

Results from soil testing in Whiting/Hammond

Overall Observations:

We sampled 147 shallow soil samples collected by Lake County residents.

We performed an XRF analysis of each of these samples, and these results were calibrated with a NIST standard, and 10 replicate measurements indicated a precision under 6% (which is good).

The majority of these samples had low lead concentrations (<200 ppm) for which there are no EPA recommendations for immediate action.

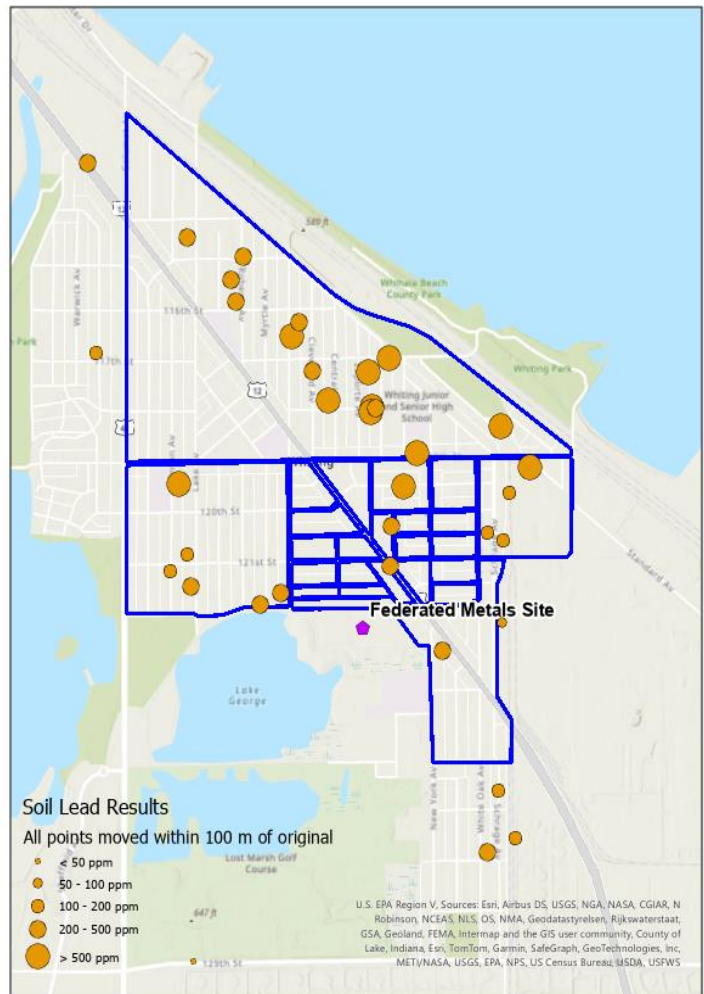
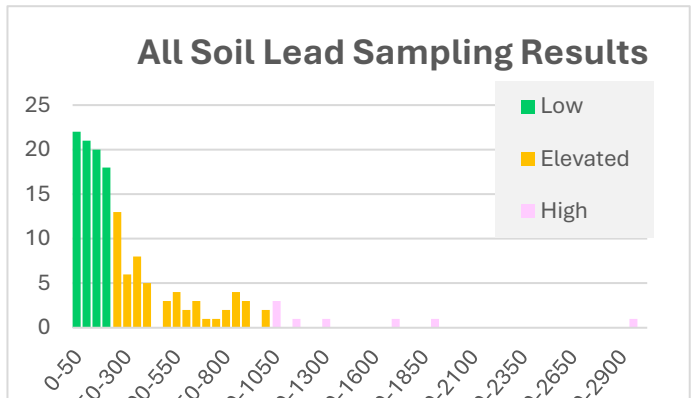
Many samples were slightly elevated (200 - 1000 ppm) and 8 samples fell in the high range (1000 - 3000 ppm). We have some suggestions to reduce personal lead exposure listed above.

Many of the highest measurements were listed as "drip line" soils, those samples collected right next to the house and/or garage, as opposed to the middle of the yard, or road side. In previous studies in St. Joseph County, we have observed these patterns in neighborhoods where the houses were built mostly before 1950. We found the primary source of lead in these areas was old lead paint that found its way into the soil nearest to the painted walls of the buildings.

It seems likely that, while some of the elevated lead measurements near the Federated Metals Superfund site may be related to historical industrial release of lead into the environment, many of these measurements in Whiting and Hammond may be due to residential lead paint. The good news is that this source of lead is easier to avoid as a resident. If you have elevated levels of lead in your soils, it is recommended that you take steps to avoid bringing lead soils into your residence.

For anybody with a high lead soil result, we would be happy to perform another measurement to confirm your results (for free), and also if you can find a paint chip near the dripline of your house, we can test that directly for lead as well. We are happy to answer any questions you might have by email (LakeCountyEnv@purdue.edu), or at a future meeting at Calumet College.

Recommendations based on lead concentration:



Category	Lead Concentration	Recommendations:
Low	<200 ppm	No intervention necessary under current EPA recommendations.
Elevated	200-1000 ppm	Remove shoes before entering home. Wash hands and bare feet after working or playing in the yard. Seed and fertilize grassy areas and cover bare soil with mulch and water grass to help keep dust down. Install raised bed gardens and supplement with clean topsoil. Install raised play/picnic areas with wood chips. Install walking stones in high traffic areas.
High	1000-3000 ppm	In addition to suggestions above: Relocate gardens unless in a raised bed with clean soil. Move children's play area or install platform/raised area filled with woodchips or mulch
V. High	>3000 ppm	In addition to suggestions above: Install a raised bed filled with new soil. Removal of soil or permanent barriers may be necessary.

Individual Kit Results

parts per million lead (ppm)

Kit Number	Sample a	Sample b	Sample c
H101	1123	223	115
H102	54	43	30
H103	84	888	355
H104	58	94	47
H105	117	153	78
H107	310	1677	969
H108	174	663	335
H109	1213	202	226
H110	713	365	228
H111	326	639	221
H112	1017	885	755
H113	116	90	151
H114	986	601	462
H115	487	202	264
H117	257	178	131
H118	269	120	157
H119	212	556	301
H120	858	825	196
H121	59	180	153
H122	518	1671	1007
H138	782	1854	559
H150	32	101	20
H205	339	235	388
H209	147	45	32
H210	121	87	66
H211	104	212	112
Kit Number	Sample a	Sample b	Sample c
H212	40	45	80

H237	46	536	76
H238	273	520	141
H239	42	43	45
H240	319	63	67
H243	153	35	88
H244	40	58	41
H245	26	17	52
H246	101	39	41
H247	51	39	97
H249	815	2937	1292
H250	159	111	105
H301	180	347	140
H302	226	844	340
H303	451	806	37
H304	500	190	613
H334	180	89	199
H342	68	157	107
H401	396	153	238
H402	110	60	264
H403	176	133	271
H404	245	125	207
H405	168	144	375