Milwaukee
Water Works
Safe, Abundant Drinking Water.

Lead Service Line Data Review
Meeting and Conference Call
Friday, June 17, 2016
2:30 – 4:00 p.m.

Meeting topic: What conclusions can we draw on the basis of results to date?
(Focus on partial lead service line replacements and meter inlet valve replacements)

ADDITIONAL INFO:

Variability in the absence of lead service line disturbance

We are providing two data sets that were assembled to demonstrate the variability of lead results in the absence of any type of disturbance of the lead service line (LSL).

Files labelled WRF 4569 contain data that were provided for the Water Research Foundation Project 4569, "Evaluation of Lead Sampling Strategies". Six homes were sampled three times in a three month window using the 12 sequential 1L sampling technique after minimum 6 hour stagnation period. Results are tabulated in "Meeting material for 160617- WRF4569.docx and graphed in WRF4569.xlsx. Note that Ex. 6 - Personal Privacy has internal lead plumbing.

The file labelled "Historical data variability 1998 to 2014.xlsx" contains data from Lead and Copper Rule compliance sampling from 1998 to 2014. These are first draw 1L samples taken after a minimum 6 hour stagnation period. Eleven residences were sampled at least 10 times over the 17-year period. They are all approved LSL sampling sites. Ex. 6 - Personal Privacy with the internal lead plumbing is also in this data set.

Construction practices and notes on sample design

Sewer main replacement: Sanitary sewers are located deeper than water mains and are offset to one side. Replacement of the sewer involves excavation above the sewer; the water main itself is not exposed. The water service lines are exposed but not severed. The new sewer main is "threaded" underneath the water service lines and connected to the sewer laterals for each building. The excavation is opened, sewer is installed, the trench is backfilled and tamped to compact the backfill and the excavation is closed all in the same day. About half a block can be completed each day. Needless to say, there is no need for pressure testing or safe sampling.

"Baseline" samples were collected prior to any construction activity at the site. Samples were collected

as soon as possible after the "tamping" of the backfill, about two weeks after tamping, and about 1 month after tamping. The rationale for the "about two weeks after tamping" sample set was that we wondered if lead levels would return to baseline sooner than one month due to the very short period of time during which the LSLs were being disturbed.

Full lead service line replacement: All these full LSL replacements were performed to rectify a failure (leak) of the service. Therefore, it was not possible to collect a baseline sample where the water rested undisturbed in the line prior to sampling. For three of the four addresses, note that the private side of the LSL was replaced earlier than the city side being replaced. Dates of the work are provided. For these three, simultaneous replacement of both sides was not able to be scheduled. The Ex. 6 - Personal Privacy Ex. 6 - Personal Privacy address did have the full LSL replaced at one time. However, note that the internal plumbing at Ex. 6 - Personal Privacy is made of lead. This is a large property with larger diameter internal plumbing. The first samples in the series reflect internal lead plumbing and NOT impacts of construction activities.

City side lead service line replacement: Since these LSL replacements were all performed to rectify a failure (leak) of the LSL, it was not possible to collect "baseline" samples where the water rested undisturbed in the line prior to sampling.

Meter valve: In this case, the meter inlet valve was inoperable and needed to be replaced. In many cases, this is emergency work. Replacement involves stopping the flow of water to the meter inlet valve, either by turning the water off at the curbstop or freezing the lead service where it comes out of the basement floor. The meter is removed from the "downstream" end of the inlet valve, the LSL is severed, and a new inlet valve is spliced into the line. The meter is reinstalled and water service is restored. In no cases were baseline samples able to be collected for meter inlet valve replacement.

Owner's leak repaired: This is when a homeowner opted to repair, rather than replace, a lead on the private side of the LSL. In these situations, MWW replaces the city side of the LSL only when the owner opts to replace their side, so the result is a full lead service line replacement.