

# Appendix B

## Chapter 4 Lead/Copper Rule Sample Site Plan

- Initial Monitoring and Site Plan Instructions/Reporting Forms (*Pg. B-2*)
- Reduced Monitoring and Site Plan Instructions/Reporting Forms (*Pg. B-8*)
- Sample Collection Instructions (*Pg. B-14*)

## Initial (Routine) Sample Site Plan and Monitoring

The tap water monitoring protocol for lead and copper is designed to identify those residences or sampling locations with lead service lines, lead interior plumbing, or copper pipes with lead solder. Samples collected from these locations are most likely to have high levels of lead and/or copper caused by the contact of corrosive water with lead- and copper-containing plumbing materials. The CWS is required to monitor at these “high-risk” locations, whenever possible (versus collecting a random sample) to better ensure that if the water is corrosive action can be taken to institute treatment that provides uniform and adequate levels of health protection throughout the distribution system. Tap water monitoring for lead and copper not only allows the CWS to determine the lead and copper concentrations in drinking water, but if treatment is installed, monitoring allows the CWS to assess the effectiveness of corrosion control treatment and/or source water treatment.

**Prior to collecting the first set of samples, the CWS must choose locations based on very specific criteria and submit these locations to the Illinois EPA for approval and assignment of sample site numbers.**

Locations must be chosen based from three tiers of sampling sites, which are described below. These sites are considered to have a higher risk for elevated levels of lead and/or copper. All sites must be Tier 1, if possible. If all of your sites are not Tier 1 sites, you must submit a letter with your site plan explaining why you had to use either Tier 2 or Tier 3 sites.

**Tier 1** includes single-family structures that contain copper pipes with lead solder installed after 1982 (*but before* June 1, 1986); lead pipes; or are served by a lead service line. When multi-family residences comprise at least 20% of the structures served by a water system, this type of structure may be included.

**Tier 2** includes buildings including multi-family residences that contain copper pipes with lead solder installed after 1982; lead pipes; or are served by a lead service line. (Tier 2 sites can be used only if insufficient Tier 1 sites are available.)

**Tier 3** includes single-family structures that contain copper pipes with lead solder installed before 1983. It if can be documented that not enough Tier 1, 2, or 3 sites are available, then random sites may be selected. (Tier 3 sites can only be used if insufficient Tier 1 and 2 sites are available.)

*Initial (Routine) Sample Site Plan and Monitoring continued*

The total number of initial or routine sites needed is based on the population served. Below is the minimum number of sites needed for initial/routine monitoring:

<b>Minimum Number of Lead and Copper Tap Samples for CWS – Routine</b>	
<b>System Size</b>	<b>No. of Samples</b>
> 100,000	100
10,001 – 100,000	60
3,301 - 10,000	40
501 - 3,300	20
101 – 500	10
≤ 100	5
Number of Sites for Routine and Initial Monitoring	

In addition to the minimum number of primary sites, it is recommended that the CWS also choose a fair number of “alternate” sites. Please note, however, once sites are chosen and approved by the Illinois EPA, only the same primary sites should be sampled each sample period. **In the event a primary site can no longer be used, a written, telephone, or email request (including justification) must be submitted to the Illinois EPA for approval to switch sample locations to an alternate location.** Once the switch is approved, this site becomes a primary location and samples must now always be collected at the alternate location in all subsequent monitoring periods

After the CWS chooses its sampling locations for the first time, they must submit the following documents:

- Lead and Copper Sample Site Plan Summary
- Illinois EPA PWS Lead and Copper Sample Site Plan

The above forms with instructions follow this page. Once completed, return to the Illinois EPA for written approval and assignment of sample site numbers. The return address is:

Lead/Copper Coordinator  
Illinois EPA /BOW/CAS #19  
1021 North Grand Avenue East  
P.O. Box 19276  
Springfield, IL 62794-9276

If a CWS is only adding existing sites to an existing site plan, the CWS is not required to submit the sites on the forms, but to add a new site, they will need submit the form on B-5 to get approval and site numbers. To do this, contact the Lead/Copper Coordinator at 217-785-0561.

**Initial/Routine Sample Site Plan and Monitoring**

**Lead and Copper Sampling Site Plan Summary**

Facility Name: \_\_\_\_\_ CWS Number: \_\_\_\_\_

1. Number of persons served: \_\_\_\_\_
2. Number of primary sites required: \_\_\_\_\_
3. Number of alternative sites selected: \_\_\_\_\_
4. Do multiple family residences comprise at least 20 % of the structures of the served by your water system? Yes \_\_\_\_\_ No \_\_\_\_\_
5. Are there any lead service lines present within your distribution system?  
Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, are 50% of the sampling sites served by lead service lines? Yes \_\_\_\_\_ No \_\_\_\_\_

- Number of Tier 1 sites:

	<b>Primary</b>	<b>Alternative</b>	<b>Total</b>
A			
B			
C			
D			
E			
F			
<b>Total</b>			

- Number of Tier 2 sites:

	<b>Primary</b>	<b>Alternative</b>	<b>Total</b>
J			
K			
L			
<b>Total</b>			

- Number of Tier 3 sites:

	<b>Primary</b>	<b>Alternative</b>	<b>Total</b>
R			
S			
<b>Total</b>			

The undersigned official custodian and the responsible operator in charge for this facility, hereby certify that the above information is accurate and true to the best of their ability.

\_\_\_\_\_  
Official Custodian's Signature

\_\_\_\_\_  
Operator's Signature

## Illinois EPA PWS Lead and Copper Sample Site Plan

CWS Number: IL \_\_\_\_\_ CWS Name \_\_\_\_\_ Date \_\_\_\_\_

<b>AGENCY USE ONLY</b>		Enter Sample Site Description (Address, Street/City, Rural route + Description, Name of Resident, etc.)	Primary Or Alternate (P or A)	Tier	Tier Type
Sample Site Number	Status				
L	A				
L	A				
L	A				
L	A				
L	A				
L	A				
L	A				

PREPARED BY \_\_\_\_\_ PHONE NUMBER (\_\_\_\_) \_\_\_\_\_

## Illinois EPA PWS Lead and Copper Sample Site Plan

CWS Number: IL9823459

CWS Name Studertown

Date 6/20/08

<b>AGENCY USE ONLY</b>		Enter Sample Site Description (Address, Street/City, Rural route + Description, Name of Resident, etc.)	Primary Or Alternate (P or A)	Tier	Tier Type
Sample Site Number	Status				
L	A	1 4 3 2 N O L D W A T E R W O R K S R O A D	P	1	A
L	A	9 1 0 W 1 S T S T	P	1	C
L	A	R R 2 B O X 1 1 H A Z E L T O N R E S I D E N T	P	1	C
L	A	1 5 1 6 E 2 N D	A	3	S
L	A	3 2 C A L H O U N R D L O T 3	A	3	R

PREPARED BY John Studebaker PHONE NUMBER: 217-999-0000

**Illinois Environmental Protection Agency  
Public Water Supply Lead and Copper Sample Site Plan**

**Instructions For Filling Out Lead and Copper Sample Site Data Input Form**

- 1) Facility Number: Enter the seven digit facility number.
- 2) Facility Name: Print the name of your facility.
- 3) Sample Site Number and Status: Leave this portion of the form blank.
- 4) Sample Site Description: Enter the Address of the location where sample will be collected. One letter per box.
- 5) Primary or Alternate: Enter "P" for a primary sampling site or an "A" for an alternate sampling site.
- 6) Tier: Enter 1 for Tier 1: 2 for Tier 2: or a 3 for Tier 3. (see explanation below)

Tier 1: a) Includes single and multifamily structures that contain copper pipes with lead solder that was installed after 1982 (*but before June 1, 1986*).

- b) Lead pipes.
- c) Is served by a lead service line.

Tier 2: a) Includes buildings that contain copper pipes with lead solder installed after 1982

- b) Lead pipes
- c) Is served by a lead service line.

Tier3: a) Includes single family structures that contain copper pipes with lead solder that were installed prior to 1983

- b) If not enough Tier 1, 2, or 3 sites are available, then random sites may be chosen.

<u>Tier</u>	<u>Tier Type</u>
Tier 1	A – Single Family, copper pipe with lead solder constructed after 1982 ( <i>but before June 1, 1986</i> ) B – Single Family, lead pipes C – Single Family, lead service line D – Multifamily, copper pipe with lead solder constructed after 1982 E – Multifamily, lead pipes F – Multifamily, lead service line
Tier 2	J – Building, copper pipe with lead solder constructed after 1982 K – Building, lead pipes L – Building, lead service line
Tier3	S – Single family, copper pipe with lead solder constructed before 1983 R – Random location

## Reduced Sample Site Plan and Monitoring

After two consecutive six-month rounds of initial/routine monitoring, if the CWS has not had any AL exceedances, the CWS may qualify for reduced monitoring. Reduced monitoring changes the sample frequency from every six months to annual. It also reduces the number of sites.

<b>Minimum Number of Lead and Copper Tap Samples for Systems on Reduced Monitoring</b>	
<b>System Size</b>	<b>No. of Samples</b>
> 100,000	50
10,001 – 100,000	30
3,301 - 10,000	20
501 - 3,300	10
101 – 500	5
≤ 100*	5
* The number of samples for this group is the same as initial/routine monitoring	

Samples for reduced monitoring must be collected between the months of June and September. Samples collected before June or after September will not count in meeting the reduced monitoring requirements.

After three consecutive years of lead/copper monitoring without any AL exceedances, the CWS may qualify for maintenance (triennial) monitoring. For maintenance monitoring, the number of samples remain the same as reduced monitoring; however, the frequency is changed to every three years. Like as in reduced monitoring, samples must be collected between the months of June and September and must be collected exactly at three year intervals. Samples collected before June or after September will not count in meeting the maintenance monitoring requirements.

If a CWS is on reduced or maintenance monitoring, if an AL is exceeded, the CWS will return to routine monitoring status.

Prior to reduced or maintenance monitoring, the CWS must submit a reduced sample site plan. These locations are a subset of the routine (or initial) sample site plan that has been already previously approved. The highest Tier level sites must be selected first. In addition, if lead service lines are present, at least 50% of the reduced plan must include these sites. If the initial site plan consist of locations that were of the same Tier level and Tier type, sites maybe selected at random (sites do not need to be selected based on historical result levels, the CWS can pick and choose).

The following pages include the site plan reporting forms the CWS must complete and return to the Illinois EPA prior to monitoring. Use the chart above to determine which form is needed.



# LEAD AND COPPER REDUCED MONITORING SITE PLAN (5 Sites)

CWS Number: \_\_\_\_\_ CWS Name: \_\_\_\_\_

List **five** sites from the original sampling pool to be used for the reduced monitoring pool. Sites must be chosen as follows:

1. The lead/copper rule requires a facility to always use the highest available Tier sites first. In other words, all Tier 1 sites (i.e., P1C, P1A, P1D) sampled in the first two rounds of monitoring must be sampled during reduced monitoring before Tier 2 sites may be sampled. Likewise all active Tier 2 sites must be sampled before Tier 3 sites may be sampled.
2. Primary sites are preferred. However, previously approved alternates may be used if enough primary sites are not available.
3. If your facility has lead service lines, you should maintain the same mix of Tier Type A and Tier Type C that was sampled in the original sample pool. At no time should there be less than 50% Tier Type C, unless all the active Tier Type C sites are already included in the reduced monitoring sampling pool.
4. All Tier Type S must be sampled before Tier Type R may be sampled.

Please list sites in numerical order (P1A001, P1A002, P3S003, etc.)

1.	
2.	
3.	
4.	
5.	

Mail this form to:

**IEPA/BOW/CAS #19  
P.O. Box 19276  
Springfield, IL 62794-9276**

This Agency is authorized to require this information under Ill. Rev. Stat., 1989, Chapter 111 1/2, Section 1019. Disclosure of this information is required. Failure to do so may result in a civil penalty up to \$10,000.00 and an additional civil penalty up to \$1,000.00 each day the failure continued, a fine up to \$1,000.00 and imprisonment up to one year. This form has been approved by the Forms Management Center. c:\wp51\forms\red5.lst

# LEAD AND COPPER REDUCED MONITORING SITE PLAN (10 Sites)

CWS Number: \_\_\_\_\_ CWS Name: \_\_\_\_\_

List **10** sites from the original sampling pool to be used for the reduced monitoring pool. Sites must be chosen as follows:

1. The lead/copper rule requires a facility to always use the highest available Tier sites first. In other words, all Tier 1 sites (i.e., P1C, P1A, P1D) sampled in the first two rounds of monitoring must be sampled during reduced monitoring before Tier 2 sites may be sampled. Likewise all active Tier 2 sites must be sampled before Tier 3 sites may be sampled.
2. Primary sites are preferred. However, previously approved alternates may be used if enough primary sites are not available.
3. If your facility has lead service lines, you should maintain the same mix of Tier Type A and Tier Type C that was sampled in the original sample pool. At no time should there be less than 50% Tier Type C, unless all the active Tier Type C sites are already included in the reduced monitoring sampling pool.
4. All Tier Type S must be sampled before Tier Type R may be sampled.

**If sites are not chosen as outlined above, results will not be used to calculate compliance and your supply will receive a monitoring violation.**

Please list sites in numerical order (P1A001, P1A002, P3S003, etc.)

1.		6.	
2.		7.	
3.		8.	
4.		9.	
5.		10.	

Mail this form to:

**IEPA/BOW/CAS #19  
P.O. Box 19276  
Springfield, IL 62794-9276**

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## LEAD AND COPPER REDUCED MONITORING SITE PLAN (20 Sites)

CWS Number: \_\_\_\_\_ CWS Name: \_\_\_\_\_

List 20 sites from the original sampling pool to be used for the reduced monitoring pool. Sites must be chosen as follows:

1. The lead/copper rule requires a facility to always use the highest available Tier sites first. In other words, all Tier 1 sites (i.e., P1C, P1A, P1D) sampled in the first two rounds of monitoring must be sampled during reduced monitoring before Tier 2 sites may be sampled. Likewise all active Tier 2 sites must be sampled before Tier 3 sites may be sampled.
2. Primary sites are preferred. However, previously approved alternates may be used if enough primary sites are not available.
3. If your facility has lead service lines, you should maintain the same mix of Tier Type A and Tier Type C that was sampled in the original sample pool. At no time should there be less than 50% Tier Type C, unless all the active Tier Type C sites are already included in the reduced monitoring sampling pool.
4. All Tier Type S must be sampled before Tier Type R may be sampled.

**If sites are not chosen as outlined above, results will not be used to calculate compliance and your supply will receive a monitoring violation.**

Please list sites in numerical order (P1A001, P1A002, P3S003, etc.)

1.		11.	
2.		12.	
3.		13.	
4.		14.	
5.		15.	
6.		16.	
7.		17.	
8.		18.	
9.		19.	
10.		20.	

**IEPA/BOW/CAS #19  
P.O. Box 19276  
Springfield, IL 62794-9276**

This Agency is authorized to require this information under Ill. Rev. Stat., 1989, Chapter 111 1/2, Section 1019. Disclosure of this information is required. Failure to do so may result in a civil penalty up to \$10,000.00 and an additional civil penalty up to \$1,000.00 each day the failure continued, a fine up to \$1,000.00 and imprisonment up to one year. This form has been approved by the Forms Management Center. c:\wp516\forms\red10.txt

## LEAD AND COPPER REDUCED MONITORING SITE PLAN (30 Sites)

CWS Number: \_\_\_\_\_ CWS Name: \_\_\_\_\_

List 30 sites from the original sampling pool to be used for the reduced monitoring pool. Sites must be chosen as follows:

1. The lead/copper rule requires a facility to always use the highest available Tier sites first. In other words, all Tier 1 sites (i.e., P1C, P1A, P1D) sampled in the first two rounds of monitoring must be sampled during reduced monitoring before Tier 2 sites may be sampled. Likewise all active Tier 2 sites must be sampled before Tier 3 sites may be sampled.
2. Primary sites are preferred. However, previously approved alternates may be used if enough primary sites are not available.
3. If your facility has lead service lines, you should maintain the same mix of Tier Type A and Tier Type C that was sampled in the original sample pool. At no time should there be less than 50% Tier Type C, unless all the active Tier Tpe C sites are already included in the reduced monitoring sampling pool.
4. All Tier Type S must be sampled before Tier Type R may be sampled.

**If sites are not chosen as outlined above, results will not be used to calculate compliance and your supply will receive a monitoring violation.**

Please list sites in numerical order (P1A001, P1A002, P3S003, etc.)

1.		11.		21.	
2.		12.		22.	
3.		13.		23.	
4.		14.		24.	
5.		15.		25.	
6.		16.		26.	
7.		17.		27.	
8.		18.		28.	
9.		19.		29.	
10.		20.		30.	

Mail this form **after collection of samples** to:

**IEPA/BOW/CAS #19  
P.O. Box 19276  
Springfield, IL 62794-9276**

This Agency is authorized to require this information under Ill. Rev. Stat., 1989, Chapter 111 1/2, Section 1019. Disclosure of this information is required. Failure to do so may result in a civil penalty up to \$10,000.00 and an additional civil penalty up to \$1,000.00 each day the failure continued, a fine up to \$1,000.00 and imprisonment up to one year. This form has been approved by the Forms Management Center.  
c:\wp51\forms\red10.txt

## LEAD AND COPPER REDUCED MONITORING SITE PLAN (50 Sites)

CWS Number: \_\_\_\_\_ CWS Name: \_\_\_\_\_

List 50 sites from the original sampling pool to be used for the reduced monitoring pool. Sites must be chosen as follows:

1. The lead/copper rule requires a facility to always use the highest available Tier sites first. In other words, all Tier 1 sites (i.e., P1C, P1A, P1D) sampled in the first two rounds of monitoring must be sampled during reduced monitoring before Tier 2 sites may be sampled. Likewise all active Tier 2 sites must be sampled before Tier 3 sites may be sampled.
2. Primary sites are preferred. However, previously approved alternates may be used if enough primary sites are not available.
3. If your facility has lead service lines, you should maintain the same mix of Tier Type A and Tier Type C that was sampled in the original sample pool. At no time should there be less than 50% Tier Type C, unless all the active Tier Type C sites are already included in the reduced monitoring sampling pool.
4. All Tier Type S must be sampled before Tier Type R may be sampled.

**If sites are not chosen as outlined above, results will not be used to calculate compliance and your supply will receive a monitoring violation.**

Please list sites in numerical order (P1A001, P1A002, P3S003, etc.)

1.		11.		21.		31.		41.	
2.		12.		22.		32.		42.	
3.		13.		23.		33.		43.	
4.		14.		24.		34.		44.	
5.		15.		25.		35.		45.	
6.		16.		26.		36.		46.	
7.		17.		27.		37.		47.	
8.		18.		28.		38.		48.	
9.		19.		29.		39.		49.	
10.		20.		30.		40.		50.	

Mail this form **after collection of samples** to:

**IEPA/BOW/CAS #19  
P.O. Box 19276  
Springfield, IL 62794-9276**

This Agency is authorized to require this information under Ill. Rev. Stat., 1989, Chapter 111 1/2, Section 1019. Disclosure of this information is required. Failure to do so may result in a civil penalty up to \$10,000.00 and an additional civil penalty up to \$1,000.00 each day the failure continued, a fine up to \$1,000.00 and imprisonment up to one year. This form has been approved by the Forms Management Center.  
c:\wp51\forms\red10.xls

## Lead/Copper Sample Collection Instructions (revised Feb2016)

When collecting lead and copper tap samples, you must follow the procedures listed below:

- Always collect a 1-liter sample in one container only (e.g., do not split the sample between two containers).
- Always collect a first-draw sample from a tap where the water has stood in the pipes for at least six hours (e.g., no flushing, showering, etc). However, make sure it is a tap that is used regularly, and not an abandoned or infrequently used tap.
- **No** pre-flushing is allowed prior to sample collection.
- Wide-mouth 1 liter bottles should be used in order for the samples to be collected by opening the cold water faucet gently but fully so that filling of the sample bottle is similar to how a resident would fill a cooking pot or drinking glass.
- **DO NOT** remove or clean aerator prior to collecting sample.
- If your water system is a NTNCWS or CWS (such as a prison or hospital) that does not have enough inside taps where the water stands unused for at least six hours, you are allowed to use interior taps from which water is typically drawn for consumption and which are the most likely to have remained unused for the longest period of time.
- First-draw samples collected at single-family residences should always be drawn from the cold-water kitchen tap or bathroom tap.
- First-draw samples collected from buildings other than single-family homes should always be drawn from an interior tap from which water is typically taken for consumption.
- You may allow residents to collect sample, but you must supply the residents with instructions as to the sample collection procedures. Be sure to properly label sample bottles prior to distributing them to residents.
- As a general rule, you should collect your lead and copper tap water samples early in the monitoring period in case you exceed the lead or copper action level. This is because you will be required to also collect WQP samples. In addition, you will need to submit your monitoring results within 10 days after the end of the monitoring period (e.g., by October 10 for systems that monitoring during June - September).
- After the sample is drawn, acidification of the sample should be completed by the laboratory personnel upon receipt of the sample, but in no case later than 14 days after sample collection. Neither the homeowner nor the sample collector should handle the nitric acid used for sample acidification.

If you cannot gain access to an original sampling site during any subsequent sample collections, the CWS should select an alternate site that has been previously approved. In this event, you will need to contact the Illinois EPA Lead /Copper Coordinator at 217-785-0561 to get the switch recorded in State records.

## Suggested Directions for Homeowner Tap Sample Collection Procedures

These samples are being collected to determine the lead and copper levels in your tap water. This sampling effort is required by the U.S. Environmental Protection Agency and your State, and is being accomplished through the cooperation of homeowners and residents.

Please read the following directions prior to collection of the sample.

1. Prior arrangements will be made with the customer to coordinate the sample collection event. Dates will be set for sample kit delivery and pick-up by water department staff.
2. There must be a minimum of 6 hours during which there is no water used from the tap the sample is taken from and any taps adjacent or close to that tap. The water department recommends that either early mornings or evenings upon returning home are the best sampling times to collect the sample.
3. A kitchen or bathroom cold-water faucet is to be used for sampling. Be sure to use a faucet that has been in recent general use by your household. If you have a water softener on your kitchen tap, collect your sample from the bathroom tap that is not attached to a water softener, if possible. **Do not remove or clean the aerator prior to sampling.** Place the opened sample bottle below the faucet and gently open the cold water tap. Fill the sample bottle to the line marked "1000-mL" and turn off the water.

DO NOT FLUSH ANY WATER FROM YOUR FAUCET PRIOR TO FILLING THE BOTTLE

4. Tightly cap the sample bottle and place in the sample kit provided. Please review the sample kit label at this time to ensure that all information contained on the label is correct.
5. ***IF ANY PLUMBING REPAIRS OR REPLACEMENT HAS BEEN DONE IN THE HOME SINCE THE PREVIOUS SAMPLING EVENT, NOTE THIS INFORMATION ON THE LABEL AS PROVIDED. ALSO IF YOUR SAMPLE WAS COLLECTED FROM A TAP WITH A WATER SOFTENER, NOTE THIS AS WELL.***
6. Place the sample kit outside of the residence in the location of the kit's delivery so that department staff may pick up the sample kit.
7. Results from this monitoring effort will be provided to participating customers when reports are generated for the State. However, if lead levels greater than 15 ppb and/or copper levels of concern are found, immediate notification will be provided.

Call \_\_\_\_\_ at \_\_\_\_\_ if you have any questions regarding these instructions.

TO BE COMPLETED BY RESIDENT		
Water was last used:	Time _____	Date _____
Sample was collected:	Time _____	Date _____