

Draft Agenda

Kentucky Lead Workgroup Meeting

May 18, 2016

1:30 – 3:00 PM EST

Kentucky Division of Water

Frankfort, Kentucky

1. Call Meeting to Order and Roll Call of Membership
2. Introduce Guests
3. Approve Minutes of April 20, 2016
4. Approve Ground Rules and Open Meetings Rules
5. Presentation on EPA Lead and Copper Rule Compliance in Kentucky – Tom Gabbard
6. Review Sub-groups Assignments and Schedule
7. Review Report Template
8. Public Comment Period
9. Next Workgroup Meeting, 1:30 PM - June 15, 2016

**Drinking Water Advisory Council
Lead in Drinking Water (LIDW) Work Group
Draft Meeting Minutes
May 18, 2016**

In attendance: Jennifer Burt (DPH), Obe Cox (CCW), Tom Gabbard (DOW), Mike Gardner (BGMU), Ron Lovan (NKYW), Brad Montgomery (ACEC), Bill Robertson (PWWKY), Thomas Rockaway (UofL), Kay Sanborn (KYTN-AWWA), Rengao Song (LWC), Brian Thomas (MWD)

Absent: Greg Heitzman, Chair (BWK), Gary Larimore (KRWA)

Division of Water (DOW): Peter Goodmann, Director; Carole Catalfo, Sarah Gaddis, Shawn Hokanson, Todd Ritter

Dept. of Environmental Protection (DEP): Larry Taylor

Liaison and Public Attendees – Amber Agee (DPH), Lane Boldman (KCC), Kent Chandler (KY OAG), Annette Dupont Ewing (KMUA), Michael Flynn (Winchester Municipal), Julie Roney (FPB)

The meeting began at 1:35 p.m.

Call Meeting to Order and Roll Call of Membership

Chair Greg Heitzman had an urgent personal issue at the last moment, and asked Peter T. Goodmann to lead the meeting. Peter Goodmann briefly discussed the upcoming Cabinet move to the new building at 300 Sower Blvd., and that the next meeting may be held at an alternate location. Work group members introduced themselves.

Introduce Guests

Guests introduced themselves and were reminded to sign in.

Approve Minutes of April 20, 2016

The work group approved the April Meeting Minutes by consensus.

Approve Ground Rules and Open Meeting Rules

The work group reviewed draft ground rules. The following changes are needed:

Title: Change “Draft Ground Rules” to “Ground Rules and Open Meeting Rules”

1.f. Change “Environmental Protection Cabinet” to “Energy and Environment Cabinet” or “EEC”

1.g. Add “ and Kentucky Open Records Act” after “Freedom of Information Act (FOIA)”

1.k. Add “Commissioner, Department of Environmental Protection” after “Bruce Scott”, and change “Environmental Protection Cabinet” to “Energy and Environment Cabinet (EEC)”

4. Remove extra parentheses from after “presenters”

4d. and 5. Change font to match remainder of document

Peter Goodmann noted the absence of proxies, which the Chair has discouraged in order to keep the workgroup at a manageable size. If gathering a quorum or voting becomes an issue in the future, the workgroup can change the position on proxies.

Motion to Approve Draft Ground Rules with the above changes made by Bill Robinson. Motion seconded by Brad Montgomery. Motion carried.

Presentation on EPA Lead and Copper Rule Compliance in Kentucky

The presentation began with an overview of the Division of Water organizational chart. Peter Goodmann addressed challenges with personnel, available resources, and water. He stated that the EPA would be issuing a health advisory for perflourinated chemicals (PFCs) in drinking water, particularly perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS), and that his inclination is to educate the public. The group briefly discussed risk communications with constituencies.

Tom Gabbard, Assist. Director of the Division of Water, continued the presentation with discussions regarding infrastructure, resilience, sustainability, capacity development, health impacts, the Lead and Copper Rule, and Kentucky public water system compliance data.

The work group discussed action levels versus sampling frequency/density and sampling by special request. The Division of Water encourages peer-to-peer collaboration, proactive approaches to correcting issues, and offers assistance for compliance. The work group also addressed difficulties with the definition and determination of what constitutes an "inventory", and infrastructure versus corrosion control.

The issue of lead service line replacement was raised by a guest. The group discussed service line ownership to the curb versus the meter, and the competing interests of Public Service Commission regulation and individual property rights. Though only about 6% of homes have lead lines, they tend to be in low income neighborhoods with few resources for replacement; noted that Louisville Water Company offers stipends from its Foundation for those purposes. All agreed that lead service line replacement, which is often a simple connection piece between the home and water main, is an enormous undertaking with few funding resources.

The work group also discussed the impetus that the crisis in Flint created with legislators, and the need to educate the public and elected officials about corrosion control versus lead service line replacement, and the complexity of water chemistry.

Review Subgroup Assignments and Schedule

Peter Goodmann reminded the Subgroup leaders of their responsibility to initiate conversations and prepare for scheduled presentations.

Review Report Template

The work group reviewed the "Kentucky Lead Report Focus Area – Public Health & Lead" template and no changes were made.

Adjournment

The meeting adjourned at 3:35 p.m.

Drinking Water Advisory Council
Lead in Drinking Water (LIDW) Work Group
Meeting Minutes
May 18, 2016

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**Kentucky Lead Workgroup
Ground Rules and Open Meeting Rules
Approved May 18, 2016**

1. **Workgroup Governance:**
 - a. The Kentucky Lead Workgroup consists of 12 appointed members.
 - b. The Chair will run the meetings. In the absence of the Chair, the Chair shall appoint an individual to Chair the meeting.
 - c. A quorum is established by attendance in person by at least 7 members. In the absence of a quorum, the group may meet to discuss and communicate, but no decisions or recommendations of the Workgroup will be considered.
 - d. Workgroup members may conference and communicate in meetings by phone, but will not be able to vote by phone.
 - e. Meeting notice, draft agenda and draft minutes will be delivered to group members at last 2 business days in advance of the meeting.
 - f. Public meeting notice will be made by Energy and Environment Cabinet (EEC) at least 24 hours in advance of meetings.
 - g. Workgroup meetings will be open and accessible to the public and Workgroup meeting materials are subject to the Freedom of Information Act (FOIA) and Kentucky Open Records Act.
 - h. Minutes of the Workgroup meetings will be kept and made available to the public after approval.
 - i. The Workgroup may establish sub-groups for the purpose of gathering information and educating workgroup members; Subject matter experts or other resources may be identified by the Workgroup to assist with sub-group activities; sub-group meetings of less than a quorum will not be subject to open meetings requirements.
 - j. Copies of all printed materials presented at the Workgroup meetings will be made available to the public at the meetings.
 - k. All communications to and from the media will be directed to Bruce Scott, Commissioner, Department of Environmental Protection, Energy and Environment Cabinet (EEC) or to the the Workgroup Chair, Greg Heitzman.
2. **Workgroup members will:**
 - a. Make effort to attend majority of meetings.
 - b. Let the Chair know at least 24 hours in advance if he/she can not attend the meeting.
 - c. Come prepared to meetings, listen attentively and not have side conversations.
 - d. Actively participate and respect the input of others during meetings.
 - e. Actively work towards consensus for the benefit of public health and safety.
 - f. Be assigned to one or more sub-committees.
 - g. Silence their phones during the meetings, and excuse themselves from the meeting if they must make or take a phone call.
3. **Decision making and recommendations of the workgroup:**
 - a. The minutes and agenda will be reviewed and approved at the beginning of each Workgroup meeting.
 - b. Chair will work to gain consensus of all Workgroup members for recommendations and action items.
 - c. Decisions and final recommendations of the Workgroup must be approved by a simple majority of Workgroup members in attendance at the meetings.
 - d. Decisions, recommendations and action items will be recorded in the minutes.
4. **Workgroup Attendees (guests, media, liaison, resources, presenters):**
 - a. Workgroup attendees must silence their phones during the meetings, and excuse themselves from the meeting if they must make or take a phone call.
 - b. Each meeting will have a public comment period where attendees may address the workgroup.
 - c. Each attendee will be provided up to 5 minutes to address the group, and the time may be extended at the discretion of the Chair.
 - d. The Chair may call for input from liaisons, resources or presenters during the course of the meeting.
5. **Workgroup Ground Rules may be amended by a majority vote of the Workgroup members in attendance at any meeting of the Workgroup.**

Workgroup Members	Organization	Representing
Greg Heitzman - Chair	BlueWater Kentucky	Water Industry
Jennifer Burt	KY Public Health	Public Health
Obe Cox	Carroll County Water	Medium Systems
Tom Gabbard	KY EEC	KY DOW
Mike Gardiner	Bowling Green Municipal Utilities	KMUA/Medium Systems
Ron Lovan	Northern KY Water District	Large Systems
Brad Montgomery	GRW Engineers	ACEC/Engineering
Bill Robertson	Paducah Water	Large Systems
Tom Rockaway	U of L Engineering	Academic
Justin Sensabaugh	Kentucky American	Private Systems
Rengao Song	Louisville Water	Large Systems
Brian Thomas	Marion Water Department	Small Systems
Liasons:		
Gary Larimore	Ky Rural Water	
Kay Sanborn	KY AWWA	
Peter Goodmann	KY EEC	
Bruce Scott	KY EEC	
Recorder:		
Carole Catalfo	KY EEC	
Sub-Group (up to 5 members)	Report Out	Member 2
Public Health	April	Tom Rockaway
Regulatory/Legislative	May	Ron Lovan
Treatment/Corrosion Control	June	Brad Montgomery
Distribution/Piping	July	Tom Rockaway
Training	August	Tom Gabbard
Finance	September	Ron Lovan
Early Warning/Monitoring	October	Jennifer Burt
Communication/Education	November	Ron Lovan
		Member 3
		Greg Heitzman
		Justin Sensabaugh
		Bill Robertson
		Mike Gardiner
		Greg Heitzman
		Greg Heitzman
		Greg Heitzman
		Brad Montgomery
		Member 4
		Obe Cox
		Justin Sensabaugh
		Rengao Song
		Member 5
		Resource 1 Resource 2
		Matt Rhodes (JC Health Dept)
		Kay Sanbor Tom Fitzgerald
		Gary Larimore (KRW)
		Matt Rhodes (JC Health Dept)
		Kelley Dearing Smith (LWC)

2016 Flint Water Crisis

Presentation

Northern Kentucky

**Water Training
Seminar**

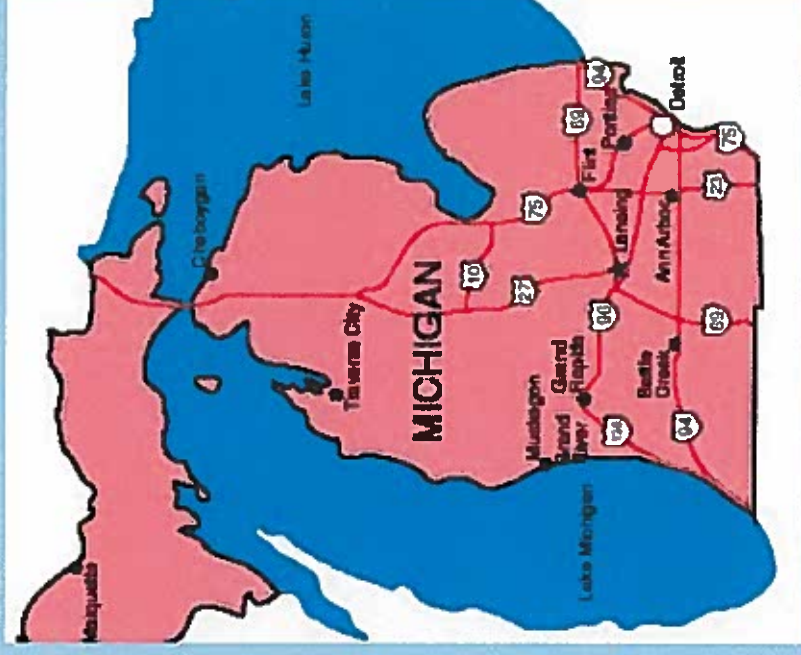
May 4, 2016

**Greg C. Heitzman
BlueWater Kentucky**



Flint, Michigan

- Population of 100,000 (down from 200,000 in 1970)
- 55% Black, 35% White, 10% Other
- 14.6% unemployment (2014)
- Median Household Income of \$24K; Michigan is \$48K
- 42% living below poverty level (2nd highest in nation)
- Median Home Value of \$29,000
- 10% with college degree



Flint Water Crisis



- Failure of water utility
- Failure of local government
- Failure of state government
- Failure of environmental regulator
- Major breach of public's trust in tap water



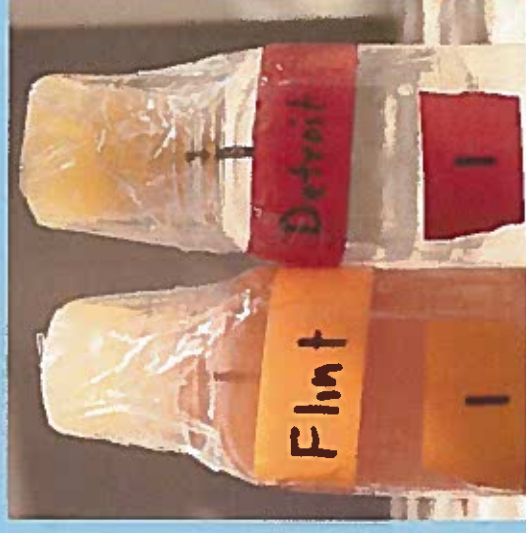
Flint Water Crisis

- City in receivership, under Emergency Management of State of Michigan
- Detroit supplied water to Flint since 1967
- Decided in 2013 to switch water supply from Detroit to the Karegnondi Water Authority (KWA) in order to avoid Detroit rate increases.
- Requires a pipeline to KWA to be complete in 2016
- In the interim, Flint reactivated their 1967 water treatment plant until pipeline is completed Lake Huron reactivate a 1972 water treatment plant to save money
- Discontinued Detroit Water Supply in April 2014
- This plan was approved by the State's Emergency Manager



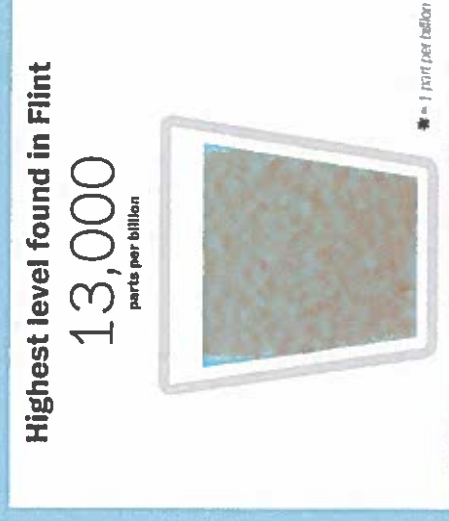
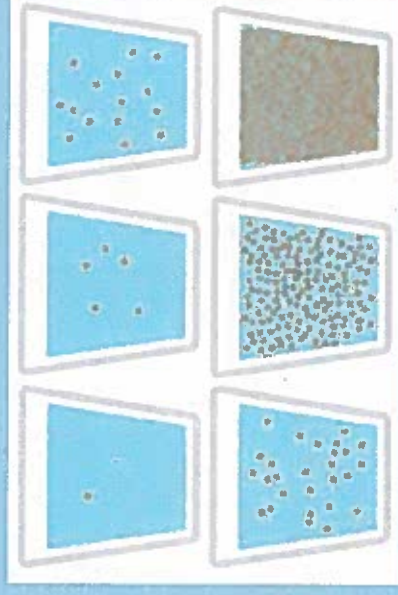
Flint Water Crisis

- In April 2014, water is treated by the Flint Water Plant with source from the Flint River
- Flint River is high in chlorides (corrosive)
- Flint did not treat for corrosion; Detroit used Ortho-phosphates for corrosion control
- Discolored tap water in Flint shows up, water was declared safe to drink by Michigan Regulators
- Flint cited for not meeting Disinfection By Products Rule (high THMs) in 2014



Flint Water Crisis

- High blood lead levels discovered in 2015, after research study by Hurley Medical Center in Flint
- Source determined to be Flint Tap Water
- Estimated 6,000 to 12,000 children affected
- Lead levels in tap water exceeded 13,000 ppb, 800 times EPA action level of 15 ppb
- Flint returned to Detroit Water in October 2015
- March 2016, samples in Flint still exceed 100 ppb (15 ppb is action level)



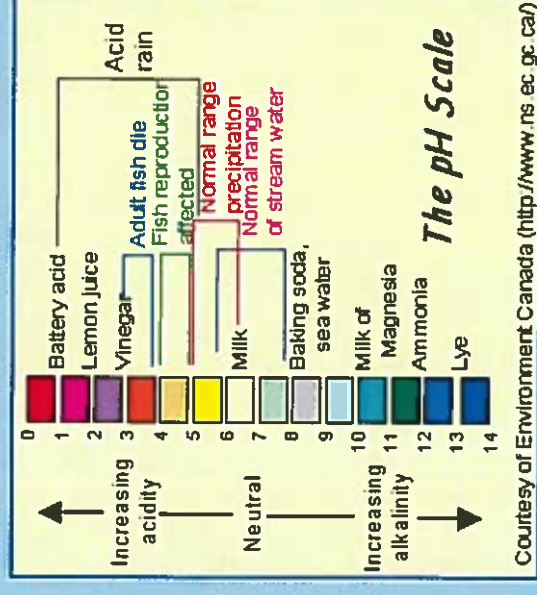
Water Comparison

Detroit Water:

- Source is Lake Huron, a stable, clean source
- Water exceeded EPA regulations
- Practiced corrosion control with ortho-phosphate treatment to coat metallic pipes
- Wholesaled water to Flint and other Michigan cities

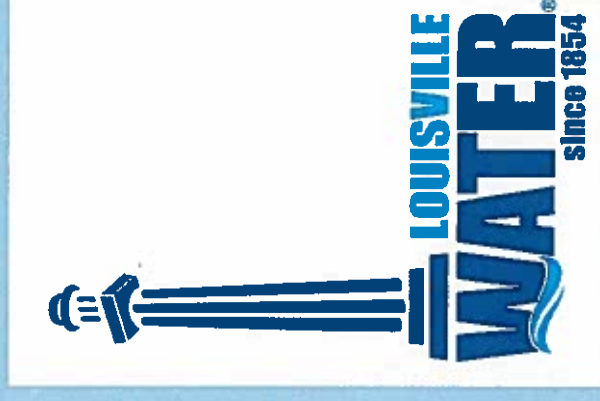
Flint Water:

- Source is Flint River
- "Flashy" source water (high turbidity, industrial waste)
- Lower pH, more acidic than Detroit water
- No corrosion treatment to buffer water
- Dissolved the protective coating inside of lead pipes and plumbing fixtures
- Lead levels exceed 13,000 parts per billion (EPA action level at 15 ppb)



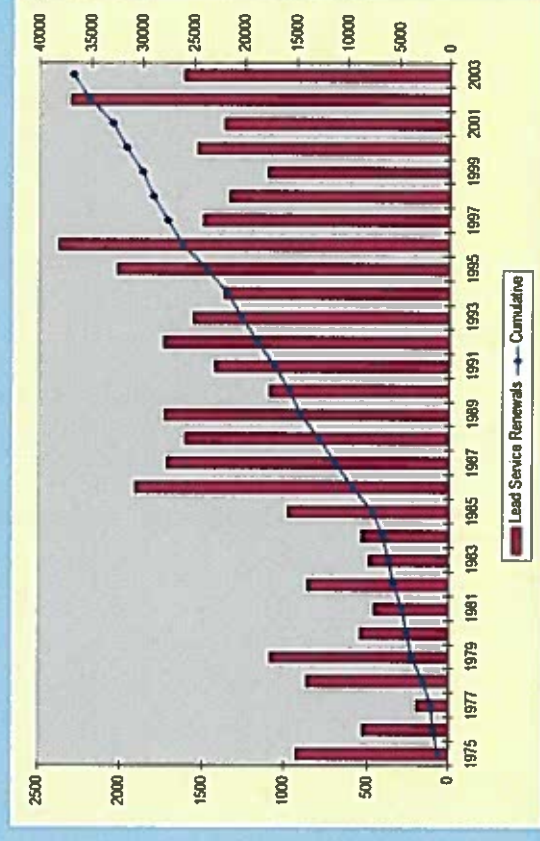
Louisville's Tap Water

- Louisville Pure Tap exceeds all EPA Drinking Water Regulations
- Consistently voted among the best Tap Waters in the United States (1982, 2008, 2013, 2015)
- Treats Ohio River Water (flashy river source like Flint)
- Adjust pH to 8.0 (slightly basic), using lime with a moderate calcium carbonate hardness (150-160 mg/l) to provide protective layer and corrosion control.
- Louisville has always complied with the 1991 EPA Lead and Copper Rule (< 15 ppb)



Louisville's Lead Program

- In 1935, Louisville had approximately 75,000 lead service lines
- Louisville phased out lead service lines beginning in 1937, replaced with copper tubing from water main to meter set to tail piece
- A proactive lead service line replacement program began in 1985, with a goal to replace 1,000 to 1,500 lead service lines each year.
- A lead service line inventory was conducted in 1987 to identify lead pipes from construction records, home age, field surveys and excavations.



Louisville's Lead Program

- In 1985 a policy was adopted to replace any lead service line whenever discovered (leak, main replacement, excavation), or when customer requested replacement
- Approximately 7,500 lead service lines remain, goal to eliminate by 2025, estimated cost at \$18 to \$20 million
- Less than 10% lead service lines on public side have lead on private side of meter
- LWC has an on-line database for customers to ID lead pipes at www.louisvillewater.com



The screenshot shows a news article from The Courier-Journal. The article title is "Louisvillians can now look up lead water lines" by James Bruggers, dated March 18, 2016. The article features a map of Louisville, Kentucky, with red dots indicating the locations of lead service lines. The map is titled "Location of lead service lines in Louisville". The article also includes a photo of a person working on a pipe and a logo for "the BUILDING BETTER". The navigation bar at the top of the article includes "Louisville lead", "NEWS", "SPORTS", "LIFESTYLE", "ENTERTAINMENT", "OPINION", "KENTUCKY DERBY", "ARCHIVES", and "USA TODAY".

Louisville's Lead Program

- An active public and consumer education program was developed by LWC, including web site information, fliers, postcards, letters.
- Following the Lead Containment Control Act of 1988, Louisville Water began a partnership with public and private schools for:
 - ✓ Lead sampling
 - ✓ Water coolers/fountains that contained lead line tanks or fittings
- Partnership with schools continues today
 - ✓ Lead
 - ✓ Cross connection
 - ✓ Boil water

Louisville Water Company
replaced its lead service line with a new copper line near your home.

When we finished, we flushed your water lines for 60 minutes.

Now, for the next 30 days we need you to flush the lines for help ridges each morning or after an extended period of no water usage. Flushing a toilet twice or running a shower or bath will flush your lines. Allow the cold water line to run for two minutes before using water for cooking or drinking.

2 minutes

30 days

before

after

We also recommend you:
Remove any faucet aerators and clean them of any particles that may have accumulated.
(The aerator is usually at the tip of most faucets and can be screwed on and off.)
Discard two cycles of tea from automatic tea makers.

Because we've replaced you to flush your lines, you will receive a credit on your next water bill.

For more information on our lead service replacement program, please visit LouisvilleWater.com or call 502.583.6610.

For the next 30 days, flush the lines for two minutes each morning or after an extended period of no water usage. Flushing a toilet twice or running a shower or bath will flush your lines. Allow the cold water line to run for two minutes before using water for cooking or drinking.

2 minutes

30 days

?

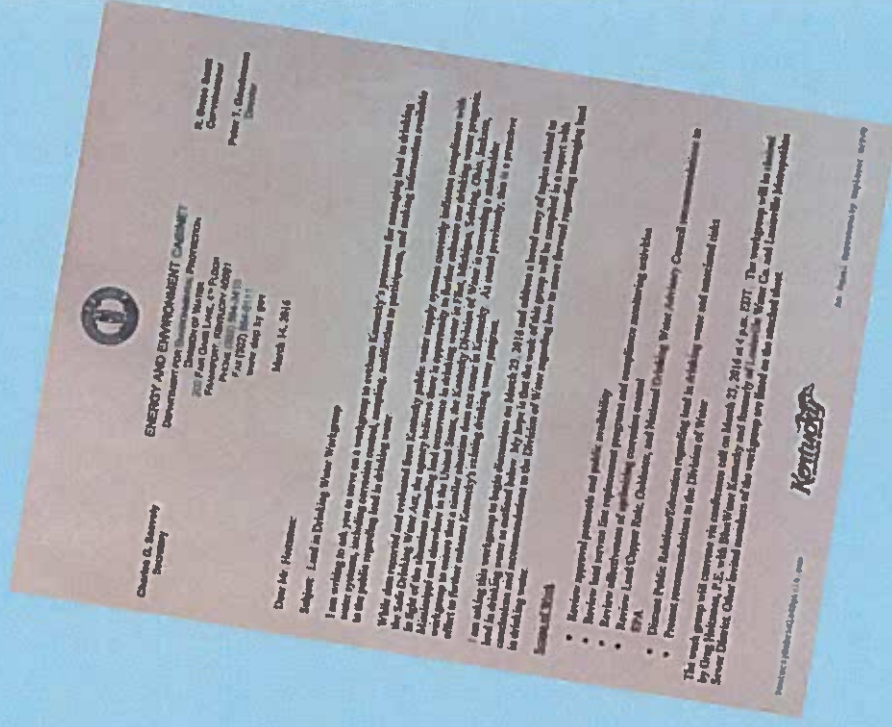
If you have questions about the work we did contact us at **502.583.6610** and ask to speak with the Project Manager or send an email through our web site: LouisvilleWater.com.

Public health is our number one priority and your drinking water meets all Environmental Protection Agency standards for lead. Louisville's drinking water does not contain lead when it leaves the treatment plants and we treat the drinking water to minimize potential corrosion of plumbing lines. To learn more about lead, go to LouisvilleWater.com and click on "water quality." Or visit the Environmental Protection Agency's consumer web site at: <http://water.epa.gov/whr/info/lead/index.cfm>

LOUISVILLE WATER

Kentucky Lead Workgroup

- Kentucky established a Lead Workgroup in March, 2016
- Diverse representation:
 - ✓ Small, medium and large utilities
 - ✓ Regulators
 - ✓ Academic
 - ✓ Engineering
 - ✓ Public Health
 - ✓ KY-TN AWWA, KY Rural Water, KMUA



Kentucky Lead Workgroup

- First meeting held April 20, 2016
- Workgroup meets monthly
- Sub-teams established in the following areas:
 - ✓ Public health impacts of lead
 - ✓ Kentucky compliance record with Lead and Copper Rule
 - ✓ Treatment/corrosion control
 - ✓ Distribution infrastructure
 - ✓ Financing lead replacement
 - ✓ Future lead regulations and legislation
 - ✓ Communications/Education

Kentucky Lead Workgroup

- Expect work to be completed by December, 2016
- Deliverables:
 - ✓ Power point presentations on each topic area
 - ✓ Briefing report by each sub-team/topic area
- Workgroup report will provide the following:
 - ✓ a summary of Kentucky's compliance with EPA's Lead and Copper Rule
 - ✓ Best practices for treatment of lead in drinking water
 - ✓ Best practices for removal of lead pipes, fixtures, etc.
 - ✓ Preparation for future regulatory changes (lower action levels)
 - ✓ Best practices for sharing lead information and educating consumers
 - ✓ Financing practices to fund replacement programs

Best Practices Emerging



- On-line lead database
- Free water sampling for lead
- Lead education materials
- Proactive lead replacement programs
- Lead replacement subsidy or finance program for homeowner's portion of lead piping
- Optimized water treatment for corrosion
- School partnerships for lead testing and lead plumbing replacement

Regulatory Possibilities:

- Reduction in Action level below 15 ppb
- Possibly a MCL for lead
- Change in sampling (cycles, size, frequency, locations)
- Strict water sampling protocol for lead
- Mandatory replacement programs (xx% per year)
- Mandatory lead education materials provided to for consumers
- Private lead line replacement requirements for homeowners
- Specific lead action steps for schools, daycares and public facilities



Questions ???

Contact Information:

Greg Heitzman, PE

gheitzman@bluewaterky.com

www.bluewaterky.com



BlueWater
Kentucky

Sources for Presentation:

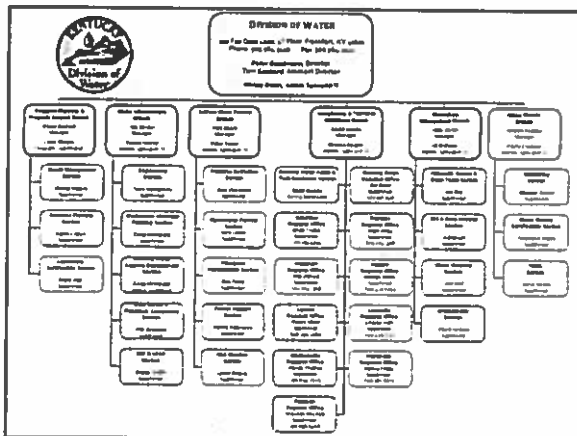
- Wikipedia
- Louisville Water Company
- Kentucky Lead Workgroup
- Courier Journal and on-line media reports

Presentation to Lead Working Group Kentucky LCR Compliance History

Tom Gabbard, Assistant Director
Kentucky Division of Water



May 18, 2016



DOW Organization and Personnel Issues

- 5/6 managers have less than 2 years
- Many new staff; over 42 new employees in 2015
- Institutional knowledge challenges; especially in drinking water!
- Reorganization proposed; re-establishes a Drinking Water Branch
- Moving to new building in June

Secretary Snavely's View

- Ensure that we are implementing the statutes, regulations and programs so that we are protecting human health and the environment
- Work in a business friendly manner
- Work collaboratively with those that we regulate and with stakeholders

Major Kentucky Water Challenges

1. Regulations and Water Quality - compliance with water, wastewater and stormwater regulations to improve water quality
 - Drinking Water – Disinfection By Products, Agal Toxins, Emerging Contaminants, Lead
2. Aging Infrastructure – renewing water infrastructure and upgrades to comply with regulations
 - Proactive Capital Investments
3. Water Rates and Affordability
4. Workforce – workforce availability, talent development and succession planning

Drinking Water System Info

- 445 Public Water Systems
- Serve more than 95% of Kentuckians
- Small systems state: more than half of PWSs serve <3300
- 138* Surface Water Systems
 - 177 surface water intakes
- 113* Groundwater Systems
 - 236 groundwater sources: 16 mines/springs; 220 wells
- 194 Systems (consecutive) that do not produce water, but only purchase water from other PWSs
- 415 systems are interconnected (93%)
 - N.B. Many systems that produce water also purchase water from other systems.
- *5 Systems that have both groundwater and surface water sources

Drinking Water Infrastructure Info

- 213 drinking water treatment plants (average age is 36 years)
- 1842 storage tanks (average age is 26 years)
- 58,783 miles of water lines (average age is 38 years)
- 11,607 miles older than 50 years (16%)
- Estimated drinking water infrastructure improvement needs through 2025 is \$1.9 billion
- Average monthly drinking water bill is \$_____
- Avg fee for 4,000 gallons (Non-Municipal) = \$32.24
- Avg fee for 4,000 gallons (Municipal Inside) = \$26.70
- Avg fee for 4,000 gallons (Municipal Outside) = \$33.41

Resilience & Sustainability

- Goal: resilient and sustainable communities requires sustainable and resilient systems (e.g. water utilities and infrastructure)

Sustainability

- The ability to continue to operate indefinitely in a functional, fiscally sound manner and sustain compliance.
 - Infrastructure & Asset Management
 - Personnel & Management
 - Operations
 - Compliance
- Triple bottom line
 - Social
 - Economic
 - Environmental
- Difficult to disentangle the interdependent variables

Sustainability

- Societal, Environmental and Economic sustainable uses are interrelated
 - Infrastructure
 - System Redundancy
 - Community Resilience



Resilience

- Capacity of systems to survive, adapt and grow in the face of stresses, upsets and disasters
- Systems must transform when required
- Humans, organizations, systems and societies are not inherently resilient
 - Plan
 - Learn
 - Adapt
 - Improve

Resilience and sustainability of Kentucky's water systems

- Many systems are experiencing little or no growth, and numerous systems are experiencing declining growth.
- The costs for small systems to sustain infrastructure and operate in compliance with federal rules is in some cases an unsustainable economic burden.
- Medium and large systems are also challenged by low growth and the "conservation conundrum."
- Many utilities historically assumed 20 years of linear growth in customer base to fund major infrastructure projects.

Resilience and sustainability of Kentucky's water systems

- Now: little/no growth in customer base and declining per capita consumption.
- Spreading more infrastructure costs over fewer gallons of water sold. Therefore, many utilities are in a cash-flow bind, and thus are forced to borrow more and increase rates.
- Water is a high fixed-cost business, and public expectations as well as regulations require utilities to stay ahead of the capacity curve (generally 15-20% excess for growth, emergency and peak demand).
- As demands decline, many utilities have reserve capacities that exceed 25%, however the customer rate base must fund the operation and maintenance, capital, depreciation, and debt service of this overbuilt infrastructure.

Resilience and sustainability of Kentucky's water systems

- Utilities have essentially been backed off the optimal point on the efficiency curve
- The marginal cost to produce or treat the next gallon of water is very low, but the cost to continue to de-marginalize will be very high for the consumer because utilities are de-leveraging their built infrastructure.
- Anticipate 6-10% annual utility rate increases over the next decade until this phenomena corrects itself (~20 years?)
- With inflation annual rate increases of 12-20% could be anticipated.

Resilience and sustainability of Kentucky's water systems

- Some communities are actually experiencing price elasticity in water and wastewater; as customers are changing their behavior due to high water and sewer bills.
- Commercial customers are recycling more of their water, using on-site treatment and more efficient processing of water and wastewater.
- Residential customers are also changing their consumption behavior and replacing dishwashers, washers, toilets and fixtures with lower use and higher efficiency devices.
- The reward for using less water is higher water rates, and the burden is disproportionately higher on low-income families, as they can least afford new low-flow plumbing renovations, high-efficiency washing machines, or the ability to fix leaking pipes.

Capacity Development

- Working with public water utilities to ensure that they have or are developing:
 - Financial Capacity
 - Managerial Capacity
 - Technical Capacity
- Goal: Resilient & Sustainable water systems

Lead in Drinking Water

- What's the status for Kentucky's Public Water Systems?

Health Impacts of Lead

- Lead is a significant public health challenge
- Domestic sources of lead include paint chips, lead tainted dust from paint, hobbies such as bullet and fishing sinker making, drinking water from corrosion of lead from lead seals, lead service lines, solders and lead in fixtures
- Kentucky Department of Public Health has never identified a lead poisoning issue in Kentucky from drinking water

Health Impacts of Lead

- Lead can affect almost every organ and system in your body. Children six years old and younger are most susceptible to the effects of lead.
- Even low levels of lead in the blood of children can result in:
 - Behavior and Learning Problems
 - Lower IQ and Hyperactivity
 - Slowed Growth
 - Hearing Problems
 - Anemia

Health Impacts of Lead

- Pregnant Women
- Lead can accumulate in our bodies over time, where it is stored in bones along with calcium. During pregnancy, lead is released from bones as maternal calcium and is used to help form the bones of the fetus. This is particularly true if a woman does not have enough dietary calcium. Lead can also cross the placental barrier exposing the fetus the lead. This can result in serious effects to the mother and her developing fetus, including:
 - Reduced growth of the fetus
 - Premature birth

Health Impacts of Lead

- Other Adults
- Lead is also harmful to other adults. Adults exposed to lead can suffer from:
 - Cardiovascular effects, increased blood pressure and incidence of hypertension
 - Decreased kidney function
 - Reproductive problems (in both men and women)

Lead in Drinking Water

- Lead in Drinking Water has been a big issue in the news because of Flint MI; Sebring OH, Jackson MS
 - Lead in drinking water not been a significant issue in Kentucky
- Lead occurs in drinking water from corrosion of lead from lead seals, lead service lines, solders and lead in fixtures
- Public Water Systems conduct control corrosion measures to ensure that the produced water is not corrosive to Pb and Cu in the distribution system

1991 Lead and Copper Rule

- Lead and copper enter drinking water primarily through plumbing materials. Exposure to lead and copper may cause health problems ranging from stomach distress to brain damage.
- In 1991, EPA published a regulation to control lead and copper in drinking water. This regulation is known as the Lead and Copper Rule (LCR). Since 1991 the LCR has undergone various revisions.

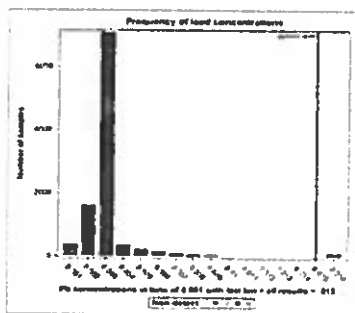
Lead and Copper Rule

- The treatment technique for the LCR requires systems to monitor drinking water at customer taps. If lead concentrations exceed an action level of 15 parts per billion in more than 10% of customer taps sampled, the system must undertake a number of additional actions to control corrosion.
- If the action level for lead is exceeded, the system must also inform through public education about steps they should take to protect their health and the water system may have to replace lead service lines under their control.

Lead Compliance Data

- Following the Flint disaster, DOW began to look at the compliance data for the Lead & Copper Rule (LCR)
- Over the past nine years:
- 409 Kentucky PWSs were subject to the federal LCR
- 20,380 water samples collected at households and businesses were analyzed for lead
- More than 77% of these samples had no detection of lead
- Approximately 1% of these samples exceeded the action level of 15 parts per billion established by EPA in the LCR

Lead Compliance Data



Lead Compliance Data

- LCR requires PWSs sample a number of households in their distribution system, based on population.
- Sampling focuses monitoring on those households most vulnerable to lead and copper contamination, such as single-family homes (installed after 1982) that contain copper pipes with lead solder, contain lead pipes or are served by a lead service line: Tier 1
 - Tier 1 does not include schools or daycares

Lead Compliance Data

- Tier 2 sample sites consist of buildings, including multi-family residences that contain copper pipes with lead solder, contain lead pipes or are served by a lead service line (installed after 1982). Possibility of schools or day cares being in the sample pool
- Tier 3 sample sites consisting of single family structures that contain lead solder (installed before 1983)

Lead Compliance Data

- The action level is exceeded when >10% of the PWS's samples >15 ppb threshold
- Exceedance of an action level determines whether systems need to undertake additional monitoring and treatment technique requirements
- Initial sampling conducted over two consecutive six-month periods. If no action levels have been exceeded, sampling is reduced to annual sampling for two consecutive years, and then every three years if no issues are identified

Lead Compliance Data

- 8 PWSs over the past 10 years have exceeded LCR action levels /ALEs
- Division of Water has required those 8 PWSs to:
 - Notify the public via newspaper and other media
 - Conduct sampling of their source water
 - Conduct additional and broader water quality monitoring at the treatment plant and in the distribution system, including restarting lead monitoring, and
 - Formulate a plan and take action to reduce lead levels.
- 3 PWSs exceeded the action level for lead at a frequency requiring action; all these PWSs have returned to compliance with LCR

Lead Working Group

- Following the Flint disaster, we began to discuss the issue of lead in drinking water with a number of folks in the industry, including Mr. Lovan and Mr. Heitzman, and with EPA leadership
- We had specific concerns regarding DOW's review of new source waters and treatment, but also regarding corrosion control compatibility with system-to-system interconnections and the impact of chemical treatment changes on corrosion control and whether our knowledge review were adequate
- All of us, DOW and the industry do not want a situation to develop in Kentucky similar to Flint or elsewhere
- Kentucky has a good track record regarding the LCR

Lead Working Group

- Other concerns
 - What are the protocols being used by PWSs
 - What various public water systems were doing in response to identified Pb issues
 - Communication about lead and public health risk
 - Are the PWS's and DOW's review and communication protocols adequate to address an identified issue in a timely manner
- Determined early in the year to convene a stakeholder workgroup to look at these and other related issues, consistent with the DOW's collaborative approach with the drinking water industry

Questions?

- Contact:
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Kentucky Division of Water
200 Fair Oaks
Frankfort, KY

502-564-2150
Tom.Gabbard@ky.gov

Lead Corrosion & Control

Rengao Song, Bill Robertson,
Brad Montgomery, and Justin Sensabaugh



Acknowledgement

Richard Brown, Michael Schock, & LWC Staff

Water Lead/LSLs Correlated to Blood Lead: Europe

- Lead in water > 5 ppb significantly increased blood lead ($p > 0.001$) in young women, and intervention excluding tap water a few months dropped blood lead 37% (Fertmann et al., 2004)
- Children in France (6 months-6 years) had 50% higher blood lead if they consumed tap water and had an LSL, and the 95thile blood lead level for this group was increased by 256% (Etchevers et al., 2014)

Presentation Outline

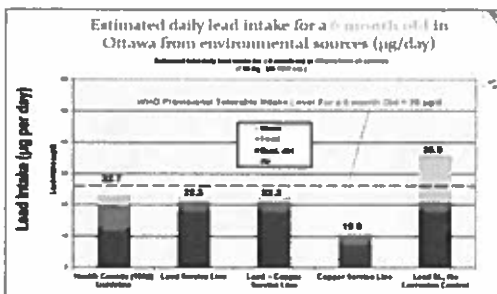
- Background
- Corrosion chemistry in drinking water
- Corrosion control methods
- Bench-top corrosion research tools
- Long-Term LCR Revisions and impacts
- Take home messages
- LCR monitoring case study -LWC

Historical Corrosion Management

- Iron corrosion
 - Prevent Tuberculation
 - Prevent pipe loss
 - Prevent red water
- Controlled by
 - Ferric oxides & calcium carbonate films at pH >8
 - Polyphosphate addition –NOT orthophosphate



Daily Lead Intake: Water vs Other Sources



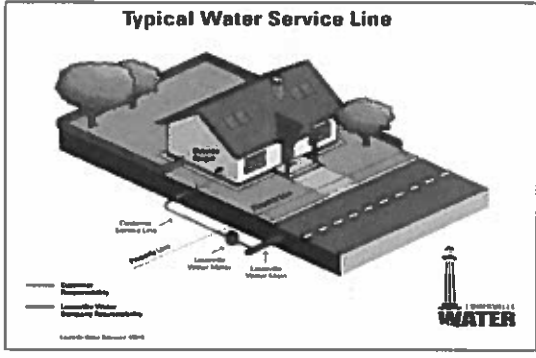
Drinking water normally is not a major source of lead exposure. It can be a significant source under the condition of lead service line with no corrosion control.

Historical Corrosion Management

- Copper corrosion
 - Prevent pitting corrosion
 - Prevent uniform (general) corrosion
- Controlled by
 - Prevent microbiological growth
 - Maintaining low DIC/high pH
 - Allowing time for films to form
 - Orthophosphate – ongoing treatment but must be maintained



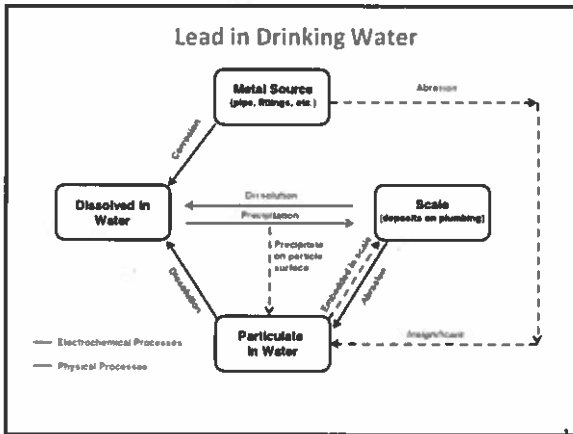
Lead Sources from Water Service Connections



Abrasion

- Physical disturbances
 - Meter installation/replacement or damaged
 - Service line repair or partial replacement
 - External shut-off valve repair/replacement
 - Street excavation or construction near the house
 - Any part of home plumbing system disturbance
- Hydraulic factors
 - Significant flow changes
 - Flow reversals
 - Pressure transients

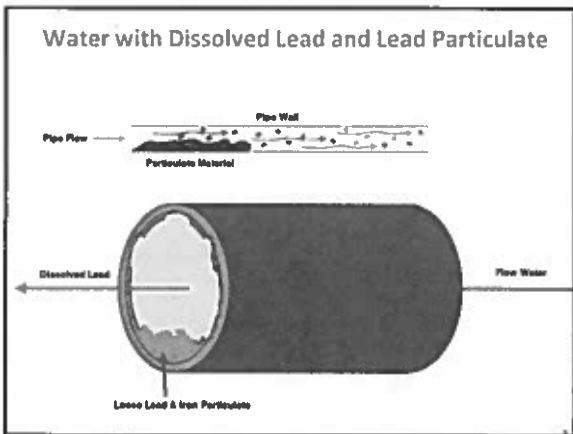
Lead in Drinking Water



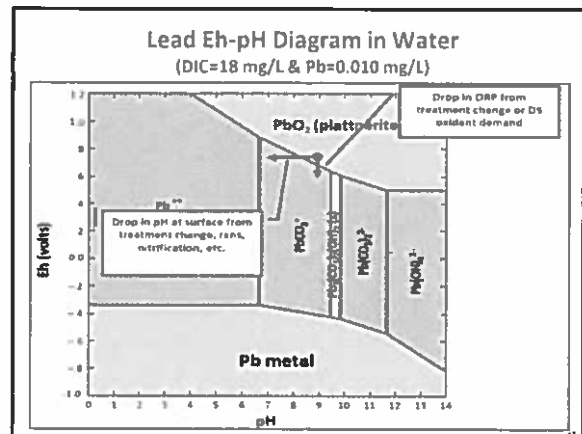
Corrosion Basics

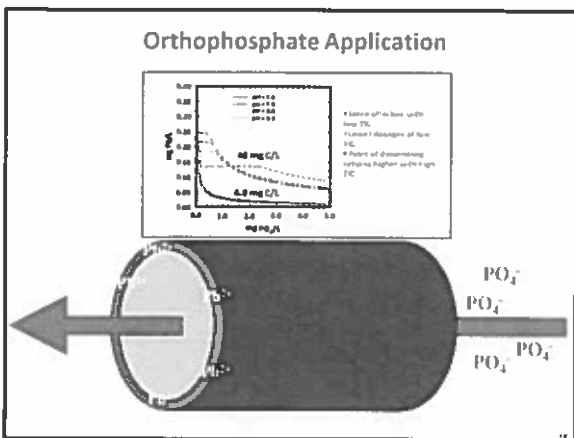
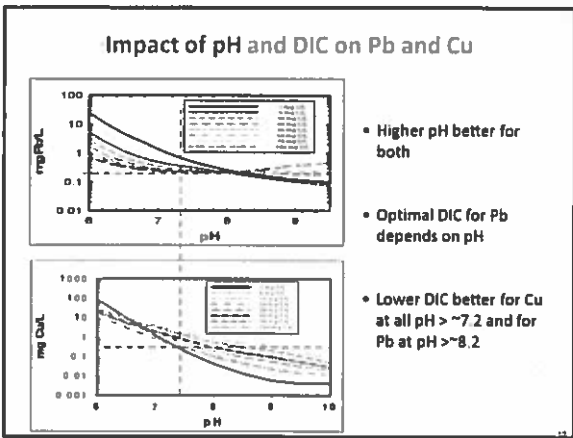
- Corrosion in drinking water: An electrochemical interaction between metal surface and water, resulting in metal release into water
 - Reduction @ Cathode: $2e + 1/2O_2 + H_2O = 2OH$
 - Oxidation @ Anode: $Me = 2e + Me^{2+}$
- Types of corrosion
 - General or uniform
 - Non-uniform: galvanic, pitting, microbial
- Complex processes
 - Pipe material and plumbing practice
 - Water quality factors (pH, DIC, ORP, PO_4^{3-} , Cl and SO_4^{2-} ...)
 - Hydraulic conditions

Water with Dissolved Lead and Lead Particulate



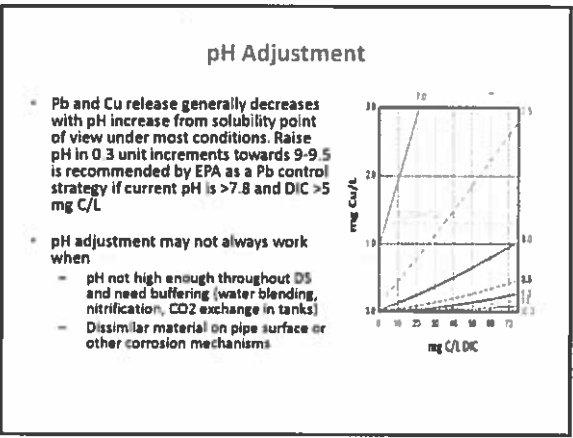
Lead Eh-pH Diagram in Water (DIC=18 mg/L & Pb=0.010 mg/L)



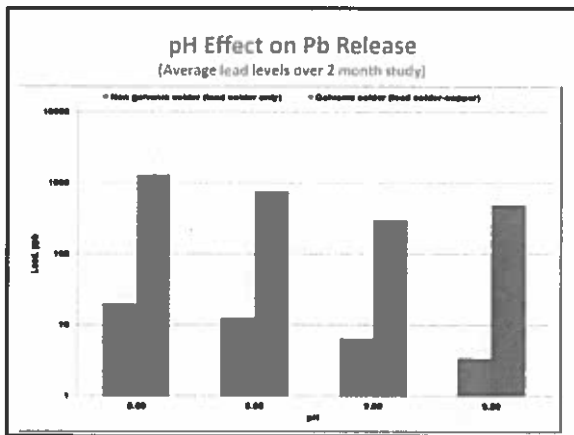


- ### How to Minimize Corrosion
- pH/alkalinity/DIC
 - High pH and low DIC
 - Orthophosphate (PO_4)
 - Best at pH 7.2 to 7.8
 - Issues: microbial? wastewater P?
 - Form insoluble Pb(IV) scale
 - High oxidation state, e.g., via maintenance of free chlorine residual
 - Cl/SO4 Ratio
 - Higher chloride-to-sulfate mass ratio (CSMR) tends to increase lead release under the conditions of galvanic corrosion
 - $CSMR < 0.5$

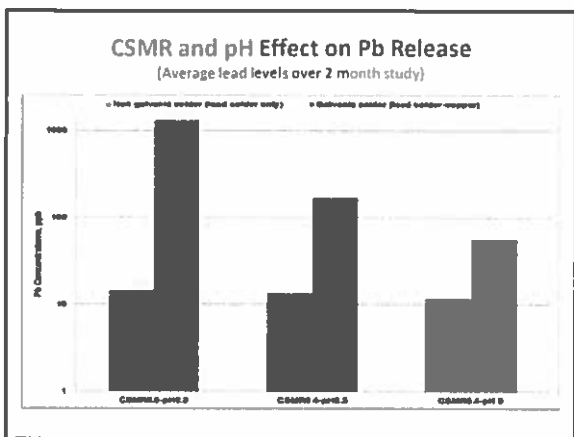
- ### Effect of CSMR
- Higher chloride-to-sulfate mass ratio (CSMR) tends to increase lead release under the conditions of galvanic corrosion
 - A threshold CSMR of 0.5 was reported: Significant lead leaching may occur when $CSMR > 0.5$
-



- ### Bench Scale Research Tools
- Two Types of coupons can be used
 - Non-galvanic solder (NGS) coupon - 50:50 Pb:Sn solder, 1" / 1/8" (L/D), epoxied to the bottom of a 120 mL glass jar
 - Galvanic solder (GS) coupon - 50:50 Pb:Sn solder placed inside copper coupling (right picture)
 - 50:50 Pb:Sn solder - 1" / 1/2" (L/D)
 - Cu coupling - 1.2" / 5/8" (L/D)
-

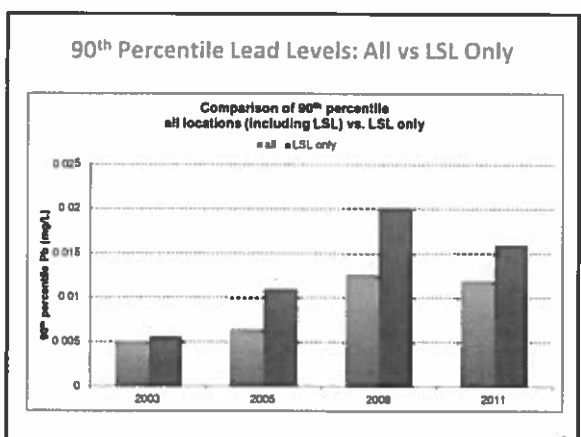


- ### Long-Term LCR
- Long-Term LCR (LT-LCR)
 - Scheduled to be proposed by USEPA sometime in 2013-2014 2015-2017?
 - Likely promulgated two years later
 - May include
 - Revisions to sampling
 - New or re-emphasized OCCT
 - PLSLR and other LSL issues
 - AL?

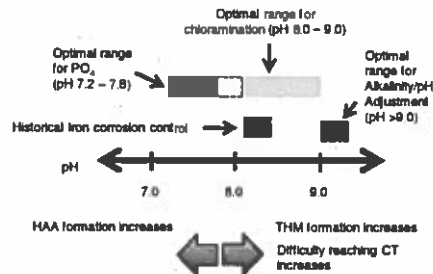


- ### LTLCR – Potential Impact of Revisions
- Some systems currently in compliance need to
 - Re-assess current OCCT
 - Change OCCT
 - Change LSL replacement activities
 - Repeat OCCT studies (pipe loops)
 - Separate Cu and Pb
 - Only or More LSLs as Tier 1 sites
 - Change sampling protocol
 - Lower AL
 - More WQP
 - More sites
 - Higher frequency
 - Use control charts
 - Public Education

- ### Lead and Copper Rule (LCR)
- Promulgated 1991
 - Sample "first flush" in selected homes with great likelihood of high Pb levels (LSLs or Pb solder)
 - Number of locations depends on system size
 - Action Level (AL)
 - 0.015 mg/L for Pb, 1.3 mg/L for Cu
 - Exceedance of is NOT an MCL violation, but can trigger other actions (TT)
 - Optimized Corrosion Control Treatment (OCCT)
 - Water quality parameter (WQP) monitoring
 - public education, and
 - lead service line replacement (LSLR)
 - 2000 & 2007
 - Minor revisions – rule framework basically unchanged



Balancing Multiple Regulations: DBP Example



LCR-Year Monitoring Case Study

- Develop strategy to improve site representativeness and sample integrity – *Noise Reduction*
- Establish team involving all key departments
- Historical data review
- Identify factors that may inadvertently alter sample representativeness – *False Signal*
- Irregular/abnormal distribution and/or residential disturbances
- Customer performs the sampling

Take Home Messages

- Personal involvement from top management
- A WQ team from across the company
- A WQ surveillance team with internal and external customers
- Be proactive: 5Cs (character, comprehensiveness, communication, commitment, and creativity)
- Define WQ signal from noise
- Review historical data to calculate 90th percentile using only LSL locations
- Profile (ten 1L samples) at selected homes
- Investigate high velocity flushing after LSL replacement
- If close to AL or ~8 ppb, look at Pb control alternatives (PO4)

LCR-Year Monitoring Case Study

3C's Required For Success:
Communication + Commitment + Collaboration

Quarter	LCR Tasks
Q1	<ul style="list-style-type: none"> ➢ Form team with support from executive leadership ➢ Establish communications with team members & state regulators ➢ Initiate surveying of LCR sample sites
Q2	<ul style="list-style-type: none"> ➢ Collect field & residential information to finalize sample list ➢ Verbal & written communications with customers ➢ Upload all LCR sample sites into GoSync mapping tool for field users ➢ Begin sample collection: coordinate delivery & pick-ups of samples
Q3	<ul style="list-style-type: none"> ➢ Continue sample collections through September ➢ Laboratory analysis and reporting ➢ Customer result notifications
Q4	<ul style="list-style-type: none"> ➢ Calculate 90th percentiles, finalize all reporting

Take Home Message

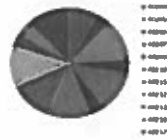
- Three levels of WQ issues (Result-code)
 - System-wide: treatment plant related (water source or and/or source WQ changes, treatment changes/loss of treatment control, unstable water leaving the plant(s))
 - Area-wide/Zip code: distribution tanks/reservoirs, major water-main breaks, downstream low demand, nitrification, etc.
 - Individual customers: low water use homes may perpetually have high lead; stagnation can affect protective scales within LSLs; LSL disturbances happen daily
- Distribution water quality management
 - Customers drink tap water not finished water in clear wells
 - Water quality can change as it travel from the plant to customer taps: pH drop, nitrification, bio-chemical reactions

TIMELINE	LCR TASKS
JAN - MAR	<ul style="list-style-type: none"> ➢ Establish quarterly meeting (Engineering, Water Quality, Plant Operations, Public Relations, Distribution Logistics, etc) ➢ Establish communication with NYSDOH, identify regulator overseeing LCR ➢ Use service line records to generate initial list of LSL locations (spatially representative of entire DS) ➢ Field verify LSL by visual confirmation in the field ➢ Prepare initial list of LSL locations that could be registered as LCR sites ➢ Set up billing credit with Accounting for participation ➢ Monitor bi-weekly WQSP at treatment plant
APR - MAY	<ul style="list-style-type: none"> ➢ Quarterly meeting ➢ Research inquiry for residential information ➢ Gather field information to proximity to LCR sites locations ➢ Register LCR sampling locations ➢ Verbal communications with selected customers (2 weeks prior to collection) ➢ Upload all potential site locations into GoSync spreadsheet ➢ Prepare for laboratory analysis (contact or in house); receive supplies, procedures, etc ➢ Review customer sampling procedures ➢ Monitor bi-weekly WQSP at treatment plant ➢ Collect WQSP DS samples 2 weeks apart
JUN - SEP	<ul style="list-style-type: none"> ➢ Quarterly meeting ➢ Monitor bi-weekly WQSP at treatment plant ➢ Send 1st 6-month WQSP data to NYSDOH ➢ Communicate with customer to coordinate delivery & pick-ups ➢ Confirm no record activity within sampling zone ➢ Stop sampling (if/when/where water stops, however may be sampled then) ➢ Define lead collection site with sampling instructions to selected sites ➢ Collect minimum of 98 samples (equal to 98 LSL + 98 LSC) ➢ Register new sites with NYSDOH ➢ Laboratory analysis & reporting ➢ Customer result notification provided within 90 days of receiving result ➢ Clarify results notification to the NYSDOH no later than 3 months following the end of the monitoring period (12/31/04 or earlier)
OCT - DEC	<ul style="list-style-type: none"> ➢ Quarterly meeting ➢ Monitor bi-weekly WQSP at treatment plant ➢ Send final and Complete results (per WQ) to NYSDOH by October 15th ➢ Collect WQSP DS samples 2 weeks apart ➢ Send 2nd 6-month WQSP data to NYSDOH

Sample Sites Selection

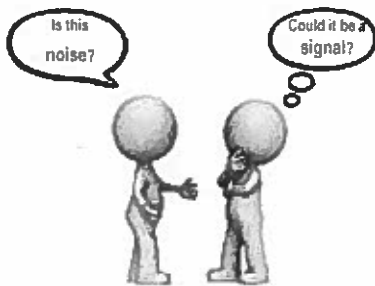
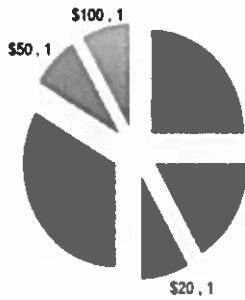
- Spatial representation of wide DS
- Field verification of LSL
- Identify significant DS impacts in proximity of sample site within a 3 month period prior to collection
- Gather residential information: shut offs, water usage, contact information
- Customer communications: verbal commitment to participate, details about residence, schedule sample collection
- Offer \$20 billing credit as incentive

2014 LSL sampling distribution



Customer Incentives Sponsored by Water System (credit card, credit on water bill, other incentive)

■ none ■ \$10 ■ \$20 ■ \$25 ■ \$50 ■ \$100



LEAD IN DRINKING WATER WORK GROUP
 Kentucky Division of Water, Conf. Room 204A
 April 20, 2016

PUBLIC SIGN-IN SHEET

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Larry Taylor	DEP-Co	Larry.C.Taylor@ky.gov	502-564-2150
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Kent Chandler	Ky Office of the AG	Kent.chandler@ky.gov	502 696 5456
Amber Agee	KY DPH	amber.n.agee@ky.gov	602-564-4637
Annette Dupont Ewing	KMUUA	adekmuua@gmail.com	502 395 0082
Sarah Jan Gaddis	DOW	Sarah.gaddis@ky.gov	502-564-3410

LEAD IN DRINKING WATER WORK GROUP
 Kentucky Division of Water, Conf. Room 204A
 May 18, 2016

WORK GROUP MEMBER SIGN-IN SHEET

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Tom GABBARD	DOW	tom.gabbard@ky.gov	502-864-3440
Ron LOVAN	NKY WATER	RONLOVAN@NKYWATER.ORG	859-816-7458
Jennifer Burt	Hq DPH	jennifer.a.burt@ky.gov	(502) 564-4537
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16-OMD-102

May 19, 2016

In re: *The Courier-Journal*/Energy and Government Cabinet – Lead in Drinking Water Work Group

Summary: Weight of legal authority supports complainant's position that the Energy and Environment Cabinet's Lead in Drinking Water Work Group is a public agency for open meetings purposes and that its unpublicized March 2016 telephonic meeting constituted a violation of the Open Meetings Act. Work Group presents no arguments supporting the propriety of the unpublicized telephonic meeting or its position on the application of the Open Meetings Act to it.

Open Meetings Decision

Courier-Journal reporter James Bruggers appeals the Energy and Environment Cabinet's Lead in Drinking Water Work Group's response to his April 5, 2015, complaint alleging multiple violations of the Open Meetings Act. Specifically, Mr. Bruggers complained that the Work Group's unannounced telephonic meeting conducted in March:

- was a special meeting for which no prior written notice, consisting of date, time, place, and agenda, was provided in contravention of KRS 61.823(3) and (4);
- violated KRS 61.810(1) insofar as the public was excluded; and
- was prohibited by Kentucky caselaw and Attorney General open meetings decisions because it was conducted by telephone.

As a means of remedying the alleged violations, Bruggers proposed that the Work Group “admit to violating the open meetings law, and promise to hold all future meetings of this Work Group in full compliance with that law.”

The Work Group responded to Mr. Bruggers’ complaint, through counsel, on April 5. The Work Group advised:

The Cabinet has cancelled the April 6, 2016, scheduled meeting of the Lead in Drinking Water Workshop. Any future meeting time, date, and location for this work group will be made public as appropriate.

Shortly thereafter, Mr. Bruggers initiated this open meetings appeal.

In supplemental correspondence directed to this office, Energy and Environment Cabinet General Counsel John G. Horne described Mr. Bruggers’ complaint as lacking “any merit,” disputing his “characterizations regarding prior meetings of the work group in question.” Mr. Horne asserted that Mr. Bruggers’ proposal that the Work Group remedy the violation by admitting that the March meeting violated the Open Meetings Act contradicts KRS 61.846(1).¹ The statute describes the process by which open meeting disputes are initiated and provides, in part:

The person shall submit a written complaint to the presiding officer of the public agency suspected of the violation of KRS 61.805 to 61.850. The complaint shall state the circumstances which constitute an alleged violation of KRS 61.805 to 61.850 and shall state what the public agency should do to remedy the alleged violation. The public agency shall determine within three (3) days, excepting Saturdays, Sundays, and legal holidays, after the receipt of the

¹ Proposed remedies that include agency admission of its violation of the Open Meetings Act are common. Such proposed remedies do not contradict KRS 61.846(1), relating to the evidentiary irrelevance of agency efforts to remedy an alleged violation in an administrative or judicial appeal. On those occasions when the agency implements the proposal that it remedy the violation by admitting the violation, the complaint is generally resolved and administrative or judicial proceedings are unnecessary.

complaint whether to remedy the alleged violation pursuant to the complaint and shall notify in writing the person making the complaint, within the three (3) day period, of its decision. *If the public agency makes efforts to remedy the alleged violation pursuant to the complaint, efforts to remedy the alleged violation shall not be admissible as evidence of wrongdoing in an administrative or judicial proceeding.* An agency's response denying, in whole or in part, the complaint's requirements for remedying the alleged violation shall include a statement of the specific statute or statutes supporting the public agency's denial and a brief explanation of how the statute or statutes apply. The response shall be issued by the presiding officer, or under his authority, and shall constitute final agency action.

(Emphasis added.) In closing, Mr. Horne noted that “[t]he Cabinet responded in writing to Mr. Bruggers stating that it would hold future meetings in accordance with the Kentucky Open Meetings Law.” The Cabinet did not, however, respond to Mr. Bruggers’ allegations by identifying “the specific statute or statutes supporting the [Work Group’s implicit] denial” or provide “a brief explanation of how the statute or statutes apply.” KRS 61.846(1).

The questions presented on appeal are whether the Energy and Environment Cabinet’s Lead in Drinking Water Work Group is a public agency as defined in KRS 61.805(2), and, if so, whether its March 2016 unpublicized telephone meeting violated the Open Meetings Act. In a press release issued by the Energy and Environment Cabinet, the Cabinet’s Division of Water “announced that it has proactively created a work group whose main goal will be to prevent lead from entering the state’s drinking water.” According to the press release, the Work Group consists of “[t]hirteen experts from a broad spectrum of Kentucky’s water infrastructure,” including the Kentucky Rural Water Association, the KY/TN Section of the American Water Works Association, the Division of Water, the Association of Municipal Water Agencies, and the University of Louisville. The Work Group, the press release continues, “will develop a report and present recommendations to the Division of Water.” These representations, made by the Energy and Environment Cabinet itself, and

not modified on appeal, describe a public agency as defined in KRS 61.805(2)(g).² Accordingly, we find that the Work Group is a public agency and its meetings are subject to all requirements imposed by the Open Meetings Act.

KRS 61.805(2)(g) defines the term "public agency" as:

Any board, commission, committee, subcommittee, ad hoc committee, advisory committee, council, or agency, except for a committee of a hospital medical staff or a committee formed for the purpose of evaluating the qualifications of public agency employees, established, created, and controlled by a "public agency" as defined in paragraph (a), (b), (c), (d), (e), (f), or (h) of this subsection[.]

In *Lexington Herald-Leader Co. v. University of Kentucky Presidential Search Committee*, 732 S.W.2d 884, 884 (Ky. 1987) the Kentucky Supreme Court determined that a body created by the University's Board of Trustees was a public agency, under the Open Meetings Act, even though it was "an advisory body only." Additionally, in 15-OMD-155 the Attorney General concluded that a committee, established by the Kentucky Board of Education to "narrow [] the search for a firm to assist the Board in finding a new commissioner of education," was a public agency pursuant to KRS 61.805(2)(g). These authorities are dispositive of the issue presented in Mr. Bruggers' appeal and further analysis is unnecessary.

Kentucky's courts have also determined that actions taken by public agencies in the course of telephonic meetings are void. *Fiscal Court of Jefferson County v. Courier-Journal and Louisville Times Co.*, 554 S.W.2d 72 (Ky. 1977). This conclusion was predicated on the recognition that the Open Meetings Act "is designed to require governmental agencies to conduct the public's business in such a way that the deliberations and decisions are accomplished in an

² The Work Group almost certainly qualifies as a public agency under KRS 61.805(2)(f), defining a public agency as "[a]ny entity when the majority of its governing body is appointed by a 'public agency' as defined in paragraph (a), (b), (c), (d), (e), (g), or (h) of this subsection, a member or employee of a 'public agency,' a state or local officer, or any combination thereof[.]" The Work Group provides no information about the manner in which Work Group members were selected, or by whom they were selected, frustrating our ability to conclusively resolve this question.

atmosphere wherein the public and the media may be present.” *Jefferson County Board of Education v. Courier-Journal and Louisville Times Co.*, 551 S.W. 25, 27 (Ky. App. 1977). In later years, the Attorney General adopted this reasoning in determining that telephonic meetings were wholly impermissible under the Open Meetings Act. See, e.g., 02-OMD-206 (determining that city council could not permit a voting member to participate in a public meeting by telephone); 11-OMD-018 (determining that a fiscal court violated the Open Meetings Act when it conducted a telephone poll of its members).

Having concluded that the Lead in Drinking Water Work Group is a public agency for purposes of the Open Meetings Act, we find that the Work Group violated KRS 61.823(3) and (4) by failing to give adequate notice of its March 2016 special meeting.³ Further, we find that the Work Group violated KRS 61.810(1)⁴ by excluding the public from its March meeting and conducting the meeting by telephone conference call. These acts contravene the mandate of the Act and the judicial recognition that public agencies must “conduct the public’s business in such a way that the deliberations and decisions are accomplished in an atmosphere wherein the public and the media may be present.” *Id.*, *Jefferson County Board of Education*, 551 S.W.2d at 27. Finally, we find that the Work Group violated KRS 61.846(1) by failing to respond to Mr. Bruggers’ complaint in a manner consistent with the statute’s strict legal requirements. The Work Group’s compliance with *all* requirements of the Open Meetings Act is not only warranted “as appropriate” but is legally mandated.⁵

³ Because the Work Group has not adopted a schedule of regular meetings, as required by KRS 61.820, the March meeting was a special meeting the requirements for which are found in KRS 61.823. See, e.g., 92-OMD-1840 (recognizing that “[i]f a public agency holds a meeting in addition to, outside of, or in place of the regular meeting schedule, that meeting is a special meeting”).

⁴ KRS 61.810(1) identifies the thirteen exceptions to the Open Meetings Act authorizing closed session discussion. It is prefaced by the following language:

All meetings of a quorum of the members of any public agency at which any public business is discussed or at which any action is taken by the agency, shall be public meetings, open to the public at all times[.]

This language summarizes the Act’s broad legal mandate.

⁵ To avoid future legal challenge, the Work Group should conduct its first meeting as a special meeting and strictly adhere to the special meeting notice requirements found at KRS 61.823(3) and (4). At this special meeting, the Work Group should adopt a regular meeting schedule, per the requirement found in KRS 61.820, and adhere to that schedule going forward. In all instances, except for those identified in KRS 61.810(1)(a) through (m), the Work Group should conduct its meetings in an open, public forum.

Either party may appeal this decision by initiating action in the appropriate circuit court pursuant to KRS 61.846(4)(a). The Attorney General should be notified of any action in circuit court, but should not be named as a party in that action or in any subsequent proceedings.

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Attorney General

Amye L. Bensenhaver
Assistant Attorney General

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Distributed to:

James Bruggers
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Kentucky Lead Workgroup

Draft Ground Rules

Updated 5-19-16

1. Workgroup Governance:
 - a. The Kentucky Lead Workgroup consists of 12 appointed members
 - b. The Chair will run the meetings. In the absence of the Chair, the Chair shall appoint an individual to Chair the meeting.
 - c. A quorum is established by attendance in person by at least 7 members. In the absence of a quorum, the group may meet to discuss and communicate, but no decisions or recommendations of the Workgroup will be considered.
 - d. Workgroup members may conference and communicate in meetings by phone, but will not be able to vote by phone.
 - e. Meeting notice, draft agenda and draft minutes will be delivered to group members at last 2 business days in advance of the meeting
 - f. Public meeting notice will be made by Environmental Protection Cabinet at least 24 hours in advance of meetings
 - g. Workgroup meetings will be open and accessible to the public and Workgroup meeting materials are subject to the Freedom of Information Act (FOIA).
 - h. Minutes of the Workgroup meetings will be kept and made available to the public after approval.
 - i. The Workgroup may establish sub-groups for the purpose of gathering information and educating workgroup members; Subject matter experts or other resources may be identified by the Workgroup to assist with sub-group activities; sub-group meetings of less than a quorum will not be subject to open meetings requirements.
 - j. Copies of all printed materials presented at the Workgroup meetings will be made available to the public at the meetings
 - k. All communications to and from the media will be directed to Bruce Scott of the Environmental Protection Cabinet or to the the Workgroup Chair, Greg Heitzman
2. Workgroup members will:
 - a. Make effort to attend majority of meetings.
 - b. Let the Chair know at least 24 hours in advance if he/she can not attend the meeting
 - c. Come prepared to meetings, listen attentively and not have side conversations
 - d. Actively participate and respect the input of others during meetings
 - e. Actively work towards consensus for the benefit of public health and safety
 - f. Be assigned to one or more sub-committees
 - g. Silence their phones during the meetings, and excuse themselves from the meeting if they must make or take a phone call.
3. Decision making and recommendations of the workgroup:
 - a. The minutes and agenda will be reviewed and approved at the beginning of each Workgroup meeting
 - b. Chair will work to gain consensus of all Workgroup members for recommendations and action items.
 - c. Decisions and final recommendations of the Workgroup must be approved by a simple majority of Workgroup members in attendance at the meetings.
 - d. Decisions, recommendations and action items will be recorded in the minutes.
4. Workgroup Attendees (guests, media, liaison, resources, presenters))
 - a. Workgroup attendees must silence their phones during the meetings, and excuse themselves from the meeting if they must make or take a phone call.
 - b. Each meeting will have a public comment period where attendees may address the workgroup.
 - c. Each attendee will be provided up to 5 minutes to address the group, and the time may be extended at the discretion of the Chair.
 - d. The Chair may call for input from liaisons, resources or presenters during the course of the meeting.
5. After adoption, Workgroup Ground Rules may be amended by a majority vote of the Workgroup members in attendance at any meeting of the Workgroup.