Table 2. Results of chemical analysis of groundwater in the Maynardville Limestone and Bear Creek Area, and of surface water at SS-4, SS-5, and BCK 9.47

Analyte [b]	Groundwater				SS-4 [a]				SS-5 [a]				Bear Creek at BCK 9.47 [a]			
	Freq. of wells w. detects	Max detect	Mean of the medians [c]	SRC?	Freq. of detect	Max detect	Avg. [c] result	SRC?	Freq. of detect	Max detect	Avg. [c] result	SRC?	Freq. of detect	Max detect	Avg. [c] result	SRC?
Inorganics (mg/L)																
Aluminum	78/ 78	68	0.3		19/ 27	2.98	0.34		17/ 27	0.813	0.098		26/ 35	29.8	1.68	Y
Antimony	1/ 78	0.13	0.027		1/ 13	0.0028	0.001		1/ 13	0.003	0.001		4/ 22	0.003	0.001	
Arsenic	1/ 17	0.005	0.0025										5/ 22	0.023	0.003	
Barium	78/ 78	10	0.23		27/ 27	0.24	0.15		27/ 27	0.12	0.083		33/ 35	0.204	0.099	
Beryllium	40/ 78	0.0039	0.0002						1/ 27	0.0003	0.0002		1/ 35	0.0015	0.0002	
Boron	78/ 78	3	0.16	Y	14/ 14	0.26	0.11	Y	13/ 14	0.18	0.075	Y	13/ 13	4.1	0.80	Y
Cadmium	21/ 82	1.0200	0.008													
Calcium	82/ 82	880	119.52		27/ 27	140	100.2		27/ 27	87	62.73		35/ 35	101	64.67	
Chromium	39/ 82	0.71	0.007										1/ 11	0.01	0.006	
Cobalt	17/ 78	0.140	0.003										3/ 35	0.014	0.002	
Copper	70/ 78	0.19	0.005	Y	4/ 27	0.007	0.002		2/ 27	0.007	0.002		1/ 35	0.005	0.003	
Iron	78/ 78	170	1.82		23/ 27	3.72	0.46		20/ 26	1.13	0.111		34/ 35	38	2.39	
Lead	61/ 82	0.23	0.0046	Y	1/ 12	0.005	0.002		1/ 12	0.012	0.003					
Lithium	5/ 6	0.085	0.029	Y	7/ 7	0.036	0.029		7/ 7	0.014	0.010		7/ 7	0.091	0.060	Y

Analyte [b]	Groundwater				SS-4 [a]				SS-5 [a]				Bear Creek at BCK 9.47 [a]			
	Freq. of wells w. detects	Max detect	Mean of the medians [c]	SRC?	Freq. of detect	Max detect	Avg. [c] result	SRC?	Freq. of detect	Max detect	Avg. [c] result	SRC?	Freq. of detect	Max detect	Avg. [c] result	SRC?
Magnesium	82/ 82	250	28.58		27/ 27	26	20.27		27/ 27	20	15.34		35/ 35	18.1	11.44	
Manganese	78/ 78	16	0.37	Y	26/ 27	0.809	0.14	Y	21/ 27	0.048	0.007		34/ 35	0.708	0.126	
Mercury	11/ 79	0.0019	0.0001		3/ 24	0.0002	0.0001						3/ 32	0.0002	0.0001	
Molybdenum	6/ 78	3.5	0.0052													
Nickel	57/ 78	0.23	0.0087		3/ 27	0.022	0.005		1/ 27	0.01	0.004		6/ 35	0.021	0.005	Y
Niobium	3/ 6	0.029	0.0073													
Potassium	82/ 82	44	4.0		26/ 27	5.4	3.0		26/ 27	3.2	1.767		35/ 35	12.2	4.16	
Selenium	2/ 20	0.005	0.0025										1/ 22	0.003	0.001	
Silicon	63/ 63	18	5.12		3/ 3	4.1	3.9		3/ 3	3.6	3.5		3/ 3	3.7	3.5	
Silver	0/ 19	0	0.005		1/ 27	0.007	0.003									
Sodium	82/ 82	1,300	33.4		27/ 27	25	15.79		27/ 27	14	7.8		34/ 35	17.1	9.5	
Strontium	77/ 77	23	0.91	Y	14/ 14	0.42	0.23	Y	14/ 14	0.2	0.11	Y	13/ 13	0.22	0.16	Y
Thallium	0/ 15	0	0.005													
Thorium	0/ 78	0	0.105													
Tin	0/ 1	0	0.005													
Titanium	5/ 6	0.052	0.0183													
Total uranium (fluorometric)	71/ 82	0.30	0.0092	Y	14/ 14	0.285	0.136	Y	14/ 14	0.117	0.058	Y	13/ 13	0.152	0.103	Y

Analyte [b]	Groundwater				SS-4 [a]				SS-5 [a]				Bear Creek at BCK 9.47 [a]			
	Freq. of wells w. detects	Max detect	Mean of the medians [c]	SRC?	Freq. of detect	Max detect	Avg. [c] result	SRC?	Freq. of detect	Max detect	Avg. [c] result	SRC?	Freq. of detect	Max detect	Avg. [c] result	SRC?
Vanadium	20/ 78	0.13	0.0026		1/ 27	0.004	0.002		1/ 27	0.0037	0.0019		6/ 35	0.058	0.005	Y
Zinc	78/ 78	5.1	0.0452	Y	12/ 27	0.02	0.006		13/ 27	0.02	0.005		19/ 35	0.223	0.018	Y
Zirconium	2/ 6	0.0081	0.003													
Common Anions (mg/L)																
Ammonia nitrogen	1/ 4	2.9	0.1													
Chloride	81/ 82	2,180	49.4	Y	26/ 26	41.5	25.91	Y	26/ 26	23.9	13.5	Y	34/ 34	34.4	17.1	Y
Fluoride	70/ 80	1.9	0.234		26/ 27	0.6	0.362	Y	24/ 27	0.44	0.205		35/ 35	0.4	0.26	Y
Kjeldahl nitrogen	3/ 4	4.9	1.4													
Nitrate	64/ 82	918	29.5	Y	26/ 27	67.6	31.58	Y	26/ 27	27	11.04	Y	35/ 35	46.2	14.47	Y
Nitrite	0/ 4	0	1.625													
Sulfate	82/ 82	2,833	95.9		26/ 27	45	27.7	Y	27/ 27	29	16.75	Y	33/ 35	29.6	21.24	
Organics (µg/L)																
1,1,1-Trichloroethane	25/ 83	43	2.7	Y	2/ 27	1	2.5	Y					1/ 35	0.4	2.5	
1,1-Dichloroethane	16/ 83	21	2.8	Y									3/ 35	2	2.5	Y
1,1-Dichloroethene	18/ 83	36	2.7	Y	3/ 27	3	2.6	Y								
1,2-Dichloroethane	4/ 83	2	2.5										7/ 35	20	5.1	Y

Analyte [b]	Groundwater				SS-4 [a]				SS-5 [a]				Bear Creek at BCK 9.47 [a]			
	Freq. of wells w. detects	Max detect	Mean of the medians [c]	SRC?	Freq. of detect	Max detect	Avg. [c] result	SRC?	Freq. of detect	Max detect	Avg. [c] result	SRC?	Freq. of detect	Max detect	Avg. [c] result	SRC?
1,2-Dichloroethene	44/ 83	140	5.7	Y	21/ 27	21	7.7	Y	8/ 27	2	2.3	Y	34/ 35	28	7.1	Y
2-Butanone	15/ 83	16	5.1										2/ 35	24	4.2	Y
2-Hexanone	5/ 83	5	5.1													
4-Methyl-2-pentanone	9/ 83	8	5.1						1/ 27	4	3.3		1/ 35	86	5.4	
Acetone	44/ 83	180	5.1	Y					2/ 27	6	3.6	Y	6/ 35	23	6.7	Y
Benzene	17/ 83	10	2.5													
Bromodichloromethane	1/ 83	4	2.5													
Bromoform	2/ 83	1	2.5													
Carbon tetrachloride	25/ 83	9	2.6	Y												
Carbon disulfide	6/ 83	2	2.5		1/ 27	2	2.6		1/ 27	1	2.5					
Chlorobenzene	4/ 83	8	2.5													
Chloroethane	5/ 83	8	5.1													
Chloromethane													6/ 35	7	3.9	Y
Chloroform	34/ 83	11	2.5	Y												
Dimethylbenzene	4/ 83	8	2.5													
Ethylbenzene	7/ 83	2	2.5													
Methylene chloride	32/ 83	23	2.5	Y					2/ 27	4	2.7	Y	3/ 35	4	2.4	Y

Analyte [b]	Groundwater				SS-4 [a]				SS-5 [a]				Bear Creek at BCK 9.47 [a]			
	Freq. of wells w. detects	Max detect	Mean of the medians [c]	SRC?	Freq. of detect	Max detect	Avg. [c] result	SRC?	Freq. of detect	Max detect	Avg. [c] result	SRC?	Freq. of detect	Max detect	Avg. [c] result	SRC?
Phenols	4/ 21	0.006	0.008													
Styrene	3/ 83	1	2.5													
Tetrachloroethene	35/ 83	55	3.1	Y									14/ 35	4	2.1	Y
Toluene	19/ 83	1	2.5										1/ 35	1	2.5	
Trichloroethene	57/ 83	460	21.9	Y	26/ 27	23	8.8	Y	6/ 27	2	2.4	Y	7/ 35	2	2.2	Y
Trans-1,2-Dichloroethene	5/ 16	86	7.8	Y												
Vinyl acetate	15/ 83	10	5.1													
Vinyl Chloride	4/ 83	35	5.3													
Radioactivity (pCi/L)																
Alpha activity	43/ 73	108	4.69	Y	27/ 27	130	52.94	Y	22/ 27	75.8	29.35	Y	32/ 32	138	54.64	Y
Beta activity	53/ 73	197	16.7	Y	26/ 26	143	82.29	Y	24/ 26	81.75	37.83	Y	34/ 34	119.8	59.62	Y
Cesium-137	3/ 7	8.8	4.3													
Radium-228	2/ 7	7.8	1.46													
Technetium-99	3/ 8	39	9.38		2/ 3	220	136.6	Y					1/ 7	110	43.86	Y
Thorium-228	2/ 8	0.92	0.24										1/ 3	0.13	0.05	Y
Thorium-230	6/ 8	0.65	0.35		1/ 3	0.11	0.6	Y	1/3	0.21	0.14	Y	1/ 3	0.2	0.1	Y

Analyte [b]	Groundwater				SS-4 [a]				SS-5 [a]				Bear Creek at BCK 9.47 [a]			
	Freq. of wells w. detects	Max detect	Mean of the medians [c]	SRC?	Freq. of detect	Max detect	Avg. [c] result	SRC?	Freq. of detect	Max detect	Avg. [c] result	SRC?	Freq. of detect	Max detect	Avg. [c] result	SRC?
Uranium-234	5/ 8	22	4.06		13/ 13	37.3	27.26	Y	13/ 13	26.6	13.97	Y	21/ 21	29.2	18.74	Y
Uranium-235	1/ 7	0.89	0.16		10/ 13	3.62	1.57	Y	3/ 13	2.98	0.84	Y	6/ 21	1.69	0.9	Y
Uranium-238	4/ 8	42	7.24		13/ 13	82.6	57.59	Y	13/ 13	58.4	26.71	Y	21/ 21	64.5	40.29	Y

[a] Groundwater data are the results for the SS-4, SS-5, and BC at BCK 9.47. These data are presented in Table D.112, D.114, and D.106 in Appendix D.

[b] Analytes detected at least once are summarized. Results reflect data validation and data usability screens.

[c] The mean of the medians is the arithmetic mean of the median concentration of an analyte for each well. In calculating the mean of the medians it was assumed that non-detects are equal to one-half the detection limit for chemicals. Radionuclide data qualified as non-detect based on comparison to minimal detectable activities or counting errors are set equal to the reported value.