

Table 2
Representative Minimum Detectable Concentrations for Radiological Analyses

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Note: The minimum detectable concentrations (MDCs) are calculated at the 95-percent confidence level using instrument background measurements and typical detector efficiencies, decay times, and counting intervals. Chemical recoveries, air filter collection efficiencies, and line loss factors are assumed to be 100 percent unless typical historical values are available. Sample sizes are presented in table 1, "Sample Media Information." The MDCs for actual samples may be different because of variations in the sample preparation, size, and content, and because of variations in the chemical recoveries, line loss factors, counting efficiencies, reagent blanks, decay times, counting times, and instrument backgrounds.

Nuclide	Surveillance Air ^a	Surveillance Air ^b	Rainwater ^c	Stream/Effluent Water
	pCi/m ³	pCi/m ³	pCi/m ²	pCi/L
H-3	2.00E+01	2.00E+01	8.50E+02	8.50E+02
Be-7	7.27E-02	3.64E-02	1.70E+02	4.70E+01
K-40	2.00E-01	1.00E-01	4.10E+02	1.30E+01
Co-58	1.20E-02	6.00E-03	3.00E+01	7.40E+00
Co-60	1.09E-02	5.45E-03	3.20E+01	9.10E+00
Ru-103	7.77E-03	3.89E-03	2.80E+01	6.70E+00
Ru-106	7.33E-02	3.67E-02	2.80E+02	5.90E+01
I-129	3.28E-02	1.64E-02		1.23E+01
I-131	1.60E-02	8.00E-03	7.20E+01	1.60E+01
Cs-134	1.06E-02	5.30E-03	2.70E+01	5.80E+00
Cs-137	9.54E-03	4.77E-03	2.60E+01	7.10E+00
Ce-141	1.30E-02	6.50E-03	3.60E+01	8.50E+00
Ce-144	3.62E-02	1.81E-02	1.30E+02	2.90E+01
Sr-89,90	2.31E-03	1.19E-3	5.82E+01	1.72E+00
Sr-90				
Tc-99				9.06E+00
U-234	4.83E-05	2.41E-5	3.87E-01	1.20E-02
U-235	1.61E-05	8.05E-6	4.52E-01	1.40E-02
U-238	3.89E-05	1.94E-5	3.55E-01	1.10E-02
Pu-238	1.11E-05	5.55E-6	2.97E-01	9.20E-03
Pu-239	1.14E-05	5.70E-6	2.97E-01	9.20E-03
Am-241	4.29E-05	2.14E-5	8.81E-01	2.73E-02
Cm-244	1.23E-05	6.15E-6	3.19E-01	9.90E-03
Gross alpha	1.07E-03	5.34E-4	7.84E+00	8.05E-01
Gross beta	1.98E-03	9.88E-4	1.45E+01	1.49E+00

a Values represent sampling period from January to September 2003; samples collected weekly.

b Values represent sampling period from October to December 2003; samples collected every two weeks.

c Values, except for tritium, reflect wet/dry deposition; tritium values are in pCi/L.

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Nuclide	River Water	Drinking Water	Soil/Sediment	Vegetation
	pCi/L	pCi/L	pCi/g	pCi/g
H-3	3.10E+02	3.10E+02		3.71E-01
Be-7	7.34E+00	4.70E+01	3.40E-01	4.20E-01
K-40	1.67E+01	1.30E+01	5.50E-01	1.40E+00
Co-58	8.00E-01	7.40E+00	4.40E-02	5.50E-02
Co-60	1.27E+00	9.10E+00	4.70E-02	5.70E-02
Ru-103	8.67E-01	6.70E+00	5.00E-02	5.00E-02
Ru-106	7.34E+00	5.90E+01	3.20E-01	4.50E-01
I-129				
I-131	1.53E+00	1.60E+01	8.00E-02	8.80E-02
Cs-134	8.67E-01	5.80E+00	3.80E-02	4.40E-02
Cs-137	9.34E-01	7.10E+00	4.20E-02	4.90E-02
Ce-141	1.00E+00	8.50E+00	7.80E-02	8.40E-02
Ce-144	3.94E+00	2.90E+01	3.00E-01	3.40E-01
Sr-89,90	2.46E-01	1.72E+00	5.97E-01	2.22E-01
Sr-90				
Tc-99	9.06E+00			
U-234	1.20E-02	1.20E-02	2.92E-03	3.22E-03
U-235	1.40E-02	1.40E-02	3.30E-03	9.91E-04
U-238	1.10E-02	1.10E-02	2.72E-03	8.15E-04
Pu-238	9.20E-03	9.20E-03	2.86E-03	1.03E-03
Pu-239	9.20E-03	9.20E-03	2.84E-03	9.32E-04
Am-241	2.73E-02	2.73E-02	3.94E-03	3.56E-03
Cm-244	9.90E-03	9.90E-03	3.48E-03	8.50E-04
Gross alpha	8.05E-01	8.05E-01	8.05E+00	9.22E-01
Gross beta	1.49E+00	1.49E+00	1.49E+01	1.71E+00

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Nuclide	Highway 301 Fish (edible portion)	River Mouth Fish (edible portion)	Onsite Fish (edible portion)	Panfish (edible portion)
	pCi/g	pCi/g	pCi/g	pCi/g
H-3	7.77E-01	7.77E-01	7.77E-01	7.77E-01
Be-7	7.20E-01	1.50E+00	5.00E-01	5.00E-01
K-40	3.50E-01	9.30E-01	6.70E-01	6.70E-01
Co-58	5.50E-02	1.10E-01	7.40E-02	7.40E-02
Co-60	2.40E-02	4.60E-02	5.20E-02	5.20E-02
Ru-103	1.40E-01	3.00E-01	1.00E-01	1.00E-01
Ru-106	2.10E-01	4.20E-01	4.90E-01	4.90E-01
I-129				
I-131			6.80E+00	6.80E+00
Cs-134	2.20E-02	3.80E-02	4.50E-02	4.50E-02
Cs-137	2.10E-02	4.00E-02	4.20E-02	4.20E-02
Ce-141	3.80E-01	7.10E-01	1.60E-01	1.60E-01
Ce-144	1.70E-01	3.70E-01	2.30E-01	2.30E-01
Sr-89,90	9.92E-3	9.92E-03	9.92E-03	1.98E-02
Sr-90				
Tc-99				
U-234				
U-235				
U-238				
Pu-238	4.29E-05	4.29E-05	4.29E-05	8.58E-05
Pu-239	4.38E-05	4.38E-05	4.38E-05	8.75E-05
Am-241				
Cm-244				
Gross alpha	4.92E-01	4.92E-01	4.92E-01	4.92E-01
Gross beta	9.10E-01	9.10E-01	9.10E-01	9.10E-01

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Nuclide	Fish (nonedible portion)	Panfish (nonedible portion)	Oysters/Crabs	Food Products
	pCi/g	pCi/g	pCi/g	pCi/g
H-3				3.10E-01
Be-7			5.00E-01	2.30E-01
K-40			6.70E-01	1.20E-01
Co-58			7.40E-02	2.10E-02
Co-60			5.20E-02	7.50E-03
Ru-103			1.00E-01	5.00E-02
Ru-106			4.90E-01	7.20E-02
I-129				
I-131			6.80E+00	
Cs-134			4.50E-02	7.30E-03
Cs-137			4.20E-02	7.20E-03
Ce-141			1.60E-01	9.80E-02
Ce-144			2.30E-01	4.00E-02
Sr-89,90	7.93E-02	7.93E-02	1.98E-02	9.92E-02
Sr-90				
Tc-99				
U-234				
U-235				
U-238				
Pu-238				9.73E-05
Pu-239				9.34E-05
Am-241				
Cm-244				
Gross alpha	1.48E+00	1.48E+00	1.48E+00	
Gross beta	2.73E+00	2.73E+00	2.73E+00	

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Nuclide	Milk	Deer Muscle	Deer Bone	Beef
	pCi/L	pCi/g	pCi/g	pCi/g
H-3	3.10E+02			8.10E-02
Be-7	1.80E+01	5.00E-01		5.00E-01
K-40	4.30E+01	6.70E-01		6.70E-01
Co-58	2.50E+00	7.40E-02		7.40E-02
Co-60	2.80E+00	5.20E-02		5.20E-02
Ru-103	2.40E+00	1.00E-01		1.00E-01
Ru-106	2.30E+01	4.90E-01		4.90E-01
I-129				
I-131	2.90E+00	6.80E+00		6.80E+00
Cs-134	2.40E+00	4.50E-02		4.50E-02
Cs-137	2.70E+00	4.20E-02		4.20E-02
Ce-141	2.80E+00	1.60E-01		1.60E-01
Ce-144	1.20E+01	2.30E-01		2.30E-01
Sr-89,90		1.98E-02	9.92E-01	1.92E-03
Sr-90	5.66E+00			
Tc-99				
U-234				
U-235				
U-238				
Pu-238				4.86E-5
Pu-239				4.67E-5
Am-239				
Cm-244				
Gross alpha				
Gross beta				