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MONTHLY PROGRESS REPORT

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

DAVIS-BESSE NUCLEAR POWER STATION
OAK HARBOR, OHIO

Reporting Period: January-December, 2012

Prepared and Submitted by
ENVIRONMENTAL, INC.,
MIDWEST LABORATORY

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Reviewed and Approved _____

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1.0 INTRODUCTION

The following constitutes the current 2012 Monthly Progress Report for the Radiological Environmental Monitoring Program conducted at the Davis-Besse Nuclear Power Station in Oak Harbor, Ohio. Results of completed analyses are presented in the attached tables. Missing entries indicate analyses that are not yet completed.

All activities, except gross alpha and gross beta, are decay corrected to the time of collection.

All samples were collected within the scheduled period unless noted otherwise in the Listing of Missed Samples.

2.0 LISTING OF MISSED SAMPLES

Sample Type	Location	Expected Collection Date	Reason

3.0 DATA TABULATIONS

Table 1. Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131[a].
Location: T-1
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Volume (m^3)	Gross Beta	Date Collected	Volume (m^3)	Gross Beta
Required LLD		0.010			0.010
01-10-12	285	0.030 ± 0.004	07-10-12	284	0.031 ± 0.004
01-17-12	285	0.029 ± 0.004	07-17-12	285	0.027 ± 0.004
01-24-12	288	0.026 ± 0.004	07-24-12	284	0.035 ± 0.004
01-31-12	294	0.029 ± 0.004	07-31-12	284	0.022 ± 0.004
02-07-12	290	0.025 ± 0.004	08-07-12	284	0.029 ± 0.004
02-14-12	287	0.020 ± 0.003	08-14-12	284	0.021 ± 0.004
02-21-12	285	0.023 ± 0.003	08-21-12	285	0.025 ± 0.004
02-28-12	285	0.028 ± 0.004	08-28-12	284	0.049 ± 0.005
03-06-12	287	0.020 ± 0.003	09-04-12	283	0.023 ± 0.004
03-13-12	284	0.026 ± 0.004	09-11-12	284	0.030 ± 0.004
03-20-12	285	0.020 ± 0.003	09-18-12	285	0.035 ± 0.004
03-27-12	286	0.019 ± 0.003	09-25-12	286	0.017 ± 0.004
04-03-12	285	0.014 ± 0.003	10-02-12	283	0.027 ± 0.004
1st Quarter Mean ± s.d.		0.024 ± 0.005	3rd Quarter Mean ± s.d.		0.029 ± 0.008
04-10-12	286	0.021 ± 0.004	10-09-12	283	0.027 ± 0.004
04-17-12	287	0.024 ± 0.004	10-16-12	285	0.024 ± 0.004
04-24-12	281	0.023 ± 0.004	10-23-12	285	0.031 ± 0.004
05-01-12	285	0.028 ± 0.004	10-30-12	285	0.031 ± 0.004 [b]
05-08-12	286	0.017 ± 0.004	11-06-12	290	0.012 ± 0.003
05-15-12	285	0.022 ± 0.004	11-13-12	286	0.037 ± 0.004
05-22-12	299	0.023 ± 0.004	11-20-12	287	0.047 ± 0.005
05-29-12	285	0.026 ± 0.004	11-27-12	287	0.055 ± 0.005
06-05-12	286	0.018 ± 0.003	12-04-12	285	0.061 ± 0.005
06-13-12	333	0.017 ± 0.003	12-11-12	288	0.029 ± 0.004
06-19-12	243	0.025 ± 0.004	12-18-12	287	0.052 ± 0.005
06-26-12	283	0.020 ± 0.004	12-26-12	327	0.035 ± 0.004
07-03-12	284	0.034 ± 0.004	01-02-13	287	0.044 ± 0.004
2nd Quarter Mean ± s.d.		0.023 ± 0.005	4th Quarter Mean ± s.d.		0.037 ± 0.014
			Cumulative Average		0.028

[a] Iodine-131 concentrations are < 0.07 pCi/m^3 unless noted otherwise.
[b] Volume corrections 10-30-12 through 11-27-12.

Table 2. Airborne particulates and charcoal canisters, analyses for gross beta and Iodine-131[a].
Location: T-2
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Volume (m^3)	Gross Beta	Date Collected	Volume (m^3)	Gross Beta
Required LLD		0.010			0.010
01-10-12	288	0.023 ± 0.003	07-10-12	288	0.031 ± 0.004
01-17-12	287	0.054 ± 0.005	07-17-12	287	0.030 ± 0.004
01-24-12	288	0.026 ± 0.004	07-24-12	301	0.029 ± 0.004
01-31-12	287	0.028 ± 0.004	07-31-12	286	0.022 ± 0.004
02-07-12	288	0.027 ± 0.004	08-07-12	287	0.026 ± 0.004
02-14-12	288	0.019 ± 0.003	08-14-12	287	0.019 ± 0.003
02-21-12	287	0.022 ± 0.003	08-21-12	288	0.024 ± 0.004
02-28-12	287	0.026 ± 0.004	08-28-12	288	0.046 ± 0.005
03-06-12	288	0.021 ± 0.003	09-04-12	274	0.023 ± 0.004
03-13-12	286	0.023 ± 0.004	09-11-12	287	0.030 ± 0.004
03-20-12	287	0.017 ± 0.003	09-18-12	285	0.036 ± 0.004
03-27-12	288	0.021 ± 0.003	09-25-12	285	0.017 ± 0.004
04-03-12	287	0.014 ± 0.003	10-02-12	283	0.025 ± 0.004
1st Quarter Mean ± s.d.		0.025 ± 0.010	3rd Quarter Mean ± s.d.		0.028 ± 0.008
04-10-12	288	0.019 ± 0.003	10-09-12	283	0.028 ± 0.004
04-17-12	288	0.018 ± 0.003	10-16-12	284	0.025 ± 0.004
04-24-12	292	0.019 ± 0.003	10-23-12	285	0.029 ± 0.004
05-01-12	273	0.022 ± 0.004	10-30-12	282	0.026 ± 0.004
05-08-12	281	0.018 ± 0.004	11-06-12	287	0.017 ± 0.003
05-15-12	287	0.021 ± 0.004	11-13-12	283	0.037 ± 0.004
05-22-12	288	0.022 ± 0.004	11-20-12	284	0.044 ± 0.004
05-29-12	286	0.031 ± 0.004	11-27-12	290	0.054 ± 0.005
06-05-12	288	0.019 ± 0.003	12-04-12	276	0.055 ± 0.005
06-13-12	330	0.017 ± 0.003	12-11-12	285	0.028 ± 0.004
06-19-12	246	0.020 ± 0.004	12-18-12	284	0.048 ± 0.005
06-26-12	287	0.018 ± 0.004	12-26-12	323	0.034 ± 0.004
07-03-12	286	0.033 ± 0.004	01-02-13	284	0.040 ± 0.004
2nd Quarter Mean ± s.d.		0.021 ± 0.005	4th Quarter Mean ± s.d.		0.036 ± 0.012
			Cumulative Average		0.027

[a] Iodine-131 concentrations are < 0.07 pCi/m^3 unless noted otherwise.

Table 3. Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131[a].
Location: T-3
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Volume (m^3)	Gross Beta	Date Collected	Volume (m^3)	Gross Beta
Required LLD		0.010			0.010
01-10-12	311	0.024 ± 0.003	07-10-12	289	0.033 ± 0.004
01-17-12	227	0.043 ± 0.005	07-17-12	288	0.025 ± 0.004
01-24-12	291	0.024 ± 0.003	07-24-12	288	0.031 ± 0.004
01-31-12	286	0.030 ± 0.004	07-31-12	288	0.023 ± 0.004
02-07-12	287	0.027 ± 0.004	08-07-12	288	0.028 ± 0.004
02-14-12	287	0.020 ± 0.003	08-14-12	288	0.020 ± 0.004
02-21-12	286	0.023 ± 0.003	08-21-12	289	0.026 ± 0.004
02-28-12	286	0.024 ± 0.004	08-28-12	289	0.046 ± 0.005
03-06-12	288	0.024 ± 0.004	09-04-12	287	0.024 ± 0.004
03-13-12	285	0.026 ± 0.004	09-11-12	288	0.030 ± 0.004
03-20-12	286	0.021 ± 0.003	09-18-12	289	0.031 ± 0.004
03-27-12	287	0.020 ± 0.003	09-25-12	289	0.019 ± 0.004
04-03-12	286	0.014 ± 0.003	10-02-12	287	0.027 ± 0.004
1st Quarter Mean ± s.d.		0.025 ± 0.007	3rd Quarter Mean ± s.d.		0.028 ± 0.007
04-10-12	287	0.022 ± 0.004	10-09-12	287	0.029 ± 0.004
04-17-12	287	0.022 ± 0.003	10-16-12	286	0.031 ± 0.004
04-24-12	286	0.022 ± 0.004	10-23-12	287	0.033 ± 0.004
05-01-12	288	0.023 ± 0.004	10-30-12	284	0.027 ± 0.004
05-08-12	289	0.018 ± 0.004	11-06-12	289	0.014 ± 0.003
05-15-12	288	0.025 ± 0.004	11-13-12	285	0.044 ± 0.005
05-22-12	298	0.023 ± 0.004	11-20-12	288	0.054 ± 0.005
05-29-12	287	0.025 ± 0.004	11-27-12	295	0.061 ± 0.005
06-05-12	289	0.014 ± 0.003	12-04-12	278	0.057 ± 0.005
06-13-12	331	0.017 ± 0.003	12-11-12	288	0.029 ± 0.004
06-19-12	247	0.020 ± 0.004	12-18-12	283	0.044 ± 0.004
06-26-12	287	0.021 ± 0.004	12-26-12	320	0.035 ± 0.004
07-03-12	288	0.032 ± 0.004	01-02-13	281	0.039 ± 0.004
2nd Quarter Mean ± s.d.		0.022 ± 0.004	4th Quarter Mean ± s.d.		0.038 ± 0.013
			Cumulative Average		0.028

[a] Iodine-131 concentrations are < 0.07 pCi/m^3 unless noted otherwise.

Table 4. Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131[a].
Location: T-4
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Volume (m^3)	Gross Beta	Date Collected	Volume (m^3)	Gross Beta
Required LLD		0.010			0.010
01-10-12	299	0.026 ± 0.003	07-10-12	282	0.044 ± 0.005
01-17-12	305	0.028 ± 0.003	07-17-12	283	0.022 ± 0.004
01-24-12	290	0.025 ± 0.003	07-24-12	281	0.028 ± 0.004
01-31-12	286	0.029 ± 0.004	07-31-12	282	0.023 ± 0.004
02-07-12	288	0.029 ± 0.004	08-07-12	281	0.026 ± 0.004
02-14-12	287	0.021 ± 0.003	08-14-12	282	0.022 ± 0.004
02-21-12	287	0.024 ± 0.004	08-21-12	282	0.025 ± 0.004
02-28-12	287	0.028 ± 0.004	08-28-12	283	0.044 ± 0.004
03-06-12	288	0.020 ± 0.003	09-04-12	280	0.023 ± 0.004
03-13-12	286	0.023 ± 0.004	09-11-12	282	0.029 ± 0.004
03-20-12	287	0.019 ± 0.003	09-18-12	283	0.033 ± 0.004
03-27-12	287	0.019 ± 0.003	09-25-12	283	0.018 ± 0.004
04-03-12	287	0.014 ± 0.003	10-02-12	281	0.026 ± 0.004
1st Quarter Mean ± s.d.		0.023 ± 0.005	3rd Quarter Mean ± s.d.		0.028 ± 0.008
04-10-12	288	0.021 ± 0.004	10-09-12	282	0.029 ± 0.004
04-17-12	288	0.020 ± 0.003	10-16-12	283	0.027 ± 0.004
04-24-12	291	0.017 ± 0.003	10-23-12	280	0.037 ± 0.004
05-01-12	290	0.023 ± 0.004	10-30-12	282	0.032 ± 0.004
05-08-12	297	0.018 ± 0.003	11-06-12	287	0.011 ± 0.003
05-15-12	285	0.027 ± 0.004	11-13-12	284	0.039 ± 0.004
05-22-12	272	0.021 ± 0.004	11-20-12	284	0.049 ± 0.005
05-29-12	281	0.027 ± 0.004	11-27-12	293	0.056 ± 0.005
06-05-12	282	0.014 ± 0.003	12-04-12	277	0.054 ± 0.005
06-13-12	324	0.018 ± 0.003	12-11-12	286	0.025 ± 0.003
06-19-12	242	0.024 ± 0.004	12-18-12	284	0.046 ± 0.004
06-26-12	280	0.021 ± 0.004	12-26-12	323	0.034 ± 0.004
07-03-12	282	0.034 ± 0.004	01-02-13	284	0.039 ± 0.004
2nd Quarter Mean ± s.d.		0.022 ± 0.005	4th Quarter Mean ± s.d.		0.037 ± 0.013
			Cumulative Average		0.028

[a] Iodine-131 concentrations are < 0.07 pCi/m^3 unless noted otherwise.

Table 5. Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131[a].
Location: T-7
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Volume (m^3)	Gross Beta	Date Collected	Volume (m^3)	Gross Beta
Required LLD		0.010			0.010
01-10-12	293	0.024 ± 0.003	07-10-12	300	0.035 ± 0.004
01-17-12	289	0.031 ± 0.004	07-17-12	275	0.028 ± 0.004
01-24-12	288	0.021 ± 0.003	07-24-12	302	0.027 ± 0.004
01-31-12	291	0.027 ± 0.004	07-31-12	275	0.022 ± 0.004
02-07-12	292	0.029 ± 0.004	08-07-12	286	0.027 ± 0.004
02-14-12	287	0.018 ± 0.003	08-14-12	286	0.019 ± 0.003
02-21-12	288	0.024 ± 0.004	08-21-12	286	0.024 ± 0.004
02-28-12	287	0.025 ± 0.004	08-28-12	286	0.049 ± 0.005
03-06-12	288	0.021 ± 0.003	09-04-12	298	0.020 ± 0.003
03-13-12	285	0.025 ± 0.004	09-11-12	275	0.027 ± 0.004
03-20-12	287	0.020 ± 0.003	09-18-12	286	0.029 ± 0.004
03-27-12	290	0.019 ± 0.003	09-25-12	286	0.015 ± 0.003
04-03-12	287	0.017 ± 0.004	10-02-12	335	0.023 ± 0.003
1st Quarter Mean ± s.d.		0.023 ± 0.004	3rd Quarter Mean ± s.d.		0.027 ± 0.008
04-10-12	287	0.022 ± 0.004	10-09-12	291	0.032 ± 0.004
04-17-12	286	0.027 ± 0.004	10-16-12	284	0.028 ± 0.004
04-24-12	286	0.022 ± 0.004	10-23-12	294	0.028 ± 0.004
05-01-12	286	0.024 ± 0.004	10-30-12	294	0.039 ± 0.004
05-08-12	286	0.018 ± 0.004	11-06-12	298	0.014 ± 0.003
05-15-12	286	0.025 ± 0.004	11-13-12	291	0.038 ± 0.004
05-22-12	286	0.026 ± 0.004	11-20-12	300	0.048 ± 0.004
05-29-12	304	0.025 ± 0.004	11-27-12	286	0.058 ± 0.005
06-05-12	303	0.017 ± 0.003	12-04-12	277	0.050 ± 0.005
06-13-12	327	0.022 ± 0.003	12-11-12	288	0.027 ± 0.004
06-19-12	244	0.022 ± 0.004	12-18-12	292	0.044 ± 0.004
06-26-12	290	0.022 ± 0.004	12-26-12	341	0.030 ± 0.003
07-03-12	291	0.033 ± 0.004	01-02-13	297	0.037 ± 0.004
2nd Quarter Mean ± s.d.		0.023 ± 0.004	4th Quarter Mean ± s.d.		0.036 ± 0.012
			Cumulative Average		0.027

[a] Iodine-131 concentrations are < 0.07 pCi/m^3 unless noted otherwise.

Table 6. Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131[a].
Location: T-8
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Volume (m^3)	Gross Beta	Date Collected	Volume (m^3)	Gross Beta
Required LLD		0.010			0.010
01-10-12	284	0.027 ± 0.003	07-10-12	287	0.026 ± 0.004
01-17-12	286	0.028 ± 0.004	07-17-12	282	0.029 ± 0.004
01-24-12	294	0.025 ± 0.003	07-24-12	288	0.028 ± 0.004
01-31-12	283	0.029 ± 0.004	07-31-12	287	0.025 ± 0.004
02-07-12	291	0.028 ± 0.004	08-07-12	288	0.030 ± 0.004
02-14-12	285	0.021 ± 0.003	08-14-12	286	0.020 ± 0.004
02-21-12	286	0.024 ± 0.003	08-21-12	287	0.027 ± 0.004
02-28-12	286	0.027 ± 0.004	08-28-12	287	0.044 ± 0.004
03-06-12	286	0.021 ± 0.003	09-04-12	293	0.025 ± 0.004
03-13-12	284	0.026 ± 0.004	09-11-12	288	0.032 ± 0.004
03-20-12	286	0.021 ± 0.003	09-18-12	282	0.033 ± 0.004
03-27-12	286	0.019 ± 0.003	09-25-12	287	0.018 ± 0.004
04-03-12	286	0.015 ± 0.004	10-02-12	288	0.025 ± 0.004
1st Quarter Mean ± s.d.		0.024 ± 0.004	3rd Quarter Mean ± s.d.		0.028 ± 0.006
04-10-12	286	0.020 ± 0.004	10-09-12	307	0.028 ± 0.004
04-17-12	286	0.020 ± 0.003	10-16-12	286	0.034 ± 0.004
04-24-12	287	0.021 ± 0.004	10-23-12	287	0.032 ± 0.004
05-01-12	287	0.023 ± 0.004	10-30-12	288	0.027 ± 0.004
05-08-12	282	0.016 ± 0.004	11-06-12	289	0.016 ± 0.003
05-15-12	287	0.023 ± 0.004	11-13-12	288	0.039 ± 0.004
05-22-12	287	0.024 ± 0.004	11-20-12	291	0.052 ± 0.005
05-29-12	292	0.027 ± 0.004	11-27-12	280	0.057 ± 0.005
06-05-12	283	0.020 ± 0.003	12-04-12	282	0.056 ± 0.005
06-13-12	329	0.023 ± 0.003	12-11-12	285	0.027 ± 0.004
06-19-12	246	0.026 ± 0.004	12-18-12	287	0.050 ± 0.005
06-26-12	288	0.018 ± 0.004	12-26-12	329	0.034 ± 0.004
07-03-12	292	0.033 ± 0.004	01-02-13	288	0.038 ± 0.004
2nd Quarter Mean ± s.d.		0.023 ± 0.004	4th Quarter Mean ± s.d.		0.038 ± 0.013
			Cumulative Average		0.028

[a] Iodine-131 concentrations are < 0.07 pCi/m^3 unless noted otherwise.

Table 7. Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131[a].
Location: T-9 (C)
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Volume (m^3)	Gross Beta	Date Collected	Volume (m^3)	Gross Beta
Required LLD		0.010			0.010
01-10-12	274	0.029 ± 0.004	07-10-12	284	0.030 ± 0.004
01-17-12	280	0.031 ± 0.004	07-17-12	277	0.027 ± 0.004
01-24-12	305	0.028 ± 0.003	07-24-12	282	0.030 ± 0.004
01-31-12	276	0.028 ± 0.004	07-31-12	281	0.024 ± 0.004
02-07-12	283	0.021 ± 0.003	08-07-12	290	0.028 ± 0.004
02-14-12	287	0.022 ± 0.003	08-14-12	274	0.022 ± 0.004
02-21-12	287	0.024 ± 0.003	08-21-12	282	0.026 ± 0.004
02-28-12	287	0.025 ± 0.004	08-28-12	282	0.047 ± 0.005
03-06-12	288	0.021 ± 0.003	09-04-12	289	0.026 ± 0.004
03-13-12	286	0.024 ± 0.004	09-11-12	287	0.028 ± 0.004
03-20-12	287	0.021 ± 0.003	09-18-12	277	0.035 ± 0.004
03-27-12	301	0.021 ± 0.003	09-25-12	291	0.018 ± 0.004
04-03-12	294	0.015 ± 0.003	10-02-12	291	0.031 ± 0.004
1st Quarter Mean ± s.d.		0.024 ± 0.004	3rd Quarter Mean ± s.d.		0.029 ± 0.007
04-10-12	284	0.023 ± 0.004	10-09-12	284	0.027 ± 0.004
04-17-12	282	0.024 ± 0.004	10-16-12	282	0.027 ± 0.004
04-24-12	295	0.017 ± 0.003	10-23-12	282	0.031 ± 0.004
05-01-12	296	0.027 ± 0.004	10-30-12	289	0.028 ± 0.004 [b]
05-08-12	289	0.014 ± 0.003	11-06-12	274	0.017 ± 0.004
05-15-12	282	0.020 ± 0.004	11-13-12	280	0.047 ± 0.005
05-22-12	282	0.025 ± 0.004	11-20-12	284	0.054 ± 0.005
05-29-12	287	0.025 ± 0.004	11-27-12	276	0.061 ± 0.005
06-05-12	277	0.019 ± 0.003	12-04-12	289	0.049 ± 0.005
06-13-12	322	0.021 ± 0.003	12-11-12	273	0.032 ± 0.004
06-19-12	241	0.023 ± 0.004	12-18-12	276	0.054 ± 0.005
06-26-12	288	0.020 ± 0.004	12-26-12	318	0.034 ± 0.004
07-03-12	289	0.036 ± 0.004	01-02-13	273	0.040 ± 0.004
2nd Quarter Mean ± s.d.		0.023 ± 0.005	4th Quarter Mean ± s.d.		0.039 ± 0.013
			Cumulative Average		0.028

[a] Iodine-131 concentrations are < 0.07 pCi/m^3 unless noted otherwise.
[b] Volume corrections 10-30-12 through 11-27-12.

Table 8. Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131[a].
Location: T-11 (C)
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Volume (m^3)	Gross Beta	Date Collected	Volume (m^3)	Gross Beta
Required LLD		0.010			0.010
01-10-12	296	0.027 ± 0.003	07-10-12	291	0.028 ± 0.004
01-17-12	289	0.026 ± 0.003	07-17-12	284	0.029 ± 0.004
01-24-12	282	0.026 ± 0.004	07-24-12	284	0.029 ± 0.004
01-31-12	284	0.032 ± 0.004	07-31-12	283	0.022 ± 0.004
02-07-12	284	0.027 ± 0.004	08-07-12	284	0.027 ± 0.004
02-14-12	282	0.022 ± 0.003	08-14-12	284	0.020 ± 0.004
02-21-12	282	0.028 ± 0.004	08-21-12	284	0.022 ± 0.004
02-28-12	282	0.027 ± 0.004	08-28-12	284	0.045 ± 0.005
03-06-12	282	0.024 ± 0.004	09-04-12	284	0.027 ± 0.004
03-13-12	280	0.025 ± 0.004	09-11-12	284	0.028 ± 0.004
03-20-12	282	0.018 ± 0.003	09-18-12	284	0.035 ± 0.004
03-27-12	282	0.020 ± 0.003	09-25-12	284	0.016 ± 0.004
04-03-12	282	0.014 ± 0.004	10-02-12	288	0.030 ± 0.004
1st Quarter Mean ± s.d.		0.024 ± 0.005	3rd Quarter Mean ± s.d.		0.028 ± 0.007
04-10-12	291	0.018 ± 0.003	10-09-12	284	0.032 ± 0.004
04-17-12	290	0.023 ± 0.003	10-16-12	284	0.031 ± 0.004
04-24-12	291	0.024 ± 0.004	10-23-12	284	0.034 ± 0.004
05-01-12	290	0.027 ± 0.004	10-30-12	284	0.026 ± 0.004 [b]
05-08-12	291	0.015 ± 0.003	11-06-12	284	0.013 ± 0.003
05-15-12	290	0.021 ± 0.003	11-13-12	284	0.042 ± 0.004
05-22-12	291	0.023 ± 0.004	11-20-12	286	0.039 ± 0.004
05-29-12	290	0.023 ± 0.004	11-27-12	284	0.056 ± 0.005
06-05-12	291	0.020 ± 0.003	12-04-12	289	0.054 ± 0.005
06-13-12	332	0.025 ± 0.004	12-11-12	277	0.030 ± 0.004
06-19-12	248	0.021 ± 0.004	12-18-12	281	0.047 ± 0.005
06-26-12	291	0.028 ± 0.004	12-26-12	319	0.034 ± 0.004
07-03-12	290	0.028 ± 0.004	01-02-13	279	0.041 ± 0.004
2nd Quarter Mean ± s.d.		0.023 ± 0.004	4th Quarter Mean ± s.d.		0.037 ± 0.012
			Cumulative Average		0.028

[a] Iodine-131 concentrations are < 0.07 pCi/m^3 unless noted otherwise.
[b] Volume corrections 10-30-12 through 11-27-12.

Table 9. Airborne particulates and charcoal canisters, analyses for gross beta and Iodine-131[a].
Location: T-12 (C)
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Volume (m^3)	Gross Beta	Date Collected	Volume (m^3)	Gross Beta
Required LLD		0.010			0.010
01-10-12	289	0.026 ± 0.003	07-10-12	291	0.029 ± 0.004
01-17-12	270	0.030 ± 0.004	07-17-12	292	0.024 ± 0.004
01-24-12	297	0.027 ± 0.004	07-24-12	293	0.031 ± 0.004
01-31-12	288	0.028 ± 0.004	07-31-12	293	0.021 ± 0.004
02-07-12	292	0.029 ± 0.004	08-07-12	290	0.027 ± 0.004
02-14-12	286	0.025 ± 0.003	08-14-12	295	0.020 ± 0.003
02-21-12	287	0.025 ± 0.004	08-21-12	311	0.026 ± 0.004
02-28-12	283	0.027 ± 0.004	08-28-12	310	0.042 ± 0.004
03-06-12	288	0.021 ± 0.003	09-04-12	284	0.025 ± 0.004
03-13-12	284	0.027 ± 0.004	09-11-12	293	0.027 ± 0.004
03-20-12	289	0.018 ± 0.003	09-18-12	294	0.034 ± 0.004
03-27-12	286	0.019 ± 0.003	09-25-12	293	0.018 ± 0.004
04-03-12	285	0.018 ± 0.004	10-02-12	285	0.031 ± 0.004
1st Quarter Mean ± s.d.		0.025 ± 0.004	3rd Quarter Mean ± s.d.		0.027 ± 0.006
04-10-12	288	0.020 ± 0.004	10-09-12	285	0.028 ± 0.004
04-17-12	286	0.020 ± 0.003	10-16-12	288	0.024 ± 0.004
04-24-12	293	0.024 ± 0.004	10-23-12	288	0.035 ± 0.004
05-01-12	294	0.026 ± 0.004	10-30-12	285	0.033 ± 0.004
05-08-12	291	0.019 ± 0.004	11-06-12	290	0.012 ± 0.003
05-15-12	293	0.021 ± 0.003	11-13-12	284	0.040 ± 0.004
05-22-12	292	0.021 ± 0.004	11-20-12	291	0.045 ± 0.004
05-29-12	294	0.025 ± 0.004	11-27-12	286	0.021 ± 0.004
06-05-12	291	0.015 ± 0.003	12-04-12	285	0.049 ± 0.005
06-13-12	336	0.017 ± 0.003	12-11-12	288	0.027 ± 0.004
06-19-12	244	0.027 ± 0.004	12-18-12	288	0.049 ± 0.005
06-26-12	290	0.020 ± 0.004	12-26-12	323	0.035 ± 0.004
07-03-12	291	0.037 ± 0.004	01-02-13	287	0.037 ± 0.004
2nd Quarter Mean ± s.d.		0.022 ± 0.006	4th Quarter Mean ± s.d.		0.033 ± 0.011
			Cumulative Average		0.027

[a] Iodine-131 concentrations are < 0.07 pCi/m^3 unless noted otherwise.

Table 10. Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131[a].
Location: T-27 (C)
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Volume (m^3)	Gross Beta	Date Collected	Volume (m^3)	Gross Beta
Required LLD		0.010			0.010
01-10-12	291	0.029 ± 0.004	07-10-12	298	0.031 ± 0.004
01-17-12	286	0.031 ± 0.004	07-17-12	283	0.025 ± 0.004
01-24-12	274	0.025 ± 0.004	07-24-12	287	0.032 ± 0.004
01-31-12	277	0.028 ± 0.004	07-31-12	288	0.022 ± 0.004
02-07-12	278	0.030 ± 0.004	08-07-12	281	0.027 ± 0.004
02-14-12	276	0.018 ± 0.003	08-14-12	292	0.022 ± 0.004
02-21-12	274	0.027 ± 0.004	08-21-12	288	0.027 ± 0.004
02-28-12	270	0.031 ± 0.004	08-28-12	289	0.045 ± 0.004
03-06-12	281	0.023 ± 0.004	09-04-12	291	0.024 ± 0.004
03-13-12	268	0.027 ± 0.004	09-11-12	283	0.027 ± 0.004
03-20-12	281	0.019 ± 0.003	09-18-12	284	0.037 ± 0.004
03-27-12	275	0.021 ± 0.003	09-25-12	284	0.020 ± 0.004
04-03-12	270	0.013 ± 0.004	10-02-12	285	0.029 ± 0.004
1st Quarter Mean ± s.d.		0.025 ± 0.006	3rd Quarter Mean ± s.d.		0.028 ± 0.007
04-10-12	280	0.022 ± 0.004	10-09-12	286	0.026 ± 0.004
04-17-12	277	0.024 ± 0.004	10-16-12	280	0.030 ± 0.004
04-24-12	274	0.028 ± 0.004	10-23-12	278	0.037 ± 0.004
05-01-12	275	0.024 ± 0.004	10-30-12	280	0.027 ± 0.004
05-08-12	276	0.015 ± 0.004	11-06-12	283	0.012 ± 0.003
05-15-12	275	0.022 ± 0.004	11-13-12	276	0.037 ± 0.004
05-22-12	276	0.020 ± 0.004	11-20-12	288	0.050 ± 0.005
05-29-12	275	0.028 ± 0.004	11-27-12	275	0.058 ± 0.005
06-05-12	275	0.015 ± 0.003	12-04-12	282	0.055 ± 0.005
06-13-12	317	0.020 ± 0.003	12-11-12	282	0.030 ± 0.004
06-19-12	235	0.021 ± 0.004	12-18-12	240	0.060 ± 0.005
06-26-12	285	0.022 ± 0.004	12-26-12	315	0.031 ± 0.004
07-03-12	277	0.036 ± 0.004	01-02-13	277	0.042 ± 0.004
2nd Quarter Mean ± s.d.		0.023 ± 0.006	4th Quarter Mean ± s.d.		0.038 ± 0.014
			Cumulative Average		0.029

[a] Iodine-131 concentrations are < 0.07 pCi/m^3 unless noted otherwise.

Table 11-1. Airborne particulate data,gross beta analyses, monthly averages, minima and maxima.

January

Location	Average	Minima	Maxima
T-9	0.029	0.028	0.031
T-11	0.028	0.026	0.032
T-12	0.028	0.026	0.030
T-27	0.028	0.025	0.031
Controls	0.028	0.025	0.032
T-1	0.029	0.026	0.030
T-2	0.033	0.023	0.054
T-3	0.030	0.024	0.043
T-4	0.027	0.025	0.029
T-7	0.026	0.021	0.031
T-8	0.027	0.025	0.029
Indicators	0.029	0.021	0.054

February

Location	Average	Minima	Maxima
T-9	0.023	0.021	0.025
T-11	0.026	0.022	0.028
T-12	0.027	0.025	0.029
T-27	0.027	0.018	0.031
Controls	0.026	0.018	0.031
T-1	0.024	0.020	0.028
T-2	0.024	0.019	0.027
T-3	0.024	0.020	0.027
T-4	0.026	0.021	0.029
T-7	0.024	0.018	0.029
T-8	0.025	0.021	0.028
Indicators	0.025	0.018	0.029

March

Location	Average	Minima	Maxima
T-9	0.020	0.015	0.024
T-11	0.020	0.014	0.025
T-12	0.021	0.018	0.027
T-27	0.021	0.013	0.027
Controls	0.021	0.013	0.027
T-1	0.020	0.014	0.026
T-2	0.019	0.014	0.023
T-3	0.021	0.014	0.026
T-4	0.019	0.014	0.023
T-7	0.020	0.017	0.025
T-8	0.020	0.015	0.026
Indicators	0.020	0.014	0.026

April

Location	Average	Minima	Maxima
T-9	0.023	0.017	0.027
T-11	0.023	0.018	0.027
T-12	0.023	0.020	0.026
T-27	0.025	0.022	0.028
Controls	0.024	0.017	0.028
T-1	0.024	0.021	0.028
T-2	0.020	0.018	0.022
T-3	0.022	0.022	0.023
T-4	0.020	0.017	0.023
T-7	0.024	0.022	0.027
T-8	0.021	0.020	0.023
Indicators	0.022	0.017	0.028

May

Location	Average	Minima	Maxima
T-9	0.021	0.014	0.025
T-11	0.021	0.015	0.023
T-12	0.022	0.019	0.025
T-27	0.021	0.015	0.028
Controls	0.021	0.014	0.028
T-1	0.022	0.017	0.026
T-2	0.023	0.018	0.031
T-3	0.023	0.018	0.025
T-4	0.023	0.018	0.027
T-7	0.024	0.018	0.026
T-8	0.023	0.016	0.027
Indicators	0.023	0.016	0.031

June

Location	Average	Minima	Maxima
T-9	0.024	0.019	0.036
T-11	0.024	0.020	0.028
T-12	0.023	0.015	0.037
T-27	0.023	0.015	0.036
Controls	0.024	0.015	0.037
T-1	0.023	0.017	0.034
T-2	0.021	0.017	0.033
T-3	0.021	0.014	0.032
T-4	0.022	0.014	0.034
T-7	0.023	0.017	0.033
T-8	0.024	0.018	0.033
Indicators	0.022	0.014	0.034

Note: Unless otherwise specified, samples collected on the first, second or third day of the month are grouped with data of the previous month.

Table 11-1. Airborne particulate data,gross beta analyses, monthly averages, minima and maxima.

July			
Location	Average	Minima	Maxima
T-9	0.028	0.024	0.030
T-11	0.027	0.022	0.029
T-12	0.026	0.021	0.031
T-27	0.028	0.022	0.032
Controls	0.027	0.021	0.032
T-1	0.029	0.022	0.035
T-2	0.028	0.022	0.031
T-3	0.028	0.023	0.033
T-4	0.029	0.022	0.044
T-7	0.028	0.022	0.035
T-8	0.027	0.025	0.029
Indicators	0.028	0.022	0.044

October			
Location	Average	Minima	Maxima
T-9	0.028	0.027	0.031
T-11	0.031	0.026	0.034
T-12	0.030	0.024	0.035
T-27	0.030	0.026	0.037
Controls	0.030	0.024	0.037
T-1	0.028	0.024	0.031
T-2	0.027	0.025	0.029
T-3	0.030	0.027	0.033
T-4	0.031	0.027	0.037
T-7	0.032	0.028	0.039
T-8	0.030	0.027	0.034
Indicators	0.030	0.024	0.039

August			
Location	Average	Minima	Maxima
T-9	0.031	0.022	0.047
T-11	0.029	0.020	0.045
T-12	0.029	0.020	0.042
T-27	0.030	0.022	0.045
Controls	0.030	0.020	0.047
T-1	0.031	0.021	0.049
T-2	0.029	0.019	0.046
T-3	0.030	0.020	0.046
T-4	0.029	0.022	0.044
T-7	0.030	0.019	0.049
T-8	0.030	0.020	0.044
Indicators	0.030	0.019	0.049

November			
Location	Average	Minima	Maxima
T-9	0.045	0.017	0.061
T-11	0.038	0.013	0.056
T-12	0.030	0.012	0.045
T-27	0.039	0.012	0.058
Controls	0.038	0.012	0.061
T-1	0.038	0.012	0.055
T-2	0.038	0.017	0.054
T-3	0.043	0.014	0.061
T-4	0.039	0.011	0.056
T-7	0.040	0.014	0.058
T-8	0.041	0.016	0.057
Indicators	0.040	0.011	0.061

September			
Location	Average	Minima	Maxima
T-9	0.028	0.018	0.035
T-11	0.027	0.016	0.035
T-12	0.027	0.018	0.034
T-27	0.027	0.020	0.037
Controls	0.027	0.016	0.037
T-1	0.026	0.017	0.035
T-2	0.026	0.017	0.036
T-3	0.026	0.019	0.031
T-4	0.026	0.018	0.033
T-7	0.023	0.015	0.029
T-8	0.027	0.018	0.033
Indicators	0.026	0.015	0.036

December			
Location	Average	Minima	Maxima
T-9	0.042	0.032	0.054
T-11	0.041	0.030	0.054
T-12	0.039	0.027	0.049
T-27	0.044	0.030	0.060
Controls	0.042	0.027	0.060
T-1	0.044	0.029	0.061
T-2	0.041	0.028	0.055
T-3	0.041	0.029	0.057
T-4	0.040	0.025	0.054
T-7	0.038	0.027	0.050
T-8	0.041	0.027	0.056
Indicators	0.041	0.025	0.061

Note: Unless otherwise specified, samples collected on the first, second or third day of the month are grouped with data of the previous month.

Table 12. Airborne particulates, analyses for strontium-89, strontium-90 and gamma-emitting isotopes.
Collection: Quarterly Composite
Units: pCi/m^3

Location	T-1			
Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Lab Code	TAP- 2033	TAP- 4348	TAP- 6423	TAP- 8437
Volume (m^3)	3726	3723	3695	3762
Sr-89	< 0.0005	< 0.0010	< 0.0005	< 0.0005
Sr-90	< 0.0004	< 0.0011	< 0.0004	< 0.0003
Be-7	0.071 ± 0.016	0.107 ± 0.019	0.095 ± 0.017	0.071 ± 0.017
K-40	< 0.023	< 0.024	< 0.025	< 0.022
Nb-95	< 0.0009	< 0.0004	< 0.0007	< 0.0011
Zr-95	< 0.0014	< 0.0016	< 0.0014	< 0.0025
Ru-103	< 0.0013	< 0.0007	< 0.0008	< 0.0009
Ru-106	< 0.0059	< 0.0038	< 0.0049	< 0.0091
Cs-134	< 0.0009	< 0.0008	< 0.0005	< 0.0010
Cs-137	< 0.0009	< 0.0008	< 0.0005	< 0.0010
Ce-141	< 0.0012	< 0.0016	< 0.0010	< 0.0018
Ce-144	< 0.0057	< 0.0051	< 0.0043	< 0.0039

Location	T-2			
Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Lab Code	TAP- 2034	TAP- 4350	TAP- 6424	TAP- 8438
Volume (m^3)	3736	3720	3726	3730
Sr-89	< 0.0006	< 0.0005	< 0.0005	< 0.0005
Sr-90	< 0.0004	< 0.0004	< 0.0003	< 0.0004
Be-7	0.077 ± 0.013	0.075 ± 0.016	0.082 ± 0.015	0.062 ± 0.013
K-40	< 0.023	< 0.025	< 0.025	< 0.022
Nb-95	< 0.0006	< 0.0013	< 0.0006	< 0.0009
Zr-95	< 0.0008	< 0.0015	< 0.0016	< 0.0015
Ru-103	< 0.0005	< 0.0011	< 0.0011	< 0.0011
Ru-106	< 0.0060	< 0.0106	< 0.0034	< 0.0064
Cs-134	< 0.0008	< 0.0007	< 0.0006	< 0.0007
Cs-137	< 0.0004	< 0.0010	< 0.0005	< 0.0009
Ce-141	< 0.0013	< 0.0014	< 0.0013	< 0.0011
Ce-144	< 0.0042	< 0.0056	< 0.0023	< 0.0033

Table 12. Airborne particulates, analyses for strontium-89, strontium-90 and gamma-emitting isotopes.
Collection: Quarterly Composite
Units: pCi/m^3

Location	T-3			
Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Lab Code	TAP- 2035	TAP- 4351	TAP- 6425	TAP- 8439
Volume (m^3)	3693	3752	3747	3751
Sr-89	< 0.0005	< 0.0005	< 0.0004	< 0.0005
Sr-90	< 0.0004	< 0.0004	< 0.0003	< 0.0004
Be-7	0.071 ± 0.013	0.095 ± 0.014	0.081 ± 0.016	0.066 ± 0.015
K-40	< 0.017	< 0.018	< 0.025	< 0.023
Nb-95	< 0.0010	< 0.0009	< 0.0010	< 0.0006
Zr-95	< 0.0008	< 0.0011	< 0.0008	< 0.0016
Ru-103	< 0.0008	< 0.0008	< 0.0005	< 0.0009
Ru-106	< 0.0081	< 0.0053	< 0.0045	< 0.0065
Cs-134	< 0.0007	< 0.0006	< 0.0003	< 0.0010
Cs-137	< 0.0007	< 0.0006	< 0.0005	< 0.0009
Ce-141	< 0.0012	< 0.0013	< 0.0010	< 0.0018
Ce-144	< 0.0030	< 0.0047	< 0.0049	< 0.0048

Location	T-4			
Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Lab Code	TAP- 2036	TAP- 4352	TAP- 6426	TAP- 8440
Volume (m^3)	3764	3702	3665	3729
Sr-89	< 0.0005	< 0.0005	< 0.0005	< 0.0004
Sr-90	< 0.0003	< 0.0004	< 0.0004	< 0.0003
Be-7	0.078 ± 0.015	0.098 ± 0.014	0.102 ± 0.017	0.060 ± 0.012
K-40	< 0.022	< 0.022	0.026 ± 0.015	< 0.016
Nb-95	< 0.0009	< 0.0015	< 0.0009	< 0.0011
Zr-95	< 0.0009	< 0.0009	< 0.0006	< 0.0006
Ru-103	< 0.0013	< 0.0011	< 0.0011	< 0.0007
Ru-106	< 0.0060	< 0.0069	< 0.0066	< 0.0059
Cs-134	< 0.0004	< 0.0007	< 0.0008	< 0.0003
Cs-137	< 0.0009	< 0.0008	< 0.0006	< 0.0005
Ce-141	< 0.0016	< 0.0017	< 0.0012	< 0.0014
Ce-144	< 0.0056	< 0.0048	< 0.0050	< 0.0035

Table 12. Airborne particulates, analyses for strontium-89, strontium-90 and gamma-emitting isotopes.
Collection: Quarterly Composite
Units: pCi/m^3

Location	T-7			
Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Lab Code	TAP- 2037	TAP- 4353	TAP- 6427	TAP- 8441
Volume (m^3)	3752	3762	3776	3833
Sr-89	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Sr-90	< 0.0004	< 0.0004	< 0.0003	< 0.0003
Be-7	0.072 ± 0.014	0.105 ± 0.014	0.090 ± 0.014	0.053 ± 0.014
K-40	< 0.022	< 0.015	< 0.024	< 0.021
Nb-95	< 0.0010	< 0.0008	< 0.0008	< 0.0008
Zr-95	< 0.0009	< 0.0014	< 0.0015	< 0.0014
Ru-103	< 0.0007	< 0.0009	< 0.0009	< 0.0009
Ru-106	< 0.0086	< 0.0042	< 0.0073	< 0.0070
Cs-134	< 0.0007	< 0.0005	< 0.0007	< 0.0007
Cs-137	< 0.0007	< 0.0006	< 0.0013	< 0.0006
Ce-141	< 0.0021	< 0.0011	< 0.0013	< 0.0011
Ce-144	< 0.0037	< 0.0028	< 0.0047	< 0.0050

Location	T-8			
Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Lab Code	TAP- 2038	TAP- 4354	TAP- 6428	TAP- 8442
Volume (m^3)	3723	3732	3730	3787
Sr-89	< 0.0005	< 0.0006	< 0.0005	< 0.0005
Sr-90	< 0.0004	< 0.0005	< 0.0004	< 0.0004
Be-7	0.076 ± 0.014	0.095 ± 0.014	0.082 ± 0.014	0.061 ± 0.013
K-40	< 0.021	< 0.020	< 0.025	< 0.023
Nb-95	< 0.0009	< 0.0007	< 0.0009	< 0.0012
Zr-95	< 0.0012	< 0.0016	< 0.0011	< 0.0015
Ru-103	< 0.0009	< 0.0007	< 0.0008	< 0.0011
Ru-106	< 0.0070	< 0.0082	< 0.0070	< 0.0060
Cs-134	< 0.0008	< 0.0008	< 0.0005	< 0.0009
Cs-137	< 0.0006	< 0.0006	< 0.0007	< 0.0006
Ce-141	< 0.0015	< 0.0018	< 0.0017	< 0.0011
Ce-144	< 0.0033	< 0.0042	< 0.0036	< 0.0048

Table 12. Airborne particulates, analyses for strontium-89, strontium-90 and gamma-emitting isotopes.
Collection: Quarterly Composite
Units: pCi/m^3

Location	T-9 (C)			
Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Lab Code	TAP- 2039	TAP- 4355	TAP- 6429	TAP- 8443
Volume (m^3)	3735	3714	3687	3680
Sr-89	< 0.0006	< 0.0004	< 0.0005	< 0.0005
Sr-90	< 0.0005	< 0.0004	< 0.0004	< 0.0004
Be-7	0.080 ± 0.013	0.101 ± 0.015	0.083 ± 0.015	0.061 ± 0.014
K-40	< 0.017	0.021 ± 0.012	< 0.025	< 0.022
Nb-95	< 0.0007	< 0.0009	< 0.0009	< 0.0014
Zr-95	< 0.0010	< 0.0015	< 0.0009	< 0.0013
Ru-103	< 0.0008	< 0.0011	< 0.0005	< 0.0012
Ru-106	< 0.0050	< 0.0049	< 0.0057	< 0.0062
Cs-134	< 0.0006	< 0.0010	< 0.0003	< 0.0007
Cs-137	< 0.0006	< 0.0007	< 0.0007	< 0.0009
Ce-141	< 0.0007	< 0.0019	< 0.0012	< 0.0017
Ce-144	< 0.0026	< 0.0037	< 0.0047	< 0.0053

Location	T-11 (C)			
Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Lab Code	TAP- 2040	TAP- 4356	TAP- 6430	TAP- 8444
Volume (m^3)	3689	3776	3702	3719
Sr-89	< 0.0014	< 0.0005	< 0.0005	< 0.0005
Sr-90	< 0.0010	< 0.0004	< 0.0004	< 0.0003
Be-7	0.076 ± 0.016	0.112 ± 0.018	0.104 ± 0.014	0.050 ± 0.013
K-40	< 0.025	< 0.023	< 0.025	< 0.016
Nb-95	< 0.0007	< 0.0006	< 0.0009	< 0.0010
Zr-95	< 0.0015	< 0.0012	< 0.0014	< 0.0009
Ru-103	< 0.0007	< 0.0007	< 0.0007	< 0.0009
Ru-106	< 0.0074	< 0.0063	< 0.0040	< 0.0066
Cs-134	< 0.0006	< 0.0003	< 0.0010	< 0.0005
Cs-137	< 0.0006	< 0.0006	< 0.0009	< 0.0009
Ce-141	< 0.0010	< 0.0008	< 0.0015	< 0.0010
Ce-144	< 0.0038	< 0.0042	< 0.0052	< 0.0035

Table 12. Airborne particulates, analyses for strontium-89, strontium-90 and gamma-emitting isotopes.
Collection: Quarterly Composite
Units: pCi/m^3

Location	T-12 (C)			
Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Lab Code	TAP- 2042	TAP- 4357	TAP- 6431	TAP- 8445
Volume (m^3)	3724	3783	3824	3768
Sr-89	< 0.0006	< 0.0004	< 0.0005	< 0.0004
Sr-90	< 0.0004	< 0.0004	< 0.0004	< 0.0003
Be-7	0.081 ± 0.013	0.088 ± 0.018	0.087 ± 0.015	0.064 ± 0.015
K-40	< 0.022	< 0.020	< 0.025	< 0.026
Nb-95	< 0.0011	< 0.0009	< 0.0012	< 0.0008
Zr-95	< 0.0018	< 0.0011	< 0.0011	< 0.0008
Ru-103	< 0.0005	< 0.0009	< 0.0007	< 0.0009
Ru-106	< 0.0048	< 0.0079	< 0.0031	< 0.0039
Cs-134	< 0.0006	< 0.0009	< 0.0006	< 0.0006
Cs-137	< 0.0007	< 0.0007	< 0.0005	< 0.0007
Ce-141	< 0.0012	< 0.0018	< 0.0012	< 0.0017
Ce-144	< 0.0030	< 0.0042	< 0.0028	< 0.0049

Location	T-27 (C)			
Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Lab Code	TAP- 2043	TAP- 4358	TAP- 6432	TAP- 8446
Volume (m^3)	3601	3597	3733	3642
Sr-89	< 0.0006	< 0.0005	< 0.0004	< 0.0004
Sr-90	< 0.0004	< 0.0004	< 0.0003	< 0.0003
Be-7	0.075 ± 0.014	0.106 ± 0.019	0.107 ± 0.015	0.065 ± 0.016
K-40	< 0.022	< 0.026	< 0.025	< 0.032
Nb-95	< 0.0010	< 0.0012	< 0.0008	< 0.0011
Zr-95	< 0.0009	< 0.0011	< 0.0009	< 0.0007
Ru-103	< 0.0009	< 0.0012	< 0.0005	< 0.0010
Ru-106	< 0.0058	< 0.0049	< 0.0058	< 0.0033
Cs-134	< 0.0011	< 0.0010	< 0.0002	< 0.0007
Cs-137	< 0.0013	< 0.0009	< 0.0005	< 0.0008
Ce-141	< 0.0015	< 0.0016	< 0.0016	< 0.0015
Ce-144	< 0.0057	< 0.0043	< 0.0049	< 0.0051

Table 13. Area monitors (TLD), Quarterly.
Units: mR/91 days

Indicator	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
T-1	12.4 ± 0.7	11.2 ± 0.7	12.3 ± 0.6	13.1 ± 1.3
T-2	14.6 ± 0.8	14.1 ± 0.8	14.6 ± 0.6	15.5 ± 1.0
T-3	15.0 ± 0.8	13.7 ± 0.8	15.7 ± 0.9	14.9 ± 0.9
T-4	14.5 ± 1.2	13.6 ± 0.8	15.1 ± 0.7	14.7 ± 1.0
T-5	18.3 ± 0.9	16.7 ± 0.7	19.0 ± 0.8	18.1 ± 0.7
T-6	14.2 ± 1.1	12.6 ± 0.7	15.6 ± 1.0	13.7 ± 0.7
T-7	22.1 ± 0.6	19.7 ± 0.6	22.6 ± 0.4	20.2 ± 0.7
T-8	27.3 ± 1.4	25.3 ± 1.6	28.6 ± 1.5	25.9 ± 2.0
T-10	17.9 ± 0.9	17.4 ± 0.8	19.1 ± 1.4	18.0 ± 0.8
T-38	12.5 ± 0.6	13.4 ± 1.3	13.7 ± 0.9	13.3 ± 1.1
T-39	13.2 ± 1.2	13.1 ± 0.7	15.0 ± 1.7	12.5 ± 0.7
T-40	15.7 ± 0.7	18.9 ± 0.8	17.0 ± 0.5	15.2 ± 0.8
T-41	11.6 ± 0.7	13.5 ± 0.6	12.9 ± 0.7	13.2 ± 0.6
T-42	14.2 ± 0.8	13.9 ± 1.0	15.5 ± 1.1	13.9 ± 0.9
T-43	19.0 ± 0.8	18.1 ± 0.9	20.9 ± 1.1	17.3 ± 0.8
T-44	21.2 ± 1.2	20.3 ± 1.1	22.3 ± 1.2	19.9 ± 1.5
T-45	25.2 ± 0.6	24.8 ± 0.7	27.1 ± 0.4	23.3 ± 0.7
T-46	15.9 ± 1.2	16.0 ± 1.0	17.1 ± 1.2	15.4 ± 1.0
T-47	13.1 ± 1.2	11.6 ± 0.8	14.7 ± 1.0	11.8 ± 0.7
T-48	14.8 ± 0.5	14.9 ± 0.8	15.7 ± 0.3	14.2 ± 0.8
T-49	12.9 ± 0.6	12.3 ± 1.3	14.4 ± 0.6	12.0 ± 1.3
T-50	17.1 ± 0.5	19.1 ± 1.4	18.0 ± 0.6	17.7 ± 1.1
T-51	21.5 ± 1.4	22.1 ± 1.8	22.0 ± 1.5	19.2 ± 1.4
T-52	21.8 ± 1.3	21.3 ± 0.7	22.9 ± 1.6	20.0 ± 0.7
T-53	19.8 ± 0.5	18.4 ± 2.0	20.7 ± 0.4	18.3 ± 1.6
T-54	19.4 ± 0.6	20.0 ± 0.9	20.6 ± 0.9	18.5 ± 0.9
T-55	15.6 ± 1.2	16.4 ± 0.9	17.4 ± 1.0	16.1 ± 1.2
T-60	11.2 ± 0.8	12.8 ± 0.7	11.6 ± 1.1	12.2 ± 1.4
T-62	12.4 ± 0.5	12.1 ± 0.8	12.6 ± 0.7	11.8 ± 0.8
T-65	20.1 ± 1.0	19.4 ± 0.8	20.6 ± 1.0	18.1 ± 0.9
T-66	22.7 ± 0.6	23.1 ± 2.1	22.9 ± 1.2	20.7 ± 1.8
T-67	22.4 ± 1.1	22.2 ± 0.9	23.7 ± 1.4	20.3 ± 1.0
T-68	17.9 ± 0.6	18.6 ± 1.0	18.9 ± 0.8	17.3 ± 0.8
T-69	20.7 ± 1.3	20.1 ± 1.2	21.8 ± 0.9	18.0 ± 0.7
T-71	20.5 ± 0.6	16.3 ± 1.0	20.1 ± 0.8	17.4 ± 0.9
T-73	16.4 ± 1.2	15.2 ± 1.2	16.9 ± 1.0	14.5 ± 1.1
T-74	24.4 ± 1.8	17.9 ± 1.4	16.6 ± 1.1	16.7 ± 1.5
T-75	18.7 ± 0.7	16.5 ± 0.8	19.2 ± 0.9	15.3 ± 0.7
T-76	14.2 ± 0.5	12.3 ± 0.9	14.2 ± 0.9	12.1 ± 0.9
T-91	21.0 ± 1.2	22.0 ± 1.3	22.6 ± 1.1	20.7 ± 1.4
T-92	15.5 ± 0.7	15.8 ± 0.8	16.5 ± 0.7	17.0 ± 0.8

Table 13. Area monitors (TLD), Quarterly.
Units: mR/91 days

Indicator	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
T-93	18.4 ± 1.1	16.2 ± 0.9	20.1 ± 1.1	17.6 ± 1.1
T-94	18.4 ± 1.2	19.2 ± 1.1	21.1 ± 1.3	21.5 ± 1.3
T-112	16.0 ± 0.4	11.8 ± 0.8	16.8 ± 0.7	12.3 ± 0.9
T-121	21.1 ± 0.9	20.3 ± 1.3	22.3 ± 1.4	19.4 ± 1.1
T-122	17.1 ± 1.2	17.3 ± 0.7	18.6 ± 1.2	17.1 ± 0.8
T-123	20.3 ± 1.2	19.5 ± 0.7	21.5 ± 1.3	19.0 ± 0.9
T-125	18.4 ± 0.6	19.7 ± 0.8	21.7 ± 1.9	18.6 ± 0.7
T-126	18.8 ± 0.5	17.5 ± 1.1	19.5 ± 0.7	16.1 ± 1.2
T-127	21.8 ± 0.7	20.6 ± 1.3	23.5 ± 1.7	19.6 ± 1.1
T-128	20.9 ± 1.8	19.6 ± 0.9	21.8 ± 1.9	18.9 ± 0.7
T-142	12.9 ± 0.6	11.9 ± 0.8	13.3 ± 0.9	12.6 ± 0.7
T-150	15.0 ± 1.0	14.3 ± 1.8	15.2 ± 1.1	14.1 ± 1.3
T-151	19.9 ± 0.8	18.2 ± 1.0	20.9 ± 1.3	18.4 ± 0.8
T-153	19.0 ± 0.6	17.0 ± 0.8	20.4 ± 1.1	16.3 ± 0.7
T-154	15.7 ± 1.2	15.6 ± 1.1	16.7 ± 1.5	15.1 ± 1.0
T-201	12.7 ± 0.9	12.6 ± 0.2	13.8 ± 1.0	12.1 ± 0.2
T-202	13.0 ± 0.9	13.4 ± 0.5	13.1 ± 1.1	12.7 ± 0.5
T-203	13.2 ± 0.9	14.3 ± 0.9	13.6 ± 1.1	13.4 ± 0.8
T-204	11.7 ± 0.8	12.5 ± 0.9	12.0 ± 1.0	11.9 ± 0.9
T-205	9.9 ± 0.8	10.6 ± 0.5	11.1 ± 1.4	10.5 ± 0.5
T-206	8.8 ± 0.9	10.9 ± 0.3	10.7 ± 1.1	10.9 ± 0.3
T-207	8.5 ± 1.1	8.1 ± 0.4	9.6 ± 1.3	8.5 ± 0.3
T-208	9.4 ± 1.2	10.7 ± 0.3	10.8 ± 1.6	10.6 ± 0.4
T-211	11.3 ± 0.9	10.6 ± 0.6	13.7 ± 1.5	11.1 ± 0.7
T-212	11.6 ± 0.7	11.9 ± 0.8	13.2 ± 0.8	12.3 ± 0.8
T-213	17.3 ± 0.5	18.4 ± 0.8	20.5 ± 0.6	18.0 ± 0.8
T-214	18.9 ± 0.7	19.5 ± 0.8	22.0 ± 0.7	19.2 ± 0.7
T-215	19.1 ± 0.8	18.8 ± 0.9	22.7 ± 0.5	17.7 ± 0.8
T-216	17.4 ± 0.6	17.8 ± 1.1	20.2 ± 0.6	16.9 ± 1.3
T-217	21.5 ± 1.3	21.3 ± 1.5	25.5 ± 1.4	19.0 ± 1.6
T-218	20.3 ± 0.8	22.1 ± 1.0	22.9 ± 0.8	19.9 ± 1.1
T-219	15.0 ± 0.8	17.8 ± 1.3	17.7 ± 1.3	16.4 ± 1.2
T-220	18.1 ± 0.7	21.1 ± 1.2	22.1 ± 1.8	19.4 ± 1.3
T-222	11.3 ± 0.7	13.5 ± 0.7	12.8 ± 0.8	12.9 ± 0.9
T-223	12.4 ± 0.9	13.3 ± 0.8	14.0 ± 1.0	13.2 ± 0.9
T-224	15.3 ± 0.9	15.7 ± 0.7	17.5 ± 1.2	15.1 ± 1.0
Mean ± s.d.	16.7 ± 4.1	16.5 ± 3.8	17.9 ± 4.2	16.1 ± 3.4

Table 13. Area monitors (TLD), Quarterly.
Units: mR/91 days

	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Control				
T-9	16.2 ± 0.7	15.7 ± 0.9	17.0 ± 0.8	16.2 ± 0.9
T-11	15.3 ± 0.7	14.6 ± 0.9	16.0 ± 0.5	15.1 ± 0.9
T-12	24.6 ± 0.6	20.3 ± 0.8	21.1 ± 0.8	18.9 ± 1.1
T-24	19.8 ± 1.0	19.9 ± 0.6	21.1 ± 0.9	18.6 ± 0.6
T-27	22.1 ± 1.4	20.6 ± 0.8	22.9 ± 1.7	19.7 ± 0.7
Mean ± s.d.	19.6 ± 3.9	18.2 ± 2.8	19.6 ± 3.0	17.7 ± 2.0
T-95	17.4 ± 1.4	18.1 ± 0.9	19.9 ± 1.5	18.6 ± 0.8
T-100	14.8 ± 1.0	16.9 ± 1.3	16.2 ± 1.3	16.3 ± 1.0
T-111	20.9 ± 1.8	19.2 ± 1.0	21.2 ± 1.7	18.5 ± 1.2
T-124	19.9 ± 1.4	15.3 ± 0.9	22.1 ± 1.7	15.3 ± 0.9
T-155	12.8 ± 0.5	13.3 ± 1.3	13.7 ± 0.8	13.0 ± 1.2
T-221	16.0 ± 1.0	19.1 ± 0.7	22.5 ± 1.6	18.3 ± 0.8
Mean ± s.d.	17.0 ± 3.1	17.0 ± 2.3	19.3 ± 3.6	16.7 ± 2.2
QC				
T-80	10.1 ± 0.9	10.1 ± 0.8	10.6 ± 1.0	10.1 ± 0.7
T-81	18.7 ± 0.9	18.5 ± 0.8	19.0 ± 1.1	16.9 ± 0.7
T-82	10.6 ± 0.7	10.5 ± 0.8	11.3 ± 1.0	10.3 ± 0.7
T-83	9.0 ± 0.5	10.9 ± 1.4	10.9 ± 0.7	10.5 ± 1.0
T-84	11.6 ± 0.8	11.5 ± 0.9	12.7 ± 0.7	10.7 ± 0.8
T-85	14.5 ± 1.0	14.9 ± 1.0	15.9 ± 1.0	13.6 ± 0.9
T-86	22.4 ± 1.0	22.4 ± 1.0	25.1 ± 1.3	20.9 ± 1.0
T-88	17.7 ± 1.3	19.3 ± 1.0	19.6 ± 1.4	17.5 ± 1.0
T-89	17.6 ± 1.1	20.3 ± 0.8	20.8 ± 1.5	18.3 ± 0.8
T-113	16.3 ± 0.9	15.6 ± 0.9	16.9 ± 1.1	14.4 ± 0.9
T-114	17.1 ± 0.7	18.2 ± 0.9	19.1 ± 0.8	16.7 ± 0.9
T-115	14.3 ± 0.8	15.8 ± 1.2	15.6 ± 1.0	15.3 ± 1.0
T-116	16.7 ± 0.8	17.1 ± 1.2	18.4 ± 0.9	16.9 ± 1.3
T-117	13.6 ± 1.0	13.9 ± 1.1	16.3 ± 1.7	14.5 ± 1.2
T-118	16.1 ± 0.9	16.6 ± 1.3	18.2 ± 1.0	16.2 ± 1.2
T-119	15.3 ± 1.0	13.7 ± 0.8	16.7 ± 1.6	13.9 ± 0.8
T-120	12.3 ± 0.9	11.3 ± 0.9	13.0 ± 1.1	11.7 ± 0.9
T-200	11.3 ± 0.8	12.9 ± 0.7	12.1 ± 1.1	12.6 ± 1.1
Mean ± s.d.	14.7 ± 3.5	15.2 ± 3.6	16.2 ± 3.9	14.5 ± 3.1
Shield				
T-87	8.5 ± 0.7	7.9 ± 1.0	8.9 ± 0.8	7.8 ± 0.9

Table 14. Area monitors (TLD), Annual.
Units: mR/365 days

Indicator	2012
T-1	37.6 ± 1.5
T-2	43.2 ± 1.5
T-3	47.5 ± 3.0
T-4	43.6 ± 1.4
T-5	54.4 ± 1.3
T-6	42.1 ± 1.6
T-7	69.7 ± 2.2
T-8	91.6 ± 7.3
T-10	57.1 ± 1.5
T-38	45.5 ± 1.5
T-39	46.1 ± 1.5
T-40	56.8 ± 2.9
T-41	45.6 ± 1.6
T-42	48.0 ± 2.0
T-43	60.2 ± 2.4
T-44	69.7 ± 3.7
T-45	79.6 ± 1.4
T-46	48.7 ± 1.7
T-47	40.9 ± 1.5
T-48	50.6 ± 1.9
T-49	41.7 ± 1.5
T-50	54.9 ± 2.1
T-51	68.0 ± 2.1
T-52	70.1 ± 1.9
T-53	67.4 ± 2.7
T-54	68.5 ± 2.2
T-55	57.0 ± 2.9
T-60	46.6 ± 2.3
T-62	45.6 ± 1.1
T-65	80.0 ± 7.2
T-66	79.9 ± 2.9
T-67	80.4 ± 3.4
T-68	67.5 ± 2.7
T-69	72.5 ± 2.3
T-71	67.7 ± 2.0
T-73	57.1 ± 1.6
T-74	64.2 ± 2.2
T-75	64.3 ± 1.1
T-76	49.6 ± 1.8
T-91	78.9 ± 4.1
T-92	52.6 ± 1.0

Table 14. Area monitors (TLD), Annual.
Units: mR/365 days

Indicator	2012
T-93	61.2 ± 1.2
T-94	75.7 ± 1.4
T-112	57.4 ± 2.9
T-121	77.0 ± 3.1
T-122	64.1 ± 1.6
T-123	75.7 ± 3.0
T-125	75.4 ± 2.0
T-126	56.9 ± 1.8
T-127	81.1 ± 1.9
T-128	75.5 ± 1.7
T-142	45.4 ± 1.2
T-150	54.2 ± 1.9
T-151	78.4 ± 5.2
T-153	73.0 ± 3.7
T-154	55.4 ± 1.5
T-201	51.6 ± 4.5
T-202	50.5 ± 3.6
T-203	53.7 ± 5.5
T-204	49.4 ± 5.3
T-205	39.8 ± 3.7
T-206	41.6 ± 4.0
T-207	36.9 ± 3.9
T-208	42.1 ± 3.9
T-211	43.2 ± 1.9
T-212	43.3 ± 1.4
T-213	75.0 ± 4.4
T-214	73.6 ± 1.7
T-215	77.7 ± 1.6
T-216	65.6 ± 3.0
T-217	81.0 ± 2.6
T-218	78.1 ± 2.8
T-219	61.8 ± 2.6
T-220	74.6 ± 3.9
T-222	54.8 ± 2.5
T-223	53.0 ± 1.8
T-224	68.0 ± 2.4
Mean ± s.d.	60.2 ± 13.8

[a] ND = No Data, TLD lost in the field.

Table 14. Area monitors (TLD), Annual.

Units: mR/365 days

Control	2012
T-9	51.1 ± 1.9
T-11	51.4 ± 5.0
T-12	72.7 ± 1.6
T-24	72.2 ± 2.1
T-27	74.4 ± 1.5
Mean ± s.d.	64.4 ± 12.0
T-95	69.4 ± 1.6
T-100	65.3 ± 2.2
T-111	73.7 ± 1.9
T-124	70.2 ± 1.8
T-155	55.8 ± 1.4
T-221	68.5 ± 2.3
Mean ± s.d.	67.2 ± 6.2
QC	
T-80	45.9 ± 2.2
T-81	75.6 ± 2.1
T-82	44.2 ± 1.8
T-83	43.9 ± 3.2
T-84	49.2 ± 3.7
T-85	56.4 ± 1.0
T-86	88.9 ± 4.0
T-88	63.0 ± 1.9
T-89	71.7 ± 1.3
T-113	66.1 ± 0.9
T-114	69.1 ± 1.3
T-115	62.7 ± 4.6
T-116	68.7 ± 1.8
T-117	57.0 ± 1.5
T-118	62.9 ± 2.9
T-119	55.4 ± 2.5
T-120	46.3 ± 1.5
T-200	50.6 ± 4.6
Mean ± s.d.	59.9 ± 12.3
Shield	
T-87	31.7 ± 1.3

Table 15. Milk, analyses for strontium-89, strontium-90, iodine-131, gamma emitting isotopes, calcium and stable potassium.
Monthly collections, location T-24 Units: pCi/L

Date Collected	01-31-12	02-28-12	04-04-12	05-02-12
Lab Code	TMI- 532	TMI- 962	TMI- 1676	TMI- 2418
I-131	< 0.3	< 0.2	< 0.2	< 0.4
Sr-89	< 0.7	< 0.5	< 0.6	< 0.7
Sr-90	< 0.6	0.9 ± 0.3	0.6 ± 0.3	1.0 ± 0.4
K-40	1378 ± 112	1345 ± 114	1323 ± 113	1384 ± 126
Cs-134	< 2.8	< 2.7	< 3.2	< 4.0
Cs-137	< 3.3	< 3.8	< 3.7	< 4.5
Ba-La-140	< 1.7	< 1.3	< 1.5	< 1.4
Ca (g/L)	1.02	1.08	1.11	1.27
Sr-90/g Ca	< 0.59	0.83	0.54	0.79
K (g/L)	1.68 ± 0.14	1.64 ± 0.14	1.61 ± 0.14	1.69 ± 0.15
Cs-137/g K	< 1.96	< 2.32	< 2.30	< 2.66

Date Collected	05-30-12	07-03-12	07-31-12	08-28-12
Lab Code	TMI- 3208	TMI- 3962	TMI- 4831	TMI- 5430
I-131	< 0.3	< 0.3	< 0.4	< 0.2
Sr-89	< 0.7	< 0.7	< 0.6	< 0.9
Sr-90	0.8 ± 0.3	< 0.4	< 0.5	< 0.7
K-40	1441 ± 120	1437 ± 111	1412 ± 98	1368 ± 115
Cs-134	< 2.6	< 2.2	< 3.0	< 3.8
Cs-137	< 3.0	< 3.6	< 3.4	< 3.4
Ba-La-140	< 1.6	< 8.9	< 1.9	< 2.9
Ca (g/L)	1.22	1.09	0.90	1.02
Sr-90/g Ca	0.66	< 0.37	< 0.56	< 0.69
K (g/L)	1.76 ± 0.15	1.75 ± 0.14	1.72 ± 0.12	1.67 ± 0.14
Cs-137/g K	< 1.70	< 2.06	< 1.98	< 2.04

Date Collected	10-02-12	10-30-12	12-05-12	01-02-13
Lab Code	TMI- 6146	TMI- 6994	TMI- 7764	TMI- 8240
I-131	< 0.3	< 0.4	< 0.4	< 0.2
Sr-89	< 0.5	< 0.6	< 0.6	< 0.5
Sr-90	< 0.5	< 0.5	0.5 ± 0.3	0.5 ± 0.3
K-40	1416 ± 111	1412 ± 80	1452 ± 116	1494 ± 113
Cs-134	< 4.0	< 2.5	< 2.5	< 2.5
Cs-137	< 2.6	< 2.8	< 3.4	< 3.0
Ba-La-140	< 6.0	< 2.4	< 3.1	< 2.2
Ca (g/L)	1.05	0.95	1.15	1.13
Sr-90/g Ca	< 0.48	< 0.53	0.43	0.44
K (g/L)	1.73 ± 0.14	1.72 ± 0.10	1.77 ± 0.14	1.82 ± 0.14
Cs-137/g K	< 1.50	< 1.63	< 1.92	< 1.65

Table 16. Ground water samples, analyses for gross beta, tritium, strontium-89, strontium-90 and gamma-emitting isotopes.
Collection: Quarterly
Units: pCi/L

Period	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	
Location			T-27A (C)		
Lab Code	TWW- 1722	TWW- 3209	TWW- 4863	TWW- 6277	Req. LLD
Date Collected	03-13-12	05-08-12	07-31-12	10-03-12	
Gross beta	< 1.5	< 2.9	4.7 ± 1.8	< 3.5	4.0
H-3	< 330	< 330	< 330	< 330	330
Sr-89	< 1.0	< 0.9	< 0.7	< 0.7	
Sr-90	< 0.4	< 0.7	< 0.4	< 0.5	
Mn-54	< 1.2	< 3.5	< 2.9	< 2.9	15
Fe-59	< 2.6	< 4.6	< 6.6	< 6.6	30
Co-58	< 1.1	< 2.9	< 3.6	< 3.6	15
Co-60	< 0.8	< 1.3	< 2.2	< 3.9	15
Zn-65	< 2.3	< 4.4	< 6.9	< 5.4	30
Zr-Nb-95	< 1.1	< 3.3	< 2.9	< 6.4	15
Cs-134	< 0.9	< 2.3	< 4.0	< 4.3	15
Cs-137	< 1.3	< 3.6	< 2.5	< 4.7	18
Ba-La-140	< 3.9	< 5.1	< 4.1	< 7.2	15
Location			T-225 (I)		
Lab Code	ND	ND	TWW- 4865	TWW- 7829	Req. LLD
Date Collected	-	-	07-31-12	10-11-12	
Gross beta	-	-	3.7 ± 1.0	< 0.9	4.0
H-3	-	-	< 330	< 330	330
Sr-89	-	-	< 0.7	< 1.6	
Sr-90	-	-	< 0.5	< 0.4	
Mn-54	-	-	< 2.4	< 1.4	15
Fe-59	-	-	< 4.6	< 3.1	30
Co-58	-	-	< 2.8	< 2.1	15
Co-60	-	-	< 1.7	< 1.4	15
Zn-65	-	-	< 4.9	< 1.7	30
Zr-Nb-95	-	-	< 1.4	< 4.3	15
Cs-134	-	-	< 2.7	< 1.2	15
Cs-137	-	-	< 3.4	< 1.3	18
Ba-La-140	-	-	< 1.2	< 44.4 [a]	15

[a] Required LLD could not be met due to delay in shipping.
ND = No Data, Sample not received.

Table 16. Ground water samples, analyses for gross beta, tritium, strontium-89, strontium-90 and gamma-emitting isotopes.
Collection: Quarterly
Units: pCi/L

Period	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	
Location			T-226 (I)		
Lab Code	TWW- 1724	TWW- 3211	TWW- 4867	TWW- 6279	Req. LLD
Date Collected	03-20-12	05-08-12	07-31-12	10-03-12	
Gross beta	< 1.3	2.3 ± 0.6	2.1 ± 1.0	1.5 ± 0.7	4.0
H-3	< 330	< 330	< 330	< 330	330
Sr-89	< 0.9	< 0.9	< 0.9	< 0.7	
Sr-90	< 0.4	< 0.4	< 0.6	< 0.5	
Mn-54	< 1.5	< 2.0	< 2.7	< 2.1	15
Fe-59	< 3.3	< 7.8	< 3.7	< 4.0	30
Co-58	< 1.8	< 2.3	< 3.5	< 2.2	15
Co-60	< 1.4	< 1.9	< 3.0	< 2.7	15
Zn-65	< 1.4	< 4.3	< 4.1	< 2.7	30
Zr-Nb-95	< 1.8	< 3.9	< 2.5	< 3.9	15
Cs-134	< 1.1	< 2.6	< 2.8	< 2.1	15
Cs-137	< 2.0	< 3.5	< 2.4	< 2.9	18
Ba-La-140	< 3.7	< 5.7	< 2.8	< 4.7	15
Location			T-141 (QC)		
Lab Code	TWW- 1723	TWW- 3210	TWW- 4864	TWW- 6278	Req. LLD
Date Collected	03-20-12	05-08-12	07-31-12	10-03-12	
Gross beta	2.2 ± 0.7	< 3.2	< 3.5	< 3.1	4.0
H-3	< 330	< 330	< 330	< 330	330
Sr-89	< 1.0	< 1.1	< 0.9	< 0.7	
Sr-90	< 0.5	< 0.8	< 0.6	< 0.5	
Mn-54	< 1.4	< 2.6	< 2.1	< 2.8	15
Fe-59	< 3.2	< 9.6	< 3.9	< 7.2	30
Co-58	< 1.1	< 2.0	< 2.8	< 1.9	15
Co-60	< 1.0	< 2.1	< 2.5	< 2.3	15
Zn-65	< 3.0	< 7.0	< 2.7	< 3.5	30
Zr-Nb-95	< 2.0	< 3.7	< 2.2	< 3.5	15
Cs-134	< 1.2	< 2.8	< 2.1	< 2.1	15
Cs-137	< 1.8	< 2.3	< 3.7	< 3.7	18
Ba-La-140	< 5.4	< 7.3	< 2.5	< 7.0	15

ND = No Data, Sample not received.

Table 18. Wild meat, analyses for gamma-emitting isotopes.
Collection: Annually
Units: pCi/g wet

Location	T-31(I)	T-210 (C)
Lab Code	TWL- 8253	TWL- 8254
Date Collected	12-08-12	12-16-12
Sample Type	Muskrat	Muskrat
Be-7	< 0.079	< 0.075
K-40	3.22 ± 0.198	3.24 ± 0.2003
Nb-95	< 0.0088	< 0.0069
Zr-95	< 0.0102	< 0.0143
Ru-103	< 0.0109	< 0.0102
Ru-106	< 0.0680	< 0.0730
Cs-134	< 0.0046	< 0.0053
Cs-137	< 0.0057	< 0.0063
Ce-141	< 0.0198	< 0.0260
Ce-144	< 0.0463	< 0.0456

Table 19. Green leafy vegetables, analyses for strontium-89, strontium-90, iodine-131 and other gamma-emitting isotopes.
Collection: Monthly, in season Units: pCi/g wet

Location	T-227 (I)		
Lab Code	TVE- 4835	TVE- 5451	TVE- 6241
Date Collected	08-01-12	08-29-12	09-26-12
Sample Type	Cabbage	Cabbage	Cabbage
Sr-89	< 0.005	< 0.002	< 0.010
Sr-90	0.006 ± 0.002	< 0.001	< 0.004
I-131	< 0.011	< 0.015	< 0.015
K-40	3.13 ± 0.20	1.78 ± 0.17	2.49 ± 0.17
Nb-95	< 0.008	< 0.007	< 0.007
Zr-95	< 0.007	< 0.013	< 0.007
Cs-134	< 0.006	< 0.007	< 0.006
Cs-137	< 0.006	< 0.008	< 0.006
Ce-141	< 0.013	< 0.013	< 0.011
Ce-144	< 0.055	< 0.056	< 0.032

Location	T-19 (I)		
Lab Code	TVE- 4832	TVE- 5449	TVE- 6239
Date Collected	08-01-12	08-29-12	09-26-12
Sample Type	Cabbage	Cabbage	Cabbage
Sr-89	< 0.007	< 0.004	< 0.011
Sr-90	0.005 ± 0.002	0.003 ± 0.001	< 0.005
I-131	< 0.010	< 0.009	< 0.017
K-40	4.06 ± 0.22	2.39 ± 0.17	2.16 ± 0.16
Nb-95	< 0.004	< 0.005	< 0.005
Zr-95	< 0.014	< 0.008	< 0.010
Cs-134	< 0.006	< 0.004	< 0.004
Cs-137	< 0.005	< 0.004	< 0.003
Ce-141	< 0.013	< 0.010	< 0.010
Ce-144	< 0.043	< 0.025	< 0.041

Location	T-37 (C)		
Lab Code	TVE- 4834	TVE- 5450	TVE- 6240
Date Collected	07-31-12	08-28-12	09-26-12
Sample Type	Cabbage	Cabbage	Cabbage
Sr-89	< 0.003	< 0.002	< 0.010
Sr-90	< 0.002	< 0.001	< 0.005
I-131	< 0.011	< 0.009	< 0.017
K-40	2.31 ± 0.20	2.38 ± 0.16	2.64 ± 0.18
Nb-95	< 0.007	< 0.005	< 0.005
Zr-95	< 0.010	< 0.010	< 0.007
Cs-134	< 0.006	< 0.004	< 0.005
Cs-137	< 0.006	< 0.005	< 0.005
Ce-141	< 0.008	< 0.008	< 0.011
Ce-144	< 0.029	< 0.033	< 0.039

Table 20. Fruit, analyses for strontium-89, strontium-90, iodine-131 and other gamma-emitting isotopes.
Collection: Monthly, in season
Units: pCi/g wet

Location	T-8 (I)	T-25 (I)
Lab Code	TVE- 5913	TVE- 5914
Date Collected	09-19-12	09-19-12
Sample Type	Apples	Apples
Sr-89	< 0.077	< 0.023
Sr-90	< 0.030	< 0.009
I-131	< 0.016	< 0.023
K-40	1.37 ± 0.14	1.42 ± 0.15
Nb-95	< 0.005	< 0.008
Zr-95	< 0.006	< 0.012
Cs-134	< 0.006	< 0.005
Cs-137	< 0.004	< 0.005
Ce-141	< 0.016	< 0.009
Ce-144	< 0.053	< 0.044

Location	T-209 (C)
Lab Code	TVE- 5915
Date Collected	09-18-12
Sample Type	Apples
Sr-89	< 0.005
Sr-90	< 0.002
I-131	< 0.020
K-40	1.29 ± 0.14
Nb-95	< 0.007
Zr-95	< 0.010
Cs-134	< 0.004
Cs-137	< 0.003
Ce-141	< 0.009
Ce-144	< 0.032

Table 22. Soil samples, analyses for gamma-emitting isotopes.
Collection: Annual
Units: pCi/g dry

Location	T-1	T-2	T-3	T-4
Lab Code	TSO- 2534	TSO- 2535	TSO- 2536	TSO- 2537
Date Collected	04-18-12	04-18-12	04-18-12	04-18-12
Be-7	< 0.16	< 0.18	< 0.20	< 0.29
K-40	5.63 ± 0.48	4.76 ± 0.49	7.89 ± 0.58	12.65 ± 0.73
Mn-54	< 0.018	< 0.020	< 0.020	< 0.022
Nb-95	< 0.017	< 0.024	< 0.029	< 0.017
Zr-95	< 0.033	< 0.032	< 0.036	< 0.043
Ru-103	< 0.015	< 0.026	< 0.024	< 0.019
Ru-106	< 0.091	< 0.122	< 0.123	< 0.131
Cs-134	< 0.013	< 0.015	< 0.017	< 0.017
Cs-137	0.061 ± 0.021	0.24 ± 0.027	< 0.017	< 0.020
Ce-141	< 0.050	< 0.026	< 0.030	< 0.063
Ce-144	< 0.119	< 0.081	< 0.087	< 0.113

Location	T-7	T-8
Lab Code	TSO- 2538	TSO- 2539
Date Collected	04-18-12	04-25-12
Be-7	< 0.22	< 0.28
K-40	10.60 ± 0.56	22.83 ± 1.00
Mn-54	< 0.016	< 0.028
Nb-95	< 0.017	< 0.047
Zr-95	< 0.041	< 0.058
Ru-103	< 0.018	< 0.031
Ru-106	< 0.154	< 0.255
Cs-134	< 0.014	< 0.026
Cs-137	0.028 ± 0.014	0.18 ± 0.039
Ce-141	< 0.046	< 0.072
Ce-144	< 0.092	< 0.109

Location	T-9	T-11	T-12	T-27
Lab Code	TSO- 2540	TSO- 2541	TSO- 2542	TSO- 2543
Date Collected	04-25-12	04-24-12	04-24-12	04-25-12
Be-7	< 0.25	< 0.18	0.70 ± 0.36	0.70 ± 0.20
K-40	21.57 ± 0.91	13.71 ± 0.67	15.21 ± 0.80	20.54 ± 0.90
Mn-54	< 0.029	< 0.018	< 0.027	< 0.032
Nb-95	< 0.015	< 0.026	< 0.031	< 0.022
Zr-95	< 0.021	< 0.041	< 0.030	< 0.021
Ru-103	< 0.037	< 0.012	< 0.026	< 0.022
Ru-106	< 0.172	< 0.166	< 0.129	< 0.193
Cs-134	< 0.016	< 0.018	< 0.021	< 0.022
Cs-137	0.12 ± 0.037	< 0.025	0.12 ± 0.033	0.14 ± 0.031
Ce-141	< 0.071	< 0.050	< 0.068	< 0.062
Ce-144	< 0.126	< 0.066	< 0.127	< 0.139

Table 23. Treated surface water samples, analyses for gross beta.
Collection: Monthly composites of weekly grab samples
Units: pCi/L

T-11 (C)			T-12 (C)		
Lab Code	Date Collected	Gross Beta	Lab Code	Date Collected	Gross Beta
TSWT- 540	01-31-12	1.6 ± 0.4	TSWT- 541	01-31-12	1.5 ± 0.4
TSWT- 1070	02-28-12	1.9 ± 0.8	TSWT- 1071	02-28-12	2.0 ± 0.7
TSWT- 1710	04-03-12	< 1.9	TSWT- 1711	04-03-12	< 1.6
TSWT- 2544	05-01-12	2.5 ± 1.0	TSWT- 2545	05-01-12	< 1.6
TSWT- 3212	05-29-12	2.5 ± 1.0	TSWT- 3213	05-29-12	1.9 ± 1.0
TSWT- 4091	07-03-12	2.2 ± 1.0	TSWT- 4092	07-03-12	< 1.6
TSWT- 4859	07-31-12	3.0 ± 0.8	TSWT- 4860	07-31-12	2.3 ± 0.7
TSWT- 5467	08-28-12	< 1.8	TSWT- 5468	08-28-12	1.7 ± 0.9
TSWT- 6266	10-02-12	< 1.9	TSWT- 6267	10-02-12	1.9 ± 0.9
TSWT- 7177	10-30-12	1.1 ± 0.5	TSWT- 7178	10-30-12	1.0 ± 0.5
TSWT- 7815	12-04-12	2.0 ± 0.8	TSWT- 7816	12-04-12	2.0 ± 0.7
TSWT- 8241	01-02-13	1.8 ± 0.6	TSWT- 8242	01-02-13	< 0.8

T-22			T-143 (QC)		
TSWT- 542	01-31-12	2.4 ± 0.5	TSWT- 543	01-31-12	1.8 ± 0.5
TSWT- 1072	02-28-12	2.3 ± 0.8	TSWT- 1073	02-28-12	2.4 ± 0.7
TSWT- 1712	04-03-12	< 1.9	TSWT- 1713	04-03-12	2.5 ± 1.0
TSWT- 2546	05-01-12	< 1.8	TSWT- 2547	05-01-12	2.0 ± 0.9
TSWT- 3214	05-29-12	< 1.6	TSWT- 3215	05-29-12	< 1.8
TSWT- 4093	07-03-12	< 1.8	TSWT- 4094	07-03-12	< 1.7
TSWT- 4861	07-31-12	3.1 ± 0.8	TSWT- 4862	07-31-12	2.2 ± 0.7
TSWT- 5469	08-28-12	< 1.8	TSWT- 5470	08-28-12	< 1.6
TSWT- 6268	10-02-12	< 1.8	TSWT- 6269	10-02-12	< 1.6
TSWT- 7179	10-30-12	0.9 ± 0.5	TSWT- 7180	10-30-12	< 0.9
TSWT- 7817	12-04-12	2.1 ± 0.8	TSWT- 7818	12-04-12	2.2 ± 0.7
TSWT- 8243	01-02-13	1.1 ± 0.5	TSWT- 8245	01-02-13	1.1 ± 0.5

Table 24. Treated surface water samples, analyses for tritium, strontium-89, strontium-90 and gamma-emitting isotopes.
Collection: Quarterly composites of weekly grab samples
Units: pCi/L

Location	T-11 (C)				
Period Lab Code	1st Qtr. TSWT- 1871	2nd Qtr. TSWT- 4190	3rd Qtr. TSWT- 6305	4th Qtr. TSWT- 8274	Req. LLD
H-3	< 330	< 330	< 330	< 330	330
Sr-89	< 0.7	< 0.8	< 0.7	< 0.9	
Sr-90	< 0.4	< 0.5	< 0.5	< 0.6	
Mn-54	< 2.0	< 2.8	< 1.7	< 3.6	15
Fe-59	< 2.3	< 4.1	< 6.9	< 6.7	30
Co-58	< 2.1	< 2.1	< 3.5	< 3.4	15
Co-60	< 1.2	< 1.6	< 3.2	< 3.1	15
Zn-65	< 1.8	< 3.9	< 3.7	< 5.0	30
Zr-Nb-95	< 2.2	< 2.6	< 2.9	< 3.3	15
Cs-134	< 2.1	< 2.1	< 3.3	< 3.4	10
Cs-137	< 2.5	< 2.4	< 3.2	< 3.4	18
Ba-La-140	< 1.8	< 5.1	< 5.9	< 3.9	15

Location	T-12 (C)				
Period Lab Code	1st Qtr. TSWT- 1872	2nd Qtr. TSWT- 4191	3rd Qtr. TSWT- 6306	4th Qtr. TSWT- 8275	Req. LLD
H-3	< 330	< 330	< 330	< 330	330
Sr-89	< 0.7	< 0.7	< 0.9	< 0.8	
Sr-90	< 0.5	< 0.5	< 0.6	< 0.5	
Mn-54	< 2.0	< 1.7	< 3.2	< 3.5	15
Fe-59	< 3.8	< 5.7	< 4.3	< 4.3	30
Co-58	< 1.9	< 2.7	< 1.7	< 2.9	15
Co-60	< 1.7	< 2.6	< 2.3	< 3.7	15
Zn-65	< 3.0	< 1.4	< 3.9	< 3.9	30
Zr-Nb-95	< 2.3	< 3.0	< 3.7	< 3.9	15
Cs-134	< 1.9	< 2.9	< 2.1	< 2.9	10
Cs-137	< 2.6	< 1.8	< 2.8	< 3.3	18
Ba-La-140	< 3.4	< 5.2	< 4.2	< 5.4	15

Table 24. Treated surface water samples, analyses for tritium, strontium-89, strontium-90 and gamma-emitting isotopes.
Collection: Quarterly composites of weekly grab samples.
Units: pCi/L

Location	T-22				
Period Lab Code	1st Qtr. TSWT- 1873	2nd Qtr. TSWT- 4192	3rd Qtr. TSWT- 6307	4th Qtr. TSWT- 8276	Req. LLD
H-3	< 330	< 330	< 330	< 330	330
Sr-89	< 0.7	< 0.7	< 0.7	< 0.8	
Sr-90	< 0.4	< 0.4	< 0.5	< 0.5	
Mn-54	< 1.8	< 2.0	< 2.5	< 2.0	15
Fe-59	< 3.3	< 4.8	< 4.0	< 3.2	30
Co-58	< 1.9	< 2.1	< 1.8	< 2.6	15
Co-60	< 1.1	< 2.1	< 2.8	< 2.5	15
Zn-65	< 2.5	< 3.0	< 3.8	< 3.5	30
Zr-Nb-95	< 2.8	< 3.7	< 3.0	< 3.4	15
Cs-134	< 2.0	< 1.5	< 2.2	< 2.2	10
Cs-137	< 2.5	< 2.7	< 3.4	< 3.9	18
Ba-La-140	< 3.8	< 5.0	< 8.1	< 3.1	15

Table 25. Untreated surface water, analyses for gross beta, tritium and gamma emitting isotopes.
Location: T-3
Collection: Monthly composites of weekly grab samples
Units: pCi/L

Lab Code	TSWU- 544	TSWU- 1074	TSWU- 1714	TSWU- 2549	
Date Collected	01-31-12	02-28-12	04-03-12	05-01-12	Req. LLD
Gross beta	6.0 ± 0.9	1.8 ± 0.6	5.1 ± 0.8	1.5 ± 0.6	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 2.7	< 2.1	< 2.2	< 3.0	15
Fe-59	< 3.5	< 2.9	< 4.1	< 6.3	30
Co-58	< 3.0	< 1.7	< 2.5	< 2.5	15
Co-60	< 1.6	< 1.9	< 2.4	< 2.5	15
Zn-65	< 2.7	< 2.9	< 5.4	< 3.0	30
Zr-Nb-95	< 1.9	< 1.8	< 3.4	< 2.8	15
Cs-134	< 2.2	< 2.1	< 2.3	< 3.1	10
Cs-137	< 2.5	< 2.8	< 2.6	< 2.6	18
Ba-La-140	< 4.3	< 3.1	< 3.7	< 2.6	15

Lab Code	TSWU- 3216	TSWU- 4095	TSWU- 4876	TSWU- 5471	
Date Collected	05-29-12	07-03-12	07-31-12	08-28-12	Req. LLD
Gross Beta	2.4 ± 0.5	2.0 ± 0.6	2.9 ± 0.8	2.9 ± 0.8	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 2.4	< 2.2	< 2.0	< 2.0	15
Fe-59	< 4.2	< 7.8	< 6.8	< 3.3	30
Co-58	< 2.5	< 2.2	< 3.5	< 1.5	15
Co-60	< 1.9	< 1.7	< 2.9	< 1.6	15
Zn-65	< 5.4	< 5.7	< 6.3	< 3.5	30
Zr-Nb-95	< 3.0	< 2.6	< 3.4	< 3.0	15
Cs-134	< 2.0	< 3.1	< 2.8	< 2.3	10
Cs-137	< 3.1	< 2.5	< 2.3	< 2.3	18
Ba-La-140	< 2.1	< 3.0	< 3.5	< 2.9	15

Lab Code	TSWU- 6270	TSWU- 7181	TSWU- 7821	TSWU- 8246	
Date Collected	10-02-12	10-30-12	12-04-12	01-02-13	Req. LLD
Gross Beta	2.5 ± 1.1	2.6 ± 0.8	3.1 ± 0.8	4.8 ± 0.9	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 4.0	< 2.6	< 1.9	< 2.7	15
Fe-59	< 6.9	< 4.7	< 5.1	< 3.7	30
Co-58	< 3.2	< 1.9	< 2.9	< 2.6	15
Co-60	< 3.8	< 2.0	< 2.1	< 2.6	15
Zn-65	< 4.3	< 3.6	< 1.8	< 2.9	30
Zr-Nb-95	< 4.3	< 3.7	< 2.9	< 3.1	15
Cs-134	< 3.3	< 2.6	< 2.5	< 2.4	10
Cs-137	< 4.0	< 2.6	< 2.7	< 1.7	18
Ba-La-140	< 3.0	< 4.5	< 3.3	< 1.4	15

Table 25. Untreated surface water, analyses for gross beta, tritium and gamma emitting isotopes.
Location: T-11 (C)
Collection: Monthly composites of weekly grab samples
Units: pCi/L

Lab Code	TSWU- 546	TSWU- 1076	TSWU- 1716	TSWU- 2552	
Date Collected	01-31-12	02-28-12	04-03-12	05-01-12	Req. LLD
Gross beta	3.5 ± 0.8	1.4 ± 0.6	1.2 ± 0.4	1.4 ± 0.6	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 2.3	< 2.6	< 3.0	< 1.6	15
Fe-59	< 4.4	< 5.2	< 7.2	< 5.4	30
Co-58	< 2.2	< 2.9	< 1.9	< 2.1	15
Co-60	< 2.0	< 2.3	< 3.1	< 2.1	15
Zn-65	< 2.6	< 2.8	< 5.9	< 3.9	30
Zr-Nb-95	< 2.6	< 2.9	< 2.6	< 3.1	15
Cs-134	< 2.1	< 2.7	< 3.6	< 2.4	10
Cs-137	< 2.9	< 2.8	< 4.2	< 3.4	18
Ba-La-140	< 1.5	< 5.2	< 6.0	< 3.9	15

Lab Code	TSWU- 3218	TSWU- 4098	TSWU- 4878	TSWU- 5473	
Date Collected	05-29-12	07-03-12	07-31-12	08-28-12	Req. LLD
Gross Beta	1.4 ± 0.4	1.0 ± 0.6	2.4 ± 0.8	2.6 ± 0.8	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 2.6	< 1.8	< 2.5	< 2.7	15
Fe-59	< 3.7	< 3.8	< 3.8	< 4.7	30
Co-58	< 2.3	< 2.5	< 2.6	< 2.3	15
Co-60	< 1.6	< 1.7	< 2.1	< 1.2	15
Zn-65	< 4.6	< 5.0	< 4.1	< 4.6	30
Zr-Nb-95	< 2.6	< 3.7	< 1.7	< 3.3	15
Cs-134	< 1.4	< 2.4	< 2.2	< 2.5	10
Cs-137	< 3.1	< 3.1	< 3.3	< 3.1	18
Ba-La-140	< 1.8	< 2.8	< 2.2	< 4.6	15

Lab Code	TSWU- 6272	TSWU- 7183	TSWU- 7823	TSWU- 8248	
Date Collected	10-02-12	10-30-12	12-04-12	01-02-13	Req. LLD
Gross Beta	2.1 ± 1.0	1.7 ± 0.7	2.8 ± 0.8	2.8 ± 0.8	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 3.7	< 1.8	< 4.4	< 3.6	15
Fe-59	< 7.1	< 3.7	< 6.8	< 3.7	30
Co-58	< 3.5	< 2.7	< 3.4	< 2.9	15
Co-60	< 3.7	< 2.8	< 4.7	< 2.9	15
Zn-65	< 5.3	< 1.4	< 2.8	< 5.4	30
Zr-Nb-95	< 3.3	< 2.6	< 3.5	< 1.4	15
Cs-134	< 4.3	< 1.9	< 3.5	< 3.2	10
Cs-137	< 5.5	< 2.7	< 3.6	< 3.2	18
Ba-La-140	< 3.9	< 4.6	< 3.8	< 3.4	15

Table 25. Untreated surface water, analyses for gross beta, tritium and gamma emitting isotopes.
Location: T-12 (C)
Collection: Monthly composites of weekly grab samples
Units: pCi/L

Lab Code	TSWU- 547	TSWU- 1077	TSWU- 1717	TSWU- 2553	
Date Collected	01-31-12	02-28-12	04-03-12	05-01-12	Req. LLD
Gross beta	4.0 ± 0.8	0.9 ± 0.5	1.7 ± 0.4	< 0.9	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 5.7	< 2.3	< 3.0	< 2.5	15
Fe-59	< 8.2	< 4.7	< 6.4	< 4.7	30
Co-58	< 5.0	< 1.6	< 2.9	< 1.9	15
Co-60	< 3.7	< 2.1	< 4.5	< 1.1	15
Zn-65	< 6.6	< 4.0	< 5.5	< 3.8	30
Zr-Nb-95	< 3.1	< 3.2	< 4.7	< 2.9	15
Cs-134	< 4.4	< 2.3	< 3.9	< 2.1	10
Cs-137	< 4.9	< 2.9	< 2.9	< 2.9	18
Ba-La-140	< 6.8	< 1.9	< 5.0	< 2.3	15

Lab Code	TSWU- 3219	TSWU- 4099	TSWU- 4879	TSWU- 5474	
Date Collected	05-29-12	07-03-12	07-31-12	08-28-12	Req. LLD
Gross Beta	1.3 ± 0.4	1.4 ± 0.6	2.0 ± 0.7	2.4 ± 0.7	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 3.7	< 2.7	< 2.2	< 2.8	15
Fe-59	< 4.6	< 3.5	< 3.6	< 5.2	30
Co-58	< 2.7	< 2.7	< 1.4	< 3.0	15
Co-60	< 3.7	< 3.4	< 2.5	< 3.2	15
Zn-65	< 7.1	< 2.9	< 3.2	< 1.9	30
Zr-Nb-95	< 3.6	< 3.2	< 3.4	< 4.3	15
Cs-134	< 3.6	< 2.2	< 1.9	< 2.5	10
Cs-137	< 3.7	< 3.3	< 2.8	< 1.7	18
Ba-La-140	< 2.8	< 6.4	< 2.4	< 3.8	15

Lab Code	TSWU- 6273	TSWU- 7184	TSWU- 7825	TSWU- 8249	
Date Collected	10-02-12	10-30-12	12-04-12	01-02-13	Req. LLD
Gross Beta	1.9 ± 0.9	1.2 ± 0.7	1.8 ± 0.7	2.1 ± 0.7	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 3.3	< 2.7	< 4.1	< 2.9	15
Fe-59	< 4.4	< 5.9	< 6.6	< 3.0	30
Co-58	< 4.2	< 3.8	< 1.8	< 1.6	15
Co-60	< 3.2	< 2.6	< 3.9	< 2.0	15
Zn-65	< 4.0	< 6.2	< 4.0	< 2.3	30
Zr-Nb-95	< 2.3	< 2.7	< 3.6	< 2.4	15
Cs-134	< 3.4	< 2.2	< 2.8	< 2.2	10
Cs-137	< 5.0	< 3.4	< 3.4	< 2.7	18
Ba-La-140	< 3.4	< 4.6	< 2.7	< 3.0	15

Table 25. Untreated surface water, analyses for gross beta, tritium and gamma emitting isotopes.
Location: T-22
Collection: Monthly composites of weekly grab samples
Units: pCi/L

Lab Code	TSWU- 549	TSWU- 1079	TSWU- 1719	TSWU- 2555	
Date Collected	01-31-12	02-28-12	04-03-12	05-01-12	Req. LLD
Gross beta	4.6 ± 0.9	1.5 ± 0.6	1.5 ± 0.4	2.5 ± 0.9	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 2.6	< 3.2	< 3.8	< 2.1	15
Fe-59	< 6.2	< 5.5	< 5.0	< 2.4	30
Co-58	< 3.0	< 4.5	< 5.3	< 3.1	15
Co-60	< 2.3	< 3.8	< 1.6	< 1.7	15
Zn-65	< 5.3	< 3.6	< 4.0	< 3.6	30
Zr-Nb-95	< 2.6	< 3.4	< 3.2	< 3.6	15
Cs-134	< 3.5	< 3.1	< 3.5	< 2.1	10
Cs-137	< 2.2	< 2.7	< 5.4	< 3.3	18
Ba-La-140	< 2.5	< 5.6	< 5.1	< 1.8	15

Lab Code	TSWU- 3221	TSWU- 4101	TSWU- 4881	TSWU- 5476	
Date Collected	05-29-12	07-03-12	07-31-12	08-28-12	Req. LLD
Gross Beta	1.7 ± 0.5	1.4 ± 0.6	0.9 ± 0.5	2.3 ± 0.8	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 3.0	< 2.3	< 2.4	< 2.5	15
Fe-59	< 5.7	< 3.8	< 4.5	< 6.0	30
Co-58	< 2.7	< 2.3	< 3.2	< 2.0	15
Co-60	< 2.7	< 1.4	< 2.1	< 1.7	15
Zn-65	< 3.8	< 3.5	< 4.2	< 2.2	30
Zr-Nb-95	< 2.0	< 2.4	< 3.4	< 2.2	15
Cs-134	< 1.8	< 2.2	< 2.7	< 2.2	10
Cs-137	< 2.1	< 2.9	< 3.2	< 3.0	18
Ba-La-140	< 2.1	< 4.7	< 2.6	< 2.4	15

Lab Code	TSWU- 6275	TSWU- 7186	TSWU- 7827	TSWU- 8251	
Date Collected	10-02-12	10-30-12	12-04-12	01-02-13	Req. LLD
Gross Beta	1.9 ± 1.0	1.2 ± 0.6	1.3 ± 0.5	2.9 ± 1.1	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 2.2	< 1.8	< 3.2	< 1.7	15
Fe-59	< 3.6	< 3.8	< 3.3	< 4.5	30
Co-58	< 2.4	< 1.3	< 1.7	< 2.2	15
Co-60	< 1.9	< 2.0	< 2.2	< 1.5	15
Zn-65	< 3.5	< 3.3	< 4.2	< 3.7	30
Zr-Nb-95	< 2.5	< 3.2	< 2.8	< 3.1	15
Cs-134	< 2.3	< 1.8	< 2.0	< 2.3	10
Cs-137	< 2.5	< 3.2	< 2.4	< 2.1	18
Ba-La-140	< 2.2	< 3.7	< 5.3	< 2.4	15

Table 25. Untreated surface water, analyses for gross beta, tritium and gamma emitting isotopes.
Location: T-145 (QC)
Collection: Monthly composites of weekly grab samples
Units: pCi/L

Lab Code	TSWU- 550	TSWU- 1080	TSWU- 1721	TSWU- 2556	
Date Collected	01-31-12	02-28-12	04-03-12	05-01-12	Req. LLD
Gross beta	4.1 ± 0.8	2.5 ± 0.8	2.0 ± 0.5	2.1 ± 1.0	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 2.3	< 2.5	< 4.1	< 1.7	15
Fe-59	< 3.8	< 4.6	< 7.3	< 4.8	30
Co-58	< 2.8	< 1.7	< 3.5	< 2.5	15
Co-60	< 2.2	< 2.4	< 3.5	< 1.6	15
Zn-65	< 4.5	< 5.9	< 6.8	< 3.8	30
Zr-Nb-95	< 3.1	< 1.8	< 4.8	< 3.6	15
Cs-134	< 2.9	< 2.8	< 2.8	< 2.7	10
Cs-137	< 3.1	< 3.3	< 2.8	< 2.2	18
Ba-La-140	< 2.8	< 4.4	< 4.9	< 4.2	15

Lab Code	TSWU- 3223	TSWU- 4102	TSWU- 4882	TSWU- 5477	
Date Collected	05-29-12	07-03-12	07-31-12	08-28-12	Req. LLD
Gross Beta	1.6 ± 0.5	1.0 ± 0.5	1.1 ± 0.5	0.9 ± 0.5	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 2.1	< 2.2	< 1.8	< 1.3	15
Fe-59	< 3.8	< 5.8	< 3.7	< 6.5	30
Co-58	< 2.5	< 2.9	< 1.8	< 2.1	15
Co-60	< 4.0	< 2.1	< 3.0	< 1.3	15
Zn-65	< 3.9	< 2.7	< 3.3	< 2.4	30
Zr-Nb-95	< 3.0	< 3.3	< 2.2	< 6.5	15
Cs-134	< 2.4	< 1.9	< 2.5	< 2.2	10
Cs-137	< 2.5	< 2.5	< 2.5	< 3.2	18
Ba-La-140	< 4.9	< 5.1	< 1.7	< 25.3	15

Lab Code	TSWU- 6276	TSWU- 7187	TSWU- 7828	TSWU- 8252	
Date Collected	10-02-12	10-30-12	12-04-12	01-02-13	Req. LLD
Gross Beta	< 1.3	1.1 ± 0.5	1.1 ± 0.5	< 1.7	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 4.4	< 2.5	< 1.8	< 1.9	15
Fe-59	< 7.3	< 3.5	< 7.0	< 3.9	30
Co-58	< 2.3	< 2.5	< 1.5	< 3.0	15
Co-60	< 3.4	< 2.1	< 2.1	< 3.4	15
Zn-65	< 6.2	< 4.8	< 4.1	< 5.7	30
Zr-Nb-95	< 3.9	< 3.9	< 3.5	< 4.4	15
Cs-134	< 2.8	< 1.8	< 3.0	< 2.5	10
Cs-137	< 4.4	< 2.6	< 3.6	< 3.9	18
Ba-La-140	< 5.1	< 8.8	< 3.3	< 2.2	15

Table 26. Untreated surface water samples, analyses for strontium-89 and strontium-90.
Collection: Quarterly composites of weekly grab samples
Units: pCi/L

Location	T-3			
Period	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Lab Code	TSWU- 1874	TSWU- 4258	TSWU- 6602	TSWU- 8312
Sr-89	< 0.7	< 0.8	< 0.7	< 0.9
Sr-90	< 0.5	< 0.6	< 0.4	< 0.6

Location	T-11 (C)			
Period	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Lab Code	TSWU- 1876	TSWU- 4259	TSWU- 6603	TSWU- 8313
Sr-89	< 0.7	< 0.8	< 0.8	< 0.9
Sr-90	< 0.5	< 0.5	< 0.5	0.6 < 0.3

Location	T-12 (C)			
Period	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Lab Code	TSWU- 1877	TSWU- 4260	TSWU- 6604	TSWU- 8314
Sr-89	< 0.7	< 0.8	< 0.7	< 1.1
Sr-90	< 0.4	< 0.5	< 0.5	< 0.7

Location	T-22			
Period	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Lab Code	TSWU- 1878	TSWU- 4261	TSWU- 6605	TSWU- 8315
Sr-89	< 0.7	< 1.0	< 0.6	< 0.8
Sr-90	< 0.4	< 0.7	< 0.4	< 0.5

Table 27. Fish samples, analyses for gross beta and gamma-emitting isotopes.
Collection: Annually
Units: pCi/g wet

Location	T-33 (Lake Erie, 1.5 mi. NE of Station)		
Lab Code	TF- 3410	TF- 3411	TF- 3412
Date Collected	03-16-12	03-18-12	05-23-12
Sample Type	Carp	Walleye	Wh. Bass/ Wh. Perch
Gross Beta	3.2 ± 0.1	3.3 ± 0.1	3.5 ± 0.1
K-40	2.78 ± 0.39	3.74 ± 0.41	2.40 ± 0.38
Mn-54	< 0.022	< 0.017	< 0.015
Fe-59	< 0.151	< 0.153	< 0.037
Co-58	< 0.041	< 0.025	< 0.010
Co-60	< 0.014	< 0.015	< 0.005
Zn-65	< 0.021	< 0.036	< 0.010
Cs-134	< 0.016	< 0.017	< 0.007
Cs-137	< 0.016	< 0.015	< 0.015

Location	T-35		
Lab Code	TF- 3414	TF- 3415	TF- 3416
Date Collected	03-07-12	03-17-12	03-22-12
Sample Type	Walleye	White Perch	Carp
Gross Beta	3.8 ± 0.1	3.6 ± 0.1	2.4 ± 0.1
K-40	3.30 ± 0.42	3.28 ± 0.40	2.75 ± 0.42
Mn-54	< 0.023	< 0.018	< 0.009
Fe-59	< 0.133	< 0.107	< 0.051
Co-58	< 0.049	< 0.033	< 0.010
Co-60	< 0.017	< 0.011	< 0.008
Zn-65	< 0.022	< 0.023	< 0.020
Cs-134	< 0.014	< 0.012	< 0.012
Cs-137	< 0.020	< 0.015	< 0.008

Table 28. Shoreline sediment samples, analyses for gamma-emitting isotopes.
Collection: Semiannually
Units: pCi/g dry

Location	T-3	T-4	T-4P	T-27B	T-132
Lab Code	TSS- 2528	TSS- 2529	TSS- 2531	TSS- 2532	TSS- 2533
Date Collected	04-25-12	04-25-12	04-25-12	04-25-12	04-25-12
K-40	11.25 ± 0.52	10.98 ± 0.55	17.28 ± 0.86	10.34 ± 0.53	7.94 ± 0.43
Mn-54	< 0.011	< 0.019	< 0.029	< 0.010	< 0.013
Co-58	< 0.011	< 0.017	< 0.024	< 0.015	< 0.015
Co-60	< 0.010	< 0.013	< 0.009	< 0.005	< 0.006
Cs-134	< 0.012	< 0.011	< 0.025	< 0.010	< 0.010
Cs-137	< 0.007	< 0.013	0.065 ± 0.033	< 0.011	< 0.012
Lab Code	TSS- 7953	TSS- 7954	TSS- 7955	TSS- 7956	TSS- 7957
Date Collected	11-07-12	11-07-12	11-07-12	11-07-12	11-07-12
K-40	9.91 ± 0.51	11.19 ± 0.54	20.29 ± 1.11	11.47 ± 0.69	8.69 ± 0.45
Mn-54	< 0.016	< 0.015	< 0.038	< 0.021	< 0.012
Co-58	< 0.019	< 0.029	< 0.051	< 0.018	< 0.019
Co-60	< 0.011	< 0.011	< 0.025	< 0.023	< 0.010
Cs-134	< 0.011	< 0.012	< 0.025	< 0.020	< 0.009
Cs-137	< 0.012	< 0.017	< 0.033	< 0.015	< 0.012

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APPENDIX A

INTERLABORATORY COMPARISON PROGRAM RESULTS

NOTE: Environmental Inc., Midwest Laboratory participates in intercomparison studies administered by Environmental Resources Associates, and serves as a replacement for studies conducted previously by the U.S. EPA Environmental Monitoring Systems Laboratory, Las Vegas, Nevada. Results are reported in Appendix A. TLD Intercomparison results, in-house spikes, blanks, duplicates and mixed analyte performance evaluation program results are also reported. Appendix A is updated four times a year; the complete Appendix is included in March, June, September and December monthly progress reports only.

January, 2012 through December, 2012

Appendix A

Interlaboratory Comparison Program Results

Environmental, Inc., Midwest Laboratory has participated in interlaboratory comparison (crosscheck) programs since the formulation of it's quality control program in December 1971. These programs are operated by agencies which supply environmental type samples containing concentrations of radionuclides known to the issuing agency but not to participant laboratories. The purpose of such a program is to provide an independent check on a laboratory's analytical procedures and to alert it of any possible problems.

Participant laboratories measure the concentration of specified radionuclides and report them to the issuing agency. Several months later, the agency reports the known values to the participant laboratories and specifies control limits. Results consistently higher or lower than the known values or outside the control limits indicate a need to check the instruments or procedures used.

Results in Table A-1 were obtained through participation in the environmental sample crosscheck program administered by Environmental Resources Associates, serving as a replacement for studies conducted previously by the U.S. EPA Environmental Monitoring Systems Laboratory, Las Vegas, Nevada.

Table A-2 lists results for thermoluminescent dosimeters (TLDs), via International Intercomparison of Environmental Dosimeters, when available, and internal laboratory testing.

Table A-3 lists results of the analyses on in-house "spiked" samples for the past twelve months. All samples are prepared using NIST traceable sources. Data for previous years available upon request.

Table A-4 lists results of the analyses on in-house "blank" samples for the past twelve months. Data for previous years available upon request.

Table A-5 lists REMP specific analytical results from the in-house "duplicate" program for the past twelve months. Acceptance is based on the difference of the results being less than the sum of the errors. Complete analytical data for duplicate analyses is available upon request.

The results in Table A-6 were obtained through participation in the Mixed Analyte Performance Evaluation Program.

Results in Table A-7 were obtained through participation in the environmental sample crosscheck program administered by Environmental Resources Associates, serving as a replacement for studies conducted previously by the Environmental Measurement Laboratory Quality Assessment Program (EML).

Attachment A lists the laboratory precision at the 1 sigma level for various analyses. The acceptance criteria in Table A-3 is set at ± 2 sigma.

Out-of-limit results are explained directly below the result.

Attachment A

ACCEPTANCE CRITERIA FOR "SPIKED" SAMPLES

LABORATORY PRECISION: ONE STANDARD DEVIATION VALUES FOR VARIOUS ANALYSES[a]

Analysis	Level	One standard deviation for single determination
Gamma Emitters	5 to 100 pCi/liter or kg	5.0 pCi/liter
	> 100 pCi/liter or kg	5% of known value
Strontium-89[b]	5 to 50 pCi/liter or kg	5.0 pCi/liter
	> 50 pCi/liter or kg	10% of known value
Strontium-90[b]	2 to 30 pCi/liter or kg	5.0 pCi/liter
	> 30 pCi/liter or kg	10% of known value
Potassium-40	≥ 0.1 g/liter or kg	5% of known value
Gross alpha	≤ 20 pCi/liter	5.0 pCi/liter
	> 20 pCi/liter	25% of known value
Gross beta	≤ 100 pCi/liter	5.0 pCi/liter
	> 100 pCi/liter	5% of known value
Tritium	≤ 4,000 pCi/liter	$\pm 1\sigma$ = $169.85 \times (\text{known})^{0.0933}$
	> 4,000 pCi/liter	10% of known value
Radium-226,-228	≥ 0.1 pCi/liter	15% of known value
Plutonium	≥ 0.1 pCi/liter, gram, or sample	10% of known value
Iodine-131, Iodine-129[b]	≤ 55 pCi/liter	6 pCi/liter
	> 55 pCi/liter	10% of known value
Uranium-238, Nickel-63[b] Technetium-99[b]	≤ 35 pCi/liter	6 pCi/liter
	> 35 pCi/liter	15% of known value
Iron-55[b]	50 to 100 pCi/liter	10 pCi/liter
	> 100 pCi/liter	10% of known value
Other Analyses [b]	---	20% of known value

[a] From EPA publication, "Environmental Radioactivity Laboratory Intercomparison Studies Program, Fiscal Year, 1981-1982, EPA-600/4-81-004.

[b] Laboratory limit.

TABLE A-1. Interlaboratory Comparison Crosscheck program, Environmental Resource Associates (ERA)[a].

Lab Code	Date	Analysis	Concentration (pCi/L) Laboratory Result [b]	ERA Result [c]	Control Limits	Acceptance
ERW-1783	04/09/12	Sr-89	62.2 ± 6.0	58.5	46.9 - 66.3	Pass
ERW-1783	04/09/12	Sr-90	33.7 ± 2.1	37.4	27.4 - 43.1	Pass
ERW-1786	04/09/12	Ba-133	75.7 ± 4.1	82.3	69.1 - 90.5	Pass
ERW-1786	04/09/12	Co-60	71.9 ± 4.0	72.9	65.6 - 82.6	Pass
ERW-1786	04/09/12	Cs-134	70.0 ± 4.3	74.2	60.6 - 81.6	Pass
ERW-1786	04/09/12	Cs-137	151.5 ± 6.1	155.0	140.0 - 172.0	Pass
ERW-1786	04/09/12	Zn-65	108.3 ± 89.0	105.0	94.5 - 125.0	Pass
ERW-1789	04/09/12	Gr. Alpha	55.0 ± 2.4	62.9	33.0 - 78.0	Pass
ERW-1789 [d]	04/09/12	Gr. Beta	38.3 ± 1.3	44.2	29.6 - 51.5	Pass
ERW-1795	04/09/12	Ra-226	6.4 ± 0.4	5.7	4.3 - 6.9	Pass
ERW-1795	04/09/12	Ra-228	5.4 ± 1.2	4.6	2.7 - 6.3	Pass
ERW-1795	04/09/12	Uranium	56.2 ± 2.6	61.5	50.0 - 68.2	Pass
ERW-1798	04/09/12	H-3	16023 ± 355	15800	13800 - 17400	Pass
ERW-6283	10/05/12	Sr-89	41.5 ± 4.1	39.1	29.7 - 46.1	Pass
ERW-6283	10/05/12	Sr-90	19.7 ± 1.6	20.1	14.4 - 23.8	Pass
ERW-6286	10/05/12	Ba-133	82.7 ± 4.4	84.8	71.3 - 93.3	Pass
ERW-6286	10/05/12	Co-60	77.2 ± 3.7	78.3	70.5 - 88.5	Pass
ERW-6286	10/05/12	Cs-134	74.4 ± 1.5	76.6	62.6 - 84.3	Pass
ERW-6286	10/05/12	Cs-137	183.0 ± 6.2	183.0	165.0 - 203.0	Pass
ERW-6286	10/05/12	Zn-65	211.0 ± 9.9	204.0	184.0 - 240.0	Pass
ERW-6288	10/05/12	Gr. Alpha	47.0 ± 2.3	58.6	30.6 - 72.9	Pass
ERW-6288	10/05/12	Gr. Beta	33.4 ± 1.2	39.2	26.0 - 46.7	Pass
ERW-6290	10/05/12	I-131	23.3 ± 1.0	24.8	20.6 - 29.4	Pass
ERW-6295 [e]	10/05/12	Ra-226	16.5 ± 0.7	15.0	11.2 - 17.2	Pass
ERW-6295 [e]	10/05/12	Ra-228	4.9 ± 1.1	4.6	2.7 - 6.2	Pass
ERW-6295	10/05/12	Uranium	61.2 ± 1.8	62.5	50.8 - 69.3	Pass

[a] Results obtained by Environmental, Inc., Midwest Laboratory as a participant in the crosscheck program for proficiency testing in drinking water conducted by Environmental Resources Associates (ERA).

[b] Unless otherwise indicated, the laboratory result is given as the mean ± standard deviation for three determinations.

[c] Results are presented as the known values, expected laboratory precision (1 sigma, 1 determination) and control limits as provided by ERA.

[d] Result of reanalysis. Sample dilution problem suspected. A new dilution was prepared and the sample reanalyzed. Original analysis results, 76.2 ± 1.8 pCi/L.

[e] Results of reanalyses, original submission (pCi/L): Ra-226, 17.52 ± 0.69 Ra-228, 7.44 ± 1.1.49.
A new test was ordered from Environmental Resources Associates, results will be updated for first quarter, 2013.

TABLE A-2. Thermoluminescent Dosimetry, (TLD, $CaSO_4$: Dy Cards).

Lab Code	Date	Description	mR Known Value	Lab Result ± 2 sigma	Control Limits	Acceptance
Environmental, Inc.						
2012-1	2/7/2012	30 cm.	74.87	87.22 ± 2.86	52.41 - 97.33	Pass
2012-1	2/7/2012	40 cm.	42.12	53.70 ± 4.53	29.48 - 54.76	Pass
2012-1	2/7/2012	50 cm.	26.95	33.04 ± 1.96	18.87 - 35.04	Pass
2012-1	2/7/2012	70 cm.	13.75	13.26 ± 1.15	9.63 - 17.88	Pass
2012-1	2/7/2012	75 cm.	11.98	13.38 ± 1.68	8.39 - 15.57	Pass
2012-1	2/7/2012	80 cm.	10.53	11.27 ± 0.95	7.37 - 13.69	Pass
2012-1	2/7/2012	90 cm.	8.32	7.79 ± 0.83	5.82 - 10.82	Pass
2012-1	2/7/2012	100 cm.	6.74	5.91 ± 0.25	4.72 - 8.76	Pass
2012-1	2/7/2012	110 cm.	5.57	4.63 ± 0.83	3.90 - 7.24	Pass
2012-1	2/7/2012	120 cm.	4.68	3.96 ± 1.68	3.28 - 6.08	Pass
2012-1	2/7/2012	150 cm.	2.99	2.41 ± 0.08	2.09 - 3.89	Pass
2012-1	2/7/2012	180 cm.	2.08	2.02 ± 0.25	1.46 - 2.70	Pass
Environmental, Inc.						
2012-2	9/11/2012	40 cm.	33.75	43.74 ± 1.31	23.63 - 43.88	Pass
2012-2	9/11/2012	50 cm.	21.6	25.37 ± 0.82	15.12 - 28.08	Pass
2012-2	9/11/2012	60 cm.	15	16.63 ± 0.45	10.50 - 19.50	Pass
2012-2	9/11/2012	70 cm.	11.02	10.58 ± 0.20	7.71 - 14.33	Pass
2012-2	9/11/2012	80 cm.	8.44	8.55 ± 1.18	5.91 - 10.97	Pass
2012-2	9/11/2012	90 cm.	6.67	5.75 ± 0.33	4.67 - 8.67	Pass
2012-2	9/11/2012	100 cm.	5.4	4.44 ± 0.22	3.78 - 7.02	Pass
2012-2	9/11/2012	110 cm.	4.46	3.85 ± 0.05	3.12 - 5.80	Pass
2012-2	9/11/2012	120 cm.	3.75	3.03 ± 0.71	2.63 - 4.88	Pass
2012-2	9/11/2012	150 cm.	2.4	1.82 ± 0.10	1.68 - 3.12	Pass
2012-2	9/11/2012	180 cm.	1.67	1.19 ± 0.34	1.17 - 2.17	Pass

TABLE A-3. In-House "Spiked" Samples

Lab Code [b]	Date	Analysis	Concentration (pCi/L)[a] Laboratory results 2s, n=1 [c]	Known Activity	Control Limits [d]	Acceptance
SPW-41824	2/15/2012	Ra-228	24.85 ± 2.14	28.75	20.13 - 37.38	Pass
W-22712	2/27/2012	Gr. Alpha	14.59 ± 0.34	20.00	10.00 - 30.00	Pass
W-22712	2/27/2012	Gr. Alpha	43.57 ± 0.40	41.70	20.85 - 62.55	Pass
SPAP-1032	3/5/2012	Cs-134	7.06 ± 1.71	5.26	0.00 - 15.26	Pass
SPAP-1032	3/5/2012	Cs-137	102.63 ± 3.13	104.24	93.82 - 114.66	Pass
SPAP-1034	3/5/2012	Gr. Beta	44.30 ± 0.11	46.88	28.13 - 65.63	Pass
SPW-1036	3/5/2012	Cs-134	43.23 ± 3.84	39.42	29.42 - 49.42	Pass
SPW-1036	3/5/2012	Cs-137	57.44 ± 4.60	52.12	42.12 - 62.12	Pass
SPW-1036	3/5/2012	Sr-90	60.51 ± 1.93	61.52	49.22 - 73.82	Pass
SPMI-1038	3/5/2012	Cs-134	37.79 ± 4.06	39.42	29.42 - 49.42	Pass
SPMI-1038	3/5/2012	Cs-137	54.75 ± 5.09	52.12	42.12 - 62.12	Pass
SPW-1045	3/5/2012	H-3	68022 ± 746	69048	55238 - 82858	Pass
SPW-1047	3/5/2012	Ni-63	217.10 ± 3.64	206.64	144.65 - 268.63	Pass
SPW-1049	3/5/2012	C-14	3858.90 ± 12.79	4738.80	2843.28 - 6634.32	Pass
W-31412	3/14/2012	Ra-226	13.13 ± 0.36	16.70	11.69 - 21.71	Pass
SPW-1520	3/23/2012	U-238	45.67 ± 2.02	41.70	29.19 - 54.21	Pass
SPW-41825	4/10/2012	Ra-228	28.48 ± 2.51	28.35	19.85 - 36.86	Pass
WW-1547	4/16/2012	Ba-133	18.99 ± 4.67	26.70	16.70 - 36.70	Pass
WW-1547	4/16/2012	Cs-134	9.28 ± 2.82	8.68	0.00 - 18.68	Pass
WW-1547	4/16/2012	Cs-137	27.77 ± 4.49	29.70	19.70 - 39.70	Pass
W-51712	5/17/2012	Ra-226	17.29 ± 0.43	16.70	11.69 - 21.71	Pass
W-61112	6/11/2012	Gr. Alpha	22.16 ± 0.45	20.00	10.00 - 30.00	Pass
W-61112	6/11/2012	Gr. Beta	43.57 ± 0.40	45.20	35.20 - 55.20	Pass
SPAP-4418	7/25/2012	Gr. Beta	43.74 ± 0.11	46.50	27.90 - 65.10	Pass
SPAP-4420	7/25/2012	Cs-134	4.54 ± 0.73	4.60	2.76 - 6.44	Pass
SPAP-4420	7/25/2012	Cs-137	104.70 ± 2.77	103.30	92.97 - 113.63	Pass
SPMI-4422	7/25/2012	Co-60	31.43 ± 2.12	31.62	21.62 - 41.62	Pass
SPMI-4422	7/25/2012	Cs-134	16.50 ± 1.17	16.15	6.15 - 26.15	Pass
SPMI-4422	7/25/2012	Cs-137	29.60 ± 2.61	26.64	16.64 - 36.64	Pass
SPMI-4422	7/25/2012	Sr-90	31.60 ± 1.35	30.47	24.38 - 36.56	Pass
SPW-4424	7/25/2012	Co-60	38.52 ± 1.76	37.95	27.95 - 47.95	Pass
SPW-4424	7/25/2012	Cs-137	33.23 ± 2.27	32.01	22.01 - 42.01	Pass
SPW-4424	7/25/2012	Sr-90	36.56 ± 1.58	40.60	32.48 - 48.72	Pass
SPF-4426	7/25/2012	Cs-134	947.50 ± 42.50	1025.00	922.50 - 1127.50	Pass
SPF-4426	7/25/2012	Cs-137	2692.00 ± 62.40	2480.00	2232.00 - 2728.00	Pass
SPW-4428	7/25/2012	C-14	4325.70 ± 15.80	4738.80	2843.28 - 6634.32	Pass
SPW-4430	7/25/2012	H-3	70119.40 ± 773.40	67570.00	54056.00 - 81084.00	Pass
SPW-4432	7/25/2012	Ni-63	187.20 ± 3.85	206.80	144.76 - 268.84	Pass
W-81712	8/17/2012	Ra-226	14.94 ± 0.40	16.70	11.69 - 21.71	Pass
SPW-5407	8/29/2012	U-238	42.95 ± 0.11	41.70	29.19 - 54.21	Pass
SPW-18022	9/10/2012	Ra-228	29.03 ± 2.80	28.21	19.75 - 36.67	Pass

TABLE A-3. In-House "Spiked" Samples

Lab Code [b]	Date	Concentration (pCi/L)[a] Analysis	Laboratory results 2s, n=1 [c]	Known Activity	Control Limits [d]	Acceptance
W-91012	9/10/2012	Gr. Alpha	19.95 ± 0.42	20.00	10.00 - 30.00	Pass
W-91012	9/10/2012	Gr. Beta	43.47 ± 0.40	45.20	35.20 - 55.20	Pass
W-100312	10/3/2012	Gr. Alpha	19.95 ± 0.41	20.00	10.00 - 30.00	Pass
W-100312	10/3/2012	Gr. Beta	44.21 ± 0.40	45.20	35.20 - 55.20	Pass
W-101812	10/18/2012	Ra-226	18.80 ± 0.43	16.70	11.69 - 21.71	Pass
ESO-7235	12/6/2012	Sr-90	138.79 ± 2.67	161.05	128.84 - 193.26	Pass
SPW-7753	12/6/2012	U-238	45.55 ± 5.05	41.70	29.19 - 54.21	Pass
SPW-18023	12/18/2012	Ra-228	31.59 ± 2.99	25.98	18.19 - 33.77	Pass

[a] Liquid sample results are reported in pCi/Liter, air filters(pCi/filter), charcoal (pCi/m^3), and solid samples (pCi/g).

[b] Laboratory codes : W (Water), MI (milk), AP (air filter), SO (soil), VE (vegetation), CH (charcoal canister), F (fish), U (urine).

[c] Results are based on single determinations.

[d] Control limits are established from the precision values listed in Attachment A of this report, adjusted to ± 2σ.

NOTE: For fish, Jello is used for the Spike matrix. For Vegetation, cabbage is used for the Spike matrix.

TABLE A-4. In-House "Blank" Samples

Lab Code	Sample Type	Date	Analysis[b]	Concentration (pCi/L)[a]		
				Laboratory results (4.66σ)		Acceptance
				LLD	Activity[c]	Criteria (4.66 σ)
SPW-41814	Water	2/15/2012	Ra-228	0.65	0.49 ± 0.36	2
W-22712	Water	2/27/2012	Gr. Alpha	0.42	-0.04 ± 0.29	1
W-22712	Water	2/27/2012	Gr. Beta	0.74	-0.54 ± 0.50	3.2
SPAP-1031	Air Filter	3/5/2012	Cs-134	1.89	-	100
SPAP-1031	Air Filter	3/5/2012	Cs-137	1.16	-	100
SPAP-1033	Air Filter	3/5/2012	Gr. Beta	0.003	0.013 ± 0.003	0.01
SPW-1035	Water	3/5/2012	Cs-134	2.40	-	10
SPW-1035	Water	3/5/2012	Cs-137	2.88	-	10
SPW-1035	Water	3/5/2012	I-131(G)	2.35	-	20
SPW-1035	Water	3/5/2012	Sr-90	0.60	-0.11 ± 0.26	1
SPMI-1037	Milk	3/5/2012	Cs-134	2.85	-	10
SPMI-1037	Milk	3/5/2012	Cs-137	3.73	-	10
SPMI-1037	Milk	3/5/2012	I-131(G)	3.24	-	20
SPW-1044	Water	3/5/2012	H-3	146.10	37.10 ± 74.40	200
SPW-1046	Water	3/5/2012	Ni-63	19.07	8.30 ± 11.79	20
SPW-1048	Water	3/5/2012	C-14	5.70	2.99 ± 3.04	200
SPW-1166	water	3/9/2012	C-14	6.79	1.11	200
W-31412	Water	3/14/2012	Ra-226	0.034	0.043 ± 0.027	1
SPW-1521	Water	3/23/2012	U-238	0.10	0.09 ± 0.11	1
W-51712	Water	4/24/2012	Ra-226	0.04	0.04 ± 0.03	1
W-61112	Water	6/11/2012	Gr. Alpha	0.47	-0.14 ± 0.32	1
W-61112	Water	6/11/2012	Gr. Beta	0.71	0.29 ± 0.51	3.2
SPW-41815	Water	7/7/2011	Ra-228	0.77	0.52 ± 0.42	2
SPAP-4417	Air Filter	7/25/2012	Gr. Beta	0.001	0.021 ± 0.003	0.01
SPMI-4421	Milk	7/25/2012	Co-60	4.29	-	10
SPMI-4421	Milk	7/25/2012	Cs-134	3.58	-	10
SPMI-4421	Milk	7/25/2012	Cs-137	4.60	-	10
SPMI-4421	Milk	7/25/2012	Sr-90	0.45	0.53 ± 0.27	1
SPW-4423	Water	7/25/2012	Co-60	1.88	-	10
SPW-4423	Water	7/25/2012	Cs-134	2.38	-	10
SPW-4423	Water	7/25/2012	Cs-137	2.80	-	10
SPW-4423	water	7/25/2012	Sr-90	0.45	0.08 ± 0.22	1
SPF-4425	Fish	7/25/2012	Co-60	6.74	-	100
SPF-4425	Fish	7/25/2012	Cs-134	7.47	-	100
SPF-4425	Fish	7/25/2012	Cs-137	9.62	-	100
SPW-4427	Water	7/25/2012	C-14	10.93	3.54 ± 5.84	200
SPW-4431	Water	7/25/2012	Ni-63	19.00	5.50 ± 11.70	20
W-81712	Water	8/17/2012	Ra-226	0.038	0.035 ± 0.030	1
SPW-5408	Water	8/29/2012	U-238	0.039	0.015 ± 0.057	1

TABLE A-4. In-House "Blank" Samples

Lab Code	Sample Type	Date	Analysis[b]	Concentration (pCi/L)[a]		
				Laboratory results (4.66σ)		Acceptance
				LLD	Activity[c]	Criteria (4.66 σ)
SPW-18032	Water	9/10/2012	Ra-228	0.78	0.85 ± 0.46	2
W-91012	Water	9/10/2012	Gr. Alpha	0.42	0.027 ± 0.29	1
W-91012	Water	9/10/2012	Gr. Beta	0.75	-0.13 ± 0.52	3.2
W-100312	Water	10/3/2012	Gr. Beta	0.77	-0.32 ± 0.53	3.2
W-100312	Water	10/3/2012	Gr. Beta	0.43	0.06 ± 0.30	3.2
W-101812	Water	10/18/2012	Ra-226	0.04	0.04 ± 0.03	1
SPW-7754	Water	12/6/2012	U-238	0.10	0.02 ± 0.08	1
SPW-18033	Water	12/18/2012	Ra-228	0.98	0.43 ± 0.50	2

[a] Liquid sample results are reported in pCi/Liter, air filters(pCi/filter), charcoal (pCi/charcoal canister), and solid samples (pCi/kg).

[b] I-131(G); Iodine-131 as analyzed by gamma spectroscopy.

[c] Activity reported is a net activity result. For gamma spectroscopic analysis, activity detected below the LLD value is not reported.

TABLE A-5. In-House "Duplicate" Samples

			Concentration (pCi/L)[a]			
Lab Code	Date	Analysis	First Result	Second Result	Averaged Result	Acceptance
CF-20, 21	1/3/2012	Gr. Beta	14.50 ± 0.29	15.02 ± 0.30	14.76 ± 0.21	Pass
CF-20, 21	1/3/2012	K-40	12.88 ± 0.55	12.40 ± 0.53	12.64 ± 0.38	Pass
CF-20, 21	1/3/2012	Sr-90	0.01 ± 0.01	0.01 ± 0.01	0.01 ± 0.00	Pass
P-9133, 9134	1/3/2012	H-3	108.86 ± 83.03	206.60 ± 86.38	157.73 ± 59.91	Pass
U-302, 303	1/17/2012	Beta (-K40)	6.84 ± 2.91	5.24 ± 2.56	6.04 ± 1.94	Pass
S-386, 387	1/23/2012	Ac-228	0.77 ± 0.11	0.79 ± 0.14	0.78 ± 0.09	Pass
S-386, 387	1/23/2012	Bi-214	0.80 ± 0.07	0.73 ± 0.11	0.77 ± 0.07	Pass
S-386, 387	1/23/2012	Pb-214	0.74 ± 0.06	0.75 ± 0.11	0.75 ± 0.06	Pass
S-386, 387	1/23/2012	Tl-208	0.21 ± 0.02	0.21 ± 0.04	0.21 ± 0.02	Pass
S-386, 387	1/23/2012	U-235	0.05 ± 0.02	0.12 ± 0.05	0.09 ± 0.03	Pass
WW-619, 620	1/31/2012	H-3	257.20 ± 86.00	305.80 ± 88.30	281.50 ± 61.63	Pass
MI-702, 703	2/6/2012	K-40	1337.00 ± 123.00	1460.40 ± 102.00	1398.70 ± 79.90	Pass
WW-892, 893	2/17/2012	Gr. Beta	3.46 ± 0.56	3.77 ± 0.59	3.61 ± 0.41	Pass
S-850, 851	2/22/2012	Cs-134	0.14 ± 0.02	0.13 ± 0.02	0.14 ± 0.01	Pass
S-850, 851	2/22/2012	Cs-137	0.21 ± 0.03	0.22 ± 0.03	0.22 ± 0.02	Pass
W-1251, 1252	3/6/2012	Gr. Alpha	1.20 ± 0.62	1.27 ± 0.92	1.24 ± 0.55	Pass
W-1251, 1252	3/6/2012	Gr. Beta	16.86 ± 1.43	15.14 ± 1.34	16.00 ± 0.98	Pass
W-1251, 1252	3/6/2012	H-3	5235.52 ± 230.91	4893.24 ± 224.55	5064.38 ± 161.05	Pass
W-1251, 1252	3/6/2012	Tc-99	19.67 ± 3.60	14.46 ± 3.51	17.07 ± 2.51	Pass
AP-1209, 1210	3/8/2012	Be-7	0.24 ± 0.12	0.20 ± 0.11	0.22 ± 0.08	Pass
XWW-1564, 1565	3/14/2012	H-3	308.00 ± 88.00	293.00 ± 87.00	300.50 ± 61.87	Pass
SG-1438, 1439	3/19/2012	Ac-228	6.01 ± 0.30	6.23 ± 0.31	6.12 ± 0.22	Pass
SG-1438, 1439	3/19/2012	Pb-214	4.69 ± 0.49	5.20 ± 0.54	4.95 ± 0.36	Pass
WW-1585, 1586	3/19/2012	H-3	3124.50 ± 176.96	2982.38 ± 173.62	3053.44 ± 123.96	Pass
AP-2103, 2104	3/28/2012	Be-7	0.080 ± 0.016	0.076 ± 0.013	0.078 ± 0.010	Pass
AP-2166, 2167	3/28/2012	Be-7	0.061 ± 0.020	0.071 ± 0.016	0.066 ± 0.013	Pass
AP-1632, 1633	3/29/2012	Be-7	0.26 ± 0.12	0.24 ± 0.12	0.25 ± 0.08	Pass
E-1653, 1654	4/2/2012	Gr. Beta	1.53 ± 0.05	1.55 ± 0.04	1.54 ± 0.03	Pass
E-1653, 1654	4/2/2012	K-40	1.34 ± 0.13	1.36 ± 0.14	1.35 ± 0.10	Pass
SG-1677, 1678	4/2/2012	Ac-228	6.63 ± 0.37	6.49 ± 0.33	6.56 ± 0.25	Pass
SG-1677, 1678	4/2/2012	Pb-214	4.77 ± 0.16	5.07 ± 0.14	4.92 ± 0.11	Pass
SWU-1719, 1720	4/3/2012	Gr. Beta	1.16 ± 0.41	1.53 ± 0.44	1.35 ± 0.30	Pass
W-1698, 1699	4/5/2012	Gr. Beta	10.86 ± 1.49	9.42 ± 1.32	10.14 ± 1.00	Pass
W-1698, 1699	4/5/2012	Ra-226	0.41 ± 0.15	0.67 ± 0.18	0.54 ± 0.12	Pass
W-1698, 1699	4/5/2012	Ra-228	1.46 ± 0.76	1.48 ± 0.74	1.47 ± 0.53	Pass
SG-1761, 1762	4/10/2012	Ac-228	16.26 ± 0.53	16.55 ± 0.44	16.41 ± 0.34	Pass
SG-1761, 1762	4/10/2012	Pb-214	14.16 ± 1.44	15.40 ± 1.56	14.78 ± 1.06	Pass
AP-2019, 2020	4/12/2012	Be-7	0.17 ± 0.10	0.17 ± 0.08	0.17 ± 0.07	Pass
DW-2272, 2273	4/20/2012	I-131	0.52 ± 0.24	0.49 ± 0.27	0.51 ± 0.18	Pass
DW-2356, 2357	4/24/2012	Gr. Beta	12.82 ± 2.01	9.47 ± 1.74	11.14 ± 1.33	Pass

TABLE A-5. In-House "Duplicate" Samples

Lab Code	Date	Analysis	Concentration (pCi/L)[a] First Result	Second Result	Averaged Result	Acceptance
G-2403, 2404	5/1/2012	Be-7	1.77 ± 0.21	1.55 ± 0.33	1.66 ± 0.20	Pass
G-2403, 2404	5/1/2012	K-40	6.38 ± 0.50	6.93 ± 0.72	6.66 ± 0.44	Pass
BS-2445, 2446	5/1/2012	Gr. Beta	8.92 ± 1.52	9.29 ± 1.63	9.11 ± 1.11	Pass
BS-2445, 2446	5/1/2012	K-40	5.86 ± 0.38	6.22 ± 0.48	6.04 ± 0.31	Pass
SWU-2550, 2551	5/1/2012	Gr. Beta	2.07 ± 0.65	1.59 ± 0.62	1.83 ± 0.45	Pass
WW-2614, 2615	5/1/2012	Gr. Beta	2.03 ± 1.04	2.36 ± 1.14	2.20 ± 0.77	Pass
WW-2614, 2615	5/1/2012	H-3	750.60 ± 106.20	653.20 ± 102.30	701.90 ± 73.73	Pass
BS-2656, 2657	5/2/2012	Cs-137	0.13 ± 0.07	0.07 ± 0.04	0.10 ± 0.04	Pass
BS-2656, 2657	5/2/2012	K-40	10.15 ± 0.97	11.13 ± 0.90	10.64 ± 0.66	Pass
SO-2635, 2636	5/3/2012	Cs-137	0.046 ± 0.024	0.050 ± 0.027	0.048 ± 0.018	Pass
SO-2635, 2636	5/3/2012	K-40	13.20 ± 0.74	14.01 ± 0.67	13.61 ± 0.50	Pass
MI-2677, 2678	5/7/2012	K-40	1415.30 ± 131.40	1348.10 ± 109.00	1381.70 ± 85.36	Pass
VE-2719, 2720	5/7/2012	K-40	4.15 ± 0.36	4.19 ± 0.38	4.17 ± 0.26	Pass
SWU-3221, 3222	5/8/2012	Gr. Beta	1.67 ± 0.47	1.39 ± 0.45	1.53 ± 0.33	Pass
SWU-3221, 3222	5/8/2012	H-3	236.90 ± 101.90	281.90 ± 103.70	259.40 ± 72.69	Pass
WW-3073, 3074	5/14/2012	H-3	339.12 ± 145.45	337.23 ± 98.19	338.18 ± 87.74	Pass
AP-2968, 2969	5/17/2012	Be-7	0.25 ± 0.12	0.21 ± 0.09	0.23 ± 0.07	Pass
F-3031, 3032	5/22/2012	H-3	11291.00 ± 372.80	11167.00 ± 315.00	11229.00 ± 244.03	Pass
F-3031, 3032	5/22/2012	K-40	3528.90 ± 372.80	3677.20 ± 392.40	3603.05 ± 270.63	Pass
G-3094, 3095	5/23/2012	Gr. Beta	7.89 ± 0.16	8.01 ± 0.16	7.95 ± 0.11	Pass
F-3412, 3413	5/23/2012	Gr. Beta	3.46 ± 0.10	3.33 ± 0.10	3.40 ± 0.07	Pass
F-3412, 3413	5/23/2012	K-40	2.40 ± 0.38	2.55 ± 0.43	2.48 ± 0.29	Pass
MI-3067, 3068	5/24/2012	K-40	1267.20 ± 105.00	1305.70 ± 109.80	1286.45 ± 75.96	Pass
SO-3305, 3306	5/30/2012	Cs-137	0.024 ± 0.013	0.030 ± 0.015	0.027 ± 0.010	Pass
SO-3305, 3306	5/30/2012	Gr. Beta	10.95 ± 0.89	10.86 ± 0.89	10.91 ± 0.63	Pass
SO-3305, 3306	5/30/2012	Tl-208	0.068 ± 0.018	0.062 ± 0.017	0.065 ± 0.012	Pass
LW-3454, 3455	5/31/2012	Gr. Beta	2.12 ± 0.86	2.27 ± 0.77	2.20 ± 0.58	Pass
BS-3697, 3698	6/14/2012	Be-7	2.05 ± 0.19	2.27 ± 0.38	2.16 ± 0.21	Pass
BS-3697, 3698	6/14/2012	Cs-137	2.32 ± 0.39	2.26 ± 0.66	2.29 ± 0.38	Pass
BS-3697, 3698	6/14/2012	K-40	6.67 ± 0.28	6.64 ± 0.42	6.66 ± 0.25	Pass
VE-3798, 3799	6/20/2012	K-40	5.93 ± 0.38	6.03 ± 0.37	5.98 ± 0.26	Pass
WW-4790, 4791	6/20/2012	H-3	251.33 ± 86.51	372.48 ± 92.27	311.90 ± 63.24	Pass
DW-30103, 30104	6/27/2012	Ra-226	0.30 ± 0.08	0.42 ± 0.09	0.36 ± 0.06	Pass
DW-30103, 30104	6/27/2012	Ra-228	0.76 ± 0.54	0.78 ± 0.54	0.77 ± 0.38	Pass
LW-3970, 3971	6/28/2012	Gr. Beta	1.49 ± 1.06	0.72 ± 0.53	1.11 ± 0.59	Pass
DW-3949, 3950	6/29/2012	I-131	0.54 ± 0.26	0.25 ± 0.26	0.40 ± 0.18	Pass
SG-4075, 4076	7/2/2012	Ac-228	0.33 ± 0.09	0.34 ± 0.06	0.34 ± 0.05	Pass
SG-4075, 4076	7/2/2012	K-40	6.71 ± 0.58	7.20 ± 0.32	6.96 ± 0.33	Pass
SG-4075, 4076	7/2/2012	Pb-214	0.46 ± 0.05	0.49 ± 0.03	0.48 ± 0.03	Pass
AP-4390, 4391	7/3/2012	Be-7	0.09 ± 0.02	0.09 ± 0.01	0.09 ± 0.01	Pass
AP-4390, 4391	7/3/2012	Be-7	0.11 ± 0.02	0.10 ± 0.01	0.11 ± 0.01	Pass
AP-4012, 4013	7/5/2012	Be-7	0.27 ± 0.09	0.29 ± 0.16	0.28 ± 0.09	Pass
SW-4033, 4034	7/5/2012	H-3	614.99 ± 107.99	512.31 ± 103.83	563.65 ± 74.91	Pass

TABLE A-5. In-House "Duplicate" Samples

Lab Code	Date	Analysis	Concentration (pCi/L)[a] First Result	Second Result	Averaged Result	Acceptance
VE-4054, 4055	7/9/2012	K-40	7.28 ± 0.56	7.42 ± 0.63	7.35 ± 0.42	Pass
VE-4222, 4223	7/13/2012	Be-7	0.16 ± 0.08	0.22 ± 0.09	0.19 ± 0.06	Pass
VE-4222, 4223	7/13/2012	K-40	7.20 ± 0.30	6.60 ± 0.30	6.90 ± 0.21	Pass
DW-30113, 30114	7/13/2012	Ra-228	1.93 ± 0.66	1.03 ± 0.53	1.48 ± 0.42	Pass
DW-30115, 30116	7/13/2012	Gr. Alpha	7.46 ± 1.21	7.02 ± 1.14	7.24 ± 0.83	Pass
DW-30124, 30125	7/13/2012	Ra-226	1.16 ± 0.15	0.90 ± 0.12	1.03 ± 0.10	Pass
DW-30124, 30125	7/13/2012	Ra-228	1.38 ± 0.56	1.72 ± 0.60	1.55 ± 0.41	Pass
DW-30126, 30127	7/13/2012	Gr. Alpha	6.23 ± 1.16	6.75 ± 1.29	6.49 ± 0.87	Pass
AP-4433, 4434	7/19/2012	Be-7	0.17 ± 0.09	0.21 ± 0.10	0.19 ± 0.07	Pass
SG-4475, 4476	7/19/2012	Gr. Alpha	17.03 ± 4.17	15.56 ± 3.96	16.30 ± 2.88	Pass
SG-4475, 4476	7/19/2012	Gr. Beta	13.23 ± 2.61	14.36 ± 2.47	13.80 ± 1.80	Pass
WW-4685, 4686	7/24/2012	H-3	289.00 ± 99.00	375.00 ± 103.00	332.00 ± 71.43	Pass
AP-4706, 4707	7/26/2012	Be-7	0.28 ± 0.14	0.24 ± 0.14	0.26 ± 0.10	Pass
SO-4748, 4749	7/26/2012	Gr. Beta	20.45 ± 1.04	19.22 ± 0.94	19.84 ± 0.70	Pass
SO-4748, 4749	7/26/2012	Gr. Beta	20.45 ± 1.04	19.22 ± 0.94	19.84 ± 0.70	Pass
SO-4748, 4749	7/26/2012	U-233/4	0.11 ± 0.02	0.10 ± 0.01	0.11 ± 0.01	Pass
SO-4748, 4749	7/26/2012	U-238	0.12 ± 0.02	0.11 ± 0.01	0.12 ± 0.01	Pass
VE-4832, 4833	8/1/2012	K-40	4.06 ± 0.22	4.08 ± 0.24	4.07 ± 0.16	Pass
DW-30149, 30150	8/1/2012	Ra-226	2.69 ± 0.22	2.79 ± 0.22	2.74 ± 0.16	Pass
DW-30149, 30150	8/1/2012	Ra-228	2.77 ± 0.75	1.61 ± 0.57	2.19 ± 0.47	Pass
SG-4916, 4917	8/3/2012	Ac-228	11.03 ± 0.33	11.08 ± 0.44	11.06 ± 0.28	Pass
SG-4916, 4917	8/3/2012	K-40	6.39 ± 0.80	6.98 ± 0.88	6.69 ± 0.59	Pass
F-5313, 5314	8/9/2012	Cs-137	0.05 ± 0.02	0.05 ± 0.02	0.05 ± 0.01	Pass
F-5313, 5314	8/9/2012	Gr. Beta	4.12 ± 0.08	4.10 ± 0.08	4.11 ± 0.06	Pass
F-5313, 5314	8/9/2012	K-40	3.07 ± 0.42	3.14 ± 0.40	3.11 ± 0.29	Pass
VE-5166, 5167	8/15/2012	K-40	4.26 ± 0.28	3.66 ± 0.47	3.96 ± 0.27	Pass
VE-5376, 5377	8/22/2012	Gr. Beta	7.72 ± 0.17	7.61 ± 0.16	7.67 ± 0.12	Pass
VE-5334, 5335	8/27/2012	K-40	1.65 ± 0.17	1.72 ± 0.15	1.68 ± 0.12	Pass
VE-5481, 5482	8/28/2012	Be-7	2.52 ± 0.19	2.65 ± 0.21	2.59 ± 0.14	Pass
VE-5481, 5482	8/28/2012	K-40	5.05 ± 0.37	4.79 ± 0.39	4.92 ± 0.27	Pass
VE-5481, 5482	8/28/2012	Sr-90	0.01 ± 0.00	0.01 ± 0.01	0.01 ± 0.00	Pass
DW-30164, 30165	8/30/2012	Ra-226	1.33 ± 0.15	1.59 ± 0.17	1.46 ± 0.11	Pass
DW-30164, 30165	8/30/2012	Ra-228	2.76 ± 0.66	1.54 ± 0.56	2.15 ± 0.43	Pass
VE-5166, 5167	9/4/2012	K-40	2.05 ± 0.32	2.53 ± 0.36	2.29 ± 0.24	Pass
ME-5607, 5608	9/4/2012	Gr. Beta	2.92 ± 0.08	2.89 ± 0.08	2.90 ± 0.06	Pass
ME-5607, 5608	9/4/2012	K-40	2.06 ± 0.32	2.53 ± 0.36	2.29 ± 0.24	Pass
SW-5901, 5902	9/17/2012	H-3	10909.00 ± 311.00	10817.00 ± 310.00	10863.00 ± 219.56	Pass
BS-6048, 6049	9/24/2012	K-40	1.24 ± 0.20	1.18 ± 0.21	1.21 ± 0.14	Pass
AP-6482, 6483	9/27/2012	Be-7	0.09 ± 0.02	0.09 ± 0.03	0.09 ± 0.02	Pass

TABLE A-5. In-House "Duplicate" Samples

Lab Code	Date	Analysis	Concentration (pCi/L)[a] First Result	Second Result	Averaged Result	Acceptance
G-6090, 6091	10/1/2012	Be-7	3.74 ± 0.33	3.54 ± 0.30	3.64 ± 0.22	Pass
G-6090, 6091	10/1/2012	Gr. Beta	10.81 ± 0.34	10.72 ± 0.33	10.77 ± 0.24	Pass
G-6090, 6091	10/1/2012	K-40	5.99 ± 0.47	5.45 ± 0.44	5.72 ± 0.32	Pass
SO-6111, 6112	10/1/2012	Cs-137	0.06 ± 0.03	0.04 ± 0.02	0.05 ± 0.02	Pass
SO-6111, 6112	10/1/2012	K-40	19.66 ± 0.84	20.09 ± 0.80	19.88 ± 0.58	Pass
W-6795, 6796	10/1/2012	H-3	215.20 ± 88.00	292.80 ± 91.60	254.00 ± 63.51	Pass
AP-6461, 6462	10/2/2012	Be-7	0.07 ± 0.01	0.07 ± 0.02	0.07 ± 0.01	Pass
WW-6279, 6280	10/3/2012	Gr. Beta	1.54 ± 0.68	1.67 ± 0.75	1.61 ± 0.51	Pass
W-6346, 6347	10/3/2012	Ra-226	0.30 ± 0.10	0.36 ± 0.10	0.33 ± 0.07	Pass
VE-6503, 6504	10/9/2012	K-40	5.23 ± 0.83	6.00 ± 0.45	5.04 ± 0.27	Pass
WW-6606, 6607	10/10/2012	Gr. Beta	3.18 ± 1.31	2.42 ± 1.27	2.80 ± 0.91	Pass
WW-6606, 6607	10/10/2012	H-3	273.10 ± 85.70	219.80 ± 83.10	246.45 ± 59.69	Pass
WW-7237, 7238	10/12/2012	H-3	175.44 ± 99.84	180.75 ± 100.03	178.10 ± 70.66	Pass
F-6627, 6628	10/15/2012	K-40	3.05 ± 0.39	3.23 ± 0.37	3.14 ± 0.27	Pass
VE-6669, 6670	10/16/2012	Be-7	0.48 ± 0.26	0.50 ± 0.13	0.49 ± 0.15	Pass
VE-6669, 6670	10/16/2012	K-40	4.06 ± 0.28	3.68 ± 0.26	3.87 ± 0.19	Pass
SS-6711, 6712	10/16/2012	Ac-228	0.16 ± 0.05	0.17 ± 0.06	0.17 ± 0.04	Pass
SS-6711, 6712	10/16/2012	Bi-214	0.13 ± 0.03	0.16 ± 0.03	0.14 ± 0.02	Pass
SS-6711, 6712	10/16/2012	Gr. Beta	14.20 ± 0.89	12.67 ± 0.88	13.44 ± 0.63	Pass
SS-6711, 6712	10/16/2012	Pb-212	0.15 ± 0.06	0.13 ± 0.02	0.14 ± 0.03	Pass
SS-6711, 6712	10/16/2012	Tl-208	0.06 ± 0.02	0.04 ± 0.02	0.05 ± 0.01	Pass
WW-7258, 7259	10/22/2012	H-3	214.69 ± 85.42	314.60 ± 90.25	264.65 ± 62.13	Pass
WW-7655, 7656	10/25/2012	H-3	159.00 ± 86.10	159.00 ± 86.10	159.00 ± 60.88	Pass
WW-7747, 7748	10/25/2012	H-3	156.50 ± 84.70	170.20 ± 85.30	163.35 ± 60.10	Pass
MI-6963, 6964	10/28/2012	K-40	1384.60 ± 111.70	1421.60 ± 107.60	1403.10 ± 77.55	Pass
MI-7174, 7175	11/5/2012	K-40	1283.60 ± 97.45	1293.20 ± 91.37	1288.40 ± 66.79	Pass
SG-7221, 7222	11/9/2012	Pb-214	31.49 ± 0.70	30.11 ± 0.80	30.80 ± 0.53	Pass
DW-30216, 30217	11/9/2012	Gr. Alpha	2.23 ± 0.86	2.31 ± 0.92	2.27 ± 0.63	Pass
DW-30216, 30217	11/9/2012	Ra-226	0.72 ± 0.12	0.82 ± 0.14	0.77 ± 0.09	Pass
DW-30216, 30217	11/9/2012	Ra-228	0.92 ± 0.52	1.26 ± 0.53	1.09 ± 0.37	Pass
MI-7363, 7364	11/13/2012	K-40	1304.40 ± 103.30	1496.10 ± 121.30	1400.25 ± 79.66	Pass
CF-7384, 7385	11/13/2012	K-40	11.75 ± 0.52	10.94 ± 0.59	11.35 ± 0.39	Pass
VE-7489, 7490	11/16/2012	K-40	2.22 ± 0.23	1.91 ± 0.22	2.06 ± 0.16	Pass
AP-7531, 7532	11/21/2012	Be-7	0.19 ± 0.10	0.29 ± 0.17	0.24 ± 0.10	Pass
BS-7573, 7574	11/24/2012	K-40	7.21 ± 0.41	7.57 ± 0.39	7.39 ± 0.28	Pass
LW-7865, 7866	12/5/2012	Gr. Beta	2.16 ± 0.56	1.64 ± 0.62	1.90 ± 0.42	Pass
SG-8095, 8096	12/19/2012	Ac-228	25.15 ± 0.73	25.47 ± 0.54	25.31 ± 0.45	Pass
SG-8095, 8096	12/19/2012	Gamma	26.98 ± 2.72	28.68 ± 2.89	27.83 ± 1.98	Pass

Note: Duplicate analyses are performed on every twentieth sample received in-house. Results are not listed for those analyses with activities that measure below the LLD.

[a] Results are reported in units of pCi/L, except for air filters (pCi/Filter), food products, vegetation, soil, sediment (pCi/g).

TABLE A-6. Department of Energy's Mixed Analyte Performance Evaluation Program (MAPEP).

			Concentration [a]			
Lab Code [b]	Date	Analysis	Laboratory result	Known Activity	Control Limits [c]	Acceptance
STW-1670	02/01/12	I-129	9.31 ± 0.31	12.29	8.60 - 15.98	Pass
STSO-1766 [d]	02/01/12	Am-241	88.50 ± 8.30	159.00	111.00 - 207.00	Fail
STSO-1766	02/01/12	Co-57	1352.10 ± 4.00	1179.00	825.00 - 1533.00	Pass
STSO-1766	02/01/12	Co-60	1.70 ± 0.70	1.56	1.00 - 2.00	Pass
STSO-1766	02/01/12	Cs-134	842.20 ± 4.30	828.00	580.00 - 1076.00	Pass
STSO-1766	02/01/12	Cs-137	0.40 ± 0.90	0.00	0.00 - 1.00	Pass
STSO-1766	02/01/12	K-40	1729.60 ± 22.20	1491.00	1044.00 - 1938.00	Pass
STSO-1766	02/01/12	Mn-54	647.60 ± 4.20	558.00	391.00 - 725.00	Pass
STSO-1766	02/01/12	Ni-63	781.50 ± 9.70	862.00	603.00 - 1121.00	Pass
STSO-1766	02/01/12	Pu-238	142.40 ± 9.70	136.00	97.00 - 177.00	Pass
STSO-1766	02/01/12	Pu-239/40	66.10 ± 6.40	65.80	46.10 - 85.50	Pass
STSO-1766	02/01/12	Sr-90	383.20 ± 15.30	392.00	274.00 - 510.00	Pass
STSO-1766	02/01/12	Tc-99	289.60 ± 10.90	374.00	262.00 - 486.00	Pass
STSO-1766	02/01/12	U-233/4	63.20 ± 5.40	68.10	47.70 - 88.50	Pass
STSO-1766	02/01/12	U-238	310.80 ± 12.10	329.00	230.00 - 428.00	Pass
STSO-1766	02/01/12	Zn-65	766.70 ± 6.70	642.00	449.00 - 835.00	Pass
STAP-1772	02/01/12	Am-241	0.062 ± 0.02	0.073	0.051 - 0.10	Pass
STAP-1772	02/01/12	Co-57	0.010 ± 0.01	0.00	0.000 - 1.00	Pass
STAP-1772	02/01/12	Co-60	2.40 ± 0.08	2.18	1.53 - 2.84	Pass
STAP-1772	02/01/12	Cs-134	2.33 ± 0.13	2.38	1.67 - 3.09	Pass
STAP-1772	02/01/12	Cs-137	2.07 ± 0.10	1.79	1.25 - 2.33	Pass
STAP-1772	02/01/12	Mn-54	3.77 ± 0.14	3.24	2.27 - 4.21	Pass
STAP-1772	02/01/12	Pu-238	0.003 ± 0.004	0.002	0.000 - 0.10	Pass
STAP-1772	02/01/12	Pu-239/40	0.098 ± 0.017	0.097	0.07 - 0.13	Pass
STAP-1772	02/01/12	Sr-90	-0.010 ± 0.060	0.000	-0.10 - 0.13	Pass
STAP-1772 [e]	02/01/12	U-233/4	0.016 ± 0.006	0.019	0.013 - 0.024	Pass
STAP-1772	02/01/12	U-238	0.11 ± 0.02	0.12	0.09 - 0.16	Pass
STAP-1772	02/01/12	Zn-65	3.67 ± 0.20	2.99	2.09 - 3.89	Pass
STAP-1773	02/01/12	Gr. Alpha	0.51 ± 0.05	1.20	0.40 - 2.00	Pass
STAP-1773	02/01/12	Gr. Beta	2.75 ± 0.10	2.40	1.20 - 3.60	Pass
STVE-1776	02/01/12	Co-57	14.57 ± 0.28	12.00	8.40 - 15.60	Pass
STVE-1776	02/01/12	Co-60	6.45 ± 0.23	6.05	4.24 - 7.87	Pass
STVE-1776	02/01/12	Cs-134	8.39 ± 0.29	8.43	5.90 - 10.96	Pass
STVE-1776	02/01/12	Cs-137	0.01 ± 0.09	0.00	0.00 - 0.10	Pass
STVE-1776	02/01/12	Mn-54	0.03 ± 0.08	0.00	0.00 - 0.10	Pass
STVE-1776	02/01/12	Zn-65	10.31 ± 0.67	8.90	6.23 - 11.57	Pass
STW-1960	02/01/12	Gr. Alpha	1.68 ± 0.09	2.14	0.64 - 3.64	Pass
STW-1960	02/01/12	Gr. Beta	6.33 ± 0.10	6.36	3.18 - 9.54	Pass

TABLE A-6. Department of Energy's Mixed Analyte Performance Evaluation Program (MAPEP).

			Concentration [a]			
Lab Code [b]	Date	Analysis	Laboratory result	Known Activity	Control Limits [c]	Acceptance
STW-1964	02/01/12	Am-241	1.28 ± 0.12	1.63	1.14 - 2.12	Pass
STW-1964	02/01/12	Co-57	33.30 ± 0.40	32.90	23.00 - 42.80	Pass
STW-1964	02/01/12	Co-60	23.20 ± 0.40	23.72	16.60 - 30.84	Pass
STW-1964	02/01/12	Cs-134	0.30 ± 3.00	0.00	0.00 - 1.00	Pass
STW-1964	02/01/12	Cs-137	40.10 ± 0.60	39.90	27.90 - 51.90	Pass
STW-1964 [1]	02/01/12	Fe-55	65.10 ± 9.50	81.90	57.30 - 106.50	Pass
STW-1964	02/01/12	H-3	460.00 ± 12.10	437.00	306.00 - 568.00	Pass
STW-1964	02/01/12	K-40	153.00 ± 4.20	142.00	99.00 - 185.00	Pass
STW-1964	02/01/12	Mn-54	32.70 ± 0.60	31.80	22.30 - 41.30	Pass
STW-1964	02/01/12	Ni-63	49.80 ± 2.90	60.00	42.00 - 78.00	Pass
STW-1964	02/01/12	Pu-238	0.58 ± 0.06	0.63	0.44 - 0.82	Pass
STW-1964	02/01/12	Pu-239/40	1.30 ± 0.15	1.34	0.94 - 1.74	Pass
STW-1964	02/01/12	Sr-90	0.10 ± 0.20	0.00	0.00 - 1.00	Pass
STW-1964	02/01/12	Tc-99	23.70 ± 0.80	27.90	19.50 - 36.30	Pass
STW-1964	02/01/12	U-233/4	0.40 ± 0.05	0.39	0.27 - 0.51	Pass
STW-1964	02/01/12	U-238	2.67 ± 0.13	2.76	1.93 - 3.59	Pass
STW-1964	02/01/12	Zn-65	0.01 ± 0.20	0.00	0.00 - 1.00	Pass
STW-5391	08/01/12	I-129	5.73 ± 0.28	6.82	4.77 - 8.87	Pass
STSO-5392	08/01/12	Am-241	129.30 ± 12.70	111.00	78.00 - 144.00	Pass
STSO-5392	08/01/12	Ni-63	376.20 ± 20.60	406.00	284.00 - 528.00	Pass
STSO-5392	08/01/12	Pu-238	118.70 ± 9.30	105.80	74.10 - 137.50	Pass
STSO-5392	08/01/12	Pu-239/40	140.70 ± 9.90	134.00	94.00 - 174.00	Pass
STSO-5392	08/01/12	Sr-90	483.52 ± 16.47	508.00	356.00 - 660.00	Pass
STSO-5392	08/01/12	Tc-99	432.50 ± 23.10	469.00	328.00 - 610.00	Pass
STSO-5394	08/01/12	Co-57	1528.00 ± 4.10	1316.00	921.00 - 1711.00	Pass
STSO-5394	08/01/12	Co-60	592.00 ± 3.20	531.00	372.00 - 690.00	Pass
STSO-5394	08/01/12	Cs-134	933.60 ± 5.82	939.00	657.00 - 1221.00	Pass
STSO-5394	08/01/12	Cs-137	1319.80 ± 5.50	1150.00	805.00 - 1495.00	Pass
STSO-5394	08/01/12	K-40	737.30 ± 17.70	632.00	442.00 - 822.00	Pass
STSO-5394	08/01/12	Mn-54	1083.20 ± 5.20	920.00	644.00 - 1196.00	Pass
STSO-5394	08/01/12	U-233/4	55.80 ± 4.20	60.30	42.20 - 78.40	Pass
STSO-5394	08/01/12	U-238	231.20 ± 8.60	263.00	184.00 - 342.00	Pass
STSO-5394	08/01/12	Zn-65	696.10 ± 7.00	606.00	424.00 - 788.00	Pass

TABLE A-6. Department of Energy's Mixed Analyte Performance Evaluation Program (MAPEP).

			Concentration [a]			
Lab Code [b]	Date	Analysis	Laboratory result	Known Activity	Control Limits [c]	Acceptance
STVE-5395 [g]	08/01/12	Co-57	7.44 ± 0.17	5.66	3.96 - 7.36	Fail
STVE-5395	08/01/12	Co-60	5.90 ± 0.15	5.12	3.58 - 6.66	Pass
STVE-5395	08/01/12	Cs-134	7.40 ± 0.31	6.51	4.56 - 8.46	Pass
STVE-5395	08/01/12	Cs-137	5.45 ± 0.18	4.38	3.07 - 5.69	Pass
STVE-5395	08/01/12	Mn-54	4.06 ± 0.21	3.27	2.29 - 4.25	Pass
STAP-5398	08/01/12	Gr. Alpha	0.41 ± 0.05	0.97	0.29 - 1.65	Pass
STAP-5398	08/01/12	Gr. Beta	2.11 ± 0.09	1.92	0.96 - 2.88	Pass
STAP-5401 [h]	08/01/12	Am-241	0.12 ± 0.02	0.08	0.05 - 0.10	Fail
STAP-5403	08/01/12	Co-57	1.96 ± 0.05	1.91	1.34 - 2.48	Pass
STAP-5403	08/01/12	Co-60	1.76 ± 0.07	1.73	1.21 - 2.25	Pass
STAP-5403	08/01/12	Cs-134	2.74 ± 0.18	2.74	1.92 - 3.56	Pass
STAP-5403	08/01/12	Cs-137	0.00 ± 0.03	0.00	-0.01 - 0.01	Pass
STAP-5403	08/01/12	Mn-54	2.52 ± 0.10	2.36	1.65 - 3.07	Pass
STAP-5403	08/01/12	Pu-238	0.050 ± 0.015	0.063	0.044 - 0.081	Pass
STAP-5403	08/01/12	Pu-239/40	0.001 ± 0.004	0.00081	0.000 - 0.010	Pass
STAP-5403 [i]	08/01/12	U-233/4	0.009 ± 0.011	0.014	0.010 - 0.018	Fail
STAP-5403	08/01/12	U-238	0.08 ± 0.02	0.10	0.070 - 0.130	Pass
STAP-5403	08/01/12	Zn-65	0.01 ± 0.06	0.00	-0.010 - 0.010	Pass
STW-5445	08/01/12	Fe-55	79.80 ± 4.10	89.30	62.50 - 116.10	Pass
STW-5445	08/01/12	Ni-63	74.30 ± 3.40	66.30	46.40 - 86.20	Pass
STW-5445	08/01/12	U-233/4	0.46 ± 0.05	0.45	0.32 - 0.59	Pass
STW-5445	08/01/12	U-238	3.14 ± 0.14	3.33	2.33 - 4.33	Pass
STW-5445 [j]	08/01/12	Am-241	0.64 ± 0.04	1.06	0.74 - 1.38	Fail

[a] Results are reported in units of Bq/kg (soil), Bq/L (water) or Bq/total sample (filters, vegetation).

[b] Laboratory codes as follows: STW (water), STAP (air filter), STSO (soil), STVE (vegetation).

[c] MAPEP results are presented as the known values and expected laboratory precision (1 sigma, 1 determination) and control limits as defined by the MAPEP. A known value of "zero" indicates an analysis was included in the testing series as a "false positive". MAPEP does not provide control limits.

[d] Investigation was inconclusive, there was not enough sample for reanalysis. ERA results (A-7) for the same matrix were acceptable.

[e] No errors found in calculation or procedure, original analysis result; 0.010 ± 0.010 Bq/filter.

[f] Reanalysis results were within limits, but low. ERA results (A-7) for the same matrix were acceptable. The efficiency factor was recalculated for the second round of MAPEP testing. Original analysis results 55.8 ± 12.6 Bq/L.

[g] Result of reanalysis; 6.74 ± 0.15 Bq/sample. Gamma emitters for the vegetation matrix exhibited a high bias, only Co-57 exceeded acceptance limits. Recounted using a geometry more closely matched to the MAPEP sample size.

[h] Result of reanalysis; 0.070 ± 0.013 Bq/filter.

[i] Result of reanalysis; 0.013 ± 0.005 pCi/filter. A larger sample size was used to reduce the counting error.

[j] Result of reanalysis 1.07 ± 0.06 pCi/L. The analyses of the MAPEP sample matrix resulted in recovery factors greater than 100%. A correction was made using recovery based on analysis of blank samples. A new tracer solution is on order, future samples for MAPEP testing will include batch spike and blank samples.

TABLE A-7. Interlaboratory Comparison Crosscheck program, Environmental Resource Associates (ERA)[a].

Lab Code [b]	Date	Analysis	Concentration (pCi/L) [b] Laboratory Result [c]	ERA Result [d]	Control Limits	Acceptance
ERAP-1393	03/19/12	Co-60	917.5 ± 7.0	880.0	681.0 - 1100.0	Pass
ERAP-1393	03/19/12	Cs-134	586.6 ± 7.4	656.0	417.0 - 814.0	Pass
ERAP-1393	03/19/12	Cs-137	1255.9 ± 9.4	1130.0	849.0 - 1480.0	Pass
ERAP-1393	03/19/12	Mn-54	< 3.4	0.0	-	Pass
ERAP-1393	03/19/12	Zn-65	1085.2 ± 18.0	897.0	642.0 - 1240.0	Pass
ERAP-1394	03/19/12	Am-241	86.9 ± 2.9	68.8	42.4 - 93.1	Pass
ERAP-1394	03/19/12	Pu-238	70.2 ± 3.6	63.2	43.3 - 83.1	Pass
ERAP-1394	03/19/12	Pu-239/40	66.0 ± 1.0	63.0	45.6 - 82.4	Pass
ERAP-1394	03/19/12	Sr-90	112.5 ± 15.4	89.6	43.8 - 134.0	Pass
ERAP-1394	03/19/12	U-233/4	43.4 ± 0.8	47.5	29.4 - 71.6	Pass
ERAP-1394	03/19/12	U-238	44.0 ± 1.2	47.1	30.4 - 65.1	Pass
ERAP-1394	03/19/12	Uranium	89.1 ± 2.2	96.7	53.5 - 147.0	Pass
ERAP-1396	03/19/12	Gr. Alpha	81.1 ± 1.5	77.8	26.1 - 121.0	Pass
ERAP-1396	03/19/12	Gr. Beta	68.4 ± 0.7	52.5	33.2 - 76.5	Pass
ERSO-1397	03/19/12	Ac-228	1303.4 ± 89.3	1570.0	1010.0 - 2180.0	Pass
ERSO-1397	03/19/12	Am-241	856.0 ± 123.7	938.0	549.0 - 1220.0	Pass
ERSO-1397	03/19/12	Bi-212	1379.2 ± 247.2	1550.0	413.0 - 2280.0	Pass
ERSO-1397	03/19/12	Bi-214	965.2 ± 38.4	1100.0	665.0 - 1590.0	Pass
ERSO-1397	03/19/12	Co-60	3693.6 ± 32.1	3500.0	2370.0 - 4820.0	Pass
ERSO-1397	03/19/12	Cs-134	2257.3 ± 45.4	2180.0	1420.0 - 2620.0	Pass
ERSO-1397	03/19/12	Cs-137	9444.5 ± 58.4	8770.0	6720.0 - 11300.0	Pass
ERSO-1397	03/19/12	K-40	11277.0 ± 275.1	11600.0	8470.0 - 15600.0	Pass
ERSO-1397	03/19/12	Mn-54	< 21.0	0.0	-	Pass
ERSO-1397	03/19/12	Pb-212	1208.4 ± 26.3	1510.0	992.0 - 2110.0	Pass
ERSO-1397	03/19/12	Pb-214	1041.6 ± 46.9	1110.0	647.0 - 1650.0	Pass
ERSO-1397	03/19/12	Pu-238	921.0 ± 112.6	984.0	592.0 - 1360.0	Pass
ERSO-1397	03/19/12	Pu-239/40	1028.0 ± 112.6	879.0	575.0 - 1210.0	Pass
ERSO-1397	03/19/12	Sr-90	8128.0 ± 329.0	8800.0	3360.0 - 13900.0	Pass
ERSO-1397	03/19/12	Th-234	2711.3 ± 253.6	2000.0	632.0 - 3760.0	Pass
ERSO-1397	03/19/12	U-233/4	1859.3 ± 126.6	1960.0	1200.0 - 2510.0	Pass
ERSO-1397	03/19/12	U-238	2003.3 ± 130.3	2000.0	1240.0 - 2540.0	Pass
ERSO-1397	03/19/12	Uranium	3939.5 ± 283.8	4030.0	2190.0 - 5320.0	Pass
ERSO-1397	03/19/12	Zn-65	4200.4 ± 65.9	3650.0	2910.0 - 4850.0	Pass

TABLE A-7. Interlaboratory Comparison Crosscheck program, Environmental Resource Associates (ERA)[a].

Lab Code [b]	Date	Analysis	Concentration (pCi/L) [b] Laboratory Result [c]	ERA Result [d]	Control Limits	Acceptance
ERVE-1400	03/19/12	Am-241	4194.8 ± 199.5	4540.0	2780.0 - 6040.0	Pass
ERVE-1400	03/19/12	Cm-244	1471.2 ± 113.1	1590.0	779.0 - 2480.0	Pass
ERVE-1400	03/19/12	Co-60	2347.8 ± 47.9	2210.0	1520.0 - 3090.0	Pass
ERVE-1400	03/19/12	Cs-134	2847.5 ± 64.0	2920.0	1880.0 - 3790.0	Pass
ERVE-1400	03/19/12	Cs-137	1503.5 ± 52.5	1340.0	972.0 - 1860.0	Pass
ERVE-1400	03/19/12	K-40	34105.7 ± 745.3	28600.0	20700.0 - 40100.0	Pass
ERVE-1400	03/19/12	Mn-54	< 26.8	0.0	-	Pass
ERVE-1400	03/19/12	Pu-238	2509.0 ± 213.6	2350.0	1400.0 - 3220.0	Pass
ERVE-1400	03/19/12	Pu-239/40	2690.4 ± 208.9	2570.0	1580.0 - 3540.0	Pass
ERVE-1400	03/19/12	Sr-90	7881.5 ± 470.8	8520.0	4860.0 - 11300.0	Pass
ERVE-1400	03/19/12	U-233/4	3149.6 ± 165.2	3610.0	2370.0 - 4640.0	Pass
ERVE-1400	03/19/12	U-238	3203.6 ± 166.5	3580.0	2390.0 - 4550.0	Pass
ERVE-1400	03/19/12	Uranium	6463.7 ± 363.2	7350.0	4980.0 - 9150.0	Pass
ERVE-1400	03/19/12	Zn-65	2701.9 ± 105.5	2310.0	1670.0 - 3240.0	Pass
ERW-1403	03/19/12	Am-241	119.9 ± 3.2	135.0	91.0 - 181.0	Pass
ERW-1403	03/19/12	Fe-55	713.7 ± 127.4	863.0	514.0 - 1170.0	Pass
ERW-1403	03/19/12	Pu-238	131.9 ± 6.4	135.0	99.9 - 168.0	Pass
ERW-1403	03/19/12	Pu-239/40	108.9 ± 10.2	112.0	86.9 - 141.0	Pass
ERW-1403	03/19/12	U-233/4	93.1 ± 7.9	105.0	78.9 - 135.0	Pass
ERW-1403	03/19/12	U-238	96.9 ± 5.5	104.0	79.3 - 128.0	Pass
ERW-1403	03/19/12	Uranium	190.0 ± 13.8	214.0	157.0 - 277.0	Pass
ERW-1405	03/19/12	Co-60	858.7 ± 5.6	875.0	760.0 - 1020.0	Pass
ERW-1405	03/19/12	Cs-134	560.4 ± 4.4	609.0	447.0 - 700.0	Pass
ERW-1405	03/19/12	Cs-137	1239.9 ± 7.4	1250.0	1060.0 - 1500.0	Pass
ERW-1405	03/19/12	Mn-54	< 7.4	0.0	-	Pass
ERW-1405	03/19/12	Sr-90	944.3 ± 26.2	989.0	644.0 - 1310.0	Pass
ERW-1405	03/19/12	Zn-65	786.9 ± 20.6	749.0	624.0 - 945.0	Pass
ERW-1406	03/19/12	Gr. Alpha	85.9 ± 3.0	103.0	36.6 - 160.0	Pass
ERW-1406	03/19/12	Gr. Beta	45.7 ± 1.6	43.7	25.0 - 64.7	Pass
ERW-1409	03/19/12	H-3	9045.0 ± 284.0	9150.0	6130.0 - 13000.0	Pass

[a] Results obtained by Environmental, Inc., Midwest Laboratory as a participant in the crosscheck program for proficiency testing administered by Environmental Resources Associates, serving as a replacement for studies conducted previously by the Environmental Measurements Laboratory Quality Assessment Program (EML).

[b] Laboratory codes as follows: STW (water), STAP (air filter), STSO (soil), STVE (vegetation). Results are reported in units of pCi/L, except for air filters (pCi/Filter), vegetation and soil (pCi/kg).

[c] Unless otherwise indicated, the laboratory result is given as the mean ± standard deviation for three determinations.

[d] Results are presented as the known values, expected laboratory precision (1 sigma, 1 determination) and control limits as provided by ERA. A known value of "zero" indicates an analysis was included in the testing series as a "false positive". Control limits are not provided.

APPENDIX B

DATA REPORTING CONVENTIONS

Data Reporting Conventions

1.0. All activities, except gross alpha and gross beta, are decay corrected to collection time or the end of the collection period.

2.0. Single Measurements

Each single measurement is reported as follows: $x \pm s$

where: x = value of the measurement;

$s = 2\sigma$ counting uncertainty (corresponding to the 95% confidence level).

In cases where the activity is less than the lower limit of detection L, it is reported as: < L, where L = the lower limit of detection based on 4.66σ uncertainty for a background sample.

3.0. Duplicate analyses

If duplicate analyses are reported, the convention is as follows. :

3.1 Individual results: For two analysis results; $x_1 \pm s_1$ and $x_2 \pm s_2$

Reported result: $x \pm s$; where $x = (1/2)(x_1 + x_2)$ and $s = (1/2)\sqrt{s_1^2 + s_2^2}$

3.2. Individual results: $< L_1$, $< L_2$ Reported result: < L, where L = lower of L_1 and L_2

3.3. Individual results: $x \pm s$, < L Reported result: $x \pm s$ if $x \geq L$; < L otherwise.

4.0. Computation of Averages and Standard Deviations

4.1 Averages and standard deviations listed in the tables are computed from all of the individual measurements over the period averaged; for example, an annual standard deviation would not be the average of quarterly standard deviations. The average $\bar{x}$ and standard deviation "s" of a set of n numbers $x_1, x_2 \ldots x_n$ are defined as follows:

$$\bar{x} = \frac{1}{n} \sum x \qquad s = \sqrt{\frac{\sum (x - \bar{x})^2}{n-1}}$$

4.2 Values below the highest lower limit of detection are not included in the average.

4.3 If all values in the averaging group are less than the highest LLD, the highest LLD is reported.

4.4 If all but one of the values are less than the highest LLD, the single value x and associated two sigma error is reported.

4.5 In rounding off, the following rules are followed:

4.5.1. If the number following those to be retained is less than 5, the number is dropped, and the retained numbers are kept unchanged. As an example, 11.443 is rounded off to 11.44.

4.5.2. If the number following those to be retained is equal to or greater than 5, the number is dropped and the last retained number is raised by 1. As an example, 11.445 is rounded off to 11.45.

APPENDIX C

Maximum Permissible Concentrations of Radioactivity in Air and Water Above Background in Unrestricted Areas

Table C-1. Maximum permissible concentrations of radioactivity in air and water above natural background in unrestricted areas[a].

	Air (pCi/m^3)		Water (pCi/L)
Gross alpha	1×10^{-3}	Strontium-89	8,000
Gross beta	1	Strontium-90	500
Iodine-131[b]	2.8×10^{-1}	Cesium-137	1,000
		Barium-140	8,000
		Iodine-131	1,000
		Potassium-40[c]	4,000
		Gross alpha	2
		Gross beta	10
		Tritium	1×10^6

[a] Taken from Table 2 of Appendix B to Code of Federal Regulations Title 10, Part 20, and appropriate footnotes. Concentrations may be averaged over a period not greater than one year.

[b] Value adjusted by a factor of 700 to reduce the dose resulting from the air-grass-cow-milk-child pathway.

[c] A natural radionuclide.

Table 4.5 Radiological Environmental Monitoring Program Summary

Name of Facility: Davis-Besse Nuclear Power Station — Docket No. 50-346
Location of Facility: Ottawa, Ohio (County, State) — Reporting Period January-December, 2012

Sample Type (Units)	Type and Number of Analyses[a]	LLD[b]	Indicator Locations Mean (F)[c] Range[c]	Location with Highest Annual Mean		Control Locations Mean (F)[c] Range[c]	Number Non-Routine Results[e]
				Location[d]	Mean (F)[c] Range[c]		
Airborne Particulates (pCi/m^3)	GB 520	0.003	0.028 (312/312) (0.011-0.061)	T-27, Crane Creek S.P. 5.3 mi. SW	0.029 (52/52) (0.012-0.060)	0.028 (208/208) (0.012-0.061)	0
	Sr-89	0.0014	< LLD	-	-	< LLD	0
	Sr-90	0.0011	< LLD	-	-	< LLD	0
	GS 40						
	Be-7	0.015	0.080 (24/24) (0.053-0.107)	T-27, Crane Creek S.P. 5.3 mi. SW	0.088 (4/4) (0.065-0.107)	0.084 (16/16) (0.050-0.112)	0
	K-40	0.032	< LLD	-	-	< LLD	0
	Nb-95	0.0015	< LLD	-	-	< LLD	0
	Zr-95	0.0025	< LLD	-	-	< LLD	0
	Ru-103	0.0013	< LLD	-	-	< LLD	0
	Ru-106	0.0106	< LLD	-	-	< LLD	0
	Cs-134	0.0011	< LLD	-	-	< LLD	0
	Cs-137	0.0013	< LLD	-	-	< LLD	0
	Ce-141	0.0021	< LLD	-	-	< LLD	0
	Ce-144	0.0057	< LLD	-	-	< LLD	0
Airborne Iodine (pCi/m^3)	I-131 520	0.07	< LLD	-	-	< LLD	0
TLD (Quarterly) (mR/91 days)	Gamma 352	1.0	16.8 (308/308) (8.1-28.6)	T-8, Farm 2.7 mi. WSW	26.8 (4/4) (25.3-28.6)	18.1 (44/44) (12.8-24.6)	0
TLD (Quarterly) (mR/91 days) (Shield)	Gamma 4	1.0	8.3 (4/4) (7.8-8.9)	-	-	None	0
TLD (Annual) (mR/365 days)	Gamma 88	1.0	60.2 (77/77) (36.9-91.6)	T-8, Farm 2.7 mi. WSW	91.6 (1/1)	65.9 (11/11) (51.1-74.4)	0
TLD (Annual) (mR/365 days) (Shield)	Gamma 1	1.0	31.7 (1/1)	-	-	None	0

Table 4.5 Radiological Environmental Monitoring Program Summary

Name of Facility: Davis-Besse Nuclear Power Station
Location of Facility: Ottawa, Ohio (County, State)
Docket No.: 50-346
Reporting Period: January-December, 2012

Sample Type (Units)	Type and Number of Analyses[a]	LLD[b]	Indicator Locations Mean (F)[c] Range[c]	Location with Highest Annual Mean Location[d]	Location with Highest Annual Mean Mean (F)[c] Range[c]	Control Locations Mean (F)[c] Range[c]	Number Non-Routine Results[e]
Milk (pCi/L)	I-131 12	0.4	none	-	-	< LLD	0
	Sr-89 12	0.9	none	-	-	< LLD	0
	Sr-90 12	0.7	none	T-24, Sandusky 21.0 mi. SE	0.9 (3/12) (0.8-1.0)	0.9 (3/12) (0.8-1.0)	0
	GS 12						
	K-40	100	none	T-24, Sandusky 21.0 mi. SE	1405 (12/12) (1323-1494)	1405 (12/12) (1323-1494)	0
	Cs-134	4.0					
	Cs-137	4.5	none	-	-	< LLD	0
	Ba-La-140	8.9	none	-	-	< LLD	0
(g/L)	Ca 12	0.50	none	T-24, Sandusky 21.0 mi. SE	1.08 (12/12) (0.90-1.27)	1.08 (12/12) (0.90-1.27)	0
(g/L)	K (stable) 12		none	T-24, Sandusky 21.0 mi. SE	1.71 (12/12) (1.61-1.82)	1.71 (12/12) (1.61-1.82)	0
(pCi/g)	Sr-90/Ca 12		none	T-24, Sandusky 21.0 mi. SE	0.81 (2/12) (0.79-0.83)	0.81 (2/12) (0.79-0.83)	0
(pCi/g)	Cs-137/K 12		none	-	-	< LLD	0
Ground Water (pCi/L)	GB (TR) 10	3.5	3.7 (1/6)	T-27A, Crane Creek S.P 5.3 mi. WNW	4.7 (1/4)	4.7 (1/4)	
	H-3 10	330	< LLD	-	-	< LLD	0
	Sr-89 10	1.6	< LLD	-	-	< LLD	0
	Sr-90 10	0.8	< LLD	-	-	< LLD	0
	GS						
	Mn-54	15	< LLD	-	-	< LLD	0
	Fe-59	30	< LLD	-	-	< LLD	0
	Co-58	15	< LLD	-	-	< LLD	0
	Co-60	15	< LLD	-	-	< LLD	0
	Zn-65	30	< LLD	-	-	< LLD	0
	Zr-95	15	< LLD	-	-	< LLD	0
	Cs-134	10	< LLD	-	-	< LLD	0
	Cs-137	10	< LLD	-	-	< LLD	0
	Ba-La-140	15	< LLD	-	-	< LLD	0

Table 4.5 Radiological Environmental Monitoring Program Summary

Name of Facility: Davis-Besse Nuclear Power Station
Location of Facility: Ottawa, Ohio (County, State)
Docket No.: 50-346
Reporting Period: January-December, 2012

Sample Type (Units)	Type and Number of Analyses[a]	LLD[b]	Indicator Locations Mean (F)[c] Range[c]	Location with Highest Annual Mean: Location[d]	Location with Highest Annual Mean: Mean (F)[c] Range[c]	Control Locations Mean (F)[c] Range[c]	Number Non-Routine Results[e]
Edible Meat (pCi/g wet)	GS 2						
	K-40	0.10	3.22 (1/1)	T-210, Offsite Roving location	3.24 (1/1)	3.24 (1/1)	0
	Nb-95	0.009	< LLD	-	-	< LLD	0
	Zr-95	0.014	< LLD	-	-	< LLD	0
	Ru-103	0.011	< LLD	-	-	< LLD	0
	Ru-106	0.073	< LLD	-	-	< LLD	0
	Cs-134	0.005	< LLD	-	-	< LLD	0
	Cs-137	0.006	< LLD	-	-	< LLD	0
	Ce-141	0.026	< LLD	-	-	< LLD	0
	Ce-144	0.046	< LLD	-	-	< LLD	0
Fruits and Vegetables (pCi/g wet)	Sr-89 3	0.077	< LLD	-	-	< LLD	0
	Sr-90 3	0.030	< LLD	-	-	< LLD	0
	I-131 3	0.023	< LLD	-	-	< LLD	0
	GS 3						
	K-40	0.50	1.40 (2/2) (1.37-1.42)	T-25, Residence 1.6 mi. S	1.42 (1/1)	1.29 (1/1)	0
	Nb-95	0.008	< LLD	-	-	< LLD	0
	Zr-95	0.012	< LLD	-	-	< LLD	0
	Cs-134	0.006	< LLD	-	-	< LLD	0
	Cs-137	0.005	< LLD	-	-	< LLD	0
	Ce-141	0.016	< LLD	-	-	< LLD	0
	Ce-144	0.053	< LLD	-	-	< LLD	0
Broad Leaf Vegetation (pCi/g wet)	Sr-89 9	0.011	< LLD	-	-	< LLD	0
	Sr-90 9	0.005	0.006 (2/6) (0.005-0.006)	T-227, Roving location	0.006 (1/3)	< LLD	0
	I-131 9	0.017	< LLD	-	-	< LLD	0
	GS 9						
	K-40	0.50	2.67 (6/6) (1.78-4.06)	T-19, Garden 1.0 mi. W	2.87 (3/3) (2.16-4.06)	2.44 (3/3) (2.31-2.64)	0
	Nb-95	0.008	< LLD	-	-	< LLD	0
	Zr-95	0.014	< LLD	-	-	< LLD	0
	Cs-134	0.007	< LLD	-	-	< LLD	0
	Cs-137	0.008	< LLD	-	-	< LLD	0
	Ce-141	0.013	< LLD	-	-	< LLD	0
	Ce-144	0.056	< LLD	-	-	< LLD	0

Table 4.5 Radiological Environmental Monitoring Program Summary

Name of Facility: Davis-Besse Nuclear Power Station — Docket No. 50-346
Location of Facility: Ottawa, Ohio (County, State) — Reporting Period: January-December, 2012

Sample Type (Units)	Type and Number of Analyses[a]	LLD[b]	Indicator Locations Mean (F)[c] Range[c]	Location with Highest Annual Mean: Location[d]	Location with Highest Annual Mean: Mean (F)[c] Range[c]	Control Locations Mean (F)[c] Range[c]	Number Non-Routine Results[e]
Fish (pCi/g wet)	GB 6	0.10	3.33 (3/3) (3.20-3.5)	T-33, Lake Erie 1.5 mi. NE	3.33 (3/3) (3.20-3.50)	3.27 (3/3) (2.40-3.80)	0
	GS 6						
	K-40	0.10	2.97 (3/3) (2.40-3.74)	T-35, Lake Erie > 10 mi.	3.11 (3/3) (2.75-3.30)	3.11 (3/3) (2.75-3.30)	0
	Mn-54	0.023	< LLD	-	-	< LLD	0
	Fe-59	0.153	< LLD	-	-	< LLD	0
	Co-58	0.049	< LLD	-	-	< LLD	0
	Co-60	0.017	< LLD	-	-	< LLD	0
	Zn-65	0.036	< LLD	-	-	< LLD	0
	Cs-134	0.017	< LLD	-	-	< LLD	0
	Cs-137	0.020	< LLD	-	-	< LLD	0
Shoreline Sediments (pCi/g dry)	GS 8						
	K-40	0.10	10.00 (6/6) (7.94-11.25)	T-4, Site Boundary 0.8 mi. S	11.09 (2/2) (10.98-11.19)	10.91 (2/2) (10.34-11.47)	0
	Mn-54	0.038	< LLD	-	-	< LLD	0
	Co-58	0.051	< LLD	-	-	< LLD	0
	Co-60	0.025	< LLD	-	-	< LLD	0
	Cs-134	0.025	< LLD	-	-	< LLD	0
	Cs-137	0.033	< LLD	-	-	< LLD	0
Soil (pCi/g dry)	GS 10						
	Be-7	0.29	< LLD	T-12, Water Treatment Plant, 23.5 mi. WNW	0.70 (1/1)	0.70 (2/4) (0.70-0.70)	0
	K-40	0.10	10.73 (6/6) (4.76-22.83)	T-8, Farm 2.7 mi. WSW	22.83 (1/1)	17.76 (4/4) (13.71-21.57)	0
	Mn-54	0.032	< LLD	-	-	< LLD	0
	Nb-95	0.047	< LLD	-	-	< LLD	0
	Zr-95	0.058	< LLD	-	-	< LLD	0
	Ru-103	0.037	< LLD	-	-	< LLD	0
	Ru-106	0.26	< LLD	-	-	< LLD	0
	Cs-134	0.026	< LLD	-	-	< LLD	0
	Cs-137	0.025	0.13 (4/6) (0.028-0.24)	T-2, Site Boundary 0.9 mi. E	0.24 (1/1)	0.13 (3/4) (0.12-0.14)	0
	Ce-141	0.072	< LLD	-	-	< LLD	0
	Ce-144	0.14	< LLD	-	-	< LLD	0

Table 4.5 Radiological Environmental Monitoring Program Summary

Name of Facility: Davis-Besse Nuclear Power Station — Docket No. 50-346
Location of Facility: Ottawa, Ohio (County, State) — Reporting Period: January-December, 2012

Sample Type (Units)	Type and Number of Analyses[a]	LLD[b]	Indicator Locations Mean (F)[c] Range[c]	Location with Highest Annual Mean: Location[d]	Location with Highest Annual Mean: Mean (F)[c] Range[c]	Control Locations Mean (F)[c] Range[c]	Number Non-Routine Results[e]
Treated Surface Water (pCi/L)	GB (TR) 36	1.8	2.5 (8/12) (2.1-3.1)	T-22, Carroll Twp. WTP, 3.0 mi. NW	2.5 (8/12) (2.1-3.1)	2.2 (11/24) (1.9-3.0)	0
	H-3 12	330	< LLD	-	-	< LLD	0
	Sr-89 15	0.9	< LLD	-	-	< LLD	0
	Sr-90 15	0.6	< LLD	-	-	< LLD	0
	GS 16						
	Mn-54	15	< LLD	-	-	< LLD	0
	Fe-59	30	< LLD	-	-	< LLD	0
	Co-58	15	< LLD	-	-	< LLD	0
	Co-60	15	< LLD	-	-	< LLD	0
	Zn-65	30	< LLD	-	-	< LLD	0
	Zr-Nb-95	15	< LLD	-	-	< LLD	0
	Cs-134	10	< LLD	-	-	< LLD	0
	Cs-137	10	< LLD	-	-	< LLD	0
	Ba-La-140	15	< LLD	-	-	< LLD	0
Untreated Surface Water (pCi/L)	GB (TR) 48	0.9	2.6 (24/24) (0.9-6.0)	T-3, Site Boundary 1.4 mi. ESE	3.1 (12/12) (1.5-6.0)	2.0 (23/24) (0.9-4.0)	0
	H-3 48	330	< LLD	-	-	< LLD	0
	Sr-89 15	1.1	< LLD	-	-	< LLD	0
	Sr-90 15	0.7	< LLD	-	-	< LLD	0
	GS 48						
	Mn-54	15	< LLD	-	-	< LLD	0
	Fe-59	30	< LLD	-	-	< LLD	0
	Co-58	15	< LLD	-	-	< LLD	0
	Co-60	15	< LLD	-	-	< LLD	0
	Zn-65	30	< LLD	-	-	< LLD	0
	Zr-Nb-95	15	< LLD	-	-	< LLD	0
	Cs-134	10	< LLD	-	-	< LLD	0
	Cs-137	10	< LLD	-	-	< LLD	0
	Ba-La-140	15	< LLD	-	-	< LLD	0

[a] GB = gross beta, GS = gamma scan.

[b] LLD = nominal lower limit of detection based on a 4.66 sigma counting error for background sample.

[c] Mean and range are based on detectable measurements only (i.e., >LLD) Fraction of detectable measurements at specified locations is indicated in parentheses (F).

[d] Locations are specified by station code (Table 4.1) and distance (miles) and direction relative to reactor site..

[e] Non-routine results are those which exceed ten times the control station value.

[f] The required limit for La-140 was not met for one sample due to delay in shipping.