



**State-based Public Health Laboratory Biomonitoring Program for the Four  
Corners States (AZ, CO, NM, UT) Biomonitoring Consortium**

## Results from Urine and Water Testing

Dear Participant:

Thank you for taking the time to be in our study, "Assessment of Pediatric Exposures in Rural Colorado." This study is helping us learn about levels of metals and chemicals we have in our bodies and in our environment.

The results of the testing of your urine and water samples are attached. The urine comparison values are based on levels found in children's urine from a long-term ongoing national study. These levels are typically found in people who do not have health problems. Levels associated with toxic effects are generally higher than these comparison values. Levels in urine can fluctuate as a result of diet (including vitamins), smoking, and season. Also, your urine results and the comparison urine values are based on randomly collected samples and do not take in to account variation in exposure in the time prior to providing the sample.

We're sorry for any delay you may have had in getting your test results. Once again, thank you for being in our study. If you have any questions about your results, please contact Dr. Katherine A. James by e-mail at [kathy.james@ucdenver.edu](mailto:kathy.james@ucdenver.edu).

Sincerely,

Tony Harrison, MA  
Colorado Department of Public Health and Environment

Katherine A. James, PhD, MSCE  
University of Colorado, Anschutz Medical Campus



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**Results from Urine and Water Testing**

First Name

Last Name

Study ID Number

Address

Contaminant	Age Group (years)	Your Urine Concentration (a) (micrograms/gram creatinine)	*Comparison Urine Concentration (b) Median (µg/g) (range)	Your Water Concentration (µg/L)	EPA MCL(c) (µg/L)
Antimony	6-11		0.200 (0.170-0.250)		6 MCL
	12-19		0.130 (0.110-0.170)		
Arsenic	6-11		33.5 (17.0-54.6)		10 MCL
	12-19		19.2 (14.5-21.3)		
Barium	6-11		5.04 (4.17-7.39)		2000 MCL
	12-19		3.98 (3.40-5.29)		
Beryllium	6-11		Less than 0.13		4 MCL
	12-19		Less than 0.13		
Cadmium	6-11		0.160 (0.130-0.220)		5 MCL
	12-19		0.160 (0.140-0.180)		
Cesium	6-11		9.19 (8.13-10.4)		4 millirem/year
	12-19		5.54 (5.01-6.32)		
Cobalt	6-11		1.06 (.920-1.21)		No Standard
	12-19		0.960 (0.790-1.07)		
Lead	6-11		1.32 (1.09-1.51)		15 MCL
	12-19		0.620 (0.550-0.760)		
Manganese	6-11		0.486 (0.388-0.600)		50 (ss)
	12-19		0.297 (0.220-0.429)		
Mercury	6-11		1.04 (0.863-1.26)		2 MCL
	12-19		0.917 (0.736-1.18)		
Molybdenum	6-11		174 (154-191)		8 (ss)
	12-19		93.6 (85.8-101)		
Selenium	6-11		Not Available		50 MCL
	12-19				
Thallium	6-11		0.400 (0.350-0.440)		2 MCL
	12-19		0.260 (0.220-0.310)		
Tungsten	6-11		0.620 (0.450-0.850)		No Standard
	12-19		0.270 (0.210-0.290)		
Uranium	6-11		0.020 (0.015-0.030)		30 MCL
	12-19		0.017 (0.014-0.021)		

(a) QNS –quantity not sufficient; micrograms/liter is micrograms per gram creatinine

(b) 90 percentile of National Health and Nutrition Examination Survey (NHANES) 2009-2010 survey

(c) MCL (Maximum Contaminant Level) - The highest level of a contaminant that is allowed in drinking water in a community water system. MCLs are enforceable standards for community water systems, but not for private wells. MCLG (Maximum Contaminant Level Goal) - The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety and are non-enforceable public health goals for community water systems. SS (Secondary Standard) A non-enforceable standard based not on health effects, but on cosmetic effects such as skin or tooth discoloration, or on factors such as taste or color of drinking water.