring period* in which Pb AL was exceeded if not already delivering PE.[4] ▶ Repeat annually except: water bill inserts - quarterly; press releases - 2x/year, and web posting - continuous. ▶ Can discontinue whenever ≤ Pb AL but must recommence if subsequently exceed Pb AL.

[4]State may allow extension in some situations. Also, State may require approval of message content prior to delivery.

Source Water Monitoring and Source Water Treatment (SOWT)

Applicability	▶ Systems that exceed Pb or Cu AL.
Purpose	▶ Determine contribution from source water to total tap water Pb and Cu levels and need for SOWT.
Timing	▶ One set of samples at each EPTDS is due within 6 months of first AL exceedance. ▶ System has 24 months to install any required SOWT. ▶ State sets maximum permissible levels (MPLs) for Pb and Cu in source water based on initial and follow-up source water monitoring.
Standard	▶ Ground water PWSs monitor during 3-year compliance periods; surface water PWSs monitor annually.
Reduced	▶ Monitor every 9 years if MPLs are not exceeded during 3 consecutive compliance periods for ground water PWSs or 3 consecutive years for surface water PWSs.

Corrosion Control Treatment (CCT)

Applicability	▶ All large systems except those meeting requirements of 40 CFR 141.81(b)(2) or (b)(3). ▶ Medium and small systems that exceed either AL; may stop CCT steps if ≤ both ALs for 2 consecutive 6-month periods but must recommence CCT if subsequently exceed either AL.
Study	▶ All large systems except as noted above. ▶ If State requires study for small or medium systems, it must be completed within 18 months.
Treatment	▶ Once State determines type of CCT to be installed, PWS has 24 months to install. ▶ Systems installing CCT must conduct 2 consecutive 6-months of follow-up monitoring.
OWQPs	▶ After follow-up Pb/Cu tap and WQP monitoring, State sets OWQPs. *Refer to WQP section above.*

Lead Service Line Replacement (LSLR)

Applicability	▶ Systems that continue to exceed the Pb AL after installing CCT and/or SOWT. ▶ Can discontinue LSLR whenever ≤ Pb AL in tap samples for 2 consecutive 6 month monitoring periods; must recommence if subsequently exceed.
Monitoring	▶ Optional: Sample from LSL to determine if line must be replaced. If all samples are ≤ 0.015 mg/L, line is considered "replaced through testing"; must reconsider these lines if Pb AL is subsequently exceeded. ▶ Required: Sample from any LSLs not completely replaced to determine impact on Pb levels.
Replacement	▶ Must replace at least 7% of LSLs annually; State can require accelerated schedule. ▶ If only portion of LSL is replaced, PWS must: - Notify customers at least 45 days prior to replacement about potential for increased Pb levels. - Collect samples within 72 hours of replacement and provide results within 3 days of receipt.

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