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ENVIRONMENTAL RADIATION DATA

REPORT 85

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United States Environmental Protection Agency

Office of Radiation and Indoor Air

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Preface

Environmental Radiation Data (ERD) is compiled and published quarterly by the Office of Radiation and Indoor Air's National Air and Radiation Environmental Laboratory (NAREL) in Montgomery, Alabama, and contains data from the Environmental Radiation Ambient Monitoring System (ERAMS). Data from similar networks operated by contributing States, Canada, Mexico, and the Pan American Health Organization are reported in the ERD when available. ERD is published in both hard-copy and electronic formats. Electronic reports are available online at www.epa.gov/narel.

The United States Environmental Protection Agency established ERAMS in 1973 with an emphasis on identifying trends in the accumulation of long-lived radionuclides in the environment. ERAMS is comprised of a nationwide network of sampling stations that provide air, precipitation, surface water, drinking water, and milk samples.

Sampling locations are selected to provide optimal population coverage while functioning to monitor fallout from nuclear devices and other forms of radioactive contamination of the environment. The radiation analyses performed on these samples include gross alpha and gross beta levels, gamma analyses, and radionuclide-specific analyses for uranium, plutonium, strontium, iodine, radium, and tritium. This monitoring effort also provides ancillary information on natural background levels and on routine and accidental releases into the environment from stationary sources.

The radiochemical procedures used by NAREL to analyze the ERAMS samples are contained in the *Eastern Environmental Radiation Facility Radiochemistry Procedures Manual* (EPA 520/5-84-006). Station operation and sample collection are in accordance with procedures contained in the *ERAMS Manual* (EPA 520/5-84-007, 008, 009).

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Acknowledgments

All sampling for the Environmental Radiation Ambient Monitoring System (ERAMS) is performed by volunteer collectors who are frequently members of the health departments or related environmental agencies of their respective states. The National Air and Radiation Environmental Laboratory (NAREL) on behalf of the U.S. Environmental Protection Agency would like to acknowledge its indebtedness to these volunteer collectors who are so essential to the successful operation of ERAMS. The efforts of the sample collectors are especially appreciated during times of emergency operation when sampling frequencies are increased and schedules are sometimes demanding.

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Data Reporting Conventions

Every laboratory measurement involves uncertainty. When there is little or no radioactivity in a sample, one consequence of measurement uncertainty is the possibility of obtaining a measured value that is less than zero. Such a negative result occurs when random effects in the measurement process cause the measured value for the sample to be less than that of the blank or background, which is subtracted from it. From April 1991 to December 1995, negative results were reported as "not detected" or "ND," and gamma analysis results that were less than their estimated measurement uncertainties were also reported as "ND." In January 1996 both of these practices were discontinued. Although negative activities are physically impossible, the inclusion of negative results in the report allows better statistical analysis of the data.

Results of gamma analyses are still reported as "ND" when gamma-emitting radionuclides are not detected.

Measurement Uncertainty

Each measured value y is reported with an expanded uncertainty $U = k\,u_c(y)$, which is determined from the combined standard uncertainty $u_c(y)$ and the coverage factor $k = 2$. The interval from $y - U$ to $y + U$ is estimated to have a level of confidence of approximately 95%.

Significant Figures

Expanded uncertainties are reported to two significant figures. Measurement results are rounded to the corresponding number of decimal places.

Detection Capability

The minimum detectable concentrations (MDCs) for each radionuclide are shown in Table 1. The MDC is defined as the minimum concentration that gives a 95% probability of detection when the detection criteria are chosen to give only a 5% probability of false detection in a blank sample.

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Table 1

Reporting Units and Minimum Detectable Concentrations for Radionuclide Analyses

Radionuclide	Media	Reporting Unit	Minimum Detectable Concentration
Gross Alpha	Water	pCi/L	2
Gross Beta	Air	pCi/m³	0.0015
	Water	pCi/L	2
	Precipitation	pCi/L	2
Tritium	Water	pCi/L	150
	Milk	pCi/L	150
* Plutonium-238,239/240	Air	aCi/m³	0.75
	Water	pCi/L	0.1
† Uranium-234,235,238	Air	aCi/m³	0.75
	Water	pCi/L	0.1
Radium-226	Water	pCi/L	0.02
Strontium-90	Milk	pCi/L	2
	Water	pCi/L	1
‡ Iodine-131	Milk (gamma)	pCi/L	4
	Water (gamma)	pCi/L	4
	Water	pCi/L	0.3
Cesium-137	Milk	pCi/L	5
	Water	pCi/L	5
‡ Barium-140	Milk	pCi/L	15
	Water	pCi/L	15
Potassium	Milk	g/L	0.06
	Water	g/L	0.06
Potassium-40	Water	pCi/L	50

* The MDC for air is based on an assumed total sample volume of 120,000 m³. Measurement by alpha spectrometry includes combined activities of ^{239}Pu and ^{240}Pu, since the relative contributions of these two isotopes cannot be determined.

† The MDC for air is based on an assumed total sample volume of 120,000 m³.

‡ Activity as of the day of counting.

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1. Air Program

Airborne Particulates and Precipitation

Gross beta radioactivity measurements and certain specific analyses are performed on air particulates and precipitation samples as indicator measurements in assessing the general (national) impact of all contributing sources on environmental levels of radiation.

Airborne particulates are collected continuously at field stations representing wide geographic coverage, including present and potential sources of environmental radioactivity. Sampling sites are located throughout the United States.

Filters (10-cm diameter synthetic fiber) from air samplers are changed twice weekly and field measurements are made with a G-M survey meter at 5 hours after collection to allow for decay of natural radon isotopes and their progeny. Field estimates are reported to appropriate EPA officials by telephone or mail depending on the activity levels found.

The filters are sent to NAREL for more sensitive analyses in a low background beta counter. Gamma scans are performed on all filters showing gross beta counts greater than 1 pCi/m^3. The laboratory obtained values are usually lower than the field estimates due to the decay of naturally occurring radionuclides between the times of the two measurements.

Precipitation samples are collected at those field stations collecting air filters. These samples are also sent to NAREL where they are composited monthly for gamma scans, tritium, and gross beta activity measurements. A composite of the March, April, and May precipitation samples is analyzed for plutonium-238, combined plutonium-239 and 240, and uranium-234, 235, and 238.

A compilation of individual measurements is available from the National Air and Radiation Environmental Laboratory, 540 South Morris Avenue, Montgomery, AL 36115-2601.

Table 2

Gross Beta in Airborne Particulates
January 1996

Location	Number of Samples	5-hour Field Estimate (pCi/m³)			NAREL Lab Measurement (pCi/m³)		
		Max	Min	Avg	Max	Min	Avg
AK: Fairbanks	5	0.0	0.0	0.0	0.037	0.009	0.020
AL: Montgomery	7	0.1	0.0	0.0	0.016	0.007	0.011
AR: Little Rock	9	0.2	0.0	0.1	0.028	0.007	0.014
AZ: Phoenix	3	1.2	0.6	0.9	0.020	0.010	0.014
CA: Berkeley	9	0.2	0.0	0.1	0.013	0.002	0.006
CA: Los Angeles	9	0.3	0.0	0.2	0.019	0.005	0.011
CO: Denver	8	0.6	0.2	0.4	0.020	0.006	0.013
CT: Hartford	9	0.0	0.0	0.0	0.016	0.005	0.010
DE: Wilmington	9	0.0	0.0	0.0	0.025	0.009	0.013
FL: Jacksonville	7	0.0	0.0	0.0	0.014	0.007	0.010
FL: Miami	9	0.2	0.0	0.0	0.012	0.002	0.008
HI: Honolulu	7	0.2	0.1	0.1	0.006	0.001	0.003
IA: Iowa City	8	0.6	0.0	0.2	0.032	0.014	0.022
ID: Boise	9	0.5	0.1	0.2	0.016	0.003	0.008
ID: Idaho Falls	9				0.036	0.004	0.012
IL: Chicago	1	0.0	0.0	0.0	0.006	0.006	0.006
IN: Indianapolis	8	0.1	0.0	0.1	0.026	0.009	0.017
KS: Topeka	8	0.9	0.2	0.4	0.033	0.010	0.018
ME: Augusta	8	0.0	0.0	0.0	0.028	0.009	0.015
MI: Lansing	9	0.1	0.0	0.0	0.028	0.012	0.018
MN: Minneapolis	5	0.1	0.0	0.1	0.026	0.017	0.023
MN: Welch	3	0.1	0.1	0.1	0.027	0.016	0.021
MS: Jackson	9	0.1	0.1	0.1	0.020	0.008	0.012
NC: Charlotte	8	0.1	0.0	0.1	0.021	0.009	0.015
NC: Wilmington	2				0.011	0.010	0.010
ND: Bismarck	4	0.1	0.0	0.0	0.035	0.006	0.021
NH: Concord	9	0.0	0.0	0.0	0.019	0.007	0.012
NJ: Trenton	9	0.9	0.0	0.1	0.018	0.008	0.014
NM: Santa Fe	3	0.1	0.1	0.1	0.025	0.009	0.016
NV: Las Vegas	6	0.2	0.1	0.1	0.019	0.005	0.011
NY: Albany	4	0.0	0.0	0.0	0.016	0.011	0.013
NY: New York City	2	0.0	0.0	0.0	0.008	0.008	0.008
NY: Niagara Falls	8	0.1	0.0	0.0	0.028	0.010	0.017
NY: Yaphank	8	0.1	0.0	0.0	0.023	0.006	0.011
OH: Columbus	4	0.0	0.0	0.0	0.017	0.008	0.011
OH: Painesville	9	0.1	0.0	0.0	0.025	0.010	0.016
OH: Ross	8				0.026	0.011	0.016
OH: Toledo	9	0.2	0.0	0.1	0.024	0.011	0.016

Table 2 (continued)

Gross Beta in Airborne Particulates
January 1996

Location	Number of Samples	5-hour Field Estimate			NAREL Lab Measurement		
		Max	Min	Avg	Max	Min	Avg
		(pCi/m³)			(pCi/m³)		
OR: Portland	9	0.0	0.0	0.0	0.007	0.001	0.003
PA: Harrisburg	9	0.1	0.0	0.1	0.040	0.012	0.019
PA: Pittsburgh	9				0.025	0.010	0.017
SC: Barnwell	2	0.0	0.0	0.0	0.012	0.011	0.012
SC: Columbia	9	0.2	0.1	0.1	0.026	0.006	0.013
SD: Pierre	9	0.3	0.1	0.2	0.026	0.004	0.017
TN: Knoxville	3	0.3	0.0	0.2	0.021	0.018	0.019
TN: Nashville	8	0.1	0.1	0.1	0.020	0.009	0.015
TX: Austin	8	0.2	0.1	0.1	0.022	0.009	0.014
TX: El Paso	9	1.9	0.3	1.0	0.028	0.013	0.018
UT: Salt Lake City	8	0.2	0.0	0.1	0.020	0.003	0.009
VA: Lynchburg	8	0.4	0.1	0.2	0.016	0.007	0.012
VA: Virginia Beach	1	0.0	0.0	0.0	0.012	0.012	0.012
WA: Olympia	8	0.1	0.0	0.0	0.006	0.001	0.004
WA: Spokane	9	0.1	0.0	0.0	0.026	0.007	0.012
WI: Madison	9	0.2	0.0	0.1	0.021	0.012	0.016

Table 3

Gross Beta in Airborne Particulates
February 1996

Location	Number of Samples	5-hour Field Estimate			NAREL Lab Measurement		
		Max	Min	Avg	Max	Min	Avg
		(pCi/m³)			(pCi/m³)		
AL: Montgomery	9	0.1	0.0	0.0	0.019	0.007	0.014
AR: Little Rock	9	0.5	0.1	0.2	0.018	0.010	0.015
AZ: Phoenix	4	0.4	0.2	0.3	0.019	0.006	0.013
CA: Berkeley	8	0.2	0.0	0.1	0.018	0.003	0.006
CA: Los Angeles	8	0.2	0.0	0.1	0.018	0.003	0.008
CO: Denver	9	1.2	0.2	0.6	0.024	0.006	0.013
CT: Hartford	9	0.0	0.0	0.0	0.013	0.002	0.008
DE: Wilmington	8	0.1	0.0	0.0	0.020	0.006	0.010
FL: Jacksonville	8	0.2	0.0	0.1	0.018	0.009	0.012
FL: Miami	7	0.1	0.0	0.0	0.014	0.007	0.010
HI: Honolulu	7	0.2	0.1	0.1	0.007	0.001	0.004
IA: Iowa City	9	0.3	0.0	0.1	0.026	0.005	0.014
ID: Boise	8	0.8	0.1	0.2	0.029	0.003	0.013
ID: Idaho Falls	9				0.023	0.004	0.012
IN: Indianapolis	8	0.3	0.2	0.2	0.018	0.010	0.014
KS: Topeka	8	2.2	0.2	0.9	0.026	0.005	0.014
ME: Augusta	8	0.1	0.0	0.0	0.017	0.005	0.011
MI: Lansing	9	0.2	0.0	0.1	0.019	0.008	0.012
MN: Minneapolis	4	0.1	0.0	0.0	0.024	0.012	0.016
MS: Jackson	8	0.2	0.0	0.1	0.020	0.009	0.014
NC: Charlotte	8	0.1	0.0	0.1	0.019	0.007	0.013
NC: Wilmington	4				0.013	0.008	0.011
ND: Bismarck	6	0.4	0.0	0.1	0.057	0.004	0.019
NH: Concord	8	0.0	0.0	0.0	0.015	0.004	0.009
NJ: Trenton	9	0.1	0.0	0.1	0.020	0.003	0.009
NM: Santa Fe	2	0.2	0.1	0.1	0.011	0.006	0.008
NV: Las Vegas	9	0.3	0.0	0.2	0.020	0.003	0.011
NY: Albany	5	0.0	0.0	0.0	0.016	0.006	0.011
NY: New York City	3				0.015	0.008	0.012
NY: Niagara Falls	1	0.0	0.0	0.0	0.012	0.012	0.012
NY: Yaphank	7	0.1	0.0	0.1	0.012	0.003	0.008
OH: Columbus	5	0.1	0.0	0.1	0.011	0.006	0.009
OH: Painesville	7	0.1	0.0	0.0	0.013	0.003	0.008
OH: Ross	8				0.039	0.009	0.019
OH: Toledo	1	0.1	0.1	0.1	0.009	0.009	0.009
PA: Harrisburg	9	0.2	0.0	0.1	0.019	0.006	0.012
PA: Pittsburgh	9	0.0	0.0	0.0	0.018	0.008	0.012
SC: Barnwell	2	0.0	0.0	0.0	0.011	0.009	0.010

Table 3 (continued)

Gross Beta in Airborne Particulates
February 1996

Location	Number of Samples	5-hour Field Estimate (pCi/m³)			NAREL Lab Measurement (pCi/m³)		
		Max	Min	Avg	Max	Min	Avg
SC: Columbia	7	0.4	0.0	0.1	0.020	0.008	0.016
SD: Pierre	6	0.3	0.0	0.1	0.021	0.004	0.013
TN: Knoxville	3	0.1	0.1	0.1	0.019	0.015	0.017
TN: Nashville	8	0.2	0.1	0.1	0.021	0.008	0.014
TX: Austin	8	0.3	0.0	0.2	0.017	0.006	0.012
TX: El Paso	9	1.7	0.0	0.6	0.030	0.009	0.016
UT: Salt Lake City	7	0.2	0.0	0.0	0.022	0.005	0.014
VA: Lynchburg	9	0.6	0.0	0.2	0.020	0.006	0.011
VA: Virginia Beach	1	0.0	0.0	0.0	0.014	0.014	0.014
WA: Olympia	7	0.2	0.0	0.1	0.020	0.001	0.008
WA: Spokane	8	0.1	0.0	0.1	0.026	0.002	0.013
WI: Madison	8	0.2	0.0	0.1	0.021	0.006	0.014

Table 4

Gross Beta in Airborne Particulates
March 1996

Location	Number of Samples	5-hour Field Estimate (pCi/m³)			NAREL Lab Measurement (pCi/m³)		
		Max	Min	Avg	Max	Min	Avg
AL: Montgomery	8	0.3	0.0	0.0	0.014	0.005	0.010
AR: Little Rock	8	0.3	0.1	0.2	0.013	0.011	0.012
AZ: Phoenix	4	0.7	0.1	0.3	0.013	0.007	0.011
CA: Berkeley	9	0.2	0.0	0.1	0.013	0.003	0.005
CA: Los Angeles	9	0.2	0.0	0.1	0.023	0.003	0.008
CO: Denver	8	1.1	0.2	0.6	0.021	0.006	0.013
CT: Hartford	5	0.1	0.0	0.0	0.022	0.008	0.012
DE: Wilmington	9	0.1	0.0	0.1	0.014	0.005	0.011
FL: Jacksonville	8	0.1	0.0	0.1	0.011	0.007	0.009
FL: Miami	9	0.1	0.0	0.0	0.013	0.004	0.009
HI: Honolulu	8	0.2	0.1	0.1	0.005	0.002	0.004
IA: Iowa City	8	0.4	0.0	0.2	0.017	0.011	0.014
ID: Boise	9	0.9	0.1	0.2	0.012	0.004	0.007
ID: Idaho Falls	8				0.017	0.006	0.009
IN: Indianapolis	9	0.4	0.1	0.2	0.019	0.011	0.015
KS: Topeka	7	1.8	0.3	0.7	0.015	0.009	0.012
ME: Augusta	9	0.1	0.0	0.0	0.018	0.008	0.013
MI: Lansing	8	0.1	0.0	0.0	0.015	0.012	0.013
MN: Minneapolis	4	0.1	0.0	0.1	0.018	0.013	0.015
MN: Welch	2	0.1	0.1	0.1	0.021	0.019	0.020
MS: Jackson	8	0.1	0.0	0.1	0.017	0.009	0.012
NC: Charlotte	7	0.1	0.0	0.0	0.015	0.008	0.012
NC: Wilmington	4				0.015	0.012	0.013
ND: Bismarck	6	0.1	0.0	0.1	0.020	0.010	0.015
NH: Concord	9	0.1	0.0	0.0	0.013	0.006	0.010
NJ: Trenton	8	0.3	0.0	0.1	0.010	0.005	0.007
NM: Santa Fe	3	0.2	0.1	0.1	0.009	0.006	0.007
NV: Las Vegas	8	0.2	0.1	0.1	0.011	0.004	0.008
NY: Albany	4	0.1	0.0	0.0	0.020	0.010	0.015
NY: New York City	1				0.013	0.013	0.013
NY: Yaphank	9	0.1	0.0	0.1	0.013	0.005	0.010
OH: Painesville	8	0.1	0.0	0.1	0.013	0.008	0.011
OH: Ross	9				0.029	0.009	0.014
PA: Harrisburg	8	0.3	0.1	0.1	0.015	0.008	0.012
PA: Pittsburgh	6	0.0	0.0	0.0	0.018	0.010	0.013
SC: Barnwell	2	0.0	0.0	0.0	0.009	0.008	0.008
SC: Columbia	9	0.3	0.1	0.1	0.040	0.006	0.015
SD: Pierre	8	0.4	0.0	0.1	0.020	0.007	0.015

Table 4 (continued)

Gross Beta in Airborne Particulates
March 1996

Location	Number of Samples	5-hour Field Estimate			NAREL Lab Measurement		
		Max	Min	Avg	Max	Min	Avg
		(pCi/m³)			(pCi/m³)		
TN: Knoxville	2	0.8	0.2	0.5	0.020	0.017	0.019
TN: Nashville	8	0.2	0.0	0.1	0.016	0.010	0.013
TX: Austin	8	0.2	0.1	0.2	0.015	0.006	0.011
TX: El Paso	8	1.2	0.4	0.7	0.027	0.001	0.015
UT: Salt Lake City	9	0.2	0.0	0.1	0.014	0.004	0.009
VA: Lynchburg	8	0.6	0.1	0.4	0.011	0.006	0.010
VA: Virginia Beach	1	0.0	0.0	0.0	0.010	0.010	0.010
WA: Olympia	9	0.1	0.0	0.1	0.012	0.002	0.006
WA: Spokane	8	0.2	0.0	0.1	0.026	0.004	0.012
WI: Madison	9	0.2	0.0	0.1	0.018	0.009	0.014

Table 5

Gross Beta and Specific Gamma in Precipitation
January 1996

Location	Gross Beta Activity		Specific Gamma Activity		
	pCi/L	± 2*u*	Nuclide	pCi/L	± 2*u*
AL: Montgomery	2.71	0.41	Be7	61	45
			Pb212	4.8	6.8
AR: Little Rock	1.66	0.34	Be7	49	49
CA: Berkeley	0.47	0.25	Bi212	31	38
CO: Denver	1.76	0.37	Be7	121	32
			K40	18	27
			Pb212	5.7	4.7
CT: Hartford	1.69	0.36	Be7	47	27
DE: Wilmington	1.40	0.33	Pb212	2.4	4.5
FL: Jacksonville	0.97	0.37	Bi214	3.1	4.8
FL: Miami	0.42	0.33	Pb212	7.4	9.2
HI: Honolulu	1.29	0.32		ND	
IA: Iowa City	1.24	0.31	Bi212	29	39
ID: Boise	0.99	0.32		ND	
ID: Idaho Falls	1.87	0.36	Pb212	7.1	7.1
MN: Minneapolis	2.63	0.42	Bi212	30	42
MN: Welch	0.60	0.28	Bi214	12.2	7.4
			K40	25	39
			Pb212	7.7	6.7
MS: Jackson	2.77	0.43	Be7	73	51
			Bi214	7.4	7.3
NC: Charlotte	1.24	0.37	Be7	35	36
NC: Wilmington	2.04	0.38		ND	
ND: Bismarck	4.67	0.52		ND	
NJ: Trenton	2.22	0.38	Ra224	63	87
NY: Albany	2.50	0.42		ND	
NY: Yaphank	2.92	0.43	Be7	38	38
			K40	46	41
OH: Painesville	2.30	0.39	Be7	70	51
			Tl208	3.1	4.1
OH: Toledo	1.61	0.37		ND	
OR: Portland	1.18	0.30		ND	
PA: Harrisburg	3.43	0.45	Bi214	10.0	6.9
SC: Barnwell	1.83	0.36	Be7	96	51
			K40	24	39
SC: Columbia	1.94	0.41	Pb212	6.2	6.8
TN: Knoxville	0.47	0.26		ND	

Note: ND = Not detected.

Table 5 (continued)

Gross Beta and Specific Gamma in Precipitation
January 1996

Location	Gross Beta Activity		Specific Gamma Activity		
	pCi/L	± 2*u*	Nuclide	pCi/L	± 2*u*
TN: Nashville	5.89	0.63	Be7	38	25
UT: Salt Lake City	0.89	0.29		ND	
VA: Lynchburg	1.47	0.38	Bi214	8.3	7.3
WA: Olympia	0.42	0.24	Be7	53	39
WI: Madison	1.99	0.36	Bi214	10.9	7.2

Note: ND = Not detected.

Table 6

Gross Beta and Specific Gamma in Precipitation
February 1996

Location	Gross Beta Activity		Specific Gamma Activity		
	pCi/L	± 2*u*	Nuclide	pCi/L	± 2*u*
AL: Montgomery	0.68	0.27		ND	
AR: Little Rock	4.57	0.53	Pb212	4.7	6.5
AZ: Phoenix	2.04	0.39		ND	
CA: Berkeley	0.39	0.25		ND	
CT: Hartford	5.52	0.56	Be7	85	36
			Pb212	8.4	6.7
DE: Wilmington	1.53	0.33	Be7	49	24
			Pb212	4.2	5.0
FL: Jacksonville	1.21	0.32		ND	
FL: Miami	1.63	0.37		ND	
HI: Honolulu	1.02	0.30		ND	
IA: Iowa City	1.26	0.32	Pb212	5.0	7.2
ID: Boise	0.48	0.26		ND	
ID: Idaho Falls	8.07	0.67		ND	
MN: Minneapolis	1.71	0.36		ND	
MS: Jackson	0.18	0.25		ND	
NC: Charlotte	2.62	0.41	Be7	47	28
			Pb212	3.2	5.3
NC: Wilmington	1.44	0.35	Be7	34	25
ND: Bismarck	6.14	0.61	Be7	30	21
			Bi214	14.3	5.1
			Pb212	2.6	4.7
			Tl208	1.6	2.8
NJ: Trenton	1.91	0.36	Be7	37	33
NY: Albany	2.06	0.38	Be7	93	33
NY: Yaphank	2.81	0.42	Be7	63	29
OH: Painesville	0.69	0.30	Be7	67	40
			Pb212	5.0	6.9
OR: Portland	2.96	0.45	Tl208	2.7	2.4
PA: Harrisburg	7.37	0.63	Be7	68	34
			Pb212	5.6	6.4
SC: Barnwell	1.60	0.35		ND	
SC: Columbia	1.40	0.33	Be7	47	26
			Pb212	3.0	5.0
			Tl208	2.2	3.3
TN: Nashville	1.41	0.33	Be7	49	37
			Be7	56	30

Note: ND = Not detected.

Table 6 (continued)

Gross Beta and Specific Gamma in Precipitation
February 1996

Location	Gross Beta Activity		Specific Gamma Activity		
	pCi/L	± 2*u*	Nuclide	pCi/L	± 2*u*
UT: Salt Lake City	1.49	0.35	Be7	38	21
VA: Lynchburg	2.14	0.39		ND	
WA: Olympia	0.70	0.28	Be7	30	30

Note: ND = Not detected.

Table 7

Gross Beta and Specific Gamma in Precipitation
March 1996

Location	Gross Beta Activity		Specific Gamma Activity		
	pCi/L	± 2*u*	Nuclide	pCi/L	± 2*u*
AL: Montgomery	1.05	0.28	Be7	51	32
AR: Little Rock	2.09	0.37		ND	
CA: Berkeley	0.46	0.26		ND	
CO: Denver	1.93	0.36		ND	
CT: Hartford	2.49	0.38	Be7	64	33
			Bi214	15.6	6.5
DE: Wilmington	2.30	0.36	Be7	40	26
			Tl208	2.8	3.3
FL: Jacksonville	1.19	0.30	Be7	37	40
			Bi214	6.2	5.8
			Pb212	3.0	5.1
FL: Miami	2.20	0.39		ND	
HI: Honolulu	0.40	0.24	Pb212	3.8	4.1
IA: Iowa City	1.69	0.34	Be7	167	35
			Bi214	11.4	4.9
			Pb214	7.8	5.0
ID: Boise	2.28	0.38	Pb212	5.3	7.4
			Tl208	3.3	2.2
ID: Idaho Falls	4.99	0.52		ND	
MN: Minneapolis	2.17	0.38	Be7	75	40
			Pb212	7.7	4.8
			Tl208	4.2	3.0
MS: Jackson	0.74	0.27		ND	
NC: Charlotte	1.31	0.30	Be7	58	26
			Pb212	2.8	4.9
NC: Wilmington	0.81	0.26	Pb212	4.7	5.0
ND: Bismarck	18.7	1.0	Be7	82	39
			Bi214	5.3	6.1
NJ: Trenton	1.29	0.30	Be7	38	30
			Pb214	7.0	4.9
NY: Albany	1.14	0.29		ND	
NY: Yaphank	2.52	0.37	Be7	33	35
			K40	45	54
OH: Painesville	2.89	0.41	Be7	56	41
			K40	24	43
OR: Portland	0.94	0.29	Pb212	3.8	6.4
PA: Harrisburg	2.36	0.36	Be7	52	29

Note: ND = Not detected.

Table 7 (continued)

Gross Beta and Specific Gamma in Precipitation
March 1996

Location	Gross Beta Activity		Specific Gamma Activity		
	pCi/L	± 2*u*	Nuclide	pCi/L	± 2*u*
SC: Barnwell	0.86	0.27		ND	
SC: Columbia	1.70	0.33		ND	
TN: Nashville	0.75	0.26		ND	
TX: Austin	4.29	0.49	Pb212	2.9	5.4
UT: Salt Lake City	1.07	0.29		ND	
VA: Lynchburg	0.90	0.29		ND	
WA: Olympia	1.82	0.33	Be7	87	46
WI: Madison	3.00	0.42	Tl208	1.9	3.2

Note: ND = Not detected.

Table 8

Tritium in Precipitation
January - March 1996

Location	January 1996		February 1996		March 1996	
	pCi/L	± 2*u*	pCi/L	± 2*u*	pCi/L	± 2*u*
AL: Montgomery	-49	71	-59	72	-39	73
AR: Little Rock	-39	72	47	71	-19	73
AZ: Phoenix	NS		-17	69	NS	
CA: Berkeley	-31	72	25	71	7	74
CO: Denver	1	74	NS		0	74
CT: Hartford	-26	71	-35	72	0	75
DE: Wilmington	-7	72	-4	73	-3	74
FL: Jacksonville	22	72	-25	73	-35	73
FL: Miami	-1	71	-42	72	-66	72
HI: Honolulu	-7	74	35	71	-19	73
IA: Iowa City	-51	72	-17	69	-17	73
ID: Boise	-38	72	32	71	3	74
ID: Idaho Falls	7	73	91	73	-23	73
MN: Minneapolis	12	74	42	71	-22	73
MN: Welch	26	74	NS		NS	
MS: Jackson	10	71	-19	73	-58	72
NC: Charlotte	38	73	-26	73	-3	74
NC: Wilmington	10	72	-51	72	-3	75
ND: Bismarck	-57	71	29	71	9	75
NJ: Trenton	12	73	-3	74	-25	74
NY: Albany	-4	72	-10	73	-3	75
NY: Yaphank	34	74	-43	72	-1	74
OH: Painesville	20	73	-3	74	-30	73
OH: Toledo	-19	73	NS		NS	
OR: Portland	-9	73	-16	69	-53	72
PA: Harrisburg	-6	72	-22	73	-9	74
SC: Barnwell	142	79	-30	73	62	76
SC: Columbia	10	72	143	79	-36	73
TN: Knoxville	-55	71	NS		NS	
TN: Nashville	30	72	-68	71	-20	74
TX: Austin	NS		NS		3	74
UT: Salt Lake City	-4	73	55	72	47	76
VA: Lynchburg	-30	70	-69	71	-36	73
WA: Olympia	-84	70	0	70	-35	72
WI: Madison	-16	72	NS		-30	74

Note: NS = No sample.

Plutonium and Uranium in Airborne Particulates and Precipitation

Environmental radiation levels of plutonium and uranium are determined by the analysis of annually composited samples (air filters) collected from the continuously operating airborne particulate samplers.

Concentrations of plutonium-238, combined plutonium-239 and 240, and uranium-234, 235, and 238 are determined by alpha spectrometry following chemical separation. The volume of air represented by the annual composite ranges from 120,000 to 500,000 cubic meters.

Plutonium and uranium results are published when they become available.

2. Water Program

The ERAMS water program provides data on radionuclide concentrations in the nation's rivers, streams, and drinking water supplies.

Surface Water

Quarterly grab samples are taken downstream from operating or future nuclear facilities at 58 stations. Surface water samples are analyzed for tritium quarterly and gamma-emitting radionuclides annually. Tritium is a primary potential radioactive pollutant from nuclear power plants and weapons production activities.

Table 9

Tritium in Surface Water
January - March 1996

Location	Source	Date Collected	^{3}H pCi/L	± 2*u*
AL: Decatur	Tennessee River	01/18/96	50	74
AL: Gordon	Chattahoochee River	01/09/96	22	79
AL: Scottsboro	Tennessee River	01/17/96	34	74
AR: Little Rock	Arkansas River	01/25/96	20	100
CA: Clay Station	Folsom S. Canal	01/30/96	230	120
CA: Diablo Canyon	Pacific Ocean	01/02/96	-19	77
CA: Eureka	Humboldt Bay	01/25/96	0	110
CA: San Onofre	Pacific Ocean	03/30/96	0	75
CO: Platteville	South Platte River	01/24/96	82	82
CT: E. Haddam	Connecticut River	03/14/96	40	71
CT: Waterford	Long Island Sound	03/14/96	286	78
FL: Crystal River	Gulf Of Mexico	01/29/96	-60	110
FL: Ft. Pierce	Atlantic Ocean	01/31/96	-60	120
FL: Homestead	Biscayne Bay	02/14/96	248	82
GA: Baxley	Altamaha River	01/09/96	70	82
IA: Cedar Rapids	Cedar River	01/24/96	36	81
IL: Morris	Illinois River	03/19/96	278	80
IL: Zion	Lake Michigan	02/15/96	95	82
KS: Le Roy	Neosho River	01/04/96	-14	77
LA: New Orleans	Mississippi River	01/22/96	-16	72
MA: Plymouth	Cape Cod Bay	02/27/96	-27	72
MD: Conowingo	Susquehanna River	02/06/96	60	110
MD: Lusby	Chesapeake Bay	01/30/96	0	110
ME: Wiscasset	Montseway Bay	02/08/96	1	71
MI: Charlevoix	Lake Michigan	01/25/96	107	83
MI: Monroe	Lake Erie	01/25/96	110	110
MN: Monticello	Mississippi River	02/20/96	-14	72
MN: Red Wing	Mississippi River	02/12/96	-4	72
MS: Port Gibson	Mississippi River	01/23/96	26	73
NC: Charlotte	Catawba River	01/29/96	500	130
NC: Southport	Atlantic Ocean	02/15/96	-65	70
NE: Rulo	Missouri River	01/23/96	46	81
NJ: Bayside	Delaware River	01/23/96	20	73
NJ: Oyster Creek	Oyster Creek	01/24/96	21	80
NV: Boulder City	Colorado River	03/15/96	96	73
NY: Chelsea	Hudson River	01/25/96	170	120
NY: Croton-On-Hudson	Hudson River	01/25/96	150	120
NY: Oswego	Lake Ontario	02/21/96	142	78
OR: Bradwood	Columbia River	03/11/96	-13	73
PA: Danville	Susquehanna River	02/07/96	46	73

Table 9 (continued)

Tritium in Surface Water
January - March 1996

Location	Source	Date Collected	^{3}H pCi/L	± 2*u*
PA: Philadelphia	Delaware River - Baxter	02/09/96	20	71
PA: Philadelphia	Schuylkill River - Belmont, Pa	02/09/96	62	75
PA: Philadelphia	Schuylkill River - Queen Lane	02/09/96	53	74
SC: Allendale	Savannah River	01/04/96	810	100
SC: Broad River	Broad River	01/24/96	89	82
SC: Hartsville	Lake Robinson	01/23/96	1750	120
TN: Daisy	Tennessee River	01/22/96	52	77
TN: Kingston	Clinch River	01/25/96	880	110
TN: Oak Ridge	Clinch River	02/19/96	412	92
TX: El Paso	Rio Grande	02/13/96	-85	69
TX: Matagorda	Colorado River	01/08/96	31	81
VA: Doswell	North Anna River	01/04/96	3970	170
VA: Newport News	James River	01/17/96	49	75
WA: Northport	Columbia River	02/14/96	-62	70
WA: Richland	Columbia River	01/25/96	20	80
WI: Two Creeks	Lake Michigan	02/20/96	101	77
WI: Victory	Mississippi River	01/08/96	86	83
WV: Wheeling	Ohio River	01/24/96	18	80

Drinking Water

This program monitors ambient radiation levels in drinking water at 78 sites. These data serve to assess trends and anomalies in concentrations, and to compare with standards set forth in the EPA "National Interim Primary Drinking Water Regulations." These regulations provide for approval of supplies when the combined radium-226 and radium-228 levels do not exceed 5 pCi/L, when the gross alpha (excluding radon and uranium) levels do not exceed 15 pCi/L, when tritium levels do not exceed 20,000 pCi/L, when the strontium-90 levels do not exceed 8 pCi/L, and when the gross beta levels do not exceed 50 pCi/L.

Grab samples are taken at the 78 sites which are either major population centers or selected nuclear facility environs.

The analyses include (a) tritium on a quarterly basis; (b) gross alpha, gross beta, strontium-90, and gamma on annual composites; (c) radium-226 if the gross alpha exceeds 2 pCi/L and radium-228 if the radium-226 falls between 3 and 5 pCi/L; (d) specific iodine-131 on one quarterly sample per year for each station; and (e) an annual composite for plutonium-238, combined plutonium-239 and 240, and uranium-234, 235, and 238 for stations that demonstrate gross alpha levels greater than 2 pCi/L.

Table 10

Tritium in Drinking Water
January - March 1996

Location	Date Collected	^{3}H pCi/L	± 2*u*
AK: Fairbanks	01/22/96	-1	75
AL: Dothan	01/10/96	-30	76
AL: Muscle Shoals	01/18/96	-18	71
AL: Scottsboro	01/17/96	39	73
AR: Little Rock	01/25/96	-8	79
CA: Los Angeles	01/23/96	-56	73
CO: Denver	01/25/96	57	82
CO: Platteville	01/24/96	-25	71
CT: Hartford	01/24/96	-17	72
DC: Washington	01/26/96	26	81
DE: Dover	01/23/96	-39	71
FL: Miami	01/23/96	23	80
FL: Tampa	01/23/96	4	72
GA: Baxley	01/09/96	-30	74
GA: Savannah	03/19/96	-32	68
HI: Honolulu	01/16/96	-89	68
IA: Cedar Rapids	01/23/96	15	73
ID: Boise	01/22/96	-51	73
ID: Idaho Falls	02/22/96	36	76
IL: Morris	01/22/96	-114	70
IL: W. Chicago	01/30/96	0	110
KS: Topeka	01/22/96	-55	73
LA: New Orleans	01/24/96	-25	71
MA: Lawrence	03/01/96	20	75
MD: Baltimore	01/22/96	-67	72
MD: Conowingo	02/06/96	70	110
ME: Augusta	01/29/96	130	110
MI: Detroit	01/22/96	87	78
MI: Grand Rapids	02/16/96	-22	72
MN: Minneapolis	02/20/96	52	75
MN: Red Wing	02/26/96	-66	70
MO: Jefferson City	01/24/96	1	72
MS: Jackson	01/24/96	-29	71
MS: Port Gibson	01/23/96	-62	72
MT: Helena	03/20/96	57	71
NC: Charlotte	01/29/96	550	120
NC: Wilmington	02/01/96	27	74
NE: Lincoln	01/23/96	-7	72
NH: Concord	01/22/96	-67	73
NJ: Trenton	01/22/96	-58	73

Table 10 (continued)

Tritium in Drinking Water
January - March 1996

Location	Date Collected	^{3}H pCi/L ± 2*u*	
NJ: Waretown	01/25/96	-36	78
NM: Santa Fe	03/29/96	82	79
NV: Las Vegas	01/23/96	-3	76
NY: Albany	01/22/96	20	73
NY: Niagara Falls	01/23/96	79	75
NY: Syracuse	03/15/96	90	73
OH: Cincinnati	02/27/96	26	74
OH: Columbus	01/29/96	60	110
OH: E. Liverpool	02/15/96	27	74
OH: Painesville	01/31/96	170	120
OH: Toledo	01/29/96	210	120
OK: Oklahoma City	01/24/96	-28	71
OR: Portland	01/24/96	-29	71
PA: Columbia	02/08/96	63	73
PA: Harrisburg	02/08/96	-29	72
PA: Philadelphia - Belmont	02/09/96	39	72
PA: Philadelphia - Queen Lane	02/09/96	17	73
PA: Pittsburgh	02/15/96	-35	71
PC: Corozal	01/23/96	60	110
RI: Providence	01/23/96	12	73
SC: Barnwell	01/10/96	-71	73
SC: Columbia	01/22/96	17	76
SC: Jenkinsville	01/26/96	44	81
SC: Seneca	01/22/96	6	76
TN: Chattanooga	01/22/96	-33	74
TN: Knoxville	01/31/96	60	82
TN: Oak Ridge - Anderson Co. #768	03/27/96	62	78
TN: Oak Ridge - Anderson Co. #772	03/27/96	76	79
TN: Oak Ridge - Knox Co. #371	03/27/96	29	76
TN: Oak Ridge - Roane Co. #360	03/28/96	31	77
TN: Oak Ridge - Roane Co. #4442	03/28/96	266	86
TX: Austin	02/06/96	-42	71
VA: Lynchburg	01/25/96	70	110
WA: Richland	01/25/96	0	82
WA: Seattle	01/22/96	-84	72
WI: Genoa City	01/08/96	-1	72
WI: Madison	01/24/96	-30	71

3. Milk Program

Pasteurized Milk

Milk is a reliable indicator of the general population's intake of radionuclides since it is consumed fresh by a large segment of the population and can contain several of the biologically significant radionuclides that result from environmental releases from nuclear activities. A primary function of this program is to obtain reliable monitoring data relative to current radionuclide concentrations and determine any long-term trends.

Monthly samples are collected at approximately 55 sampling sites with at least one located in each state, Puerto Rico, and the Panama Canal Zone. The samples are composited, according to production, from the major milk suppliers representing more than 80 percent of the milk consumed in a given population center.

The samples are analyzed for gamma-emitting nuclides, including iodine-131, barium-140, cesium-137, and potassium-40. Total potassium concentrations in g/L are determined from potassium-40 activities assuming natural isotopic abundances. All samples collected in July are analyzed for strontium-90.

Iodine-131, barium-140, cesium-137, and potassium-40 are determined by gamma spectral analysis. Strontium-90 is determined by beta counting a total strontium precipitate that has been chemically separated by ion exchange.

Table 11

Radionuclides in Pasteurized Milk
January 1996

Location	Date Collected	K g/L ± 2*u*		^{137}Cs pCi/L ± 2*u*		^{140}Ba pCi/L ± 2*u*	^{131}I pCi/L ± 2*u*
AL: Montgomery	01/09/96	1.57	0.11	ND		ND	ND
AR: Little Rock	01/08/96	1.632	0.080	ND		ND	ND
AZ: Phoenix	01/23/96	1.716	0.093	ND		ND	ND
CA: Los Angeles	01/17/96	1.66	0.13	ND		ND	ND
CA: Sacramento	01/17/96	1.525	0.089	ND		ND	ND
CA: San Francisco	01/04/96	1.58	0.14	ND		ND	ND
CO: Denver	01/22/96	1.41	0.11	ND		ND	ND
DE: Dover	01/30/96	1.70	0.10	ND		ND	ND
FL: Tampa	01/23/96	1.632	0.094	6.3	2.5	ND	ND
GA: Atlanta	01/09/96	1.537	0.077	ND		ND	ND
HI: Honolulu	01/29/96	1.67	0.13	ND		ND	ND
IA: Des Moines	01/22/96	1.632	0.092	ND		ND	ND
IL: Chicago	01/04/96	1.680	0.081	ND		ND	ND
IN: Indianapolis	01/09/96	1.60	0.10	ND		ND	ND
KS: Wichita	01/22/96	1.66	0.13	ND		ND	ND
KS: Wichita	01/23/96	1.501	0.089	ND		ND	ND
KY: Louisville	01/17/96	1.632	0.092	ND		ND	ND
MA: Boston	01/09/96	1.644	0.089	ND		ND	ND
MD: Baltimore	01/19/96	1.549	0.090	ND		ND	ND
ME: Portland	01/11/96	1.585	0.090	ND		ND	ND
MI: Detroit	01/17/96	1.668	0.093	ND		ND	ND
MI: Grand Rapids	01/08/96	1.62	0.10	ND		ND	ND
MN: St. Paul	01/03/96	1.549	0.076	ND		ND	ND
MO: Kansas City	01/23/96	1.716	0.079	ND		ND	ND
MS: Jackson	01/08/96	1.680	0.080	ND		ND	ND
NC: Charlotte	01/09/96	1.537	0.075	ND		ND	ND
ND: Minot	01/17/96	1.704	0.089	ND		ND	ND
NJ: Trenton	01/10/96	1.680	0.092	ND		ND	ND
NM: Albuquerque	01/23/96	1.67	0.10	ND		ND	ND
NY: Buffalo	01/16/96	1.50	0.14	ND		ND	ND
NY: Syracuse	01/16/96	1.632	0.091	ND		ND	ND
OH: Cincinnati	01/16/96	1.64	0.12	ND		ND	ND
OH: Cleveland	01/23/96	1.573	0.091	ND		ND	ND
OR: Portland	01/09/96	1.609	0.079	ND		ND	ND
PA: Philadelphia	01/17/96	1.847	0.095	ND		ND	ND
PA: Pittsburgh	01/03/96	1.64	0.13	ND		ND	ND
PC: Cristobal	01/25/96	1.585	0.099	4.8	2.3	ND	ND
PR: San Juan	01/19/96	1.680	0.095	ND		ND	ND
SC: Charleston	01/11/96	1.621	0.088	ND		ND	ND

Note: ND = Not detected

Table 11 (continued)

Radionuclides in Pasteurized Milk
January 1996

Location	Date Collected	K g/L ± 2*u*		^{137}Cs pCi/L ± 2*u*	^{140}Ba pCi/L ± 2*u*	^{131}I pCi/L ± 2*u*
TN: Chattanooga	01/04/96	1.668	0.081	ND	ND	ND
TN: Knoxville	01/07/96	1.57	0.11	ND	ND	ND
TN: Memphis	01/30/96	1.549	0.090	ND	ND	ND
TX: Austin	01/24/96	1.57	0.13	ND	ND	ND
TX: Ft. Worth	01/17/96	1.692	0.089	ND	ND	ND
VA: Norfolk	01/26/96	1.50	0.12	ND	ND	ND
VT: Burlington	01/31/96	1.64	0.10	ND	ND	ND
WA: Seattle	01/16/96	1.680	0.099	ND	ND	ND
WA: Spokane	01/18/96	1.54	0.12	ND	ND	ND

Note: ND = Not detected

Table 12

Radionuclides in Pasteurized Milk
February 1996

Location	Date Collected	K g/L ± 2*u*		^{137}Cs pCi/L ± 2*u*		^{140}Ba pCi/L ± 2*u*	^{131}I pCi/L ± 2*u*
AL: Montgomery	02/05/96	1.58	0.13	ND		ND	ND
AR: Little Rock	02/06/96	1.501	0.089	ND		ND	ND
CA: Los Angeles	02/07/96	1.692	0.093	ND		ND	ND
CA: Sacramento	02/14/96	1.632	0.081	ND		ND	ND
CA: San Francisco	02/07/96	1.632	0.088	ND		ND	ND
CO: Denver	02/13/96	1.585	0.090	ND		ND	ND
CT: Hartford	02/05/96	1.561	0.087	ND		ND	ND
DE: Wilmington	02/13/96	1.466	0.075	ND		ND	ND
FL: Tampa	02/05/96	1.656	0.089	2.3	2.2	ND	ND
GA: Atlanta	02/13/96	1.53	0.10	ND		ND	ND
HI: Honolulu	02/20/96	1.716	0.091	ND		ND	ND
IA: Des Moines	02/06/96	1.67	0.11	ND		ND	ND
IL: Chicago	02/08/96	1.597	0.090	ND		ND	ND
IN: Indianapolis	02/05/96	1.585	0.080	ND		ND	ND
KS: Wichita	02/26/96	1.632	0.090	ND		ND	ND
KY: Louisville	02/05/96	1.56	0.12	ND		ND	ND
MA: Boston	02/06/96	1.680	0.090	ND		ND	ND
MD: Baltimore	02/02/96	1.537	0.089	ND		ND	ND
MI: Detroit	02/13/96	1.561	0.076	ND		ND	ND
MI: Grand Rapids	02/05/96	1.63	0.11	ND		ND	ND
MN: St. Paul	02/08/96	1.64	0.10	ND		ND	ND
MO: Kansas City	02/07/96	1.55	0.10	ND		ND	ND
MS: Jackson	02/07/96	1.549	0.082	ND		ND	ND
NC: Charlotte	02/06/96	1.704	0.093	ND		ND	ND
ND: Minot	02/08/96	1.585	0.090	ND		ND	ND
NJ: Trenton	02/08/96	1.656	0.080	ND		ND	ND
NM: Albuquerque	02/21/96	1.549	0.080	ND		ND	ND
NV: Las Vegas	02/06/96	1.454	0.086	ND		ND	ND
NY: Buffalo	02/06/96	1.70	0.14	ND		ND	ND
NY: Syracuse	02/05/96	1.656	0.067	ND		ND	ND
OH: Cincinnati	02/05/96	1.585	0.090	ND		ND	ND
OH: Cleveland	02/07/96	1.64	0.14	ND		ND	ND
OR: Portland	02/05/96	1.63	0.13	ND		ND	ND
PA: Pittsburgh	02/06/96	1.561	0.093	ND		ND	ND
PC: Cristobal	02/29/96	1.45	0.11	4.7	2.7	ND	ND
PR: San Juan	02/12/96	1.728	0.093	ND		ND	ND
SC: Charleston	02/13/96	1.74	0.10	ND		ND	ND
TN: Chattanooga	02/06/96	1.58	0.12	ND		ND	ND
TN: Knoxville	02/05/96	1.632	0.094	ND		ND	ND

Note: ND = Not detected

Table 12 (continued)

Radionuclides in Pasteurized Milk
February 1996

Location	Date Collected	K g/L ± 2*u*	^{137}Cs pCi/L ± 2*u*	^{140}Ba pCi/L ± 2*u*	^{131}I pCi/L ± 2*u*
TN: Memphis	02/20/96	1.632 0.067	ND	ND	ND
TX: Ft. Worth	02/06/96	1.525 0.074	ND	ND	ND
VA: Norfolk	02/23/96	1.656 0.091	ND	ND	ND
VT: Burlington	02/29/96	1.656 0.092	ND	ND	ND
WA: Seattle	02/06/96	1.489 0.089	ND	ND	ND
WA: Spokane	02/08/96	1.63 0.10	ND	ND	ND
WV: Charleston	02/13/96	1.69 0.12	ND	ND	ND

Note: ND = Not detected

Table 13

Radionuclides in Pasteurized Milk
March 1996

Location	Date Collected	K g/L ± 2*u*	^{137}Cs pCi/L ± 2*u*	^{140}Ba pCi/L ± 2*u*	^{131}I pCi/L ± 2*u*
AL: Montgomery	03/07/96	1.561 0.081	ND	ND	ND
AR: Little Rock	03/13/96	1.45 0.10	ND	ND	ND
AZ: Phoenix	03/20/96	1.621 0.081	ND	ND	ND
CA: Los Angeles	03/12/96	1.54 0.14	ND	ND	ND
CA: Sacramento	03/26/96	1.632 0.068	ND	ND	ND
CA: San Francisco	03/05/96	1.63 0.12	ND	ND	ND
CO: Denver	03/18/96	1.585 0.088	ND	ND	ND
DE: Wilmington	03/15/96	1.573 0.080	ND	ND	ND
FL: Tampa	03/04/96	1.740 0.093	4.5 2.7	ND	ND
GA: Atlanta	03/12/96	1.525 0.079	ND	ND	ND
HI: Honolulu	03/22/96	1.621 0.080	ND	ND	ND
IA: Des Moines	03/04/96	1.728 0.094	ND	ND	ND
IL: Chicago	03/14/96	1.585 0.079	ND	ND	ND
IN: Indianapolis	03/04/96	1.752 0.094	ND	ND	ND
KS: Wichita	03/18/96	1.68 0.12	ND	ND	ND
KY: Louisville	03/05/96	1.61 0.10	ND	ND	ND
MA: Boston	03/08/96	1.597 0.081	ND	ND	ND
MD: Baltimore	03/01/96	1.63 0.11	ND	ND	ND
MI: Detroit	03/13/96	1.609 0.089	ND	ND	ND
MI: Grand Rapids	03/04/96	1.632 0.092	ND	ND	ND
MN: St. Paul	03/04/96	1.61 0.12	ND	ND	ND
MO: Kansas City	03/06/96	1.61 0.14	ND	ND	ND
MS: Jackson	03/04/96	1.573 0.081	ND	ND	ND
NC: Charlotte	03/05/96	1.60 0.14	ND	ND	ND
ND: Minot	03/20/96	1.632 0.089	ND	ND	ND
NJ: Trenton	03/06/96	1.680 0.092	ND	ND	ND
NM: Albuquerque	03/12/96	1.64 0.15	ND	ND	ND
NV: Las Vegas	03/11/96	1.811 0.094	ND	ND	ND
NY: Buffalo	03/05/96	1.621 0.081	ND	ND	ND
NY: Syracuse	03/04/96	1.680 0.092	ND	ND	ND
OH: Cincinnati	03/21/96	1.48 0.14	ND	ND	ND
OH: Cleveland	03/04/96	1.597 0.086	ND	ND	ND
OR: Portland	03/04/96	1.740 0.093	ND	ND	ND
PA: Philadelphia	03/04/96	1.752 0.094	ND	ND	ND
PA: Pittsburgh	03/05/96	1.668 0.093	ND	ND	ND
PC: Cristobal	03/14/96	1.847 0.093	5.5 2.5	ND	ND
PR: San Juan	03/08/96	1.680 0.093	ND	ND	ND
SC: Charleston	03/05/96	1.55 0.11	ND	ND	ND
SD: Rapid City	03/06/96	1.656 0.091	ND	ND	ND

Note: ND = Not detected

Table 13 (continued)

Radionuclides in Pasteurized Milk
March 1996

Location	Date Collected	K g/L ± 2*u*	^{137}Cs pCi/L ± 2*u*	^{140}Ba pCi/L ± 2*u*	^{131}I pCi/L ± 2*u*
TN: Chattanooga	03/11/96	1.585 0.067	ND	ND	ND
TN: Chattanooga	03/29/96	1.51 0.10	ND	ND	ND
TN: Knoxville	03/11/96	1.513 0.079	ND	ND	ND
TN: Knoxville	03/29/96	1.430 0.073	ND	ND	ND
TN: Memphis	03/18/96	1.597 0.080	ND	ND	ND
TX: Ft. Worth	03/06/96	1.621 0.068	ND	ND	ND
VA: Norfolk	03/26/96	1.51 0.11	ND	ND	ND
VT: Burlington	03/22/96	1.585 0.080	ND	ND	ND
WA: Seattle	03/04/96	1.53 0.10	ND	ND	ND
WA: Spokane	03/11/96	1.644 0.088	ND	ND	ND
WV: Charleston	03/04/96	1.53 0.14	ND	ND	ND

Note: ND = Not detected

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