IE HQ FILE COPY

Solid Waste Shipments January -- June 1982

Date		Volume - ft^3	Curies
1/29/82	Barnwell, So. Carolina	527	0.477
2/23/82	Barnwell, So. Carolina	692.5	0.424
3/8/82	Hanford, Washington	1078	1.4
3/24/82	Barnwell, So. Carolina	315	.87
4/5/82	Hanford, Washington	1078	.46
4/19/82	Hanford, Washington	1078	1.2
4/26/82	Barnwell, So. Carolina	337.5	.89
5/3/82	Hanford, Washington	.662	.58
5/10/82	Hanford, Washington	518.5	.514
5/12/82	Hanford, Washington	518.5	.07
5/18/82	Hanford, Washington	518.5	.2
5/20/82	Hanford, Washington	889	1.1
5/27/82	Barnwell, So. Carolina	337.5	.11
6/3/82	Hanford, Washington	881	.39
6/22/82	Barnwell, So. Carolina	120	142.7
6/28/82	Barnwell, So. Carolina	-202-	:095
		9753	151.5

APPENDIX A

REPORT RADIOACTIVE EFFLUENTS

FACILITY: ROCHESTER GAS & ELECTRIC GINNA STATION DOCKET: 50-244 YEAR: 1982

I. LIQUID RELEASES

	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	TOTAL
1. GROSS RADIOACTIVITY (,)								
A) TOTAL RELEASED (except 2,3 & 4)	CURIES	4.42 E-3	0.335	2.78 E-5	5.96 E-4	2.1 E-4	6.55 E-2	.406
B) AVERAGE CONCENTRATION RELEASED	μCI/ML	7.11 E-6	3.69 E-6	1.16 E-6	2.92 E-6	8.47 E-7	3.52 E-6	N/A
C) MAXIMUM CONCENTRATION RELEASED	μCI/ML	3.4 E-4	2.72 E-5	3.0 E-5	1.43 E-5	9.14 E-6	5.09 E-5	N/A
2. TRITIUM								
A) TOTAL RELEASED	CURIES	20.45	49.34	36.9	40.4	35.5	7.96	190.6
B) AVERAGE CONCENTRATION RELEASED	μCI/ML		8.54 E-7	1.09 E-6	1.24 E-6	8.45 E-7	1.21 E-7	N/A
C) PERCENT OF LIMIT	%	0.011	0.03	0.036	0.041	0.028	0.0041	N/A
3. DISSOLVED NOBLE GASES								
A) TOTAL RELEASED	CURIES	ND	ND	ND	ND	ND	ND	ND
B) AVERAGE CONCENTRATION RELEASED	CI/ML	———	———	———	———	———	———	N/A
4. GROSS ALPHA RADIOACTIVITY								
A) TOTAL RELEASED	CURIES	ND	ND	ND	ND	ND	ND	ND
B) AVERAGE CONCENTRATION RELEASED	CI/ML	———	———	———	———	———	———	N/A
5. VOLUME OF LIQUID WASTE TO DISCHARGE CANAL	LITERS	1.96 E 6	5.90 E 6	1.83 E 5	3.64 E 5	8.57 E 5	3.63 E 6	1.29 E 7
6. VOLUME OF DILUTION WATER	LITERS	6.17 E 10	5.78 E 10	3.38 E 10	3.26 E 10	4.2 E 10	6.55 E 10	2.93 E11
7. ISOTOPES RELEASED	CURIES	———	———	———	———	———	———	———
Cerium 141	"	ND	ND	ND	ND	ND	ND	ND
Ruthenium 103	"	ND	ND	ND	ND	ND	ND	ND
Cesium 137	"	2.64 E-3	1.72 E-3	2.78 E-5	2.48 E-4	ND	1.53 E-3	6.2 E-3
Cesium 134	"	4.8 E-5	1.0 E-4	ND	ND	1.9 E-4	2.82 E-3	3.2 E-3
Cobalt 58	"	2.95 E-5	8.33 E-4	ND	3.48 E-4	2.1 E-5	2.61 E-2	2.73 E-2
Cobalt 60	"	1.66 E-3	1.0 E-4	ND	ND	ND	2.3 E-2	2.48 E-2
Manganese 54	"	ND	ND	ND	ND	ND	7.53 E-3	7.53 E-3
Zirconium 95	"	ND	ND	ND	ND	ND	1.3 E-3	1.3 E-3
Niobium 95	"	ND	ND	ND	ND	ND	3.25 E-3	3.25 E-3
Cerium 144	"	ND	ND	ND	ND	ND	ND	ND
Tellurium 132	"	ND	ND	ND	ND	ND	ND	ND
Ruthenium 106	"	ND	ND	ND	ND	ND	ND	ND
Silver 110m	"	ND	ND	ND	ND	ND	ND	ND
Molybdenum 99	"	ND	ND	ND	ND	ND	ND	ND
Barium 140	"	ND	ND	ND	ND	ND	ND	ND
Chromium 51	"	ND	ND	ND	ND	ND	ND	ND
Iron 59	"	ND	ND	ND	ND	ND	ND	ND
Tellurium 129m	"	ND	ND	ND	ND	ND	ND	ND
Cesium 136	"	ND	ND	ND	ND	ND	ND	ND
Neptunium 239	"	ND	ND	ND	ND	ND	ND	ND
Iodine 131	"	ND	ND	ND	ND	ND	ND	ND
Tellurium 127m	"	ND	ND	ND	ND	ND	ND	ND
Barium/Lanthanum 140	"	4.17 E-5	0.332	ND	ND	ND	ND	0.332
Zinc 65	"	ND	ND	ND	ND	ND	ND	ND
Strontium 90	"	ND	ND	ND	ND	ND	ND	ND
Antimony 125	"	ND	ND	ND	ND	ND	ND	ND
PERCENT OF TECHNICAL SPECIFICATION LIMIT FOR ACTIVITY RELEASED	%	<.001	0.030	<.001	<.001	<.001	.002	N/A

APPENDIX A

REPORT RADIOACTIVE EFFLUENTS

FACILITY: ROCHESTER GAS & ELECTRIC GINNA STATION DOCKET: 50-244 YEAR: 1982

II. AIRBORNE RELEASES

	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	TOTAL
1. TOTAL NOBLE GASES	CURIES	237.0	695.91	1.51	1.95	2.07	8.21	946.65
2. TOTAL HALOGENS	CURIES	2.55 E-3	1.21 E-4	2.68 E-6	ND	5.11 E-6	6.4 E-5	2.7 E-3
3. TOTAL PARTICULATE GROSS RADIOACTIVITY (β,γ)	CURIES	1.76 E-4	6.09 E-6	2.18 E-6	ND	ND	4.48 E-6	1.88 E-4
4. TOTAL TRITIUM	CURIES	6.14	2.72	6.37	5.69.	5.82	5.49	32.23
5. TOTAL PARTICULATE GROSS ALPHA RADIOACTIVITY	CURIES	7.0 E-9	1.9 E-8	1.6 E-8	3.7 E-8	9.0 E-9	ND	8.8 E-8
6. MAXIMUM NOBLE GAS RELEASE RATE	μCI/SEC	351.0	2800.0	52.9	28.0	211.0	3.17	N/A
7. PERCENT OF APPLICABLE LIMIT FOR:								
A) NOBLE GASSES	%	0.147	0.48	0.009	0.0013	0.0015	0.0057	N/A
B) HALOGENS	%	0.33	0.17	0.0034	ND	ND	0.0164	N/A
C) PARTICULATES	%	0.110	<0.001	<0.001	ND	ND	<0.001	N/A
8. ISOTOPE RELEASED:	CURIES	———	———	———	———	———	———	———
PARTICULATES	"	———	———	———	———	———	———	———
Cesium 137	"	1.26 E-5	1.51 E-6	4.67 E-7	ND	ND	2.71 E-6	1.73 E-5
Barium/Lanthanum 140	"	6.44 E-5	ND	ND	ND	ND	ND	6.44 E-5
Strontium 90	"	ND	ND	ND	ND	ND	ND	ND
Cesium 134	"	ND	ND	ND	ND	ND	ND	ND
Strontium 89	"	ND	ND	ND	ND	ND	ND	ND
Iodine 131	"	7.24 E-5	ND	ND	ND	ND	ND	7.24 E-5
Cobalt 60	"	1.3 E-5	2.92 E-6	7.75 E-6	ND	ND	1.77 E-6	1.85 E-5
Cobalt 58	"	1.32 E-5	1.66 E-6	9.37 E-7	ND	ND	ND	1.58 E-5
HALOGENS	CURIES	———	———	———	———	———	———	———
Iodine 131	"	2.57 E-4	1.21 E-4	2.68 E-6	ND	ND	1.23 E-5	3.9 E-4
Iodine 133	"	7.22 E-4	ND	ND	ND	5.11 E-6	5.13 E-5	7.8 E-4
Iodine 135	"	1.73 E-4	ND	ND	ND	ND	ND	1.73 E-4
Iodine 134	"	9.91 E-5	ND	ND	ND	ND	ND	9.91 E-5
Iodine 132	"	1.3 E-3	ND	ND	ND	ND	ND	1.3 E-3
GASES	CURIES	———	———	———	———	———	———	———
Krypton 85	"	5.66	ND	1.39	1.9	1.86	ND	10.81
Xenon 133	"	215.31	695.91	0.06	0.021	ND	7.912	919.21
Krypton 88	"	0.006	ND	ND	ND	ND	0.0112	0.0172
Krypton 87	"	0.004	ND	ND	ND	ND	0.087	0.0127
Krypton 85m	"	0.004	ND	ND	ND	3.83 E-5	0.0044	0.0084
Xenon 138	"	0.004	ND	ND	ND	ND	0.0099	0.014
Xenon 135m	"	0.042	ND	ND	ND	ND	0.0845	0.127
Xenon 135	"	1.05	ND	ND	ND	0.21	0.177	1.437
Argon 41	"	0.007	ND	ND	ND	6.83 E-5	0.001	0.0081
Xenon 133m	"	0.07	ND	ND	ND	ND	ND	0.07
OTHERS AS APPROPRIATE (SPECIFY)	CURIES	———	———	———	———	———	———	———
Xenon 131m	"	14.79	ND	0.062	0.031	ND	ND	14.883
	"							
	"							

ROBERT E. GINNA STATION
STANDARD REPORT OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION
FOR THE YEAR OF 1981

WORK & JOB FUNCTION	NUMBER OF PERSONNEL			TOTAL MAN - REM		
REACTOR OPERATIONS & SURVEILLANCE	CONTRACT WORKERS	STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT WORKERS	STATION EMPLOYEES	UTILITY EMPLOYEES
MAINTENANCE PERSONNEL	121	34	130	7.276	3.146	5.579
OPERATING PERSONNEL	0	26	1	0.000	12.023	0.360
HEALTH PHYSICS PERSONNEL	28	13	1	4.952	5.950	0.061
SUPERVISORY PERSONNEL	31	15	10	1.813	3.398	0.256
ENGINEERING PERSONNEL	33	2	11	0.736	0.205	0.290
ROUTINE MAINTENANCE						
MAINTENANCE PERSONNEL	196	33	180	79.026	22.363	142.907
OPERATING PERSONNEL	0	16	0	0.000	1.045	0.000
HEALTH PHYSICS PERSONNEL	29	13	1	12.658	7.237	0.065
SUPERVISORY PERSONNEL	33	12	13	7.385	3.382	5.783
ENGINEERING PERSONNEL	58	2	10	35.118	0.119	8.249
INSERVICE INSPECTION						
MAINTENANCE PERSONNEL	39	16	96	3.508	1.405	21.816
OPERATING PERSONNEL	0	1	0	0.000	0.005	0.000
HEALTH PHYSICS PERSONNEL	18	12	0	1.230	1.172	0.000
SUPERVISORY PERSONNEL	9	9	9	1.226	0.756	1.782
ENGINEERING PERSONNEL	27	1	2	7.058	0.013	0.565
SPECIAL MAINTENANCE						
MAINTENANCE PERSONNEL	176	34	154	87.829	6.578	41.276
OPERATING PERSONNEL	0	10	0	0.000	0.399	0.000
HEALTH PHYSICS PERSONNEL	29	11	0	8.511	2.007	0.000
SUPERVISORY PERSONNEL	32	13	10	7.365	1.148	0.857
ENGINEERING PERSONNEL	38	2	7	6.359	0.004	0.859
WASTE PROCESSING						
MAINTENANCE PERSONNEL	25	21	21	2.519	1.248	0.227
OPERATING PERSONNEL	0	10	0	0.000	0.104	0.000
HEALTH PHYSICS PERSONNEL	10	8	0	0.722	0.890	0.000
SUPERVISORY PERSONNEL	2	5	0	0.118	0.017	0.000
ENGINEERING PERSONNEL	3	0	3	0.007	0.000	0.000
REFUELING						
MAINTENANCE PERSONNEL	22	19	36	2.715	0.830	5.438
OPERATING PERSONNEL	0	4	0	0.000	2.363	0.000
HEALTH PHYSICS PERSONNEL	23	4	0	3.497	0.030	0.000
SUPERVISORY PERSONNEL	5	5	3	1.513	0.175	0.915
ENGINEERING PERSONNEL	20	0	1	17.279	0.000	0.090
TOTALS						
MAINTENANCE PERSONNEL	214	34	186	182.873	35.570	217.243
OPERATING PERSONNEL	0	26	1	0.000	15.939	0.360
HEALTH PHYSICS PERSONNEL	29	13	1	31.570	17.286	0.126
SUPERVISORY PERSONNEL	35	15	13	19.420	8.876	9.593
ENGINEERING PERSONNEL	62	2	11	66.557	0.341	10.053
GRAND TOTALS	340	90	212	300.420	78.012	237.375

ROBERT E. GINNA STATION
STANDARD REPORT OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION
FOR THE YEAR OF 1981

From previous submittal - these were INCORRECT COLUMN HEADINGS

WORK & JOB FUNCTION	NUMBER OF PERSONNEL			TOTAL MAN - REM		
REACTOR OPERATIONS & SURVEILLANCE	STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT WORKERS	STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT WORKERS
MAINTENANCE PERSONNEL	121	34	130	7.276	3.146	5.579
OPERATING PERSONNEL	0	26	1	0.000	12.023	0.360
HEALTH PHYSICS PERSONNEL	28	13	1	4.952	5.950	0.061
SUPERVISORY PERSONNEL	31	15	10	1.813	3.398	0.256
ENGINEERING PERSONNEL	33	2	11	0.736	0.205	0.290
ROUTINE MAINTENANCE						
MAINTENANCE PERSONNEL	196	33	180	79.026	22.363	142.907
OPERATING PERSONNEL	0	16	0	0.000	1.045	0.000
HEALTH PHYSICS PERSONNEL	29	13	1	12.658	7.237	0.065
SUPERVISORY PERSONNEL	33	12	13	7.385	3.382	5.783
ENGINEERING PERSONNEL	58	2	10	35.118	0.119	8.249
INSERVICE INSPECTION						
MAINTENANCE PERSONNEL	39	16	96	3.508	1.405	21.816
OPERATING PERSONNEL	0	1	0	0.000	0.005	0.000
HEALTH PHYSICS PERSONNEL	18	12	0	1.230	1.172	0.000
SUPERVISORY PERSONNEL	9	9	9	1.226	0.756	1.782
ENGINEERING PERSONNEL	27	1	2	7.058	0.013	0.565
SPECIAL MAINTENANCE						
MAINTENANCE PERSONNEL	176	34	153	87.829	6.578	39.076
OPERATING PERSONNEL	0	10	0	0.000	0.399	0.000
HEALTH PHYSICS PERSONNEL	29	11	0	8.511	2.007	0.000
SUPERVISORY PERSONNEL	32	13	10	7.365	1.148	0.857
ENGINEERING PERSONNEL	38	2	7	6.359	0.004	0.859
WASTE PROCESSING						
MAINTENANCE PERSONNEL	25	21	21	2.519	1.248	0.227
OPERATING PERSONNEL	0	10	0	0.000	0.104	0.000
HEALTH PHYSICS PERSONNEL	10	8	0	0.722	0.890	0.000
SUPERVISORY PERSONNEL	2	5	0	0.118	0.017	0.000
ENGINEERING PERSONNEL	3	0	3	0.007	0.000	0.000
REFUELING						
MAINTENANCE PERSONNEL	22	19	36	2.715	0.830	5.438
OPERATING PERSONNEL	0	4	0	0.000	2.363	0.000
HEALTH PHYSICS PERSONNEL	23	4	0	3.497	0.030	0.000
SUPERVISORY PERSONNEL	5	5	3	1.513	0.175	0.915
ENGINEERING PERSONNEL	20	0	1	17.279	0.000	0.090
TOTALS						
MAINTENANCE PERSONNEL	214	34	185	182.873	35.570	215.043
OPERATING PERSONNEL	0	26	1	0.000	15.939	0.360
HEALTH PHYSICS PERSONNEL	29	13	1	31.570	17.286	0.126
SUPERVISORY PERSONNEL	35	15	13	19.420	8.876	9.593
ENGINEERING PERSONNEL	62	2	11	66.557	0.341	10.053
GRAND TOTALS	340	90	211	300.420	78.012	235.175

RADIOLOGICAL ENVIRONMENTAL SURVEY

January - December 1981

SUMMARY

The environment surrounding the Ginna Nuclear Plant is routinely monitored to determine the influence of plant operation on the levels of man-made radioactivity. Samples are collected on-site where concentrations would be expected to be highest if a release from the plant should occur and compared to samples which have been collected simultaneously at points where the concentration of the plant effluents is calculated to be less than 1% of those at the closer locations. The reference samples provide a running background which makes it possible to distinguish between significant radioactivity introduced to the environment from the operation of the plant and that introduced by nuclear detonations or other sources.

The sample and analysis requirements, as specified in the Technical Specifications, are governed by the fraction of the annual allowable release rate at which the plant is operating. For the year of 1981, the minimum program was required (Regime 1) since actual releases were less than 1/30th of the annual allowable release. However, the actual program that was conducted was approximately that anticipated with the proposed Environmental Tech. Specs. for Ginna Station.

During the year of 1981, 1457 samples were obtained and analyzed, 380 of these samples were analyzed by a gamma scan. In addition, we received 48 EPA Interlaboratory Comparison Studies samples which were analyzed and reported. The samples included air, water, fallout, fish, vegetation, milk and direct radiation. There was no significant difference between on-site and off-site samples and no positive results were found that were due to plant operations. The concentrations of radioactive material in the environment resulting from plant releases were calculated from the measured release rates and dilution factors. These calculated concentrations could not have been detected because of the magnitude and fluctuations of the background or because they were below the sensitivity of our analytic procedures. The calculated concentrations would give a dose commitment well below the design objectives specified in Appendix I, 10 CFR50.

ANALYTICAL RESULTS

The values listed on the following tables include the uncertainties stated as 2 standard deviations (96% confidence level).

Key Definitions

Curie (Ci): The quantity of any radionuclide in which the number of disintegrations per second is 37 billion.

Picocurie (pCi): One millionth of a millionth of a curie or 0.037 disintegrations per second.

Key Definitions (Con't)

Cubic Meter (M^3): Approximately 35.3 cubic feet.

Liter (L): Approximately 1.06 quarts.

Lower Limit of Detection

The Nuclear Regulatory Commission has requested that reported values be compared to the Lower Limit of Detection (LLD) for each piece of equipment. Table XII is a listing of the LLD values for gamma isotopes using our Ge(Li) multichannel pulse height detector system. These values are before the correction for decay. An explanation of the calculation of the LLD is included following Table XII. Gross detection limits are as follows:

Beta:

Air	0.002 pCi/M^3 Gross beta for 400M^3 sample.
Water	1.2 pCi/L Gross beta for 1 liter sample.
Milk	0.05 pCi/L Iodine 131 for 4 liter sample.
Fallout	0.5 pCi/M^2/day for 0.092 M^2 collection area.

Gamma:

Air	0.03 pCi/m^3 Iodine 131 on charcoal cartridge for 400M^3 sample
Radiation	10 miilirem/month for one month exposure (film). 1 millirem/quarter for one quarter exposure (TLD).

AIR PARTICULATES

Radioactive particles in air are collected by drawing approximately one cfm through a two inch diameter particulate filter. The volume of air sampled is measured by a dry gas meter and corrected for the pressure drop across the filter. The filters are changed weekly and allowed to decay for three days prior to counting to eliminate most of the natural radioactivity such as the short half-life daughter products of radon and thoron. The decay period is used to give a more sensitive measurement of long-lived man-made radioactivity.

There is a ring of 7 sampling stations on the plant site located approximately 1000 feet from the reactor at the point of the maximum annual average ground level concentration. In addition, there is a ring of 5 sampling stations located approximately 10 miles from the site that serve as background stations.

Based on weekly comparisons, there was no statistical difference between the on-site and the background radioactive particulate concentrations. The average concentrations for the on-site and background samples was 0.120 and 0.120 pCi/M^3 for the period of January to December, 1981. Maximum weekly concentrations for each station were less than 0.21 pCi/M^3.

The average concentration of particulate at the site boundry due to plant releases of iodine and particulate would be 1.78 E-4 pCi/M^3 or 1/6,300 the average release concentration of 1.16 pCi/m^3. The survey can not detect such concentrations against the magnitude of the background.

During the first 7 months of 1981, the air particulate activities were higher than expected because of the continuing influence of the October 17, 1980 A-bomb test detonation by China.

Table IA is a list of values for the on-site samplers during January to June, Table IIA is a list for the off-site locations during January to June. Table IB is a list of values for the on-site samplers during July to December, Table IIB is a list for the off-site locations during July to December.

The particulate filters from each sampling location were saved and a 13 week composite was made. A gamma isotopic analysis was done for each sampling location and corrected for decay. The results of this analysis are listed in Tables IIIA, B, C, and D.

Iodine cartridges are placed at four locations. These cartridges are changed and counted each week. A list of values for these cartridges is given in Table IV.

WATER

Composite samples are collected weekly from Lake Ontario, upstream (Russell Station) and downstream (Ontario Water Plant) and analyzed for gross beta activity. There was no significant difference between the upstream and downstream sample concentrations. The yearly averages were 3.76 and 3.27 pCi/liter for the upstream and downstream samples respectively. Results are listed in Table V for January to December.

Weekly composite samples are taken from the plant circulating water intake and discharge canal. The yearly averages were 3.54 and 3.51 pCi/liter for the intake and discharge canal, respectively. Results are listed in Table V.

Releases of gross beta-gamma activity from the plant to the discharge canal gave an average concentration of <0.001 pCi/liter in the canal. The survey cannot detect this concentration due to the magnitude and the fluctuation of the background lake water activity. The concentration at the Ontario Water Plant would be only 1/20th of the discharge canal concentrations or <0.0005 pCi/liter due to plant releases.

Samples of tap water, the nearest well, and the creek which crosses the site were collected and analyzed monthly. The results show no indication of plant influence. These results are listed in Table VI.

Gamma isotopic analysis was done on some of the water samples. These are listed in Table VII.

FALLOUT

Fallout is a term used to denote radioactive material settling from the atmosphere to the ground. At the sampling stations, the fallout settles as dust or is collected with rainfall by a funnel and bottle. There are two on-site sampling stations and three off-site. Fallout generally increases in the spring months due to transfer of fission products from the upper to the lower atmosphere in conjunction with increased rainfall. There was no significant difference between on-site and off-site samples for the period of January to December, 1981. Table VIII lists the values for fallout samples.

EXTERNAL PENETRATING RADIATION

External penetrating radiation is measured by film badges, which are sealed in plastic with the desiccant. The films are located at 12 air particulate sampling stations and are changed monthly. Readings for all films, both on-site and off-site, were less than the minimum sensitivity of 10 millirem per month.

A thermoluminescent dosimeter (TLD) system with a sensitivity of 1 millirem is used as part of the environmental monitoring. Thirty-nine TLD badges are currently placed in four rings around the plant. These rings range from less than 1000 feet to 15 miles and have been dispersed so as to give indications in each of the nine land based sectors around the plant potential population exposures should an excessive release occur from the plant. Each badge contains 3 $CaSO_4$:Dy discs in a teflon matrix and are shielded by a copper filter to correct for overresponse to low energy photons. Badges are changed and read after approximately 3 months exposure.

For the year of 1981, on-site exposure ranged between 0.85 and 1.59 mrem/wk, with an average exposure of 1.17 mrem/wk and off-site 0.78 to 1.52 mrem/wk with an average exposure of 1.06 mrem/wk. Tables IXA and IXB give TLD readings for each quarter.

MILK

Milk samples are collected monthly from one of the three closest dairy herds located three to five miles from the plant. The milk is analyzed for Iodine-131. The method involves chemical separation of iodine and gross beta counting. Interference from other radioactive isotopes has made the results suspect in that they are biased high. The counting procedure is not specific for Iodine-131 and other isotopes may add to the count rate. Attempts to determine the half-life of the activity in the sample is difficult because of the low counting rates involved.

The average Iodine-131 concentration in milk for the twelve month period was <0.09 pCi/liter.

The annual dose to the thyroid of an infant which could result from the measured plant release rate, was calculated by the method described in the USNRC Regulatory Guide 1.109. The resultant annual thyroid dose for 1981 would be 0.030 mrem. The annual average plant release rate would give a concentration of <0.005 pCi/liter of Iodine-131 in milk, which is below the LLD for this analysis.

LAKE ONTARIO FISH

Fish caught near the discharge canal outfall were filleted, and counted for gamma emitting isotopes. Gross gamma activity was normal and no isotopes attributed to plant operations were detected.

Isotopic Gamma Concentrations (pCi/wet kilogram) are listed in Table XI.

A sample of the sand was obtained from the lake bottom in the discharge plume area. Results of the gamma scan are included on Table XI.

OTHER SAMPLES

Additional samples representing vegetation and fruit were taken and analyzed for gamma emitting isotopes. The results for these samples are listed in Table XIB.

EPA Interlaboratory Comparison Study

An indication of the plants ability to analyze samples and achieve results consistent with other laboratories is the aim of the EPA Interlaboratory Comparison. Selected unknowns are received and analyzed by our procedures and the results are sent to the EPA Environmental Monitoring Systems Laboratory. A report is returned from them indicating the concentrations with which the samples were spiked and how we compared to other laboratories doing the same samples. Table XIII is a tabulation of the samples analyzed during 1981.

Table IA

On-Site Samplers
Results in pCi/M^3

Week of	Sta.#2	Sta.#3	Sta.#4	Sta.#5	Sta.#6	Sta.#7	Sta.#13	On Site Average
Dec 31–Jan 8	0.071±0.002	0.078±0.003	0.075±0.002	0.077±0.002	0.060±0.002	0.101±0.003	c	0.077
Jan 8–15	0.086±0.002	0.105±0.003	0.089±0.003	0.088±0.002	0.073±0.002	0.111±0.003	0.091±0.002	0.092
Jan 15–23	0.121±0.003	0.134±0.004	0.116±0.003	0.131±0.003	0.139±0.003	0.160±0.004	0.164±0.004	0.138
Jan 23–30	0.103±0.003	0.136±0.004	0.100±0.003	0.114±0.003	0.109±0.003	0.112±0.003	0.114±0.003	0.113
Jan 30–Feb 6	0.097±0.003	0.122±0.004	0.111±0.004	0.099±0.003	0.107±0.003	0.103±0.003	0.109±0.003	0.107
Feb 6–13	0.096±0.003	0.106±0.003	0.111±0.004	0.112±0.003	0.101±0.003	0.109±0.003	0.121±0.003	0.108
Feb 13–20	0.140±0.003	0.177±0.004	0.216±0.005	0.179±0.003	0.157 0.003	0.206±0.004	0.194±0.004	0.181
Feb 20–27	0.053±0.002	0.092±0.003	0.088±0.003	0.095±0.003	a	0.098±0.003	0.094±0.003	0.087
Feb 27–Mar 6	0.116±0.003	0.121±0.004	0.157±0.005	0.131±0.003	0.129±0.003	0.128±0.004	0.089±0.003	0.124
Mar 6–13	0.076±0.002	0.129±0.004	0.118±0.004	0.113±0.003	0.128±0.003	0.122±0.003	0.152±0.004	0.120
Mar 13–20	0.177±0.003	0.179±0.004	0.195±0.005	0.178±0.003	0.181±0.004	0.167±0.004	0.283±0.005	0.194
Mar 20–27	0.182±0.003	0.203±0.004	0.210±0.005	0.206±0.004	0.194±0.004	0.209±0.004	0.219±0.004	0.203
Mar 27–Apr 3	0.319±0.005	0.399±0.006	0.382±0.007	0.338±0.005	0.353±0.005	0.404±0.006	0.297±0.005	0.356
Apr 3–10	0.376±0.005	0.380±0.006	0.423±0.007	0.369±0.005	0.401±0.005	0.408±0.006	0.457±0.006	0.402
Apr 10–16	0.231±0.004	0.258±0.005	0.304±0.006	0.240±0.004	0.260±0.005	0.260±0.005	0.269±0.005	0.260
Apr 16–24	0.270±0.004	0.311±0.005	0.323±0.006	0.310±0.004	0.316±0.004	0.278±0.005	0.362±0.006	0.310
Apr 24–May 1	0.237±0.004	0.269±0.005	0.281±0.006	0.264±0.004	0.269±0.004	0.283±0.005	a	0.267
May 1–8	0.267±0.004	0.290±0.005	0.296±0.006	0.290±0.004	0.296±0.005	0.309±0.005	0.340±0.006	0.298
May 8–15	0.229±0.004	0.286±0.005	0.319±0.006	0.273±0.004	0.279±0.004	0.283±0.005	0.241±0.005	0.273
May 15–22	0.284±0.004	0.310±0.005	0.319±0.004	0.299±0.004	0.311±0.005	0.330±0.005	0.257±0.000	0.301
May 22–29	0.267±0.004	0.311±0.005	0.328±0.004	0.301±0.004	0.297±0.004	0.343±0.005	0.288±0.005	0.305
May 29–June 5	0.154±0.003	0.178±0.004	0.177±0.005	0.169±0.003	0.164±0.003	0.175±0.004	0.172±0.004	0.170
June 5–12	0.193±0.004	0.209±0.005	0.211±0.005	0.295±0.006	0.182±0.004	0.198±0.005	0.202±0.004	0.213
June 12–19	0.095±0.003	0.114±0.003	0.104±0.004	0.098±0.003	0.097±0.003	0.106±0.003	0.114±0.003	0.104
June 19–26	0.124±0.003	0.129±0.004	0.128±0.004	0.119±0.003	0.119±0.003	0.137±0.004	0.107±0.003	0.123
June 26–July 2	0.156±0.004	0.174±0.005	0.166±0.005	0.156±0.004	0.152±0.004	0.179±0.004	0.148±0.004	0.162
Maximum	0.376±0.005	0.399±0.006	0.423±0.007	0.369±0.005	0.401±0.005	0.408±0.006	0.457±0.006	
Average	0.174	0.200	0.207	0.194	0.194	0.205	0.199	
Minimun	0.053±0.002	0.078±0.003	0.075±0.002	0.077±0.002	0.060±0.002	0.098±0.003	0.089±0.003	

(a) Unit out of service
(b) Filter torn or off-centered.
(c) Unable to unlock substation

Table IB

On-Site Samplers
Results in pCi/M^3

Week of	Sta.#2	Sta.#3	Sta.#4	Sta.#5	Sta.#6	Sta.#7	Sta.#13	On Site Average
July 2-10	0.128±0.003	0.135±0.004	0.150±0.004	0.134±0.003	0.127±0.003	0.153±0.004	0.129±0.003	0.137
July 10-17	0.162±0.003	0.167±0.004	0.185±0.005	(b)	0.159±0.003	0.175±0.004	0.182±0.004	0.172
July 17-24	0.108±0.003	0.102±0.003	0.107±0.004	0.094±0.003	0.097±0.003	0.111±0.003	0.082±0.003	0.100
July 24-31	0.086±0.003	0.091±0.003	0.099±0.004	0.090±0.003	0.085±0.003	0.101±0.003	0.072±0.003	0.080
July 31-Aug 7	0.088±0.003	0.095±0.003	0.099±0.004	0.085±0.002	0.088±0.003	0.093±0.003	0.095±0.003	0.092
Aug 7-14	0.048±0.002	0.050±0.003	0.049±0.003	0.048±0.002	0.046±0.002	0.054±0.002	b	0.049
Aug 14-21	0.060±0.002	0.068±0.003	0.063±0.003	0.059±0.002	0.058±0.002	0.062±0.003	0.062±0.003	0.062
Aug 21-28	0.063±0.002	0.067±0.003	0.061±0.003	0.059±0.002	0.061±0.002	0.062±0.002	0.059±0.002	0.062
Aug 28 Sept 4	0.042±0.002	0.049±0.002	0.045±0.003	0.045±0.002	0.042±0.002	0.049±0.002	0.033±0.002	0.044
Aug 4 Sept 11	0.028±0.002	0.031±0.002	0.029±0.002	0.027±0.002	0.029±0.002	0.032±0.002	0.030±0.002	0.029
Sept 11-18	0.029±0.002	0.031±0.002	0.031±0.002	0.028±0.002	0.029±0.002	0.033±0.002	0.027±0.002	0.030
Sept 18-25	0.022±0.001	0.024±0.002	0.022±0.002	0.021±0.001	0.022±0.004	0.022±0.002	0.020±0.002	0.022
Sept 25 Oct 2	0.028±0.002	0.030±0.002	0.029±0.002	0.030±0.002	0.028±0.002	0.032±0.002	0.024±0.002	0.029
Oct 2-9	0.013±0.001	0.014±0.002	0.014±0.002	0.014±0.001	0.012±0.001	0.014±0.001	0.009±0.001	0.013
Oct 9-16	0.023±0.001	0.024±0.002	0.024±0.002	0.022±0.001	0.022±0.001	0.023±0.002	0.026±0.002	0.023
Oct 16-23	0.015±0.001	0.016±0.002	0.018±0.002	0.014±0.001	0.017±0.002	0.016±0.003	0.008±0.001	0.015
Oct 23-30	0.018±0.001	0.019±0.002	0.018±0.002	0.016±0.001	0.018±0.001	0.019±0.002	0.016±0.002	0.018
Oct 30 Nov 6	0.027±0.002	0.028±0.002	0.028±0.002	0.027±0.002	0.026±0.002	0.029±0.002	0.023±0.002	0.027
Nov 6-13	0.020±0.001	0.020±0.001	0.019±0.002	0.018±0.001	0.019±0.002	0.021±0.002	0.017±0.002	0.019
Nov 13-19	0.027±0.002	0.030±0.002	0.033±0.003	0.027±0.002	0.030±0.002	0.031±0.002	0.028±0.002	0.029
Nov 19-25	0.014±0.001	0.015±0.002	0.013±0.002	0.014±0.002	0.014±0.002	0.017±0.002	0.014±0.002	0.015
Nov 25 Dec 2	0.016±0.001	0.016±0.001	0.018±0.002	0.016±0.002	(b)	0.020±0.002	0.014±0.002	0.017
Dec 2-9	0.023±0.002	0.028±0.002	0.026±0.002	0.022±0.002	0.027±0.002	0.028±0.002	0.024±0.002	0.025
Dec 9-16	0.019±0.001	0.015±0.001	0.016±0.002	0.015±0.002	0.013±0.001	0.016±0.002	0.014±0.001	0.015
Dec 16-23	0.020±0.001	0.019±0.001	0.019±0.002	0.021±0.002	0.019±0.002	0.021±0.002	0.016±0.002	0.019
Dec 23-30	0.045±0.002	0.038±0.002	0.037±0.002	0.040±0.002	0.040±0.002	0.044±0.002	0.037±0.002	0.040
Maximum	0.162± 0.003	0.167±0.004	0.185±0.005	0.134±0.003	0.157±.0.003	0.175±0.004	0.182±0.004	
Average	0.044	0.047	0.047	0.039	0.045	0.049	0.042	
Minimum	0.013±0.001	0.014±0.002	0.013±0.002	0.014±0.001	0.012±0.001	0.014±0.001	0.008±0.001	

(a) Unit out of service
(b) Filter torn or off-centered.

Table IIA

Off-Site Samplers
Results in pCi/M^3

Week of	Sta.#8	Sta.#9	Sta.#10	Sta.#11	Sta.#12	OffSite Average
Dec. 31-Jan. 8	0.067±0.004	0.066±0.003	0.272±0.004	0.070±0.003	C	0.119
Jan. 8-15	0.082±0.004	0.096±0.004	0.083±0.002	0.088±0.003	0.079±0.002	0.086
Jan. 15-23	0.120±0.005	0.125±0.005	0.169±0.004	0.118±0.003	0.128±0.003	0.132
Jan. 23-30	0.104±0.005	0.148±0.005	0.096±0.003	0.103±0.003	0.112±0.003	0.113
Jan. 30-Feb. 6	0.125±0.011	0.102±0.004	0.106±0.003	0.094±0.003	0.103±0.003	0.106
Feb. 6-13	0.093±0.004	0.098±0.003	0.103±0.003	0.102±0.003	0.105±0.003	0.100
Feb. 13-20	0.174±0.004	0.178±0.004	0.165±0.004	0.162±0.004	0.166±0.004	0.169
Feb. 20-27	0.078±0.003	0.090±0.003	0.079±0.003	0.161±0.004	0.095±0.003	0.101
Feb. 27-Mar 6	0.132±0.003	0.126±0.003	0.120±0.003	0.156±0.004	0.132±0.004	0.133
Mar. 6-13	0.097±0.003	0.125±0.003	0.109±0.003	0.114±0.003	0.119±0.003	0.113
Mar. 13-20	0.155±0.003	0.205±0.004	0.156±0.005	0.158±0.004	0.231±0.005	0.181
Mar. 20-27	0.197±0.004	0.191±0.004	0.218±0.006	0.182±0.004	0.203±0.004	0.198
Mar. 27-Apr. 3	0.368±0.005	0.383±0.005	0.370±0.007	0.348±0.006	0.382±0.006	0.370
Apr. 3-10	0.415±0.006	0.419±0.005	0.387±0.007	0.383±0.006	0.370±0.006	0.395
Apr. 10-16	0.282±0.005	0.299±0.005	0.284±0.007	0.242±0.005	0.245±0.005	0.270
Apr. 16-24	0.289±0.004	0.320±0.004	0.292±0.006	0.287±0.005	0.317±0.005	0.301
Apr. 24-May 1	0.281±0.005	0.282±0.004	0.278±0.006	0.228±0.005	0.271±0.005	0.268
May 1-8	0.293±0.005	0.301±0.005	0.323±0.007	0.284±0.005	0.277±0.005	0.296
May 8-15	0.283±0.005	0.259±0.004	0.250±0.006	0.256±0.005	0.264±0.005	0.262
May 15-22	0.325±0.005	0.325±0.005	0.311±0.007	0.306±0.005	0.292±0.005	0.312
May 22-29	0.328±0.005	0.328±0.005	0.341±0.007	0.321±0.005	0.319±0.005	0.327
May 29-June 5	0.181±0.004	0.174±0.004	0.173±0.005	0.177±0.004	0.167±0.004	0.174
June 5-12	0.197±0.004	0.210±0.004	0.197±0.005	0.169±0.004	0.181±0.004	0.191
June 12-19	0.109±0.003	0.110±0.003	0.114±0.004	0.104±0.003	0.091±0.003	0.106
June 19-26	0.120±0.003	0.123±0.003	0.115±0.004	0.110±0.003	0.106±0.003	0.115
June 26-July 2	0.170±0.004	0.154±0.004	0.148±0.005	0.142±0.004	0.154±0.004	0.154
Maximum	0.415±0.006	0.419±0.005	0.387±0.007	0.383±0.006	0.382±0.006	
Average	0.195	0.201	0.202	0.187	0.192	
Minimum	0.067±0.004	0.066±0.003	0.079±0.003	0.070±0.003	0.079±0.002	

(a) Unit out of-service
(b) Filter torn or off centered
(c) Unable to unlock substation

Table IIB

Off-Site Samplers
Results in pCi/M^3

Week of	Sta.#8	Sta.#9	Sta.#10	Sta.#11	Sta.#12	OffSite Average
July 2-10	0.133±0.003	0.130±0.003	0.124±0.004	0.112±0.003	0.130±0.003	0.126
July 10-17	0.173±0.004	0.161±0.003	0.162±0.005	0.148±0.004	0.153±0.004	0.159
July 17-24	0.082±0.003	0.122±0.003	0.092±0.004	0.090±0.003	0.087±0.003	0.095
July 24-31	0.056±0.002	0.087±0.003	0.087±0.004	0.080±0.003	0.090±0.003	0.080
July 31-Aug 7	0.082±0.003	0.087±0.003	0.084±0.004	0.079±0.003	0.084±0.003	0.083
Aug 7-14	(b)	0.050±0.002	0.049±0.002	0.045±0.002	0.046±0.002	0.048
Aug 14-21	0.056±0.002	0.057±0.002	0.056±0.003	0.055±0.003	0.057±0.003	0.056
Aug 21-28	0.047±0.002	0.054±0.003	0.055±0.003	0.046±0.002	0.053±0.002	0.051
Aug 28 Sept 4	0.029±0.002	0.045±0.002	0.042±0.002	0.041±0.002	0.043±0.002	0.040
Sept 4-11	(b)	0.023±0.002	0.023±0.002	0.026±0.002	0.027±0.002	0.025
Sept 11-18	0.024±0.002	0.029±0.002	0.028±0.003	0.025±0.002	0.029±0.002	0.027
Sept 18-25	(b)	0.020±0.001	0.018±0.002	0.018±0.002	0.021±0.003	0.019
Sept 25 Oct 2	0.023±0.002	0.029±0.002	0.026±0.003	0.022±0.002	0.027±0.002	0.025
Oct 2-9	0.014±0.001	0.014±0.001	0.013±0.002	0.013±0.002	0.013±0.002	0.013
Oct 9-16	0.024±0.002	0.022±0.002	0.022±0.002	0.019±0.002	0.021±0.002	0.022
Oct 16-23	0.016±0.001	0.016±0.002	0.016±0.002	0.016±0.002	0.015±0.002	0.016
Oct 23-30	0.018±0.002	0.016±0.001	0.017±0.002	0.016±0.002	0.016±0.002	0.017
Oct 30 Nov 6	0.027±0.002	0.030±0.002	0.025±0.003	0.024±0.002	0.026±0.002	0.026
Nov 6 13	0.021±0.002	0.018±0.001	0.014±0.002	0.020±0.003	(b)	0.018
Nov 13-19	0.029±0.002	0.027±0.002	0.025±0.003	0.029±0.003	0.026±0.002	0.027
Nov 19-25	0.015±0.002	0.015±0.002	0.015±0.003	0.016±0.002	0.014±0.002	0.015
Nov 25 Dec 2	0.012±0.002	0.013±0.001	0.016±0.002	0.015±0.002	0.015±0.002	0.014
Dec 2-9	0.026±0.002	0.025±0.002	0.025±0.003	0.027±0.002	0.025±0.002	0.026
Dec 9-16	0.015±0.002	0.014±0.001	0.011±0.002	0.015±0.002	0.012±0.002	0.013
Dec 16-23	0.016±0.002	0.018±0.001	0.018±0.002	0.021±0.002	0.019±0.002	0.018
Dec 23-30	0.038±0.002	0.030±0.002	0.035±0.003	0.041±0.002	0.026±0.002	0.034
Maximum	0.173±0.004	0.161±0.003	0.162±0.005	0.148±0.004	0.153±0.004	
Average	0.042	0.044	0.042	0.041	0.043	
Minimum	0.012±0.002	0.013±0.001	0.011±0.002	0.013±0.002	0.012±0.002	

(a) Unit out of service
(b) Filter torn or off centered
(c) Unable to unlock substation

Table IIIA

13 Week Composite
Gamma Isotopic Analysis
Results in pCi/M^3

First Quarter	Sta 2	Sta 3	Sta 4	Sta 5	Sta 6	Sta 7	Sta 8	Sta 9	Sta 10	Sta 11	Sta 12	Sta 13
Be^7	.081±.010	.080±.012	.087±.014	.071±.010	.057±.010	.087±.013	.096±.013	.076±.014	.077±.021	.080±.015	.101±.012	.084±.012
K^{40}	<.013	<.018	<.019	<.013	<.015	<.017	<.021	<.018	.022 .004	<.013	<.016	<.017
Cr^{51}	<.020	<.029	<.030	<.021	<.024	<.029	<.038	<.035	<.220	<.260	<.030	<.032
Mn^{54}	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.0
Fe^{59}	<.004	<.005	<.006	<.004	<.004	<.005	<.007	<.006	<.018	<.006	<.005	<.006
Co^{58}	<.001	<.002	<.001	<.001	<.001	<.002	<.002	<.002	<.004	<.005	<.002	<.002
Co^{60}	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001
Zn^{65}	<.002	<.003	<.003	<.002	<.002	<.003	<.003	<.003	<.003	<.003	<.002	<.003
Zr^{95}	.027±.002	.030±.003	.025±.003	.027±.002	.020±.002	.023±.003	.033±.003	.028±.003	.038±.004	.031±.004	.026±.003	.038±.003
Nb^{95}	.070±.003	.082±.003	.079±.003	.083±.003	.070±.003	.079±.003	.092±.004	.064±.003	.061±.003	.052±.003	.099±.004	.113±.004
Ru^{103}	.018±.002	.022±.002	.021±.002	.019±.002	.013±.002	.017±.002	.019±.002	.020±.002	.020±.003	.020±.003	.020±.002	.019±.002
Ru^{106}	<.008	< 011	<.012	<.008	<.009	<.011	<.014	<.011	<.011	<.011	<.010	<.011
Cs^{134}	<.001	<.001	<.001	<.001	<.001	<.001	<.002	<.001	<.001	<.001	<.001	<.001
Cs^{137}	<.002	.004±.001	.003±.001	.003 .001	<.002	<.002	.003±.001	<.001	<.001	<.001	<.001	<.001
$BaLa^{140}$	<.011	<.015	<.017	<.012	<.014	<.017	<.022	<.024	<.030	<.020	<.020	<.022
Ce^{141}	.014±.002	.014±.002	.013±.002	.016±.002	.009±.001	.012±.002	.010±.002	.013±.002	.015±.003	.006±.001	.012±.001	.014±.002
Ce^{144}	.017±.002	.014±.003	.011±.002	.018±.002	.007±.002	.012±.003	.015±.003	.017±.002	.021±.002	.012±.002	.014±.002	.016±.002

All values given as < are less than LLD

Table 111B

13 Week Composite
Gamma Isotopic Analysis
Results in pCi/M^3

Second Quarter	Sta 2	Sta 3	Sta 4	Sta 5	Sta 6	Sta 7	Sta 8	Sta 9	Sta 10	Sta 11	Sta 12	Sta 13
Be^7	.090±.012	.125±.015	.129±.017	.132±.013	.147±.012	.113±.006	.171±.016	.109±.017	.103±.010	.105±.010	.127±.010	.088±.007
K^{40}	<.013	<.015	<.013	<.011	<.012	<.011	<.011	<.009	<.018	<.015	<.015	<.016
Cr^{51}	<.026	<.037	<.045	<.028	<.024	<.056	<.039	<.049	<.097	<.066	<.066	<.071
Mn^{54}	<.001	<.001	<.002	<.001	<.001	<.001	<.001	<.002	<.002	<.001	<.002	<.002
Fe^{59}	<.004	<.006	<.007	<.004	<.004	<.003	<.006	<.006	<.012	<.008	<.008	<.009
Co^{58}	<.001	<.002	<.002	<.001	<.001	<.001	<.002	<.002	<.003	<.002	<.002	<.002
Co^{60}	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.004	<.001	<.003	<.003
Zn^{65}	<.002	<.003	<.003	<.002	<.002	<.001	<.002	<.002	<.004	<.003	<.003	<.003
Zr^{95}	.033±.003	.039±.003	.048±.004	.046±.003	.040±.003	.041±.003	.046±.003	.045±.003	.041±.005	.043±.004	.046±.004	.045±.004
Nb^{95}	.118±.004	.104±.004	.117±.004	.109±.003	.096±.005	.094±.003	.102±.004	.068±.003	.064±.010	.061±.003	.084±.003	.088±.004
Ru^{103}	<.004	<.004	<.004	<.007	.019±.002	.018±.002	<.006	.014±.002	.017±.002	.013±.002	.019±.001	.011±.001
Ru^{106}	<.007	<.010	<.012	<.020	<.026	.026±.002	<.009	.013±.002	.024±.002	.028±.002	.015±.003	.020±.002
Cs^{134}	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.002	<.001	<.002	<.001
Cs^{137}	.003±.001	.005±.001	<.002	<.003	<.003	<.003	<.003	<.003	<.003	<.003	<.003	<.003
$BaLa^{140}$	<.021	<.030	<.040	<.026	<.025	<.081	<.041	<.051	<.096	<.077	<.077	<.081
Ce^{141}	<.003	<.004	<.005	<.003	<.003	<.007	<.004	<.005	<.010	<.007	<.006	<.007
Ce^{144}	.035±.002	.041±.003	.037±.003	.039±.003	.035±.003	.041±.003	.040±.003	.038±.003	.045±.005	.039±.003	.045±.003	.044±.003

All values given as < are less than LLD.

Table IIIC

13 Week Composite
Gamma Isotopic Analysis
Results in pCi/M^3

Third Quarter	Sta 2	Sta 3	Sta 4	Sta 5	Sta 6	Sta 7	Sta 8	Sta 9	Sta 10	Sta 11	Sta 12	Sta 13
Be^7	.100±.012	.111±.015	.104±.018	.083±.009	.097±.012	.109±.018	.058±.009	.104±.012	.095±.020	.092±.012	.090±.014	.100±.015
K^{40}	<.011	<.016	<.018	<.010	<.010	<.010	<.010	<.011	<.014	<.012	<.014	<.013
Cr^{51}	<.024	<.033	<.040	<.027	<.028	<.032	<.031	<.038	<.054	<.036	<.042	<.036
Mn^{54}	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.002	<.001	<.001	<.00
Fe^{59}	<.003	<.004	<.005	<.003	<.003	<.004	<.004	<.003	<.006	<.004	<.004	<.004
Co^{58}	<.001	<.001	<.002	<.001	<.001	<.001	<.001	<.002	<.002	<.001	<.002	<.002
Co^{60}	<.001	<.002	<.002	<.001	<.002	<.002	<.002	<.002	<.002	<.002	<.001	<.003
Zn^{65}	<.002	<.002	<.003	<.002	<.002	<.002	<.002	<.002	<.003	<.002	<.002	<.002
Zr^{95}	<.004	<.006	<.005	<.003	<.005	<.006	<.004	<.004	<.005	<.004	<.007	<.005
Nb^{95}	.010±.002	.008±.002	.009±.002	.007±.002	.008±.002	.010±.003	.007±.002	.010±.003	<.006	.007±.003	<.005	.009±.002
Ru^{103}	<.002	<.003	<.003	<.002	<.002	<.003	<.003	<.002	<.004	<.003	<.003	<.003
Ru^{106}	<.008	.014±.003	<.013	<.008	<.009	<.011	<.009	<.010	<.016	<.010	<.011	<.011
Cs^{134}	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001
Cs^{137}	<.001	<.001	<.002	<.001	<.001	<.002	<.002	<.002	<.002	<.002	<.001	<.003
$BaLa^{140}$	<.009	<.015	<.019	<.012	<.014	<.017	<.018	<.016	<.032	<.020	<.022	<.022
Ce^{141}	<.003	<.005	<.005	<.006	<.004	<.004	<.004	<.009	<.006	<.005	<.005	<.005
Ce^{144}	.013±.002	.009±.002	<.009	<.011	<.006	<.007	<.006	<.016	<.010	<.007	<.012	<.007

All values given as < are less than LLD

Table IIID

13 Week Composite
Gamma Isotopic Analysis
Results in pCi/M^3

Fourth Quarter	Sta 2	Sta 3	Sta 4	Sta 5	Sta 6	Sta 7	Sta 8	Sta 9	Sta 10	Sta 11	Sta 12	Sta 13
Be^7	.063±.004	.069±.004	.075±.005	.059±.004	.069±.004	.074±.004	.063±.004	.073±.004	.068±.007	.070±.005	.077±.005	.069±.005
K^{40}	<.005	<.006	<.009	<.006	<.006	<.007	<.006	<.005	<.009	<.007	<.006	<.006
Cr^{51}	<.025	<.028	<.041	<.028	<.029	<.033	<.032	<.029	<.059	<.040	<.043	<.039
Mn^{54}	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.002	<.001	<.001	<.001
Fe^{59}	<.003	<.003	<.005	<.003	<.003	<.004	<.004	<.003	<.006	<.005	<.005	<.004
Co^{58}	<.001	<.001	<.002	<.001	<.001	<.001	<.001	<.001	<.002	<.002	<.002	<.002
Co^{60}	<.001	<.001	<.002	<.001	<.001	<.001	<.002	<.001	<.001	<.001	<.001	<.001
Zn^{65}	<.002	<.002	<.003	<.002	<.002	<.002	<.002	<.002	<.003	<.003	<.002	<.002
Zr^{95}	<.002	<.003	<.004	<.002	<.003	<.003	<.003	<.002	<.004	<.003	<.003	<.003
Nb^{95}	<.002	<.002	<.003	<.002	<.002	<.003	<.003	<.002	<.004	<.003	<.003	<.003
Ru^{103}	<.002	<.002	<.003	<.002	<.002	<.002	<.002	<.002	<.004	<.003	<.003	<.003
Ru^{106}	<.008	< 008	<.012	<.009	<.009	<.010	<.009	<.008	<.014	<.011	<.011	<.010
Cs^{134}	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001
Cs^{137}	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.002	<.001	<.001	<.001
$BaLa^{140}$	<.012	<.014	<.020	<.014	<.014	<.017	<.019	<.014	<.036	<.023	<.028	<.025
Ce^{141}	<.003	<.004	<.006	<.004	<.004	<.004	<.004	<.003	<.007	<.005	<.006	<.005
Ce^{144}	<.005	<.006	<.008	<.005	<.005	<.006	<.006	<.005	<.010	<.007	<.007	<.006

All values given as < are less than LLD

Table IV
Charcoal Cartridges for Iodine
Results in pCi/M^3

Week of		Sta. #4	Sta. #7	Sta. #9	Sta. #11
December 31-Jan 8		<0.02	<0.03	<0.05	<0.03
January 8-15		<0.02	<0.03	<0.05	<0.03
January 15-23		<0.02	<0.03	<0.05	<0.03
January 23-30		<0.03	<0.03	<0.05	<0.03
January 30 Feb 6		<0.04	<0.03	<0.05	<0.03
February 6-13		<0.04	<0.03	<0.03	<0.03
February 13-20		<0.04	<0.03	<0.02	<0.03
February 20-27		<0.03	<0.03	<0.02	<0.03
February 27 Mar 6		<0.04	<0.03	<0.02	<0.03
March 6- 13		<0.04	<0.03	<0.02	<0.03
March 13-20		<0.04	<0.03	<0.02	<0.03
March 20-27		<0.04	<0.03	<0.02	<0.03
March 27-Apr 3		<0.04	<0.03	<0.02	<0.03
April 3-10		<0.04	<0.03	<0.02	<0.03
April 10-16	(a)	<0.13	<0.10	<0.09	<0.11
April 16-24	(a)	<0.11	<0.08	<0.07	<0.09
April 24-May 1	(a)	<0.12	<0.09	<0.08	<0.10
May 1- 8	(a)	<0.11	<0.09	<0.08	<0.10
May 8-15	(a)	<0.12	<0.10	<0.08	<0.10
May 15-22	(a)	<0.12	<0.10	<0.08	<0.10
May 22-29	(a)	<0.11	<0.09	<0.07	<0.10
May 29-June 5	(a)	<0.11	<0.09	<0.07	<0.10
June 5-12		<0.04	<0.03	<0.02	<0.03
June 12-19		<0.04	<0.03	<0.02	<0.03
June 19-26		<0.04	<0.03	<0.02	<0.03
June 26- July 2		<0.04	<0.03	<0.03	<0.03
July 2-10		<0.03	<0.03	<0.02	<0.03
July 10-17		<0.04	<0.03	<0.02	<0.03
July 17-24		<0.04	<0.03	<0.02	<0.03
July 24-31		<0.04	<0.03	<0.02	<0.03
July 31-Aug. 7		<0.04	<0.03	<0.02	<0.03
Aug. 7-14		<0.03	<0.03	<0.02	<0.03
Aug. 14-21		<0.04	<0.03	<0.02	<0.03
Aug. 21-28		<0.04	<0.03	<0.02	<0.03
Aug. 28-Sept. 4		<0.04	<0.03	<0.02	<0.03
Sept. 4-11		<0.04	<0.03	<0.02	<0.03
Sept. 11-18		<0.04	<0.03	<0.02	<0.03
Sept. 18-25		<0.04	<0.03	<0.02	<0.03
Sept. 25-Oct. 2		<0.04	<0.03	<0.02	<0.03
Oct. 2-9		<0.04	<0.03	<0.02	<0.03
Oct. 9-16		<0.04	<0.03	<0.02	<0.03
Oct. 16-23		<0.04	<0.03	<0.02	<0.03
Oct. 23-30		<0.03	<0.03	<0.02	<0.03
Oct. 30-Nov. 6		<0.04	<0.03	<0.03	<0.03
Nov. 6-13		<0.04	<0.03	<0.02	<0.05
Nov. 13-19		<0.04	<0.03	<0.03	<0.03
Nov. 19-25		<0.04	<0.03	<0.03	<0.03
Nov. 25-Dec. 2		<0.03	<0.03	<0.02	<0.03
Dec. 2-9		<0.04	<0.03	<0.02	<0.03
Dec. 9-16		<0.04	<0.03	<0.02	<0.03
Dec. 16-23		<0.03	<0.03	<0.02	<0.03
Dec. 23-30		<0.02	<0.03	<0.02	<0.03

All values given as < are less than LLD
(a) Samples counted this week on HP counting room Ge(Li)
(b) Changed to Environmental Ge(Li) detector for counting beginning this week

Table VA

Environmental Water Samples 1981

Results in pCi/Liter

Week of	Russell	O.W.D	Circ In	Circ Out
Jan. 4- Jan. 10	4.97±0.97		3.03±0.90	2.81±0.90
Jan. 11-17	4.49±0.94	4.24±0.93	3.23±0.89	3.48±0.91
Jan. 18-24	4.72±0.92	3.56±0.88	3.60±0.88	3.74±0.89
Jan. 25-31	2.68±0.86	3.37±0.89	2.93±0.87	2.78±0.87
Feb. 1-Feb. 7	2.70±0.90	3.83±0.94	4.73±0.97	3.34±0.92
Feb. 8-14	3.41±0.92	3.62±0.93	3.71±0.93	3.63±0.93
Feb. 15-21	6.91±1.03	3.95±0.92	3.74±0.92	3.07±0.89
Feb. 22-28	4.87±0.96	4.57±0.95	5.41±0.98	5.24±0.97
March 1-7	6.02±0.97	3.09±0.89	5.24±0.96	4.92±0.95
March 8-14	4.37±0.92	3.26±0.89	4.08±0.92	3.62±0.90
March 15-21	6.05±0.97	2.82±0.91	4.31±0.96	4.32±0.96
March 22-28	6.64±0.99	2.57±0.85	3.14±0.89	3.91±0.92
March 29-April 4	5.15±0.94	2.91±0.87	3.85±0.91	3.69±0.90
April 5-11	3.59±0.90	2.60±0.87	3.41±0.90	3.30±0.90
April 12-18	4.99±0.96	4.14±0.93	2.97±0.88	3.98±0.92
April 19-25	3.53±0.92	4.22±0.94	2.60±0.86	4.57±0.95
April 26-May 2	4.23±0.94	2.68±0.89	3.38±0.91	4.95±0.94
May 3-9	3.93±0.95	3.31±0.93	3.55±0.93	2.94±0.91
May 10-16	3.59±0.94	3.31±0.94	4.05±0.95	4.00±0.96
May 17-23	3.04±0.90	2.71±0.91	4.14±0.96	4.03±0.96
May 24-30	3.54±0.98	2.73±0.90	3.49±0.93	3.65±0.94
May 31-June 6	3.03±0.96	2.51±0.90	2.91±0.89	3.43±0.91
June 7-13	2.51±0.92	2.05±0.92	2.74±0.95	4.84±1.01
June 14-20	3.95±1.03	3.73±0.98	3.32±0.97	3.42±0.97
June 21-27	2.31±0.97	2.97±0.99	3.55±1.01	3.43±1.01
Maximum	6.91±1.03	4.57±0.95	5.41±0.98	5.24±0.97
Average	4.21	3.28	3.64	3.80
Minimum	2.31±0.97	2.57±0.85	2.60±0.86	2.78±0.87

Table VB

Environmental Water Samples 1981
Results in pCi/Liter

Week of	Russell	O.W.D	Circ In	Circ Out
June 28-July 4	2.91±0.98	3.91±1.02	4.78±1.05	3.40±1.00
July 5-11	3.36±1.01	3.55±1.01	8.64±1.16	3.46±1.00
July 12-18	2.57±0.98	4.29±1.04	3.71±1.02	2.24±0.97
July 19-25	2.66±1.02	3.88±1.03	3.20±0.99	3.82±1.03
July 26-Aug. 1	3.62±1.04	1.85±.099	2.60±1.03	2.74±1.03
August 2-8	3.93±1.05	2.25±1.01	4.06±1.07	2.28±1.02
August 9-15	3.96±1.05	3.36±1.03	3.43±1.03	2.60±1.01
August 16-22	2.78±0.95	3.59±1.01	3.36±1.00	2.89±0.98
August 23-29	3.10±0.96	3.14±0.96	3.52±0.97	3.36±0.97
August 30-Sept. 5	3.58±0.97	2.51±0.94	3.33±0.97	3.13±0.97
September 6-12	2.63±0.94	3.19±0.97	2.15±0.92	3.19±0.96
September 13-19	3.45±0.94	4.41±0.97	2.63±0.91	2.61±0.91
September 20-26	3.31±0.89	3.94±0.95	3.71±0.94	4.41±0.97
September 29-Oct. 3	3.36±0.94	3.01±0.93	3.66±0.95	3.80±0.95
October 4-10	3.28±0.89	4.47±0.94	4.02±0.92	3.42±0.91
October 11-17	3.56±0.93	2.60±0.90	3.08±0.91	4.38±0.96
October 18-24	3.49±0.96	4.23±0.95	3.73±0.93	3.46±0.92
October 25-31	3.73±0.97	3.36±0.96	2.64±0.93	3.41±0.96
November 1-7	4.35±0.98	3.56±0.92	3.62±0.92	3.80±0.93
November 8-14	5.92±1.13	3.47±0.96	3.65±0.96	2.63±0.93
November 15-21	3.73±0.96	3.00±0.93	3.05±0.94	3.97±0.97
November 22-28	2.83±0.87	2.87±0.94	3.03±0.94	3.38±0.95
November 29-Dec. 5	3.41±0.89	3.32±0.93	3.57±0.93	3.59±0.93
December 6-12	2.33±0.84	2.22±0.87	2.34±0.88	3.69±0.94
December 13-19	2.63±0.89	3.05±0.90	1.84±0.78	1.87±0.82
December 20-26	3.69±0.92	3.42±0.91	2.61±0.88	3.21±0.90
December 27-Jan. 2	2.06±0.85	3.25±0.90	2.93±0.89	2.98±0.88
Maximum	5.92±1.13	4.47±0.94	8.64±1.16	4.41±0.97
Average	3.34	3.25	3.44	3.25
Minimum	2.06±0.85	1.85±0.99	1.84±0.78	1.87±0.82

Table VI

Results in pCi/liter

	Deer Creek	Tap	Well
January	4.34±0.92	3.49±0.89	8.35±1.09
February	5.86±0.99	3.05±0.89	6.76±1.02
March	5.04±0.97	2.56±0.90	6.38±1.01
April	6.44±1.07	2.76±0.91	7.69±1.11
May	3.66±0.99	4.31±0.97	7.81±1.11
June	4.44±1.04	3.19±0.99	7.13±1.12
July	7.10±1.16		6.56±1.14
August	3.81±1.02	3.55±0.97	3.58±0.99
September	6.32±1.03	3.57±0.94	7.95±1.09
October	6.10±1.02	3.70±0.93	6.12±1.05
November	7.98±1.10	3.68±0.97	7.67±1.09
December	4.54±0.96	2.04±0.81	6.03±1.01
Maximum	7.98±1.10	4.31±0.97	8.35±1.09
Average	5.47	3.26	6.84
Minimum	3.66±0.99	2.04±0.81	3.58±0.99

Table VII
Water Gamma Isotopic Analysis
Results in pCi/liter

First Quarter	January				February				March				
	Russ. Sta.	O.W.D.	Well 'B'	Deer Creek	Russ. Sta.	O.W.D.	Well 'B'	Deer Creek	Russ. Sta.	O.W.D.	Well 'B'	Deer Creek	Disc. Comp.
Be^{7}	<75	<77	<56	<56	<69	<67	<54	<53	<73	<74	<53	<53	<84
K^{40}	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80
Cr^{51}	<100	<105	<56	<56	<86	<80	<54	<52	<100	<105	<52	<52	<125
Mn^{54}	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	
Fe^{59}	<17	<18	<12	<12	<16	<15	<12	<12	<17	<17	<12	<12	<20
Co^{58}	< 7	< 7	< 6	< 6	< 7	< 6	< 5	< 5	< 7	< 7	< 5	< 5	< 8
Co^{60}	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Zn^{65}	<12	<13	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<13
Zr^{95}	<16	<17	<13	<13	<15	<15	<13	<12	<16	<16	<12	<12	<18
Nb^{95}	< 9	< 9	< 6	< 6	< 8	< 7	< 5	< 5	< 8	< 9	< 5	< 5	<11
Ru^{103}	<10	<10	< 6	< 6	< 9	< 8	< 6	< 6	< 9	< 9	< 6	< 6	<11
Ru^{106}	<56	<56	<53	<53	<55	<55	<53	<53	<56	<56	<53	<53	<57
I^{131}	<66	<78	< 9	< 9	<39	<30	< 8	< 7	<66	<59	< 7	< 7	<142
Cs^{134}	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Cs^{137}	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
$BaLa^{140}$	<22	<25	< 6	< 6	<16	<14	< 6	< 5	<20	<21	< 5	< 5	<36
Ce^{141}	<16	<16	<10	<10	<14	<13	< 9	< 9	<16	<16	< 9	< 9	<19
Ce^{144}	<40	<40	<38	<38	<40	<39	<38	<38	<40	<40	<38	<38	<41
Ra^{226}	<14	<14	21±9	18±9	<14	<14	44±9	23±9	<14	<14	41±10	<14	<14

All values given as < are less than LLD

Table VII
Water Gamma Isotopic Analysis
Results in pCi/liter

Second Quarter	April				May				June				
	Russ. Sta.	O.W.D.	Well 'B'	Deer Creek	Russ. Sta.	O.W.D.	Well 'B'	Deer Creek	Russ. Sta.	O.W.D.	Well 'B'	Deer Creek	Disc. Comp.
Be^{7}	<97	<67	<56	<104	<75	<77	<56	<73	<107	<97	<54	<54	<124
K^{40}	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80
Cr^{51}	<160	<82	<56	<195	<100	<105	<56	<100	<124	<164	<54	<54	<258
Mn^{54}	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Fe^{59}	<22	<15	<12	<26	<17	<18	<12	<17	<26	<23	<12	<12	<31
Co^{58}	< 8	< 6	< 6	< 9	< 7	< 7	< 6	< 7	<10	< 8	< 5	< 5	<10
Co^{60}	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Zn^{65}	<13	<12	<12	<13	<12	<13	<12	<12	<13	<13	<12	<12	<14
Zr^{95}	<18	<15	<13	<22	<16	<17	<13	<17	<22	<20	<13	<13	<25
Nb^{95}	<13	< 8	< 6	<15	< 9	< 9	< 6	< 9	<15	<13	< 5	< 5	<19
Ru^{103}	<13	< 8	< 6	<15	<10	<10	< 6	<10	<15	<13	< 6	< 6	<19
Ru^{106}	<56	<55	<53	<59	<56	<56	<53	<56	<59	<58	<53	<53	<60
I^{131}	<128	<33	< 9	<142	<66	<68	< 9	<100	<106	<136	< 8	< 8	<14
Cs^{134}	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 7
Cs^{137}	< 6	< 6	< 6	< 7	< 6	< 6	< 6	< 7	< 6	< 6	< 6	< 6	< 6
$BaLa^{140}$	<62	<14	< 6	<91	<22	<25	< 6	<21	<10	<64	< 6	< 6	<173
Ce^{141}	<22	<13	<10	<29	<16	<16	<10	<15	<17	<24	< 9	< 9	<35
Ce^{144}	<40	<39	<38	<47	<40	<40	<38	<44	<27	<42	<38	<38	<44
Ra^{226}	<14	<14	31±7	<14	<14	<14	26±7	<14	<14	<14	27±3	<14	<14

All values given as < are less than LLD

Table VII
Water Gamma Isotopic Analysis
Results in pCi/liter

	July				August				September				
Third Quarter	Russ. Sta.	O.W.D.	Well 'B'	Deer Creek	Russ. Sta.	O.W.D.	Well 'B'	Deer Creek	Russ. Sta.	O.W.D.	Well 'B'	Deer Creek	Disc. Comp.
Be^{7}	<70	<72	<56	<56	<83	<70	<58	<53	<73	<75	<59	<73	<101
K^{40}	<80	<80	<80	<80	<80	<80	91±13	<80	<80	<80	<80	<80	<80
Cr^{51}	<114	<92	<56	<57	<138	<99	<67	<31	<102	<104	<68	<88	<205
Mn^{54}	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 3	< 5	< 6	< 5	< 7	< 6
Fe^{59}	<16	<16	<12	<12	<14	<12	<10	< 3	<14	<13	< 9	<11	<18
Co^{58}	< 7	< 7	< 6	< 6	< 7	< 6	< 6	< 2	< 7	< 7	< 5	< 7	< 8
Co^{60}	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Zn^{65}	<12	<12	<12	<12	<11	<10	<12	< 7	<11	<12	<11	<14	<11
Zr^{95}	<15	<16	<13	<13	<13	<12	<10	< 4	<12	<12	< 9	<12	<15
Nb^{95}	< 8	< 8	< 6	< 6	< 9	< 8	< 6	< 2	< 8	< 8	< 6	< 7	<13
Ru^{103}	< 9	< 9	< 6	<11	<11	< 9	< 9	< 9	< 9	< 9	< 6	< 9	<15
Ru^{106}	<59	<55	<53	<54	<59	<57	<57	<24	<58	<60	<57	<72	<62
I^{131}	<71	<73	<10	< 9	<39	<28	< 8	< 4	<37	<37	< 8	<11	<65
Cs^{134}	< 6	< 6	< 6	< 6	< 6	< 6	< 2	< 2	< 6	< 6	< 6	< 7	< 6
Cs^{137}	< 6	< 6	< 6	< 6	< 6	< 7	< 6	< 6	< 7	< 8	< 7	< 9	< 7
$BaLa^{140}$	<16	<19	< 6	< 7	<25	<10	< 4	< 2	<13	<12	< 5	< 7	<57
Ce^{141}	<28	<19	<10	<10	<26	<19	<15	< 5	<21	<21	<14	<18	<38
Ce^{144}	<56	<58	<38	<38	<64	<63	<62	<21	<62	<66	<61	<73	<66
Ra^{226}	<14	<14	15±9	<14	<14	<14	28±9	<14	<14	<14	50±26	<14	<14

All values given as < are less than LLD

Table VII
Water Gamma Isotopic Analysis
Results in pCi/liter

Fourth Quarter	October				November				December				
	Russ. Sta.	O.W.D.	Well 'B'	Deer Creek	Russ. Sta.	O.W.D.	Well 'B'	Deer Creek	Russ. Sta.	O.W.D.	Well 'B'	Deer Creek	Disc. Comp.
Be^{7}	<75	<70	<58	<56	<88	<72	<59	<59	<84	<81	<54	<55	<74
K^{40}	<77	<92	<94	<88	<77	<85	<77	<92	<77	<78	<77	<77	<77
Cr^{51}	<112	<106	<68	<67	<143	<112	<68	<67	<145	<131	<56	<65	<110
Mn^{54}	< 5	< 5	< 5	< 5	< 6	< 6	< 5	< 5	< 6	< 6	< 6	< 5	< 6
Fe^{59}	<12	<11	<10	<10	<16	<12	< 9	< 9	<15	<13	< 9	< 8	<13
Co^{58}	< 6	< 6	< 5	< 5	< 7	< 6	< 5	< 5	< 7	< 7	< 5	< 5	< 7
Co^{60}	< 6	< 6	< 6	< 6	< 4	< 4	< 4	< 6	< 4	< 4	< 6	< 6	< 7
Zn^{65}	<12	<10	<11	<11	<11	<11	<12	<12	<11	<11	<12	<10	<12
Zr^{95}	<12	<11	<10	<10	<13	<12	<10	< 9	<12	<13	< 9	<10	<12
Nb^{95}	< 8	< 8	< 6	< 5	<10	< 8	< 5	< 6	<10	<10	< 5	< 5	< 8
Ru^{103}	<10	< 9	< 9	< 9	<11	< 9	< 7	< 7	<11	<11	< 7	< 7	< 9
Ru^{106}	<61	<60	<57	<58	<58	<61	<54	<58	<59	<60	<56	<57	<59
I^{131}	<45	<34	< 8	< 8	<120	<44	< 8	< 8	<99	<87	< 9	< 8	<6
Cs^{134}	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Cs^{137}	< 7	< 6	< 6	< 7	< 6	< 6	< 6	< 7	< 6	< 6	< 6	< 6	< 6
$BaLa^{140}$	<14	<12	< 5	< 5	<28	<15	< 5	< 5	<29	<24	< 5	< 5	<14
Ce^{141}	<23	<20	<14	<14	<28	<22	<14	<15	< 7	< 6	<14	<14	<22
Ce^{144}	<65	<62	<61	<61	<63	<63	<61	<61	<63	<64	<61	<58	<61
Ra^{226}	<14	<14	23±8	<14	<14	<14	<14	<14	<14	<14	<14	<14	<14

All values given as < are less than LLD

Table VIII

FALLOUT
Results in $pCi/M^2/day$

	Sta. #3	Sta. #5	Sta. #8	Sta. #10	Sta. #12
January	14.1±0.7		14.1±0.6	15.3±0.6	19.7±0.9
February	63.3±3.2	60.3±3.0	62.8±3.2	59.9±3.0	38.1±2.5
March	30.3±1.3	25.6±1.1	26.7±1.3	29.0±1.2	15.7±0.8
April	140±4	41.9±1.6	61.2±2.9	65.6±2.5	66.5±2.9
May	169±5	117±4	133±5	62.2±2.2	73.3±2.8
June	58.0±2.9	45.9±1.4	36.4±2.3	33.3±2.2	68.6±3.1
July	19.2±1.3	28.5±1.6	10.1±1.1	11.3±1.1	13.2±1.1
August	27.1±2.9	29.5±3.1	30.5±3.0	27.3±2.6	28.7±2.7
September	20.2±3.4	11.2±3.0	14.3±3.2	18.3±3.2	25.5±3.5
October	14.8±2.6	19.1±2.8	4.44±2.32	7.54±2.4	36.7±3.3
November	16.4±2.4	9.37±1.09	4.45±0.82	4.30±0.78	7.48±0.92
December	5.05±1.24	4.52±0.89	4.38±1.03	5.70±1.25	3.01±1.46
Maximum	169±5	117±4	133±5	65.6±2.5	73.3±2.8
Average	48.1	32.7	28.8	28.3	33.0
Minimum	5.05±1.24	4.52±0.89	4.38±1.03	4.30±0.78	3.01±1.46

External Penetrating Radiation
Thermoluminescent Dosimetry
1981

Badge #	Location	1st Quarter Total Dose (mrem)	1st Quarter mrem/wk	2nd Quarter Total Dose (mrem)	2nd Quarter mrem/wk
2	#2 - #7 plus #13 are	17.8	1.19±0.09	17.2	1.16±0.08
3	on-site near the line	15.9	1.06±0.08	18.3	1.23±0.09
4	of highest annual	16.2	1.08±0.08	17.2	1.16±0.08
5	average ground level	19.2	1.28±0.09	19.8	1.33±0.10
6	concentration.	12.8	0.85±0.06	14.6	0.98±0.07
7		16.4	1.10±0.08	17.9	1.20±0.09
8	#8 - #12 are offsite at	19.0	1.26±0.09	14.4	0.97±0.07
9	a distance of 8 to 15	17.3	1.15±0.08	13.9	0.94±0.07
10	miles.	20.4	1.36±0.10	15.0	1.01±0.07
11		16.5	1.10±0.08	16.4	1.10±0.08
12		19.6	1.30±0.09	13.4	0.90±0.06
13		20.3	1.36±0.10	14.7	0.99±0.07
14	#14 - #16 are located	15.2	1.01±0.07	15.6	1.05±0.08
15	along a line 3000' west	17.7	1.18±0.08	15.6	1.05±0.08
16	of the plant.	15.8	1.06±0.08	16.5	1.11±0.08
17	#17 - #21 are located	15.3	1.02±0.07	13.8	0.93±0.07
18	along Lake Road.	19.0	1.27±0.09	14.7	0.99±0.07
19		18.2	1.22±0.09	16.2	1.09±0.08
20		17.7	1.18±0.08	14.6	0.98±0.07
21		18.4	1.23±0.09	19.5	1.31±0.09
22	#22 - #24 are located	18.7	1.25±0.09	17.7	1.19±0.09
23	along the east site	15.9	1.06±0.08	19.9	1.34±0.10
24	boundary line.	16.7	1.11±0.08	18.4	1.24±0.09

(a) TLD Missing

External Penetrating Radiation
Thermoluminescent Dosimetry
1981

Badge #	Location	1st Quarter		2nd Quarter	
		Total Dose (mrem)	mrem/wk	Total Dose (mrem)	mrem/wk
25	#25 - 30 are offsite	15.9	1.05±0.08	12.9	0.87±0.06
26	at a distance of 8	13.3	0.88±0.06	12.7	0.85±0.06
27	to 15 miles	14.4	0.95±0.07	12.4	0.84±0.06
28		18.1	1.20±0.09	16.7	1.12±0.08
29		16.4	1.08±0.08	13.3	0.90±0.06
30		12.9	0.85±0.06	11.3	0.76±0.05
31	#31 through #40 are	17.1	1.13±0.08	14.8	1.00±0.07
32	located in an arc at a	17.3	1.14±0.08	13.9	0.93±0.07
33	distance of 4-5 miles	14.0	0.92±0.07	14.2	0.96±0.07
34		17.4	1.15±0.08	14.6	0.98±0.07
35		16.5	1.09±0.08	16.2	1.09±0.08
36		14.9	0.98±0.07	14.6	0.98±0.07
37		13.3	0.88±0.06	14.0	1.01±0.07
38		13.5	0.89±0.06	12.7	0.85±0.06
39		a		14.3	0.96±0.07
40		12.0	0.79±0.06	12.7	0.85±0.06

(a) TLD Missing

External Penetrating Radiation
Thermoluminescent Dosimetry
1981

Badge #	Location	3rd Quarter Total Dose (mrem)	3rd Quarter mrem/wk	4th Quarter Total Dose (mrem)	4th Quarter mrem/wk
2	#2 - #7 plus #13 are	16.2	1.14±0.08	18.2	1.28±0.09
3	on-site near the line	15.5	1.10±0.08	22.5	1.59±0.11
4	of highest annual	15.3	1.08±0.08	14.9	1.05±0.08
5	average ground level	18.5	1.31±0.09	17.9	1.27±0.09
6	concentration.	14.6	1.03±0.07	12.7	0.90±0.06
7		16.1	1.14±0.08	16.7	1.18±0.08
8	#8 - #12 are offsite at	17.1	1.21±0.09	16.6	1.17±0.08
9	a distance of 8 to 15	16.7	1.18±0.08	15.5	1.10±0.08
10	miles.	18.4	1.30±0.09	19.2	1.35±0.10
11		(b)		14.7	1.04±0.07
12		16.6	1.18±0.08	12.9	0.91±0.07
13		18.0	1.27±0.09	16.7	1.18±0.09
14	#14 - #16 are located	15.4	1.09±0.09	(a)	
15	along a line 3000' west	17.9	1.27±0.09	16.9	1.20±0.09
16	of the plant.	(a)		18.8	1.33±0.10
17	#17 - #21 are located	15.6	1.10±0.08	15.6	1.10±0.08
18	along Lake Road.	18.5	1.30±0.09	16.7	1.18±0.08
19		18.5	1.30±0.09	16.8	1.18±0.08
20		19.3	1.37±0.10	20.0	1.41±0.10
21		18.8	1.33±0.10	19.1	1.35±0.10
22	#22 - #24 are located	18.1	1.28±0.09	17.0	1.20±0.09
23	along the east site	17.8	1.26±0.09	14.3	1.01±0.07
24	boundary line.	16.1	1.14±0.08	16.3	1.15±0.08

(a) TLD Missing
(b) Wet chips, no response

External Penetrating Radiation
Thermoluminescent Dosimetry
1981

Badge #	Location	3rd Quarter Total Dose (mrem)	3rd Quarter mrem/wk	4th Quarter Total Dose (mrem)	4th Quarter mrem/wk
25	#25 - 30 are offsite	12.6	0.88±0.06	15.7	1.11±0.08
26	at a distance of 8	11.1	0.78±0.06	13.6	0.96±0.07
27	to 15 miles	15.3	1.07±0.08	21.5	1.52±0.11
28		17.8	1.25±0.09	13.3	0.91±0.07
29		16.0	1.12±0.08	(a)	
30		12.9	0.90±0.07	14.4	1.02±0.07
31	#31 through #40 are	(a)		21.5	1.52±0.11
32	located in an arc at a	(a)		18.2	1.29±0.09
33	distance of 4-5 miles	16.1	1.13±0.08	14.3	1.01±0.07
34		19.2	1.34±0.10	17.9	1.27±0.09
35		18.3	1.28±0.09	15.2	1.07±0.08
36		16.7	1.17±0.08	16.5	1.17±0.08
37		16.5	1.15±0.08	16.1	1.14±0.08
38		16.0	1.12±0.08	15.5	1.09±0.08
39		16.8	1.18±0.08	14.9	1.05±0.08
40		15.8	1.11±0.08	13.2	0.94±0.07

(a) TLD Missing
(b) Wet chips, no response

Table X

1981 Milk Results for I-131
Results in pCi/liter

Date	Eaton	Gerber	Molino
01/27/81		<0.05	
02/24/81	<0.05		
03/24/81			<0.05
04/08/81		<0.05	
05/27/81	0.166±0.040		
06/18/81			<0.05
07/21/81		0.245±0.081	
08/13/81	0.140±0.046		
09/15/81			<0.05
10/27/81		<0.05	
11/17/81	0.139±0.047		
12/10/81			<0.05

Maximum	0.245
Average	<0.09
Minimum	< .05

Table XIA
1981 Lake Ontario Samples
All Values pCi/kgm Wet

	MARCH, 1981				JUNE, 1981		
	Chinook Salmon	Lake Trout	Rainbow Trout	White Perch	Brown Trout	Walleye Pike	White Bass
K^{40}	3430±330	3490±220	4210±370	3280±240	3060±160	2890±190	3270±270
Cr^{51}	< 71	< 42	< 87	< 48	< 40	< 42	< 47
Mn^{54}	< 26	< 14	< 28	< 17	< 4	< 10	< 5
Fe^{59}	< 59	< 31	< 64	< 37	< 9	< 26	< 10
Co^{58}	< 27	< 14	< 29	< 17	< 4	< 15	< 5
Co^{60}	< 29	< 16	< 31	< 18	< 5	< 35	< 6
Zn^{65}	< 55	< 30	< 59	< 35	< 8	< 18	< 6
Zr^{95}	< 62	< 33	< 67	< 39	< 9	< 35	< 11
Nb^{95}	< 32	< 14	< 30	< 17	< 4	< 22	< 5
Ru^{103}	< 54	< 30	< 42	< 20	< 5	< 23	< 6
Ru^{106}	<250	<135	<270	<160	< 73	<100	< 46
I^{131}	< 15	< 7	< 17	< 12	< 18	< 35	< 16
Cs^{134}	< 29	< 16	< 31	< 19	< 4	< 8	< 5
Cs^{137}	150±25	99±14	130±25	98±16	63±8	< 11	60±15
$BaLa^{140}$	< 34	< 17	< 38	< 21	< 4	<175	< 5
Ce^{141}	< 94	< 89	<120	< 71	< 7	< 50	< 11
Ce^{144}	<235	<134	<150	<110	< 30	<160	< 36
Ra^{226}	< 58	< 46	< 61	< 51	< 10	< 13	< 12

All values given as < are less than LLD

Table XIA
1980 Lake Ontario Samples
All Values pCi/kgm Wet

	SEPTEMBER, 1981			DECEMBER, 1981			
	Smallmouth Bass	White Perch	* Fish Composite	Brown Trout	Lake Trout	Walleye Pike	Lake Bottom
K^{40}	3050±20	2620±10	2680±10	3480±200	2780±150	3450±250	5870±900
Cr^{51}	< 53	<150	<165	<137	<148	<200	<500
Mn^{54}	< 9	< 9	< 7	< 12	< 10	< 16	< 50
Fe^{59}	< 15	< 19	< 21	< 22	< 22	< 30	< 16
Co^{58}	< 9	< 8	< 9	< 12	< 11	< 16	< 26
Co^{60}	< 7	< 7	< 13	22±3	19±2	38±6	137±11
Zn^{65}	< 21	< 19	< 19	< 26	< 22	< 35	< 11
Zr^{95}	< 14	< 16	< 18	< 21	< 19	< 30	< 54
Nb^{95}	< 8	< 12	< 12	< 12	< 12	< 17	< 47
Ru^{103}	< 7	< 10	< 12	< 14	< 13	< 20	< 20
Ru^{106}	< 57	< 68	< 52	<120	<105	<166	< 45
I^{131}	< 5	< 91	<140	< 19	< 27	< 25	——
Cs^{134}	< 5	< 13	< 7	< 12	< 11	< 18	< 37
Cs^{137}	54±3	< 30	< 71	53±4	72±3	< 26	160±14
$BaLa^{140}$	< 4	< 20	< 26	< 11	< 12	< 13	——
Ce^{141}	< 15	< 20	< 21	< 29	< 29	< 40	——
Ce^{144}	< 20	< 59	< 59	<117	<104	<165	< 54
Ra^{226}	< 12	< 12	< 12	< 12	< 12	< 13	140±5

All values given as < are less than LLD / * Fish composite includes: Rainbow Trout, Rock Bass, Yellow Perch

Table XIB

1981 VEGETATION SAMPLES
All Values pCi/kgm Wet

	Sour Cherries	Lettuce	Squash	Corn	Grapes	Apples
K^{40}	1040±60	2690±20	1880±120	1810±110	1340±20	810±10
Cr^{51}	<58	<77	<117	<85	<87	<74
Mn^{54}	< 6	< 7	<10	< 7	< 8	< 6
Fe^{59}	<13	<16	<17	<15	<14	<11
Co^{58}	< 5	< 9	<11	< 7	< 7	< 6
Co^{60}	< 6	< 9	<25	<14	<14	<12
Zn^{65}	<12	<20	<22	<16	<16	<12
Zr^{95}	<13	<21	<18	<13	<13	<11
Nb^{95}	< 6	<15	<10	< 7	< 8	< 6
Ru^{103}	< 7	< 9	<12	< 8	< 9	< 8
Ru^{106}	<55	<90	<96	<73	<75	<61
I^{131}	< 9	< 5	<14	<10	<11	< 9
Cs^{134}	< 6	< 4	<10	< 8	< 8	< 7
Cs^{137}	< 6	<10	<13	< 8	<10	<13
$BaLa^{140}$	< 6	< 8	< 9	< 6	< 6	< 6
Ce^{141}	<10	< 5	<25	<17	<18	<16
Ce^{144}	<39	<100	<102	<76	<78	<68
Ra^{226}	<15	<49	<36	<41	<41	<21

All values given as < are less than LLD

Table XII

LOWER LIMIT OF DETECTION (LLD)
Before Correction For Decay

	Air Filters pCi/M^3 (minimum Sple 3500 M^3/Qt.	Water pCi/liter (Sample of 3.5 liters)	Milk pCi/liter (Sample of 3.5 liters)	Fish pCi/kgm (minimum Sple 2.0 kgms)	Vegetation(a) pCi/kgm (Sample of 3.0 kgms.)
Be^7	0.014	52		91	61
K^{40}	0.027	81	81	137	91
Cr^{51}	0.013	52		91	61
Mn^{54}	0.002	5		9	6
Fe^{59}	0.004	12		20	13
Co^{58}	0.004	5		9	6
Co^{60}	0.002	6	6	11	7
Zn^{65}	0.004	11		19	13
Zr^{95}	0.004	12		22	15
Nb^{95}	0.002	5		9	6
Ru^{103}	0.002	6		11	7
Ru^{106}	0.015	53		93	62
I^{131}	0.03(b)	7	7(Gamma Scan) 0.05(Beta)	12	8
Cs^{134}	0.002	6		10	7
Cs^{137}	0.002	7	7	11	8
$BaLa^{140}$	0.002	5	5	9	6
Ce^{141}	0.002	9		16	11
Ce^{144}	0.007	41		72	48
Ra^{226}	0.003	14		25	17
Beta	0.002	1.2			

(a) Leaf vegetable or pasture grass samples would be 50% higher due to sample sizes of 2.0 kgms
(b) Charcoal Cartridge

Table XII (Continued)

TABLE NOTATION

The LLD is the smallest concentration of radioactive material in a sample that will yield a net count (above system background) that will be detected with 95% probability with only 5% probability of falsely concluding that a blank observation represents a "real" signal.

For a particular measurement system (which may include radiochemical separation):

$$LLD = \frac{4.66\ Sb}{E \circ V \circ 2.22 \circ Y \circ \exp[(-\Delta t)\lambda]}$$

where

LLD is the lower limit of detection as defined above (as pCi per unit mass or volume)

Sb is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute).

E is the counting efficiency (as counts per disintegration)

V is the sample size (in units of mass or volume)

2.22 is the number of disintegrations per minute per picocurie

Y is the fractional radiochemical yield (when applicable)

λ is the radioactive decay constant for the particular radionuclide

Δt is the elapsed time between sample collection and counting

The value of Sb used in the calculation of the LLD for a particular measurement system shall be based on the actual observed variance of the background counting rate or of the counting rate of the blank samples (as appropriate) rather than on an unverified theoretically predicted variance. In calculating the LLD for a radionuclide determined by gamma-ray spectrometry, the background shall include the typical contributions of other radionuclides normally present in the samples (e.g., potassium-40 in milk samples).

Table XIII

EPA Interlaboratory Comparison Program - 1981

Description	Date	Sample Analysis	Experimental Data			EPA Value ± 10
Alpha/Beta in Water (Results in pCi/l)	03/21/81	Alpha	No Sample			25±6
		Beta	Received			25±5
	07/19/81	Alpha	15	14	13	22±5
		Beta	17	16	15	15±5
	11/20/81	Alpha	11	9	12	21±5
		Beta	29	27	25	23±5
Gamma in Water (Results in pCi/l)	02/06/81	Cr-51	<52	<52	<52	0
		Co-60	24	23	23	25±5
		Zn-65	43	44	41	85±5
		Ru-106	< 6	< 6	< 6	0
		Cs-134	40	41	36	36±5
		Cs-137	< 7	< 7	< 7	4±5
	06/05/81	Cr-51	<52	<52	<52	0
		Co-60	20	22	26	17±5
		Zn-65	<11	<11	<11	0
		Ru-106	<53	<53	<53	15±5
		Cs-134	23	23	23	21±5
		Cs-137	28	28	23	31±5
	10/02/81	Cr-51	65	63	62	34±5
		Co-60	21	23	25	22±5
		Zn-65	27	22	25	24±5
		Ru-106	<64	<64	<64	0
		Cs-134	25	22	23	21±5
		Cs-137	37	34	36	32±5
Iodine-131 in Water (Results in pCi/l)	04/06/81	I-131	8	9	7	30±5
	08/31/81	I-131	74	68	71	73±7
Air Filters (Results in pCi/Sple)	12/19/81	Alpha	22	22	23	21±5
		Beta	27	29	28	19±5
		Cs-137	28	31	30	19±5
	03/27/81	Alpha	31	29	30	30±5
		Beta	71	63	69	50±5
		Cs-137	<12	<12	<12	14±5
	06/26/81	Alpha	32	32	30	28±5
		Beta	76	76	75	54±5
		Cs-137	27	25	29	16±5
	09-26	Alpha	18	20	22	25±5
		Beta	67	70	73	52±5
		Cs-137	27	28	30	19±5

All Values given as < are less than the LLD

EPA Interlaboratory Comparison Program - 1981

Sample Description	Date	Analysis	Experimental Data			EPA Value ± 1σ
Milk (Results in pCi/l)	01/30/81	I-131	25	26	26	26±5
		Cs-137	47	47	47	44±5
		Ba-140	<5	<5	<5	0
		K-40	1330	1270	1280	1550±135
	05/15/81	I-131	< 8	< 8	< 8	26±5
		Cs-137	24	28	27	22±5
		Ba-140	< 7	< 7	< 7	0
		K-40	1660	1660	1740	1560±90
	07/24/81	I-131	<14	<14	<14	0
		Cs-137	32	35	38	31±5
		Ba-140	< 8	< 8	< 8	0
		K-40	1570	1500	1630	1600±80
	10/23/81	I-131	51	46	39	52±6
		Cs-137	30	29	31	25±5
		Ba-140	< 9	< 9	< 9	0
		K-40	1450	1580	1490	1530±80

All values are given as < are less than the LLD

Table IIID

13 Week Composite
Gamma Isotopic Analysis
Results in pCi/M^3

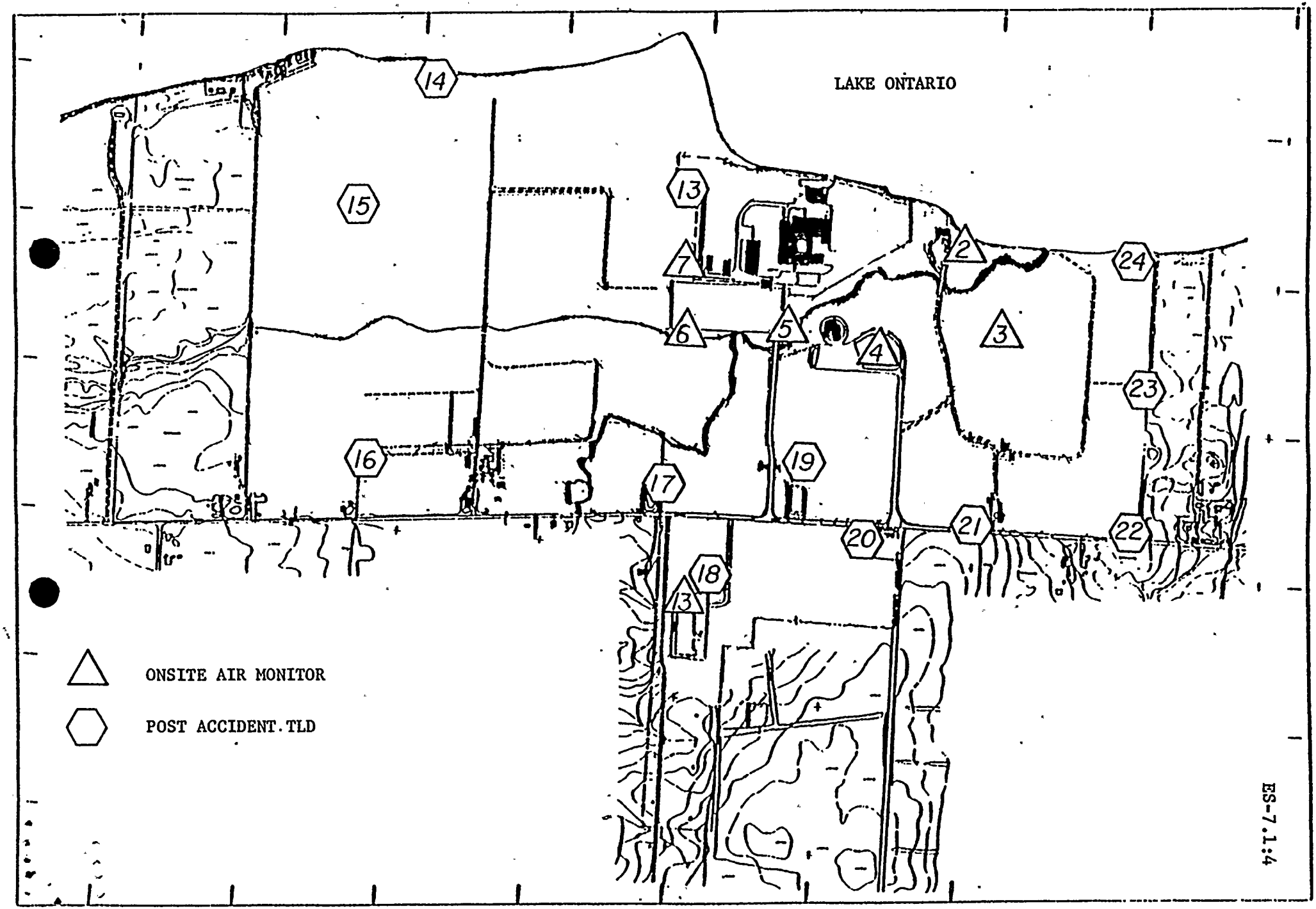
Fourth Quarter	Sta 2	Sta 3	Sta 4	Sta 5	Sta 6	Sta 7	Sta 8	Sta 9	Sta 10	Sta 11	Sta 12	Sta 13
Be^7	.063±.004	.069±.004	.075±.005	.059±.004	.069±.004	.074±.004	.063±.004	.073±.004	.068±.007	.070±.005	.077±.005	.069±.005
K^{40}	<.005	<.006	<.009	<.006	<.006	<.007	<.006	<.005	<.009	<.007	<.006	<.006
Cr^{51}	<.025	<.028	<.041	<.028	<.029	<.033	<.032	<.029	<.059	<.040	<.043	<.039
Mn^{54}	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.002	<.001	<.001	<.001
Fe^{59}	<.003	<.003	<.005	<.003	<.003	<.004	<.004	<.003	<.006	<.005	<.005	<.004
Co^{58}	<.001	<.001	<.002	<.001	<.001	<.001	<.001	<.001	<.002	<.002	<.002	<.002
Co^{60}	<.001	<.001	<.002	<.001	<.001	<.001	<.002	<.001	<.001	<.001	<.001	<.001
Zn^{65}	<.002	<.002	<.003	<.002	<.002	<.002	<.002	<.002	<.003	<.003	<.002	<.002
Zr^{95}	<.002	<.003	<.004	<.002	<.003	<.003	<.003	<.002	<.004	<.003	<.003	<.003
Nb^{95}	<.002	<.002	<.003	<.002	<.002	<.003	<.003	<.002	<.004	<.003	<.003	<.003
Ru^{103}	<.002	<.002	<.003	<.002	<.002	<.002	<.002	<.002	<.004	<.003	<.003	<.003
Ru^{106}	<.008	< 008	<.012	<.009	<.009	<.010	<.009	<.008	<.014	<.011	<.011	<.010
Cs^{134}	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001
Cs^{137}	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.002	<.001	<.001	<.001
$BaLa^{140}$	<.012	<.014	<.020	<.014	<.014	<.017	<.019	<.014	<.036	<.023	<.028	<.025
Ce^{141}	<.003	<.004	<.006	<.004	<.004	<.004	<.004	<.003	<.007	<.005	<.006	<.005
Ce^{144}	<.005	<.006	<.008	<.005	<.005	<.006	<.006	<.005	<.010	<.007	<.007	<.006

All values given as < are less than LLD

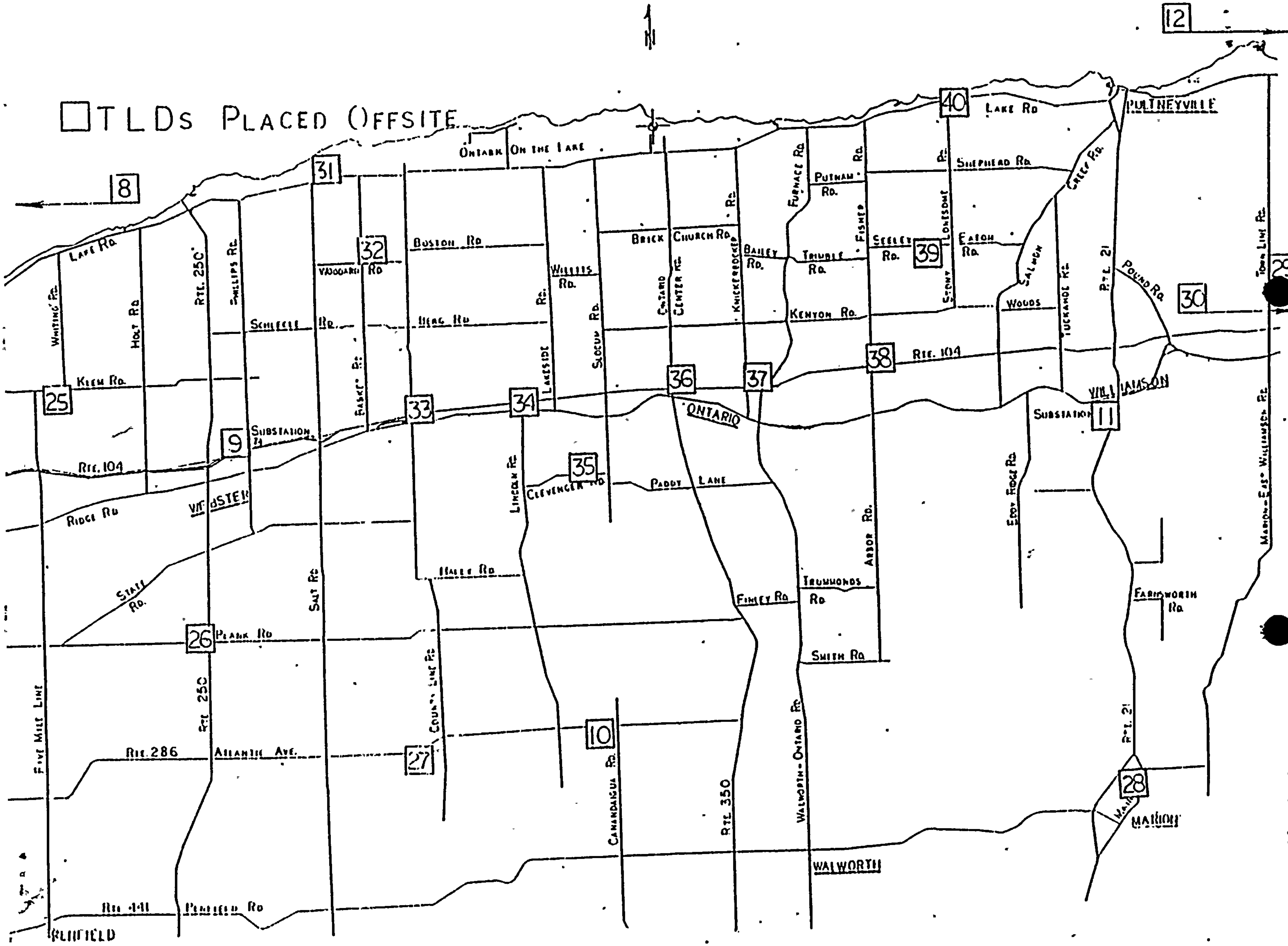
Table IV
Charcoal Cartridges for Iodine
Results in pCi/M^3

Week of		Sta. #4	Sta. #7	Sta. #9	Sta. #11
December 31-Jan 8		<0.02	<0.03	<0.05	<0.03
January 8-15		<0.02	<0.03	<0.05	<0.03
January 15-23		<0.02	<0.03	<0.05	<0.03
January 23-30		<0.03	<0.03	<0.05	<0.03
January 30 Feb 6		<0.04	<0.03	<0.05	<0.03
February 6-13		<0.04	<0.03	<0.03	<0.03
February 13-20		<0.04	<0.03	<0.02	<0.03
February 20-27		<0.03	<0.03	<0.02	<0.03
February 27 Mar 6		<0.04	<0.03	<0.02	<0.03
March 6- 13		<0.04	<0.03	<0.02	<0.03
March 13-20		<0.04	<0.03	<0.02	<0.03
March 20-27		<0.04	<0.03	<0.02	<0.03
March 27-Apr 3		<0.04	<0.03	<0.02	<0.03
April 3-10		<0.04	<0.03	<0.02	<0.03
April 10-16	(a)	<0.13	<0.10	<0.09	<0.11
April 16-24	(a)	<0.11	<0.08	<0.07	<0.09
April 24-May 1	(a)	<0.12	<0.09	<0.08	<0.10
May 1- 8	(a)	<0.11	<0.09	<0.08	<0.10
May 8-15	(a)	<0.12	<0.10	<0.08	<0.10
May 15-22	(a)	<0.12	<0.10	<0.08	<0.10
May 22-29	(a)	<0.11	<0.09	<0.07	<0.10
May 29-June 5	(a)	<0.11	<0.09	<0.07	<0.10
June 5-12		<0.04	<0.03	<0.02	<0.03
June 12-19		<0.04	<0.03	<0.02	<0.03
June 19-26		<0.04	<0.03	<0.02	<0.03
June 26- July 2		<0.04	<0.03	<0.03	<0.03
July 2-10		<0.03	<0.03	<0.02	<0.03
July 10-17		<0.04	<0.03	<0.02	<0.03
July 17-24		<0.04	<0.03	<0.02	<0.03
July 24-31		<0.04	<0.03	<0.02	<0.03
July 31-Aug. 7		<0.04	<0.03	<0.02	<0.03
Aug. 7-14		<0.03	<0.03	<0.02	<0.03
Aug. 14-21		<0.04	<0.03	<0.02	<0.03
Aug. 21-28		<0.04	<0.03	<0.02	<0.03
Aug. 28-Sept. 4		<0.04	<0.03	<0.02	<0.03
Sept. 4-11		<0.04	<0.03	<0.02	<0.03
Sept. 11-18		<0.04	<0.03	<0.02	<0.03
Sept. 18-25		<0.04	<0.03	<0.02	<0.03
Sept. 25-Oct. 2		<0.04	<0.03	<0.02	<0.03
Oct. 2-9		<0.04	<0.03	<0.02	<0.03
Oct. 9-16		<0.04	<0.03	<0.02	<0.03
Oct. 16-23		<0.04	<0.03	<0.02	<0.03
Oct. 23-30		<0.03	<0.03	<0.02	<0.03
Oct. 30-Nov. 6		<0.04	<0.03	<0.03	<0.03
Nov. 6-13		<0.04	<0.03	<0.02	<0.05
Nov. 13-19		<0.04	<0.03	<0.03	<0.03
Nov. 19-25		<0.04	<0.03	<0.03	<0.03
Nov. 25-Dec. 2		<0.03	<0.03	<0.02	<0.03
Dec. 2-9		<0.04	<0.03	<0.02	<0.03
Dec. 9-16		<0.04	<0.03	<0.02	<0.03
Dec. 16-23		<0.03	<0.03	<0.02	<0.03
Dec. 23-30		<0.02	<0.03	<0.02	<0.03

All values given as < are less than LLD
(a) Samples counted this week on HP counting room Ge(Li)
(b) Changed to Environmental Ge(Li) detector for counting beginning this week


LAKE ONTARIO
14
15
13
7
2
24
6
5
4
3
23
16
19
17
20
21
22
18
ONSITE AIR MONITOR
POST ACCIDENT.TLD

ES-7.1:4


TLDs PLACED OFFSITE
8
12
31
32
33
34
35
36
37
38
39
40
25
9
26
27
10
28
29
30
11
PULTNEYVILLE
WILLIAMSON
ONTARIO
WEBSTER
WALWORTH
MARION
Lake Rd
Ontario On the Lake
Shepherd Rd
Putnam Rd.
Boston Rd
Brick Church Rd.
Bailey Rd.
Trimble Rd.
Seeley Rd.
Eaton Rd.
Kenyon Rd.
Woods
Pound Rd.
Schlegel Rd.
Hegg Rd
Willits Rd.
Keem Rd.
Rte. 104
Substation
Clevenger Rd
Paddy Lane
Ridge Rd
State Rd.
Plank Rd
Hall Rd
Trumbonds Rd
Finley Rd
Smith Rd
Farnsworth Rd
Rte. 286
Atlantic Ave.
Five Mile Line
Rte. 250
Salt Rd
County Line Rd
Canandaigua Rd.
Rte. 350
Walworth-Ontario Rd.
Rte. 21
Marion-East Williamson Rd.
Town Line Rd.
Arbor Rd.
Eddy Ridge Rd
Tuckahoe Rd.
Stony Lonesome Rd.
Fisher Rd.
Furnace Rd.
Knickerbocker Rd.
Ontario Center Rd.
Slocum Rd.
Lakeside Rd.
Lincoln Rd
Basket Rd.
Phillips Rd.
Rte. 250
Holt Rd
Whiting Rd.
Creek Rd.
Salmon
Main

ES-7.1:5