City of Milwaukee Lead in Drinking Water Data Review for Work Done through 5/23/16

Number of Homes Tested and Sampling Frequency by Work Type

Work Type*	Number of Homes	Sampling Frequency
City Line Replacement	39	1 day post-work: 4 homes; 2 days post-work: 13 homes; 3 days post-work: 7 homes; 4 days post-work: 5 homes; 5 days post-work: 4 homes; 6 days post-work: 1 home; 7 days post-work: 4 homes; 8 days post-work: 1 home; 9 days post-work: 1 home; 10 days post-work: 1 home; 13 days post-work: 1 home; 30 days post-work: 27 homes; 60 days post-work: 9 homes
Full Replacement	4	Pre-work: 1 home; 1 day post-work: 1 home; 2 days post-work: 1 home; 6 days post-work: 1 home; 7 days post-work: 1 home; 14 days post-work: 1 home; 30 days post-work: 2 homes; 60 days post-work: 1 home; 85 days post-work: 1 home
Leak Repair	2	1 day post-work: 1 home; 5 days post-work: 1 home; 30 days post-work: 1 home
Meter	5	2 days post-work: 2 homes; 3 days post-work: 1 home; 4 days post-work: 1 home; 8 days post-work: 1 home; 30 days post work: 5 homes; 60 days post-work: 4 homes
Sewer Main Replacement	4	Pre-work: 4 homes; 1 day post-work: 4 homes; 14 days post-work: 4 homes; 30 day post-work: 4 homes

*Full Replacement includes: *"City Lead Service Line Replaced; Homeowner Lead Service Line Replaced", "City Lead Service Line Replaced; Owner Previously Replaced Lead Service Line", "Full Lead Service Line Replacement (Internal Plumbing is Lead)", "Owner's Side Lead Service Line Replaced 3/12/2016; City Lead Service Line Replaced 3/24/2016"*

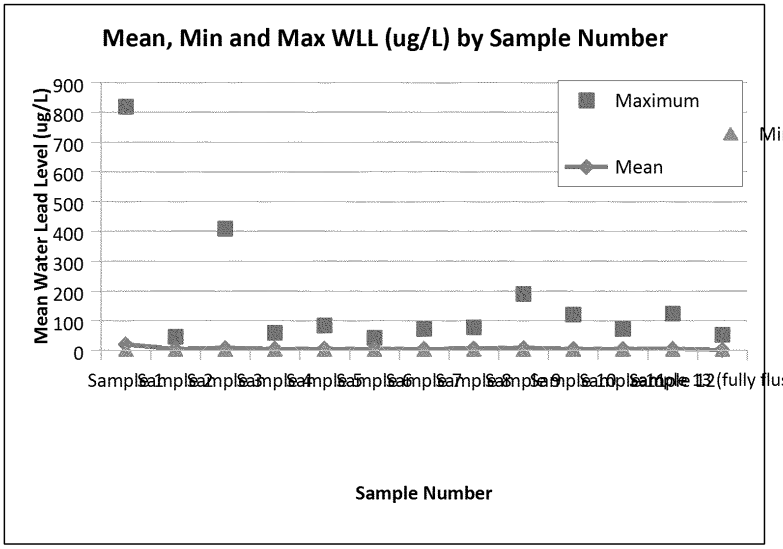
Meter includes: *"Meter Valve", Meter Valve Inlet"*

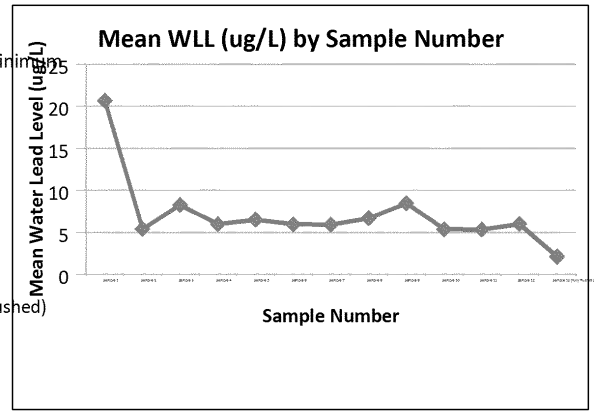
Summary of all Water Lead Levels (WLLs)

N (samples)	N (homes)	WLL (µg/L)							
		Min	Max	Mean	StdDev	P25	P50	P75	P95
1548	54	1	820	7.15	29.54	1	2.2	6.1	20

Summary of WLLs by Sample Number

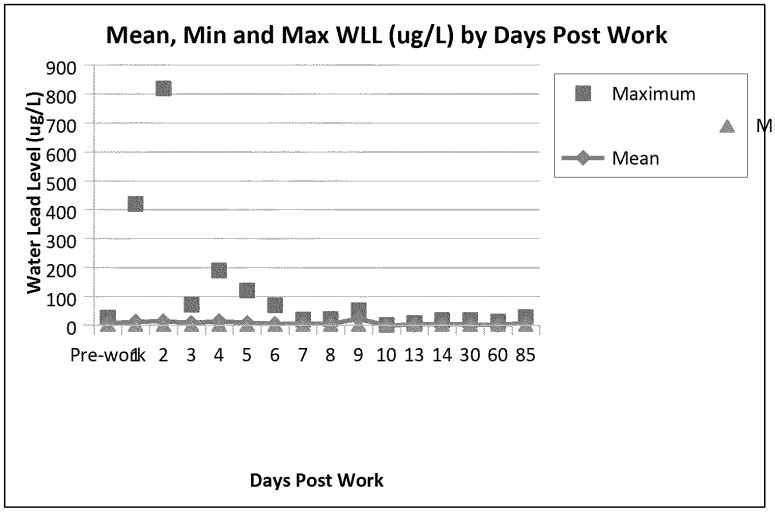
STATISTIC	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Sample 7	Sample 8	Sample 9	Sample 10	Sample 11	Sample 12	Sample 13 (Fully Flushed)
N	121	121	119	116	119	119	119	119	118	119	119	118	121
Min	1	1	1	1	1	1	1	1	1	1	1	1	1
Max	820	46	410	60	84	43	72	77	190	120	72	124	52
Mean	20.68	5.41	8.28	6.00	6.52	5.97	5.94	6.71	8.48	5.39	5.36	6.00	2.12
StdDev	89.66	7.46	37.69	9.65	10.47	7.10	9.29	11.73	24.53	12.32	9.70	14.68	4.98
P25	1	1	1	1	1	1	1	1	1	1	1	1	1
P50	3	2.9	2.8	2.6	3.1	3	2.7	2.2	2.1	1	1	1	1
P75	6.8	5.8	5.4	5.8	7.5	8.7	7.7	7.7	6.5	5.1	6.3	6	1
P95	65	22	23	27	23	20	20	33	28	19	21	19	5.7

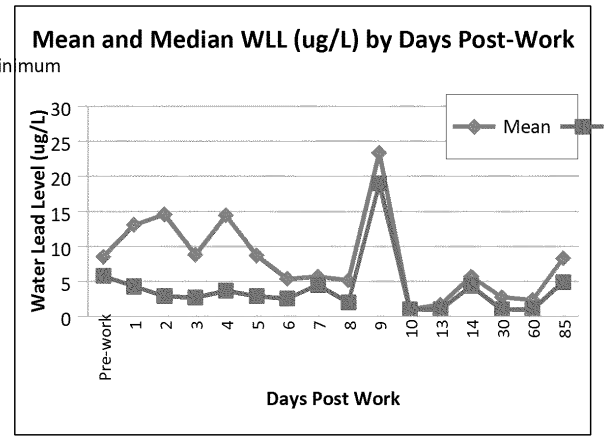




Summary of WLLs by Days Post-Work

STATISTIC	Pre-work	1	2	3	4	5	6	7	8	9	10	13	14	30	60	85
N	65	130	208	117	75	64	26	45	26	13	13	13	65	507	168	13
N (homes)	5	10	16	8	6	5	2	5	2	1	1	1	5	39	13	1
MINIMUM	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
MAXIMUM	27	420	820	72	190	120	69	20	22	53	1	7.5	19	19	13	28
MEAN	8.48	13.10	14.57	8.80	14.42	8.71	5.38	5.67	5.18	23.38	1.00	1.68	5.66	2.72	2.34	8.33
STANDARD DEVIATION	6.41	39.70	68.52	13.56	31.85	17.83	13.25	4.73	6.05	14.02	0.00	1.86	4.27	3.11	2.53	8.46
P25	4.1	1	1	1	1	1	1	1	1	17	1	1	2.3	1	1	3.2
P50	5.8	4.3	2.9	2.7	3.7	2.9	2.55	4.5	2	19	1	1	4.4	1	1	4.9
P75	12	11	8.25	11	10	5.8	3.9	8.2	7.8	32	1	1	8.1	3.6	2.6	9.2
P95	21	41	41	35	84	27	14	14	20	53	1	7.5	14	8.5	8	28



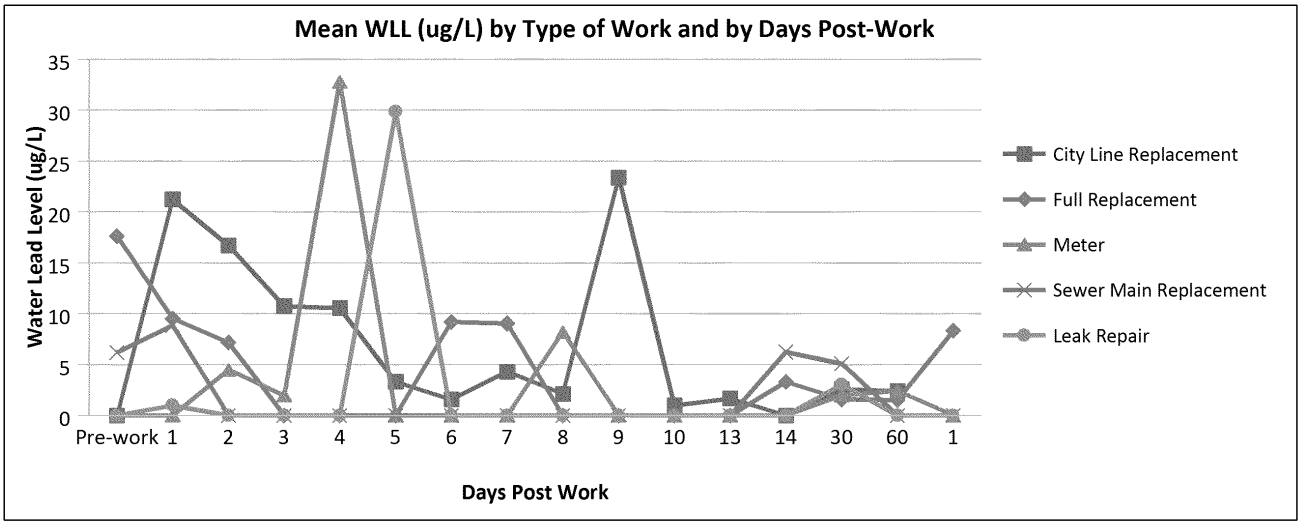


Summary of Water Lead Levels by Type of Work

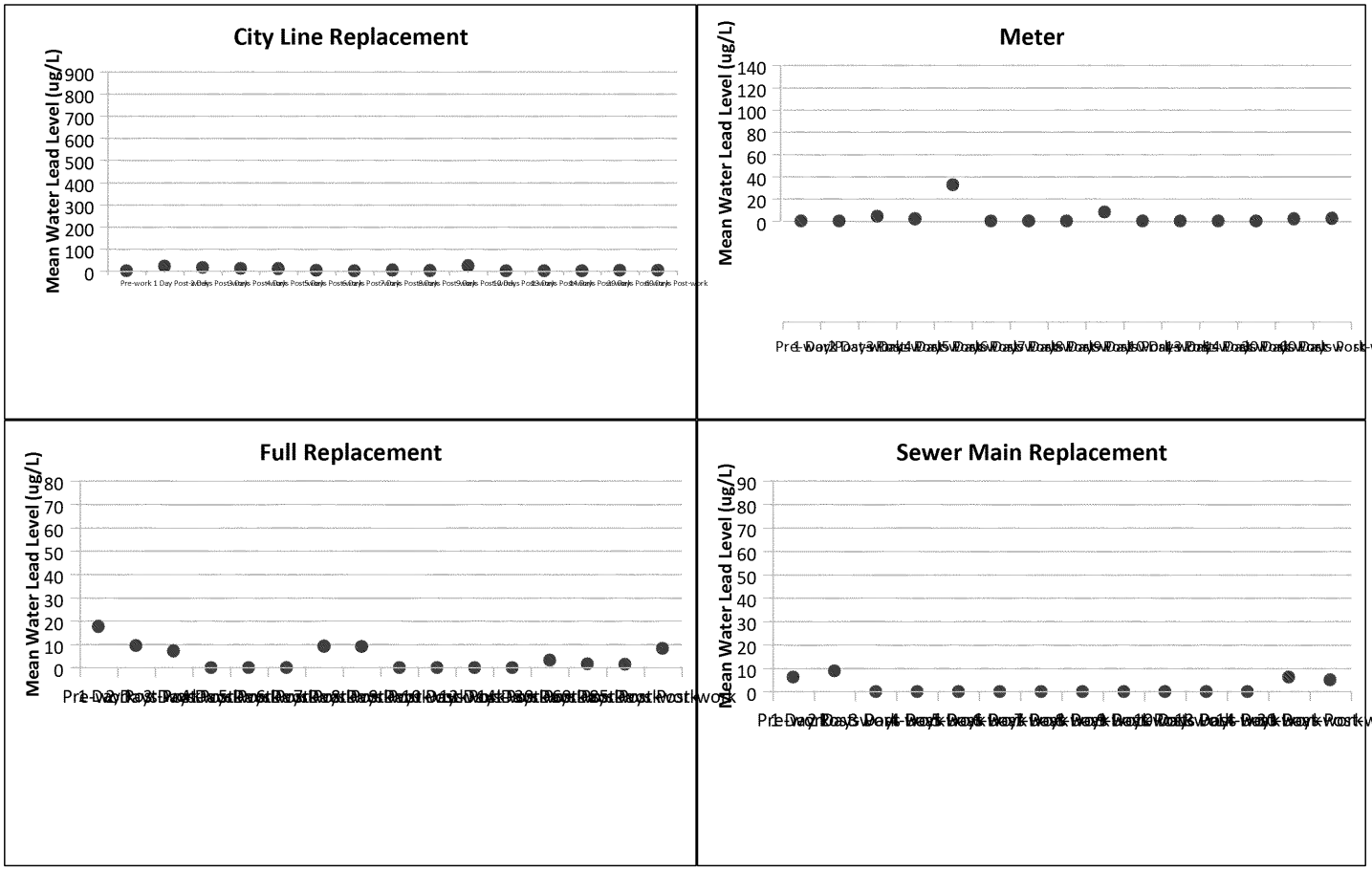
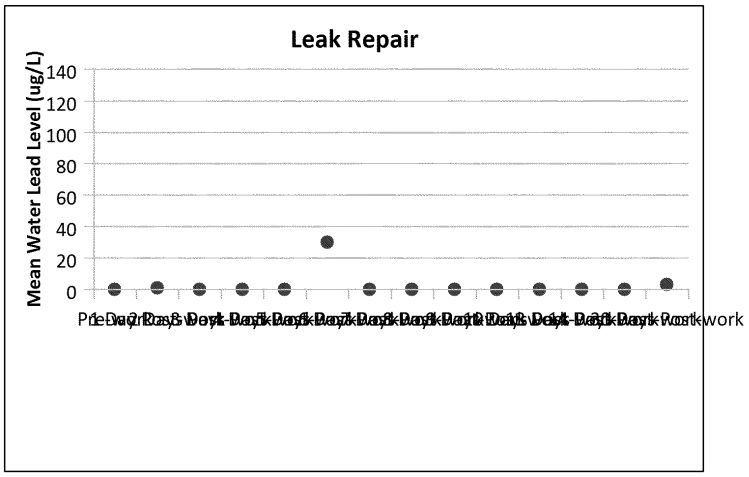
STATISTIC	City Line Replacement	Full Replacement	Leak Repair	Meter	Sewer Main Replacement
N	990	130	39	181	208
MINIMUM	1	1	1	1	1
MAXIMUM	820	69	120	130	77
MEAN	7.52	6.89	11.30	5.10	6.60
STANDARD DEVIATION	35.85	10.74	22.07	13.54	7.33
P25	1	1	1	1	3
P50	1	3.05	2.2	1	5.1
P75	5.1	8	12	4	8.3
P95	20	24	66	13	14

Mean WLLs by Work Type and Days Post-Work

	DAYS POST WORK															
WORK TYPE	**Pre-work**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**13**	**14**	**30**	**60**	**85**
City Line Replacement		21.24	16.69	10.76	10.56	3.32	1.58	4.30	2.14	23.38	1.00	1.68		2.58	2.41	
Full Replacement	17.63	9.51	7.18				9.18	9.05					3.32	1.59	1.51	8.33
Meter			4.49	1.97	32.80				8.22					1.99	2.43	
Sewer Main Replacement	6.19	8.88											6.25	5.09		
Leak Repair		1.00				29.85								3.05		



By Work Type: WLLs (Mean/Min/Max) by Days Post-Work



By Work Type: WLLs (Mean/Min/Max) by Days Post-Work, continued