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SUBJECT: "1998 Radiological Environ Monitoring Program for WNP-2."
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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

P.O. Box 968 • Richland, Washington 99352-0968

May 12, 1999
GO2-99-094

Docket No. 50-397

U.S. Nuclear Regulatory Commission
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Energy Facility Site Evaluation Council
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Olympia, WA 98504-3172

Subject: **SUPPLY SYSTEM NUCLEAR PLANT NO. 2
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM
ANNUAL REPORT FOR 1998**

References: 1. WNP-2 (Operating License No. NPF-21), Technical Specification 5.6.2
2. EFSEC Resolution No. 260, January 13, 1992

Enclosed are three (3) copies of the subject report and separate data volume which are submitted per the referenced requirements.

Respectfully,

D.W. Coleman

D.W. Coleman (Mail Drop PE20)
Manager, Regulatory Affairs

Enclosures

86147

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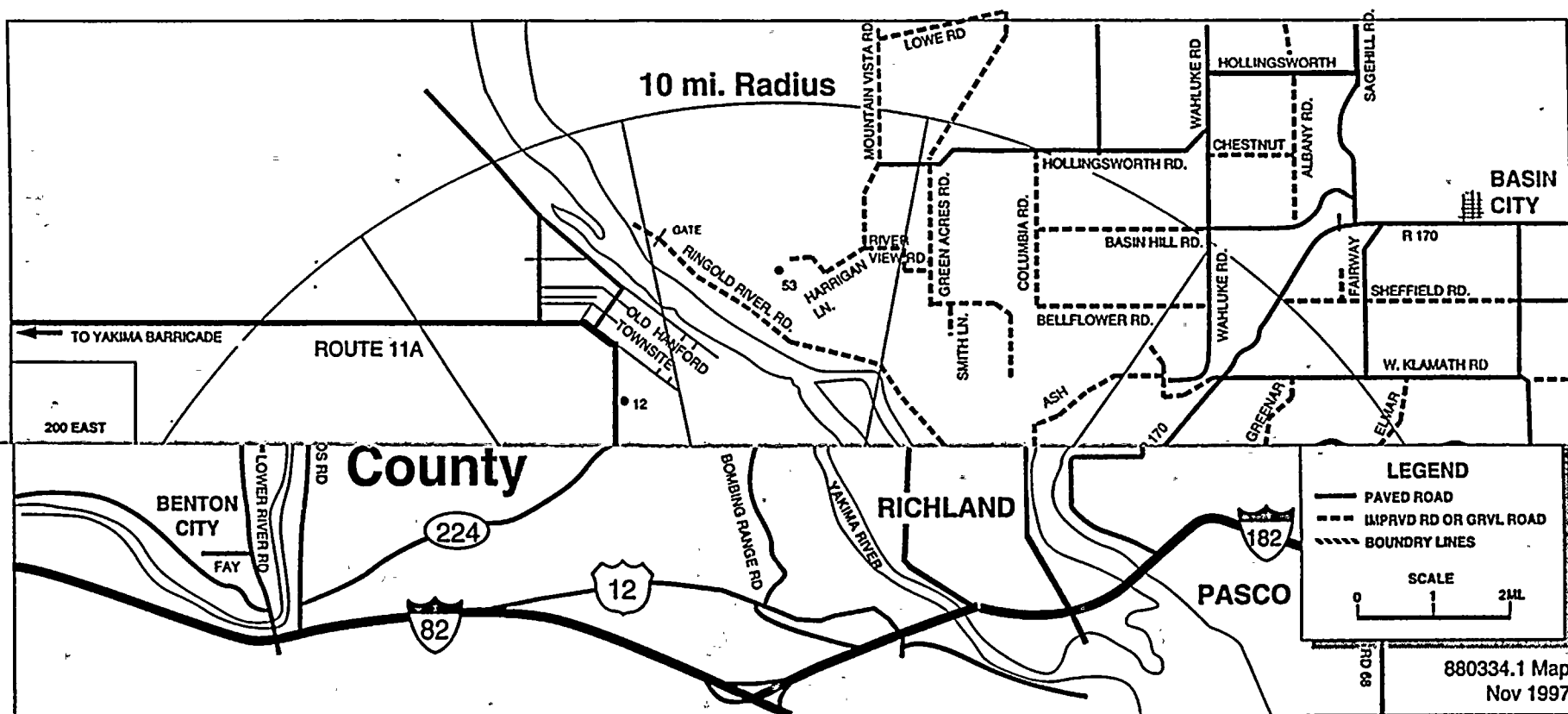


FIGURE 4-1 REMP SAMPLING LOCATIONS WITHIN THE 10-MILE RADIUS

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38 ▲

Lyons Ferry

Lower Monumental Dam

Little Goose Dam

Snake River

Lower Granite Dam

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Clarkston ●

IDAHO

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APERTURE
CARD

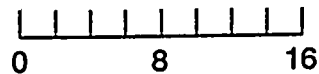
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OREGON



1 inch = 16 miles



▲ Sample Locations

LOCATIONS OUTSIDE THE 10-MILE RADIUS

1998 REMP ANNUAL REPORT

9905190200-02

900286A1
Jan 1999

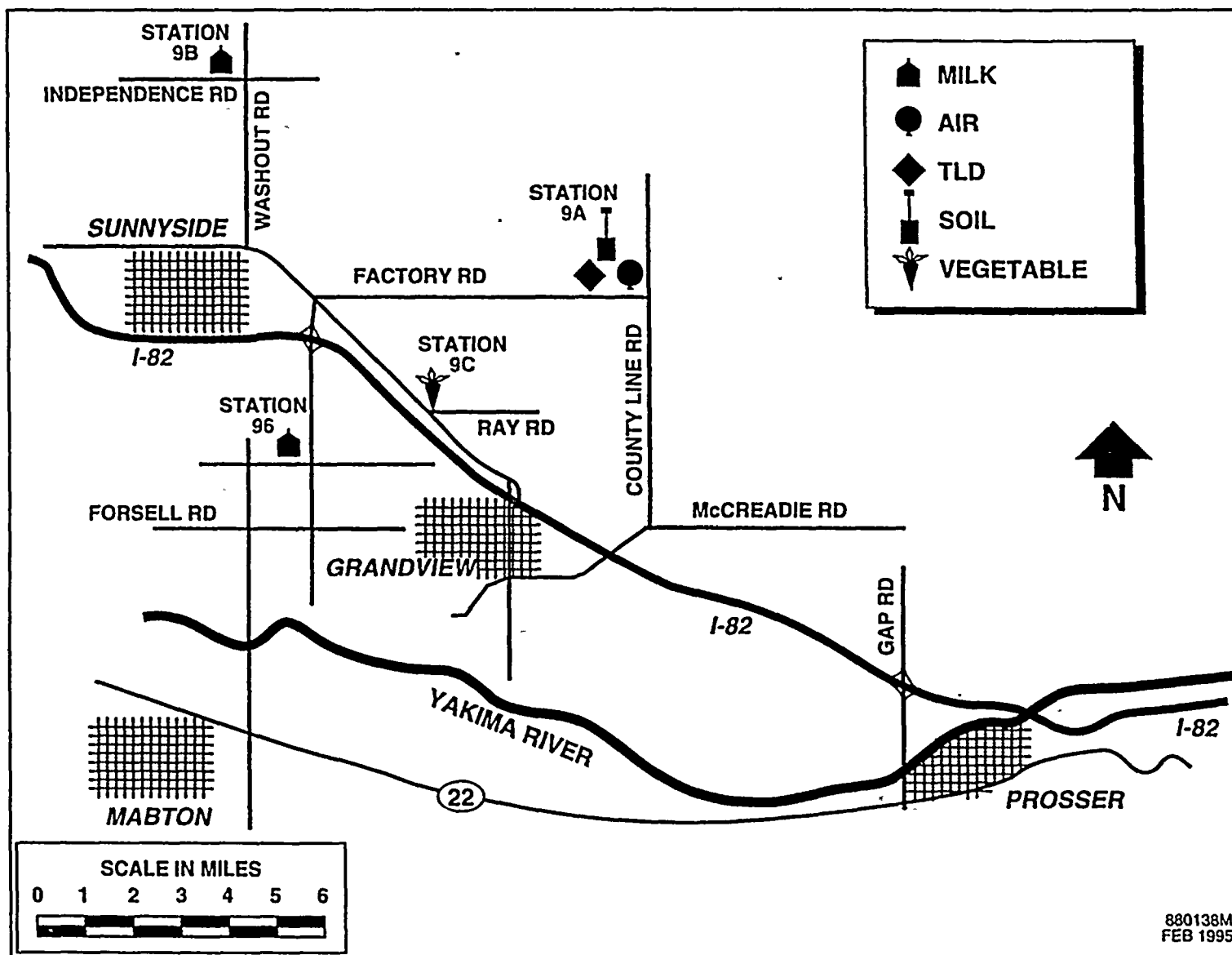


FIGURE 4-3 REMP SAMPLING LOCATIONS SUNNYSIDE/GRANDVIEW AREA

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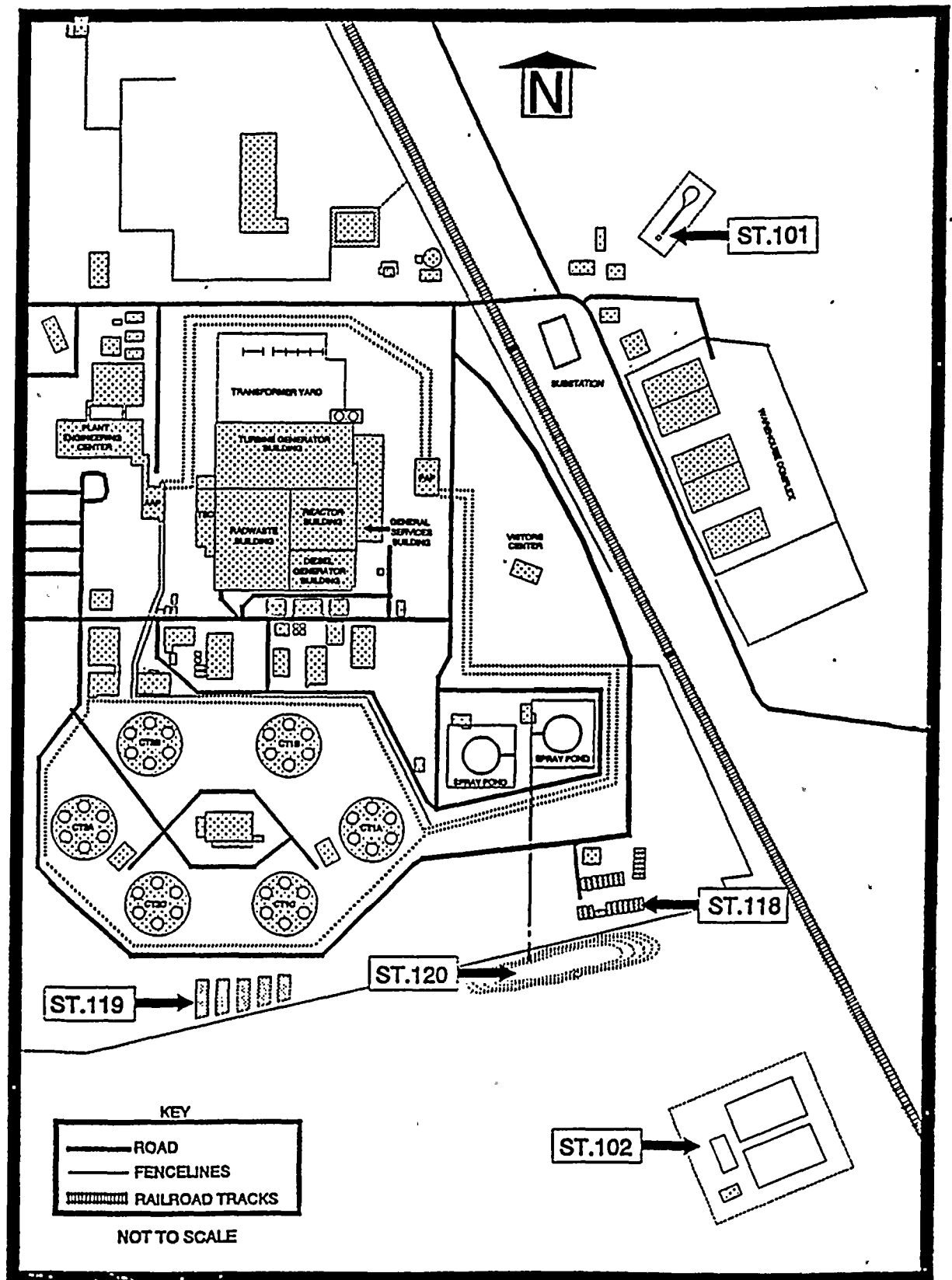


FIGURE 4-4 REMP NEAR PLANT SAMPLING LOCATIONS



5.0 RESULTS AND DISCUSSION

During 1998, the analyses of REMP samples were performed by Teledyne Brown Engineering Environmental Services in Westwood, New Jersey. The thermoluminescent dosimeters were processed by Battelle Northwest in Richland, Washington. Table 5-1 presents the means and ranges of selected 1998 results for each type of sample collected and Table 5-3 provides a summary of detectable results. The means and ranges of the preoperational and the previous operational data are also included in the table for comparison. The data tables of 1998 results comprise a separate volume that is available to interested parties.

The data for the preoperational period and the first six months of 1984 included "less than" (<) designations for results below the actual LLD, the contractual LLD, or the two-sigma error, depending upon the convention employed by the analytical contractor. Consequently, the data averages using "less than" values are biased high. The use of the "less than" values was discontinued in mid-1984. Since then, REMP data have been reported as net (total results minus the detector counting background).

Since the primary focus of the REMP is to determine whether Plant 2 operations had an impact on the environment, the 1998 results are compared in this report to the results during the preoperational period and the results obtained during the previous years of Plant 2 operation. They are also compared to state and federal regulatory limits. Because of the use of "less than" values, rather than net results, during the preoperational period and during the first year of operation, and because of the impact of the 1986 Chernobyl accident on environmental radiation levels, the interpretation of the 1998 measurements relative to previous measurements must bear this in mind.

Some of the parameters considered in the evaluations discussed in this report are the means, ranges and standard deviations or standard errors of the results. Comparative plots and frequency distributions of the data are some of the tools that have been employed in the interpretation of the 1998 REMP data.

The 1998 analytical results for the REMP sampling locations established since the preoperational period are very similar to the results reported for previous years. The 1998 annual and quarterly TLD results were also very much like those observed previously. No significant trends indicating an environmental impact or unexpected change in the environmental concentrations or exposure rates at REMP monitoring stations were observed.

5.1 Direct Radiation

Environmental radiation exposure rates at near plant and remote stations, as determined by thermoluminescent dosimeters (TLDs), remained consistent with data from previous years.

Figure 5-1 presents a plot of the mean 1998 quarterly TLD results for each of the sixteen meteorological sectors at the property boundary of the plant ("S" stations). The chart also includes the high, low and mean result in each sector for 1984 through 1997.

The relationship of the mean 1998 results to the results for the previous operational periods is very similar for each sector. This indicates that there were no significant

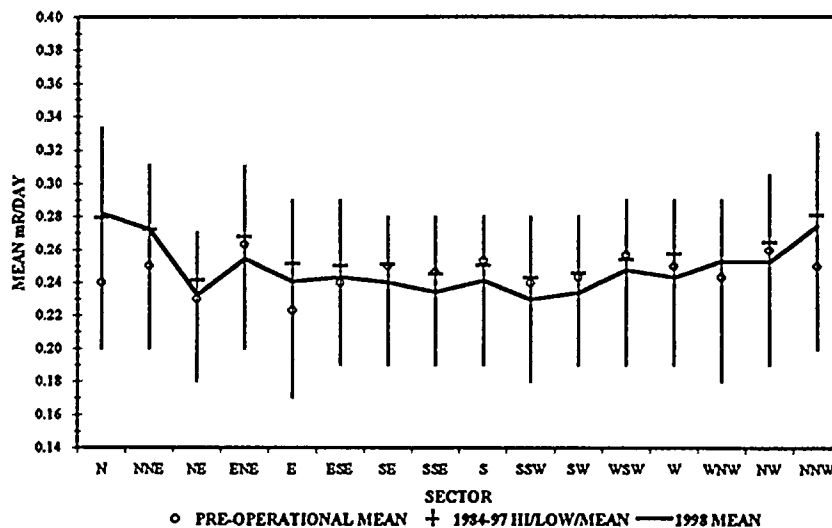


Figure 5-1 Site Boundary Quarterly TLDs 1984-97 Hi/Low/Mean vs. 1998 Mean by Sector

directional effects observed in the 1998 TLD results.

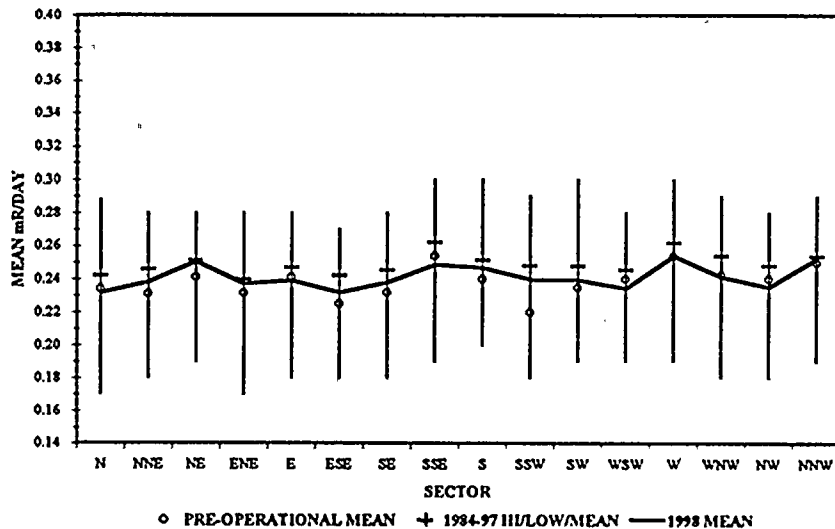


Figure 5-2 Near-Plant Quarterly TLDs - 1984-97 Hi/Low/Mean vs. 1998 Mean by Sector

The higher exposures in the N, NNE, and NNW sectors for the "S" stations is a result of those TLDs being physically closer to the plant than those of the other "S" station TLDs. Compare the data presented in Figure 5-1 with that of Figure 5-2, where the near-plant TLDs are more of an evenly placed distance from the plant.

Summaries of the environmental radiation exposure rates, determined by thermoluminescent dosimeters (TLDs) are presented in Tables 5-4 and 5-5.

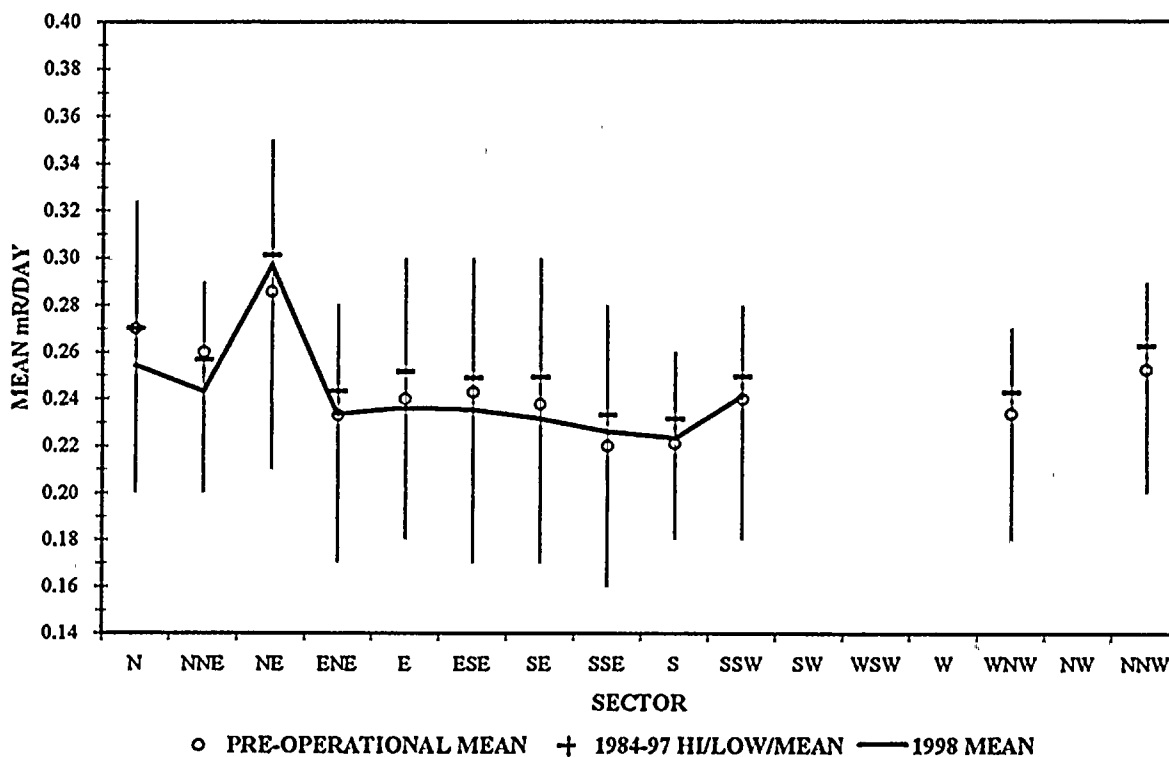


Figure 5-3 Remote Quarterly TLDs 1984-97 Hi/Low/Mean vs. 1998 Mean by Sector

For the remote TLDs, Station 46 in the Wahluke Reserve (NE sector) remained the location with the highest mean exposure rate, as shown in Figure 5-3. Since the preoperational measurement phase, the results for this location have exceeded the results for all other locations. Variations in the soil and underlying rock composition most likely account for localized differences such as shown in the TLD results for Station 46. The quarterly mean of the four quarterly results for Station 46 was 0.30 mR/day, with a range of 0.27 mR/day to 0.31 mR/day.

Frequency distribution plots of the 1998 quarterly TLD results are presented in Figure 5-4. The plots were varied slightly from quarter to quarter, with 0.24 mR/day being the most frequent result, followed by 0.25 mR/day, 0.23 mR/day and 0.26 mR/day. The most frequent result for the period 1984 to 1997 was 0.26 mR/day, followed by 0.25 mR/day, 0.27 mR/day and 0.24 mR/day. The frequency distributions for the previous operational TLD results are shown in Figure 5-5.

A comparison of the 1998 annual and mean quarterly TLD result is presented in Table 5-6. The 1998 annual TLD results are generally 5-10% lower than the mean quarterly results because of signal fade. This difference is not significant, in light of the variability commonly observed in TLD results. In most cases, the annual result is within the uncertainty associated with the quarterly TLD results.

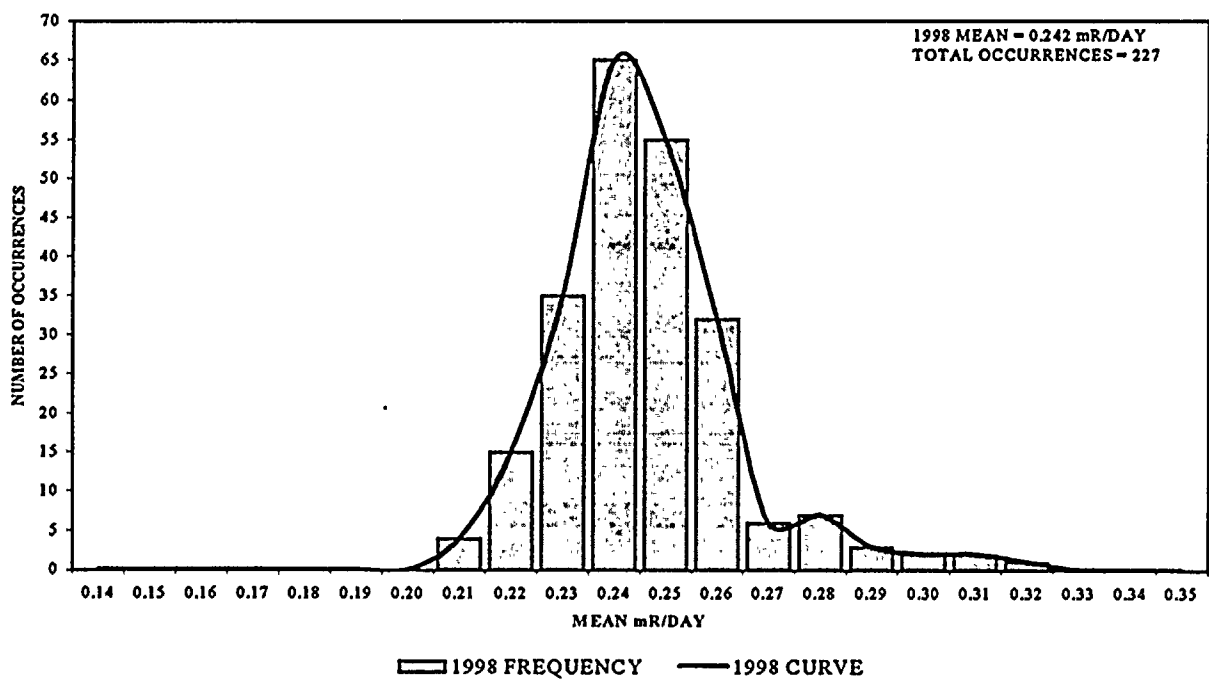


Figure 5-4 Frequency Distribution for 1998 Quarterly TLDs

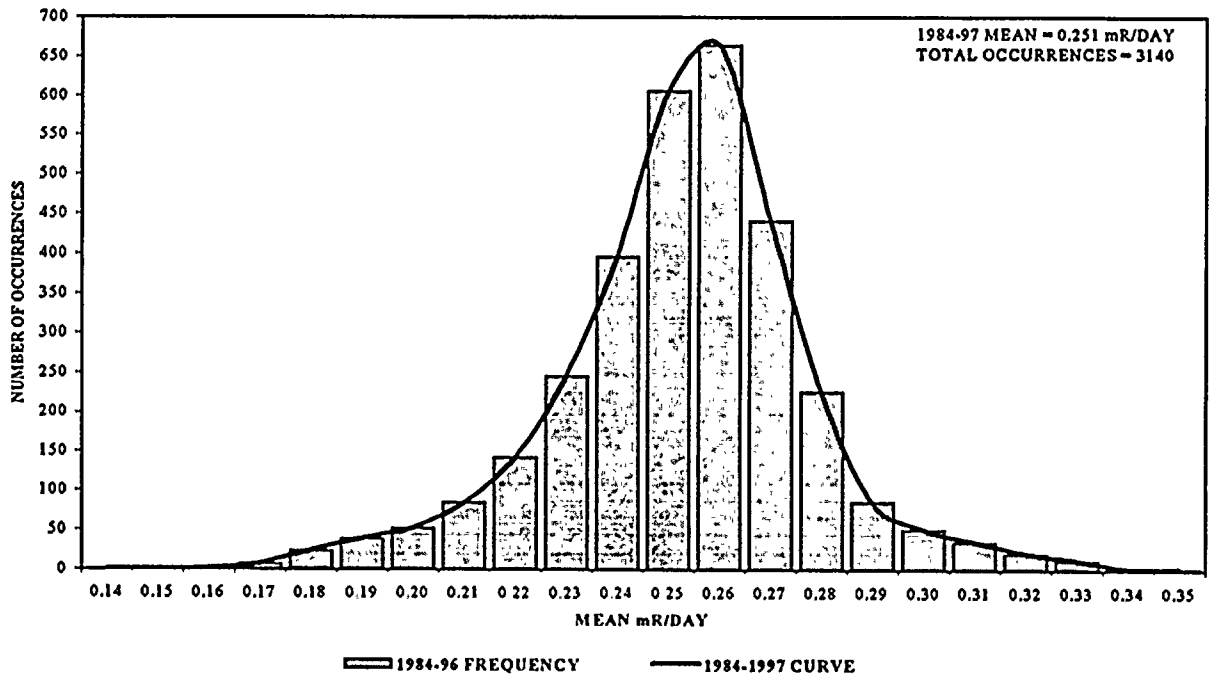


Figure 5-5 Frequency Distribution for 1984-97 Quarterly TLDs

5.2 Airborne Particulate/Iodine

The 1998 mean weekly gross beta on particulate filter results for indicator stations near (within 3 miles) Plant 2 are plotted in Figure 5-6. The gross beta in air results for 1998 were within the ranges observed during the preoperational period and during previous operational periods, as shown in Table 5-1. In Figure 5-7, the similarity between results from near-plant locations and those from remote locations can be seen. The control location (Station 9A) results follow a very similar pattern to the remote and near-plant indicator locations. As observed previously, gross beta levels increased during periods of inversion occurring in the fall and winter months. Gross beta results plotted over a period of several years show a cyclic pattern of fall and winter increases. The increase, which was evident in the results of all the air sampling locations, is due to an increase in radon and radon daughter concentrations during the inversions.

The quarterly gamma analyses of the particulate filter composites indicated only the presence of two naturally-occurring radionuclides, beryllium-7 and potassium-40, at levels above detection limits at indicator locations and the control location. All iodine-131 in air results for 1998 were less than the 0.02 picocuries/cubic meter (pCi/m³) LLD.

No evidence of any impact of plant operations on the environment was apparent in the particulate filter and charcoal cartridge results for 1998.

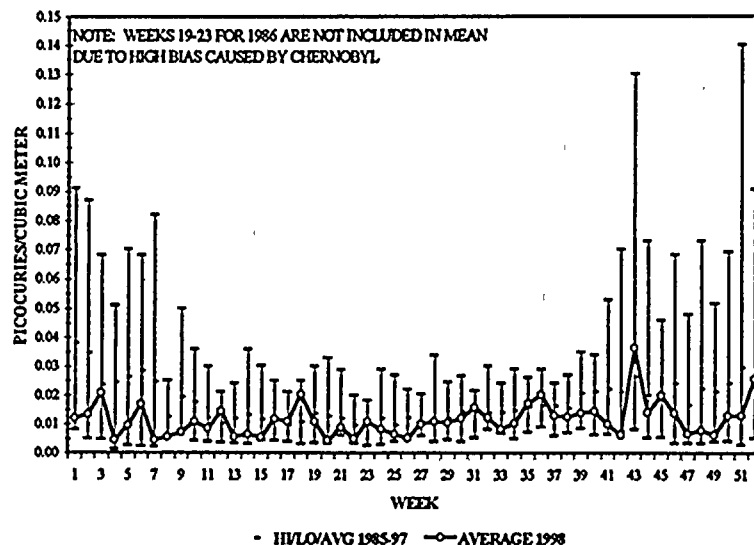


Figure 5-6 1985-97 Weekly Hi/Low/Mean vs. 1998 Weekly Mean Gross Beta in Air - Near Plant Stations

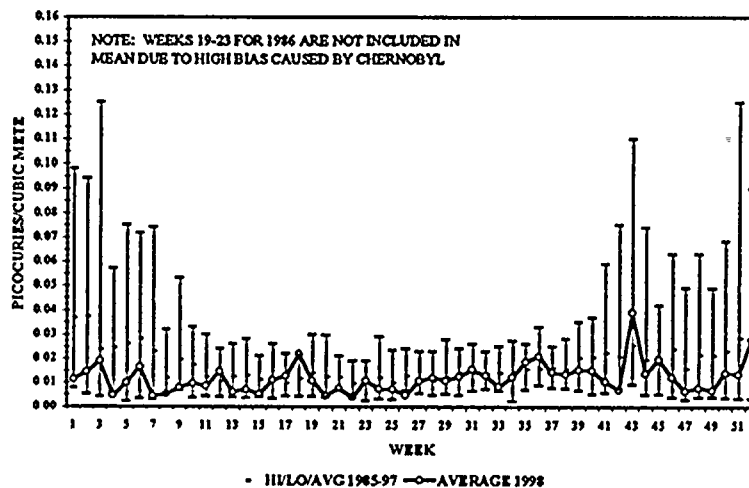


Figure 5-7 1985-97 Weekly Hi/Low/Mean vs. 1998 Weekly Mean Gross Beta in Air - Remote Stations

5.3 Water

All river/drinking water results for gross beta were within the ranges normally observed and less than 8 picocuries/liter (pCi/l), the level at which a strontium analysis is performed to verify compliance with the Washington State drinking water standard for strontium-90*. The 1998 gross beta concentrations in river/drinking water, relative to the state annual average concentration limit⁽¹¹⁾, are presented in Figure 5-8. The mean gross beta results in discharge water for 1998 are presented in Figure 5-9. The 1998 average results compare well to the averages from previous periods.

The gross beta levels in the discharge sample reflect the concentrations of naturally-occurring radionuclides, principally potassium-40, and any radionuclides from upstream sources of past Hanford activities present in the makeup water, in addition to radionuclides from Plant 2 discharges. The discharge sample results are representative of the radioactivity present in plant discharges before any mixing with river water occurs. All results were below the Washington Department of Health's (WDOH) investigation level, which is the point the Supply System would notify WDOH of the result.

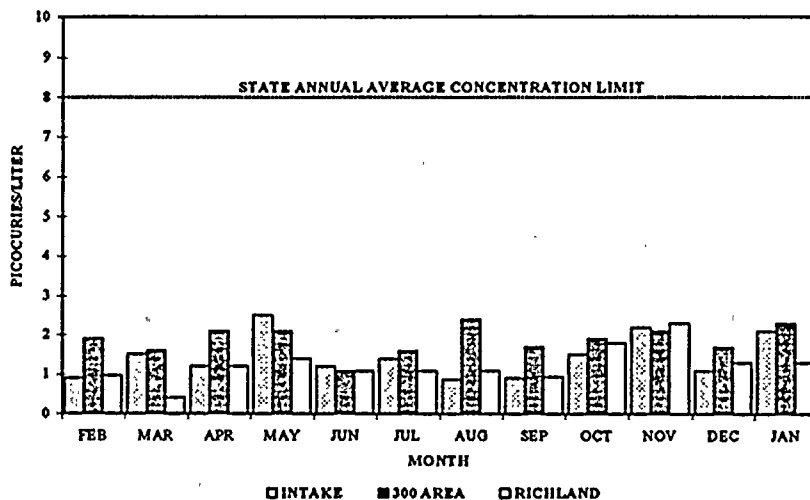


Figure 5-8 Gross Beta in River/Drinking Water-1998

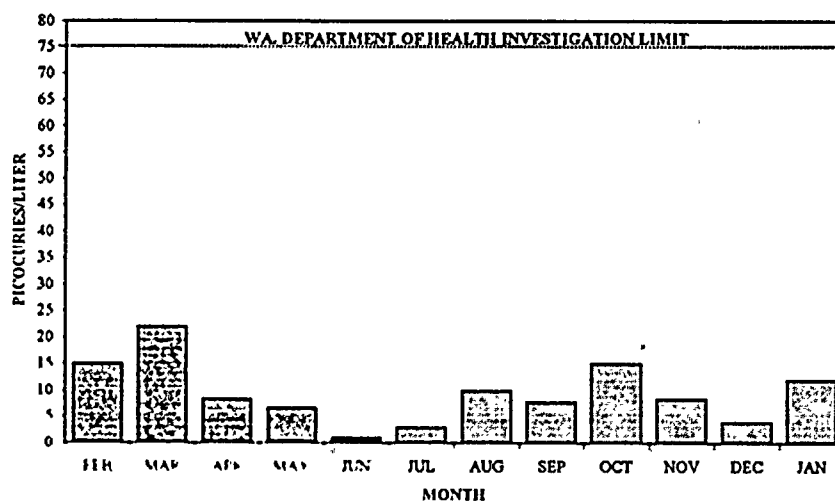


Figure 5-9 Gross Beta in Discharge Water-1998

*Strontium-90 is assumed to account for the gross beta result.

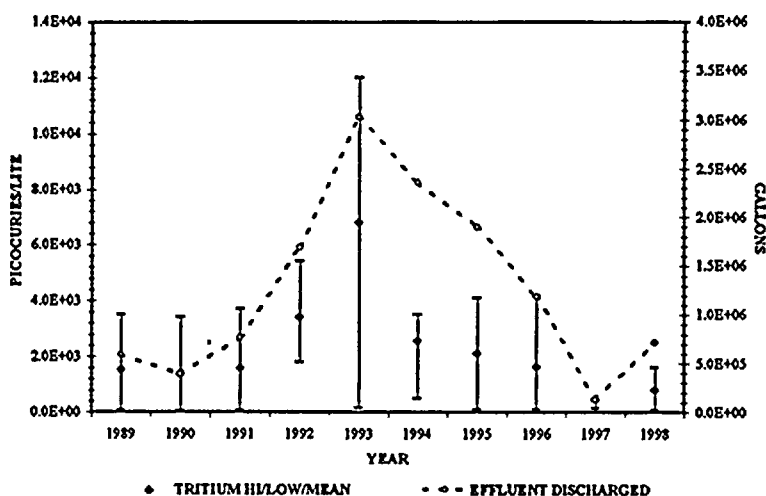


Figure 5-10 Tritium in Discharge Water and Effluent Discharged 1989-98

period. This reduction is due to an overall reduction in the volume of radwaste discharges from a high of over three million gallons in 1993 to a low of 132,000 gallons in 1997. The volume of liquid radwaste discharged in 1998 was 717,000 gallons.

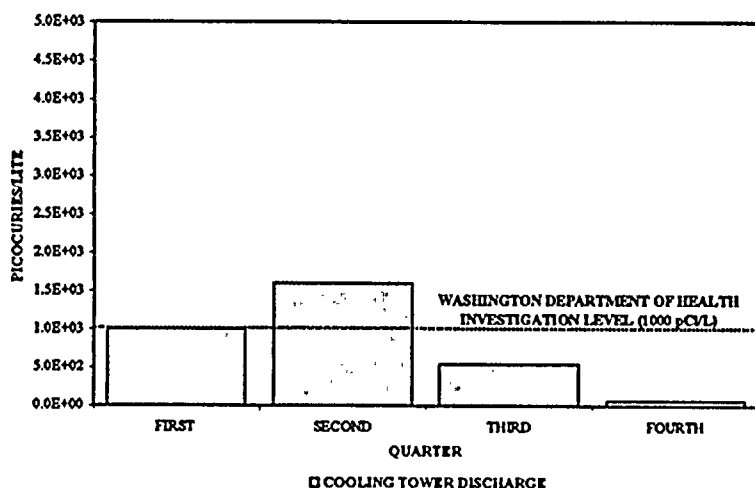


Figure 5-11 Tritium in Discharge Water - 1998

6.2 pCi/l, well below the NRC reporting level of 300 pCi/l.

5.4 Soil

Gamma spectrometry performed on soil samples in 1998 indicated a range of cesium-137 from 23 picocuries/kilogram (pCi/kg) to 166 pCi/kg at the indicator stations and a result of 79 pCi/kg at the control station. As shown in Table 5-1, the cesium-137 levels in the soil samples were well within

The 1998 tritium levels in the river/drinking water and groundwater were comparable with results obtained for prior years. Tritium levels in the discharge water were higher than the levels observed for the river/drinking water samples because of plant releases and because discharge water samples were taken prior to the water reaching the river and becoming diluted. As shown in Figure 5-10, the annual mean tritium concentration for 1998 continued to be lower than the levels observed in the 1989-96

Tritium concentrations in the discharge water for 1998 ranged from 100 to 4200 pCi/l, which is low when compared to the NRC reporting level of 20,000 pCi/l for a quarterly average concentration in drinking water. Other than tritium, there were no detectable nuclides in the river/drinking or ground water samples during 1998. The discharge water had detectable tritium and one occurrence of detectable cobalt-60. The cobalt-60 was measured at

the range observed during preoperational and previous operational sampling. The gamma spectrometry results for the soil samples did not indicate any impact from Plant 2 operations on the environment.

No strontium analysis was required in 1998. Aside from cesium-137, the only radionuclides detected in the samples were potassium-40, radium-226 and thorium-228. These are part of the natural radioactivity typically found in soils.

5.5 River Sediment

The results of gamma spectrometry of river sediment indicated that aside from the naturally occurring radionuclides (potassium-40, radium-226 and thorium-228), cobalt-60 and cesium-137 were detected downstream of the plant (Station 34). Cesium-137 was also detected in the upstream control sample (Station 33). The cesium-137 concentrations in the upstream samples were 42 pCi/kg and 60 pCi/kg dry weight. The concentrations of cesium-137 in the downstream samples were 194 pCi/kg and 337 pCi/kg dry weight. Cobalt-60 levels in the two downstream samples were 20 pCi/kg and 22 pCi/kg dry weight. Both cobalt-60 and cesium-137 have been detected in similar quantities in preoperational samples and operational samples. They have also been previously identified as components of the Columbia River sediment originating from the operation of the old Hanford Reservation reactors. ⁽¹⁴⁾

5.6 Fish

The gamma spectrometry results of fish samples collected in the vicinity of the Plant 2 discharge and at the control location on the Snake River were below detection limits, except for potassium-40, a naturally-occurring radionuclide.

5.7 Milk

There was one detectable iodine-131 result in 1998. The result of 0.64 pCi/l was found in the November sample taken at Station 64 and is just above the detection level for this nuclide. The iodine-131 result from the other downwind dairy was below the detection limit. An investigation of plant effluents determined it was not an effect from the plant. All gamma spectrometry milk sample results for the indicator and control locations were less than the detection limits, except for potassium-40, which is naturally occurring.

Because of the loss of the control dairy, it was decided to use the garden produce as a substitute while another suitable dairy was located. No dairy in the area of the control was located that didn't at least use feed grown downwind of the plant as supplemental feed. In August, the REMP began collecting samples of feed grown by the owners of the dairy at Station 9. No radionuclides were detected other than the naturally occurring beryllium-7 and potassium-40.

5.8 Garden Produce

The gamma isotopic analysis results for all root, fruit and leafy vegetables collected in 1998 were below detection limits other than potassium-40, which occurs naturally.

5.9 Special Interest Stations

The storm drain pond, Sanitary Waste Treatment Facility (SWTF) and the containerized storage area were incorporated into the routine sampling schedule in 1992. The cooling tower sediment disposal area was added in 1995. Thermoluminescent dosimeters were placed around the spray pond drainfield (Station 120) in June 1995. Discussions of the results from each of the locations are given in the following sections.

Until incorporated into the REMP, the sediment samples collected during previous years at the storm drain and SWTF were analyzed by the Supply System. The storm drain and SWTF sediment samples were analyzed wet, so the results were in terms of wet weight instead of the dry weight concentrations determined by Teledyne. Consequently, direct comparison of the wet sample results with the dried sample results is difficult since the percent solids can vary from sample to sample.

5.9.1 Storm Drain Pond (Station 101)

The storm drain pond is located approximately 1500 feet northeast of Plant 2. Water is conveyed to the pond via a 18-inch diameter pipe which discharges into a 300-foot long earthen channel that leads to a 100-foot diameter pond. The pond is a shallow, unlined percolation/evaporation basin.

REMP personnel collected water, sediment, soil and vegetation samples at the outfall during 1998. Monthly water grab samples and sediment samples were taken from the pond area beginning in July of 1994 and were discontinued in July 1996. At the outfall, an automatic sampler collected flow proportional composite water samples. Sediment sampling at the outfall was changed from monthly to biannually in July of 1996. Vegetation was sampled annually near the outfall.

Tritium was the only isotope detected during 1998. Figure 5-12 shows the monthly averages for 1992 through 1998. The range for positive tritium results at the outfall was from 160 pCi/l to 3700 pCi/l and averaged 738 pCi/l. Detectable gross beta activity at the outfall averaged 4.4 pCi/l with a range of 2.6 to 9.3 pCi/l.

In June, an accidental actuation of the fire protection system caused the rupture of a cast iron valve, resulting in flooding of a stairwell in the Reactor Building. Approximately 160,000 gallons of water was discharged into the stairwell. A sample of the water in the stairwell was taken and counted, per procedure, to free release LLDs by the Plant Chemistry laboratory. There was no detectable activity in this sample. Approximately 17,000 gallons of water was pumped from the stairwell to the storm drain pond when a second sample indicated a possibility of cobalt-60 being present. Pumping activities were suspended. The flow-proportional composite sampler at the outfall collected 171 ml of sample, which upon analysis at Teledyne, confirmed that there was no detectable cobalt-60 present.

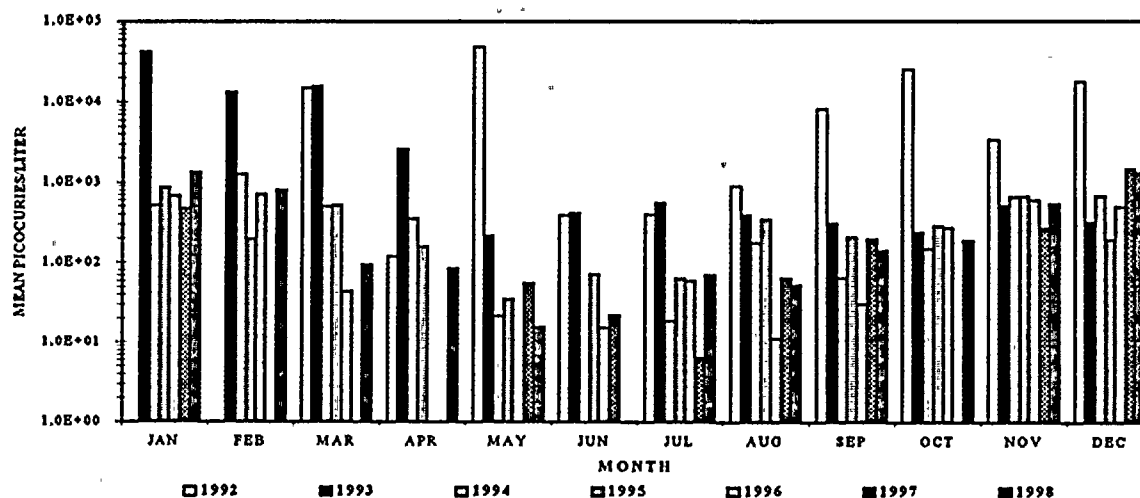


Figure 5-12 Average Monthly Tritium at Storm Drain Outfall - 1992-98

Sediment at ST101 was sampled biannually at the outfall. In the sediment samples, cobalt-60 and cesium-137 were detected, along with the natural-occurring nuclides potassium-40, radium-226 and thorium-228. Detectable cobalt-60 averaged 174 pCi/kg dry and ranged from 140 pCi/kg dry to 207 pCi/kg dry. The detectable cesium-137 ranged from 38 pCi/kg dry to 44 pCi/kg dry and averaged 41 pCi/kg dry.

All six soil samples, taken on the east and west banks, had detectable amounts of cesium-137 in them. The natural radionuclides of beryllium-7, potassium-40, radium-226 and thorium-228 were also detected. Cesium-137 averaged 33 pCi/kg and ranged from 30 pCi/kg to 37 pCi/kg. These results are within the ranges observed in previous years.

In the annual vegetation sample taken in the stream, no detectable radionuclides were found other than potassium-40, which occurs naturally.

5.9.2 Sanitary Waste Treatment Facility (Station 102)

The Sanitary Waste Treatment Facility (SWTF), located approximately 0.4 mile south-southeast of Plant 2, processes the sanitary waste from Plant 2, the WNP-1 and WNP-4 sites, the Plant Support Facility (PSF) and the Department of Energy's 400 Area (beginning April, 1997). Discharge standards and monitoring requirements for the SWTF are established in EFSEC Resolution No. 259⁽¹⁵⁾. Until April 1992, the SWTF sediment was sampled semiannually and analyzed in the Support Services radiation laboratory and the radionuclide concentrations were given in terms of wet weight.

Gross beta results for wastewater sampled prior to discharge to the percolation beds averaged 37 pCi/l and ranged from 32 pCi/l to 41 pCi/l. An investigation in 1994 into the source of the gross beta indicated potassium-40, a natural isotope, was the major contributor. Other contributors to the beta appear to be natural isotopes and no fission or activation products were detected that would

indicate Plant 2 as a source. Monthly composite water samples of the 400 Area effluent had gross beta results ranging from 17 pCi/l to 41 pCi/l and averaging 29 pCi/l.

Prior to discharge samples and 400 Area effluent samples were also analyzed for gross alpha. There were no detectable gross alpha results for 1998.

Tritium results at the headworks (ST.102B) continued to increase due to the influx of FFTF effluent. The mean at the headworks increased from 466 pCi/l to 1342 pCi/l. From May until August, tritium levels at the FFTF sewer line (ST.102A) averaged 15000 pCi/l. This was due to FFTF drawing water from another aquifer, known to have tritium levels of approximately 20000 pCi/l, while maintenance was performed on the main pump. The annual average for tritium at ST.102A was 8008 pCi/l and ranged from 3800 pCi/l to 20000 pCi/l. Tritium in the prior to discharge samples (ST.102C) averaged 803 pCi/l and ranged from 480 pCi/l to 1100 pCi/l. Water samples taken from the north stabilization pond (ST.102D) ranged from 670 pCi/l to 1200 pCi/l and average 935 pCi/l while the south stabilization pond (ST.102E) had a mean of 925 pCi/l and a range of 550 pCi/l to 1300 pCi/l.

Gamma analysis of sediment samples collected from the north stabilization pond revealed detectable quantities of cobalt-60 and cesium-137 in addition to naturally occurring nuclides. Detectable cobalt-60 ranged from 164 pCi/kg dry weight to 2110 pCi/kg dry weight. Cesium-137 results ranged from 72 pCi/kg dry weight to 132 pCi/kg dry weight. After the higher cobalt-60 result was received, a second sample from the sample area was taken. The cobalt-60 and cesium 137 results for this sample were below the detection limits.

5.9.3 Containerized Storage Area (Station 118)

Station 118, consists of twenty-nine large metal storage containers holding the low-pressure turbine rotor parts removed from the plant during the 1992 maintenance outage. Soil samples and ionization chamber readings were taken at Station 118. Beginning in September 1994, samples from different areas were composited and sent to Teledyne Brown for analysis

Soil samples taken at Station 118 before the storage of the low-pressure turbine rotor parts contained no detectable radioactivity except that from naturally occurring radionuclides, such as potassium-40 and radium-226. No detectable nuclides, other than those that are naturally occurring, were found in 1998.

5.9.4 Cooling Tower Sediment Disposal Area (Station 119)

On May 8, 1995, EFSEC approved Resolution No. 278⁽¹⁶⁾ that authorized the onsite disposal of cooling tower sediments containing low levels of radionuclides. This area is located just south of the cooling towers. According to Resolution No. 278, the REMP is to monitor the area's direct radiation exposure rate with annual pressurized ion chamber measurements. Direct radiation dose is measured by quarterly and annual TLDs and a dry composite sediment sample is taken from the disposal cell within thirty days following each cleaning to confirm that the disposal criteria outlined in the resolution have not been exceeded.

An estimated total of 41 cubic yards of material was disposed of during the 1998 cleaning. Using the volume and an average measured dry density of 1.4 g/cm^3 , along with the activity, it is calculated that the following quantities of nuclides were placed in the disposal area:

Cobalt-60	1.85E-06 curies
Manganese-54	4.56E-07 curies
Zinc-65	9.13E-08 curies
Cesium-134	1.90E-06 curies
Cesium-137	1.00E-05 curies

Of the above nuclides, only cobalt-60 and cesium-137 were above detection levels. The cobalt-60 result was 42 pCi/kg dry. The cesium-137 result was 228 pCi/kg dry. Since the results for manganese-54, zinc-65 and cesium-134 were lower than the detection limit, the calculated quantities disposed of those nuclides are estimates of maximum possible concentration.

Measurements of direct radiation were taken using TLDs and a Reuter Stokes pressurized ion chamber. The TLDs were collected quarterly and annually. Two locations were used, one next to the collection area (ST.119B) and the other approximately 100 yards to the east as the control (ST.119-Control). The mean quarterly TLD result for ST.119B was 0.25 mR/day and ST. 119-Control had a mean quarterly result of 0.24 mR/day. The annual TLD results were 0.22 mR/day for ST.119B and 0.23 for ST.119-Control. The pressurized ion chamber readings were taken monthly during 1998. The readings remained consistent throughout the year, with a high mean of 0.0102 mR/hr in March with the plant at 100% power to a low mean of 0.0091 mR/hr in April, with the plant shutdown. The average for the year was 0.0097 mR/hr.

5.10 Spray Pond Drain Field (Station 120)

Sediment from spray pond cleanings had been discharged to a trench located approximately 500 feet south of the spray ponds. In 1995, soil samples taken in the trench indicated detectable amounts of cesium-137 and cobalt-60. In 1996, the deposited sediment was removed to a disposal cell south of the cooling towers. The trench has continued to be used as the discharge location for spray pond filter backwash water.

In 1997, the decision was made to remove the west TLD station inside the trench, and the control TLD station on the south bank. The Station 119 Control TLD would also act as the control location for Station 120. In 1998, the mean for the quarterly TLD inside the trench was 0.25 mR/day. The quarterly mean for the control location was 0.24 mR/day. The annual results were 0.23 mR/day for both locations.

Soil samples were taken in March and October of 1998. The samples are composites, taken from several areas inside the trench. These continued to show that no new radionuclides had been deposited in the trench since the previously deposited sediment was relocated in 1996. Along with the naturally occurring nuclides of beryllium-7, potassium-40, radium-226 and thorium-228, the

only other detectable nuclide was cobalt-60 and cesium-137. The cobalt-60 results were 16 pCi/kg and 61 pCi/kg and the one detectable cesium-137 result was 21 pCi/kg. The cobalt-60 results were far below the pre-cleaning result of 6880 pCi/kg and comparable to results of samples taken immediately after the sediment had been removed in August of 1996.

5.11 1998 Sample Deviations

Air sampler outages made up the majority of sample deviations for 1998. Problems ranged from pump failure to power outages. Of the three water sample deviations, one was due to the plant refueling outage and another to an outage of the water source. Deviations are listed in Table 5-2.

TABLE 5-1
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM
COMPARITIVE SUMMARY

MEDIA/ ANALYSIS	PREOPERATIONAL ^(a)		PREVIOUS OPERATIONAL ^{(b)(c)}		1998 ^(d)	
	MEAN	(RANGE)	MEAN	(RANGE)	MEAN	(RANGE)
Air: pCi/m³						
Gross Beta	<0.02	(<0.003 - 0.130)	0.020	(0.001 - 0.741)	0.012	(0.002 - 0.043)
I-131 ^(e)	<0.05	(<0.01 - 0.11)	0.00	(-0.07 - 0.82)	0.00	(-0.01 - 0.01)
Gamma						
Cs-134	<0.01	(<0.001 - 0.040)	0.0003	(-0.0021 - 0.0149)	0.0000	(-0.0003 - 0.0002)
Cs-137	<0.01	(<0.001 - 0.040)	0.0006	(-0.0011 - 0.0356)	0.0000	(-0.0003 - 0.0002)
River/Drinking Water: pCi/l						
Gross Beta	<3	(<1 - <6)	1.9	(-0.2 - 9.1)	1.6	(0.4 - 2.4)
Gamma						
Cs-134	<3.8	(<1 - <12)	0.1	(-8.2 - 5.2)	0.1	(-2.3 - 2.6)
Cs-137	<4.1	(<1 - <13)	1	(-5.7 - 6.2)	0.7	(-3.2 - 3.3)
Co-58	<5.1	(<1 - <25)	-0.1	(-3.3 - 2.9)	-0.1	(-2.3 - 1.1)
Co-60	<4.7	(<1 - <13)	0.7	(-4.9 - 7.1)	0.1	(-3.1 - 1.4)
Fe-59	<13.3	(<2 - <93)	0.7	(-8.9 - 6.9)	1.6	(-2 - 6)
Zn-65	<8.3	(<2 - <27)	-0.9	(-16.2 - 10.5)	0.9	(-2.7 - 5)
H-3	<481.7	(220 - <820)	108.4	(-500 - 596)	120.3	(7.1 - 250)
Groundwater: pCi/l						
Gamma						
Cs-134	<4	(<1 - <12)	0.4	(-4.1 - 5.4)	0.2	(-1.5 - 2.2)
Cs-137	<3.8	(0.8 - <8)	0.9	(-6 - 4.9)	0.5	(-2.7 - 4.2)
Co-58	<4.7	(<1 - <12)	-0.4	(-3.3 - 1.9)	-0.4	(-2 - 0.7)
Co-60	<4.1	(0.1 - <9)	0.9	(-2.4 - 8.4)	0.2	(-2.1 - 1.7)
Fe-59	<11.6	(<2 - <33)	0.8	(-4.5 - 5.7)	0.2	(-2.2 - 3.3)
Zn-65	<8.6	(<2 - 17)	-0.6	(-46.8 - 15)	1	(-4.3 - 9.5)
H-3	<467.8	(<10 - 2600)	16.7	(-516 - 324)	47.5	(-47 - 190)

(a) All stations, all years.

(b) Indicator stations only for the years 1984 to 1997. Some of the data means and ranges are biased high due to Chernobyl in 1986.

(c) The data used for these averages does not include the "less than" values reported in 1984.

(d) Indicator stations only.

(e) Charcoal cartridge results.

TABLE 5-1 (cont.)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM
COMPARITIVE SUMMARY

MEDIA/ ANALYSIS	PREOPERATIONAL ^(a)		PREVIOUS OPERATIONAL ^{(b)(c)}		1998 ^(d)	
	MEAN	(RANGE)	MEAN	(RANGE)	MEAN	(RANGE)
Discharge Water: pCi/l						
Gross Beta	<2.8	(<1.9 - 4)	16.9	(0.6 - 56)	9.4	(1.1 - 22)
Gamma						
Cs-134	<3.7	(<1 - <8)	0.5	(-3.9 - 10.1)	0.5	(-1.1 - 1.9)
Cs-137	<4.7	(<1 - 16)	2	(-5.3 - 23.1)	1.5	(-0.1 - 3.2)
Co-58	<1.4	(1 - 13)	0.0	(-2.6 - 4.6)	-0.3	(-1.4 - 2.7)
Co-60	<5.0	(<1.9 - <13)	5.6	(-8.7 - 57.6)	0.6	(-6.5 - 6.2)
Fe-59	<11.9	(<3 - <38)	0.9	(-5.9 - 13)	1.5	(-1.3 - 4.7)
Zn-65	<8.6	(<2 - 27)	3.8	(-8.2 - 86.7)	0.4	(-2.6 - 3.9)
H-3	<420	(<80 - 700)	1907	(55 - 12000)	803	(62 - 1600)
Sr-90	<3		0.8	(0.5 - 1.1)	Analysis Not Performed	
Storm Drain Water: pCi/l						
Gross Beta	Analysis Not Performed		9.6	(0.2 - 1100)	3.3	(0.3 - 9.3)
Gamma	Analysis Not Performed					
Cs-134			0.0	(-9.6 - 8.1)	0.1	(-7.6 - 2.7)
Cs-137			1.3	(-11 - 252)	0.8	(-4.4 - 7.5)
Co-58			-0.4	(-7.6 - 3.4)	-0.3	(-3 - 2.5)
Co-60			0.9	(-4.2 - 125)	0.4	(-11 - 2.9)
Fe-59			0.8	(-14 - 12)	0.8	(-3.5 - 4.7)
Zn-65			0.8	(-13 - 53)	1	(-6.7 - 1.8)
Mn-54			0.6	(-6.2 - 6.7)	0.2	(-2.9 - 3.5)
I-131			-0.1	(-17 - 21.1)	0.5	(-4.2 - 7.7)
Ce-141			-1	(-441 - 707)	-1.7	(-13.2 - 3.3)
I-131 ^(e)			0.4	(-0.2 - 8.3)	Analysis Not Performed	
H-3	Analysis Not Performed		5703.5	(-330 - 270000)	324.6	(-52 - 3700)
Sanitary Waste Water: pCi/l						
Gross Alpha	Analysis Not Performed		0.5	(-0.8 - 2.3)	0.5	(-1 - 2.4)
Gross Beta	Analysis Not Performed		35.6	(5.9 - 61)	31.3	(17 - 41)
Cs-134			0.1	(-2.6 - 4.9)	0.2	(-2.3 - 2.6)
Cs-137			1	(-5.1 - 4.2)	0.9	(-4.2 - 3.6)
Co-58			-0.3	(-2.9 - 1.8)	-0.3	(-1.4 - 1.6)
Co-60			0.4	(-12.9 - 4)	0.1	(-3.2 - 1.7)
H-3	Analyses Not Performed		496.9	(-170 - 6700)	3723.1	(-170 - 20000)

(a) All stations, all years.

(b) Indicator stations only for the years 1984 to 1997. Some of the data means and ranges are biased high due to Chernobyl in 1986

(c) The data used for these averages does not include the "less than" values reported in 1984.

(d) Indicator stations only.

(e) Resin method

TABLE 5-1 (cont.)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM
COMPARITIVE SUMMARY

MEDIA/ ANALYSIS	PREOPERATIONAL ^(a)		PREVIOUS OPERATIONAL ^{(b)(c)}		1998 ^(d)	
	MEAN	(RANGE)	MEAN	(RANGE)	MEAN	(RANGE)
River Sediment:						
pCi/kg (dry)						
Gamma						
Cs-134	<112.5	(<50 - <150)	52.1	(7 - 172)	32.5	(26.1 - 38.9)
Cs-137	<287	(<50 - <560)	316.1	(136.5 - 1890)	265.5	(193.9 - 337.1)
Co-60	<254.6	(130 - 610)	37.4	(9 - 129)	20.9	(20.3 - 21.6)
Storm Drain Sediment:						
pCi/kg (dry)						
Gamma:	Analysis Not Performed ^(e)					
Cs-134			61.6	(4.1 - 1140)	12.2	(5.2 - 19.2)
Cs-137			160.6	(-3.6 - 2900)	41.2	(38.1 - 44.4)
Co-58			-1.9	(-27 - 58)	-7.9	(-8.7 - -7.1)
Co-60			750.7	(-6.4 - 25400)	173.1	(139.6 - 206.6)
Zn-65			116.2	(-34.5 - 4650)	4.8	(-34.5 - 1.2)
Mn-54			22.8	(-9.6 - 670)	1.6	(0.1 - 3.1)
Ce-141			35.2	(-28.8 - 3740)	4.1	(1.5 - 6.7)
Sanitary Waste Sediment:						
pCi/kg (dry)						
Gamma:	Analysis Not Performed ^(e)					
Cs-134			27.7	(-15.6 - 55.2)	34.6	(25.7 - 45.8)
Cs-137			148.8	(0 - 255.1)	73.3	(15.7 - 132.1)
Co-60			227.7	(-3.4 - 728.2)	760	(4.9 - 2110)
Zn-65			12.1	(-106 - 125)	1.6	(-38 - 37)
Mn-54			6.2	(-26 - 95)	9.1	(2.6 - 12.4)
Annual Soil:						
pCi/kg (dry)						
Gamma						
Cs-134	<65.3	(<20 - <150)	24.9	(1 - 53.2)	32.7	(29.3 - 37.1)
Cs-137	364.3	(<20 - <1880)	224.1	(-7.3 - 735)	80.6	(23 - 165.9)
Sr-90	Analysis Not Performed		178.8	(0.2 - 455)	Analysis Not Performed	

(a) All stations all years.

(b) Indicator stations only for the years 1984 to 1997. Some of the data means and ranges are biased high due to Chernobyl in 1986

(c) The data used for these averages does not include the "less than" values reported in 1984.

(d) Indicator stations only.

(e) Prior to February 1992, these samples were analyzed as wet weight. These numbers are for the samples analyzed as dry weight.

TABLE 5-1 (cont.)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM
COMPARITIVE SUMMARY

	PREOPERATIONAL ^(a)		PREVIOUS OPERATIONAL ^{(b)(c)}		1998 ^(d)	
MEDIA/ ANALYSIS	MEAN	(RANGE)	MEAN	(RANGE)	MEAN	(RANGE)
ST 118 Soil:						
pCi/kg (dry)						
Gamma	Analysis Not Performed					
Cs-134			22.4	(-3.5 - 46)	21.8	
Cs-137			14.9	(0.5 - 48)	13.7	
Storm Drain Soil:						
pCi/kg (dry)						
Gamma	Analysis Not Performed					
Cs-134			22.3	(-1.4 - 38)	24.7	(16.5 - 29.2)
Cs-137			41.7	(12.5 - 77.3)	32.9	(30 - 36.7)
Milk: pCi/l						
Gamma						
Cs-134	<3.7	(<0.9 - <14)	0.7	(-8.7 - 22.6)	0.1	(-6.5 - 3.4)
Cs-137	<3.8	(<1 - <12)	2.2	(-6.6 - 47.3)	1.1	(-4.5 - 5.1)
Ba-140	<72.1	(<6 - <2000)	0.2	(-44.3 - 55)	0.1	(-8.7 - 8.2)
La-140	<33.3	(<5 - 1000)	-0.4	(-24.2 - 9.7)	-0.4	(-6.1 - 2.5)
I-131 ^(e)	<0.5	(<0.1 - <1)	0.7	(-0.8 - 143.6)	0.0	(-0.4 - 0.6)
Sr-90	Analysis Not Performed		1.9	(1.3 - 3.9)	Analysis Not Performed	
Fish: pCi/kg (wet)						
Gamma						
Cs-134	<61.2	(<6 - <130)	1.8	(-20.4 - 24)	-1.4	(-6.7 - 6.4)
Cs-137	<88.8	(<10 - <130)	14.2	(-35.1 - 57)	8.7	(4.4 - 13.2)
Co-58	<87.7	(<9 - <130)	0.5	(-16.8 - 25.8)	2.5	(0.4 - 4.3)
Co-60	<80.6	(<9 - <130)	1.6	(-18.4 - 21)	0.1	(-6.3 - 4.6)
Fe-59	<130	(<30 - <260)	0.2	(-34.2 - 30)	1.6	(-1.6 - 7.2)
Mn-54	<88.3	(<8 - <130)	1.5	(-20 - 30.9)	1.6	(-0.7 - 2.9)
Produce: pCi/kg (wet)						
Gamma						
Cs-134	<49.1	(<10 - <140)	0.6	(-24.8 - 19.8)	0.4	(-3.4 - 3.6)
Cs-137	<69.8	(<10 - <140)	3	(-9.8 - 20.9)	1.2	(-1.7 - 2.4)
I-131	<105.6	(<10 - <1000)	-0.3	(-26 - 59)	-0.1	(-5.3 - 3)

(a) All stations, all years.

(b) Indicator stations only for the years 1984 to 1997. Some of the data means and ranges are biased high due to Chernobyl in 1986.

(c) The data used for these averages does not include the "less than" values reported in 1984.

(d) Indicator stations only.

(e) Resin method.

TABLE 5-1 (cont.)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM
COMPARITIVE SUMMARY

MEDIA/ ANALYSIS	PREOPERATIONAL ^(a)		PREVIOUS OPERATIONAL ^{(b)(c)}		1998 ^(d)	
	MEAN	(RANGE)	MEAN	(RANGE)	MEAN	(RANGE)
Storm Drain Vegetation ^(e) : pCi/kg (wet)						
Gamma	Analysis Not Performed					
Mn-54			11.9	(-2 - 32.2)	2.2	
Co-60			18.1	(-3.7 - 48.2)	-3.8	
Zn-65			25	(-4.3 - 57.4)	26.8	
Cs-134			6.6	(-6.5 - 45.8)	-14.8	
Cs-137			24.7	(-1.6 - 93.5)	-1.2	
Cooling Tower Sediment: pCi/kg (dry)						
Gamma	Analysis Not Performed		Analysis Not Performed			
Mn-54			8.8	(2.8 - 14.9)	10.4	
Co-60			69.7	(69.7 - 92.3)	32.2	
Zn-65			17	(4.5 - 27.8)	2.1	
Cs-134			32.1	(28 - 34.6)	43.2	
Cs-137			228.3	(211 - 236.9)	228.1	
TLD: mR/day						
Quarterly	0.24	(0.17 - 0.31)	0.25	(0.16 - 0.35)	0.24	(0.20 - 0.31)
Annual	0.24	(0.20 - 0.29)	0.24	(0.18 - 0.34)	0.22	(0.19 - 0.28)

(a) All stations, all years.

(b) Indicator stations only for the years 1984 to 1997. Some of the data means and ranges are biased high due to Chernobyl in 1986.

(c) The data used for these averages does not include the "less than" values reported in 1984.

(d) Indicator Stations only.

(e) Routine samples from the outfall only.

TABLE 5-2
1998 SAMPLE DEVIATIONS

SAMPLE MEDIA	DATE	LOCATION	PROBLEM
Air Particulate/Iodine	02/02-02/09	Station 5	Power off for substation repair. Sample volume acceptable
	02/09-02/17	Station 5	Power off for substation repair. Sample volume acceptable
	04/27-05/04	Station 7	Unit failure. Sample volume acceptable.
	05/11-05/18	Station 57	Unit failure. Sample volume acceptable.
	05/18-05/26	Station 1	Power off due to Outage. Sample volume unacceptable.
	05/18-05/26	Station 48	Unit failure. Sample volume unacceptable.
	05/26-06/01	Station 1	Power restored this week. Volume acceptable.
	05/26-06/01	Station 48	Late placement in field. Sample volume acceptable.
	07/20-07-27	Station 4	Unit failure. Sample volume unacceptable.
	11/02-11/09	Station 48	Unit failure. Sample volume unacceptable.
Water	R-13 Outage	Station 27	Sampler in Timed mode for plant outage.
	08/10-08/18	Station 28	Sampler out of service for repair. Sample shipped on schedule.
	12/01-12/10	Station 28	300 Area water off.
Soil	12/31	Station 101	No sample due to wet weather.
Milk	2 nd Quarter	Station 96	Ramerman Dairy quits operation. No suitable replacement found. Substitution of broadleaf vegetables and feed from Station 9 used.

TABLE 5-3
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY
 WASHINGTON PUBLIC POWER SUPPLY SYSTEM WNP-2 DOCKET NO. 50-397
 HANFORD WASHINGTON JANUARY 1 to DECEMBER 31, 1998

Medium or Pathway Sampled (Unit of Measurement)	Analysis and Total Number of Analyses Performed	Lower Limit of Detection ^(a) (LLD)	All Indicator Locations Mean (Ratio) ^(a) (Range)	Location With Highest Mean Name Distance and Direction	Mean (Ratio) ^(a) (Range)	Control Location Mean (Ratio) ^(a) (Range)	Number of Nonroutine Reported Measurements
Air Particulates (pCi/m ³)	Gross Beta 624	0.003	0.012(572/572) (0.002-0.043)	4 6.4 mi SSE	0.013(52/52) (0.004-0.043)	0.012(52/52) (0.003-0.029)	0
	Gamma 48 (Quarterly)						
	Be-7	0.01	0.098(44/44) (0.061-0.173)	40 6.4 mi SE	0.111(4/4) (0.076-0.173)	0.095(4/4) (0.068-0.148)	0
	K-40	0.01	0.006(5/44) (0.001-0.006)	4 6.4 mi SSE	0.006(1/4)	-(0/4)	0
Air Iodine (pCi/m ³)	I-131 624	0.01	-(0/572)			-(0/52)	0
Soil (pCi/kg dry)	Gamma 5						
	K-40	700	14300(4/4) (13400 - 16700)	23 3.0 mi ESE	16700(1/1)	12500(1/1)	0
	Cs-137	40	80.6(4/4) (23.0-166)	7 2.7 mi WNW	166(1/1)	78.8(1/1)	0
	Ra-226	400	862(4/4) (637-988)	23 3.0 mi ESE	988(1/1)	951(1/1)	0
	Th-228	50	637(4/4) (457-867)	23 3.0 mi ESE	867(1/1)	618(1/1)	0

^(a) The mean of positive results above the LLD and ratio of those results to the number of samples analyzed for the parameter of interest.
 Actual LLDs may be lower for specific samples.

TABLE 5-3 (cont.)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

WASHINGTON PUBLIC POWER SUPPLY SYSTEM WNP-2
 HANFORD WASHINGTON

DOCKET NO. 50-397
 JANUARY 1 to DECEMBER 31, 1998

Medium or Pathway Sampled (Unit of Measurement)	Analysis and Total Number of Analyses Performed	Lower Limit of Detection ^(a) (LLD)	All Indicator Locations Mean (Ratio) ^(a) (Range)	Location With Highest Mean Name Distance and Direction	Mean (Ratio) ^(a) (Range)	Control Location Mean (Ratio) ^(a) (Range)	Number of Nonroutine Reported Measurements
Water (River/Drinking) (pCi/liter)	Gross Beta 36	4	1.66(21/24) (0.40-2.4)	28 7.4 mi SSE	1.88(12/12) (1.1-2.4)	1.56(10/12)	0
	Tritium 12	200	197(3/8) (140-250)	28 7.4 mi SSE	197(3/4) (140-250)	-(0/4)	0
	Gamma 36						
	K-40	20	-(0/24)			-(0/12)	0
Water (Discharge) (pCi/liter)	Gross Beta 12	12	9.44(12/12) (1.1-22)	27 3.2 mi E	9.44(12/12) (1.1-22)	-(0/0)	0
	Tritium 4		1050(3/4) (62-1600)	27 3.2 mi E	1050(3/4) (62-1600)	-(0/0)	0
	Gamma 12						
	Co-60	10	-(0/12)			-(0/0)	0
	Cs-137	10	-(0/12)			-(0/0)	0

(a) The mean of positive results above the LLD and ratio of those results to the number of samples analyzed for the parameter of interest.

(b) Contract LLDs. Actual LLDs may be lower for specific samples.

**WASHINGTON PUBLIC POWER SUPPLY SYSTEM WNP-2
HANFORD WASHINGTON**

The mean of positive results above the LLD and ratio of those results to the number of samples tested for the parameter of interest.

TABLE 5-3 (cont.)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

WASHINGTON PUBLIC POWER SUPPLY SYSTEM WNP-2
 HANFORD WASHINGTON

DOCKET NO. 50-397
 JANUARY 1 to DECEMBER 31, 1998

Medium or Pathway Sampled (Unit of Measurement)	Analysis and Total Number of Analyses Performed		Lower Limit of Detection ^(a) (LLD)	<u>All Indicator Locations</u>	<u>Location With Highest Mean</u>		Control Location Mean (Ratio) ^(a) (Range)	Number of Nonroutine Reported Measurements
				Mean (Ratio) ^(a) (Range)	Name Distance and Direction	Mean (Ratio) ^(a) (Range)		
Fish (pCi/kg wet)	Gamma	6						
	K-40		1000	3363(3/3) (2910-3620)	38 26.5 mi ESE	3747(3/3) (3220-4460)	3747(3/3) (3220-4460)	0
Milk (pCi/liter)	I-131	57	0.5	0.6(1/54)	64 9.7 mi ESE	0.6(1/54)	-(0/3)	0
	Gamma	57						
	K-40		200	1341(54/54) (1120-2000)	96 36.0 mi SW	1383(3/3) (1180-1490)	1383(3/3) (1180-1490)	0
Broadleaf In Lieu of Milk (pCi/kg wet)	Gamma	5						
	K-40		200	-(0/0)	9G 30.0 mi WSW	5820(5/5) (3720-7760)	5820(5/5) (3720-7760)	0
Roots (pCi/kg wet)	Gamma	8		-(0/4)			-(0/4)	0
Fruits (pCi/kg wet)	Gamma	9		-(0/5)			-(0/4)	0
Vegetables (pCi/kg wet)	Gamma	10		-(0/5)			-(0/5)	0

(a) The mean of positive results above the LLD and ratio of those results to the number of samples analyzed for the parameter of interest.

(b) Contract LLDs. Actual LLDs may be lower for specific samples.

TABLE 5-3 (cont.)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

WASHINGTON PUBLIC POWER SUPPLY SYSTEM WNP-2
 HANFORD WASHINGTON

DOCKET NO. 50-397
 JANUARY 1 to DECEMBER 31, 1998

Medium or Pathway Sampled (Unit of Measurement)	Analysis and Total Number of Analyses Performed	Lower Limit of Detection ^(a) (LLD)	All Indicator Locations Mean (Ratio) ^(a) (Range)	Location With Highest Mean Name Distance and Direction	Mean (Ratio) ^(a) (Range)	Control Location Mean (Ratio) ^(a) (Range)	Number of Nonroutine Reported Measurements
Direct Radiation Quarterly TLDs (mR/day)	TLD 227		0.25(223/223) (0.20-0.31)	46 5 mi NE	0.30(4/4) (0.27-0.31)	0.22(4/4) (0.21-0.23)	0
Direct Radiation Annual TLDs (mR/day)	TLD 57		0.22(56/56) (0.19-0.28)	46 5 mi NE	0.28(1/1)	0.20(1/1)	0
ST119 Direct Radiation Quarterly TLDs (mR/day)	TLD 8		0.25(4/4) (0.24-0.27)	119B 0.2 mi S	0.25(4/4) (0.24-0.27)	0.24(4/4) (0.23-0.25)	0
ST119 Direct Radiation Annual TLDs (mR/day)	TLD 2		0.23(1/1)	119Cntrl 0.2 mi SSE	0.23(1/1)	0.23(1/1)	0
ST120 Direct Radiation Quarterly TLDs (mR/day)	TLD 4		0.25(4/4)	120 0.3 mi SSE	0.25(4/4)	-	0
ST120 Direct Radiation Annual TLDs (mR/day)	TLD 1		0.23(1/1)	120 0.3 mi SSE	0.23(1/1)	-	0

^(a) Mean of positive results above the LLD and ratio of those results to the number of samples analyzed for the parameter of interest.
 Actual LLDs may be lower for specific samples.

TABLE 5-3 (cont.)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY
 WASHINGTON PUBLIC POWER SUPPLY SYSTEM WNP-2 DOCKET NO. 50-397
 HANFORD WASHINGTON JANUARY 1 to DECEMBER 31, 1998

Medium or Pathway Sampled (Unit of Measurement)	Analysis and Total Number of Analyses Performed	Lower Limit of Detection ^(a) (LLD)	All Indicator Locations Mean (Ratio) ^(a) (Range)	Location With Highest Mean Name Distance and Direction	Mean (Ratio) ^(a) (Range)	Control Location Mean (Ratio) ^(a) (Range)	Number of Nonroutine Reported Measurements
Storm Drain Sediment Station 101-Outfall (pCi/kg)	Gamma	2					
	K-40	700	4855(2/2) (4490-5220)	101 0.3 mi ENE	4855(2/2) (4490-5220)	-(0/0)	0
	Mn-54	40	-(0/2)			-(0/0)	0
	Co-60	30	205(2/2) (140-270)	101 0.3 mi ENE	205(2/2) (140-270)	-(0/0)	0
	Zn-65	100	56.3(1/2)	101 0.3 mi ENE	56.3(1/2)	-(0/0)	0
	Cs-137	40	41.2(2/2) (38.-44.4)	101 0.3 mi ENE	41.2(2/2) (38.-44.4)	-(0/0)	0
	Ra-226	400	826(2/2) (810-841)	101 0.3 mi ENE	826(2/2) (810-841)	-(0/0)	0
	Th-228	50	399(2/2) (363-434)	101 0.3 mi ENE	399(2/2) (363-434)	-(0/0)	0

(a) The mean of positive results above the LLD and ratio of those results to the number of samples analyzed for the parameter of interest.
 (b) Contract LLDs. Actual LLDs may be lower for specific samples.

TABLE 5-3 (cont.)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY
 WASHINGTON PUBLIC POWER SUPPLY SYSTEM WNP-2 DOCKET NO. 50-397
 HANFORD WASHINGTON JANUARY 1 to DECEMBER 31, 1998

Medium or Pathway Sampled (Unit of Measurement)	Analysis and Total Number of Analyses Performed	Lower Limit of Detection ^(a) (LLD)	All Indicator Locations Mean (Ratio) ^(a) (Range)	Location With Highest Mean Name Distance and Direction	Mean (Ratio) ^(a) (Range)	Control Location Mean (Ratio) ^(a) (Range)	Number of Nonroutine Reported Measurements
Storm Drain Soil (pCi/kg)	Gamma	6					
	Be-7		136(6/6) (101-185)	101 0.3 mi ENE	136(6/6) (101-185)	-(0/0)	0
	K-40	700	15217(6/6) (14600-16200)	101 0.3 mi ENE	15217(6/6) (14600-16200)	-(0/0)	0
	Mn-54		-(0/6)			-(0/0)	0
	Cs-137	40	32.8(6/6) (29.9-36.7)	101 0.3 mi ENE	32.8(6/6) (29.9-36.7)	-(0/0)	0
	Ra-226	400	777(6/6) (677-885)	101 0.3 mi ENE	777(6/6) (677-885)	-(0/0)	0
	Th-228	50	467(6/6) (168-561)	101 0.3 mi ENE	467(6/6) (168-561)	-(0/0)	0
Station 118 Soil (pCi/kg dry)	Gamma	1					
	Be-7		171(1/1)	118 0.3 mi SE	171(1/1)	-(0/0)	0
	K-40	700	13100(1/1)	118 0.3 mi SE	13100(1/1)	-(0/0)	0
	Ra-226	40	640(1/1)	118 0.3 mi SE	640(1/1)	-(0/0)	0
	Th-228	50	521(1/1)	118 0.3 mi SE	521(1/1)	-(0/0)	0

^(a) The mean of positive results above the LLD and ratio of those results to the number of samples analyzed for the parameter of interest.

LLD = Lower Limit of Detection; LLD may be lower than specific activity of samples.

TABLE 5-3 (cont.)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

WASHINGTON PUBLIC POWER SUPPLY SYSTEM WNP-2
 HANFORD WASHINGTON

DOCKET NO. 50-397
 JANUARY 1 to DECEMBER 31, 1998

Medium or Pathway Sampled (Unit of Measurement)	Analysis and Total Number of Analyses Performed	Lower Limit of Detection ^(a) (LLD)	All Indicator Locations Mean (Ratio) ^(a) (Range)	Location With Highest Mean Name Distance and Direction	Mean (Ratio) ^(a) (Range)	Control Location Mean (Ratio) ^(a) (Range)	Number of Nonroutine Reported Measurements
Storm Drain Vegetation (pCi/kg wet)	Gamma 1						
	Be-7		-(0/1)			-(0/0)	0
	K-40		3020(1/1)	101 0.3 mi ENE	3020(1/1)	-(0/0)	0
Storm Drain Water Station 101 (pCi/liter)	Gross Beta 47		4.40(22/47) (2.6-9.3)	101 0.3 mi ENE	4.40(22/47) (2.6-9.3)	-(0/0)	0
	Tritium 46	300	738(19/46) (160-3700)	101 0.3 mi ENE	738(19/46) (160-3700)	-(0/0)	0
	Gamma 48						
	K-40	200	-(0/48)			-(0/0)	0
	Cs-137	10	-(0/48)			-(0/0)	0
	Th-228	10	-(0/48)			-(0/0)	0
Sanitary Waste Treatment Facility Water (pCi/l)	Gross Alpha 16		-(0/16)			-(0/0)	0
	Gross Beta 16	1	31.2(16/16) (17-41)	102C 0.4 mi SSE	31.2(16/16) (17-41)	-(0/0)	0
	Tritium 32	300	3978(30/32) (470-20000)	102A 0.4 mi SSE	8042(12/12) (3800-20000)	-(0/0)	0

(a) The mean of positive results above the LLD and ratio of those results to the number of samples analyzed for the parameter of interest.

(b) Contract LLDs. Actual LLDs may be lower for specific samples.

TABLE 5-3 (cont.)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY
 WASHINGTON PUBLIC POWER SUPPLY SYSTEM WNP-2
 HANFORD WASHINGTON

DOCKET NO. 50-397

JANUARY 1 to DECEMBER 31, 1998

Medium or Pathway Sampled (Unit of Measurement)	Analysis and Total Number of Analyses Performed	Lower Limit of Detection ^(a) (LLD)	All Indicator Locations Mean (Ratio) ^(a) (Range)	Location With Highest Mean Name Distance and Direction	Mean (Ratio) ^(a) (Range)	Control Location Mean (Ratio) ^(a) (Range)	Number of Nonroutine Reported Measurements
Sanitary Waste Treatment Facility Water (pCi/l) (cont.)	Gamma 32 K-40	300	56.8(1/22)	102A 0.4 mi SSE	56.8(1/22)	-(0/0)	0
Sanitary Waste Treatment Facility Sediment (pCi/kg)	Gamma 3 K-40	700	10860(3/3) (8980-13200)	102 0.4 mi SSE	10860(3/3) (8980-13200)	-(0/0)	0
	Co-60	30	1137(2/3) (164-2110)	102 0.4 mi SSE	1137(2/3) (164-2110)	-(0/0)	0
	Cs-137	40	74(3/3) (15.9-132)	102 0.4 mi SSE	74(3/3) (15.9-132)	-(0/0)	0
	Ra-226	400	1413(3/3) (1190-1540)	102 0.4 mi SSE	1413(3/3) (1190-1540)	-(0/0)	0
	Th-228	50	654(3/3) (448-967)	102 0.4 mi SSE	654(3/3) (448-967)	-(0/0)	0

^(a) Mean of positive results above the LLD and ratio of those results to the number of samples analyzed for the parameter of interest.

^(b) LLDs and LLDs may be lower for specific samples.

TABLE 5-4
MEAN QUARTERLY TLD DATA SUMMARY FOR THE PREOPERATIONAL
AND OPERATIONAL PERIODS
 Results in mR/day

STATION	<u>PREOPERATIONAL</u>		<u>1984 - 1997 OPERATIONAL</u>		<u>1998 OPERATIONAL</u>	
	MEAN ^(a)	STANDARD ERROR	MEAN	STANDARD ERROR	MEAN	STANDARD ERROR
1	0.24	0.02	0.25	0.01	0.25	0.01
2	0.23	0.02	0.25	0.00	0.24	0.00
3	0.22	0.01	0.24	0.00	0.23	0.00
4	0.22	0.02	0.22	0.01	0.21	0.01
5	0.23	0.01	0.23	0.00	0.22	0.01
6	0.22	0.01	0.23	0.00	0.22	0.01
7	0.23	0.01	0.24	0.00	0.24	0.01
8	0.26	0.01	0.27	0.01	0.25	0.02
9	0.22	0.02	0.23	0.00	0.22	0.01
10	0.23	0.01	0.24	0.00	0.23	0.01
11	0.24	0.01	0.24	0.00	0.23	0.00
12	0.25	0.01	0.26	0.01	0.25	0.01
13	0.24	0.01	0.25	0.00	0.24	0.01
14	0.24	0.02	0.25	0.00	0.23	0.00
15	0.25	0.01	0.26	0.01	0.25	0.01
16	0.24	0.01	0.25	0.00	0.24	0.00
17	0.25	0.01	0.25	0.01	0.25	0.01
18	0.24	0.01	0.25	0.01	0.24	0.01
19	0.24	0.01	0.25	0.00	0.25	0.01
20	0.24	0.01	0.25	0.00	0.25	0.01
21	0.23	0.01	0.23	0.00	0.23	0.00
22	0.24	0.01	0.25	0.00	0.24	0.01
23	0.24	0.01	0.24	0.00	0.23	0.00
24	0.24	0.01	0.25	0.00	0.24	0.01
25	0.25	0.01	0.26	0.01	0.25	0.00
40	0.22	0.01	0.23	0.00	0.22	0.01
41	0.26	0.02	0.26	0.01	0.25	0.01
42	0.25	0.01	0.26	0.01	0.24	0.00
43	0.25	0.01	0.26	0.01	0.24	0.00
44	0.23	0.01	0.24	0.00	0.23	0.01
45	0.23	0.01	0.24	0.00	0.23	0.01
46	0.29	0.02	0.30	0.01	0.30	0.02
47	0.22	0.02	0.23	0.01	0.22	0.01
49	0.24	0.00	0.25	0.00	0.24	0.01
50	0.22	0.00	0.25	0.01	0.24	0.02
51	0.23	0.01	0.24	0.00	0.23	0.01

(a) This preoperational mean is for the 1982-1983 data only.

TABLE 5-4 (cont.)
 MEAN QUARTERLY TLD DATA SUMMARY FOR THE PREOPERATIONAL
 AND OPERATIONAL PERIODS
 Results in mR/day

STATION	PREOPERATIONAL		1984 - 1997 OPERATIONAL		1998 OPERATIONAL	
	MEAN ^(a)	STANDARD ERROR	MEAN	STANDARD ERROR	MEAN	STANDARD ERROR
53	0.27	0.00	0.27	0.01	0.25	0.01
54	0.26	0.00	0.26	0.00	0.24	0.01
55	0.23	0.00	0.24	0.00	0.24	0.00
56	0.24	0.00	0.25	0.01	0.24	0.01
61	(b)		0.27	0.01	(b)	
65	(c)		0.24	0.01	0.23	0.01
71(1S)	0.24	0.02	0.28	0.01	0.28	0.02
72(2S)	0.25	0.01	0.27	0.01	0.27	0.01
73(3S)	0.23	0.01	0.24	0.00	0.23	0.01
74(4S)	0.26	0.01	0.27	0.01	0.25	0.01
75(5S)	0.22	0.02	0.25	0.01	0.24	0.01
76(6S)	0.24	0.01	0.25	0.01	0.24	0.01
77(7S)	0.25	0.01	0.25	0.00	0.24	0.01
78(8S)	0.25	0.01	0.25	0.00	0.23	0.01
79(9S)	0.25	0.01	0.25	0.00	0.24	0.01
80(10S)	0.24	0.01	0.24	0.00	0.23	0.01
81(11S)	0.24	0.02	0.25	0.00	0.23	0.01
82(12S)	0.26	0.02	0.25	0.00	0.25	0.01
83(13S)	0.25	0.01	0.26	0.01	0.24	0.00
84(14S)	0.24	0.01	0.25	0.01	0.25	0.01
85(15S)	0.26	0.02	0.26	0.01	0.25	0.01
86(16S)	0.25	0.01	0.28	0.01	0.27	0.02
119B	(d)		0.26	0.01	0.25	0.01
119Ctrl	(d)		0.26	0.01	0.24	0.01
120East	(d)		0.27	0.02	0.25	0.01
120West	(d)		0.28	0.04	(d)	
120Ctrl	(d)		0.25	0.01	(d)	
All	0.25	0.00	0.25	0.01	0.25	0.01

(a) This preoperational mean is for 1982-1983 data only

(b) Station 61 was added in 1989 and discontinued in 1992

(c) Station 65 added in 1997.

(d) Stations 119B, 119Ctrl, 120East, 120West and 120Ctrl added in 1995. Stations 120West and 120Ctrl discontinued in 1997.

TABLE 5-5
ANNUAL TLD DATA SUMMARY FOR THE PREOPERATIONAL
AND OPERATIONAL PERIODS
 Results in mR/day

STATION	<u>PREOPERATIONAL</u>		<u>1984 - 1997 OPERATIONAL</u>		<u>1998 OPERATIONAL</u>
	MEAN ^(a)	STANDARD ERROR	MEAN	STANDARD ERROR	RESULT
1	0.25	0.04	0.24	0.01	0.22
2	0.23	0.00	0.23	0.01	0.22
3	0.23	0.01	0.22	0.01	0.21
4	0.24	0.07	0.21	0.01	0.19
5	0.24	0.03	0.22	0.01	0.19
6	0.22	0.01	0.22	0.01	0.20
7	0.23	0.01	0.23	0.01	0.21
8	0.26	0.01	0.26	0.01	0.24
9	0.22	0.01	0.21	0.01	0.20
10	0.23	0.01	0.22	0.01	0.22
11	0.24	0.01	0.23	0.01	0.22
12	0.26	0.00	0.25	0.01	0.24
13	0.24	0.01	0.23	0.01	0.22
14	0.23	0.00	0.23	0.01	0.22
15	0.25	0.03	0.25	0.01	0.23
16	0.25	0.01	0.24	0.01	0.23
17	0.24	0.02	0.24	0.01	0.23
18	0.25	0.03	0.24	0.01	0.24
19	0.24 ^(b)		0.24	0.01	0.24
20	0.24	0.01	0.24	0.01	0.23
21	0.22	0.01	0.22	0.01	0.20
22	0.24	0.01	0.23	0.01	0.23
23	0.23	0.01	0.23	0.01	0.21
24	0.24	0.01	0.24	0.01	0.22
25	0.25	0.01	0.25	0.01	0.22
40	0.21 ^(b)		0.22	0.01	0.20
41	0.26	0.01	0.25	0.01	0.22
42	0.24 ^(b)		0.24	0.01	0.22
43	0.24 ^(b)		0.25	0.01	0.20
44	0.24	0.02	0.23	0.01	0.20
45	0.23	0.01	0.23	0.01	0.22
46	0.29	0.01	0.29	0.01	0.28
47	0.22 ^(b)		0.22	0.01	0.21
49	(c)		0.23	0.01	0.22

- (a) This preoperational mean is for 1982 - 1983 data only.
 (b) There was only one annual exchange during the preoperational period.
 (c) Stations 49-56 were first monitored during Fourth Quarter 1983.
 (d) TLD missing.

TABLE 5-5 (cont.)
ANNUAL TLD DATA SUMMARY FOR THE PREOPERATIONAL
AND OPERATIONAL PERIODS
Results in mR/day

STATION	PREOPERATIONAL		1984 - 1997 OPERATIONAL		1998 OPERATIONAL
	MEAN ^(a)	STANDARD ERROR	MEAN	STANDARD ERROR	RESULT
50	(c)		0.23	0.01	0.23
51	(c)		0.23	0.01	0.22
53	(c)		0.26	0.01	0.24
54	(c)		0.25	0.01	0.23
55	(c)		0.23	0.01	0.21
56	(c)		0.24	0.01	0.22
61	(c)		0.26 ^(d)	0.01	(d)
71 (1S)	0.24 ^(b)		0.27	0.01	0.25
72 (2S)	0.25 ^(b)		0.26	0.01	0.25
73 (3S)	0.23 ^(b)		0.23	0.01	0.22
74 (4S)	0.24 ^(b)		0.25	0.01	0.24
75(5S)	0.24 ^(b)		0.24	0.01	0.22
76(6S)	0.24 ^(b)		0.24	0.01	0.22
77 (7S)	0.25 ^(b)		0.24	0.01	0.22
78 (8S)	0.25 ^(b)		0.23	0.01	0.22
79 (9S)	0.25 ^(b)		0.24	0.01	0.22
80 (10S)	0.23 ^(b)		0.23	0.01	0.23
81 (11S)	0.23 ^(b)		0.23	0.01	0.22
82 (12S)	0.25 ^(b)		0.24	0.01	0.22
83 (13S)	0.25 ^(b)		0.25	0.01	0.23
84 (14S)	0.23 ^(b)		0.24	0.01	0.23
85 (15S)	0.25 ^(b)		0.25	0.01	0.24
86 (16S)	0.24 ^(b)		0.27	0.01	0.26
119B			0.28	0.03	0.22
119Ctrl			0.28	0.01	0.23
120East			0.30	0.02	0.23
120West			0.33		(e)
120Ctrl			0.29		(e)
All	0.24	0.00	0.24	0.00	0.22

- (a) This preoperational mean is for 1982 - 1983 data only.
(b) There was only one annual exchange during the preoperational period.
(c) Stations 49-56 were first monitored during Fourth Quarter 1983. Station 61 was added in 1989.
(d) Station 61 discontinued on June 29, 1992
(e) Stations 120West and 120Ctrl were discontinued in 1997

TABLE 5-6
1998 MEAN QUARTERLY VERSUS ANNUAL TLD DATA
 Results in mR/day

STATION	QUARTERLY MEAN ^(a)	<u>1984-97 TLDs</u>		QUARTERLY MEAN ^(a)	<u>1998 TLDs</u>	
		ANNUAL MEAN	RATIO ^(b)		ANNUAL RESULTS	RATIO ^(b)
1	0.25	0.24	1.05	0.25	0.22	1.12
2	0.25	0.23	1.05	0.24	0.22	1.10
3	0.24	0.22	1.07	0.23	0.21	1.09
4	0.22	0.21	1.06	0.21	0.19	1.09
5	0.23	0.22	1.07	0.22	0.19	1.11
6	0.23	0.22	1.06	0.22	0.20	1.12
7	0.24	0.23	1.05	0.24	0.21	1.15
8	0.27	0.26	1.03	0.25	0.24	1.03
9	0.23	0.21	1.06	0.22	0.20	1.08
10	0.24	0.22	1.07	0.23	0.22	1.08
11	0.24	0.23	1.06	0.23	0.22	1.06
12	0.26	0.25	1.06	0.25	0.24	1.05
13	0.25	0.23	1.06	0.24	0.22	1.07
14	0.25	0.23	1.07	0.23	0.22	1.09
15	0.26	0.25	1.05	0.25	0.23	1.09
16	0.25	0.24	1.06	0.24	0.23	1.07
17	0.25	0.24	1.04	0.25	0.23	1.12
18	0.25	0.24	1.05	0.24	0.24	1.03
19	0.25	0.23	1.06	0.25	0.24	1.04
20	0.25	0.24	1.05	0.25	0.23	1.06
21	0.23	0.22	1.06	0.23	0.20	1.13
22	0.25	0.23	1.06	0.24	0.23	1.04
23	0.24	0.23	1.06	0.23	0.21	1.12
24	0.25	0.24	1.06	0.24	0.22	1.12
25	0.26	0.25	1.05	0.25	0.22	1.12
40	0.23	0.22	1.07	0.22	0.20	1.10
41	0.26	0.25	1.06	0.25	0.22	1.10
42	0.26	0.24	1.07	0.24	0.22	1.10
43	0.26	0.25	1.06	0.24	0.20	1.22
44	0.24	0.23	1.06	0.23	0.20	1.16
45	0.25	0.23	1.07	0.23	0.22	1.08
46	0.30	0.29	1.04	0.30	0.28	1.05
47	0.23	0.22	1.05	0.22	0.21	1.05
49	0.25	0.23	1.06	0.24	0.22	1.07
50	0.25	0.23	1.07	0.24	0.23	1.05

- (a) Mean of the quarterly results.
 (b) Quarterly result/Annual result
 (c) TLD missing

TABLE 5-6 (cont.)
1998 MEAN QUARTERLY VERSUS ANNUAL TLD DATA
Results in mR/day

STATION	QUARTERLY MEAN ^(a)	1984-97 TLDs		QUARTERLY MEAN ^(a)	1998 TLDs	
		ANNUAL MEAN	RATIO ^(b)		ANNUAL RESULTS	RATIO ^(b)
51	0.24	0.23	1.06	0.23	0.22	1.07
53	0.27	0.26	1.05	0.25	0.24	1.07
54	0.26	0.25	1.05	0.24	0.23	1.08
55	0.24	0.23	1.06	0.24	0.21	1.15
56	0.25	0.24	1.05	0.24	0.22	1.08
61 ^(c)	0.27	0.26	1.06			
65 ^(d)	0.25	0.24	1.04	0.23	0.22	1.04
71 (1S)	0.28	0.27	1.05	0.28	0.25	1.11
72 (2S)	0.27	0.26	1.04	0.27	0.25	1.10
73 (3S)	0.24	0.23	1.07	0.23	0.22	1.05
74 (4S)	0.27	0.25	1.06	0.25	0.24	1.05
75 (5S)	0.25	0.24	1.06	0.24	0.22	1.08
76 (6S)	0.25	0.24	1.05	0.24	0.22	1.11
77 (7S)	0.25	0.24	1.06	0.24	0.22	1.09
78 (8S)	0.25	0.23	1.05	0.23	0.22	1.07
79 (9S)	0.25	0.23	1.07	0.24	0.22	1.09
80 (10S)	0.24	0.23	1.06	0.23	0.23	1.00
81 (11S)	0.25	0.23	1.06	0.23	0.22	1.09
82 (12S)	0.25	0.24	1.04	0.25	0.22	1.15
83 (13S)	0.26	0.25	1.05	0.24	0.23	1.08
84 (14S)	0.25	0.24	1.06	0.25	0.23	1.13
85 (15S)	0.27	0.25	1.05	0.25	0.24	1.05
86 (16S)	0.28	0.27	1.04	0.27	0.26	1.04
119B	0.26	0.28	0.93	0.25	0.22	1.14
119Ctrl	0.26	0.28	0.95	0.24	0.23	1.07
120East	0.28	0.30	0.93	0.25	0.23	1.08
120West	0.28	0.33	0.86	(e)	(e)	
120Ctrl	0.25	0.29	0.86	(e)	(e)	
ALL	0.25	0.24	1.04	0.24	0.22	1.09

- (a) Mean of the quarterly results.
(b) Quarterly result/Annual result.
(c) Station 61 was added in 1989 and discontinued in 1992.
(d) Station 65 added in 1997.
(e) Stations discontinued in 1997.

6.0 QUALITY ASSURANCE AND QUALITY CONTROL

The REMP is designed to meet the quality assurance and quality control criteria of Regulatory Guide 4.15⁽⁴⁾. To accomplish this, the REMP requires that its analytical contractors meet these criteria also. In-depth audits are performed of the REMP records and activities and the records and activities of its support organizations at least annually by the Supply System Quality Assurance group.

Quality assurance and technical audits of the analytical contractor (Teledyne Brown Engineering) are also conducted periodically to verify their compliance to regulatory and contractual requirements. The adequacy of their quality assurance program is also assessed during the audits.

Intercomparison programs, which involve the comparison of Supply System analytical results of samples containing known concentrations of various radionuclides, to the known values and also with the results reported by other monitoring programs, are a major component of the quality assurance activities of the REMP. The program participates in the Environmental Protection Agency (EPA) and Environmental Measurements Laboratory (EML) intercomparison programs. It also participates in local and regional intercomparison studies. The following sections summarize the quality assurance and quality control aspects of the TLD and analytical components of the REMP.

6.1 Quality Control For the Supply System Environmental TLD Program

The Quality Control Program includes the preparation, processing and evaluation of environmental TLDs. To begin with, all environmental TLDs, including controls, which are to be used in the same quarter (or year for annuals), are annealed at the same time. This allows for uniform accumulation of and correction for background radiation. From the time the TLDs are annealed to the time they are placed in the field, they are stored and transported together. Once the field TLDs are collected, they are again stored together with the controls until processed.

Reader QC dosimeters are prepared by the TLD processor and serve as indicators that the reader calibration is satisfactory and that the TLDs were processed correctly. These TLDs are annealed just prior to being given a known exposure (typically 100 mR) to ¹³⁷Cs and processed among the field dosimeters. The number of QA dosimeters used during each processing is generally 10% of the number of field dosimeters.

If the mean reader QC dosimeter results vary by more than $\pm 5\%$ from the given exposure, the processor is contacted and an investigation into the source of the discrepancy is initiated. Evaluation of the 1998 reader QC dosimeter results indicated satisfactory agreement for all four quarters and the annual processing results.

Control dosimeters (trip controls) are used for each set of field dosimeters to monitor the contribution of the exposure received by the field TLDs while in transit. The radiation background in the storage area is also monitored by a separate set of control dosimeters (building controls). If the trip control results are greater than the building control results, the difference between the two is subtracted from the field dosimeters.

Spiked dosimeters, which are exposed by the Supply System, are irradiated 25 mR cesium-137 for quarterly dosimeters or 85 mR for annual dosimeters. These spiked dosimeters are also processed with the field dosimeters during each run to verify the accuracy and consistency of the environmental TLD evaluations. All results were within $\pm 5\%$ of the known exposure and are provided in Table 6-1.

Extra sets of control dosimeters, known as zero dose dosimeters, are also included with the field dosimeters for processing. These zero dose TLDs are stored in a shielded container throughout the quarter (or year for annuals) and are used as an additional indication of reader performance. These TLDs may also be used as substitutes if a field TLD is lost.

6.2 Quality Control For the Analytical Program

Quality control for the analytical program involves two components: the quality control activities performed by the Supply System and the quality control program of the analytical contractor, Teledyne Brown Engineering. Both of these components are described in the following sections.

6.2.1 Supply System Quality Control Activities

The Supply System has participated in the U.S. Department of Energy's Environmental Measurements Laboratory (EML) Quality Assessment Program since 1987. In general, the Teledyne Brown results agreed with the EML values as seen in Table 6-2. All results were either acceptable or acceptable with warning.

Duplicate samples were submitted to Teledyne Brown for analysis during 1998. These duplicates consisted of two sets of milk samples and one set of air filters from EML. The milk duplicates were marked Station 37 and were submitted for analysis at the same time as the milk samples from Station 36.

6.2.2 Teledyne Brown Engineering Quality Control Program

The goal of the quality control program at Teledyne Brown Engineering - Environmental Services is to produce analytical results which are accurate, precise and supported by adequate documentation. The program is based on the requirements of 10CFR50, Appendix B, Nuclear Regulatory Guide 4.15 and the program, as described in Teledyne's Quality Assurance Manual (IWL-0032-395) and Quality Control Manual (IWL-0032-365).

All measuring equipment is calibrated for efficiency at least annually using standard reference material traceable to the National Institute of Standards and Technology (NIST). For alpha and beta counting, check sources are prepared and counted each weekday the counter is in use. Control charts are maintained with three-sigma limits specified. Backgrounds are usually measured at least once per week.⁽¹⁷⁾

The gamma spectrometers are calibrated annually with a NIST-traceable standard reference material selected to cover the energy range of the nuclides to be monitored for all of the geometries measured. Backgrounds are determined every other week and check sources are counted weekly. The energy resolution and efficiency are plotted at two energy levels (59.5 and 1332 KeV) and held within three-sigma control limits.⁽¹⁸⁾

The efficiency of the liquid scintillation counters is determined at least annually by counting NIST traceable standards which have been diluted in a known amount of distilled water and various amounts of quenching agent.⁽¹⁹⁾ The background of each counter is measured with each batch of samples. A control chart is maintained for the background and check source measurements as a stability check.

Results are reviewed before being entered into the data system by the Quality Assurance and/or the Department Manager for reasonableness of the parameters (background, efficiency, decay, etc.). Any results that are suspect, being higher or lower than results in the past, are returned to the laboratory for recount. If a longer count, decay check, recount on another system or recalculation does not give acceptable results based on experience, a new aliquot is analyzed. The complete information about the sample is contained on the worksheets accompanying the sample results.

Teledyne Brown also participates in the US EPA Interlaboratory Comparison Program to the fullest extent possible. That is, they participate in the program for all radioactive isotopes prepared and at the maximum frequency of availability. Beginning with 1996, the US EPA discontinued providing milk and air particulate filter samples. Teledyne purchased comparable spiked samples from Analytics, Inc.

Tables 6-3 and 6-4 present the Teledyne Brown quality control data results for blanks and spikes, respectively. Table 6-5 presents the results of the 1998 EPA Intercomparison as reported to the Supply System. Footnotes in the table refer to investigations of problems encountered in a few cases and the steps taken by Teledyne Brown to prevent recurrence. Table 6-6 presents the Analytics Cross Check Comparison results for 1998.

No deviations from written procedures occurred during 1998. A summary of the quality control blank and spiked sample results follow.

Iodine-131 Cartridges

A blank charcoal filter was analyzed with each group of samples assayed. Fifty-two blanks were analyzed in 1998. The average activity was $-1.8 \pm 10.0 \text{ E-01}$ total pCi. Activities were calculated without considering detection limits.

Gross-Beta - Filters

One blank filter was measured with each set of filters assayed. Fifty-two blanks were counted for 1998. The average activity $1.0 \pm 0.2 \text{ E+00}$ total pCi, which indicated a relatively stable background for the filter and the gross beta proportional counters.

I-131 - Milk

A blank milk was analyzed with each group of samples assayed. The results showed that there was no contamination in the laboratory or counting area. The measurements of the blank samples indicated that there was no bias on the low background counters. The average activity for eighteen samples in 1998 was $-1.3 \pm 9.8 \text{ E-02 pCi/liter}$ without considering detection limits. In addition ten blanks were analyzed as part of the Teledyne Brown Engineering - Environmental Services' quality control program. The average result for 1998 was $5.3 \pm 15 \text{ E-01 pCi/liter}$.

Sr-90 - Milk and Water

Eleven blank water samples were analyzed during 1998. The average result, without considering the detection limits, was $1.2 \pm 1.9 \text{ E-01 pCi/liter}$. Eleven spiked water samples were analyzed during 1998. The average value of the samples was $3.4 \pm 0.4 \text{ E+01 pCi/l}$ compared with a spike level of $3.5 \pm 0.6 \text{ E+01 pCi/l}$. During 1998, a total of ten spiked milk samples were analyzed. The average value of the samples was $3.2 \pm 0.9 \text{ E+01 pCi/l}$ compared with a spike value of $3.5 \pm 0.6 \text{ E+01 pCi/l}$. These results were within the limits as specified by the EPA Intercomparison Studies Program. Ten blank milk samples were analyzed with an average activity of $6.6 \pm 2.9 \text{ E-01 pCi/l}$ of Sr-90, which is the natural content of milk.

Gross Beta - Water

Eleven blanks were prepared from distilled water. The average result without considering detection limits for 1998 was $1.3 \pm 3.7 \text{ E-01 pCi/l}$. Eleven gross beta samples with a spike level of $2.2 \pm 0.7 \text{ E+01 pCi/l}$ were analyzed during 1998. The average result was $2.1 \pm 0.3 \text{ E+01 pCi/l}$. The results were well within the guidelines outlined in Table 2 of the document, "Environmental Radioactivity Laboratory Intercomparison Studies Program," EPA-600/4-81-004.

Tritium in Water

Thirteen blank samples were analyzed during 1998. The average result, without considering detection levels, was $1.0 \pm 6.9 \text{ E+01 pCi/l}$. Thirteen tritium samples with a spike level of $1.7 \pm 0.5 \text{ E+03 pCi/l}$ were analyzed by liquid scintillation counting during 1998. The average result was $1.5 \pm 0.2 \text{ E+03 pCi/l}$.

Gamma Spectroscopy

A blank water sample was analyzed weekly in the gamma spectroscopy laboratory. All nuclides were less than the normal level of detection indicating no contamination. Spike samples were measured weekly using the Cs-137 peak at 662 KeV. The average activity of eleven measurements during 1998 was $2.2 \pm 0.05 \text{ E+04 pCi/l}$ as compared with a spike level of $2.0 \pm 0.3 \text{ E+04 pCi/l}$.

TABLE 6-1
1998 ENVIRONMENTAL SPIKED DOSIMETER RESULTS

DISTRIBUTION PERIOD	GIVEN EXPOSURE (mR)	REPORTED EXPOSURE (mR)	BIAS (%)
First Quarter	24.0	23.1	-3.8
		23.2	-3.3
		23.4	-2.5
Second Quarter	25.0	24.3	-2.8
		25.1	+4.0
		24.5	-2.0
Third Quarter	25.0	23.8	-4.8
		24.5	-2.0
		24.4	-2.4
Fourth Quarter	25.0	25.1	+0.2
		24.2	-3.3
		24.0	-4.1
Annual	85.0	80.6	-5.2
		80.4	-5.4
		80.1	-5.8

TABLE 6-2
1998 ENVIRONMENTAL MEASUREMENTS LABORATORY (EML)
QUALITY ASSESSMENT PROGRAM RESULTS

DATE	SAMPLE TYPE ^(a)	NUCLIDE	REPORTED RESULT	ERROR	EML VALUE	EML ERROR	RATIO REPORTED/EML
06/98	Air (Bq/filter)	Mn-54	5.81E+00	2.5E-01	5.44E+00	4.9E-01	1.07
		Co-60	8.71E+00	3.3E-01	9.09E+00	7.3E-01	0.96
		Sb-125	1.28E+01	6.3E-01	1.22E+01	1.2E-01	1.05
		Cs-137	1.22E+01	3.3E-01	1.19E+01	9.6E-01	1.03
		Gr-β	2.11E+00	7.4E-02	1.96E+00	3.0E-01	1.08
		Ce-144	7.36E+00	5.7E-01	8.21E+00	8.0E-01	0.90
06/98	Soil (Bq/kg)	K-40	3.89E+02	1.4E+01	3.14E+02	1.0E+01	1.24
		Sr-90	1.30E+01	2.2E+00	1.31E+01	2.8E-01	0.99
		Cs-137	3.92E+02	3.4E+00	3.30E+02	9.3E+00	1.19
06/98	Vegetation (Bq/kg)	K-40	8.38E+02	2.2E+01	7.07E+02	2.5E+01	1.18
		Co-60	1.33E+01	1.2E+00	1.06E+01	2.1E-01	1.26
		Cs-137	2.23E+02	3.0E+00	1.82E+02	7.1E+00	1.23
06/98	Water (Bq/l)	H-3	3.40E+02	4.8E+01	2.18E+02	6.5E+00	1.56
		Mn-54	5.61E+01	1.3E+00	5.70E+01	1.9E+00	0.98
		Co-60	1.36E+01	8.0E-01	1.36E+01	1.2E+00	1.00
		Cs-137	4.72E+01	1.2E+00	4.60E+01	1.7E+00	1.03
		Gr-α	1.40E+03	1.1E+02	1.42E+03	1.0E+02	0.99
		Gr-β	5.3E+01 ^(b)	2.0E+00	2.20E+03	1.0E+02	0.02

Bq=becquerel; the EML results are reported in becquerel instead of picocuries. One picocurie equals 0.037 becquerel

Supply System result was entered wrong on EML database. Result should have been 1.96E+03 Bq/l.

TABLE 6-3
1998 TELEDYNE BROWN QUALITY CONTROL DATA - BLANKS

NUCLIDE	MEDIUM	NUMBER	AVERAGE RESULT	UNITS
I-131	Milk	18 ^(a)	-1.3 ± 9.8E-02	pCi/l
		10 ^(b)	5.3 ± 15E-01	pCi/l
Sr-90	Water	11 ^(a)	1.2 ± 1.9E-01	pCi/l
H-3	Water	13 ^(a)	1.0 ± 6.9E+01	pCi/l
Gross Beta	Water	11 ^(a)	1.3 ± 3.7E-01	pCi/l
Gamma	Water	52	*	pCi/l
Gross Beta	AP Filter	52 ^{(c)(d)}	1.0 ± 0.2E+00	Total pCi
I-131	Charcoal	52 ^{(a)(c)}	-1.8 ± 10E-01	Total pCi

Footnotes:

* All nuclides less than minimum detection level

a) This average is calculated from the Supply System quality control samples without considering detection limits.

b) This is the natural content in milk.

c) The in-house weekly quality control blanks for AP filters and charcoals are calculated in total pCi.

d) This average includes only the blank AP filters analyzed for the Supply System. A blank planchette (counter background) and a blank filter are counted with each set of filters analyzed (approximately 10 sets per week).

TABLE 6-4
1998 TELEDYNE BROWN QUALITY CONTROL DATA - SPIKES

NUCLIDE	MEDIUM	NUMBER	AVERAGE RESULT	SPIKE LEVEL
Gross Beta	Water	11	$2.1 \pm 0.3E+01$	$2.2 \pm 0.7E+01$
H-3	Water	13	$1.5 \pm 0.2E+03$	$1.7 \pm 0.5E+03$
Sr-90	Water	11	$3.4 \pm 0.4E+01$	$3.5 \pm 0.6E+01$
Sr-90	Milk	10	$3.2 \pm 0.9E+01$	$3.5 \pm 0.6E+01$
Gamma ^(a)	Water	11	$2.2 \pm 0.05E+04$	$2.0 \pm 0.3E+04$

Footnotes:

a) Measured Cs-137 peak at 662 KeV.

TABLE 6-5
1998 EPA INTERCOMPARISON PROGRAM RESULTS

ISOTOPE	COLLECTION DATE	TI RESULTS ^(a)	EPA RESULTS ^(b)	OTHER LABS ^(c)
<u>MEDIUM - WATER (pCi/liter)</u>				
Sr-89	01/16/98	5.00 ± 1.73	8.0 ± 5.0	9.33 ± 4.70
Sr-90	01/16/98	31.67 ± 0.58	32.0 ± 5.0	29.51 ± 3.39
Sr-89	04/21/98	4.67 ± 1.15	6.0 ± 5.0	6.15 ± 2.53
Sr-90	04/21/98	21.67 ± 1.15	18.0 ± 5.0	17.06 ± 2.75
Sr-89	07/17/98	21.00 ± 1.00	21.0 ± 5.0	20.53 ± 3.50
Sr-90	07/17/98	6.33 ± 0.58	7.0 ± 5.0	6.82 ± 1.80
Sr-89	10/20/98	18.33 ± 1.53	19.0 ± 5.0	18.25 ± 3.33
Sr-90	10/20/98	8.33 ± 1.15	8.0 ± 5.0	7.24 ± 1.61
Gr-Alpha	01/30/98	33.00 ± 2.65	30.5 ± 7.6	21.36 ± 5.99
Gr-Beta	01/30/98	5.60 ± 0.90	3.9 ± 5.0	7.44 ± 2.59
Gr-Alpha	04/21/98	50.00 ± 1.73	54.4 ± 13.6	53.26 ± 9.73
Gr-Beta	04/21/98	102.00 ± 6.56	94.7 ± 10.0	97.73 ± 9.53
Gr-Alpha	07/24/98	5.43 ± 0.64	7.2 ± 5.0	7.27 ± 1.98
Gr-Beta	07/24/98	14.67 ± 2.08	12.8 ± 5.0	13.23 ± 2.84
Gr-Alpha	10/20/98	21.67 ± 2.31	30.1 ± 7.5	30.01 ± 5.15
Gr-Beta	10/20/98	74.67 ± 7.64	94.0 ± 10.0	94.20 ± 10.64 ^(d)
I-131	02/06/98	110.00 ± 0.00	104.9 ± 10.5	105.74 ± 5.43
I-131	09/11/98	5.93 ± 0.55	6.1 ± 2.0	6.70 ± 1.17
Ra-226	02/13/98	14.67 ± 0.58	16.0 ± 2.4	16.05 ± 1.67
Ra-228	02/13/98	32.00 ± 2.00	33.3 ± 8.3	31.89 ± 5.93
Ra-226	04/21/98	15.00 ± 0.00	15.0 ± 2.3	14.57 ± 1.70
Ra-228	04/21/98	8.50 ± 0.20	9.3 ± 2.3	9.50 ± 1.61
Ra-226	06/12/98	4.47 ± 0.85	4.9 ± 0.7	4.70 ± 0.70
Ra-228	06/12/98	1.93 ± 0.21	2.1 ± 0.5	2.62 ± 0.64
Ra-226	09/18/98	1.53 ± 0.46	1.7 ± 0.3	1.82 ± 0.29
Ra-228	09/18/98	6.70 ± 0.35	5.7 ± 1.4	5.76 ± 0.82
Ra-226	10/20/98	4.67 ± 0.25	4.5 ± 0.7	4.53 ± 0.98
Ra-228	10/20/98	1.90 ± 0.20	1.5 ± 0.4	1.92 ± 0.51
H-3	03/13/98	1833.33 ± 57.74	2155.0 ± 348.0	2159.47 ± 234.20
Co-60	04/21/98	52.33 ± 1.53	50.0 ± 5.0	49.65 ± 2.25
Cs-134	04/21/98	21.00 ± 1.00	22.0 ± 5.0	20.74 ± 2.29
Cs-137	04/21/98	11.67 ± 0.58	10.0 ± 5.0	10.82 ± 1.72
Co-60	06/05/98	13.00 ± 1.00	12.0 ± 5.0	12.74 ± 1.81
Zn-65	06/05/98	111.67 ± 2.52	104.0 ± 10.0	108.45 ± 7.54
Cs-134	06/05/98	32.33 ± 0.58	31.0 ± 5.0	28.42 ± 2.16
Cs-137	06/05/98	37.67 ± 2.08	35.0 ± 5.0	36.13 ± 2.06
Ba-133	06/05/98	35.00 ± 2.65	40.0 ± 5.0	38.11 ± 2.84
Co-60	10/20/98	22.33 ± 1.15	21.0 ± 5.0	21.77 ± 2.03
Cs-134	10/20/98	6.67 ± 0.58	6.0 ± 5.0	6.40 ± 1.57
Cs-137	10/20/98	56.33 ± 3.79	50.0 ± 5.0	50.88 ± 2.72 ^(e)
Co-60	11/11/98	38.67 ± 2.52	38.0 ± 5.0	38.17 ± 2.38

TABLE 6-5 (cont.)
1998 EPA INTERCOMPARISON PROGRAM RESULTS

ISOTOPE	COLLECTION DATE	TI RESULTS ^(a)	EPA RESULTS ^(b)	OTHER LABS ^(c)
Zn-65	11/11/98	140.67 ± 10.97	131.0 ± 13.0	137.21 ± 7.65
Cs-134	11/11/98	103.00 ± 2.00	105.0 ± 5.0	97.11 ± 6.14
Cs-137	11/11/98	115.33 ± 1.53	111.0 ± 6.0	113.38 ± 5.42
Ba-133	11/11/98	46.33 ± 2.52	56.0 ± 6.0	53.11 ± 3.64

Footnotes:

- a) Teledyne Results - Average ± one sigma. Units are pCi/liter for water and milk except K is in mg/liter. Units are total pCi for air particulate filters.
- b) EPA Results - Expected laboratory precision (1 sigma). Units are pCi/liter for water and milk except K is in mg/liter. Units are total pCi for air particulate filters.
- c) Average concentration ± one sigma, based on range of values encountered from other labs.
- d) The special EPA instructions concerning multiple evaporation with concentrated nitric acid (to purge) chlorides derived from HCl preservative were omitted by oversight. The chlorides cause greater self absorption and lead to lower results. Two additional aliquots using tow evaporations with concentrated nitric acid were analyzed. The results, when corrected for decay of Sr-89, were 87 and 83 pCi/liter, which compare favorably with the EPA result.
- e) An investigation is being conducted; result will be available shortly.

TABLE 6-6
1998 ANALYTICS, INC. CROSS CHECK COMPARISON PROGRAM

SAMPLE ID	MEDIA	NUCLIDE	TI RESULT ^(a)	ANALYTICS RESULT	RATIO ^(b)
E1346-396	Milk	I-131	87 ± 9	82 ± 4	1.06
TI #71657		Ce-141	66 ± 7	70 ± 4	0.94
03/12/98		Cr-51	220 ± 30	201 ± 10	1.09
		Cs-134	85 ± 9	84 ± 4	1.01
		Cs-137	180 ± 20	161 ± 8	1.12
		Mn-54	130 ± 10	133 ± 7	0.98
		Fe-59	110 ± 10	95 ± 5	1.16
		Zn-65	160 ± 20	142 ± 7	1.13
		Co-60	82 ± 8	85 ± 4	0.96
E1460-396	Milk	I-131	68 ± 7	67 ± 3	1.01
TI #78921		Ce-141	94 ± 9	99 ± 5	0.95
06/11/98		Cr-51	97 ± 31	132 ± 7	0.73
		Cs-134	101 ± 1	95 ± 5	1.06
		Cs-137	79 ± 8	70 ± 4	1.13
		Mn-54	112 ± 11	106 ± 5	1.06
		Fe-59	58 ± 9	45 ± 2	1.29
		Zn-65	143 ± 14	122 ± 6	1.17
		Co-60	157 ± 16	143 ± 7	1.10
E1630-396	Milk	I-131	65 ± 1	71 ± 4	0.92
TI #94881		Ce-141	647 ± 65	746 ± 37	0.87
12/14/98		Cr-51	900 ± 90	979 ± 49	0.92
		Cs-134	200 ± 20	220 ± 11	0.91
		Cs-137	177 ± 18	183 ± 9	0.97
		Mn-54	136 ± 14	142 ± 7	0.96
		Fe-59	156 ± 16	148 ± 7	1.05
		Zn-65	132 ± 14	140 ± 7	0.94
		Co-60	169 ± 17	178 ± 9	0.95
		Sr-89	20 ± 2	69 ± 3	0.29 ^(c)
		Sr-90	16 ± 1	41 ± 2	0.39 ^(c)
E1631-396	Filter	Ce-141	566 ± 57	524 ± 26	1.08
TI #94882		Cr-51	800 ± 80	687 ± 49	1.16
12/14/98		Cs-134	147 ± 15	154 ± 8	0.95
		Cs-137	158 ± 16	128 ± 6	1.23
		Mn-54	122 ± 12	100 ± 5	1.22
		Fe-59	134 ± 13	104 ± 5	1.29
		Zn-65	129 ± 13	98 ± 5	1.32
		Co-60	134 ± 13	125 ± 6	1.07
E1632-396	Water	H-3	5500 ± 200	5980 ± 299	1.08
TI #94883					
12/14/98					
E1633-396	Water	Am-241	8.3 ± 1.5	7.9 ± 0.4	1.05
TI #94884		Pu-239	9.8 ± 1.8	8.9 ± 0.4	1.10
12/14/98					

TABLE 6-6(cont.)
1998 ANALYTICS, INC. CROSS CHECK COMPARISON PROGRAM

Footnotes:

- a) Teledyne Results - counting error is two standard deviations. Units are pCi/liter for water and milk. For gamma results, if two standard deviations are less than 10%, then a 10% error is reported. Units are total pCi for air particulate filters.
- b) Ratio of Teledyne Brown Engineering to Analytics results. Acceptance criteria are based on USNRC acceptance criteria described in USNRC Procedure 84750 dated March 15, 1994.
- c) Investigation in progress.

7.0 REFERENCES

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5. U.S. Nuclear Regulatory Commission, "Performance, Testing and Procedural Specifications For Thermoluminescence Dosimetry-Environmental Applications," Regulatory Guide 4.13, Revision 1, July 1977.
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8. WNP-2 Offsite Dose Calculation Manual (ODCM).
9. Code of Federal Regulations, Title 10 Part 20, "Standards For Protection Against Radiation."
10. Code of Federal Regulations, Title 10 Part 50, "Domestic Licensing of Production and Utilization Facilities."
11. Washington Administrative Code 246-290, "Group A Public Water Systems."
12. Washington Administrative Code 173-200, "Water Quality Standards for Ground Water of the State of Washington."
13. Washington Administrative Code 173-201A, "Water Quality Standards for Surface Waters of the State of Washington."
14. Robertson, D. E., and J. J. Fix, "Association of Hanford Origin Radionuclides With Columbia River Sediment", BNWL-2305, August 1977.
15. Energy Facility Site Evaluation Council, Resolution No. 259, amended November 1994.
16. Energy Facility Site Evaluation Council, Resolution No. 278, approved May 8, 1995.

17. Teledyne Brown Engineering - Environmental Services PRO-032-27, "Calibration and Control of Alpha/Beta Counters."
18. Teledyne Brown Engineering - Environmental Services PRO-042-44, "Calibration and Control of Gamma Ray Spectrometers."
19. Teledyne Brown Engineering - Environmental Services PRO-052-35, "Determination of Tritium by Liquid Scintillation."

8.0 1997 REMP REPORT ERRATA

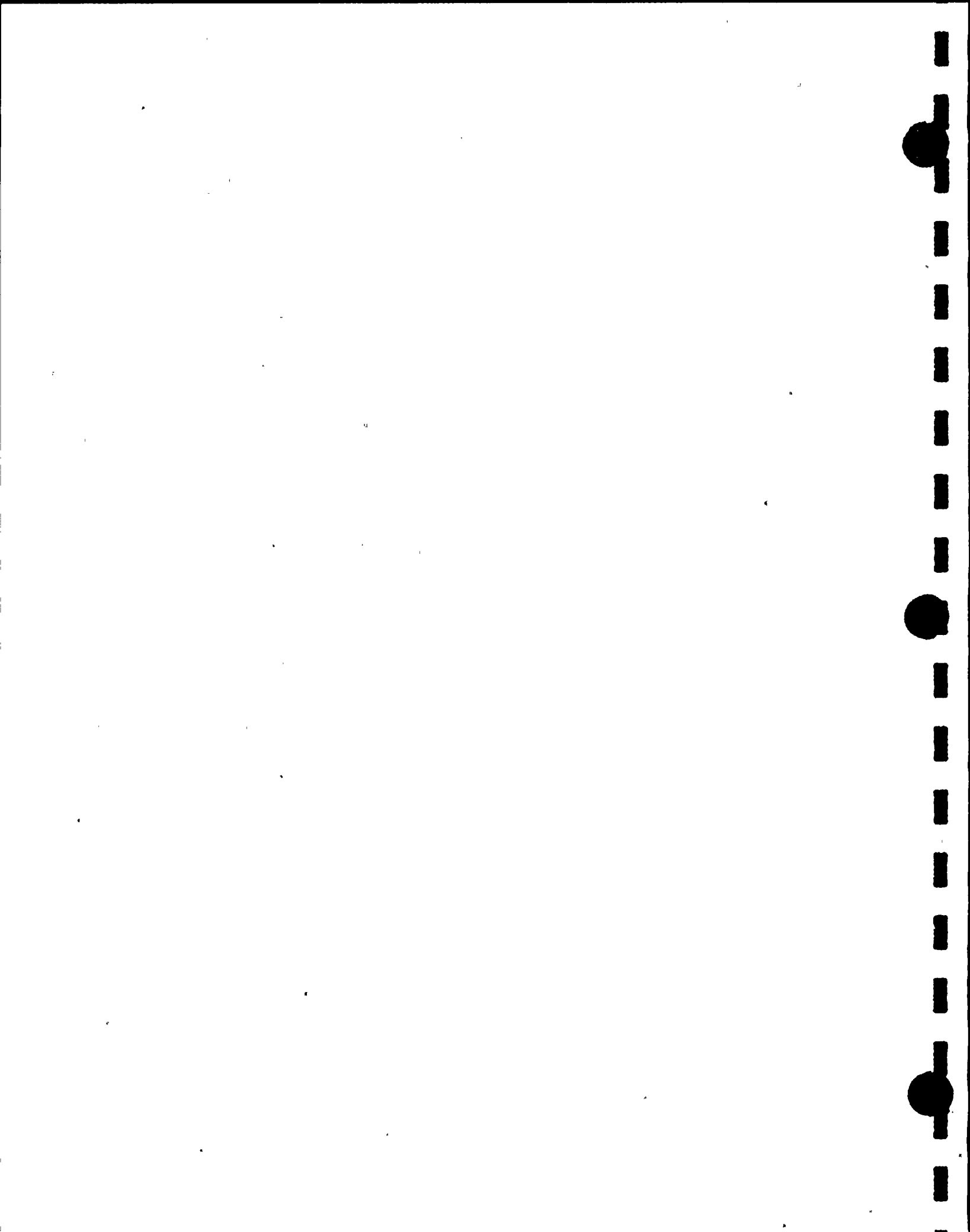
Corrections to errors found in the 1997 Radiological Environmental Monitoring Program Annual Report are listed below.

Page 4-14, Table 4-2: Two stations in north sector have wrong distance. Station 47 and Station 57 should both be 0.9 miles and 1448 meters.

Page 4-15, Table 4-2: Station 65 in the south sector should read 8.7 miles and 13999 meters estimated distance.

Page 5-14, Table 5-1: Mean cesium-137 result in annual soil, previous operational should read 235.3 pCi/kg.

Page 5-16, Table 5-1: Mean cesium-137 result in river sediment, previous operational should read 317.8 pCi/kg.





**WASHINGTON PUBLIC POWER
SUPPLY SYSTEM**

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

NUCLEAR PLANT 2

**1998 DATA TABLES
TABLES A and B**

JANUARY 1 to DECEMBER 31, 1998

**RADIOLOGICAL
ENVIRONMENTAL
MONITORING PROGRAM**

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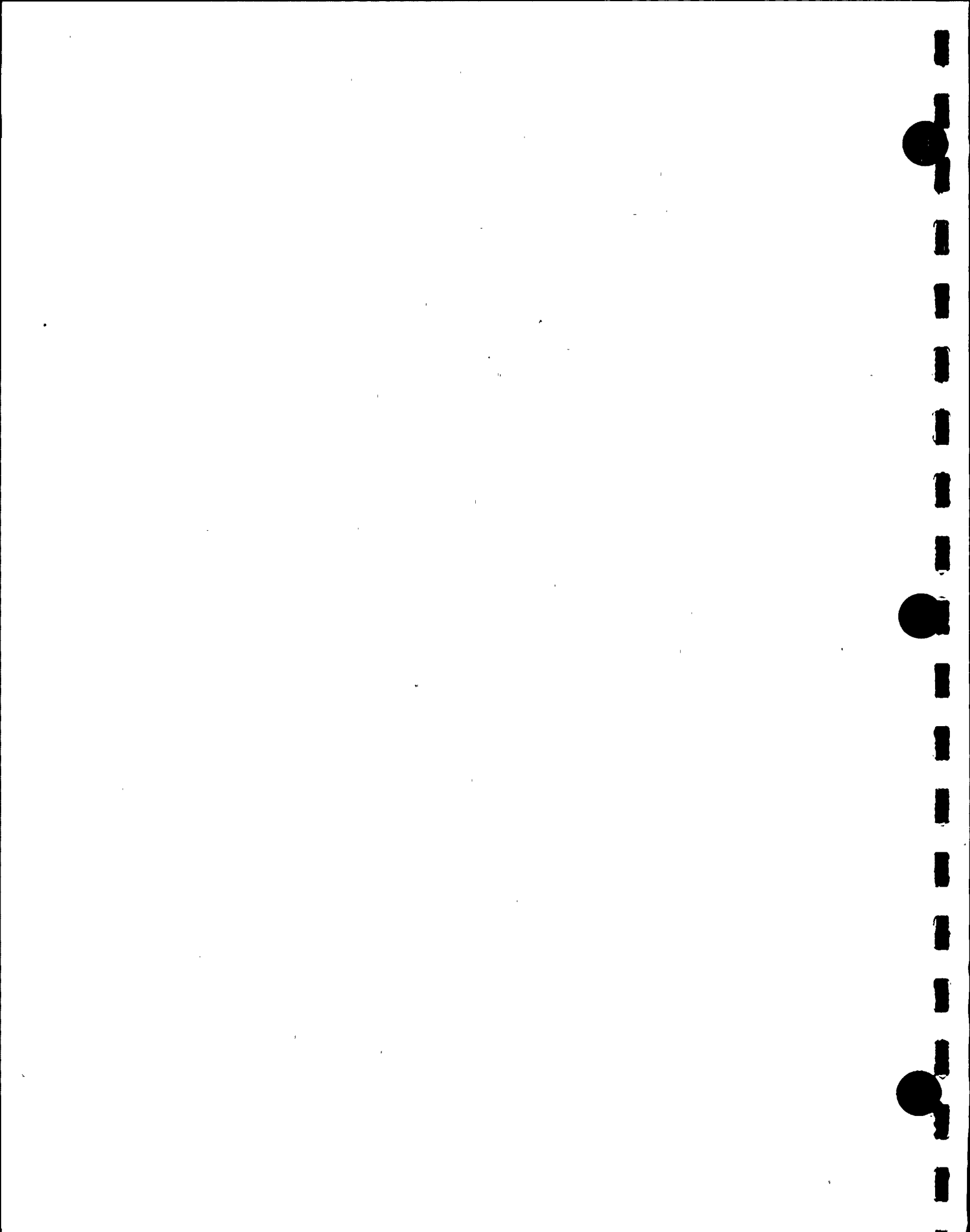
1998 DATA TABLES

TABLE A: ROUTINE RESULTS

TABLE B: SPECIAL INTEREST SAMPLE RESULTS

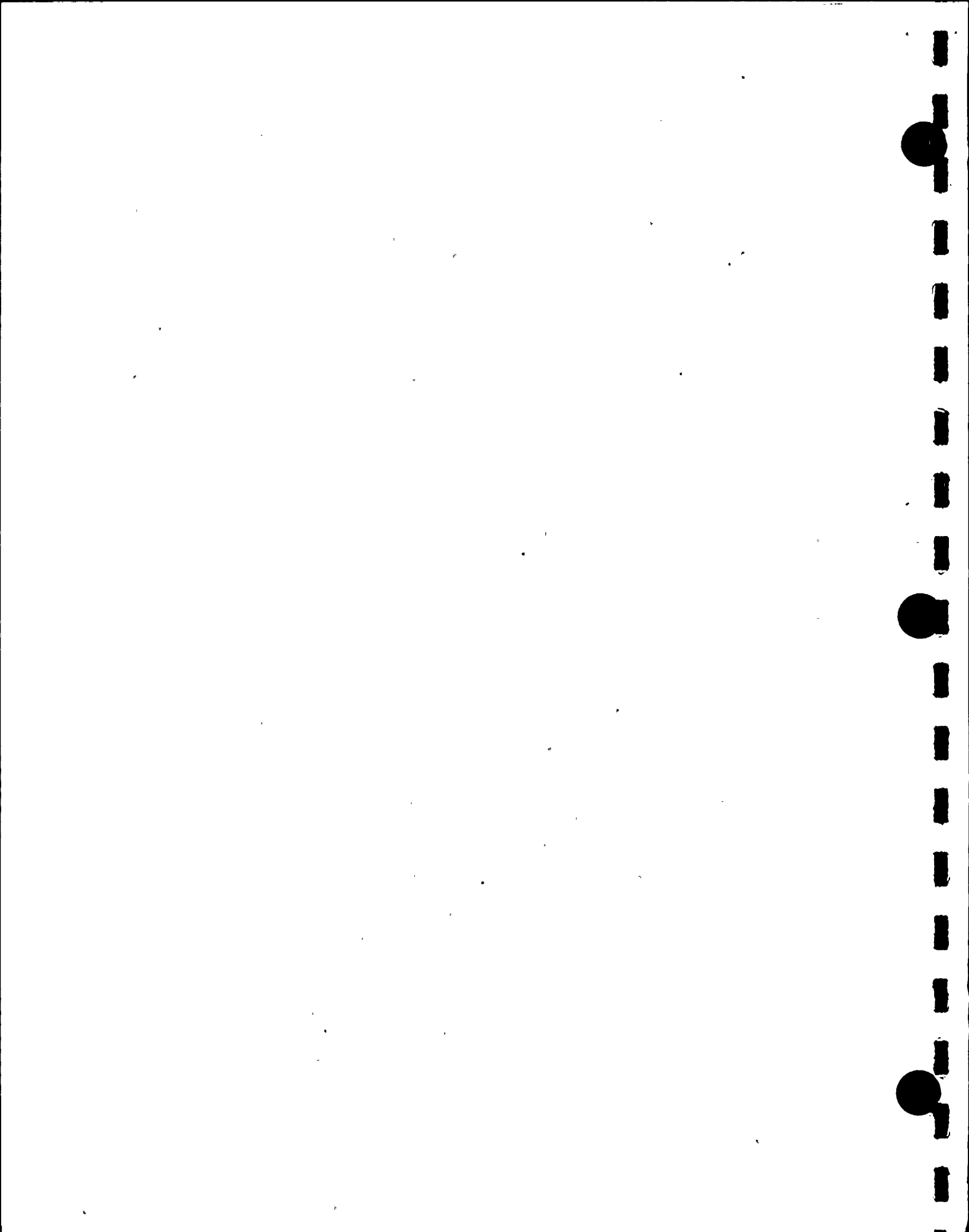
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TABLE A-1.1
1998 QUARTERLY TLD RESULTS

Results in mR/Day

LOCATION	COLLECTION PERIOD	RESULT
1	12/30/97 to 03/27/98	0.239
	03/27/98 to 06/25/98	0.249
	06/25/98 to 09/29/98	0.239
	09/29/98 to 12/31/98	0.260
2	12/30/97 to 03/27/98	0.236
	03/27/98 to 06/25/98	0.234
	06/25/98 to 09/29/98	0.241
	09/29/98 to 12/31/98	0.243
3	12/30/97 to 03/27/98	0.233
	03/27/98 to 06/25/98	0.229
	06/25/98 to 09/29/98	0.230
	09/29/98 to 12/31/98	0.240
4	12/30/97 to 03/27/98	0.204
	03/27/98 to 06/25/98	0.218
	06/25/98 to 09/29/98	0.202
	09/29/98 to 12/31/98	0.218
5	12/30/97 to 03/27/98	0.215
	03/27/98 to 06/25/98	0.217
	06/25/98 to 09/29/98	0.205
	09/29/98 to 12/31/98	0.223
6	12/30/97 to 03/27/98	0.223
	03/27/98 to 06/25/98	0.222
	06/25/98 to 09/29/98	0.217
	09/29/98 to 12/31/98	0.230
7	12/30/97 to 03/27/98	0.253
	03/27/98 to 06/25/98	0.231
	06/25/98 to 09/29/98	0.242
	09/29/98 to 12/31/98	0.239
8	12/30/97 to 03/27/98	0.216
	03/27/98 to 06/25/98	0.259
	06/25/98 to 09/29/98	0.253
	09/29/98 to 12/31/98	0.265

TABLE A-1.1 (cont.)
1998 QUARTERLY TLD RESULTS

Results in mR/Day

LOCATION	COLLECTION PERIOD	RESULT
9	12/30/97 to 03/27/98	0.234
	03/27/98 to 06/25/98	0.213
	06/25/98 to 09/29/98	0.211
	09/29/98 to 12/31/98	0.217
10	12/30/97 to 03/27/98	0.239
	03/27/98 to 06/25/98	0.236
	06/25/98 to 09/29/98	0.226
	09/29/98 to 12/31/98	0.237
11	12/30/97 to 03/27/98	0.229
	03/27/98 to 06/25/98	0.235
	06/25/98 to 09/29/98	0.233
	09/29/98 to 12/31/98	0.238
12	12/30/97 to 03/27/98	0.248
	03/27/98 to 06/25/98	0.256
	06/25/98 to 09/29/98	0.248
	09/29/98 to 12/31/98	0.266
13	12/30/97 to 03/27/98	0.238
	03/27/98 to 06/25/98	0.240
	06/25/98 to 09/29/98	0.234
	09/29/98 to 12/31/98	0.246
14	12/30/97 to 03/27/98	0.234
	03/27/98 to 06/25/98	0.235
	06/25/98 to 09/29/98	0.229
	09/29/98 to 12/31/98	0.240
15	12/30/97 to 03/27/98	0.250
	03/27/98 to 06/25/98	0.253
	06/25/98 to 09/29/98	0.250
	09/29/98 to 12/31/98	0.263
16	12/30/97 to 03/27/98	0.238
	03/27/98 to 06/25/98	0.242
	06/25/98 to 09/29/98	0.243
	09/29/98 to 12/31/98	0.243

TABLE A-1.1 (cont.)
1998 QUARTERLY TLD RESULTS

Results in mR/Day

LOCATION	COLLECTION PERIOD	RESULT
17	12/30/97 to 03/27/98	0.245
	03/27/98 to 06/25/98	0.256
	06/25/98 to 09/29/98	0.251
	09/29/98 to 12/31/98	0.259
18	12/30/97 to 03/27/98	0.239
	03/27/98 to 06/25/98	0.256
	06/25/98 to 09/29/98	0.239
	09/29/98 to 12/31/98	0.245
19	12/30/97 to 03/27/98	0.243
	03/27/98 to 06/25/98	0.250
	06/25/98 to 09/29/98	0.250
	09/29/98 to 12/31/98	0.260
20	12/30/97 to 03/27/98	0.246
	03/27/98 to 06/25/98	0.239
	06/25/98 to 09/29/98	0.246
	09/29/98 to 12/31/98	0.255
21	12/30/97 to 03/27/98	0.226
	03/27/98 to 06/25/98	0.229
	06/25/98 to 09/29/98	0.225
	09/29/98 to 12/31/98	0.232
22	12/30/97 to 03/27/98	0.233
	03/27/98 to 06/25/98	0.240
	06/25/98 to 09/29/98	0.237
	09/29/98 to 12/31/98	0.246
23	12/30/97 to 03/27/98	0.235
	03/27/98 to 06/25/98	0.235
	06/25/98 to 09/29/98	0.230
	09/29/98 to 12/31/98	0.237
24	12/30/97 to 03/27/98	0.229
	03/27/98 to 06/25/98	0.254
	06/25/98 to 09/29/98	0.231
	09/29/98 to 12/31/98	0.257

TABLE A-1.1 (cont.)
1998 QUARTERLY TLD RESULTS

Results in mR/Day

LOCATION	COLLECTION PERIOD	RESULT
25	12/30/97 to 03/27/98	0.243
	03/27/98 to 06/25/98	0.254
	06/25/98 to 09/29/98	0.247
	09/29/98 to 12/31/98	0.251
40	12/30/97 to 03/27/98	0.210
	03/27/98 to 06/25/98	0.221
	06/25/98 to 09/29/98	0.212
	09/29/98 to 12/31/98	0.225
41	12/30/97 to 03/27/98	0.245
	03/27/98 to 06/25/98	0.252
	06/25/98 to 09/29/98	0.236
	09/29/98 to 12/31/98	0.250
42	12/30/97 to 03/27/98	0.240
	03/27/98 to 06/25/98	0.243
	06/25/98 to 09/29/98	0.247
	09/29/98 to 12/31/98	0.241
43	12/30/97 to 03/27/98	(a)
	03/27/98 to 06/25/98	0.238
	06/25/98 to 09/29/98	0.240
	09/29/98 to 12/31/98	0.236
44	12/30/97 to 03/27/98	0.225
	03/27/98 to 06/25/98	0.235
	06/25/98 to 09/29/98	0.222
	09/29/98 to 12/31/98	0.244
45	12/30/97 to 03/27/98	0.229
	03/27/98 to 06/25/98	0.230
	06/25/98 to 09/29/98	0.242
	09/29/98 to 12/31/98	0.236
46	12/30/97 to 03/27/98	0.272
	03/27/98 to 06/25/98	0.306
	06/25/98 to 09/29/98	0.300
	09/29/98 to 12/31/98	0.311

(a) TLD missing

TABLE A-1.1 (cont.)
1998 QUARTERLY TLD RESULTS

Results in mR/Day

LOCATION	COLLECTION PERIOD	RESULT
47	12/30/97 to 03/27/98	0.218
	03/27/98 to 06/25/98	0.219
	06/25/98 to 09/29/98	0.211
	09/29/98 to 12/31/98	0.227
49	12/30/97 to 03/27/98	0.239
	03/27/98 to 06/25/98	0.219
	06/25/98 to 09/29/98	0.233
	09/29/98 to 12/31/98	0.251
50	12/30/97 to 03/27/98	0.230
	03/27/98 to 06/25/98	0.240
	06/25/98 to 09/29/98	0.226
	09/29/98 to 12/31/98	0.264
51	12/30/97 to 03/27/98	0.225
	03/27/98 to 06/25/98	0.233
	06/25/98 to 09/29/98	0.226
	09/29/98 to 12/31/98	0.244
53	12/30/97 to 03/27/98	0.247
	03/27/98 to 06/25/98	0.253
	06/25/98 to 09/29/98	0.245
	09/29/98 to 12/31/98	0.272
54	12/30/97 to 03/27/98	0.232
	03/27/98 to 06/25/98	0.253
	06/25/98 to 09/29/98	0.235
	09/29/98 to 12/31/98	0.253
55	12/30/97 to 03/27/98	0.244
	03/27/98 to 06/25/98	0.240
	06/25/98 to 09/29/98	0.235
	09/29/98 to 12/31/98	0.246
56	12/30/97 to 03/27/98	0.237
	03/27/98 to 06/25/98	0.234
	06/25/98 to 09/29/98	0.234
	09/29/98 to 12/31/98	0.259

TABLE A-1.1 (cont.)
1998 QUARTERLY TLD RESULTS

Results in mR/Day

LOCATION	COLLECTION PERIOD	RESULT
65	12/30/97 to 03/27/98	0.222
	03/27/98 to 06/25/98	0.234
	06/25/98 to 09/29/98	0.217
	09/29/98 to 12/31/98	0.238
71	12/30/97 to 03/27/98	0.286
	03/27/98 to 06/25/98	0.254
	06/25/98 to 09/29/98	0.283
	09/29/98 to 12/31/98	0.305
72	12/30/97 to 03/27/98	0.272
	03/27/98 to 06/25/98	0.258
	06/25/98 to 09/29/98	0.273
	09/29/98 to 12/31/98	0.286
73	12/30/97 to 03/27/98	0.234
	03/27/98 to 06/25/98	0.228
	06/25/98 to 09/29/98	0.228
	09/29/98 to 12/31/98	0.241
74	12/30/97 to 03/27/98	0.249
	03/27/98 to 06/25/98	0.250
	06/25/98 to 09/29/98	0.253
	09/29/98 to 12/31/98	0.267
75	12/30/97 to 03/27/98	0.239
	03/27/98 to 06/25/98	0.235
	06/25/98 to 09/29/98	0.238
	09/29/98 to 12/31/98	0.251
76	12/30/97 to 03/27/98	0.250
	03/27/98 to 06/25/98	0.231
	06/25/98 to 09/29/98	0.244
	09/29/98 to 12/31/98	0.248
77	12/30/97 to 03/27/98	0.238
	03/27/98 to 06/25/98	0.230
	06/25/98 to 09/29/98	0.241
	09/29/98 to 12/31/98	0.252

TABLE A-1.1 (cont.)
1998 QUARTERLY TLD RESULTS

Results in mR/Day

LOCATION	COLLECTION PERIOD	RESULT
78	12/30/97 to 03/27/98	0.229
	03/27/98 to 06/25/98	0.238
	06/25/98 to 09/29/98	0.229
	09/29/98 to 12/31/98	0.243
79	12/30/97 to 03/27/98	0.231
	03/27/98 to 06/25/98	0.244
	06/25/98 to 09/29/98	0.242
	09/29/98 to 12/31/98	0.249
80	12/30/97 to 03/27/98	0.226
	03/27/98 to 06/25/98	0.231
	06/25/98 to 09/29/98	0.224
	09/29/98 to 12/31/98	0.239
81	12/30/97 to 03/27/98	0.225
	03/27/98 to 06/25/98	0.238
	06/25/98 to 09/29/98	0.228
	09/29/98 to 12/31/98	0.245
82	12/30/97 to 03/27/98	0.241
	03/27/98 to 06/25/98	0.251
	06/25/98 to 09/29/98	0.241
	09/29/98 to 12/31/98	0.258
83	12/30/97 to 03/27/98	0.239
	03/27/98 to 06/25/98	0.242
	06/25/98 to 09/29/98	0.244
	09/29/98 to 12/31/98	0.249
84	12/30/97 to 03/27/98	0.244
	03/27/98 to 06/25/98	0.253
	06/25/98 to 09/29/98	0.242
	09/29/98 to 12/31/98	0.274
85	12/30/97 to 03/27/98	0.243
	03/27/98 to 06/25/98	0.249
	06/25/98 to 09/29/98	0.258
	09/29/98 to 12/31/98	0.262

TABLE A-1.1 (cont.)
1998 QUARTERLY TLD RESULTS

Results in mR/Day

LOCATION	COLLECTION PERIOD	RESULT
86	12/30/97 to 03/27/98	0.277
	03/27/98 to 06/25/98	0.254
	06/25/98 to 09/29/98	0.274
	09/29/98 to 12/31/98	0.293
119	12/30/97 to 03/27/98	0.242
	03/27/98 to 06/25/98	0.250
	06/25/98 to 09/29/98	0.238
	09/29/98 to 12/31/98	0.266
119-Control	12/30/97 to 03/27/98	0.249
	03/27/98 to 06/25/98	0.234
	06/25/98 to 09/29/98	0.242
	09/29/98 to 12/31/98	0.250
120	12/30/97 to 03/27/98	0.254
	03/27/98 to 06/25/98	0.248
	06/25/98 to 09/29/98	0.241
	09/29/98 to 12/31/98	0.261

TABLE A-1.2
1998 ANNUAL TLD RESULTS

Results in mR/Day

LOCATION	COLLECTION PERIOD	RESULT
1	12/30/97 to 12/31/98	0.220
2	12/30/97 to 12/31/98	0.217
3	12/30/97 to 12/31/98	0.213
4	12/30/97 to 12/31/98	0.194
5	12/30/97 to 12/31/98	0.194
6	12/30/97 to 12/31/98	0.200
7	12/30/97 to 12/31/98	0.210
8	12/30/97 to 12/31/98	0.240
9	12/30/97 to 12/31/98	0.203
10	12/30/97 to 12/31/98	0.218
11	12/30/97 to 12/31/98	0.220
12	12/30/97 to 12/31/98	0.242
13	12/30/97 to 12/31/98	0.223
14	12/30/97 to 12/31/98	0.215
15	12/30/97 to 12/31/98	0.233
16	12/30/97 to 12/31/98	0.225
17	12/30/97 to 12/31/98	0.225
18	12/30/97 to 12/31/98	0.238
19	12/30/97 to 12/31/98	0.242
20	12/30/97 to 12/31/98	0.233
21	12/30/97 to 12/31/98	0.202
22	12/30/97 to 12/31/98	0.229
23	12/30/97 to 12/31/98	0.209
24	12/30/97 to 12/31/98	0.217
25	12/30/97 to 12/31/98	0.223
40	12/30/97 to 12/31/98	0.197
41	12/30/97 to 12/31/98	0.223
42	12/30/97 to 12/31/98	0.220
43	12/30/97 to 12/31/98	0.195
44	12/30/97 to 12/31/98	0.200
45	12/30/97 to 12/31/98	0.217
46	12/30/97 to 12/31/98	0.283
47	12/30/97 to 12/31/98	0.209

TABLE A-1.2 (cont.)
1998 ANNUAL TLD RESULTS
Results in mR/Day

LOCATION	COLLECTION PERIOD	RESULT
49	12/30/97 to 12/31/98	0.221
50	12/30/97 to 12/31/98	0.228
51	12/30/97 to 12/31/98	0.216
53	12/30/97 to 12/31/98	0.237
54	12/30/97 to 12/31/98	0.226
55	12/30/97 to 12/31/98	0.210
56	12/30/97 to 12/31/98	0.223
65	12/30/97 to 12/31/98	0.219
71	12/30/97 to 12/31/98	0.254
72	12/30/97 to 12/31/98	0.248
73	12/30/97 to 12/31/98	0.222
74	12/30/97 to 12/31/98	0.242
75	12/30/97 to 12/31/98	0.223
76	12/30/97 to 12/31/98	0.220
77	12/30/97 to 12/31/98	0.220
78	12/30/97 to 12/31/98	0.220
79	12/30/97 to 12/31/98	0.222
80	12/30/97 to 12/31/98	0.231
81	12/30/97 to 12/31/98	0.215
82	12/30/97 to 12/31/98	0.216
83	12/30/97 to 12/31/98	0.226
84	12/30/97 to 12/31/98	0.225
85	12/30/97 to 12/31/98	0.241
86	12/30/97 to 12/31/98	0.263
119	12/30/97 to 12/31/98	0.219
119-Control	12/30/97 to 12/31/98	0.227
120	12/30/97 to 12/31/98	0.232

TABLE A-1.3
1998 TLD RESULTS - SUMMARY
 Results in mR/Day

NUCLIDE	AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
<u>QUARTERLY TLD RESULTS</u>					
TLD (I)	0.242	0.202	0.311	235	235
TLD (C)	0.219	0.211	0.234	4	
<u>ANNUAL TLD RESULTS</u>					
TLD (I)	0.223	0.194	0.283	59	59
TLD (C)	0.203	0.203	0.203	1	1



TABLE A-2.1
GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
1	12/29/97-01/05/98	1.3 E-02	2.0 E-03
	01/05/98-01/12/98	1.4 E-02	2.0 E-03
	01/12/98-01/19/98	2.2 E-02	2.0 E-03
	01/19/98-01/26/98	4.7 E-03	1.7 E-03
	01/26/98-02/02/98	9.2 E-03	2.1 E-03
	02/02/98-02/09/98	1.8 E-02	2.0 E-03
	02/09/98-02/17/98	5.6 E-03	1.7 E-03
	02/17/98-02/23/98	6.7 E-03	2.1 E-03
	02/23/98-03/02/98	7.7 E-03	1.9 E-03
	03/02/98-03/09/98	1.1 E-02	2.0 E-03
	03/09/98-03/16/98	8.9 E-03	2.0 E-03
	03/16/98-03/23/98	1.5 E-02	2.0 E-03
	03/23/98-03/30/98	4.9 E-03	1.7 E-03
	03/30/98-04/06/98	7.8 E-03	2.0 E-03
	04/06/98-04/13/98	6.9 E-03	2.0 E-03
	04/13/98-04/20/98	1.2 E-02	2.0 E-03
	04/20/98-04/27/98	1.0 E-02	2.0 E-03
	04/27/98-05/04/98	7.7 E-03	1.9 E-03
	05/04/98-05/11/98	1.1 E-02	2.0 E-03
	05/11/98-05/18/98	4.6 E-03	1.8 E-03
	05/18/98-05/26/98 (a)	1.1 E-02	4.0 E-03
	05/26/98-06/01/98	6.2 E-03	2.5 E-03
	06/01/98-06/08/98	1.0 E-02	2.0 E-03
	06/08/98-06/15/98	7.4 E-03	1.8 E-03
	06/15/98-06/22/98	6.5 E-03	1.7 E-03
	06/22/98-06/29/98	5.0 E-03	1.7 E-03
	06/29/98-07/06/98	9.0 E-03	2.0 E-03
	07/06/98-07/13/98	1.1 E-02	2.0 E-03
	07/13/98-07/20/98	9.8 E-03	1.8 E-03
	07/20/98-07/27/98	1.1 E-02	2.0 E-03
	07/27/98-08/03/98	1.4 E-02	2.0 E-03
	08/03/98-08/10/98	1.3 E-02	2.0 E-03
	08/10/98-08/17/98	6.0 E-03	1.8 E-03
	08/17/98-08/24/98	1.1 E-02	2.0 E-03
	08/24/98-08/31/98	1.8 E-02	2.0 E-03
	08/31/98-09/08/98	2.1 E-02	2.0 E-03
	09/08/98-09/14/98	1.4 E-02	2.0 E-03
	09/14/98-09/21/98	1.3 E-02	2.0 E-03
	09/21/98-09/28/98	1.7 E-02	2.0 E-03

(a) Low sample volume due to power outage. Not included in averages.

TABLE A-2.1 (Cont.)
GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
1	09/28/98-10/05/98	1.5 E-02	2.0 E-03
	10/05/98-10/12/98	1.0 E-02	2.0 E-03
	10/12/98-10/19/98	8.4 E-03	2.1 E-03
	10/19/98-10/26/98	3.5 E-02	3.0 E-03
	10/26/98-11/02/98	1.4 E-02	2.0 E-03
	11/02/98-11/09/98	1.9 E-02	2.0 E-03
	11/09/98-11/16/98	1.6 E-02	2.0 E-03
	11/16/98-11/23/98	5.5 E-03	1.6 E-03
	11/23/98-11/30/98	8.9 E-03	2.1 E-03
	11/30/98-12/07/98	7.3 E-03	1.8 E-03
	12/07/98-12/14/98	1.4 E-02	2.0 E-03
	12/14/98-12/21/98	1.4 E-02	2.0 E-03
	12/21/98-12/28/98	2.5 E-02	3.0 E-03

TABLE A-2.1 (Cont.)
GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
4	12/29/97-01/05/98	1.3 E-02	2.0 E-03
	01/05/98-01/12/98	1.6 E-02	2.0 E-03
	01/12/98-01/19/98	1.9 E-02	2.0 E-03
	01/19/98-01/26/98	5.7 E-03	1.8 E-03
	01/26/98-02/02/98	1.0 E-02	2.0 E-03
	02/02/98-02/09/98	1.8 E-02	2.0 E-03
	02/09/98-02/17/98	5.5 E-03	1.7 E-03
	02/17/98-02/23/98	6.4 E-03	2.1 E-03
	02/23/98-03/02/98	9.8 E-03	2.0 E-03
	03/02/98-03/09/98	6.7 E-03	1.8 E-03
	03/09/98-03/16/98	9.9 E-03	2.0 E-03
	03/16/98-03/23/98	1.4 E-02	2.0 E-03
	03/23/98-03/30/98	7.0 E-03	1.8 E-03
	03/30/98-04/06/98	7.8 E-03	2.0 E-03
	04/06/98-04/13/98	6.1 E-03	2.0 E-03
	04/13/98-04/20/98	1.2 E-02	2.0 E-03
	04/20/98-04/27/98	1.6 E-02	2.0 E-03
	04/27/98-05/04/98	2.5 E-02	3.0 E-03
	05/04/98-05/11/98	1.1 E-02	2.0 E-03
	05/11/98-05/18/98	5.1 E-03	1.8 E-03
	05/18/98-05/26/98	8.3 E-03	1.6 E-03
	05/26/98-06/01/98	5.0 E-03	1.9 E-03
	06/01/98-06/08/98	1.2 E-02	2.0 E-03
	06/08/98-06/15/98	7.3 E-03	1.8 E-03
	06/15/98-06/22/98	6.9 E-03	1.7 E-03
	06/22/98-06/29/98	4.3 E-03	1.7 E-03
	06/29/98-07/06/98	1.2 E-02	2.0 E-03
	07/06/98-07/13/98	1.2 E-02	2.0 E-03
	07/13/98-07/20/98	1.2 E-02	2.0 E-03
	07/20/98-07/27/98 (a)	1.2 E-02	4.0 E-03
	07/27/98-08/03/98	1.9 E-02	2.0 E-03
	08/03/98-08/10/98	1.5 E-02	2.0 E-03
	08/10/98-08/17/98	1.0 E-02	2.0 E-03
	08/17/98-08/24/98	1.5 E-02	2.0 E-03
	08/24/98-08/31/98	2.0 E-02	2.0 E-03
	08/31/98-09/08/98	2.2 E-02	2.0 E-03
	09/08/98-09/14/98	1.4 E-02	2.0 E-03
	09/14/98-09/21/98	1.4 E-02	2.0 E-03
	09/21/98-09/28/98	1.5 E-02	2.0 E-03

(a) Unit failure; low sample volume.

TABLE A-2.1 (Cont.)
GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
4	09/28/98-10/05/98	1.7 E-02	2.0 E-03
	10/05/98-10/12/98	1.3 E-02	2.0 E-03
	10/12/98-10/19/98	9.0 E-03	2.1 E-03
	10/19/98-10/26/98	4.3 E-02	3.0 E-03
	10/26/98-11/02/98	1.5 E-02	2.0 E-03
	11/02/98-11/09/98	2.0 E-02	2.0 E-03
	11/09/98-11/16/98 (a)	1.2 E-02	4.0 E-03
	11/16/98-11/23/98	7.3 E-03	1.7 E-03
	11/23/98-11/30/98	8.2 E-03	2.0 E-03
	11/30/98-12/07/98	8.1 E-03	1.8 E-03
	12/07/98-12/14/98	1.4 E-02	2.0 E-03
	12/14/98-12/21/98	1.6 E-02	2.0 E-03
	12/21/98-12/28/98	2.7 E-02	3.0 E-03

(a) Power off at unit.

TABLE A-2.1 (Cont.)
GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
5	12/29/97-01/05/98	1.0 E-02	2.0 E-03
	01/05/98-01/12/98	1.6 E-02	2.0 E-03
	01/12/98-01/19/98	1.9 E-02	2.0 E-03
	01/19/98-01/26/98	3.1 E-03	1.6 E-03
	01/26/98-02/02/98	1.1 E-02	2.0 E-03
	02/02/98-02/09/98	1.5 E-02	2.0 E-03
	02/09/98-02/17/98	4.5 E-03	1.8 E-03
	02/17/98-02/23/98	5.0 E-03	2.0 E-03
	02/23/98-03/02/98	7.0 E-03	1.8 E-03
	03/02/98-03/09/98	1.2 E-02	2.0 E-03
	03/09/98-03/16/98	7.2 E-03	1.9 E-03
	03/16/98-03/23/98	1.3 E-02	2.0 E-03
	03/23/98-03/30/98	6.1 E-03	1.8 E-03
	03/30/98-04/06/98	7.6 E-03	1.9 E-03
	04/06/98-04/13/98	5.7 E-03	1.9 E-03
	04/13/98-04/20/98	1.1 E-02	2.0 E-03
	04/20/98-04/27/98	1.3 E-02	2.0 E-03
	04/27/98-05/04/98	2.3 E-02	3.0 E-03
	05/04/98-05/11/98	1.2 E-02	2.0 E-03
	05/11/98-05/18/98	4.7 E-03	1.8 E-03
	05/18/98-05/26/98	9.1 E-03	1.6 E-03
	05/26/98-06/01/98	3.4 E-03	1.8 E-03
	06/01/98-06/08/98	8.5 E-03	1.9 E-03
	06/08/98-06/15/98	7.8 E-03	1.8 E-03
	06/15/98-06/22/98	8.0 E-03	1.8 E-03
	06/22/98-06/29/98	7.2 E-03	1.8 E-03
	06/29/98-07/06/98	1.4 E-02	2.0 E-03
	07/06/98-07/13/98	1.4 E-02	2.0 E-03
	07/13/98-07/20/98	1.2 E-02	2.0 E-03
	07/20/98-07/27/98	1.5 E-02	2.0 E-03
	07/27/98-08/03/98	1.6 E-02	2.0 E-03
	08/03/98-08/10/98	1.5 E-02	2.0 E-03
	08/10/98-08/17/98	1.0 E-02	2.0 E-03
	08/17/98-08/24/98	1.1 E-02	2.0 E-03
	08/24/98-08/31/98	1.7 E-02	2.0 E-03
	08/31/98-09/08/98	2.1 E-02	2.0 E-03
	09/08/98-09/14/98	1.4 E-02	2.0 E-03
	09/14/98-09/21/98	1.3 E-02	2.0 E-03
	09/21/98-09/28/98	1.7 E-02	2.0 E-03

TABLE A-2.1 (Cont.)
GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
5	09/28/98-10/05/98	1.4 E-02	2.0 E-03
	10/05/98-10/12/98	8.9 E-03	1.9 E-03
	10/12/98-10/19/98	6.8 E-03	2.0 E-03
	10/19/98-10/26/98	3.5 E-02	3.0 E-03
	10/26/98-11/02/98	1.3 E-02	2.0 E-03
	11/02/98-11/09/98	1.8 E-02	2.0 E-03
	11/09/98-11/16/98	1.1 E-02	2.0 E-03
	11/16/98-11/23/98	5.4 E-03	1.6 E-03
	11/23/98-11/30/98	6.9 E-03	2.0 E-03
	11/30/98-12/07/98	5.1 E-03	1.6 E-03
	12/07/98-12/14/98	1.2 E-02	2.0 E-03
	12/14/98-12/21/98	1.2 E-02	2.0 E-03
	12/21/98-12/28/98	2.5 E-02	3.0 E-03

TABLE A-2.1 (Cont.)
GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
6	12/29/97-01/05/98	1.1 E-02	2.0 E-03
	01/05/98-01/12/98	1.3 E-02	2.0 E-03
	01/12/98-01/19/98	1.7 E-02	2.0 E-03
	01/19/98-01/26/98	6.2 E-03	1.8 E-03
	01/26/98-02/02/98	1.2 E-02	2.0 E-03
	02/02/98-02/09/98	1.8 E-02	2.0 E-03
	02/09/98-02/17/98 (a)	* 1.7 E-03	1.4 E-03
	02/17/98-02/23/98	3.6 E-03	1.9 E-03
	02/23/98-03/02/98	7.7 E-03	1.9 E-03
	03/02/98-03/09/98	9.0 E-03	1.9 E-03
	03/09/98-03/16/98	7.5 E-03	1.9 E-03
	03/16/98-03/23/98	1.6 E-02	2.0 E-03
	03/23/98-03/30/98	6.0 E-03	1.8 E-03
	03/30/98-04/06/98	6.3 E-03	1.9 E-03
	04/06/98-04/13/98	3.9 E-03	1.8 E-03
	04/13/98-04/20/98	9.7 E-03	1.9 E-03
	04/20/98-04/27/98	1.3 E-02	2.0 E-03
	04/27/98-05/04/98	2.2 E-02	3.0 E-03
	05/04/98-05/11/98	1.0 E-02	2.0 E-03
	05/11/98-05/18/98	4.5 E-03	1.8 E-03
	05/18/98-05/26/98	8.3 E-03	1.6 E-03
	05/26/98-06/01/98	3.8 E-03	1.9 E-03
	06/01/98-06/08/98	1.4 E-02	2.0 E-03
	06/08/98-06/15/98	8.3 E-03	1.8 E-03
	06/15/98-06/22/98	7.8 E-03	1.8 E-03
	06/22/98-06/29/98	5.8 E-03	1.8 E-03
	06/29/98-07/06/98	1.2 E-02	2.0 E-03
	07/06/98-07/13/98	1.3 E-02	2.0 E-03
	07/13/98-07/20/98	1.2 E-02	2.0 E-03
	07/20/98-07/27/98	1.4 E-02	2.0 E-03
	07/27/98-08/03/98	1.7 E-02	2.0 E-03
	08/03/98-08/10/98	1.4 E-02	2.0 E-03
	08/10/98-08/17/98	8.2 E-03	1.9 E-03
	08/17/98-08/24/98	1.1 E-02	2.0 E-03
	08/24/98-08/31/98	1.9 E-02	2.0 E-03
	08/31/98-09/08/98	2.2 E-02	2.0 E-03
	09/08/98-09/14/98	1.4 E-02	2.0 E-03
	09/14/98-09/21/98	1.2 E-02	2.0 E-03
	09/21/98-09/28/98	1.5 E-02	2.0 E-03

(a) Filter light in disposition.

* Denotes a result less than the detection limit.

TABLE A-2.1 (Cont.)
GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
6	09/28/98-10/05/98	1.5 E-02	2.0 E-03
	10/05/98-10/12/98	8.8 E-03	1.9 E-03
	10/12/98-10/19/98	6.6 E-03	2.0 E-03
	10/19/98-10/26/98	4.2 E-02	3.0 E-03
	10/26/98-11/02/98	1.5 E-02	2.0 E-03
	11/02/98-11/09/98	2.2 E-02	2.0 E-03
	11/09/98-11/16/98	1.3 E-02	2.0 E-03
	11/16/98-11/23/98	6.2 E-03	1.7 E-03
	11/23/98-11/30/98	1.0 E-02	2.0 E-03
	11/30/98-12/07/98	9.1 E-03	1.9 E-03
	12/07/98-12/14/98	1.9 E-02	2.0 E-03
	12/14/98-12/21/98	1.4 E-02	2.0 E-03
	12/21/98-12/28/98	3.1 E-02	3.0 E-03

TABLE A-2.1 (Cont.)
GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
7	12/29/97-01/05/98	1.1 E-02	2.0 E-03
	01/05/98-01/12/98	1.3 E-02	2.0 E-03
	01/12/98-01/19/98	1.8 E-02	2.0 E-03
	01/19/98-01/26/98	4.1 E-03	1.7 E-03
	01/26/98-02/02/98	1.1 E-02	2.0 E-03
	02/02/98-02/09/98	1.4 E-02	2.0 E-03
	02/09/98-02/17/98	4.7 E-03	1.6 E-03
	02/17/98-02/23/98	4.9 E-03	2.0 E-03
	02/23/98-03/02/98	8.2 E-03	1.9 E-03
	03/02/98-03/09/98	1.0 E-02	2.0 E-03
	03/09/98-03/16/98	7.5 E-03	1.9 E-03
	03/16/98-03/23/98	1.4 E-02	2.0 E-03
	03/23/98-03/30/98	4.8 E-03	1.7 E-03
	03/30/98-04/06/98	5.6 E-03	1.8 E-03
	04/06/98-04/13/98	5.5 E-03	1.9 E-03
	04/13/98-04/20/98	1.2 E-02	2.0 E-03
	04/20/98-04/27/98	1.1 E-02	2.0 E-03
	04/27/98-05/04/98 (a)	2.7 E-02	4.0 E-03
	05/04/98-05/11/98	1.0 E-02	2.0 E-03
	05/11/98-05/18/98	5.3 E-03	1.8 E-03
	05/18/98-05/26/98	8.5 E-03	1.6 E-03
	05/26/98-06/01/98	5.4 E-03	2.0 E-03
	06/01/98-06/08/98	1.2 E-02	2.0 E-03
	06/08/98-06/15/98	9.2 E-03	1.9 E-03
	06/15/98-06/22/98	5.6 E-03	1.6 E-03
	06/22/98-06/29/98	4.6 E-03	1.7 E-03
	06/29/98-07/06/98	9.5 E-03	2.0 E-03
	07/06/98-07/13/98	9.8 E-03	2.0 E-03
	07/13/98-07/20/98	1.1 E-02	2.0 E-03
	07/20/98-07/27/98	1.0 E-02	2.0 E-03
	07/27/98-08/03/98	1.5 E-02	2.0 E-03
	08/03/98-08/10/98	1.1 E-02	2.0 E-03
	08/10/98-08/17/98	9.5 E-03	2.0 E-03
	08/17/98-08/24/98	1.0 E-02	2.0 E-03
	08/24/98-08/31/98	1.4 E-02	2.0 E-03
	08/31/98-09/08/98	2.0 E-02	2.0 E-03
	09/08/98-09/14/98	1.2 E-02	2.0 E-03
	09/14/98-09/21/98	1.0 E-02	2.0 E-03
	09/21/98-09/28/98	1.2 E-02	2.0 E-03

(a) Low sample volume due to unit failure.

TABLE A-2.1 (Cont.)
GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
7	09/28/98-10/05/98	1.4 E-02	2.0 E-03
	10/05/98-10/12/98	8.2 E-03	1.8 E-03
	10/12/98-10/19/98	5.3 E-03	2.0 E-03
	10/19/98-10/26/98	3.2 E-02	3.0 E-03
	10/26/98-11/02/98	1.2 E-02	2.0 E-03
	11/02/98-11/09/98	1.9 E-02	2.0 E-03
	11/09/98-11/16/98	1.1 E-02	2.0 E-03
	11/16/98-11/23/98	6.2 E-03	1.7 E-03
	11/23/98-11/30/98	8.1 E-03	2.0 E-03
	11/30/98-12/07/98	4.2 E-03	1.6 E-03
	12/07/98-12/14/98	1.1 E-02	2.0 E-03
	12/14/98-12/21/98	1.2 E-02	2.0 E-03
	12/21/98-12/28/98	2.1 E-02	3.0 E-03

TABLE A-2.1 (Cont.)
GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
8	12/29/97-01/05/98	1.1 E-02	2.0 E-03
	01/05/98-01/12/98	1.4 E-02	2.0 E-03
	01/12/98-01/19/98	1.8 E-02	2.0 E-03
	01/19/98-01/26/98	4.0 E-03	1.7 E-03
	01/26/98-02/02/98	7.0 E-03	2.0 E-03
	02/02/98-02/09/98	1.5 E-02	2.0 E-03
	02/09/98-02/17/98	3.7 E-03	1.6 E-03
	02/17/98-02/23/98	5.2 E-03	2.0 E-03
	02/23/98-03/02/98	7.0 E-03	1.8 E-03
	03/02/98-03/09/98	9.8 E-03	2.0 E-03
	03/09/98-03/16/98	8.3 E-03	2.0 E-03
	03/16/98-03/23/98	1.4 E-02	2.0 E-03
	03/23/98-03/30/98	4.9 E-03	1.7 E-03
	03/30/98-04/06/98	6.0 E-03	1.9 E-03
	04/06/98-04/13/98	4.9 E-03	1.9 E-03
	04/13/98-04/20/98	1.1 E-02	2.0 E-03
	04/20/98-04/27/98	1.1 E-02	2.0 E-03
	04/27/98-05/04/98	2.0 E-02	3.0 E-03
	05/04/98-05/11/98	8.6 E-03	1.9 E-03
	05/11/98-05/18/98	3.1 E-03	1.7 E-03
	05/18/98-05/26/98	7.6 E-03	1.5 E-03
	05/26/98-06/01/98	2.9 E-03	1.8 E-03
	06/01/98-06/08/98	1.1 E-02	2.0 E-03
	06/08/98-06/15/98	7.0 E-03	1.8 E-03
	06/15/98-06/22/98	7.7 E-03	1.8 E-03
	06/22/98-06/29/98	3.1 E-03	1.6 E-03
	06/29/98-07/06/98	9.1 E-03	2.0 E-03
	07/06/98-07/13/98	8.5 E-03	1.9 E-03
	07/13/98-07/20/98	9.8 E-03	1.8 E-03
	07/20/98-07/27/98	1.2 E-02	2.0 E-03
	07/27/98-08/03/98	8.5 E-03	1.8 E-03
	08/03/98-08/10/98	1.1 E-02	2.0 E-03
	08/10/98-08/17/98	6.7 E-03	1.8 E-03
	08/17/98-08/24/98	1.2 E-02	2.0 E-03
	08/24/98-08/31/98	1.9 E-02	2.0 E-03
	08/31/98-09/08/98	2.1 E-02	2.0 E-03
	09/08/98-09/14/98	1.4 E-02	2.0 E-03
	09/14/98-09/21/98	1.5 E-02	2.0 E-03
	09/21/98-09/28/98	1.4 E-02	2.0 E-03

TABLE A-2.1 (Cont.)
GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
8	09/28/98-10/05/98	1.3 E-02	2.0 E-03
	10/05/98-10/12/98	1.1 E-02	2.0 E-03
	10/12/98-10/19/98	5.9 E-03	2.0 E-03
	10/19/98-10/26/98	3.9 E-02	3.0 E-03
	10/26/98-11/02/98	1.4 E-02	2.0 E-03
	11/02/98-11/09/98	1.9 E-02	2.0 E-03
	11/09/98-11/16/98	1.5 E-02	2.0 E-03
	11/16/98-11/23/98	7.2 E-03	1.7 E-03
	11/23/98-11/30/98	7.6 E-03	2.0 E-03
	11/30/98-12/07/98	7.0 E-03	1.7 E-03
	12/07/98-12/14/98	1.2 E-02	2.0 E-03
	12/14/98-12/21/98	1.2 E-02	2.0 E-03
	12/21/98-12/28/98	2.9 E-02	3.0 E-03

TABLE A-2.1 (Cont.)
GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
9	12/29/97-01/05/98	9.1 E-03	2.0 E-03
	01/05/98-01/12/98	1.4 E-02	2.0 E-03
	01/12/98-01/19/98	1.8 E-02	2.0 E-03
	01/19/98-01/26/98	2.7 E-03	1.6 E-03
	01/26/98-02/02/98	8.3 E-03	2.1 E-03
	02/02/98-02/09/98	1.7 E-02	2.0 E-03
	02/09/98-02/17/98	3.6 E-03	1.6 E-03
	02/17/98-02/23/98	3.8 E-03	1.9 E-03
	02/23/98-03/02/98	8.5 E-03	1.9 E-03
	03/02/98-03/09/98	8.7 E-03	1.9 E-03
	03/09/98-03/16/98	1.0 E-02	2.0 E-03
	03/16/98-03/23/98	1.6 E-02	2.0 E-03
	03/23/98-03/30/98	4.3 E-03	1.7 E-03
	03/30/98-04/06/98	7.0 E-03	1.9 E-03
	04/06/98-04/13/98	3.6 E-03	1.8 E-03
	04/13/98-04/20/98	1.2 E-02	2.0 E-03
	04/20/98-04/27/98	1.3 E-02	2.0 E-03
	04/27/98-05/04/98	2.0 E-02	2.0 E-03
	05/04/98-05/11/98	1.3 E-02	2.0 E-03
	05/11/98-05/18/98	4.7 E-03	1.8 E-03
	05/18/98-05/26/98	7.9 E-03	1.6 E-03
	05/26/98-06/01/98	3.5 E-03	1.8 E-03
	06/01/98-06/08/98	9.3 E-03	2.0 E-03
	06/08/98-06/15/98	7.2 E-03	1.8 E-03
	06/15/98-06/22/98	7.6 E-03	1.7 E-03
	06/22/98-06/29/98	4.5 E-03	1.7 E-03
	06/29/98-07/06/98	1.1 E-02	2.0 E-03
	07/06/98-07/13/98	1.2 E-02	2.0 E-03
	07/13/98-07/20/98	9.4 E-03	1.8 E-03
	07/20/98-07/27/98	1.4 E-02	2.0 E-03
	07/27/98-08/03/98	1.7 E-02	2.0 E-03
	08/03/98-08/10/98	1.1 E-02	2.0 E-03
	08/10/98-08/17/98	9.0 E-03	2.0 E-03
	08/17/98-08/24/98	1.2 E-02	2.0 E-03
	08/24/98-08/31/98	1.6 E-02	2.0 E-03
	08/31/98-09/08/98	1.6 E-02	2.0 E-03
	09/08/98-09/14/98	1.3 E-02	2.0 E-03
	09/14/98-09/21/98	1.3 E-02	2.0 E-03
	09/21/98-09/28/98	1.4 E-02	2.0 E-03

TABLE A-2.1 (Cont.)
GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
9	09/28/98-10/05/98	1.2 E-02	2.0 E-03
	10/05/98-10/12/98	7.4 E-03	1.8 E-03
	10/12/98-10/19/98	6.0 E-03	2.0 E-03
	10/19/98-10/26/98	2.9 E-02	3.0 E-03
	10/26/98-11/02/98	1.1 E-02	2.0 E-03
	11/02/98-11/09/98	1.7 E-02	2.0 E-03
	11/09/98-11/16/98	1.0 E-02	2.0 E-03
	11/16/98-11/23/98	7.1 E-03	1.7 E-03
	11/23/98-11/30/98	4.7 E-03	1.9 E-03
	11/30/98-12/07/98	3.7 E-03	1.5 E-03
	12/07/98-12/14/98	6.0 E-02	1.7 E-03
	12/14/98-12/21/98	1.2 E-02	2.0 E-03
	12/21/98-12/28/98	1.9 E-02	2.0 E-03

TABLE A-2.1 (Cont.)
GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
21	12/29/97-01/05/98	1.1 E-02	2.0 E-03
	01/05/98-01/12/98	1.0 E-02	2.0 E-03
	01/12/98-01/19/98	1.9 E-02	2.0 E-03
	01/19/98-01/26/98	3.4 E-03	1.6 E-03
	01/26/98-02/02/98	9.3 E-03	2.1 E-03
	02/02/98-02/09/98	1.7 E-02	2.0 E-03
	02/09/98-02/17/98	4.2 E-03	1.6 E-03
	02/17/98-02/23/98	5.6 E-03	2.1 E-03
	02/23/98-03/02/98	6.8 E-03	1.8 E-03
	03/02/98-03/09/98	1.0 E-02	2.0 E-03
	03/09/98-03/16/98	9.2 E-03	2.0 E-03
	03/16/98-03/23/98	1.5 E-02	2.0 E-03
	03/23/98-03/30/98	4.7 E-03	1.7 E-03
	03/30/98-04/06/98	6.9 E-03	1.9 E-03
	04/06/98-04/13/98	4.5 E-03	1.9 E-03
	04/13/98-04/20/98	9.7 E-03	1.9 E-03
	04/20/98-04/27/98	1.0 E-02	2.0 E-03
	04/27/98-05/04/98	2.2 E-02	3.0 E-03
	05/04/98-05/11/98	9.6 E-03	1.9 E-03
	05/11/98-05/18/98	4.1 E-03	1.7 E-03
	05/18/98-05/26/98	8.8 E-03	1.6 E-03
	05/26/98-06/01/98	3.9 E-03	1.9 E-03
	06/01/98-06/08/98	9.0 E-03	2.0 E-03
	06/08/98-06/15/98	8.2 E-03	1.8 E-03
	06/15/98-06/22/98	5.9 E-03	1.6 E-03
	06/22/98-06/29/98	4.6 E-03	1.7 E-03
	06/29/98-07/06/98	9.9 E-03	2.1 E-03
	07/06/98-07/13/98	7.3 E-03	1.8 E-03
	07/13/98-07/20/98	8.9 E-03	1.8 E-03
	07/20/98-07/27/98	1.1 E-02	2.0 E-03
	07/27/98-08/03/98	1.5 E-02	2.0 E-03
	08/03/98-08/10/98	9.7 E-03	2.0 E-03
	08/10/98-08/17/98	7.1 E-03	1.9 E-03
	08/17/98-08/24/98	9.3 E-03	2.0 E-03
	08/24/98-08/31/98	1.6 E-02	2.0 E-03
	08/31/98-09/08/98	1.7 E-02	2.0 E-03
	09/08/98-09/14/98	9.8 E-03	2.1 E-03
	09/14/98-09/21/98	1.1 E-02	2.0 E-03
	09/21/98-09/28/98	1.3 E-02	2.0 E-03

TABLE A-2.1 (Cont.)
GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
21	09/28/98-10/05/98 (a)	1.6 E-02	2.0 E-03
	10/05/98-10/12/98	1.2 E-02	2.0 E-03
	10/12/98-10/19/98	5.7 E-03	1.9 E-03
	10/19/98-10/26/98	4.0 E-02	3.0 E-03
	10/26/98-11/02/98	1.5 E-02	2.0 E-03
	11/02/98-11/09/98	2.1 E-02	2.0 E-03
	11/09/98-11/16/98	1.4 E-02	2.0 E-03
	11/16/98-11/23/98	8.0 E-03	1.8 E-03
	11/23/98-11/30/98	7.9 E-03	2.0 E-03
	11/30/98-12/07/98	6.0 E-03	1.7 E-03
	12/07/98-12/14/98	1.3 E-02	2.0 E-03
	12/14/98-12/21/98	1.4 E-02	2.0 E-03
	12/21/98-12/28/98	2.8 E-02	3.0 E-03

(a) Power off due to maintenance work.

TABLE A-2.1 (Cont.)
GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
23	12/29/97-01/05/98	1.1 E-02	2.0 E-03
	01/05/98-01/12/98	1.4 E-02	2.0 E-03
	01/12/98-01/19/98	2.2 E-02	2.0 E-03
	01/19/98-01/26/98	4.7 E-03	1.7 E-03
	01/26/98-02/02/98	8.9 E-03	2.1 E-03
	02/02/98-02/09/98	1.8 E-02	2.0 E-03
	02/09/98-02/17/98	3.2 E-03	1.5 E-03
	02/17/98-02/23/98	4.9 E-03	2.0 E-03
	02/23/98-03/02/98	6.9 E-03	1.8 E-03
	03/02/98-03/09/98	1.2 E-02	2.0 E-03
	03/09/98-03/16/98	8.8 E-03	2.0 E-03
	03/16/98-03/23/98	1.4 E-02	2.0 E-03
	03/23/98-03/30/98	6.6 E-03	1.8 E-03
	03/30/98-04/06/98	6.3 E-03	1.9 E-03
	04/06/98-04/13/98	4.9 E-03	1.9 E-03
	04/13/98-04/20/98	1.3 E-02	2.0 E-03
	04/20/98-04/27/98	1.2 E-02	2.0 E-03
	04/27/98-05/04/98	2.2 E-02	3.0 E-03
	05/04/98-05/11/98	1.2 E-02	2.0 E-03
	05/11/98-05/18/98	4.5 E-03	1.8 E-03
	05/18/98-05/26/98	9.2 E-03	1.6 E-03
	05/26/98-06/01/98	3.9 E-03	1.9 E-03
	06/01/98-06/08/98	1.1 E-02	2.0 E-03
	06/08/98-06/15/98	7.9 E-03	1.8 E-03
	06/15/98-06/22/98	6.7 E-03	1.7 E-03
	06/22/98-06/29/98	4.8 E-03	1.7 E-03
	06/29/98-07/06/98	1.0 E-02	2.0 E-03
	07/06/98-07/13/98	1.3 E-02	2.0 E-03
	07/13/98-07/20/98	1.2 E-02	2.0 E-03
	07/20/98-07/27/98	1.4 E-02	2.0 E-03
	07/27/98-08/03/98	1.6 E-02	2.0 E-03
	08/03/98-08/10/98	1.3 E-02	2.0 E-03
	08/10/98-08/17/98	8.2 E-03	1.9 E-03
	08/17/98-08/24/98	9.8 E-03	2.0 E-03
	08/24/98-08/31/98	1.8 E-02	2.0 E-03
	08/31/98-09/08/98	2.2 E-02	2.0 E-03
	09/08/98-09/14/98	1.5 E-02	2.0 E-03
	09/14/98-09/21/98	1.3 E-02	2.0 E-03
	09/21/98-09/28/98	1.3 E-02	2.0 E-03

TABLE A-2.1 (Cont.)
GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
23	09/28/98-10/05/98	1.4 E-02	2.0 E-03
	10/05/98-10/12/98	8.8 E-03	1.9 E-03
	10/12/98-10/19/98	4.5 E-03	1.9 E-03
	10/19/98-10/26/98	3.6 E-02	3.0 E-03
	10/26/98-11/02/98	1.4 E-02	2.0 E-03
	11/02/98-11/09/98	2.0 E-02	2.0 E-03
	11/09/98-11/16/98	1.4 E-02	2.0 E-03
	11/16/98-11/23/98	6.1 E-03	1.7 E-03
	11/23/98-11/30/98	6.9 E-03	2.0 E-03
	11/30/98-12/07/98	6.1 E-03	1.7 E-03
	12/07/98-12/14/98	1.4 E-02	2.0 E-03
	12/14/98-12/21/98	1.1 E-02	2.0 E-03
	12/21/98-12/28/98	3.0 E-02	3.0 E-03

TABLE A-2.1 (Cont.)
GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
40	12/29/97-01/05/98	1.1 E-02	2.0 E-03
	01/05/98-01/12/98	1.3 E-02	2.0 E-03
	01/12/98-01/19/98	1.9 E-02	2.0 E-03
	01/19/98-01/26/98	3.8 E-03	1.7 E-03
	01/26/98-02/02/98	8.7 E-03	2.1 E-03
	02/02/98-02/09/98	1.6 E-02	2.0 E-03
	02/09/98-02/17/98	5.3 E-03	1.7 E-03
	02/17/98-02/23/98	5.3 E-03	2.0 E-03
	02/23/98-03/02/98	6.8 E-03	1.8 E-03
	03/02/98-03/09/98	1.1 E-02	2.0 E-03
	03/09/98-03/16/98	8.8 E-03	2.0 E-03
	03/16/98-03/23/98	1.4 E-02	2.0 E-03
	03/23/98-03/30/98	7.1 E-03	1.8 E-03
	03/30/98-04/06/98	7.8 E-03	1.9 E-03
	04/06/98-04/13/98	5.2 E-03	1.9 E-03
	04/13/98-04/20/98	1.1 E-02	2.0 E-03
	04/20/98-04/27/98	1.1 E-02	2.0 E-03
	04/27/98-05/04/98	2.0 E-02	3.0 E-03
	05/04/98-05/11/98	1.2 E-02	2.0 E-03
	05/11/98-05/18/98	3.4 E-03	1.7 E-03
	05/18/98-05/26/98	7.6 E-03	1.5 E-03
	05/26/98-06/01/98	3.7 E-03	1.9 E-03
	06/01/98-06/08/98	1.1 E-02	2.0 E-03
	06/08/98-06/15/98	7.5 E-03	1.8 E-03
	06/15/98-06/22/98	6.9 E-03	1.7 E-03
	06/22/98-06/29/98	3.6 E-03	1.6 E-03
	06/29/98-07/06/98	8.7 E-03	2.0 E-03
	07/06/98-07/13/98	1.1 E-02	2.0 E-03
	07/13/98-07/20/98	8.0 E-03	1.7 E-03
	07/20/98-07/27/98	9.5 E-03	1.9 E-03
	07/27/98-08/03/98	1.4 E-02	2.0 E-03
	08/03/98-08/10/98	9.7 E-03	2.0 E-03
	08/10/98-08/17/98	6.6 E-03	1.8 E-03
	08/17/98-08/24/98	1.3 E-02	2.0 E-03
	08/24/98-08/31/98	1.9 E-02	2.0 E-03
	08/31/98-09/08/98	2.1 E-02	2.0 E-03
	09/08/98-09/14/98	1.6 E-02	2.0 E-03
	09/14/98-09/21/98	1.5 E-02	2.0 E-03
	09/21/98-09/28/98	1.6 E-02	2.0 E-03

TABLE A-2.1 (Cont.)
GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
40	09/28/98-10/05/98	1.6 E-02	2.0 E-03
	10/05/98-10/12/98	9.4 E-03	1.9 E-03
	10/12/98-10/19/98	7.5 E-03	2.0 E-03
	10/19/98-10/26/98	3.7 E-02	3.0 E-03
	10/26/98-11/02/98	1.2 E-02	2.0 E-03
	11/02/98-11/09/98	2.0 E-02	2.0 E-03
	11/09/98-11/16/98	1.1 E-02	2.0 E-03
	11/16/98-11/23/98	7.2 E-03	1.7 E-03
	11/23/98-11/30/98	7.5 E-03	2.0 E-03
	11/30/98-12/07/98	6.2 E-03	1.7 E-03
	12/07/98-12/14/98	1.3 E-02	2.0 E-03
	12/14/98-12/21/98	1.4 E-02	2.0 E-03
	12/21/98-12/28/98	2.8 E-02	3.0 E-03

TABLE A-2.1 (Cont.)
GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
48	12/29/97-01/05/98	1.2 E-02	2.0 E-03
	01/05/98-01/12/98	1.5 E-02	2.0 E-03
	01/12/98-01/19/98	2.2 E-02	2.0 E-03
	01/19/98-01/26/98	5.2 E-03	1.7 E-03
	01/26/98-02/02/98	1.1 E-02	2.0 E-03
	02/02/98-02/09/98	1.8 E-02	2.0 E-03
	02/09/98-02/17/98	5.1 E-03	1.6 E-03
	02/17/98-02/23/98	5.8 E-03	2.1 E-03
	02/23/98-03/02/98	8.9 E-03	1.9 E-03
	03/02/98-03/09/98	1.0 E-02	2.0 E-03
	03/09/98-03/16/98	1.0 E-02	2.0 E-03
	03/16/98-03/23/98	1.8 E-02	2.0 E-03
	03/23/98-03/30/98	5.4 E-03	1.8 E-03
	03/30/98-04/06/98	7.6 E-03	1.9 E-03
	04/06/98-04/13/98	5.1 E-03	1.9 E-03
	04/13/98-04/20/98	1.2 E-02	2.0 E-03
	04/20/98-04/27/98	1.3 E-02	2.0 E-03
	04/27/98-05/04/98	2.2 E-02	3.0 E-03
	05/04/98-05/11/98	1.1 E-02	2.0 E-03
	05/11/98-05/18/98	6.0 E-03	1.9 E-03
	05/18/98-05/26/98 (a)	* 5.4 E-03	8.0 E-03
	05/26/98-06/01/98	4.7 E-03	2.2 E-03
	06/01/98-06/08/98	8.8 E-03	1.9 E-03
	06/08/98-06/15/98	6.7 E-03	1.7 E-03
	06/15/98-06/22/98	6.2 E-03	1.7 E-03
	06/22/98-06/29/98	4.6 E-03	1.7 E-03
	06/29/98-07/06/98	8.3 E-03	2.0 E-03
	07/06/98-07/13/98	1.4 E-02	2.0 E-03
	07/13/98-07/20/98	1.1 E-02	2.0 E-03
	07/20/98-07/27/98	1.3 E-02	2.0 E-03
	07/27/98-08/03/98	1.9 E-02	2.0 E-03
	08/03/98-08/10/98	1.3 E-02	2.0 E-03
	08/10/98-08/17/98	8.3 E-03	1.9 E-03
	08/17/98-08/24/98	1.2 E-02	2.0 E-03
	08/24/98-08/31/98	1.8 E-02	2.0 E-03
	08/31/98-09/08/98	1.9 E-02	2.0 E-03
	09/08/98-09/14/98	1.4 E-02	2.0 E-03
	09/14/98-09/21/98	1.2 E-02	2.0 E-03
	09/21/98-09/28/98	1.6 E-02	2.0 E-03

(a) Low sample volume due to unit failure.

* Denotes a result less than the detection limit. Low sample volume due to unit failure.

TABLE A-2.1 (Cont.)
GROSS BETA ON AIR PARTICULATE FILTERS
 Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
48	09/28/98-10/05/98	1.6 E-02	2.0 E-03
	10/05/98-10/12/98	1.1 E-02	2.0 E-03
	10/12/98-10/19/98	7.1 E-03	2.0 E-03
	10/19/98-10/26/98	3.9 E-02	3.0 E-03
	10/26/98-11/02/98	1.4 E-02	2.0 E-03
	11/02/98-11/09/98 (a)	2.3 E-02	9.0 E-03
	11/09/98-11/16/98	1.2 E-02	2.0 E-03
	11/16/98-11/23/98	6.0 E-03	1.7 E-03
	11/23/98-11/30/98	7.5 E-03	2.0 E-03
	11/30/98-12/07/98	5.9 E-03	1.7 E-03
	12/07/98-12/14/98	1.5 E-02	2.0 E-03
	12/14/98-12/21/98	1.4 E-02	2.0 E-03
	12/21/98-12/28/98	2.7 E-02	3.0 E-03

(a) Power off; low sample volume. Not included in averages.

TABLE A-2.1 (Cont.)
GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
57	12/29/97-01/05/98	1.4 E-02	2.0 E-03
	01/05/98-01/12/98	1.6 E-02	2.0 E-03
	01/12/98-01/19/98	2.3 E-02	2.0 E-03
	01/19/98-01/26/98	5.8 E-03	1.8 E-03
	01/26/98-02/02/98	1.0 E-02	2.0 E-03
	02/02/98-02/09/98	1.7 E-02	2.0 E-03
	02/09/98-02/17/98	5.2 E-03	1.6 E-03
	02/17/98-02/23/98	5.7 E-03	2.1 E-03
	02/23/98-03/02/98	6.2 E-03	1.8 E-03
	03/02/98-03/09/98	1.1 E-02	2.0 E-03
	03/09/98-03/16/98	8.3 E-03	2.0 E-03
	03/16/98-03/23/98	1.5 E-02	2.0 E-03
	03/23/98-03/30/98	6.7 E-03	1.8 E-03
	03/30/98-04/06/98	6.7 E-03	1.9 E-03
	04/06/98-04/13/98	5.2 E-03	1.9 E-03
	04/13/98-04/20/98	1.2 E-02	2.0 E-03
	04/20/98-04/27/98	1.2 E-02	2.0 E-03
	04/27/98-05/04/98	2.4 E-02	3.0 E-02
	05/04/98-05/11/98	1.2 E-02	2.0 E-03
	05/11/98-05/18/98 (a)	* 2.8 E-03	2.6 E-03
	05/18/98-05/26/98	9.7 E-03	1.6 E-03
	05/26/98-06/01/98	5.0 E-03	1.9 E-03
	06/01/98-06/08/98	1.2 E-02	2.0 E-03
	06/08/98-06/15/98	8.7 E-03	1.8 E-03
	06/15/98-06/22/98	8.6 E-03	1.8 E-03
	06/22/98-06/29/98	6.6 E-03	1.8 E-03
	06/29/98-07/06/98	1.2 E-02	2.0 E-03
	07/06/98-07/13/98	1.4 E-02	2.0 E-03
	07/13/98-07/20/98	1.1 E-02	2.0 E-03
	07/20/98-07/27/98	1.4 E-02	2.0 E-03
	07/27/98-08/03/98	1.9 E-02	2.0 E-03
	08/03/98-08/10/98	1.5 E-02	2.0 E-03
	08/10/98-08/17/98	1.0 E-02	2.0 E-03
	08/17/98-08/24/98	1.1 E-02	2.0 E-03
	08/24/98-08/31/98	1.9 E-02	2.0 E-03
	08/31/98-09/08/98	2.1 E-02	2.0 E-03
	09/08/98-09/14/98	1.4 E-02	2.0 E-03
	09/14/98-09/21/98	1.5 E-02	2.0 E-03
	09/21/98-09/28/98	1.4 E-02	2.0 E-03

(a) Low sample volume.

* Denotes a result less than the detection limit. Low sample volume.

TABLE A-2.1 (Cont.)
GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
57	09/28/98-10/05/98	1.3 E-02	2.0 E-03
	10/05/98-10/12/98	1.1 E-02	2.0 E-03
	10/12/98-10/19/98	6.9 E-03	2.0 E-03
	10/19/98-10/26/98	4.0 E-02	3.0 E-03
	10/26/98-11/02/98	1.5 E-02	2.0 E-03
	11/02/98-11/09/98	2.1 E-02	2.0 E-03
	11/09/98-11/16/98	1.4 E-02	2.0 E-03
	11/16/98-11/23/98	8.1 E-03	1.8 E-03
	11/23/98-11/30/98	7.8 E-03	2.0 E-03
	11/30/98-12/07/98	7.4 E-03	1.8 E-03
	12/07/98-12/14/98	1.3 E-02	2.0 E-03
	12/14/98-12/21/98	1.3 E-02	2.0 E-03
	12/21/98-12/28/98	2.5 E-02	3.0 E-03

TABLE A-2.2

GROSS BETA ON AIR PARTICULATE FILTERS - SUMMARY

Results in pCi/cubic meter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Gr-Beta	(I)	1.17E-02	1.7E-03	4.3E-02	572	569
Gr-Beta	(C)	1.06E-02	2.7E-03	2.9E-02	52	52

(I) Indicator Stations
(C) Control Station

TABLE A-3.1
GAMMA SPECTROMETRY OF PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
1	12/29/97-03/30/98	Be-7	7.12 E-02	7.89 E-03
		K-40	*-1.22 E-03	3.00 E-03
		Ru-103	* 3.21 E-04	5.61 E-04
		Ru-106	*-2.92 E-04	2.09 E-03
		Cs-134	*-2.52 E-04	2.30 E-04
		Cs-137	* 1.93 E-04	2.30 E-04
		Ra-226	*-1.17 E-03	3.92 E-03
		Th-228	* 5.03 E-04	3.61 E-04
	03/30/98-06/29/98	Be-7	9.17 E-02	1.04 E-02
		K-40	* 5.97 E-04	2.79 E-03
		Ru-103	*-1.59 E-04	7.50 E-04
		Ru-106	* 4.94 E-04	1.96 E-03
		Cs-134	*-1.71 E-04	2.03 E-04
		Cs-137	* 2.09 E-05	1.93 E-04
		Ra-226	*-8.44 E-04	3.53 E-03
		Th-228	* 3.73 E-05	3.27 E-04
	06/29/98-09/28/98	Be-7	1.62 E-01	1.12 E-02
		K-40	* 1.19 E-03	2.83 E-03
		Ru-103	*-4.30 E-04	6.28 E-04
		Ru-106	*-1.82 E-04	1.64 E-03
		Cs-134	* 8.53 E-05	1.90 E-04
		Cs-137	* 1.07 E-04	1.89 E-04
		Ra-226	*-2.35 E-03	3.40 E-03
		Th-228	* 5.05 E-04	3.35 E-04
	09/28/98-12/28/98	Be-7	7.05 E-02	8.26 E-03
		K-40	* 2.84 E-04	3.04 E-03
		Ru-103	*-1.94 E-04	6.04 E-04
		Ru-106	*-9.86 E-04	2.07 E-03
		Cs-134	* 9.29 E-05	2.14 E-04
		Cs-137	* 2.12 E-04	2.08 E-04
		Ra-226	*-2.20 E-03	3.67 E-03
		Th-228	*-7.21 E-05	3.39 E-04

* Denotes a result less than the detection limit.

TABLE A-3.1 (Cont.)

GAMMA SPECTROMETRY OF PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
4	12/29/97-03/30/98	Be-7	6.79 E-02	6.50 E-03
		K-40	*-1.10 E-03	4.20 E-03
		Ru-103	* 1.14 E-04	5.53 E-04
		Ru-106	*-1.44 E-03	1.77 E-03
		Cs-134	* 8.32 E-05	2.37 E-04
		Cs-137	* 7.77 E-05	2.07 E-04
		Ra-226	*-1.23 E-03	2.74 E-03
		Th-228	* 4.26 E-04	2.61 E-04
	03/30/98-06/29/98	Be-7	9.79 E-02	9.33 E-03
		K-40	* 5.26 E-04	2.19 E-03
		Ru-103	*-3.90 E-04	6.11 E-04
		Ru-106	*-3.41 E-04	1.58 E-03
		Cs-134	*-1.46 E-04	1.67 E-04
		Cs-137	*-1.08 E-04	1.59 E-04
		Ra-226	*-3.08 E-03	3.81 E-03
		Th-228	*-3.27 E-04	3.23 E-04
	06/29/98-09/28/98	Be-7	1.62 E-01	9.96 E-03
		K-40	6.18 E-03	2.28 E-03
		Ru-103	*-1.25 E-04	5.87 E-04
		Ru-106	* 0.00 E+00	1.51 E-03
		Cs-134	* 8.63 E-06	1.55 E-04
		Cs-137	* 6.90 E-05	1.47 E-04
		Ra-226	*-2.63 E-03	2.66 E-03
		Th-228	*-1.41 E-04	2.57 E-04
	09/28/98-12/28/98	Be-7	7.36 E-02	7.99 E-03
		K-40	* 1.09 E-03	6.29 E-03
		Ru-103	*-3.75 E-04	7.19 E-04
		Ru-106	* 2.83 E-04	2.30 E-03
		Cs-134	* 1.99 E-04	2.72 E-04
		Cs-137	* 1.46 E-04	2.50 E-04
		Ra-226	*-1.49 E-04	3.40 E-03
		Th-228	*-3.66 E-04	3.13 E-04

* Denotes a result less than the detection limit.

TABLE A-3.1 (Cont.)

GAMMA SPECTROMETRY OF PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
5	12/29/97-03/30/98	Be-7	7.06 E-02	7.00 E-02
		K-40	*-6.99 E-03	5.57 E-03
		Ru-103	* 1.13 E-04	6.08 E-04
		Ru-106	* 1.57 E-03	2.34 E-03
		Cs-134	*-1.62 E-04	2.40 E-04
		Cs-137	* 3.29 E-04	2.57 E-04
		Ra-226	*-3.76 E-03	3.35 E-03
		Th-228	*-1.83 E-04	2.96 E-04
	03/30/98-06/29/98	Be-7	9.25 E-02	8.17 E-03
		K-40	*-2.17 E-03	4.04 E-03
		Ru-103	*-4.06 E-05	6.61 E-04
		Ru-106	* 1.19 E-03	1.93 E-03
		Cs-134	* 6.57 E-05	2.16 E-04
		Cs-137	* 1.39 E-04	1.92 E-04
		Ra-226	*-7.65 E-04	2.44 E-03
		Th-228	*-4.32 E-05	2.55 E-04
	06/29/98-09/28/98	Be-7	1.48 E-01	9.50 E-03
		K-40	* 1.93 E-03	4.05 E-03
		Ru-103	* 1.84 E-04	6.14 E-04
		Ru-106	* 6.18 E-05	1.84 E-03
		Cs-134	* 0.00 E+00	2.04 E-04
		Cs-137	* 9.89 E-05	1.89 E-04
		Ra-226	*-2.05 E-03	2.54 E-03
		Th-228	* 3.37 E-04	2.62 E-04
	09/28/98-12/28/98	Be-7	8.58 E-02	9.14 E-03
		K-40	*-4.23 E-04	2.21 E-03
		Ru-103	*-2.09 E-04	5.44 E-04
		Ru-106	* 0.00 E+00	1.71 E-03
		Cs-134	* 2.70 E-05	1.86 E-04
		Cs-137	* 1.84 E-04	1.69 E-04
		Ra-226	*-2.33 E-03	3.14 E-03
		Th-228	* 5.71 E-04	3.19 E-04

* Denotes a result less than the detection limit.

TABLE A-3.1 (Cont.)

GAMMA SPECTROMETRY OF PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
6	12/29/97-03/30/98	Be-7	7.77 E-02	8.20 E-03
		K-40	*-4.07 E-04	3.00 E-03
		Ru-103	* 1.39 E-04	4.62 E-04
		Ru-106	* 1.97 E-04	1.71 E-03
		Cs-134	* 1.07 E-04	1.77 E-04
		Cs-137	*-1.08 E-04	1.60 E-04
		Ra-226	*-4.07 E-04	3.19 E-03
		Th-228	*-1.37 E-04	2.88 E-04
	03/30/98-06/29/98	Be-7	1.02 E-01	9.28 E-03
		K-40	4.77 E-03	1.94 E-03
		Ru-103	* 2.50 E-04	6.83 E-04
		Ru-106	*-1.07 E-03	1.86 E-03
		Cs-134	* 3.03 E-05	1.86 E-04
		Cs-137	*-2.58 E-04	2.14 E-04
		Ra-226	*-1.90 E-03	3.06 E-03
		Th-228	* 6.66 E-04	3.05 E-04
	06/29/98-09/28/98	Be-7	1.36 E-01	9.10 E-03
		K-40	* 1.46 E-03	2.62 E-03
		Ru-103	*-2.39 E-04	5.49 E-04
		Ru-106	*-5.67 E-04	1.43 E-03
		Cs-134	* 7.51 E-05	1.46 E-04
		Cs-137	* 1.00 E-04	1.46 E-04
		Ra-226	*-1.44 E-03	2.52 E-03
		Th-228	*-8.76 E-05	2.53 E-04
	09/28/98-12/28/98	Be-7	8.80 E-02	7.09 E-03
		K-40	* 1.83 E-04	3.46 E-03
		Ru-103	*-3.69 E-04	5.13 E-04
		Ru-106	* 8.74 E-04	1.76 E-03
		Cs-134	* 0.00 E+00	1.78 E-04
		Cs-137	* 1.18 E-04	1.74 E-04
		Ra-226	* 3.38 E-04	2.44 E-03
		Th-228	*-2.00 E-05	2.39 E-04

* Denotes a result less than the detection limit.

TABLE A-3.1 (Cont.)
GAMMA SPECTROMETRY OF PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
7	12/29/97-03/30/98	Be-7	6.65 E-02	5.79 E-03
		K-40	*-1.37 E-03	3.49 E-03
		Ru-103	* 3.91 E-05	4.61 E-04
		Ru-106	* 2.70 E-04	1.65 E-03
		Cs-134	*-6.44 E-05	1.84 E-04
		Cs-137	* 1.53 E-04	1.79 E-04
		Ra-226	* 8.53 E-04	2.46 E-03
		Th-228	* 2.23 E-04	2.41 E-04
	03/30/98-06/29/98	Be-7	9.99 E-02	9.10 E-03
		K-40	* 1.35 E-03	2.96 E-03
		Ru-103	*-2.45 E-04	6.52 E-04
		Ru-106	*-1.02 E-03	1.93 E-03
		Cs-134	*-8.85 E-06	2.06 E-04
		Cs-137	* 7.16 E-06	1.92 E-04
		Ra-226	*-2.54 E-03	2.40 E-03
		Th-228	*-7.26 E-05	2.48 E-04
	06/28/98-09/28/98	Be-7	1.35 E-01	9.08 E-03
		K-40	* 1.76 E-03	2.94 E-03
		Ru-103	* 3.70 E-04	6.00 E-04
		Ru-106	* 9.73 E-04	1.89 E-03
		Cs-134	*-7.65 E-05	2.02 E-04
		Cs-137	* 2.14 E-04	1.95 E-04
		Ra-226	*-6.04 E-03	2.35 E-03
		Th-228	* 5.03 E-05	2.40 E-04
	09/28/98-12/28/98	Be-7	7.77 E-02	9.37 E-03
		K-40	*-8.14 E-04	3.12 E-03
		Ru-103	*-1.35 E-04	5.71 E-04
		Ru-106	* 3.06 E-04	1.89 E-03
		Cs-134	*-1.37 E-05	1.89 E-04
		Cs-137	*-8.84 E-05	2.10 E-04
		Ra-226	*-3.04 E-04	3.70 E-03
		Th-228	*-2.43 E-04	3.55 E-04

* Denotes a result less than the detection limit.

TABLE A-3.1 (Cont.)

GAMMA SPECTROMETRY OF PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
8	12/29/97-03/30/98	Be-7	8.12 E-02	8.35 E-03
		K-40	* 1.58 E-03	2.92 E-03
		Ru-103	*-9.56 E-05	5.46 E-04
		Ru-106	*-3.02 E-04	1.97 E-03
		Cs-134	* 1.50 E-04	2.20 E-04
		Cs-137	*-1.77 E-04	2.08 E-04
		Ra-226	*-2.02 E-03	3.69 E-03
		Th-228	* 5.52 E-05	3.50 E-04
	03/30/98-06/29/98	Be-7	8.73 E-02	8.03 E-03
		K-40	*-6.24 E-04	2.61 E-03
		Ru-103	*-8.27 E-05	6.41 E-04
		Ru-106	* 9.51 E-04	1.54 E-03
		Cs-134	* 8.31 E-05	1.66 E-04
		Cs-137	*-2.01 E-04	1.87 E-04
		Ra-226	*-7.13 E-04	2.78 E-03
		Th-228	* 1.66 E-05	2.68 E-04
	06/29/98-09/28/98	Be-7	1.37 E-01	8.89 E-03
		K-40	* 3.00 E-03	2.79 E-03
		Ru-103	* 3.19 E-04	6.01 E-04
		Ru-106	*-4.39 E-04	1.71 E-03
		Cs-134	*-1.65 E-05	1.87 E-04
		Cs-137	* 1.26 E-04	2.06 E-04
		Ra-226	*-1.18 E-04	2.88 E-03
		Th-228	* 4.74 E-04	2.92 E-04
	09/28/98-12/28/98	Be-7	8.62 E-02	8.36 E-03
		K-40	4.65 E-03	2.69 E-03
		Ru-103	*-1.66 E-04	5.18 E-04
		Ru-106	* 1.79 E-04	1.73 E-03
		Cs-134	* 2.42 E-05	1.87 E-04
		Cs-137	* 1.46 E-04	1.90 E-04
		Ra-226	*-1.50 E-03	3.37 E-03
		Th-228	* 3.08 E-04	3.06 E-04

* Denotes a result less than the detection limit.

TABLE A-3.1 (Cont.)

GAMMA SPECTROMETRY OF PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
9A	12/29/97-03/30/98	Be-7	6.87 E-02	8.46 E-03
		K-40	* 2.99 E-04	3.19 E-03
		Ru-103	*-3.04 E-04	6.27 E-04
		Ru-106	*-1.95 E-04	1.95 E-03
		Cs-134	* 1.19 E-04	2.32 E-04
		Cs-137	* 1.29 E-04	2.10 E-04
		Ra-226	*-4.02 E-03	3.87 E-03
		Th-228	* 3.69 E-05	3.46 E-04
	03/30/98-06/29/98	Be-7	9.71 E-02	1.10 E-02
		K-40	* 2.74 E-03	6.00 E-03
		Ru-103	* 2.52 E-04	9.47 E-04
		Ru-106	* 1.12 E-03	2.57 E-03
		Cs-134	* 4.55 E-05	2.85 E-04
		Cs-137	* 1.82 E-05	2.59 E-04
		Ra-226	*-9.89 E-06	3.48 E-03
		Th-228	*-8.60 E-05	3.50 E-04
	06/29/98-09/28/98	Be-7	1.48 E-01	1.19 E-02
		K-40	*-3.46 E-03	6.23 E-03
		Ru-103	*-5.05 E-05	9.12 E-04
		Ru-106	*-1.02 E-03	2.56 E-03
		Cs-134	*-3.37 E-05	2.68 E-04
		Cs-137	* 1.54 E-04	2.62 E-04
		Ra-226	* 9.73 E-04	3.69 E-03
		Th-228	* 9.35 E-04	3.82 E-04
	09/28/98-12/28/98	Be-7	6.76 E-02	7.20 E-03
		K-40	*-3.85 E-04	2.55 E-03
		Ru-103	* 0.00 E+00	4.73 E-04
		Ru-106	* 7.49 E-04	1.64 E-03
		Cs-134	* 0.00 E+00	1.60 E-04
		Cs-137	* 9.89 E-05	1.57 E-04
		Ra-226	* 6.29 E-04	3.81 E-03
		Th-228	* 6.00 E-04	3.46 E-04

* Denotes a result less than the detection limit.

TABLE A-3.1 (Cont.)

GAMMA SPECTROMETRY OF PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
21	12/29/97-03/30/98	Be-7	6.05 E-02	6.60 E-03
		K-40	* 9.76 E-04	4.27 E-03
		Ru-103	* 3.65 E-04	5.45 E-04
		Ru-106	* -2.06 E-04	1.94 E-03
		Cs-134	* 1.48 E-04	2.25 E-04
		Cs-137	* -8.78 E-05	2.01 E-04
		Ra-226	* -3.05 E-03	2.68 E-03
		Th-228	* 2.23 E-04	2.59 E-04
	03/30/98-06/29/98	Be-7	1.00 E-01	1.02 E-02
		K-40	* 1.92 E-03	3.42 E-03
		Ru-103	* 2.29 E-04	7.80 E-04
		Ru-106	* 8.06 E-04	1.91 E-03
		Cs-134	* 3.98 E-05	1.96 E-04
		Cs-137	* -1.06 E-05	1.93 E-04
		Ra-226	* 1.45 E-03	3.74 E-03
		Th-228	* 5.43 E-04	3.40 E-04
	06/29/98-09/28/98	Be-7	1.38 E-01	1.13 E-02
		K-40	* 6.52 E-04	3.07 E-03
		Ru-103	* 3.12 E-04	6.96 E-04
		Ru-106	* 2.85 E-04	1.96 E-03
		Cs-134	* 2.52 E-05	1.95 E-04
		Cs-137	* 6.09 E-05	1.93 E-04
		Ra-226	* -5.78 E-04	3.64 E-03
		Th-228	* 3.29 E-04	3.40 E-04
	09/28/98-12/28/98	Be-7	7.90 E-02	6.79 E-03
		K-40	* -3.05 E-03	3.95 E-03
		Ru-103	* -2.12 E-04	5.44 E-04
		Ru-106	* -2.44 E-04	1.80 E-03
		Cs-134	* -8.13 E-06	2.00 E-04
		Cs-137	* 1.32 E-05	1.88 E-04
		Ra-226	* 2.44 E-04	2.37 E-03
		Th-228	* 7.52 E-04	2.57 E-04

* Denotes a result less than the detection limit.

TABLE A-3.1 (Cont.)

GAMMA SPECTROMETRY OF PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
23	12/29/97-03/30/98	Be-7	6.96 E-02	7.06 E-03
		K-40	*-1.36 E-02	5.29 E-03
		Ru-103	* 3.73 E-04	6.26 E-04
		Ru-106	* 8.08 E-04	2.20 E-03
		Cs-134	*-2.87 E-04	2.59 E-04
		Cs-137	* 1.48 E-05	2.34 E-04
		Ra-226	*-1.49 E-03	3.35 E-03
		Th-228	* 2.71 E-04	3.08 E-04
	03/30/98-06/29/98	Be-7	9.81 E-02	9.58 E-03
		K-40	2.74 E-02	4.94 E-03
		Ru-103	*-8.17 E-05	8.10 E-04
		Ru-106	*-1.60 E-03	2.20 E-03
		Cs-134	*-3.15 E-05	2.43 E-04
		Cs-137	* 6.45 E-06	2.24 E-04
		Ra-226	*-1.22 E-03	2.91 E-03
		Th-228	*-8.82 E-05	2.81 E-04
	06/29/98-09/28/98	Be-7	1.28 E-01	1.00 E-02
		K-40	*-5.57 E-04	4.80 E-03
		Ru-103	* 5.77 E-04	8.20 E-04
		Ru-106	* 2.34 E-03	2.19 E-03
		Cs-134	*-5.43 E-05	2.40 E-04
		Cs-137	* 8.73 E-05	2.11 E-04
		Ra-226	*-2.79 E-03	2.77 E-03
		Th-228	*-3.28 E-05	2.90 E-04
	09/28/98-12/28/98	Be-7	6.50 E-02	7.17 E-03
		K-40	*-3.09 E-03	2.71 E-03
		Ru-103	*-2.00 E-05	5.57 E-04
		Ru-106	* 5.24 E-04	1.80 E-03
		Cs-134	*-1.30 E-04	1.89 E-04
		Cs-137	*-9.61 E-05	2.26 E-04
		Ra-226	* 1.25 E-04	3.06 E-03
		Th-228	* 5.00 E-04	2.89 E-04

* Denotes a result less than the detection limit.

TABLE A-3.1 (Cont.)

GAMMA SPECTROMETRY OF PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
40	12/29/97-03/30/98	Be-7	8.63 E-02	8.13 E-03
		K-40	*-1.76 E-03	2.63 E-03
		Ru-103	*-1.65 E-04	4.59 E-04
		Ru-106	* 1.48 E-03	1.77 E-03
		Cs-134	* 1.88 E-04	2.07 E-04
		Cs-137	*-1.08 E-05	1.78 E-04
		Ra-226	* 3.16 E-03	3.18 E-03
		Th-228	*-8.86 E-05	2.99 E-04
	03/30/98-06/29/98	Be-7	1.07 E-01	1.08 E-02
		K-40	* 4.19 E-04	3.18 E-03
		Ru-103	*-3.57 E-05	7.11 E-04
		Ru-106	*-1.10 E-04	1.89 E-03
		Cs-134	* 7.28 E-05	2.02 E-04
		Cs-137	* 1.52 E-04	2.07 E-04
		Ra-226	*-4.31 E-04	3.62 E-03
		Th-228	* 4.49 E-04	3.52 E-04
	06/29/98-09/28/98	Be-7	1.73 E-01	1.24 E-02
		K-40	*-1.02 E-03	2.76 E-03
		Ru-103	* 1.54 E-04	7.28 E-04
		Ru-106	* 2.08 E-04	1.78 E-03
		Cs-134	* 5.52 E-05	2.10 E-04
		Cs-137	* 1.89 E-04	2.07 E-04
		Ra-226	*-2.19 E-03	3.49 E-03
		Th-228	* 1.00 E-03	3.84 E-04
	09/28/98-12/28/98	Be-7	7.62 E-02	7.06 E-03
		K-40	* 7.06 E-04	3.09 E-03
		Ru-103	* 0.00 E+00	5.10 E-04
		Ru-106	* 0.00 E+00	1.76 E-03
		Cs-134	*-5.06 E-05	1.88 E-04
		Cs-137	* 6.20 E-05	1.78 E-04
		Ra-226	* 4.20 E-04	2.37 E-03
		Th-228	* 1.52 E-04	2.33 E-04

* Denotes a result less than the detection limit.

TABLE A-3.1 (Cont.)

GAMMA SPECTROMETRY OF PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
48	12/29/97-03/30/98	Be-7	7.62 E-02	6.34 E-03
		K-40	* 2.57 E-03	3.64 E-03
		Ru-103	*-2.66 E-05	4.59 E-04
		Ru-106	*-2.71 E-04	1.69 E-03
		Cs-134	*-7.16 E-06	1.92 E-04
		Cs-137	* 0.00 E+00	1.70 E-04
		Ra-226	* 1.62 E-03	2.47 E-03
		Th-228	*-6.09 E-06	2.35 E-04
	03/30/98-06/29/98	Be-7	8.86 E-02	8.21 E-03
		K-40	6.79 E-03	2.92 E-03
		Ru-103	*-1.12 E-04	5.89 E-04
		Ru-106	*-1.04 E-03	1.48 E-03
		Cs-134	* 1.83 E-05	1.69 E-04
		Cs-137	* 2.34 E-04	1.67 E-04
		Ra-226	*-1.50 E-03	2.72 E-03
		Th-228	*-1.27 E-04	2.55 E-04
	06/29/98-09/28/98	Be-7	1.50 E-01	8.62 E-03
		K-40	* 6.48 E-04	2.48 E-03
		Ru-103	*-3.35 E-04	4.91 E-04
		Ru-106	* 5.95 E-05	1.34 E-03
		Cs-134	* 1.11 E-04	1.52 E-04
		Cs-137	* 6.36 E-05	1.47 E-04
		Ra-226	* 1.67 E-03	2.56 E-03
		Th-228	*-9.40 E-07	2.40 E-04
	09/28/98-12/28/98	Be-7	7.56 E-02	7.67 E-03
		K-40	* 1.75 E-03	2.85 E-03
		Ru-103	*-3.54 E-05	5.53 E-04
		Ru-106	*-1.19 E-03	1.59 E-03
		Cs-134	* 7.88 E-05	1.79 E-04
		Cs-137	* 1.90 E-04	2.15 E-04
		Ra-226	*-2.18 E-03	2.84 E-03
		Th-228	*-5.51 E-05	2.70 E-04

* Denotes a result less than the detection limit.

TABLE A-3.1 (Cont.)

GAMMA SPECTROMETRY OF PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
57	12/29/97-03/30/98	Be-7	7.60 E-02	8.40 E-03
		K-40	* 1.19 E-03	2.93 E-03
		Ru-103	* 7.30 E-05	5.43 E-04
		Ru-106	* -1.62 E-03	1.85 E-03
		Cs-134	* 5.46 E-05	2.06 E-04
		Cs-137	* 4.43 E-05	2.09 E-04
		Ra-226	* -3.79 E-04	3.67 E-03
		Th-228	* -1.42 E-04	3.47 E-04
	03/30/98-06/29/98	Be-7	9.90 E-02	9.34 E-03
		K-40	* -3.81 E-03	4.82 E-03
		Ru-103	* 4.66 E-05	8.48 E-04
		Ru-106	* -1.29 E-03	2.12 E-03
		Cs-134	* -1.22 E-04	2.25 E-04
		Cs-137	* 7.57 E-05	2.19 E-04
		Ra-226	* -4.64 E-03	2.81 E-03
		Th-228	* 1.38 E-04	2.96 E-04
	06/29/98-09/28/98	Be-7	1.34 E-01	1.01 E-02
		K-40	* -5.93 E-03	4.44 E-03
		Ru-103	* -4.30 E-04	7.15 E-04
		Ru-106	* 0.00 E+00	2.08 E-03
		Cs-134	* -1.30 E-04	2.20 E-04
		Cs-137	* 8.40 E-05	2.15 E-04
		Ra-226	* -2.04 E-03	2.85 E-03
		Th-228	* 1.49 E-04	2.90 E-04
	09/28/98-12/28/98	Be-7	7.87 E-02	9.49 E-03
		K-40	* 7.59 E-04	6.22 E-03
		Ru-103	* -2.24 E-04	7.96 E-04
		Ru-106	* 0.00 E+00	2.50 E-03
		Cs-134	* -8.96 E-05	2.85 E-04
		Cs-137	* -9.07 E-05	2.56 E-04
		Ra-226	* 3.90 E-03	3.58 E-03
		Th-228	* 3.37 E-04	3.62 E-04

* Denotes a result less than the detection limit.

TABLE A-3.2 (Cont.)

GAMMA SPECTROMETRY OF PARTICULATE FILTERS - SUMMARY

Results in pCi/cubic meter

NUCLIDE		NUMBER AVERAGE	LOW	HIGH	NUMBER SAMPLES	POSITIVE
Be-7	(I)	9.83E-02	6.05E-02	1.73E-01	44	44
Be-7	(C)	9.54E-02	6.76E-02	1.48E-01	4	4
K-40	(I)	6.44E-04	-1.36E-02	2.74E-02	44	5
K-40	(C)	-2.02E-04	-3.46E-03	2.74E-03	4	0
Ru-103	(I)	-2.17E-05	-4.30E-04	5.77E-04	44	0
Ru-103	(C)	-2.56E-05	-3.04E-04	2.52E-04	4	0
Ru-106	(I)	-7.96E-06	-1.62E-03	2.34E-03	44	0
Ru-106	(C)	1.64E-04	-1.02E-03	1.12E-03	4	0
Cs-134	(I)	4.30E-08	-2.87E-04	1.99E-04	44	0
Cs-134	(C)	3.27E-05	-3.37E-05	1.19E-04	4	0
Cs-137	(I)	5.64E-05	-2.58E-04	3.29E-04	44	0
Cs-137	(C)	1.00E-04	1.82E-05	1.54E-04	4	0

(I) Indicator Stations
(C) Control Station

TABLE A-4.1

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
1	12/29/98-01/05/98	*-3.00 E-03	5.73 E-03
	01/05/98-01/12/98	* 2.46 E-03	6.22 E-03
	01/12/98-01/19/98	* 7.72 E-03	1.16 E-02
	01/19/98-01/26/98	* 1.49 E-03	1.12 E-02
	01/26/98-02/02/98	* 1.24 E-03	1.27 E-02
	02/02/98-02/09/98	*-3.22 E-03	6.70 E-03
	02/09/98-02/17/98	* 9.44 E-03	9.51 E-03
	02/17/98-02/23/98	*-3.94 E-03	7.14 E-03
	02/23/98-03/02/98	* 2.55 E-04	5.99 E-03
	03/02/98-03/09/98	* 4.25 E-03	6.55 E-03
	03/09/98-03/16/98	* 1.29 E-02	1.13 E-02
	03/16/98-03/23/98	*-2.32 E-03	5.65 E-03
	03/23/98-03/30/98	*-2.30 E-03	1.07 E-02
	03/30/98-04/06/98	*-3.66 E-03	6.72 E-03
	04/06/98-04/13/98	* 9.24 E-04	1.15 E-02
	04/13/98-04/20/98	* 1.81 E-03	6.08 E-03
	04/20/98-04/27/98	* 1.71 E-03	5.74 E-03
	04/27/98-05/04/98	* 4.73 E-04	6.54 E-03
	05/04/98-05/11/98	*-7.16 E-04	6.31 E-03
	05/11/98-05/18/98	*-3.14 E-03	5.78 E-03
	05/18/98-05/26/98 (a)	* 1.52 E-02	1.37 E-02
	05/26/98-06/01/98	* 3.51 E-03	1.05 E-02
	06/01/98-06/08/98	* 4.91 E-03	1.10 E-02
	06/08/98-06/15/98	*-1.09 E-03	6.41 E-03
	06/15/98-06/22/98	*-4.99 E-03	5.80 E-03
	06/22/98-06/29/98	*-2.31 E-03	1.09 E-02
	06/29/98-07/06/98	* 6.22 E-03	6.67 E-03
	07/06/98-07/13/98	*-7.36 E-04	5.97 E-03
	07/13/98-07/20/98	* 1.93 E-03	5.06 E-03
	07/20/98-07/27/98	* 1.35 E-03	6.65 E-03
	07/27/98-08/03/98	*-4.83 E-04	3.33 E-03
	08/03/98-08/10/98	6.06 E-03	1.18 E-02
	08/10/98-08/17/98	* 2.57 E-03	6.48 E-03
	08/17/98-08/24/98	*-3.76 E-03	6.76 E-03
	08/24/98-08/31/98	*-2.27 E-03	6.93 E-03
	08/31/98-09/08/98	* 3.14 E-04	5.11 E-03
	09/08/98-09/14/98	*-3.53 E-03	7.80 E-03
	09/14/98-09/21/98	*-8.08 E-04	6.85 E-03
	09/21/98-09/28/98	*-4.04 E-03	5.77 E-03

(a) Low sample volume due to power outage. Not included in averages.

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
1	09/28/98-10/05/98	*-1.61 E-03	6.56 E-03
	10/05/98-10/12/98	* 1.26 E-03	8.85 E-03
	10/12/98-10/19/98	* 1.37 E-03	7.14 E-03
	10/19/98-10/26/98	*-3.69 E-03	5.51 E-03
	10/26/98-11/02/98	* 1.79 E-04	6.57 E-03
	11/02/98-11/09/98	* 1.25 E-03	5.94 E-03
	11/09/98-11/16/98	*-4.32 E-04	8.98 E-03
	11/16/98-11/23/98	*-7.73 E-03	1.05 E-02
	11/23/98-11/30/98	* 1.40 E-03	6.39 E-03
	11/30/98-12/07/98	* 1.80 E-03	6.03 E-03
	12/07/98-12/14/98	*-2.00 E-03	5.96 E-03
	12/14/98-12/21/98	*-2.23 E-03	5.69 E-03
	12/21/98-12/28/98	*-1.29 E-03	5.72 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
4	12/29/98-01/05/98	*-2.93 E-03	5.60 E-03
	01/05/98-01/12/98	* 2.40 E-03	6.07 E-03
	01/12/98-01/19/98	* 7.29 E-03	1.09 E-02
	01/19/98-01/26/98	* 1.46 E-03	1.10 E-02
	01/26/98-02/02/98	* 1.33 E-03	1.36 E-02
	02/02/98-02/09/98	*-3.17 E-03	6.59 E-03
	02/09/98-02/17/98	* 9.28 E-03	9.35 E-03
	02/17/98-02/23/98	*-3.88 E-03	7.02 E-03
	02/23/98-03/02/98	* 2.51 E-04	5.89 E-03
	03/02/98-03/09/98	* 4.19 E-03	6.46 E-03
	03/09/98-03/16/98	* 1.29 E-02	1.13 E-02
	03/16/98-03/23/98	*-2.33 E-03	5.66 E-03
	03/23/98-03/30/98	*-2.26 E-03	1.05 E-02
	03/30/98-04/06/98	*-3.60 E-03	6.61 E-03
	04/06/98-04/13/98	* 9.24 E-04	1.15 E-02
	04/13/98-04/20/98	* 1.78 E-03	5.97 E-03
	04/20/98-04/27/98	* 1.68 E-03	5.64 E-03
	04/27/98-05/04/98	* 4.65 E-04	6.43 E-03
	05/04/98-05/11/98	*-7.03 E-04	6.20 E-03
	05/11/98-05/18/98	*-3.09 E-03	5.70 E-03
	05/18/98-05/26/98	* 5.46 E-03	4.92 E-03
	05/26/98-06/01/98	* 2.67 E-03	8.01 E-03
	06/01/98-06/08/98	* 4.81 E-03	1.08 E-02
	06/08/98-06/15/98	*-1.08 E-03	6.32 E-03
	06/15/98-06/22/98	*-4.90 E-03	5.70 E-03
	06/22/98-06/29/98	*-2.30 E-03	1.09 E-02
	06/29/98-07/06/98	* 6.16 E-03	6.60 E-03
	07/06/98-07/13/98	*-7.22 E-04	5.85 E-03
	07/13/98-07/20/98	* 1.90 E-03	4.99 E-03
	07/20/98-07/27/98 (a)	* 2.89 E-03	1.43 E-02
	07/27/98-08/03/98	*-4.75 E-04	3.27 E-03
	08/03/98-08/10/98	* 5.93 E-03	1.15 E-02
	08/10/98-08/17/98	* 2.53 E-03	6.37 E-03
	08/17/98-08/24/98	*-3.70 E-03	6.66 E-03
	08/24/98-08/31/98	*-2.23 E-03	6.82 E-03
	08/31/98-09/08/98	* 3.08 E-04	5.03 E-03
	09/08/98-09/14/98	*-3.48 E-03	7.69 E-03
	09/14/98-09/21/98	*-7.88 E-04	6.68 E-03
	09/21/98-09/28/98	*-3.23 E-03	4.61 E-03

(a) Unit failure; low sample volume.

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
4	09/28/98-10/05/98	*-1.59 E-03	6.46 E-03
	10/05/98-10/12/98	* 1.24 E-03	8.70 E-03
	10/12/98-10/19/98	* 1.35 E-03	7.03 E-03
	10/19/98-10/26/98	*-3.63 E-03	5.43 E-03
	10/26/98-11/02/98	* 1.76 E-04	6.47 E-03
	11/02/98-11/09/98	* 1.24 E-03	5.86 E-03
	11/09/98-11/16/98 (a)	*-8.28 E-04	1.72 E-02
	11/16/98-11/23/98	*-4.35 E-03	5.88 E-03
	11/23/98-11/30/98	* 1.37 E-03	6.27 E-03
	11/30/98-12/07/98	* 1.75 E-03	5.89 E-03
	12/07/98-12/14/98	*-1.98 E-03	5.89 E-03
	12/14/98-12/21/98	*-2.19 E-03	5.60 E-03
	12/21/98-12/28/98	*-1.27 E-03	5.64 E-03

(a) Power off at unit.

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
5	12/29/98-01/05/98	*-2.95 E-03	5.64 E-03
	01/05/98-01/12/98	* 2.42 E-03	6.12 E-03
	01/12/98-01/19/98	* 7.63 E-03	1.14 E-02
	01/19/98-01/26/98	* 1.47 E-03	1.11 E-02
	01/26/98-02/02/98	* 1.23 E-03	1.26 E-02
	02/02/98-02/09/98	*-3.34 E-03	6.95 E-03
	02/09/98-02/17/98	* 1.08 E-02	1.09 E-02
	02/17/98-02/23/98	*-3.89 E-03	7.03 E-03
	02/23/98-03/02/98	* 2.52 E-04	5.92 E-03
	03/02/98-03/09/98	* 4.21 E-03	6.49 E-03
	03/09/98-03/16/98	* 1.27 E-02	1.11 E-02
	03/16/98-03/23/98	*-2.29 E-03	5.57 E-03
	03/23/98-03/30/98	*-2.27 E-03	1.05 E-02
	03/30/98-04/06/98	*-3.62 E-03	6.65 E-03
	04/06/98-04/13/98	* 9.01 E-04	1.12 E-02
	04/13/98-04/20/98	* 1.79 E-03	6.00 E-03
	04/20/98-04/27/98	* 1.69 E-03	5.67 E-03
	04/27/98-05/04/98	* 4.67 E-04	6.46 E-03
	05/04/98-05/11/98	*-7.06 E-04	6.23 E-03
	05/11/98-05/18/98	*-2.88 E-03	5.30 E-03
	05/18/98-05/26/98	* 5.48 E-03	4.94 E-03
	05/26/98-06/01/98	* 2.68 E-03	8.05 E-03
	06/01/98-06/08/98	* 4.82 E-03	1.08 E-02
	06/08/98-06/15/98	*-1.08 E-03	6.33 E-03
	06/15/98-06/22/98	*-4.94 E-03	5.75 E-03
	06/22/98-06/29/98	*-2.32 E-03	1.09 E-02
	06/29/98-07/06/98	* 6.19 E-03	6.63 E-03
	07/06/98-07/13/98	*-7.25 E-04	5.88 E-03
	07/13/98-07/20/98	* 1.91 E-03	5.01 E-03
	07/20/98-07/27/98	* 1.33 E-03	6.56 E-03
	07/27/98-08/03/98	*-4.78 E-04	3.29 E-03
	08/03/98-08/10/98	* 5.96 E-03	1.16 E-02
	08/10/98-08/17/98	* 2.55 E-03	6.42 E-03
	08/17/98-08/24/98	*-3.72 E-03	6.70 E-03
	08/24/98-08/31/98	*-2.23 E-03	6.84 E-03
	08/31/98-09/08/98	* 3.10 E-04	5.05 E-03
	09/08/98-09/14/98	*-3.50 E-03	7.73 E-03
	09/14/98-09/21/98	*-7.92 E-04	6.72 E-03
	09/21/98-09/28/98	*-3.24 E-03	4.63 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
5	09/28/98-10/05/98	*-1.60 E-03	6.50 E-03
	10/05/98-10/12/98	* 1.24 E-03	8.74 E-03
	10/12/98-10/19/98	* 1.36 E-03	7.08 E-03
	10/19/98-10/26/98	*-3.65 E-03	5.45 E-03
	10/26/98-11/02/98	* 1.76 E-04	6.48 E-03
	11/02/98-11/09/98	* 1.24 E-03	5.88 E-03
	11/09/98-11/16/98	*-4.29 E-04	8.91 E-03
	11/16/98-11/23/98	*-4.37 E-03	5.91 E-03
	11/23/98-11/30/98	* 1.38 E-03	6.32 E-03
	11/30/98-12/07/98	* 1.77 E-03	5.94 E-03
	12/07/98-12/14/98	*-1.98 E-03	5.91 E-03
	12/14/98-12/21/98	*-2.20 E-03	5.63 E-03
	12/21/98-12/28/98	*-1.28 E-03	5.66 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
6	12/29/98-01/05/98	*-2.98 E-03	5.70 E-03
	01/05/98-01/12/98	* 2.45 E-03	6.19 E-03
	01/12/98-01/19/98	* 7.69 E-03	1.15 E-02
	01/19/98-01/26/98	* 1.49 E-03	1.12 E-02
	01/26/98-02/02/98	* 1.24 E-03	1.27 E-02
	02/02/98-02/09/98	*-3.21 E-03	6.68 E-03
	02/09/98-02/17/98	* 9.41 E-03	9.48 E-03
	02/17/98-02/23/98	*-3.92 E-03	7.09 E-03
	02/23/98-03/02/98	* 2.55 E-04	5.98 E-03
	03/02/98-03/09/98	* 4.24 E-03	6.53 E-03
	03/09/98-03/16/98	* 1.28 E-02	1.12 E-02
	03/16/98-03/23/98	*-2.32 E-03	5.63 E-03
	03/23/98-03/30/98	*-2.29 E-03	1.06 E-02
	03/30/98-04/06/98	*-3.65 E-03	6.70 E-03
	04/06/98-04/13/98	* 9.01 E-04	1.12 E-02
	04/13/98-04/20/98	* 1.80 E-03	6.06 E-03
	04/20/98-04/27/98	* 1.71 E-03	5.72 E-03
	04/27/98-05/04/98	* 4.70 E-04	6.50 E-03
	05/04/98-05/11/98	*-7.12 E-04	6.28 E-03
	05/11/98-05/18/98	*-3.14 E-03	5.78 E-03
	05/18/98-05/26/98	* 5.53 E-03	4.99 E-03
	05/26/98-06/01/98	* 2.71 E-03	8.12 E-03
	06/01/98-06/08/98	* 4.87 E-03	1.09 E-02
	06/08/98-06/15/98	*-1.09 E-03	6.38 E-03
	06/15/98-06/22/98	*-4.98 E-03	5.79 E-03
	06/22/98-06/29/98	*-2.34 E-03	1.11 E-02
	06/29/98-07/06/98	* 6.17 E-03	6.61 E-03
	07/06/98-07/13/98	*-7.35 E-04	5.96 E-03
	07/13/98-07/20/98	* 1.92 E-03	5.03 E-03
	07/20/98-07/27/98	* 1.33 E-03	6.58 E-03
	07/27/98-08/03/98	*-4.82 E-04	3.32 E-03
	08/03/98-08/10/98	* 6.04 E-03	1.17 E-02
	08/10/98-08/17/98	* 2.56 E-03	6.46 E-03
	08/17/98-08/24/98	*-3.75 E-03	6.76 E-03
	08/24/98-08/31/98	*-2.25 E-03	6.90 E-03
	08/31/98-09/08/98	* 3.13 E-04	5.10 E-03
	09/08/98-09/14/98	*-3.52 E-03	7.78 E-03
	09/14/98-09/21/98	*-8.03 E-04	6.81 E-03
	09/21/98-09/28/98	*-3.26 E-03	4.65 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
6	09/28/98-10/05/98	*-1.61 E-03	6.56 E-03
	10/05/98-10/12/98	* 1.25 E-03	8.81 E-03
	10/12/98-10/19/98	* 1.37 E-03	7.14 E-03
	10/19/98-10/26/98	*-3.68 E-03	5.50 E-03
	10/26/98-11/02/98	* 1.78 E-04	6.54 E-03
	11/02/98-11/09/98	* 1.25 E-03	5.93 E-03
	11/09/98-11/16/98	*-4.32 E-04	8.98 E-03
	11/16/98-11/23/98	*-4.40 E-03	5.96 E-03
	11/23/98-11/30/98	* 1.39 E-03	6.37 E-03
	11/30/98-12/07/98	* 1.79 E-03	6.01 E-03
	12/07/98-12/14/98	*-2.00 E-03	5.95 E-03
	12/14/98-12/21/98	*-2.22 E-03	5.68 E-03
	12/21/98-12/28/98	*-1.29 E-03	5.71 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
7	12/29/98-01/05/98	*-2.29 E-03	4.38 E-03
	01/05/98-01/12/98	* 1.83 E-03	4.63 E-03
	01/12/98-01/19/98	* 3.80 E-03	5.69 E-03
	01/19/98-01/26/98	* 7.34 E-04	5.52 E-03
	01/26/98-02/02/98	* 6.11 E-04	6.28 E-03
	02/02/98-02/09/98	*-2.40 E-03	4.99 E-03
	02/09/98-02/17/98	* 4.65 E-03	4.69 E-03
	02/17/98-02/23/98	*-2.85 E-03	5.16 E-03
	02/23/98-03/02/98	* 1.91 E-04	4.47 E-03
	03/02/98-03/09/98	* 3.38 E-03	5.20 E-03
	03/09/98-03/16/98	* 6.33 E-03	5.55 E-03
	03/16/98-03/23/98	*-1.78 E-03	4.33 E-03
	03/23/98-03/30/98	*-1.13 E-03	5.24 E-03
	03/30/98-04/06/98	*-2.73 E-03	5.01 E-03
	04/06/98-04/13/98	* 4.49 E-04	5.58 E-03
	04/13/98-04/20/98	* 1.35 E-03	4.53 E-03
	04/20/98-04/27/98	* 1.28 E-03	4.29 E-03
	04/27/98-05/04/98 (a)	* 6.41 E-04	8.87 E-03
	05/04/98-05/11/98	*-5.68 E-04	5.01 E-03
	05/11/98-05/18/98	*-2.35 E-03	4.32 E-03
	05/18/98-05/26/98	* 4.25 E-03	3.83 E-03
	05/26/98-06/01/98	* 1.85 E-03	5.56 E-03
	06/01/98-06/08/98	* 2.40 E-03	5.38 E-03
	06/08/98-06/15/98	*-8.67 E-04	5.08 E-03
	06/15/98-06/22/98	*-3.73 E-03	4.33 E-03
	06/22/98-06/29/98	*-1.32 E-03	6.22 E-03
	06/29/98-07/06/98	* 5.58 E-03	5.98 E-03
	07/06/98-07/13/98	*-5.50 E-04	4.46 E-03
	07/13/98-07/20/98	* 1.48 E-03	3.88 E-03
	07/20/98-07/27/98	* 9.15 E-04	4.52 E-03
	07/27/98-08/03/98	*-3.60 E-04	2.48 E-03
	08/03/98-08/10/98	* 2.98 E-03	5.80 E-03
	08/10/98-08/17/98	* 2.04 E-03	5.15 E-03
	08/17/98-08/24/98	*-2.99 E-03	5.38 E-03
	08/24/98-08/31/98	*-1.79 E-03	5.49 E-03
	08/31/98-09/08/98	* 2.40 E-04	3.92 E-03
	09/08/98-09/14/98	*-2.80 E-03	6.19 E-03
	09/14/98-09/21/98	*-6.40 E-04	5.43 E-03
	09/21/98-09/28/98	*-3.10 E-03	4.42 E-03

(a) Low sample volume due to unit failure.

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
7	09/28/98-10/05/98	*-1.28 E-03	5.23 E-03
	10/05/98-10/12/98	* 8.34 E-04	5.86 E-03
	10/12/98-10/19/98	* 1.10 E-03	5.74 E-03
	10/19/98-10/26/98	*-2.83 E-03	4.23 E-03
	10/26/98-11/02/98	* 1.33 E-04	4.89 E-03
	11/02/98-11/09/98	* 9.35 E-04	4.43 E-03
	11/09/98-11/16/98	*-2.97 E-04	6.17 E-03
	11/16/98-11/23/98	*-3.51 E-03	4.75 E-03
	11/23/98-11/30/98	* 1.11 E-03	5.08 E-03
	11/30/98-12/07/98	* 1.34 E-03	4.49 E-03
	12/07/98-12/14/98	*-1.49 E-03	4.45 E-03
	12/14/98-12/21/98	*-1.93 E-03	4.94 E-03
	12/21/98-12/28/98	*-1.12 E-03	4.95 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
8	12/29/98-01/05/98	* 7.80 E-04	9.40 E-03
	01/05/98-01/12/98	* 4.74 E-03	1.23 E-02
	01/12/98-01/19/98	*-2.02 E-03	1.22 E-02
	01/19/98-01/26/98	*-3.03 E-03	6.46 E-03
	01/26/98-02/02/98	* 0.00 E+00	1.23 E-02
	02/02/98-02/09/98	* 9.64 E-04	5.87 E-03
	02/09/98-02/17/98	* 1.78 E-03	4.91 E-03
	02/17/98-02/23/98	*-2.04 E-03	7.70 E-03
	02/23/98-03/02/98	* 2.59 E-03	5.20 E-03
	03/02/98-03/09/98	* 1.46 E-03	6.61 E-03
	03/09/98-03/16/98	* 9.47 E-04	6.58 E-03
	03/16/98-03/23/98	*-3.71 E-03	9.41 E-03
	03/23/98-03/30/98	*-5.13 E-04	6.23 E-03
	03/30/98-04/06/98	* 5.70 E-04	6.24 E-03
	04/06/98-04/13/98	* 1.41 E-03	6.69 E-03
	04/13/98-04/20/98	* 3.04 E-03	5.35 E-03
	04/20/98-04/27/98	*-3.84 E-03	4.91 E-03
	04/27/98-05/04/98	* 8.56 E-04	5.57 E-03
	05/04/98-05/11/98	*-1.48 E-03	6.20 E-03
	05/11/98-05/18/98	* 3.50 E-04	5.24 E-03
	05/18/98-05/26/98	*-5.02 E-03	7.92 E-03
	05/26/98-06/01/98	*-2.79 E-03	8.10 E-03
	06/01/98-06/08/98	* 1.09 E-03	6.43 E-03
	06/08/98-06/15/98	* 1.71 E-03	6.61 E-03
	06/15/98-06/22/98	* 2.65 E-03	5.33 E-03
	06/22/98-06/29/98	*-2.65 E-03	6.44 E-03
	06/29/98-07/06/98	*-4.44 E-03	6.58 E-03
	07/06/98-07/13/98	*-6.75 E-03	6.48 E-03
	07/13/98-07/20/98	* 2.44 E-03	8.25 E-03
	07/20/98-07/27/98	* 2.28 E-03	5.40 E-03
	07/27/98-08/03/98	*-2.34 E-03	6.67 E-03
	08/03/98-08/10/98	*-1.09 E-04	6.57 E-03
	08/10/98-08/17/98	* 4.61 E-03	6.80 E-03
	08/17/98-08/24/98	* 1.01 E-03	6.62 E-03
	08/24/98-08/31/98	*-3.28 E-03	6.80 E-03
	08/31/98-09/08/98	* 4.38 E-03	8.18 E-03
	09/08/98-09/14/98	*-3.81 E-03	7.80 E-03
	09/14/98-09/21/98	*-3.31 E-03	6.86 E-03
	09/21/98-09/28/98	*-9.51 E-04	8.79 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
8	09/28/98-10/05/98	* 3.40 E-03	6.56 E-03
	10/05/98-10/12/98	* 3.31 E-03	6.89 E-03
	10/12/98-10/19/98	*-1.86 E-03	5.84 E-03
	10/19/98-10/26/98	*-1.14 E-03	8.76 E-03
	10/26/98-11/02/98	* 3.96 E-03	5.91 E-03
	11/02/98-11/09/98	* 2.34 E-03	5.29 E-03
	11/09/98-11/16/98	* 0.00 E+00	6.64 E-03
	11/16/98-11/23/98	* 1.42 E-03	6.06 E-03
	11/23/98-11/30/98	*-2.40 E-04	6.64 E-03
	11/30/98-12/07/98	*-1.26 E-03	5.31 E-03
	12/07/98-12/14/98	*-2.00 E-03	5.39 E-03
	12/14/98-12/21/98	* 4.31 E-04	5.11 E-03
	12/21/98-12/28/98	* 7.42 E-04	6.12 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
9	12/29/98-01/05/98	* 7.86 E-04	9.47 E-03
	01/05/98-01/12/98	* 4.78 E-03	1.24 E-02
	01/12/98-01/19/98	* -2.03 E-03	1.22 E-02
	01/19/98-01/26/98	* -1.71 E-02	3.63 E-02
	01/26/98-02/02/98	* 0.00 E+00	1.24 E-02
	02/02/98-02/09/98	* 8.89 E-04	5.42 E-03
	02/09/98-02/17/98	* 1.79 E-03	4.94 E-03
	02/17/98-02/23/98	* -2.05 E-03	7.74 E-03
	02/23/98-03/02/98	* 2.60 E-03	5.22 E-03
	03/02/98-03/09/98	* 1.19 E-03	5.37 E-03
	03/09/98-03/16/98	* 9.53 E-04	6.62 E-03
	03/16/98-03/23/98	* -3.73 E-03	9.46 E-03
	03/23/98-03/30/98	* -5.15 E-04	6.25 E-03
	03/30/98-04/06/98	* 5.73 E-04	6.28 E-03
	04/06/98-04/13/98	* 1.42 E-03	6.73 E-03
	04/13/98-04/20/98	* 3.06 E-03	5.38 E-03
	04/20/98-04/27/98	* -3.86 E-03	4.94 E-03
	04/27/98-05/04/98	* 8.60 E-04	5.60 E-03
	05/04/98-05/11/98	* -1.49 E-03	6.22 E-03
	05/11/98-05/18/98	* 3.52 E-04	5.27 E-03
	05/18/98-05/26/98	* -5.05 E-03	7.97 E-03
	05/26/98-06/01/98	* -2.80 E-03	8.15 E-03
	06/01/98-06/08/98	* 1.10 E-03	6.48 E-03
	06/08/98-06/15/98	* 1.72 E-03	6.66 E-03
	06/15/98-06/22/98	* 2.66 E-03	5.36 E-03
	06/22/98-06/29/98	* -2.75 E-03	6.68 E-03
	06/29/98-07/06/98	* -4.48 E-03	6.63 E-03
	07/06/98-07/13/98	* -6.59 E-03	6.32 E-03
	07/13/98-07/20/98	* 2.44 E-03	8.26 E-03
	07/20/98-07/27/98	* 2.28 E-03	5.41 E-03
	07/27/98-08/03/98	* -2.35 E-03	6.70 E-03
	08/03/98-08/10/98	-1.10 E-04	6.62 E-03
	08/10/98-08/17/98	-4.64 E-03	6.84 E-03
	08/17/98-08/24/98	-1.02 E-03	6.65 E-03
	08/24/98-08/31/98	-3.31 E-03	6.85 E-03
	08/31/98-09/08/98	-4.40 E-03	8.23 E-03
	09/08/98-09/14/98	-3.82 E-03	7.82 E-03
	09/14/98-09/21/98	-3.34 E-03	6.91 E-03
	09/21/98-09/28/98	-9.55 E-04	8.84 E-03

(a) Low sample volume due to power outage. Not included in averages.

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
9	09/28/98-10/05/98	* 3.42 E-03	6.61 E-03
	10/05/98-10/12/98	* 3.33 E-03	6.93 E-03
	10/12/98-10/19/98	*-1.87 E-03	5.87 E-03
	10/19/98-10/26/98	*-1.14 E-03	8.81 E-03
	10/26/98-11/02/98	* 3.99 E-03	5.95 E-03
	11/02/98-11/09/98	* 2.36 E-03	5.33 E-03
	11/09/98-11/16/98	* 0.00 E+00	6.68 E-03
	11/16/98-11/23/98	* 1.43 E-03	6.09 E-03
	11/23/98-11/30/98	*-2.41 E-04	6.68 E-03
	11/30/98-12/07/98	*-1.27 E-03	5.34 E-03
	12/07/98-12/14/98	*-2.02 E-03	5.42 E-03
	12/14/98-12/21/98	* 4.34 E-04	5.14 E-03
	12/21/98-12/28/98	* 7.46 E-04	6.15 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
21	12/29/98-01/05/98	* 7.94 E-04	9.58 E-03
	01/05/98-01/12/98	* 4.83 E-03	1.26 E-02
	01/12/98-01/19/98	* -2.04 E-03	1.23 E-02
	01/19/98-01/26/98	* -3.07 E-03	6.53 E-03
	01/26/98-02/02/98	* 0.00 E+00	1.25 E-02
	02/02/98-02/09/98	* 9.78 E-04	5.96 E-03
	02/09/98-02/17/98	* 1.81 E-03	4.99 E-03
	02/17/98-02/23/98	* -2.07 E-03	7.81 E-03
	02/23/98-03/02/98	* 2.63 E-03	5.28 E-03
	03/02/98-03/09/98	* 1.48 E-03	6.69 E-03
	03/09/98-03/16/98	* 9.63 E-04	6.69 E-03
	03/16/98-03/23/98	* -3.77 E-03	9.57 E-03
	03/23/98-03/30/98	* -5.21 E-04	6.32 E-03
	03/30/98-04/06/98	* 5.79 E-04	6.33 E-03
	04/06/98-04/13/98	* 1.44 E-03	6.79 E-03
	04/13/98-04/20/98	* 3.09 E-03	5.43 E-03
	04/20/98-04/27/98	* -3.90 E-03	4.99 E-03
	04/27/98-05/04/98	* 8.68 E-04	5.65 E-03
	05/04/98-05/11/98	* -1.50 E-03	6.29 E-03
	05/11/98-05/18/98	* 3.54 E-04	5.31 E-03
	05/18/98-05/26/98	* -5.09 E-03	8.03 E-03
	05/26/98-06/01/98	* -2.84 E-03	8.25 E-03
	06/01/98-06/08/98	* 1.11 E-03	6.53 E-03
	06/08/98-06/15/98	* 1.73 E-03	6.72 E-03
	06/15/98-06/22/98	* 2.68 E-03	5.40 E-03
	06/22/98-06/29/98	* -2.66 E-03	6.45 E-03
	06/29/98-07/06/98	* -4.48 E-03	6.64 E-03
	07/06/98-07/13/98	* -6.87 E-03	6.59 E-03
	07/13/98-07/20/98	* 2.46 E-03	8.33 E-03
	07/20/98-07/27/98	* 2.30 E-03	5.47 E-03
	07/27/98-08/03/98	* -2.38 E-03	6.76 E-03
	08/03/98-08/10/98	* -1.12 E-04	6.70 E-03
	08/10/98-08/17/98	* 4.68 E-03	6.90 E-03
	08/17/98-08/24/98	* 1.03 E-03	6.69 E-03
	08/24/98-08/31/98	* -3.33 E-03	6.91 E-03
	08/31/98-09/08/98	* 4.44 E-03	8.30 E-03
	09/08/98-09/14/98	* -3.85 E-03	7.89 E-03
	09/14/98-09/21/98	* -3.39 E-03	7.02 E-03
	09/21/98-09/28/98	* -9.61 E-04	8.89 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
21	09/28/98-10/05/98 (a)	* 3.63 E-03	7.01 E-03
	10/05/98-10/12/98	* 3.37 E-03	7.00 E-03
	10/12/98-10/19/98	*-2.30 E-03	7.22 E-03
	10/19/98-10/26/98	*-1.15 E-03	8.88 E-03
	10/26/98-11/02/98	* 4.03 E-03	6.01 E-03
	11/02/98-11/09/98	* 2.37 E-03	5.36 E-03
	11/09/98-11/16/98	* 0.00 E+00	6.71 E-03
	11/16/98-11/23/98	* 1.44 E-03	6.14 E-03
	11/23/98-11/30/98	*-2.44 E-04	6.75 E-03
	11/30/98-12/07/98	*-1.28 E-03	5.40 E-03
	12/07/98-12/14/98	*-2.03 E-03	5.46 E-03
	12/14/98-12/21/98	* 4.37 E-04	5.18 E-03
	12/21/98-12/28/98	* 6.47 E-04	5.34 E-03

(a) Power off due to maintenance work.

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
23	12/29/98-01/05/98	* 7.94 E-04	9.57 E-03
	01/05/98-01/12/98	* 4.83 E-03	1.26 E-02
	01/12/98-01/19/98	* -2.04 E-03	1.23 E-02
	01/19/98-01/26/98	* -3.07 E-03	6.53 E-03
	01/26/98-02/02/98	* 0.00 E+00	1.25 E-02
	02/02/98-02/09/98	* 9.77 E-04	5.95 E-03
	02/09/98-02/17/98	* 1.81 E-03	4.99 E-03
	02/17/98-02/23/98	* -2.07 E-03	7.83 E-03
	02/23/98-03/02/98	* 2.62 E-03	5.27 E-03
	03/02/98-03/09/98	* 1.48 E-03	6.68 E-03
	03/09/98-03/16/98	* 9.57 E-04	6.64 E-03
	03/16/98-03/23/98	* -3.77 E-03	9.57 E-03
	03/23/98-03/30/98	* -5.20 E-04	6.32 E-03
	03/30/98-04/06/98	* 5.78 E-04	6.33 E-03
	04/06/98-04/13/98	* 1.43 E-03	6.79 E-03
	04/13/98-04/20/98	* 3.09 E-03	5.43 E-03
	04/20/98-04/27/98	* -3.90 E-03	4.98 E-03
	04/27/98-05/04/98	* 8.68 E-04	5.65 E-03
	05/04/98-05/11/98	* -1.50 E-03	6.28 E-03
	05/11/98-05/18/98	* 3.54 E-04	5.30 E-03
	05/18/98-05/26/98	* -5.09 E-03	8.03 E-03
	05/26/98-06/01/98	* -2.83 E-03	8.24 E-03
	06/01/98-06/08/98	* 1.11 E-03	6.54 E-03
	06/08/98-06/15/98	* 1.73 E-03	6.71 E-03
	06/15/98-06/22/98	* 2.68 E-03	5.39 E-03
	06/22/98-06/29/98	* -2.66 E-03	6.44 E-03
	06/29/98-07/06/98	* -4.48 E-03	6.63 E-03
	07/06/98-07/13/98	* -6.86 E-03	6.58 E-03
	07/13/98-07/20/98	* 2.47 E-03	8.35 E-03
	07/20/98-07/27/98	* 2.31 E-03	5.48 E-03
	07/27/98-08/03/98	* -2.37 E-03	6.76 E-03
	08/03/98-08/10/98	* -1.11 E-04	6.69 E-03
	08/10/98-08/17/98	* 4.68 E-03	6.90 E-03
	08/17/98-08/24/98	* 1.02 E-03	6.69 E-03
	08/24/98-08/31/98	* -3.33 E-03	6.90 E-03
	08/31/98-09/08/98	* 4.44 E-03	8.29 E-03
	09/08/98-09/14/98	* -3.85 E-03	7.88 E-03
	09/14/98-09/21/98	* -3.39 E-03	7.01 E-03
	09/21/98-09/28/98	* -9.58 E-04	8.86 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
23	09/28/98-10/05/98	* 3.44 E-03	6.65 E-03
	10/05/98-10/12/98	* 3.36 E-03	6.99 E-03
	10/12/98-10/19/98	*-2.32 E-03	7.30 E-03
	10/19/98-10/26/98	*-1.15 E-03	8.87 E-03
	10/26/98-11/02/98	* 4.02 E-03	6.00 E-03
	11/02/98-11/09/98	* 2.37 E-03	5.36 E-03
	11/09/98-11/16/98	* 0.00 E+00	6.71 E-03
	11/16/98-11/23/98	* 1.44 E-03	6.13 E-03
	11/23/98-11/30/98	*-2.43 E-04	6.73 E-03
	11/30/98-12/07/98	*-1.28 E-03	5.39 E-03
	12/07/98-12/14/98	*-2.03 E-03	5.45 E-03
	12/14/98-12/21/98	* 4.37 E-04	5.18 E-03
	12/21/98-12/28/98	* 6.48 E-04	5.35 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
40	12/29/98-01/05/98	* 5.36 E-04	6.46 E-03
	01/05/98-01/12/98	* 2.34 E-03	6.10 E-03
	01/12/98-01/19/98	* -1.32 E-03	7.95 E-03
	01/19/98-01/26/98	* -2.41 E-03	5.14 E-03
	01/26/98-02/02/98	* 0.00 E+00	8.05 E-03
	02/02/98-02/09/98	* 7.41 E-04	4.51 E-03
	02/09/98-02/17/98	* 1.33 E-03	3.67 E-03
	02/17/98-02/23/98	* -1.63 E-03	6.14 E-03
	02/23/98-03/02/98	* 1.99 E-03	3.99 E-03
	03/02/98-03/09/98	* 1.07 E-03	4.81 E-03
	03/09/98-03/16/98	* 7.05 E-04	4.90 E-03
	03/16/98-03/23/98	* -2.50 E-03	6.34 E-03
	03/23/98-03/30/98	* -4.09 E-04	4.96 E-03
	03/30/98-04/06/98	* 4.38 E-04	4.80 E-03
	04/06/98-04/13/98	* 9.68 E-04	4.58 E-03
	04/13/98-04/20/98	* 2.34 E-03	4.11 E-03
	04/20/98-04/27/98	* -2.95 E-03	3.78 E-03
	04/27/98-05/04/98	* 6.56 E-04	4.27 E-03
	05/04/98-05/11/98	* -1.08 E-03	4.50 E-03
	05/11/98-05/18/98	* 2.69 E-04	4.03 E-03
	05/18/98-05/26/98	* -3.45 E-03	5.44 E-03
	05/26/98-06/01/98	* -2.22 E-03	6.45 E-03
	06/01/98-06/08/98	* 7.50 E-04	4.42 E-03
	06/08/98-06/15/98	* 1.24 E-03	4.81 E-03
	06/15/98-06/22/98	* 2.04 E-03	4.10 E-03
	06/22/98-06/29/98	* -2.06 E-03	5.01 E-03
	06/29/98-07/06/98	* -3.69 E-03	5.47 E-03
	07/06/98-07/13/98	* -5.41 E-03	5.19 E-03
	07/13/98-07/20/98	* 1.67 E-03	5.67 E-03
	07/20/98-07/27/98	* 1.75 E-03	4.15 E-03
	07/27/98-08/03/98	* -1.70 E-03	4.85 E-03
	08/03/98-08/10/98	* -8.18 E-05	4.91 E-03
	08/10/98-08/17/98	* 3.36 E-03	4.96 E-03
	08/17/98-08/24/98	* 7.38 E-04	4.82 E-03
	08/24/98-08/31/98	* -2.39 E-03	4.96 E-03
	08/31/98-09/08/98	* 3.01 E-03	5.62 E-03
	09/08/98-09/14/98	* -2.77 E-03	5.68 E-03
	09/14/98-09/21/98	* -2.42 E-03	5.00 E-03
	09/21/98-09/28/98	* -6.53 E-04	6.04 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
40	09/28/98-10/05/98	* 2.48 E-03	4.79 E-03
	10/05/98-10/12/98	* 2.64 E-03	5.49 E-03
	10/12/98-10/19/98	* -1.67 E-03	5.24 E-03
	10/19/98-10/26/98	* -7.16 E-04	5.52 E-03
	10/26/98-11/02/98	* 3.05 E-03	4.55 E-03
	11/02/98-11/09/98	* 1.80 E-03	4.07 E-03
	11/09/98-11/16/98	* 0.00 E+00	5.29 E-03
	11/16/98-11/23/98	* 1.04 E-03	4.41 E-03
	11/23/98-11/30/98	* -1.75 E-04	4.84 E-03
	11/30/98-12/07/98	* -9.70 E-04	4.08 E-03
	12/07/98-12/14/98	* -1.54 E-03	4.14 E-03
	12/14/98-12/21/98	* 3.31 E-04	3.93 E-03
	12/21/98-12/28/98	* 4.81 E-04	3.97 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
48	12/29/98-01/05/98	* 2.85 E-03	6.74 E-03
	01/05/98-01/12/98	* 1.73 E-03	7.69 E-03
	01/12/98-01/19/98	* 1.71 E-03	5.40 E-03
	01/19/98-01/26/98	*-6.27 E-03	1.09 E-02
	01/26/98-02/02/98	*-2.42 E-04	4.34 E-03
	02/02/98-02/09/98	* 1.21 E-03	1.11 E-02
	02/09/98-02/17/98	*-4.65 E-03	1.38 E-02
	02/17/98-02/23/98	* 4.03 E-03	8.17 E-03
	02/23/98-03/02/98	* 1.65 E-03	8.52 E-03
	03/02/98-03/09/98	* 6.12 E-03	6.96 E-03
	03/09/98-03/16/98	* 2.45 E-03	1.09 E-02
	03/16/98-03/23/98	* 7.62 E-03	1.09 E-02
	03/23/98-03/30/98	* 0.00 E+00	6.12 E-03
	03/30/98-04/06/98	* 7.19 E-04	9.72 E-03
	04/06/98-04/13/98	*-1.25 E-03	5.74 E-03
	04/13/98-04/20/98	* 5.10 E-03	8.89 E-03
	04/20/98-04/27/98	*-5.65 E-04	7.99 E-03
	04/27/98-05/04/98	*-2.29 E-04	9.07 E-03
	05/04/98-05/11/98	* 2.82 E-03	6.06 E-03
	05/11/98-05/18/98	*-3.57 E-04	5.36 E-03
	05/18/98-05/26/98 (a)	* 1.48 E-02	3.56 E-02
	05/26/98-06/01/98	*-1.46 E-03	5.71 E-03
	06/01/98-06/08/98	* 4.24 E-04	5.57 E-03
	06/08/98-06/15/98	*-4.13 E-03	3.80 E-03
	06/15/98-06/22/98	*-5.33 E-03	8.35 E-03
	06/22/98-06/29/98	* 3.61 E-04	6.53 E-03
	06/29/98-07/06/98	* 2.77 E-03	8.95 E-03
	07/06/98-07/13/98	*-7.89 E-04	6.75 E-03
	07/13/98-07/20/98	*-1.87 E-03	6.18 E-03
	07/20/98-07/27/98	*-1.74 E-03	5.55 E-03
	07/27/98-08/03/98	*-7.31 E-03	1.14 E-02
	08/03/98-08/10/98	* 4.19 E-03	5.93 E-03
	08/10/98-08/17/98	* 6.14 E-03	1.20 E-02
	08/17/98-08/24/98	* 1.14 E-04	9.23 E-03
	08/24/98-08/31/98	*-1.97 E-03	6.37 E-03
	08/31/98-09/08/98	* 4.04 E-03	5.70 E-03
	09/08/98-09/14/98	*-1.03 E-03	6.20 E-03
	09/14/98-09/21/98	*-1.26 E-02	1.14 E-02
	09/21/98-09/28/98	*-8.60 E-04	6.06 E-03

(a) Low sample volume due to power outage. Not included in averages.

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
48	09/28/98-10/05/98	* 2.31 E-03	5.86 E-03
	10/05/98-10/12/98	*-7.48 E-03	6.33 E-03
	10/12/98-10/19/98	* 1.52 E-03	5.41 E-03
	10/19/98-10/26/98	*-1.45 E-03	1.05 E-02
	10/26/98-11/02/98	*-3.09 E-04	5.38 E-03
	11/02/98-11/09/98 (a)	* 7.50 E-03	3.35 E-02
	11/09/98-11/16/98	* 3.11 E-03	6.61 E-03
	11/16/98-11/23/98	* 0.00 E+00	5.36 E-03
	11/23/98-11/30/98	*-5.36 E-04	3.86 E-03
	11/30/98-12/07/98	* 6.18 E-03	8.30 E-03
	12/07/98-12/14/98	* 3.56 E-03	8.43 E-03
	12/14/98-12/21/98	* 7.13 E-04	8.06 E-03
	12/21/98-12/28/98	*-1.05 E-04	8.57 E-03

(a) Power off; low sample volume. Not included in averages.

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
57	12/29/98-01/05/98	* 2.91 E-03	6.88 E-03
	01/05/98-01/12/98	*-3.71 E-03	7.19 E-03
	01/12/98-01/19/98	*-2.17 E-03	5.06 E-03
	01/19/98-01/26/98	*-6.38 E-03	1.11 E-02
	01/26/98-02/02/98	* 1.86 E-03	6.45 E-03
	02/02/98-02/09/98	* 1.23 E-03	1.13 E-02
	02/09/98-02/17/98	*-4.73 E-03	1.40 E-02
	02/17/98-02/23/98	* 4.10 E-03	8.31 E-03
	02/23/98-03/02/98	* 1.68 E-03	8.69 E-03
	03/02/98-03/09/98	* 6.21 E-03	7.06 E-03
	03/09/98-03/16/98	* 2.45 E-03	1.09 E-02
	03/16/98-03/23/98	* 7.76 E-03	1.10 E-02
	03/23/98-03/30/98	* 0.00 E+00	6.22 E-03
	03/30/98-04/06/98	* 7.31 E-04	9.89 E-03
	04/06/98-04/13/98	*-1.27 E-03	5.84 E-03
	04/13/98-04/20/98	* 5.19 E-03	9.04 E-03
	04/20/98-04/27/98	*-5.74 E-04	8.13 E-03
	04/27/98-05/04/98	*-2.33 E-04	9.23 E-03
	05/04/98-05/11/98	* 0.00 E+00	3.95 E-03
	05/11/98-05/18/98 (a)	* 2.27 E-03	7.20 E-03
	05/18/98-05/26/98	* 0.00 E+00	4.01 E-03
	05/26/98-06/01/98	*-2.53 E-03	7.36 E-03
	06/01/98-06/08/98	* 4.31 E-04	5.66 E-03
	06/08/98-06/15/98	* 1.53 E-03	5.82 E-03
	06/15/98-06/22/98	*-5.41 E-03	8.47 E-03
	06/22/98-06/29/98	* 3.66 E-04	6.61 E-03
	06/29/98-07/06/98	* 2.78 E-03	8.99 E-03
	07/06/98-07/13/98	*-7.97 E-04	6.83 E-03
	07/13/98-07/20/98	*-1.90 E-03	6.27 E-03
	07/20/98-07/27/98	*-3.52 E-03	8.42 E-03
	07/27/98-08/03/98	*-7.43 E-03	1.16 E-02
	08/03/98-08/10/98	* 4.28 E-03	6.06 E-03
	08/10/98-08/17/98	* 6.23 E-03	1.22 E-02
	08/17/98-08/24/98	* 1.16 E-04	9.39 E-03
	08/24/98-08/31/98	*-2.01 E-03	6.48 E-03
	08/31/98-09/08/98	* 4.07 E-03	5.75 E-03
	09/08/98-09/14/98	* 3.82 E-03	8.61 E-03
	09/14/98-09/21/98	*-1.27 E-02	1.15 E-02
	09/21/98-09/28/98	*-8.71 E-04	6.13 E-03

(a) Low sample volume.

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
57	09/28/98-10/05/98	* 2.33 E-03	5.92 E-03
	10/05/98-10/12/98	*-7.61 E-03	6.44 E-03
	10/12/98-10/19/98	*-2.96 E-03	4.53 E-03
	10/19/98-10/26/98	*-1.47 E-03	1.07 E-02
	10/26/98-11/02/98	*-5.50 E-04	9.55 E-03
	11/02/98-11/09/98	* 1.44 E-03	6.43 E-03
	11/09/98-11/16/98	* 3.15 E-03	6.70 E-03
	11/16/98-11/23/98	* 0.00 E+00	5.44 E-03
	11/23/98-11/30/98	*-2.87 E-04	5.84 E-03
	11/30/98-12/07/98	* 6.31 E-03	8.47 E-03
	12/07/98-12/14/98	* 3.61 E-03	8.54 E-03
	12/14/98-12/21/98	* 7.27 E-04	8.22 E-03
	12/21/98-12/28/98	*-1.06 E-04	8.67 E-03

* Denotes a result less than the detection limit.

TABLE A-4.2
I-131 IN CHARCOAL FILTERS - SUMMARY

Results in pCi/cubic meter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
I-131	(I)	1.97E-04	-1.27E-02	1.29E-02	572	0
I-131	(C)	-2.82E-04	-1.71E-02	4.78E-03	52	0

(I) Indicator Stations
 (C) Control Station



TABLE A-5.1
GROSS BETA IN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	RESULT		OVERALL UNCERTAINTY	
<u>River/Drinking</u>					
26	01/06/98-02/03/98	9.1	E-01	6.2	E-01
	02/03/98-03/03/98	1.5	E+00	7.0	E-01
	03/03/98-04/01/98	1.2	E+00	7.0	E-01
	04/01/98-05/06/98	2.5	E+00	8.0	E-01
	05/06/98-06/03/98	1.2	E+00	7.0	E-01
	06/03/98-07/01/98	1.4	E+00	6.0	E-01
	07/01/98-08/05/98	* 8.7	E-01	7.6	E-01
	08/05/98-09/02/98	* 9.0	E-01	6.7	E-01
	09/02/98-10/06/98	1.5	E+00	7.0	E-01
	10/06/98-11/03/98	2.2	E+00	7.0	E-01
	11/03/98-12/01/98	1.1	E+00	7.0	E-01
	12/01/98-01/05/99	2.1	E+00	7.0	E-01
28	01/06/98-02/03/98	1.9	E+00	7.0	E-01
	02/03/98-03/03/98	1.6	E+00	7.0	E-01
	03/03/98-04/01/98	2.1	E+00	8.0	E-01
	04/01/98-05/06/98	2.1	E+00	8.0	E-01
	05/06/98-06/03/98	1.1	E+00	7.0	E-01
	06/03/98-07/01/98	1.6	E+00	6.0	E-01
	07/01/98-08/05/98	2.4	E+00	9.0	E-01
	08/05/98-09/02/98	1.7	E+00	8.0	E-01
	09/02/98-10/06/98	1.9	E+00	7.0	E-01
	10/06/98-11/03/98	2.1	E+00	7.0	E-01
	11/03/98-12/01/98	1.7	E+00	7.0	E-01
	12/01/98-01/05/99	2.3	E+00	7.0	E-01
29	01/06/98-02/03/98	9.6	E-01	6.2	E-01
	02/03/98-03/03/98	* 4.0	E-01	5.8	E-01
	03/03/98-04/01/98	1.2	E+00	7.0	E-01
	04/01/98-05/06/98	1.4	E+00	7.0	E-01
	05/06/98-06/03/98	1.1	E+00	7.0	E-01
	06/03/98-07/01/98	1.1	E+00	6.0	E-01
	07/01/98-08/05/98	* 1.1	E+00	7.7	E-01
	08/05/98-09/02/98	* 9.3	E-01	6.8	E-01
	09/02/98-10/06/98	1.8	E+00	7.0	E-01
	10/06/98-11/03/98	2.3	E+00	7.0	E-01
	11/03/98-12/01/98	1.3	E+00	8.0	E-01
	12/01/98-01/05/99	1.3	E+00	6.0	E-01

* Denotes a result less than the detection limit.

TABLE A-5.1 (Cont.)
GROSS BETA IN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
<u>Discharge</u>			
27	01/06/98-02/03/98	1.5 E+01	2.0 E+00
	02/03/98-03/03/98	2.2 E+01	3.0 E+00
	03/03/98-04/01/98	8.3 E+00	1.5 E+00
	04/01/98-05/06/98	6.7 E+00	1.2 E+00
	05/06/98-06/03/98	1.1 E+00	7.0 E-01
	06/03/98-07/01/98	3.0 E+00	8.0 E-01
	07/01/98-08/05/98	1.0 E+01	2.0 E+00
	08/05/98-09/02/98	7.8 E+00	1.6 E+00
	09/02/98-10/06/98	1.5 E+01	2.0 E+00
	10/06/98-11/03/98	8.4 E+00	1.4 E+00
	11/03/98-12/01/98	4.0 E+00	1.1 E+00
	12/01/98-01/05/99	1.2 E+01	2.0 E+00

TABLE A-5.2
GROSS BETA IN WATER - SUMMARY

Results in pCi/liter

NUCLIDE	AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
<u>River/Drinking</u>					
Gr-Beta (I)	1.56E+00	4.0E-01	2.4E+00	24	21
Gr-Beta (C)	1.45E+00	8.7E-01	2.5E+00	12	10
<u>Discharge</u>					
Gr-Beta (I)	9.44E+00	1.1E+00	2.2E+01	12	12

(I) Indicator Stations
 (C) Control Station



TABLE A-6.1
TRITIUM IN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
<u>River/Drinking</u>			
26	01/06/98-04/01/98	* 1.7 E+01	8.88 E+01
	04/01/98-07/01/98	*-4.0 E+01	8.20 E+01
	07/01/98-10/06/98	* 2.5 E+01	1.15 E+02
	10/06/98-01/05/99	* 5.9 E+01	1.08 E+02
28	01/06/98-04/01/98	* 1.4 E+02	9.52 E+01
	04/01/98-07/01/98	1.4 E+02	9.0 E+01
	07/01/98-10/06/98	2.5 E+02	1.2 E+02
	10/06/98-01/05/99	2.0 E+02	1.2 E+02
29	01/06/98-04/01/98	* 7.1 E+00	8.83 E+01
	04/01/98-07/01/98	* 1.9 E+01	8.53 E+01
	07/01/98-10/06/98	* 1.7 E+02	1.20 E+02
	10/06/98-01/05/99	* 3.6 E+01	1.12 E+02
<u>Discharge</u>			
27	01/06/98-04/01/98	1.0 E+03	1.0 E+02
	04/01/98-07/01/98	1.6 E+03	1.0 E+02
	07/01/98-10/06/98	5.5 E+02	1.3 E+02
	10/06/98-01/05/99	* 6.2 E+01	1.1 E+02

* Denotes a result less than the detection limit.

TABLE A-6.1 (Cont.)
TRITIUM IN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
<u>Ground</u>			
31 (Well 1)	03/03/98	*-4.7 E+00	8.46E+01
	06/03/98	*-9.5 E+00	8.74E+01
	09/02/98	1.6 E+02	9.0 E+01
	12/01/98	* 3.9 E+01	1.04E+02
32 (Well 2)	03/03/98	*-4.7 E+01	8.21E+01
	06/03/98	*-4.3 E+01	8.56E+01
	09/02/98	* 5.0 E+01	8.12E+01
	12/01/98	* 6.2 E+01	1.05E+02
52 (Well 3)	03/03/98	* 4.7 E+01	8.74E+01
	06/03/98	* 3.6 E+01	8.98E+01
	09/02/98	1.9 E+02	9.0 E+01
	12/01/98	* 9.0 E+01	1.06E+02

* Denotes a result less than the detection limit.

TABLE A-6.2
TRITIUM IN WATER - SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
<u>River/Drinking</u>						
H-3	(I)	1.20E+02	7.1E+00	2.5E+02	8	3
H-3	(C)	1.53E+01	-4.0E+01	5.9E+01	4	0
<u>Ground</u>						
H-3	(I)	4.75E+01	-4.7E+01	1.9E+02	12	0
<u>Discharge</u>						
H-3	(I)	8.03E+02	6.2E+01	1.6E+03	4	3

(I) Indicator Stations
(C) Control Station



TABLE A-7.1
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>River/Drinking</u>				
26	01/06/98-02/03/98	Be-7	*-5.16 E+00	1.73 E+01
		K-40	*-4.80 E+01	2.98 E+01
		Mn-54	* 1.47 E+00	2.00 E+00
		Co-58	*-3.33 E-01	1.89 E+00
		Fe-59	* 1.63 E+00	3.84 E+00
		Co-60	*-2.18 E+00	2.02 E+00
		Zn-65	* 4.00 E+00	4.11 E+00
		Zr-95	*-2.82 E+00	3.87 E+00
		Nb-95	* 1.76 E+00	2.03 E+00
		Cs-134	*-7.73 E-01	2.23 E+00
		Cs-137	* 2.03 E+00	2.16 E+00
		Ba-140	* 6.73 E-01	5.75 E+00
		La-140	* 5.65 E-01	2.45 E+00
		Ra-226	*-1.56 E+02	3.49 E+01
		Th-228	*-1.25 E+01	3.09 E+00
	02/03/98-03/03/98	Be-7	*-4.82 E+00	1.51 E+01
		K-40	*-1.85 E+01	2.15 E+01
		Mn-54	* 1.35 E-01	1.59 E+00
		Co-58	*-6.85 E-01	1.54 E+00
		Fe-59	*-1.07 E-01	3.20 E+00
		Co-60	*-4.67 E-01	1.65 E+00
		Zn-65	* 5.37 E+00	3.38 E+00
		Zr-95	*-3.49 E-01	3.16 E+00
		Nb-95	* 3.03 E-01	1.60 E+00
		Cs-134	* 1.37 E+00	1.77 E+00
		Cs-137	* 1.30 E+00	1.83 E+00
		Ba-140	* 4.44 E-01	5.17 E+00
		La-140	* 1.79 E+00	2.25 E+00
		Ra-226	*-3.85 E+01	4.03 E+01
		Th-228	* 1.21 E-01	3.25 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>River/Drinking</u>				
26	03/03/98-04/01/98	Be-7	*-1.67 E+00	1.26 E+01
		K-40	*-3.38 E+01	1.89 E+01
		Mn-54	*-6.40 E-01	1.26 E+00
		Co-58	* 1.29 E+00	1.31 E+00
		Fe-59	* 1.48 E+00	2.43 E+00
		Co-60	* 3.29 E-01	1.36 E+00
		Zn-65	*-1.04 E+00	2.74 E+00
		Zr-95	*-2.90 E-01	2.62 E+00
		Nb-95	* 2.08 E+00	1.38 E+00
		Cs-134	*-4.92 E-01	1.48 E+00
		Cs-137	* 8.02 E-01	1.50 E+00
		Ba-140	*-8.87 E-02	4.14 E+00
		La-140	* 2.30 E-01	1.83 E+00
		Ra-226	*-4.06 E+01	3.41 E+01
		Th-228	* 5.51 E-01	2.95 E+00
	04/01/98-05/06/98	Be-7	*-1.37 E+01	1.67 E+01
		K-40	* 4.44 E+00	2.43 E+01
		Mn-54	* 1.47 E+00	1.74 E+00
		Co-58	*-3.59 E-01	1.83 E+00
		Fe-59	* 2.05 E+00	3.61 E+00
		Co-60	* 6.25 E-01	1.95 E+00
		Zn-65	* 1.61 E+00	3.86 E+00
		Zr-95	* 2.19 E+00	4.07 E+00
		Nb-95	*-3.40 E-01	1.95 E+00
		Cs-134	*-3.02 E-01	1.94 E+00
		Cs-137	* 9.30 E-01	1.94 E+00
		Ba-140	*-3.19 E+00	6.59 E+00
		La-140	*-1.89 E+00	3.02 E+00
		Ra-226	*-2.68 E+01	4.26 E+01
		Th-228	*-5.75 E+00	3.57 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>River/Drinking</u>				
26	05/06/98-06/03/98	Be-7	* 0.00 E+00	1.50 E+01
		K-40	*-3.45 E+00	2.18 E+01
		Mn-54	* 7.86 E-01	1.67 E+00
		Co-58	*-6.57 E-01	1.54 E+00
		Fe-59	*-2.22 E-01	3.21 E+00
		Co-60	*-1.25 E+00	1.59 E+00
		Zn-65	* 2.96 E+00	3.44 E+00
		Zr-95	* 5.36 E-01	3.01 E+00
		Nb-95	* 8.42 E-01	1.54 E+00
		Cs-134	* 9.02 E-01	1.78 E+00
		Cs-137	* 1.23 E+00	1.84 E+00
		Ba-140	* 6.81 E-01	5.42 E+00
		La-140	*-1.26 E+00	2.34 E+00
		Ra-226	*-1.65 E+01	3.72 E-01
		Th-228	*-2.01 E+00	3.22 E+00
	06/03/98-07/01/98	Be-7	* 1.89 E+00	1.21 E+01
		K-40	*-5.71 E+00	1.81 E+01
		Mn-54	* 1.88 E-01	1.19 E+00
		Co-58	* 4.13 E-01	1.27 E+00
		Fe-59	*-1.12 E+00	2.39 E+00
		Co-60	* 7.68 E-01	1.33 E+00
		Zn-65	* 1.13 E+00	2.67 E+00
		Zr-95	* 4.31 E-01	2.51 E+00
		Nb-95	* 1.14 E+00	1.35 E+00
		Cs-134	* 6.96 E-01	1.40 E+00
		Cs-137	* 8.39 E-01	1.46 E+00
		Ba-140	* 3.40 E-01	3.84 E+00
		La-140	* 2.20 E-01	1.66 E+00
		Ra-226	* 2.85 E+01	3.37 E+01
		Th-228	*-2.23 E+00	2.79 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>River/Drinking</u>				
26	07/01/98-08/05/98	Be-7	* 1.42 E+01	1.77 E+01
		K-40	*-1.31 E+02	3.38 E+01
		Mn-54	*-6.51 E-01	1.84 E+00
		Co-58	* 8.41 E-01	1.92 E+00
		Fe-59	* 3.42 E+00	3.96 E+00
		Co-60	* 1.59 E-01	1.86 E+00
		Zn-65	* 2.72 E+00	3.89 E+00
		Zr-95	*-2.63 E+00	3.65 E+00
		Nb-95	* 3.45 E-01	1.99 E+00
		Cs-134	*-1.62 E+00	2.05 E+00
		Cs-137	* 1.68 E+00	2.10 E+00
		Ba-140	* 1.94 E+00	7.38 E+00
		La-140	*-1.24 E+00	2.69 E+00
		Ra-226	*-4.88 E+01	3.64 E+01
		Th-228	* 1.17 E+00	3.08 E+00
	08/05/98-09/02/98	Be-7	*-9.49 E+00	1.58 E+01
		K-40	*-2.26 E+01	2.30 E+01
		Mn-54	*-8.06 E-02	1.61 E+00
		Co-58	*-4.60 E-01	1.65 E+00
		Fe-59	* 2.73 E+00	3.53 E+00
		Co-60	* 2.19 E+00	1.78 E+00
		Zn-65	*-1.21 E+00	3.37 E+00
		Zr-95	*-1.21 E+00	3.24 E+00
		Nb-95	* 8.37 E-01	1.66 E+00
		Cs-134	* 1.36 E+00	1.77 E+00
		Cs-137	*-2.82 E+00	2.08 E+00
		Ba-140	* 2.73 E+00	6.09 E+00
		La-140	*-1.78 E+00	2.60 E+00
		Ra-226	*-5.32 E+00	3.81 E+01
		Th-228	*-3.02 E+00	3.16 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>River/Drinking</u>				
26	09/02/98-10/06/98	Be-7	*-6.36 E+00	1.89 E+01
		K-40	*-2.75 E+01	2.31 E+01
		Mn-54	* 3.07 E-01	1.81 E+00
		Co-58	*-7.79 E-01	1.92 E+00
		Fe-59	*-1.92 E+00	4.41 E+00
		Co-60	* 9.24 E-02	2.08 E+00
		Zn-65	* 3.50 E+00	4.35 E+00
		Zr-95	* 2.61 E+00	4.06 E+00
		Nb-95	* 1.85 E-01	2.06 E+00
		Cs-134	* 7.92 E-01	2.05 E+00
		Cs-137	* 1.72 E+00	2.11 E+00
		Ba-140	*-2.98 E+00	8.18 E+00
		La-140	* 1.90 E-01	3.62 E+00
		Ra-226	* 1.99 E+01	3.97 E+01
		Th-228	* 3.23 E+00	3.53 E+00
	10/06/98-11/03/98	Be-7	*-7.43 E+00	1.80 E+01
		K-40	*-3.05 E+01	2.73 E+01
		Mn-54	* 9.67 E-01	1.90 E+00
		Co-58	* 8.00 E-01	1.90 E+00
		Fe-59	*-2.07 E+00	3.91 E+00
		Co-60	* 1.24 E+00	2.11 E+00
		Zn-65	* 9.88 E-01	4.03 E+00
		Zr-95	* 2.30 E+00	3.71 E+00
		Nb-95	* 1.20 E+00	1.95 E+00
		Cs-134	* 1.39 E-01	1.93 E+00
		Cs-137	* 1.77 E+00	2.07 E+00
		Ba-140	* 6.73 E+00	7.33 E+00
		La-140	*-9.99 E-01	3.28 E+00
		Ra-226	*-1.65 E+01	4.43 E+01
		Th-228	* 2.91 E+00	3.74 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>River/Drinking</u>				
26	11/03/98-12/01/98	Be-7	* 2.16 E+00	1.62 E+01
		K-40	*-5.40 E+01	3.55 E+01
		Mn-54	* 6.54 E-01	1.75 E+00
		Co-58	*-5.23 E-01	1.78 E+00
		Fe-59	* 1.96 E+00	3.72 E+00
		Co-60	*-8.13 E-01	1.87 E+00
		Zn-65	* 1.57 E+00	3.89 E+00
		Zr-95	* 1.40 E+00	3.59 E+00
		Nb-95	* 5.28 E-01	1.77 E+00
		Cs-134	*-4.11 E-01	1.92 E+00
		Cs-137	* 1.32 E+00	2.00 E+00
		Ba-140	* 1.52 E+00	5.83 E+00
		La-140	* 2.26 E+00	2.27 E+00
		Ra-226	*-4.69 E+01	3.40 E+01
		Th-228	* 2.73 E+00	2.95 E+00
	12/01/98-01/05/99	Be-7	* 5.57 E+00	1.67 E+01
		K-40	*-7.71 E+01	3.55 E+01
		Mn-54	* 2.21 E-01	1.81 E+00
		Co-58	*-5.98 E-01	1.84 E+00
		Fe-59	*-4.37 E-01	3.89 E+00
		Co-60	* 6.54 E-01	1.86 E+00
		Zn-65	* 1.50 E+00	3.82 E+00
		Zr-95	* 5.71 E-01	3.81 E+00
		Nb-95	* 1.24 E+00	1.89 E+00
		Cs-134	* 0.00 E+00	2.04 E+00
		Cs-137	* 1.17 E+00	2.05 E+00
		Ba-140	* 2.54 E+00	5.97 E+00
		La-140	* 5.66 E-01	2.41 E+00
		Ra-226	*-4.92 E+01	3.56 E+01
		Th-228	*-2.71 E+00	3.02 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>River/Drinking</u>				
28	01/06/98-02/03/98	Be-7	* 1.09 E+01	1.67 E+01
		K-40	*-5.11 E+01	3.45 E+01
		Mn-54	* 3.22 E-01	1.81 E+00
		Co-58	* 6.50 E-01	1.76 E+00
		Fe-59	* 3.32 E+00	3.70 E+00
		Co-60	*-5.02 E-01	1.78 E+00
		Zn-65	* 2.45 E+00	3.87 E+00
		Zr-95	* 4.86 E-01	3.47 E+00
		Nb-95	* 1.41 E+00	1.78 E+00
		Cs-134	*-9.40 E-01	1.95 E+00
		Cs-137	* 5.31 E-01	2.03 E+00
		Ba-140	* 5.23 E-01	5.42 E+00
		La-140	*-8.23 E-01	2.16 E+00
		Ra-226	*-3.60 E+01	3.63 E+01
		Th-228	* 6.18 E-01	3.03 E+00
	02/03/98-03/03/98	Be-7	* 0.00 E+00	1.62 E+01
		K-40	*-4.88 E+01	3.45 E+01
		Mn-54	* 3.62 E-01	1.73 E+00
		Co-58	*-5.34 E-01	1.75 E+00
		Fe-59	* 3.32 E+00	3.73 E+00
		Co-60	* 8.12 E-01	1.79 E+00
		Zn-65	* 5.03 E+00	3.77 E+00
		Zr-95	*-1.66 E+00	3.56 E+00
		Nb-95	* 1.58 E+00	1.83 E+00
		Cs-134	*-2.29 E+00	1.93 E+00
		Cs-137	* 9.88 E-01	2.03 E+00
		Ba-140	*-2.05 E+00	5.68 E+00
		La-140	*-1.27 E+00	2.11 E+00
		Ra-226	*-6.75 E+01	3.28 E+01
		Th-228	* 2.92 E+00	3.05 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>River/Drinking</u>				
28	03/03/98-04/01/98	Be-7	* 2.30 E+00	1.33 E+01
		K-40	*-1.42 E+01	2.13 E+01
		Mn-54	*-1.06 E+00	1.40 E+00
		Co-58	*-9.30 E-01	1.37 E+00
		Fe-59	* 0.00 E+00	2.97 E+00
		Co-60	*-6.74 E-01	1.49 E+00
		Zn-65	* 1.91 E+00	3.03 E+00
		Zr-95	*-2.03 E+00	2.69 E+00
		Nb-95	* 1.89 E+00	1.43 E+00
		Cs-134	* 2.16 E-01	1.62 E+00
		Cs-137	*-3.19 E+00	1.88 E+00
		Ba-140	*-2.81 E+00	4.33 E+00
		La-140	*-1.01 E+00	1.80 E+00
		Ra-226	*-2.23 E+01	3.37 E+01
		Th-228	* 9.61 E-02	2.70 E+00
	04/01/98-05/06/98	Be-7	*-1.00 E+01	1.51 E+01
		K-40	*-5.19 E+00	2.40 E+01
		Mn-54	* 1.22 E+00	1.57 E+00
		Co-58	* 1.06 E+00	1.46 E+00
		Fe-59	* 1.57 E+00	3.27 E+00
		Co-60	* 6.80 E-01	1.53 E+00
		Zn-65	* 4.71 E-01	3.14 E+00
		Zr-95	* 3.68 E-01	3.20 E+00
		Nb-95	* 3.19 E-01	1.53 E+00
		Cs-134	* 2.03 E-01	1.65 E+00
		Cs-137	* 2.25 E-01	1.73 E+00
		Ba-140	*-2.92 E+00	5.65 E+00
		La-140	*-8.81 E-01	2.20 E+00
		Ra-226	* 5.87 E+01	3.81 E+01
		Th-228	* 5.65 E+00	3.17 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>River/Drinking</u>				
28	05/06/98-06/03/98	Be-7	*-3.47 E-01	1.06 E+01
		K-40	*-7.33 E-01	1.68 E+01
		Mn-54	* 3.26 E-01	1.27 E+00
		Co-58	*-5.20 E-01	1.20 E+00
		Fe-59	* 3.39 E+00	2.59 E+00
		Co-60	* 2.36 E-01	1.34 E+00
		Zn-65	* 1.90 E+00	2.73 E+00
		Zr-95	* 4.72 E-01	2.44 E+00
		Nb-95	* 3.28 E-01	1.31 E+00
		Cs-134	*-5.32 E-01	1.38 E+00
		Cs-137	* 5.80 E-01	1.37 E+00
		Ba-140	* 5.85 E-01	3.66 E+00
		La-140	* 7.20 E-01	1.65 E+00
		Ra-226	*-7.10 E+01	2.33 E+01
		Th-228	*-2.31 E+00	2.03 E+00
	06/03/98-07/01/98	Be-7	* 1.08 E+01	1.38 E+01
		K-40	*-2.31 E+01	2.52 E+01
		Mn-54	* 6.06 E-01	1.52 E+00
		Co-58	*-7.34 E-01	1.49 E+00
		Fe-59	* 8.70 E-01	2.96 E+00
		Co-60	*-4.60 E-01	1.57 E+00
		Zn-65	* 4.60 E+00	3.14 E+00
		Zr-95	* 9.17 E-01	3.19 E+00
		Nb-95	* 4.84 E-01	1.50 E+00
		Cs-134	* 1.39 E-01	1.77 E+00
		Cs-137	* 8.10 E-01	1.74 E+00
		Ba-140	*-4.36 E-01	4.40 E+00
		La-140	* 2.62 E+00	1.92 E+00
		Ra-226	*-3.54 E+01	2.86 E+01
		Th-228	*-5.85 E+00	2.46 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>River/Drinking</u>				
28	07/01/98-08/05/98	Be-7	* 1.09 E+01	2.04 E+01
		K-40	*-5.53 E+01	4.50 E+01
		Mn-54	* 1.94 E+00	2.13 E+00
		Co-58	* 9.61 E-01	2.21 E+00
		Fe-59	* 1.32 E+00	4.69 E+00
		Co-60	* 0.00 E+00	2.22 E+00
		Zn-65	*-2.20 E+00	4.68 E+00
		Zr-95	* 1.84 E+00	4.45 E+00
		Nb-95	* 1.83 E+00	2.20 E+00
		Cs-134	* 2.57 E+00	2.46 E+00
		Cs-137	* 2.78 E-01	2.40 E+00
		Ba-140	* 0.00 E-01	8.54 E+00
		La-140	* 5.12 E-01	3.28 E+00
		Ra-226	*-6.74 E+01	4.10 E+01
		Th-228	* 1.54 E+00	3.61 E+00
	08/05/98-09/02/98	Be-7	*-1.27 E+00	1.72 E+01
		K-40	*-2.23 E+02	3.11 E+01
		Mn-54	*-9.09 E-01	1.84 E+00
		Co-58	*-1.52 E+00	1.82 E+00
		Fe-59	* 5.96 E+00	4.03 E+00
		Co-60	*-7.06 E-01	1.81 E+00
		Zn-65	*-2.68 E+00	3.98 E+00
		Zr-95	*-2.13 E+00	3.72 E+00
		Nb-95	* 7.64 E-01	1.85 E+00
		Cs-134	*-9.47 E-01	2.02 E+00
		Cs-137	* 7.82 E-01	2.04 E+00
		Ba-140	* 8.72 E+00	7.13 E+00
		La-140	* 9.93 E-01	2.79 E+00
		Ra-226	*-2.09 E+01	3.59 E+01
		Th-228	*-9.34 E+00	2.99 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>River/Drinking</u>				
28	09/02/98-10/06/98	Be-7	*-4.13 E+00	2.49 E+01
		K-40	*-6.27 E+01	5.89 E+01
		Mn-54	*-3.09 E-01	2.55 E+00
		Co-58	*-2.34 E+00	2.62 E+00
		Fe-59	* 2.63 E+00	5.88 E+00
		Co-60	*-1.05 E+00	2.55 E+00
		Zn-65	* 9.15 E-01	5.72 E+00
		Zr-95	*-3.14 E-01	5.30 E+00
		Nb-95	* 1.04 E+00	2.68 E+00
		Cs-134	* 6.09 E-01	2.75 E+00
		Cs-137	* 3.31 E+00	2.77 E+00
		Ba-140	* 2.22 E+00	1.14 E+01
		La-140	* 2.29 E+00	4.45 E+00
		Ra-226	*-2.13 E+01	5.06 E+01
		Th-228	*-1.92 E+00	4.39 E+00
	10/06/98-11/03/98	Be-7	*-4.50 E+00	1.62 E+01
		K-40	* 8.88 E+00	3.56 E+01
		Mn-54	*-2.64 E-01	1.71 E+00
		Co-58	* 5.73 E-01	1.78 E+00
		Fe-59	* 7.84 E-01	3.64 E+00
		Co-60	* 3.82 E-01	1.76 E+00
		Zn-65	* 3.55 E+00	3.97 E+00
		Zr-95	* 0.00 E+00	3.64 E+00
		Nb-95	* 1.76 E+00	1.86 E+00
		Cs-134	*-2.87 E-01	1.94 E+00
		Cs-137	* 8.28 E-01	1.97 E+00
		Ba-140	*-6.08 E+00	5.86 E+00
		La-140	*-1.19 E+00	2.35 E+00
		Ra-226	*-1.33 E+01	3.32 E+01
		Th-228	* 1.06 E+01	3.10 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>River/Drinking</u>				
28	11/03/98-12/01/98	Be-7	* 4.28 E+00	1.51 E+01
		K-40	*-3.91 E+01	2.23 E+01
		Mn-54	* 5.08 E-01	1.55 E+00
		Co-58	* 3.27 E-01	1.57 E+00
		Fe-59	*-1.99 E+00	3.16 E+00
		Co-60	* 1.39 E+00	1.87 E+00
		Zn-65	*-9.46 E-01	3.23 E+00
		Zr-95	*-1.52 E+00	3.20 E+00
		Nb-95	* 8.39 E-01	1.67 E+00
		Cs-134	*-1.55 E-01	1.72 E+00
		Cs-137	* 5.72 E-01	1.78 E+00
		Ba-140	*-3.35 E-01	4.98 E+00
		La-140	*-1.24 E+00	2.27 E+00
		Ra-226	*-2.63 E+01	3.69 E+01
		Th-228	*-6.12 E+00	3.19 E+00
	12/01/98-01/05/99	Be-7	*-6.03 E+00	1.38 E+01
		K-40	*-5.13 E+01	2.90 E+01
		Mn-54	* 2.48 E-01	1.51 E+00
		Co-58	* 2.24 E-01	1.45 E+00
		Fe-59	* 4.32 E+00	3.02 E+00
		Co-60	* 0.00 E+00	1.58 E+00
		Zn-65	* 1.49 E+00	3.33 E+00
		Zr-95	*-1.24 E+00	3.08 E+00
		Nb-95	* 1.81 E+00	1.55 E+00
		Cs-134	*-6.31 E-01	1.68 E+00
		Cs-137	* 9.73 E-01	1.69 E+00
		Ba-140	*-2.82 E+00	4.84 E+00
		La-140	*-1.36 E+00	1.85 E+00
		Ra-226	* 2.05 E+01	3.08 E+01
		Th-228	* 5.48 E+00	2.64 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>River/Drinking</u>				
29	01/06/98-02/03/98	Be-7	*-1.10 E+01	1.77 E+01
		K-40	*-2.38 E+01	2.66 E+01
		Mn-54	* 1.15 E+00	1.75 E+00
		Co-58	* 0.00 E+00	1.85 E+00
		Fe-59	*-2.03 E+00	3.56 E+00
		Co-60	* 1.40 E+00	2.12 E+00
		Zn-65	* 1.65 E+00	4.03 E+00
		Zr-95	* 1.38 E-01	3.78 E+00
		Nb-95	* 2.73 E-01	1.77 E+00
		Cs-134	* 1.02 E+00	2.02 E+00
		Cs-137	* 5.51 E-01	2.16 E+00
		Ba-140	* 1.48 E+00	5.69 E+00
		La-140	*-4.53 E-01	2.40 E+00
		Ra-226	* 1.24 E+00	4.38 E+01
		Th-228	* 3.38 E-01	3.79 E+00
	02/03/98-03/03/98	Be-7	*-3.59 E+00	1.37 E+01
		K-40	* 1.58 E+01	2.13 E+01
		Mn-54	* 4.74 E-02	1.41 E+00
		Co-58	* 0.00 E+00	1.39 E+00
		Fe-59	* 4.66 E-01	2.91 E+00
		Co-60	* 2.41 E-01	1.45 E+00
		Zn-65	* 1.66 E-01	3.02 E+00
		Zr-95	* 5.14 E-01	2.68 E+00
		Nb-95	* 2.26 E+00	1.50 E+00
		Cs-134	* 1.33 E+00	1.53 E+00
		Cs-137	*-2.61 E+00	1.86 E+00
		Ba-140	*-1.23 E+00	4.45 E+00
		La-140	* 9.25 E-01	2.04 E+00
		Ra-226	* 1.59 E+01	3.38 E+01
		Th-228	* 1.28 E+00	2.72 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>River/Drinking</u>				
29	03/03/98-04/01/98	Be-7	* 3.91 E+00	1.44 E+01
		K-40	*-1.59 E+01	2.56 E+01
		Mn-54	*-7.35 E-01	1.55 E+00
		Co-58	*-6.12 E-01	1.62 E+00
		Fe-59	* 1.62 E+00	3.26 E+00
		Co-60	*-3.22 E-01	1.67 E+00
		Zn-65	*-7.96 E-01	3.27 E+00
		Zr-95	* 1.79 E+00	3.17 E+00
		Nb-95	* 1.62 E+00	1.60 E+00
		Cs-134	*-2.09 E-01	1.76 E+00
		Cs-137	* 2.65 E+00	1.83 E+00
		Ba-140	* 6.58 E+00	4.93 E+00
		La-140	* 1.35 E+00	2.02 E+00
		Ra-226	*-1.30 E+02	2.88 E+01
		Th-228	*-1.60 E+01	2.51 E+00
	04/01/98-05/06/98	Be-7	* 1.06 E+01	1.58 E+01
		K-40	*-1.82 E+01	2.13 E+01
		Mn-54	* 3.89 E-01	1.55 E+00
		Co-58	*-1.73 E-01	1.49 E+00
		Fe-59	* 3.79 E+00	3.42 E+00
		Co-60	*-3.07 E+00	1.69 E+00
		Zn-65	*-1.40 E-01	3.16 E+00
		Zr-95	* 3.31 E-01	2.93 E+00
		Nb-95	* 1.31 E+00	1.63 E+00
		Cs-134	* 1.45 E+00	1.71 E+00
		Cs-137	* 1.82 E+00	1.81 E+00
		Ba-140	*-3.35 E+00	5.96 E+00
		La-140	*-6.87 E-01	2.53 E+00
		Ra-226	*-5.40 E+01	4.04 E+01
		Th-228	*-8.37 E+00	3.35 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>River/Drinking</u>				
29	05/06/98-06/03/98	Be-7	* 0.00 E+00	1.25 E+01
		K-40	* 6.72 E+00	2.03 E+01
		Mn-54	* 1.21 E+00	1.31 E+00
		Co-58	* 3.61 E-01	1.28 E+00
		Fe-59	* 7.57 E-01	2.52 E+00
		Co-60	* 5.23 E-01	1.37 E+00
		Zn-65	* 2.62 E+00	2.58 E+00
		Zr-95	* -6.28 E-02	2.54 E+00
		Nb-95	* 1.87 E-01	1.26 E+00
		Cs-134	* 0.00 E+00	1.39 E+00
		Cs-137	* 1.17 E+00	1.52 E+00
		Ba-140	* -6.20 E-01	3.97 E+00
		La-140	* 6.04 E-01	1.69 E+00
		Ra-226	* -2.20 E+01	3.25 E+01
		Th-228	* 2.96 E+00	2.74 E+00
	06/03/98-07/01/98	Be-7	* 0.00 E+00	1.46 E+01
		K-40	* -4.72 E+01	3.56 E+01
		Mn-54	* -1.62 E-01	1.60 E+00
		Co-58	* 7.83 E-01	1.64 E+00
		Fe-59	* -1.09 E+00	3.30 E+00
		Co-60	* 3.83 E-02	1.72 E+00
		Zn-65	* 2.99 E+00	3.67 E+00
		Zr-95	* -2.28 E+00	3.21 E+00
		Nb-95	* 3.18 E+00	1.67 E+00
		Cs-134	* -8.26 E-01	1.84 E+00
		Cs-137	* 1.46 E+00	1.89 E+00
		Ba-140	* -2.49 E-01	4.79 E+00
		La-140	* -7.56 E-01	1.80 E+00
		Ra-226	* -7.68 E+01	3.22 E+01
		Th-228	* -7.54 E+00	2.76 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>River/Drinking</u>				
29	07/01/98-08/05/98	Be-7	* 1.69 E+00	1.63 E+01
		K-40	*-4.13 E+01	2.36 E+01
		Mn-54	*-5.01 E-01	1.56 E+00
		Co-58	*-1.26 E+00	1.62 E+00
		Fe-59	*-2.51 E-01	3.33 E+00
		Co-60	*-1.45 E-01	1.74 E+00
		Zn-65	*-1.89 E+00	3.27 E+00
		Zr-95	* 4.96 E+00	3.43 E+00
		Nb-95	* 3.51 E-01	1.57 E+00
		Cs-134	*-2.70 E-01	1.77 E+00
		Cs-137	*-5.27 E-01	1.66 E+00
		Ba-140	* 0.00 E+00	6.78 E+00
		La-140	*-2.78 E-01	2.69 E+00
		Ra-226	*-1.18 E+02	3.95 E+01
		Th-228	*-1.85 E+00	3.30 E+00
	08/05/98-09/02/98	Be-7	*-1.30 E+01	1.64 E+01
		K-40	*-3.15 E+00	2.43 E+01
		Mn-54	* 1.13 E+00	1.66 E+00
		Co-58	* 5.61 E-01	1.64 E+00
		Fe-59	* 8.47 E-01	3.41 E+00
		Co-60	* 7.79 E-01	1.77 E+00
		Zn-65	* 1.48 E+00	3.52 E+00
		Zr-95	* 2.06 E+00	3.48 E+00
		Nb-95	* 4.86 E-02	1.58 E+00
		Cs-134	* 5.29 E-01	1.79 E+00
		Cs-137	* 7.03 E-01	1.83 E+00
		Ba-140	* 4.46 E+00	6.69 E+00
		La-140	*-3.34 E+00	2.53 E+00
		Ra-226	*-2.72 E+01	4.08 E+01
		Th-228	* 2.92 E+00	3.36 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>River/Drinking</u>				
29	09/02/98-10/06/98	Be-7	*-4.20 E+00	1.71 E+01
		K-40	*-1.15 E+01	3.27 E+01
		Mn-54	*-4.84 E-01	1.77 E+00
		Co-58	*-3.16 E-01	1.85 E+00
		Fe-59	* 3.33 E+00	3.85 E+00
		Co-60	*-5.19 E-02	1.80 E+00
		Zn-65	*-1.20 E+00	3.58 E+00
		Zr-95	*-1.83 E+00	3.73 E+00
		Nb-95	* 1.43 E+00	1.93 E+00
		Cs-134	*-6.84 E-01	1.93 E+00
		Cs-137	* 1.26 E+00	1.95 E+00
		Ba-140	* 3.35 E+00	7.70 E+00
		La-140	*-1.04 E-01	3.00 E+00
		Ra-226	*-1.09 E+01	3.53 E+01
		Th-228	* 2.75 E+00	3.13 E+00
	10/06/98-11/03/98	Be-7	* 2.75 E+00	1.84 E+01
		K-40	*-3.40 E+00	2.70 E+01
		Mn-54	*-5.73 E-01	1.89 E+00
		Co-58	* 0.00 E+00	1.75 E+00
		Fe-59	* 4.79 E+00	4.08 E+00
		Co-60	* 1.28 E+00	1.90 E+00
		Zn-65	*-3.66 E-01	3.92 E+00
		Zr-95	* 1.42 E-01	3.72 E+00
		Nb-95	* 2.39 E+00	1.91 E+00
		Cs-134	* 2.32 E-01	2.08 E+00
		Cs-137	* 2.04 E+00	2.10 E+00
		Ba-140	* 4.03 E-01	7.08 E+00
		La-140	* 3.69 E-01	3.30 E+00
		Ra-226	*-2.41 E+01	4.29 E+01
		Th-228	* 3.89 E+00	3.81 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>River/Drinking</u>				
29	11/03/98-12/01/98	Be-7	*-9.62 E+00	1.50 E+01
		K-40	*-1.70 E+01	2.21 E+01
		Mn-54	*-1.80 E-01	1.49 E+00
		Co-58	*-4.57 E-02	1.62 E+00
		Fe-59	*-1.07 E-01	3.12 E+00
		Co-60	* 1.00 E+00	1.76 E+00
		Zn-65	*-2.40 E+00	3.52 E+00
		Zr-95	*-8.72 E-02	3.07 E+00
		Nb-95	* 9.94 E-01	1.63 E+00
		Cs-134	* 2.45 E-01	1.74 E+00
		Cs-137	* 0.00 E+00	1.83 E+00
		Ba-140	* 8.83 E-01	5.07 E+00
		La-140	*-5.93 E-01	2.20 E+00
		Ra-226	*-2.55 E+00	4.10 E+01
		Th-228	* 1.52 E+00	3.31 E+00
	12/01/98-01/05/99	Be-7	*-4.28 E+00	1.60 E+01
		K-40	*-2.51 E+01	2.37 E+01
		Mn-54	* 1.14 E+00	1.65 E+00
		Co-58	* 7.52 E-01	1.71 E+00
		Fe-59	* 1.42 E+00	3.43 E+00
		Co-60	* 2.23 E-01	1.91 E+00
		Zn-65	* 2.16 E+00	3.87 E+00
		Zr-95	*-5.73 E-01	3.36 E+00
		Nb-95	* 2.27 E+00	1.75 E+00
		Cs-134	* 4.83 E-01	1.85 E+00
		Cs-137	* 1.23 E+00	1.86 E+00
		Ba-140	*-8.37 E-01	5.48 E+00
		La-140	* 1.11 E-01	2.47 E+00
		Ra-226	*-2.37 E+01	3.89 E+01
		Th-228	* 5.88 E+00	3.42 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>Discharge</u>				
27	01/06/98-02/03/98	Be-7	* 7.56 E+00	1.76 E+01
		K-40	*-4.74 E+01	2.88 E+01
		Mn-54	*-1.17 E+00	1.86 E+00
		Co-58	* 0.00 E+00	1.88 E+00
		Fe-59	* 1.22 E+00	3.87 E+00
		Co-60	* 1.26 E+00	1.96 E+00
		Zn-65	*-2.64 E+00	4.07 E+00
		Zr-95	*-3.72 E-01	3.59 E+00
		Nb-95	* 2.03 E+00	1.94 E+00
		Cs-134	* 1.90 E+00	2.03 E+00
		Cs-137	* 3.16 E+00	2.17 E+00
		Ba-140	* 3.27 E+00	5.85 E+00
		La-140	* 3.67 E+00	2.89 E+00
		Ra-226	*-1.56 E+00	4.55 E+01
		Th-228	*-5.05 E+00	3.77 E+00
	02/03/98-03/03/98	Be-7	*-2.42 E+00	1.25 E+01
		K-40	*-2.75 E+01	1.82 E+01
		Mn-54	*-1.13 E-01	1.27 E+00
		Co-58	*-8.42 E-01	1.23 E+00
		Fe-59	*-6.21 E-01	2.46 E+00
		Co-60	* 8.23 E-01	1.42 E+00
		Zn-65	* 9.47 E-02	2.55 E+00
		Zr-95	* 1.10 E+00	2.55 E+00
		Nb-95	* 1.31 E+00	1.39 E+00
		Cs-134	* 1.15 E+00	1.39 E+00
		Cs-137	* 1.90 E+00	1.46 E+00
		Ba-140	*-1.98 E+00	4.15 E+00
		La-140	*-9.76 E-01	1.71 E+00
		Ra-226	*-6.41 E+01	3.35 E+01
		Th-228	* 2.72 E+00	2.87 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>Discharge</u>				
27	03/03/98-04/01/98	Be-7	*-2.08 E+00	1.60 E+01
		K-40	*-9.34 E+00	3.51 E+01
		Mn-54	*-8.20 E-01	1.73 E+00
		Co-58	* 9.91 E-02	1.73 E+00
		Fe-59	* 2.20 E+00	3.52 E+00
		Co-60	* 1.43 E-01	1.86 E+00
		Zn-65	* 1.97 E+00	3.73 E+00
		Zr-95	*-3.29 E+00	3.36 E+00
		Nb-95	* 1.25 E-01	1.72 E+00
		Cs-134	* 9.65 E-01	1.98 E+00
		Cs-137	* 1.69 E+00	1.97 E+00
		Ba-140	*-8.53 E-01	5.23 E+00
		La-140	*-7.31 E-01	2.12 E+00
		Ra-226	*-3.31 E+01	3.29 E+01
		Th-228	*-1.12 E+00	2.98 E+00
	04/01/98-05/06/98	Be-7	* 3.88 E+00	1.94 E+01
		K-40	*-7.54 E+01	2.56 E+01
		Mn-54	* 4.65 E-01	1.88 E+00
		Co-58	* 2.68 E+00	1.98 E+00
		Fe-59	*-1.31 E+00	3.88 E+00
		Co-60	* 9.77 E-02	1.96 E+00
		Zn-65	* 0.00 E+00	4.17 E+00
		Zr-95	* 5.27 E-01	3.94 E+00
		Nb-95	* 0.00 E+00	1.99 E+00
		Cs-134	* 0.00 E+00	2.05 E+00
		Cs-137	* 1.90 E-01	2.13 E+00
		Ba-140	*-5.11 E+00	7.26 E+00
		La-140	*-1.53 E+00	2.71 E+00
		Ra-226	*-3.29 E+01	4.89 E+01
		Th-228	*-1.62 E+01	3.84 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>Discharge</u>				
27	05/06/98-06/03/98	Be-7	*-2.58 E+00	1.36 E+01
		K-40	*-3.64 E+01	2.83 E+01
		Mn-54	* 4.60 E-01	1.47 E+00
		Co-58	*-6.12 E-01	1.46 E+00
		Fe-59	* 2.42 E+00	3.01 E+00
		Co-60	*-3.73 E-01	1.52 E+00
		Zn-65	*-2.37 E-01	3.31 E+00
		Zr-95	* 1.23 E+00	2.95 E+00
		Nb-95	* 9.79 E-01	1.47 E+00
		Cs-134	*-2.65 E-01	1.61 E+00
		Cs-137	* 3.11 E-01	1.63 E+00
		Ba-140	* 8.45 E-01	4.53 E+00
		La-140	*-9.97 E-01	1.69 E+00
		Ra-226	*-9.13 E+01	2.92 E+01
		Th-228	* 2.68 E+00	2.49 E+00
	06/03/98-07/01/98	Be-7	* 7.88 E+00	1.49 E+01
		K-40	*-2.89 E+01	2.31 E+01
		Mn-54	* 1.99 E+00	1.57 E+00
		Co-58	*-1.38 E-01	1.49 E+00
		Fe-59	* 8.65 E-01	3.16 E+00
		Co-60	6.21 E+00	2.16 E+00
		Zn-65	* 1.45 E+00	3.48 E+00
		Zr-95	*-3.52 E-01	2.95 E+00
		Nb-95	*-3.05 E-01	1.48 E+00
		Cs-134	* 7.19 E-01	1.56 E+00
		Cs-137	* 2.04 E+00	1.70 E+00
		Ba-140	* 3.08 E+00	5.81 E+00
		La-140	*-9.99 E-01	2.24 E+00
		Ra-226	*-1.09 E+00	3.72 E+01
		Th-228	* 1.48 E-01	3.06 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>Discharge</u>				
27	07/01/98-08/05/98	Be-7	* 4.12 E+00	1.68 E+01
		K-40	*-3.94 E+01	2.47 E+01
		Mn-54	* 2.68 E+00	1.68 E+00
		Co-58	*-9.14 E-01	1.67 E+00
		Fe-59	* 3.70 E+00	3.47 E+00
		Co-60	* 1.27 E+00	1.58 E+00
		Zn-65	* 1.30 E-01	3.58 E+00
		Zr-95	* 1.96 E+00	3.41 E+00
		Nb-95	* 0.00 E+00	1.67 E+00
		Cs-134	* 2.78 E-01	1.65 E+00
		Cs-137	* 3.95 E-01	1.75 E+00
		Ba-140	*-2.35 E+00	6.63 E+00
		La-140	*-8.16 E-01	2.67 E+00
		Ra-226	*-9.22 E+01	3.99 E+01
		Th-228	*-6.89 E+00	3.27 E+00
	08/05/98-09/02/98	Be-7	* 8.52 E+00	1.96 E+01
		K-40	*-1.61 E+01	2.46 E+01
		Mn-54	* 2.96 E-01	1.87 E+00
		Co-58	*-8.42 E-01	1.91 E+00
		Fe-59	* 1.83 E+00	4.11 E+00
		Co-60	* 7.69 E-01	2.07 E+00
		Zn-65	*-1.32 E+00	4.17 E+00
		Zr-95	* 0.00 E+00	3.79 E+00
		Nb-95	* 1.96 E+00	2.00 E+00
		Cs-134	*-3.19 E-01	2.02 E+00
		Cs-137	* 2.31 E+00	2.04 E+00
		Ba-140	* 0.00 E+00	7.37 E+00
		La-140	* 1.35 E+00	3.49 E+00
		Ra-226	* 9.17 E+00	4.49 E+01
		Th-228	* 7.29 E-01	3.90 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>Discharge</u>				
27	09/02/98-10/06/98	Be-7	*-1.00 E+00	2.08 E+01
		K-40	*-4.19 E+01	4.16 E+01
		Mn-54	* 1.30 E+00	2.15 E+00
		Co-58	*-1.00 E+00	2.22 E+00
		Fe-59	* 2.42 E+00	4.69 E+00
		Co-60	* 3.93 E+00	2.35 E+00
		Zn-65	*-2.53 E-01	4.71 E+00
		Zr-95	*-1.42 E+00	4.64 E+00
		Nb-95	* 5.52 E-01	2.28 E+00
		Cs-134	* 6.44 E-01	2.31 E+00
		Cs-137	*-1.42 E-01	2.28 E+00
		Ba-140	*-1.11 E+01	9.27 E+00
		La-140	*-5.92 E-01	3.84 E+00
		Ra-226	*-6.27 E+00	4.01 E+01
		Th-228	* 3.90 E+00	3.43 E+00
	10/06/98-11/03/98	Be-7	* 2.71 E+00	1.76 E+01
		K-40	*-1.20 E+02	3.42 E+01
		Mn-54	* 2.00 E+00	1.87 E+00
		Co-58	* 5.55 E-01	1.88 E_00
		Fe-59	* 4.67 E+00	3.82 E+00
		Co-60	* 1.24 E+00	1.91 E+00
		Zn-65	* 0.00 E+00	4.08 E+00
		Zr-95	* 3.07 E+00	3.84 E+00
		Nb-95	* 2.09 E+00	1.91 E+00
		Cs-134	*-1.12 E+00	1.99 E+00
		Cs-137	* 1.75 E+00	2.02 E+00
		Ba-140	* 2.35 E+00	6.89 E+00
		La-140	*-2.19 E+00	2.61 E+00
		Ra-226	* 2.62 E+00	3.66 E+01
		Th-228	*-5.70 E+00	3.11 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>Discharge</u>				
27	11/03/98-12/01/98	Be-7	* 1.61 E+01	1.98 E+01
		K-40	*-9.42 E+01	5.03 E+01
		Mn-54	* 3.20 E-01	2.06 E+00
		Co-58	*-1.40 E+00	2.05 E+00
		Fe-59	* 0.00 E+00	4.38 E+00
		Co-60	*-6.50 E+00	2.20 E+00
		Zn-65	* 1.26 E+00	4.74 E+00
		Zr-95	* 7.56 E-01	4.33 E+00
		Nb-95	* 2.08 E+00	2.17 E+00
		Cs-134	* 8.87 E-01	2.32 E+00
		Cs-137	* 3.24 E+00	2.38 E+00
		Ba-140	*-4.18 E+00	6.85 E+00
		La-140	*-1.25 E+00	2.58 E+00
		Ra-226	*-1.02 E+02	4.23 E+01
		Th-228	*-3.99 E+00	3.58 E+00
	12/01/98-01/05/99	Be-7	*-4.79 E-01	2.03 E+01
		K-40	*-2.96 E+01	5.35 E+01
		Mn-54	* 8.38 E-01	2.19 E+00
		Co-58	*-6.56 E-01	2.17 E+00
		Fe-59	* 3.61 E-01	4.61 E+00
		Co-60	*-1.07 E+00	2.22 E+00
		Zn-65	* 3.86 E+00	5.02 E+00
		Zr-95	* 2.06 E+00	4.39 E+00
		Nb-95	* 1.32 E+00	2.26 E+00
		Cs-134	* 1.70 E+00	2.45 E+00
		Cs-137	* 6.58 E-01	2.46 E+00
		Ba-140	* 4.86 E+00	7.22 E+00
		La-140	*-1.09 E+00	2.43 E+00
		Ra-226	*-4.91 E+01	4.36 E+01
		Th-228	* 6.79 E-01	3.73 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>Ground</u>				
31	03/03/98	Be-7	* 1.21 E+01	1.61 E+01
		K-40	* 3.06 E+01	2.59 E+01
		Mn-54	* 1.57 E+00	1.71 E+00
		Co-58	* 2.01 E+00	1.75 E+00
		Fe-59	* 9.70 E-01	3.59 E+00
		Co-60	* 1.15 E+00	1.82 E+00
		Zn-65	* 9.49 E+00	4.14 E+00
		Zr-95	* 1.87 E+00	3.59 E+00
		Nb-95	* 9.50 E+00	2.01 E+00
		Cs-134	* 1.53 E+00	1.91 E+00
		Cs-137	* 4.21 E+00	1.97 E+00
		Ba-140	* 1.12 E+00	5.52 E+00
		La-140	* 1.95 E+00	2.24 E+00
		Ra-226	* 1.18 E+02	3.29 E+01
		Th-228	* 1.38 E+01	3.31 E+00
	06/03/98	Be-7	* 4.57 E+00	1.83 E+01
		K-40	* 3.84 E+00	2.69 E+01
		Mn-54	* 6.49 E-01	1.88 E+00
		Co-58	* 6.66 E-02	1.90 E+00
		Fe-59	-2.20 E+00	3.76 E+00
		Co-60	* 1.15 E+00	2.07 E+00
		Zn-65	* 1.32 E+00	4.12 E+00
		Zr-95	* 3.95 E+00	3.79 E+00
		Nb-95	* 2.53 E+00	1.93 E+00
		Cs-134	* 2.11 E-01	2.01 E+00
		Cs-137	* 6.20 E-02	2.06 E+00
		Ba-140	* 2.97 E+00	6.84 E+00
		La-140	* 0.00 E+00	2.61 E+00
		Ra-226	* 6.87 E+01	4.90 E+01
		Th-228	* 1.04 E-01	3.96 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>Ground</u>				
31	09/02/98	Be-7	*-2.15 E+00	2.02 E+01
		K-40	*-2.35 E+01	2.81 E+01
		Mn-54	* 0.00 E+00	1.92 E+00
		Co-58	* 1.38 E-01	2.04 E+00
		Fe-59	* 0.00 E+00	3.92 E+00
		Co-60	*-1.66 E+00	2.05 E+00
		Zn-65	* 1.01 E+00	4.38 E+00
		Zr-95	* 3.69 E+00	4.26 E+00
		Nb-95	* 1.50 E+00	2.09 E+00
		Cs-134	* 1.44 E-01	2.19 E+00
		Cs-137	*-3.80 E-01	2.23 E+00
		Ba-140	*-1.70 E+00	7.90 E+00
		La-140	*-1.69 E-01	3.21 E+00
		Ra-226	*-7.59 E+01	5.14 E+01
		Th-228	* 2.82 E+00	4.21 E+00
	12/01/98	Be-7	*-2.65 E+00	1.32 E+01
		K-40	*-2.11 E+01	1.88 E+01
		Mn-54	*-1.13 E-01	1.38 E+00
		Co-58	*-1.11 E+00	1.37 E+00
		Fe-59	* 4.43 E-01	2.80 E+00
		Co-60	* 1.43 E+00	1.49 E+00
		Zn-65	*-3.31 E+00	2.95 E+00
		Zr-95	* 1.24 E+00	2.68 E+00
		Nb-95	* 4.49 E+00	1.51 E+00
		Cs-134	*-2.05 E-01	1.51 E+00
		Cs-137	* 2.37 E+00	1.60 E+00
		Ba-140	* 1.69 E+00	4.62 E+00
		La-140	* 8.08 E-02	2.10 E+00
		Ra-226	*-3.49 E+01	3.57 E+01
		Th-228	* 5.68 E+00	3.08 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>Ground</u>				
32	03/03/98	Be-7	*-1.25 E+00	1.89 E+01
		K-40	*-3.96 E+01	2.86 E+01
		Mn-54	* 4.51 E-01	1.88 E+00
		Co-58	*-4.03 E-01	2.08 E+00
		Fe-59	*-1.45 E+00	4.02 E+00
		Co-60	*-7.64 E-01	2.15 E+00
		Zn-65	*-4.28 E+00	4.27 E+00
		Zr-95	* 0.00 E+00	4.12 E+00
		Nb-95	* 1.97 E+00	2.15 E+00
		Cs-134	* 1.32 E+00	2.07 E+00
		Cs-137	*-6.10 E-02	2.10 E+00
		Ba-140	*-3.81 E-01	7.47 E+00
		La-140	* 1.92 E+00	3.61 E+00
		Ra-226	* 1.05 E+01	4.52 E+01
		Th-228	* 2.18 E+00	3.85 E+00
	06/03/98	Be-7	* 7.79 E+00	1.59 E+01
		K-40	*-1.99 E+01	2.22 E+01
		Mn-54	* 1.63 E-01	1.58 E+00
		Co-58	*-1.39 E+00	1.70 E+00
		Fe-59	*-3.91 E-01	3.35 E+00
		Co-60	*-2.05 E+00	1.64 E+00
		Zn-65	*-2.59 E+00	3.36 E+00
		Zr-95	* 1.18 E+00	3.36 E+00
		Nb-95	* 3.92 E+00	1.87 E+00
		Cs-134	* 2.24 E+00	1.79 E+00
		Cs-137	* 2.61 E-01	1.87 E+00
		Ba-140	* 2.67 E+00	6.12 E+00
		La-140	*-2.17 E+00	2.52 E+00
		Ra-226	*-3.12 E+01	4.30 E+01
		Th-228	* 8.86 E+00	3.72 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
32	09/02/98	Be-7	*-5.14 E+00	1.70 E+01
		K-40	*-3.31 E+00	2.38 E+01
		Mn-54	*-5.01 E-01	1.65 E+00
		Co-58	* 3.46 E-01	1.79 E+00
		Fe-59	* 5.42 E-01	3.53 E+00
		Co-60	* 1.69 E+00	1.85 E+00
		Zn-65	* 1.26 E+00	3.36 E+00
		Zr-95	*-1.22 E+00	3.32 E+00
		Nb-95	* 3.83 E+00	1.94 E+00
		Cs-134	* 7.83 E-01	1.86 E+00
		Cs-137	* 5.34 E-01	1.87 E+00
		Ba-140	* 0.00 E+00	6.53 E+00
		La-140	*-2.63 E+00	2.78 E+00
		Ra-226	*-6.10 E+00	4.30 E+01
		Th-228	*-5.71 E+00	3.67 E+00
	12/01/98	Be-7	* 9.93 E+00	1.67 E+01
		K-40	*-1.50 E+01	3.71 E+01
		Mn-54	* 6.91 E-01	1.82 E+00
		Co-58	*-1.00 E-01	1.86 E+00
		Fe-59	* 2.39 E+00	3.92 E+00
		Co-60	* 4.77 E-01	1.89 E+00
		Zn-65	* 2.47 E+00	4.09 E+00
		Zr-95	*-2.49 E+00	3.72 E+00
		Nb-95	* 5.95 E+00	1.94 E+00
		Cs-134	* 8.59 E-01	2.04 E+00
		Cs-137	*-2.73 E+00	2.05 E+00
		Ba-140	*-1.64 E-01	5.86 E+00
		La-140	* 2.11 E-01	2.40 E+00
		Ra-226	* 2.14 E+01	3.53 E+01
		Th-228	* 7.66 E+00	3.19 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>Ground</u>				
52	03/04/97	Be-7	* 1.30 E+00	1.38 E+01
		K-40	*-1.09 E+02	2.74 E+01
		Mn-54	* 1.09 E+00	1.47 E+00
		Co-58	*-5.43 E-01	1.46 E+00
		Fe-59	* 3.34 E+00	3.02 E+00
		Co-60	*-1.36 E-01	1.48 E+00
		Zn-65	* 1.60 E+00	3.29 E+00
		Zr-95	* 3.33 E-01	2.97 E+00
		Nb-95	* 1.29 E+00	1.50 E+00
		Cs-134	*-9.80 E-01	1.65 E+00
		Cs-137	* 1.53 E+00	1.61 E+00
		Ba-140	* 1.57 E+00	4.83 E+00
		La-140	*-1.48 E+00	1.82 E+00
		Ra-226	*-1.25 E+02	2.91 E+01
		Th-228	* 2.29 E+00	2.52 E+00
	06/03/98	Be-7	*-9.00 E+00	1.97 E+01
		K-40	*-2.47 E+01	4.31 E+01
		Mn-54	* 4.73 E-02	2.14 E+00
		Co-58	* 6.82 E-01	2.16 E+00
		Fe-59	*-6.82 E-01	4.39 E+00
		Co-60	* 2.05 E-01	2.15 E+00
		Zn-65	* 4.75 E-01	4.77 E+00
		Zr-95	*-9.34 E-02	4.41 E+00
		Nb-95	* 6.48 E-01	2.21 E+00
		Cs-134	* 1.03 E-01	2.37 E+00
		Cs-137	* 9.13 E-02	2.36 E+00
		Ba-140	*-2.99 E+00	7.27 E+00
		La-140	*-1.00 E+00	2.89 E+00
		Ra-226	*-4.18 E+01	3.95 E+01
		Th-228	* 5.98 E+00	3.63 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)
GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>Ground</u>				
52	09/02/98	Be-7	*-6.43 E+00	1.72 E+01
		K-40	*-1.38 E+01	2.45 E+01
		Mn-54	* 2.20 E+00	1.81 E+00
		Co-58	* 6.06 E-01	1.74 E+00
		Fe-59	*-2.38 E-01	3.63 E+00
		Co-60	* 2.83 E-01	1.85 E+00
		Zn-65	* 7.36 E+00	4.10 E+00
		Zr-95	*-1.46 E+00	3.60 E+00
		Nb-95	* 1.49 E+00	1.84 E+00
		Cs-134	*-7.39 E-01	1.90 E+00
		Cs-137	*-1.86 E+00	2.20 E+00
		Ba-140	* 2.40 E+00	6.73 E+00
		La-140	*-2.20 E+00	2.99 E+00
		Ra-226	*-2.37 E+01	4.10 E+01
		Th-228	* 9.55 E-01	3.42 E+00
	12/01/98	Be-7	*-6.25 E+00	1.46 E+01
		K-40	*-3.75 E+01	2.53 E+01
		Mn-54	*-8.01 E-01	1.60 E+00
		Co-58	*-8.78 E-01	1.65 E+00
		Fe-59	* 2.02 E+00	3.26 E+00
		Co-60	* 4.61 E-01	1.70 E+00
		Zn-65	* 2.39 E-01	3.59 E+00
		Zr-95	* 3.43 E+00	3.34 E+00
		Nb-95	* 1.73 E+00	1.70 E+00
		Cs-134	* 3.49 E-01	1.78 E+00
		Cs-137	* 2.12 E+00	1.87 E+00
		Ba-140	* 1.05 E+00	5.17 E+00
		La-140	*-2.04 E-01	2.20 E+00
		Ra-226	*-6.20 E+01	3.07 E+01
		Th-228	* 4.42 E+00	2.73 E+00

* Denotes a result less than the detection limit.

TABLE A-7.2
GAMMA SPECTROMETRY OF WATER - SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
<u>River/Drinking</u>						
K-40	(I)	-3.12E+01	-2.23E+02	1.58E+01	24	0
K-40	(C)	-3.73E+01	-1.31E+02	4.44E+00	12	0
Mn-54	(I)	2.26E-01	-1.06E+00	1.94E+00	24	0
Mn-54	(C)	4.02E-01	-6.51E-01	1.47E+00	12	0
Co-60	(I)	8.35E-02	-3.07E+00	1.40E+00	24	0
Co-60	(C)	1.12E-01	-2.18E+00	2.19E+00	12	0
Co-58	(I)	-1.14E-01	-2.34E+00	1.06E+00	24	0
Co-58	(C)	-8.75E-02	-7.79E-01	1.29E+00	12	0
Cs-134	(I)	5.23E-02	-2.29E+00	2.57E+00	24	0
Cs-134	(C)	1.38E-01	-1.62E+00	1.37E+00	12	0
Cs-137	(I)	6.85E-01	-3.19E+00	3.31E+00	24	0
Cs-137	(C)	9.98E-01	-2.82E+00	2.03E+00	12	0
Nb-95	(I)	1.27E+00	-4.86E-02	3.18E+00	24	0
Nb-95	(C)	8.43E-01	-3.40E-01	2.08E+00	12	0
Zr-95	(I)	1.21E-02	-2.28E+00	4.96E+00	24	0
Zr-95	(C)	2.28E-01	-2.82E+00	2.61E+00	12	0

(I) Indicator Stations
(C) Control Station

TABLE A-7.2 (Cont.)

GAMMA SPECTROMETRY OF WATER - SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
<u>River/Drinking</u>						
Zn-65	(I)	8.65E-01	-2.68E+00	5.03E+00	24	0
Zn-65	(C)	1.92E+00	-1.21E+00	5.37E+00	12	0
Fe-59	(I)	1.63E+00	-2.03E+00	5.96E+00	24	0
Fe-59	(C)	6.16E-01	-2.07E+00	3.42E+00	12	0
Ba-140	(I)	4.56E-01	-3.35E+00	8.72E+00	24	0
Ba-140	(C)	9.45E-01	-3.19E+00	6.73E+00	12	0
La-140	(I)	-1.45E-01	-3.34E+00	2.62E+00	24	0
La-140	(C)	-1.12E-01	-1.89E+00	2.26E+00	12	0

(I) Indicator Stations
(C) Control Station

TABLE A-7.2 (Cont.)

GAMMA SPECTROMETRY OF WATER - SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
<u>Discharge</u>						
K-40	(I)	-4.72E+01	-1.20E+02	-9.34E+00	12	0
Mn-54	(I)	6.87E-01	-1.17E+00	2.68E+00	12	0
Co-60	(I)	6.50E-01	-6.50E+00	6.21E+00	12	1
Co-58	(I)	-2.56E-01	-1.40E+00	2.68E+00	12	0
Cs-134	(I)	5.45E-01	-1.12E+00	1.90E+00	12	0
Cs-137	(I)	1.46E+00	-1.42E-01	3.24E+00	12	0
Nb-95	(I)	1.01E+00	-3.05E-01	2.09E+00	12	0
Zr-95	(I)	4.39E-01	-3.29E+00	3.07E+00	12	0
Zn-65	(I)	3.60E-01	-2.64E+00	3.86E+00	12	0
Fe-59	(I)	1.48E+00	-1.31E+00	4.67E+00	12	0
Ba-140	(I)	-9.31E-01	-1.11E+01	4.86E+00	12	0
La-140	(I)	-5.13E-01	-2.19E+00	3.67E+00	12	0

(I) Indicator Stations

TABLE A-7.2 (Cont.)

GAMMA SPECTROMETRY OF WATER - SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
<u>Ground</u>						
K-40	(I)	-2.78E+01	-1.09E+02	3.84E+00	12	0
Mn-54	(I)	4.54E-01	-8.01E-01	2.20E+00	12	0
Co-60	(I)	1.86E-01	-2.05E+00	1.69E+00	12	0
Co-58	(I)	-3.83E-01	-2.01E+00	6.82E-01	12	0
Cs-134	(I)	2.13E-01	-1.53E+00	2.24E+00	12	0
Cs-137	(I)	5.02E-01	-2.73E+00	4.21E+00	12	0
Nb-95	(I)	3.24E+00	6.48E-01	9.50E+00	12	0
Zr-95	(I)	8.69E-01	-2.49E+00	3.95E+00	12	0
Zn-65	(I)	1.03E+00	-4.28E+00	9.49E+00	12	0
Fe-59	(I)	2.34E-01	-2.20E+00	3.34E+00	12	0
Ba-140	(I)	4.58E-03	-2.99E+00	2.67E+00	12	0
La-140	(I)	-4.74E-01	-2.63E+00	1.95E+00	12	0

(I) Indicator Stations

TABLE B-8.1
GAMMA SPECTROMETRY OF SOIL
 Results in pCi/kilogram

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
01	05/13/98	K-40	1.34 E+04	2.74 E+02
		Cs-134	* 3.71 E+01	7.43 E+00
		Cs-137	3.92 E+01	7.09 E+00
		Ra-226	8.99 E+02	1.64 E+02
		Th-228	6.24 E+02	1.90 E+01
07	05/13/98	K-40	1.37 E+04	2.79 E+02
		Cs-134	* 2.93 E+01	6.90 E+00
		Cs-137	1.66 E+02	1.16 E+01
		Ra-226	9.25 E+02	1.63 E+02
		Th-228	5.98 E+02	1.62 E+01
09	05/13/98	K-40	1.25 E+04	2.67 E+02
		Cs-134	* 1.92 E+01	6.52 E+00
		Cs-137	7.88 E+01	1.00 E+01
		Ra-226	9.51 E+02	1.48 E+02
		Th-228	6.18 E+02	1.65 E+01
21	05/13/98	K-40	1.34 E+04	2.73 E+02
		Cs-134	* 3.09 E+01	6.33 E+00
		Cs-137	2.30 E+01	5.89 E+00
		Ra-226	6.37 E+02	1.42 E+02
		Th-228	4.57 E+02	1.39 E+01
23	05/13/98	K-40	1.67 E+04	3.40 E+02
		Cs-134	* 3.34 E+01	8.24 E+00
		Cs-137	9.42 E+01	9.88 E+00
		Ra-226	9.88 E+02	1.73 E+02
		Th-228	8.67 E+02	2.52 E+01

* Denotes a result less than the detection limit.

TABLE A-8.2
GAMMA SPECTROMETRY OF SOIL - SUMMARY

Results in pCi/kilogram

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
K-40	(I)	1.43E+04	1.34E+04	1.67E+04	4	4
K-40	(C)	1.25E+04	1.25E+04	1.25E+04	1	1
Cs-134	(I)	3.27E+01	2.93E+01	3.71E+01	4	0
Cs-134	(C)	1.92E+01	1.92E+01	1.92E+01	1	0
Cs-137	(I)	8.06E+01	2.30E+01	1.66E+02	4	4
Cs-137	(C)	7.88E+01	7.88E+01	7.88E+01	1	1
Ra-226	(I)	8.62E+02	6.37E+02	9.88E+02	4	4
Ra-226	(C)	9.51E+02	9.51E+02	9.51E+02	1	1
Th-228	(I)	6.37E+02	4.57E+02	8.67E+02	4	4
Th-228	(C)	6.18E+02	6.18E+02	6.18E+02	1	1

(I) Indicator Station
(C) Control Stations

TABLE A-9.1
GAMMA SPECTROMETRY OF SEDIMENT

Results in pCi/kilogram

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
33 (Upstream)	04/08/98	K-40	1.43 E+04	2.80 E+02
		Co-57	*-6.29 E+00	5.65 E+00
		Co-60	* 5.31 E-01	6.61 E+00
		Cs-134	* 2.88 E+01	6.81 E+00
		Cs-137	4.10 E+01	9.59 E+00
		Ra-226	6.60 E+02	1.33 E+02
		Eu-152	* 6.31 E+00	2.86 E+01
		Th-228	5.23 E+02	1.45 E+01
34 (Downstream)	04/08/98	K-40	1.44 E+04	3.19 E+02
		Co-57	* 3.49 E+01	7.20 E+00
		Co-60	2.16 E+01	8.95 E+00
		Cs-134	* 3.89 E+01	8.36 E+00
		Cs-137	3.37 E+02	1.59 E+01
		Ra-226	9.86 E+02	1.64 E+02
		Eu-152	1.58 E+02	2.39 E+01
		Th-228	7.54 E+02	2.44 E+01
33 (Upstream)	10/21/98	K-40	1.46 E+04	3.19 E+02
		Co-57	*-1.53 E+01	8.78 E+00
		Co-60	* 5.32 E+00	8.50 E+00
		Cs-134	* 7.24 E+01	1.03 E+01
		Cs-137	5.96 E+01	1.28 E+01
		Ra-226	1.90 E+03	2.37 E+02
		Eu-152	* 7.75 E+01	4.48 E+01
		Th-228	1.55 E+03	2.59 E+01
34 (Downstream)	10/21/98	K-40	1.72 E+04	2.97 E+02
		Co-57	* 1.62 E+01	6.47 E+00
		Co-60	2.03 E+01	7.38 E+00
		Cs-134	* 2.61 E+01	6.98 E+00
		Cs-137	1.94 E+02	1.03 E+01
		Ra-226	1.13 E+03	1.74 E+02
		Eu-152	* 1.12 E+02	3.24 E+01
		Th-228	7.22 E+02	1.77 E+01

* Denotes a result less than the detection limit.

TABLE A-9.2
GAMMA SPECTROMETRY OF SEDIMENT- SUMMARY

Results in pCi/kilogram

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
K-40	(I)	1.58E+04	1.44E+04	1.72E+04	2	2
K-40	(C)	1.45E+04	1.43E+04	1.46E+04	2	2
Co-57	(I)	2.56E+01	1.62E+01	3.49E+01	2	0
Co-57	(C)	-1.08E+01	-1.53E+01	-6.29E+00	2	0
Co-60	(I)	2.10E+01	2.03E+01	2.16E+01	2	2
Co-60	(C)	2.93E+00	5.31E-01	5.32E+00	2	0
Cs-134	(I)	3.25E+01	2.61E+01	3.89E+01	2	0
Cs-134	(C)	5.06E+01	2.88E+01	7.24E+01	2	0
Cs-137	(I)	2.66E+02	1.94E+02	3.37E+02	2	2
Cs-137	(C)	5.03E+01	4.10E+01	5.96E+01	2	2
Ra-226	(I)	1.06E+03	9.86E+02	1.13E+03	2	2
Ra-226	(C)	1.28E+03	6.60E+02	1.90E+03	2	2
Eu-152	(I)	1.35E+02	1.12E+02	1.58E+02	2	0
Eu-152	(C)	4.19E+01	6.31E+00	7.75E+01	2	0
Th-228	(I)	7.38E+02	7.22E+02	7.54E+02	2	2
Th-228	(C)	1.04E+03	5.23E+02	1.55E+03	2	2

(I) Indicator Stations
(C) Control Station

TABLE A-10.1
GAMMA SPECTROMETRY OF FISH

Results in pCi/kilogram (wet)

LOCATION	COLLECTION DATE	NUCLIDE	RESULT	OVERALL UNCERTAINTY
30 Carp	09/25/98	K-40	2.91 E+03	1.71 E+02
		Mn-54	*-6.93 E-01	7.32 E+00
		Co-58	* 2.72 E+00	8.39 E+00
		Fe-59	*-7.88 E-01	1.94 E+01
		Co-60	*-6.32 E+00	6.88 E+00
		Zn-65	*-4.43 E+00	1.62 E+01
		Cs-134	*-6.66 E+00	7.63 E+00
		Cs-137	* 4.37 E+00	7.86 E+00
		Ra-226	*-2.02 E+02	1.31 E+02
		Th-228	*-8.95 E+00	1.15 E+00
30 Sucker	09/25/98	K-40	3.56 E+03	2.06 E+02
		Mn-54	* 2.94 E+00	6.42 E+00
		Co-58	* 4.22 E-01	7.41 E+00
		Fe-59	*-1.62 E+00	1.82 E+01
		Co-60	* 2.08 E+00	6.65 E+00
		Zn-65	*-9.79 E+00	1.59 E+01
		Cs-134	* 6.44 E+00	6.99 E+00
		Cs-137	* 1.32 E+01	7.34 E+00
		Ra-226	*-4.89 E+01	1.44 E+02
		Th-228	* 9.89 E+00	1.23 E+01
30 Steelhead	10/06/98	K-40	3.62 E+03	2.07 E+02
		Mn-54	* 2.51 E+00	8.15 E+00
		Co-58	* 4.25 E+00	8.63 E+00
		Fe-59	* 7.20 E+00	1.83 E+01
		Co-60	* 4.57 E+00	8.66 E+00
		Zn-65	* 1.14 E+01	1.91 E+01
		Cs-134	*-3.97 E+00	8.76 E+00
		Cs-137	* 8.62 E+00	8.80 E+00
		Ra-226	*-3.42 E+02	1.38 E+02
		Th-228	*-9.12 E-01	1.25 E+01

* Denotes a result less than the detection limit.

TABLE A-10.1 (Cont.)
GAMMA SPECTROMETRY OF FISH

Results in pCi/kilogram (wet)

LOCATION	COLLECTION DATE	NUCLIDE	RESULT	OVERALL UNCERTAINTY
38 Carp	09/24/98	K-40	3.22 E+03	1.75 E+02
		Mn-54	* 3.90 E+00	7.38 E+00
		Co-58	*-5.02 E+00	8.28 E+00
		Fe-59	* 1.86 E+01	1.93 E+01
		Co-60	*-1.04 E+00	7.00 E+00
		Zn-65	* 3.20 E-01	1.65 E+01
		Cs-134	*-4.57 E+00	8.11 E+00
		Cs-137	* 3.34 E+00	7.84 E+00
		Ra-226	*-2.13 E+02	1.27 E+02
		Th-228	*-6.97 E-01	1.14 E+01
38 Sucker	09/24/98	K-40	3.56 E+03	1.92 E+02
		Mn-54	* 4.46 E+00	6.03 E+00
		Co-58	* 2.98 E+00	7.25 E+00
		Fe-59	* 1.25 E+01	1.67 E+01
		Co-60	* 2.69 E+00	6.40 E+00
		Zn-65	* 4.05 E-01	1.49 E+01
		Cs-134	* 1.69 E-01	6.66 E+00
		Cs-137	* 1.15 E+01	6.45 E+00
		Ra-226	*-1.91 E+01	1.33 E+02
		Th-228	* 1.36 E+01	1.13 E+01
38 Steelhead	10/07/98	K-40	4.46 E+03	2.42 E+02
		Mn-54	* 1.88 E+00	8.99 E+00
		Co-58	* 5.39 E+00	1.05 E+01
		Fe-59	* 1.77 E+01	2.26 E+01
		Co-60	*-5.42 E+00	1.02 E+01
		Zn-65	*-1.42 E+00	2.20 E+01
		Cs-134	*-4.88 E+00	1.09 E+01
		Cs-137	* 1.82 E+01	1.06 E+01
		Ra-226	*-3.71 E+02	1.65 E+02
		Th-228	* 8.82 E+00	1.51 E+01

* Denotes a result less than the detection limit.

TABLE A-10.2
GAMMA SPECTROMETRY OF FISH - SUMMARY

Results in pCi/kilogram

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
K-40	(I)	3.36E+03	2.91E+03	3.62E+03	3	0
K-40	(C)	3.75E+03	3.22E+03	4.46E+03	3	3
Co-60	(I)	1.10E-01	-6.32E+00	4.57E+00	3	0
Co-60	(C)	-1.26E+00	-5.42E+00	2.69E+00	3	0
Fe-59	(I)	1.60E+00	-1.62E+00	7.20E+00	3	0
Fe-59	(C)	1.63E+01	1.25E+01	1.86E+01	3	0
Zn-65	(I)	-9.40E-01	-9.79E+00	1.14E+01	3	0
Zn-65	(C)	-2.32E-01	-1.42E+00	4.05E-01	3	0
Co-58	(I)	2.46E+00	4.22E-01	4.25E+00	3	0
Co-58	(C)	1.12E+00	-5.02E+00	5.39E+00	3	0
Cs-134	(I)	-1.40E+00	-6.66E+00	6.44E+00	3	0
Cs-134	(C)	-3.09E+00	-4.88E+00	1.69E-01	3	0
Cs-137	(I)	8.73E+00	4.37E+00	1.32E+01	3	0
Cs-137	(C)	1.10E+01	3.34E+00	1.82E+01	3	0
Mn-54	(I)	1.59E+00	-6.93E-01	2.94E+00	3	0
Mn-54	(C)	3.41E+00	1.88E+00	4.46E+00	3	0

(I) Indicator Station
(C) Control Stations

TABLE A-11.1
I-131 IN MILK

Results in pCi/liter

LOCATION	COLLECTION DATE	RESULT		OVERALL UNCERTAINTY	
9B	01/13/98	*-1.7	E-02	9.21	E-02
	02/10/98	*-1.7	E-01	1.18	E-01
	03/10/98	*-2.5	E-02	7.93	E-02
	04/14/87	*-1.0	E-01	1.53	E-01
	04/28/98	* 3.8	E-02	1.08	E-01
	05/05/98	*-2.0	E-01	2.73	E-01
	05/19/98	*-1.1	E-01	1.29	E-01
	06/02/98	*-2.7	E-01	1.77	E-01
	06/16/98	*-1.6	E-01	1.30	E-01
	07/14/98	* 2.7	E-02	1.94	E-01
	07/28/98	* 1.5	E-01	2.14	E-01
	08/04/98	* 1.4	E-02	1.82	E-01
	08/25/98	* 0.0	E+00	3.06	E-01
	09/01/98	*-4.2	E-02	2.68	E-01
	09/22/98	*-3.0	E-01	3.23	E-01
	10/13/98	* 3.8	E-02	1.84	E-01
	11/10/98	* 6.1	E-02	1.51	E-01
	12/08/98	*-4.4	E-02	4.31	E-01
36	01/13/98	*-2.3	E-02	9.51	E-02
	02/10/98	*-5.3	E-02	1.08	E-01
	03/10/98	*-2.0	E-02	7.86	E-02
	04/14/98	*-2.1	E-02	1.43	E-01
	04/28/98	* 2.9	E-02	1.50	E-01
	05/05/98	* 4.5	E-02	1.55	E-01
	05/19/98	*-1.6	E-01	1.46	E-01
	06/02/98	*-1.6	E-01	1.75	E-01
	06/16/98	*-5.7	E-02	1.43	E-01
	07/14/98	* 7.4	E-02	1.74	E-01
	07/28/98	* 2.3	E-01	3.09	E-01
	08/04/98	*-2.5	E-01	1.66	E-01
	08/25/98	* 5.2	E-02	3.42	E-01
	09/01/98	* 5.5	E-02	1.93	E-01
	09/22/98	*-3.5	E-02	2.36	E-01
	10/13/98	* 1.2	E-01	2.22	E-01
	11/10/98	* 0.0	E+00	1.37	E-01
	12/08/98	*-5.8	E-02	2.78	E-01

* Denotes a result less than the detection limit.

TABLE A-11.1 (Cont.)

I-131 IN MILK

Results in pCi/liter

LOCATION	COLLECTION DATE	RESULT	OVERALL UNCERTAINTY
64	01/13/98	* 2.7 E-02	9.68 E-02
	02/10/98	*-3.6 E-01	1.14 E-01
	03/10/98	*-2.0 E-02	6.18 E-02
	04/14/98	* 2.6 E-01	1.74 E-01
	04/28/98	* 2.4 E-01	1.57 E-01
	05/05/98	*-1.9 E-01	1.54 E-01
	05/19/98	*-1.7 E-01	1.64 E-01
	06/02/98	* 5.8 E-02	2.05 E-01
	06/16/98	*-1.9 E-02	1.41 E-01
	07/14/98	* 1.4 E-01	1.96 E-01
	07/28/98	*-8.4 E-02	2.85 E-01
	08/04/98	*-5.3 E-02	1.92 E-01
	08/25/98	*-5.2 E-02	1.53 E-01
	09/01/98	* 9.5 E-02	2.29 E-01
	09/22/98	*-3.3 E-02	2.26 E-01
	10/13/98	* 2.7 E-01	2.73 E-01
	11/10/98 (a)	6.4 E-01	1.4 E-01
	12/08/98	* 3.2 E-01	2.67 E-01
96	01/13/98	*-6.8 E-02	1.08 E-01
	02/10/98	*-4.7 E-01	1.31 E-01
	03/10/98	* 3.3 E-02	7.99 E-02
	04/14/98 (b)		

(a) Postive I-131 result confirmed by a reanalysis.

(b) Farmer withdrew from the program.

* Denotes a result less than the detection limit.

TABLE A-11.2
I-131 IN MILK - SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
I-131	(I)	-5.06E-03	-3.6E-01	6.4E-01	54	1
I-131	(C) (a)	-1.68E-01	-4.70E-01	3.30E-02	3	0

- (a) Farmer withdrew from program.
- (I) Indicator Stations
- (C) Control Station

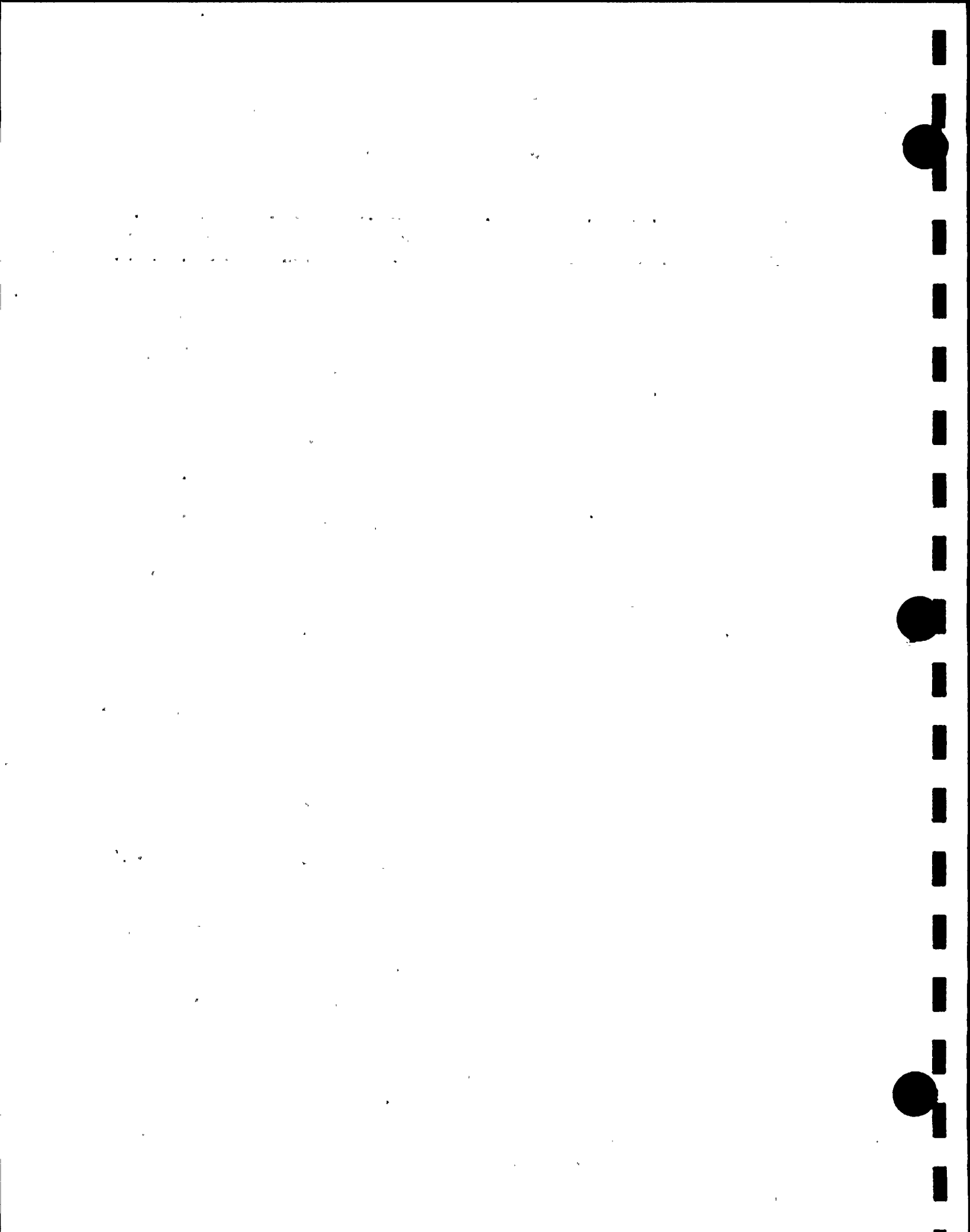


TABLE A-12.1
GAMMA SPECTROMETRY OF MILK

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
9B	01/13/98	K-40	1.42 E+03	6.94 E+01
		Cs-134	* 4.30 E-01	2.60 E+00
		Cs-137	* 1.57 E+00	2.59 E+00
		Ba-140	* 2.11 E+00	8.49 E+00
		La-140	* 2.51 E+00	3.29 E+00
	02/10/98	K-40	1.30 E+03	6.32 E+01
		Cs-134	* 1.54 E+00	1.86 E+00
		Cs-137	* -3.29 E-01	1.88 E+00
		Ba-140	* -2.03 E+00	7.41 E+00
		La-140	* -4.05 E-01	2.72 E+00
	03/10/98	K-40	1.31 E+03	6.27 E+01
		Cs-134	* 9.21 E-01	2.01 E+00
		Cs-137	* -2.04 E+00	2.37 E+00
		Ba-140	* -1.31 E+00	5.31 E+00
		La-140	* 6.63 E-01	2.25 E+00
	04/14/98	K-40	1.29 E+03	6.68 E+01
		Cs-134	* 1.48 E+00	1.95 E+00
		Cs-137	* 4.21 E-01	1.87 E+00
		Ba-140	* 1.52 E+00	5.23 E+00
		La-140	* -6.55 E-01	2.15 E+00
	04/28/98	K-40	1.20 E+03	5.87 E+01
		Cs-134	* 8.32 E-01	1.78 E+00
		Cs-137	* 1.78 E+00	1.81 E+00
		Ba-140	* -3.38 E-01	5.17 E+00
		La-140	* -4.87 E-01	2.02 E+00
	05/05/98	K-40	1.41 E+03	5.95 E+01
		Cs-134	* -1.06 E+00	1.92 E+00
		Cs-137	* -1.01 E+00	2.07 E+00
		Ba-140	* -2.85 E+00	6.12 E+00
		La-140	* -7.60 E-01	2.52 E+00
	05/19/98	K-40	1.32 E+03	6.50 E+01
		Cs-134	* 5.30 E-01	1.86 E+00
		Cs-137	* -1.41 E-01	1.90 E+00
		Ba-140	* 2.16 E+00	5.40 E+00
		La-140	* -9.83 E-01	1.95 E+00

* Denotes a result less than the detection limit.

TABLE A-12.1 (Cont.)
GAMMA SPECTROMETRY OF MILK

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
9B	06/02/98	K-40	1.37 E+03	5.85 E+01
		Cs-134	* 1.50 E+00	2.46 E+00
		Cs-137	* 1.77 E+00	2.45 E+00
		Ba-140	*-2.10 E+00	7.17 E+00
		La-140	*-9.36 E-01	2.50 E+00
	06/16/98	K-40	1.42 E+03	5.88 E+01
		Cs-134	*-1.69 E-01	2.17 E+00
		Cs-137	* 6.47 E-01	2.13 E+00
		Ba-140	* 2.79 E+00	5.86 E+00
		La-140	*-1.50 E-01	2.10 E+00
	07/14/98	K-40	1.32 E+03	5.95 E+01
		Cs-134	* 5.80 E-01	2.19 E+00
		Cs-137	* 3.62 E-01	2.22 E+00
		Ba-140	*-4.51 E+00	5.97 E+00
		La-140	* 1.11 E+00	2.16 E+00
	07/28/98	K-40	1.31 E+03	6.66 E+01
		Cs-134	* 2.99 E-01	1.87 E+00
		Cs-137	* 1.54 E+00	1.99 E+00
		Ba-140	* 4.76 E-01	6.31 E+00
		La-140	*-2.74 E-01	2.36 E+00
	08/04/98	K-40	1.26 E+03	6.63 E+01
		Cs-134	*-6.00 E-01	1.87 E+00
		Cs-137	* 2.82 E+00	2.03 E+00
		Ba-140	*-3.82 E+00	6.59 E+00
		La-140	*-8.24 E-01	2.55 E+00
	08/25/98	K-40	1.31 E+03	7.91 E+01
		Cs-134	*-1.31 E+00	2.26 E+00
		Cs-137	* 1.76 E+00	2.26 E+00
		Ba-140	*-3.99 E-01	7.36 E+00
		La-140	*-5.56 E-01	3.00 E+00
	09/01/98	K-40	1.20 E+03	6.28 E+01
		Cs-134	* 3.38 E+00	2.53 E+00
		Cs-137	* 2.21 E+00	2.56 E+00
		Ba-140	*-8.73 E+00	6.70 E+00
		La-140	* 2.14 E+00	2.52 E+00

* Denotes a result less than the detection limit.

TABLE A-12.1 (Cont.)
GAMMA SPECTROMETRY OF MILK

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
9B	09/22/98	K-40	1.20 E+03	5.71 E+01
		Cs-134	* 1.10 E+00	1.69 E+00
		Cs-137	* 3.34 E+00	1.75 E+00
		Ba-140	* 3.12 E-01	4.85 E+00
		La-140	*-8.97 E-02	1.88 E+00
	10/13/98	K-40	1.18 E+03	7.16 E+01
		Cs-134	* 6.02 E-01	2.34 E+00
		Cs-137	* 2.16 E+00	2.31 E+00
		Ba-140	* 2.16 E+00	7.88 E+00
		La-140	*-1.90 E+00	3.25 E+00
	11/10/98	K-40	1.12 E+03	5.34 E+01
		Cs-134	*-5.19 E-01	1.62 E+00
		Cs-137	* 8.07 E-01	1.68 E+00
		Ba-140	*-6.88 E-01	4.90 E+00
		La-140	*-5.09 E-01	1.88 E+00
	12/08/98	K-40	1.16 E+03	6.75 E+01
		Cs-134	* 6.93 E-01	2.11 E+00
		Cs-137	* 1.01 E+00	2.06 E+00
		Ba-140	* 2.16 E+00	5.69 E+00
		La-140	*-2.33 E-01	2.11 E+00

* Denotes a result less than the detection limit.

TABLE A-12.1 (Cont.)
GAMMA SPECTROMETRY OF MILK

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
36	01/13/98	K-40	1.48 E+03	7.75 E+01
		Cs-134	* 1.92 E+00	2.31 E+00
		Cs-137	* 4.04 E-01	2.29 E+00
		Ba-140	*-5.05 E-01	7.53 E+00
		La-140	*-1.93 E+00	3.39 E+00
	02/10/98	K-40	2.00 E+03	9.07 E+01
		Cs-134	*-4.62 E-01	2.52 E+00
		Cs-137	* 5.06 E+00	2.54 E+00
		Ba-140	*-8.87 E-01	7.92 E+00
		La-140	*-6.79 E-01	3.11 E+00
	03/10/98	K-40	1.35 E+03	6.46 E+01
		Cs-134	* 5.09 E-01	2.43 E+00
		Cs-137	* 8.81 E-02	2.38 E+00
		Ba-140	* 1.75 E+00	6.72 E+00
		La-140	*-1.31 E+00	2.44 E+00
	04/14/98	K-40	1.21 E+03	7.34 E+01
		Cs-134	* 1.62 E+00	2.38 E+00
		Cs-137	* 1.99 E+00	2.43 E+00
		Ba-140	*-3.87 E+00	6.08 E+00
		La-140	*-1.87 E+00	2.60 E+00
	04/28/98	K-40	1.25 E+03	6.73 E+01
		Cs-134	*-1.29 E+00	2.17 E+00
		Cs-137	* 7.74 E-01	2.15 E+00
		Ba-140	*-1.20 E+00	6.11 E+00
		La-140	*-4.77 E-01	2.46 E+00
	05/05/98	K-40	1.50 E+03	6.66 E+01
		Cs-134	*-1.99 E-01	2.31 E+00
		Cs-137	* 3.99 E-01	2.22 E+00
		Ba-140	* 7.99 E-01	7.46 E+00
		La-140	* 1.23 E+00	2.93 E+00
	05/19/98	K-40	1.37 E+03	5.96 E+01
		Cs-134	*-4.86 E-01	1.86 E+00
		Cs-137	* 2.64 E+00	1.83 E+00
		Ba-140	* 4.57 E+00	4.60 E+00
		La-140	* 1.62 E-01	2.00 E+00

* Denotes a result less than the detection limit.

TABLE A-12.1 (Cont.)
GAMMA SPECTROMETRY OF MILK

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
36	06/02/98	K-40	1.44 E+03	5.78 E+01
		Cs-134	* 1.98 E+00	2.17 E+00
		Cs-137	* 2.87 E+00	2.13 E+00
		Ba-140	* 8.21 E+00	5.99 E+00
		La-140	* 1.74 E+00	2.39 E+00
	06/16/98	K-40	1.22 E+03	7.63 E+01
		Cs-134	* -7.76 E-01	2.12 E+00
		Cs-137	* 4.09 E-01	2.18 E+00
		Ba-140	* -3.40 E+00	5.75 E+00
		La-140	* -7.53 E-01	2.59 E+00
	07/14/98	K-40	1.22 E+03	7.45 E+01
		Cs-134	* 2.19 E-01	2.39 E+00
		Cs-137	* 1.60 E+00	2.40 E+00
		Ba-140	* 1.97 E+00	6.42 E+00
		La-140	* -4.34 E-01	2.57 E+00
	07/28/98	K-40	1.22 E+03	7.14 E+01
		Cs-134	* 1.86 E+00	2.48 E+00
		Cs-137	* 9.44 E-01	2.31 E+00
		Ba-140	* 3.73 E-01	8.02 E+00
		La-140	* -2.17 E+00	2.78 E+00
	08/04/98	K-40	1.35 E+03	7.81 E+01
		Cs-134	* -2.29 E+00	2.31 E+00
		Cs-137	* 1.26 E+00	2.35 E+00
		Ba-140	* -3.19 E+00	7.55 E+00
		La-140	* 1.18 E+00	2.90 E+00
	08/25/98	K-40	1.33 E+03	7.69 E+01
		Cs-134	* 2.69 E+00	2.38 E+00
		Cs-137	* 1.80 E+00	2.42 E+00
		Ba-140	* 1.06 E+00	7.80 E+00
		La-140	* -1.35 E+00	2.94 E+00
	09/01/98	K-40	1.40 E+03	6.89 E+01
		Cs-134	* 9.06 E-01	2.00 E+00
		Cs-137	* 1.99 E+00	2.01 E+00
		Ba-140	* -5.31 E+00	5.36 E+00
		La-140	* -6.71 E-01	2.08 E+00

* Denotes a result less than the detection limit.

TABLE A-12.1 (Cont.)
GAMMA SPECTROMETRY OF MILK

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
36	09/22/98	K-40	1.34 E+03	7.76 E+01
		Cs-134	*-3.36 E+00	2.37 E+00
		Cs-137	*-3.63 E-01	2.30 E+00
		Ba-140	* 5.37 E+00	7.31 E+00
		La-140	*-1.64 E-01	2.95 E+00
	10/13/98	K-40	1.31 E+03	7.68 E+01
		Cs-134	* 2.77 E+00	2.36 E+00
		Cs-137	* 4.19 E+00	2.36 E+00
		Ba-140	*-3.63 E+00	7.45 E+00
		La-140	* 4.95 E-01	3.24 E+00
	11/10/98	K-40	1.32 E+03	6.50 E+01
		Cs-134	*-1.13 E+00	1.98 E+00
		Cs-137	* 0.00 E+00	1.95 E+00
		Ba-140	*-5.79 E-01	5.70 E+00
		La-140	*-9.33 E-01	2.24 E+00
	12/08/98	K-40	1.22 E+03	7.53 E+01
		Cs-134	* 6.01 E-01	2.54 E+00
		Cs-137	* 2.20 E+00	2.39 E+00
		Ba-140	*-6.36 E-01	6.56 E+00
		La-140	*-1.71 E+00	2.39 E+00

* Denotes a result less than the detection limit.

TABLE A-12.1 (Cont.)
GAMMA SPECTROMETRY OF MILK

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
64	01/13/98	K-40	1.34 E+03	7.91 E+01
		Cs-134	* 8.88 E-01	2.23 E+00
		Cs-137	* 1.95 E+00	2.18 E+00
		Ba-140	* 1.72 E+00	7.09 E+00
		La-140	*-3.54 E-01	2.70 E+00
	02/10/98	K-40	1.43 E+03	7.99 E+01
		Cs-134	*-1.10 E+00	2.32 E+00
		Cs-137	* 2.45 E+00	2.42 E+00
		Ba-140	* 7.78 E-01	8.52 E+00
		La-140	* 2.42 E+00	3.91 E+00
	03/10/98	K-40	1.27 E+03	5.77 E+01
		Cs-134	*-1.69 E+00	1.86 E+00
		Cs-137	*-5.64 E-01	2.03 E+00
		Ba-140	*-9.18 E-01	4.91 E+00
		La-140	*-3.06 E-01	2.07 E+00
	04/14/98	K-40	1.32 E+03	6.53 E+01
		Cs-134	* 4.12 E-01	2.42 E+00
		Cs-137	* 2.25 E+00	2.45 E+00
		Ba-140	*-1.99 E+00	6.67 E+00
		La-140	*-4.74 E-01	2.57 E+00
	04/28/98	K-40	1.42 E+03	6.15 E+01
		Cs-134	*-3.42 E-01	2.25 E+00
		Cs-137	* 2.21 E+00	2.25 E+00
		Ba-140	*-7.92 E-01	6.59 E+00
		La-140	* 8.49 E-01	2.41 E+00
	05/05/98	K-40	1.38 E+03	7.52 E+01
		Cs-134	*-6.49 E+00	3.13 E+00
		Cs-137	* 1.74 E+00	3.05 E+00
		Ba-140	* 4.83 E-01	1.02 E+01
		La-140	*-8.72 E-01	3.88 E+00
	05/19/98	K-40	1.41 E+03	6.56 E+01
		Cs-134	*-4.98 E-01	2.40 E+00
		Cs-137	* 2.66 E+00	2.47 E+00
		Ba-140	* 5.64 E+00	6.84 E+00
		La-140	*-1.02 E+00	2.41 E+00

* Denotes a result less than the detection limit.

TABLE A-12.1 (Cont.)
GAMMA SPECTROMETRY OF MILK

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
64	06/02/98	K-40	1.61 E+03	5.16 E+01
		Cs-134	*-2.28 E+00	1.75 E+00
		Cs-137	* 1.06 E+00	1.74 E+00
		Ba-140	* 3.69 E+00	4.99 E+00
		La-140	*-2.50 E+00	1.89 E+00
	06/16/98	K-40	1.14 E+03	7.38 E+01
		Cs-134	* 0.00 E+00	2.42 E+00
		Cs-137	* 1.66 E+00	2.43 E+00
		Ba-140	*-3.00 E+00	6.37 E+00
		La-140	* 1.46 E-01	2.63 E+00
	07/14/98	K-40	1.25 E+03	8.03 E+01
		Cs-134	* 0.00 E+00	2.67 E+00
		Cs-137	* 5.62 E-01	2.50 E+00
		Ba-140	* 8.17 E+00	6.77 E+00
		La-140	*-6.18 E-01	2.76 E+00
	07/28/98	K-40	1.33 E+03	6.38 E+01
		Cs-134	* 3.67 E-01	2.03 E+00
		Cs-137	*-1.11 E+00	2.36 E+00
		Ba-140	*-1.53 E+00	6.64 E+00
		La-140	*-3.73 E+00	2.81 E+00
	08/04/98	K-40	1.34 E+03	6.61 E+01
		Cs-134	* 1.89 E+00	2.49 E+00
		Cs-137	* 3.35 E+00	2.57 E+00
		Ba-140	* 5.71 E+00	8.22 E+00
		La-140	*-6.12 E+00	3.17 E+00
	08/25/98	K-40	1.45 E+03	8.17 E+01
		Cs-134	* 1.88 E+00	2.48 E+00
		Cs-137	* 9.89 E-01	2.56 E+00
		Ba-140	*-1.94 E-01	7.63 E+00
		La-140	* 5.40 E-01	3.36 E+00
	09/01/98	K-40	1.38 E+03	6.55 E+01
		Cs-134	* 1.13 E+00	2.34 E+00
		Cs-137	*-1.06 E+00	2.28 E+00
		Ba-140	* 6.68 E-01	5.89 E+00
		La-140	* 2.33 E+00	2.35 E+00

* Denotes a result less than the detection limit.

TABLE A-12.1 (Cont.)
GAMMA SPECTROMETRY OF MILK

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
64	9/22/98	K-40	1.42 E+03	5.93 E+01
		Cs-134	*-3.87 E+00	2.26 E+00
		Cs-137	* 1.10 E+00	2.16 E+00
		Ba-140	*-3.73 E+00	6.25 E+00
		La-140	*-2.34 E-01	2.41 E+00
	10/13/98	K-40	1.48 E+03	7.52 E+01
		Cs-134	* 3.41 E-01	3.07 E+00
		Cs-137	*-4.48 E+00	3.03 E+00
		Ba-140	* 2.23 E+00	1.02 E+01
		La-140	* 2.66 E-01	3.66 E+00
	11/10/98	K-40	1.40 E+03	5.78 E+01
		Cs-134	* 1.17 E+00	2.22 E+00
		Cs-137	* 5.37 E-01	2.15 E+00
		Ba-140	* 4.30 E-01	6.17 E+00
		La-140	*-3.69 E-01	2.38 E+00
	12/08/98	K-40	1.40 E+03	7.01 E+01
		Cs-134	*-2.09 E+00	2.58 E+00
		Cs-137	*-4.54 E+00	2.61 E+00
		Ba-140	*-3.54 E-01	6.89 E+00
		La-140	* 1.01 E-01	2.60 E+00

* Denotes a result less than the detection limit.

TABLE A-12.1 (Cont.)
GAMMA SPECTROMETRY OF MILK

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
96	01/13/98	K-40	1.49 E+03	7.39 E+01
		Cs-134	* 9.99 E-01	3.04 E+00
		Cs-137	* 1.76 E+00	2.99 E+00
		Ba-140	*-9.28 E+00	9.93 E+00
		La-140	*-2.98 E+00	3.76 E+00
	02/10/98	K-40	1.18 E+03	6.21 E+01
		Cs-134	*-1.35 E+00	2.47 E+00
		Cs-137	* 2.12 E+00	2.49 E+00
		Ba-140	* 7.47 E+00	9.22 E+00
		La-140	* 1.79 E+00	3.32 E+00
	03/10/98	K-40	1.48 E+03	6.64 E+01
		Cs-134	*-1.69 E+00	2.22 E+00
		Cs-137	* 3.51 E+00	2.21 E+00
		Ba-140	* 1.40 E+00	5.89 E+00
		La-140	*-5.40 E-01	2.07 E+00

* Denotes a result less than the detection limit.

TABLE A-12.2

GAMMA SPECTROMETRY OF MILK - SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
K-40	(I)	1.34E+03	1.12E+03	2.00E+03	54	54
K-40	(C)	1.38E+03	1.18E+03	1.49E+03	3	3
Cs-134	(I)	9.31E-02	-6.49E+00	3.38E+00	54	0
Cs-134	(C)	-6.80E-01	-1.69E+00	9.99E-01	3	0
Cs-137	(I)	1.07E+00	-4.54E+00	5.06E+00	54	0
Cs-137	(C)	2.46E+00	1.76E+00	3.51E+00	3	0
Ba-140	(I)	8.92E-02	-8.73E+00	8.21E+00	54	0
Ba-140	(C)	-1.37E-01	-9.28E+00	7.47E+00	3	0
La-140	(I)	-4.06E-01	-6.12E+00	2.51E+00	54	0
La-140	(C)	-5.77E-01	-2.98E+00	1.79E+00	3	0

(I) Indicator Stations
(C) Control Station

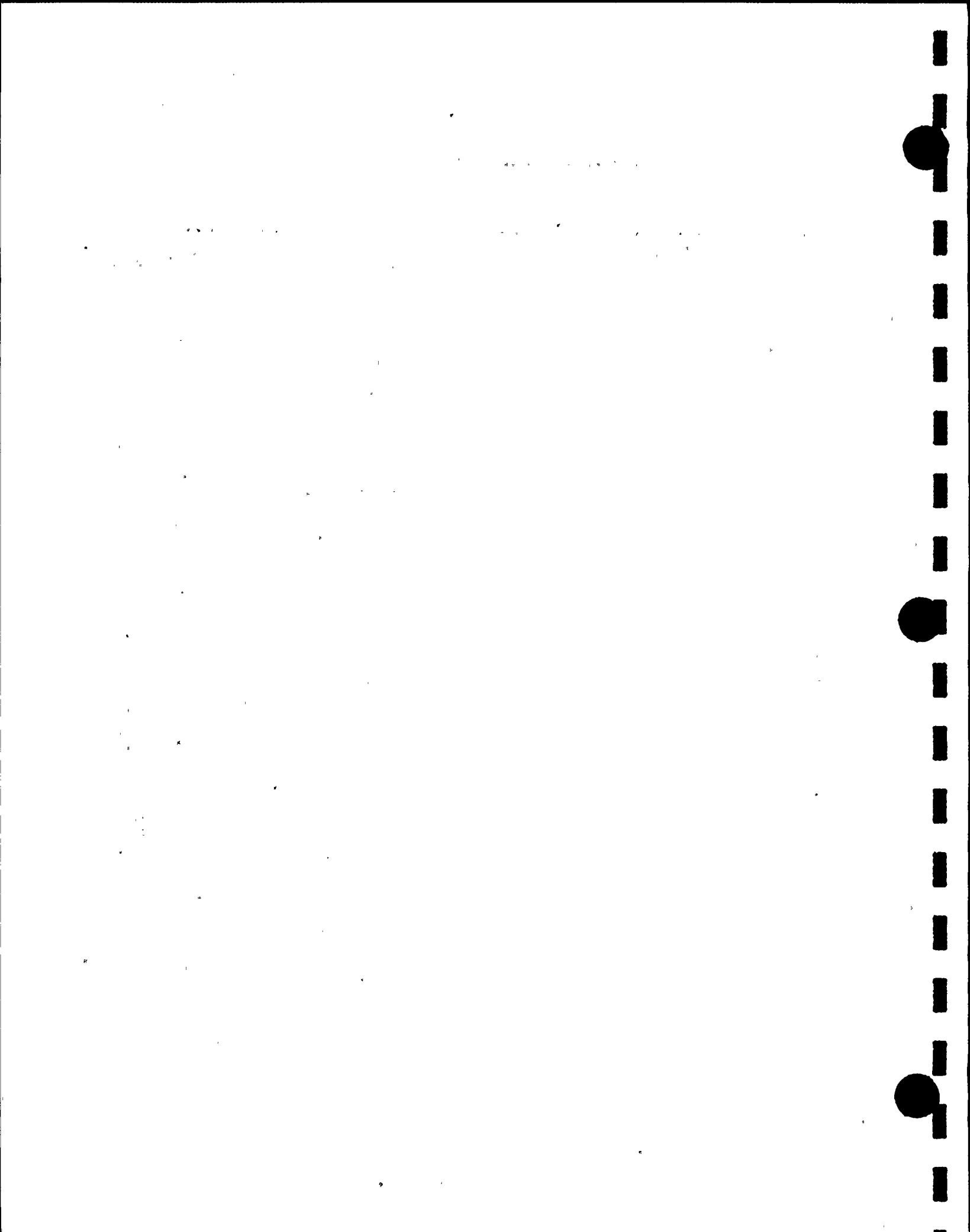


TABLE A-13.1
GAMMA SPECTROMETRY OF BROADLEAF IN LIEU OF MILK

Results in pCi/kilogram (wet)

LOCATION	COLLECTION DATE	NUCLIDE	RESULT	OVERALL UNCERTAINTY
9G Grass-Meeker	08/26/98	K-40	7.37 E+03	2.63 E+02
		Cs-134	*-2.23 E+00	8.05 E+00
		Cs-137	* 2.54 E+00	8.19 E+00
		Ba-140	*-1.40 E+00	2.95 E+01
		La-140	* 5.72 E+00	1.09 E+01
9G Grass-Meeker	09/22/98	K-40	5.97 E+03	3.00 E+02
		Cs-134	*-6.97 E+00	1.23 E+01
		Cs-137	*-8.34 E-01	1.24 E+01
		Ba-140	* 2.60 E+01	4.29 E+01
		La-140	*-1.23 E+01	1.56 E+01
9G Grass-Meeker	10/13/98	K-40	7.76 E+03	2.65 E+02
		Cs-134	* 4.82 E-01	8.30 E+00
		Cs-137	* 2.31 E+00	8.14 E+00
		Ba-140	* 3.29 E+01	2.88 E+01
		La-140	*-4.85 E+00	1.02 E+01
9G Feed/Corn Meeker	11/09/98	K-40	4.29 E+03	1.39 E+02
		Cs-134	* 2.57 E+00	3.73 E+00
		Cs-137	* 7.14 E-01	3.55 E+00
		Ba-140	* 3.68 E+00	1.04 E+01
		La-140	*-6.38 E-01	3.70 E+00
9G Corn-Meeker	12/08/98	K-40	3.72 E+03	1.73 E+02
		Cs-134	*-1.35 E+00	6.07 E+00
		Cs-137	* 6.30 E+00	5.90 E+00
		Ba-140	* 5.02 E+00	1.58 E+01
		La-140	*-3.71 E+00	5.62 E+00

* Denotes a result less than the detection limit.

TABLE A-13.2

GAMMA SPECTROMETRY OF BROADLEAF IN LIEU OF MILK - SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
K-40	(C)	5.82E+03	3.72E+03	7.76E+03	5	5
Cs-134	(C)	-1.50E+00	-6.97E+00	2.57E+00	5	0
Cs-137	(C)	2.21E+00	-8.34E-01	6.30E+00	5	0
Ba-140	(C)	1.32E+01	-1.40E+00	3.29E+01	5	0
La-140	(C)	-3.16E+00	-1.23E+01	5.72E+00	5	0

TABLE A-14.1
GAMMA SPECTROMETRY OF ROOTS

Results in pCi/kilogram (wet)

LOCATION	COLLECTION DATE	NUCLIDE	RESULT	OVERALL UNCERTAINTY
9C Beets	06/16/98	Cs-134	*-8.53 E-01	3.85 E+00
		Cs-137	* 3.10 E+00	3.67 E+00
		I-131	* 4.77 E+00	4.23 E+00
37 Onions	06/16/98	Cs-134	*-1.38 E+00	3.77 E+00
		Cs-137	* 1.69 E+00	3.81 E+00
		I-131	*-1.14 E+00	4.31 E+00
9C Potatoes	07/28/98	Cs-134	* 5.52 E-01	3.98 E+00
		Cs-137	* 3.65 E-01	3.87 E+00
		I-131	*-5.89 E+00	7.36 E+00
37 Potatoes	07/28/98	Cs-134	* 1.49 E+00	3.26 E+00
		Cs-137	* 1.60 E+00	3.01 E+00
		I-131	* 1.34 E+00	5.94 E+00
9C Potatoes	08/25/98	Cs-134	* 0.00 E+00	2.75 E+00
		Cs-137	* 1.58 E+00	2.69 E+00
		I-131	* 9.22 E-01	4.53 E+00
37 Potatoes	08/25/98	Cs-134	* 9.35 E-01	4.93 E+00
		Cs-137	* 2.40 E+00	4.62 E+00
		I-131	*-5.77 E-01	7.61 E+00
9C Potatoes	09/22/98	Cs-134	* 9.55 E-01	4.01 E+00
		Cs-137	* 3.15 E+00	4.08 E+00
		I-131	*-2.22 E+00	6.41 E+00
37 Potatoes	09/22/98	Cs-134	* 7.27 E-01	2.33 E+00
		Cs-137	*-2.15 E-01	2.20 E+00
		I-131	* 2.67 E+00	3.01 E+00

* Denotes a result less than the detection limit.

TABLE A-14.2

GAMMA SPECTROMETRY OF ROOTS - SUMMARY

Results in pCi/kilogram (wet)

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Cs-134	(I)	4.43E-01	-1.38E+00	1.49E+00	4	0
Cs-134	(C)	1.64E-01	-8.53E-01	9.55E-01	4	0
Cs-137	(I)	1.37E+00	-2.15E-01	2.40E+00	4	0
Cs-137	(C)	2.05E+00	3.65E-01	3.15E+00	4	0
I-131	(I)	5.73E-01	-1.14E+00	2.67E+00	4	0
I-131	(C)	-6.05E-01	-5.89E+00	4.77E+00	4	0

(I) Indicator Stations

TABLE A-15.1
GAMMA SPECTROMETRY OF FRUIT

Results in pCi/kilogram (wet)

LOCATION	COLLECTION DATE	NUCLIDE	RESULT	OVERALL UNCERTAINTY
9C Cherries	06/16/98	Cs-134	*-3.06 E-01	2.33 E+00
		Cs-137	* 1.05 E+00	2.34 E+00
		I-131	*-1.25 E+00	2.98 E+00
37 Cherries	06/16/98	Cs-134	* 4.31 E-01	3.79 E+00
		Cs-137	*-1.65 E+00	3.75 E+00
		I-131	* 1.39 E+00	4.35 E+00
9C Peaches	07/28/98	Cs-134	*-4.80 E-01	2.06 E+00
		Cs-137	* 1.42 E+00	2.09 E+00
		I-131	*-2.78 E+00	3.98 E+00
37 Peaches	07/28/98	Cs-134	* 3.64 E+00	3.58 E+00
		Cs-137	* 7.11 E-01	3.49 E+00
		I-131	* 3.03 E+00	7.57 E+00
9C Nectarines	08/25/98	Cs-134	* 2.01 E+00	2.67 E+00
		Cs-137	* 2.25 E+00	2.65 E+00
		I-131	* 8.38 E-01	4.38 E+00
37 Nectarines	08/25/98	Cs-134	*-2.66 E+00	2.78 E+00
		Cs-137	* 1.20 E+00	2.79 E+00
		I-131	* 4.06 E-01	4.58 E+00
91 Apples	09/14/98	Cs-134	* 2.17 E+00	5.15 E+00
		Cs-137	* 2.01 E+00	4.95 E+00
		I-131	*-5.26 E+00	1.06 E+01
9C Apples	09/22/98	Cs-134	* 4.42 E+00	4.18 E+00
		Cs-137	* 4.16 E+00	4.14 E+00
		I-131	*-2.47 E+00	6.34 E+00
37 Apples	09/22/98	Cs-134	* 2.41 E+00	3.67 E+00
		Cs-137	* 1.50 E+00	3.52 E+00
		I-131	*-1.44 E+00	5.29 E+00

* Denotes a result less than the detection limit.

TABLE A-15.2

GAMMA SPECTROMETRY OF FRUIT - SUMMARY

Results in pCi/kilogram (wet)

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Cs-134	(I)	1.20E+00	-2.66E+00	3.64E+00	5	0
Cs-134	(C)	1.41E+00	-4.80E-01	4.42E+00	4	0
Cs-137	(I)	7.54E-01	-1.65E+00	2.01E+00	5	0
Cs-137	(C)	2.22E+00	1.05E+00	4.16E+00	4	0
I-131	(I)	-3.75E-01	-5.26E+00	3.03E+00	5	0
I-131	(C)	-1.42E+00	-2.78E+00	8.38E-01	4	0

(I) Indicator Station
(C) Control Stations

TABLE A-16.1
GAMMA SPECTROMETRY OF VEGETABLES

Results in pCi/kilogram (wet)

LOCATION	COLLECTION DATE	NUCLIDE	RESULT	OVERALL UNCERTAINTY
9C Asparagus	05/19/98	Cs-134	*-3.42 E+00	4.61 E+00
		Cs-137	* 4.28 E+00	4.57 E+00
		I-131	* 1.14 E+00	5.94 E+00
37 Asparagus	05/1998	Cs-134	*-1.36 E-01	3.72 E+00
		Cs-137	* 2.05 E+00	3.71 E+00
		I-131	* 2.51 E+00	4.78 E+00
9C Asparagus	06/16/98	Cs-134	*-1.40 E+00	2.92 E+00
		Cs-137	* 0.00 E+00	2.94 E+00
		I-131	*-2.85 E+00	4.26 E+00
37 Cucumber	06/16/98	Cs-134	* 1.88 E+00	2.78 E+00
		Cs-137	* 6.97 E-02	2.77 E+00
		I-131	*-1.55 E+00	3.53 E+00
9C Beans	07/28/98	Cs-134	* 1.07 E+00	6.54 E+00
		Cs-137	* 0.00 E+00	6.34 E+00
		I-131	*-4.69 E+00	6.53 E+00
37 Cabbage	07/28/98	Cs-134	*-1.28 E+00	5.86 E+00
		Cs-137	* 1.15 E+00	5.72 E+00
		I-131	*-1.44 E-01	1.13 E+01
9C Cucumber	08/25/98	Cs-134	*-4.23 E-01	3.25 E+00
		Cs-137	* 4.91 E-01	3.26 E+00
		I-131	* 9.70 E-01	5.33 E+00
37 Cabbage	08/25/98	Cs-134	* 3.19 E-01	4.95 E+00
		Cs-137	* 2.16 E+00	4.67 E+00
		I-131	* 1.14 E+00	7.87 E+00
9C Greenbeans	09/22/98	Cs-134	*-8.17 E+00	5.93 E+00
		Cs-137	* 6.96 E+00	5.98 E+00
		I-131	* 2.45 E-01	9.61 E+00
37 Cabbage	09/22/98	Cs-134	*-3.44 E+00	3.97 E+00
		Cs-137	* 1.66 E+00	4.04 E+00
		I-131	*-4.38 E+00	5.18 E+00

* Denotes a result less than the detection limit.

TABLE A-16.2

GAMMA SPECTROMETRY OF VEGETABLES- SUMMARY

Results in pCi/kilogram (wet)

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Cs-134	(I)	-5.31E-01	-3.44E+00	1.88E+00	5	0
Cs-134	(C)	-2.47E+00	-8.17E+00	1.07E+00	5	0
Cs-137	(I)	1.42E+00	6.97E-02	2.16E+00	5	0
Cs-137	(C)	2.35E+00	0.00E+00	6.96E+00	5	0
I-131	(I)	-4.85E-01	-4.38E+00	2.51E+00	5	0
I-131	(C)	-1.04E+00	-4.69E+00	1.14E+00	5	0

(I) Indicator Station
(C) Control Stations

TABLE B-2.1
GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	12/29/97-01/07/98	Be-7	*-8.93 E+00	1.95 E+01
		K-40	*-1.57 E+02	3.88 E+01
		Mn-54	* 1.18 E-01	1.97 E+00
		Co-58	*-1.46 E+00	2.11 E+00
		Fe-59	*-1.75 E+00	4.38 E+00
		Co-60	*-5.46 E-01	1.94 E+00
		Zn-65	* 1.56 E+00	4.26 E+00
		Zr-95	* 3.33 E+00	4.23 E+00
		Nb-95	* 2.14 E+00	2.15 E+00
		Cs-134	*-3.81 E-01	2.19 E+00
		Cs-137	* 1.62 E+00	2.09 E+00
		Ba-140	* 9.85 E-01	1.03 E+01
		La-140	*-3.32 E+00	3.84 E+00
		Ra-226	*-3.19 E+01	3.74 E+01
		Th-228	*-4.85 E+00	3.31 E+00
	01/16/98-01/26/98	Be-7	* 3.52 E-01	2.52 E+01
		K-40	*-2.21 E+02	5.87 E+01
		Mn-54	* 4.77 E-01	2.56 E+00
		Co-58	*-2.62 E+00	2.72 E+00
		Fe-59	*-1.48 E+00	5.90 E+00
		Co-60	* 3.10 E-01	2.58 E+00
		Zn-65	*-1.35 E+00	5.95 E+00
		Zr-95	* 0.00 E+00	5.44 E+00
		Nb-95	*-3.19 E+00	2.77 E+00
		Cs-134	* 2.40 E+00	2.76 E+00
		Cs-137	*-6.53 E-01	2.84 E+00
		Ba-140	* 1.03 E+00	1.13 E+01
		La-140	* 2.29 E+00	4.26 E+00
		Ra-226	*-4.38 E+01	5.06 E+01
		Th-228	*-4.20 E+00	4.30 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)
GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	01/29/98-02/10/98	Be-7	*-4.56 E+00	1.57 E+01
		K-40	*-5.66 E+01	2.47 E+01
		Mn-54	* 6.84 E-01	1.58 E+00
		Co-58	*-3.13 E-01	1.69 E+00
		Fe-59	* 3.99 E+00	3.79 E+00
		Co-60	* 1.25 E+00	1.69 E+00
		Zn-65	* 5.21 E+00	3.33 E+00
		Zr-95	* 0.00 E+00	3.44 E+00
		Nb-95	* 1.36 E+00	1.81 E+00
		Cs-134	*-5.27 E-01	1.76 E+00
		Cs-137	* 9.67 E-01	1.78 E+00
		Ba-140	* 7.53 E+00	7.64 E+00
		La-140	*-2.37 E+00	3.07 E+00
		Ra-226	*-1.59 E+02	2.85 E+01
		Th-228	*-8.36 E+00	2.61 E+00
	02/10/98-02/16/98	Be-7	* 1.61 E+01	1.39 E+01
		K-40	*-1.52 E+01	1.91 E+01
		Mn-54	*-1.14 E-01	1.47 E+00
		Co-58	*-5.61 E-01	1.53 E+00
		Fe-59	* 1.52 E+00	3.21 E+00
		Co-60	* 1.09 E-01	1.58 E+00
		Zn-65	*-4.76 E-01	3.29 E+00
		Zr-95	*-1.47 E+00	3.09 E+00
		Nb-95	*-8.57 E-01	1.59 E+00
		Cs-134	*-1.56 E+00	1.54 E+00
		Cs-137	* 3.28 E-01	1.61 E+00
		Ba-140	*-8.75 E-01	6.05 E+00
		La-140	* 9.59 E-01	2.52 E+00
		Ra-226	*-4.79 E+01	2.80 E+01
		Th-228	*-4.62 E+00	2.43 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)
GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	02/19/98-02/26/98	Be-7	*-2.24 E+00	1.16 E+01
		K-40	*-2.90 E+00	1.62 E+01
		Mn-54	*-5.50 E-02	1.23 E+00
		Co-58	*-6.65 E-01	1.25 E+00
		Fe-59	* 3.70 E+00	2.71 E+00
		Co-60	* 7.10 E-01	1.34 E+00
		Zn-65	* 3.17 E+00	2.78 E+00
		Zr-95	*-2.78 E-01	2.53 E+00
		Nb-95	* 7.01 E-01	1.35 E+00
		Cs-134	* 9.81 E-01	1.42 E+00
		Cs-137	* 1.74 E+00	1.39 E+00
		Ba-140	*-1.77 E+00	4.74 E+00
		La-140	* 9.78 E-01	2.36 E+00
		Ra-226	*-6.56 E+01	2.35 E+01
		Th-228	*-2.08 E+00	2.10 E+00
	03/02/98 (a)	Be-7	* 1.49 E+01	1.75 E+01
		K-40	*-6.46 E+01	3.25 E+01
		Mn-54	* 1.78 E-01	1.78 E+00
		Co-58	* 4.51 E-01	1.91 E+00
		Fe-59	* 2.44 E+00	3.91 E+00
		Co-60	* 1.38 E+00	1.77 E+00
		Zn-65	* 2.01 E+00	3.79 E+00
		Zr-95	* 0.00 E+00	3.76 E+00
		Nb-95	* 3.60 E-02	1.81 E+00
		Cs-134	*-3.48 E-01	2.01 E+00
		Cs-137	*-1.05 E-01	1.95 E+00
		Ba-140	*-9.41 E-01	7.45 E+00
		La-140	*-3.70 E-01	2.79 E+00
		Ra-226	*-5.48 E+01	3.52 E+01
		Th-228	*-6.19 E+00	2.99 E+00

(a) Grab Sample

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)
GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	03/03/98 (a)	Be-7	* 6.47 E+00	1.77 E+01
		K-40	*-3.47 E+01	3.32 E+01
		Mn-54	* 1.40 E-01	1.75 E+00
		Co-58	*-1.22 E+00	1.81 E+00
		Fe-59	*-5.16 E-01	3.84 E+00
		Co-60	* 1.93 E-01	1.76 E+00
		Zn-65	*-1.89 E+00	3.73 E+00
		Zr-95	*-4.30 E-01	3.65 E+00
		Nb-95	* 3.12 E+00	1.87 E+00
		Cs-134	* 1.14 E-01	1.95 E+00
		Cs-137	* 1.33 E+00	1.89 E+00
		Ba-140	* 6.82 E+00	7.71 E+00
		La-140	*-1.79 E+00	2.94 E+00
		Ra-226	*-3.52 E+01	3.52 E+01
		Th-228	*-1.97 E+00	3.02 E+00
	03/05/98-03/10/98	Be-7	*-3.52 E+00	1.71 E+01
		K-40	*-3.86 E+01	2.05 E+01
		Mn-54	* 3.42 E-01	1.63 E+00
		Co-58	* 2.85 E-01	1.76 E+00
		Fe-59	* 4.65 E+00	4.03 E+00
		Co-60	*-5.10 E-01	1.99 E+00
		Zn-65	* 1.40 E+00	3.68 E+00
		Zr-95	*-2.32 E+00	3.51 E+00
		Nb-95	*-6.08 E-01	1.78 E+00
		Cs-134	*-2.21 E-01	1.94 E+00
		Cs-137	* 1.74 E+00	1.90 E+00
		Ba-140	*-6.71 E+00	6.77 E+00
		La-140	*-1.70 E+00	3.29 E+00
		Ra-226	* 3.90 E+01	3.94 E+01
		Th-228	*-1.29 E+00	3.54 E+00

(a) Grab Sample

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)
GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	03/13/98-03/19/98	Be-7	* 3.12 E-01	1.82 E+01
		K-40	*-3.71 E+01	2.89 E+01
		Mn-54	* 1.34 E+00	1.87 E+00
		Co-58	* 4.82 E-02	1.94 E+00
		Fe-59	* 4.52 E-01	3.94 E+00
		Co-60	*-3.96 E-01	1.87 E+00
		Zn-65	*-4.61 E-01	4.13 E+00
		Zr-95	* 1.30 E+00	3.90 E+00
		Nb-95	* 1.70 E+00	1.96 E+00
		Cs-134	*-2.00 E-01	2.11 E+00
		Cs-137	* 2.76 E+00	2.18 E+00
		Ba-140	* 3.11 E+00	7.25 E+00
		La-140	* 2.25 E+00	2.96 E+00
		Ra-226	*-2.08 E+02	3.36 E+01
		Th-228	*-1.73 E+01	2.97 E+00
	03/23/98-04/03/98	Be-7	* 1.40 E+01	1.97 E+01
		K-40	*-1.78 E+01	2.66 E+01
		Mn-54	* 1.49 E+00	1.97 E+00
		Co-58	* 2.76 E-01	2.10 E+00
		Fe-59	*-2.86 E+00	3.94 E+00
		Co-60	* 1.61 E+00	2.09 E+00
		Zn-65	* 4.29 E+00	4.42 E+00
		Zr-95	*-1.33 E+00	3.84 E+00
		Nb-95	* 3.95 E-01	2.05 E+00
		Cs-134	*-9.76 E-01	2.02 E+00
		Cs-137	*-1.84 E-01	2.05 E+00
		Ba-140	* 4.76 E+00	9.07 E+00
		La-140	*-2.03 E-01	3.70 E+00
		Ra-226	*-6.68 E+01	4.80 E+01
		Th-228	*-2.79 E+00	3.79 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)
GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	04/09/98-04/17/98	Be-7	* 7.61 E+00	1.65 E+01
		K-40	*-5.70 E+01	3.60 E+01
		Mn-54	*-6.20 E-02	1.74 E+00
		Co-58	* 0.00 E+00	1.79 E+00
		Fe-59	* 2.30 E+00	3.83 E+00
		Co-60	* 2.61 E+00	1.79 E+00
		Zn-65	* 5.63 E+00	4.05 E+00
		Zr-95	*-9.32 E-01	3.63 E+00
		Nb-95	* 4.00 E-01	1.85 E+00
		Cs-134	* 2.01 E-01	1.94 E+00
		Cs-137	* 1.48 E+00	1.92 E+00
		Ba-140	* 2.92 E+00	6.84 E+00
		La-140	*-1.48 E+00	2.83 E+00
		Ra-226	*-5.50 E+01	3.23 E+01
		Th-228	*-2.70 E+00	2.81 E+00
	04/21/98-04/23/98	Be-7	* 2.82 E+00	1.67 E+01
		K-40	*-4.66 E+01	2.74 E+01
		Mn-54	* 4.63 E-01	1.79 E+00
		Co-58	*-1.48 E+00	1.74 E+00
		Fe-59	*-2.24 E+00	3.62 E+00
		Co-60	* 1.20 E-01	1.74 E+00
		Zn-65	*-5.46 E+00	3.80 E+00
		Zr-95	*-6.38 E+00	3.82 E+00
		Nb-95	* 1.50 E+00	1.91 E+00
		Cs-134	*-1.92 E+00	1.97 E+00
		Cs-137	* 1.51 E+00	1.94 E+00
		Ba-140	*-3.46 E+00	6.65 E+00
		La-140	* 2.59 E+00	2.83 E+00
		Ra-226	*-1.50 E+02	3.15 E+01
		Th-228	*-1.06 E+01	2.81 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)
GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	04/23/98-04/24/98	Be-7	* 3.12 E+00	1.73 E+01
		K-40	*-3.80 E+01	3.84 E+01
		Mn-54	* 5.32 E-01	1.84 E+00
		Co-58	*-1.65 E+00	1.73 E+00
		Fe-59	* 1.60 E+00	3.93 E+00
		Co-60	* 5.51 E-01	1.92 E+00
		Zn-65	* 1.31 E+00	4.17 E+00
		Zr-95	* 1.76 E+00	3.75 E+00
		Nb-95	* 1.57 E+00	1.87 E+00
		Cs-134	*-1.04 E+00	2.02 E+00
		Cs-137	* 1.70 E+00	2.09 E+00
		Ba-140	*-1.50 E+00	6.58 E+00
		La-140	*-2.58 E+00	2.32 E+00
		Ra-226	*-5.48 E+01	3.61 E+01
		Th-228	*-3.56 E+00	3.18 E+00
	04/24/98-05/03/98	Be-7	* 1.70 E+01	2.61 E+01
		K-40	*-2.26 E+02	5.71 E+01
		Mn-54	* 8.30 E-01	2.62 E+00
		Co-58	* 1.88 E+00	2.76 E+00
		Fe-59	*-4.57 E-01	6.01 E+00
		Co-60	* 1.48 E+00	2.60 E+00
		Zn-65	* 3.02 E+00	5.82 E+00
		Zr-95	*-2.41 E+00	5.49 E+00
		Nb-95	* 2.81 E+00	2.87 E+00
		Cs-134	*-7.57 E+00	2.89 E+00
		Cs-137	* 2.91 E+00	2.88 E+00
		Ba-140	* 5.92 E+00	1.15 E+01
		La-140	*-1.78 E-01	4.27 E+00
		Ra-226	* 1.99 E+00	5.03 E+01
		Th-228	* 2.89 E+00	4.36 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)
GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	05/07/98-05/09/98	Be-7	* 1.15 E+01	1.84 E+01
		K-40	* 6.24 E+00	3.07 E+01
		Mn-54	*-1.20 E+00	1.92 E+00
		Co-58	*-2.35 E+00	1.92 E+00
		Fe-59	* 1.16 E-01	4.27 E+00
		Co-60	* 2.50 E+00	1.97 E+00
		Zn-65	* 1.16 E-01	3.89 E+00
		Zr-95	* 6.62 E+00	4.13 E+00
		Nb-95	* 2.15 E+00	2.05 E+00
		Cs-134	*-6.51 E-01	2.16 E+00
		Cs-137	* 7.57 E-01	2.06 E+00
		Ba-140	* 7.34 E+00	8.51 E+00
		La-140	* 1.44 E+00	3.32 E+00
		Ra-226	*-9.93 E+01	3.47 E+01
		Th-228	*-1.10 E+01	3.02 E+00
	05/13/98-05/15/98	Be-7	*-2.13 E+00	1.73 E+01
		K-40	*-3.23 E+01	2.84 E+01
		Mn-54	* 1.10 E+00	1.79 E+00
		Co-58	* 0.00 E+00	1.93 E+00
		Fe-59	* 3.50 E+00	3.95 E+00
		Co-60	*-1.64 E+00	1.82 E+00
		Zn-65	*-5.72 E-01	4.09 E+00
		Zr-95	*-5.44 E-01	3.81 E+00
		Nb-95	* 1.17 E+00	1.88 E+00
		Cs-134	* 1.20 E+00	2.07 E+00
		Cs-137	* 2.09 E+00	2.22 E+00
		Ba-140	* 3.66 E+00	6.47 E+00
		La-140	*-7.41 E-01	2.82 E+00
		Ra-226	*-1.49 E+02	3.39 E+01
		Th-228	*-9.14 E+00	2.97 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)
GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	05/19/98-05/23/98	Be-7	* 2.72 E+00	2.10 E+01
		K-40	*-1.12 E+02	4.06 E+01
		Mn-54	*-4.41 E-01	2.17 E+00
		Co-58	* 2.62 E-01	2.26 E+00
		Fe-59	*-1.89 E+00	4.87 E+00
		Co-60	* 7.01 E-01	2.11 E+00
		Zn-65	*-6.16 E-01	4.73 E+00
		Zr-95	* 3.03 E-01	4.60 E+00
		Nb-95	*-3.00 E-01	2.24 E+00
		Cs-134	* 1.74 E+00	2.38 E+00
		Cs-137	* 1.91 E+00	2.37 E+00
		Ba-140	* 2.31 E+00	1.00 E+01
		La-140	*-1.06 E+00	4.14 E+00
		Ra-226	*-4.68 E+01	3.94 E+01
		Th-228	* 4.60 E+00	3.63 E+00
	05/28/98-06/03/98	Be-7	* 1.08 E+01	1.75 E+01
		K-40	*-8.33 E+00	2.53 E+01
		Mn-54	* 1.07 E+00	1.73 E+00
		Co-58	*-2.20 E-01	1.89 E+00
		Fe-59	* 4.72 E+00	4.24 E+00
		Co-60	* 8.45 E-01	1.89 E+00
		Zn-65	* 3.63 E-01	4.01 E+00
		Zr-95	*-9.79 E-01	3.70 E+00
		Nb-95	* 2.01 E+00	1.96 E+00
		Cs-134	* 1.53 E-01	1.96 E+00
		Cs-137	* 1.08 E+00	1.92 E+00
		Ba-140	* 1.56 E+00	6.74 E+00
		La-140	*-1.43 E+00	3.18 E+00
		Ra-226	*-9.16 E+01	4.22 E+01
		Th-228	*-7.89 E-02	3.76 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)
GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	06/05/98-06/10/98	Be-7	* 2.60 E-01	1.41 E+01
		K-40	* 2.20 E+01	1.83 E+01
		Mn-54	* 7.64 E-02	1.29 E+00
		Co-58	* 2.02 E-01	1.38 E+00
		Fe-59	* 7.72 E-01	2.58 E+00
		Co-60	* 3.30 E-01	1.38 E+00
		Zn-65	* 1.44 E+00	2.73 E+00
		Zr-95	* 0.00 E+00	2.80 E+00
		Nb-95	* 4.62 E-01	1.46 E+00
		Cs-134	* 1.24 E+00	1.45 E+00
		Cs-137	* 1.53 E+00	1.51 E+00
		Ba-140	* 2.92 E+00	5.85 E+00
		La-140	* 1.42 E+00	2.50 E+00
		Ra-226	* 1.51 E+01	3.41 E+01
		Th-228	* 2.93 E+00	2.82 E+00
	06/15/98-06/17/98	Be-7	* 5.62 E+00	1.55 E+01
		K-40	* 5.20 E+01	3.47 E+01
		Mn-54	* 2.69 E+00	1.78 E+00
		Co-58	* 1.98 E-01	1.75 E+00
		Fe-59	* 1.51 E-01	3.64 E+00
		Co-60	* 6.20 E-01	1.78 E+00
		Zn-65	* 1.23 E+00	3.74 E+00
		Zr-95	* 1.89 E-01	3.30 E+00
		Nb-95	* 4.06 E-01	1.66 E+00
		Cs-134	* 5.36 E-01	1.91 E+00
		Cs-137	* 1.91 E+00	2.01 E+00
		Ba-140	* 4.61 E-01	5.21 E+00
		La-140	* 3.96 E-01	2.12 E+00
		Ra-226	* 3.37 E+01	3.26 E+01
		Th-228	* 1.61 E+00	2.91 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)
GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	06/17/98 (a)	Be-7	*-2.89 E+00	7.43 E+01
		K-40	*-6.99 E+01	1.13 E+02
		Mn-54	* 3.51 E+00	7.26 E+00
		Co-58	* 2.53 E+00	7.35 E+00
		Fe-59	* 1.11 E+00	1.64 E+01
		Co-60	* 2.91 E+00	7.81 E+00
		Zn-65	*-6.71 E+00	1.61 E+00
		Zr-95	*-2.21 E+00	1.52 E+01
		Nb-95	*-2.19 E-01	7.68 E+00
		Cs-134	* 2.13 E+00	7.94 E+00
		Cs-137	*-2.92 E+00	8.23 E+00
		Ba-140	* 4.07 E+00	2.92 E+01
		La-140	*-3.06 E+00	1.23 E+01
		Ra-226	*-3.13 E+02	1.67 E+02
		Th-228	* 1.18 E+01	1.43 E+01
	06/17/98-06/18/98	Be-7	*-3.51 E+01	6.92 E+01
		K-40	*-2.75 E+01	1.64 E+02
		Mn-54	* 3.29 E-01	7.60 E+00
		Co-58	*-1.85 E+00	7.63 E+00
		Fe-59	*-3.51 E+00	1.50 E+01
		Co-60	*-1.19 E+00	7.82 E+00
		Zn-65	* 1.78 E+01	1.65 E+01
		Zr-95	* 1.45 E+01	1.57 E+01
		Nb-95	* 1.10 E+01	7.95 E+00
		Cs-134	* 2.32 E+00	8.25 E+00
		Cs-137	* 7.47 E+00	8.59 E+00
		Ba-140	*-5.10 E+00	2.48 E+01
		La-140	* 6.59 E+00	9.71 E+00
		Ra-226	*-2.75 E+02	1.34 E+02
		Th-228	* 9.72 E+00	1.22 E+01

(a) Special composite sample.

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)
GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	06/18/98-06/24/98	Be-7	* 2.08 E+00	2.07 E+01
		K-40	*-7.75 E+01	4.13 E+01
		Mn-54	* 6.64 E-01	2.22 E+00
		Co-58	*-1.13 E+00	2.37 E+00
		Fe-59	* 3.84 E-01	4.94 E+00
		Co-60	* 6.60 E-01	2.23 E+00
		Zn-65	* 1.28 E+00	4.38 E+00
		Zr-95	* 2.07 E-01	4.62 E+00
		Nb-95	* 5.13 E-01	2.26 E+00
		Cs-134	*-1.10 E-01	2.40 E+00
		Cs-137	*-1.25 E+00	2.47 E+00
		Ba-140	*-1.83 E+00	9.18 E+00
		La-140	* 2.72 E+00	3.72 E+00
		Ra-226	*-7.43 E+01	4.06 E+01
		Th-228	*-1.33 E+00	3.65 E+00
	06/25/98-07/01/98	Be-7	* 2.41 E+00	1.65 E+01
		K-40	*-1.17 E+02	3.05 E+01
		Mn-54	*-5.87 E-01	1.65 E+00
		Co-58	*-3.03 E+00	1.72 E+00
		Fe-59	* 2.95 E+00	3.70 E+00
		Co-60	* 1.28 E-01	1.66 E+00
		Zn-65	* 3.95 E+00	3.56 E+00
		Zr-95	*-1.20 E+00	3.48 E+00
		Nb-95	* 1.28 E+00	1.76 E+00
		Cs-134	* 9.38 E-01	1.87 E+00
		Cs-137	* 1.54 E+00	1.90 E+00
		Ba-140	* 1.66 E+00	7.13 E+00
		La-140	*-3.02 E+00	2.72 E+00
		Ra-226	*-3.04 E+01	3.34 E+01
		Th-228	*-5.22 E+00	2.84 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)
GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	07/02/98-07/06/98	Be-7	* 9.80 E+00	2.75 E+01
		K-40	*-4.58 E+01	6.11 E+01
		Mn-54	*-3.49 E-01	2.72 E+00
		Co-58	*-9.66 E-01	2.79 E+00
		Fe-59	* 1.15 E+00	5.90 E+00
		Co-60	* 1.71 E-01	2.49 E+00
		Zn-65	* 2.51 E+00	5.88 E+00
		Zr-95	* 4.97 E+00	5.54 E+00
		Nb-95	* 2.86 E-01	2.75 E+00
		Cs-134	* 0.00 E+00	2.95 E+00
		Cs-137	* 0.00 E+00	2.93 E+00
		Ba-140	*-4.75 E+00	1.02 E+01
		La-140	*-6.13 E-01	4.14 E+00
		Ra-226	* 2.80 E+01	5.01 E+01
		Th-228	* 6.75 E+00	4.49 E+00
	07/09/98-07/15/98	Be-7	*-6.18 E+00	2.00 E+01
		K-40	*-1.78 E+02	4.10 E+01
		Mn-54	* 0.00 E+00	2.10 E+00
		Co-58	*-1.16 E+00	2.05 E+00
		Fe-59	*-1.86 E+00	4.48 E+00
		Co-60	* 2.36 E+00	2.17 E+00
		Zn-65	* 7.49 E+00	4.38 E+00
		Zr-95	* 2.85 E+00	4.16 E+00
		Nb-95	* 9.72 E-01	2.15 E+00
		Cs-134	* 1.22 E+00	2.27 E+00
		Cs-137	*-4.32 E-02	2.30 E+00
		Ba-140	*-6.35 E-01	7.53 E+00
		La-140	* 0.00 E+00	2.91 E+00
		Ra-226	*-2.65 E+01	3.96 E+01
		Th-228	*-6.48 E-01	3.50 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)
GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	07/17/98-07/22/98	Be-7	* 0.00 E+00	1.54 E+01
		K-40	* 1.18 E+01	2.18 E+01
		Mn-54	* 4.73 E-01	1.54 E+00
		Co-58	*-1.82 E-01	1.60 E+00
		Fe-59	* 3.60 E+00	3.68 E+00
		Co-60	* 4.53 E-01	1.58 E+00
		Zn-65	* 2.23 E+00	3.29 E+00
		Zr-95	* 1.74 E+00	3.26 E+00
		Nb-95	* 1.95 E+00	1.66 E+00
		Cs-134	*-4.62 E-02	1.72 E+00
		Cs-137	* 1.49 E+00	1.79 E+00
		Ba-140	* 3.70 E+00	7.14 E+00
		La-140	*-6.79 E-01	3.16 E+00
		Ra-226	*-1.70 E+01	3.27 E+01
		Th-228	*-1.57 E+00	2.96 E+00
	07/23/98-07/26/98	Be-7	*-8.72 E-01	1.99 E+01
		K-40	* 1.00 E+01	2.60 E+01
		Mn-54	*-8.47 E-01	1.86 E+00
		Co-58	*-4.83 E-01	1.99 E+00
		Fe-59	*-2.50 E+00	3.85 E+00
		Co-60	* 5.71 E-01	2.03 E+00
		Zn-65	* 2.15 E+00	4.12 E+00
		Zr-95	* 2.25 E+00	4.24 E+00
		Nb-95	* 1.25 E+00	2.10 E+00
		Cs-134	*-2.10 E-01	1.85 E+00
		Cs-137	* 1.48 E+00	2.15 E+00
		Ba-140	*-3.91 E+00	8.39 E+00
		La-140	* 3.89 E-01	3.52 E+00
		Ra-226	*-2.06 E+01	4.90 E+01
		Th-228	*-5.01 E+00	3.89 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)
GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	07/31/98-08/04/98	Be-7	*-4.78 E+00	1.63 E+01
		K-40	*-4.38 E+01	2.33 E+01
		Mn-54	* 2.89 E-01	1.56 E+00
		Co-58	*-1.50 E-01	1.53 E+00
		Fe-59	* 1.18 E+00	3.30 E+00
		Co-60	*-4.19 E-01	1.57 E+00
		Zn-65	*-8.48 E-01	3.27 E+00
		Zr-95	* 1.92 E+00	3.36 E+00
		Nb-95	* 4.75 E-01	1.58 E+00
		Cs-134	* 1.67 E+00	1.72 E+00
		Cs-137	* 4.62 E-01	1.77 E+00
		Ba-140	* 1.55 E+00	6.03 E+00
		La-140	* 0.00 E+00	2.39 E+00
		Ra-226	*-8.07 E+01	3.86 E+01
		Th-228	*-2.26 E+00	3.27 E+00
	08/05/98-08/11/98	Be-7	* 9.81 E+00	1.98 E+01
		K-40	*-6.02 E+00	2.65 E+01
		Mn-54	* 6.51 E-01	2.07 E+00
		Co-58	* 3.78 E-01	2.10 E+00
		Fe-59	* 2.56 E+00	4.26 E+00
		Co-60	* 1.29 E+00	2.17 E+00
		Zn-65	* 5.01 E+00	4.37 E+00
		Zr-95	*-1.45 E-01	3.97 E+00
		Nb-95	* 2.08 E+00	2.09 E+00
		Cs-134	* 0.00 E+00	2.08 E+00
		Cs-137	* 2.53 E+00	2.38 E+00
		Ba-140	*-5.87 E+00	7.96 E+00
		La-140	*-1.61 E+00	3.51 E+00
		Ra-226	*-7.45 E+01	4.61 E+01
		Th-228	*-5.15 E+00	3.91 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)
GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	08/11/98-08/16/98	Be-7	* 1.31 E+01	1.59 E+01
		K-40	*-3.01 E+01	2.21 E+01
		Mn-54	*-1.22 E+00	1.58 E+00
		Co-58	*-8.12 E-01	1.61 E+00
		Fe-59	* 2.62 E+00	3.28 E+00
		Co-60	* 4.62 E-01	1.73 E+00
		Zn-65	* 3.04 E-01	3.31 E+00
		Zr-95	* 1.07 E+00	3.27 E+00
		Nb-95	* 2.04 E-01	1.74 E+00
		Cs-134	*-1.32 E-01	1.84 E+00
		Cs-137	*-4.36 E+00	2.01 E+00
		Ba-140	* 1.31 E+00	6.61 E+00
		La-140	* 4.38 E-01	2.87 E+00
		Ra-226	*-5.44 E+00	3.80 E+01
		Th-228	* 4.97 E+00	3.10 E+00
	08/17/98-08/21/98	Be-7	* 1.01 E+01	1.73 E+01
		K-40	*-8.27 E+00	2.50 E+01
		Mn-54	*-1.99 E-01	1.69 E+00
		Co-58	*-1.02 E+00	1.61 E+00
		Fe-59	* 7.85 E-01	3.63 E+00
		Co-60	*-5.72 E-01	1.61 E+00
		Zn-65	* 7.55 E-01	3.30 E+00
		Zr-95	* 1.25 E+00	3.43 E+00
		Nb-95	* 1.70 E+00	1.79 E+00
		Cs-134	*-3.75 E-01	1.77 E+00
		Cs-137	*-1.42 E-01	1.83 E+00
		Ba-140	* 9.58 E-01	8.47 E+00
		La-140	* 9.95 E-01	3.35 E+00
		Ra-226	*-5.84 E+01	4.01 E+01
		Th-228	*-7.95 E+00	3.31 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)
GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	08/24/98-08/31/98	Be-7	* 1.56 E+01	1.64 E+01
		K-40	*-2.89 E+01	2.25 E+01
		Mn-54	* 1.46 E+00	1.66 E+00
		Co-58	* 0.00 E+00	1.60 E+00
		Fe-59	*-1.34 E+00	3.54 E+00
		Co-60	*-5.73 E-01	1.66 E+00
		Zn-65	*-2.83 E+00	3.26 E+00
		Zr-95	* 5.86 E-01	3.34 E+00
		Nb-95	* 2.28 E+00	1.74 E+00
		Cs-134	* 0.00 E+00	1.81 E+00
		Cs-137	*-4.34 E+00	2.04 E+00
		Ba-140	*-7.36 E-01	7.71 E+00
		La-140	*-2.58 E+00	3.04 E+00
		Ra-226	* 9.07 E-02	3.80 E+01
		Th-228	* 2.17 E+00	3.23 E+00
	09/03/98-09/10/98	Be-7	* 2.08 E+00	1.83 E+01
		K-40	*-4.43 E+01	2.71 E+01
		Mn-54	*-1.97 E-01	1.90 E+00
		Co-58	* 1.55 E+00	1.88 E+00
		Fe-59	*-1.28 E+00	4.05 E+00
		Co-60	*-1.14 E+00	2.02 E+00
		Zn-65	*-3.35 E-01	3.64 E+00
		Zr-95	* 1.93 E+00	3.85 E+00
		Nb-95	* 2.36 E+00	1.89 E+00
		Cs-134	* 3.55 E-01	2.14 E+00
		Cs-137	* 6.24 E-01	2.14 E+00
		Ba-140	* 8.73 E-01	6.67 E+00
		La-140	* 9.59 E-01	2.75 E+00
		Ra-226	*-4.74 E+01	4.54 E+01
		Th-228	* 1.75 E+00	3.79 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)
GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	09/10/98-09/17/98	Be-7	*-1.44 E+00	1.35 E+01
		K-40	*-4.30 E+01	2.02 E+01
		Mn-54	* 1.63 E+00	1.42 E+00
		Co-58	* 9.34 E-01	1.37 E+00
		Fe-59	* 4.42 E-01	2.79 E+00
		Co-60	*-9.16 E-01	1.39 E+00
		Zn-65	* 1.03 E+00	2.94 E+00
		Zr-95	* 3.71 E-01	2.77 E+00
		Nb-95	* 1.35 E+00	1.45 E+00
		Cs-134	* 1.22 E+00	1.59 E+00
		Cs-137	*-3.05 E+00	1.81 E+00
		Ba-140	*-1.48 E+00	4.54 E+00
		La-140	* 4.54 E-01	1.90 E+00
		Ra-226	*-9.57 E+00	3.37 E+01
		Th-228	*-5.26 E+00	2.71 E+00
	09/17/98-09/20/98	Be-7	*-7.75 E+00	2.40 E+01
		K-40	*-1.80 E+02	5.15 E+01
		Mn-54	*-1.47 E+00	2.34 E+00
		Co-58	* 1.33 E+00	2.63 E+00
		Fe-59	* 2.74 E+00	5.66 E+00
		Co-60	* 0.00 E+00	2.52 E+00
		Zn-65	*-2.51 E-01	5.63 E+00
		Zr-95	* 4.09 E-01	5.27 E+00
		Nb-95	* 7.09 E-01	2.63 E+00
		Cs-134	*-8.43 E-01	2.63 E+00
		Cs-137	* 4.16 E-01	2.54 E+00
		Ba-140	*-1.88 E+00	1.21 E+01
		La-140	* 6.79 E-01	4.50 E+00
		Ra-226	*-1.00 E+01	4.50 E+01
		Th-228	* 7.03 E+00	4.02 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)
GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	09/24/98-09/28/98	Be-7	* 1.47 E+01	2.20 E+01
		K-40	*-2.69 E+01	2.75 E+01
		Mn-54	*-2.88 E+00	2.01 E+00
		Co-58	*-1.32 E+00	2.24 E+00
		Fe-59	* 1.57 E+00	4.62 E+00
		Co-60	* 1.33 E+00	2.17 E+00
		Zn-65	*-1.08 E+00	4.32 E+00
		Zr-95	* 4.48 E-01	4.49 E+00
		Nb-95	*-2.22 E+00	2.05 E+00
		Cs-134	* 2.09 E+00	2.24 E+00
		Cs-137	* 6.48 E-02	2.18 E+00
		Ba-140	*-6.02 E+00	1.23 E+01
		La-140	* 2.64 E+00	5.84 E+00
		Ra-226	*-1.49 E+01	4.43 E+01
		Th-228	*-3.44 E+00	3.96 E+00
	10/01/98-10/08/98	Be-7	* 7.46 E+00	1.80 E+01
		K-40	* 4.40 E+00	2.91 E+01
		Mn-54	*-3.94 E-01	1.81 E+00
		Co-58	* 4.03 E-01	1.87 E+00
		Fe-59	* 1.12 E+00	3.81 E+00
		Co-60	*-2.93 E-01	2.21 E+00
		Zn-65	*-3.35 E+00	3.94 E+00
		Zr-95	*-6.42 E-01	3.90 E+00
		Nb-95	* 1.14 E+00	2.02 E+00
		Cs-134	* 0.00 E+00	2.10 E+00
		Cs-137	* 1.88 E-01	2.02 E+00
		Ba-140	* 1.55 E+00	6.67 E+00
		La-140	*-1.73 E+00	2.90 E+00
		Ra-226	*-1.40 E+01	4.59 E+01
		Th-228	* 6.62 E+00	3.87 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)
GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	10/09/98-10/18/98	Be-7	*-7.83 E+00	1.50 E+01
		K-40	* 1.30 E+01	2.22 E+01
		Mn-54	* 1.38 E+00	1.48 E+00
		Co-58	* 5.63 E-02	1.61 E+00
		Fe-59	*-2.61 E-01	2.92 E+00
		Co-60	* 1.45 E+00	1.70 E+00
		Zn-65	* 1.39 E-01	3.03 E+00
		Zr-95	* 1.94 E+00	3.22 E+00
		Nb-95	* 1.82 E+00	1.58 E+00
		Cs-134	* 3.61 E-01	1.81 E+00
		Cs-137	* 4.28 E-01	1.74 E+00
		Ba-140	* 4.50 E+00	5.62 E+00
		La-140	*-1.21 E-01	2.42 E+00
		Ra-226	*-8.89 E+00	4.10 E+01
		Th-228	*-2.67 E+00	3.42 E+00
	10/19/98-10/20/98	Be-7	* 7.10 E+00	1.52 E+01
		K-40	*-4.26 E+01	2.17 E+01
		Mn-54	* 3.69 E-01	1.59 E+00
		Co-58	*-2.33 E-01	1.59 E+00
		Fe-59	*-1.32 E+00	3.16 E+00
		Co-60	* 7.63 E-01	1.69 E+00
		Zn-65	* 5.91 E-01	3.19 E+00
		Zr-95	*-2.22 E+00	3.16 E+00
		Nb-95	*-3.08 E-01	1.58 E+00
		Cs-134	* 3.50 E-01	1.85 E+00
		Cs-137	*-2.20 E-01	1.77 E+00
		Ba-140	* 2.20 E+00	4.98 E+00
		La-140	*-5.10 E-01	2.30 E+00
		Ra-226	*-4.58 E+01	3.67 E+01
		Th-228	*-7.65 E+00	3.14 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)
GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	10/21/98-10/29/98	Be-7	* 6.84 E+00	1.97 E+01
		K-40	*-2.61 E+01	4.47 E+01
		Mn-54	*-1.73 E+00	2.03 E+00
		Co-58	* 3.62 E-01	2.16 E+00
		Fe-59	* 2.43 E+00	4.66 E+00
		Co-60	* 1.75 E+00	2.13 E+00
		Zn-65	*-5.59 E-01	4.79 E+00
		Zr-95	* 1.30 E+00	4.43 E+00
		Nb-95	* 2.32 E+00	2.20 E+00
		Cs-134	* 9.15 E-01	2.40 E+00
		Cs-137	* 6.84 E-01	2.38 E+00
		Ba-140	*-1.95 E+00	7.17 E+00
		La-140	* 3.49 E+00	2.76 E+00
		Ra-226	*-5.26 E+01	3.97 E+01
		Th-228	*-1.86 E+00	3.58 E+00
	11/06/98-11/12/98	Be-7	*-4.29 E+00	1.68 E+01
		K-40	*-1.85 E+02	3.21 E+01
		Mn-54	*-1.32 E+00	1.77 E+00
		Co-58	*-5.69 E-01	1.86 E+00
		Fe-59	* 4.24 E+00	3.88 E+00
		Co-60	* 1.43 E+00	1.77 E+00
		Zn-65	* 0.00 E+00	3.86 E+00
		Zr-95	* 1.17 E+00	3.73 E+00
		Nb-95	* 1.41 E+00	1.90 E+00
		Cs-134	*-1.36 E+00	2.05 E+00
		Cs-137	* 1.23 E+00	2.05 E+00
		Ba-140	*-1.90 E+00	6.63 E+00
		La-140	* 9.97 E-01	2.64 E+00
		Ra-226	*-3.36 E+01	3.61 E+01
		Th-228	*-7.61 E-01	3.18 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)
GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	11/12/98-11/22/98	Be-7	*-7.27 E+00	1.60 E+01
		K-40	* 5.18 E+00	2.31 E+01
		Mn-54	* 2.02 E-01	1.55 E+00
		Co-58	*-3.42 E-01	1.63 E+00
		Fe-59	*-7.09 E-01	3.49 E+00
		Co-60	* 2.69 E+00	1.59 E+00
		Zn-65	* 7.06 E-01	3.50 E+00
		Zr-95	* 1.24 E+00	3.19 E+00
		Nb-95	* 1.92 E+00	1.67 E+00
		Cs-134	*-1.35 E+00	1.70 E+00
		Cs-137	*-1.42 E+00	1.95 E+00
		Ba-140	*-1.10 E+00	6.56 E+00
		La-140	* 1.26 E+00	3.07 E+00
		Ra-226	*-1.30 E+02	3.62 E+01
		Th-228	*-5.23 E+00	2.92 E+00
	11/23/98-12/01/98	Be-7	*-7.81 E-01	1.63 E+01
		K-40	*-1.85 E+01	3.59 E+01
		Mn-54	* 9.83 E-01	1.65 E+00
		Co-58	*-6.22 E-01	1.75 E+00
		Fe-59	*-1.81 E+00	3.55 E+00
		Co-60	* 2.20 E+00	1.91 E+00
		Zn-65	* 5.02 E+00	3.71 E+00
		Zr-95	* 1.31 E+00	3.53 E+00
		Nb-95	* 2.54 E+00	1.82 E+00
		Cs-134	*-7.34 E-01	1.93 E+00
		Cs-137	* 2.31 E+00	1.94 E+00
		Ba-140	* 3.72 E+00	5.78 E+00
		La-140	* 5.95 E-01	2.47 E+00
		Ra-226	*-4.22 E+01	3.33 E+01
		Th-228	* 5.12 E+00	2.99 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)
GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	12/01/98-12/08/98	Be-7	* 3.91 E+00	1.95 E+01
		K-40	*-6.56 E+01	4.26 E+01
		Mn-54	*-1.47 E+00	2.12 E+00
		Co-58	* 9.48 E-01	2.10 E+00
		Fe-59	* 2.33 E+00	4.53 E+00
		Co-60	* 1.39 E+00	2.38 E+00
		Zn-65	*-3.45 E+00	4.99 E+00
		Zr-95	*-3.42 E+00	4.43 E+00
		Nb-95	* 9.96 E-02	2.17 E+00
		Cs-134	*-6.26 E-01	2.44 E+00
		Cs-137	* 2.42 E+00	2.40 E+00
		Ba-140	* 1.46 E+00	6.61 E+00
		La-140	* 5.44 E-01	2.55 E+00
		Ra-226	*-1.83 E+01	4.16 E+01
		Th-228	* 1.83 E+00	3.61 E+00
	12/08/98-12/09/98	Be-7	* 1.00 E+01	2.71 E+01
		K-40	*-1.01 E+02	7.33 E+01
		Mn-54	* 5.64 E-01	2.99 E+00
		Co-58	*-3.13 E-01	2.94 E+00
		Fe-59	* 4.05 E+00	6.24 E+00
		Co-60	*-1.09 E+01	3.03 E+00
		Zn-65	* 1.27 E+00	6.64 E+00
		Zr-95	*-6.08 E+00	6.03 E+00
		Nb-95	* 3.43 E+00	3.06 E+00
		Cs-134	* 2.73 E+00	2.28 E+00
		Cs-137	* 1.03 E+00	3.38 E+00
		Ba-140	* 2.07 E+00	9.00 E+00
		La-140	*-2.35 E+00	3.31 E+00
		Ra-226	*-1.14 E+02	5.99 E+01
		Th-228	*-3.35 E+00	5.06 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)
GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	12/09/98-12/19/98	Be-7	* 1.21 E+01	1.86 E+01
		K-40	* 8.74 E-01	2.64 E+01
		Mn-54	*-8.51 E-01	1.94 E+00
		Co-58	*-1.03 E+00	1.99 E+00
		Fe-59	* 2.61 E-01	4.11 E+00
		Co-60	* 1.21 E+00	2.13 E+00
		Zn-65	* 1.51 E+00	4.28 E+00
		Zr-95	*-4.25 E+00	3.85 E+00
		Nb-95	* 2.05 E-01	2.10 E+00
		Cs-134	* 1.72 E+00	2.18 E+00
		Cs-137	* 3.06 E+00	2.18 E+00
		Ba-140	*-1.64 E+00	6.64 E+00
		La-140	*-2.09 E+00	2.96 E+00
		Ra-226	* 1.01 E+01	4.12 E+01
		Th-228	*-3.80 E+00	3.60 E+00
	12/21/98-12/29/98	Be-7	*-5.88 E+00	2.02 E+01
		K-40	*-2.15 E+01	4.34 E+01
		Mn-54	* 1.87 E-01	2.22 E+00
		Co-58	* 1.94 E-01	2.17 E+00
		Fe-59	* 0.00 E+00	4.56 E+00
		Co-60	*-6.08 E-01	2.14 E+00
		Zn-65	* 1.06 E+00	4.32 E+00
		Zr-95	* 1.86 E+00	4.40 E+00
		Nb-95	*-4.60 E-02	2.23 E+00
		Cs-134	* 5.58 E-01	2.43 E+00
		Cs-137	* 1.24 E+00	2.36 E+00
		Ba-140	*-2.29 E+00	7.89 E+00
		La-140	* 5.76 E-01	3.10 E+00
		Ra-226	* 1.24 E+01	3.94 E+01
		Th-228	* 6.24 E+00	3.58 E+00

* Denotes a result less than the detection limit.

TABLE B-2.2

GAMMA SPECTROMETRY OF STORM DRAIN WATER - SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
<u>Station 101 - Outfall</u>						
Be-7	(I)	2.56E+00	-3.51E+01	1.70E+01	48	0
K-40	(I)	-5.37E+01	-2.26E+02	1.30E+01	48	0
Mn-54	(I)	1.84E-01	-2.88E+00	3.51E+00	48	0
Co-58	(I)	-3.39E-01	-3.03E+00	2.53E+00	48	0
Fe-59	(I)	7.94E-01	-3.51E+00	4.72E+00	48	0
Co-60	(I)	3.53E-01	-1.09E+01	2.91E+00	48	0
Zn-65	(I)	1.04E+00	-6.71E+00	1.78E+01	48	0
Zr-95	(I)	4.00E-01	-6.38E+00	1.45E+01	48	0
Nb-95	(I)	1.20E+00	-3.19E+00	1.10E+01	48	0
Cs-134	(I)	1.24E-01	-7.57E+00	2.73E+00	48	0
Cs-137	(I)	7.78E-01	-4.36E+00	7.47E+00	48	0
Ba-140	(I)	3.72E-01	-6.71E+00	7.53E+00	48	0
La-140	(I)	1.33E-03	-3.32E+00	6.59E+00	48	0
Ra-226	(I)	-5.84E+01	-3.13E+02	3.90E+01	48	0
Th-228	(I)	-1.81E+00	-1.73E+01	1.18E+01	48	0

(I) Indicator Stations

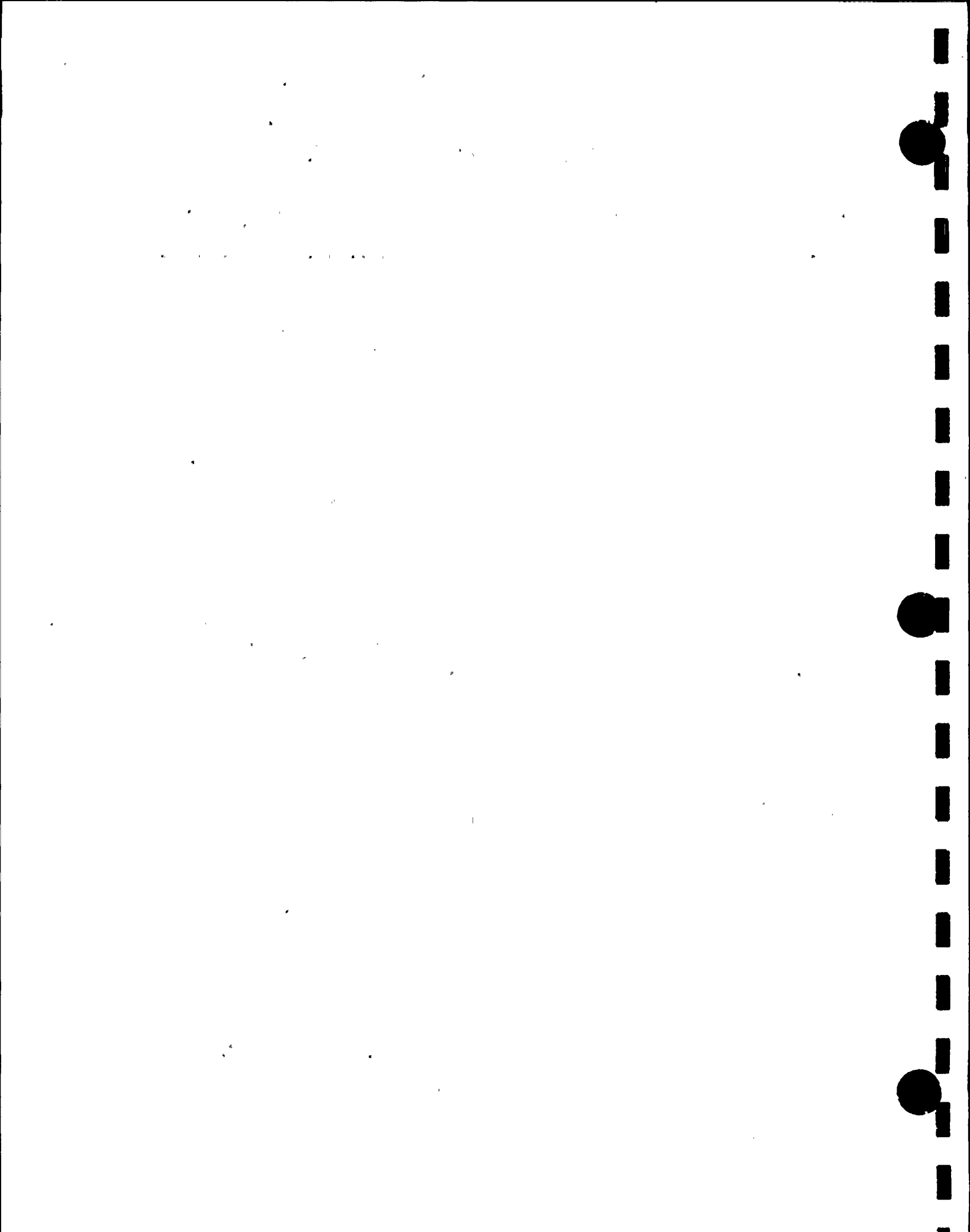


TABLE B-3.1
GROSS BETA IN STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
101	12/29/97-01/07/98	* 2.8 E+00	2.08 E+00
	01/16/98-01/26/98	* 2.2 E+00	2.01 E+00
	01/29/98-02/10/98	* 1.8 E+00	2.05 E+00
	02/10/98-02/16/98	* 1.8 E+00	2.06 E+00
	02/19/98-02/26/98	* 1.9 E+00	1.70 E+00
	03/02/98	9.3 E+00	2.8 E+00
	03/03/98	7.3 E+00	2.5 E+00
	03/05/98-03/10/98	3.6 E+00	1.9 E+00
	03/13/98-03/19/98	* 2.0 E+00	1.96 E+00
	03/23/98-04/03/98	2.6 E+00	1.7 E+00
	04/09/98-04/17/98	3.7 E+00	2.2 E+00
	04/21/98-04/23/98	* 1.7 E+00	1.68 E+00
	04/23/98-04/24/98	5.2 E+00	2.2 E+00
	04/24/98-05/03/98	* 1.9 E+00	2.02 E+00
	05/07/98-05/09/98	3.1 E+00	2.1 E+00
	05/13/98-05/15/98	* 2.3 E+00	2.00 E+00
	05/19/98-05/23/98	* 2.9 E+00	2.07 E+00
	05/28/98-06/03/98	3.2 E+00	1.9 E+00
	06/05/98-06/10/98	3.4 E+00	2.1 E+00
	06/15/98-06/17/98	* 2.8 E+00	2.05 E+00
	06/17/98-06/18/98	* 4.2 E+00	5.42 E+00
	06/17/98 (a)		
	06/18/98-06/24/98	3.8 E+00	1.9 E+00
	06/25/98-07/01/98	* 1.9 E+00	1.98 E+00
	07/02/98-07/06/98	* 3.0 E-01	1.73 E+00
	07/09/98-07/15/98	3.0 E+00	2.1 E+00
	07/17/98-07/22/98	4.7 E+00	2.0 E+00
	07/23/98-07/26/98	4.2 E+00	1.9 E+00
	07/31/98-08/04/98	* 2.8 E+00	2.47 E+00
	08/05/98-08/11/98	* 1.6 E+00	1.89 E+00
	08/11/98-08/16/98	3.0 E+00	2.0 E+00
	08/17/98-08/21/98	* 2.5 E+00	2.01 E+00
	08/24/98-08/31/98	* 2.2 E+00	1.89 E+00
	09/03/98-09/10/98	* 2.6 E+00	2.06 E+00
	09/10/98-09/17/98	* 3.4 E+00	2.42 E+00
	09/17/98-09/20/98	* 3.2 E+00	2.41 E+00
	09/24/98-09/28/98	5.6 E+00	2.5 E+00
	10/01/98-10/08/98	* 3.4 E+00	2.41 E+00
	10/09/98-10/18/98	4.8 E+00	2.1 E+00
	10/19/98-10/20/98	3.5 E+00	2.0 E+00
	10/21/98-10/29/98	* 1.7 E+00	2.05 E+00
	11/06/98-11/12/98	4.6 E+00	2.3 E+00
	11/12/98-11/22/98	5.8 E+00	2.3 E+00

(a) Grab sample; gross beta analysis not performed.

* Denotes a result less than the detection limit.

TABLE B-3.1 (Cont.)
GROSS BETA IN STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
101	11/23/98-12/01/98	3.9 E+00	2.1 E+00
	12/01/98-12/08/98	* 2.1 E+00	1.88 E+00
	12/08/98-12/09/98	4.1 E+00	2.0 E+00
	12/09/98-12/18/98	4.7 E+00	2.0 E+00
	12/21/98-12/29/98	* 5.8 E-01	5.61 E-01

* Denotes a result less than the detection limit.

TABLE B-3.2

GROSS BETA IN STORM DRAIN WATER - SUMMARY

Results in pCi/liter

NUCLIDE	AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
<u>Station 101 - Outfall</u>					
Gross Beta (I)	3.27E+00	3.0E-01	9.3E+00	47	22

(I) Indicator Stations

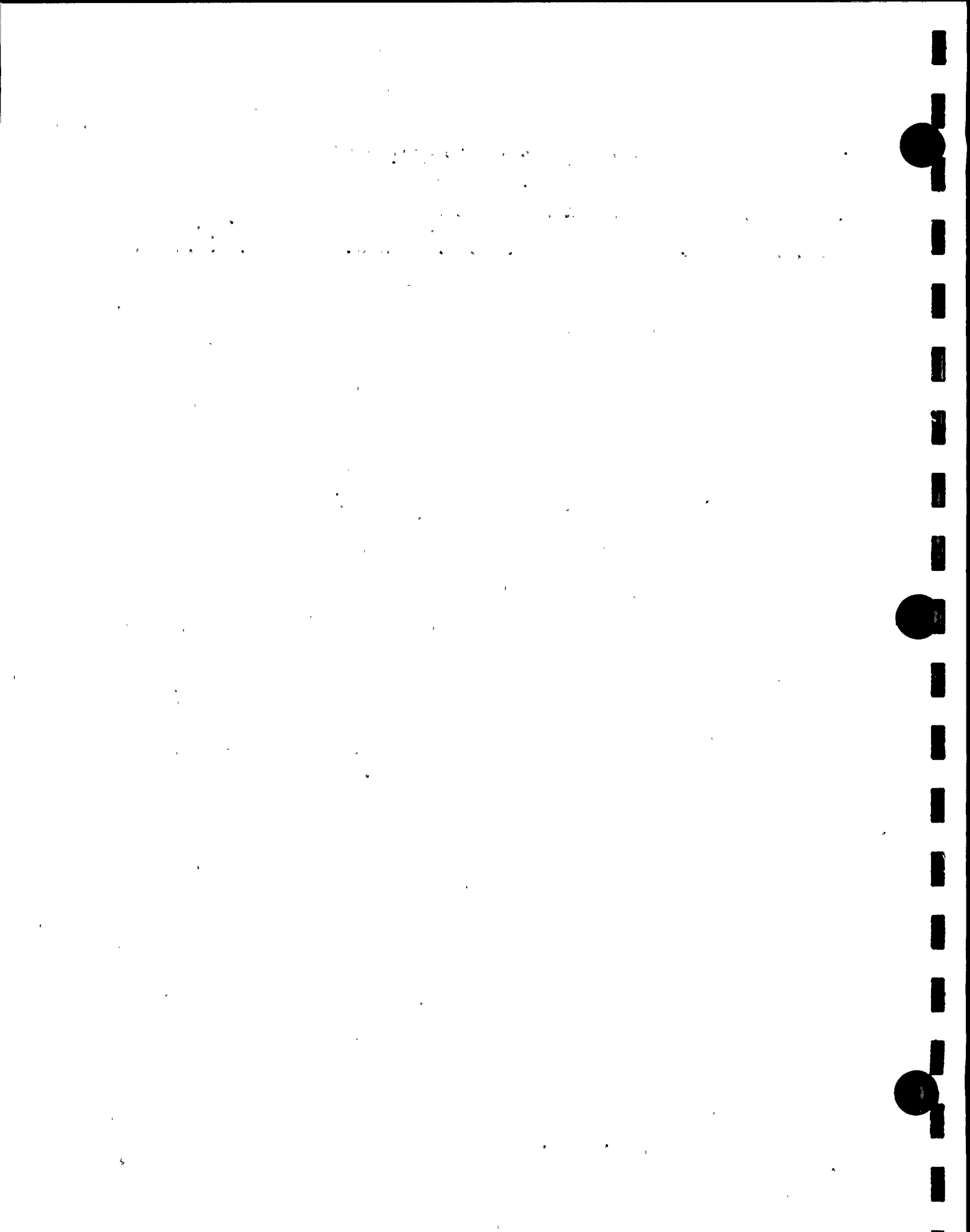


TABLE B-4.1
TRITIUM IN STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
101	12/29/97-01/07/98	1.2 E+03	2.0 E+02
	01/16/98-01/26/98	1.5 E+03	2.0 E+02
	01/29/98-02/10/98	9.5 E+02	2.3 E+02
	02/10/98-02/16/98	1.1 E+03	2.0 E+02
	02/19/98-02/26/98	3.8 E+02	1.0 E+02
	03/02/98 (a)	* 1.2 E+02	9.1 E+01
	03/03/98 (a)	* 5.9 E+01	8.8 E+01
	03/05/98-03/10/98	* 7.1 E+00	8.5 E+01
	03/13/98-03/19/98	*-2.3 E+00	5.9 E+01
	03/23/98-04/03/98	2.9 E+02	1.0 E+02
	04/09/98-04/17/98	* 2.8 E+01	9.6 E+01
	04/21/98-04/23/98	* 2.6 E+01	9.21 E+01
	04/23/98-04/24/98	1.7 E+02	1.0 E+02
	04/24/98-05/03/98	* 1.2 E+02	9.65 E+01
	05/07/98-05/09/98	*-7.1 E+00	8.36 E+01
	05/13/98-05/15/98	* 7.0 E+01	9.26 E+01
	05/19/98-05/23/98	* 2.8 E+01	8.48 E+01
	05/28/98-06/03/98	*-2.8 E+01	9.56 E+01
	06/05/98-06/10/98	*-3.8 E+01	9.51 E+01
	06/15/98-06/17/98	* 2.4 E+00	9.38 E+01
	06/17/98 (b)		
	06/17/98-06/18/98 (c)		
	06/18/98-06/24/98	*-4.7 E+01	8.92 E+01
	06/25/98-07/01/98	* 2.5 E+00	9.61 E+00
	07/02/98-07/06/98	*-5.2 E+01	8.82 E+01
	07/09/98-07/15/98	* 5.5 E+01	9.16 E+01
	07/17/98-07/22/98	* 7.3 E+01	8.65 E+01
	07/23/98-07/26/98	* 2.8 E+01	8.59 E+01
	07/31/98-08/04/98	2.5 E+02	1.0 E+02
	08/05/98-08/11/98	* 4.0 E+01	9.11 E+01
	08/11/98-08/16/98	*-4.3 E+01	9.02 E+01
	08/17/98-08/21/98	* 5.8 E+01	8.97 E+01
	08/24/98-08/31/98	1.6 E+02	9.0 E+01
	09/03/98-09/10/98	* 9.0 E+01	9.95 E+01
	09/10/98-09/17/98	* 8.5 E+01	1.70 E+02
	09/17/98-09/20/98	* 1.0 E+02	1.71 E+02
	09/24/98-09/28/98	3.0 E+02	1.8 E+02
	10/01/98-10/08/98	3.7 E+02	1.8 E+02
	10/09/98-10/18/98	* 4.1 E+01	1.05 E+02
	10/19/98-10/20/98	2.7 E+02	1.1 E+02
	10/21/98-10/29/98	* 8.8 E+01	1.76 E+02

(a) Grab sample

(b) Grab sample; tritium analysis not performed.

(c) Tritium analysis not performed.

* Denotes a result less than the detection limit.

TABLE B-4.1 (Cont.)
TRITIUM IN STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
101	11/06/98-11/12/98	6.0 E+02	1.3 E+02
	11/12/98-11/22/98	4.5 E+02	1.8 E+02
	11/23/98-12/01/98	5.9 E+02	1.8 E+02
	12/01/98-12/08/98	5.4 E+02	1.3 E+02
	12/08/98-12/09/98	2.1 E+02	1.1 E+02
	12/09/98-12/19/98	1.0 E+03	1.0 E+02
	12/21/98-12/29/98	3.7 E+03	2.0 E+02

TABLE B-4.2

TRITIUM IN STORM DRAIN WATER - SUMMARY

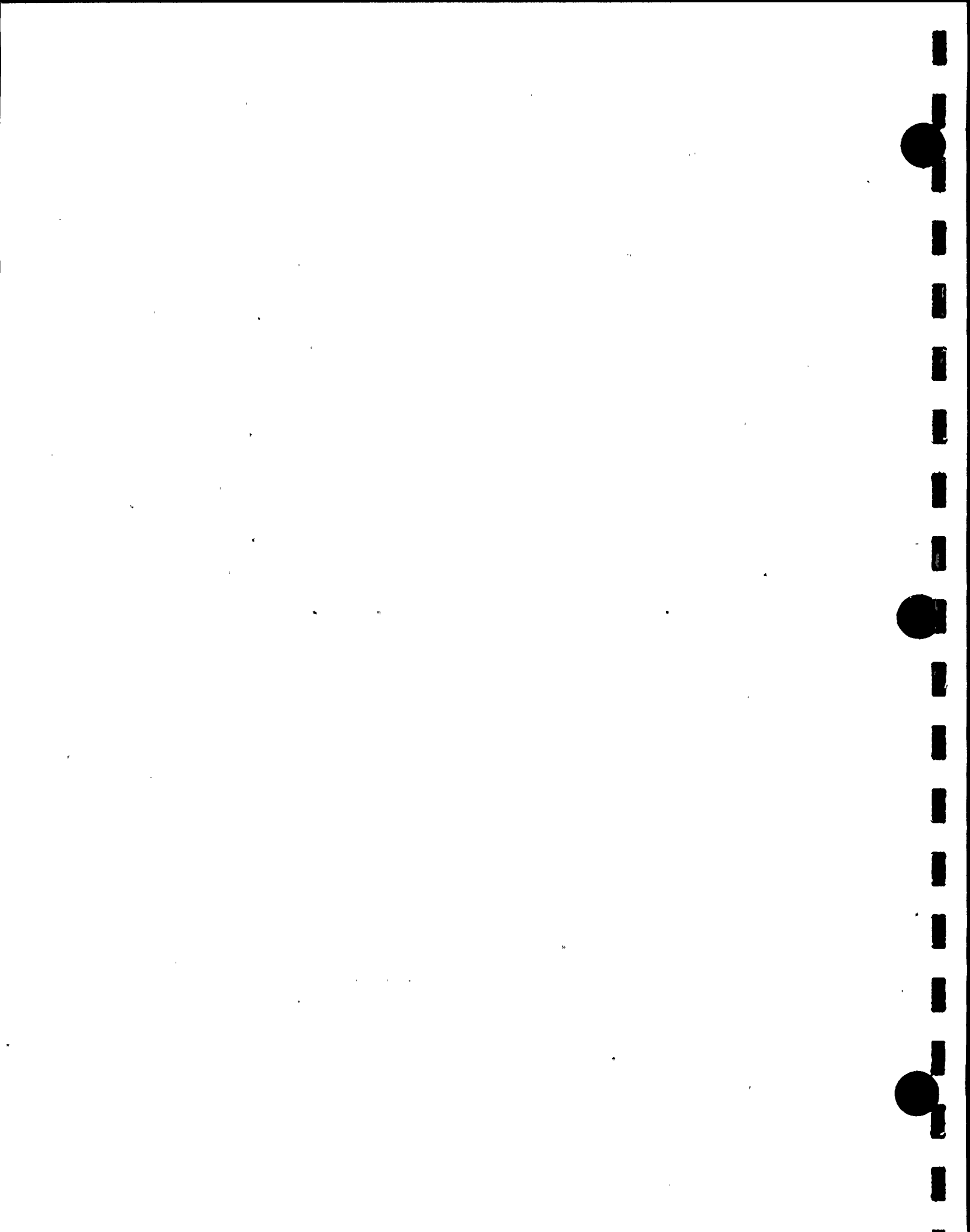
Results in pCi/liter

NUCLIDE	AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
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Station 101 - Outfall

H-3	(I)	3.25E+02	-5.2E+01	3.7E+03	46	19
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(I) Indicator Stations



STORM DRAIN VEGETATION RESULTS

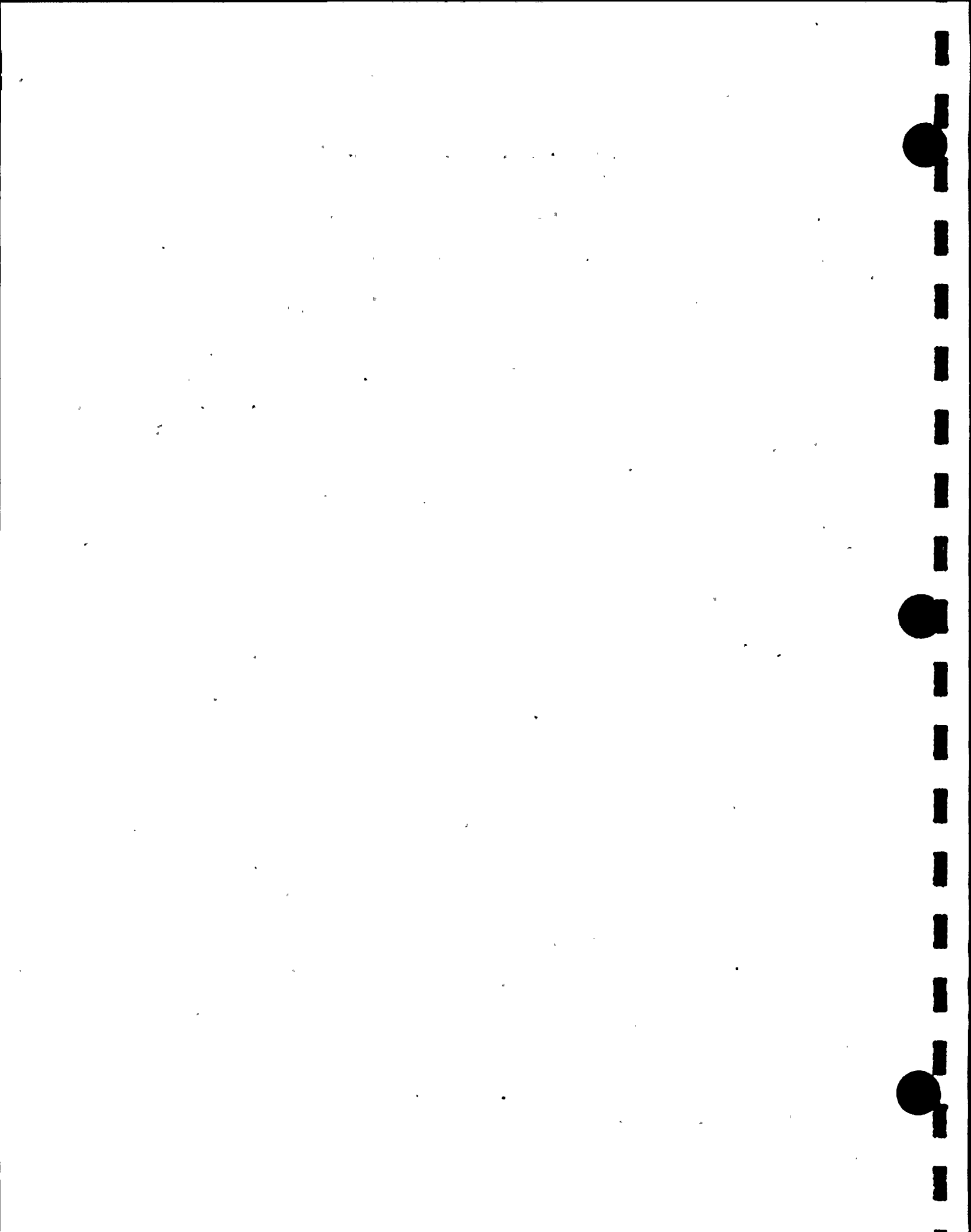


TABLE B-7.1
GAMMA SPECTROMETRY OF STORM DRAIN VEGETATION

Results in pCi/kilogram

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	08/17/98	Be-7	* 1.23 E+02	1.25 E+02
		K-40	3.02 E+03	2.60 E+02
		Mn-54	* 2.24 E+00	1.28 E+01
		Co-58	* 1.05 E+00	1.32 E+01
		Fe-59	* 2.43 E+00	2.83 E+01
		Co-60	*-3.78 E+00	1.26 E+01
		Zn-65	* 2.68 E+01	2.85 E+01
		Zr-95	* 6.59 E+00	2.59 E+01
		Nb-95	* 1.75 E+01	1.34 E+01
		Cs-134	*-1.48 E+01	1.38 E+01
		Cs-137	*-1.21 E+00	1.42 E+01
		Ba-140	*-4.97 E+00	5.28 E+01
		La-140	*-5.87 E+00	1.94 E+01
		Ra-226	*-3.21 E+01	2.38 E+02
		Th-228	* 4.44 E+01	2.08 E+01

* Denotes a result less than the detection limit.

TABLE B-7.2

GAMMA SPECTROMETRY OF STORM DRAIN VEGETATION - SUMMARY

Results in pCi/kilogram

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Be-7	(I)	1.23E+02	1.23E+02	1.23E+02	1	0
K-40	(I)	3.02E+03	3.02E+03	3.02E+03	1	1
Mn-54	(I)	2.24E+00	2.24E+00	2.24E+00	1	0
Co-60	(I)	-3.78E+00	-3.78E+00	-3.78E+00	1	0
Co-58	(I)	1.05E+00	1.05E+00	1.05E+00	1	0
Cs-134	(I)	-1.48E+01	-1.48E+01	-1.48E+01	1	0
Cs-137	(I)	-1.21E+00	-1.21E+00	-1.21E+00	1	0
Nb-95	(I)	1.75E+01	1.75E+01	1.75E+01	1	0
Zr-95	(I)	6.59E+00	6.59E+00	6.59E+00	1	0
Zn-65	(I)	2.68E+01	2.68E+01	2.68E+01	1	0
Fe-59	(I)	2.43E+00	2.43E+00	2.43E+00	1	0
Ba-140	(I)	-4.97E+00	-4.97E+00	-4.97E+00	1	0
La-140	(I)	-5.87E+00	-5.87E+00	-5.87E+00	1	0

(I) Indicator Stations

TABLE B-5.1
GAMMA SPECTROMETRY OF STORM DRAIN SEDIMENT

Results in pCi/kilogram

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	03/25/98	K-40	4.49 E+03	1.79 E+02
		Co-57	*-4.27 E+00	5.32 E+00
		Co-60	2.07 E+02	1.36 E+01
		Zn-65	* 9.05 E+00	1.50 E+01
		Co-58	*-7.10 E+00	5.68 E+00
		Mn-54	* 3.06 E+00	5.78 E+00
		Cs-134	* 5.17 E+00	6.44 E+00
		Cs-137	3.80 E+01	8.55 E+00
		Ce-141	* 1.51 E+00	1.00 E+01
		Ra-226	8.10 E+02	1.55 E+02
		Eu-152	* 3.64 E+01	2.66 E+01
		Th-228	3.63 E+02	1.41 E+01
	06/18/98	K-40	5.22 E+03	1.89 E+02
		Co-57	*-2.07 E+00	5.26 E+00
		Co-60	1.40 E+02	1.18 E+01
		Zn-65	* 5.63 E-01	1.31 E+01
		Co-58	*-8.68 E+00	5.23 E+00
		Mn-54	* 1.12 E-01	5.73 E+00
		Cs-134	* 1.92 E+01	6.39 E+00
		Cs-137	4.44 E+01	8.54 E+00
		Ce-141	* 6.72 E+00	9.30 E+00
		Ra-226	8.41 E+02	1.50 E+02
		Eu-152	* 2.23 E+01	2.67 E+01
		Th-228	4.34 E+02	1.85 E+01

* Denotes a result less than the detection limit.

TABLE B-5.2

GAMMA SPECTROMETRY OF STORM DRAIN SEDIMENT - SUMMARY

Results in pCi/kilogram

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
<u>Station 101 - Outfall</u>						
K-40	(I)	4.86E+03	4.49E+03	5.22E+03	2	2
Mn-54	(I)	1.59E+00	1.12E-01	3.06E+00	2	0
Co-57	(I)	-3.17E+00	-4.27E+00	-2.07E+00	2	0
Co-58	(I)	-7.89E+00	-8.68E+00	-7.10E+00	2	0
Co-60	(I)	1.74E+02	1.40E+02	2.07E+02	2	2
Zn-65	(I)	4.81E+00	5.63E-01	9.05E+00	2	0
Cs-134	(I)	1.22E+01	5.17E+00	1.92E+01	2	0
Cs-137	(I)	4.12E+01	3.80E+01	4.44E+01	2	2
Ce-141	(I)	4.12E+00	1.51E+00	6.72E+00	2	0
Ra-226	(I)	8.26E+02	8.10E+02	8.41E+02	2	2
Eu-152	(I)	2.94E+01	2.23E+01	3.64E+01	2	0
Th-228	(I)	3.99E+02	3.63E+02	4.34E+02	2	2

(I) - Indicator Stations

TABLE B-6.1
GAMMA SPECTROMETRY OF STORM DRAIN SOIL
 Results in pCi/kilogram

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101A	03/25/98	Be-7	1.10 E+02	5.83 E+01
		K-40	1.55 E+04	2.75 E+02
		Mn-54	* 8.35 E-02	5.45 E+00
		Cs-134	* 2.68 E+01	6.48 E+00
		Cs-137	3.64 E+01	6.95 E+00
		Ra-226	7.96 E+02	1.53 E+02
		Th-228	5.48 E+02	1.47 E+01
101B	03/25/98	Be-7	1.04 E+02	5.76 E+01
		K-40	1.49 E+04	2.92 E+02
		Mn-54	* 4.18 E+00	5.74 E+00
		Cs-134	* 2.78 E+01	6.49 E+00
		Cs-137	3.67 E+01	7.46 E+00
		Ra-226	6.89 E+02	1.58 E+02
		Th-228	4.94 E+02	1.49 E+01
101A	06/30/98	Be-7	1.01 E+02	5.86 E+01
		K-40	1.54 E+04	3.08 E+02
		Mn-54	* 2.75 E+00	6.06 E+00
		Cs-134	* 2.92 E+01	7.09 E+00
		Cs-137	3.02 E+01	6.32 E+00
		Ra-226	8.35 E+02	1.51 E+02
		Th-228	5.25 E+02	1.59 E+01
101B	06/30/98	Be-7	1.85 E+02	7.26 E+01
		K-40	1.46 E+04	3.27 E+02
		Mn-54	* 3.36 E+00	6.86 E+00
		Cs-134	* 2.47 E+01	7.64 E+00
		Cs-137	3.08 E+01	8.63 E+00
		Ra-226	6.77 E+02	1.73 E+02
		Th-228	5.04 E+02	1.63 E+01
101A	09/17/98	Be-7	1.34 E+02	6.97 E+01
		K-40	1.47 E+04	2.95 E+02
		Mn-54	* 6.42 E+00	6.32 E+00
		Cs-134	* 2.31 E+01	7.31 E+00
		Cs-137	3.30 E+01	7.27 E+00
		Ra-226	7.82 E+02	1.55 E+02
		Th-228	1.68 E+02	2.10 E+01

* Denotes a result less than the detection limit.

TABLE B-6.1
GAMMA SPECTROMETRY OF STORM DRAIN SOIL
 Results in pCi/kilogram

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101B	09/17/98	Be-7	1.81 E+02	7.55 E+01
		K-40	1.62 E+04	3.10 E+02
		Mn-54	* 4.44 E+00	6.09 E+00
		Cs-134	* 1.65 E+01	7.13 E+00
		Cs-137	2.99 E+01	7.78 E+00
		Ra-226	8.85 E+02	1.64 E+02
		Th-228	5.61 E+02	1.62 E+01

* Denotes a result less than the detection limit.

TABLE B-6.2

GAMMA SPECTROMETRY OF STORM DRAIN SOIL - SUMMARY

Results in pCi/kilogram

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Be-7	(I)	1.36E+02	1.01E+02	1.85E+02	6	6
K-40	(I)	1.52E+04	1.46E+04	1.62E+04	6	6
Mn-54	(I)	3.54E+00	8.35E-02	6.42E+00	6	0
Cs-134	(I)	2.47E+01	1.65E+01	2.92E+01	6	0
Cs-137	(I)	3.28E+01	2.99E+01	3.67E+01	6	6
Ra-226	(I)	7.77E+02	6.77E+02	8.85E+02	6	6
Th-228	(I)	4.67E+02	1.68E+02	5.61E+02	6	6

(I) Indicator Stations

TABLE B-8.1
GROSS ALPHA IN SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
102A	01/16/98-02/03/98	* 1.5 E+00	1.61 E+00
	02/03/98-03/03/98	* 2.5 E-01	1.79 E+00
	03/03/98-04/01/98	* 2.2 E-01	1.58 E+00
	04/01/98-05/06/98	* 1.4 E+00	2.02 E+00
	05/06/98-06/03/98	* 8.5 E-01	1.04 E+00
	06/03/98-07/01/98	* 1.0 E+00	1.43 E+00
	07/01/98-08/05/98	* 0.0 E+00	1.71 E+00
	08/05/98-09/02/98	* 4.9 E-01	1.54 E+00
	09/02/98-10/06/98	* 2.0 E-01	1.23 E+00
	10/06/98-11/03/98	* 1.9 E+00	1.74 E+00
	11/03/98-12/01/98	* 6.4 E-01	1.55 E+00
	12/01/98-01/05/99	* 0.0 E+00	2.86 E+00
102C Prior to Discharge	05/20/98	* 6.8 E-01	1.36 E+00
	05/20/98	* 2.4 E+00	2.45 E+00
	10/21/98	* 6.4 E-01	1.13 E+00
	10/21/98	* 0.0 E+00	9.54 E-01

* Denotes a result less than the detection limit.

TABLE B-8.2

GROSS ALPHA IN SANITARY WASTE TREATMENT WATER - SUMMARY

Results in pCi/liter

NUCLIDE	AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
<u>102A</u>					
Gr-Alpha (I)	5.63E-01	-8.5E-01	1.9E+00	12	0
<u>102C - Prior to Discharge</u>					
Gr-Alpha (I)	5.90E-01	-6.8E-01	2.4E+00	4	0

(I) Indicator Stations

TABLE B-9.1
GROSS BETA IN SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
102A	01/16/98-02/03/98	3.2 E+01	2.0 E+00
	02/03/98-03/03/98	3.1 E+01	2.0 E+00
	03/03/98-04/01/98	2.1 E+01	2.0 E+00
	04/01/98-05/06/98	2.9 E+01	2.0 E+00
	05/06/98-06/03/98	2.4 E+01	2.0 E+00
	06/03/98-07/01/98	4.1 E+01	3.0 E+00
	07/01/98-08/05/98	3.6 E+01	3.0 E+00
	08/05/98-09/02/98	3.5 E+01	3.0 E+00
	09/01/98-10/06/98	1.7 E+01	2.0 E+00
	10/06/98-11/03/98	2.9 E+01	2.0 E+00
	11/03/98-12/01/98	2.5 E+01	2.0 E+00
	12/01/98-01/05/99	3.3 E+01	4.0 E+00
102C Prior to Discharge	05/20/98	3.2 E+01	4.0 E+00
	05/20/98	3.3 E+01	4.0 E+00
	10/21/98	4.1 E+01	3.0 E+00
	10/21/98	4.1 E+01	3.0 E+00

TABLE B -9.2

GROSS BETA IN SANITARY WASTE TREATMENT WATER - SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
<u>102A</u>						
Gr-Beta	(I)	2.94E+01	1.7E+01	4.1E+01	12	12
<u>102C-Prior to Discharge</u>						
Gr-Beta	(I)	3.65E+01	3.2E+01	4.1E+01	4	4

(I) Indicator Stations

TABLE B-10.1
GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102B Monthly Headworks	01/21/98	Be-7	*-7.54 E-01	1.70 E+01
		K-40	5.68 E+01	2.84 E+01
		Mn-54	* 1.03 E+00	1.83 E+00
		Co-58	*-6.05 E-01	1.86 E+00
		Fe-59	* 1.73 E+00	3.90 E+00
		Co-60	* 1.69 E+00	1.81 E+00
		Zn-65	* 2.07 E+00	3.89 E+00
		Zr-95	*-2.26 E+00	3.61 E+00
		Nb-95	* 6.50 E-01	1.86 E+00
		Cs-134	*-4.40 E-01	2.03 E+00
		Cs-137	* 8.65 E-01	1.99 E+00
		Ba-140	* 2.93 E+00	6.47 E+00
		La-140	*-2.47 E-01	2.47 E+00
		Ra-226	*-4.64 E+01	3.65 E+01
		Th-228	*-5.88 E-01	3.09 E+00
	02/25/98	Be-7	* 0.00 E+00	1.31 E+01
		K-40	* 2.00 E+01	2.20 E+01
		Mn-54	*-1.80 E+00	1.39 E+00
		Co-58	* 1.99 E-01	1.40 E+00
		Fe-59	* 2.07 E+00	2.93 E+00
		Co-60	* 7.23 E-01	1.57 E+00
		Zn-65	* 4.14 E-01	3.18 E+00
		Zr-95	*-1.91 E-01	2.70 E+00
		Nb-95	* 7.24 E-01	1.44 E+00
		Cs-134	* 3.59 E-02	1.59 E+00
		Cs-137	*-3.21 E+00	1.83 E+00
		Ba-140	*-9.35 E-01	4.31 E+00
		La-140	* 1.35 E-01	1.89 E+00
		Ra-226	*-4.25 E+01	3.34 E+01
		Th-228	*-2.19 E-01	2.73 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1 (Cont.)

GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102B Monthly Headworks	03/18/98	Be-7	* 3.70 E+00	1.31 E+01
		K-40	*-1.68 E+01	2.75 E+01
		Mn-54	* 5.38 E-01	1.46 E+00
		Co-58	*-6.21 E-01	1.43 E+00
		Fe-59	* 7.60 E-01	3.03 E+00
		Co-60	*-9.79 E-01	1.48 E+00
		Zn-65	*-1.20 E+00	2.99 E+00
		Zr-95	*-1.49 E-01	2.89 E+00
		Nb-95	* 2.29 E+00	1.47 E+00
		Cs-134	* 1.68 E-01	1.64 E+00
		Cs-137	* 1.06 E+00	1.63 E+00
		Ba-140	*-3.63 E+00	4.46 E+00
		La-140	*-6.54 E-01	1.75 E+00
		Ra-226	*-2.17 E+01	2.98 E+01
		Th-228	*-3.93 E-01	2.61 E+00
	04/15/98	Be-7	* 1.09 E+01	1.38 E+01
		K-40	*-5.19 E+01	2.88 E+01
		Mn-54	* 5.57 E-01	1.48 E+00
		Co-58	*-7.82 E-01	1.48 E+00
		Fe-59	* 1.32 E+00	3.01 E+00
		Co-60	* 5.09 E-01	1.47 E+00
		Zn-65	* 2.19 E+00	3.19 E+00
		Zr-95	* 3.34 E+00	2.90 E+00
		Nb-95	* 1.86 E+00	1.46 E+00
		Cs-134	*-1.22 E+00	1.64 E+00
		Cs-137	* 1.24 E+00	1.66 E+00
		Ba-140	*-6.58 E-01	4.59 E+00
		La-140	*-1.97 E+00	1.74 E+00
		Ra-226	*-1.35 E+01	3.08 E+01
		Th-228	* 6.22 E-02	2.56 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1 (Cont.)
GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102D North Stabilization Pond	05/12/98	Be-7	* 0.00 E+00	1.50 E+01
		K-40	*-3.98 E+00	2.27 E+01
		Mn-54	*-2.73 E+00	1.44 E+00
		Co-58	*-5.02 E-01	1.56 E+00
		Fe-59	* 0.00 E+00	3.27 E+00
		Co-60	* 8.67 E-01	1.65 E+00
		Zn-65	* 2.06 E+00	3.24 E+00
		Zr-95	* 2.44 E+00	3.05 E+00
		Nb-95	* 8.63 E-02	1.51 E+00
		Cs-134	* 9.79 E-02	1.71 E+00
		Cs-137	* 9.95 E-01	1.74 E+00
		Ba-140	* 3.18 E+00	5.23 E+00
		La-140	*-1.28 E+00	2.05 E+00
		Ra-226	*-5.27 E+00	4.01 E+01
		Th-228	*-6.03 E-01	3.11 E+00
	11/17/98	Be-7	* 1.72 E+01	1.85 E+01
		K-40	*-1.93 E+00	3.26 E+01
		Mn-54	*-6.54 E-01	1.97 E+00
		Co-58	*-1.21 E+00	1.96 E+00
		Fe-59	* 2.94 E+00	4.30 E+00
		Co-60	* 2.00 E-01	1.91 E+00
		Zn-65	*-1.05 E+00	4.29 E+00
		Zr-95	* 4.10 E+00	4.00 E+00
		Nb-95	* 2.95 E+00	2.08 E+00
		Cs-134	*-1.77 E+00	2.17 E+00
		Cs-137	* 2.39 E+00	2.28 E+00
		Ba-140	* 4.38 E+00	7.35 E+00
		La-140	*-2.18 E+00	2.80 E+00
		Ra-226	*-1.48 E+02	3.49 E+01
		Th-228	*-2.96 E+00	3.20 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1 (Cont.)
GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102E South Stabilization Pond	05/12/98	Be-7	*-3.61 E+00	1.25 E+01
		K-40	* 1.15 E+01	1.94 E+01
		Mn-54	* 1.39 E+00	1.26 E+00
		Co-58	* 3.82 E-02	1.30 E+00
		Fe-59	* 1.41 E+00	2.56 E+00
		Co-60	*-2.70 E+00	1.26 E+00
		Zn-65	* 1.89 E-01	2.66 E+00
		Zr-95	*-7.31 E-01	2.70 E+00
		Nb-95	* 1.48 E+00	1.35 E+00
		Cs-134	* 1.31 E+00	1.39 E+00
		Cs-137	* 1.31 E+00	1.54 E+00
		Ba-140	* 2.14 E+00	4.31 E+00
		La-140	*-2.09 E+00	1.72 E+00
		Ra-226	*-5.33 E+01	3.34 E+01
		Th-228	*-6.29 E+00	2.80 E+00
	11/17/98	Be-7	*-9.31 E+00	2.06 E+01
		K-40	*-9.06 E+01	5.01 E+01
		Mn-54	*-7.19 E-02	2.14 E+00
		Co-58	*-1.25 E+00	2.23 E+00
		Fe-59	* 5.37 E+00	4.81 E+00
		Co-60	* 9.46 E-01	2.11 E+00
		Zn-65	* 1.83 E+00	4.93 E+00
		Zr-95	*-1.89 E+00	4.45 E+00
		Nb-95	* 8.27 E-01	2.31 E+00
		Cs-134	*-7.75 E-01	2.29 E+00
		Cs-137	* 1.60 E+00	2.37 E+00
		Ba-140	* 1.26 E+00	9.22 E+00
		La-140	*-7.19 E-01	3.50 E+00
		Ra-226	*-1.16 E+02	4.18 E+01
		Th-228	* 6.57 E-01	3.55 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1 (Cont.)
GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102A	01/06/98-02/03/98	Be-7	*-3.51 E-01	1.10 E+01
		K-40	* 6.84 E+00	1.69 E+01
		Mn-54	*-6.26 E-01	1.22 E+00
		Co-58	*-8.01 E-01	1.23 E+00
		Fe-59	* 1.21 E+00	2.65 E+00
		Co-60	* 9.05 E-01	1.39 E+00
		Zn-65	* 1.16 E+00	2.66 E+00
		Zr-95	* 7.94 E-01	2.40 E+00
		Nb-95	* 2.46 E+00	1.27 E+00
		Cs-134	*-1.18 E-01	1.35 E+00
		Cs-137	* 1.16 E+00	1.34 E+00
		Ba-140	*-1.44 E+00	3.92 E+00
		La-140	* 7.59 E-01	1.77 E+00
		Ra-226	*-7.28 E+01	2.34 E+01
		Th-228	*-8.49 E-02	2.04 E+00
	02/03/98-03/03/98	Be-7	* 6.56 E+00	1.76 E+01
		K-40	* 1.28 E+01	3.94 E+01
		Mn-54	* 1.14 E+00	1.90 E+00
		Co-58	* 5.09 E-01	1.97 E+00
		Fe-59	* 2.96 E+00	4.27 E+00
		Co-60	* 5.26 E-01	1.94 E+00
		Zn-65	*-4.51 E+00	4.30 E+00
		Zr-95	*-2.61 E-01	3.77 E+00
		Nb-95	* 3.32 E+00	2.01 E+00
		Cs-134	* 1.82 E-01	2.22 E+00
		Cs-137	* 1.95 E-01	2.12 E+00
		Ba-140	* 1.96 E+00	6.23 E+00
		La-140	*-6.36 E-01	2.50 E+00
		Ra-226	*-7.53 E+01	3.50 E+01
		Th-228	* 8.08 E+00	3.19 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1 (Cont.)
GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102A	03/03/98-04/01/98	Be-7	*-4.48 E+00	1.51 E+01
		K-40	* 6.00 E+00	2.35 E+01
		Mn-54	*-9.00 E-02	1.52 E+00
		Co-58	* 6.79 E-01	1.57 E+00
		Fe-59	* 7.38 E-01	3.14 E+00
		Co-60	* 6.66 E-01	1.71 E+00
		Zn-65	* 1.94 E+00	3.18 E+00
		Zr-95	* 1.64 E+00	3.21 E+00
		Nb-95	*-7.28 E-01	1.58 E+00
		Cs-134	* 9.78 E-02	1.70 E+00
		Cs-137	* 8.65 E-01	1.73 E+00
		Ba-140	* 1.47 E+00	4.88 E+00
		La-140	*-4.71 E-01	2.06 E+00
		Ra-226	* 1.10 E+00	4.10 E+01
		Th-228	*-6.64 E+00	3.29 E+00
	04/01/98-05/06/98	Be-7	*-6.72 E+00	1.62 E+01
		K-40	* 2.58 E+01	3.40 E+01
		Mn-54	* 9.20 E-01	1.77 E+00
		Co-58	*-2.27 E-01	1.79 E+00
		Fe-59	* 1.65 E+00	3.64 E+00
		Co-60	* 5.18 E-01	1.74 E+00
		Zn-65	* 5.44 E-01	3.72 E+00
		Zr-95	*-1.90 E+00	3.63 E+00
		Nb-95	* 1.63 E+00	1.83 E+00
		Cs-134	* 1.20 E-01	1.96 E+00
		Cs-137	* 4.67 E-01	1.92 E+00
		Ba-140	* 7.16 E+00	6.38 E+00
		La-140	*-1.17 E+00	2.36 E+00
		Ra-226	* 1.62 E+01	3.54 E+01
		Th-228	* 3.92 E+00	3.06 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1 (Cont.)
GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102C Prior to Discharge	05/20/98	Be-7	*-7.97 E+00	1.69 E+01
		K-40	* 1.74 E+01	2.04 E+01
		Mn-54	* 1.20 E+00	1.36 E+00
		Co-58	*-2.98 E-01	1.54 E+00
		Fe-59	* 1.65 E+00	3.56 E+00
		Co-60	*-7.83 E-01	1.44 E+00
		Zn-65	*-1.52 E+00	3.09 E+00
		Zr-95	* 8.69 E-01	3.29 E+00
		Nb-95	* 1.72 E+00	1.67 E+00
		Cs-134	* 0.00 E+00	1.51 E+00
		Cs-137	* 1.79 E+00	1.55 E+00
		Ba-140	*-2.68 E+00	1.19 E+01
		La-140	* 4.63 E-01	4.58 E+00
		Ra-226	*-5.76 E+01	3.46 E+01
		Th-228	*-2.33 E+00	2.96 E+00
	05/20/98	Be-7	* 5.52 E+00	2.00 E+01
		K-40	*-8.19 E+01	3.60 E+01
		Mn-54	* 4.49 E-01	1.86 E+00
		Co-58	*-1.04 E+00	2.14 E+00
		Fe-59	* 3.76 E+00	4.79 E+00
		Co-60	*-7.86 E-01	1.85 E+00
		Zn-65	* 2.84 E+00	3.97 E+00
		Zr-95	* 1.69 E-01	4.39 E+00
		Nb-95	* 2.34 E+00	2.19 E+00
		Cs-134	*-3.97 E-01	1.98 E+00
		Cs-137	* 3.48 E+00	2.04 E+00
		Ba-140	*-3.75 E+00	1.51 E+01
		La-140	*-7.04 E+00	6.10 E+00
		Ra-226	*-5.59 E+01	3.38 E+01
		Th-228	* 6.03 E-01	3.08 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1 (Cont.)

GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102C Prior to Discharge	10/21/98	Be-7	*-9.71 E+00	1.90 E+01
		K-40	*-9.82 E+00	5.27 E+01
		Mn-54	* 8.15 E-01	2.08 E+00
		Co-58	* 1.64 E+00	2.12 E+00
		Fe-59	*-2.49 E-01	4.23 E+00
		Co-60	*-1.05 E+00	2.07 E+00
		Zn-65	*-3.77 E+00	4.69 E+00
		Zr-95	*-3.06 E+00	4.14 E+00
		Nb-95	* 9.10 E-01	2.15 E+00
		Cs-134	* 3.85 E-02	2.41 E+00
		Cs-137	*-4.18 E+00	2.31 E+00
		Ba-140	*-7.45 E-01	6.58 E+00
		La-140	* 0.00 E+00	2.56 E+00
		Ra-226	*-1.19 E+01	4.24 E+01
		Th-228	*-6.59 E+00	3.59 E+00
	10/21/98	Be-7	* 1.35 E+00	1.32 E+01
		K-40	*-2.60 E+01	2.85 E+01
		Mn-54	*-1.28 E-01	1.44 E+00
		Co-58	*-4.91 E-01	1.45 E+00
		Fe-59	* 3.15 E+00	2.94 E+00
		Co-60	* 6.53 E-01	1.47 E+00
		Zn-65	* 4.10 E+00	3.11 E+00
		Zr-95	* 0.00 E+00	2.90 E+00
		Nb-95	* 1.60 E+00	1.49 E+00
		Cs-134	* 2.80 E-01	1.63 E+00
		Cs-137	* 9.33 E-01	1.64 E+00
		Ba-140	*-1.56 E+00	4.55 E+00
		La-140	* 6.03 E-01	1.72 E+00
		Ra-226	*-6.66 E+00	2.96 E+01
		Th-228	* 3.46 E+00	2.61 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1 (Cont.)

GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102B Monthly Headworks	09/23/98	Be-7	* 1.01 E+01	1.53 E+01
		K-40	* 6.15 E+00	2.34 E+01
		Mn-54	* 1.56 E+00	1.63 E+00
		Co-58	*-1.39 E+00	1.63 E+00
		Fe-59	* 1.03 E+00	3.44 E+00
		Co-60	*-6.47 E-01	1.93 E+00
		Zn-65	*-8.54 E-01	3.82 E+00
		Zr-95	* 2.00 E+00	3.46 E+00
		Nb-95	*-1.17 E+00	1.69 E+00
		Cs-134	* 0.00 E+00	1.84 E+00
		Cs-137	* 2.33 E+00	1.89 E+00
		Ba-140	* 1.13 E-01	5.33 E+00
		La-140	*-1.08 E+00	2.27 E+00
		Ra-226	*-2.70 E+01	3.48 E+01
		Th-228	*-7.29 E-02	3.11 E+00
	10/21/98	Be-7	* 6.41 E-01	1.62 E+01
		K-40	*-5.29 E+01	3.52 E+01
		Mn-54	* 4.46 E-01	1.82 E+00
		Co-58	*-6.22 E-01	1.78 E+00
		Fe-59	* 0.00 E+00	3.64 E+00
		Co-60	* 1.57 E+00	1.85 E+00
		Zn-65	* 1.65 E+00	3.62 E+00
		Zr-95	* 1.91 E+00	3.59 E+00
		Nb-95	* 1.67 E+00	1.76 E+00
		Cs-134	*-8.21 E-01	1.99 E+00
		Cs-137	* 6.61 E-01	1.97 E+00
		Ba-140	*-4.41 E+00	5.31 E+00
		La-140	*-2.15 E-01	2.15 E+00
		Ra-226	* 2.34 E+01	3.37 E+01
		Th-228	*-2.48 E-01	2.92 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1 (Cont.)
GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER
 Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102B Monthly Headworks	11/18/98	Be-7	* 6.34 E+00	1.66 E+01
		K-40	* 3.05 E+00	3.63 E+01
		Mn-54	* 6.58 E-01	1.79 E+00
		Co-58	*-1.00 E+00	1.80 E+00
		Fe-59	* 3.63 E+00	3.68 E+00
		Co-60	* 6.21 E-01	1.86 E+00
		Zn-65	* 2.47 E-01	4.04 E+00
		Zr-95	* 1.92 E-01	3.49 E+00
		Nb-95	* 1.23 E+00	1.75 E+00
		Cs-134	* 4.29 E-01	1.94 E+00
		Cs-137	*-4.06 E+00	2.03 E+00
		Ba-140	* 6.58 E-01	5.71 E+00
		La-140	* 3.53 E-01	2.35 E+00
		Ra-226	* 2.58 E+01	3.28 E+01
		Th-228	* 1.04 E+01	3.01 E+00
	12/16/98	Be-7	*-4.05 E+00	1.23 E+01
		K-40	*-6.54 E+00	1.95 E+01
		Mn-54	* 4.89 E-01	1.22 E+00
		Co-58	* 3.03 E-01	1.27 E+00
		Fe-59	* 1.57 E+00	2.49 E+00
		Co-60	* 4.39 E-01	1.41 E+00
		Zn-65	*-1.89 E+00	2.54 E+00
		Zr-95	*-2.17 E+00	2.45 E+00
		Nb-95	* 2.05 E+00	1.39 E+00
		Cs-134	*-3.28 E-01	1.44 E+00
		Cs-137	* 1.68 E+00	1.51 E+00
		Ba-140	*-1.43 E+00	4.15 E+00
		La-140	* 6.15 E-01	1.92 E+00
		Ra-226	*-7.48 E+00	3.47 E+01
		Th-228	*-5.24 E+00	2.89 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1 (Cont.)
GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102B Monthly Headworks	05/20/98	Be-7	* 8.49 E+00	1.89 E+01
		K-40	* 4.14 E+01	2.72 E+01
		Mn-54	* 5.90 E-01	1.79 E+00
		Co-58	* 5.43 E-01	1.89 E+00
		Fe-59	* 3.23 E+00	4.08 E+00
		Co-60	* 1.93 E-01	1.99 E+00
		Zn-65	* 2.50 E+00	4.08 E+00
		Zr-95	* 1.30 E-01	3.99 E+00
		Nb-95	* 1.48 E+00	1.92 E+00
		Cs-134	* 2.20 E+00	2.26 E+00
		Cs-137	* 1.06 E+00	1.99 E+00
		Ba-140	* 4.11 E+00	7.31 E+00
		La-140	* 1.00 E+00	3.08 E+00
		Ra-226	* 3.76 E+01	4.91 E+01
		Th-228	* 1.40 E+01	3.87 E+00
	06/17/98	Be-7	* 5.86 E+00	1.51 E+01
		K-40	* 5.58 E+01	2.44 E+01
		Mn-54	* 4.50 E-02	1.54 E+00
		Co-58	* 4.52 E-02	1.49 E+00
		Fe-59	* 1.16 E+00	3.22 E+00
		Co-60	* 9.33 E-01	1.72 E+00
		Zn-65	* 4.56 E-01	3.46 E+00
		Zr-95	* 8.62 E-02	3.06 E+00
		Nb-95	* 1.20 E+00	1.59 E+00
		Cs-134	* 9.78 E-02	1.60 E+00
		Cs-137	* 1.12 E+00	1.66 E+00
		Ba-140	* 2.08 E-01	4.90 E+00
		La-140	* 5.10 E+00	2.18 E+00
		Ra-226	* 4.03 E+01	4.05 E+01
		TH-228	* 1.99 E+00	3.25 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1 (Cont.)
GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102B Monthly Headworks	07/15/98	Be-7	*-2.01 E+00	1.83 E+01
		K-40	* 1.71 E+01	2.71 E+01
		Mn-54	*-1.36 E+00	1.89 E+00
		Co-58	*-7.33 E-01	2.10 E+00
		Fe-59	*-3.21 E-01	4.36 E+00
		Co-60	* 1.67 E+00	2.35 E+00
		Zn-65	*-1.84 E+00	4.36 E+00
		Zr-95	*-1.90 E+00	3.98 E+00
		Nb-95	* 6.30 E-01	1.97 E+00
		Cs-134	* 2.52 E+00	2.16 E+00
		Cs-137	* 2.08 E+00	2.21 E+00
		Ba-140	*-6.00 E+00	6.75 E+00
		La-140	* 1.15 E+00	3.74 E+00
		Ra-226	*-4.46 E+01	4.00 E+01
		Th-228	* 1.67 E+00	3.63 E+00
	08/19/98	Be-7	*-1.47 E+01	1.73 E+01
		K-40	* 3.77 E+00	2.69 E+01
		Mn-54	* 3.79 E+00	2.03 E+00
		Co-58	*-5.16 E-01	2.02 E+00
		Fe-59	* 0.00 E+00	3.97 E+00
		Co-60	* 9.80 E-01	2.05 E+00
		Zn-65	* 3.98 E+00	3.94 E+00
		Zr-95	* 1.47 E+00	3.66 E+00
		Nb-95	* 6.08 E-01	1.93 E+00
		Cs-134	* 1.32 E+00	2.13 E+00
		Cs-137	* 1.16 E+00	2.24 E+00
		Ba-140	*-7.25 E-01	5.59 E+00
		La-140	*-3.46 E+00	2.59 E+00
		Ra-226	*-4.27 E+01	4.08 E+01
		Th-228	*-2.74 E+00	3.50 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1 (Cont.)

GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102A	05/06/98-06/03/98	Be-7	* 3.50 E+00	2.20 E+01
		K-40	*-7.60 E+00	4.45 E+01
		Mn-54	* 3.47 E-01	2.21 E+00
		Co-58	*-1.61 E-01	2.42 E+00
		Fe-59	*-7.83 E-01	5.10 E+00
		Co-60	*-9.88 E-01	2.23 E+00
		Zn-65	*-2.74 E+00	4.90 E+00
		Zr-95	*-1.97 E+00	4.64 E+00
		Nb-95	* 1.64 E+00	2.49 E+00
		Cs-134	* 1.28 E+00	2.53 E+00
		Cs-137	* 2.02 E+00	2.42 E+00
		Ba-140	*-9.24 E+00	1.07 E+01
		La-140	*-2.02 E+00	4.45 E+00
		Ra-226	*-4.29 E+01	4.05 E+01
		Th-228	* 4.78 E-01	3.66 E+00
	06/03/98-07/01/98	Be-7	*-3.59 E+00	1.45 E+01
		K-40	* 3.19 E+01	2.39 E+01
		Mn-54	* 1.30 E+00	1.58 E+00
		Co-58	*-8.52 E-01	1.48 E+00
		Fe-59	* 1.14 E+00	2.94 E+00
		Co-60	* 1.20 E+00	1.70 E+00
		Zn-65	* 5.68 E-01	3.31 E+00
		Zr-95	*-6.84 E-01	3.24 E+00
		Nb-95	* 1.10 E+00	1.43 E+00
		Cs-134	*-4.88 E-01	1.69 E+00
		Cs-137	* 1.51 E+00	1.77 E+00
		Ba-140	* 5.59 E+00	4.63 E+00
		La-140	*-8.94 E-02	2.09 E+00
		Ra-226	*-5.15 E+01	4.07 E+01
		Th-228	*-1.59 E-02	3.26 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1 (Cont.)

GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102A	07/01/98-08/05/98	Be-7	* 1.14 E+01	2.10 E+01
		K-40	*-7.96 E+01	4.41 E+01
		Mn-54	* 2.83 E-01	2.18 E+00
		Co-58	* 9.92 E-02	2.17 E+00
		Fe-59	* 1.66 E+00	4.81 E+00
		Co-60	* 1.36 E-01	2.17 E+00
		Zn-65	* 1.55 E+00	4.67 E+00
		Zr-95	* 1.91 E-01	4.57 E+00
		Nb-95	* 1.18 E+00	2.22 E+00
		Cs-134	*-5.60 E-01	2.37 E+00
		Cs-137	* 1.35 E-01	2.31 E+00
		Ba-140	*-1.36 E+00	8.94 E+00
		La-140	* 6.61 E-01	3.41 E+00
		Ra-226	*-1.17 E+02	3.97 E+01
		Th-228	*-1.36 E+00	3.55 E+00
	08/05/98-09/02/98	Be-7	* 8.26 E+00	2.05 E+01
		K-40	*-1.24 E+01	4.41 E+01
		Mn-54	* 1.52 E+00	2.16 E+00
		Co-58	*-9.62 E-02	2.13 E+00
		Fe-59	* 1.49 E+00	4.69 E+00
		Co-60	* 1.34 E+00	2.13 E+00
		Zn-65	*-1.05 E+00	4.61 E+00
		Zr-95	* 1.11 E+00	4.33 E+00
		Nb-95	* 2.10 E+00	2.17 E+00
		Cs-134	* 1.84 E+00	2.31 E+00
		Cs-137	* 3.52 E+00	2.36 E+00
		Ba-140	* 3.38 E+00	8.42 E+00
		La-140	* 2.94 E+00	3.38 E+00
		Ra-226	*-7.96 E+01	4.04 E+01
		Th-228	*-4.23 E+00	3.50 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1 (Cont.)
GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102A	09/02/98-10/06/98	Be-7	* 1.63 E+01	2.01 E+01
		K-40	*-2.92 E+01	2.66 E+01
		Mn-54	*-2.46 E+00	1.94 E+00
		Co-58	*-9.91 E-01	1.87 E+00
		Fe-59	* 1.38 E+00	4.46 E+00
		Co-60	* 5.96 E-01	2.01 E+00
		Zn-65	* 7.21 E+00	4.26 E+00
		Zr-95	*-1.36 E+00	4.14 E+00
		Nb-95	* 9.42 E-01	2.06 E+00
		Cs-134	* 0.00 E+00	2.07 E+00
		Cs-137	* 3.59 E+00	2.30 E+00
		Ba-140	*-1.17 E+01	8.41 E+00
		La-140	* 6.13 E-01	4.29 E+00
		Ra-226	* 5.50 E+00	4.33 E+01
		Th-228	*-3.00 E+00	3.85 E+00
	10/06/98-11/03/98	Be-7	* 4.24 E+00	1.53 E+01
		K-40	* 6.42 E+00	2.46 E+01
		Mn-54	* 4.64 E-01	1.50 E+00
		Co-58	* 1.56 E-01	1.51 E+00
		Fe-59	*-4.78 E-01	3.10 E+00
		Co-60	*-3.76 E-01	1.55 E+00
		Zn-65	* 1.16 E+00	3.30 E+00
		Zr-95	* 0.00 E+00	3.12 E+00
		Nb-95	* 1.18 E+00	1.62 E+00
		Cs-134	* 1.24 E+00	1.77 E+00
		Cs-137	* 5.50 E-01	1.66 E+00
		Ba-140	* 1.94 E+00	4.82 E+00
		La-140	*-1.05 E+00	2.02 E+00
		Ra-226	*-6.12 E+01	4.05 E+01
		Th-228	* 7.00 E-01	3.47 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1 (Cont.)
GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102A	11/03/98-12/01/98	Be-7	*-3.34 E+00	1.27 E+01
		K-40	*-1.31 E+01	1.96 E+01
		Mn-54	* 9.14 E-01	1.29 E+00
		Co-58	* 5.96 E-01	1.33 E+00
		Fe-59	*-3.84 E-01	2.55 E+00
		Co-60	*-3.21 E+00	1.30 E+00
		Zn-65	*-2.13 E+00	2.54 E+00
		Zr-95	* 1.40 E+00	2.52 E+00
		Nb-95	* 1.92 E+00	1.36 E+00
		Cs-134	* 3.55 E-01	1.42 E+00
		Cs-137	* 1.29 E+00	1.41 E+00
		Ba-140	* 4.89 E-01	4.29 E+00
		La-140	* 7.06 E-02	1.74 E+00
		Ra-226	* 1.33 E+01	3.29 E+01
		Th-228	*-2.05 E-01	2.70 E+00
	12/01/98-01/05/99	Be-7	* 5.09 E+00	1.97 E+01
		K-40	* 9.18 E+01	3.11 E+01
		Mn-54	*-6.93 E-01	2.21 E+00
		Co-58	*-1.48 E+00	2.28 E+00
		Fe-59	* 2.88 E+00	4.78 E+00
		Co-60	* 1.53 E+00	2.41 E+00
		Zn-65	* 5.02 E-01	4.83 E+00
		Zr-95	*-2.63 E+00	4.48 E+00
		Nb-95	* 1.16 E+00	2.29 E+00
		Cs-134	*-5.90 E-01	2.42 E+00
		Cs-137	* 1.70 E+00	2.36 E+00
		Ba-140	* 4.82 E+00	7.80 E+00
		La-140	* 0.00 E+00	3.03 E+00
		Ra-226	*-1.68 E+01	4.05 E+01
		Th-228	* 2.46 E+00	3.61 E+00

* Denotes a result less than the detection limit.

TABLE B-10.2

GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER -
SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
102B - Monthly Headworks						
Be-7	(I)	2.04E+00	-1.47E+01	1.09E+01	12	0
K-40	(I)	-5.73E-01	-5.29E+01	5.68E+01	12	1
Mn-54	(I)	5.38E-01	-1.80E+00	3.79E+00	12	0
Co-58	(I)	-5.30E-01	-1.39E+00	3.03E-01	12	0
Fe-59	(I)	1.35E+00	-3.21E-01	3.63E+00	12	0
Co-60	(I)	4.54E-01	-9.79E-01	1.69E+00	12	0
Zn-65	(I)	5.68E-01	-1.89E+00	3.98E+00	12	0
Zr-95	(I)	1.69E-01	-2.26E+00	3.34E+00	12	0
Nb-95	(I)	1.10E+00	-1.17E+00	2.29E+00	12	0
Cs-134	(I)	3.14E-01	-1.22E+00	2.52E+00	12	0
Cs-137	(I)	3.12E-01	-4.06E+00	2.33E+00	12	0
Ba-140	(I)	-1.50E+00	-6.00E+00	2.93E+00	12	0
La-140	(I)	-9.56E-01	-5.10E+00	1.15E+00	12	0
Ra-226	(I)	-2.29E+01	-4.64E+01	2.58E+01	12	0
Th-228	(I)	-7.82E-01	-1.40E+01	1.04E+01	12	0

(I) Indicator Stations

TABLE B-10.2

GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER -
SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
<u>102C - Prior to Discharge</u>						
Be-7	(I)	-2.70E+00	-9.71E+00	5.52E+00	4	0
K-40	(I)	-2.51E+01	-8.19E+01	1.74E+01	4	0
Mn-54	(I)	5.84E-01	-1.28E-01	1.20E+00	4	0
Co-58	(I)	-4.73E-02	-1.04E+00	1.64E+00	4	0
Fe-59	(I)	2.08E+00	-2.49E-01	3.76E+00	4	0
Co-60	(I)	-4.92E-01	-1.05E+00	6.53E-01	4	0
Zn-65	(I)	4.13E-01	-3.77E+00	4.10E+00	4	0
Zr-95	(I)	-5.06E-01	-3.06E+00	8.69E-01	4	0
Nb-95	(I)	1.64E+00	9.10E-01	2.34E+00	4	0
Cs-134	(I)	-1.96E-02	-3.97E-01	2.80E-01	4	0
Cs-137	(I)	5.06E-01	-4.18E+00	3.48E+00	4	0
Ba-140	(I)	-2.18E+00	-3.75E+00	-7.45E-01	4	0
La-140	(I)	-1.49E+00	-7.04E+00	6.03E-01	4	0
Ra-226	(I)	-3.30E+01	-5.76E+01	-6.66E+00	4	0
Th-228	(I)	-1.21E+00	-6.59E+00	3.46E+00	4	0

(I) Indicator Stations

TABLE B-10.2

GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER -
SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
<u>102D - North Stabilization Pond</u>						
Be-7	(I)	8.60E+00	0.00E+00	1.72E+01	2	0
K-40	(I)	-2.96E+00	-3.98E+00	-1.93E+00	2	0
Mn-54	(I)	-1.69E+00	-2.73E+00	-6.54E-01	2	0
Co-58	(I)	-8.56E-01	-1.21E+00	-5.02E-01	2	0
Fe-59	(I)	1.47E+00	0.00E+00	2.94E+00	2	0
Co-60	(I)	5.34E-01	2.00E-01	8.67E-01	2	0
Zn-65	(I)	5.05E-01	-1.05E+00	2.06E+00	2	0
Zr-95	(I)	3.27E+00	2.44E+00	4.10E+00	2	0
Nb-95	(I)	1.52E+00	8.63E-02	2.95E+00	2	0
Cs-134	(I)	-8.36E-01	-1.77E+00	9.79E-02	2	0
Cs-137	(I)	1.69E+00	9.95E-01	2.39E+00	2	0
Ba-140	(I)	3.78E+00	3.18E+00	4.38E+00	2	0
La-140	(I)	-1.73E+00	-2.18E+00	-1.28E+00	2	0
Ra-226	(I)	-7.66E+01	-1.48E+02	-5.27E+00	2	0
Th-228	(I)	-1.78E+00	-2.96E+00	-6.03E-01	2	0

(I) Indicator Stations

TABLE B-10.2

GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER -
SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
<u>102E - South Stabilization Pond</u>						
Be-7	(I)	-6.46E+00	-9.31E+00	-3.61E+00	2	0
K-40	(I)	-3.96E+01	-9.06E+01	1.15E+01	2	0
Mn-54	(I)	6.59E-01	-7.19E-02	1.39E+00	2	0
Co-58	(I)	-6.06E-01	-1.25E+00	3.82E-02	2	0
Fe-59	(I)	3.39E+00	1.41E+00	5.37E+00	2	0
Co-60	(I)	-8.77E-01	-2.70E+00	9.46E-01	2	0
Zn-65	(I)	1.01E+00	1.89E-01	1.83E+00	2	0
Zr-95	(I)	-1.31E+00	-1.89E+00	-7.31E-01	2	0
Nb-95	(I)	1.15E+00	8.27E-01	1.48E+00	2	0
Cs-134	(I)	2.68E-01	-7.75E-01	1.31E+00	2	0
Cs-137	(I)	1.46E+00	1.31E+00	1.60E+00	2	0
Ba-140	(I)	1.70E+00	1.26E+00	2.14E+00	2	0
La-140	(I)	-1.40E+00	-2.09E+00	-7.19E-01	2	0
Ra-226	(I)	-8.47E+01	-1.16E+02	-5.33E+01	2	0
Th-228	(I)	-2.82E+00	-6.29E+00	6.57E-01	2	0

(I) Indicator Stations

TABLE B-10.2

GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER -
SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
<u>102A</u>						
Be-7	(I)	3.07E+00	-6.72E+00	1.63E+01	12	0
K-40	(I)	3.31E+00	-7.96E+01	9.18E+01	12	0
Mn-54	(I)	2.52E-01	-2.46E+00	1.52E+00	12	0
Co-58	(I)	-2.14E-01	-1.48E+00	6.79E-01	12	0
Fe-59	(I)	1.12E+00	-7.83E-01	2.96E+00	12	0
Co-60	(I)	2.37E-01	-3.21E+00	1.53E+00	12	0
Zn-65	(I)	3.50E-01	-4.51E+00	7.21E+00	12	0
Zr-95	(I)	-3.06E-01	-2.63E+00	1.64E+00	12	0
Nb-95	(I)	1.49E+00	-7.28E-01	3.32E+00	12	0
Cs-134	(I)	2.80E-01	-5.90E-01	1.84E+00	12	0
Cs-137	(I)	1.42E+00	1.35E-01	3.59E+00	12	0
Ba-140	(I)	2.56E-01	-1.17E+01	7.16E+00	12	0
La-140	(I)	-3.27E-02	-2.02E+00	2.94E+00	12	0
Ra-226	(I)	-4.01E+01	-1.17E+02	1.62E+01	12	0
Th-228	(I)	8.52E-03	-6.64E+00	8.08E+00	12	0

(I) Indicator Stations



TABLE B-11.1
TRITIUM IN SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION DATE	RESULT	OVERALL UNCERTAINTY
<u>FFTF-Effluent</u>			
H-3 102A	01/06/98-02/03/98	5.3 E+03	3.0 E+02
	02/03/98-03/03/98	3.9 E+03	2.0 E+02
	03/03/98-04/01/98	3.8 E+03	2.0 E+02
	04/01/98-05/06/98	4.2 E+03	2.0 E+02
	05/06/98-06/03/98	1.6 E+04	1.0 E+03
	06/03/98-07/01/98	2.0 E+04	1.0 E+03
	07/01/98-08/05/98	1.1 E+04	1.0 E+03
	08/05/98-09/02/98	1.3 E+04	1.0 E+03
	09/02/98-10/06/98	5.0 E+03	3.0 E+02
	10/06/98-11/03/98	4.7 E+03	3.0 E+02
	11/03/98-12/01/98	4.2 E+03	2.0 E+02
	12/01/98-01/05/99	5.4 E+03	2.0 E+02
<u>Monthly Headworks</u>			
H-3 102B	01/21/98	5.1 E+02	2.0 E+02
	02/25/98	* 1.3 E+02	1.9 E+02
	03/18/98	6.6 E+02	8.0 E+01
	04/15/98	1.0 E+03	1.0 E+02
	05/20/98	7.1 E+03	3.0 E+02
	06/17/98	1.8 E+03	2.0 E+02
	07/15/98	* 5.9 E+01	9.2 E+01
	08/19/98	4.7 E+02	1.0 E+02
	09/23/98	1.2 E+03	2.0 E+02
	10/21/98	4.0 E+02	1.2 E+02
	11/18/98	2.0 E+03	2.0 E+02
	12/16/98	7.8 E+02	1.3 E+02
H-3 102C	05/20/98	4.8 E+02	1.2 E+02
	05/20/98	5.3 E+02	1.2 E+02
	10/21/98	1.1 E+03	1.0 E+02
	10/21/98	1.1 E+03	1.0 E+02

* Denotes a result less than the detection limit.

TABLE B-11.1 (cont.)
TRITIUM IN SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION DATE	RESULT	OVERALL UNCERTAINTY
<u>North Stabilization Ponds</u>			
H-3	05/12/98	6.7 E+02	1.2 E+02
102D	11/17/98	1.2 E+03	1.0 E+02
<u>South Stabilization Ponds</u>			
H-3	05/12/98	5.5 E+02	1.2 E+02
102E	11/17/98	1.3 E+03	2.0 E+02

TABLE B-11.2 (Cont.)

TRITIUM IN SANITARY WASTE TREATMENT WATER - SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
<u>All Samples</u>						
H-3	(I)	3.74E+03	5.9E+01	2.0E+04	32	30
<u>FFTF Effluent</u>						
H-3 102-A	(I)	8.04E+03	3.8E+03	2.0E+04	12	12
<u>Monthly Headworks</u>						
H-3 102-B	(I)	1.34E+03	5.9E+01	7.1E+03	12	10
<u>Prior to Discharge</u>						
H-3 102-C	(I)	8.03E+02	4.8E+02	1.1E+03	4	4
<u>North Stabilization Ponds</u>						
H-3 102-D	(I)	9.35E+02	6.7E+02	1.2E+03	2	2
<u>South Stabilization Ponds</u>						
H-3 102-E	(I)	9.25E+02	5.5E+02	1.3E+03	2	2

(I) Indicator Stations



TABLE B-12.1
GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT SEDIMENT
 Results in pCi/kilogram

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102D	04/21/98	K-40	1.04 E+04	7.01 E+02
		Co-57	*-3.32 E+00	1.85 E+01
		Co-60	1.64 E+02	3.97 E+01
		Cs-134	* 3.23 E+01	2.58 E+01
		Cs-137	1.32 E+02	4.08 E+01
		Ra-226	1.19 E+03	5.49 E+02
		Eu-152	* 3.40 E+01	1.16 E+02
		Th-228	5.46 E+02	4.67 E+01
102D	10/27/98	K-40	8.98 E+03	6.58 E+02
		Co-57	*-2.51 E-01	1.99 E+01
		Co-60	2.11 E+03	1.00 E+02
		Cs-134	* 2.57 E+01	3.10 E+01
		Cs-137	7.20 E+01	4.01 E+01
		Ra-226	1.51 E+03	6.58 E+02
		Eu-152	* 8.79 E+01	1.04 E+02
		Th-228	4.48 E+02	4.87 E+01
102D	11/17/98	K-40	1.32 E+04	3.27 E+02
		Co-57	*-7.47 E+00	8.88 E+00
		Co-60	* 4.85 E+00	9.23 E+00
		Cs-134	* 4.58 E+01	1.06 E+01
		Cs-137	* 1.59 E+01	9.91 E+00
		Ra-226	1.54 E+03	2.70 E+02
		Eu-152	* 6.31 E+01	4.95 E+01
		Th-228	9.67 E+02	2.43 E+01

* Denotes a result less than the detection limit.

TABLE B-12.2
GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT SEDIMENT-
SUMMARY

Results in pCi/kilogram

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
K-40	(I)	1.09E+04	8.98E+03	1.32E+04	3	3
Co-57	(I)	-3.68E+00	-7.47E+00	-2.51E-01	3	0
Co-60	(I)	7.60E+02	4.85E+00	2.11E+03	3	2
Cs-134	(I)	3.46E+01	2.57E+01	4.58E+01	3	0
Cs-137	(I)	7.33E+01	1.59E+01	1.32E+02	3	2
Ra-226	(I)	1.41E+03	1.19E+03	1.54E+03	3	3
Eu-152	(I)	6.17E+01	3.40E+01	8.79E+01	3	0
Th-228	(I)	6.54E+02	4.48E+02	9.67E+02	3	3

(I) Indicator Stations

STATION 118 SOIL RESULTS

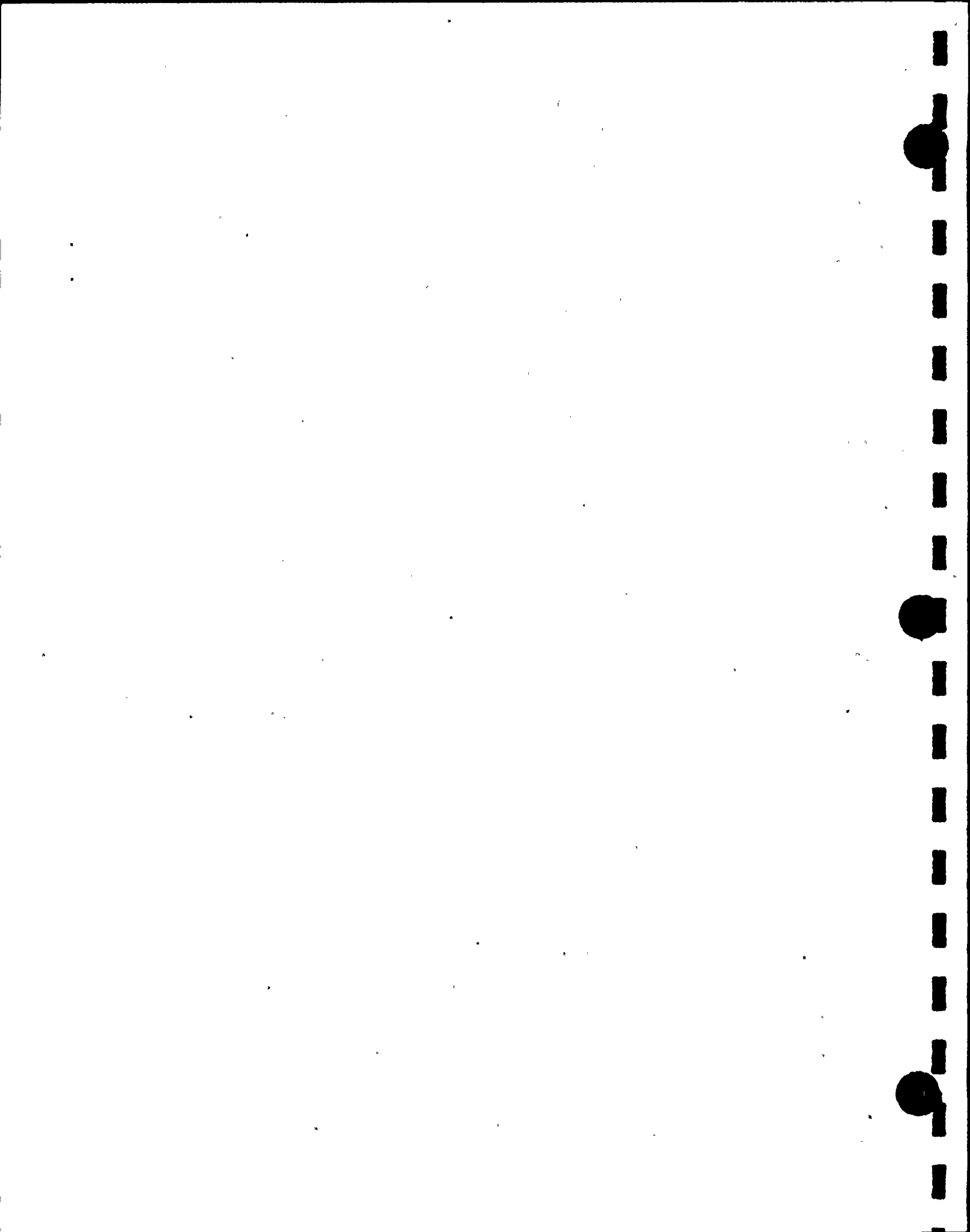


TABLE B-13.1
GAMMA SPECTROMETRY OF STATION 118 SOIL

Results in pCi/kilogram

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
118	06/09/98	Be-7	1.71 E+02	6.27 E+01
		K-40	1.31 E+04	2.59 E+02
		Cs-134	* 2.18 E+01	6.00 E+00
		Cs-137	* 1.37 E+01	5.76 E+00
		Ra-226	6.40 E+02	1.44 E+02
		Th-228	5.21 E+02	1.42 E+01

* Denotes a result less than the detection limit.

TABLE B-13.2

GAMMA SPECTROMETRY OF STATION 118 SOIL - SUMMARY

Results in pCi/kilogram

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Be-7	(I)	1.71E+02	1.71E+02	1.71E+02	1	1
K-40	(I)	1.31E+04	1.31E+04	1.31E+04	1	1
Cs-134	(I)	2.18E+01	2.18E+01	2.18E+01	1	0
Cs-137	(I)	1.37E+01	1.37E+01	1.37E+01	1	0
Ra-226	(I)	6.40E+02	6.40E+02	6.40E+02	1	1
Th-228	(I)	5.21E+02	5.21E+02	5.21E+02	1	1

(I) Indicator Stations



**WASHINGTON PUBLIC POWER
SUPPLY SYSTEM**

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

NUCLEAR PLANT 2

**1997 ANNUAL RADIOLOGICAL
ENVIRONMENTAL OPERATING REPORT**

JANUARY 1 to DECEMBER 31, 1997

**RADIOLOGICAL
ENVIRONMENTAL
MONITORING PROGRAM**

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1.0 EXECUTIVE SUMMARY

The Washington Public Power Supply System Radiological Environmental Monitoring Program (REMP) evaluates the radiological impact of Plant 2 operations on the environment in the Airborne, Direct Radiation, Waterborne, and Ingestion pathways as specified in the Offsite Dose Calculation Manual (ODCM). The Supply System's Plant 2 is a 1200 MW commercial nuclear power plant that achieved initial criticality on January 19, 1984.

Samples of air, water, milk, soil, sediment, fish and garden produce were collected throughout the year and analyzed for radionuclides specific to plant operations. Radiation levels were also monitored continuously during 1997 with thermoluminescent dosimeters (TLDs).

The samples were collected in established areas near the plant and at other locations which could be affected by Plant 2 effluents. This information was compared to samples taken in areas that were unlikely to be affected by plant operations. The 1997 REMP data was also compared to data collected during previous years of plant operation and to the data collected prior to initial plant operation.

Most of the results of samples collected by the REMP during 1997 were below detection levels. Some analyses, such as gross beta in air and water, were above the detection level for nearly all samples. This is due to the low detection limit for the gross beta analysis and also to the abundance of naturally occurring beta-emitting radionuclides in the environment. Other results above detection levels, such as cesium-137 in soil and sediment, reflect the effect of past Hanford activities or fallout from Chernobyl and past nuclear weapons testing.

Tritium concentration in discharge water continued to be lower than the mean levels observed from the 1992 through 1996 periods. This reduction is due to an ongoing reduction in the volume of the radwaste discharges to the Columbia River.

The REMP analytical results and TLD results were demonstrated to be accurate through intercomparison programs which are provided as part of the quality assurance activities conducted during 1997. Such intercomparisons tested the performance of the Supply System monitoring program to other monitoring programs using known radioactive standards. The Supply System REMP analytical contractor performed well in the Environmental Measurements Laboratory (EML) Quality Assessment Program, Environmental Protection Agency Intercomparison Studies, and the Analytics, Inc. Cross Check Comparison Program conducted during 1997. In 1996, the Supply System also participated in the Quality Assurance Task Force (QATF) intercomparison for soil samples. The results for this intercomparison were received in the spring of 1997. The QATF is chaired by the Washington Department of Health and has as its members the various environmental programs on the Hanford Site. The Supply System results for this intercomparison were also favorable.

The analytical data collected by the REMP in 1997 remained consistent with the environmental data collected during the preoperational period and prior operational years. Based on the data, no significant new trends or changes in the environmental radiological levels around the plant were observed.

2.0 DEFINITIONS

Airborne Activity Sampling: Continuous sampling of air through the collection of particulates and radionuclides on filter media.

Periodic soil samples are collected for gamma isotopic analysis to provide information on deposition to the soil from airborne releases.

Alpha Particle (α): A charged particle emitted from the nucleus of an atom having a mass and charge equal in magnitude of a helium nucleus.

Becquerel (Bq): One disintegration per second. One picocurie (pCi) equals 0.037 becquerel.

Beta Particle (β): Charged particle emitted from the nucleus of an atom, with a mass and charge equal in magnitude to that of an electron.

Blank Sample: A sample of the same media as the field sample being analyzed but without the radionuclide(s) being measured. It enables correction for the inherent sample background.

Composite Sample: A series of single collected portions (aliquots) analyzed as one sample. The aliquots making up the sample are collected at time intervals that are very short compared to the composite period.

Control Station: A background sampling location, i.e., a location not likely to be affected by plant effluents due to its distance and/or direction from Plant 2.

Counting Error: An estimate of the two-sigma uncertainty associated with the sample results based respective count times.

$$\pm 1.96 \sqrt{(\text{Sample CPM} / \text{Count Time}) + (\text{Bkg CPM} / \text{Count Time})}$$

Curie (Ci): 3.7×10^{10} disintegrations per second, or 2.22×10^{12} disintegrations per minute.

Direct Radiation Monitoring: The measurement of radiation dose at various distances from the plant is assessed through the use of thermoluminescent dosimeters and pressurized ionization chambers.

DOH: Washington State Department of Health.

EFSEC: Energy Facility Site Evaluation Council.

FFTF: U.S. Department of Energy's Fast Flux Test Facility near Plant 2. Also known as the 400 Area.

Flow Proportional Sampling: Sample collection volume or frequency determined as a function of the flow rate of the water being sampled.

Grab Sample: A single discrete sample drawn at one point in time.

Indicator Station: A sampling location that could be affected by plant effluents due to its proximity and/or direction from Plant 2.

Ingestion Pathway Monitoring: The ingestion pathway includes milk, soil, fish, garden produce. Also sampled (under special circumstances) are other media such as vegetation and animal products such as eggs and meat when additional information about particular radionuclides is needed.

Lower Limit of Detection (LLD): 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 a 5% probability of a false conclusion that a blank observation represents "real" signal.

$$LLD = 4.66 S_b / (2.22 \cdot Vol \cdot Eff \cdot Yield \cdot e^{(-\lambda t)})$$

Where LLD is the "*a priori*" or 'before-the-fact' measurement and not "*a posteriori*" or 'after-the-fact' measurement.

Mean: The average, i.e., the sum of results divided by the number of results.

Microcurie: 3.7×10^4 disintegrations per second, or 2.22×10^6 disintegrations per minute.

Milliroentgen (mR): 1/1000 Roentgen; a unit of exposure to X or gamma radiation.

NIST: National Institute of Standards and Technology.

NRC: U.S. Nuclear Regulatory Commission.

ODCM: Offsite Dose Calculation Manual, which contains the program requirements formerly contained in the Technical Specifications.

Picocurie (pCi): 1×10^{-12} Curie or 2.22 disintegrations per minute; one millionth of a microcurie.

REMP: Radiological Environmental Monitoring Program.

Range: The difference between the smallest and largest results.

Restricted Area: Any area to which access is controlled for purposes of protection of individuals from exposure to radiation and radioactive materials.

Results: The results of sample collection are discussed and interpreted by comparing them to similar measurements made during the preoperational and previous operational periods and to the detection capabilities associated with the current methods of analysis.

Roentgen: Unit of exposure to X or gamma (γ) radiation in air.

Site Certification Agreement (SCA): The Plant 2 licensing agreement with the State of Washington.

Spike Sample: A sample containing a known concentration of the radionuclide(s) being measured.

Standard Deviation: A measure of the scatter of a set of observations (or samples) around their mean value. Indicated by (σ).

Standard Error of the Mean: An estimate of the uncertainty associated with the mean of observation (or sample) averages.

$$SE = \sqrt{\left(\frac{S^2}{n}\right)}$$

where S^2 , the variance is

$$S^2 = \frac{1}{(n-1)} \sum (X_i - \bar{X})^2$$

SWTF: Sanitary Waste Treatment Facility; sanitary waste processing facility for Plant 2 and WNP-1 and WNP-4 sites.

TEDA: triethylene diamine

TLD: Thermoluminescent dosimeter. A TLD contains a phosphor which stores energy from exposure to radiation and emits that energy in the form of light when heated.

3.0 INTRODUCTION

3.1 Site Description

The Washington Public Power Supply System's Nuclear Plant 2 is located in a sparsely populated shrub-steppe region within the Department of Energy's Hanford Site in southeastern Washington. The plant is approximately three miles west of the Columbia River and is surrounded on all sides by uninhabited desert land. The nearest population centers are Richland, Pasco and Kennewick, which are 12 miles south, 18 miles southeast, and 21 miles southeast, respectively. The nearest privately-owned lands are located approximately four miles ENE of the plant, across the Columbia River. Given the prevailing wind directions, shown in the 1997 wind frequency distribution in Figure 3-1, the focus of REMP sampling is the farming region east of the plant site.

Because Plant 2 is located on the Hanford Site, other potential sources of radioactive materials are in close proximity to Plant 2. For this reason, sampling locations near the plant provide useful information for separating the potential effects of Plant 2 from those of the other sources on the Hanford Site.

3.2 Program Background

The REMP is designed to conform to the regulatory guidance of the Nuclear Regulatory Commission (NRC) as provided by Regulatory Guides 4.1⁽¹⁾ and 4.8⁽²⁾, including the Radiological Assessment Branch Technical Position⁽³⁾.

The quality assurance aspects of the program and the thermoluminescent dosimetry are conducted in accordance with Regulatory Guides 4.15⁽⁴⁾ and 4.13⁽⁵⁾. The REMP also must adhere to the requirements of the Washington Energy Facility Site Evaluation Council (EFSEC)⁽⁶⁾, the Plant 2 Technical Specifications⁽⁷⁾ and the Offsite Dose Calculation Manual (ODCM)⁽⁸⁾. These requirements cover not only the environmental sampling and sample analysis aspects of the program, but also the reporting and quality assurance requirements of the program.

The preoperational phase of the program, which lasted from March 1978 until initial criticality in January 1984, provided a baseline of background environmental data. The variability in the background levels of radioactivity is due to differences in geologic composition, Chernobyl and nuclear weapons test fallout, meteorological conditions and seasonal changes.

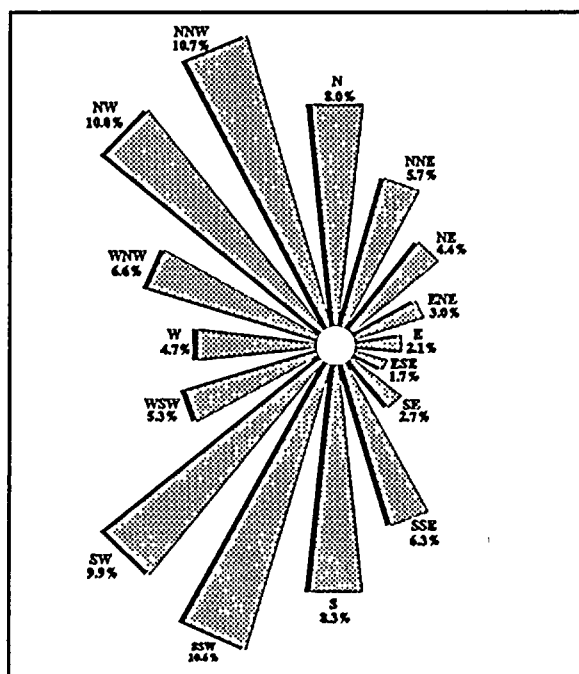


Figure 3-1 Average Wind Direction During 1997

REMP environmental samples are analyzed by a contract analytical laboratory. Teledyne Brown Engineering Environmental Services in Westwood, New Jersey has performed the analysis of REMP samples since June 1986. The thermoluminescent dosimeters used in the REMP to assess the direct radiation were processed in the past by the Supply System. In 1996, the Supply System contracted with ThermoNUtech, to process the TLDs in their West Richland laboratory. In 1997, ThermoNUtech moved their laboratory to Albuquerque, New Mexico.

Any radiological effect of Plant 2 on the environment must be distinguished from the normal variation in background radiation levels and from the effects of other sources of radioactive effluents in the area. The monitoring results obtained during each year of the plant's operation are compared to the preoperational data and to data from previous operating years to determine whether a significant accumulation of plant-produced radionuclides has occurred in the environment.

Quarterly averages of the results are also compared to the NRC non-routine reporting levels listed in the ODCM. In addition to evaluating the environmental concentrations against federal standards or limits, the REMP also compares the results to state standards.⁽¹¹⁾⁽¹²⁾⁽¹³⁾ The results are discussed and interpreted by comparing them to similar measurements made during the preoperational and previous operational periods and to the detection capabilities associated with the current methods of analysis. The quality assurance and quality control aspects of the program are also discussed in this report.

3.3 Program Objectives

The REMP provides a mechanism for determining whether the levels of radioactivity in the plant environs are within established limits and to ensure that the accumulation of radionuclides in the environment will not become significant as a result of plant operations.

While in-plant monitoring programs are used to ensure that 10CFR20⁽⁹⁾ and 10CFR50⁽¹⁰⁾ criteria for releases of radioactive effluents are met, the REMP provides supplemental verification that the concentrations of radionuclides in the environment are not greater than anticipated.

4.0 PROGRAM DESCRIPTION

The requirement for the Radiological Environmental Monitoring Program (REMP) is defined by the WNP-2 Offsite Dose Calculation Manual (ODCM). The sampling plan presented in Table 4-1 in this report shows which samples are required by the ODCM and provides a summary of the sample locations, collection frequency, and types of analyses performed. The methods of sampling and sampling frequencies utilized in the program have been determined by such factors as the half-lives and major exposure pathways for the radionuclides potentially released from the plant to the surrounding environment.

4.1 Sample Locations

Eighty-three sample locations were included in the 1997 monitoring program. Seventy-five indicator and three control (i.e. background) stations were located within 10 miles (16 kilometers) of Plant 2. Three additional control stations and two indicator stations were outside the 10-mile radius from the plant. Sample stations are listed in Table 4-2 by meteorological sector, sample media and approximate distance from the plant. The numbers and locations of sample stations are based primarily on factors such as population distribution and meteorological conditions and also on station accessibility, security throughout the year and the requirements of applicable regulations. Other factors, such as the need to monitor locations which potentially could be impacted by Plant 2 operations, influence the location of REMP sampling sites.

The REMP sampling locations listed in Tables 4-1 and 4-2 are shown in Figures 4-1 and 4-2. Figure 4-3 provides a more detailed map of sampling locations in the Sunnyside/Grandview area. Figure 4-4 shows the locations of the storm drain (Station 101) and the Sanitary Waste Treatment Facility (Station 102), which are NPDES sites. Also shown are the containerized storage area (Station 118), the cooling tower landfill (Station 119) and the spray pond drainfield (Station 120) which are special interest stations.

4.2 Land Use Census

The land use census for areas within 5 miles of Plant 2 was performed in August. The objectives of the land use census are to identify the locations of the nearest milk animal, residence, and garden greater than 50 m² (500 ft²) producing broadleaf vegetation and to determine whether any site located during the census has a calculated dose or dose commitment greater than the sites currently monitored for the same exposure pathway. If a new location with a higher dose commitment is found, routine sampling of that dose pathway would be initiated at that new site.

The results of the 1997 land use census within 5 miles of Plant 2 are given in Table 4-3. No changes from the 1996 land use census were observed. No milk animals are located within the 5-mile radius. The nearest milk location is located 7.2 miles east-southeast of Plant 2.

4.3 Sampling Methods

Environmental samples were collected according to the program plan in Table 4-1. All samples were collected by Supply System personnel. Documented procedures for sample collection and TLD analyses are contained in the Supply System's Environmental and Analytical Laboratory Instruction (EALI) manual. The sample analyses procedures are prepared and maintained by the analytical contractor and reviewed by the Supply System prior to implementation.

The following sections describe the sampling and preparation methods.

4.3.1 Direct Radiation

During 1997, thermoluminescent dosimeters (TLDs) were used to determine the direct radiation levels at sixty (60) monitoring locations listed in Table 4-1. In January 1997, TLD Station 65 was added. This station is 7.3 miles south of Plant 2 and is located near a new housing development. Also, TLD stations ST120-West and ST120-Control were removed. The remaining station, ST120-East, is located midway down the bank of the spray pond drainfield trench near the area of greatest sediment deposition. The TLDs at ST119-Control will serve at the control station for ST120. The control station TLD (background) is located at Station 9A in Sunnyside. The remaining TLDs served as indicator TLDs throughout the year.

Two sets of TLDs placed three feet above ground were employed at each location. One set of TLDs were exchanged on a quarterly basis (Quarterly TLDs) and the other exchanged on an annual basis (Annual TLDs). Exposure received by the field TLDs during transport to the TLD sites was monitored by a set of trip control dosimeters that accompanied the field dosimeters to and from the field locations. Another set of TLDs were used as building controls which were used to determine the exposure of the TLDs at the controlled storage location. The TLD exposure during transport to and from the field was determined by subtracting the difference between the building control results and the trip control results.

Since 1995, the REMP has used Harshaw TLDs and since 1996, the environmental dosimeters have been processed by a vendor, ThermoNutech. The environmental dosimeters were processed on either a Harshaw Model 8800 or a Harshaw Model 6600 TLD Reader. The file generated when the Harshaw TLD reader processes the environmental TLDs was stored in the host computer and used as input for the Harshaw algorithm that calculates environmental doses. The TLD reader was typically calibrated within 7 days prior to processing field TLDs. The TLD reader was calibrated in generic units using calibration cards irradiated on a ThermoNutech Sr-90 source. "Relative response" factors (gU/R) were used by the dose algorithm to convert an element reading in gU from the reader to the Roentgen equivalent reading.

The exposure values determined for calibration exposures, as well as the exposures of some QA dosimeters (processing control dosimeters), were based on a National Institute of Standards and Technology (NIST) traceable Sr-90 source. The exposure values for the audit dosimeters (spiked dosimeters) were based on the calculated field strength of a Supply System Cs-137 source. Ionization chamber measurements made during TLD exposure were used to confirm the calculated exposure. If the calculated exposure and the ionization chamber reading differed by 5% or more, an investigation was performed to resolve the difference.

Two Reuter Stokes pressurized ionization chambers (PICs) provided additional capability for measuring direct radiation exposure. These units are no longer part of the routine monitoring program, but they are used in special monitoring situations and maintained as back-up monitoring systems.

4.3.2 Airborne Particulate/Iodine

Air particulate and air iodine (I-131) samples were obtained through the use of portable, low volume (1.5 cfm) constant flow-rate sampling units at each of twelve locations. The samples drawn at Station 9A (Figure 4-3) were considered control samples; the ones drawn at the other locations (Figure 4-1) were indicator samples. Air particulates were collected by drawing air through a 47mm diameter glass fiber filter. Air iodine was collected by drawing air through a 57mm diameter TEDA impregnated charcoal cartridge. The particulate air filter and charcoal cartridge were placed in tandem, particulate filter first, in a holder that attached to the air inlet of the sampler unit. The sampler units were placed in ventilated metal weatherproof housings mounted on elevated platforms at each air sample location. The filter media are changed weekly and shipped to the analytical contractor for analysis within one or two days of collection.

New air sampler units were purchased in 1997, and were placed in service beginning in May. By the first week in October, all of the sampler units had been replaced.

4.3.3 Water

There were nine locations for water sampling in 1997: three for the evaluation of river/drinking water, one for plant discharge water, three for groundwater, one for the storm drain water, and one for sanitary waste water. One river/drinking water location, Station 26, was used for evaluation of the plant intake water, i.e., the river water taken upstream of the plant discharge point. This sample location is also used for a drinking water sample since Plant 2 draws its drinking water from the intake water. It is considered the river/drinking water control sample because of its upstream location. Two additional locations, Stations 28 and 29, were used to evaluate the water at the two nearest drinking water locations, the Department of Energy 300 Area and the Richland Water Treatment Plant. These two stations were considered indicator stations.

The ODCM requirement for a downstream water sample "near but beyond the mixing zone" was met by sampling water from Station 27, the plant discharge line to the Columbia River. This sample reflects the radioactivity present in the plant discharge prior to any river dilution, rather than the concentrations that would be found after dilution in the mixing zone. Water is drawn at this location because it was not feasible to perform flow-proportional composite sampling in the mixing zone area of the river downstream from the plant discharge point. The Station 27 sample is also considered an indicator sample.

Composite samplers are installed at the Columbia River pumphouse to monitor the plant intake water (Control Station 26), and the cooling tower discharge line (Station 27). There are composite samplers at the two drinking water locations (Stations 28 and 29). The samplers collect 25-ml aliquots of water at regular intervals of time or flow. Non-routine analyses on the drinking water samples include strontium-90 and iodine-131 analysis. Strontium-90 analysis is required when the gross beta activity exceeds either 8 pCi/liter or ten times the mean of the

previous three months' activity for a specific location. Iodine-131 analysis is required when the dose calculated for the consumption of water exceeds one millirem per year. Neither of these analyses were required during 1997.

There are three wells within the vicinity of Plant 2 that are used as groundwater sampling locations. These are a deep well on the Plant 2 site (0.1 mile north of the Reactor Building) and two wells on the WNP-1 site (1.2 miles downgradient from Plant 2). Water from the Plant 2 well can be used as a backup source for drinking and fire protection. Water from the WNP-1 wells supplies the drinking and fire protection water for the WNP-1 site. Although none of these wells draw from the unconfined aquifer, they are considered indicator samples. Quarterly grab samples were taken from each of these wells. One gallon (3.8 liters) was collected from each well for gamma analysis and one liter was drawn for tritium analysis.

Water samples were collected from the storm drain outfall (Station 101) using a flow proportional composite sampler. These samples were analyzed for gross beta, gamma and tritium. EFSEC Resolution No. 259 for the Sanitary Waste Treatment Facility (SWTF; Station 102) requires a monthly sample to be taken at the headworks (102B) which was analyzed for gamma and tritium and two samples prior to discharge (102C) which were taken at the discharge weir of the south pond. Those samples were analyzed for gross alpha, gross beta, gamma and tritium. In addition, one sample was taken from the west end of each pond and analyzed for gross beta, gamma and tritium.

Beginning in April of 1997, the SWTF began receiving sanitary waste from the U.S. Department of Energy's 400 Area. The Supply System installed a flow meter and composite sampler on the 400 Area sewer line just above where the 400 Area/Plant Support Facility (PSF) intertie is located. This sampler takes a flow-proportional composite sample which was collected at least monthly. Gross alpha and beta analyses, tritium analysis, and gamma analysis were performed on each sample.

4.3.4 Soil

As required by the Site Certification Agreement (EFSEC Resolution No. 260⁽⁶⁾), annual soil samples were taken at the indicator stations, Stations 1, 7, 21 and 23. One sample was taken at the control location, Station 9A (Figure 4-3). Quarterly soil samples were collected at two special interest locations, Station 101 and Station 118, as shown in Figures 4-4.

Each sample was collected from an area of approximately one square foot to a depth of approximately one inch. Approximately two kilograms of soil were collected in each sample. Soil samples were shipped to the analytical contractor after collection and analyzed for gamma activity.

If the gamma isotopic analysis indicates that cesium levels in any of the indicator samples exceeds ten (10) times the level in the control sample, a strontium analysis is performed on the sample(s). No strontium analysis was required during 1997.

4.3.5 Sediment

For the second year, only the fall collection of the semiannual sediment could be taken. High water levels in the Columbia River covered the two sample sites well into the early summer. The fall sample was collected at the end of October. The upstream sediment sample (Station 33) was collected from a location approximately two miles upriver from the plant discharge. The downstream sample (Station 34) was collected approximately one mile downstream of the plant discharge. Each sample consisted of approximately two kilograms of the shallow surface sediment scooped from below the waterline. The samples were shipped to the analytical contractor.

Sediment samples were also taken from the storm drain (Station 101) outfall and pond and the SWTF (Station 102) north stabilization pond. Sediment sampling in these locations was performed in a manner similar to river sediment sampling. Special care was taken to prevent loss of the fine particulates in the sediment. In addition, formalin was added to the sanitary pond sediment prior to shipping, to inhibit gas formation within the sample container.

A 2-kilogram sample of dried cooling tower sediment was collected from the sediment disposal cell (Station 119) within thirty days of the completion of cleaning the cooling towers. In 1997 the cooling towers were cleaned once, hence, only one sample was collected for gamma spectrometry analysis.

4.3.6 Fish

The annual fish sampling was performed in late September and early October. Fish samples collected from the Columbia River (Station 30 in Figure 4-1) were indicator samples, whereas the fish collected on the Snake River (Stations 38 and 38A in Figure 4-2), were control samples.

Three separate fish samples, consisting of an anadromous species and two other species generally considered edible or potentially edible (such as carp, catfish and whitefish) were collected at each location. All the fish were collected using electro-shocking except the samples of the anadromous species which were collected from the Ringold hatchery on the Columbia River and at the Lyons Ferry Fish Hatchery on the Snake River. The fish were filleted to obtain approximately one kilogram of edible flesh per sample. The fillets were placed in clean plastic bags and frozen until shipment to the analytical contractor. Fish are sampled annually unless elevated radiation levels related to plant operations are observed, in which case sampling is conducted semiannually.

4.3.7 Milk

Milk samples were collected monthly January through March and October through December and semimonthly during the spring and summer months when the cows were likely to be grazing or on fresh feed. Enough raw milk was collected from each sampling location to obtain a one gallon sample after the cream had been skimmed off. The samples were refrigerated overnight and the cream skimmed off the next morning. The milk samples were chilled and shipped to the analytical contractor within a day of collection.

Routine samples were collected from two indicator locations (Stations 36 and 64) across the Columbia River in Franklin County. Milk samples were also collected at one indicator station (Station 9B) and one control location (Station 96) in the Sunnyside/Grandview area (in Figure 4-3). Station 9B in Sunnyside serves as an indicator station because a portion of the feed for the cows at that location is hay from Franklin County north of Pasco. That factor makes it unsuitable for use as a control location.

4.3.8 Garden Produce

Samples of local garden produce were collected monthly from April to September when the produce was readily available. When possible, three types of produce samples (a root crop, fruit, and a leafy vegetable) were collected at each location. The indicator samples were collected from a region in a predominant downwind direction (Station 37 in Figure 4-2) where crops are irrigated with Columbia River water. The control samples were obtained from produce stands in the Sunnyside area (Station 9C in Figure 4-3), the direction least likely to be affected by plant effluents. Apples were collected in September from Station 91, the Rio Vista Farms orchard, which is irrigated with Columbia River water.

4.3.9 Vegetation

The annual sample of vegetation growing in the storm drain pond was collected in June. Cattails and grasses were the principal types of vegetation collected. Approximately two kilograms of sample were collected each time. Care was taken to avoid including the roots or soil from around the roots in the samples.

4.4 Analytical Procedures

The analytical procedures used for the 1997 REMP samples are described below. Teledyne Brown Engineering Environmental Services performed all routine analyses of REMP samples during 1997.

4.4.1 Gross Beta Activity on Particulate Filters

The particulate filters were counted in a gas flow-proportional counter after a delay of five or more days to allow for the radon-222 and radon-220 (thoron) daughter products to decay. An unused air particulate filter was counted as the blank with each weekly set of filters.

4.4.2 Measurement of Gamma Emitters

A shielded Ge(Li) detector system was coupled to a computer-based data acquisition system which performed pulse height and gamma energy analysis. The information collected about each peak was compared to a library of known peaks. Isotopic identification was performed as was the radioactivity calculation which used the appropriate fractional gamma ray abundance, half-life, detector efficiency, and net counts in the peak region.

Milk and Water

A 1-liter Marinelli beaker was filled with a representative aliquot of the sample. The sample was then counted for at least 1000 minutes (16.7 hours).

Foodstuff

As much of the edible portion of the sample as possible was loaded into a tared Marinelli beaker and weighed. The sample was then counted for at least 1000 minutes (16.7 hours).

Vegetation

As much sample as possible is placed in a 1-liter Marinelli beaker and counted for approximately 1000 minutes (16.7 hours). The sample is not dried prior to counting, so the results are given in terms of wet weight.

Soils and Sediments

A large quantity of the sample was dried at a temperature below 100°C. As much sample as possible was loaded into a tared 1-liter Marinelli beaker and weighed. The sample was then counted for at least 360 minutes (6 hours).

Charcoal Cartridges (Air Iodine)

Charcoal filters were counted up to five at a time, with one positioned on the face and up to four on the side of the calibrated Ge(Li) detector. The detection limit for a charcoal cartridge was uniquely determined for each filter and by using its position. In the event that iodine-131 would have been observed in the initial counting of a set, each charcoal cartridge in the set was then positioned separately on the face of the detector and counted.

Air Particulate Filters

Four air particulate filters for a quarterly composite from each field station were aligned one in front of another and counted for at least 360 minutes (6 hours).

4.4.3 Gross Beta Activity in Water

A one-liter aliquot of each sample was evaporated to a small volume and transferred to a stainless steel planchet. The sample was dried under heat lamps, cooled, then counted on an automatic beta proportional counter. The results were calculated using empirical self-absorption curves which enabled the correction of effective counting efficiency based on the sample residue mass.

4.4.4 Iodine-131 in Water

Two liters of sample were first equilibrated with a stable iodide carrier. A batch treatment with anion exchange resin was used to remove iodine from the sample. The iodine was then stripped from the resin with sodium hypochlorite solution, reduced with hydroxylamine hydrochloride, and extracted into carbon tetrachloride as free iodine. It was then back-extracted as iodide into a sodium bisulfite solution and precipitated as palladium iodide. The precipitate was weighed for chemical yield and mounted on a nylon planchet for low-level beta counting. The chemical

yield was corrected by measuring the stable iodide content of the water with a specific ion electrode. During 1997, this procedure was used only on intercomparison samples, since the doses calculated via ODCM methodology for the consumption of drinking water did not exceed one millirem per year.

4.4.5 Tritium in Water

The analysis of tritium in water was performed utilizing liquid scintillation. Liquid scintillation requires 10 milliliters of water mixed with 10 milliliters of liquid scintillation "cocktail." The mixture is then counted in an automatic liquid scintillation detector.

4.4.6 Strontium-89 and 90 in Water, Milk and Soil

During 1997, strontium analyses were not required for any routine REMP water, milk or soil samples. It was used for intercomparison water and sediment analyses. The techniques used to analyze for strontium in the various media are described below.

Water

Stable strontium carrier was added to one liter of sample and the volume is reduced by evaporation. Strontium was precipitated as $\text{Sr}(\text{NO}_3)_2$ using fuming (90%) nitric acid.

Milk

Stable strontium carrier was added to one liter of sample. The sample is then evaporated and ashed in a muffle furnace. The ash is dissolved and strontium precipitated as a phosphate. The sample is then redissolved and strontium precipitated as $\text{Sr}(\text{NO}_3)_2$ using fuming (90%) nitric acid.

Soil and Sediment

The sample is first dried under heat lamps and a 10-gram aliquot is taken. Stable strontium carrier is added and the sample is leached in hydrochloric acid. After the mixture is filtered, phosphates are then precipitated, collected by filtration, and dissolved in nitric acid. Strontium is precipitated as $\text{Sr}(\text{NO}_3)_2$ using fuming (90%) nitric acid. A barium chromate scavenge and an iron (ferric hydroxide) scavenge are then performed. Stable yttrium carrier is added and the sample is allowed to stand for five days or more for yttrium ingrowth. Yttrium is then precipitated as hydroxide, dissolved and reprecipitated as oxalate. The yttrium oxalate is mounted on a nylon planchet and counted in a low-level beta counter to infer strontium-90 activity. Strontium-89 activity is determined by precipitating SrCO_3 from the sample after yttrium separation. This precipitate is mounted on a nylon planchet and covered with an 80 mg/cm² aluminum absorber for low-level beta counting.

4.4.7 Iodine-131 in Milk

Two liters of sample are first equilibrated with stable iodide carrier. A batch treatment with anion exchange resin is used to remove iodine from the sample. The iodine is then stripped from the resin with sodium hypochlorite solution, reduced with hydroxylamine hydrochloride, and extracted into carbon tetrachloride as free iodine. It was then back-extracted as iodide into sodium bisulfite solution and precipitated as palladium iodide. The precipitate was weighed for

chemical yield and mounted on a nylon planchet for low-level beta counting. The chemical yield is corrected by measuring the stable iodide content of the milk with a specific ion electrode.

4.5 Data Analysis Methods

Since mid-1984, the results of the REMP analyses have been presented as net results calculated from the gross or total counts determined for each radionuclide minus the background counts of the counting or detection instrument. Consequently, for several sample types, the results range from negative to positive numbers. This manner of presenting environmental data prevents the bias and loss of individual results inherent in the use of "less than" ($<$) values, where the "less than" numbers can have a variety of meanings, such as "less than the lower limit of detection (LLD)." A listing of the LLDs determined for each analysis is provided in Table 4-4 as a reference when reviewing the sample results.

Plots of the sample results versus time are used to represent the results for analyses such as gross beta on air particulate filters, where the results are normally above the lower limits of detection. In such cases, the indicator station results are plotted with the control station results for easy comparison. Other data analysis techniques, such as frequency distributions, are also used to represent the data and to determine whether trends that could be attributed to Plant 2 operations are evident. Thermoluminescent dosimeter (TLD) data is presented in terms of the net mR/day exposure rate. These results are determined from the total exposure (in mR) calculated for each TLD from its total thermoluminescent output minus the TLD background, minus any transit (or trip) exposure received during distribution and retrieval, and divided by the number of days the TLD was in the field. Frequency distributions and graphs of TLD data by meteorological sector and distance from the plant are used to interpret trends in the results.

TLD data summaries include the term "standard error." The standard error, which is the estimate of the precision of the mean, is used for the means of quarterly and annual data and is an indicator of the uncertainty associated with the results. The mean results of the quarterly TLDs are compared with the results of annual TLDs and expressed as a ratio by dividing the quarterly results by the annual result.

TABLE 4-1
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM PLAN

SAMPLE TYPE ^(a)	SAMPLE STATION ^(b) NUMBER	SAMPLING AND COLLECTION FREQUENCY ^(c)	TYPE AND FREQUENCY OF ANALYSIS
1. AIRBORNE			
Particulates and radioiodine (6/12) ^(d)	1, 4-8, <u>9A</u> , 21, 23, 40, 48, and 57	Continuous sampling; weekly collection	Particulate: Weekly gross beta ^(e) ; gamma isotopic ^(f) of quarterly composite (by location)
Soil ^(g) (0/7)	<u>9A</u> , 1, 7, 21 and 23, 101, 118	Annually Quarterly or more often as needed.	Iodine: Weekly gamma analysis. Gamma isotopic ^(f) ; strontium-90 ^(h) Gamma isotopic
2. DIRECT RADIATION			
TLD ⁽ⁱ⁾ (34/61)	1-8, <u>9A</u> , 10-25, 40-47, 49-51, 53-56, 71-86 (1S-16S) ^(j) , 119B, <u>119-Control</u> , 120-East	Quarterly, annually	Thermoluminescent output; quarterly and annual processing.
PIC	Various locations, as needed ^(k)	Continuous recording, as needed	Exposure rate accumulated on mag card and in internal memory
3. WATERBORNE			
River/Drinking Water ^(l) (3/4)	<u>26</u> , 27, 28 and 29	Composite aliquots ^(m) ; monthly collection	Gamma isotopic ^(f) , gross beta, quarterly; tritium composite; strontium-90 ^(h) ; I-131 ^(o)
Storm Drain Water (1/1)	101	Composite aliquots ^(m) , weekly collection; grab samples	Gamma isotopic ^(f) , tritium, gross beta
Sanitary Waste Treatment Facility Water (1/1)	102	Monthly, annually, pre-discharge and as needed.	Gamma isotopic ^(f) , gross beta, gross alpha, tritium
Ground Water (2/3) ^(p)	31, 32, and 52	Quarterly	Gamma isotopic ^(f) ; tritium
River Sediment (1/2) ^(q)	<u>33</u> and 34	Semiannually	Gamma isotopic ^(f)
Sanitary Waste Treatment Facility Sediment (1/1)	102	Monthly or more often as needed	Gamma Isotopic ^(f)

TABLE 4-1 (Cont.)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM PLAN

SAMPLE TYPE ^(a)	SAMPLE STATION ^(b) NUMBER	SAMPLING AND COLLECTION FREQUENCY ^(c)	TYPE AND FREQUENCY OF ANALYSIS
Cooling Tower Sediment Disposal Area (0/1)	119	Within 30 days following Cooling Tower cleaning event	Gamma Isotopic ^(d)
4. INGESTION			
Milk ^(e) (4/4)	9B, 36, 64 and <u>96</u> ^(a)	Semi-monthly during grazing season, monthly at other times	Gamma isotopic ^(d) ; iodine-131; strontium- 90 ^(f)
Fish ^(e) (2/2)	30, <u>38</u>	Annually ^(e)	Gamma isotopic ^(d)
Garden Produce ^(e) (1/3)	<u>9C</u> , 91 ^(a) and 37	Monthly during growing season in the Riverview area of Pasco and a control near Grandview; annual collection at Station 91.	Gamma isotopic ^(d)
Vegetation (1/1)	101	annually	Gamma isotopic ^(d)

(a) The fraction in parentheses for each sample type indicates the ratio of ODCM-required sample locations to the total number of sample locations currently being monitored in the surveillance program. The SCA also requires certain numbers of sampling stations for each type of media.

(b) The underlined sample location designates a control station.

(c) Deviations are permitted if samples are unobtainable due to hazardous conditions, seasonal availability, malfunction of automatic sampling equipment, or other legitimate reasons. Such deviations are documented in Section 5

(d) The SCA requires nine or more air sampling stations.

(e) Particulate sample filters will be analyzed for gross beta after at least 24 to 48 hours to allow for the decay of radon daughter products. If gross beta activity is greater than 10 times the mean of the result for the control, Station 9A, gamma isotopic analysis shall be performed on the individual sample.

(f) Gamma isotopic means identification and quantification of gamma-emitting radionuclides that may be attributable to the effluents of Plant 2.

TABLE 4-1 (Cont.)

- (g) Soil samples are collected to satisfy the requirements of the Site Certification Agreement (SCA)⁽⁶⁾ for Plant 2. The SCA requires that soil samples be collected at five air sampling locations.
- (h) Strontium-90 analysis shall be performed on any indicator soil sample having cesium results greater than ten times the results for the control location.
- (i) TLD refers to thermoluminescent dosimeter. For purposes of the REMP, a TLD is a phosphor card (31.75mm x 44.75mm x 0.4mm) with eight individual read-out areas (four main dosimeter areas and four back-up dosimeter areas) in each badge case. TLDs used in the REMP meet the requirements of Reg Guide 4.13⁽⁹⁾ and ANSI N545-1975, except for specified energy-dependence response. Correlation factors are available for energy ranges with response outside of specified tolerances.
- (j) TLD Stations 71-86 are special interest stations and are not included among the 34 routine TLD stations required by the ODCM Table 6.3.1.1-1 (3.12-1). Their alternate designations are 1S-16S. The SCA requires that 25 or more TLD stations are located within a 10-mile radius of the plant.
- (k) Pressurized ion chambers (PICs) are not required as part of the routine monitoring program, but they are required by the SCA to be maintained as a supplemental or backup system. PICs were used routinely at various locations during 1997 to provide supplemental information.
- (l) The term "river/drinking water," instead of "surface/drinking water," is used throughout this report because the surface water is taken from the Columbia River. Station 26, Plant 2 makeup water intake from the Columbia River is both an upstream surface, or river, water sample and the drinking water control sample location. Station 28 (300 Area) and Station 29 samples are drinking water samples. The Station 27 sample, which is drawn from the plant discharge line, is taken in place of a "downstream" water sample near but beyond the mixing zone. It reflects the radioactivity present in the plant discharge prior to any river dilution. The SCA requires two drinking water locations downstream from the plant discharge and requires sampling from the plant intake and discharge water. Station 101, the storm drain pond, and Station 102, the Sanitary Waste Treatment Facility, are represented individually because they are unique sampling locations requiring special attention.
- (m) Composite (integrated grab) samples are collected with equipment which collects an aliquot at time intervals that are short relative to the compositing period.
- (n) When the gross beta activity in drinking water exceeds 8 pCi/liter, a strontium-90 analysis is performed.
- (o) When the dose calculated via ODCM methodology for consumption of water exceeds 1 mrem per year, iodine-131 analyses are performed on the drinking water samples.
- (p) The SCA requires sampling from wells used for fire protection and as backup drinking water sources.
- (q) The SCA requires sediment sample collection upstream and downstream of the plant discharge.
- (r) Milk samples will be obtained from farms or individual milk animals which are located in the most prevalent wind directions from Plant 2. Routine milk samples are collected in areas of high dose potential instead of within 5 kilometers, due to the locations of milk animals. The SCA requires at least three milk locations within the 10-mile radius of the plant and one in a control location.
- (s) Station 96 is the control station for milk samples because it was determined that the cows at Station 9B in Sunnyside were given feed grown in the Franklin County area across the Columbia River from Plant 2.

TABLE 4-1 (Cont.)

- (t) If cesium-134 or cesium-137 is measured in an individual milk sample in excess of 30 pCi/l, then the strontium-90 analysis will be performed.
- (u) There are no commercially important species in the Hanford Reach of the Columbia River. Most recreationally important species in the area are anadromous (primarily salmonids), which ascend rivers from the sea for breeding. Four fish species will normally be collected by the electroshock technique in the vicinity of the plant discharge (Station 30) and from the Snake River (Station 38). If electro-shocking produces insufficient anadromous fish samples from the Snake River, samples may be obtained from the fish trap at Ice Harbor Dam, Lyons Ferry Fish Hatchery, or other similar facility. If insufficient anadromous fish samples are produced through electro-shocking on the Columbia River, samples may be obtained at the Ringold Fish Hatchery.
- (v) If an impact is indicated, sampling will be conducted semiannually.
- (w) Garden produce will routinely be obtained from farms or gardens using Columbia River water for irrigation. One sample of a root crop, leafy vegetable, and a fruit is collected each sample period, if available. The variety of the produce obtained will be dependent on seasonal availability.
- (x) Station 91 is an apple orchard irrigated with Columbia River water. The apple crop from Station 91 is sampled annually.

TABLE 4-2

REMP SAMPLE LOCATIONS BY SECTOR

SECTOR ^(a)	STATION ^(b) NUMBER	ESTIMATED DISTANCE ^(c)		SAMPLE TYPE ^(d)
		MILES	METERS	
N (1)	52	0.1	161	GW
	71(1S)	0.3	483	TLD
	47	0.5	805	TLD
	57	0.8	1201	AP/AI
	18	1.1	1770	TLD
	53	7.5	12068	TLD
NNE (2)	72(2S)	0.4	644	TLD
	2	1.8	2896	TLD
	54	6.5	10459	TLD
NE (3)	73(3S)	0.5	805	TLD
	19	1.8	2896	TLD
	48	4.5	7241	AP/AI
	39	4.4	7084	FI
	46	5.0	8045	TLD
ENE (4)	101	0.3	483	SDW/SE/SO/VE
	74(4S)	0.4	644	TLD
	21	1.5	2414	AP/AI/SO/TLD
	20	1.9	3057	TLD
	11	3.1	4988	TLD
	33	3.6	5792	SE
	45	4.3	6919	TLD
	44	5.8	9332	TLD
E (5)	75(5S)	0.4	644	TLD
	22	2.1	3379	TLD
	10	3.1	4988	TLD
	26	3.2	5149	PW
	27 ^(e)	3.2	5149	DW
	30	3.3	5311	FI
	43	5.8	9332	TLD
ESE (6)	76(6S)	0.4	644	TLD
	31	1.1	1770	GW
	32	1.2	1931	GW
	51	2.1	3379	TLD
	23	3.0	4827	AP/AI/SO/TLD
	34	3.5	5632	SE
	91	4.4	7079	FR
	8	4.5	7241	AP/AI/TLD
	42	5.6	9010	TLD
	36 ^(e)	7.2	11585	MI
	5	7.7	12389	AP/AI/TLD
	64	9.7	15610	MI
	38	26.5	42639	FI

TABLE 4-2 (Cont.)

REMP SAMPLE LOCATIONS BY SECTOR

SECTOR ^(a)	STATION ^(b) NUMBER	ESTIMATED DISTANCE ^(c)		SAMPLE TYPE ^(d)
		MILES	METERS	
SE (7)	118	0.3	483	SO
	77(7S)	0.5	805	TLD
	24	1.9	3057	TLD
	3	2.0	3218	TLD
	41	5.8	9332	TLD
	40	6.4	10298	AP/AI/TLD
SSE (8)	102	0.4	644	SWW/SE
	119-Control	0.2	335	TLD
	120	0.3	483	SO/TLD
	78(8S)	0.7	1126	TLD
	25	1.6	2574	TLD
	55	6.2	9976	TLD
	28	7.4	11907	PW
	4	9.3	14964	AI/AP/TLD
	29	11.0	17699	PW
	37	16.0	25744	GP
S (9)	119	0.2	366	SO
	119B	0.2	381	TLD
	79(9S)	0.7	1126	TLD
	1	1.3	2092	AP/AI/SO/TLD
	65	7.3	11748	TLD
	6	7.7	12389	AP/AI/TLD
SSW (10)	80(10S)	0.8	1287	TLD
	50	1.2	1931	TLD
	56	7.0	11263	TLD
SW (11)	81(11S)	0.7	1126	TLD
	13	1.4	2253	TLD
	96	36.0	49250	MI
WSW (12)	82(12S)	0.5	805	TLD
	14	1.4	2253	TLD
	9A, 9B, 9C	30.0	48270	AP/AI/MI/GP/TLD/SO
W (13)	83(13S)	0.5	805	TLD
	15	1.4	2253	TLD
WNW (14)	84(14S)	0.5	805	TLD
	16	1.4	2253	TLD
	7	2.7	4344	AP/AI/SO/TLD
NW (15)	85(15S)	0.5	805	TLD
	49	1.2	1931	TLD
NNW (16)	86(16S)	0.4	644	TLD
	17	1.2	1931	TLD
	12	3.1	4988	TLD

TABLE 4-2 (Cont.)

- (a) The area in the vicinity of Plant 2 is separated into 16 separate sectors for reporting purposes. The 16 sectors cover 360 degrees in equal 22.5 degree sections, beginning with Sector 1 (N) at 348.75 to 11.25 degrees and continuing clockwise through Sector 16 (NNW).
- (b) The alternate designations for TLD Stations 71-86 are given in parentheses, i.e., 1S-16S.
- (c) Distances are estimated from map positions for each location as a radial distance from Plant 2 containment.
- (d) Sample Type Key:

AI	- Air Iodine	AP	- Air Particulate
DW	- Discharge Water	FI	- Fish
FR	- Fruit	GP	- Garden Produce
GW	- Ground Water	MI	- Milk
PW	- Surface (River)/Drinking Water	SDW	- Storm Drain Water
SE	- Sediment	SO	- Soil
SWW	- Sanitary Waste Water	TLD	- Thermoluminescent Dosimeter
VE	- Vegetation		

Station 9 designates the Sunnyside-Grandview control area. It is actually three separate stations (Stations 9A for TLD, AI/AP and SO, 9B for milk, and 9C for GP) within a few miles of each other and all within 30-35 miles of Plant 2. Station 96, which is the control station for milk, is also located within the control area. It is 36 miles from Plant 2. Station 9B, which was the control location for milk until 1986, is now an indicator milk location.

- (e) Duplicate samples, i.e., samples drawn at the same time as the routine samples and submitted for analysis as a quality assurance check, are collected at this location. The station designation for the duplicate of Station 27 is Station 72 for second and fourth quarters and 92 for the first quarter. The station designation for the duplicate of Station 36 is Station 37.

TABLE 4-3

1997 FIVE MILE LAND USE CENSUS RESULTS

SECTOR ^(a)	NEAREST RESIDENT ^(b)	GARDEN ($>50M^2$)	DAIRY ^(c) ANIMALS	LIVESTOCK
NE	4.3	none	none	4.8
ENE	4.1	4.1 ^(d)	none	none
E	4.5	none	none	none
ESE	4.2	4.3 ^(d)	none	4.6
SE	none	none	none	none

(a) Eleven of the sixteen meteorological sectors within the five-mile radius of Plant 2 are on the federally-owned Hanford Site; the remaining land is comprised of 4.5 sq. miles of privately-owned farm land. Only those sectors containing points of interest are presented here.

(b) Estimated distances in miles.

(c) The closest dairy animal locations are at 8.3 miles SE and 7.2 and 9.7 miles ESE. The dairy at 8.3 miles SE is not used for milk sample collection due to the owner's reluctance to participate in the sampling program.

(d) Small garden with broadleaf; samples were not available due to the small amounts grown.

TABLE 4-4

**COMPARISON OF TELEDYNE NOMINAL LOWER LIMITS OF DETECTION
WITH OFFSITE DOSE CALCULATION MANUAL⁽⁸⁾ REQUIREMENTS**

MEDIA (UNITS)	ANALYSIS	TELEDYNE LLDs ^(a)	BTP REQUIRED LLDs
Air (pCi/m ³)	Gross Beta	0.003	0.01
	Gamma Spectrometry		
	Cs-134	0.001	0.05
	Cs-137	0.001	0.06
	I-131	0.01	0.07
Water: (pCi/l)	Gross Beta	4	4
	Tritium	300	2000 ^(b)
	I-131	1	---
	Sr-90	1	---
	Gamma Spectrometry		
	Mn-54	10	15
	Fe-59	20	30
	Co-58	10	15
	Co-60	10	15
	Zn-65	20	30
	Zr-95	20	30
	Nb-95	10	15
	Cs-134	10	15
	Cs-137	10	18
	Ba-140	20	60
	La-140	10	15
Soil/Sediment: (pCi/kg dry)	Gamma Spectrometry		
	Co-57	120	---
	Co-60	30	---
	Zn-65	100	---
	Cs-134	30	150
	Cs-137	40	180
	Sr-90	10	---
Fish: (pCi/kg wet)	Gamma Spectrometry		
	Mn-54	20	130
	Fe-59	30	260
	Co-58	20	130
	Co-60	20	130
	Zn-65	30	260
	Cs-134	20	130
	Cs-137	20	150
Milk: (pCi/l)	I-131	0.5	1
	Gamma Spectrometry		
	Cs-134	10	15
	Cs-137	10	18
	Ba-140	20	60
	La-140	10	15
	Sr-90	1	---
Garden Produce: (pCi/kg wet)	Gamma Spectrometry		
	Cs-134	20	60
	Cs-137	20	80
	I-131	30	60

^(a) These are the contract LLDs. Actual LLDs may be lower for specific samples.

^(b) If no drinking water pathway exists, a value of 3,000 pCi/l may be used.