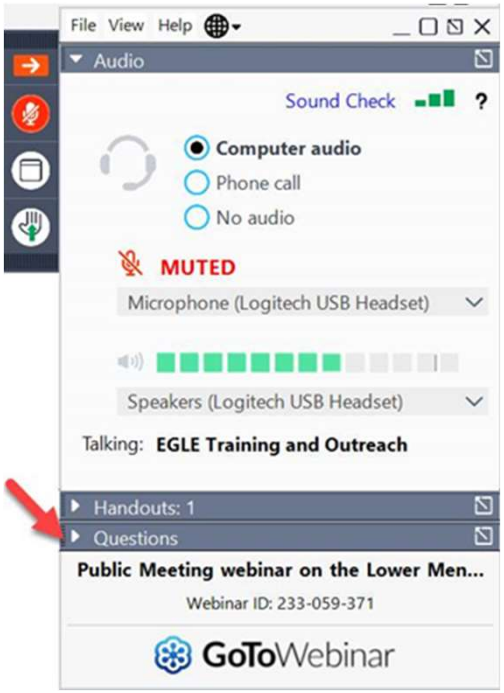
MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

Michigan Lead and Copper Rule Webinar for Drinking Water Operators

Session #2

All lines are muted during the webinar.

Submit your questions using the "**Question**" box in your Go To Webinar tool bar.



How to get CECs

- You must be logged in as yourself, if you are watching with someone else that is logged in, you will not receive credit.
- You must attend the entire presentation.
- You must answer all 3 poll questions to demonstrate your participation in this webinar.
- Your participation is documented.

Agenda

Session #2 (0.1 CECs)

- LCR Monitoring Tips and Tricks
- Elevated Results and Public Education
- Water Quality Parameter Monitoring
- Reporting Basics

Reducing COVID-19 Exposure During Sampling

Reminder from Session #1

For All Situations

- In each scenario, consider the risk to yourself and others
  - The Governor's plan says to wear a cloth face covering whenever possible
- Document the PPE that was worn at each location that samples are dropped off or picked up
- Be mindful of potentially contaminated gloves
  - Put on gloves and face covering prior to exiting the vehicle
  - Open the trunk, get the bottle from the residence
  - Place them in the trunk
  - Remove soiled gloves into a wastebasket in the trunk
  - Close the trunk

Picking-up Bottles from the Lab

- Talk to your lab
  - Do they have contactless drop off and pick up?
  - Do they have a drop off or pick up point outside?
- Wear a cloth face covering if you must be within 6ft of someone
- Wear gloves when handling bottles
  - Be mindful of potentially contaminated gloves

EGLE Lab Process

- In-person sample deliveries and pickups resumed May 11, 2020
- All deliveries and pick-ups must be
  - Scheduled ahead of time by call 517-335-8184
  - Occur within your 15-minute timeframe
  - Occur outside the main facility at a designated location
- To help protect yourself and lab staff
  - Maintain at least 6ft of separation between delivery persons and staff
  - Do not come to the lab facility if you are sick or have symptoms of COVID-19

Dropping off Bottles to Residents

- Leave bottles at the door or at a prearranged location
- Stay 6ft away if you need to talk to the resident
- Plan for the unknown; wear your cloth face covering when getting out of the vehicle
  - You don't know if someone will get to close to you
  - There may be kids playing in the yard

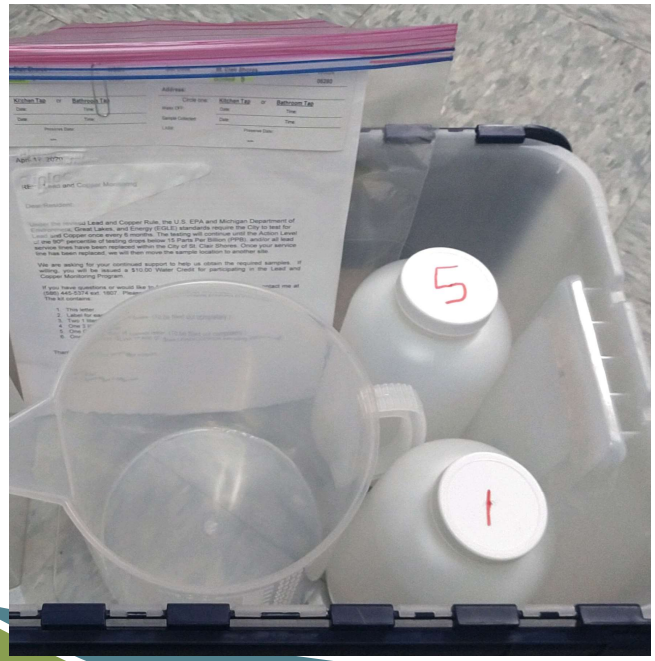
Picking up Bottles/Bottle kits from Residents

- Have resident leave bottles outside the door or at a prearranged location
- Wear gloves when handling the bottles or bottle kits
  - Be mindful of potentially contaminated gloves
- Stay 6ft away if you need to talk to the resident
- Plan for the unknown; wear your cloth face covering when getting out of the vehicle
  - You don't know if someone will get to close to you
  - There may be kids playing in the yard

Collecting Samples Inside Residences

- Employees should not be entering homes with symptomatic residents
- Have approval from your supervisor and written approval from the homeowner before entering a home
- Wear a cloth face covering and gloves while collecting samples within a home
  - Plan for the unknown; wear your cloth face covering when getting out of the vehicle
    - You don't know if someone will get to close to you
    - There may be kids playing in the yard or in the home
  - Be mindful of potentially contaminated gloves
- Stay 6ft away from the residents

Example



General Online Resources

- Bi-weekly EGLE webinar for all Community Water Supplies
- MiWarn webinars
- Online content
  - Michigan Webpage: Michigan.gov/Coronavirus
  - EGLE CWS Webpage: Michigan.gov/CommunityWater, then "COVID 19: Information for Water Operators"
  - EPA has established a website to assist water utilities: "Water Utility Resources for the COVID-19 Pandemic"

LCR Monitoring Tips and Tricks

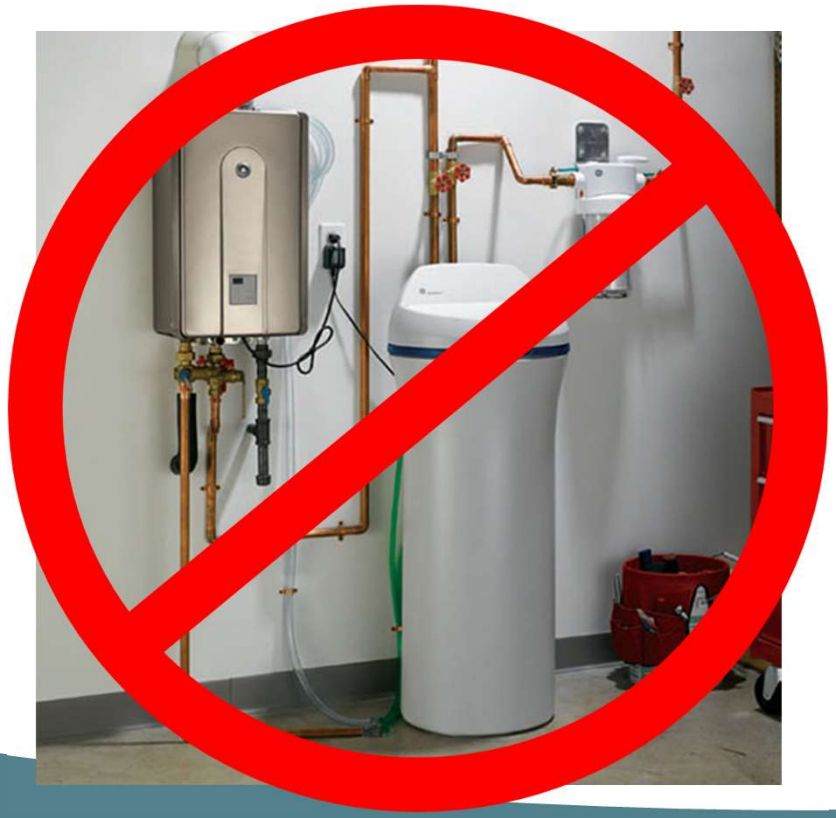
Collecting Samples

Where Do You Collect Samples?

Kitchen Sink

Main Bathroom Sink

Treatment Devices



"Sampling sites **MAY NOT** include faucets that have point of use or point of entry treatment devices"

Faucet Filters (Point of Use filter)

Filter red

Filter in bypass mode

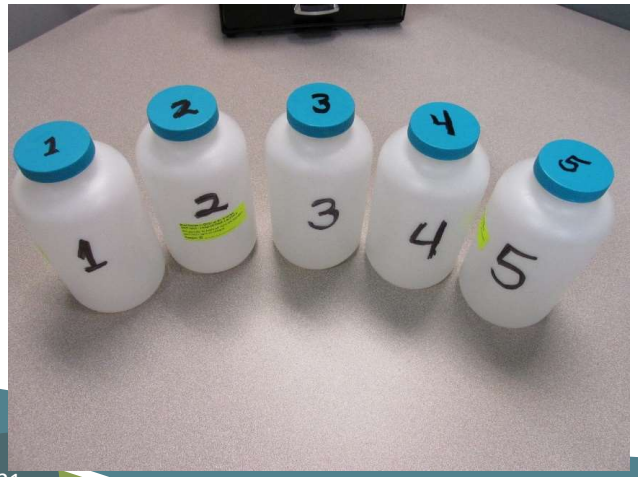

Aqua-Pure

Compliance Sampling Procedures

Lead Service Lines

Five 1-liter bottles

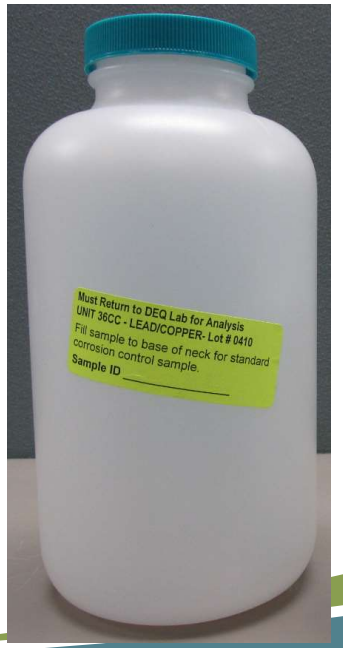
- Tier 1, Category A sites
- Tier 2, Category D sites



No Lead Service Lines

One 1-liter bottle

- All other sites

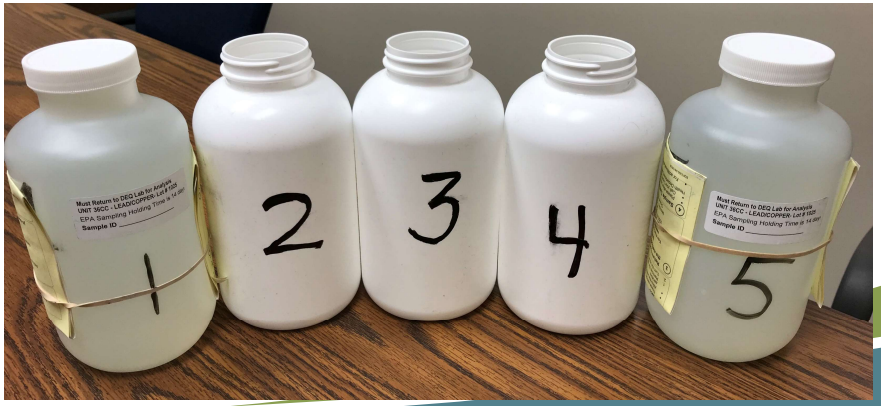


Tap Sampling – No Lead Service Line

- 1st liter sample protocol
  - 1-liter wide mouth bottle
  - Do not sample through POU or POE treatment devices
  - 1st draw
    - Water must remain motionless in plumbing system for at least 6 hours
  - Cold water kitchen or main bath sink tap
  - DO NOT remove aerators
  - DO NOT systematically flush before sampling
  - May allow resident to collect AFTER you give them instruction and taking proper precautions to reduce COVID-19 exposure

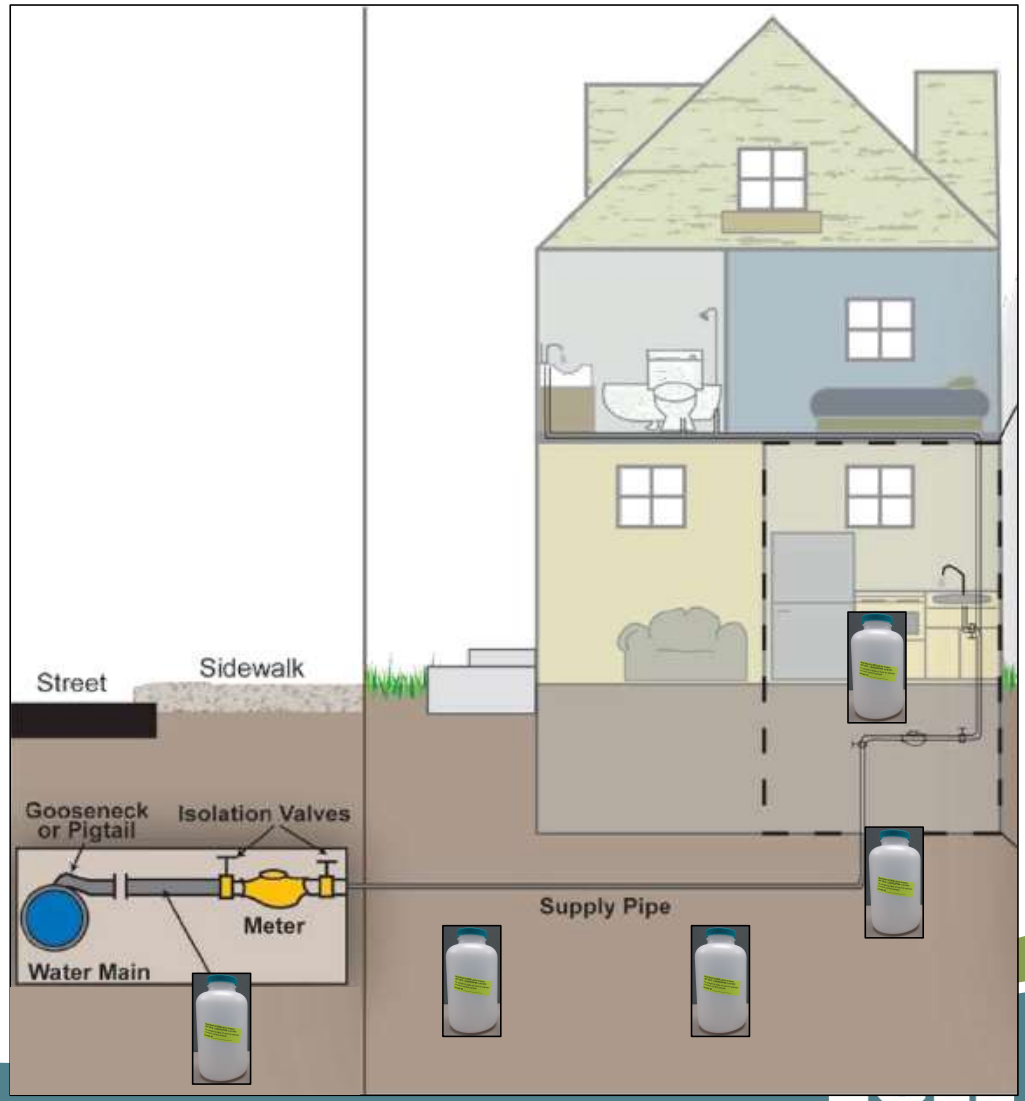
Tap Sampling – Lead Service Line

- 1st and 5th liter sample protocol
  - Two samples are used for compliance determination
  - 1st liter follows the same sampling procedures as sites without LSLs
- DO NOT turn off tap between bottles
- DO NOT let any water run down the drain between bottles



Why the 5th Liter?

- Why collect a second sample?
  - The first draw sample does not always represent the highest risk to public health for a site with an LSL
- Why the fifth liter?
  - More likely to represent water in the LSL rather than in-home plumbing



Tap Sampling – EGLE 5th liter sample process

EGLE Laboratory 1st/5th liter kit. Call 517-335-8184 and request CCUBK

For EGLE lab:

- 2nd through 4th liter are collected, but are not sent to the lab for analysis
- Bottles 2-4 do not have lids

Post-sampling Review

Tap Sampling – Review QA/QC

- Review sampling sheets BEFORE sending samples to the lab
- Results can only be invalidated for reasons specified in the Rules
- If a resident collects the samples, it cannot challenge the accuracy of the results for alleged sample collection error

TO BE COMPLETED BY RESIDENT/CUSTOMER

Which faucet did you use to fill the bottles?

☐ Kitchen ☐ Main bathroom ☐ Other (not an option for residential sites)

If you selected Other, please describe: _____

_____

When was water in the house last used before sampling?

Date _____ Time _____ AM/PM

When did you fill the bottles?

Date _____ Time _____ AM/PM

Is there a faucet mounted filter?

☐ **YES** ☐ **NO**

If you selected Yes, was it bypassed?

☐ **YES** ☐ **NO**

Is this faucet connected to a home treatment device such as a water softener, filter, reverse osmosis unit, iron removal device **OR** any other kind of treatment?

☐ **YES** ☐ **NO**

If you selected Yes, please describe: _____

_____

Have any plumbing repairs or replacements been done since the previous sampling event?

☐ **YES** ☐ **NO**

If you selected Yes, please describe: _____

_____

I have read the Drinking Water Lead and Copper Sampling Instructions and have taken the tap samples in accordance with these directions.

_____

Signature Date

_____

Sample Collection Address

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EGLE

Tap Sampling – Hold Time

- Samples must be to the lab and preserved within 14 days.
- Do not wait too long for that last sample!

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Compliance Evaluation and 90th Percentiles

Evaluation of Tap Sample Results

- EGLE reviews all sample results for
  - Proper sample collection
    - Within monitoring period
    - First draw OR fifth liter collection
    - Kitchen or Bath
    - No errors or comments from lab
      - Filled to the neck
      - Hold time
  - Valid lab analysis and site selection
- EGLE may exclude anything improper or invalid from 90th calculation

Evaluation of Tap Sample Results

- A statistical calculation is done with all results to find the “90th percentile” value
- The 90th is compared to the Action Levels (ALs) to determine if treatment technique actions are needed
  - If the values are below the ALs, it indicates that 90% of distribution system sites are in compliance with the LCR
  - If the values are above the ALs, it indicates that more than 10% of all samples are over the ALs

❖ **<u>ALs are not health standards, they help determine if treatment changes are needed</u>**

90th Percentile Calculations
>15 ug/L (0.015 mg/L) Lead
>1300 ug/L (1.3 mg/L) Copper

Action Level Exceedance

90th Percentile Calculation Steps

- Step 1: Place results in ascending order
- Step 2: Assign each a number, 1 for the lowest value
- Step 3: Multiply number of samples by 0.9*
  - Example: 20 samples x 0.9 – 18th sample
- Step 4: Compare result with action level
  - Example above, 90th percentile is value of 18th result

* If number of samples x 0.9 is not a whole number, interpolation is used

90th Percentile Calculation Example

- 90th percentiles are now calculated using the highest lead and highest copper results from each site
  - Applies to systems with lead services lines (1st and 5th liter samples)
  - Any other system that collects multiple samples at the same site

	1st Liter		5th Liter	
	Lead (ppm)	Copper (ppm)	Lead (ppm)	Copper (ppm)
123 Main St	0.001	0.6	0	0.04
124 ABC Rd	0.001	0.2	0	0
125 North St	0.002	0.01	0.010	0
126 South Blvd	0.002	0.04	0.002	0.02
127 West Ave	0.002	0.025	0.030	0.01

90th percentiles
Lead = 0.020 ppm
Copper = 0.4 ppm

Lead ALE

Final 90th Percentiles

- Letter with 90th percentiles sent to water supply
  - Includes # of sites over AL
  - Includes range of sample results
  - Includes CCR language

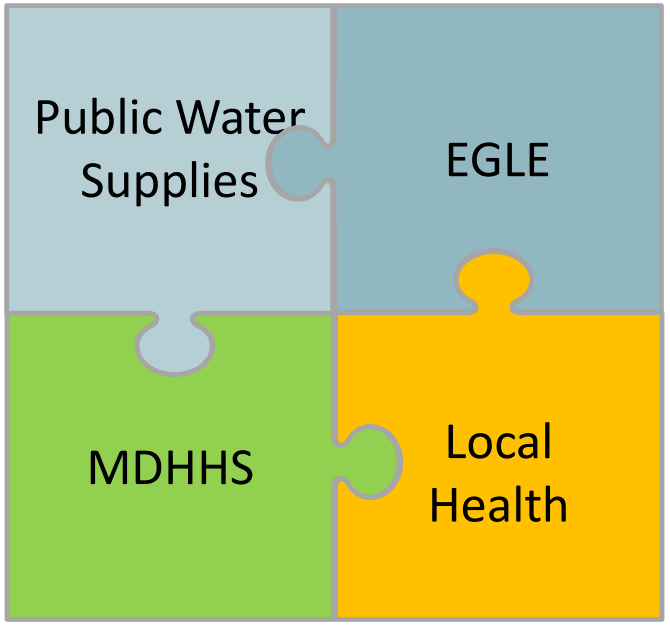
- Final 90th percentiles are available on Michigan.gov/MILeadSafe
  - July-Dec 2019 data will be available soon

Elevated Sample Results and Lead Education

Individual Elevated Results

What Happens if a Result Exceeds an AL?

- EGLE notifies agencies of high results
  - EGLE Management
  - MDHHS EH Mailbox
  - Water System
  - EGLE District Office



Individual High Results

EGLE sends an email to the water system

Requiring a Water System to…

- Consumer Notice within 30 days
  - Results and basic steps to reduce exposure

Recommending a Water System to…

- Educate homeowner
  - Basic maintenance
  - Possible sources of lead and copper
- Collect resample
- Collect investigative samples

Water Supply Investigative Sampling

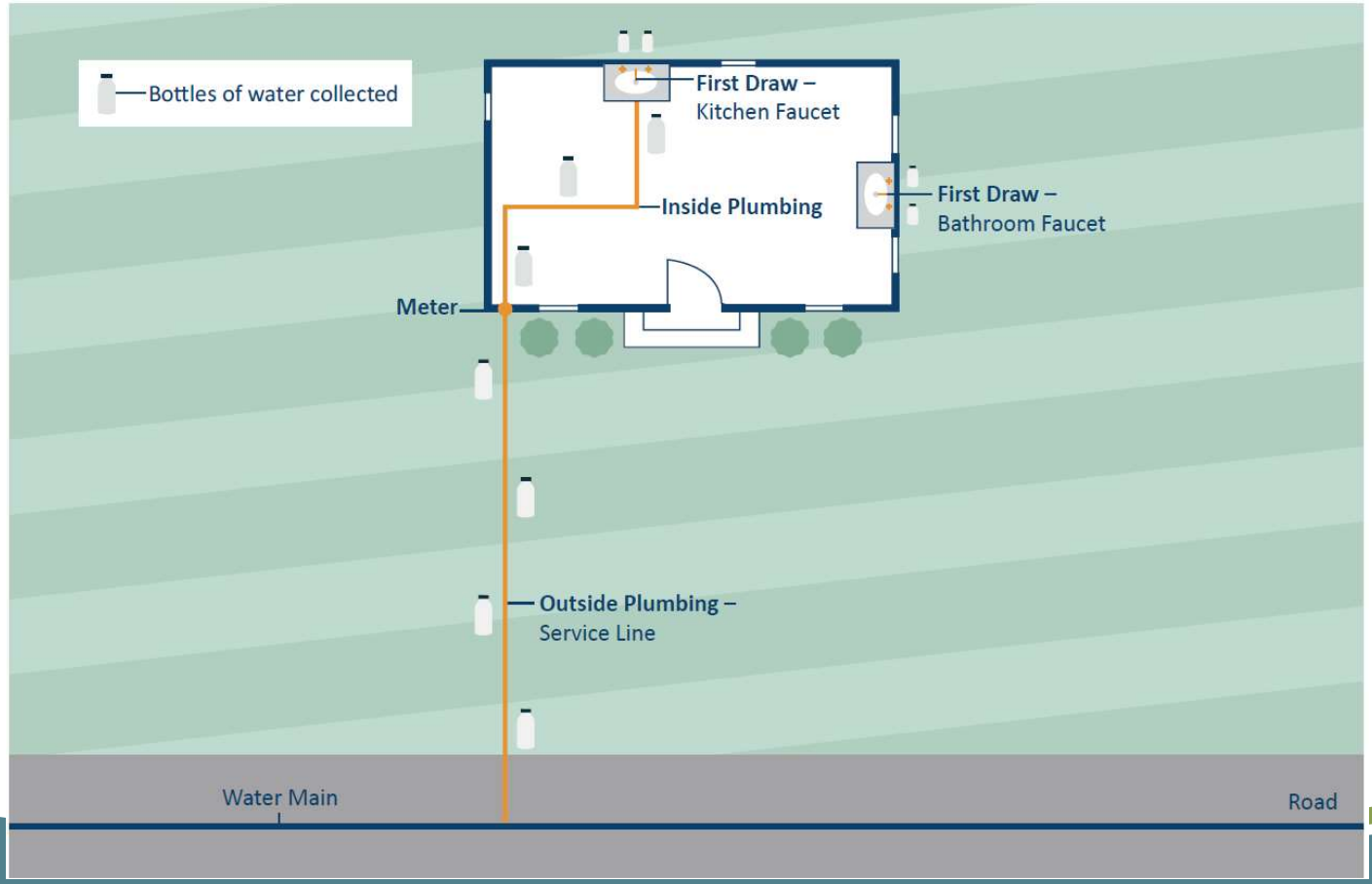
Recommended investigative sampling

- To locate potential source of lead/copper
  - Fixture, connective plumbing, valves, building pipes
- Tailor testing depending on potential sources of lead
  1) Use smaller bottle sizes (250 mL, or 125 mL)
  2) 1st draw sample after 6 hrs. stagnation
  3) 1st/5th liter sampling for lead service lines
- Test all taps used for consumption
- Report all results to EGLE

DHHS Investigative Sampling

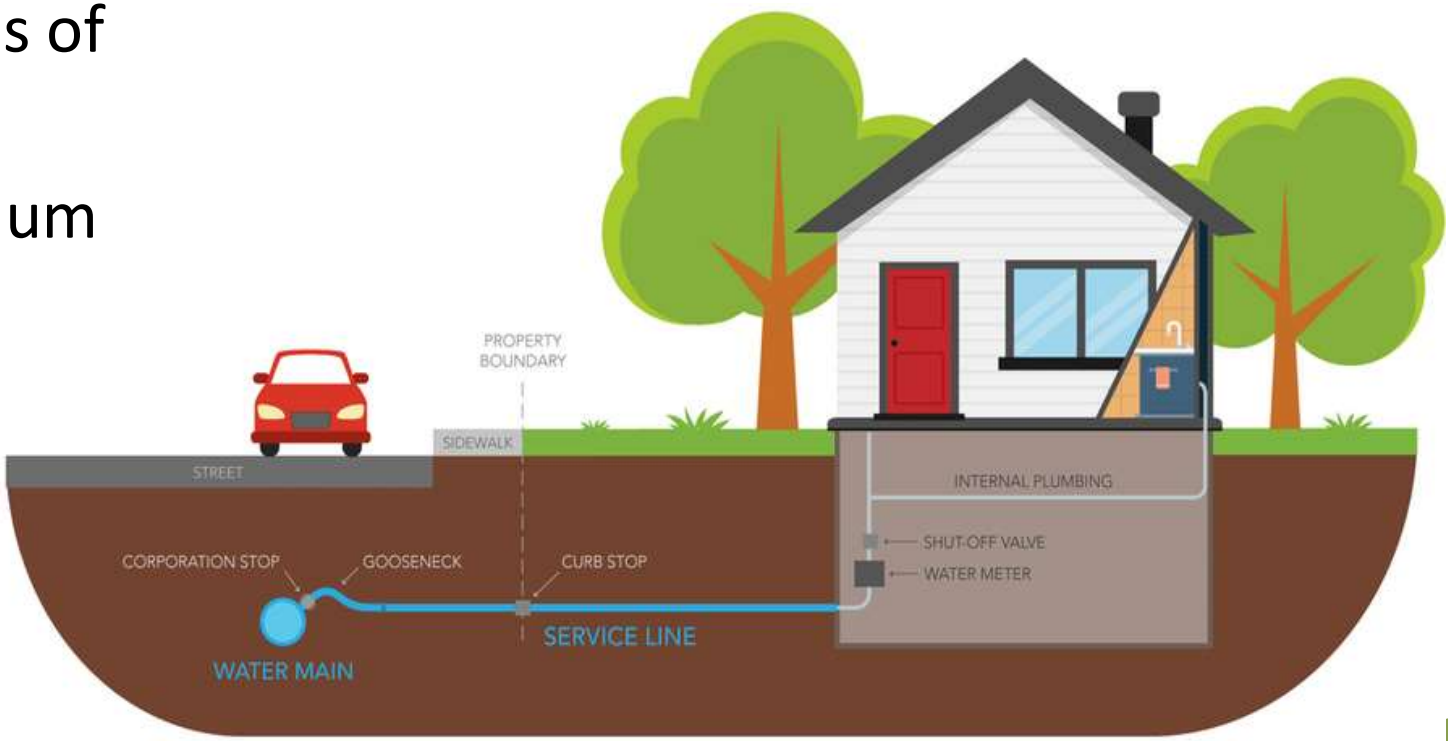
- Follows up at homes with high results
- Collects sequential samples from kitchen
  - 125mL, 125mL, 1L, 1L, 1L….
- Collects samples from bathrooms
  - 125mL, 125mL

DHHS Investigative Sampling



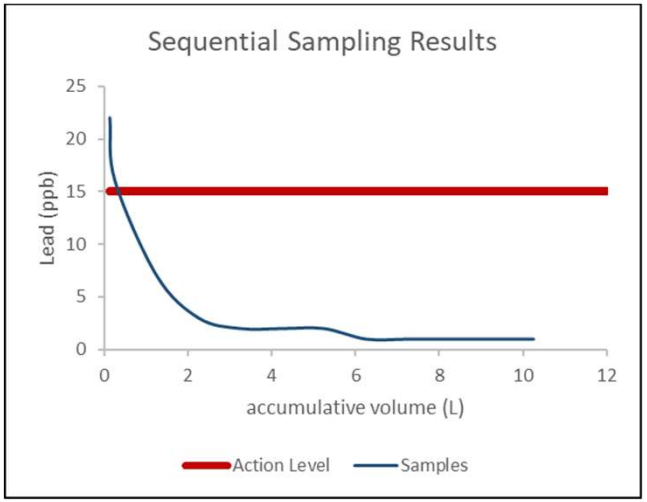
How are DHHS results being used?

- Identify sources of lead or copper
- Identify maximum flushing time



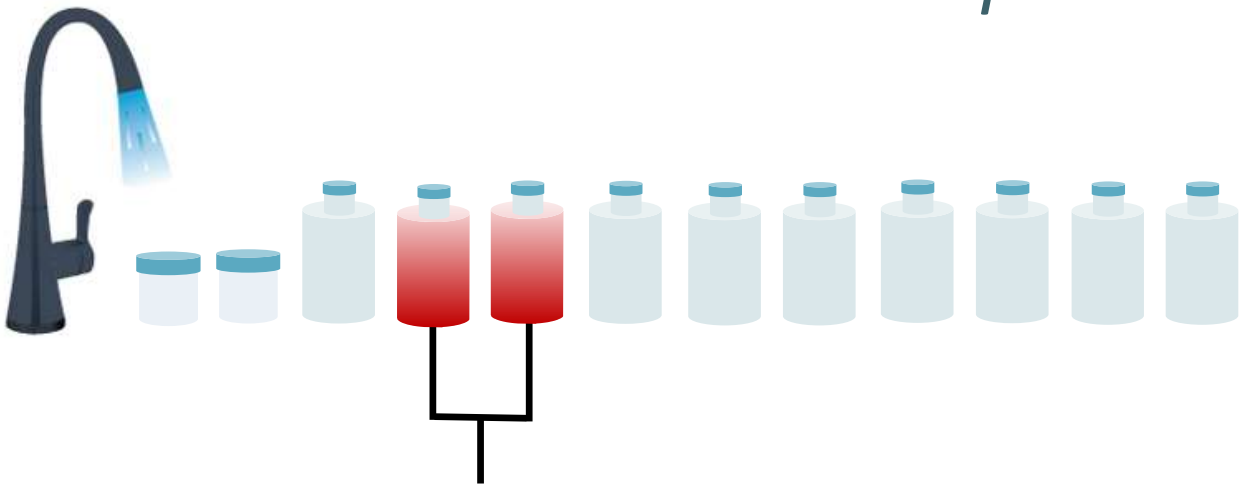
Sequential Sampling Water Test Results Example 1

Sample Result = Higher than the 15 ppb (action level)

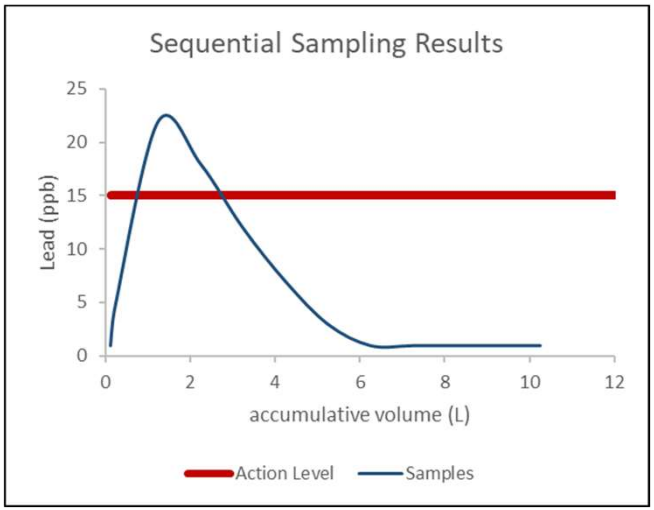


Lead in Faucet

Sequential Sampling Water Test Results Example 2



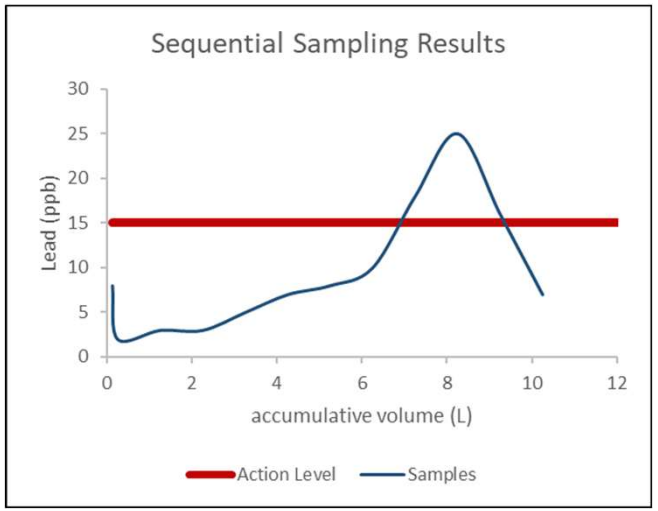
Sample Result = Higher than the 15 ppb (action level)



Lead in inside plumbing

Sequential Sampling Water Test Results Example 3

Sample Result = Higher than the 15 ppb (action level)



Lead in Service Line

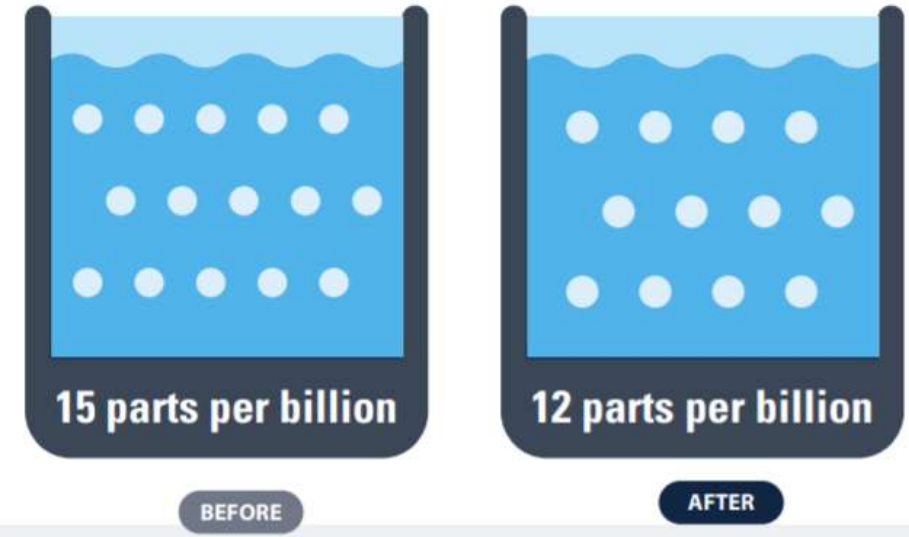
Action Level Exceedance (ALE)

>10% of the samples have elevated results

Lead Action Level

- The lead action level of 15 ppb remains in effect through December 31, 2024
- The new lead action level of 12 ppb takes effect January 1, 2025

- The copper action level of 1.3 mg/L (1300 ppb) does not change



ALE Letter and Timetable

- Extensive letter detailing the triggered requirements
  - Emailed to supply, operator and District
- Provides a chronological list of requirements
  - Not on monitoring schedule
- Each requirement has the opportunity to be a monitoring, reporting or treatment technique violation

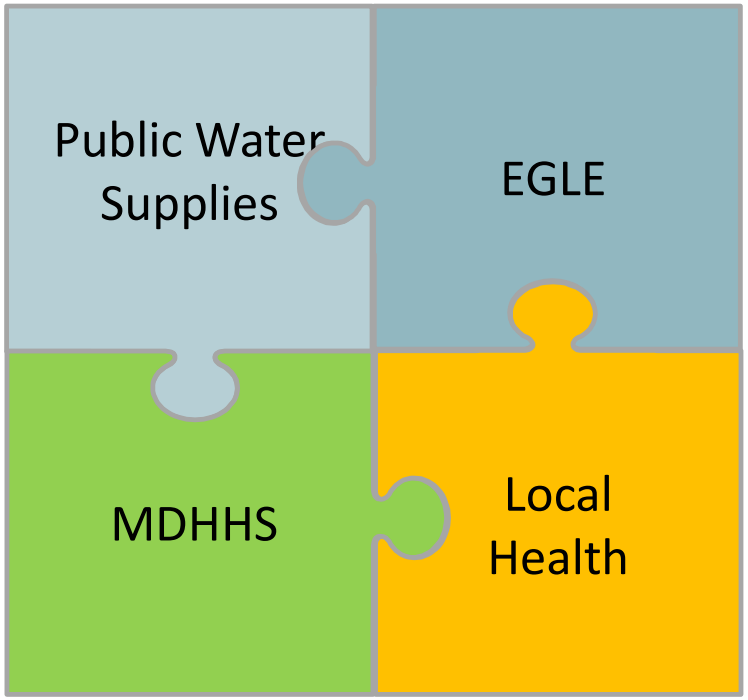
Timetable of Upcoming Requirements

Complete By	Requirement	Comments
Within three business days	Distribute a Public Advisory	Distribute a public advisory to inform all persons served by the water supply of the lead AL exceedance. Distribution of the notice must be in a form and manner designed to fit the specific situation and must be reasonably calculated to reach all persons served by the public water supply.
Right away	Deliver *Consumer Notice of Lead and Copper Results* to persons served at each site tested within 30 days of knowing the result.	Download *Lead and Copper Report and Consumer Notice of Lead and Copper Results Certificate* in Microsoft Word or PDF format from http://michigan.gov/deqleadcopper.
November 29, 2018	Perform PE activities including delivering PE materials to all consumers.	PE required activities are listed in enclosed template and checklist. Repeat every year until the lead AL is met in the most recent round of sampling.
November 30, 2018	Collect WQP samples.	Collect two sets of WQP samples from your entry point to the distribution system. Collect two sets of WQP samples at least 24 hours apart from ten locations in the distribution system. Repeat each lead and copper monitoring period until both ALs are met.
December 9, 2018	Send us certification of PE compliance along with a sample copy of the materials delivered.	Sample certification enclosed. Required within 10 days of PE distribution.
December 29, 2018	For the Jun-Sep 2018 monitoring, send us certification of consumer notice of lead and copper results compliance along with a sample copy of the notice delivered.	Download *Lead and Copper Report and Consumer Notice of Lead and Copper Results Certificate* in Microsoft Word or PDF format from http://michigan.gov/deqleadcopper.
Between January 1 and June 30, 2019	Collect 60 samples from the distribution system and have them analyzed for lead and copper.	Report the results to the DEQ and deliver the consumer notice of individual lead and copper results using the downloadable *Lead and Copper Report and Consumer Notice of Lead and Copper Results Certificate*. **Report due July 10, 2019.**
Between January 1 and June 30, 2019	Collect WQP samples.	Collect two sets of WQP samples from your entry point to the distribution system. Collect two sets of WQP samples at least 24 hours apart from ten locations in the distribution system. Repeat each lead and copper monitoring period until both ALs are met.
March 31, 2019	Collect one lead and copper sample from your entry point to the distribution system.	Repeat every third year until both ALs are met for the whole three-year period.
March 31, 2019	Submit a proposal for optimal corrosion control treatment or a corrosion control study.	Contact us for guidance on corrosion control options. Corrosion control study and treatment installation may cease if both ALs are met during two consecutive six-month monitoring periods.
July 1, 2019	Report the 2018 AL exceedance in the Consumer Confidence Report.	Specific lead health effects language must be included.
Between July 1 and December 31, 2019	Collect 60 samples from the distribution system and have them analyzed for lead and copper.	Report the results to the DEQ and deliver the consumer notice of individual lead and copper results using the downloadable *Lead and Copper Report and Consumer Notice of Lead and Copper Results Certificate*. **Report due January 10, 2020.**
Between July 1 and December 31, 2019	Collect WQP samples.	Collect two sets of WQP samples from your entry point to the distribution system. Collect two sets of WQP samples at least 24 hours apart from ten locations in the distribution system. Repeat each lead and copper monitoring period until both ALs are met.
September 28, 2019	For the Jan-June 2019 monitoring, send us certification of Consumer Notice of Lead and Copper results compliance along with a sample copy of the notice delivered.	Download *Lead and Copper Report and Consumer Notice of Lead and Copper Results Certificate* in Word or PDF format from http://michigan.gov/deqleadcopper.
March 31, 2020	For the July-Dec 2019 monitoring, send us certification of Consumer Notice of Lead and Copper results compliance along with a sample copy of the notice delivered.	Download *Lead and Copper Report and Consumer Notice of Lead and Copper Results Certificate* in Word or PDF format from http://michigan.gov/deqleadcopper.
March 31, 2022	Collect one lead and copper sample from your entry point to the distribution system.	Repeat every third year until both ALs are met for the whole three-year period.

EGLE

ALE Coordination

- Coordination between water supply, EGLE, MDHHS and Local Health Departments
- Larger communities, higher results, and pervasive lead issues may require more interagency support



Lead Education

Lead Education

- Michigan Safe Drinking Water Act requires several documents to provide more information to consumers about lead
  - Consumer Notice of Results
  - Consumer Confidence Report (CCR)
  - Lead Service Line notifications within 30 days of determining a service line contains lead or is presumed to contain lead
  - Service Line Replacement notifications 45 days in advance of construction
  - Public Education document (Lead AL exceedance)

Lead Education Goals

Don’t just educate people when there’s a problem!

Resources available at Michigan.gov/MiLeadSafe

Goals

- Reach as many customers as possible
- Reach vulnerable subpopulations
- Promote transparency
- Provide a consistent message

Communication – Sources of Lead Exposure

- Identify lead risk
  - Plumbing materials that could contain lead
  - Service line
  - Plumbing
  - Faucets/Fixtures

EPA

EGLE

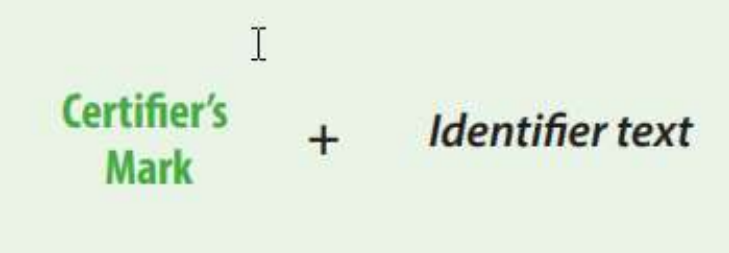
Identifying Sources of Lead Inside a Home

- What is the age of the home?
- Do you have copper plumbing?
- Have you replaced any of the faucets since 2014?

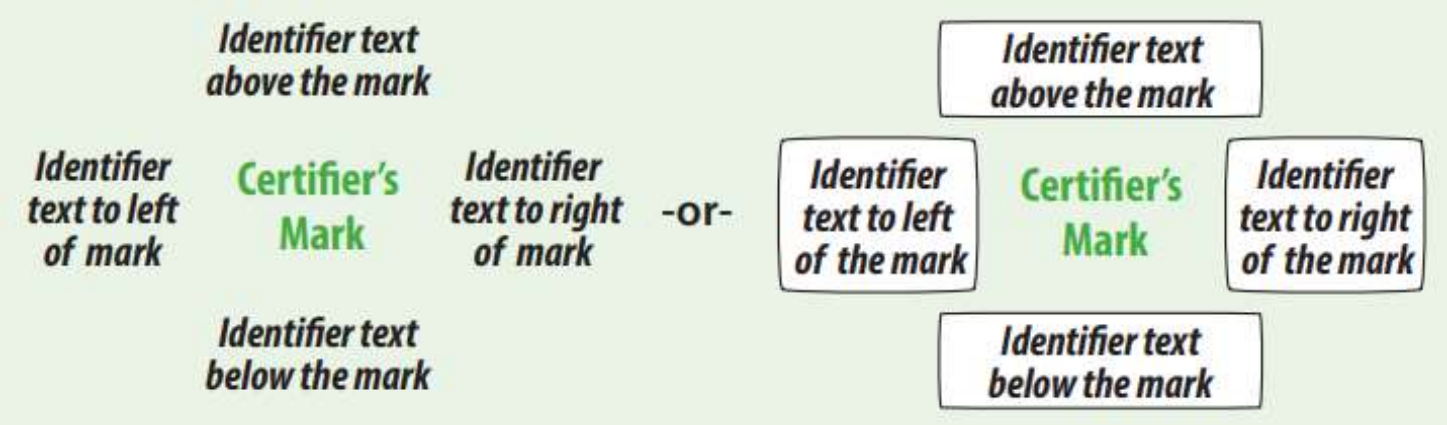
- If you don’t know about the materials in your home, look for the “Lead Free Certification Marks”

Lead Free Certification Marks

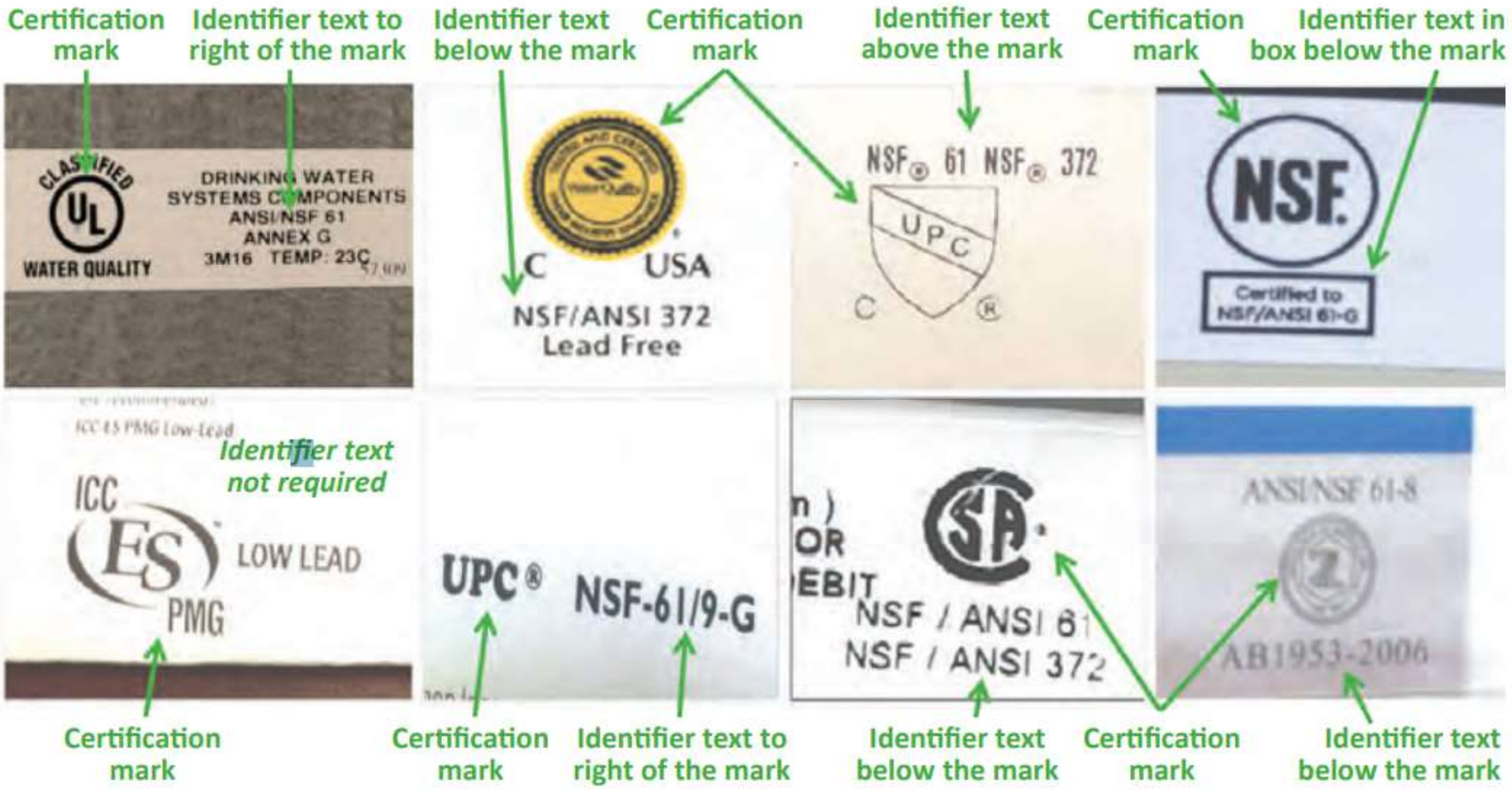
- Eight different certification bodies, so there's a lot of variance
- Generally should be…



- Or can be…



Lead Free Certification Marks

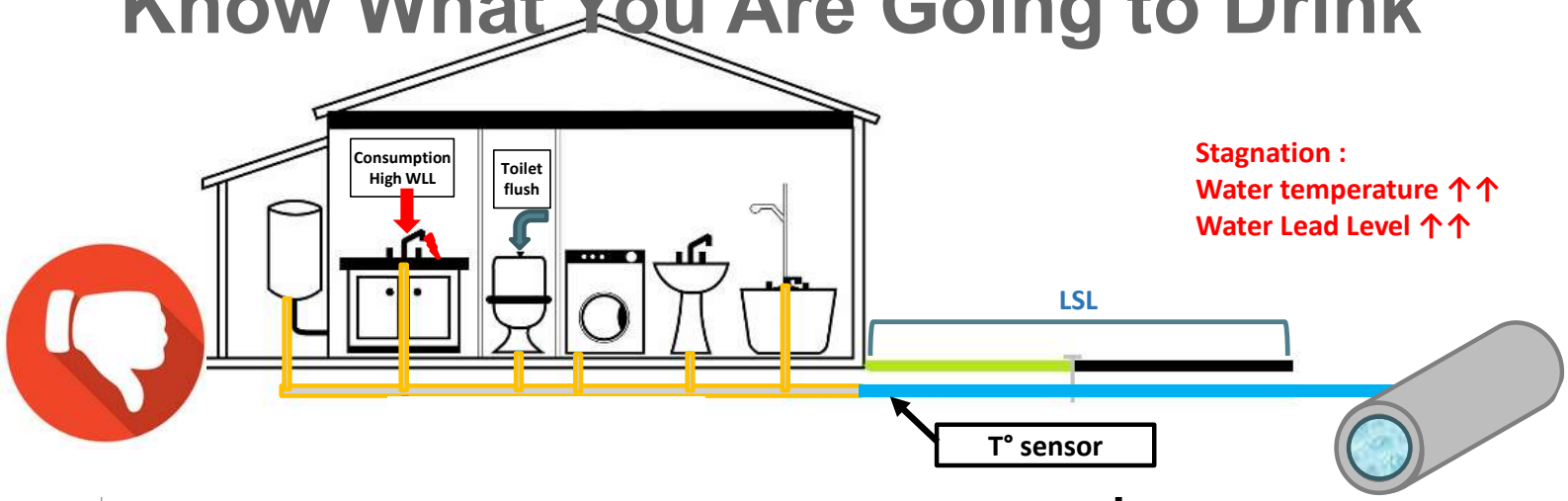


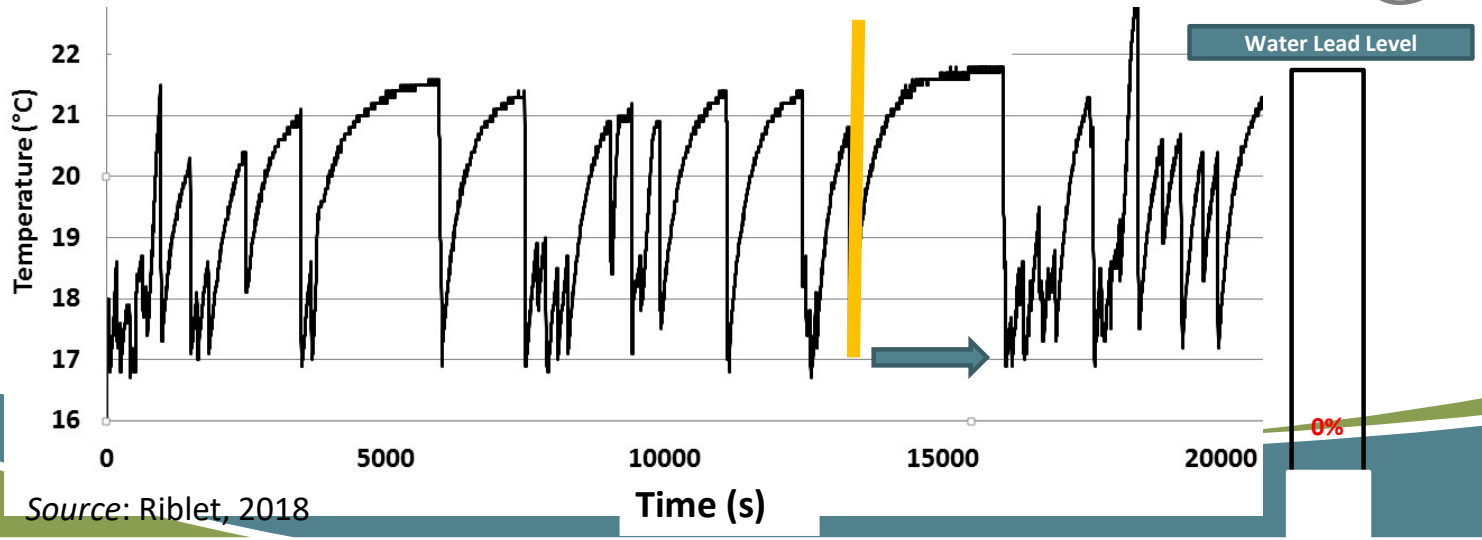
How to Reduce Lead Exposure

- Run the water before drinking (flushing)
- Do not boil water
- Do not use hot water for drinking and cooking
- Clean your faucet aerator
- Test the water
- Use a filter to reduce lead (NSF 53, 42 (Class I))
- Replace lead containing materials
  - service line/plumbing materials

Animated Slides

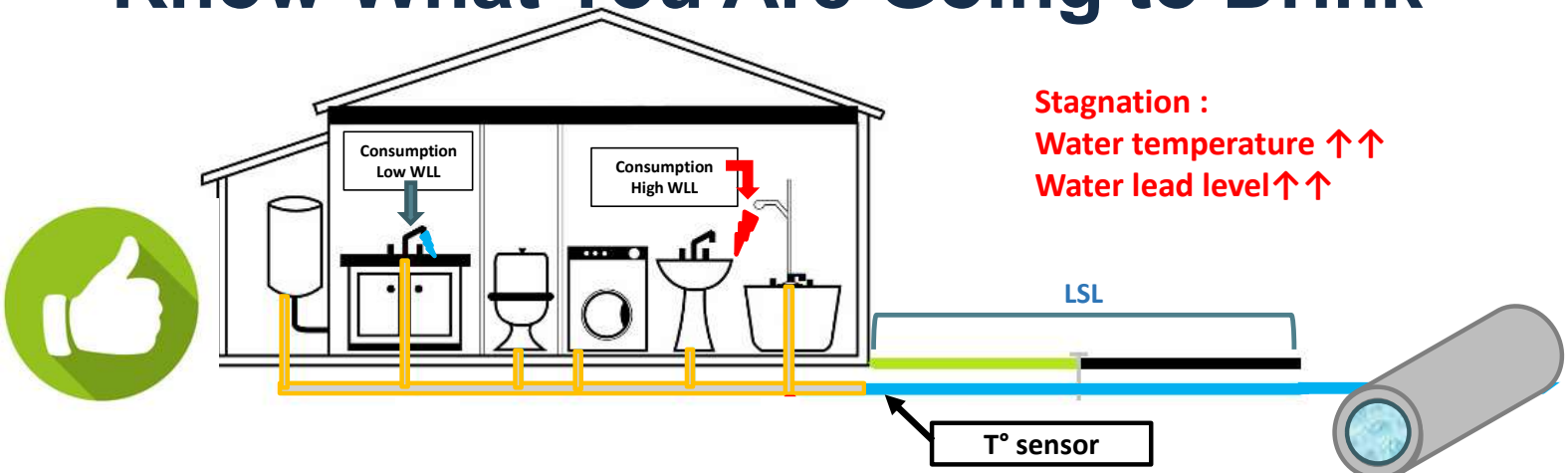
With a Lead Service Line, You Never Know What You Are Going to Drink

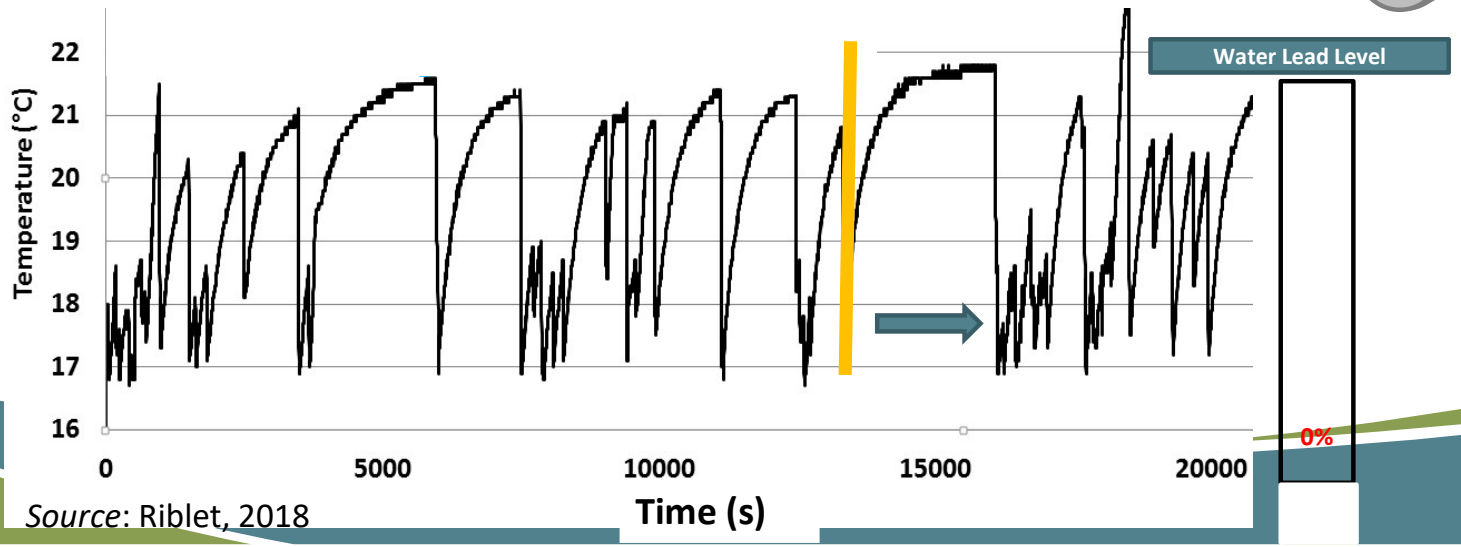




Source: Riblet, 2018

With a Lead Service Line, You Never Know What You Are Going to Drink





Source: Riblet, 2018

Water Quality Parameter (WQP) Monitoring

What are Water Quality Parameters (WQP)?

- Used to determine corrosivity of water.
- Helps EGLE determine the type of CCT that a system might need to install and how treatment should operate.
  - CCT is the primary mechanism for reducing lead and copper levels.

What are Water Quality Parameters (WQP)?

Parameters

- pH
- Alkalinity
- Calcium
- Conductivity
- Temperature
- Chloride
- Sulfate
- If used – Orthophosphate or Silica

What Are Optimal Water Quality Parameters (OWQP)?

- Specific ranges or minimums determined by the State for each relevant WQP.
- Represent the conditions under which systems must operate their CCT to most effectively minimize lead & copper exposure at users' taps.

WQP Monitoring

WQP sampling

- Required for all supplies with OCCT or an ALE.
- Likely required for systems with source or treatment changes.
- MI Rule expanded to include chloride and sulfate.
- Cannot be reduce to triennial monitoring.

OWQP ranges

- Will be established for supplies with OCCT.
- Are required to be established at each POE & Distribution system.
- Triggers a Treatment Technique violation if any ten days, within six months, are outside of the ranges.

WQP Monitoring

Monitoring Locations – Entry Point & Distribution

Check your Monitoring Schedule

- Each Entry Point – Sampled every 2 weeks or quarterly
- Distribution – Quarterly or every 6-months

Field kit vs lab

- Field tests at time of sample collection: pH and Temperature.
- Other parameters can be either done in the field with a test kit (Hach multi-test DR-900 or equivalent test kits) or sent to a lab.
  - Alkalinity, calcium, conductivity, orthophosphate, chloride* and sulfate

*Field test kit not currently available

Field Test Instrument Calibration and Maintenance

- Don’t forget to…
  - Clean the exterior of the instrument: Moist cloth and a mild soap solution and then wipe the instrument dry.
  - Clean sample cells: Most laboratory detergents are used at recommended concentrations. To complete the cleaning, rinse a few times with deionized water and then let the sample cell air dry.
  - Replace the batteries regularly.
  - Calibration according to manufacturer’s recommendations.

WQP Monitoring – Distribution Sites

Required number of sample sites determined by water supply population served

Supply Size (# of People Served)	Number of Sites (Standard Monitoring)	Number of Sites (Reduced Monitoring)
More than 100,000	25	10
10,001 - 100,000	10	7
3,301 – 10,000	3	3
501 – 3,300	2	2
101 - 500	1	1
Fewer than 101	1	1

- Must be representative sites.
- Bacteriological sampling locations are good sites to use for WQP sampling.

WQP Monitoring - Analytes

BEFORE INSTALLING CCT		
Entry Point & Distribution		
WQP1a	**WQP1b**	**WQP1c**
No inhibitor used	Phosphate inhibitor used	Silicate inhibitor used
pH alkalinity calcium conductivity temperature sulfate chloride	pH alkalinity calcium conductivity temperature sulfate chloride orthophosphate	pH alkalinity calcium conductivity temperature sulfate chloride silica

WQP Monitoring - Analytes

AFTER INSTALLING CCT		
Entry Point		
WQP2a	**WQP2b**	**WQP2c**
Phosphate inhibitor used	Alkalinity adjusted as part of CC	Silicate inhibitor used
pH sulfate chloride orthophosphate dosage orthophosphate residual	pH sulfate chloride alkalinity dosage alkalinity concentration	pH sulfate chloride silica dosage silica residual
Distribution		
WQP3a	**WQP3b**	**WQP3c**
Phosphate inhibitor used	Ca carbonate stabilization used	Silicate inhibitor used
pH alkalinity sulfate chloride orthophosphate	pH alkalinity sulfate chloride calcium	pH alkalinity sulfate chloride silica

WQP Monitoring – EGLE Lab Test Codes

- WQP monitoring is a combination of tests.
- EGLE lab
  - Multiple bottles: 32 and 33 bottles.
  - Multiple test codes: R, CORR.
- Other labs
  - Take monitoring schedule to your lab to get correct parameters tested.
- Sanitary Surveys: Will verify WQP test methods and accuracy.

WQP Monitoring – Reduced Monitoring

Entry Point Monitoring

- every 2wks – no eligibility for reduction.

Distribution System Monitoring

- **Step 1:**
  - Gathering information to designate OWQP.
    - 1st year – four sets of samples (quarterly).
  - State designates OWQP (within 6m).
- **Step 2:** Demonstrate compliance with OWQP.
  - 2nd year – four sets of samples (quarterly).
  - 3rd year – four sets of samples from reduced sampling sites (quarterly).
  - 4th year – four sets of samples from reduced sampling sites (quarterly).
- **Step 3:** Eligible for annual monitoring.
  - 5th year – two sets from reduced sampling sites (6-months).

WQP Monitoring – Compliance Issues

- Monitoring violations
  - Failure to sample timely.
  - Failure to sample for one or more parameters.
- Reporting violations
  - Failure to report on time.

Common Monitoring Errors

- Incorrect WQP analytes.
- Failure to collect POE samples every 2wks.
- Failure to collect second set of Distribution WQP samples.
- Failure to collect the correct number of sites.
- Thermal preservation.
- Incomplete request for analysis paperwork.
  - Missing field readings for pH and temperature (in C° please).
  - Not labeling sample site correctly.

OWQP Compliance

- OWQP compliance is based on 6-month periods
- Systems cannot be outside OWQP ranges:
  - at a specific sampling point or combination of sampling points, or
  - for a specific WQP or combination of WQPs.
- Each day outside OWQP ranges is an excursion day.

OWQP Monitoring – Excursion Days

- If WQP analytes test outside system specific limits it is an excursion.
- Excursion days continue until the next set of samples are collected that are within range.
- More than 9 excursion days within a 6-month monitoring period is a treatment technique violation.

OWQP Common Errors

- Are your results out of range or in range?
  - Report the correct compound
    - Orthophosphate vs. phosphorous
  - Make sure what type of phosphate you're measuring for your ranges
    - Orthophosphate
    - Polyphosphate
    - Total Phosphate
- Failing to respond timely to excursions

Orthophosphate as Phosphorous

- PO_4^{3-} “orthophosphate”
- PO_4-P “orthophosphate as phosphorus”
- PO_4^{3-} results combine both the phosphorus and the oxygen in the compound, whereas PO_4-P only considers the phosphorus in the compound.

- O = 16 atomic units
- P = 31 atomic units

4 X O = 16 x 4 = 64

0 + P = 64 + 31 = 95

One molecule of PO_4^3 weighs 95 atomic units.

95 / 31 = 3.06

PO_4^3 is 3.06 times heaver than P by itself.

Reporting of Results

Water Quality Parameter Results

- Due to EGLE within 10 days following the end of a monitoring period.
- Entry Point
  - 2-week requirement should be reported in the MOR.
  - Quarterly or 6-month sampling should be submitted on a report.
- Distribution
  - Quarterly or 6-month sampling should be submitted on a report.
  - New MOR form to include sheet for Distribution WQP (please use).

Standardized MOR: Entry Point WQP Sheet

Entry Point - 1 - Water Quality Parameters

Name of Supply					WSSN		Entry Point (e.g. Well 1)			Month		Year								
	pH		Chloride (mg/L)		Sulfate (mg/L)		Alkalinity (mg/L as $CaCO_3$)		pH/Alkalinity Adjust. Chem		Orthophosphate (mg/L)			Temperature (°F)		Calcium (mg/L as Ca		onductivity (µmhos/cn	
Min:		Days outside min/max		Days outside min/max		Days outside min/max		Days outside min/max		Days outside min/max			Days outside min/max		Days outside min/max		Days outside min/max		Days outside min/max
Max:																				
Day of the Month	Entry Point	(count)	Entry Point	(count)	Entry Point	(count)	Entry Point	(count)	Dosage	(count)	Dosage	Entry Point	(count)	Entry Point	(count)	Entry Point	(count)	Entry Point	(count)
1																			
2																			
3																			
4																			
5																			
6																			
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27																			
28																			
29																			
30																			
31																			

Standardized MOR: Distribution WQP Sheet

Distribution - Water Quality Parameters

Name of Supply | WSSN | Month | Year

Site Address or Identifier	Date Collected	**Chlorine**		**Phosphate as PO4**		**Fluoride**	**Chloride**	**Sulfate**	**Alkalinity**	**pH**	**Temp**	**Calcium**	**Conductivity**
		Distribution		Distribution		Distribution	Distribution	Distribution	Distribution	Distribution	Distribution	Distribution	Distribution
		Free (mg/L)	Total (mg/L)	Ortho (mg/L)	Total (mg/L)	mg/L	mg/L	mg/L	mg/L as CaCO3	pH units	℉	mg/L as Ca	µmhos/cm
	Maximum	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Minimum	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

WQP Example

Example: ABC Township

- Serves a population of 2,000.
- Had an ALE in 2019
- Must collect samples at their entry point and two locations in the distribution system.

Analyses		Result	RL	Qual	Units	
Lab ID:	1906563-02	Matrix:	DRINKING WATER			Collection I
Client ID:	Plant Tap	Sampler:				Received D
METALS, DRINKING WATER						**EPA 200.8**
Calcium		65.8	0.0200		mg/L	
SILICON, DRINKING WATER						**EPA 200.7**
Silica, Dissolved (as SiO2)		7.41	0.250		mg/L	
ALKALINITY						**EPA 310.2**
Alkalinity, Total (As CaCO3)		255	4.00		mg/L CaCO3	
PHOSPHOROUS, ORTHO AS P						**SM 4500-P-E**
Phosphorus, Total Orthophosphate (As P)		0.0210	0.0100		mg/L	
SPECIFIC CONDUCTANCE						**EPA 120.1**
Specific Conductivity		439	1.00		µmhos/cm	

WQP Example

- WQP Report form
  - Systems with CCT
  - Systems without CCT

www.Michigan.gov/lcr

WATER QUALITY PARAMETER DATA (when applicable):

System Name:_____ WSSN:_____

	Sample Location	Date	pH	Alk. (mg/L)	Ca as $CaCO_3$ (mg/L)	Cond. (umhos)	Temp (°C)	Inhibitor (mg/L) ☐ Orthophosphate (PO_4) ☐ Silica (Si)	Chloride (mg/L)	Sulfate (mg/L)
Entry Point to the Distribution System (Plant Tap)										
Distribution System										

WQP Example

- Filling out the report form

WATER QUALITY PARAMETER DATA (when applicable):

System Name:_____ WSSN:_____

n System	Sample Location	Date	pH	Alk. (mg/L)	Ca as $CaCO_3$ (mg/L)	Cond. (umhos)	Temp (°C)	Inhibitor (mg/L) ☒ Orthophosphate (PO_4) ☐ Silica (Si)	Chloride (mg/L)	Sulfate (mg/L)
	Plant Tap	6/16/2019	7.38	255	65.8	439	22.4	0.021	5.56	7.62

- Orthophosphate was reported as P, not PO_4!

EGLE

Orthophosphate as P vs PO_4

PHOSPHOROUS, ORTHO AS P			SM 4500-P-E
Phosphorus, Total Orthophosphate (As P)	0.0210	0.0100	mg/L

- $\frac{0.021 \text{ mg/L as P}}{} \quad \frac{95 \text{ MW of } PO_4}{31 \text{ MW of P}}$ = 0.064 mg/L as PO_4

- Put 0.064 mg/L on report form

OWQP Example

Example: ABC Township

Serves a population of 2,000

OWQP range for pH is 7.2 - 7.8

- Collects WQP samples on 12/20/2019 before the Holiday break. The pH is 7.13.

- Next WQP sample is collected on 1/6/2020. The pH is 7.25.

OWQP Example

- Excursion started on 12/20/2019.
- Continued until 1/5/2020.

= 12 excursion days for July – December 2019 monitoring period

= 5 excursion days for January – June 2020 monitoring period

- Does this supply have a Treatment Technique violation?
- What could the supply have done to reduce the excursion days?

Lead and Copper Reporting

Lead and Copper Reporting

- **Lead & Copper Report Form**
  - Due to EGLE within 10 days after monitoring period
- **Consumer Notice of Lead & Copper Results** (CNLC or Consumer Notice)
  - Individual tap result to persons served at sample site
  - Delivery to customer within 30 days
- **Certification of Consumer Notice**
  - Due to EGLE within 3 months after monitoring period
- **Lead & Copper Tap Monitoring Results**
  - Due to EGLE within 10 days after monitoring period
- **Consumer Confidence Report**
  - Annual report the 90th% result to *all* customers

Lead and Copper Report Form

- Due to EGLE 10 days after the end of the monitoring period
  - January 10
  - July 10
  - October 10
- Makes sure the supply followed correct tiering criteria for site selection
  - Taken from sampling pool
- Updated in 2019
  - Always go to the website for the newest form
  - www.Michigan.gov/lcr
- Make sure you submit all reporting forms to your local EGLE district office

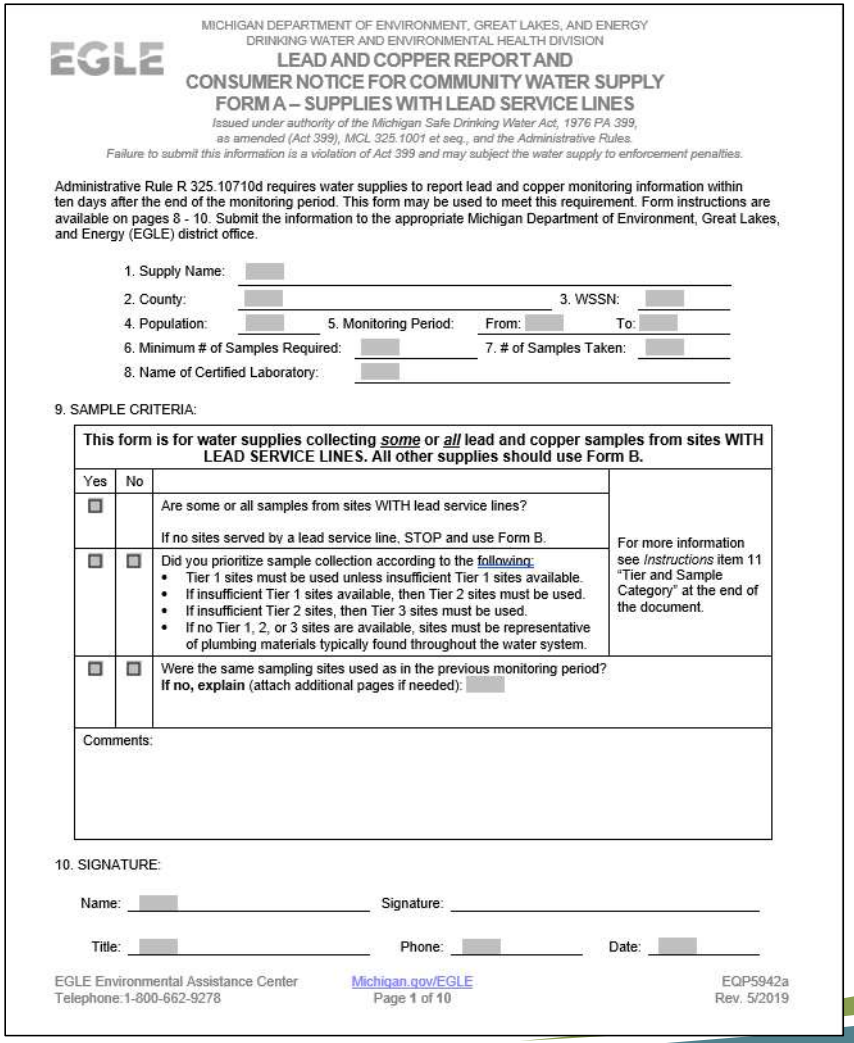
Lead and Copper Report Form

- To accommodate systems that have lead service lines and 1st and 5th sampling requirements the form has been split into two versions.

- Form A – Systems **with** lead service lines

- Form B – Systems **without** lead service lines

Form A – Supply with lead service lines



MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
DRINKING WATER AND ENVIRONMENTAL HEALTH DIVISION

EGLE

LEAD AND COPPER REPORT AND CONSUMER NOTICE FOR COMMUNITY WATER SUPPLY
FORM A – SUPPLIES WITH LEAD SERVICE LINES

Issued under authority of the Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399), MCL 325.1001 et seq., and the Administrative Rules.
Failure to submit this information is a violation of Act 399 and may subject the water supply to enforcement penalties.

Administrative Rule R 325.10710d requires water supplies to report lead and copper monitoring information within ten days after the end of the monitoring period. This form may be used to meet this requirement. Form instructions are available on pages 8 - 10. Submit the information to the appropriate Michigan Department of Environment, Great Lakes, and Energy (EGLE) district office.

1. Supply Name:
2. County: 3. WSSN:
4. Population: 5. Monitoring Period: From: To:
6. Minimum # of Samples Required: 7. # of Samples Taken:
8. Name of Certified Laboratory:

9. SAMPLE CRITERIA:

This form is for water supplies collecting *some* or *all* lead and copper samples from sites WITH LEAD SERVICE LINES. All other supplies should use Form B.

Yes	No		
☐		Are some or all samples from sites WITH lead service lines? If no sites served by a lead service line, STOP and use Form B.	For more information see *Instructions* item 11 "Tier and Sample Category" at the end of the document.
☐	☐	Did you prioritize sample collection according to the following: • Tier 1 sites must be used unless insufficient Tier 1 sites available. • If insufficient Tier 1 sites available, then Tier 2 sites must be used. • If insufficient Tier 2 sites, then Tier 3 sites must be used. • If no Tier 1, 2, or 3 sites are available, sites must be representative of plumbing materials typically found throughout the water system.	
☐	☐	Were the same sampling sites used as in the previous monitoring period? **If no, explain** (attach additional pages if needed):	
Comments:			

10. SIGNATURE:

Name: Signature:

Title: Phone: Date:

EGLE Environmental Assistance Center
Telephone: 1-800-662-9278

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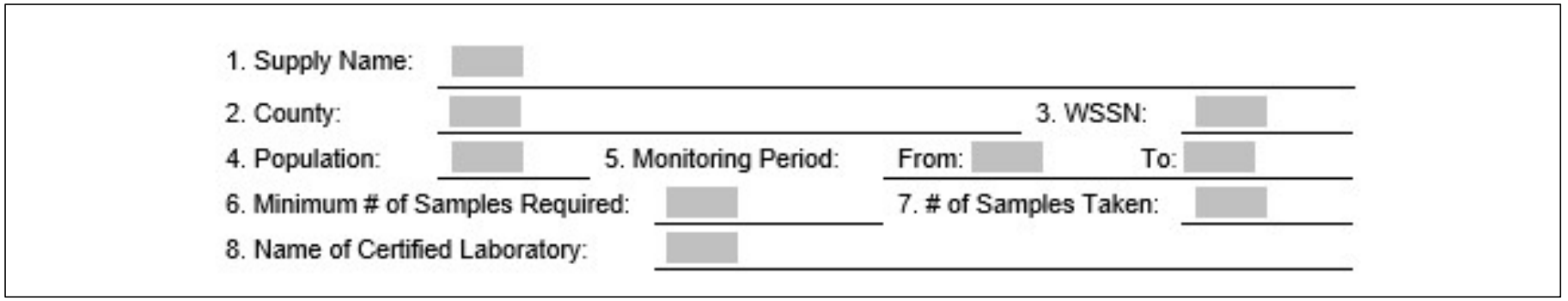
EGLE

Form A – Supply with lead service lines



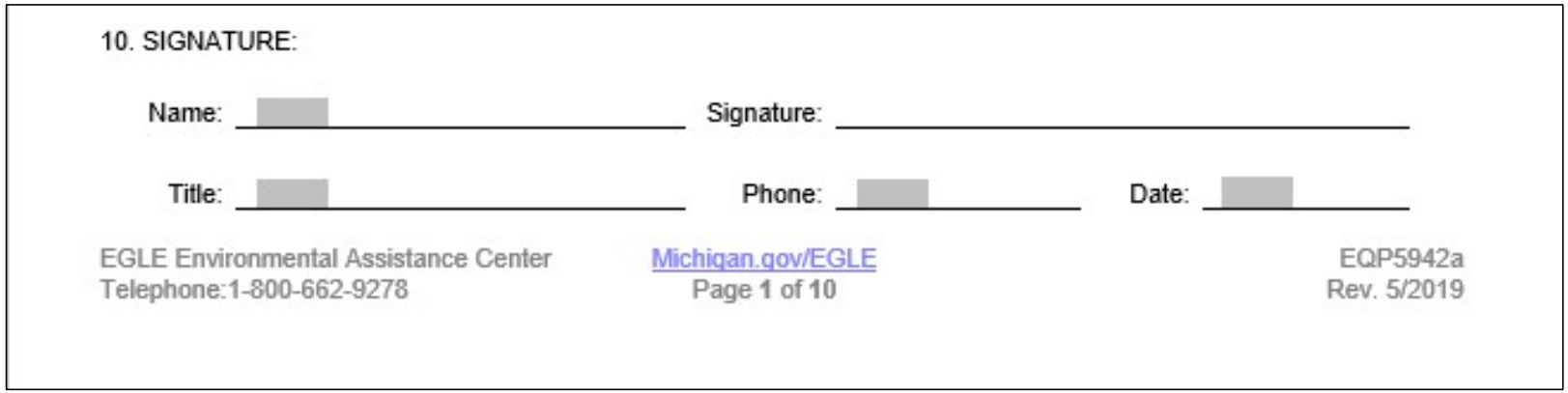
1. Supply Name:
2. County: 3. WSSN:
4. Population: 5. Monitoring Period: From: To:
6. Minimum # of Samples Required: 7. # of Samples Taken:
8. Name of Certified Laboratory:

Form A – Supply with lead service lines

9. SAMPLE CRITERIA:

This form is for water supplies collecting ***some*** or ***all*** lead and copper samples from sites WITH LEAD SERVICE LINES. All other supplies should use Form B.			
Yes	No		
☐		Are some or all samples from sites WITH lead service lines? If no sites served by a lead service line, STOP and use Form B.	For more information see *Instructions* item 11 "Tier and Sample Category" at the end of the document.
☐	☐	Did you prioritize sample collection according to the following: • Tier 1 sites must be used unless insufficient Tier 1 sites available. • If insufficient Tier 1 sites available, then Tier 2 sites must be used. • If insufficient Tier 2 sites, then Tier 3 sites must be used. • If no Tier 1, 2, or 3 sites are available, sites must be representative of plumbing materials typically found throughout the water system.	
☐	☐	Were the same sampling sites used as in the previous monitoring period? **If no, explain** (attach additional pages if needed):	
Comments:			

Form A – Supply with lead service lines



10. SIGNATURE:

Name: _____ Signature: _____

Title: _____ Phone: _____ Date: _____

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Telephone:1-800-662-9278

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Form A – Supply with lead service lines

11. TAP SAMPLING DATA

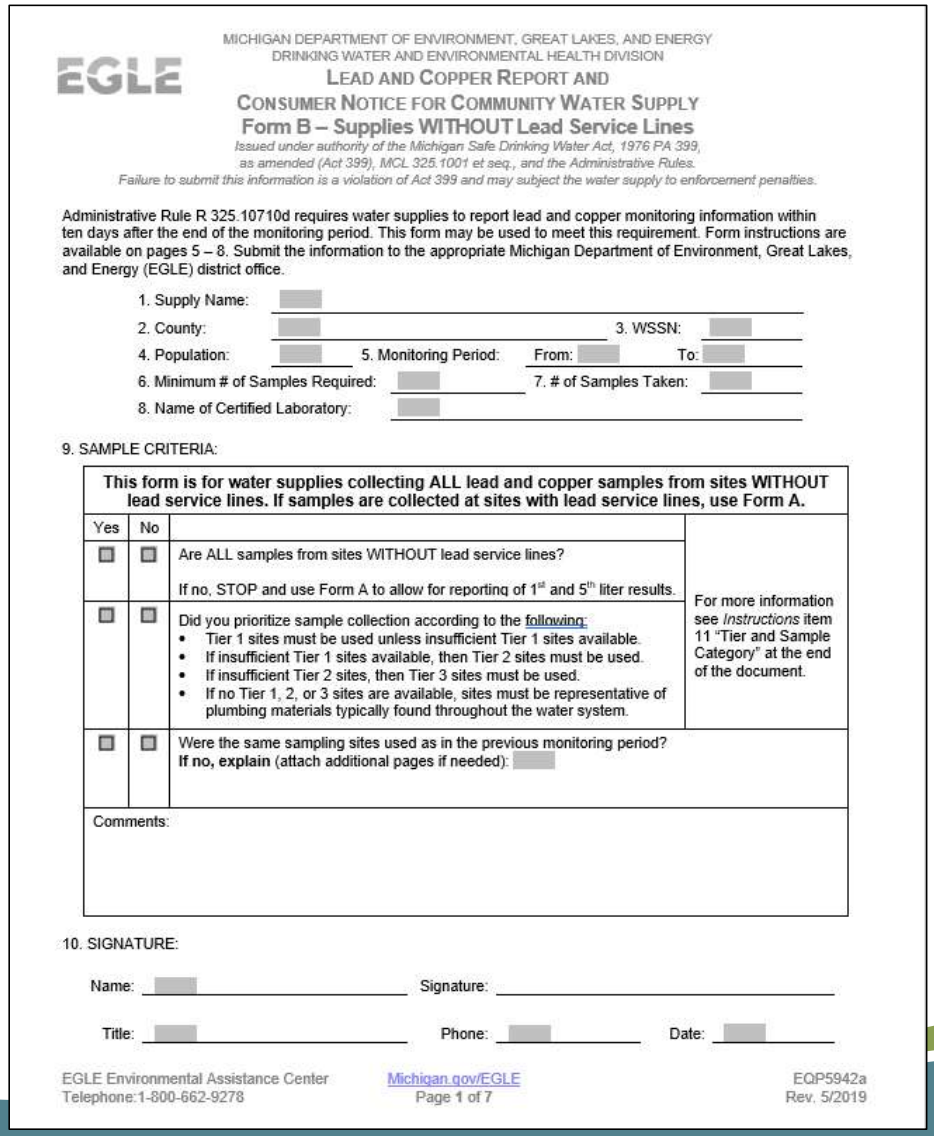
Use additional sheets as needed. Sheet _____ of _____.

Water Supply Name: [redacted] WSSN: [redacted]

Sample Location	Sample Date	Tier (1,2,3,OT)[1]	Category (see below)[2]	Building Plumbing (L,C,G,P)[3]	Service Line (L*,C,G,P)[3]	Tap Type (K,B)[4]	1st Liter Sample			5th Liter Sample		
							Lead ☐ mg/L ☐ ug/L	Copper ☐ mg/L ☐ ug/L	Lab Sample Number	Lead ☐ mg/L ☐ ug/L	Copper ☐ mg/L ☐ ug/L	Lab Sample Number

[1]Tier	[2]Category	Description	[1]Tier	[2]Category	Description	[3]Material	[4]Tap Type
Tier 1	A*	Single Family w/ lead service line	Tier 2	D*	Multi Family or building w/ lead service line	L* = Lead C = Copper G = Galvanized P = Plastic * Use Form A if any samples collected from sites with lead service lines to report 1st and 5th liter results.	K = Kitchen Sink B = Bathroom Sink O = Other (not an option for residential sites)
	B	Single Family w/ interior lead plumbing		E	Multi Family or building w/ interior lead plumbing		
	C	Multi Family Residence (MFR) w/ a LSL*, or lead interior plumbing, if MFRs comprise at least 20% of total service connections.	Tier 3	F	Single Family w/ copper plumbing with lead solder installed before 1988		
	* Use Form A if any samples collected from sites with LSLs to allow reporting of 1st and 5th liter results.		Other	OT	If no Tier 1, 2, 3 sites, use sites representative of plumbing commonly found throughout the supply.		

Form B – Supply without lead service lines



MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
DRINKING WATER AND ENVIRONMENTAL HEALTH DIVISION

EGLE

LEAD AND COPPER REPORT AND
CONSUMER NOTICE FOR COMMUNITY WATER SUPPLY
Form B – Supplies WITHOUT Lead Service Lines

Issued under authority of the Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399), MCL 325.1001 et seq., and the Administrative Rules.
Failure to submit this information is a violation of Act 399 and may subject the water supply to enforcement penalties.

Administrative Rule R 325.10710d requires water supplies to report lead and copper monitoring information within ten days after the end of the monitoring period. This form may be used to meet this requirement. Form instructions are available on pages 5 – 8. Submit the information to the appropriate Michigan Department of Environment, Great Lakes, and Energy (EGLE) district office.

1. Supply Name:
2. County: 3. WSSN:
4. Population: 5. Monitoring Period: From: To:
6. Minimum # of Samples Required: 7. # of Samples Taken:
8. Name of Certified Laboratory:

9. SAMPLE CRITERIA:

This form is for water supplies collecting ALL lead and copper samples from sites WITHOUT lead service lines. If samples are collected at sites with lead service lines, use Form A.			
Yes	No		
☐	☐	Are ALL samples from sites WITHOUT lead service lines? If no, STOP and use Form A to allow for reporting of 1st and 5th liter results.	For more information see *Instructions* item 11 "Tier and Sample Category" at the end of the document.
☐	☐	Did you prioritize sample collection according to the following: • Tier 1 sites must be used unless insufficient Tier 1 sites available. • If insufficient Tier 1 sites available, then Tier 2 sites must be used. • If insufficient Tier 2 sites, then Tier 3 sites must be used. • If no Tier 1, 2, or 3 sites are available, sites must be representative of plumbing materials typically found throughout the water system.	
☐	☐	Were the same sampling sites used as in the previous monitoring period? **If no, explain** (attach additional pages if needed):	
Comments:			

10. SIGNATURE:

Name: Signature:

Title: Phone: Date:

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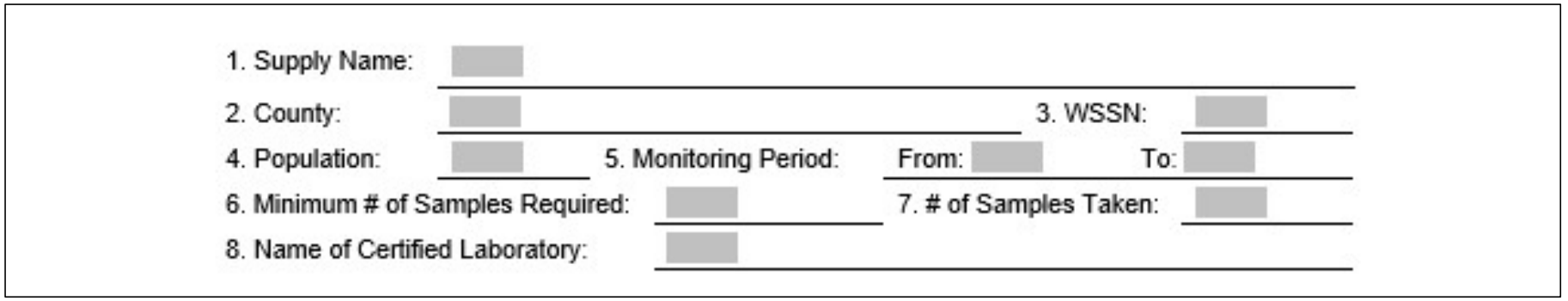
Form B – Supply without lead service lines



Form B – Supply without lead service lines

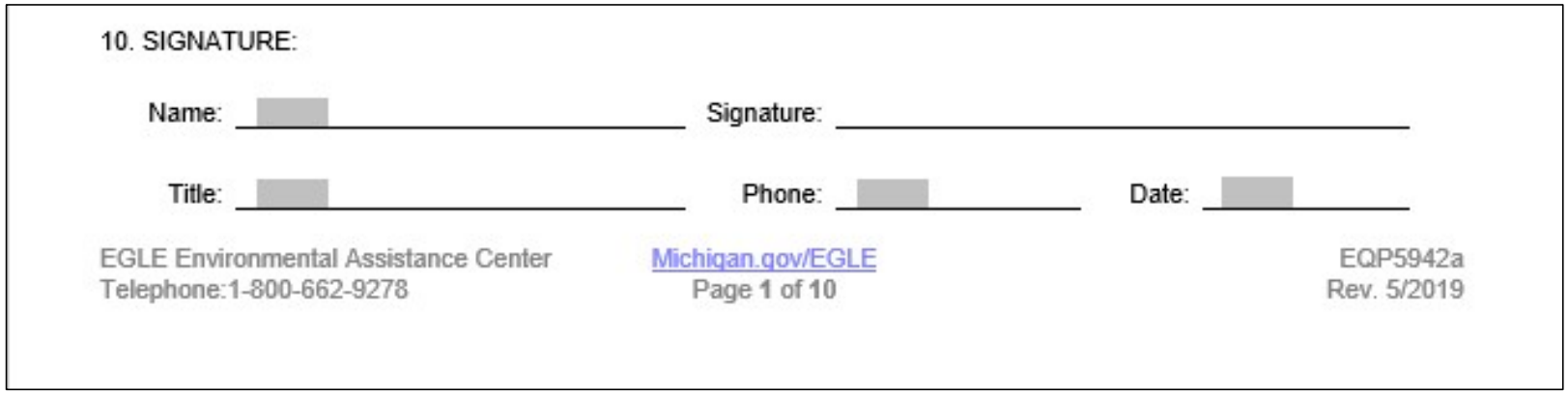
9. SAMPLE CRITERIA:

This form is for water supplies collecting ALL lead and copper samples from sites WITHOUT lead service lines. If samples are collected at sites with lead service lines, use Form A.

Yes	No		
☐	☐	Are ALL samples from sites WITHOUT lead service lines? If no, STOP and use Form A to allow for reporting of 1st and 5th liter results.	For more information see *Instructions* item 11 "Tier and Sample Category" at the end of the document.
☐	☐	Did you prioritize sample collection according to the following: • Tier 1 sites must be used unless insufficient Tier 1 sites available. • If insufficient Tier 1 sites available, then Tier 2 sites must be used. • If insufficient Tier 2 sites, then Tier 3 sites must be used. • If no Tier 1, 2, or 3 sites are available, sites must be representative of plumbing materials typically found throughout the water system.	
☐	☐	Were the same sampling sites used as in the previous monitoring period? **If no, explain** (attach additional pages if needed):	

Comments:

Form B – Supply without lead service lines



10. SIGNATURE:

Name: _____ Signature: _____

Title: _____ Phone: _____ Date: _____

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Form B – Supply without lead service lines

11. TAP SAMPLING DATA

Use additional sheets as needed. Sheet _____ of _____.

Water Supply Name:

WSSN:

Sample Location	Sample Date	Tier (1,2,3,OT)[1]	Category (see below)[2]	Service Line (C,G,P)[3]	Building Plumbing (L,C,G,P)[3]	Tap Type (K,B)[4]	Lead ☐ mg/L ☐ ug/L	Copper ☐ mg/L ☐ ug/L	Lab Sample Number

[1] Tier	[2] Category	Description	[1] Tier	[2] Category	Description	[3] Material	[4] Tap Type
Tier 1	A*	Single Family w/ lead service line	Tier 2	D*	Multi Family or building w/ lead service line	L* = Lead C = Copper G = Galvanized P = Plastic * Use Form A if any samples collected from sites with lead service lines to report 1st and 5th liter results.	K = Kitchen Sink B = Bathroom Sink O = Other (not an option for residential sites)
	B	Single Family w/ interior lead plumbing		E	Multi Family or building w/ interior lead plumbing		
	C	Multi Family Residence (MFR) w/ a lead service line*, or lead interior plumbing, if MFRs comprise at least 20% of total service connections.	Tier 3	F	Single Family w/ copper plumbing with lead solder installed before July 1988		
	* Use Form A if any samples collected from sites with lead service lines to allow reporting of 1st and 5th liter results.		Other	OT	If no Tier 1, 2, 3 sites, use sites representative of plumbing commonly found throughout the supply.		

EGLE

Consumer Notice of Lead and Copper Results

- Must be given to the residents of sites sampled within 30 days of the supply knowing the results
  - Form A and Form B
- Due to EGLE within 3 months following the end of the monitoring period
  - December 31st
  - March 31st
  - September 30th
- Provides information about lead and copper and ways to mitigate potential exposure

Form A – sites with lead service lines

CONSUMER NOTICE OF LEAD AND COPPER RESULTS IN DRINKING WATER SITE WITH A LEAD SERVICE LINE

Water Supply Name: _____

County: _____ WSSN: _____

Sample Location: _____ Date Sampled: _____

Thank you for participating in the lead and copper monitoring of drinking water. The levels of lead and copper found at your location are in the table below. Your home is served by a lead service line. This means that the pipe that brings water to your home contains lead. The first liter sample represents the water you are likely to drink when turning on the tap, and the fifth liter sample likely represents the water in the service line.

Contaminant	Action Level	Maximum Contaminant Level Goal	1st Liter Result	5th Liter Result
Lead (ppb)	15	0		
Copper (ppb)	1300	1300		

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
ppb: Parts per billion or micrograms per liter.
ND: Not detected.

To reduce exposure to lead and copper in drinking water:

- **Run your water before drinking**. The more time water has been sitting in your home's pipes, the more lead it may contain. Therefore, if your water has not been used for several hours, run the water before using it for drinking or cooking. This flushes lead-containing water from the pipes. Additional flushing may be required for homes that have been vacant or have a longer service line.
  - If you **do not** have a lead service line, run the water for 30 seconds to two minutes, or until it becomes cold or reaches a steady temperature.
  - If you **do** have a lead service line, run the water for at least five minutes to flush water from both the interior building plumbing and the lead service line.
- **Use cold water for drinking, cooking, and preparing baby formula**. Do not cook with or drink water from the hot water tap. Lead and copper dissolves more easily in hot water.
- **Do not boil water to remove lead and copper**. Boiling water will not reduce lead and copper levels.
- **Consider using a filter to reduce lead in drinking water**. Read the package to be sure the filter is NSF 53 certified to reduce lead or contact NSF International at 800-NSF-8010, or www.nsf.org for more information.
- **Consider purchasing bottled water**. The bottled water standard for lead is 5 ppb.
- **Identify older plumbing fixtures that likely contain lead**. Older faucets, fittings, and valves sold before 2014 may contain higher levels of lead, even if marked "lead-free." Faucets, fittings, and valves sold after January 2014 are required to meet a more restrictive "lead-free" definition but may still contain up to 0.25 percent lead.
- **Clean your aerator**. As part of routine maintenance, the aerator should be removed at least every six months to rinse out any debris that may include particulate lead.
- **Get your child tested**. Contact your local health department or healthcare provider to find out how you can get your child tested for lead if you are concerned about exposure.

Lead *can cause serious health and developmental problems. It can cause damage to the brain and kidneys, and it can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development. Although other sources of lead exposure exist, such as lead paint, and lead contaminated dust, your water supply is contacting you to reduce your risk of exposure to lead in drinking water. If you have questions about other sources of lead exposure, please contact your local health department.*

Copper *is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.*

The United States Environmental Protection Agency (U.S. EPA) estimates that 20 percent or more of human exposure to lead may come from drinking water. Infants who consume mostly mixed formula can receive 40 percent to 60 percent of their exposure to lead from drinking water.

For more information on reducing lead exposure around your home and the health effects of lead, visit the U.S. EPA's website at www.epa.gov/lead, call the National Lead Information Center at 800-424-LEAD, or contact your health care provider.

For more information on copper, visit the United States Center for Disease Control website at www.atsdr.cdc.gov/index.html, or contact your health provider.

For more information regarding your water supply, contact us at: _____.

Form A – Sites with Lead Service Lines

Thank you for participating in the lead and copper monitoring of drinking water. The levels of lead and copper found at your location are in the table below. Your home is served by a lead service line. This means that the pipe that brings water to your home contains lead. The first liter sample represents the water you are likely to drink when turning on the tap, and the fifth liter sample likely represents the water in the service line.

Contaminant	Action Level	Maximum Contaminant Level Goal	1st Liter Result	5th Liter Result
Lead (ppb)	15	0		
Copper (ppb)	1300	1300		

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
ppb: Parts per billion or micrograms per liter.
ND: Not detected.

Form B – sites without lead service lines

CONSUMER NOTICE OF LEAD AND COPPER RESULTS IN DRINKING WATER SITE WITHOUT A LEAD SERVICE LINE

Water Supply Name:

County: WSSN:

Sample Location: Date Sampled:

Thank you for participating in the lead and copper monitoring of drinking water. The sample represents the water you are likely to drink when turning on the tap. The levels of lead and copper found at your location are in the table below.

Contaminant	Action Level	Maximum Contaminant Level Goal	Your Result
Lead (ppb)	15	0	
Copper (ppb)	1300	1300	

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
ppb: Parts per billion or micrograms per liter.
ND: Not detected.

To reduce exposure to lead and copper in drinking water:

- **Run the water to flush out lead**. The more time water has been sitting in your home's pipes, the more lead it may contain. Therefore, if your water has not been used for several hours, run the water before using it for drinking or cooking. This flushes lead-containing water from the pipes. Additional flushing may be required for homes that have been vacant or have a longer service line.
  - If you **do not** have a lead service line, run the water for 30 seconds to two minutes, or until it becomes cold or reaches a steady temperature.
  - If you **do** have a lead service line, run the water for three to five minutes to flush water from both the interior building plumbing and the lead service line.
- **Use cold water for cooking and preparing baby formula**. Do not cook with or drink water from the hot water tap. Lead and copper dissolves more easily in hot water.
- **Do not boil water to remove lead and copper**. Boiling water will not reduce lead and copper levels.
- **Consider using a filter to reduce lead in drinking water**. Read the package to be sure the filter is NSF 53 certified to reduce lead or contact NSF International at 800-NSF-8010, or www.nsf.org for more information.
- **Consider purchasing bottled water**. The bottled water standard for lead is 5 ppb.
- **Identify older plumbing fixtures that likely contain lead**. Older faucets, fittings, and valves sold before 2014 may contain higher levels of lead, even if marked "lead-free." Faucets, fittings, and valves sold after January 2014 are required to meet a more restrictive "lead-free" definition but may still contain up to 0.25 percent lead.
- **Clean your aerator**. The aerator should be removed at least monthly to rinse out any debris; this debris could include particulate lead.
- **Get your child tested**. Contact your local health department or healthcare provider to find out how you can get your child tested for lead if you are concerned about exposure.

Lead *can cause serious health and developmental problems. It can cause damage to the brain and kidneys, and it can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development. Although other sources of lead exposure exist, such as lead paint, and lead contaminated dust, your water supply is contacting you to reduce your risk of exposure to lead in drinking water. If you have questions about other sources of lead exposure, please contact your local health department.*

Copper *is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.*

The United States Environmental Protection Agency (U.S. EPA) estimates that 20 percent or more of human exposure to lead may come from drinking water. Infants who consume mostly mixed formula can receive 40 percent to 60 percent of their exposure to lead from drinking water.

For more information on reducing lead exposure around your home and the health effects of lead, visit the U.S. EPA's website at www.epa.gov/lead, call the National Lead Information Center at 800-424-LEAD, or contact your health care provider.

For more information on copper, visit the United States Center for Disease Control website at www.atsdr.cdc.gov/index.html, or contact your health provider.

For more information regarding your water supply, contact us at: _____.

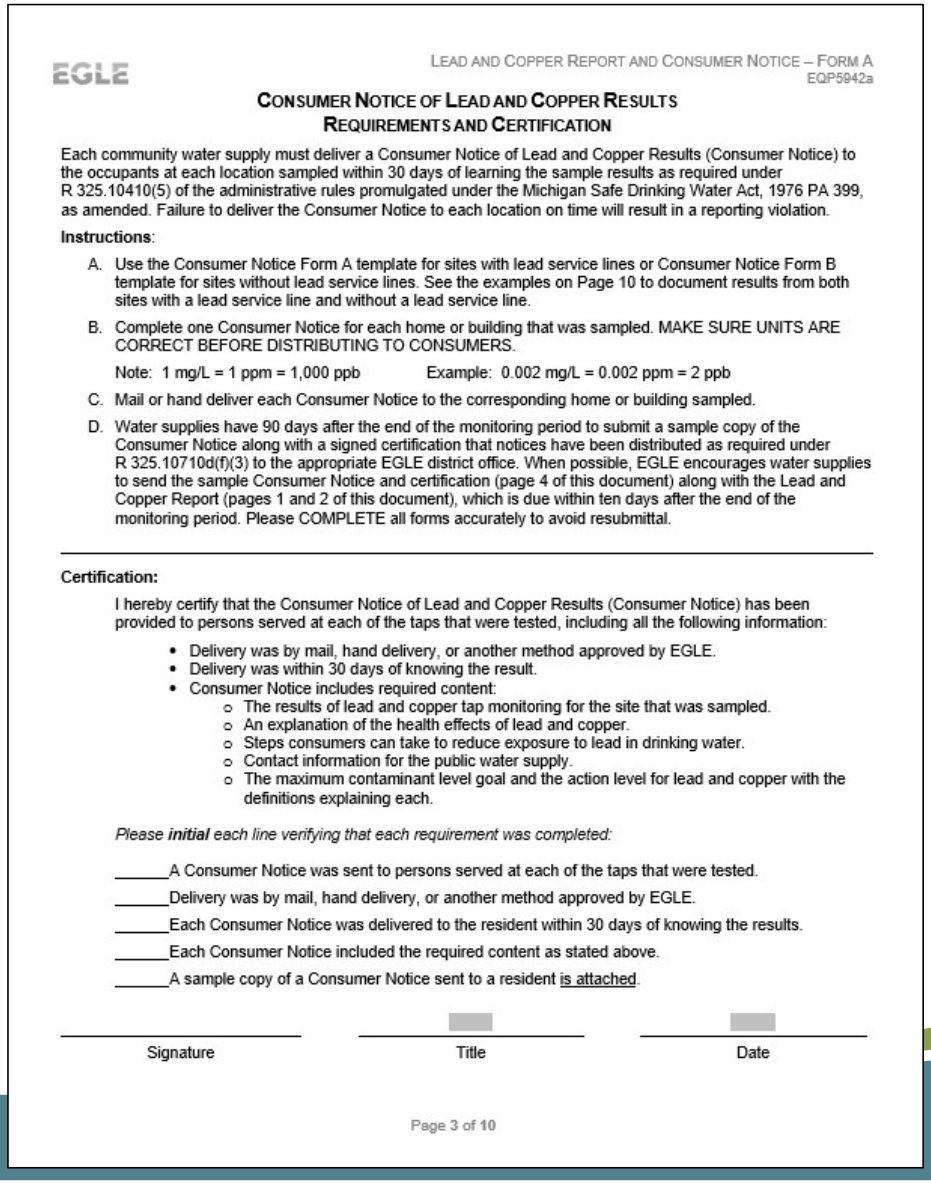
Form B – Sites without Lead Service Lines

Thank you for participating in the lead and copper monitoring of drinking water. The sample represents the water you are likely to drink when turning on the tap. The levels of lead and copper found at your location are in the table below.

Contaminant	Action Level	Maximum Contaminant Level Goal	Your Result
Lead (ppb)	15	0	
Copper (ppb)	1300	1300	

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
ppb: Parts per billion or micrograms per liter.
ND: Not detected.

Consumer Notice of Lead and Copper Results Certification



EGLE

LEAD AND COPPER REPORT AND CONSUMER NOTICE – FORM A
EQP5942a

CONSUMER NOTICE OF LEAD AND COPPER RESULTS
REQUIREMENTS AND CERTIFICATION

Each community water supply must deliver a Consumer Notice of Lead and Copper Results (Consumer Notice) to the occupants at each location sampled within 30 days of learning the sample results as required under R 325.10410(5) of the administrative rules promulgated under the Michigan Safe Drinking Water Act, 1976 PA 399, as amended. Failure to deliver the Consumer Notice to each location on time will result in a reporting violation.

Instructions:

A. Use the Consumer Notice Form A template for sites with lead service lines or Consumer Notice Form B template for sites without lead service lines. See the examples on Page 10 to document results from both sites with a lead service line and without a lead service line.

B. Complete one Consumer Notice for each home or building that was sampled. MAKE SURE UNITS ARE CORRECT BEFORE DISTRIBUTING TO CONSUMERS.

Note: 1 mg/L = 1 ppm = 1,000 ppb Example: 0.002 mg/L = 0.002 ppm = 2 ppb

C. Mail or hand deliver each Consumer Notice to the corresponding home or building sampled.

D. Water supplies have 90 days after the end of the monitoring period to submit a sample copy of the Consumer Notice along with a signed certification that notices have been distributed as required under R 325.10710d(f)(3) to the appropriate EGLE district office. When possible, EGLE encourages water supplies to send the sample Consumer Notice and certification (page 4 of this document) along with the Lead and Copper Report (pages 1 and 2 of this document), which is due within ten days after the end of the monitoring period. Please COMPLETE all forms accurately to avoid resubmittal.

Certification:

I hereby certify that the Consumer Notice of Lead and Copper Results (Consumer Notice) has been provided to persons served at each of the taps that were tested, including all the following information:

- Delivery was by mail, hand delivery, or another method approved by EGLE.
- Delivery was within 30 days of knowing the result.
- Consumer Notice includes required content:
  - The results of lead and copper tap monitoring for the site that was sampled.
  - An explanation of the health effects of lead and copper.
  - Steps consumers can take to reduce exposure to lead in drinking water.
  - Contact information for the public water supply.
  - The maximum contaminant level goal and the action level for lead and copper with the definitions explaining each.

*Please **initial** each line verifying that each requirement was completed:*

_____A Consumer Notice was sent to persons served at each of the taps that were tested.

_____Delivery was by mail, hand delivery, or another method approved by EGLE.

_____Each Consumer Notice was delivered to the resident within 30 days of knowing the results.

_____Each Consumer Notice included the required content as stated above.

_____A sample copy of a Consumer Notice sent to a resident is attached.

Signature Title Date

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EGLE

Consumer Notice of Lead and Copper Results Certification

Certification:

I hereby certify that the Consumer Notice of Lead and Copper Results (Consumer Notice) has been provided to persons served at each of the taps that were tested, including all the following information:

- Delivery was by mail, hand delivery, or another method approved by EGLE.
- Delivery was within 30 days of knowing the result.
- Consumer Notice includes required content:
  - The results of lead and copper tap monitoring for the site that was sampled.
  - An explanation of the health effects of lead and copper.
  - Steps consumers can take to reduce exposure to lead in drinking water.
  - Contact information for the public water supply.
  - The maximum contaminant level goal and the action level for lead and copper with the definitions explaining each.

*Please **initial** each line verifying that each requirement was completed:*

_____A Consumer Notice was sent to persons served at each of the taps that were tested.

_____Delivery was by mail, hand delivery, or another method approved by EGLE.

_____Each Consumer Notice was delivered to the resident within 30 days of knowing the results.

_____Each Consumer Notice included the required content as stated above.

_____A sample copy of a Consumer Notice sent to a resident is attached.

Signature	Title	Date

Page 3 of 10

Reporting of Results

- Lead and Copper Results
  - Due EGLE within 10 days following the end of a monitoring period
    - Send to your local EGLE district office
  - If using EGLE lab, results are automatically sent to us*
    - *we experienced problems with this recently where we did not see some/all results
  - If using OTHER labs, you are required to send the results to us
    - The Lead and Copper Report form does not count as submittal of laboratory results

Consumer Confidence Report (CCR)

- Annual Water Quality Report
- Applies to all community water systems
- Summarizes:
  - Information regarding source water
  - Detected contaminants
  - Compliance
  - Educational information

…..What about lead and copper requirements?

CCR Lead and Copper Requirements

- Most recent 90th percentile in CCR units
- Standard lead language
- Number of detects above the Action Level (AL)
  - Additional language required for lead or copper results over ALs
- The range of individual compliance samples

Inorganic Contaminant Subject to AL	AL	MCLG	Your Water[4]	Year Sampled	# of Samples Above AL	Range of Individual Samples	Typical Source of Contaminant
Lead (ppb)	15	0					Lead services lines, corrosion of household plumbing including fittings and fixtures; erosion of natural deposits
Copper (ppm)	1.3	1.3					Corrosion of household plumbing systems; erosion of natural deposits

Standard Lead and Copper Required Language

- *If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. [NAME OF UTILITY] is responsible for providing high quality drinking water but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you have a lead service line it is recommended that you run your water for at least 5 minutes to flush water from both your home plumbing and the lead service line. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at 1-800-426-4791 or at http://water.epa.gov/drink/info/lead.*

Elevated Lead and Copper Results Required Language

- An elevated lead result (>15ppb) triggers additional language in the CCR:
  - *Infants and children who drink water containing lead could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.*

- An elevated copper result (>1300ppb) triggers additional language in the CCR:
  - *Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.*

CCR Lead and Copper Requirements

- If CWS has LSLs or service lines with unknown contents, they need to include:

1. # of LSLs
2. # of service lines of unknown material
3. Total number of service lines

Common Errors with Reporting

Reporting

- Incomplete
  - Check every box, and explain answers when needed
  - Sign and date all forms
  - All required language on CCR needs to be added
  - Certification for Consumer Notices sent without an example copy
- Incorrect units
  - Results should be in ppb/ug/L on the Consumer Notice form
  - Lead should be in ppb/ug/L and copper should be in ppm/mg/L on the CCR
- Late
  - Past due dates = violation

Resources

When You Need Help or Other Resources…

Lead and Copper Unit

Supervisor	Brandon Onan, onanb@michigan.gov, 616-307-6736
Rule Specialist	Jeni Bolt, boltj@michigan.gov, 517-331-5161
School Specialist	Holly Gohlke, gohlkeh@michigan.gov, 989-705-3422
LCR Monitoring	Heather Jackson, jacksonh@michigan.gov, 517-242-3997
WQP Monitoring	Steve Pennington, penningtons@michigan.gov, 517-242-3923

Attend both webinars and get 0.3 CECs

Session #1 (0.1 CECs)

June 2nd (1:00-2:30pm)

- LCR Basics and Overview
- Tiering Criteria and Sampling Plans
- LCR Monitoring Basics and Pre-Sampling Preparation

Session #2 (0.1 CECs)

June 4th (1:00-2:30pm)

- LCR Monitoring Tips and Tricks
- Elevated Results and Public Education
- Water Quality Parameter Monitoring
- Reporting Basics

Questions?