

Laboratory Analytical Results Summary
Samples from Unnamed Tributary of Adams Creek (Immediately West of the Broken Arrow Landfill Site)
E. Kenosha Street
Broken Arrow, Wagoner County, Oklahoma

Sample Media/ Sample ID	Radioactivity Concentration Units	Thorium-232 (Th-232)	Radium-228 (Ra-228)	Actinium-228 (Ac-228)	Thorium-228 (Th-228)	Lead-212 (Pb-212)	Bismuth-212 (Bi-212)	Thallium-208 (Tl-208)
Creek Water (BA-CrW-20221101-11)	<i>picoCuries per liter(pCi/l)</i>	Non-detect	Non-detect	Non-detect	Non-detect	Non-detect	Non-detect	Non-detect
Creek Sediment (BA-CrW-20221101-51)	<i>picoCuries per gram (pCi/g)</i>	0.192	0.549	0.549	0.324	0.595	Non-detect	0.348
Site Background (Soil Mean)	<i>picoCuries per gram (pCi/g)</i>	1.31	1.59	1.59	1.36	1.85	Non-detect	1.35

Notes:

1: Radium-228, Actinium-228, Thorium-228, Lead-212, Bismuth-212, and Thallium-208 are daughter radioisotopes in the Thorium-232 decay series.

2: Non-detect = below the laboratory minimum detectable activity (MDA). The laboratory MDAs were significantly below the Nuclear Regulatory Commission (NRC) Effluent Concentration Standards in Water found in 10 CFR (Code of Federal Regulations) Part 20: Standards for Radiation Protection for Radioactive Particles. The Standards in Water ranged from a low of 30 pCi/l for Thorium-232 to a high of 70,000 pCi/l for Bi-212. There is no Standard for Thallium-208.

3: The Site-specific Action Level for *soil* is 4.8 pCi/l for Th-232 and each of its daughter radioisotopes, i.e., all of the radioisotopes in this table, and is *Inclusive* of soil Background. The Site-specific Action Level was calculated using EPA's online Preliminary Remediation Goals (PRG) Calculator for Radionuclides found at https://epa-prgs.ornl.gov/cgi-bin/radionuclides/rprg_search

4: The water and sediment samples were collected on November 01, 2022 from an unnamed tributary of Adams Creek at the following coordinates: Latitude 36.060660° North, Longitude 95.733873° West