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U.S. Nuclear Regulatory Commission  
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Subject: **COLUMBIA GENERATING STATION, DOCKET NO. 50-397  
INDEPENDENT SPENT FUEL STORAGE INSTALLATION, DOCKET NO. 72-35  
2004 ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT**

References: 1. Columbia Generating Station Technical Specification 5.6.2  
2. Independent Spent Fuel Storage Installation Technical Specification 5.4.b  
3. EFSEC Resolution No. 260, January 13, 1992

Dear Sir or Madam:

In accordance with the requirements of References 1-3, the subject report and separate data volume are submitted as enclosures to this letter. If you have questions regarding this information, they may be directed to TJ Southworth at (509) 377-8654.

Respectfully,



DK Atkinson (Mail Drop PE08)  
Vice President, Nuclear Generation

Enclosures

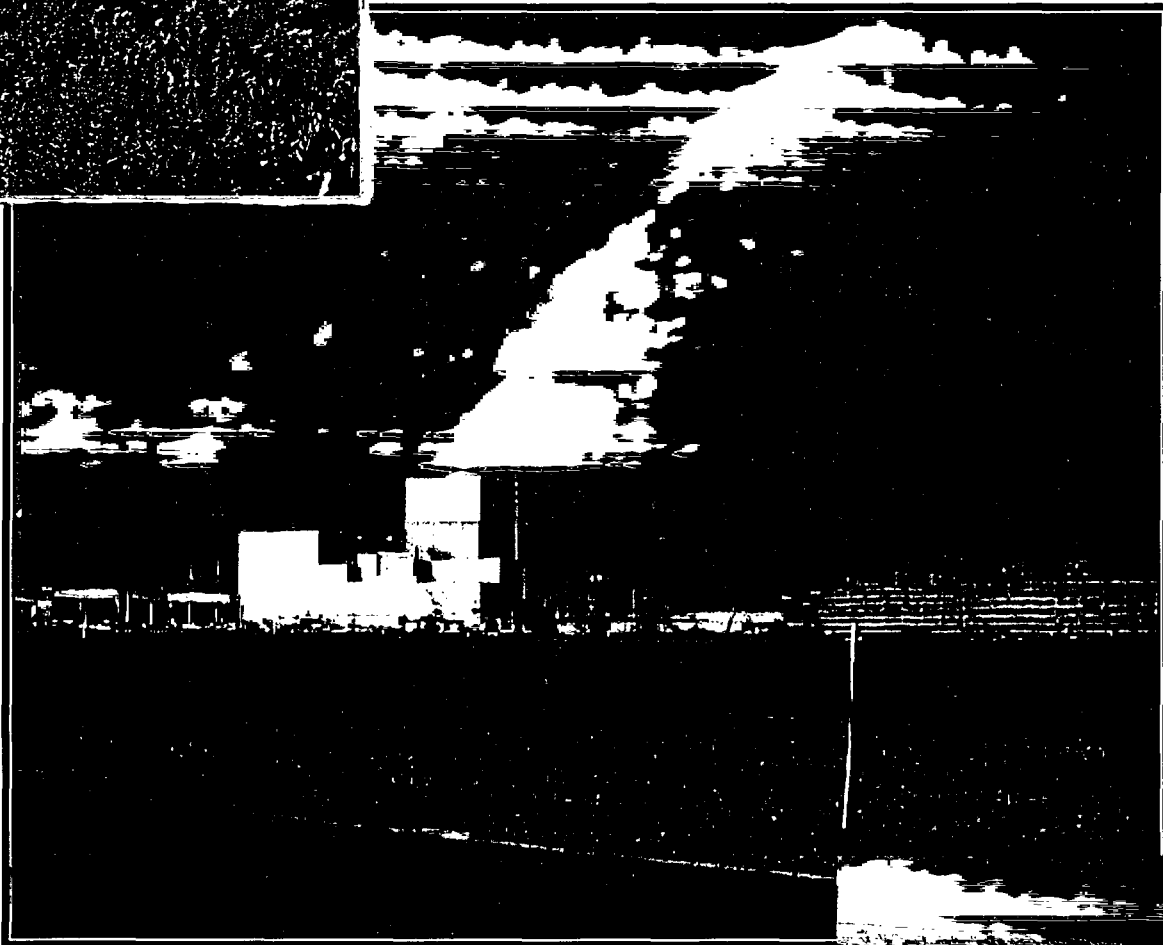
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# COLUMBIA GENERATING STATION



## 2004 ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT



# **COLUMBIA GENERATING STATION**

## **2004 ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT**

**JANUARY - DECEMBER 2004**

### **RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM**

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## **1.0 EXECUTIVE SUMMARY**



## **1.0 EXECUTIVE SUMMARY**

This report describes the radiological environmental monitoring program (REMP) conducted by Energy Northwest for the Columbia Generating Station (CGS) and its associated Independent Spent Fuel Storage Installation (ISFSI) in 2004. The REMP assesses the radiological impacts of CGS activities on the human environment through the monitoring of potential exposure pathways. The Offsite Dose Calculation Manual (ODCM) requires monitoring of direct radiation exposure levels, and of the airborne, waterborne, and ingestion pathways.

Direct radiation exposure levels were monitored continuously with thermoluminescent dosimeters (TLDs). The other exposure pathways were monitored by collecting samples from the environment and analyzing them to quantify the concentrations of radiation, and/or radioisotopes. Samples of air, water, milk, soil, sediment, fish, and garden produce were collected throughout the year and evaluated for radioactivity that might be present as a result of plant emissions.

In the 4th quarter of 2004 the Columbia Generating Station started injecting hydrogen into the condensate system. This process is referred to as Hydrogen Water Chemistry (HWC). HWC is used to create a reducing environment in the reactor, which prevents intergranular stress corrosion cracking of the reactor vessel components. As a result, there is an increase in the amount of N-16 carry-over in the steam. The addition of HWC caused a small increase in the radiation levels measured near the turbine building.

Results from the direct radiation monitoring for 2004 were significantly below the regulatory limits at all stations. There was an increase in the radiation levels near the ISFSI, as a result of the placement of ten (10) new storage casks. There was also an increase in the TLD station located between the turbine building and the ISFSI (Station 121) and at Station 86; this increase was due partially to the placement of the new casks and also the addition of the HWC. No measurable increases were seen outside of controlled areas at the CGS.

The vast majority of the activity detected in environmental samples was the result of naturally occurring radionuclides. Small amounts of Cs-137 were measured in a few of the samples collected; the concentrations were consistent with levels found in the surrounding environment as a result of atmospheric nuclear weapons tests fallout and past weapons production activities on the Hanford Site. The results seen in the samples taken this year are consistent with the results obtained in the previous operational and preoperational years.

No significant new trends or changes in the environmental radiological levels outside the fence line of the plant were observed 2004.

## **2.0 DEFINITIONS**

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**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 ( $\alpha$ ):** 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 ( $\beta$ ):** 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 any 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 sampling station in a location not likely to be affected by plant effluents due to its distance and/or direction from the Columbia Generating Station.

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

$$+/- 2\sqrt{(SampleCPM / CountTime + BkgCpm / CountTime)}$$

**Curie (Ci):** A measure of radioactivity; equal to  $3.7 \times 10^{10}$  disintegrations per second, or  $2.22 \times 10^{12}$  disintegrations per minute.

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

**DOE:** U.S. Department of Energy.

**DOE/EML QAP:** Department of Energy's Environmental Measurements Laboratory Quality Assessment Program. This program was discontinued in 2004.

**DOH:** Washington State Department of Health.

**EFSEC:** Energy Facility Site Evaluation Council.

**FFTF:** Fast Flux Test Facility.

**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 is likely to be affected by plant effluents due to its proximity and/or direction from the Columbia Generating Station.

**Ingestion Pathway Monitoring:** The ingestion pathway includes milk, soil, fish, and 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.

**ISFSI:** Independent Spent Fuel Storage Installation.

**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.

**MAPEP:** Mixed Analyte Performance Evaluation Program.

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

**Microcurie:**  $3.7 \times 10^4$  disintegrations per second, or  $2.22 \times 10^6$  disintegrations per minute.

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

**MDA:** Minimum Detectable Activity.

**NIST:** National Institute of Standards and Technology.

**NPDES:** National Pollutant Discharge Elimination System.

**NRC:** U.S. Nuclear Regulatory Commission.

**ODCM:** Offsite Dose Calculation Manual. Licensing document that contains the offsite radiological requirements.

**Picocurie (pCi):**  $1 \times 10^{-12}$  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.

**Roentgen:** Unit of exposure to ionizing radiation in air.

**Site Certification Agreement (SCA):** The Columbia Generating Station licensing agreement with the State of Washington.

**Spiked Sample:** A sample that has had a known quantity of radionuclide(s) added for the purposes of assessing analytical performance.

**Standard Deviation:** A measure of the scatter of a set of observations (or samples) around their mean value. Indicated by " $\sigma$ ".

**Standard Error of the Mean:** An estimate of the uncertainty associated with the mean of observation (or sample) averages. Also known as the standard deviation.

$$SE = \sqrt{\frac{S^2}{n}}$$

where  $S^2$ , the variance is

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

**SWTF:** Sanitary Waste Treatment Facility; sanitary waste processing facility for the Columbia Generating Station, Site-1 and Department of Energy's 400 Area.

**TEDA:** triethylene diamine

**Thermoluminescent Dosimeter (TLD):** A TLD is a phosphor that stores energy from exposure to radiation and emits that energy in the form of light when heated.

### **3.0 INTRODUCTION**

### **3.0 INTRODUCTION**

#### **3.1 Site Description**

The Columbia Generating Station (CGS) is a 1200 MWe commercial nuclear power plant that achieved initial criticality on January 19, 1984. The plant is located in a sparsely populated shrub-steppe region within the Department of Energy (DOE) 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 large 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 east-northeast of the plant, across the Columbia River. The site has a bimodal wind pattern with winds primarily from the northwest and south.<sup>(20)</sup> The primary region of focus for REMP sampling is the farming region east of the plant.

Naturally occurring radionuclides exist in detectable quantities throughout the world and are seen in many of the samples collected for the REMP. Some examples of naturally occurring radionuclides that are frequently seen in samples are K-40, Be-7, Ac-228, Th-228, and Ra-226. Additionally, several other radioisotopes, primarily Sr-90 and Cs-137, are seen in measurable quantities throughout the world as a result of fallout from atmospheric nuclear weapons testing.<sup>(21)</sup>

Due to the location of the CGS on the Hanford Site, there are significant other sources of nuclear reactor produced radionuclides in close proximity to the plant. Past practices in the special nuclear material (SNM) production and separation processes that were conducted on the Hanford Site have led to several areas of uncontrolled environmental radiological contamination. In 2003 (the latest year for which there is published data), there were more than 9000 acres of posted outdoor surface contamination on the Hanford Site.<sup>(22)</sup> Hanford related radionuclides may potentially be seen in CGS REMP samples and should not be mistaken for materials that might be present from CGS activities. Cs-137 is routinely seen in many of the samples collected for the REMP at levels that are consistent with those seen related to weapons tests fallout, and past Hanford activities. The DOE has an active radiological environmental monitoring program for the Hanford Site that is conducted by the Pacific Northwest National Laboratory and several supporting contractors.

#### **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<sup>(1)</sup> and 4.8,<sup>(2)</sup> including the Radiological Assessment Branch Technical Position.<sup>(3)</sup> In addition, the REMP also meets the requirements of 10CFR72.44(d)(2) for coverage of the ISFSI.

The quality assurance aspects of the sampling program and the thermoluminescent dosimetry are conducted in accordance with Regulatory Guides 4.15<sup>(4)</sup> and 4.13.<sup>(5)</sup> The REMP also adheres to the requirements of the Washington Energy Facility Site Evaluation Council (EFSEC),<sup>(6)</sup> the Columbia Generating Station Technical Specifications<sup>(7)</sup> and the Offsite Dose Calculation Manual (ODCM).<sup>(8)</sup> These requirements cover the environmental sampling and sample analysis aspects of the program, and also the reporting and quality assurance requirements.

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, nuclear weapons test fallout, meteorological conditions, and seasonal changes.

An analytical laboratory is currently contracted to perform the analyses of REMP samples. Teledyne Brown Engineering Environmental Services has performed the analysis of the REMP samples since June 1986. The Pacific Northwest National Laboratory has processed the thermoluminescent dosimeters used in the REMP to assess the direct radiation since 1997.

Any radiological effects of Columbia Generating Station on the environment must be distinguished from the normal variations 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 plant operation are compared to the preoperational data and data from previous operating years to determine whether a significant accumulation of station-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.<sup>(11, 12, 13)</sup> 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 station operations.

While in-plant monitoring programs are used to ensure that 10 CFR 20<sup>(9)</sup> and 10 CFR 50<sup>(10)</sup> criteria for releases of radioactive effluents are met, the REMP provides verification that the concentrations of radionuclides in the environment are not greater than anticipated.

## **4.0 PROGRAM DESCRIPTION**



## **4.0 PROGRAM DESCRIPTION**

The CGS ODCM defines the requirement for the REMP. The sampling plan presented in Table 4-1 in this report shows which samples are required by the ODCM and the Site Certification Agreement (SCA). The table also 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**

Ninety-five sample locations are included in the monitoring program. Eighty-five indicator and three control stations are located within a 10-mile radius of the CGS. Three additional control stations and four indicator stations are located outside of a 10-mile radius from the plant. Sample stations are listed in Table 4-2.

The locations of most of the stations used for sampling have been selected on the basis of an exposure pathway analysis that was based on factors such as weather patterns, anticipated emissions, likely receptors, and land use in the surrounding areas. Additional samples are collected at locations as specified by the SCA with the State of Washington Energy Facility Site Evaluation Council (EFSEC). Samples for the REMP are collected from stations in areas that are likely to be influenced by the CGS are used as indicators. Other samples collected from stations in areas that are not likely to be influenced by the CGS serve as controls. The results from the indicator stations are compared to the results at the control stations, and also to the results obtained during the previous operational and preoperational years of the program.

The REMP sampling locations listed in Tables 4-1 and 4-2 are shown in Figures 4-1 and 4-2. Figure 4-3 shows the relative locations of the storm drain outfall and pond (Station 101) and the Sanitary Waste Treatment Facility (Station 102). Also shown are the cooling tower sediment disposal area (Station 119B and Station 119-Control) and the spray pond drainfield (Station 120), which are special interest stations.

### **4.2 Independent Spent Fuel Storage Installation (ISFSI)**

The Independent Spent Fuel Storage Installation (ISFSI) was constructed to provide additional storage capacity for spent fuel. The spent fuel is stored in HI-STORM dry storage casks, which are placed on one of two concrete pads, each measuring 30-feet wide by 135-feet long. The ISFSI is located approximately 500 meters north-northwest of the reactor building.

REMP monitoring of the ISFSI is performed with of a set of quarterly and annual TLDs located at 10 stations on the isolation fence surrounding the pads. In addition, two other stations are located on other fence lines. Station 121 is located on a fence line approximately 200 meters north of the turbine building and Station 122 is located on the fence approximately 100 meters north of the ISFSI. Figure 4-4 shows the ISFSI location in relation to CGS. Figure 4-5 shows the location of the 10 TLD stations located around the ISFSI. This arrangement of TLDs in conjunction with the other monitoring activities that are conducted in support of the CGS REMP, satisfies the monitoring requirements listed in 10 CFR 72.44(d)(2) for the ISFSI.

### **4.3 Land Use Census**

A land use census for areas within five miles of CGS is performed annually. The objectives of the land use census are to identify the locations of the nearest milk animal, residence, and garden greater than 50 m<sup>2</sup> (approximately 500 ft<sup>2</sup>) producing broadleaf vegetation. This information is used 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 were found, routine sampling of that dose pathway would be initiated at that new site.

The results of the 2004 land use census within five miles of the CGS are presented in Table 4-3. No significant changes from the 2003 land use census were observed. No milk animals were located within the 5-mile radius. The nearest milk location is 7.2 miles east-southeast of the CGS.

### **4.4 Sampling Methods**

Energy Northwest personnel collected environmental samples in accordance with the program plan in Table 4-1. Procedures for sample collection and TLD handling are contained in the department instruction manual. The analytical contractor prepares and maintains the sample analysis procedures. Energy Northwest receives copies of the analytical procedures used. The following sections describe the sampling and preparation methods.

#### **4.4.1 Direct Radiation**

Direct radiation dose levels are monitored for the REMP with Harshaw Model 8807 thermoluminescent dosimeters (TLDs). Two sets of TLDs are placed in the field approximately three feet above the ground at each monitoring station. One set of TLDs is exchanged on a quarterly basis (Quarterly TLDs); the other is exchanged on an annual basis (Annual TLDs).

The locations of the TLD stations are listed in Table 4-2, and are shown in Figures 4-1, and 4-2. Station 9A in Sunnyside, serves as a control for the CGS TLDs. Station 119-Control serves as the control for Station 119B (the cooling tower/system sediment disposal basin). The remaining TLDs deployed in the field serve as indicator TLDs.

The TLDs are arranged in a series of rings that encircle the CGS. The innermost ring of TLD stations, which are located inside the fence line at distances that range from about 0.3-0.8 miles from the reactor centerline, are referred to as the 'S stations.' The next group of TLDs, which are located just outside of the fence line, are called the inner ring. The inner ring TLDs are located at distances that range from around 1-2 miles from the reactor. The outer ring of TLDs are located at distances that range from a little under three (3) miles out to around ten (10) miles.

A Reuter Stokes pressurized ionization chamber (PIC) is maintained as a backup monitoring system to provide additional capability for measuring direct radiation exposure. This unit is no longer part of the routine monitoring program, but may be used in special monitoring situations.

#### **4.4.2 Airborne - Particulate/Iodine**

Air particulate and air radioiodine (I-131) samples are obtained through the use of low volume (1.5 cfm), constant flow-rate sampling units at 12 locations. The samples drawn at Station 9A (Figure 4-2) are considered control samples; the ones drawn at the other locations (Figure 4-1) are indicator samples. Air particulate samples are collected by drawing air through a 47-mm diameter glass fiber filter. Air iodine samples are collected by drawing air through a 57-mm diameter TEDA impregnated charcoal cartridge. The air particulate filter and charcoal cartridge are placed in tandem, particulate filter first, in a holder that attaches to the air inlet of the sampler unit. The sampler units are 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.

#### **4.4.3 Water**

There are nine locations where water sampling is performed for the REMP. They are categorized as follows:

- Intake-River/Drinking Water; two locations (Stations 26, and 29)
- Groundwater; three locations (Stations 52, 31, and 32)
- Plant Discharge Water; one location (Station 27)
- Storm Drain Water; one location (Station 101)
- Sanitary Wastewater; two locations (Stations 102A, and 102B)

The sample from Station 26 is drawn from the plant intake water at the pumphouse on the Columbia River. The drinking water for the CGS comes from this intake water so this sample also serves as a drinking water sample. Additionally, Station 26 is upstream from the plant discharge, so it is considered the background, or control. Station 29 is at the Richland Water Treatment Plant, 11 miles downstream from the discharge and is an indicator station for river and drinking water.

The ODCM requirement for a downstream water sample "near but beyond the mixing zone" is met by sampling water from Station 27, the cooling tower 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 an indicator sample.

Composite samplers are used at the Columbia River pumphouse to collect samples from the plant intake water (Control Station 26), and the cooling tower discharge line (Station 27). There is also a composite sampler at the other drinking water location (Station 29). The samplers collect 25-ml aliquots of water at regular intervals. Non-routine analyses of the drinking water samples include Sr-90 and I-131 analyses. Sr-90 analysis is required when the gross beta activity exceeds either eight pCi/liter or ten times the mean of the previous three months' activity for a specific location. I-131 analysis is required when the dose calculated for the consumption of water exceeds one millirem per year.

Three wells within the vicinity of the CGS are used as groundwater sampling locations. These include a deep well on the CGS site (Station 52, 0.1 mile north of the Reactor Building) and two wells on the WNP-1 site (Station 31 and Station 32, 1.2 miles downgradient from CGS). Water from the CGS 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. These wells are considered indicator samples. Quarterly grab samples were collected from each of these wells. One gallon (3.8 liters) is collected from each well for gamma analysis and one liter is drawn for tritium analysis.

Water samples are collected from the storm drain outfall (Station 101) using a flow-proportional composite sampler. These samples are analyzed for gross beta, gamma, and tritium.

Since April of 1997, the SWTF has been receiving sanitary waste from the DOE 400 Area. Energy Northwest 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 (Station 102A) takes a flow-proportional composite sample that is collected and analyzed monthly as required by EFSEC Resolution No. 300.<sup>(15)</sup> Another automatic water sampler is located at the headworks of the SWTF (Station 102B) where a monthly composite sample is taken. Both sample locations are analyzed for gross alpha, gross beta, tritium, and gamma. The sampler is programmed to sample each time the lift station pumps waste into the headworks.

#### **4.4.4 Soil**

Annual soil samples are collected at the indicator Stations 1, 7, 21, and 23 as required by the SCA (EFSEC Resolution No. 260<sup>(6)</sup>). A sample is also collected at the control location, Station 9A (Figure 4-2). Each sample is collected from an area of approximately one square foot to a depth of approximately one inch. About two kilograms of soil are collected for each sample.

Soil samples are shipped to the analytical contractor after collection and analyzed for gamma activity. If the Cs-137 level in an indicator sample exceeds ten (10) times the level in the control sample, strontium analysis is performed.

#### **4.4.5 Sediment**

River sediment samples are collected in the spring and fall. The upstream sediment sample location (Station 33) is approximately two miles upriver from the plant discharge. The downstream sample (Station 34) is collected approximately one mile downstream from the plant discharge. Each sample consists of approximately two kilograms of the shallow surface sediment scooped from below the waterline. The samples are shipped to the analytical contractor.

EFSEC Resolution No. 299<sup>(16)</sup> requires the collection of a two-kilogram sample of dried cooling tower sediment from the sediment disposal cell (Station 119B, Figure 4-3) within thirty days of the completion of cleaning the cooling towers.

Sediment samples are also collected annually at Station 102D (the SWTF).

#### **4.4.6 Fish**

Annual fish sampling is usually performed in the late summer and early fall. Fish samples collected from the Columbia River (Station 30 in Figure 4-1) are indicator samples, whereas fish collected on the Snake River (Stations 38 and 38A in Figure 4-2) are control samples.

Three categories of fish samples are collected; one consists of an anadromous species such as salmon or steelhead, and the two other species generally considered edible or potentially edible (such as carp, catfish, and whitefish) are collected at each location. The fish are collected using electro-shocking except for the samples of the anadromous species, which are collected from the Ringold Fish Hatchery on the Columbia River and at the Lyons Ferry Fish Hatchery on the Snake River. The fish are filleted to obtain approximately one kilogram of edible flesh per sample. The fillets are 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.

#### **4.4.7 Milk**

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

Routine samples are collected from two indicator locations, Stations 36, and 9B. Station 36 is across the Columbia River in Franklin County; Station 9B is in the Sunnyside/Grandview area (Figure 4-2). Station 9B is used as an indicator station because a portion of the feed used there comes from Franklin County which is downwind from the CGS. Samples of feed grown at Station 9B are collected monthly when it is available and labeled as 'Station 9G' to serve as the control. Other dairies in the area have been checked for suitability for use as a control location, but were eliminated due to their use of feed grown in Franklin County. There are no other dairies available for sampling within the 10-mile radius of the plant.

#### **4.4.8 Garden Produce**

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

During 2004, a broadleaf vegetable sample was grown in a garden that was planted next to the SWTF. The garden was named Station 102G, and was planted specifically to produce samples that could be analyzed for the REMP. The garden does not meet the criteria in the ODCM to make it a required sampling location, however, a sample was collected from it and analyzed anyway.

## **4.5 Analytical Procedures**

General descriptions of the procedures used for the analysis of the REMP TLDs and samples are provided in the following sections. The REMP TLDs are processed by Battelle at the Pacific Northwest National Laboratory (PNNL). Teledyne Brown Engineering - Environmental Services currently analyzes the samples that are collected for the REMP.

### **4.5.1 Analysis of TLDs**

The REMP TLDs are measured at the Pacific Northwest National Laboratory (PNNL) on a Harshaw Model 8800 hot gas reader. The reader is calibrated weekly and immediately prior to processing the environmental TLDs. The reader is calibrated with TLDs that have been given a known dose from a controlled exposure to a Cs-137 source. Each group of environmental TLDs is processed with blank (freshly annealed) TLDs and spiked TLDs that have been given a known dose. Exposure received by the field TLDs during transport is monitored with a set of 'trip' control dosimeters that accompany the field dosimeters to and from the field locations and while they are in storage. Another set of TLDs, the building controls, are used to determine the exposure of the TLDs at the storage location. The TLD exposure during transport to and from the field was determined from the difference between the building control results and the trip control results.

### **4.5.2 Gross Beta Activity on Air Particulate Filters**

The air particulate filters are counted in a gas flow-proportional counter after a delay of several days to allow for the radon daughter products to decay. An unused 'blank' air particulate filter is also counted with each weekly batch of filters.

### **4.5.3 Measurement of Gamma Emitting Radionuclides**

Shielded, high purity germanium (HPGe) detectors are used to assay environmental samples to identify and quantify any gamma emitting radionuclides that are present. Most samples are loaded into Marinelli beakers and counted for a sufficient time to reach the required LLDs.

Measured aliquots of liquid samples (milk and water) are poured into an appropriately sized, tared Marinelli beaker. Depending on the type of sample, the required LLD, and the characteristics of the detector that will be used (efficiency and background), either a 1, 3, 3.5, or 4 liter Marinelli is used. For foodstuff and vegetation, as much of the edible portion of the sample as possible is placed into a tared Marinelli beaker and weighed. The samples are counted for an appropriate amount of time to meet the LLD requirements.

Soils and sediments are dried at a temperature of approximately 100°C. As much of the sample as possible is then loaded into a tared container and weighed. The sample is then counted for an appropriate amount of time to meet the LLD requirements.

Charcoal filters are counted up to five at a time, with one positioned on the face of a HPGe detector and up to four on the side of the detector. Each detector is calibrated for both positions. The detection limit for a charcoal cartridge is determined (assuming no positive I-131) uniquely from the volume of air that passed through it, the counting time, and the elapsed time between collection and analysis time. In the event that I-131 is observed in the initial counting of a set, each charcoal cartridge in the set would then be positioned separately on the face of the detector and counted. The calculations are done using a cartridge collection efficiency for iodine of 98%.

Air particulate filters from each field station are retained and are composited quarterly. The filters are aligned one in front of another and counted for an appropriate time to meet the LLD requirements.

#### **4.5.4 Gross Alpha/Beta Activity in Water**

A measured aliquot of each sample (~1 liter) is evaporated to a small volume in a beaker and rinsed into a 2-inch diameter stainless steel planchette that is stamped with a concentric ring pattern to distribute residue evenly. The final evaporation of the sample is done under heat lamps. Residue mass is determined by weighing the planchette before and after mounting the sample. The planchette is counted for alpha and beta activity on an automatic proportional counter. The results are calculated using empirical self-absorption curves that correct for the change of effective counting efficiency caused by the sample residue.

#### **4.5.5 Iodine-131 in Water**

Two to three 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 toluene as free iodine. It is then back-extracted as iodide into a sodium bisulfite solution and precipitated as palladium iodide. The precipitate is weighed for chemical yield and mounted on a nylon planchette for low-level beta counting. The chemical yield is determined on the mounted filters.

#### **4.5.6 Tritium in Water**

The sample is distilled and the distillate is collected for analysis with a liquid scintillation counter. Approximately 10 ml of the distillate is mixed with 10 ml of liquid scintillation cocktail. The mixture is then counted in an automatic liquid scintillation detector.

#### **4.5.7 Strontium-89 and 90 in Soil**

The sample is first dried under heat lamps and an aliquot is taken. Stable strontium carrier is added and the sample is leached in hydrochloric acid. After filtering the mixture, strontium is precipitated from the liquid portion as phosphate. 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 planchette and counted in a low-level beta counter to infer Sr-90 activity. Sr-89 activity is determined by precipitating  $\text{SrCO}_3$  from the sample after yttrium separation. This precipitate is mounted on a nylon planchet and covered with an 80 mg/cm<sup>2</sup> aluminum absorber for low-level beta counting.

#### **4.5.8 Iodine-131 in Milk**

Three 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 is then back-extracted as iodide into sodium bisulfite solution and precipitated as palladium iodide. The precipitate is 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.

#### **4.6 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 contract LLDs determined for each analysis is provided in Table 4-4; the ODCM required LLDs are also included for a comparison.

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 are also used to evaluate whether trends that could be attributed to CGS operations are evident.

Thermoluminescent dosimeter (TLD) data is presented in terms of the net mrem/day exposure rate. These results are determined from the total exposure (in mrem) calculated for each TLD minus the TLD background and any transit (or trip) exposure received during distribution and retrieval, and divided by the number of days the TLD was in the field.

The quarterly TLDs are compared with the results of annual TLDs and expressed as a ratio by dividing the mean of the quarterly results over the annual results.

#### **4.7 Changes to the Sampling Program in 2004**

Station 102G was created and used as a broadleaf vegetable sampling location. There were no other changes to the sampling program in 2004.



**TABLE 4-1**  
**RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM PLAN**

SAMPLE TYPE <sup>(a)</sup>	SAMPLE STATION <sup>(b)</sup> NUMBER	SAMPLING AND COLLECTION FREQUENCY <sup>(c)</sup>	TYPE AND FREQUENCY OF ANALYSIS
<b>1. AIRBORNE</b>			
Particulates and radioiodine (6/12) <sup>(d)</sup>	1, 4-8, <u>9A</u> , 21, 23, 40, 48, and 57	Continuous sampling; weekly collection	Particulate: Weekly gross beta <sup>(e)</sup> , gamma isotopic <sup>(f)</sup> of quarterly composite (by location) Iodine: Weekly gamma analysis.
Soil <sup>(g)</sup> (0/5)	<u>9A</u> , 1, 7, 21 and 23	Annually	Gamma isotopic <sup>(f)</sup> ; Sr-90 <sup>(h)</sup>
<b>2. DIRECT RADIATION</b>			
TLD <sup>(i)</sup> (34/72)	1-8, <u>9A</u> , 10-25, 40-47, 49-51, 53-56, 65, 71-86 (1S-16S) <sup>(j)</sup> , 119B, <u>119-Control</u> , 120, 121-129, 136A-138A	Quarterly, annually	Thermoluminescent output; quarterly and annual processing.
PIC	Various locations, as needed <sup>(k)</sup>	Continuous recording, as needed	Exposure rate accumulated in internal memory
<b>3. WATERBORNE</b>			
River/Drinking Water <sup>(l)</sup> (3/4)	<u>26</u> , 27 and 29	Composite aliquots <sup>(m)</sup> ; monthly collection	Gamma isotopic <sup>(f)</sup> , gross beta, quarterly; tritium composite; Sr-90 <sup>(h)</sup> ; I-131 <sup>(e)</sup>
Storm Drain Water (0/1)	101	Composite aliquots <sup>(m)</sup> ; monthly collection; grab samples	Gamma isotopic <sup>(f)</sup> , tritium, gross beta
Sanitary Waste Treatment Facility Water (0/2)	102A, 102B	Composite aliquots <sup>(m)</sup> ; monthly collection	Gamma isotopic <sup>(f)</sup> , gross beta, gross alpha, tritium
Ground Water (2/3) <sup>(p)</sup>	31, 32, and 52	Quarterly	Gamma isotopic <sup>(f)</sup> ; tritium
River Sediment (1/2) <sup>(q)</sup>	<u>33</u> and 34	Semiannually	Gamma isotopic <sup>(f)</sup>
Sanitary Waste Treatment Facility Sediment (0/1)	102D	Annually	Gamma Isotopic <sup>(f)</sup>
Cooling Tower Sediment Disposal Area (0/1)	119B	Within 30 days following Cooling Tower cleaning event	Gamma Isotopic <sup>(f)</sup>
<b>4. INGESTION</b>			
Milk <sup>(n)</sup> (3/3)	9B, 9G <sup>(a)</sup> , 36	Semimonthly during grazing season, monthly at other times	Gamma isotopic <sup>(f)</sup> ; I-131; Sr-90 <sup>(h)</sup>
Fish <sup>(o)</sup> (2/2)	30, <u>38</u>	Annually <sup>(v)</sup>	Gamma isotopic <sup>(f)</sup>
Garden Produce <sup>(w)</sup> (1/4)	<u>9C</u> , 91, <sup>(x)</sup> 37, 102G <sup>(y)</sup>	Monthly during growing season in the Riverview area of Pasco and a control near Grandview; annual collection at Station 91.	Gamma isotopic <sup>(f)</sup>

**FOOTNOTES:**

- (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.

FOOTNOTES (cont):

- (d) The SCA requires nine or more air sampling stations.
- (e) 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 the CGS.
- (g) Soil samples are collected to satisfy the requirements of the SCA for CGS. The SCA requires that soil samples be collected at five air-sampling locations.
- (h) Sr-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.
- (j) TLD Stations 71-86 are not included among the 34 routine TLD stations required by the ODCM Table 6.3.1-1. Their alternate designations are IS-16S. The SCA requires 25 or more TLD stations to be located within a 10-mile radius of the plant.
- (k) Pressurized ion chambers (PICs) are required by EFSEC Resolution No. 260 to be maintained as a supplemental or backup system.
- (l) The term "river/drinking water" is used throughout this report because the drinking water is taken from the Columbia River. Station 26, the CGS makeup water intake from the Columbia River is both an upstream water sample and the drinking water sample location. Station 29 is a downstream drinking water sample. 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. Only one drinking water station is now sampled after DOE closed the intake at the 300 Area (Station 28) in 1998.
- (m) Composite samples are collected with equipment that 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 Sr-90 analysis is performed.
- (o) When the dose calculated via ODCM methodology for consumption of water exceeds 1 mrem per year, low level I-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 that are located in the most prevalent wind directions from CGS. 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. Energy Northwest currently has access to only one dairy within a 10-mile radius of the plant (Station 36).
- (s) Samples of feed for dairy animals are collected at Station 9G in lieu of milk at a control station. The dairy cattle at Station 9B are not suitable for use as a control because a portion of their feed comes from the Franklin County area across the Columbia River from The CGS.
- (t) If Cs-134 or Cs-137 is measured in an individual milk sample in excess of 30 pCi/l, then the Sr-90 analysis will be performed.
- (u) There are no species fished commercially in the Hanford Reach of the Columbia River. The most recreationally important species in the area are anadromous, which ascend rivers from the ocean for breeding. Anadromous fish species are normally obtained from hatcheries; Snake River samples are obtained from the Lyons Ferry Fish Hatchery, and Columbia River samples are 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 when available. 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.
- (y) Station 102G was used to collect one sample. This station does not meet the ODCM criteria for a garden which requires sampling; it was used to provide a broadleaf sample that was grown inside the 5-mile radius from the plant.

**TABLE 4-2**  
**REMP SAMPLE STATIONS AND REQUIREMENTS**

SECTOR <sup>(a)</sup>	STATION <sup>(b)</sup> NUMBER	DISTANCE <sup>(c)</sup>	ODCM <sup>(d)</sup>	STATE <sup>(e)</sup>	OTHER <sup>(f)</sup>
N (1)	52	0.1	GW		
	71(1S)	0.3			TLD
	47	0.7		TLD	
	57	0.7	AP/AI		
	18	1.1	TLD	TLD	
	53	7.6	TLD		
NNE (2)	72(2S)	0.4			TLD
	2	1.8	TLD	TLD	
	54	6.1	TLD		
NE (3)	101	0.2			SW
	73(3S)	0.5			TLD
	19	1.8	TLD	TLD	
	48	4.6	AP/AI		
	46	5.0	TLD		
ENE (4)	74(4S)	0.4			TLD
	21	1.5		TLD, AP/AI, SO	
	20	1.9	TLD	TLD	
	11	3.1		TLD	
	33	3.6		SE	
	45	4.5	TLD		
	44	5.9	TLD		
E (5)	75(5S)	0.4			TLD
	22	2.1	TLD		
	10	3.1	TLD	TLD	
	26	3.2	SW, DW	SW	
	27	3.2		Dis W	
	30	3.3	FI	FI	
	43	5.6	TLD		
ESE (6)	76(6S)	0.4			TLD
	31	1.1	GW	GW	
	32	1.2		GW	
	51	2.1	TLD		
	23	3.0		TLD, AP/AI, SO	
	34	3.5	SE	SE	
	8	4.4	TLD, AP/AI	TLD, AP/AI	
	91	4.3		GP	
	42	5.8	TLD		
	36 <sup>(g)</sup>	7.2	MI	MI	

TABLE 4-2 (cont.)  
REMP SAMPLE STATIONS AND REQUIREMENTS

SECTOR <sup>(a)</sup>	STATION <sup>(b)</sup> NUMBER	DISTANCE <sup>(c)</sup>	ODCM <sup>(d)</sup>	STATE <sup>(e)</sup>	OTHER <sup>(f)</sup>
ESE (6)(cont.)	5	7.7	TLD	AP/AI	
	38	26.5	FI	FI	
SE (7)	77(7S)	0.5			TLD
	24	1.9	TLD	TLD	
	3	2.0		TLD	
	41	5.8	TLD		
	40	6.5	TLD, AP/AI		
SSE (8)	119- Control	0.2		TLD	
	120	0.3			TLD
	102B	0.5		SFW	
	102D	0.5			SFW, SE
	102G	0.5			GP
	78(8S)	0.7			TLD
	25	1.6	TLD	TLD	
	55	6.2	TLD		
	4	9.9	TLD, AP/AI	TLD, AP/AI	
	29	11.0	DW	DW	
	37B	16.0	GP	GP	
	37A	17.0		GP	
S (9)	119B	0.2		TLD, SE	
	102A	0.6		SFW	
	79(9S)	0.7			TLD
	1	1.2	TLD	TLD, AP/AI, SO	
	6	7.7	TLD	AP/AI	
	65	8.8			TLD
SSW (10)	80(10S)	0.8			TLD
	50	1.2	TLD	TLD	
	56	7.0	TLD		
SW (11)	13	1.4	TLD	TLD	
	81(11S)	0.7			TLD
WSW (12)	82(12S)	0.5			TLD
	14	1.4	TLD	TLD	
	9A	28.3	TLD, AP/AI	TLD, AP/AI	
	9B, 9G	32.7	MI, VE <sup>(h)</sup>	MI, VE <sup>(h)</sup>	
	9C	32.3	GP	GP	
W (13)	83(13S)	0.5			TLD
	15	1.4	TLD	TLD	
WNW (14)	84(14S)	0.5			TLD

**TABLE 4-2 (cont.)  
REMP SAMPLE STATIONS AND REQUIREMENTS**

SECTOR <sup>(a)</sup>	STATION <sup>(b)</sup> NUMBER	DISTANCE <sup>(c)</sup>	ODCM <sup>(d)</sup>	STATE <sup>(e)</sup>	OTHER <sup>(f)</sup>
WNW(14) (cont.)	16	1.4	TLD	TLD	
	7	2.8	TLD	TLD, AP/AI, SO	
NW (15)	85 (15S)	0.5			TLD
	49	1.2	TLD	TLD	
NNW (16)	121	0.1		TLD	TLD
	122	0.3		TLD	TLD
	123	0.3		TLD	TLD
	124	0.3		TLD	TLD
	125	0.3		TLD	TLD
	126	0.3		TLD	TLD
	127	0.3		TLD	TLD
	128	0.3		TLD	TLD
	129	0.3		TLD	TLD
	136A	0.3		TLD	TLD
	137A	0.3		TLD	TLD
	138A	0.3		TLD	TLD
	86(16S)	0.4		TLD	TLD
	17	1.2	TLD	TLD	
	12	6.1		TLD	

**SAMPLE TYPE KEY:**

AP/AI - Air Particulate/Air Iodine  
 Dis W - Discharge Water  
 GP - Garden/Orchard Produce  
 MI - Milk  
 SFW - Sanitation Facility Water  
 SW - Surface Water  
 VE - Vegetation

DW - Drinking Water  
 FI-Fish  
 GW - Ground Water  
 SE - Sediment  
 SO - Soil  
 TLD - Thermoluminescent Dosimeter

**FOOTNOTES:**

- (a) The area in the vicinity of The CGS is separated into 16 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 The CGS reactor building.
- (d) ODCM - Offsite Dose Calculation Manual Table 6.3.1-1 requirement.
- (e) State of Washington SCA requirements.
- (f) OTHER -Special study stations. TLD Stations 121 through 138A satisfy ISFSI monitoring requirements 10CFR72.44(d)(2).
- (g) Duplicate samples, i.e., samples drawn at the same time as the routine samples and submitted for analysis as a quality control check, are collected at this location. The station designation for the duplicate of Station 36 is Station 37.
- (h) Broadleaf vegetation collected in lieu of milk from a control station.

TABLE 4-3  
2004 FIVE-MILE LAND USE CENSUS RESULTS

SECTOR <sup>(a)</sup>	NEAREST RESIDENT <sup>(b)</sup>	GARDEN (>50M <sup>2</sup> )	DAIRY ANIMALS	LIVESTOCK
NE	4.47	none	none	none
ENE	4.01	none	none	4.96
E	4.59	none	none	none
ESE	4.24	none	none	none
SE	none	none	none	none

**FOOTNOTES**

- (a) Within a five-mile radius of the plant, only 4.5 sq. miles of the land in the sixteen meteorological sectors is privately owned farmland. The remainder of the land is on the federally owned Hanford Site. Only those sectors containing points of interest are presented here.
- (b) Estimated distances in miles from the CGS Reactor Building.

**TABLE 4-4**  
**COMPARISON OF TELEDYNE NOMINAL LOWER LIMITS OF DETECTION WITH**  
**OFFSITE DOSE CALCULATION MANUAL<sup>(8)</sup> REQUIREMENTS**

MEDIA (UNITS)	ANALYSIS	TELEDYNE LLDs <sup>(a)</sup>	ODCM REQUIRED LLDs
<b>Air</b> (pCi/m <sup>3</sup> )	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
<b>Water:</b> (pCi/l)	Gross Beta	4	4
	Tritium	300	2000 <sup>(b)</sup>
	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	15	15
	Nb-95	10	15
	Cs-134	10	15
	Cs-137	10	18
	Ba-140	15	15
	La-140	10	15
<b>Soil/Sediment:</b> (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	—
<b>Fish:</b> (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
<b>Milk:</b> (pCi/l)	I-131	0.5	1
	Gamma Spectrometry		
	Cs-134	10	15
	Cs-137	10	18
	Ba-140	15	15
	La-140	10	15
	Sr-90	1	—
<b>Garden Produce:</b> (pCi/kg wet)	Gamma Spectrometry		
	Cs-134	20	60
	Cs-137	20	80
	I-131	30	60

<sup>(a)</sup> These are the contract LLDs. Actual LLDs may be lower for specific samples.

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

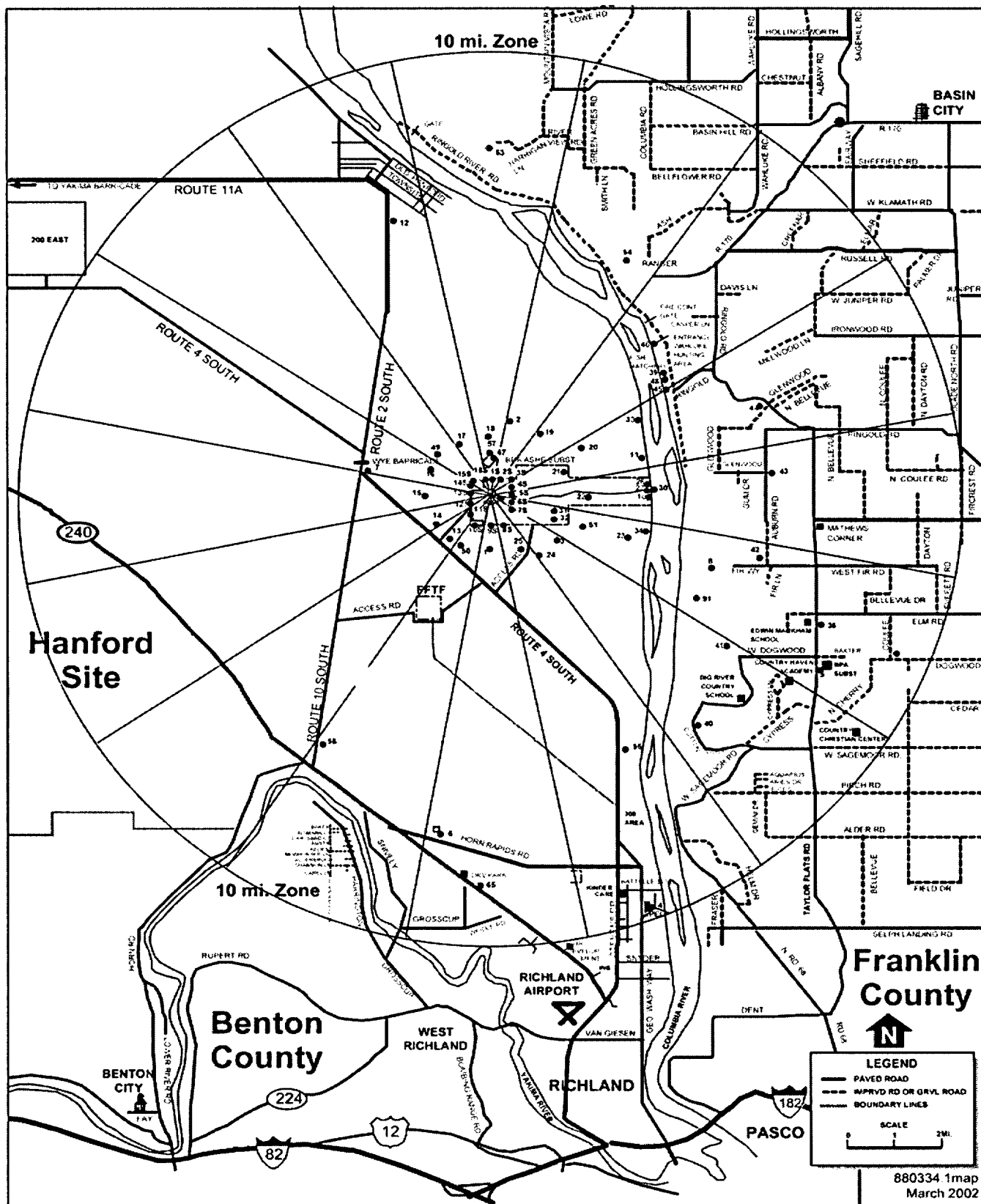


FIGURE 4-1 REMP SAMPLING LOCATIONS INSIDE THE 10 MILE RADIUS



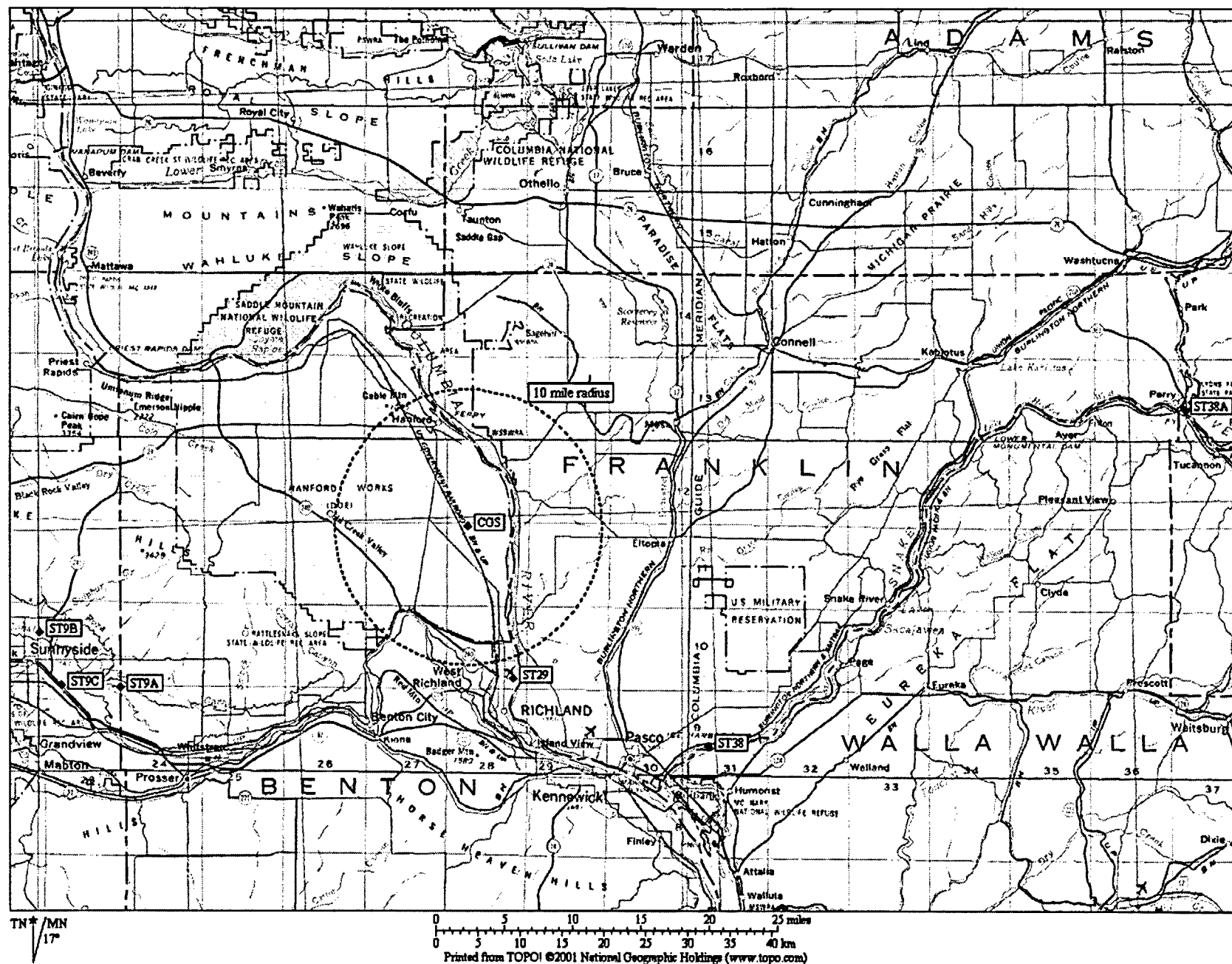
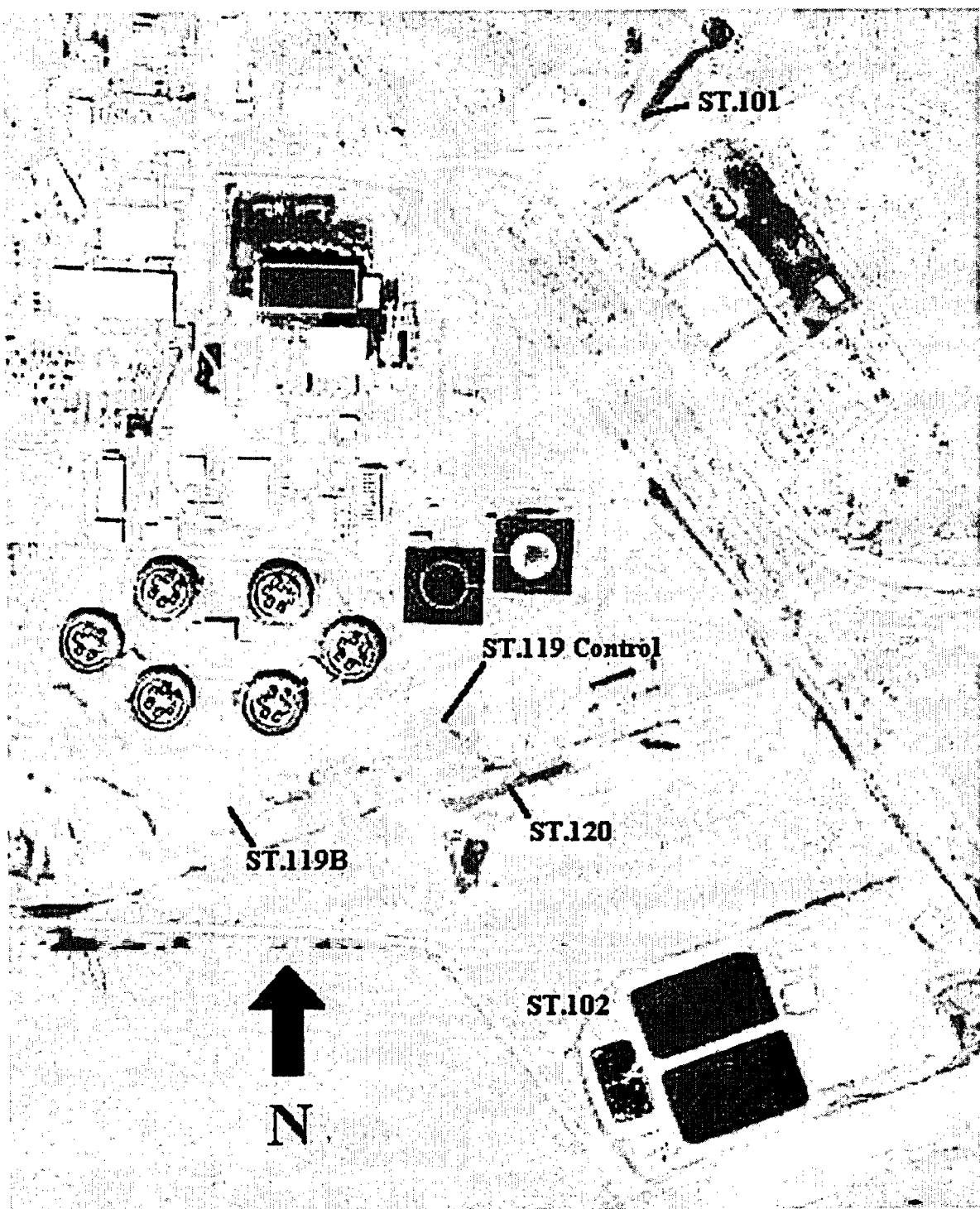


FIGURE 4-2 REMP SAMPLING LOCATIONS OUTSIDE THE 10-MILE RADIUS  
(NOTE: Station 38A is the Lyons Ferry Hatchery)



**FIGURE 4-3 REMP NEAR PLANT SAMPLING LOCATIONS**  
STATION 102A (APPROXIMATELY 0.25 MI SOUTH). STATION 102 IN PICTURE IS BOTH 102B, 102D AND 102G.

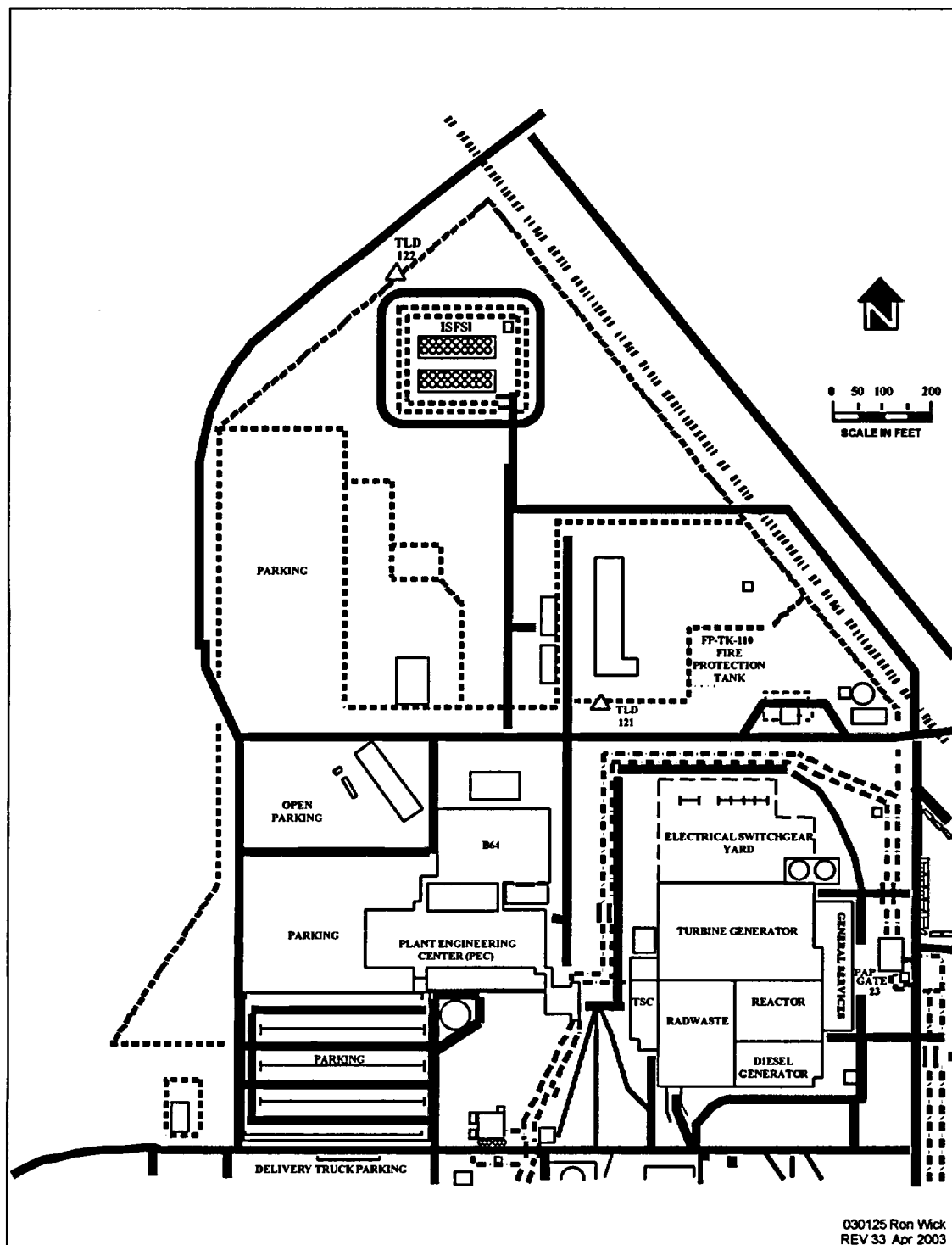


FIGURE 4-4 TLD STATIONS 121 AND 122

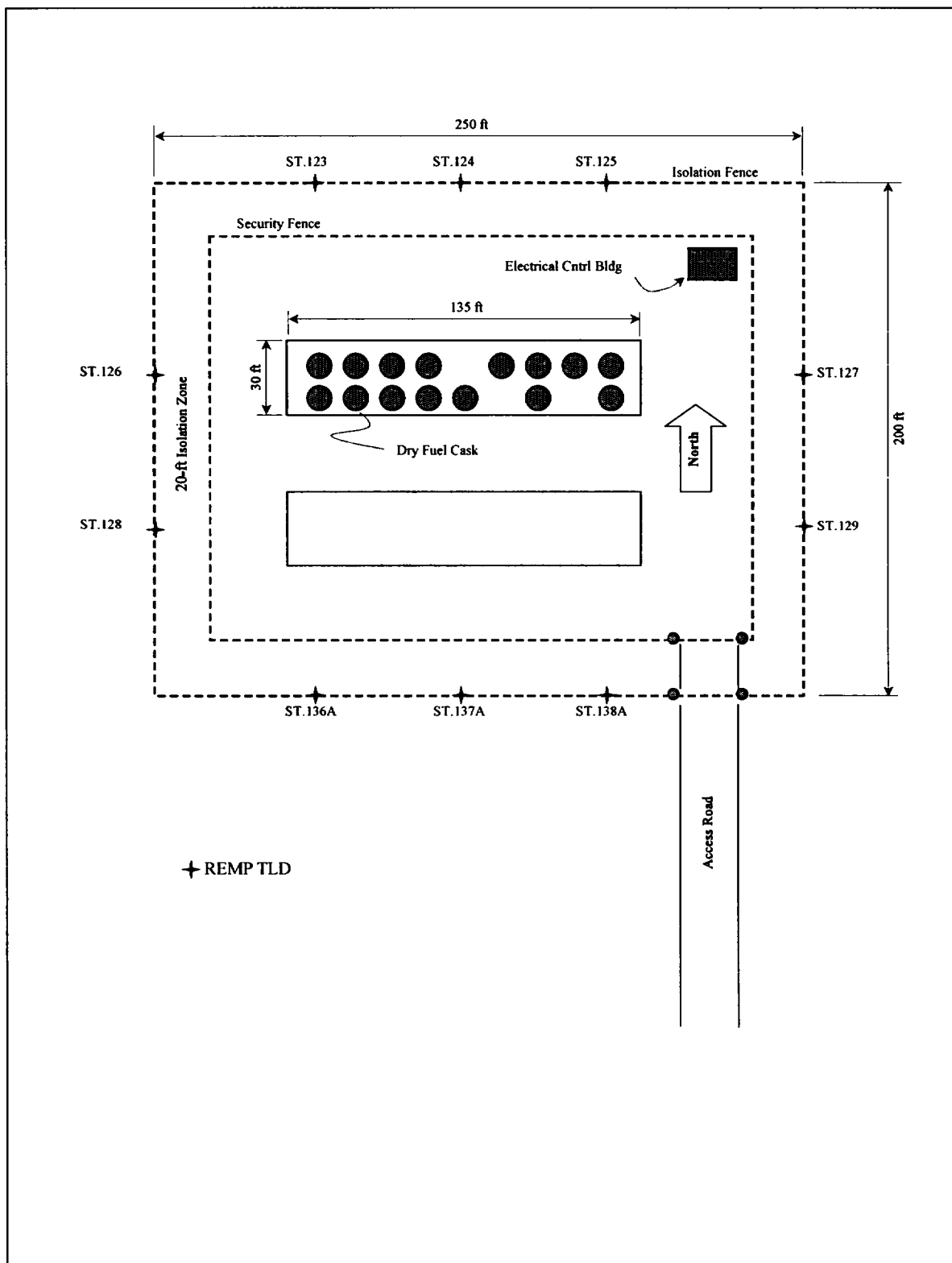


FIGURE 4-5 ISFSI TLD STATIONS LAYOUT

## **5.0 RESULTS AND DISCUSSION**

## **5.0 RESULTS AND DISCUSSION**

REMP samples were analyzed by Teledyne Brown Engineering - Environmental Services (TBE-ES) in Knoxville, Tennessee. The environmental TLDs were processed at the Pacific Northwest National Laboratory (PNNL). Table 5-2 provides a summary of detectable results. The table includes the mean of the detectable results at all indicator stations along with the location with the highest mean and the mean at the control location. Table 5-3 provides a summary of the TLD results. The data tables of the 2004 results comprise a separate volume that is available to interested parties upon request.

The analytical 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. Since mid-1984, REM data have been reported as net results (i.e. the detector counting background is subtracted from the gross results).

The 2004 results are compared in this report to the results from the preoperational period and to results from previous operational years at the CGS. Results are also compared to state and federal regulatory limits.

The analytical results for the REM sampling locations during 2004 are very similar to the results reported for previous years. With the exception of the stations near the ISFSI and the turbine building, the 2004 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 REM monitoring stations were observed.

### **5.1 Direct Radiation**

With the exception of the stations in the near vicinity of the ISFSI and the turbine generator building, the environmental radiation exposure rates measured near the plant, and at remote stations were consistent with the rates from previous years. Ten (10) additional spent fuel storage casks were placed in the ISFSI in early 2004, and an increase in the exposure rates near the ISFSI was measured. However, this is not an unusual trend or an unexpected increase.

In 2004 the CGS started injecting hydrogen into the condensate system. This process is referred to as Hydrogen Water Chemistry (HWC). HWC is used to create a reducing environment in the reactor, which prevents intergranular stress corrosion cracking of the reactor vessel components. As a result, there is an increase in the amount of N-16 carry-over in the steam. HWC increases the radiation levels in the main steam lines and in parts of the turbine generator building. The program went operational in the 4th quarter. An increase in the dose rates measured near the turbine building was seen.

Figure 5-1 presents a plot of the 2004 mean quarterly TLD results for each of the sixteen meteorological sectors near the property boundary of the plant ("S" stations, located at distances of 0.3-0.8 miles from the reactor). The chart also includes the high, low and mean result in each sector for 1984 through 2003. The TLDs in the N, NNE, and NNW sectors show higher exposures rates than other "S" stations as a result of being physically closer to the plant and from the increases caused by the ISFSI and HWC.

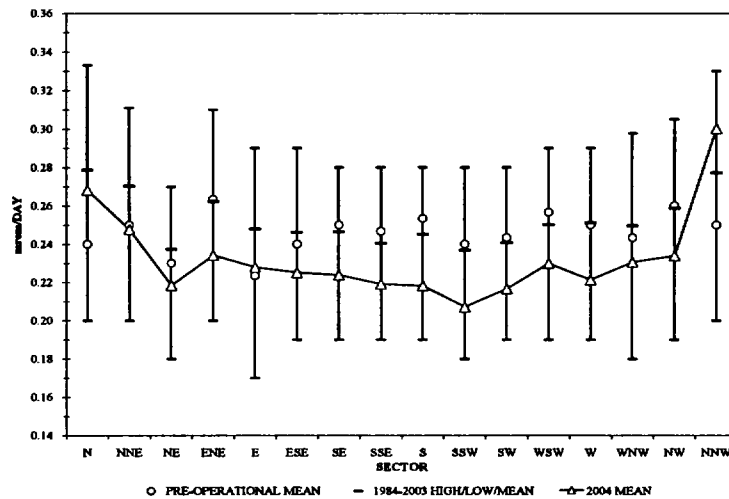


Figure 5-1 Site Boundary Quarterly TLDs 1984-2003 Hi/Low/Mean vs. 2004 Mean by Sector

The 2004 mean TLD results are very similar to the results obtained for the previous operational periods in all sectors with the exception of NNW. The increase in the dose rate near the plant in the NNW sector (Station 86) is related to the ISFSI and HWC. Station 86 is inside the fence line; just outside of the fence line, at Station 17 in the same sector (see Figure 5-2), there was no increase in the dose rates relative to historical results.

Exposure rates from the inner circle of TLDs are presented in Figure 5-2. The exposure rates measured in the near plant TLDs, which are located at distances between 0.9 and 2.1 miles from the plant, are close to the preoperational mean in most sectors. The environmental radiation exposure rates are summarized in Tables 5-3 and 5-4.

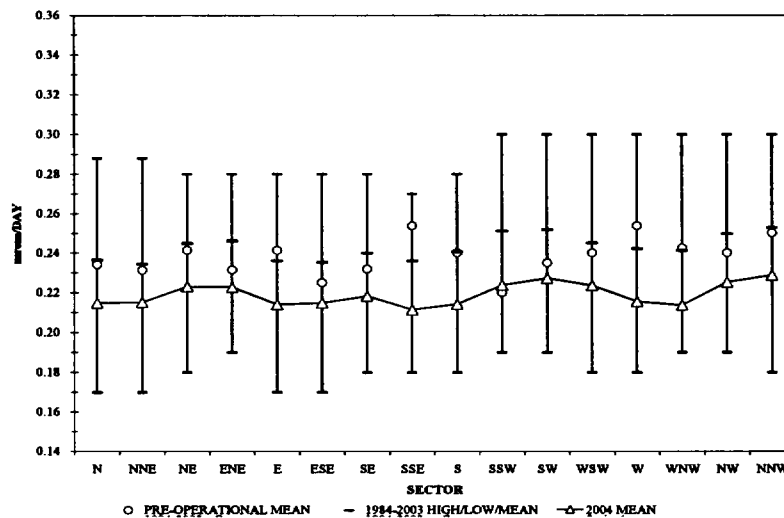


Figure 5-2 Inner Circle Quarterly TLDs 1984-2003 Hi/Low/Mean vs. 2004 Mean by Sector

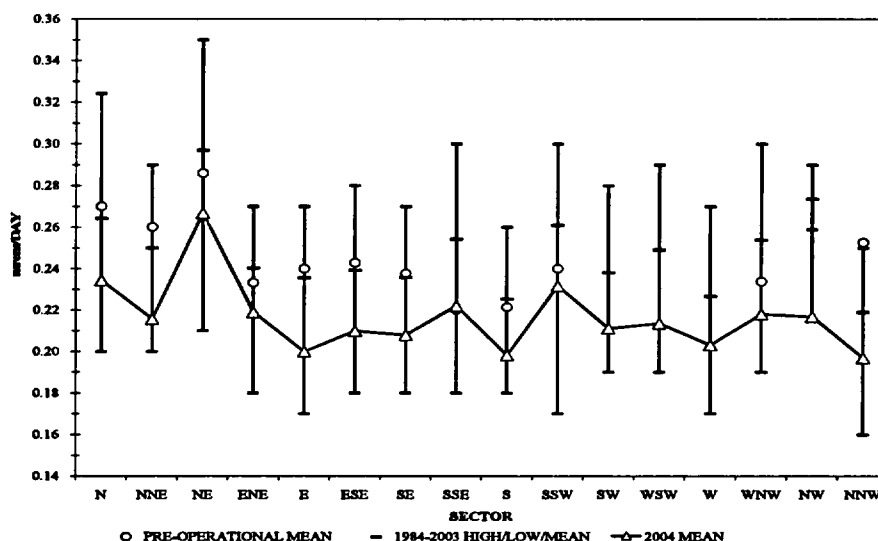


Figure 5-3 Remote Quarterly TLDs 1984-2003 Hi/Low/Mean vs. 2004 Mean By Sector

For the remote TLDs, Station 46 in the Wahluke Reserve (NE sector) remained the location with the highest 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 except those located at the ISFSI. Variations in the soil and underlying rock composition most likely account for localized differences such as those shown in the TLD results for Station 46.

Presented in Table 5-6 is a comparison of the 2004 annual and mean quarterly TLD results.

## 5.2 Airborne Particulate/Iodine

The 2004 mean weekly gross beta on particulate filter results for the inner ring indicator stations (within three miles) for The CGS are plotted in Figure 5-4. The gross beta in air results for 2004 were within the ranges observed during the preoperational period and during previous operational periods. In Figures 5-4 and 5-5, the similarity between results from near-plant locations and those from remote locations can be seen. The control location (Station 9A) results follow a nearly identical pattern to the remote and near-plant 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.

A spike was seen in the results of all of the air stations in week 46. This increase was investigated and a gamma assay was performed on the filters collected during this week. The results of the gamma assay showed that the only nuclide identified was Be-7. This spike was not caused by, or related to, any CGS activities.

The quarterly gamma analyses of the particulate filter composites indicated only the presence of two naturally-occurring radionuclides, Be-7 and K-40, at levels above detection limits at indicator locations and the control location. All I-131 in air results for 2004 were below the LLD. There is no evidence of any impact from plant operations on the environment in the air particulate filter and charcoal cartridge results for 2004.



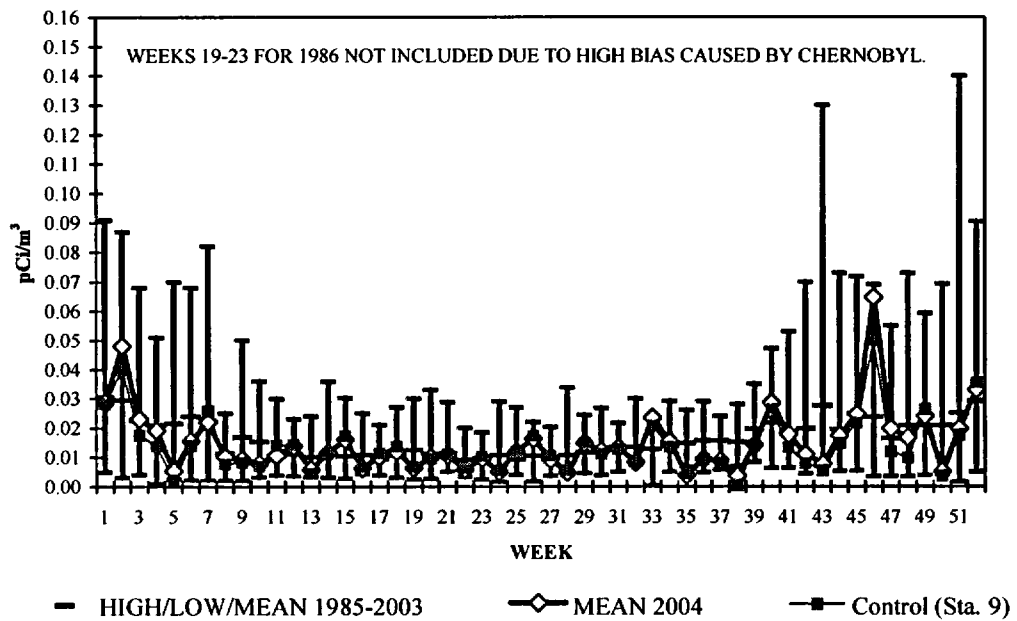


Figure 5-4 1985-2003 Weekly Hi/Low/Mean vs. 2004 Weekly Mean Gross Beta in Air - Near Plant Stations

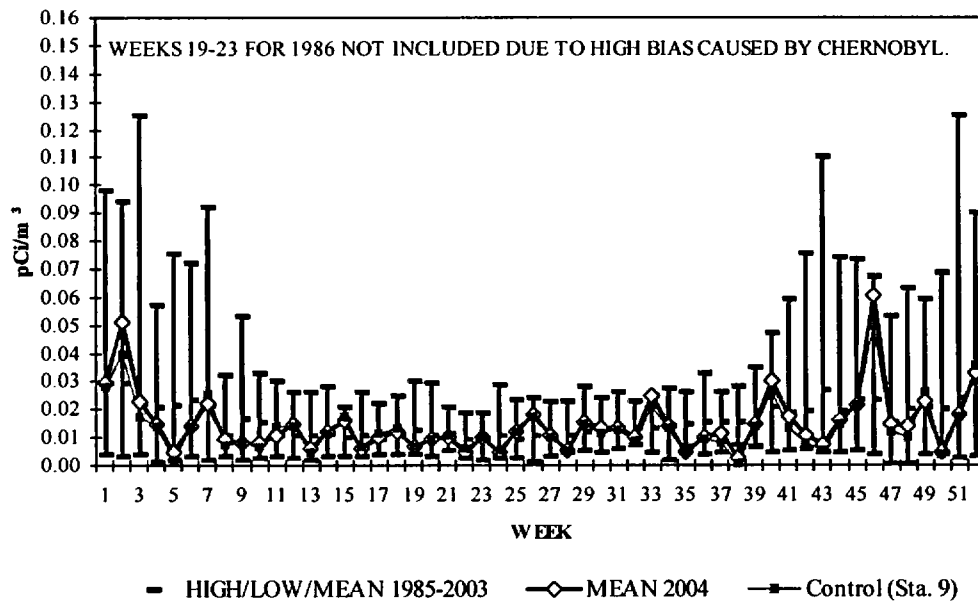


Figure 5-5 1985-2003 Weekly Hi/Low/Mean vs. 2004 Weekly Mean Gross Beta in Air - Remote Stations

### 5.3 Water

The gross beta results for the plant intake and river/drinking water (Stations 26, and 29) were within the normally observed ranges. The gross beta results were less than the eight picocurie per liter (pCi/l) level, at which a strontium analysis is required to be performed to verify compliance with the state drinking water standard for Sr-90.<sup>(11)</sup> Tritium levels in all samples from Stations 26, and 29 were below the nominal LLD. No radionuclides were detected in any of the gamma assays.

With one exception, the results of the groundwater analyses (Stations 52, 31, and 32) were consistent with the results seen in previous years. One of the samples taken from Station 52 (well #3) had a reported tritium result of 563 pCi/l. A subsequent sample from Station 52 in 2005 did not confirm this measurement, but there is a chance that the measured value was valid. There are several aquifers on the Hanford Site that are known to be contaminated with tritium; it is possible that some of this contamination could eventually migrate into the wells that are monitored by the CGS REMP. Tritium levels for the rest of the groundwater samples were below the nominal LLD, which is consistent with the results obtained in prior years.

The gross beta levels in the plant discharge water (Station 27) were typically a factor of 3-8 higher than the levels seen in the intake water (Station 26). This is the result of two causal factors; (1) the solids in the water are concentrated through evaporation, and (2) the cooling towers scrub particulates from the air that contain naturally occurring radionuclides and also Cs-137 and Sr-90 from atmospheric weapons testing and past Hanford activities. The cooling water discharged from the CGS was concentrated for 5 to 10 cycles. The discharge sample results are representative of the radioactivity present in plant discharges before any mixing with river water occurs. No gamma emitting radionuclides were identified in any of the gamma assays performed on the discharge water; however, there was one sample that had a measured tritium result. The result was very close to the LLD for the measurement, but it is possible that it was valid. Over the last several years there have been only a few discharge samples that have tested positive for tritium. The level that was measured was far below the safe drinking water standard and could have very easily been a false positive measurement.

Other than a detectable K-40 result at Station 52, and a measured Th-228 result at Station 27, there were no other detectable gamma emitting nuclides found in any water samples during 2004. Both K-40 and Th-228 are naturally occurring radionuclides.

### 5.4 Soil

The gamma assays performed on soil samples in 2004 indicated only a few naturally occurring radionuclides (Th-228, Ra-226, and K-40) and Cs-137 in some of the samples. Cs-137 was below the LLD at the background station (Station 9), but was measured in the samples from Stations 7 and 23. When the Cs-137 at an indicator station exceeds ten (10) times the level in the control sample, Sr-90 analysis is required. By default, Sr-90 analysis was performed for the samples from Stations 7 and 23. The results from the Sr-90 analyses and the gamma assays were consistent with the results that have been seen in previously. The soil sample results did not indicate any impact from CGS operations.

## **5.5 River Sediment**

Gamma assays of river sediment showed a few naturally occurring radionuclides (Ac-228, K-40, Ra-226, and Th-228) and Cs-137. Cs-137 was detected in both the upstream (Station 33) and downstream (Station 34) samples (relative to the cooling tower discharge point) that were collected. The downstream concentrations were higher, but the levels are consistent with the values seen in the preoperational phase of the REMP and previous operational years. Cs-137 has been previously identified as a component of the Columbia River sediment originating from past weapons production activities at Hanford and operation of the now decommissioned Hanford reactors.<sup>(14)</sup>

## **5.6 Fish**

The results of the gamma assays of fish samples collected in the vicinity of the CGS cooling water discharge, and at the control location on the Snake River were below detection limits for all radionuclides except for K-40, which is naturally occurring.

## **5.7 Milk**

There were no detectable I-131 results in any of the milk samples collected in 2004. The gamma assays results of milk were less than the detection limits for all radionuclides, except for K-40, which is naturally occurring.

Since August 1998, samples of feed grown by the owners of the dairy at Station 9 have been collected as a substitute for the control station. No dairy in the area of the control was located that did not use some feed grown downwind from the plant as supplemental feed. No radionuclides were detected in the feed samples collected during 2004 other than the naturally occurring Ac-228, Be-7, K-40, and Th-228.

## **5.8 Garden Produce**

The gamma assays of all of the root crops, fruit, and leafy vegetables collected in 2004 were below detection limits for all radionuclides other than K-40, which is naturally occurring.

## **5.9 Special Interest Stations**

The storm drain pond and the Sanitary Waste Treatment Facility (SWTF) were incorporated into the routine sampling schedule in 1992. In 1995, the cooling tower sediment disposal area was added. TLDs were placed around the spray pond drainfield (Station 120) in June 1995. TLDs were hung in the vicinity of the planned Independent Spent Fuel Storage Installation (ISFSI) during the first quarter of 1998 to collect background data and an additional ten TLDs were hung on the ISFSI fence after construction was completed in 2002. Discussions of the results from each of the locations are given in the following sections.

### **5.9.1 Storm Drain Pond (Station 101)**

The storm drain pond is located approximately 1500 feet northeast of the CGS. Water is sent to the pond through an 18-inch diameter pipe that 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.

Water at the storm drain outfall is sampled using a flow proportional automatic sampler to collect monthly composite samples. Samples were analyzed for tritium, gross beta, and gamma emitting radionuclides. Tritium was detected in all but one of the outfall water samples during 2004. The gross beta results were reasonably low, the highest result was about 8 pCi/l. There were no detectable gamma emitting nuclides in any of the storm drain outfall samples. The tritium and gross beta concentrations in the storm drain water during 2004 were consistent with the levels that have been seen in previous operational years.

### **5.9.2 Sanitary Waste Treatment Facility (Station 102)**

The Sanitary Waste Treatment Facility (SWTF) is located approximately 0.5 miles south-southeast of CGS. The facility processes the sanitary wastewater from the CGS, the WNP-1 and WNP-4 sites, the Kootenai Building, and the DOE 400 Area (since April 1997). Discharge standards and monitoring requirements for the SWTF are established in EFSEC Resolution No. 300<sup>(15)</sup>. Until April 1992, the SWTF sediment was sampled semiannually and analyzed in the Energy Northwest radiation laboratory and the radionuclide concentrations were given in terms of wet weight. Since that time, the samples have been sent to the analytical contractor where they are dried prior to analysis and the results reported in pCi/kg dry weight. 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.

The monthly composite water samples of the 400 Area effluent had gross beta results that were above detectable limits. The 400 Area effluent samples and SWTF headworks were also analyzed for gross alpha; there was no detectable gross alpha in any of the 2004 SWTF headworks results.

Due to contributions from the 400 Area effluent, tritium concentrations in SWTF samples continued to be higher than might otherwise be expected. The 400 Area draws part of its water from an unconfined aquifer that is high in tritium as a result of effluents from historical chemical separations processes in the 200 East Area on the Hanford Site.

Gamma analysis was done on all water samples collected at the SWTF. There were no detectable radionuclides from the gamma results in the 2004 SWTF samples other than the naturally occurring K-40 and Ra-226, and some I-131 that was present on a few occasions as a result of documented medical administrations of the isotope. Gamma analysis of the sediment sample collected from the north stabilization pond revealed detectable Cs-137 in addition to some other naturally occurring nuclides. The measured values were within the range of results observed in the previous years.

### 5.9.3 Cooling Tower Sediment Disposal Area (Station 119)

EFSEC Resolution No. 299<sup>(16)</sup> authorized the onsite disposal of sediments from plant cooling systems containing very low levels of radionuclides. The disposal area for these sediments is located just south of the cooling towers. Resolution No. 299 requires the REMP to monitor the direct radiation dose using quarterly and annual TLDs in the vicinity of the disposal cells. Resolution 299 also requires the collection of a dry composite sediment sample from the disposal cell within thirty days following each cleaning to confirm that the disposal criteria outlined in the resolution have not been exceeded.

Cleaning of the cooling towers was done twice in 2004. An estimated 44 cubic yards of sediment was placed in the disposal area in May; an additional 36 cubic yards was placed in August. Using the volume of 80 cubic yards and a density of 1.4 g/cm<sup>3</sup>, along with the associated activity (the LLDs were used as the activity for all non-detected isotopes), it was calculated that the following quantities of nuclides could have been placed in the disposal area in 2004:

Nuclide	Analytical Result (pCi/kg)	Limit (pCi/kg)	Total Curies
Co-60	<4.86E+01	5.0E+03	<4.16E-06
Mn-54	<4.24E+00	3.0E+04	<3.63E-06
Zn-65	<9.28E+01	5.0E+04	<7.95E-05
Cs-134	<3.60E+00	1.0E+04	<3.08E-06
Cs-137	2.13E+02	2.0E+04	1.82E-05

Of the above nuclides, only the Cs-137 result was above the detection limit. The result for Cs-137 is similar to the concentrations found in many of the Columbia River sediment samples. Since the results for the other nuclides were less than the lower limit of detection (LLD), the reported quantities disposed of those nuclides in the table are conservative estimates calculated from the LLD.

Measurements of direct radiation at the disposal basin were taken using TLDs. Two locations were used, one next to the collection area (Station 119B) and the other approximately 100 yards to the east as the control (Station 119-Control). The mean quarterly and annual TLD results agree well with results from previous operational years. The difference between the indicator and the control TLD (Station 119-Control) indicate that there was very little incremental dose.

#### **5.9.4 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 Cs-137 and Co-60. In 1996, the deposited sediment was removed to a disposal cell south of the cooling towers. The trench has continued to be the discharge location for spray pond filter backwash water. There were no discharges to the Spray Pond Drain Field in 2004.

The mean quarterly and annual results for the TLD at Station 120 in 2004 agree very well with results seen in previous operational years.

#### **5.9.5 Independent Spent Fuel Storage Installation**

The Independent Spent Fuel Storage Installation (ISFSI) is in an area immediately north of the CGS. Station 121 is located approximately 0.1 mile north of the plant and is between the plant and the ISFSI. Station 122 is on the fence line approximately 0.3 mile north of the plant. Ten more TLD stations are located on the security fence surrounding the ISFSI. These stations are Stations 123-129 and Stations 136A-138A. These TLDs are located approximately 0.25 mile north of the plant.

Ten (10) new spent fuel storage casks were added to the ISFSI in 2004. As a result, the exposure rates at the fence of the ISFSI increased, and there was an increase at all of the ISFSI TLD stations.

The added storage casks, and contribution from the HWC, resulted in an increase in the mean dose rate at Stations 86 and 121. Station 86 is inside the fence line in the NNW sector. Just outside of the fence line, at Station 17 in the same sector, there was no measurable increase in the mean.

#### **5.10 2004 Sample Deviations**

The majority of deviations for sampling were connected with air sampling. Most of the air sampling deviations resulted from power outages which were caused by maintenance workers; only a few were attributable to unit failures in the form of blown fuses.

The automatic composite sampler at Station 26, which samples the intake water, was not replaced until December of 2004. The temporary portable water sampler that was installed in 2003 was used in place of the automatic composite sampler for almost all of 2004. A summary of the sample deviations from 2004 are listed in Table 5-1.

**TABLE 5-1**  
**2004 SAMPLE DEVIATIONS**

SAMPLE MEDIA	DATE	LOCATION	PROBLEM
<b>Air Particulate/Iodine</b>	12/29/2003-1/5/2004	Station 9	Unit failure. Sample acceptable. Snow conditions caused failure.
	1/12/2004-1/19/2004	Station 4	Unit failure. Sample volume acceptable. Blown fuse.
	12/29/2003-1/26/2004	Station 1	Unable to reach station due to high snow drifts. Station ran continuously for 1692.4 hrs.
	2/2/2004-2/9/2004	Station 1	Power outage. Sample volume acceptable.
	2/23/2004-3/1/2004	Station 21	Power outage. No Sample. Power was turned off by electrician.
	3/1/2004-3/8/2004	Station 21	Power outage. Sample volume acceptable. Power was shut off for maintenance.
	4/26/2004-5/3/2004	Station 40	Unit Failure. Sample volume acceptable.
	5/24/2004-6/1/2004	Station 4	Power outage. Sample acceptable. Utility crew cut power line.
	6/21/2004-6/28/2004	Station 21	Power outage. Sample volume acceptable.
	6/21/2004-6/28/2004	Station 48	Power outage. Sample volume acceptable. Caused by maintenance workers at hatchery.
	7/12/2004-7/19/2004	Station 21	Power outage. Sample volume acceptable. Power shut off for installation of security system.
	7/12/2004-7/19/2004	Station 48	Unit failure. Sample volume acceptable. Blown fuse.
	7/19/2004-7/26/2004	Station 21	Power outage. Sample not acceptable. Power shut off for installation of security system.
	7/19/2004-7/26/2004	Station 48	Power outage. Sample volume acceptable. Power was shut off by maintenance workers.
	8/16/2004-8/23/2004	Station 5	Power outage. Sample acceptable. Power was shut off by maintenance workers.
	9/13/2004-9/20/2004	Station 6	Power outage. Sample not acceptable. Power was shut off by maintenance workers.
	9/13/2004-9/20/2004	Station 21	Power outage. Sample not acceptable. Power shut off for installation of security system.
	9/27/2004-10/4/2004	Station 5	Unit failure. Sample acceptable. Blown fuse.
	10/4/2004-10/11/2004	Station 57	Power outage. Sample volume acceptable. Power was shut off by maintenance workers.
	10/11/2004-10/18/2004	Station 57	Power outage. Sample volume acceptable. Power was shut off by maintenance workers.
<b>TLD</b>	12/30/2003-12/30/2004	Station 15	TLD was missing from station.
	12/30/2003-12/30/2004	Station 17	TLD was missing from station.
<b>Water</b>	1/1/2004-12/20/2004	Station 26	Portable composite sampler used. Samples acceptable.
	2/3/2004-3/2/2004	Station 102A	Unit failure. No sample.
	2/3/2004-3/2/2004	Station 102B	Unit failure. Grab sample taken.
	3/2/2004-3/24/2004	Station 102B	Unit failure. Grab sample taken.
<b>Milk</b>	5/12/2004	Station 9B	Sample spoiled and was not analyzed.
	5/12/2004	Station 36	Sample spoiled and was not analyzed.

TABLE 5-2

**REMP SAMPLE ANALYSIS RESULTS SUMMARY**ENERGY NORTHWEST COLUMBIA GENERATING STATION  
RICHLAND WASHINGTONDOCKET NO. 50-397  
JANUARY TO DECEMBER 2004

Medium or Pathway Sampled (Unit of Measurement)	Analysis and Total Number of Analyses Performed <sup>(a)</sup>		<u>All Indicator Locations</u>		<u>Location with Highest Mean</u>			Control Location Mean (Ratio) <sup>(b)</sup> (Range)	Number of Nonroutine Reported Measurements
			Mean (Ratio) <sup>(b)</sup> (Range)	Station	Distance	Direction	Mean (Ratio) <sup>(b)</sup> (Range)		
<b>Air Particulate</b> (pCi/m <sup>3</sup> )	Gross Beta	620	0.015(566/568) (0.002-0.079)	6	7.7 mi.	S	0.016(51/52) (0.002-0.066)	0.014(51/52) (0.002-0.059)	0
	Gamma <sup>(c)</sup> (Quarterly)	48	-(0/44)					-(0/4)	0
<b>Air Iodine</b> (pCi/m <sup>3</sup> )	I-131	620	-(0/568)					-(0/52)	0
<b>Soil</b> (pCi/kg dry)	Gamma <sup>(c)</sup>	5							
	Cs-137 <sup>(d)</sup>		241(2/4) (125-357)	7	2.8 mi.	WNW	357(1/1)	-(0/1)	0
	Sr-90 <sup>(d)</sup>	3	34.0(2/3) (25.9-42.1)	7	2.8 mi.	WNW	42.1(1/1)		0
<b>Water</b> (River/Drinking) (pCi/liter)	Gross Beta	24	2.85(2/12) (2.83-2.86)	29	11.6 mi.	SSE	2.85(2/12) (2.83-2.86)	2.52(1/12)	0
	Tritium	8	-(0/4)					-(0/4)	0
	Gamma <sup>(c)</sup>	24	-(0/12)					-(0/12)	0
<b>Water</b> (Discharge) (pCi/liter)	Gross Beta	24	15.6(12/12) (6.75-23.7)	27	3.2 mi	E	15.6(12/12) (6.75-23.7)	-(0/12)	0
	Tritium	8	228(1/4)	27	3.2 mi.	E	228(1/4)	-(0/4)	0
	Gamma <sup>(c)</sup>	24	-(0/12)					-(0/12)	

(a) This number includes control stations when applicable.

(b) The mean of the positive results above the LLD; the ratio inside the brackets is the number of positive results over the number of samples analyzed.

(c) Naturally occurring gamma emitting radionuclides that are not potentially attributable to CGS have been excluded from this summary. The results of all measurements, including radionuclides not attributable to CGS, are included in a separate data volume for this report.

(d) Listed because this is an isotope of interest relative to the REMP, however, this result is not believed to have been influenced by CGS activities.



TABLE 5-2 (cont.)

**REMP SAMPLE ANALYSIS RESULTS SUMMARY**ENERGY NORTHWEST COLUMBIA GENERATING STATION  
RICHLAND WASHINGTONDOCKET NO. 50-397  
JANUARY TO DECEMBER 2004

Medium or Pathway Sampled (Unit of Measurement)	Analysis and Total Number of Analyses Performed <sup>(a)</sup>		<u>All Indicator Locations</u>	<u>Location with Highest Mean</u>			Control Location Mean (Ratio) <sup>(b)</sup> (Range)	Number of Nonroutine Reported Measurements
			Mean (Ratio) <sup>(b)</sup> (Range)	Station	Distance	Direction	Mean (Ratio) <sup>(b)</sup> (Range)	
<b>Water</b> <b>(Ground)</b> (pCi/liter)	Tritium <sup>(d)</sup>	4	563(1/4)	52	0.1 mi.	N	563(1/4)	0
	Gamma <sup>(c)</sup>	12	-(0/12)					
<b>River Sediment</b> (pCi/kg dry)	Gamma <sup>(c)</sup>	4						
	Cs-137 <sup>(d)</sup>		165(2/2) (146-183)	34	3.3 mi.	ESE	165(2/2) (146-183)	0
<b>Fish</b> (pCi/kg wet)	Gamma <sup>(c)</sup>	6	-(0/3)				-(0/3)	0
<b>Milk</b> (pCi/liter)	I-131	34	-(0/34)					0
	Gamma <sup>(c)</sup>	36	-(0/36)				-(0/12)	
<b>Broadleaf In Lieu of Milk</b> (pCi/kg wet)	I-131	12	-(0/12)					0
	Gamma <sup>(c)</sup>	12	-(0/12)					
<b>Roots</b> (pCi/kg wet)	Gamma <sup>(c)</sup>	8	-(0/4)				-(0/4)	0
<b>Fruits</b> (pCi/kg wet)	Gamma <sup>(c)</sup>	9	-(0/5)				-(0/4)	0
<b>Vegetables</b> (pCi/kg wet)	Gamma <sup>(c)</sup>	14	-(0/8)				-(0/6)	0

(a) This number includes control stations when applicable.

(b) The mean of the positive results above the LLD; the ratio inside the brackets is the number of positive results over the number of samples analyzed.

(c) Naturally occurring gamma emitting radionuclides that are not potentially attributable to CGS have been excluded from this summary. The results of all measurements, including radionuclides not attributable to CGS, are included in a separate data volume for this report.

(d) Listed because this is an isotope of interest relative to the REMP, however, this result is not believed to have been influenced by CGS activities.

TABLE 5-2 (cont.)

**REMP SAMPLE ANALYSIS RESULTS SUMMARY**ENERGY NORTHWEST COLUMBIA GENERATING STATION  
RICHLAND WASHINGTONDOCKET NO. 50-397  
JANUARY TO DECEMBER 2004

Medium or Pathway Sampled (Unit of Measurement)	Analysis and Total Number of Analyses Performed <sup>(a)</sup>		<u>All Indicator Locations</u>	<u>Location with Highest Mean</u>			Control Location Mean (Ratio) <sup>(b)</sup> (Range)	Number of Nonroutine Reported Measurements
			Mean (Ratio) <sup>(b)</sup> (Range)	Station	Distance	Direction		
<b>Storm Drain Pond Station 101 Water (pCi/liter)</b>	Gross Beta	12	4.85(5/12) (4.16-5.97)	101	0.2 mi.	ENE	4.85(5/12) (4.16-5.97)	0
	Tritium	12	3380(11/12) (389-16900)	101	0.2 mi.	ENE	3380(11/12) (389-16900)	0
	Gamma <sup>(c)</sup>	12	-(0/12)					0
<b>Sanitary Waste Treatment Facility Water (pCi/liter)</b>	Gross Alpha	23	-(0/23)					0
	Gross Beta	23	27.6(23/23) (12.2-73.5)	102B	0.5 mi.	SSE	30.1(12/12) (12.2-73.5)	0
	Tritium	23	2146(22/23) (454-5490)	102A	0.7 mi.	SSE	3291(11/11) (2670-5490)	0
	Gamma <sup>(c)</sup>	23	-(0/23)					0
<b>Sanitary Waste Treatment Facility Sediment (pCi/kg dry)</b>	Gamma <sup>(c)</sup> Cs-137 <sup>(d)</sup>	1	82.8(1/1)	102D	0.5 mi.	SSE	82.8(1/1)	0
<b>Cooling Tower Sediment (pCi/kg dry)</b>	Gamma <sup>(c)</sup> Cs-137	2	216(2/2) (185-246)	119B	0.3 mi.	S	216(2/2) (185-246)	0

(a) This number includes control stations when applicable.

(b) The mean of the positive results above the LLD; the ratio inside the brackets is the number of positive results over the number of samples analyzed.

(c) Naturally occurring gamma emitting radionuclides that are not potentially attributable to CGS have been excluded from this summary. The results of all measurements, including radionuclides not attributable to CGS, are included in a separate data volume for this report.

(d) Listed because this is an isotope of interest relative to the REMP, however, this result is not believed to have been influenced by CGS activities.

TABLE 5-3

**REMP DIRECT RADIATION RESULTS SUMMARY**ENERGY NORTHWEST COLUMBIA GENERATING STATION  
RICHLAND WASHINGTONDOCKET NO. 50-397  
JANUARY TO DECEMBER 2004

Location or Group of Locations (Dose Units)	Number of TLDs Processed	<u>Indicator Locations</u> Mean (Range)	<u>Location with Highest Mean</u> Station Distance Direction			<u>Control Location</u> Mean (Range)	Number of Nonroutine Reported Measurements
<b>All Quarterly TLDs<sup>(a)</sup></b> (mrem/day)	228	0.222 (0.173-0.324)	86	0.30 mi.	NNW	0.300 (0.259-0.324) 0.194 (0.187-0.198)	0
<b>All Annual TLDs<sup>(a)</sup></b> (mrem/day)	55	0.219 (0.191-0.304)	86	0.30 mi.	NNW	0.304 0.200	0
<b>Station 119B Quarterly TLDs</b> (mrem/day)	8	0.232 (0.212-0.248)		0.3 mi.	SSE	0.227 (0.217-0.233)	0
<b>Station 119B Annual TLDs</b> (mrem/day)	2	0.218		0.3 mi.	SSE	0.227	0
<b>Station 120 Quarterly TLDs</b> (mrem/day)	4	0.237 (0.223-0.251)		0.3 mi.	SSE	-	0
<b>Station 120 Annual TLD</b> (mrem/day)	1	0.237		0.3 mi.	SSE	-	0
<b>ISFSI Quarterly TLDs</b> (mrem/day)	48	0.884 (0.278-2.203)	124	0.28 mi.	N	1.818 (0.829-2.203)	0
<b>ISFSI Annual TLDs</b> (mrem/day)	12	0.898 (0.379-1.867)	124	0.28 mi.	N	1.867	0

**FOOTNOTES:**

(a) The special interest station (Stations 119B, 119 control, 120, and all of the ISFSI stations) and control station results have been excluded.

TABLE 5-4  
MEAN QUARTERLY TLD DATA SUMMARY FOR THE PREOPERATIONAL  
AND OPERATIONAL PERIODS

Results in mrem/day

STATION	PREOPERATIONAL <sup>(a)</sup>			1984 – 2003 OPERATIONAL			2004 OPERATIONAL		
	LOW	HIGH	MEAN	LOW	HIGH	MEAN	LOW	HIGH	MEAN
1	0.210	0.260	0.240	0.200	0.300	0.248	0.214	0.241	0.227
2	0.190	0.250	0.231	0.180	0.280	0.242	0.215	0.227	0.221
3	0.200	0.240	0.224	0.180	0.270	0.235	0.203	0.215	0.208
4	0.170	0.260	0.219	0.160	0.250	0.219	0.182	0.214	0.197
5	0.200	0.250	0.228	0.180	0.260	0.225	0.187	0.203	0.198
6	0.200	0.240	0.221	0.180	0.260	0.228	0.196	0.211	0.202
7	0.210	0.250	0.234	0.180	0.270	0.238	0.206	0.216	0.211
8	0.240	0.280	0.261	0.170	0.300	0.261	0.218	0.243	0.232
9	0.170	0.240	0.218	0.180	0.260	0.221	0.187	0.198	0.194
10	0.210	0.250	0.230	0.180	0.270	0.236	0.198	0.216	0.208
11	0.210	0.250	0.235	0.180	0.270	0.240	0.212	0.227	0.219
12	0.230	0.270	0.253	0.200	0.290	0.259	0.225	0.247	0.236
13	0.210	0.250	0.235	0.190	0.300	0.242	0.203	0.218	0.210
14	0.210	0.270	0.240	0.190	0.280	0.241	0.213	0.221	0.217
15	0.230	0.280	0.254	0.190	0.300	0.258	0.227	0.243	0.234
16	0.220	0.260	0.243	0.180	0.290	0.247	0.213	0.241	0.224
17	0.210	0.260	0.250	0.190	0.290	0.251	0.220	0.239	0.230
18	0.220	0.260	0.243	0.180	0.280	0.246	0.210	0.233	0.221
19	0.220	0.260	0.241	0.190	0.280	0.248	0.218	0.232	0.225
20	0.210	0.260	0.235	0.190	0.280	0.245	0.214	0.229	0.221
21	0.210	0.240	0.227	0.170	0.260	0.228	0.200	0.214	0.207
22	0.210	0.260	0.241	0.180	0.280	0.243	0.213	0.230	0.222
23	0.220	0.260	0.237	0.190	0.280	0.238	0.209	0.215	0.211
24	0.230	0.260	0.240	0.190	0.553	0.250	0.205	0.237	0.220
25	0.230	0.270	0.254	0.190	0.300	0.256	0.215	0.238	0.228
40	0.190	0.240	0.219	0.170	0.270	0.227	0.193	0.212	0.203
41	0.220	0.280	0.260	0.190	0.300	0.254	0.203	0.232	0.218
42	0.220	0.260	0.245	0.190	0.290	0.249	0.208	0.218	0.214
43	0.230	0.270	0.253	0.180	0.300	0.254	0.215	0.229	0.222
44	0.210	0.250	0.231	0.170	0.270	0.236	0.173	0.220	0.200
45	0.210	0.250	0.233	0.180	0.280	0.239	0.200	0.220	0.210
46	0.250	0.310	0.286	0.210	0.350	0.297	0.246	0.286	0.267
47	0.190	0.230	0.218	0.170	0.288	0.227	0.193	0.232	0.209
49	-	-	0.240	0.180	0.280	0.244	0.211	0.236	0.223
50	-	-	0.220	0.180	0.290	0.243	0.210	0.230	0.221
51	0.210	0.240	0.225	0.180	0.270	0.237	0.204	0.221	0.214
53	-	-	0.270	0.200	0.324	0.264	0.224	0.244	0.234
54	-	-	0.260	0.200	0.290	0.250	0.199	0.231	0.216
55	-	-	0.230	0.180	0.280	0.239	0.206	0.242	0.221
56	-	-	0.240	0.180	0.280	0.245	0.203	0.232	0.217

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

STATION	PREOPERATIONAL <sup>(a)</sup>			1984 - 2003 OPERATIONAL			2004 OPERATIONAL		
	LOW	HIGH	MEAN	LOW	HIGH	MEAN	LOW	HIGH	MEAN
65	-	-	(b)	0.201	0.249	0.226	0.198	0.216	0.207
71(1S)	0.220	0.250	0.240	0.200	0.333	0.279	0.254	0.282	0.268
72(2S)	0.240	0.260	0.250	0.200	0.311	0.270	0.239	0.256	0.248
73(3S)	0.220	0.240	0.230	0.180	0.270	0.237	0.210	0.238	0.218
74(4S)	0.260	0.270	0.263	0.200	0.310	0.262	0.227	0.243	0.234
75(5S)	0.210	0.240	0.223	0.170	0.290	0.248	0.215	0.238	0.228
76(6S)	0.230	0.250	0.240	0.190	0.290	0.246	0.221	0.230	0.225
77(7S)	0.240	0.260	0.250	0.190	0.280	0.247	0.215	0.232	0.224
78(8S)	0.240	0.260	0.247	0.190	0.280	0.241	0.206	0.231	0.219
79(9S)	0.250	0.260	0.253	0.190	0.280	0.245	0.210	0.227	0.218
80(10S)	0.230	0.250	0.240	0.180	0.280	0.237	0.198	0.214	0.207
81(11S)	0.220	0.260	0.243	0.190	0.280	0.241	0.207	0.226	0.217
82(12S)	0.240	0.270	0.257	0.190	0.290	0.250	0.221	0.239	0.230
83(13S)	0.240	0.260	0.250	0.190	0.290	0.251	0.220	0.223	0.221
84(14S)	0.230	0.250	0.243	0.180	0.298	0.250	0.220	0.245	0.231
85(15S)	0.240	0.270	0.260	0.190	0.305	0.259	0.221	0.250	0.234
86(16S)	0.240	0.260	0.250	0.200	0.330	0.277	0.259	0.324	0.300
119B	-	-	(c)	0.218	0.281	0.247	0.212	0.248	0.232
119Ctrl	-	-	(c)	0.214	0.291	0.243	0.217	0.233	0.227
120	-	-	(c)	0.217	0.341	0.251	0.223	0.251	0.237
121 (ISFSI)	-	-	(d)	0.228	1.214	0.780	0.796	0.979	0.922
122 (ISFSI)	-	-	(d)	0.215	0.300	0.250	0.278	0.430	0.381
123 (ISFSI)	-	-	(e)	0.274	0.533	0.443	0.689	1.745	1.430
124 (ISFSI)	-	-	(e)	0.295	0.676	0.544	0.829	2.203	1.818
125 (ISFSI)	-	-	(e)	0.290	0.595	0.482	0.716	1.444	1.248
126 (ISFSI)	-	-	(e)	0.285	0.513	0.434	0.492	0.876	0.761
127 (ISFSI)	-	-	(e)	0.318	0.470	0.414	0.457	0.707	0.628
128 (ISFSI)	-	-	(e)	0.281	0.435	0.378	0.489	0.922	0.744
129 (ISFSI)	-	-	(e)	0.330	0.427	0.387	0.452	0.759	0.673
136A (ISFSI)	-	-	(e)	0.318	0.390	0.353	0.414	0.715	0.627
137A (ISFSI)	-	-	(e)	0.323	0.406	0.363	0.452	0.802	0.684
138A (ISFSI)	-	-	(e)	0.310	0.403	0.363	0.440	0.903	0.696

- (a) The preoperational mean is from 1982-1983 data.  
(b) Station 65 was added in 1997.  
(c) Stations 119B, 119Ctrl, and 120 were added in 1995.  
(d) Stations 121 and 122 were added in 1998 for the ISFSI.  
(e) Stations 123-129 and 136A-138A were added in the 2<sup>nd</sup> quarter of 2002.

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

STATION	PREOPERATIONAL <sup>(a)</sup>			1984 - 2003 OPERATIONAL			2004 OPERATIONAL
	LOW	HIGH	MEAN	LOW	HIGH	MEAN	RESULT
1	0.234	0.270	0.252	0.200	0.280	0.233	0.209
2	0.229	0.232	0.230	0.200	0.269	0.228	0.215
3	0.225	0.235	0.230	0.198	0.258	0.218	0.200
4	0.204	0.275	0.240	0.180	0.239	0.207	0.191
5	0.223	0.257	0.240	0.191	0.242	0.211	0.191
6	0.219	0.230	0.224	0.190	0.248	0.212	0.193
7	0.231	0.237	0.234	0.200	0.266	0.224	0.215
8	0.259	0.270	0.265	0.220	0.296	0.250	0.238
9	0.214	0.224	0.219	0.189	0.252	0.209	0.200
10	0.225	0.238	0.231	0.190	0.257	0.221	0.211
11	0.228	0.242	0.235	0.200	0.272	0.226	0.221
12	0.253	0.258	0.255	0.220	0.281	0.243	0.232
13	0.234	0.241	0.238	0.210	0.267	0.230	0.217
14	0.232	0.236	0.234	0.190	0.266	0.225	0.210
15	0.230	0.260	0.245	0.210	0.285	0.244	TLD Missing
16	0.246	0.252	0.249	0.210	0.278	0.234	0.221
17	0.235	0.251	0.243	0.210	0.279	0.237	TLD Missing
18	0.237	0.268	0.252	0.210	0.278	0.236	0.232
19	-	-	0.235 <sup>(b)</sup>	0.210	0.285	0.234	0.229
20	0.234	0.247	0.240	0.210	0.279	0.233	0.214
21	0.218	0.231	0.225	0.190	0.250	0.212	0.204
22	0.232	0.241	0.237	0.207	0.266	0.229	0.214
23	0.229	0.239	0.234	0.200	0.260	0.223	0.205
24	0.234	0.241	0.237	0.204	0.274	0.230	0.209
25	0.248	0.261	0.255	0.210	0.285	0.243	0.220
40	-	-	0.210 <sup>(b)</sup>	0.189	0.250	0.210	0.193
41	0.260	0.267	0.264	0.206	0.280	0.238	0.210
42	-	-	0.235 <sup>(b)</sup>	0.208	0.285	0.232	0.212
43	-	-	0.242 <sup>(b)</sup>	0.195	0.295	0.235	0.210
44	0.229	0.245	0.237	0.197	0.258	0.221	0.199
45	0.226	0.236	0.231	0.199	0.264	0.224	0.210
46	0.281	0.295	0.288	0.260	0.338	0.284	0.271
47	-	-	0.220 <sup>(b)</sup>	0.190	0.261	0.216	0.206
49	-	-	(c)	0.210	0.276	0.229	0.220
50	-	-	(c)	0.200	0.274	0.226	0.212
51	-	-	(c)	0.200	0.267	0.223	0.206
53	-	-	(c)	0.213	0.285	0.250	0.234
54	-	-	(c)	0.211	0.275	0.237	0.213
55	-	-	(c)	0.200	0.264	0.223	0.206
56	-	-	(c)	0.195	0.278	0.231	0.229
65	-	-	(d)	0.199	0.237	0.212	0.200

TABLE 5-5 (cont.)  
ANNUAL TLD DATA SUMMARY FOR THE PREOPERATIONAL  
AND OPERATIONAL PERIODS

STATION	PREOPERATIONAL <sup>(a)</sup>			1984 - 2003 OPERATIONAL			2004 OPERATIONAL
	LOW	HIGH	MEAN	LOW	HIGH	MEAN	RESULT
71 (1S)	-	-	0.241 <sup>(b)</sup>	0.230	0.307	0.265	0.276
72 (2S)	-	-	0.251 <sup>(b)</sup>	0.230	0.304	0.258	0.254
73 (3S)	-	-	0.229 <sup>(b)</sup>	0.200	0.260	0.222	0.217
74 (4S)	-	-	0.244 <sup>(b)</sup>	0.220	0.291	0.248	0.235
75(5S)	-	-	0.237 <sup>(b)</sup>	0.200	0.276	0.233	0.225
76(6S)	-	-	0.242 <sup>(b)</sup>	0.210	0.278	0.234	0.220
77 (7S)	-	-	0.246 <sup>(b)</sup>	0.200	0.272	0.232	0.224
78 (8S)	-	-	0.246 <sup>(b)</sup>	0.200	0.268	0.229	0.213
79 (9S)	-	-	0.252 <sup>(b)</sup>	0.200	0.277	0.230	0.215
80 (10S)	-	-	0.234 <sup>(b)</sup>	0.190	0.266	0.224	0.207
81 (11S)	-	-	0.227 <sup>(b)</sup>	0.200	0.264	0.226	0.202
82 (12S)	-	-	0.246 <sup>(b)</sup>	0.205	0.278	0.236	0.219
83 (13S)	-	-	0.250 <sup>(b)</sup>	0.210	0.273	0.239	0.224
84 (14S)	-	-	0.230 <sup>(b)</sup>	0.208	0.272	0.234	0.225
85 (15S)	-	-	0.252 <sup>(b)</sup>	0.220	0.290	0.248	0.240
86 (16S)	-	-	0.241 <sup>(b)</sup>	0.240	0.309	0.266	0.304
119B	-	-	(e)	0.208	0.295	0.232	0.218
119Ctrl	-	-	(e)	0.213	0.279	0.237	0.227
120	-	-	(e)	0.214	0.309	0.244	0.237
121 (ISFSI)	-	-	(f)	0.487	1.001	0.757	0.912
122 (ISFSI)	-	-	(f)	0.209	0.265	0.233	0.379
123 (ISFSI)	-	-	(g)	0.346	0.524	0.435	1.490
124 (ISFSI)	-	-	(g)	0.352	0.639	0.496	1.867
125 (ISFSI)	-	-	(g)	0.328	0.579	0.453	1.262
126 (ISFSI)	-	-	(g)	0.337	0.489	0.413	0.781
127 (ISFSI)	-	-	(g)	0.330	0.452	0.391	0.639
128 (ISFSI)	-	-	(g)	0.309	0.403	0.356	0.788
129 (ISFSI)	-	-	(g)	0.334	0.400	0.367	0.660
136A (ISFSI)	-	-	(g)	0.327	0.361	0.344	0.629
137A (ISFSI)	-	-	(g)	0.341	0.368	0.355	0.708
138A (ISFSI)	-	-	(g)	0.336	0.356	0.346	0.656

(a) The preoperational mean is from 1982 - 1983 data.

(b) There was only one annual exchange during the preoperational period.

(c) Stations 49-56 were first monitored during the Fourth Quarter of 1983.

(d) Station 65 was added in 1997.

(e) Stations 119B, 119Ctrl, and 120 were added in 1995.

(f) Station 121 and 122 were added in 1998 to gather baseline data for the ISFSI.

(g) Stations 123-129 and 136A-138A were added in the 2<sup>nd</sup> quarter of 2002

TABLE 5-6  
2004 MEAN QUARTERLY VERSUS ANNUAL TLD DATA  
Results in mrem/day

STATION	QUARTERLY MEAN <sup>(a)</sup>	ANNUAL RESULTS	RATIO <sup>(b)</sup>
1	0.227	0.209	1.09
2	0.221	0.215	1.03
3	0.208	0.200	1.04
4	0.197	0.191	1.03
5	0.198	0.191	1.04
6	0.202	0.193	1.05
7	0.211	0.215	0.98
8	0.232	0.238	0.97
9	0.194	0.200	0.97
10	0.208	0.211	0.98
11	0.219	0.221	0.99
12	0.236	0.232	1.01
13	0.210	0.217	0.97
14	0.217	0.210	1.03
15	0.234	TLD Missing	-
16	0.224	0.221	1.01
17	0.230	TLD Missing	-
18	0.221	0.232	0.95
19	0.225	0.229	0.98
20	0.221	0.214	1.03
21	0.207	0.204	1.01
22	0.222	0.214	1.04
23	0.211	0.205	1.03
24	0.220	0.209	1.05
25	0.228	0.220	1.03
40	0.203	0.193	1.05
41	0.218	0.210	1.04
42	0.214	0.212	1.01
43	0.222	0.210	1.06
44	0.200	0.199	1.00
45	0.210	0.210	1.00
46	0.267	0.271	0.98
47	0.209	0.206	1.02
49	0.223	0.220	1.02
50	0.221	0.212	1.04
51	0.214	0.206	1.04
53	0.234	0.234	1.00
54	0.216	0.213	1.01
55	0.221	0.206	1.07
56	0.217	0.229	0.95
65 <sup>(c)</sup>	0.207	0.200	1.04
71 (1S)	0.268	0.276	0.97



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

STATION	QUARTERLY MEAN <sup>(a)</sup>	ANNUAL RESULTS	RATIO <sup>(b)</sup>
72 (2S)	0.248	0.254	0.98
73 (3S)	0.218	0.217	1.01
74 (4S)	0.234	0.235	1.00
75 (5S)	0.228	0.225	1.01
76 (6S)	0.225	0.220	1.02
77 (7S)	0.224	0.224	1.00
78 (8S)	0.219	0.213	1.03
79 (9S)	0.218	0.215	1.01
80 (10S)	0.207	0.207	1.00
81 (11S)	0.217	0.202	1.07
82 (12S)	0.230	0.219	1.05
83 (13S)	0.221	0.224	0.99
84 (14S)	0.231	0.225	1.02
85 (15S)	0.234	0.240	0.98
86 (16S)	0.300	0.304	0.99
119B <sup>(d)</sup>	0.232	0.218	1.06
119Ctrl <sup>(d)</sup>	0.227	0.227	1.00
120 <sup>(d)</sup>	0.237	0.237	1.00
121 (ISFSI) <sup>(e)</sup>	0.922	0.912	1.01
122 (ISFSI) <sup>(e)</sup>	0.381	0.379	1.01
123 (ISFSI) <sup>(f)</sup>	1.430	1.490	0.96
124 (ISFSI) <sup>(f)</sup>	1.818	1.867	0.97
125 (ISFSI) <sup>(f)</sup>	1.248	1.262	0.99
126 (ISFSI) <sup>(f)</sup>	0.761	0.781	0.97
127 (ISFSI) <sup>(f)</sup>	0.628	0.639	0.98
128 (ISFSI) <sup>(f)</sup>	0.744	0.788	0.94
129 (ISFSI) <sup>(f)</sup>	0.673	0.660	1.02
136A (ISFSI) <sup>(f)</sup>	0.627	0.629	1.00
137A (ISFSI) <sup>(f)</sup>	0.684	0.708	0.97
138A (ISFSI) <sup>(f)</sup>	0.696	0.656	1.06

(a) Mean of the quarterly results.

(b) Quarterly result/Annual result.

(c) Station 65 added in 1997.

(d) Stations 119B, 119Ctrl, and 120 were added in 1995.

(e) Station 121 and 122 were added in 1998 to gather baseline data for the ISFSI.

(f) Stations 123-129 and 136A-138A were added in the 2<sup>nd</sup> quarter of 2002 for the ISFSI.

## **6.0 QUALITY ASSURANCE AND QUALITY CONTROL**

## **6.0 QUALITY ASSURANCE AND QUALITY CONTROL**

The REMP is designed to meet the quality assurance and quality control criteria of the NRC Regulatory Guide 4.15<sup>(4)</sup>. To accomplish this, the REMP requires that its analytical contractors also meet these criteria. The Energy Northwest Quality group performs audits of the REMP records and activities and the records and activities of its support organizations at least annually.

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.

The following sections summarize the quality assurance and quality control aspects of the TLD and sample analysis components of the REMP.

### **6.1 Quality Control for the Energy Northwest Environmental TLD Program**

The Quality Control program covers the preparation, processing and evaluation of environmental TLDs. From the time the TLDs are annealed to the time they are placed in the field, they are stored and transported with a set of control TLDs. Once the field TLDs are collected, they are again stored together with the controls until processed.

Control dosimeters (trip controls) are used with 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 to account for exposure during transit.

Reader QC dosimeters are prepared by Battelle Pacific Northwest National Laboratory and serve as indicators that the reader calibration is satisfactory and that the TLDs were processed correctly. These TLDs are annealed and then given a known exposure (typically 100 mR) to a cesium-137 source. The number of QC dosimeters used during each processing is generally 10% of the number of field dosimeters. Evaluation of the 2004 reader QC dosimeter results indicated satisfactory agreement for all four quarters and the annual processing results.

Spiked TLDs are submitted by Energy Northwest for processing along with the environmental TLDs. The processing results from these QA TLDs are used to demonstrate reader performance during environmental TLD processing. Quarterly spikes receive a target exposure of 25 mR and annual spikes receive a target exposure of approximately 100 mR. The spiked dosimeters are processed with the field dosimeters to verify the accuracy and consistency of the environmental TLD evaluations. All results were within  $\pm 10\%$  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 replacements if a field TLD is missing.

## **6.2 Quality Control For the Environmental Sample Program**

Quality control for the environmental sample program involves two components: the quality control activities performed by Energy Northwest 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 Energy Northwest Quality Control Activities**

A duplicate milk sample was submitted to Teledyne Brown for analysis during 2004. The milk duplicate was labeled Station 37 and was 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 that are accurate, precise and supported by adequate documentation. The program is based on the requirements of 10CFR50 Appendix B<sup>(10)</sup>, Regulatory Guide 4.15<sup>(4)</sup> and the program as described in Teledyne's Quality Assurance Quality Control Manual.

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.<sup>(17)</sup>

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.<sup>(18)</sup>

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.<sup>(19)</sup> 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.

## **Laboratory Intercomparison Program Participation**

The U.S. Environmental Protection Agency (EPA) discontinued its Interlaboratory Comparison Program in December 1998. However, on May 1, 2001, accreditation was granted to Environmental Resource Associates' (ERA) RadChem Proficiency Testing Program to complete the process of replacing the USEPA-LV Nuclear Radiation Assessment Division Program.

Teledyne participated in the following intercomparison programs in 2004:

- Analytics, Inc. Cross Check Program
- Environmental Resource Associates (ERA) RadChem Proficiency Testing Program
- Department of Energy Environmental Measurements Laboratory (DOE/EML) Quality Assessment Program (QAP)
- Department of Energy Mixed Analyte Performance Evaluation Program (MAPEP).

The EML Quality Assessment Program (QAP) was terminated in June 2004. The semi-annual MAPEP performance test sessions are being expanded to include additional performance test materials that are traceable to the National Institute of Standards and Technology. MAPEP distributed radiological performance test samples for gross alpha/beta measurements of water and air particulate filters beginning in the latter part of July 2004. The list of radionuclides will be similar, but not necessarily identical, to those provided by EML. The mixed analyte vegetation matrix samples will not be offered until the January 2005 test session.

The results of the four EML intercomparison studies done in 2004 are shown in Table 6-2. Table 6-3 presents the Analytics Inc. Cross Check Comparison results for 2004. Table 6-4 presents the results of the 2004 ERA intercomparison as reported to Energy Northwest. Table 6-5 presents the MAPEP Cross Check Comparison results for 2004.

Teledyne reported an unacceptable result for an analyte four times in the intercomparison programs in 2004. In every case, the error was one of reporting a value that was higher than the known value. This is not likely to have a negative impact on CGS data; in all cases the errors were conservative (the result was reported as being greater than actual).

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 2004. The blanks were below the detection level.

### **Gross Beta Filters**

One blank filter was measured with each set of filters assayed. 54 blanks were counted for 2004. The blanks were below or slightly above the detection limit, but indistinguishable from natural background.

### **I-131 in Milk**

Nine blank milk samples were analyzed during 2004. 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.

### **Gross Beta in Water**

104 blank samples were prepared from distilled water and analyzed during 2004. 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**

121 blank samples were analyzed by liquid scintillation counting during 2004. The average result without considering detection limits was 2.18E+00 pCi/liter.

### **Gamma Spectroscopy**

A background sample was analyzed semimonthly in the gamma spectroscopy laboratory. All nuclides were less than the normal level of detection indicating no contamination. Spike samples were measured using the Cs-137 peak at 662 KeV. The Cs-137 results were within the  $\pm 3$  sigma limits.

TABLE 6-1  
2004 ENERGY NORTHWEST SPIKED DOSIMETER RESULTS

DISTRIBUTION PERIOD	GIVEN EXPOSURE (mR)	REPORTED EXPOSURE (mR)	BIAS (%)
First Quarter	25	24.06	-3.91%
		23.96	-4.34%
		24.42	-2.38%
Second Quarter	25	24.83	-0.68%
		25.62	2.42%
		24.94	-0.24%
Third Quarter	25	24.18	-3.39%
		24.06	-3.91%
		24.68	-1.30%
Fourth Quarter	26	25.82	-0.70%
		26.33	1.25%
		25.73	-1.05%
Annual	87	86.57	-0.50%
		86.25	-0.87%
		81.99	-6.11%

**TABLE 6-2**  
**2004 ENVIRONMENTAL MEASUREMENTS LABORATORY (EML)**  
**QUALITY ASSESSMENT PROGRAM RESULTS**

Month/Year	Identification Number	Media	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/EML	Evaluation (d)
March, 2004 (2)	QAP 60 (QAP 0403)	AP	Co-60	Bq/filter	33.5	35.4	0.95	A
			Sr-90	Bq/filter	1.8	1.76	1.02	A
			Cs-134	Bq/filter	18.7	18.2	1.03	A
			Cs-137	Bq/filter	24.8	26.4	0.94	A
			Gross Alpha	Bq/filter	1.8	1.2	1.50	N (1)
			Gross Beta	Bq/filter	2.88	2.85	1.01	A
		Soil	K-40	Bq/kg	583	539	1.08	A
			Sr-90	Bq/kg	42.1	51.0	0.83	A
			Cs-137	Bq/kg	1429	1323	1.08	A
			Bi-212	Bq/kg	52.6	50.43	1.04	A
			Pb-212	Bq/kg	50.1	47.73	1.05	A
			Bi-214	Bq/kg	57.6	58.4	0.99	A
			Pb-214	Bq/kg	61.4	61.0	1.01	A
			Ac-228	Bq/kg	49.4	49.0	1.01	A
			Th-234	Bq/kg	114.9	84.0	1.37	A
		Vegetation	K-40	Bq/kg	807.5	720.0	1.12	A
			Co-60	Bq/kg	14.2	14.47	0.98	A
			Sr-90	Bq/kg	685	734.0	0.93	A
			Cs-137	Bq/kg	637.3	584.67	1.09	A
		Water	Co-60	Bq/L	159.7	163.2	0.98	A
			Sr-90	Bq/L	4.74	4.76	1.00	A
			Cs-137	Bq/L	50.6	51.95	0.97	A
			Gross Alpha	Bq/L	394.0	326.0	1.21	W
			Gross Beta	Bq/L	1200.0	1170.0	1.03	A

**Footnotes:**

- (1) Incorrect efficiency used. When recalculated with the correct efficiency, the Gross Alpha activity of 1.16 Bq/filter compared well with the value of 1.2 Bq/filter. Non-Conformance Report 04-14 was generated as a result of this occurrence.
- (2) DOE discontinued the EML quality assessment program. MAPEP has expanded their performance test program to include water, soil, AP and vegetation samples.
- (a) Teledyne Brown Engineering reported result.
- (b) The DOE/EML known value is equal to 100% of the parameter present in the standard as determined by gravimetric and/or volumetric measurements made during standard preparation.
- (c) Ratio of Teledyne Brown Engineering to DOE/EML results.
- (d) DOE/EML evaluation: A=acceptable, W=acceptable with warning, N=not acceptable.



**TABLE 6-3**  
**2004 ANALYTICS, INC. CROSS CHECK COMPARISON PROGRAM**

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)
March, 2004	E4128-396	Milk	Sr-89	pCi/L	91	103	0.88	A
			Sr-90	pCi/L	13	12	1.08	A
March, 2004	E4129-396	Milk	I-131	pCi/L	77	78	0.99	A
			Ce-141	pCi/L	77	85	0.91	A
			Cr-51	pCi/L	340	327	1.04	A
			Cs-134	pCi/L	76	90	0.84	A
			Cs-137	pCi/L	176	185	0.95	A
			Co-58	pCi/L	113	112	1.01	A
			Mn-54	pCi/L	110	114	0.96	A
			Fe-59	pCi/L	65	57	1.14	A
			Zn-65	pCi/L	132	143	0.92	A
			Co-60	pCi/L	144	153	0.94	A
	E4131-396	AP	Ce-141	pCi	87	88	0.99	A
			Cr-51	pCi	325	338	0.96	A
			Cs-134	pCi	87	93	0.94	A
			Cs-137	pCi	185	192	0.96	A
			Co-58	pCi	117	116	1.01	A
			Mn-54	pCi	105	118	0.89	A
			Fe-59	pCi	59	59	1.00	A
			Zn-65	pCi	179	148	1.21	W
			Co-60	pCi	145	159	0.91	A
March, 2004	E4130-396	Charcoal	I-131	pCi	88	97	0.91	A
June, 2004	E4213-396	Milk	Sr-89	pCi/L	77.9	87.7	0.89	A
			Sr-90	pCi/L	12.0	12.7	0.95	A
June, 2004	E4214-396	Milk	I-131	pCi/L	53.7	58.2	0.92	A
			Ce-141	pCi/L	145	157	0.92	A
			Cr-51	pCi/L	212	228	0.93	A
			Cs-134	pCi/L	85.2	101	0.84	A
			Cs-137	pCi/L	145	156	0.93	A
			Co-58	pCi/L	45.7	46.2	0.99	A
			Mn-54	pCi/L	68.2	70.5	0.97	A
			Fe-59	pCi/L	44.4	44.5	1.00	A
			Zn-65	pCi/L	102	99.3	1.03	A
			Co-60	pCi/L	162	172	0.94	A
	E4216-396	AP	Ce-141	pCi	116	118	0.98	A
			Cr-51	pCi	160	172	0.93	A
			Cs-134	pCi	68.6	76.3	0.90	A
			Cs-137	pCi	108	118	0.92	A
			Co-58	pCi	33.1	39.4	0.84	A
			Mn-54	pCi	51.1	53.3	0.96	A
			Fe-59	pCi	44.0	33.6	1.31	N (1)
			Zn-65	pCi	69.1	75.1	0.92	A
			Co-60	pCi	123	130	0.95	A

**Footnotes:**

- (1) The Analytics filter had very low activity and was counted longer than two days. This resulted in poor accuracy as demonstrated by the very large error term. Dan Montgomery of Analytics concurred that with the low counts and large error the results were reasonably accurate and would not be considered a failed cross check at 1.31 for an environmental level sample. NCR 04-16
- (a) Teledyne Brown Engineering reported result.
- (b) The Analytics known value is equal to 100% of the parameter present in the standard as determined by gravimetric and/or volumetric measurements made during standard preparation.
- (c) Ratio of Teledyne Brown Engineering to Analytics results.
- (d) Analytics evaluation based on TBE internal QC limits: A= Acceptable. Reported result falls within ratio limits of 0.80-1.20. W=Acceptable with warning. Reported result falls within 0.70-0.80 or 1.20-1.30. N = Not Acceptable. Reported result falls outside the ratio limits of < 0.70 and > 1.30.

**TABLE 6-3 (cont.)**  
**2004 ANALYTICS, INC. CROSS CHECK COMPARISON PROGRAM**

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)
September, 2004	E4215-396	Charcoal	I-131	pCi	71.8	82.0	0.88	A
	E4323-396	Milk	Sr-89	pCi/L	93.9	102	0.92	A
			Sr-90	pCi/L	24.0	24.5	0.98	A
	E4324-396	Milk	I-131	pCi/L	81.9	83.5	0.98	A
			Ce-141	pCi/L	214	235	0.91	A
			Cr-51	pCi/L	196	210	0.93	A
			Cs-134	pCi/L	77.3	90.6	0.85	A
			Cs-137	pCi/L	192	202	0.95	A
			Co-58	pCi/L	86.2	89.0	0.97	A
			Mn-54	pCi/L	163	171	0.96	A
			Fe-59	pCi/L	87.4	86.1	1.02	A
			Zn-65	pCi/L	168	167	1.00	A
			Co-60	pCi/L	108	118	0.92	A
	E4326-396	AP	Ce-141	pCi	149	148	1.01	A
			Cr-51	pCi	122	132	0.92	A
			Cs-134	pCi	50.3	57.1	0.88	A
			Cs-137	pCi	112	127	0.88	A
			Co-58	pCi	54.8	56.0	0.98	A
			Mn-54	pCi	102	108.0	0.95	A
			Fe-59	pCi	47.6	54.2	0.88	A
			Zn-65	pCi	111	106	1.05	A
October, 2004	E4325-396	Charcoal	I-131	pCi	70.3	74.9	0.94	A
	E4407-396	Milk	Sr-89	pCi/L	91.7	98.6	0.93	A
			Sr-90	pCi/L	11.9	11.3	1.05	A
	E4408-396	Milk	I-131	pCi/L	58.3	66.7	0.87	A
			Ce-141	pCi/L	140	155	0.91	A
			Cr-51	pCi/L	374	379	0.99	A
			Cs-134	pCi/L	143	170	0.84	A
			Cs-137	pCi/L	120	126	0.95	A
			Co-58	pCi/L	140	146	0.96	A
			Mn-54	pCi/L	135	136	1.00	A
			Fe-59	pCi/L	124	121	1.02	A
			Zn-65	pCi/L	198	196	1.01	A
			Co-60	pCi/L	166	175	0.95	A

**FOOTNOTES:**

- (a) Teledyne Brown Engineering reported result.
- (b) The Analytics known value is equal to 100% of the parameter present in the standard as determined by gravimetric and/or volumetric measurements made during standard preparation.
- (c) Ratio of Teledyne Brown Engineering to Analytics results.
- (d) Analytics evaluation based on TBE internal QC limits: A= Acceptable. Reported result falls within ratio limits of 0.80-1.20.  
W-Acceptable with warning. Reported result falls within 0.70-0.80 or 1.20-1.30. N = Not Acceptable. Reported result falls outside the ratio limits of < 0.70 and > 1.30.

TABLE 6-3 (cont.)  
2004 ANALYTICS, INC. CROSS CHECK COMPARISON PROGRAM

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)
	E4410-396	AP	Ce-141	pCi	77.0	79.1	0.97	A
			Cr-51	pCi	156	187	0.84	A
			Cs-134	pCi	76.6	83.5	0.92	A
			Cs-137	pCi	58.9	62.0	0.95	A
			Co-58	pCi	68.6	71.8	0.96	A
			Mn-54	pCi	63.2	66.7	0.95	A
			Fe-59	pCi	65.2	59.7	1.09	A
			Zn-65	pCi	99.7	96.3	1.04	A
			Co-60	pCi	80.1	85.9	0.93	A
	E4409A-396	Charcoal	I-131	pCi	80.9	83.3	0.97	A

**FOOTNOTES:**

- (a) Teledyne Brown Engineering reported result.
- (b) The Analytics known value is equal to 100% of the parameter present in the standard as determined by gravimetric and/or volumetric measurements made during standard preparation.
- (c) Ratio of Teledyne Brown Engineering to Analytics results.
- (d) Analytics evaluation based on TBE internal QC limits: A= Acceptable. Reported result falls within ratio limits of 0.80-1.20. W-Acceptable with warning. Reported result falls within 0.70-0.80 or 1.20-1.30. N = Not Acceptable. Reported result falls outside the ratio limits of < 0.70 and > 1.30.

**TABLE 6-4**  
**2004 ERA ENVIRONMENTAL RADIOACTIVITY**  
**CROSS CHECK COMPARISON PROGRAM**

Month/Year	Identification Number	Media	Nuclide	Units	Reported Value (a)	Known Value (b)	Control Limits	Evaluation (c)
May, 2004	Rad 57	Water	Sr-89	pCi/L	139	45.9	37.2 - 54.6	N (1)
			Sr-90	pCi/L	11.3	11.6	2.94 - 20.3	A
			Ba-133	pCi/L	93.9	101	83.5 - 118	A
			Cs-134	pCi/L	43.3	50.5	41.8 - 59.2	A
			Cs-137	pCi/L	79.3	82.5	73.8 - 91.2	A
			Co-60	pCi/L	42.4	41.6	32.9 - 50.3	A
			Zn-65	pCi/L	81.9	75.2	62.2 - 88.2	A
			Gross Alpha	pCi/L	39.9	38.8	22.0 - 55.6	A
			Gross Beta	pCi/L	62.5	59.6	42.3 - 76.9	A
			H-3	pCi/L	33500	30900	25600 - 36200	A
August, 2004	Rad 58	Water	I-131	pCi/L	9.09	9.29	5.83 - 12.8	A
December, 2004	Rad 59	Water	Sr-89	pCi/L	44.0	45.7	37.0 - 54.4	A
			Sr-90	pCi/L	35.3	36.6	27.9 - 45.3	A
			Ba-133	pCi/L	73.9	78.4	64.8 - 92.0	A
			Cs-134	pCi/L	37.8	42.9	34.2 - 51.6	A
			Cs-137	pCi/L	58.3	60.1	51.4 - 68.8	A
			Co-60	pCi/L	11.5	11.7	3.04 - 20.4	A
			Zn-65	pCi/L	51.3	50.9	42.1 - 59.7	A
			Gross Alpha	pCi/L	23.9	31.7	18.0 - 45.4	W
			Gross Beta	pCi/L	33.9	36.3	27.6 - 45.0	A
			I-131	pCi/L	19.2	22.1	16.9 - 27.3	A
			H-3	pCi/L	22900	20700	17100 - 24300	A

**Footnotes:**

- (1) The strontium-89 mount was counted without the absorber. When recounted using the absorber, the Sr-89 result of 41.5 pCi/L agreed well with the ERA known value of 45.9 pCi/L. NCR 04-13
- (a) Teledyne Brown Engineering reported result.
- (b) The ERA known value is equal to 100% of the parameter present in the standard as determined by gravimetric and/or volumetric measurements made during standard preparation.
- (c) ERA evaluation: A=acceptable. Reported result falls within the Warning Limits. NA=not acceptable. Reported result falls outside of the Control Limits. CE=check for Error. Reported result falls within the Control Limits and outside of the Warning Limit.

**TABLE 6-5**  
**2004 MAPEP ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM**

Month/Year	Identification Number	Media	Nuclide	Units	Reported Value (a)	Known Value (b)	Control Limits	Evaluation (c)
January, 2004	03-W11	Water	Cs-134	Bq/L	289.1	322.0	225.40 - 418.60	A
			Cs-137	Bq/L	118.7	124.0	86.80 - 161.20	A
			Co-57	Bq/L	164	173.0	121.10 - 224.90	A
			Co-60	Bq/L	121.1	121.8	85.26 - 158.34	A
			H-3	Bq/L	425.3	379.0	265.30 - 492.70	A
			Mn-54	Bq/L	152.6	155.0	108.50 - 201.50	A
			Sr-90	Bq/L	16.4	17.7	12.39 - 23.01	A
			Zn-65	Bq/L	303.3	320.0	224.00 - 416.00	A
July, 2004	MaW12	Water	Cs-134	Bq/L	177	208	145.60 - 270.40	A
			Cs-137	Bq/L	237	250	175.00 - 325.00	A
			Co-60	Bq/L	160	163	114.10 - 211.90	A
			H-3	Bq/L	109	82.9	58.10 - 107.90	N (1)
			Mn-54	Bq/L	262	267	186.90 - 347.10	A
			Sr-90	Bq/L	6.79	7.4	4.90 - 9.10	A
			Zn-65	Bq/L	217	208	145.60 - 270.40	A
	GrW12	Water	Gross Alpha	Bq/L	0.836	1.24	>0.0 - 2.40	A
			Gross Beta	Bq/L	4.95	4.07	2.05 - 6.15	A
	RdF12	AP	Cs-134	Bq/sample	2.19	2.9	2.03 - 3.77	W
			Cs-137	Bq/sample	1.87	1.96	1.40 - 2.60	A
			Co-60	Bq/sample	2.28	2.35	1.61 - 2.99	A
			Mn-54	Bq/sample	3.06	3.03	2.10 - 3.90	A
			Sr-90	Bq/sample	0.909	0.83	0.56 - 1.04	A
			Zn-65	Bq/sample	4.53	4.11	2.80 - 5.20	A
	GrF12	AP	Gross Alpha	Bq/sample	0.126	0.37	>0.0 - 0.80	A
			Gross Beta	Bq/sample	1.34	1.21	0.60 - 1.80	A
	MaS12	Soil	Cs-134	Bq/kg	327.7	414	290.08 - 538.72	W
			Cs-137	Bq/kg	786.0	836	585.34 - 1,088	A
			Co-60	Bq/kg	509.3	518	362.60 - 673.40	A
			Mn-54	Bq/kg	477	485	339.29 - 630.11	A
			K-40	Bq/kg	609	604	422.80 - 785.20	A
			Zn-65	Bq/kg	727	699	489.51 - 909.09	A

**Footnotes:**

- (1) All raw data looked normal for the sample. Evaluating the results based on the + 20 Bq/L uncertainty, the result easily overlaps the known value at the 95% confidence level. The sample was rerun with a larger aliquot to improve accuracy and lower the uncertainty. The H-3 result of 96.4 + 7.75 Bq/L was within the acceptance range. NCR 04-19
- (a) Teledyne Brown Engineering reported result.
- (b) The MAPEP known value is equal to 100% of the parameter present in the standard as determined by gravimetric and/or volumetric measurements made during standard preparation.
- (c) DOE/MAPEP evaluation: A=acceptable, W=acceptable with warning, N=not acceptable

## **7.0 REFERENCES**

## **7.0 REFERENCES**

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## **8.0 ERRATA**

## **8.0    ERRATA**

Revisions for the 2002 Annual Radiological Environmental Monitoring Program Annual Report Data Tables are listed below.

In Table A-17.1 (cont), the sample types for location 9C and 37 were transposed by Teledyne Brown Engineering. The sample type listed at Station 9C was Cabbage, it should be Greenbeans. The sample type listed at Station 37 was Greenbeans; it should be Cabbage. The following is the correct information for Table A-17.1 (cont):

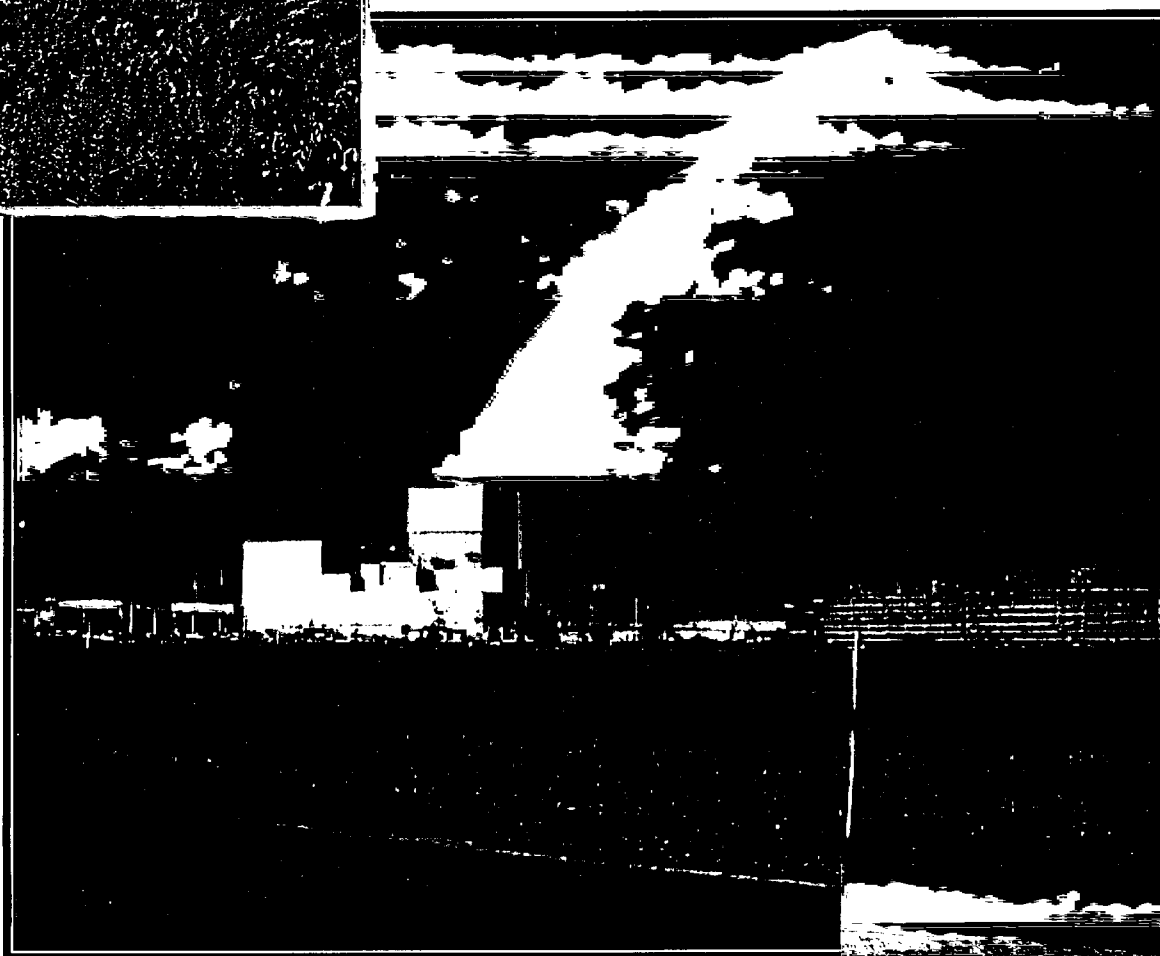
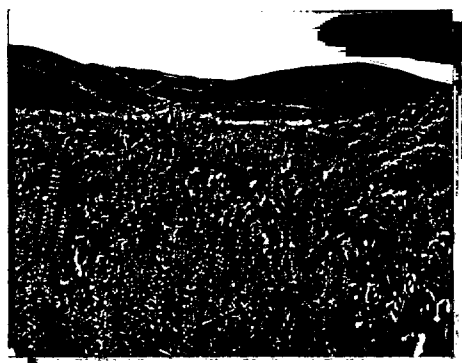
9C – Greenbeans

37 – Cabbage

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# COLUMBIA GENERATING STATION

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## 2004 ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

DATA TABLES



# **COLUMBIA GENERATING STATION**

## **2004 AREOR DATA TABLES TABLES A and B**

**JANUARY - DECEMBER 2004**

### **RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM**

**Prepared by:**

**Energy Northwest - Environmental Services Staff  
Richland, WA**

**and**

**Teledyne Brown Engineering Environmental Services  
Knoxville, TN**

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TABLE B: SPECIAL INTEREST SAMPLE RESULTS

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A-2.2	Gross Beta on Air Particulates - Summary
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## **2004 DATA TABLES**

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## **2004 DATA TABLES**

### **TABLE B: SPECIAL INTEREST SAMPLE RESULTS**

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TABLE A-1.1  
**2004 QUARTERLY TLD RESULTS**  
 Results in mrem/day

STATION	COLLECTION PERIOD	RESULT
1	12/30/2003 to 3/31/2004	0.220
	3/31/2004 to 6/29/2004	0.241
	6/29/2004 to 9/30/2004	0.214
	9/27/2004 to 12/29/2004	0.232
2	12/30/2003 to 3/31/2004	0.227
	3/31/2004 to 6/29/2004	0.220
	6/29/2004 to 9/30/2004	0.222
	9/27/2004 to 12/29/2004	0.215
3	12/30/2003 to 3/31/2004	0.204
	3/31/2004 to 6/29/2004	0.215
	6/29/2004 to 9/30/2004	0.203
	9/27/2004 to 12/29/2004	0.211
4	12/30/2003 to 3/31/2004	0.182
	3/31/2004 to 6/29/2004	0.214
	6/29/2004 to 9/30/2004	0.183
	9/27/2004 to 12/29/2004	0.208
5	12/30/2003 to 3/31/2004	0.200
	3/31/2004 to 6/29/2004	0.203
	6/29/2004 to 9/30/2004	0.187
	9/27/2004 to 12/29/2004	0.203
6	12/30/2003 to 3/31/2004	0.196
	3/31/2004 to 6/29/2004	0.211
	6/29/2004 to 9/30/2004	0.196
	9/27/2004 to 12/29/2004	0.204
7	12/30/2003 to 3/31/2004	0.206
	3/31/2004 to 6/29/2004	0.215
	6/29/2004 to 9/30/2004	0.208
	9/27/2004 to 12/29/2004	0.216
8	12/30/2003 to 3/31/2004	0.223
	3/31/2004 to 6/29/2004	0.242
	6/29/2004 to 9/30/2004	0.218
	9/27/2004 to 12/29/2004	0.243
9	12/30/2003 to 3/31/2004	0.194
	3/31/2004 to 6/29/2004	0.198
	6/29/2004 to 9/30/2004	0.187
	9/27/2004 to 12/29/2004	0.197
10	12/30/2003 to 3/31/2004	0.202
	3/31/2004 to 6/29/2004	0.214
	6/29/2004 to 9/30/2004	0.198
	9/27/2004 to 12/29/2004	0.216



TABLE A-1.1 (Cont.)  
**2004 QUARTERLY TLD RESULTS**  
 Results in mrem/day

STATION	COLLECTION PERIOD	RESULT
11	12/30/2003 to 3/31/2004	0.215
	3/31/2004 to 6/29/2004	0.227
	6/29/2004 to 9/30/2004	0.212
	9/27/2004 to 12/29/2004	0.221
12	12/30/2003 to 3/31/2004	0.225
	3/31/2004 to 6/29/2004	0.246
	6/29/2004 to 9/30/2004	0.225
	9/27/2004 to 12/29/2004	0.247
13	12/30/2003 to 3/31/2004	0.203
	3/31/2004 to 6/29/2004	0.215
	6/29/2004 to 9/30/2004	0.205
	9/27/2004 to 12/29/2004	0.218
14	12/30/2003 to 3/31/2004	0.213
	3/31/2004 to 6/29/2004	0.219
	6/29/2004 to 9/30/2004	0.213
	9/27/2004 to 12/29/2004	0.221
15	12/30/2003 to 3/31/2004	0.227
	3/31/2004 to 6/29/2004	0.236
	6/29/2004 to 9/30/2004	0.228
	9/27/2004 to 12/29/2004	0.243
16	12/30/2003 to 3/31/2004	0.213
	3/31/2004 to 6/29/2004	0.227
	6/29/2004 to 9/30/2004	0.214
	9/27/2004 to 12/29/2004	0.241
17	12/30/2003 to 3/31/2004	0.220
	3/31/2004 to 6/29/2004	0.233
	6/29/2004 to 9/30/2004	0.229
	9/27/2004 to 12/29/2004	0.239
18	12/30/2003 to 3/31/2004	0.210
	3/31/2004 to 6/29/2004	0.228
	6/29/2004 to 9/30/2004	0.212
	9/27/2004 to 12/29/2004	0.233
19	12/30/2003 to 3/31/2004	0.218
	3/31/2004 to 6/29/2004	0.232
	6/29/2004 to 9/30/2004	0.219
	9/27/2004 to 12/29/2004	0.231
20	12/30/2003 to 3/31/2004	0.214
	3/31/2004 to 6/29/2004	0.224
	6/29/2004 to 9/30/2004	0.216
	9/27/2004 to 12/29/2004	0.229

TABLE A-1.1 (Cont.)  
**2004 QUARTERLY TLD RESULTS**  
 Results in mrem/day

STATION	COLLECTION PERIOD	RESULT
21	12/30/2003 to 3/31/2004	0.202
	3/31/2004 to 6/29/2004	0.214
	6/29/2004 to 9/30/2004	0.200
	9/27/2004 to 12/29/2004	0.213
22	12/30/2003 to 3/31/2004	0.218
	3/31/2004 to 6/29/2004	0.230
	6/29/2004 to 9/30/2004	0.213
	9/27/2004 to 12/29/2004	0.229
23	12/30/2003 to 3/31/2004	0.209
	3/31/2004 to 6/29/2004	0.215
	6/29/2004 to 9/30/2004	0.211
	9/27/2004 to 12/29/2004	0.209
24	12/30/2003 to 3/31/2004	0.206
	3/31/2004 to 6/29/2004	0.237
	6/29/2004 to 9/30/2004	0.205
	9/27/2004 to 12/29/2004	0.232
25	12/30/2003 to 3/31/2004	0.215
	3/31/2004 to 6/29/2004	0.238
	6/29/2004 to 9/30/2004	0.222
	9/27/2004 to 12/29/2004	0.236
40	12/30/2003 to 3/31/2004	0.198
	3/31/2004 to 6/29/2004	0.208
	6/29/2004 to 9/30/2004	0.193
	9/27/2004 to 12/29/2004	0.212
41	12/30/2003 to 3/31/2004	0.212
	3/31/2004 to 6/29/2004	0.224
	6/29/2004 to 9/30/2004	0.203
	9/27/2004 to 12/29/2004	0.232
42	12/30/2003 to 3/31/2004	0.212
	3/31/2004 to 6/29/2004	0.216
	6/29/2004 to 9/30/2004	0.208
	9/27/2004 to 12/29/2004	0.218
43	12/30/2003 to 3/31/2004	0.217
	3/31/2004 to 6/29/2004	0.227
	6/29/2004 to 9/30/2004	0.215
	9/27/2004 to 12/29/2004	0.229
44	12/30/2003 to 3/31/2004	0.191
	3/31/2004 to 6/29/2004	0.216
	6/29/2004 to 9/30/2004	0.173
	9/27/2004 to 12/29/2004	0.220

TABLE A-1.1 (Cont.)  
**2004 QUARTERLY TLD RESULTS**  
 Results in mrem/day

STATION	COLLECTION PERIOD	RESULT
45	12/30/2003 to 3/31/2004	0.203
	3/31/2004 to 6/29/2004	0.216
	6/29/2004 to 9/30/2004	0.200
	9/27/2004 to 12/29/2004	0.220
46	12/30/2003 to 3/31/2004	0.246
	3/31/2004 to 6/29/2004	0.282
	6/29/2004 to 9/30/2004	0.253
	9/27/2004 to 12/29/2004	0.286
47	12/30/2003 to 3/31/2004	0.232
	3/31/2004 to 6/29/2004	0.205
	6/29/2004 to 9/30/2004	0.193
	9/27/2004 to 12/29/2004	0.206
49	12/30/2003 to 3/31/2004	0.211
	3/31/2004 to 6/29/2004	0.233
	6/29/2004 to 9/30/2004	0.214
	9/27/2004 to 12/29/2004	0.236
50	12/30/2003 to 3/31/2004	0.210
	3/31/2004 to 6/29/2004	0.228
	6/29/2004 to 9/30/2004	0.214
	9/27/2004 to 12/29/2004	0.230
51	12/30/2003 to 3/31/2004	0.213
	3/31/2004 to 6/29/2004	0.221
	6/29/2004 to 9/30/2004	0.204
	9/27/2004 to 12/29/2004	0.219
53	12/30/2003 to 3/31/2004	0.230
	3/31/2004 to 6/29/2004	0.241
	6/29/2004 to 9/30/2004	0.224
	9/27/2004 to 12/29/2004	0.244
54	12/30/2003 to 3/31/2004	0.210
	3/31/2004 to 6/29/2004	0.231
	6/29/2004 to 9/30/2004	0.199
	9/27/2004 to 12/29/2004	0.222
55	12/30/2003 to 3/31/2004	0.212
	3/31/2004 to 6/29/2004	0.224
	6/29/2004 to 9/30/2004	0.206
	9/27/2004 to 12/29/2004	0.242
56	12/30/2003 to 3/31/2004	0.203
	3/31/2004 to 6/29/2004	0.225
	6/29/2004 to 9/30/2004	0.208
	9/27/2004 to 12/29/2004	0.232

TABLE A-1.1 (Cont.)  
**2004 QUARTERLY TLD RESULTS**  
 Results in mrem/day

STATION	COLLECTION PERIOD	RESULT
65	12/30/2003 to 3/31/2004	0.202
	3/31/2004 to 6/29/2004	0.216
	6/29/2004 to 9/30/2004	0.198
	9/27/2004 to 12/29/2004	0.214
71	12/30/2003 to 3/31/2004	0.255
	3/31/2004 to 6/29/2004	0.282
	6/29/2004 to 9/30/2004	0.254
	9/27/2004 to 12/29/2004	0.282
72	12/30/2003 to 3/31/2004	0.249
	3/31/2004 to 6/29/2004	0.239
	6/29/2004 to 9/30/2004	0.247
	9/27/2004 to 12/29/2004	0.256
73	12/30/2003 to 3/31/2004	0.210
	3/31/2004 to 6/29/2004	0.216
	6/29/2004 to 9/30/2004	0.210
	9/27/2004 to 12/29/2004	0.238
74	12/30/2003 to 3/31/2004	0.227
	3/31/2004 to 6/29/2004	0.243
	6/29/2004 to 9/30/2004	0.228
	9/27/2004 to 12/29/2004	0.239
75	12/30/2003 to 3/31/2004	0.223
	3/31/2004 to 6/29/2004	0.236
	6/29/2004 to 9/30/2004	0.215
	9/27/2004 to 12/29/2004	0.238
76	12/30/2003 to 3/31/2004	0.221
	3/31/2004 to 6/29/2004	0.228
	6/29/2004 to 9/30/2004	0.221
	9/27/2004 to 12/29/2004	0.230
77	12/30/2003 to 3/31/2004	0.215
	3/31/2004 to 6/29/2004	0.230
	6/29/2004 to 9/30/2004	0.218
	9/27/2004 to 12/29/2004	0.232
78	12/30/2003 to 3/31/2004	0.209
	3/31/2004 to 6/29/2004	0.231
	6/29/2004 to 9/30/2004	0.206
	9/27/2004 to 12/29/2004	0.230
79	12/30/2003 to 3/31/2004	0.210
	3/31/2004 to 6/29/2004	0.227
	6/29/2004 to 9/30/2004	0.210
	9/27/2004 to 12/29/2004	0.226

TABLE A-1.1 (Cont.)  
**2004 QUARTERLY TLD RESULTS**  
 Results in mrem/day

STATION	COLLECTION PERIOD	RESULT
80	12/30/2003 to 3/31/2004	0.203
	3/31/2004 to 6/29/2004	0.213
	6/29/2004 to 9/30/2004	0.198
	9/27/2004 to 12/29/2004	0.214
81	12/30/2003 to 3/31/2004	0.208
	3/31/2004 to 6/29/2004	0.225
	6/29/2004 to 9/30/2004	0.207
	9/27/2004 to 12/29/2004	0.226
82	12/30/2003 to 3/31/2004	0.221
	3/31/2004 to 6/29/2004	0.237
	6/29/2004 to 9/30/2004	0.222
	9/27/2004 to 12/29/2004	0.239
83	12/30/2003 to 3/31/2004	0.223
	3/31/2004 to 6/29/2004	0.223
	6/29/2004 to 9/30/2004	0.220
	9/27/2004 to 12/29/2004	0.220
84	12/30/2003 to 3/31/2004	0.221
	3/31/2004 to 6/29/2004	0.236
	6/29/2004 to 9/30/2004	0.220
	9/27/2004 to 12/29/2004	0.245
85	12/30/2003 to 3/31/2004	0.221
	3/31/2004 to 6/29/2004	0.240
	6/29/2004 to 9/30/2004	0.225
	9/27/2004 to 12/29/2004	0.250
86	12/30/2003 to 3/31/2004	0.259
	3/31/2004 to 6/29/2004	0.324
	6/29/2004 to 9/30/2004	0.296
	9/27/2004 to 12/29/2004	0.322
119	12/30/2003 to 3/31/2004	0.223
	3/31/2004 to 6/29/2004	0.244
	6/29/2004 to 9/30/2004	0.212
	9/27/2004 to 12/29/2004	0.248
119 control	12/30/2003 to 3/31/2004	0.227
	3/31/2004 to 6/29/2004	0.233
	6/29/2004 to 9/30/2004	0.217
	9/27/2004 to 12/29/2004	0.233
120	12/30/2003 to 3/31/2004	0.223
	3/31/2004 to 6/29/2004	0.248
	6/29/2004 to 9/30/2004	0.228
	9/27/2004 to 12/29/2004	0.251

TABLE A-1.1 (Cont.)  
**2004 QUARTERLY TLD RESULTS**  
 Results in mrem/day

STATION	COLLECTION PERIOD	RESULT
121	12/30/2003 to 3/31/2004	0.961
	3/31/2004 to 6/29/2004	0.953
	6/29/2004 to 9/30/2004	0.796
	9/27/2004 to 12/29/2004	0.979
122	12/30/2003 to 3/31/2004	0.278
	3/31/2004 to 6/29/2004	0.430
	6/29/2004 to 9/30/2004	0.390
	9/27/2004 to 12/29/2004	0.425
123	12/30/2003 to 3/31/2004	0.689
	3/31/2004 to 6/29/2004	1.656
	6/29/2004 to 9/30/2004	1.745
	9/27/2004 to 12/29/2004	1.629
124	12/30/2003 to 3/31/2004	0.829
	3/31/2004 to 6/29/2004	2.203
	6/29/2004 to 9/30/2004	2.137
	9/27/2004 to 12/29/2004	2.103
125	12/30/2003 to 3/31/2004	0.716
	3/31/2004 to 6/29/2004	1.425
	6/29/2004 to 9/30/2004	1.444
	9/27/2004 to 12/29/2004	1.406
126	12/30/2003 to 3/31/2004	0.492
	3/31/2004 to 6/29/2004	0.876
	6/29/2004 to 9/30/2004	0.855
	9/27/2004 to 12/29/2004	0.820
127	12/30/2003 to 3/31/2004	0.457
	3/31/2004 to 6/29/2004	0.707
	6/29/2004 to 9/30/2004	0.676
	9/27/2004 to 12/29/2004	0.671
128	12/30/2003 to 3/31/2004	0.489
	3/31/2004 to 6/29/2004	0.922
	6/29/2004 to 9/30/2004	0.696
	9/27/2004 to 12/29/2004	0.869
129	12/30/2003 to 3/31/2004	0.452
	3/31/2004 to 6/29/2004	0.753
	6/29/2004 to 9/30/2004	0.759
	9/27/2004 to 12/29/2004	0.728
136A	12/30/2003 to 3/31/2004	0.414
	3/31/2004 to 6/29/2004	0.715
	6/29/2004 to 9/30/2004	0.692
	9/27/2004 to 12/29/2004	0.688

TABLE A-1.1 (Cont.)  
**2004 QUARTERLY TLD RESULTS**  
Results in mrem/day

STATION	COLLECTION PERIOD	RESULT
137A	12/30/2003 to 3/31/2004	0.452
	3/31/2004 to 6/29/2004	0.802
	6/29/2004 to 9/30/2004	0.724
	9/27/2004 to 12/29/2004	0.758
138A	12/30/2003 to 3/31/2004	0.440
	3/31/2004 to 6/29/2004	0.721
	6/29/2004 to 9/30/2004	0.903
	9/27/2004 to 12/29/2004	0.718

TABLE A-1.2  
**2004 ANNUAL TLD RESULTS**  
 Results in mrem/day

STATION	COLLECTION PERIOD	RESULT
1	12/30/2003 to 12/30/2004	0.209
2	12/30/2003 to 12/30/2004	0.215
3	12/30/2003 to 12/30/2004	0.200
4	12/30/2003 to 12/30/2004	0.191
5	12/30/2003 to 12/30/2004	0.191
6	12/30/2003 to 12/30/2004	0.193
7	12/30/2003 to 12/30/2004	0.215
8	12/30/2003 to 12/30/2004	0.238
9A	12/30/2003 to 12/30/2004	0.200
10	12/30/2003 to 12/30/2004	0.211
11	12/30/2003 to 12/30/2004	0.221
12	12/30/2003 to 12/30/2004	0.232
13	12/30/2003 to 12/30/2004	0.217
14	12/30/2003 to 12/30/2004	0.210
15	12/30/2003 to 12/30/2004	TLD Missing
16	12/30/2003 to 12/30/2004	0.221
17	12/30/2003 to 12/30/2004	TLD Missing
18	12/30/2003 to 12/30/2004	0.232
19	12/30/2003 to 12/30/2004	0.229
20	12/30/2003 to 12/30/2004	0.214
21	12/30/2003 to 12/30/2004	0.204
22	12/30/2003 to 12/30/2004	0.214
23	12/30/2003 to 12/30/2004	0.205
24	12/30/2003 to 12/30/2004	0.209
25	12/30/2003 to 12/30/2004	0.220



TABLE A-1.2 (Cont.)  
**2004 ANNUAL TLD RESULTS**  
Results in mrem/day

STATION	COLLECTION PERIOD	RESULT
40	12/30/2003 to 12/30/2004	0.193
41	12/30/2003 to 12/30/2004	0.210
42	12/30/2003 to 12/30/2004	0.212
43	12/30/2003 to 12/30/2004	0.210
44	12/30/2003 to 12/30/2004	0.199
45	12/30/2003 to 12/30/2004	0.210
46	12/30/2003 to 12/30/2004	0.271
47	12/30/2003 to 12/30/2004	0.206
49	12/30/2003 to 12/30/2004	0.220
50	12/30/2003 to 12/30/2004	0.212
51	12/30/2003 to 12/30/2004	0.206
53	12/30/2003 to 12/30/2004	0.234
54	12/30/2003 to 12/30/2004	0.213
55	12/30/2003 to 12/30/2004	0.206
56	12/30/2003 to 12/30/2004	0.229
65	12/30/2003 to 12/30/2004	0.200
71	12/30/2003 to 12/30/2004	0.276
72	12/30/2003 to 12/30/2004	0.254
73	12/30/2003 to 12/30/2004	0.217
74	12/30/2003 to 12/30/2004	0.235
75	12/30/2003 to 12/30/2004	0.225
76	12/30/2003 to 12/30/2004	0.220
77	12/30/2003 to 12/30/2004	0.224
78	12/30/2003 to 12/30/2004	0.213
79	12/30/2003 to 12/30/2004	0.215

TABLE A-1.2 (Cont.)  
**2004 ANNUAL TLD RESULTS**  
 Results in mrem/day

STATION	COLLECTION PERIOD	RESULT
80	12/30/2003 to 12/30/2004	0.207
81	12/30/2003 to 12/30/2004	0.202
82	12/30/2003 to 12/30/2004	0.219
83	12/30/2003 to 12/30/2004	0.224
84	12/30/2003 to 12/30/2004	0.225
85	12/30/2003 to 12/30/2004	0.240
86	12/30/2003 to 12/30/2004	0.304
119B	12/30/2003 to 12/30/2004	0.218
119 control	12/30/2003 to 12/30/2004	0.227
120	12/30/2003 to 12/30/2004	0.237
121	12/30/2003 to 12/30/2004	0.912
122	12/30/2003 to 12/30/2004	0.379
123	12/30/2003 to 12/30/2004	1.490
124	12/30/2003 to 12/30/2004	1.867
125	12/30/2003 to 12/30/2004	1.262
126	12/30/2003 to 12/30/2004	0.781
127	12/30/2003 to 12/30/2004	0.639
128	12/30/2003 to 12/30/2004	0.788
129	12/30/2003 to 12/30/2004	0.660
136A	12/30/2003 to 12/30/2004	0.629
137A	12/30/2003 to 12/30/2004	0.708
138A	12/30/2003 to 12/30/2004	0.656

TABLE A-1.3  
**2004 TLD RESULTS - SUMMARY**  
 Results in mrem/day

	AVERAGE	LOW	HIGH	SAMPLE NUMBER
<b><u>Quarterly TLD Results<sup>(a.)</sup></u></b>				
Indicator	0.222	0.173	0.324	224
Control	0.194	0.187	0.198	4
<b><u>STATION 119 (Cooling Tower Sediment Disposal Cell) Quarterly TLD Results</u></b>				
Indicator	0.232	0.212	0.248	4
Control	0.227	0.217	0.233	4
<b><u>STATION 120 Quarterly TLD Results</u></b>				
	0.237	0.223	0.251	4
<b><u>ISFSI Quarterly TLD Results</u></b>				
	0.884	0.278	2.203	48
<b><u>Annual TLD Results<sup>(a.)</sup></u></b>				
Indicator	0.219	0.191	0.304	54
Control	0.200	0.200	0.200	1
<b><u>STATION 119 (Cooling Tower Sediment Disposal Cell) Annual TLD Results</u></b>				
Indicator	0.218	0.218	0.218	1
Control	0.227	0.227	0.227	1
<b><u>STATION 120 Annual TLD Results</u></b>				
	0.237	0.237	0.237	1
<b><u>ISFSI Annual TLD Results</u></b>				
	0.898	0.379	1.867	12

(a.) Does not include special interest stations for the ISFSI or Stations 119B, 119-control, and 120.

TABLE A-2.1  
**GROSS BETA ON AIR PARTICULATES**  
 Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
1	12/29/2003 - 1/5/2004	(a)	
	1/5/2004 - 1/12/2004	(a)	
	1/12/2004 - 1/19/2004	(a)	
	12/29/2003 - 1/26/2004	3.38E-02	1.34E-03
	1/26/2004 - 2/2/2004	9.16E-03	1.87E-03
	2/2/2004 - 2/9/2004	1.56E-02	2.35E-03
	2/9/2004 - 2/17/2004	2.25E-02	2.32E-03
	2/17/2004 - 2/23/2004	9.93E-03	2.08E-03
	2/23/2004 - 3/1/2004	8.90E-03	1.94E-03
	3/1/2004 - 3/8/2004	9.20E-03	1.95E-03
	3/8/2004 - 3/15/2004	1.18E-02	1.99E-03
	3/15/2004 - 3/22/2004	1.89E-02	2.28E-03
	3/22/2004 - 3/29/2004	5.45E-03	1.81E-03
	3/29/2004 - 4/5/2004	1.41E-02	2.93E-03
	4/5/2004 - 4/12/2004	1.81E-02	2.27E-03
	4/12/2004 - 4/19/2004	6.68E-03	1.77E-03
	4/19/2004 - 4/26/2004	1.08E-02	1.90E-03
	4/26/2004 - 5/3/2004	1.32E-02	2.13E-03
	5/3/2004 - 5/10/2004	6.39E-03	1.68E-03
	5/10/2004 - 5/17/2004	9.96E-03	1.89E-03
	5/17/2004 - 5/24/2004	1.04E-02	2.00E-03
	5/24/2004 - 6/1/2004	4.41E-03	1.41E-03
	6/1/2004 - 6/7/2004	1.04E-02	2.28E-03
	6/7/2004 - 6/14/2004	4.35E-03	1.68E-03
	6/14/2004 - 6/21/2004	1.43E-02	2.15E-03
	6/21/2004 - 6/28/2004	1.26E-02	2.13E-03
	6/28/2004 - 7/6/2004	9.70E-03	1.73E-03
	7/6/2004 - 7/12/2004	3.67E-03	2.00E-03
	7/12/2004 - 7/19/2004	1.54E-02	2.29E-03
	7/19/2004 - 7/26/2004	1.27E-02	2.12E-03
	7/26/2004 - 8/2/2004	1.47E-02	2.10E-03
	8/2/2004 - 8/9/2004	7.30E-03	1.78E-03
	8/9/2004 - 8/16/2004	2.27E-02	2.55E-03
	8/16/2004 - 8/23/2004	1.39E-02	2.21E-03
	8/23/2004 - 8/30/2004	3.90E-03	1.53E-03
	8/30/2004 - 9/7/2004	9.44E-03	1.76E-03
	9/7/2004 - 9/13/2004	9.29E-03	2.21E-03
	9/13/2004 - 9/20/2004	3.50E-03	1.75E-03
	9/20/2004 - 9/27/2004	1.51E-02	2.26E-03

\* Denotes a result less than the detection limit.

(a) Sample not available due to snow conditions.

TABLE A-2.1 (cont.)  
**GROSS BETA ON AIR PARTICULATES**

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
1	9/27/2004 - 10/4/2004	2.76E-02	2.67E-03
	10/4/2004 - 10/11/2004	1.74E-02	2.22E-03
	10/11/2004 - 10/18/2004	1.19E-02	2.02E-03
	10/18/2004 - 10/25/2004	7.33E-03	1.75E-03
	10/25/2004 - 11/1/2004	1.62E-02	2.18E-03
	11/1/2004 - 11/8/2004	2.09E-02	2.42E-03
	11/8/2004 - 11/15/2004	6.35E-02	3.85E-03
	11/15/2004 - 11/22/2004	1.73E-02	2.56E-03
	11/22/2004 - 11/29/2004	1.56E-02	2.13E-03
	11/29/2004 - 12/6/2004	2.17E-02	2.45E-03
	12/6/2004 - 12/13/2004	4.36E-03	1.55E-03
	12/13/2004 - 12/20/2004	1.75E-02	2.27E-03
	12/20/2004 - 12/27/2004	3.26E-02	2.81E-03
4	12/29/2003 - 1/5/2004	2.44E-02	2.66E-03
	1/5/2004 - 1/12/2004	5.25E-02	3.51E-03
	1/12/2004 - 1/19/2004	2.52E-02	3.27E-03
	1/19/2004 - 1/26/2004	1.71E-02	2.34E-03
	1/26/2004 - 2/2/2004	6.09E-03	1.70E-03
	2/2/2004 - 2/9/2004	1.45E-02	2.17E-03
	2/9/2004 - 2/17/2004	2.23E-02	2.31E-03
	2/17/2004 - 2/23/2004	9.20E-03	2.05E-03
	2/23/2004 - 3/1/2004	7.60E-03	1.88E-03
	3/1/2004 - 3/8/2004	8.40E-03	1.91E-03
	3/8/2004 - 3/15/2004	1.06E-02	1.93E-03
	3/15/2004 - 3/22/2004	1.59E-02	2.14E-03
	3/22/2004 - 3/29/2004	7.05E-03	1.89E-03
	3/29/2004 - 4/5/2004	1.22E-02	2.79E-03
	4/5/2004 - 4/12/2004	1.49E-02	2.12E-03
	4/12/2004 - 4/19/2004	6.70E-03	1.77E-03
	4/19/2004 - 4/26/2004	1.13E-02	1.93E-03
	4/26/2004 - 5/3/2004	1.10E-02	2.02E-03
	5/3/2004 - 5/10/2004	6.17E-03	1.68E-03
	5/10/2004 - 5/17/2004	8.92E-03	1.84E-03
	5/17/2004 - 5/24/2004	7.65E-03	1.86E-03
	5/24/2004 - 6/1/2004	4.98E-03	1.78E-03
	6/1/2004 - 6/7/2004	9.99E-03	2.26E-03
	6/7/2004 - 6/14/2004	5.70E-03	1.75E-03
	6/14/2004 - 6/21/2004	1.43E-02	2.15E-03
	6/21/2004 - 6/28/2004	1.78E-02	2.40E-03

\* Denotes a result less than the detection limit.

TABLE A-2.1 (cont.)  
**GROSS BETA ON AIR PARTICULATES**  
 Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
4	6/28/2004 - 7/6/2004	9.98E-03	1.75E-03
	7/6/2004 - 7/12/2004	4.95E-03	2.07E-03
	7/12/2004 - 7/19/2004	1.68E-02	2.35E-03
	7/19/2004 - 7/26/2004	1.22E-02	2.10E-03
	7/26/2004 - 8/2/2004	1.37E-02	2.06E-03
	8/2/2004 - 8/9/2004	9.80E-03	1.91E-03
	8/9/2004 - 8/16/2004	2.32E-02	2.57E-03
	8/16/2004 - 8/23/2004	1.34E-02	2.19E-03
	8/23/2004 - 8/30/2004	5.85E-03	1.65E-03
	8/30/2004 - 9/7/2004	1.01E-02	1.79E-03
	9/7/2004 - 9/13/2004	1.01E-02	2.24E-03
	9/13/2004 - 9/20/2004	2.65E-03	1.71E-03
	9/20/2004 - 9/27/2004	1.71E-02	2.34E-03
	9/27/2004 - 10/4/2004	3.03E-02	2.77E-03
	10/4/2004 - 10/11/2004	1.82E-02	2.26E-03
	10/11/2004 - 10/18/2004	1.22E-02	2.03E-03
	10/18/2004 - 10/25/2004	7.61E-03	1.77E-03
	10/25/2004 - 11/1/2004	1.68E-02	2.20E-03
	11/1/2004 - 11/8/2004	2.26E-02	2.50E-03
	11/8/2004 - 11/15/2004	7.90E-02	4.23E-03
	11/15/2004 - 11/22/2004	1.98E-02	2.65E-03
	11/22/2004 - 11/29/2004	1.62E-02	2.16E-03
	11/29/2004 - 12/6/2004	3.01E-02	2.77E-03
	12/6/2004 - 12/13/2004	5.20E-03	1.60E-03
	12/13/2004 - 12/20/2004	1.99E-02	2.37E-03
	12/20/2004 - 12/27/2004	4.09E-02	3.09E-03
5	12/29/2003 - 1/5/2004	3.41E-02	3.00E-03
	1/5/2004 - 1/12/2004	4.81E-02	3.38E-03
	1/12/2004 - 1/19/2004	1.81E-02	2.26E-03
	1/19/2004 - 1/26/2004	1.32E-02	2.17E-03
	1/26/2004 - 2/2/2004	5.35E-03	1.65E-03
	2/2/2004 - 2/9/2004	1.42E-02	2.16E-03
	2/9/2004 - 2/17/2004	2.05E-02	2.24E-03
	2/17/2004 - 2/23/2004	8.74E-03	2.02E-03
	2/23/2004 - 3/1/2004	7.85E-03	1.89E-03
	3/1/2004 - 3/8/2004	8.45E-03	1.91E-03
	3/8/2004 - 3/15/2004	9.81E-03	1.89E-03
	3/15/2004 - 3/22/2004	1.25E-02	1.98E-03
	3/22/2004 - 3/29/2004	5.15E-03	1.79E-03

\* Denotes a result less than the detection limit.

TABLE A-2.1 (cont.)  
**GROSS BETA ON AIR PARTICULATES**  
 Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
5	3/29/2004 - 4/5/2004	1.14E-02	2.74E-03
	4/5/2004 - 4/12/2004	1.51E-02	2.13E-03
	4/12/2004 - 4/19/2004	5.45E-03	1.70E-03
	4/19/2004 - 4/26/2004	1.07E-02	1.90E-03
	4/26/2004 - 5/3/2004	8.75E-03	1.90E-03
	5/3/2004 - 5/10/2004	5.36E-03	1.63E-03
	5/10/2004 - 5/17/2004	7.48E-03	1.76E-03
	5/17/2004 - 5/24/2004	9.15E-03	1.93E-03
	5/24/2004 - 6/1/2004	5.02E-03	1.45E-03
	6/1/2004 - 6/7/2004	8.65E-03	2.19E-03
	6/7/2004 - 6/14/2004	3.60E-03	1.63E-03
	6/14/2004 - 6/21/2004	8.68E-03	1.87E-03
	6/21/2004 - 6/28/2004	1.82E-02	2.37E-03
	6/28/2004 - 7/6/2004	1.18E-02	1.84E-03
	7/6/2004 - 7/12/2004	4.25E-03	2.03E-03
	7/12/2004 - 7/19/2004	1.59E-02	2.31E-03
	7/19/2004 - 7/26/2004	1.41E-02	2.18E-03
	7/26/2004 - 8/2/2004	1.37E-02	2.06E-03
	8/2/2004 - 8/9/2004	1.02E-02	1.93E-03
	8/9/2004 - 8/16/2004	2.70E-02	2.71E-03
	8/16/2004 - 8/23/2004	1.22E-02	2.65E-03
	8/23/2004 - 8/30/2004	4.35E-03	1.56E-03
	8/30/2004 - 9/7/2004	9.00E-03	1.73E-03
	9/7/2004 - 9/13/2004	9.44E-03	2.21E-03
	9/13/2004 - 9/20/2004	2.61E-03	1.71E-03
	9/20/2004 - 9/27/2004	1.47E-02	2.24E-03
	9/27/2004 - 10/4/2004	3.48E-02	6.42E-03
	10/4/2004 - 10/11/2004	1.73E-02	2.22E-03
	10/11/2004 - 10/18/2004	1.13E-02	1.99E-03
	10/18/2004 - 10/25/2004	7.63E-03	1.77E-03
	10/25/2004 - 11/1/2004	1.77E-02	2.24E-03
	11/1/2004 - 11/8/2004	2.18E-02	2.46E-03
	11/8/2004 - 11/15/2004	6.38E-02	3.85E-03
	11/15/2004 - 11/22/2004	1.44E-02	2.45E-03
	11/22/2004 - 11/29/2004	1.23E-02	1.97E-03
	11/29/2004 - 12/6/2004	2.08E-02	2.41E-03
	12/6/2004 - 12/13/2004	4.56E-03	1.56E-03
	12/13/2004 - 12/20/2004	1.71E-02	2.25E-03
	12/20/2004 - 12/27/2004	2.80E-02	2.64E-03

\* Denotes a result less than the detection limit.

TABLE A-2.1 (cont.)  
**GROSS BETA ON AIR PARTICULATES**  
 Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
6	12/29/2003 - 1/5/2004	3.76E-02	3.11E-03
	1/5/2004 - 1/12/2004	5.32E-02	3.53E-03
	1/12/2004 - 1/19/2004	2.29E-02	2.46E-03
	1/19/2004 - 1/26/2004	1.81E-02	2.38E-03
	1/26/2004 - 2/2/2004	2.33E-03	1.46E-03
	2/2/2004 - 2/9/2004	1.43E-02	2.16E-03
	2/9/2004 - 2/17/2004	2.50E-02	2.41E-03
	2/17/2004 - 2/23/2004	1.14E-02	2.17E-03
	2/23/2004 - 3/1/2004	9.25E-03	1.96E-03
	3/1/2004 - 3/8/2004	9.25E-03	1.95E-03
	3/8/2004 - 3/15/2004	1.18E-02	1.99E-03
	3/15/2004 - 3/22/2004	1.57E-02	2.13E-03
	3/22/2004 - 3/29/2004	6.15E-03	1.85E-03
	3/29/2004 - 4/5/2004	1.30E-02	2.85E-03
	4/5/2004 - 4/12/2004	1.60E-02	2.18E-03
	4/12/2004 - 4/19/2004	6.78E-03	1.77E-03
	4/19/2004 - 4/26/2004	8.67E-03	1.79E-03
	4/26/2004 - 5/3/2004	1.08E-02	2.01E-03
	5/3/2004 - 5/10/2004	6.49E-03	1.69E-03
	5/10/2004 - 5/17/2004	8.82E-03	1.83E-03
	5/17/2004 - 5/24/2004	1.04E-02	2.00E-03
	5/24/2004 - 6/1/2004	5.55E-03	1.48E-03
	6/1/2004 - 6/7/2004	9.44E-03	2.23E-03
	6/7/2004 - 6/14/2004	4.80E-03	1.70E-03
	6/14/2004 - 6/21/2004	1.07E-02	1.98E-03
	6/21/2004 - 6/28/2004	1.81E-02	2.38E-03
	6/28/2004 - 7/6/2004	1.04E-02	1.76E-03
	7/6/2004 - 7/12/2004	5.36E-03	2.10E-03
	7/12/2004 - 7/19/2004	1.65E-02	2.34E-03
	7/19/2004 - 7/26/2004	1.30E-02	2.14E-03
	7/26/2004 - 8/2/2004	1.57E-02	2.15E-03
	8/2/2004 - 8/9/2004	1.06E-02	1.96E-03
	8/9/2004 - 8/16/2004	2.53E-02	2.65E-03
	8/16/2004 - 8/23/2004	1.48E-02	2.25E-03
	8/23/2004 - 8/30/2004	3.80E-03	1.52E-03
	8/30/2004 - 9/7/2004	1.08E-02	1.82E-03
	9/7/2004 - 9/13/2004	8.77E-03	2.18E-03
	9/13/2004 - 9/20/2004	* - 1.53E-04	2.35E-03
	9/20/2004 - 9/27/2004	1.40E-02	2.21E-03

(b)

\* Denotes a result less than the detection limit.

(b) Station 6 unit failure. Low volume resulted in missed MDC.



TABLE A-2.1 (cont.)  
**GROSS BETA ON AIR PARTICULATES**  
 Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
6	9/27/2004 - 10/4/2004	2.85E-02	2.70E-03
	10/4/2004 - 10/11/2004	1.92E-02	2.30E-03
	10/11/2004 - 10/18/2004	1.14E-02	2.02E-03
	10/18/2004 - 10/25/2004	9.20E-03	1.84E-03
	10/25/2004 - 11/1/2004	1.70E-02	2.21E-03
	11/1/2004 - 11/8/2004	2.42E-02	2.56E-03
	11/8/2004 - 11/15/2004	6.61E-02	3.91E-03
	11/15/2004 - 11/22/2004	1.74E-02	2.56E-03
	11/22/2004 - 11/29/2004	1.59E-02	2.15E-03
	11/29/2004 - 12/6/2004	2.19E-02	2.45E-03
	12/6/2004 - 12/13/2004	4.36E-03	1.55E-03
	12/13/2004 - 12/20/2004	1.96E-02	2.36E-03
	12/20/2004 - 12/27/2004	3.54E-02	2.90E-03
7	12/29/2003 - 1/5/2004	3.67E-02	3.08E-03
	1/5/2004 - 1/12/2004	4.93E-02	3.42E-03
	1/12/2004 - 1/19/2004	2.31E-02	2.47E-03
	1/19/2004 - 1/26/2004	2.00E-02	2.46E-03
	1/26/2004 - 2/2/2004	3.71E-03	1.55E-03
	2/2/2004 - 2/9/2004	1.73E-02	2.30E-03
	2/9/2004 - 2/17/2004	2.18E-02	2.29E-03
	2/17/2004 - 2/23/2004	1.26E-02	2.23E-03
	2/23/2004 - 3/1/2004	1.25E-02	2.12E-03
	3/1/2004 - 3/8/2004	8.20E-03	1.90E-03
	3/8/2004 - 3/15/2004	1.18E-02	1.99E-03
	3/15/2004 - 3/22/2004	1.50E-02	2.10E-03
	3/22/2004 - 3/29/2004	6.05E-03	1.84E-03
	3/29/2004 - 4/5/2004	1.31E-02	2.86E-03
	4/5/2004 - 4/12/2004	1.83E-02	2.28E-03
	4/12/2004 - 4/19/2004	5.79E-03	1.72E-03
	4/19/2004 - 4/26/2004	9.36E-03	1.82E-03
	4/26/2004 - 5/3/2004	1.30E-02	2.11E-03
	5/3/2004 - 5/10/2004	5.50E-03	1.63E-03
	5/10/2004 - 5/17/2004	9.76E-03	1.88E-03
	5/17/2004 - 5/24/2004	1.17E-02	2.06E-03
	5/24/2004 - 6/1/2004	6.86E-03	1.56E-03
	6/1/2004 - 6/7/2004	9.73E-03	2.24E-03
	6/7/2004 - 6/14/2004	5.00E-03	1.71E-03
	6/14/2004 - 6/21/2004	1.08E-02	1.98E-03
	6/21/2004 - 6/28/2004	1.70E-02	2.33E-03

\* Denotes a result less than the detection limit.

TABLE A-2.1 (cont.)  
**GROSS BETA ON AIR PARTICULATES**

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
7	6/28/2004 - 7/6/2004	8.71E-03	1.68E-03
	7/6/2004 - 7/12/2004	6.82E-03	2.18E-03
	7/12/2004 - 7/19/2004	1.57E-02	2.31E-03
	7/19/2004 - 7/26/2004	1.10E-02	2.04E-03
	7/26/2004 - 8/2/2004	1.38E-02	2.06E-03
	8/2/2004 - 8/9/2004	7.55E-03	1.79E-03
	8/9/2004 - 8/16/2004	2.37E-02	2.59E-03
	8/16/2004 - 8/23/2004	1.66E-02	2.33E-03
	8/23/2004 - 8/30/2004	3.65E-03	1.51E-03
	8/30/2004 - 9/7/2004	9.26E-03	1.75E-03
	9/7/2004 - 9/13/2004	8.66E-03	2.17E-03
	9/13/2004 - 9/20/2004	4.00E-03	1.78E-03
	9/20/2004 - 9/27/2004	1.37E-02	2.19E-03
	9/27/2004 - 10/4/2004	2.83E-02	2.69E-03
	10/4/2004 - 10/11/2004	1.73E-02	2.22E-03
	10/11/2004 - 10/18/2004	1.10E-02	2.00E-03
	10/18/2004 - 10/25/2004	7.52E-03	1.75E-03
	10/25/2004 - 11/1/2004	1.72E-02	2.22E-03
	11/1/2004 - 11/8/2004	2.57E-02	2.61E-03
	11/8/2004 - 11/15/2004	7.38E-02	4.10E-03
	11/15/2004 - 11/22/2004	2.34E-02	2.79E-03
	11/22/2004 - 11/29/2004	1.58E-02	2.14E-03
	11/29/2004 - 12/6/2004	2.54E-02	2.59E-03
	12/6/2004 - 12/13/2004	5.10E-03	1.59E-03
	12/13/2004 - 12/20/2004	2.12E-02	2.43E-03
	12/20/2004 - 12/27/2004	3.26E-02	2.81E-03
8	12/29/2003 - 1/5/2004	3.31E-02	2.97E-03
	1/5/2004 - 1/12/2004	5.23E-02	3.50E-03
	1/12/2004 - 1/19/2004	2.22E-02	2.43E-03
	1/19/2004 - 1/26/2004	1.50E-02	2.25E-03
	1/26/2004 - 2/2/2004	4.21E-03	1.58E-03
	2/2/2004 - 2/9/2004	1.31E-02	2.11E-03
	2/9/2004 - 2/17/2004	2.20E-02	2.30E-03
	2/17/2004 - 2/23/2004	9.67E-03	2.07E-03
	2/23/2004 - 3/1/2004	8.40E-03	1.92E-03
	3/1/2004 - 3/8/2004	9.00E-03	1.94E-03
	3/8/2004 - 3/15/2004	1.20E-02	2.00E-03
	3/15/2004 - 3/22/2004	1.49E-02	2.10E-03
	3/22/2004 - 3/29/2004	6.05E-03	1.84E-03

\* Denotes a result less than the detection limit.

TABLE A-2.1 (cont.)  
**GROSS BETA ON AIR PARTICULATES**  
 Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
8	3/29/2004 - 4/5/2004	1.53E-02	3.01E-03
	4/5/2004 - 4/12/2004	1.85E-02	2.28E-03
	4/12/2004 - 4/19/2004	6.85E-03	1.78E-03
	4/19/2004 - 4/26/2004	1.08E-02	1.90E-03
	4/26/2004 - 5/3/2004	1.41E-02	2.16E-03
	5/3/2004 - 5/10/2004	7.99E-03	1.78E-03
	5/10/2004 - 5/17/2004	1.07E-02	1.93E-03
	5/17/2004 - 5/24/2004	1.17E-02	2.06E-03
	5/24/2004 - 6/1/2004	5.16E-03	1.46E-03
	6/1/2004 - 6/7/2004	1.09E-02	2.31E-03
	6/7/2004 - 6/14/2004	5.60E-03	1.75E-03
	6/14/2004 - 6/21/2004	1.35E-02	2.11E-03
	6/21/2004 - 6/28/2004	2.03E-02	2.46E-03
	6/28/2004 - 7/6/2004	1.10E-02	1.80E-03
	7/6/2004 - 7/12/2004	6.23E-03	2.15E-03
	7/12/2004 - 7/19/2004	1.35E-02	2.20E-03
	7/19/2004 - 7/26/2004	1.25E-02	2.11E-03
	7/26/2004 - 8/2/2004	1.08E-02	1.91E-03
	8/2/2004 - 8/9/2004	1.03E-02	1.94E-03
	8/9/2004 - 8/16/2004	2.37E-02	2.59E-03
	8/16/2004 - 8/23/2004	1.26E-02	2.15E-03
	8/23/2004 - 8/30/2004	4.95E-03	1.60E-03
	8/30/2004 - 9/7/2004	9.53E-03	1.76E-03
	9/7/2004 - 9/13/2004	1.71E-02	2.58E-03
	9/13/2004 - 9/20/2004	3.20E-03	1.74E-03
	9/20/2004 - 9/27/2004	1.42E-02	2.22E-03
	9/27/2004 - 10/4/2004	2.73E-02	2.66E-03
	10/4/2004 - 10/11/2004	1.59E-02	2.15E-03
	10/11/2004 - 10/18/2004	8.73E-03	1.86E-03
	10/18/2004 - 10/25/2004	5.54E-03	1.65E-03
	10/25/2004 - 11/1/2004	1.31E-02	2.03E-03
	11/1/2004 - 11/8/2004	1.22E-02	2.63E-03
	11/8/2004 - 11/15/2004	6.37E-02	4.18E-03
	11/15/2004 - 11/22/2004	1.62E-02	2.52E-03
	11/22/2004 - 11/29/2004	1.32E-02	2.02E-03
	11/29/2004 - 12/6/2004	2.26E-02	2.48E-03
	12/6/2004 - 12/13/2004	5.40E-03	1.61E-03
	12/13/2004 - 12/20/2004	1.86E-02	2.32E-03
	12/20/2004 - 12/27/2004	3.11E-02	2.75E-03

\* Denotes a result less than the detection limit.

TABLE A-2.1 (cont.)  
**GROSS BETA ON AIR PARTICULATES**  
 Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
9A Control	12/29/2003 - 1/5/2004	2.83E-02	3.07E-03
	1/5/2004 - 1/12/2004	4.00E-02	3.12E-03
	1/12/2004 - 1/19/2004	1.75E-02	2.24E-03
	1/19/2004 - 1/26/2004	1.38E-02	2.20E-03
	1/26/2004 - 2/2/2004	2.23E-03	1.45E-03
	2/2/2004 - 2/9/2004	1.40E-02	2.15E-03
	2/9/2004 - 2/17/2004	2.58E-02	2.44E-03
	2/17/2004 - 2/23/2004	7.68E-03	1.96E-03
	2/23/2004 - 3/1/2004	8.30E-03	1.91E-03
	3/1/2004 - 3/8/2004	6.95E-03	1.83E-03
	3/8/2004 - 3/15/2004	1.40E-02	2.10E-03
	3/15/2004 - 3/22/2004	1.42E-02	2.06E-03
	3/22/2004 - 3/29/2004	4.65E-03	1.76E-03
	3/29/2004 - 4/5/2004	1.15E-02	2.74E-03
	4/5/2004 - 4/12/2004	1.72E-02	2.23E-03
	4/12/2004 - 4/19/2004	6.70E-03	1.77E-03
	4/19/2004 - 4/26/2004	1.14E-02	1.93E-03
	4/26/2004 - 5/3/2004	1.36E-02	2.15E-03
	5/3/2004 - 5/10/2004	6.74E-03	1.70E-03
	5/10/2004 - 5/17/2004	9.56E-03	1.87E-03
	5/17/2004 - 5/24/2004	1.10E-02	2.03E-03
	5/24/2004 - 6/1/2004	6.29E-03	1.52E-03
	6/1/2004 - 6/7/2004	1.02E-02	2.27E-03
	6/7/2004 - 6/14/2004	5.50E-03	1.74E-03
	6/14/2004 - 6/21/2004	1.19E-02	2.03E-03
	6/21/2004 - 6/28/2004	1.72E-02	2.33E-03
	6/28/2004 - 7/6/2004	1.04E-02	1.77E-03
	7/6/2004 - 7/12/2004	5.65E-03	2.11E-03
	7/12/2004 - 7/19/2004	1.49E-02	2.27E-03
	7/19/2004 - 7/26/2004	1.12E-02	2.05E-03
	7/26/2004 - 8/2/2004	1.27E-02	2.01E-03
	8/2/2004 - 8/9/2004	8.45E-03	1.84E-03
	8/9/2004 - 8/16/2004	2.07E-02	2.47E-03
	8/16/2004 - 8/23/2004	1.35E-02	2.19E-03
	8/23/2004 - 8/30/2004	4.40E-03	1.56E-03
	8/30/2004 - 9/7/2004	9.09E-03	1.74E-03
	9/7/2004 - 9/13/2004	8.08E-03	2.14E-03
	9/13/2004 - 9/20/2004	* 4.00E-04	1.57E-03
	9/20/2004 - 9/27/2004	1.40E-02	2.21E-03

\* Denotes a result less than the detection limit.

TABLE A-2.1 (cont.)  
**GROSS BETA ON AIR PARTICULATES**  
 Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
9A Control	9/27/2004 - 10/4/2004	2.61E-02	2.61E-03
	10/4/2004 - 10/11/2004	1.33E-02	2.03E-03
	10/11/2004 - 10/18/2004	7.90E-03	1.81E-03
	10/18/2004 - 10/25/2004	5.49E-03	1.65E-03
	10/25/2004 - 11/1/2004	1.47E-02	2.11E-03
	11/1/2004 - 11/8/2004	2.17E-02	2.46E-03
	11/8/2004 - 11/15/2004	5.92E-02	3.73E-03
	11/15/2004 - 11/22/2004	1.19E-02	2.34E-03
	11/22/2004 - 11/29/2004	9.88E-03	1.84E-03
	11/29/2004 - 12/6/2004	2.64E-02	2.63E-03
	12/6/2004 - 12/13/2004	3.71E-03	1.51E-03
	12/13/2004 - 12/20/2004	1.76E-02	2.28E-03
	12/20/2004 - 12/27/2004	3.55E-02	2.91E-03
21	12/29/2003 - 1/5/2004	2.99E-02	2.87E-03
	1/5/2004 - 1/12/2004	4.90E-02	3.40E-03
	1/12/2004 - 1/19/2004	2.30E-02	2.47E-03
	1/19/2004 - 1/26/2004	1.38E-02	2.20E-03
	1/26/2004 - 2/2/2004	3.86E-03	1.56E-03
	2/2/2004 - 2/9/2004	1.57E-02	2.22E-03
	2/9/2004 - 2/17/2004	2.30E-02	2.34E-03
	2/17/2004 - 2/23/2004	9.41E-03	2.06E-03
	2/23/2004 - 3/1/2004	(c)	1.90E-03
	3/1/2004 - 3/8/2004	7.05E-03	2.07E-03
	3/8/2004 - 3/15/2004	1.14E-02	1.97E-03
	3/15/2004 - 3/22/2004	1.39E-02	2.05E-03
	3/22/2004 - 3/29/2004	6.40E-03	1.86E-03
	3/29/2004 - 4/5/2004	1.19E-02	2.77E-03
	4/5/2004 - 4/12/2004	1.54E-02	2.15E-03
	4/12/2004 - 4/19/2004	5.94E-03	1.72E-03
	4/19/2004 - 4/26/2004	1.05E-02	1.88E-03
	4/26/2004 - 5/3/2004	1.14E-02	2.04E-03
	5/3/2004 - 5/10/2004	6.74E-03	1.70E-03
	5/10/2004 - 5/17/2004	1.06E-02	1.93E-03
	5/17/2004 - 5/24/2004	9.85E-03	1.97E-03
	5/24/2004 - 6/1/2004	6.38E-03	1.53E-03
	6/1/2004 - 6/7/2004	9.03E-03	2.21E-03
	6/7/2004 - 6/14/2004	5.89E-03	1.76E-03
	6/14/2004 - 6/21/2004	1.20E-02	2.05E-03
	6/21/2004 - 6/28/2004	1.69E-02	2.56E-03

\* Denotes a result less than the detection limit.

(c) No sample due to power being turned off.

TABLE A-2.1 (cont.)  
**GROSS BETA ON AIR PARTICULATES**  
 Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
21	6/28/2004 - 7/6/2004	8.82E-03	1.93E-03
	7/6/2004 - 7/12/2004	4.80E-03	2.10E-03
	7/12/2004 - 7/19/2004	1.06E-02	5.06E-03
	7/19/2004 - 7/26/2004	1.41E-02	2.83E-03
	7/26/2004 - 8/2/2004	1.19E-02	1.97E-03
	8/2/2004 - 8/9/2004	8.45E-03	1.84E-03
	8/9/2004 - 8/16/2004	2.58E-02	2.67E-03
	8/16/2004 - 8/23/2004	1.74E-02	2.36E-03
	8/23/2004 - 8/30/2004	3.90E-03	1.53E-03
	8/30/2004 - 9/7/2004	9.92E-03	1.78E-03
	9/7/2004 - 9/13/2004	8.43E-03	2.16E-03
	9/13/2004 - 9/20/2004 *	3.30E-03	3.72E-03
	9/20/2004 - 9/27/2004	1.47E-02	2.24E-03
	9/27/2004 - 10/4/2004	3.33E-02	2.87E-03
	10/4/2004 - 10/11/2004	1.69E-02	2.20E-03
	10/11/2004 - 10/18/2004	1.28E-02	2.07E-03
	10/18/2004 - 10/25/2004	6.04E-03	1.68E-03
	10/25/2004 - 11/1/2004	1.80E-02	2.26E-03
	11/1/2004 - 11/8/2004	2.35E-02	2.53E-03
	11/8/2004 - 11/15/2004	6.51E-02	3.89E-03
	11/15/2004 - 11/22/2004	1.93E-02	2.64E-03
	11/22/2004 - 11/29/2004	1.71E-02	2.20E-03
	11/29/2004 - 12/6/2004	2.42E-02	2.55E-03
	12/6/2004 - 12/13/2004	4.61E-03	1.56E-03
	12/13/2004 - 12/20/2004	2.13E-02	2.43E-03
	12/20/2004 - 12/27/2004	3.18E-02	2.78E-03
23	12/29/2003 - 1/5/2004	2.78E-02	2.79E-03
	1/5/2004 - 1/12/2004	4.95E-02	3.41E-03
	1/12/2004 - 1/19/2004	2.47E-02	2.53E-03
	1/19/2004 - 1/26/2004	1.53E-02	2.26E-03
	1/26/2004 - 2/2/2004	4.90E-03	1.62E-03
	2/2/2004 - 2/9/2004	1.52E-02	2.20E-03
	2/9/2004 - 2/17/2004	2.24E-02	2.32E-03
	2/17/2004 - 2/23/2004	1.04E-02	2.11E-03
	2/23/2004 - 3/1/2004	7.13E-03	1.85E-03
	3/1/2004 - 3/8/2004	7.50E-03	1.86E-03
	3/8/2004 - 3/15/2004	1.02E-02	1.91E-03
	3/15/2004 - 3/22/2004	1.21E-02	1.96E-03
	3/22/2004 - 3/29/2004	6.70E-03	1.88E-03

\* Denotes a result less than the detection limit.

(d) Station 21 unit failure. Low volume resulted in missed MDC.

TABLE A-2.1 (cont.)  
**GROSS BETA ON AIR PARTICULATES**  
 Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
23	3/29/2004 - 4/5/2004	1.11E-02	2.71E-03
	4/5/2004 - 4/12/2004	1.60E-02	2.18E-03
	4/12/2004 - 4/19/2004	6.18E-03	1.74E-03
	4/19/2004 - 4/26/2004	9.91E-03	1.85E-03
	4/26/2004 - 5/3/2004	9.88E-03	1.97E-03
	5/3/2004 - 5/10/2004	5.65E-03	1.64E-03
	5/10/2004 - 5/17/2004	8.96E-03	1.84E-03
	5/17/2004 - 5/24/2004	1.05E-02	2.00E-03
	5/24/2004 - 6/1/2004	5.68E-03	1.49E-03
	6/1/2004 - 6/7/2004	1.03E-02	2.27E-03
	6/7/2004 - 6/14/2004	4.84E-03	1.70E-03
	6/14/2004 - 6/21/2004	1.05E-02	1.97E-03
	6/21/2004 - 6/28/2004	1.68E-02	2.31E-03
	6/28/2004 - 7/6/2004	1.00E-02	1.75E-03
	7/6/2004 - 7/12/2004	4.89E-03	2.07E-03
	7/12/2004 - 7/19/2004	1.59E-02	2.31E-03
	7/19/2004 - 7/26/2004	1.10E-02	2.04E-03
	7/26/2004 - 8/2/2004	1.18E-02	1.96E-03
	8/2/2004 - 8/9/2004	9.40E-03	1.89E-03
	8/9/2004 - 8/16/2004	2.24E-02	2.54E-03
	8/16/2004 - 8/23/2004	1.43E-02	2.23E-03
	8/23/2004 - 8/30/2004	3.00E-03	1.47E-03
	8/30/2004 - 9/7/2004	9.18E-03	1.74E-03
	9/7/2004 - 9/13/2004	7.27E-03	2.10E-03
	9/13/2004 - 9/20/2004	2.80E-03	1.71E-03
	9/20/2004 - 9/27/2004	1.17E-02	2.10E-03
	9/27/2004 - 10/4/2004	2.46E-02	2.55E-03
	10/4/2004 - 10/11/2004	1.52E-02	2.12E-03
	10/11/2004 - 10/18/2004	9.00E-03	1.87E-03
	10/18/2004 - 10/25/2004	7.88E-03	1.78E-03
	10/25/2004 - 11/1/2004	1.72E-02	2.22E-03
	11/1/2004 - 11/8/2004	2.63E-02	2.64E-03
	11/8/2004 - 11/15/2004	6.84E-02	3.97E-03
	11/15/2004 - 11/22/2004	1.78E-02	2.58E-03
	11/22/2004 - 11/29/2004	1.82E-02	2.25E-03
	11/29/2004 - 12/6/2004	2.32E-02	2.51E-03
	12/6/2004 - 12/13/2004	5.80E-03	1.64E-03
	12/13/2004 - 12/20/2004	1.95E-02	2.36E-03
	12/20/2004 - 12/27/2004	3.31E-02	2.82E-03

\* Denotes a result less than the detection limit.

TABLE A-2.1 (cont.)  
**GROSS BETA ON AIR PARTICULATES**  
 Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
40	12/29/2003 - 1/5/2004	2.50E-02	2.68E-03
	1/5/2004 - 1/12/2004	5.13E-02	3.47E-03
	1/12/2004 - 1/19/2004	2.32E-02	2.47E-03
	1/19/2004 - 1/26/2004	1.24E-02	2.13E-03
	1/26/2004 - 2/2/2004	3.91E-03	1.56E-03
	2/2/2004 - 2/9/2004	1.47E-02	2.18E-03
	2/9/2004 - 2/17/2004	2.28E-02	2.33E-03
	2/17/2004 - 2/23/2004	9.20E-03	2.05E-03
	2/23/2004 - 3/1/2004	8.30E-03	1.91E-03
	3/1/2004 - 3/8/2004	7.00E-03	1.83E-03
	3/8/2004 - 3/15/2004	1.07E-02	1.94E-03
	3/15/2004 - 3/22/2004	1.35E-02	2.03E-03
	3/22/2004 - 3/29/2004	5.25E-03	1.80E-03
	3/29/2004 - 4/5/2004	8.46E-03	2.51E-03
	4/5/2004 - 4/12/2004	1.59E-02	2.17E-03
	4/12/2004 - 4/19/2004	5.20E-03	1.69E-03
	4/19/2004 - 4/26/2004	8.52E-03	1.78E-03
	4/26/2004 - 5/3/2004	1.56E-02	8.97E-03
	5/3/2004 - 5/10/2004	6.90E-03	1.72E-03
	5/10/2004 - 5/17/2004	1.00E-02	1.90E-03
	5/17/2004 - 5/24/2004	1.19E-02	2.07E-03
	5/24/2004 - 6/1/2004	4.59E-03	1.42E-03
	6/1/2004 - 6/7/2004	1.23E-02	2.38E-03
	6/7/2004 - 6/14/2004	4.00E-03	1.66E-03
	6/14/2004 - 6/21/2004	1.24E-02	2.06E-03
	6/21/2004 - 6/28/2004	1.55E-02	2.26E-03
	6/28/2004 - 7/6/2004	1.16E-02	1.83E-03
	7/6/2004 - 7/12/2004	7.52E-03	2.21E-03
	7/12/2004 - 7/19/2004	1.83E-02	2.41E-03
	7/19/2004 - 7/26/2004	1.21E-02	2.09E-03
	7/26/2004 - 8/2/2004	1.36E-02	2.05E-03
	8/2/2004 - 8/9/2004	9.95E-03	1.92E-03
	8/9/2004 - 8/16/2004	2.51E-02	2.64E-03
	8/16/2004 - 8/23/2004	1.34E-02	2.19E-03
	8/23/2004 - 8/30/2004	4.20E-03	1.55E-03
	8/30/2004 - 9/7/2004	1.08E-02	1.82E-03
	9/7/2004 - 9/13/2004	1.42E-02	2.35E-03
	9/13/2004 - 9/20/2004	3.46E-03	1.76E-03
	9/20/2004 - 9/27/2004	1.39E-02	2.21E-03

\* Denotes a result less than the detection limit.



TABLE A-2.1 (cont.)  
**GROSS BETA ON AIR PARTICULATES**  
 Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
40	9/27/2004 - 10/4/2004	2.93E-02	2.73E-03
	10/4/2004 - 10/11/2004	1.79E-02	2.24E-03
	10/11/2004 - 10/18/2004	1.17E-02	2.01E-03
	10/18/2004 - 10/25/2004	6.93E-03	1.73E-03
	10/25/2004 - 11/1/2004	1.57E-02	2.15E-03
	11/1/2004 - 11/8/2004	2.34E-02	2.53E-03
	11/8/2004 - 11/15/2004	6.44E-02	3.87E-03
	11/15/2004 - 11/22/2004	1.33E-02	2.40E-03
	11/22/2004 - 11/29/2004	1.22E-02	1.97E-03
	11/29/2004 - 12/6/2004	1.96E-02	2.36E-03
	12/6/2004 - 12/13/2004	3.67E-03	1.50E-03
	12/13/2004 - 12/20/2004	1.57E-02	2.19E-03
	12/20/2004 - 12/27/2004	3.31E-02	2.82E-03
48	12/29/2003 - 1/5/2004	2.35E-02	2.62E-03
	1/5/2004 - 1/12/2004	5.10E-02	3.47E-03
	1/12/2004 - 1/19/2004	2.39E-02	2.50E-03
	1/19/2004 - 1/26/2004	1.39E-02	2.20E-03
	1/26/2004 - 2/2/2004	5.35E-03	1.65E-03
	2/2/2004 - 2/9/2004	1.47E-02	2.18E-03
	2/9/2004 - 2/17/2004	2.16E-02	2.28E-03
	2/17/2004 - 2/23/2004	1.01E-02	2.10E-03
	2/23/2004 - 3/1/2004	8.15E-03	1.91E-03
	3/1/2004 - 3/8/2004	7.15E-03	1.84E-03
	3/8/2004 - 3/15/2004	1.04E-02	1.92E-03
	3/15/2004 - 3/22/2004	1.47E-02	2.09E-03
	3/22/2004 - 3/29/2004	6.40E-03	1.86E-03
	3/29/2004 - 4/5/2004	1.14E-02	2.74E-03
	4/5/2004 - 4/12/2004	1.62E-02	2.18E-03
	4/12/2004 - 4/19/2004	6.15E-03	1.74E-03
	4/19/2004 - 4/26/2004	9.86E-03	1.85E-03
	4/26/2004 - 5/3/2004	1.24E-02	2.08E-03
	5/3/2004 - 5/10/2004	7.10E-03	1.73E-03
	5/10/2004 - 5/17/2004	9.96E-03	1.89E-03
	5/17/2004 - 5/24/2004	1.03E-02	1.99E-03
	5/24/2004 - 6/1/2004	4.94E-03	1.44E-03
	6/1/2004 - 6/7/2004	7.77E-03	2.14E-03
	6/7/2004 - 6/14/2004	6.45E-03	1.80E-03
	6/14/2004 - 6/21/2004	1.16E-02	2.02E-03
	6/21/2004 - 6/28/2004	1.73E-02	2.67E-03

\* Denotes a result less than the detection limit.

TABLE A-2.1 (cont.)  
**GROSS BETA ON AIR PARTICULATES**  
 Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
48	6/28/2004 - 7/6/2004	1.04E-02	1.77E-03
	7/6/2004 - 7/12/2004	5.71E-03	2.12E-03
	7/12/2004 - 7/19/2004	1.32E-02	2.72E-03
	7/19/2004 - 7/26/2004	1.48E-02	2.40E-03
	7/26/2004 - 8/2/2004	1.43E-02	2.08E-03
	8/2/2004 - 8/9/2004	1.07E-02	1.96E-03
	8/9/2004 - 8/16/2004	2.34E-02	2.58E-03
	8/16/2004 - 8/23/2004	1.72E-02	2.36E-03
	8/23/2004 - 8/30/2004	5.40E-03	1.62E-03
	8/30/2004 - 9/7/2004	9.44E-03	1.76E-03
	9/7/2004 - 9/13/2004	9.50E-03	2.21E-03
	9/13/2004 - 9/20/2004	2.85E-03	1.72E-03
	9/20/2004 - 9/27/2004	1.40E-02	2.21E-03
	9/27/2004 - 10/4/2004	3.06E-02	2.78E-03
	10/4/2004 - 10/11/2004	1.82E-02	2.26E-03
	10/11/2004 - 10/18/2004	9.52E-03	1.90E-03
	10/18/2004 - 10/25/2004	7.08E-03	1.74E-03
	10/25/2004 - 11/1/2004	1.66E-02	2.20E-03
	11/1/2004 - 11/8/2004	2.40E-02	2.55E-03
	11/8/2004 - 11/8/2004	6.36E-02	4.12E-03
	11/15/2004 - 11/22/2004	7.74E-03	2.42E-03
	11/22/2004 - 11/29/2004	1.37E-02	2.04E-03
	11/29/2004 - 12/6/2004	2.18E-02	2.45E-03
	12/6/2004 - 12/13/2004	5.89E-03	1.64E-03
	12/13/2004 - 12/20/2004	1.85E-02	2.31E-03
	12/20/2004 - 12/27/2004	2.90E-02	2.67E-03
57	12/29/2003 - 1/5/2004	2.00E-02	2.50E-03
	1/5/2004 - 1/12/2004	4.45E-02	3.26E-03
	1/12/2004 - 1/19/2004	2.12E-02	2.40E-03
	1/19/2004 - 1/26/2004	1.24E-02	2.13E-03
	1/26/2004 - 2/2/2004	4.75E-03	1.62E-03
	2/2/2004 - 2/9/2004	1.35E-02	2.12E-03
	2/9/2004 - 2/17/2004	2.06E-02	2.25E-03
	2/17/2004 - 2/23/2004	8.25E-03	1.99E-03
	2/23/2004 - 3/1/2004	8.50E-03	1.92E-03
	3/1/2004 - 3/8/2004	7.10E-03	1.84E-03
	3/8/2004 - 3/15/2004	7.63E-03	1.77E-03
	3/15/2004 - 3/22/2004	9.09E-03	1.80E-03
	3/22/2004 - 3/29/2004	3.90E-03	1.72E-03

\* Denotes a result less than the detection limit.

TABLE A-2.1 (cont.)  
**GROSS BETA ON AIR PARTICULATES**  
 Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
57	3/29/2004 - 4/5/2004	7.86E-03	2.46E-03
	4/5/2004 - 4/12/2004	1.21E-02	1.99E-03
	4/12/2004 - 4/19/2004	6.45E-03	1.76E-03
	4/19/2004 - 4/26/2004	1.01E-02	1.86E-03
	4/26/2004 - 5/3/2004	1.26E-02	2.10E-03
	5/3/2004 - 5/10/2004	7.41E-03	1.74E-03
	5/10/2004 - 5/17/2004	9.81E-03	1.88E-03
	5/17/2004 - 5/24/2004	1.05E-02	2.00E-03
	5/24/2004 - 6/1/2004	5.16E-03	1.46E-03
	6/1/2004 - 6/7/2004	8.86E-03	2.20E-03
	6/7/2004 - 6/14/2004	4.80E-03	1.70E-03
	6/14/2004 - 6/21/2004	1.18E-02	2.04E-03
	6/21/2004 - 6/28/2004	1.81E-02	2.37E-03
	6/28/2004 - 7/6/2004	8.12E-03	1.65E-03
	7/6/2004 - 7/12/2004	4.14E-03	2.03E-03
	7/12/2004 - 7/19/2004	1.59E-02	2.31E-03
	7/19/2004 - 7/26/2004	1.16E-02	2.07E-03
	7/26/2004 - 8/2/2004	1.41E-02	2.07E-03
	8/2/2004 - 8/9/2004	8.95E-03	1.87E-03
	8/9/2004 - 8/16/2004	2.29E-02	2.56E-03
	8/16/2004 - 8/23/2004	1.48E-02	2.25E-03
	8/23/2004 - 8/30/2004	4.60E-03	1.57E-03
	8/30/2004 - 9/7/2004	8.74E-03	1.72E-03
	9/7/2004 - 9/13/2004	1.01E-02	2.25E-03
	9/13/2004 - 9/20/2004	4.20E-03	1.79E-03
	9/20/2004 - 9/27/2004	1.54E-02	2.27E-03
	9/27/2004 - 10/4/2004	2.86E-02	2.70E-03
	10/4/2004 - 10/11/2004	2.18E-02	2.93E-03
	10/11/2004 - 10/18/2004	1.01E-02	2.07E-03
	10/18/2004 - 10/25/2004	9.33E-03	1.86E-03
	10/25/2004 - 11/1/2004	1.80E-02	2.34E-03
	11/1/2004 - 11/8/2004	2.70E-02	2.67E-03
	11/8/2004 - 11/15/2004	7.65E-02	4.17E-03
	11/15/2004 - 11/22/2004	2.13E-02	2.71E-03
	11/22/2004 - 11/29/2004	1.67E-02	2.18E-03
	11/29/2004 - 12/6/2004	2.59E-02	2.61E-03
	12/6/2004 - 12/13/2004	5.99E-03	1.65E-03
	12/13/2004 - 12/20/2004	1.93E-02	2.35E-03
	12/20/2004 - 12/27/2004	3.52E-02	2.89E-03

\* Denotes a result less than the detection limit.

TABLE A-2.2  
**GROSS BETA ON AIR PARTICULATES - SUMMARY**  
 Results in pCi/cubic meter

NUCLIDE	AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Gross Beta (I)	1.49E-02	-1.53E-04	7.90E-02	568	566
Gross Beta (C)	1.39E-02	4.00E-04	5.92E-02	52	51

(I) Indicator Stations  
 (C) Control Stations

TABLE A-3.1  
**GAMMA SPECTROMETRY OF PARTICULATES FILTERS**  
 Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
1	12/29/2003 - 3/29/2004	Be-7	3.45E-02	1.02E-02
		K-40	* - 9.24E-04	4.35E-03
		Ru-103	* 6.90E-04	5.55E-04
		Ru-106	* - 6.51E-04	3.35E-03
		Cs-134	* - 2.41E-04	4.17E-04
		Cs-137	* - 7.10E-05	3.38E-04
		Ra-226	* - 9.04E-04	7.77E-03
		Th-228	* 7.48E-04	7.20E-03
	3/29/2004 - 6/28/2004	Be-7	4.94E-02	1.05E-02
		K-40	* 4.77E-03	1.15E-02
		Ru-103	* - 1.85E-04	6.81E-04
		Ru-106	* - 1.33E-03	4.08E-03
		Cs-134	* 1.03E-04	4.80E-04
		Cs-137	* - 1.34E-04	5.06E-04
		Ra-226	* - 2.00E-03	7.56E-03
		Th-228	* 1.65E-03	8.18E-03
	6/28/2004 - 9/27/2004	Be-7	6.21E-02	4.49E-03
		K-40	* - 2.90E-03	3.19E-03
		Ru-103	* 2.30E-07	1.59E-04
		Ru-106	* - 1.11E-04	1.12E-03
		Cs-134	* 9.38E-06	1.22E-04
		Cs-137	* 1.03E-04	1.49E-04
		Ra-226	* 6.48E-04	4.59E-03
		Th-228	* - 4.52E-03	2.26E-03
	9/27/2004 - 12/27/2004	Be-7	3.55E-02	7.51E-03
		K-40	* - 2.20E-03	5.38E-03
		Ru-103	* - 1.86E-05	3.22E-04
		Ru-106	* - 1.13E-03	2.25E-03
		Cs-134	* - 2.09E-05	2.30E-04
		Cs-137	* - 1.01E-04	2.61E-04
		Ra-226	* - 8.24E-04	3.73E-03
		Th-228	* - 1.17E-03	3.94E-03

\* Denotes a result less than the detection limit.

TABLE A-3.1 (cont.)  
**GAMMA SPECTROMETRY OF PARTICULATES FILTERS**  
 Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
4	12/29/2003 - 3/29/2004	Be-7	3.12E-02	1.12E-02
		K-40	* - 7.69E-04	7.99E-03
		Ru-103	* 2.21E-04	5.08E-04
		Ru-106	* - 1.07E-03	2.81E-03
		Cs-134	* 1.96E-05	2.67E-04
		Cs-137	* 2.35E-04	2.81E-04
		Ra-226	* - 2.94E-03	5.40E-03
		Th-228	* - 3.74E-03	5.09E-03
	3/29/2004 - 6/28/2004	Be-7	5.35E-02	1.03E-02
		K-40	* - 3.81E-03	5.39E-03
		Ru-103	* 2.31E-04	5.64E-04
		Ru-106	* - 7.30E-05	3.72E-03
		Cs-134	* 1.55E-04	4.16E-04
		Cs-137	* 2.52E-04	4.25E-04
		Ra-226	* 2.70E-05	8.44E-03
		Th-228	* - 4.11E-03	7.90E-03
	6/28/2004 - 9/27/2004	Be-7	5.91E-02	5.16E-03
		K-40	* - 2.32E-03	4.76E-03
		Ru-103	* 1.13E-04	2.44E-04
		Ru-106	* 6.37E-04	1.84E-03
		Cs-134	* - 2.91E-04	2.10E-04
		Cs-137	* - 1.08E-04	2.50E-04
		Ra-226	* - 4.17E-04	4.00E-03
		Th-228	* - 6.67E-03	3.79E-03
	9/27/2004 - 12/27/2004	Be-7	4.12E-02	9.70E-03
		K-40	* - 2.38E-03	9.31E-03
		Ru-103	* 2.07E-04	5.70E-04
		Ru-106	* - 4.32E-04	3.54E-03
		Cs-134	* - 1.11E-03	5.12E-04
		Cs-137	* 3.45E-04	4.69E-04
		Ra-226	* - 3.81E-03	7.43E-03
		Th-228	* 4.97E-04	7.11E-03

\* Denotes a result less than the detection limit.

TABLE A-3.1 (cont.)  
**GAMMA SPECTROMETRY OF PARTICULATES FILTERS**

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
5	12/29/2003 - 3/29/2004	Be-7	3.18E-02	1.08E-02
		K-40	* 1.15E-02	1.24E-02
		Ru-103	* 8.84E-05	6.04E-04
		Ru-106	* 3.05E-03	4.44E-03
		Cs-134	* - 1.80E-04	5.34E-04
		Cs-137	* 4.34E-05	5.35E-04
		Ra-226	* - 6.43E-03	8.47E-03
		Th-228	* - 2.19E-03	8.76E-03
	3/29/2004 - 6/28/2004	Be-7	5.26E-02	1.13E-02
		K-40	* - 2.83E-03	8.33E-03
		Ru-103	* 1.32E-04	6.48E-04
		Ru-106	* 6.77E-04	3.70E-03
		Cs-134	* - 5.02E-04	5.54E-04
		Cs-137	* - 1.18E-05	5.01E-04
		Ra-226	* - 7.40E-03	8.02E-03
		Th-228	* 9.21E-03	8.13E-03
	6/28/2004 - 9/27/2004	Be-7	5.75E-02	5.05E-03
		K-40	* 1.26E-03	4.20E-03
		Ru-103	* - 3.90E-05	2.67E-04
		Ru-106	* - 1.20E-03	1.94E-03
		Cs-134	* - 7.77E-04	2.31E-04
		Cs-137	* 1.31E-04	2.10E-04
		Ra-226	* 6.15E-04	4.13E-03
		Th-228	* - 4.21E-03	3.90E-03
	9/27/2004 - 12/27/2004	Be-7	3.84E-02	8.13E-03
		K-40	* 5.04E-03	8.34E-03
		Ru-103	* 2.77E-05	5.37E-04
		Ru-106	* - 4.13E-03	3.33E-03
		Cs-134	* 3.17E-05	4.01E-04
		Cs-137	* 1.61E-04	3.76E-04
		Ra-226	* - 3.84E-04	6.73E-03
		Th-228	* - 2.40E-04	7.04E-03

\* Denotes a result less than the detection limit.

TABLE A-3.1 (cont.)  
**GAMMA SPECTROMETRY OF PARTICULATES FILTERS**

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
6	12/29/2003 - 3/29/2004	Be-7	3.88E-02	1.41E-02
		K-40	* 1.19E-02	1.72E-02
		Ru-103	* 1.61E-04	7.71E-04
		Ru-106	* - 1.07E-03	3.28E-03
		Cs-134	* - 2.13E-04	4.51E-04
		Cs-137	* - 2.27E-04	4.51E-04
		Ra-226	* - 5.96E-03	7.14E-03
		Th-228	* - 1.27E-02	7.42E-03
	3/29/2004 - 6/28/2004	Be-7	5.47E-02	1.05E-02
		K-40	* - 1.36E-03	5.66E-03
		Ru-103	* - 5.04E-05	5.59E-04
		Ru-106	* - 4.03E-04	2.80E-03
		Cs-134	* 3.87E-05	4.04E-04
		Cs-137	* - 1.03E-04	4.32E-04
		Ra-226	* 1.37E-03	8.94E-03
		Th-228	* - 4.20E-03	8.20E-03
	6/28/2004 - 9/27/2004	Be-7	6.27E-02	3.36E-03
		K-40	5.69E-03	3.78E-03
		Ru-103	* - 1.86E-05	1.20E-04
		Ru-106	* - 4.02E-05	8.54E-04
		Cs-134	* - 1.05E-04	9.67E-05
		Cs-137	* 1.56E-06	1.28E-04
		Ra-226	* 3.15E-04	3.46E-03
		Th-228	* 3.05E-04	2.81E-03
	9/27/2004 - 12/27/2004	Be-7	3.85E-02	8.53E-03
		K-40	* 7.73E-05	4.66E-03
		Ru-103	* - 3.83E-04	4.54E-04
		Ru-106	* 9.69E-04	2.86E-03
		Cs-134	* - 3.23E-04	3.52E-04
		Cs-137	* 4.28E-05	2.91E-04
		Ra-226	* 9.86E-04	7.62E-03
		Th-228	* - 6.61E-03	7.33E-03

\* Denotes a result less than the detection limit.



TABLE A-3.1 (cont.)  
**GAMMA SPECTROMETRY OF PARTICULATES FILTERS**  
 Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
7	12/29/2003 - 3/29/2004	Be-7	4.41E-02	1.17E-02
		K-40	* - 4.86E-03	7.73E-03
		Ru-103	* 3.61E-04	7.09E-04
		Ru-106	* 2.62E-03	4.01E-03
		Cs-134	* - 5.44E-05	4.70E-04
		Cs-137	* 1.24E-04	4.47E-04
		Ra-226	* - 7.64E-04	7.47E-03
		Th-228	* - 5.75E-03	7.74E-03
	3/29/2004 - 6/28/2004	Be-7	6.37E-02	1.35E-02
		K-40	* 4.15E-03	7.85E-03
		Ru-103	* 6.60E-05	6.49E-04
		Ru-106	* - 3.27E-04	4.35E-03
		Cs-134	* - 6.97E-04	4.86E-04
		Cs-137	* - 3.95E-04	4.52E-04
		Ra-226	* 7.43E-04	7.34E-03
		Th-228	* - 9.13E-04	7.83E-03
	6/28/2004 - 9/27/2004	Be-7	6.15E-02	5.55E-03
		K-40	* 1.15E-03	5.57E-03
		Ru-103	* 1.23E-04	2.58E-04
		Ru-106	* - 1.22E-04	1.74E-03
		Cs-134	* - 6.24E-04	2.35E-04
		Cs-137	* - 4.41E-05	2.10E-04
		Ra-226	* 2.80E-03	5.71E-03
		Th-228	* 1.61E-03	3.75E-03
	9/27/2004 - 12/27/2004	Be-7	3.53E-02	8.43E-03
		K-40	* - 6.56E-04	4.42E-03
		Ru-103	* 2.45E-04	4.34E-04
		Ru-106	* 6.40E-04	3.01E-03
		Cs-134	* 4.19E-04	3.36E-04
		Cs-137	* 3.97E-05	3.43E-04
		Ra-226	* 1.71E-03	6.80E-03
		Th-228	* 1.62E-03	6.56E-03

\* Denotes a result less than the detection limit.

TABLE A-3.1 (cont.)  
**GAMMA SPECTROMETRY OF PARTICULATES FILTERS**  
 Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
8	12/29/2003 - 3/29/2004	Be-7	3.00E-02	1.14E-02
		K-40	* - 7.80E-03	9.70E-03
		Ru-103	* 1.61E-04	7.70E-04
		Ru-106	* 1.12E-03	3.64E-03
		Cs-134	* - 2.06E-04	4.69E-04
		Cs-137	* 3.04E-04	4.12E-04
		Ra-226	* 3.57E-04	6.96E-03
		Th-228	* - 5.66E-03	7.03E-03
	3/29/2004 - 6/28/2004	Be-7	6.89E-02	1.17E-02
		K-40	* 6.27E-03	1.04E-02
		Ru-103	* - 7.36E-05	6.84E-04
		Ru-106	* - 2.94E-03	4.36E-03
		Cs-134	* - 7.36E-04	5.20E-04
		Cs-137	* 1.78E-04	5.38E-04
		Ra-226	* 3.89E-03	8.53E-03
		Th-228	* - 5.70E-03	7.74E-03
	6/28/2004 - 9/27/2004	Be-7	5.54E-02	3.69E-03
		K-40	* - 5.27E-04	3.46E-03
		Ru-103	* - 5.02E-05	2.03E-04
		Ru-106	* - 1.41E-03	1.39E-03
		Cs-134	* - 8.67E-04	1.79E-04
		Cs-137	* - 7.17E-06	1.79E-04
		Ra-226	* - 2.13E-03	3.08E-03
		Th-228	* - 1.27E-02	2.94E-03
	9/27/2004 - 12/27/2004	Be-7	3.81E-02	8.67E-03
		K-40	* 7.61E-03	8.45E-03
		Ru-103	* 9.42E-05	3.64E-04
		Ru-106	* 1.87E-04	3.13E-03
		Cs-134	* - 8.63E-05	2.96E-04
		Cs-137	* - 1.64E-05	3.51E-04
		Ra-226	* - 2.56E-03	5.30E-03
		Th-228	* 1.96E-03	4.97E-03

\* Denotes a result less than the detection limit.

TABLE A-3.1 (cont.)  
**GAMMA SPECTROMETRY OF PARTICULATES FILTERS**  
 Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
9A Control	12/29/2003 - 3/29/2004	Be-7	4.09E-02	9.81E-03
		K-40	* - 3.37E-03	6.98E-03
		Ru-103	* 1.40E-04	7.07E-04
		Ru-106	* 1.52E-03	3.22E-03
		Cs-134	* - 7.74E-05	4.43E-04
		Cs-137	* 3.15E-05	3.96E-04
		Ra-226	* 7.49E-03	1.05E-02
		Th-228	* - 5.13E-03	6.77E-03
	3/29/2004 - 6/28/2004	Be-7	5.65E-02	1.50E-02
		K-40	* 1.10E-03	9.67E-03
		Ru-103	* 4.19E-04	5.38E-04
		Ru-106	* 1.39E-03	4.21E-03
		Cs-134	* 1.67E-04	3.88E-04
		Cs-137	* 6.43E-05	4.52E-04
		Ra-226	* - 2.29E-03	6.96E-03
		Th-228	* - 7.14E-03	7.51E-03
	6/28/2004 - 9/27/2004	Be-7	5.82E-02	4.25E-03
		K-40	* - 1.00E-03	3.52E-03
		Ru-103	* - 9.38E-05	2.15E-04
		Ru-106	* - 2.88E-04	1.47E-03
		Cs-134	* - 8.40E-04	1.97E-04
		Cs-137	* 1.40E-04	1.67E-04
		Ra-226	* 2.51E-03	3.20E-03
		Th-228	* 1.19E-03	2.95E-03
	9/27/2004 - 12/27/2004	Be-7	4.15E-02	8.85E-03
		K-40	* 5.07E-03	1.03E-02
		Ru-103	* 1.97E-04	5.40E-04
		Ru-106	* - 2.04E-03	3.72E-03
		Cs-134	* - 4.69E-06	4.82E-04
		Cs-137	* 3.25E-05	4.36E-04
		Ra-226	* 5.42E-03	7.68E-03
		Th-228	* 3.21E-03	8.43E-03

\* Denotes a result less than the detection limit.

TABLE A-3.1 (cont.)  
**GAMMA SPECTROMETRY OF PARTICULATES FILTERS**  
 Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
21	12/29/2003 - 3/29/2004	Be-7	3.62E-02	1.15E-02
		K-40	* 7.91E-03	8.79E-03
		Ru-103	* - 2.33E-05	4.68E-04
		Ru-106	* 1.63E-03	2.88E-03
		Cs-134	* 1.98E-04	2.61E-04
		Cs-137	* - 1.48E-04	3.84E-04
		Ra-226	* - 3.08E-03	4.91E-03
		Th-228	* - 5.73E-03	4.19E-03
	3/29/2004 - 6/28/2004	Be-7	5.71E-02	1.31E-02
		K-40	1.94E-02	9.83E-03
		Ru-103	* 1.44E-05	3.28E-04
		Ru-106	* 2.13E-04	2.50E-03
		Cs-134	* - 5.71E-05	2.59E-04
		Cs-137	* - 9.89E-05	4.08E-04
		Ra-226	* - 4.67E-03	5.47E-03
		Th-228	* - 7.75E-03	6.22E-03
	6/28/2004 - 9/27/2004	Be-7	6.18E-02	3.28E-03
		K-40	* 2.06E-03	2.63E-03
		Ru-103	* - 1.21E-04	1.63E-04
		Ru-106	* 1.38E-04	1.04E-03
		Cs-134	* 9.63E-05	1.17E-04
		Cs-137	* 2.28E-05	1.17E-04
		Ra-226	* 1.70E-03	4.89E-03
		Th-228	* 4.29E-03	2.90E-03
	9/27/2004 - 12/27/2004	Be-7	3.00E-02	9.53E-03
		K-40	* 7.14E-03	8.99E-03
		Ru-103	* 3.25E-04	5.12E-04
		Ru-106	* 1.36E-04	3.45E-03
		Cs-134	* 9.67E-05	4.69E-04
		Cs-137	* - 5.44E-05	4.71E-04
		Ra-226	* - 1.65E-03	6.86E-03
		Th-228	* - 1.02E-02	7.50E-03

\* Denotes a result less than the detection limit.

TABLE A-3.1 (cont.)  
**GAMMA SPECTROMETRY OF PARTICULATES FILTERS**  
 Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
23	12/29/2003 - 3/29/2004	Be-7	2.68E-02	1.09E-02
		K-40	* 3.72E-03	9.88E-03
		Ru-103	* - 1.11E-03	8.46E-04
		Ru-106	* - 2.47E-03	5.16E-03
		Cs-134	* - 1.11E-03	6.08E-04
		Cs-137	* - 6.79E-05	5.13E-04
		Ra-226	* - 6.48E-03	8.63E-03
		Th-228	* - 5.23E-03	8.50E-03
	3/29/2004 - 6/28/2004	Be-7	6.17E-02	1.54E-02
		K-40	* - 1.40E-03	9.13E-03
		Ru-103	* 1.29E-04	7.18E-04
		Ru-106	* - 1.14E-03	4.83E-03
		Cs-134	* - 6.81E-04	6.72E-04
		Cs-137	* - 5.43E-05	5.34E-04
		Ra-226	* 1.55E-04	9.16E-03
		Th-228	* - 1.16E-02	8.88E-03
	6/28/2004 - 9/27/2004	Be-7	5.36E-02	4.56E-03
		K-40	4.19E-03	3.78E-03
		Ru-103	* 1.80E-04	2.43E-04
		Ru-106	* 1.56E-03	1.59E-03
		Cs-134	* 7.10E-05	2.06E-04
		Cs-137	* 7.54E-05	1.82E-04
		Ra-226	* 1.60E-03	5.54E-03
		Th-228	* 2.02E-03	3.93E-03
	9/27/2004 - 12/27/2004	Be-7	4.26E-02	1.04E-02
		K-40	3.11E-02	1.00E-02
		Ru-103	* - 1.10E-04	5.01E-04
		Ru-106	* - 1.52E-03	3.36E-03
		Cs-134	* - 1.95E-05	3.19E-04
		Cs-137	* 3.86E-04	3.63E-04
		Ra-226	* - 2.44E-03	6.19E-03
		Th-228	* - 9.09E-03	6.46E-03

\* Denotes a result less than the detection limit.

TABLE A-3.1 (cont.)  
**GAMMA SPECTROMETRY OF PARTICULATES FILTERS**  
 Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
40	12/29/2003 - 3/29/2004	Be-7	3.45E-02	1.19E-02
		K-40	* 1.08E-03	1.04E-02
		Ru-103	* - 1.52E-05	9.39E-04
		Ru-106	* - 1.87E-03	4.59E-03
		Cs-134	* 1.77E-04	5.25E-04
		Cs-137	* 2.77E-04	5.93E-04
		Ra-226	* - 9.28E-03	8.98E-03
		Th-228	* 7.56E-04	7.92E-03
	3/29/2004 - 6/28/2004	Be-7	5.62E-02	6.67E-03
		K-40	* 1.59E-03	3.40E-03
		Ru-103	* - 7.92E-05	3.41E-04
		Ru-106	* - 1.32E-03	2.05E-03
		Cs-134	* 0.00E+00	0.00E+00
		Cs-137	* - 1.91E-04	2.33E-04
		Ra-226	* 9.56E-04	6.15E-03
		Th-228	* 2.65E-03	5.23E-03
	6/28/2004 - 9/27/2004	Be-7	5.20E-02	1.06E-02
		K-40	* 2.99E-03	9.66E-03
		Ru-103	* - 9.39E-04	6.88E-04
		Ru-106	* - 1.27E-03	5.07E-03
		Cs-134	* - 7.25E-04	5.47E-04
		Cs-137	* - 7.56E-05	5.35E-04
		Ra-226	* - 2.24E-03	8.34E-03
		Th-228	* 4.17E-03	8.21E-03
	9/27/2004 - 12/27/2004	Be-7	3.98E-02	1.05E-02
		K-40	* 8.62E-03	9.74E-03
		Ru-103	* - 1.44E-06	6.18E-04
		Ru-106	* - 3.30E-03	4.67E-03
		Cs-134	* - 1.27E-03	7.04E-04
		Cs-137	* 5.08E-04	5.18E-04
		Ra-226	* - 8.02E-05	8.12E-03
		Th-228	* - 5.68E-03	7.95E-03

\* Denotes a result less than the detection limit.

TABLE A-3.1 (cont.)  
**GAMMA SPECTROMETRY OF PARTICULATES FILTERS**  
 Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
48	12/29/2003 - 3/29/2004	Be-7	3.73E-02	9.33E-03
		K-40	* - 1.40E-03	5.66E-03
		Ru-103	* 8.29E-05	6.14E-04
		Ru-106	* 7.68E-04	3.43E-03
		Cs-134	* - 7.56E-05	3.89E-04
		Cs-137	* 5.97E-05	2.97E-04
		Ra-226	* 6.24E-03	8.45E-03
		Th-228	* - 1.04E-02	8.22E-03
	3/29/2004 - 6/28/2004	Be-7	5.39E-02	6.51E-03
		K-40	* 3.94E-04	4.63E-03
		Ru-103	* - 1.63E-04	3.27E-04
		Ru-106	* - 1.63E-03	1.95E-03
		Cs-134	* - 3.33E-05	2.14E-04
		Cs-137	* 1.82E-04	2.50E-04
		Ra-226	* 8.02E-03	8.77E-03
		Th-228	* 3.04E-03	5.04E-03
	6/28/2004 - 9/27/2004	Be-7	5.56E-02	6.03E-03
		K-40	* 2.05E-03	6.17E-03
		Ru-103	* - 4.73E-06	3.26E-04
		Ru-106	* 3.20E-04	2.04E-03
		Cs-134	* 2.51E-06	2.69E-04
		Cs-137	* 2.09E-04	2.63E-04
		Ra-226	* 4.01E-03	7.33E-03
		Th-228	* 6.61E-03	5.35E-03
	9/27/2004 - 12/27/2004	Be-7	4.15E-02	7.65E-03
		K-40	* 4.09E-03	7.55E-03
		Ru-103	* 2.79E-04	4.23E-04
		Ru-106	* - 3.54E-04	2.87E-03
		Cs-134	* - 1.78E-05	3.92E-04
		Cs-137	* - 1.27E-04	3.20E-04
		Ra-226	* 4.81E-04	7.02E-03
		Th-228	* 3.22E-03	5.64E-03

\* Denotes a result less than the detection limit.

TABLE A-3.1 (cont.)  
**GAMMA SPECTROMETRY OF PARTICULATES FILTERS**  
 Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
57	12/29/2003 - 3/29/2004	Be-7	1.93E-02	9.67E-03
		K-40	* 6.22E-03	9.45E-03
		Ru-103	* 2.80E-04	6.03E-04
		Ru-106	* - 1.63E-03	3.93E-03
		Cs-134	* - 3.79E-04	5.12E-04
		Cs-137	* 5.23E-04	5.07E-04
		Ra-226	* - 3.14E-03	7.53E-03
		Th-228	* - 5.92E-03	7.85E-03
	3/29/2004 - 6/28/2004	Be-7	6.14E-02	1.08E-02
		K-40	* - 2.99E-03	7.64E-03
		Ru-103	* 2.74E-04	5.37E-04
		Ru-106	* - 1.87E-03	3.51E-03
		Cs-134	* - 7.32E-06	3.66E-04
		Cs-137	* 5.71E-05	4.18E-04
		Ra-226	* 8.15E-04	1.25E-02
		Th-228	* 2.47E-03	6.64E-03
	6/28/2004 - 9/27/2004	Be-7	5.99E-02	6.63E-03
		K-40	* 1.08E-03	5.59E-03
		Ru-103	* - 1.56E-04	3.35E-04
		Ru-106	* 1.14E-03	2.40E-03
		Cs-134	* - 1.34E-04	2.79E-04
		Cs-137	* 1.48E-04	2.76E-04
		Ra-226	* 5.37E-04	4.89E-03
		Th-228	* - 3.43E-05	4.81E-03
	9/27/2004 - 12/27/2004	Be-7	3.74E-02	8.36E-03
		K-40	6.56E-03	6.13E-03
		Ru-103	* - 3.15E-04	4.30E-04
		Ru-106	* 1.40E-03	3.55E-03
		Cs-134	* - 9.84E-05	3.89E-04
		Cs-137	* 4.07E-05	3.62E-04
		Ra-226	* 5.14E-04	7.06E-03
		Th-228	* 1.83E-04	6.99E-03

\* Denotes a result less than the detection limit.



TABLE A-3.2  
**GAMMA SPECTROMETRY OF AIR PARTICULATES - SUMMARY**  
 Results in pCi/cubic meter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Be-7	(I)	4.68E-02	1.93E-02	6.89E-02	44	44
Be-7	(C)	4.93E-02	4.09E-02	5.82E-02	4	4
K-40	(I)	2.97E-03	-7.80E-03	3.11E-02	44	5
K-40	(C)	4.50E-04	-3.37E-03	5.07E-03	4	0
Ru-103	(I)	1.43E-05	-1.11E-03	6.90E-04	44	0
Ru-103	(C)	1.66E-04	-9.38E-05	4.19E-04	4	0
Ru-106	(I)	-4.00E-04	-4.13E-03	3.05E-03	44	0
Ru-106	(C)	1.46E-04	-2.04E-03	1.52E-03	4	0
Cs-134	(I)	-2.32E-04	-1.27E-03	4.19E-04	44	0
Cs-134	(C)	-1.89E-04	-8.40E-04	1.67E-04	4	0
Cs-137	(I)	5.49E-05	-3.95E-04	5.23E-04	44	0
Cs-137	(C)	6.71E-05	3.15E-05	1.40E-04	4	0
Ra-226	(I)	-7.07E-04	-9.28E-03	8.02E-03	44	0
Ra-226	(C)	3.28E-03	-2.29E-03	7.49E-03	4	0
Th-228	(I)	-2.40E-03	-1.27E-02	9.21E-03	44	0
Th-228	(C)	-1.97E-03	-7.14E-03	3.21E-03	4	0

(I) Indicator Stations  
 (C) Control Stations

TABLE A-4.1  
**I-131 IN CHARCOAL FILTERS**  
 Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
1	12/29/2003 - 1/5/2004	(a)	
	1/5/2004 - 1/12/2004	(a)	
	1/12/2004 - 1/19/2004	(a)	
	12/29/2003 - 1/26/2004	* 5.74E-04	2.23E-03
	1/26/2004 - 2/2/2004	* 3.71E-03	9.37E-03
	2/2/2004 - 2/9/2004	* - 2.23E-03	6.33E-03
	2/9/2004 - 2/17/2004	* 2.96E-03	4.59E-03
	2/17/2004 - 2/23/2004	* 1.54E-03	1.00E-02
	2/23/2004 - 3/1/2004	* - 1.49E-03	4.00E-03
	3/1/2004 - 3/8/2004	* - 2.33E-04	8.30E-03
	3/8/2004 - 3/15/2004	* 2.90E-03	3.63E-03
	3/15/2004 - 3/22/2004	* - 1.50E-03	4.78E-03
	3/22/2004 - 3/29/2004	* - 3.08E-03	9.40E-03
	3/29/2004 - 4/5/2004	* 8.26E-03	1.18E-02
	4/5/2004 - 4/12/2004	* - 7.84E-04	1.08E-02
	4/12/2004 - 4/19/2004	* 3.81E-03	9.86E-03
	4/19/2004 - 4/26/2004	* 5.08E-04	8.85E-03
	4/26/2004 - 5/3/2004	* - 9.12E-03	1.18E-02
	5/3/2004 - 5/10/2004	* - 4.50E-03	7.10E-03
	5/10/2004 - 5/17/2004	* - 2.23E-03	9.01E-03
	5/17/2004 - 5/24/2004	* - 1.82E-03	8.69E-03
	5/24/2004 - 6/1/2004	* - 1.62E-03	5.93E-03
	6/1/2004 - 6/7/2004	* 5.49E-03	1.29E-02
	6/7/2004 - 6/14/2004	* 2.62E-03	4.90E-03
	6/14/2004 - 6/21/2004	* 1.92E-03	9.08E-03
	6/21/2004 - 6/28/2004	* 3.35E-04	8.40E-03
	6/28/2004 - 7/6/2004	* 3.28E-03	7.43E-03
	7/6/2004 - 7/12/2004	* - 3.33E-03	8.73E-03
	7/12/2004 - 7/19/2004	* - 2.34E-03	7.76E-03
	7/19/2004 - 7/26/2004	* 5.01E-04	9.02E-03
	7/26/2004 - 8/2/2004	* 2.19E-03	9.14E-03
	8/2/2004 - 8/9/2004	* 9.15E-04	9.58E-03
	8/9/2004 - 8/16/2004	* - 3.42E-03	1.14E-02
	8/16/2004 - 8/23/2004	* - 6.90E-04	1.05E-02
	8/23/2004 - 8/30/2004	* 1.48E-02	1.51E-02
	8/30/2004 - 9/7/2004	* - 6.59E-03	9.07E-03
	9/7/2004 - 9/13/2004	* 4.73E-03	6.94E-03
	9/13/2004 - 9/20/2004	* - 3.33E-03	8.91E-03
	9/20/2004 - 9/27/2004	* 2.36E-04	1.44E-02

\* Denotes a result less than the detection limit.

(a) Sample not available due to snow conditions.

TABLE A-4.1 (cont.)  
**I-131 IN CHARCOAL FILTERS**  
 Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
1	9/27/2004 - 10/4/2004	* - 4.21E-03	1.30E-02
	10/4/2004 - 10/11/2004	* - 6.26E-03	1.35E-02
	10/11/2004 - 10/18/2004	* 7.58E-03	1.34E-02
	10/18/2004 - 10/25/2004	* 3.97E-03	1.32E-02
	10/25/2004 - 11/1/2004	* - 3.24E-03	7.34E-03
	11/1/2004 - 11/8/2004	* 1.43E-02	1.50E-02
	11/8/2004 - 11/15/2004	* 4.10E-03	9.44E-03
	11/15/2004 - 11/22/2004	* - 1.10E-02	1.35E-02
	11/22/2004 - 11/29/2004	* - 2.65E-03	1.22E-02
	11/29/2004 - 12/6/2004	* 2.28E-03	8.04E-03
	12/6/2004 - 12/13/2004	* - 1.85E-03	5.25E-03
	12/13/2004 - 12/20/2004	* 1.03E-03	1.42E-02
	12/20/2004 - 12/27/2004	* 2.17E-03	1.33E-02
4	12/29/2003 - 1/5/2004	* - 3.00E-03	5.47E-03
	1/5/2004 - 1/12/2004	* - 1.06E-02	1.07E-02
	1/12/2004 - 1/19/2004	* - 9.47E-04	5.17E-03
	1/19/2004 - 1/26/2004	* 2.25E-03	8.76E-03
	1/26/2004 - 2/2/2004	* 3.47E-03	6.01E-03
	2/2/2004 - 2/9/2004	* 8.95E-04	8.82E-03
	2/9/2004 - 2/17/2004	* 2.65E-03	9.90E-03
	2/17/2004 - 2/23/2004	* 3.37E-03	5.23E-03
	2/23/2004 - 3/1/2004	* - 1.47E-03	3.94E-03
	3/1/2004 - 3/8/2004	* - 1.89E-03	8.67E-03
	3/8/2004 - 3/15/2004	* 2.86E-03	3.57E-03
	3/15/2004 - 3/22/2004	* - 6.44E-03	7.83E-03
	3/22/2004 - 3/29/2004	* 1.32E-03	8.70E-03
	3/29/2004 - 4/5/2004	* 8.14E-03	1.17E-02
	4/5/2004 - 4/12/2004	* - 7.71E-04	1.06E-02
	4/12/2004 - 4/19/2004	* 3.76E-03	9.74E-03
	4/19/2004 - 4/26/2004	* 5.00E-04	8.72E-03
	4/26/2004 - 5/3/2004	* - 8.94E-03	1.16E-02
	5/3/2004 - 5/10/2004	* - 4.46E-03	7.03E-03
	5/10/2004 - 5/17/2004	* - 2.20E-03	8.88E-03
	5/17/2004 - 5/24/2004	* - 1.81E-03	8.62E-03
	5/24/2004 - 6/1/2004	* - 2.05E-03	7.54E-03
	6/1/2004 - 6/7/2004	* 5.42E-03	1.28E-02
	6/7/2004 - 6/14/2004	* 2.58E-03	4.83E-03
	6/14/2004 - 6/21/2004	* 1.89E-03	8.94E-03
	6/21/2004 - 6/28/2004	* 3.38E-04	8.48E-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	6/28/2004 - 7/6/2004	* 3.24E-03	7.34E-03
	7/6/2004 - 7/12/2004	* - 3.27E-03	8.57E-03
	7/12/2004 - 7/19/2004	* - 2.31E-03	7.64E-03
	7/19/2004 - 7/26/2004	* 4.95E-04	8.90E-03
	7/26/2004 - 8/2/2004	* 2.17E-03	9.03E-03
	8/2/2004 - 8/9/2004	* 9.02E-04	9.45E-03
	8/9/2004 - 8/16/2004	* - 3.37E-03	1.12E-02
	8/16/2004 - 8/23/2004	* - 6.80E-04	1.03E-02
	8/23/2004 - 8/30/2004	* 7.96E-03	8.13E-03
	8/30/2004 - 9/7/2004	* - 6.49E-03	8.94E-03
	9/7/2004 - 9/13/2004	* 4.64E-03	6.81E-03
	9/13/2004 - 9/20/2004	* - 3.28E-03	8.77E-03
	9/20/2004 - 9/27/2004	* 2.31E-04	1.41E-02
	9/27/2004 - 10/4/2004	* - 4.17E-03	1.28E-02
	10/4/2004 - 10/11/2004	* - 6.18E-03	1.34E-02
	10/11/2004 - 10/18/2004	* 7.46E-03	1.32E-02
	10/18/2004 - 10/25/2004	* 3.90E-03	1.29E-02
	10/25/2004 - 11/1/2004	* - 3.19E-03	7.23E-03
	11/1/2004 - 11/8/2004	* 1.41E-02	1.48E-02
	11/8/2004 - 11/15/2004	* 4.03E-03	9.29E-03
	11/15/2004 - 11/22/2004	* - 1.09E-02	1.33E-02
	11/22/2004 - 11/29/2004	* - 2.61E-03	1.20E-02
	11/29/2004 - 12/6/2004	* 2.25E-03	7.92E-03
	12/6/2004 - 12/13/2004	* - 1.82E-03	5.16E-03
	12/13/2004 - 12/20/2004	* 1.01E-03	1.40E-02
	12/20/2004 - 12/27/2004	* 2.14E-03	1.31E-02
5	12/29/2003 - 1/5/2004	* - 3.02E-03	5.51E-03
	1/5/2004 - 1/12/2004	* - 1.07E-02	1.07E-02
	1/12/2004 - 1/19/2004	* - 6.42E-04	3.50E-03
	1/19/2004 - 1/26/2004	* 2.26E-03	8.80E-03
	1/26/2004 - 2/2/2004	* - 1.13E-02	9.93E-03
	2/2/2004 - 2/9/2004	* - 3.65E-03	1.01E-02
	2/9/2004 - 2/17/2004	* - 2.16E-03	6.79E-03
	2/17/2004 - 2/23/2004	* 5.20E-03	7.96E-03
	2/23/2004 - 3/1/2004	* - 1.48E-03	3.96E-03
	3/1/2004 - 3/8/2004	* - 6.75E-03	7.31E-03
	3/8/2004 - 3/15/2004	* 2.87E-03	3.59E-03
	3/15/2004 - 3/22/2004	* 3.91E-03	6.68E-03
	3/22/2004 - 3/29/2004	* - 8.49E-03	8.11E-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	3/29/2004 - 4/5/2004	* 8.18E-03	1.17E-02
	4/5/2004 - 4/12/2004	* - 7.75E-04	1.06E-02
	4/12/2004 - 4/19/2004	* 3.78E-03	9.78E-03
	4/19/2004 - 4/26/2004	* 5.03E-04	8.76E-03
	4/26/2004 - 5/3/2004	* - 8.99E-03	1.16E-02
	5/3/2004 - 5/10/2004	* - 4.47E-03	7.04E-03
	5/10/2004 - 5/17/2004	* - 2.21E-03	8.92E-03
	5/17/2004 - 5/24/2004	* - 1.80E-03	8.60E-03
	5/24/2004 - 6/1/2004	* - 1.60E-03	5.87E-03
	6/1/2004 - 6/7/2004	* 5.45E-03	1.28E-02
	6/7/2004 - 6/14/2004	* 2.59E-03	4.85E-03
	6/14/2004 - 6/21/2004	* 1.90E-03	8.99E-03
	6/21/2004 - 6/28/2004	* 3.30E-04	8.29E-03
	6/28/2004 - 7/6/2004	* 3.25E-03	7.37E-03
	7/6/2004 - 7/12/2004	* - 3.29E-03	8.61E-03
	7/12/2004 - 7/19/2004	* - 2.32E-03	7.67E-03
	7/19/2004 - 7/26/2004	* 4.96E-04	8.92E-03
	7/26/2004 - 8/2/2004	* 2.18E-03	9.07E-03
	8/2/2004 - 8/9/2004	* 9.05E-04	9.49E-03
	8/9/2004 - 8/16/2004	* - 3.39E-03	1.13E-02
	8/16/2004 - 8/23/2004	* - 6.01E-04	9.10E-03
	8/23/2004 - 8/30/2004	* 7.99E-03	8.16E-03
	8/30/2004 - 9/7/2004	* - 6.52E-03	8.98E-03
	9/7/2004 - 9/13/2004	* 4.67E-03	6.84E-03
	9/13/2004 - 9/20/2004	* - 3.30E-03	8.82E-03
	9/20/2004 - 9/27/2004	* 2.34E-04	1.43E-02
	9/27/2004 - 10/4/2004	* - 7.32E-03	2.26E-02
	10/4/2004 - 10/11/2004	* - 6.20E-03	1.34E-02
	10/11/2004 - 10/18/2004	* 7.49E-03	1.33E-02
	10/18/2004 - 10/25/2004	* 3.93E-03	1.30E-02
	10/25/2004 - 11/1/2004	* - 3.20E-03	7.26E-03
	11/1/2004 - 11/8/2004	* 1.41E-02	1.48E-02
	11/8/2004 - 11/15/2004	* 4.06E-03	9.34E-03
	11/15/2004 - 11/22/2004	* - 1.09E-02	1.33E-02
	11/22/2004 - 11/29/2004	* - 2.63E-03	1.21E-02
	11/29/2004 - 12/6/2004	* 2.26E-03	7.96E-03
	12/6/2004 - 12/13/2004	* - 1.83E-03	5.19E-03
	12/13/2004 - 12/20/2004	* 1.02E-03	1.41E-02
	12/20/2004 - 12/27/2004	* 2.15E-03	1.31E-02

\* 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	12/29/2003 - 1/5/2004	* - 3.04E-03	5.54E-03
	1/5/2004 - 1/12/2004	* - 1.08E-02	1.08E-02
	1/12/2004 - 1/19/2004	* - 6.49E-04	3.54E-03
	1/19/2004 - 1/26/2004	* - 2.28E-03	8.88E-03
	1/26/2004 - 2/2/2004	* - 9.70E-03	9.11E-03
	2/2/2004 - 2/9/2004	* - 2.64E-03	8.54E-03
	2/9/2004 - 2/17/2004	* - 1.89E-03	7.51E-03
	2/17/2004 - 2/23/2004	* - 7.77E-04	9.25E-03
	2/23/2004 - 3/1/2004	* - 1.49E-03	3.99E-03
	3/1/2004 - 3/8/2004	* - 7.16E-03	1.02E-02
	3/8/2004 - 3/15/2004	* - 2.90E-03	3.62E-03
	3/15/2004 - 3/22/2004	* - 3.69E-03	6.64E-03
	3/22/2004 - 3/29/2004	* - 5.79E-03	1.08E-02
	3/29/2004 - 4/5/2004	* - 8.24E-03	1.18E-02
	4/5/2004 - 4/12/2004	* - 7.83E-04	1.08E-02
	4/12/2004 - 4/19/2004	* - 3.80E-03	9.84E-03
	4/19/2004 - 4/26/2004	* - 5.07E-04	8.83E-03
	4/26/2004 - 5/3/2004	* - 9.07E-03	1.17E-02
	5/3/2004 - 5/10/2004	* - 4.49E-03	7.08E-03
	5/10/2004 - 5/17/2004	* - 2.22E-03	8.99E-03
	5/17/2004 - 5/24/2004	* - 1.82E-03	8.68E-03
	5/24/2004 - 6/1/2004	* - 1.61E-03	5.92E-03
	6/1/2004 - 6/7/2004	* - 5.48E-03	1.29E-02
	6/7/2004 - 6/14/2004	* - 2.61E-03	4.89E-03
	6/14/2004 - 6/21/2004	* - 1.91E-03	9.06E-03
	6/21/2004 - 6/28/2004	* - 3.34E-04	8.39E-03
	6/28/2004 - 7/6/2004	* - 3.27E-03	7.41E-03
	7/6/2004 - 7/12/2004	* - 3.32E-03	8.68E-03
	7/12/2004 - 7/19/2004	* - 2.34E-03	7.74E-03
	7/19/2004 - 7/26/2004	* - 5.00E-04	9.00E-03
	7/26/2004 - 8/2/2004	* - 2.19E-03	9.12E-03
	8/2/2004 - 8/9/2004	* - 9.13E-04	9.56E-03
	8/9/2004 - 8/16/2004	* - 3.41E-03	1.14E-02
	8/16/2004 - 8/23/2004	* - 6.89E-04	1.04E-02
	8/23/2004 - 8/30/2004	* - 8.06E-03	8.23E-03
	8/30/2004 - 9/7/2004	* - 6.57E-03	9.05E-03
	9/7/2004 - 9/13/2004	* - 4.72E-03	6.92E-03
	9/13/2004 - 9/20/2004	* - 3.94E-03	1.05E-02
	9/20/2004 - 9/27/2004	* - 2.36E-04	1.44E-02

\* 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	9/27/2004 - 10/4/2004	* - 4.20E-03	1.29E-02
	10/4/2004 - 10/11/2004	* - 6.25E-03	1.35E-02
	10/11/2004 - 10/18/2004	* 7.73E-03	1.37E-02
	10/18/2004 - 10/25/2004	* 3.91E-03	1.30E-02
	10/25/2004 - 11/1/2004	* - 3.23E-03	7.32E-03
	11/1/2004 - 11/8/2004	* 1.43E-02	1.50E-02
	11/8/2004 - 11/15/2004	* 4.09E-03	9.42E-03
	11/15/2004 - 11/22/2004	* - 1.10E-02	1.35E-02
	11/22/2004 - 11/29/2004	* - 2.65E-03	1.22E-02
	11/29/2004 - 12/6/2004	* 2.28E-03	8.02E-03
	12/6/2004 - 12/13/2004	* - 1.84E-03	5.24E-03
	12/13/2004 - 12/20/2004	* 1.03E-03	1.42E-02
	12/20/2004 - 12/27/2004	* 2.16E-03	1.32E-02
7	12/29/2003 - 1/5/2004	* - 3.05E-03	5.55E-03
	1/5/2004 - 1/12/2004	* - 1.08E-02	1.09E-02
	1/12/2004 - 1/19/2004	* - 6.50E-04	3.55E-03
	1/19/2004 - 1/26/2004	* 1.51E-03	5.88E-03
	1/26/2004 - 2/2/2004	* 3.29E-03	9.74E-03
	2/2/2004 - 2/9/2004	* 3.87E-03	6.40E-03
	2/9/2004 - 2/17/2004	* 8.86E-04	6.45E-03
	2/17/2004 - 2/23/2004	* - 9.09E-03	8.03E-03
	2/23/2004 - 3/1/2004	* - 6.24E-04	3.26E-03
	3/1/2004 - 3/8/2004	* 8.98E-06	1.04E-02
	3/8/2004 - 3/15/2004	* - 1.07E-03	6.81E-03
	3/15/2004 - 3/22/2004	* - 3.41E-03	4.90E-03
	3/22/2004 - 3/29/2004	* 2.31E-03	1.22E-02
	3/29/2004 - 4/5/2004	* - 9.24E-03	1.09E-02
	4/5/2004 - 4/12/2004	* - 1.00E-02	9.02E-03
	4/12/2004 - 4/19/2004	* 2.54E-03	6.58E-03
	4/19/2004 - 4/26/2004	* - 4.68E-03	1.23E-02
	4/26/2004 - 5/3/2004	* - 8.50E-04	8.02E-03
	5/3/2004 - 5/10/2004	* - 3.51E-03	6.89E-03
	5/10/2004 - 5/17/2004	* 1.15E-03	9.84E-03
	5/17/2004 - 5/24/2004	* - 3.80E-03	8.49E-03
	5/24/2004 - 6/1/2004	* - 1.75E-03	7.60E-03
	6/1/2004 - 6/7/2004	* 5.37E-03	1.03E-02
	6/7/2004 - 6/14/2004	* 7.89E-04	4.97E-03
	6/14/2004 - 6/21/2004	* 1.26E-03	5.97E-03
	6/21/2004 - 6/28/2004	* - 1.74E-03	9.65E-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	6/28/2004 - 7/6/2004	* 1.71E-03	3.87E-03
	7/6/2004 - 7/12/2004	* 1.47E-02	1.13E-02
	7/12/2004 - 7/19/2004	* - 1.81E-03	6.00E-03
	7/19/2004 - 7/26/2004	* 3.29E-04	5.92E-03
	7/26/2004 - 8/2/2004	* 1.46E-03	6.10E-03
	8/2/2004 - 8/9/2004	* 7.08E-04	7.42E-03
	8/9/2004 - 8/16/2004	* - 2.25E-03	7.48E-03
	8/16/2004 - 8/23/2004	* - 6.90E-04	1.04E-02
	8/23/2004 - 8/30/2004	* 9.71E-03	1.12E-02
	8/30/2004 - 9/7/2004	* 6.15E-03	8.67E-03
	9/7/2004 - 9/13/2004	* 2.46E-03	3.61E-03
	9/13/2004 - 9/20/2004	* - 3.33E-03	8.90E-03
	9/20/2004 - 9/27/2004	* 1.66E-04	1.02E-02
	9/27/2004 - 10/4/2004	* - 4.20E-03	1.29E-02
	10/4/2004 - 10/11/2004	* - 3.26E-03	7.06E-03
	10/11/2004 - 10/18/2004	* - 2.09E-03	1.28E-02
	10/18/2004 - 10/25/2004	* 2.58E-03	8.56E-03
	10/25/2004 - 11/1/2004	* - 1.30E-02	9.38E-03
	11/1/2004 - 11/8/2004	* 9.39E-03	9.85E-03
	11/8/2004 - 11/15/2004	* 2.39E-03	5.50E-03
	11/15/2004 - 11/22/2004	* - 5.81E-03	1.28E-02
	11/22/2004 - 11/29/2004	* - 1.38E-03	6.37E-03
	11/29/2004 - 12/6/2004	* 1.52E-03	5.37E-03
	12/6/2004 - 12/13/2004	* - 9.62E-04	2.74E-03
	12/13/2004 - 12/20/2004	* 6.79E-04	9.38E-03
	12/20/2004 - 12/27/2004	* 1.45E-03	8.84E-03
8	12/29/2003 - 1/5/2004	* - 1.99E-03	3.62E-03
	1/5/2004 - 1/12/2004	* 1.15E-03	8.68E-03
	1/12/2004 - 1/19/2004	* - 2.49E-04	2.68E-03
	1/19/2004 - 1/26/2004	* 5.08E-04	7.41E-03
	1/26/2004 - 2/2/2004	* - 1.26E-02	1.11E-02
	2/2/2004 - 2/9/2004	* - 2.65E-03	8.54E-03
	2/9/2004 - 2/17/2004	* - 2.62E-03	4.89E-03
	2/17/2004 - 2/23/2004	* - 9.03E-03	7.42E-03
	2/23/2004 - 3/1/2004	* - 6.18E-04	3.23E-03
	3/1/2004 - 3/8/2004	* 3.65E-03	7.90E-03
	3/8/2004 - 3/15/2004	* - 1.06E-03	6.73E-03
	3/15/2004 - 3/22/2004	* 6.13E-03	6.30E-03
	3/22/2004 - 3/29/2004	* 3.44E-03	7.77E-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	3/29/2004 - 4/5/2004	* - 9.14E-03	1.08E-02
	4/5/2004 - 4/12/2004	* - 9.88E-03	8.91E-03
	4/12/2004 - 4/19/2004	* 4.82E-03	1.04E-02
	4/19/2004 - 4/26/2004	* - 4.64E-03	1.22E-02
	4/26/2004 - 5/3/2004	* - 8.40E-04	7.93E-03
	5/3/2004 - 5/10/2004	* - 3.48E-03	6.83E-03
	5/10/2004 - 5/17/2004	* 1.14E-03	9.74E-03
	5/17/2004 - 5/24/2004	* - 3.76E-03	8.40E-03
	5/24/2004 - 6/1/2004	* - 1.73E-03	7.51E-03
	6/1/2004 - 6/7/2004	* 5.33E-03	1.02E-02
	6/7/2004 - 6/14/2004	* 7.81E-04	4.91E-03
	6/14/2004 - 6/21/2004	* 2.71E-03	9.31E-03
	6/21/2004 - 6/28/2004	* - 1.72E-03	9.52E-03
	6/28/2004 - 7/6/2004	* - 3.36E-03	6.06E-03
	7/6/2004 - 7/12/2004	* - 2.54E-03	6.67E-03
	7/12/2004 - 7/19/2004	* 9.93E-03	9.40E-03
	7/19/2004 - 7/26/2004	* - 2.59E-03	7.93E-03
	7/26/2004 - 8/2/2004	* 2.51E-03	9.05E-03
	8/2/2004 - 8/9/2004	* 2.86E-03	7.41E-03
	8/9/2004 - 8/16/2004	* 1.87E-03	8.75E-03
	8/16/2004 - 8/23/2004	* 5.65E-03	9.10E-03
	8/23/2004 - 8/30/2004	* 9.61E-03	1.11E-02
	8/30/2004 - 9/7/2004	* 6.08E-03	8.58E-03
	9/7/2004 - 9/13/2004	* - 5.55E-03	5.74E-03
	9/13/2004 - 9/20/2004	* - 1.17E-03	8.51E-03
	9/20/2004 - 9/27/2004	* - 1.23E-02	1.15E-02
	9/27/2004 - 10/4/2004	* - 6.65E-04	9.86E-03
	10/4/2004 - 10/11/2004	* - 5.02E-03	1.08E-02
	10/11/2004 - 10/18/2004	* - 2.02E-03	1.24E-02
	10/18/2004 - 10/25/2004	* - 4.23E-03	1.15E-02
	10/25/2004 - 11/1/2004	* - 1.29E-02	9.28E-03
	11/1/2004 - 11/8/2004	* 1.40E-03	1.01E-02
	11/9/2004 - 11/15/2004	* 1.76E-03	6.79E-03
	11/15/2004 - 11/22/2004	* - 5.73E-03	1.26E-02
	11/22/2004 - 11/29/2004	* 2.63E-03	1.06E-02
	11/29/2004 - 12/6/2004	* - 1.02E-04	8.25E-03
	12/6/2004 - 12/13/2004	* 2.23E-03	4.21E-03
	12/13/2004 - 12/20/2004	* - 4.60E-03	1.12E-02
	12/20/2004 - 12/27/2004	* - 1.30E-02	1.18E-02

\* 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
9A Control	12/29/2003 - 1/5/2004	* - 1.46E-04	5.41E-03
	1/5/2004 - 1/12/2004	* 1.14E-03	8.61E-03
	1/12/2004 - 1/19/2004	* - 2.53E-04	2.72E-03
	1/19/2004 - 1/26/2004	* 6.90E-04	1.01E-02
	1/26/2004 - 2/2/2004	* - 6.08E-03	7.59E-03
	2/2/2004 - 2/9/2004	* 9.66E-03	9.04E-03
	2/9/2004 - 2/17/2004	* - 2.57E-03	7.91E-03
	2/17/2004 - 2/23/2004	* - 4.08E-03	7.32E-03
	2/23/2004 - 3/1/2004	* - 6.21E-04	3.24E-03
	3/1/2004 - 3/8/2004	* - 1.47E-02	1.28E-02
	3/8/2004 - 3/15/2004	* - 1.06E-03	6.77E-03
	3/15/2004 - 3/22/2004	* - 2.40E-03	7.67E-03
	3/22/2004 - 3/29/2004	* 1.71E-03	6.03E-03
	3/29/2004 - 4/5/2004	* - 9.19E-03	1.08E-02
	4/5/2004 - 4/12/2004	* - 9.93E-03	8.95E-03
	4/12/2004 - 4/19/2004	* 4.84E-03	1.05E-02
	4/19/2004 - 4/26/2004	* - 4.66E-03	1.22E-02
	4/26/2004 - 5/3/2004	* - 8.48E-04	8.00E-03
	5/3/2004 - 5/10/2004	* - 3.49E-03	6.85E-03
	5/10/2004 - 5/17/2004	* 1.14E-03	9.79E-03
	5/17/2004 - 5/24/2004	* - 3.78E-03	8.44E-03
	5/24/2004 - 6/1/2004	* - 1.74E-03	7.55E-03
	6/1/2004 - 6/7/2004	* 5.35E-03	1.03E-02
	6/7/2004 - 6/14/2004	* 7.85E-04	4.94E-03
	6/14/2004 - 6/21/2004	* 2.72E-03	9.36E-03
	6/21/2004 - 6/28/2004	* - 1.72E-03	9.57E-03
	6/28/2004 - 7/6/2004	* - 3.38E-03	6.09E-03
	7/6/2004 - 7/12/2004	* 2.96E-04	7.51E-03
	7/12/2004 - 7/19/2004	* - 1.90E-03	6.28E-03
	7/19/2004 - 7/26/2004	* - 2.61E-03	7.99E-03
	7/26/2004 - 8/2/2004	* 2.52E-03	9.10E-03
	8/2/2004 - 8/9/2004	* 2.87E-03	7.44E-03
	8/9/2004 - 8/16/2004	* 1.88E-03	8.80E-03
	8/16/2004 - 8/23/2004	* 5.69E-03	9.15E-03
	8/23/2004 - 8/30/2004	* 9.66E-03	1.11E-02
	8/30/2004 - 9/7/2004	* 6.12E-03	8.62E-03
	9/7/2004 - 9/13/2004	* - 5.58E-03	5.78E-03
	9/13/2004 - 9/20/2004	* - 1.17E-03	8.54E-03
	9/20/2004 - 9/27/2004	* - 1.24E-02	1.16E-02

\* 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
9A Control	9/27/2004 - 10/4/2004	* - 6.69E-04	9.91E-03
	10/4/2004 - 10/11/2004	* - 5.04E-03	1.09E-02
	10/11/2004 - 10/18/2004	* - 2.03E-03	1.25E-02
	10/18/2004 - 10/25/2004	* - 4.25E-03	1.16E-02
	10/25/2004 - 11/1/2004	* - 1.30E-02	9.33E-03
	11/1/2004 - 11/8/2004	* 1.76E-03	1.27E-02
	11/8/2004 - 11/15/2004	* 2.91E-03	1.12E-02
	11/15/2004 - 11/22/2004	* - 5.77E-03	1.27E-02
	11/22/2004 - 11/29/2004	* 2.64E-03	1.06E-02
	11/29/2004 - 12/6/2004	* - 1.02E-04	8.28E-03
	12/6/2004 - 12/13/2004	* 2.25E-03	4.23E-03
	12/13/2004 - 12/20/2004	* - 4.63E-03	1.13E-02
	12/20/2004 - 12/27/2004	* - 1.51E-02	1.38E-02
21	12/29/2003 - 1/5/2004	* - 1.29E-04	4.77E-03
	1/5/2004 - 1/12/2004	* 1.16E-03	8.74E-03
	1/12/2004 - 1/19/2004	* - 2.53E-04	2.72E-03
	1/19/2004 - 1/26/2004	* 5.17E-04	7.53E-03
	1/26/2004 - 2/2/2004	* - 2.43E-03	5.61E-03
	2/2/2004 - 2/9/2004	* - 5.03E-04	6.53E-03
	2/9/2004 - 2/17/2004	* 5.90E-03	9.74E-03
	2/17/2004 - 2/23/2004	* 3.98E-03	8.18E-03
	2/23/2004 - 3/1/2004	* (b)	
	3/1/2004 - 3/8/2004	* - 4.68E-04	7.06E-03
	3/8/2004 - 3/15/2004	* - 1.07E-03	6.82E-03
	3/15/2004 - 3/22/2004	* - 1.67E-03	9.31E-03
	3/22/2004 - 3/29/2004	* - 1.07E-03	9.10E-03
	3/29/2004 - 4/5/2004	* - 9.26E-03	1.09E-02
	4/5/2004 - 4/12/2004	* - 1.00E-02	9.04E-03
	4/12/2004 - 4/19/2004	* 4.87E-03	1.05E-02
	4/19/2004 - 4/26/2004	* - 4.69E-03	1.23E-02
	4/26/2004 - 5/3/2004	* - 8.55E-04	8.07E-03
	5/3/2004 - 5/10/2004	* - 3.52E-03	6.90E-03
	5/10/2004 - 5/17/2004	* 1.15E-03	9.87E-03
	5/17/2004 - 5/24/2004	* - 3.81E-03	8.51E-03
	5/24/2004 - 6/1/2004	* - 1.76E-03	7.61E-03
	6/1/2004 - 6/7/2004	* 5.38E-03	1.03E-02
	6/7/2004 - 6/14/2004	* 7.89E-04	4.96E-03
	6/14/2004 - 6/21/2004	* 2.75E-03	9.45E-03
	6/21/2004 - 6/28/2004	* - 2.01E-03	1.11E-02

\* Denotes a result less than the detection limit.

(b) No sample due to power being turned off.

TABLE A-4.1 (cont.)  
**I-131 IN CHARCOAL FILTERS**  
 Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
21	6/28/2004 - 7/6/2004	* - 4.07E-03	7.33E-03
	7/6/2004 - 7/12/2004	* 3.04E-04	7.72E-03
	7/12/2004 - 7/19/2004	* - 5.71E-03	1.89E-02
	7/19/2004 - 7/26/2004	* - 3.76E-03	1.15E-02
	7/26/2004 - 8/2/2004	* 2.53E-03	9.14E-03
	8/2/2004 - 8/9/2004	* 2.89E-03	7.50E-03
	8/9/2004 - 8/16/2004	* 1.89E-03	8.86E-03
	8/16/2004 - 8/23/2004	* 5.73E-03	9.21E-03
	8/23/2004 - 8/30/2004	* 9.73E-03	1.12E-02
	8/30/2004 - 9/7/2004	* 6.16E-03	8.69E-03
	9/7/2004 - 9/13/2004	* - 5.64E-03	5.84E-03
	9/13/2004 - 9/20/2004	* - 2.11E-03	1.53E-02
	9/20/2004 - 9/27/2004	* - 1.24E-02	1.16E-02
	9/27/2004 - 10/4/2004	* - 6.74E-04	1.00E-02
	10/4/2004 - 10/11/2004	* - 5.08E-03	1.09E-02
	10/11/2004 - 10/18/2004	* - 2.05E-03	1.26E-02
	10/18/2004 - 10/25/2004	* - 4.28E-03	1.17E-02
	10/25/2004 - 11/1/2004	* - 1.31E-02	9.40E-03
	11/1/2004 - 11/8/2004	* 1.78E-03	1.28E-02
	11/8/2004 - 11/15/2004	* 2.92E-03	1.13E-02
	11/15/2004 - 11/22/2004	* - 5.82E-03	1.28E-02
	11/22/2004 - 11/29/2004	* 2.66E-03	1.07E-02
	11/29/2004 - 12/6/2004	* - 1.03E-04	8.34E-03
	12/6/2004 - 12/13/2004	* 2.27E-03	4.27E-03
	12/13/2004 - 12/20/2004	* - 4.67E-03	1.14E-02
	12/20/2004 - 12/27/2004	* - 1.52E-02	1.39E-02
23	12/29/2003 - 1/5/2004	* - 1.29E-04	4.77E-03
	1/5/2004 - 1/12/2004	* 1.16E-03	8.74E-03
	1/12/2004 - 1/19/2004	* - 2.53E-04	2.72E-03
	1/19/2004 - 1/26/2004	* 5.16E-04	7.53E-03
	1/26/2004 - 2/2/2004	* - 1.57E-03	8.59E-03
	2/2/2004 - 2/9/2004	* 3.62E-03	8.01E-03
	2/9/2004 - 2/17/2004	* - 4.42E-04	7.20E-03
	2/17/2004 - 2/23/2004	* - 5.34E-03	8.04E-03
	2/23/2004 - 3/1/2004	* - 6.24E-04	3.25E-03
	3/1/2004 - 3/8/2004	* 7.62E-04	7.86E-03
	3/8/2004 - 3/15/2004	* 2.95E-03	4.55E-03
	3/15/2004 - 3/22/2004	* 2.38E-03	5.74E-03
	3/22/2004 - 3/29/2004	* 2.89E-04	1.03E-02

\* 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	3/29/2004 - 4/5/2004	* - 5.36E-04	1.13E-02
	4/5/2004 - 4/12/2004	* - 4.91E-04	1.36E-02
	4/12/2004 - 4/19/2004	* 4.86E-03	1.05E-02
	4/19/2004 - 4/26/2004	* 6.26E-03	9.98E-03
	4/26/2004 - 5/3/2004	* 2.30E-03	7.78E-03
	5/3/2004 - 5/10/2004	* 5.21E-03	6.44E-03
	5/10/2004 - 5/17/2004	* - 9.83E-03	1.11E-02
	5/17/2004 - 5/24/2004	* - 7.62E-03	8.96E-03
	5/24/2004 - 6/1/2004	* 7.00E-03	8.17E-03
	6/1/2004 - 6/7/2004	* 6.18E-03	1.26E-02
	6/7/2004 - 6/14/2004	* - 3.02E-03	4.60E-03
	6/14/2004 - 6/21/2004	* 2.75E-03	9.45E-03
	6/21/2004 - 6/28/2004	* - 7.35E-03	8.80E-03
	6/28/2004 - 7/6/2004	* - 3.40E-03	6.12E-03
	7/6/2004 - 7/12/2004	* 2.98E-04	7.58E-03
	7/12/2004 - 7/19/2004	* - 1.91E-03	6.33E-03
	7/19/2004 - 7/26/2004	* - 2.62E-03	8.03E-03
	7/26/2004 - 8/2/2004	* 2.53E-03	9.13E-03
	8/2/2004 - 8/9/2004	* 2.89E-03	7.49E-03
	8/9/2004 - 8/16/2004	* 1.89E-03	8.86E-03
	8/16/2004 - 8/23/2004	* 5.72E-03	9.21E-03
	8/23/2004 - 8/30/2004	* - 5.02E-03	9.96E-03
	8/30/2004 - 9/7/2004	* - 1.28E-03	6.60E-03
	9/7/2004 - 9/13/2004	* - 5.63E-03	5.83E-03
	9/13/2004 - 9/20/2004	* - 1.18E-03	8.61E-03
	9/20/2004 - 9/27/2004	* - 1.24E-02	1.16E-02
	9/27/2004 - 10/4/2004	* - 6.74E-04	9.99E-03
	10/4/2004 - 10/11/2004	* - 5.07E-03	1.09E-02
	10/11/2004 - 10/18/2004	* 1.70E-03	1.18E-02
	10/18/2004 - 10/25/2004	* - 4.28E-03	1.17E-02
	10/25/2004 - 11/1/2004	* - 6.07E-03	4.37E-03
	11/1/2004 - 11/8/2004	* 1.78E-03	1.28E-02
	11/8/2004 - 11/15/2004	* 2.92E-03	1.13E-02
	11/15/2004 - 11/22/2004	* - 1.29E-02	1.85E-02
	11/22/2004 - 11/29/2004	* 2.66E-03	1.07E-02
	11/29/2004 - 12/6/2004	* - 1.03E-04	8.34E-03
	12/6/2004 - 12/13/2004	* 2.26E-03	4.26E-03
	12/13/2004 - 12/20/2004	* - 4.67E-03	1.14E-02
	12/20/2004 - 12/27/2004	* - 1.52E-02	1.39E-02

\* 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	12/29/2003 - 1/5/2004	* - 1.27E-04	4.69E-03
	1/5/2004 - 1/12/2004	* 3.55E-05	6.41E-03
	1/12/2004 - 1/19/2004	* 1.58E-03	4.22E-03
	1/19/2004 - 1/26/2004	* - 3.53E-03	6.22E-03
	1/26/2004 - 2/2/2004	* 3.07E-03	9.41E-03
	2/2/2004 - 2/9/2004	* 1.88E-03	9.13E-03
	2/9/2004 - 2/17/2004	* 2.63E-03	8.30E-03
	2/17/2004 - 2/23/2004	* - 3.32E-03	5.92E-03
	2/23/2004 - 3/1/2004	* 1.68E-03	2.97E-03
	3/1/2004 - 3/8/2004	* - 5.10E-04	7.80E-03
	3/8/2004 - 3/15/2004	* 2.92E-03	4.50E-03
	3/15/2004 - 3/22/2004	* - 3.17E-03	6.11E-03
	3/22/2004 - 3/29/2004	* 1.40E-03	8.46E-03
	3/29/2004 - 4/5/2004	* - 5.30E-04	1.12E-02
	4/5/2004 - 4/12/2004	* - 4.85E-04	1.35E-02
	4/12/2004 - 4/19/2004	* - 3.75E-04	1.09E-02
	4/19/2004 - 4/26/2004	* 6.19E-03	9.87E-03
	4/26/2004 - 5/3/2004	* 2.70E-03	2.23E-02
	5/3/2004 - 5/10/2004	* 5.17E-03	6.38E-03
	5/10/2004 - 5/17/2004	* - 9.72E-03	1.10E-02
	5/17/2004 - 5/24/2004	* - 7.53E-03	8.86E-03
	5/24/2004 - 6/1/2004	* 6.92E-03	8.08E-03
	6/1/2004 - 6/7/2004	* 6.13E-03	1.25E-02
	6/7/2004 - 6/14/2004	* - 3.00E-03	4.56E-03
	6/14/2004 - 6/21/2004	* 1.53E-03	5.24E-03
	6/21/2004 - 6/28/2004	* - 7.27E-03	8.70E-03
	6/28/2004 - 7/6/2004	* - 2.13E-03	3.84E-03
	7/6/2004 - 7/12/2004	* 2.94E-04	7.48E-03
	7/12/2004 - 7/19/2004	* - 1.89E-03	6.26E-03
	7/19/2004 - 7/26/2004	* - 2.01E-03	6.15E-03
	7/26/2004 - 8/2/2004	* 1.65E-03	5.96E-03
	8/2/2004 - 8/9/2004	* 4.40E-03	6.73E-03
	8/9/2004 - 8/16/2004	* 6.66E-03	1.04E-02
	8/16/2004 - 8/23/2004	* 6.01E-03	1.05E-02
	8/23/2004 - 8/30/2004	* - 4.97E-03	9.86E-03
	8/30/2004 - 9/7/2004	* - 1.26E-03	6.53E-03
	9/7/2004 - 9/13/2004	* 2.89E-04	5.16E-03
	9/13/2004 - 9/20/2004	* - 1.17E-03	8.52E-03
	9/20/2004 - 9/27/2004	* - 2.72E-04	8.61E-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	9/27/2004 - 10/4/2004	* - 3.82E-03	9.64E-03
	10/4/2004 - 10/11/2004	* - 8.25E-03	8.95E-03
	10/11/2004 - 10/18/2004	* 1.68E-03	1.16E-02
	10/18/2004 - 10/25/2004	* 3.79E-03	1.16E-02
	10/25/2004 - 11/1/2004	* - 1.13E-03	9.14E-03
	11/1/2004 - 11/8/2004	* 1.76E-03	1.27E-02
	11/8/2004 - 11/15/2004	* 2.90E-03	1.12E-02
	11/15/2004 - 11/22/2004	* - 1.27E-02	1.83E-02
	11/22/2004 - 11/29/2004	* 1.66E-03	6.68E-03
	11/29/2004 - 12/6/2004	* - 1.04E-03	4.24E-03
	12/6/2004 - 12/13/2004	* 1.41E-03	2.66E-03
	12/13/2004 - 12/20/2004	* 6.94E-03	9.88E-03
	12/20/2004 - 12/27/2004	* - 7.85E-03	7.15E-03
48	12/29/2003 - 1/5/2004	* - 7.91E-03	7.33E-03
	1/5/2004 - 1/12/2004	* 3.54E-05	6.40E-03
	1/12/2004 - 1/19/2004	* 1.57E-03	4.21E-03
	1/19/2004 - 1/26/2004	* - 3.52E-03	6.20E-03
	1/26/2004 - 2/2/2004	* 4.91E-03	9.60E-03
	2/2/2004 - 2/9/2004	* 1.74E-03	7.81E-03
	2/9/2004 - 2/17/2004	* - 5.32E-03	6.58E-03
	2/17/2004 - 2/23/2004	* - 4.22E-03	7.68E-03
	2/23/2004 - 3/1/2004	* 1.68E-03	2.96E-03
	3/1/2004 - 3/8/2004	* - 8.61E-03	7.78E-03
	3/8/2004 - 3/15/2004	* 2.91E-03	4.49E-03
	3/15/2004 - 3/22/2004	* 4.68E-04	6.04E-03
	3/22/2004 - 3/29/2004	* 7.25E-03	1.06E-02
	3/29/2004 - 4/5/2004	* - 5.29E-04	1.12E-02
	4/5/2004 - 4/12/2004	* - 4.84E-04	1.34E-02
	4/12/2004 - 4/19/2004	* - 3.74E-04	1.09E-02
	4/19/2004 - 4/26/2004	* 6.18E-03	9.85E-03
	4/26/2004 - 5/3/2004	* 2.25E-03	7.64E-03
	5/3/2004 - 5/10/2004	* 5.15E-03	6.37E-03
	5/10/2004 - 5/17/2004	* - 9.70E-03	1.10E-02
	5/17/2004 - 5/24/2004	* - 7.51E-03	8.84E-03
	5/24/2004 - 6/1/2004	* 6.91E-03	8.06E-03
	6/1/2004 - 6/7/2004	* 6.11E-03	1.24E-02
	6/7/2004 - 6/14/2004	* - 2.99E-03	4.55E-03
	6/14/2004 - 6/21/2004	* 3.74E-03	1.03E-02
	6/21/2004 - 6/28/2004	* - 8.78E-03	1.05E-02

\* 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	6/28/2004 - 7/6/2004	* - 6.16E-03	5.07E-03
	7/6/2004 - 7/12/2004	* 1.45E-02	1.12E-02
	7/12/2004 - 7/19/2004	* - 1.97E-03	6.52E-03
	7/20/2004 - 7/26/2004	* - 6.34E-03	1.12E-02
	7/26/2004 - 8/2/2004	* - 2.48E-03	8.85E-03
	8/2/2004 - 8/9/2004	* 4.39E-03	6.71E-03
	8/9/2004 - 8/16/2004	* 6.65E-03	1.04E-02
	8/16/2004 - 8/23/2004	* 6.00E-03	1.05E-02
	8/23/2004 - 8/30/2004	* - 4.96E-03	9.84E-03
	8/30/2004 - 9/7/2004	* - 1.26E-03	6.52E-03
	9/7/2004 - 9/13/2004	* 2.88E-04	5.14E-03
	9/13/2004 - 9/20/2004	* 4.61E-03	9.04E-03
	9/20/2004 - 9/27/2004	* - 2.71E-04	8.58E-03
	9/27/2004 - 10/4/2004	* - 3.82E-03	9.62E-03
	10/4/2004 - 10/11/2004	* - 8.23E-03	8.94E-03
	10/11/2004 - 10/18/2004	* 1.68E-03	1.16E-02
	10/18/2004 - 10/25/2004	* 3.78E-03	1.16E-02
	10/25/2004 - 11/1/2004	* - 1.13E-03	9.12E-03
	11/1/2004 - 11/8/2004	* 2.16E-03	9.09E-03
	11/8/2004 - 11/8/2004	* 5.63E-04	1.17E-02
	11/15/2004 - 11/22/2004	* - 9.62E-03	1.38E-02
	11/22/2004 - 11/29/2004	* 2.63E-03	9.22E-03
	11/29/2004 - 12/6/2004	* - 1.03E-03	4.23E-03
	12/6/2004 - 12/13/2004	* - 1.20E-03	4.64E-03
	12/13/2004 - 12/20/2004	* 6.93E-03	9.86E-03
	12/20/2004 - 12/27/2004	* - 5.20E-03	1.16E-02
57	12/29/2003 - 1/5/2004	* - 8.10E-03	7.50E-03
	1/5/2004 - 1/12/2004	* 3.57E-05	6.45E-03
	1/12/2004 - 1/19/2004	* 1.60E-03	4.28E-03
	1/19/2004 - 1/26/2004	* - 3.59E-03	6.31E-03
	1/26/2004 - 2/2/2004	* - 7.50E-03	8.40E-03
	2/2/2004 - 2/9/2004	* - 4.81E-03	6.15E-03
	2/9/2004 - 2/17/2004	* - 1.36E-03	4.91E-03
	2/17/2004 - 2/23/2004	* - 4.98E-03	1.11E-02
	2/23/2004 - 3/1/2004	* 1.70E-03	3.00E-03
	3/1/2004 - 3/8/2004	* - 4.46E-03	1.09E-02
	3/8/2004 - 3/15/2004	* 2.96E-03	4.55E-03
	3/15/2004 - 3/22/2004	* 5.44E-04	6.37E-03
	3/22/2004 - 3/29/2004	* 3.81E-03	1.17E-02

\* 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	3/29/2004 - 4/5/2004	* - 5.36E-04	1.13E-02
	4/5/2004 - 4/12/2004	* - 4.92E-04	1.37E-02
	4/12/2004 - 4/19/2004	* - 3.80E-04	1.10E-02
	4/19/2004 - 4/26/2004	* 6.27E-03	1.00E-02
	4/26/2004 - 5/3/2004	* 2.30E-03	7.80E-03
	5/3/2004 - 5/10/2004	* 5.21E-03	6.43E-03
	5/10/2004 - 5/17/2004	* - 9.85E-03	1.12E-02
	5/17/2004 - 5/24/2004	* - 7.63E-03	8.98E-03
	5/24/2004 - 6/1/2004	* 7.01E-03	8.19E-03
	6/1/2004 - 6/7/2004	* 6.18E-03	1.26E-02
	6/7/2004 - 6/14/2004	* - 3.03E-03	4.62E-03
	6/14/2004 - 6/21/2004	* 3.81E-03	1.05E-02
	6/21/2004 - 6/28/2004	* - 7.36E-03	8.82E-03
	6/28/2004 - 7/6/2004	* - 6.23E-03	5.14E-03
	7/6/2004 - 7/12/2004	* 1.48E-02	1.14E-02
	7/12/2004 - 7/19/2004	* 1.01E-02	9.54E-03
	7/19/2004 - 7/26/2004	* - 5.74E-03	1.01E-02
	7/26/2004 - 8/2/2004	* - 2.50E-03	8.95E-03
	8/2/2004 - 8/9/2004	* 4.45E-03	6.81E-03
	8/9/2004 - 8/16/2004	* 6.75E-03	1.06E-02
	8/16/2004 - 8/23/2004	* 6.08E-03	1.07E-02
	8/23/2004 - 8/30/2004	* - 5.03E-03	9.98E-03
	8/30/2004 - 9/7/2004	* - 1.28E-03	6.61E-03
	9/7/2004 - 9/13/2004	* 2.94E-04	5.25E-03
	9/13/2004 - 9/20/2004	* 4.68E-03	9.16E-03
	9/20/2004 - 9/27/2004	* - 2.74E-04	8.70E-03
	9/27/2004 - 10/4/2004	* - 3.87E-03	9.76E-03
	10/4/2004 - 10/11/2004	* - 1.13E-02	1.23E-02
	10/11/2004 - 10/18/2004	* 1.88E-03	1.30E-02
	10/18/2004 - 10/25/2004	* 3.84E-03	1.18E-02
	10/25/2004 - 11/1/2004	* - 1.21E-03	9.79E-03
	11/1/2004 - 11/8/2004	* 2.19E-03	9.23E-03
	11/8/2004 - 11/15/2004	* 2.77E-04	5.76E-03
	11/15/2004 - 11/22/2004	* - 1.29E-02	1.85E-02
	11/22/2004 - 11/29/2004	* 2.66E-03	9.36E-03
	11/29/2004 - 12/6/2004	* - 1.05E-03	4.29E-03
	12/6/2004 - 12/13/2004	* - 1.22E-03	4.72E-03
	12/13/2004 - 12/20/2004	* 7.04E-03	1.00E-02
	12/20/2004 - 12/27/2004	* - 5.28E-03	1.18E-02

\* Denotes a result less than the detection limit.

TABLE A-4.2  
**I-131 CHARCOAL FILTERS - SUMMARY**  
 Results in pCi/cubic meter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
I-131	(I)	-4.47E-04	-1.52E-02	1.48E-02	568	0
I-131	(C)	-1.51E-03	-1.51E-02	9.66E-03	52	0

(I) Indicator Stations  
 (C) Control Stations

TABLE A-5.1  
**GROSS BETA IN WATER**  
Results in pCi/liter

LOCATION	COLLECTION PERIOD		RESULT	OVERALL UNCERTAINTY
<u>River/Drinking</u>				
26 Control	1/6/2004	- 2/3/2004	* - 1.66E+00	1.74E+00
	2/3/2004	- 3/2/2004	* 3.88E-01	1.80E+00
	3/2/2004	- 4/6/2004	* 1.71E+00	1.56E+00
	4/6/2004	- 4/30/2004	* 1.58E+00	1.86E+00
	4/30/2004	- 6/2/2004	* 1.07E+00	1.74E+00
	6/2/2004	- 7/7/2004	* 7.31E-01	1.68E+00
	7/7/2004	- 8/3/2004	* 1.07E+00	1.59E+00
	8/3/2004	- 9/1/2004	* - 3.22E-01	1.75E+00
	9/1/2004	- 10/5/2004	* - 1.09E+00	1.94E+00
	10/5/2004	- 11/2/2004	2.52E+00	1.74E+00
	11/2/2004	- 12/1/2004	* 2.08E+00	1.96E+00
	12/1/2004	- 1/4/2005	* 1.85E+00	1.74E+00
29	1/6/2004	- 2/3/2004	* 5.58E-01	1.94E+00
	2/3/2004	- 3/2/2004	* 1.15E+00	2.49E+00
	3/2/2004	- 4/6/2004	2.83E+00	1.68E+00
	4/6/2004	- 4/30/2004	* 2.23E+00	1.92E+00
	4/30/2004	- 6/2/2004	* 1.92E+00	1.81E+00
	6/2/2004	- 7/7/2004	* 1.07E+00	1.73E+00
	7/7/2004	- 8/3/2004	2.86E+00	1.77E+00
	8/3/2004	- 9/1/2004	* - 9.67E-01	1.69E+00
	9/1/2004	- 10/5/2004	* - 5.43E-01	1.98E+00
	10/5/2004	- 11/2/2004	* 2.07E+00	1.71E+00
	11/2/2004	- 12/1/2004	* 1.52E+00	1.91E+00
	12/1/2004	- 1/4/2005	* 8.05E-01	1.64E+00
<u>Discharge</u>				
27	1/6/2004	- 2/3/2004	1.63E+01	3.66E+00
	2/3/2004	- 3/2/2004	6.75E+00	2.22E+00
	3/2/2004	- 4/6/2004	1.74E+01	3.36E+00
	4/6/2004	- 4/30/2004	1.50E+01	3.84E+00
	4/30/2004	- 6/2/2004	1.02E+01	3.11E+00
	6/2/2004	- 7/7/2004	1.83E+01	4.08E+00
	7/7/2004	- 8/3/2004	1.74E+01	3.65E+00
	8/3/2004	- 9/1/2004	8.13E+00	2.86E+00
	9/1/2004	- 10/5/2004	1.50E+01	4.22E+00
	10/5/2004	- 11/2/2004	1.88E+01	3.87E+00
	11/2/2004	- 12/1/2004	2.04E+01	4.21E+00
	12/1/2004	- 1/4/2005	2.37E+01	4.24E+00

\* Denotes a result less than the detection limit.

TABLE A-5.2  
**GROSS BETA IN WATER - SUMMARY**  
 Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
<b><u>River/Drinking</u></b>						
Gr-Beta	(I)	1.29E+00	-9.67E-01	2.86E+00	12	2
Gr-Beta	(C)	8.27E-01	-1.66E+00	2.52E+00	12	1
<b><u>Discharge</u></b>						
Gr-Beta	(I)	1.56E+01	6.75E+00	2.37E+01	12	12

(I) Indicator Stations  
 (C) Control Stations

TABLE A-6.1  
**TRITIUM IN WATER**  
Results in pCi/liter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
<b><u>River/Drinking</u></b>			
26 Control	1/6/2004 - 4/6/2004	* - 5.81E+01	1.13E+02
	4/6/2004 - 7/7/2004	* 9.46E+01	1.04E+02
	7/7/2004 - 10/5/2004	* 3.17E+01	1.14E+02
	10/5/2004 - 1/4/2005	* - 5.55E+01	1.21E+02
29	1/6/2004 - 4/6/2004	* - 1.70E+01	1.10E+02
	4/6/2004 - 7/7/2004	* 1.17E+02	1.05E+02
	7/7/2004 - 10/5/2004	* 9.40E+01	1.15E+02
	10/5/2004 - 1/4/2005	* 8.02E+00	1.25E+02
<b><u>Discharge</u></b>			
27	1/6/2004 - 4/6/2004	* 3.12E+01	1.19E+02
	4/6/2004 - 7/7/2004	2.28E+02	1.11E+02
	7/7/2004 - 10/5/2004	* 2.05E+01	1.10E+02
	10/5/2004 - 1/4/2005	* - 8.34E+01	1.22E+02
<b><u>Ground</u></b>			
31 (Well 1)	3/2/2004	* 2.56E+00	1.01E+02
	6/2/2004	* - 1.57E+02	1.16E+02
	9/1/2004	* - 4.12E+00	9.20E+01
	12/1/2004	* 4.88E+01	1.06E+02
32 (Well 2)	3/2/2004	* 9.85E+01	1.05E+02
	6/2/2004	* 7.40E+01	1.25E+02
	9/1/2004	* - 4.38E+01	8.74E+01
	12/1/2004	* 4.90E+01	1.06E+02
52 (well 3)	3/2/2004	* - 9.60E+02	2.93E+02
	6/2/2004	* - 1.59E+02	1.05E+02
	9/1/2004	* 4.05E+00	9.06E+01
	12/1/2004	5.63E+02	1.34E+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)	5.05E+01	-1.70E+01	1.17E+02	4	0
H-3	(C)	3.18E+00	-5.81E+01	9.46E+01	4	0
<u>Discharge</u>						
H-3	(I)	4.91E+01	-8.34E+01	2.28E+02	4	1
<u>Ground</u>						
H-3	(I)	-4.03E+01	-9.60E+02	5.63E+02	12	1

(I) Indicator Stations  
 (C) Control Stations

TABLE A-7.1  
**GAMMA SPECTROMETRY OF WATER**  
 Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
<u>River/Drinking</u>				
26 Control	1/6/2004 - 2/3/2004	Be-7	* - 9.70E+00	2.14E+01
		K-40	* - 8.13E+01	5.48E+01
		Mn-54	* - 1.35E-01	2.63E+00
		Co-58	* - 1.47E+00	2.54E+00
		Fe-59	* - 4.08E+00	5.26E+00
		Co-60	* 9.09E-01	2.59E+00
		Zn-65	* - 9.04E+00	5.87E+00
		Nb-95	* 3.07E-01	2.62E+00
		Zr-95	* - 1.37E+00	4.66E+00
		Cs-134	* - 2.00E+00	2.70E+00
		Cs-137	* 1.96E+00	2.49E+00
		Ba-140	* - 4.31E+00	1.12E+01
		La-140	* - 1.36E+00	4.07E+00
		Ra-226	* 8.70E+00	6.24E+01
		Th-228	* - 3.59E+01	4.32E+01
	2/3/2004 - 3/2/2004	Be-7	* 1.08E+01	1.40E+01
		K-40	* - 9.48E+01	4.06E+01
		Mn-54	* - 5.13E-01	1.71E+00
		Co-58	* - 2.60E+00	1.78E+00
		Fe-59	* - 9.15E-01	3.18E+00
		Co-60	* 5.94E-01	1.67E+00
		Zn-65	* - 3.45E+00	4.02E+00
		Nb-95	* 2.31E-01	1.74E+00
		Zr-95	* 2.65E-01	2.89E+00
		Cs-134	* 1.36E+00	1.58E+00
		Cs-137	* 3.25E-01	1.77E+00
		Ba-140	* - 4.23E+00	8.38E+00
		La-140	* 1.75E+00	3.00E+00
		Ra-226	* - 5.45E+01	4.94E+01
		Th-228	* - 3.21E+00	3.66E+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
<b><u>River/Drinking</u></b>				
26 Control	3/2/2004 - 4/6/2004	Be-7	* 1.09E+01	1.11E+01
		K-40	* - 1.94E+01	3.13E+01
		Mn-54	* - 6.48E-01	1.41E+00
		Co-58	* - 5.81E-01	1.55E+00
		Fe-59	* - 3.78E+00	6.46E+00
		Co-60	* 7.88E-01	4.36E+00
		Zn-65	* - 2.67E+00	6.99E+00
		Nb-95	* - 1.85E+00	1.69E+00
		Zr-95	* - 1.57E+00	2.63E+00
		Cs-134	* - 3.44E-01	1.41E+00
		Cs-137	* 7.72E-01	1.62E+00
		Ba-140	* 2.04E+00	6.88E+00
		La-140	* 1.89E-01	2.32E+00
		Ra-226	* 1.57E+00	6.12E+01
		Th-228	* - 6.95E+01	2.91E+01
	4/6/2004 - 4/30/2004	Be-7	* - 3.98E+00	9.15E+00
		K-40	* - 9.68E+00	2.11E+01
		Mn-54	* - 7.84E-01	1.11E+00
		Co-58	* - 1.54E+00	1.09E+00
		Fe-59	* 6.59E-01	2.28E+00
		Co-60	* 9.27E-01	1.16E+00
		Zn-65	* - 5.14E+00	2.53E+00
		Nb-95	* 4.73E-01	1.13E+00
		Zr-95	* - 5.30E-01	1.94E+00
		Cs-134	* - 7.11E+00	1.28E+00
		Cs-137	* 1.01E+00	1.15E+00
		Ba-140	* - 1.00E-01	4.53E+00
		La-140	* - 1.30E+00	1.79E+00
		Ra-226	* 1.24E+01	3.92E+01
		Th-228	* - 6.07E+01	2.78E+01

\* 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 Control	4/30/2004 - 6/2/2004	Be-7	* - 4.42E+00	7.49E+00
		K-40	* - 2.42E+01	1.75E+01
		Mn-54	* - 8.02E-02	8.18E-01
		Co-58	* 6.11E-01	8.54E-01
		Fe-59	* 1.32E+00	1.71E+00
		Co-60	* 4.89E-01	8.83E-01
		Zn-65	* - 4.86E+00	1.82E+00
		Nb-95	* 1.13E+00	8.67E-01
		Zr-95	* - 6.09E-01	1.47E+00
		Cs-134	* - 2.81E+00	8.78E-01
		Cs-137	* - 5.11E-02	8.63E-01
		Ba-140	* 2.88E+00	4.07E+00
		La-140	* 1.24E-01	1.39E+00
		Ra-226	* - 9.50E+00	3.02E+01
		Th-228	* - 6.19E+00	1.74E+01
	6/2/2004 - 7/7/2004	Be-7	* - 8.91E-01	7.87E+00
		K-40	* - 3.82E+01	1.63E+01
		Mn-54	* 9.41E-02	8.83E-01
		Co-58	* 4.80E-02	8.47E-01
		Fe-59	* 1.24E+00	1.79E+00
		Co-60	* 3.27E-01	8.47E-01
		Zn-65	* - 1.60E+00	1.87E+00
		Nb-95	* - 3.41E-01	9.35E-01
		Zr-95	* - 7.24E-01	1.59E+00
		Cs-134	* - 4.56E+00	9.39E-01
		Cs-137	* 2.22E-01	9.53E-01
		Ba-140	* - 1.60E-01	4.28E+00
		La-140	* - 4.34E-01	1.31E+00
		Ra-226	* 2.08E+01	3.32E+01
		Th-228	* - 5.60E+01	2.00E+01

\* 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 Control	7/7/2004 - 8/3/2004	Be-7	* - 5.76E+00	1.50E+01
		K-40	* - 4.30E+01	3.75E+01
		Mn-54	* - 6.96E-01	1.52E+00
		Co-58	* 5.86E-01	1.43E+00
		Fe-59	* - 4.74E-01	3.49E+00
		Co-60	* 3.20E-01	1.97E+00
		Zn-65	* - 1.66E+00	2.74E+00
		Nb-95	* 3.37E-02	1.66E+00
		Zr-95	* - 1.41E+00	3.09E+00
		Cs-134	* 5.62E-01	1.62E+00
		Cs-137	* - 4.02E-01	2.04E+00
		Ba-140	* 3.58E+00	6.72E+00
		La-140	* 9.65E-01	2.73E+00
		Ra-226	* - 5.44E+01	4.80E+01
		Th-228	* 8.00E+00	3.77E+01
	8/3/2004 - 9/1/2004	Be-7	* 3.02E+00	1.08E+01
		K-40	* - 1.65E+01	2.25E+01
		Mn-54	* 3.06E-01	1.30E+00
		Co-58	* - 1.07E+00	1.31E+00
		Fe-59	* 3.24E+00	2.64E+00
		Co-60	* - 2.86E-01	1.23E+00
		Zn-65	* - 3.79E+00	2.82E+00
		Nb-95	* 9.27E-02	1.26E+00
		Zr-95	* 5.52E-01	2.32E+00
		Cs-134	* - 2.36E+00	1.31E+00
		Cs-137	* - 2.59E-02	1.34E+00
		Ba-140	* 4.61E+00	6.65E+00
		La-140	* - 6.85E-01	2.14E+00
		Ra-226	* - 1.79E+01	3.38E+01
		Th-228	* - 2.70E+01	2.85E+01

\* 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 Control	9/1/2004 - 10/5/2004	Be-7	* 1.31E+01	1.72E+01
		K-40	* 5.75E+00	3.33E+01
		Mn-54	* - 1.08E+00	1.92E+00
		Co-58	* - 3.97E-02	1.89E+00
		Fe-59	* - 1.34E+00	4.11E+00
		Co-60	* - 1.63E+00	1.88E+00
		Zn-65	* - 1.00E+00	4.64E+00
		Nb-95	* - 4.91E-02	1.94E+00
		Zr-95	* 6.07E-02	3.51E+00
		Cs-134	* - 6.57E+00	2.21E+00
		Cs-137	* - 2.57E+00	1.98E+00
		Ba-140	* - 8.92E-01	8.40E+00
		La-140	* 3.81E+00	3.07E+00
		Ra-226	* 1.31E+01	4.66E+01
		Th-228	* 1.05E+01	3.75E+01
	10/5/2004 - 11/2/2004	Be-7	* 4.29E+00	1.08E+01
		K-40	* 9.14E+00	2.54E+01
		Mn-54	* - 1.67E+00	1.23E+00
		Co-58	* - 7.38E-01	1.16E+00
		Fe-59	* - 1.59E+00	2.39E+00
		Co-60	* 8.94E-02	1.24E+00
		Zn-65	* - 5.36E+00	2.68E+00
		Nb-95	* 4.99E-01	1.25E+00
		Zr-95	* - 7.26E-01	2.33E+00
		Cs-134	* - 4.77E+00	1.31E+00
		Cs-137	* - 1.25E-01	1.35E+00
		Ba-140	* - 3.85E+00	5.85E+00
		La-140	* - 3.16E-01	1.80E+00
		Ra-226	* 1.11E+00	3.71E+01
		Th-228	* - 3.60E+01	2.86E+01

\* 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
<b><u>River/Drinking</u></b>				
26 Control	11/2/2004 - 12/1/2004	Be-7	* 5.89E+00	1.05E+01
		K-40	* 1.71E+00	2.87E+01
		Mn-54	* 7.61E-01	1.11E+00
		Co-58	* - 1.19E+00	1.23E+00
		Fe-59	* - 6.05E-01	2.40E+00
		Co-60	* 9.33E-01	1.17E+00
		Zn-65	* - 3.24E+00	2.52E+00
		Nb-95	* 4.49E-01	1.22E+00
		Zr-95	* - 1.00E+00	2.20E+00
		Cs-134	* - 3.24E+00	1.29E+00
		Cs-137	* 6.84E-02	1.21E+00
		Ba-140	* - 2.79E+00	5.81E+00
		La-140	* 3.35E-01	1.89E+00
		Ra-226	* 1.05E+01	4.29E+01
		Th-228	* - 5.80E+01	2.95E+01
	12/1/2004 - 1/4/2005	Be-7	* - 4.68E+00	8.65E+00
		K-40	* - 5.50E+01	2.26E+01
		Mn-54	* - 6.55E-01	9.44E-01
		Co-58	* - 1.35E-01	9.85E-01
		Fe-59	* 1.36E+00	2.00E+00
		Co-60	* - 3.06E-01	9.82E-01
		Zn-65	* - 2.95E+00	2.24E+00
		Nb-95	* - 1.99E-01	9.80E-01
		Zr-95	* 1.85E-01	1.66E+00
		Cs-134	* - 4.22E+00	1.07E+00
		Cs-137	* - 3.64E-01	1.30E+00
		Ba-140	* 4.29E-01	4.74E+00
		La-140	* - 6.10E-01	1.51E+00
		Ra-226	* 4.40E-01	3.23E+01
		Th-228	* - 7.17E+00	2.18E+01

\* 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	1/6/2004 - 2/3/2004	Be-7	* - 4.85E+00	2.93E+01
		K-40	* - 1.28E+02	6.70E+01
		Mn-54	* 2.45E+00	2.99E+00
		Co-58	* - 1.85E+00	2.92E+00
		Fe-59	* - 4.89E+00	6.39E+00
		Co-60	* 7.59E-01	2.80E+00
		Zn-65	* 1.39E+00	6.78E+00
		Nb-95	* 5.10E+00	3.54E+00
		Zr-95	* - 2.88E+00	4.93E+00
		Cs-134	* - 1.07E+00	3.06E+00
		Cs-137	* 7.42E-01	3.61E+00
		Ba-140	* 1.19E+01	1.77E+01
		La-140	* 5.42E+00	4.95E+00
		Ra-226	* - 1.22E+02	8.76E+01
		Th-228	* 2.80E+02	7.46E+01
	2/3/2004 - 3/2/2004	Be-7	* - 1.70E+00	1.84E+01
		K-40	* - 3.92E+01	4.92E+01
		Mn-54	* - 1.68E+00	2.26E+00
		Co-58	* - 2.50E+00	2.30E+00
		Fe-59	* 1.40E+00	4.68E+00
		Co-60	* - 9.09E-01	2.37E+00
		Zn-65	* - 9.49E+00	5.50E+00
		Nb-95	* 3.54E+00	2.27E+00
		Zr-95	* 2.91E+00	3.92E+00
		Cs-134	* - 1.39E+01	2.50E+00
		Cs-137	* 1.59E+00	2.75E+00
		Ba-140	* 9.93E-01	1.08E+01
		La-140	* - 2.24E+00	3.72E+00
		Ra-226	* - 4.55E+01	5.90E+01
		Th-228	* - 5.62E+00	4.23E+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	3/2/2004 - 4/6/2004	Be-7	* - 1.01E+01	1.22E+01
		K-40	* - 4.09E+00	2.32E+01
		Mn-54	* - 7.86E-02	1.20E+00
		Co-58	* - 3.07E-01	1.18E+00
		Fe-59	* - 1.42E+00	2.57E+00
		Co-60	* - 5.96E-02	1.17E+00
		Zn-65	* - 4.51E+00	2.74E+00
		Nb-95	* - 1.43E+00	1.30E+00
		Zr-95	* - 1.03E-01	2.28E+00
		Cs-134	* - 2.12E-02	1.37E+00
		Cs-137	* - 6.58E-01	1.33E+00
		Ba-140	* 2.64E+00	7.20E+00
		La-140	* - 1.16E+00	2.32E+00
		Ra-226	* - 3.97E+01	3.75E+01
		Th-228	* 2.32E+01	3.05E+01
	4/6/2004 - 4/30/2004	Be-7	* 7.05E+00	7.06E+00
		K-40	* 2.17E+01	2.76E+01
		Mn-54	* - 2.54E-02	7.87E-01
		Co-58	* 2.86E-01	7.81E-01
		Fe-59	* - 1.61E+00	1.52E+00
		Co-60	* - 2.48E-01	7.91E-01
		Zn-65	* 7.41E-01	1.63E+00
		Nb-95	* - 5.88E-02	8.18E-01
		Zr-95	* 6.44E-01	1.37E+00
		Cs-134	* - 7.98E-02	7.01E-01
		Cs-137	* 1.13E-01	7.95E-01
		Ba-140	* 4.05E-01	3.62E+00
		La-140	* 6.64E-01	1.11E+00
		Ra-226	* - 1.72E+01	2.48E+01
		Th-228	* - 2.11E+01	1.70E+01

\* 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	4/30/2004 - 6/2/2004	Be-7	* - 3.94E+00	1.05E+01
		K-40	* 2.81E+01	3.01E+01
		Mn-54	* 2.95E-01	1.20E+00
		Co-58	* 2.90E-01	1.28E+00
		Fe-59	* - 1.76E-01	2.63E+00
		Co-60	* 8.94E-02	1.25E+00
		Zn-65	* - 3.62E+00	2.80E+00
		Nb-95	* 1.22E+00	1.33E+00
		Zr-95	* - 7.50E-01	2.26E+00
		Cs-134	* - 5.44E+00	1.41E+00
		Cs-137	* - 2.77E-01	1.34E+00
		Ba-140	* - 1.62E-01	5.88E+00
		La-140	* - 6.70E-02	2.18E+00
		Ra-226	* 2.43E+01	5.04E+01
		Th-228	* 5.16E+00	3.16E+01
	6/2/2004 - 7/7/2004	Be-7	* 2.20E+00	9.80E+00
		K-40	* - 1.47E+01	2.05E+01
		Mn-54	* - 8.28E-02	1.02E+00
		Co-58	* 4.27E-01	1.14E+00
		Fe-59	* - 1.32E+00	2.37E+00
		Co-60	* 1.95E-01	9.57E-01
		Zn-65	* - 4.03E+00	2.50E+00
		Nb-95	* - 7.26E-01	1.06E+00
		Zr-95	* - 8.39E-02	1.92E+00
		Cs-134	* 7.97E-01	1.22E+00
		Cs-137	* 8.50E-01	1.16E+00
		Ba-140	* - 4.67E+00	5.32E+00
		La-140	* 1.21E+00	1.82E+00
		Ra-226	* - 2.63E+01	3.02E+01
		Th-228	* - 7.66E+00	2.32E+01

\* 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	7/7/2004 - 8/3/2004	Be-7	* 6.17E+00	1.50E+01
		K-40	* 2.95E+01	5.30E+01
		Mn-54	* - 1.17E-01	1.55E+00
		Co-58	* - 5.14E-01	1.69E+00
		Fe-59	* - 1.41E+00	3.89E+00
		Co-60	* - 8.58E-01	1.96E+00
		Zn-65	* 3.00E-01	3.90E+00
		Nb-95	* 5.60E-01	1.88E+00
		Zr-95	* - 4.54E-01	3.35E+00
		Cs-134	* - 7.39E-01	1.98E+00
		Cs-137	* - 1.86E+00	2.15E+00
		Ba-140	* 2.04E+00	7.01E+00
		La-140	* - 1.70E+00	2.35E+00
		Ra-226	* 1.52E+01	5.30E+01
		Th-228	* - 7.16E+01	4.33E+01
	8/3/2004 - 9/1/2004	Be-7	* 1.57E+00	7.43E+00
		K-40	* 1.21E+01	2.07E+01
		Mn-54	* - 1.15E-01	7.73E-01
		Co-58	* - 3.46E-01	7.90E-01
		Fe-59	* - 3.56E-01	1.64E+00
		Co-60	* - 1.91E+00	1.02E+00
		Zn-65	* - 2.00E+00	1.66E+00
		Nb-95	* 1.44E-01	8.20E-01
		Zr-95	* 6.47E-02	1.45E+00
		Cs-134	* - 1.65E+00	8.48E-01
		Cs-137	* 1.92E-03	8.95E-01
		Ba-140	* 7.60E-01	4.31E+00
		La-140	* - 9.80E-01	1.36E+00
		Ra-226	* 1.33E+01	3.64E+01
		Th-228	* - 3.00E+01	2.15E+01

\* 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	9/1/2004 - 10/5/2004	Be-7	* - 1.17E+00	1.32E+01
		K-40	* - 1.99E+01	3.30E+01
		Mn-54	* - 4.08E-01	1.26E+00
		Co-58	* - 3.53E-01	1.45E+00
		Fe-59	* 1.10E+00	3.19E+00
		Co-60	* - 8.05E-01	1.48E+00
		Zn-65	* 1.08E+00	2.84E+00
		Nb-95	* 1.77E-01	1.56E+00
		Zr-95	* - 1.39E+00	2.49E+00
		Cs-134	* 1.69E-01	1.48E+00
		Cs-137	* - 4.94E-01	1.48E+00
		Ba-140	* - 3.70E+00	7.21E+00
		La-140	* 5.39E-01	2.26E+00
		Ra-226	* 9.08E+00	4.08E+01
		Th-228	* - 2.60E+01	3.30E+01
	10/5/2004 - 11/2/2004	Be-7	* - 1.23E+00	1.46E+01
		K-40	* 3.40E+01	5.46E+01
		Mn-54	* - 1.12E+00	1.52E+00
		Co-58	* - 4.39E-01	1.58E+00
		Fe-59	* 4.85E-01	3.38E+00
		Co-60	* - 9.63E-01	1.95E+00
		Zn-65	* 1.24E+00	3.43E+00
		Nb-95	* 1.23E+00	1.74E+00
		Zr-95	* 8.12E-01	3.49E+00
		Cs-134	* 1.15E+00	1.99E+00
		Cs-137	* 4.92E-01	2.05E+00
		Ba-140	* - 2.46E+00	9.58E+00
		La-140	* 2.21E+00	2.92E+00
		Ra-226	* - 4.55E+01	4.75E+01
		Th-228	* - 1.68E+01	3.84E+01

\* 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	11/2/2004 - 12/1/2004	Be-7	* 2.04E+00	1.40E+01
		K-40	* 3.96E+01	4.25E+01
		Mn-54	* - 5.43E-01	1.50E+00
		Co-58	* - 8.96E-01	1.73E+00
		Fe-59	* 7.95E-01	3.37E+00
		Co-60	* 2.29E+00	1.76E+00
		Zn-65	* 4.84E-02	3.63E+00
		Nb-95	* - 7.42E-01	1.72E+00
		Zr-95	* - 2.08E-01	2.98E+00
		Cs-134	* 1.81E-01	1.79E+00
		Cs-137	* 2.28E-01	1.81E+00
		Ba-140	* - 6.77E+00	8.18E+00
		La-140	* 2.41E+00	2.76E+00
		Ra-226	* 4.57E+01	6.23E+01
		Th-228	* 3.85E+01	3.96E+01
	12/1/2004 - 1/4/2005	Be-7	* 2.17E-01	9.98E+00
		K-40	* 1.36E+00	2.21E+01
		Mn-54	* - 7.84E-01	1.11E+00
		Co-58	* 1.02E+00	1.14E+00
		Fe-59	* - 9.74E-01	2.46E+00
		Co-60	* 1.45E+00	1.18E+00
		Zn-65	* - 3.40E+00	2.63E+00
		Nb-95	* 1.27E+00	1.17E+00
		Zr-95	* 6.26E-01	1.99E+00
		Cs-134	* - 5.98E+00	1.30E+00
		Cs-137	* - 3.11E-02	1.27E+00
		Ba-140	* - 5.33E+00	5.51E+00
		La-140	* 1.09E+00	1.74E+00
		Ra-226	* - 9.28E+00	3.30E+01
		Th-228	* - 3.87E+01	2.70E+01

\* 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
<b><u>Discharge</u></b>				
27	1/6/2004 - 2/3/2004	Be-7	* - 2.94E+00	1.61E+01
		K-40	* - 4.51E+01	4.80E+01
		Mn-54	* 3.94E-01	2.52E+00
		Co-58	* 2.07E-01	2.18E+00
		Fe-59	* 1.85E+00	1.11E+01
		Co-60	* 3.35E+00	4.69E+00
		Zn-65	* - 4.10E+00	1.27E+01
		Nb-95	* 1.10E+00	2.45E+00
		Zr-95	* 1.60E+00	3.78E+00
		Cs-134	* - 6.87E-01	2.32E+00
		Cs-137	* - 7.18E-01	2.57E+00
		Ba-140	* 5.05E+00	1.01E+01
		La-140	* 2.33E-01	3.91E+00
		Ra-226	* - 5.01E+01	5.16E+01
		Th-228	8.87E+00	5.83E+00
	2/3/2004 - 3/2/2004	Be-7	* 3.00E+00	2.41E+01
		K-40	* 2.07E+01	1.00E+02
		Mn-54	* 8.65E-01	2.77E+00
		Co-58	* 5.68E-02	2.90E+00
		Fe-59	* 9.75E-01	7.28E+00
		Co-60	* - 2.55E+00	4.75E+00
		Zn-65	* - 9.41E-01	7.37E+00
		Nb-95	* - 3.31E-01	3.02E+00
		Zr-95	* 1.18E+00	4.55E+00
		Cs-134	* - 1.04E+00	3.07E+00
		Cs-137	* - 3.10E+00	3.80E+00
		Ba-140	* 6.66E+00	1.56E+01
		La-140	* - 1.16E+00	6.10E+00
		Ra-226	* - 6.77E+01	6.43E+01
		Th-228	* 5.08E+00	7.86E+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	3/2/2004 - 4/6/2004	Be-7	* 1.86E+01	1.39E+01
		K-40	* 4.34E+01	4.45E+01
		Mn-54	* - 1.58E+00	1.70E+00
		Co-58	* - 6.64E-01	1.64E+00
		Fe-59	* 1.02E+00	3.28E+00
		Co-60	* - 3.55E-02	1.59E+00
		Zn-65	* - 1.08E+00	3.60E+00
		Nb-95	* - 2.01E-01	1.57E+00
		Zr-95	* 4.60E-01	2.61E+00
		Cs-134	* - 3.44E-01	1.40E+00
		Cs-137	* - 3.96E-01	1.76E+00
		Ba-140	* 1.71E+00	8.15E+00
		La-140	* - 6.11E-01	2.46E+00
		Ra-226	* - 1.54E+01	4.29E+01
		Th-228	* 1.18E+01	3.40E+01
	4/6/2004 - 4/30/2004	Be-7	* 7.77E+00	7.78E+00
		K-40	* - 2.89E+01	1.85E+01
		Mn-54	* - 1.15E-01	8.94E-01
		Co-58	* - 7.62E-02	8.98E-01
		Fe-59	* 3.08E-01	1.80E+00
		Co-60	* 1.19E-01	9.52E-01
		Zn-65	* - 4.97E+00	2.11E+00
		Nb-95	* - 6.21E-01	1.03E+00
		Zr-95	* 4.14E-01	1.51E+00
		Cs-134	* - 3.33E+00	1.00E+00
		Cs-137	* - 7.00E-01	1.15E+00
		Ba-140	* 3.68E+00	3.92E+00
		La-140	* - 5.90E-01	1.34E+00
		Ra-226	* 8.38E+00	3.45E+01
		Th-228	* - 1.12E+02	2.26E+01

\* 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
<b><u>Discharge</u></b>				
27	4/30/2004 - 6/2/2004	Be-7	* 2.42E+00	9.71E+00
		K-40	* 1.19E+00	2.39E+01
		Mn-54	* - 4.11E-01	1.07E+00
		Co-58	* - 2.66E-01	1.13E+00
		Fe-59	* 1.46E+00	2.42E+00
		Co-60	* 4.78E-01	1.11E+00
		Zn-65	* - 4.51E+00	2.56E+00
		Nb-95	* 2.92E-01	1.18E+00
		Zr-95	* 1.36E+00	2.02E+00
		Cs-134	* - 2.20E+00	1.11E+00
		Cs-137	* 8.88E-01	1.25E+00
		Ba-140	* 3.64E-01	5.51E+00
		La-140	* - 2.31E+00	1.95E+00
		Ra-226	* - 1.67E+01	3.09E+01
		Th-228	* - 4.38E+01	2.15E+01
	6/2/2004 - 7/7/2004	Be-7	* 6.00E+00	8.86E+00
		K-40	* 9.80E+00	2.31E+01
		Mn-54	* 5.48E-02	1.05E+00
		Co-58	* 7.72E-01	1.01E+00
		Fe-59	* - 2.20E+00	1.99E+00
		Co-60	* 1.53E-01	1.10E+00
		Zn-65	* - 2.83E+00	2.17E+00
		Nb-95	* 6.44E-01	1.09E+00
		Zr-95	* 2.56E-01	1.85E+00
		Cs-134	* - 4.21E+00	1.11E+00
		Cs-137	* 8.16E-01	1.12E+00
		Ba-140	* 3.17E+00	4.72E+00
		La-140	* - 6.92E-01	1.67E+00
		Ra-226	* 1.64E+00	3.44E+01
		Th-228	* - 5.75E+01	2.46E+01

\* 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
<b><u>Discharge</u></b>				
27	7/7/2004 - 8/3/2004	Be-7	* 6.15E+00	1.77E+01
		K-40	* - 2.50E+01	3.60E+01
		Mn-54	* - 1.23E-01	1.94E+00
		Co-58	* 2.72E+00	1.92E+00
		Fe-59	* - 2.20E+00	4.16E+00
		Co-60	* - 1.04E+00	1.91E+00
		Zn-65	* - 3.31E+00	5.11E+00
		Nb-95	* 6.17E-01	1.99E+00
		Zr-95	* - 1.70E+00	3.38E+00
		Cs-134	* - 5.72E+00	2.24E+00
		Cs-137	* 1.32E-01	2.17E+00
		Ba-140	* 4.20E+00	8.06E+00
		La-140	* 1.77E-01	2.79E+00
		Ra-226	* - 3.49E+01	5.51E+01
		Th-228	* - 8.10E+01	4.43E+01
	8/3/2004 - 9/1/2004	Be-7	* 1.64E+00	6.96E+00
		K-40	* 4.81E+00	1.55E+01
		Mn-54	* - 6.19E-01	7.74E-01
		Co-58	* - 3.52E-01	7.69E-01
		Fe-59	* 1.96E-01	1.59E+00
		Co-60	* 5.34E-02	7.25E-01
		Zn-65	* - 4.12E+00	1.69E+00
		Nb-95	* 2.07E-01	8.10E-01
		Zr-95	* - 3.80E-01	1.36E+00
		Cs-134	* - 3.27E+00	8.41E-01
		Cs-137	* 4.47E-01	8.35E-01
		Ba-140	* 2.84E+00	4.16E+00
		La-140	* - 1.72E-01	1.41E+00
		Ra-226	* 3.68E+01	3.69E+01
		Th-228	* - 6.55E+01	2.28E+01

\* 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
<b><u>Discharge</u></b>				
27	9/1/2004 - 10/5/2004	Be-7	* 1.01E+01	1.56E+01
		K-40	* 3.21E+01	4.94E+01
		Mn-54	* 2.39E-01	1.77E+00
		Co-58	* 1.08E+00	1.88E+00
		Fe-59	* 3.14E+00	4.01E+00
		Co-60	* - 6.67E-01	1.70E+00
		Zn-65	* 1.53E+00	4.49E+00
		Nb-95	* 2.57E-01	1.92E+00
		Zr-95	* 1.93E+00	3.27E+00
		Cs-134	* - 7.37E+00	2.17E+00
		Cs-137	* - 4.25E-01	1.97E+00
		Ba-140	* 3.58E+00	8.88E+00
		La-140	* - 1.01E+00	2.97E+00
		Ra-226	* 7.66E+00	6.14E+01
		Th-228	* - 1.32E+01	4.20E+01
	10/5/2004 - 11/2/2004	Be-7	* 5.23E+00	1.52E+01
		K-40	* - 5.76E+01	3.56E+01
		Mn-54	* - 6.94E-01	1.75E+00
		Co-58	* - 2.28E-02	2.03E+00
		Fe-59	* - 1.45E-01	3.59E+00
		Co-60	* 3.27E-02	1.88E+00
		Zn-65	* - 3.80E+00	4.08E+00
		Nb-95	* - 1.03E+00	1.96E+00
		Zr-95	* 1.32E+00	3.21E+00
		Cs-134	* - 1.54E+00	1.94E+00
		Cs-137	* 1.27E-01	1.90E+00
		Ba-140	* 4.18E+00	7.92E+00
		La-140	* - 1.36E+00	2.87E+00
		Ra-226	* - 1.19E+01	5.02E+01
		Th-228	* - 5.89E+01	3.80E+01

\* 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	11/2/2004 - 12/1/2004	Be-7	* 1.20E+01	1.68E+01
		K-40	* 1.03E+01	3.15E+01
		Mn-54	* - 1.37E+00	1.58E+00
		Co-58	* 8.33E-01	1.59E+00
		Fe-59	* 1.64E+00	3.85E+00
		Co-60	* 3.94E-01	1.43E+00
		Zn-65	* 1.42E+00	3.87E+00
		Nb-95	* 2.54E-01	1.63E+00
		Zr-95	* 7.40E-01	3.09E+00
		Cs-134	* - 2.24E+00	1.74E+00
		Cs-137	* 1.81E-01	1.62E+00
		Ba-140	* - 1.47E+00	8.61E+00
		La-140	* 2.08E+00	2.83E+00
		Ra-226	* 2.60E+01	6.56E+01
		Th-228	* - 5.36E+01	3.99E+01
	12/1/2004 - 1/4/2005	Be-7	* 5.39E+00	8.01E+00
		K-40	* - 1.41E+01	1.84E+01
		Mn-54	* 3.00E-01	9.51E-01
		Co-58	* - 2.89E-01	9.57E-01
		Fe-59	* 1.23E+00	1.90E+00
		Co-60	* 1.13E+00	9.40E-01
		Zn-65	* - 5.92E+00	2.19E+00
		Nb-95	* 8.71E-02	9.64E-01
		Zr-95	* - 9.54E-01	1.67E+00
		Cs-134	* - 6.82E+00	1.11E+00
		Cs-137	* - 4.14E-01	9.78E-01
		Ba-140	* 2.78E+00	4.53E+00
		La-140	* - 1.69E+00	1.52E+00
		Ra-226	* 2.80E+00	2.69E+01
		Th-228	* - 2.51E+00	2.57E+01

\* 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	3/2/2004	Be-7	* - 7.04E-02	1.49E+01
		K-40	* 1.08E+01	4.52E+01
		Mn-54	* 7.70E-01	1.67E+00
		Co-58	* - 3.16E-01	1.68E+00
		Fe-59	* 7.51E-01	3.29E+00
		Co-60	* - 7.29E-01	1.58E+00
		Zn-65	* - 6.02E+00	4.00E+00
		Nb-95	* 2.41E+00	1.70E+00
		Zr-95	* - 1.19E+00	2.98E+00
		Cs-134	* - 6.46E-01	1.82E+00
		Cs-137	* - 3.55E-01	1.70E+00
		Ba-140	* - 4.17E+00	9.00E+00
		La-140	* - 1.86E+00	2.77E+00
		Ra-226	* 5.74E+00	4.89E+01
		Th-228	* 7.83E-01	4.21E+00
	6/2/2004	Be-7	* 4.32E+00	1.45E+01
		K-40	* - 1.22E+01	2.94E+01
		Mn-54	* 6.90E-01	1.83E+00
		Co-58	* - 6.44E-01	1.69E+00
		Fe-59	* 2.48E+00	3.65E+00
		Co-60	* 6.73E-01	1.81E+00
		Zn-65	* - 1.88E+00	4.22E+00
		Nb-95	* 9.17E-01	1.75E+00
		Zr-95	* 1.73E+00	2.99E+00
		Cs-134	* - 1.44E+00	1.96E+00
		Cs-137	* - 1.78E+00	1.79E+00
		Ba-140	* - 6.98E+00	8.67E+00
		La-140	* 4.77E+00	3.00E+00
		Ra-226	* 2.75E+01	4.42E+01
		Th-228	* 3.11E+01	3.93E+01

\* 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	9/1/2004	Be-7	* 1.14E+00	5.99E+00
		K-40	* - 3.71E+01	1.58E+01
		Mn-54	* - 2.99E-02	6.32E-01
		Co-58	* - 8.45E-01	6.59E-01
		Fe-59	* 2.67E-03	1.43E+00
		Co-60	* 1.42E+00	1.92E+00
		Zn-65	* 1.50E+00	1.45E+00
		Nb-95	* 2.86E-01	7.13E-01
		Zr-95	* - 1.65E-01	1.22E+00
		Cs-134	* 1.55E-01	6.77E-01
		Cs-137	* 3.49E-01	7.25E-01
		Ba-140	* 8.89E-01	3.42E+00
		La-140	* 4.42E-01	1.24E+00
		Ra-226	* 9.38E+00	2.90E+01
		Th-228	* 2.29E+01	2.75E+01
	12/1/2004	Be-7	* 3.81E+00	6.57E+00
		K-40	1.62E+02	2.08E+01
		Mn-54	* 8.88E-01	6.39E-01
		Co-58	* 6.88E-02	6.80E-01
		Fe-59	* - 1.32E+00	1.52E+00
		Co-60	* 2.94E-01	6.56E-01
		Zn-65	* 4.12E-01	1.53E+00
		Nb-95	* - 6.44E-01	7.22E-01
		Zr-95	* - 1.25E-01	1.19E+00
		Cs-134	* 1.11E-01	6.93E-01
		Cs-137	* 2.81E-02	7.41E-01
		Ba-140	* 2.06E+00	3.86E+00
		La-140	* - 8.68E-01	1.13E+00
		Ra-226	* 3.78E+00	3.85E+01
		Th-228	* 1.19E+01	1.79E+01

\* 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	3/2/2004	Be-7	* 4.85E+00	1.51E+01
		K-40	* - 2.42E+01	3.76E+01
		Mn-54	* 1.11E+00	1.84E+00
		Co-58	* - 5.67E-02	1.86E+00
		Fe-59	* 2.94E+00	4.15E+00
		Co-60	* 7.96E-01	1.95E+00
		Zn-65	* - 1.79E+01	4.57E+00
		Nb-95	* 8.29E-01	1.95E+00
		Zr-95	* - 8.82E-01	3.25E+00
		Cs-134	* - 1.59E+01	2.29E+00
		Cs-137	* 2.39E-01	1.97E+00
		Ba-140	* - 5.91E+00	9.48E+00
		La-140	* - 4.37E-01	3.53E+00
		Ra-226	* - 7.57E-01	4.77E+01
		Th-228	* - 7.73E+00	3.69E+00
	6/2/2004	Be-7	* 7.72E-01	9.81E+00
		K-40	* - 6.33E+00	2.23E+01
		Mn-54	* 2.32E-01	1.09E+00
		Co-58	* - 3.71E-02	1.08E+00
		Fe-59	* 9.18E-01	2.22E+00
		Co-60	* 1.35E-01	1.15E+00
		Zn-65	* - 1.87E+00	2.56E+00
		Nb-95	* 8.03E-01	1.13E+00
		Zr-95	* - 1.13E+00	1.99E+00
		Cs-134	* 5.22E-01	1.12E+00
		Cs-137	* - 1.63E+00	1.35E+00
		Ba-140	* - 3.53E-01	5.61E+00
		La-140	* - 3.72E-01	1.69E+00
		Ra-226	* 2.23E+01	1.69E+02
		Th-228	* 4.41E+01	3.37E+01

\* 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	9/1/2004	Be-7	* 1.04E+00	5.72E+00
		K-40	* 2.37E+01	3.31E+01
		Mn-54	* - 3.26E-01	6.34E-01
		Co-58	* - 3.85E-01	7.32E-01
		Fe-59	* 1.22E+00	2.21E+00
		Co-60	* 1.75E+00	1.73E+00
		Zn-65	* 1.03E+00	2.69E+00
		Nb-95	* 4.12E-01	8.10E-01
		Zr-95	* - 3.89E-01	1.20E+00
		Cs-134	* - 2.69E-01	7.30E-01
		Cs-137	* 1.07E+00	7.30E-01
		Ba-140	* 3.38E-01	3.42E+00
		La-140	* - 1.07E+00	1.17E+00
		Ra-226	* - 9.38E+00	2.20E+01
		Th-228	* - 8.16E+01	2.02E+01
	12/1/2004	Be-7	* - 4.52E+00	6.65E+00
		K-40	* 7.29E+00	2.53E+01
		Mn-54	* - 3.54E-01	7.10E-01
		Co-58	* 6.05E-02	7.42E-01
		Fe-59	* - 6.67E-01	1.53E+00
		Co-60	* 6.94E-01	7.23E-01
		Zn-65	* 3.46E-01	1.52E+00
		Nb-95	* 1.06E-01	8.14E-01
		Zr-95	* 3.54E-01	1.36E+00
		Cs-134	* 3.71E-01	7.46E-01
		Cs-137	* 1.46E-01	8.65E-01
		Ba-140	* 2.35E+00	4.04E+00
		La-140	* 4.02E-02	1.25E+00
		Ra-226	* 1.53E+01	3.98E+01
		Th-228	* 7.17E+01	1.61E+01

\* 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	3/2/2004	Be-7	* 6.34E+00	1.47E+01
		K-40	3.72E+02	4.97E+01
		Mn-54	* - 1.26E+00	1.58E+00
		Co-58	* 9.42E-01	1.53E+00
		Fe-59	* - 1.67E+00	3.29E+00
		Co-60	* - 4.79E-01	1.56E+00
		Zn-65	* 1.58E+00	3.34E+00
		Nb-95	* - 1.88E+00	1.61E+00
		Zr-95	* - 2.08E+00	2.66E+00
		Cs-134	* - 8.06E-01	1.64E+00
		Cs-137	* 6.01E-01	1.56E+00
		Ba-140	* 4.57E+00	8.85E+00
		La-140	* - 5.26E-01	2.70E+00
		Ra-226	* - 7.89E+01	5.36E+01
		Th-228	* 6.26E+00	4.24E+00
	6/2/2004	Be-7	* - 2.47E+00	7.32E+00
		K-40	* 2.31E+01	2.91E+01
		Mn-54	* 9.54E-01	6.82E-01
		Co-58	* - 2.94E-01	7.15E-01
		Fe-59	* 4.69E-02	1.50E+00
		Co-60	* - 3.67E-01	7.66E-01
		Zn-65	* - 2.15E-01	1.54E+00
		Nb-95	* 2.77E-01	7.65E-01
		Zr-95	* - 1.12E-01	1.34E+00
		Cs-134	* - 2.13E-01	7.47E-01
		Cs-137	* - 9.29E-02	7.55E-01
		Ba-140	* 4.15E+00	3.90E+00
		La-140	* - 8.92E-01	1.34E+00
		Ra-226	* 5.28E+00	3.77E+01
		Th-228	* - 4.14E+01	1.64E+01

\* 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	9/1/2004	Be-7	* - 7.70E-01	7.70E+00
		K-40	* - 6.03E+00	1.68E+01
		Mn-54	* - 5.45E-01	8.37E-01
		Co-58	* - 3.94E-01	8.27E-01
		Fe-59	* - 1.52E+00	1.65E+00
		Co-60	* - 3.08E+00	1.07E+00
		Zn-65	* - 2.66E+00	1.85E+00
		Nb-95	* - 6.57E-01	8.49E-01
		Zr-95	* - 4.96E-01	1.46E+00
		Cs-134	* - 2.68E+00	8.84E-01
		Cs-137	* - 4.46E-02	8.70E-01
		Ba-140	* - 3.04E+00	4.22E+00
		La-140	* - 2.88E-02	1.36E+00
		Ra-226	* - 1.03E+01	2.75E+01
		Th-228	* - 2.86E+01	2.02E+01
	12/1/2004	Be-7	* - 1.16E+01	1.65E+01
		K-40	* - 2.52E-01	2.22E+01
		Mn-54	* - 2.84E-01	7.45E-01
		Co-58	* - 1.53E-01	1.40E+00
		Fe-59	* - 2.47E+00	5.19E+00
		Co-60	* - 1.11E-01	1.79E+00
		Zn-65	* - 1.02E-01	1.63E+00
		Nb-95	* - 2.25E+00	1.79E+00
		Zr-95	* - 2.60E+00	2.95E+00
		Cs-134	* - 3.17E-01	6.28E-01
		Cs-137	* - 6.22E-01	6.54E-01
		Ba-140	* - 2.00E+02	4.19E+02
		La-140	* - 8.69E+01	1.40E+02
		Ra-226	* - 3.47E+01	3.48E+01
		Th-228	* - 1.29E+01	2.89E+01

\* 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)	-3.29E+00	-1.28E+02	3.96E+01	12	0
K-40	(C)	-3.05E+01	-9.48E+01	9.14E+00	12	0
Mn-54	(I)	-1.84E-01	-1.68E+00	2.45E+00	12	0
Mn-54	(C)	-4.25E-01	-1.67E+00	7.61E-01	12	0
Co-58	(I)	-4.32E-01	-2.50E+00	1.02E+00	12	0
Co-58	(C)	-6.77E-01	-2.60E+00	6.11E-01	12	0
Fe-59	(I)	-6.98E-01	-4.89E+00	1.40E+00	12	0
Fe-59	(C)	-4.14E-01	-4.08E+00	3.24E+00	12	0
Co-60	(I)	-8.08E-02	-1.91E+00	2.29E+00	12	0
Co-60	(C)	2.63E-01	-1.63E+00	9.33E-01	12	0
Zn-65	(I)	-1.85E+00	-9.49E+00	1.39E+00	12	0
Zn-65	(C)	-3.73E+00	-9.04E+00	-1.00E+00	12	0
Nb-95	(I)	8.57E-01	-1.43E+00	5.10E+00	12	0
Nb-95	(C)	6.47E-02	-1.85E+00	1.13E+00	12	0
Zr-95	(I)	-6.77E-02	-2.88E+00	2.91E+00	12	0
Zr-95	(C)	-5.73E-01	-1.57E+00	5.52E-01	12	0

(I) Indicator Stations  
 (C) Control Stations

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>						
Cs-134	(I)	-2.22E+00	-1.39E+01	1.15E+00	12	0
Cs-134	(C)	-3.01E+00	-7.11E+00	1.36E+00	12	0
Cs-137	(I)	5.81E-02	-1.86E+00	1.59E+00	12	0
Cs-137	(C)	6.83E-02	-2.57E+00	1.96E+00	12	0
Ba-140	(I)	-3.63E-01	-6.77E+00	1.19E+01	12	0
Ba-140	(C)	-2.33E-01	-4.31E+00	4.61E+00	12	0
La-140	(I)	6.16E-01	-2.24E+00	5.42E+00	12	0
La-140	(C)	2.06E-01	-1.36E+00	3.81E+00	12	0
Ra-226	(I)	-1.65E+01	-1.22E+02	4.57E+01	12	0
Ra-226	(C)	-5.64E+00	-5.45E+01	2.08E+01	12	0
Th-228	(I)	1.08E+01	-7.16E+01	2.80E+02	12	0
Th-228	(C)	-2.84E+01	-6.95E+01	1.05E+01	12	0

(I) Indicator Stations  
 (C) Control Stations



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)	-4.03E+00	-5.76E+01	4.34E+01	12	0
Mn-54	(I)	-2.55E-01	-1.58E+00	8.65E-01	12	0
Co-58	(I)	3.33E-01	-6.64E-01	2.72E+00	12	0
Fe-59	(I)	6.06E-01	-2.20E+00	3.14E+00	12	0
Co-60	(I)	1.18E-01	-2.55E+00	3.35E+00	12	0
Zn-65	(I)	-2.72E+00	-5.92E+00	1.53E+00	12	0
Nb-95	(I)	1.06E-01	-1.03E+00	1.10E+00	12	0
Zr-95	(I)	5.19E-01	-1.70E+00	1.93E+00	12	0
Cs-134	(I)	-3.23E+00	-7.37E+00	-3.44E-01	12	0
Cs-137	(I)	-2.64E-01	-3.10E+00	8.88E-01	12	0
Ba-140	(I)	3.06E+00	-1.47E+00	6.66E+00	12	0
La-140	(I)	-5.92E-01	-2.31E+00	2.08E+00	12	0
Ra-226	(I)	-9.45E+00	-6.77E+01	3.68E+01	12	0
Th-228	(I)	-3.85E+01	-1.12E+02	1.18E+01	12	1

(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)	4.28E+01	-3.71E+01	3.72E+02	12	2
Mn-54	(I)	2.01E-01	-1.26E+00	1.11E+00	12	0
Co-58	(I)	-1.05E-01	-8.45E-01	9.42E-01	12	0
Fe-59	(I)	3.13E-01	-2.47E+00	2.94E+00	12	0
Co-60	(I)	1.02E-01	-3.08E+00	1.75E+00	12	0
Zn-65	(I)	-2.15E+00	-1.79E+01	1.58E+00	12	0
Nb-95	(I)	1.60E-01	-2.25E+00	2.41E+00	12	0
Zr-95	(I)	-5.08E-01	-2.60E+00	1.73E+00	12	0
Cs-134	(I)	-1.71E+00	-1.59E+01	5.22E-01	12	0
Cs-137	(I)	-6.32E-02	-1.78E+00	1.07E+00	12	0
Ba-140	(I)	1.67E+01	-6.98E+00	2.00E+02	12	0
La-140	(I)	-7.30E+00	-8.69E+01	4.77E+00	12	0
Ra-226	(I)	2.05E+00	-7.89E+01	3.47E+01	12	0
Th-228	(I)	2.48E+00	-8.16E+01	7.17E+01	12	0

(I) Indicator Stations

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

LOCATION	COLLECTION		RESULT	OVERALL UNCERTAINTY
	PERIOD	NUCLIDE		
01	5/17/2004	K-40	1.56E+04	1.46E+03
		Cs-134	* - 1.75E+00	3.47E+01
		Cs-137	* 8.08E+01	4.24E+01
		Ra-226	* 5.07E+02	6.54E+02
		Th-228	2.34E+03	1.02E+03
07	5/17/2004	K-40	1.95E+04	1.42E+03
		Cs-134	* - 9.67E-01	3.79E+01
		Cs-137	3.57E+02	7.37E+01
		Ra-226	2.06E+03	1.14E+03
		Th-228	2.37E+03	1.25E+03
		Sr-90	4.21E+01	9.83E+00
9A Control	5/17/2004	K-40	1.42E+04	1.35E+03
		Cs-134	* - 3.38E+01	3.98E+01
		Cs-137	* 5.95E+01	3.71E+01
		Ra-226	2.34E+03	1.08E+03
		Th-228	2.08E+03	1.04E+03
21	5/17/2004	K-40	1.43E+04	1.28E+03
		Cs-134	* 1.51E+01	2.04E+01
		Cs-137	* 4.25E+00	2.14E+01
		Ra-226	1.14E+03	7.82E+02
		Th-228	1.20E+03	8.95E+02
23	5/17/2004	K-40	1.57E+04	1.16E+03
		Cs-134	* - 1.48E+01	3.27E+01
		Cs-137	1.25E+02	5.08E+01
		Ra-226	1.38E+03	1.17E+03
		Th-228	2.57E+03	9.23E+02
		Sr-90	2.59E+01	8.64E+00

\* 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)	1.63E+04	1.43E+04	1.95E+04	4	4
K-40	(C)	1.42E+04	1.42E+04	1.42E+04	1	1
Cs-134	(I)	-6.04E-01	-1.48E+01	1.51E+01	4	0
Cs-134	(C)	-3.38E+01	-3.38E+01	-3.38E+01	1	0
Cs-137	(I)	1.42E+02	4.25E+00	3.57E+02	4	2
Cs-137	(C)	5.95E+01	5.95E+01	5.95E+01	1	0
Ra-226	(I)	1.27E+03	5.07E+02	2.06E+03	4	3
Ra-226	(C)	2.34E+03	2.34E+03	2.34E+03	1	1
Th-228	(I)	2.12E+03	1.20E+03	2.57E+03	4	4
Th-228	(C)	2.08E+03	2.08E+03	2.08E+03	1	1
Sr-90	(I)	3.40E+01	2.59E+01	4.21E+01	2	2

(I) Indicator Stations  
 (C) Control Stations

TABLE A-9.1  
**GAMMA SPECTROMETRY OF SEDIMENT**  
 Results in pCi/kilogram

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
33 Control (Upstream)	3/25/2004	K-40	1.77E+04	6.64E+02
		Co-57	* 9.12E+00	9.54E+00
		Co-60	* 4.41E+00	1.22E+01
		Cs-134	* - 3.56E+00	1.07E+01
		Cs-137	4.17E+01	2.48E+01
		Eu-152	* 1.05E+01	3.22E+01
		Ra-226	1.23E+03	4.95E+02
		Ac-228	8.29E+02	1.10E+02
		Th-228	1.68E+03	4.38E+02
		U-235	* - 1.22E+01	7.44E+01
	12/7/2004	K-40	1.77E+04	1.33E+03
		Co-57	* 9.16E+00	3.05E+01
		Co-60	* - 5.27E-01	2.93E+01
		Cs-134	* - 2.01E+01	3.35E+01
		Cs-137	1.24E+02	5.09E+01
		Eu-152	* - 4.42E+01	9.95E+01
		Ra-226	3.34E+03	1.45E+03
		Ac-228	2.26E+03	3.04E+02
		Th-228	6.19E+03	1.04E+03
		U-235	* 3.21E+01	2.45E+02
34 (Downstream)	3/25/2004	K-40	1.66E+04	4.72E+02
		Co-57	* 9.26E+00	9.91E+00
		Co-60	* 1.12E+01	1.18E+01
		Cs-134	* - 1.03E+01	1.22E+01
		Cs-137	1.83E+02	2.36E+01
		Eu-152	* 4.49E+00	3.27E+01
		Ra-226	1.75E+03	4.24E+02
		Ac-228	8.63E+02	8.77E+01
		Th-228	2.44E+03	4.56E+02
		U-235	* - 6.99E+00	7.38E+01
	12/7/2004	K-40	1.76E+04	1.06E+03
		Co-57	* 1.53E+01	2.03E+01
		Co-60	* 2.38E+00	2.49E+01
		Cs-134	* - 7.12E+00	2.53E+01
		Cs-137	1.46E+02	4.20E+01
		Eu-152	* 2.59E+01	7.45E+01
		Ra-226	1.23E+03	8.78E+02
		Ac-228	6.77E+02	1.71E+02
		Th-228	2.52E+03	7.39E+02
		U-235	* - 4.43E+01	1.63E+02

\* Denotes a result less than the detection limit.

TABLE A-9.2  
**GAMMA SPECTROMETRY OF SEDIMENT - SUMMARY**  
 Result in pCi/kilogram

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
K-40	(I)	1.71E+04	1.66E+04	1.76E+04	2	2
K-40	(C)	1.77E+04	1.77E+04	1.77E+04	2	2
Co-57	(I)	1.23E+01	9.26E+00	1.53E+01	2	0
Co-57	(C)	9.14E+00	9.12E+00	9.16E+00	2	0
Co-60	(I)	6.79E+00	2.38E+00	1.12E+01	2	0
Co-60	(C)	1.94E+00	-5.27E-01	4.41E+00	2	0
Cs-134	(I)	-8.71E+00	-1.03E+01	-7.12E+00	2	0
Cs-134	(C)	-1.18E+01	-2.01E+01	-3.56E+00	2	0
Cs-137	(I)	1.65E+02	1.46E+02	1.83E+02	2	2
Cs-137	(C)	8.29E+01	4.17E+01	1.24E+02	2	2
Eu-152	(I)	1.52E+01	4.49E+00	2.59E+01	2	0
Eu-152	(C)	-1.69E+01	-4.42E+01	1.05E+01	2	0
Ra-226	(I)	1.49E+03	1.23E+03	1.75E+03	2	2
Ra-226	(C)	2.29E+03	1.23E+03	3.34E+03	2	2
Ac-228	(I)	7.70E+02	6.77E+02	8.63E+02	2	2
Ac-228	(C)	1.54E+03	8.29E+02	2.26E+03	2	2

(I) Indicator Stations  
 (C) Control Stations

TABLE A-9.2 (cont.)  
**GAMMA SPECTROMETRY OF SEDIMENT - SUMMARY**  
 Result in pCi/kilogram

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Th-228	(I)	2.48E+03	2.44E+03	2.52E+03	2	2
Th-228	(C)	3.94E+03	1.68E+03	6.19E+03	2	2
U-235	(I)	-2.56E+01	-4.43E+01	-6.99E+00	2	0
U-235	(C)	9.95E+00	-1.22E+01	3.21E+01	2	0

(I) Indicator Stations  
 (C) Control Stations

TABLE A-10.1  
**GAMMA SPECTROMETRY OF FISH**  
 Results in pCi/kilogram (wet)

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
30 Steelhead	11/2/2004	K-40	3.36E+03	8.65E+02
		Mn-54	* - 7.75E+00	3.05E+01
		Co-58	* - 1.11E+01	4.00E+01
		Fe-59	* - 9.37E+01	9.61E+01
		Co-60	* 5.51E+00	2.78E+01
		Zn-65	* - 1.25E+01	7.19E+01
		Cs-134	* 6.82E+00	2.96E+01
		Cs-137	* 1.43E+01	2.44E+01
		Ra-226	* 2.91E+02	5.21E+02
		Th-228	* - 4.75E+02	4.75E+02
30 Carp	11/2/2004	K-40	2.86E+03	5.89E+02
		Mn-54	* - 6.55E+00	2.24E+01
		Co-58	* - 1.43E+01	2.59E+01
		Fe-59	* - 5.77E+01	7.15E+01
		Co-60	* - 8.70E+00	2.16E+01
		Zn-65	* 4.15E+01	5.05E+01
		Cs-134	* 7.48E+00	2.04E+01
		Cs-137	* 1.24E+00	2.20E+01
		Ra-226	* 2.07E+02	5.45E+02
		Th-228	* 3.33E+02	5.32E+02
30 Sucker	11/2/2004	K-40	4.09E+03	6.36E+02
		Mn-54	* - 1.14E+01	2.10E+01
		Co-58	* - 7.25E+00	2.20E+01
		Fe-59	* - 6.23E+00	6.52E+01
		Co-60	* - 9.56E+00	1.58E+01
		Zn-65	* - 6.34E+01	5.25E+01
		Cs-134	* 2.10E+01	2.07E+01
		Cs-137	* - 5.06E+00	1.95E+01
		Ra-226	* 7.66E+01	5.67E+02
		Th-228	* - 4.56E+02	3.69E+02

\* Denotes a result less than the detection limit.



TABLE 10-A.1 (Cont.)  
**GAMMA SPECTROMETRY OF FISH**  
 Results in pCi/kilogram (wet)

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
38 Control Steelhead	11/9/2004	K-40	3.54E+03	6.46E+02
		Mn-54	* 4.49E+00	2.02E+01
		Co-58	* - 2.43E+00	2.58E+01
		Fe-59	* - 1.43E+01	6.01E+01
		Co-60	* 7.22E+00	2.11E+01
		Zn-65	* 1.09E+01	5.19E+01
		Cs-134	* - 7.07E+00	2.33E+01
		Cs-137	* - 6.65E+00	1.98E+01
		Ra-226	* 6.45E+01	3.77E+02
		Th-228	* - 6.28E+01	4.24E+02
38 Control Carp	11/9/2004	K-40	2.55E+03	5.50E+02
		Mn-54	* - 1.32E+01	2.25E+01
		Co-58	* 8.07E+00	2.78E+01
		Fe-59	* 2.30E+01	6.18E+01
		Co-60	* 1.85E+01	2.31E+01
		Zn-65	* - 6.57E+01	5.93E+01
		Cs-134	* - 8.76E+00	2.62E+01
		Cs-137	* 9.60E+00	2.22E+01
		Ra-226	* - 9.21E+01	4.49E+02
		Th-228	* 2.43E+02	4.34E+02
38 Control Sucker	11/9/2004	K-40	4.16E+03	6.79E+02
		Mn-54	* 2.86E+00	2.29E+01
		Co-58	* - 1.01E+01	2.96E+01
		Fe-59	* - 2.43E+01	6.31E+01
		Co-60	* - 2.50E+00	2.35E+01
		Zn-65	* - 1.13E+02	6.79E+01
		Cs-134	* 2.02E+01	2.54E+01
		Cs-137	* 7.89E+00	2.44E+01
		Ra-226	* 5.85E+02	8.25E+02
		Th-228	* 3.21E+02	5.17E+02

\* Denotes a result less than the detection limit.

TABLE A-10.2  
**GAMMA SPECTROMETRY OF FISH - SUMMARY**  
 Results in pCi/kilogram (wet)

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
K-40	(I)	3.44E+03	2.86E+03	4.09E+03	3	3
K-40	(C)	3.42E+03	2.55E+03	4.16E+03	3	3
Mn-54	(I)	-8.57E+00	-1.14E+01	-6.55E+00	3	0
Mn-54	(C)	-1.95E+00	-1.32E+01	4.49E+00	3	0
Co-58	(I)	-1.09E+01	-1.43E+01	-7.25E+00	3	0
Co-58	(C)	-1.49E+00	-1.01E+01	8.07E+00	3	0
Fe-59	(I)	-5.25E+01	-9.37E+01	-6.23E+00	3	0
Fe-59	(C)	-5.20E+00	-2.43E+01	2.30E+01	3	0
Co-60	(I)	-4.25E+00	-9.56E+00	5.51E+00	3	0
Co-60	(C)	7.74E+00	-2.50E+00	1.85E+01	3	0
Zn-65	(I)	-1.15E+01	-6.34E+01	4.15E+01	3	0
Zn-65	(C)	-5.59E+01	-1.13E+02	1.09E+01	3	0
Cs-134	(I)	1.18E+01	6.82E+00	2.10E+01	3	0
Cs-134	(C)	1.46E+00	-8.76E+00	2.02E+01	3	0
Cs-137	(I)	3.49E+00	-5.06E+00	1.43E+01	3	0
Cs-137	(C)	3.61E+00	-6.65E+00	9.60E+00	3	0

(I) Indicator Stations  
 (C) Control Stations

TABLE A-10.2  
**GAMMA SPECTROMETRY OF FISH - SUMMARY**

Results in pCi/kilogram (wet)

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Ra-226	(I)	1.92E+02	7.66E+01	2.91E+02	3	0
Ra-226	(C)	1.86E+02	-9.21E+01	5.85E+02	3	0
Th-228	(I)	-1.99E+02	-4.75E+02	3.33E+02	3	0
Th-228	(C)	1.67E+02	-6.28E+01	3.21E+02	3	0

(I) Indicator Stations

(C) Control Stations

TABLE A-11.1

**I-131 IN MILK**

Results in pCi/liter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
9B	1/20/2004	* - 5.61E-01	4.32E-01
	2/24/2004	* 7.02E-02	5.44E-01
	3/23/2004	* 4.30E-01	5.04E-01
	4/13/2004	* 4.73E-01	3.89E-01
	4/27/2004	* 2.38E-01	4.61E-01
	5/12/2004	(a)	
	5/25/2004	* - 1.60E+00	3.36E-01
	6/8/2004	* 9.54E-02	3.81E-01
	6/22/2004	* 2.04E-01	3.77E-01
	7/13/2004	* 6.71E-02	3.77E-01
	7/28/2004	* 1.64E-01	3.30E-01
	8/10/2004	* 1.99E-02	1.30E-01
	8/24/2004	* 1.67E-01	4.01E-01
	9/14/2004	* - 2.34E-01	3.70E-01
	9/28/2004	* 6.18E-01	6.44E-01
	10/12/2004	* 2.33E-01	3.93E-01
36	11/16/2004	* 2.41E-01	3.42E-01
	12/14/2004	* 1.47E-01	3.56E-01
	1/20/2004	* - 1.13E-01	5.59E-01
	2/24/2004	* 6.64E-01	5.97E-01
	3/23/2004	* 5.56E-02	4.31E-01
	4/13/2004	* 5.80E-01	4.13E-01
	4/27/2004	* 4.60E-01	6.11E-01
	5/12/2004	(a)	
	5/25/2004	* - 1.53E+00	3.23E-01
	6/8/2004	* - 3.45E-02	4.45E-01
	6/22/2004	* 8.96E-02	3.99E-01
	7/13/2004	* - 2.08E-01	4.46E-01
	7/28/2004	* - 6.86E-02	3.66E-01
	8/10/2004	* 1.21E-01	2.84E-01
	8/24/2004	* - 2.16E-01	4.98E-01
	9/14/2004	* 8.92E-02	2.39E-01
	9/28/2004	* 1.71E-01	4.34E-01
	10/12/2004	* 4.26E-01	5.06E-01
	11/16/2004	* 2.57E-02	3.21E-01
	12/14/2004	* 4.22E-01	5.13E-01

\* Denotes a result less than the detection limit.

(a) Milk collected 05/12/04, shipped 05/13/04 (Thursday). Fed Ex attempted to deliver 5/15/04 (Saturday), but the lab was closed. Fed Ex delivered on May 17, 2004 (Monday). The milk was curdled when received. As a result, the Lab was unable to analyze the milk for low level iodine.

TABLE A-11.2  
**I-131 IN MILK - SUMMARY**  
 Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
I-131	(I)	5.02E-02	-1.60E+00	6.64E-01	34	0

(I) Indicator Stations

TABLE A-12.1  
**GAMMA SPECTROMETRY OF MILK**  
 Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
9B	1/20/2004	K-40	1.36E+03	1.71E+02
		Cs-134	* - 8.74E-01	2.91E+00
		Cs-137	* - 2.77E+00	3.18E+00
		Ba-140	* - 3.65E+00	1.34E+01
		La-140	* - 2.93E+00	4.02E+00
	2/24/2004	K-40	1.24E+03	1.81E+02
		Cs-134	* - 1.89E+00	4.09E+00
		Cs-137	* 2.48E+00	4.08E+00
		Ba-140	* - 5.84E+00	1.57E+01
		La-140	* 1.69E+00	4.77E+00
	3/23/2004	K-40	1.33E+03	6.94E+01
		Cs-134	* - 1.19E+01	2.35E+00
		Cs-137	* 8.88E-01	2.03E+00
		Ba-140	* 3.27E-01	9.08E+00
		La-140	* - 3.63E-01	3.04E+00
	4/13/2004	K-40	1.30E+03	4.14E+01
		Cs-134	* - 4.42E+00	9.95E-01
		Cs-137	* - 2.85E-02	9.96E-01
		Ba-140	* - 8.89E-02	4.56E+00
		La-140	* - 5.70E-01	1.46E+00
	4/27/2004	K-40	1.30E+03	4.48E+01
		Cs-134	* - 7.94E+00	1.25E+00
		Cs-137	* - 9.78E-01	1.36E+00
		Ba-140	* 3.10E+00	5.34E+00
		La-140	* 7.41E-01	1.66E+00
	5/12/2004	K-40	1.35E+03	5.10E+01
		Cs-134	* - 4.88E+00	1.20E+00
		Cs-137	* - 2.89E-01	1.18E+00
		Ba-140	* 1.95E+00	5.19E+00
		La-140	* - 8.06E-01	1.68E+00
	5/25/2004	K-40	1.34E+03	4.95E+01
		Cs-134	* 1.88E-01	8.03E-01
		Cs-137	* 1.09E+00	8.45E-01
		Ba-140	* - 9.02E-02	4.34E+00
		La-140	* - 4.73E-01	1.31E+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	6/8/2004	K-40	1.14E+03	9.24E+01
		Cs-134	* - 1.40E+00	1.75E+00
		Cs-137	* - 1.79E-01	1.88E+00
		Ba-140	* - 3.58E+00	9.48E+00
		La-140	* - 1.32E+00	2.62E+00
	6/22/2004	K-40	1.23E+03	5.02E+01
		Cs-134	* 6.88E-02	8.20E-01
		Cs-137	* - 1.70E-01	9.01E-01
		Ba-140	* - 3.05E+00	4.53E+00
		La-140	* - 7.00E-01	1.30E+00
	7/13/2004	K-40	1.31E+03	1.14E+02
		CS-134	* 4.18E-01	1.89E+00
		CS-137	* 1.26E+00	2.10E+00
		BA-140	* 1.67E+00	9.12E+00
		LA-140	* 9.44E-01	2.13E+00
	7/28/2004	K-40	1.21E+03	8.14E+01
		CS-134	* 4.45E-01	1.42E+00
		CS-137	* - 1.55E+00	1.71E+00
		BA-140	* 1.73E+00	5.95E+00
		LA-140	* 1.77E-01	1.75E+00
	8/10/2004	K-40	1.27E+03	8.34E+01
		CS-134	* - 7.17E-01	2.80E+00
		CS-137	* - 2.15E-01	1.98E+00
		BA-140	* 3.90E-01	8.51E+00
		LA-140	* 4.15E-01	2.44E+00
	8/24/2004	K-40	1.20E+03	7.91E+01
		CS-134	* - 5.49E-01	1.92E+00
		CS-137	* 1.35E+00	2.09E+00
		BA-140	* 5.96E+00	8.65E+00
		LA-140	* 7.29E-01	2.59E+00
	9/14/2004	K-40	1.22E+03	9.13E+01
		CS-134	* - 1.80E-01	1.61E+00
		CS-137	* - 5.53E-01	1.99E+00
		BA-140	* - 2.27E+00	6.99E+00
		LA-140	* - 6.41E-01	2.06E+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	9/28/2004	K-40	1.15E+03	4.85E+01
		Cs-134	* 3.82E-02	7.48E-01
		Cs-137	* 5.77E-01	8.06E-01
		Ba-140	* 6.58E-01	3.78E+00
		La-140	* 4.92E-01	1.06E+00
	10/12/2004	K-40	1.21E+03	4.11E+01
		Cs-134	* - 5.48E+00	9.63E-01
		Cs-137	* - 1.50E-01	1.12E+00
		Ba-140	* - 2.77E+00	4.33E+00
		La-140	* 7.97E-02	1.47E+00
	11/16/2004	K-40	1.19E+03	9.47E+01
		Cs-134	* - 5.78E+00	2.76E+00
		Cs-137	* 4.67E-02	2.42E+00
		Ba-140	* - 2.90E-01	8.92E+00
		La-140	* - 9.90E-01	2.64E+00
	12/14/2004	K-40	1.04E+03	3.98E+01
		Cs-134	* - 6.67E+00	1.01E+00
		Cs-137	* - 4.22E-01	9.30E-01
		Ba-140	* - 2.96E+00	4.60E+00
		La-140	* 1.92E-01	1.38E+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	1/20/2004	K-40	1.34E+03	1.27E+02
		Cs-134	* 3.90E-01	3.34E+00
		Cs-137	* 1.64E+00	3.64E+00
		Ba-140	* - 2.88E+00	1.34E+01
		La-140	* 6.80E-01	3.98E+00
	2/24/2004	K-40	1.27E+03	1.64E+02
		Cs-134	* 1.80E+00	4.41E+00
		Cs-137	* - 8.09E-01	4.48E+00
		Ba-140	* 4.82E+00	1.69E+01
		La-140	* - 3.95E+00	6.08E+00
	3/23/2004	K-40	1.26E+03	9.44E+01
		Cs-134	* - 4.99E+00	2.53E+00
		Cs-137	* - 1.47E+00	3.08E+00
		Ba-140	* - 3.54E+00	1.19E+01
		La-140	* - 2.11E+00	3.96E+00
	4/13/2004	K-40	1.40E+03	5.62E+01
		Cs-134	* - 1.69E+00	1.28E+00
		Cs-137	* - 6.24E-02	1.60E+00
		Ba-140	* 1.86E+00	5.99E+00
		La-140	* - 7.73E-01	1.77E+00
	4/27/2004	K-40	1.38E+03	5.10E+01
		Cs-134	* - 4.22E-01	7.88E-01
		Cs-137	* 4.06E-02	9.31E-01
		Ba-140	* - 2.21E-01	4.41E+00
		La-140	* - 1.34E+00	1.29E+00
	5/12/2004	K-40	1.37E+03	5.40E+01
		Cs-134	* - 6.64E-01	1.23E+00
		Cs-137	* 5.61E-01	1.36E+00
		Ba-140	* - 5.43E+00	5.86E+00
		La-140	* - 7.31E-01	1.87E+00
	5/25/2004	K-40	1.37E+03	5.02E+01
		Cs-134	* - 1.54E-01	7.53E-01
		Cs-137	* - 1.18E-01	8.89E-01
		Ba-140	* 8.14E-01	4.09E+00
		La-140	* - 3.24E-01	9.61E-01

\* 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	6/8/2004	K-40	1.35E+03	3.92E+01
		Cs-134	* - 3.89E+00	9.98E-01
		Cs-137	* - 4.34E-01	8.76E-01
		Ba-140	* - 1.00E+00	4.43E+00
		La-140	* 1.78E+00	1.36E+00
	6/22/2004	K-40	1.32E+03	5.08E+01
		Cs-134	* - 2.06E-01	7.40E-01
		Cs-137	* 4.61E-01	9.20E-01
		Ba-140	* 2.95E+00	3.95E+00
		La-140	* - 7.42E-01	1.11E+00
	7/13/2004	K-40	1.33E+03	4.27E+01
		Cs-134	* - 4.74E+00	9.30E-01
		Cs-137	* - 3.17E-01	1.19E+00
		Ba-140	* 1.88E+00	4.23E+00
		La-140	* - 1.31E+00	1.29E+00
	7/28/2004	K-40	1.35E+03	8.46E+01
		Cs-134	* 8.85E-01	1.35E+00
		Cs-137	* - 1.03E-02	1.69E+00
		Ba-140	* - 1.63E+00	6.26E+00
		La-140	* 1.60E-01	1.62E+00
	8/10/2004	K-40	1.42E+03	8.12E+01
		Cs-134	* 2.46E+00	1.81E+00
		Cs-137	* - 3.69E-01	1.89E+00
		Ba-140	* 3.96E+00	8.35E+00
		La-140	* 5.26E-01	2.30E+00
	8/24/2004	K-40	1.47E+03	1.13E+02
		Cs-134	* 4.88E-01	1.89E+00
		Cs-137	* 1.51E-01	2.04E+00
		Ba-140	* 2.63E+00	8.90E+00
		La-140	* - 5.90E-01	2.33E+00
	9/14/2004	K-40	1.22E+03	8.70E+01
		Cs-134	* 2.72E-01	2.09E+00
		Cs-137	* 4.78E-01	2.31E+00
		Ba-140	* 7.93E+00	8.61E+00
		La-140	* - 2.81E-01	2.79E+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	9/28/2004	K-40	1.38E+03	1.07E+02
		Cs-134	* 7.88E-01	1.79E+00
		Cs-137	* - 1.62E-01	2.02E+00
		Ba-140	* 3.18E+00	8.92E+00
		La-140	* 2.57E+00	2.52E+00
	10/12/2004	K-40	1.30E+03	5.24E+01
		Cs-134	* - 2.24E+00	1.15E+00
		Cs-137	* - 8.27E-01	1.47E+00
		Ba-140	* 2.89E+00	5.17E+00
		La-140	* 5.01E-02	1.57E+00
	11/16/2004	K-40	1.34E+03	9.88E+01
		Cs-134	* - 1.12E+00	2.35E+00
		Cs-137	* - 2.74E-01	2.09E+00
		Ba-140	* - 3.76E+00	8.60E+00
		La-140	* - 1.93E+00	2.54E+00
	12/14/2004	K-40	1.51E+03	4.84E+01
		Cs-134	* - 2.89E+00	1.02E+00
		Cs-137	* 5.06E-01	1.01E+00
		Ba-140	* - 1.04E+00	5.02E+00
		La-140	* - 1.45E-01	1.33E+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)	1.30E+03	1.04E+03	1.51E+03	36	36
Cs-134	(I)	-1.87E+00	-1.19E+01	2.46E+00	36	0
Cs-137	(I)	-1.74E-02	-2.77E+00	2.48E+00	36	0
Ba-140	(I)	1.28E-01	-5.84E+00	7.93E+00	36	0
La-140	(I)	-3.28E-01	-3.95E+00	2.57E+00	36	0

(I) Indicator Stations

TABLE A-13.1  
**I-131 IN BROADLEAF IN LIEU OF MILK**  
 Results in pCi/kilogram (wet)

LOCATION	COLLECTION DATE	RESULT	OVERALL UNCERTAINTY
9G Control	1/20/2004	* 3.33E+00	6.96E+00
	2/24/2004	* - 1.95E+00	1.41E+01
	3/23/2004	* 2.61E+01	1.87E+01
	4/13/2004	* 4.36E+01	3.18E+01
	5/12/2004	* - 5.26E-01	1.27E+01
	6/8/2004	* 1.97E+01	1.79E+01
	7/13/2004	* 2.08E+01	2.86E+01
	8/10/2004	* - 1.22E+01	1.04E+01
	9/14/2004	* 8.33E+00	1.19E+01
	10/12/2004	* 5.68E+00	1.14E+01
	11/16/2004	* 6.01E+00	5.58E+00
	12/14/2004	* - 3.70E-01	6.41E+00

\* Denotes a result less than the detection limit.

TABLE A-13.2  
**I-131 IN BROADLEAF IN LIEU OF MILK - SUMMARY**  
 Results in pCi/kilogram (wet)

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
I-131	(C)	9.88E+00	-1.22E+01	4.36E+01	12	0

(C) Control Stations

Table A-14.1  
**GAMMA SPECTROMETRY OF BROADLEAF IN LIEU OF MILK**  
 Results in pCi/kilogram (wet)

Location	Collection Date	Nuclide	Result	Overall Uncertainty
9G Control Cornchop Meeker	1/20/2004	Be-7	7.04E+01	3.34E+01
		K-40	3.70E+03	9.64E+01
		Cs-134	* 5.68E-01	1.46E+00
		Cs-137	* - 5.75E-01	2.00E+00
		Ba-140	* 2.71E+00	7.75E+00
		La-140	* 6.30E-01	1.85E+00
		Th-228	* - 1.85E+01	3.54E+01
9G Control Cornchop Meeker	2/24/2004	Be-7	* 3.02E+01	5.27E+01
		K-40	4.91E+03	4.17E+02
		Cs-134	* 4.08E+00	6.19E+00
		Cs-137	* 6.79E-01	6.78E+00
		Ba-140	* 9.91E-01	2.29E+01
		La-140	* 5.51E+00	7.20E+00
		Th-228	* 8.00E+00	1.36E+01
9G Control Cornchop Meeker	3/23/2004	Be-7	* 2.98E+01	3.10E+01
		K-40	6.94E+03	1.54E+02
		Cs-134	* - 4.90E+00	2.77E+00
		Cs-137	* 1.09E-01	2.73E+00
		Ba-140	* 3.02E+01	4.33E+01
		La-140	* 7.99E-01	9.89E+00
		Th-228	* 1.02E+02	5.89E+01
9G Control Cornchop Meeker	4/13/2004	Be-7	* 4.09E+01	2.72E+01
		K-40	6.53E+03	1.59E+02
		Cs-134	* - 2.41E+01	3.68E+00
		Cs-137	* - 1.27E+00	3.83E+00
		Ba-140	* - 7.17E-01	1.57E+01
		La-140	* - 2.35E+00	4.29E+00
		Th-228	* - 4.72E+01	7.08E+01
9G Control Cornchop Meeker	5/12/2004	Be-7	* 2.65E+01	3.54E+01
		K-40	5.14E+03	2.48E+02
		Cs-134	* - 2.70E+00	4.37E+00
		Cs-137	* 5.51E+00	4.69E+00
		Ba-140	* 4.11E+00	2.07E+01
		La-140	* - 4.60E+01	1.92E+01
		Th-228	* 1.39E+02	1.43E+02

\* Denotes a result less than the detection limit.

Table A-14.1 (cont.)  
**GAMMA SPECTROMETRY OF BROADLEAF IN LIEU OF MILK**  
 Results in pCi/kilogram (wet)

Location	Collection Date	Nuclide	Result	Overall Uncertainty
9G Control Cornchop Meeker	6/8/2004	Be-7	2.09E+02	1.24E+02
		K-40	4.58E+03	3.55E+02
		Cs-134	* - 1.97E+00	5.68E+00
		Cs-137	* - 5.49E-01	5.86E+00
		Ba-140	* 4.39E+00	2.87E+01
		La-140	* - 1.81E-01	6.46E+00
		Th-228	* - 3.20E+02	1.40E+02
	7/13/2004	Be-7	* 1.62E+01	1.87E+01
		K-40	6.72E+03	1.79E+02
		Cs-134	* 9.01E-01	2.29E+00
		Cs-137	* - 2.28E+00	3.42E+00
		Ba-140	* - 2.64E+00	1.08E+01
		La-140	* 4.37E-01	2.68E+00
		Th-228	* - 1.30E+02	5.40E+01
	8/10/2004	Be-7	* 1.10E+02	8.22E+01
		K-40	6.12E+03	5.11E+02
		Cs-134	* - 3.92E+00	9.33E+00
		Cs-137	* - 5.39E+00	9.82E+00
		Ba-140	* 3.11E+01	3.65E+01
		La-140	* - 1.35E+00	1.12E+01
		Th-228	* 1.64E+02	2.58E+02
	9/14/2004	Be-7	3.18E+02	7.90E+01
		K-40	4.30E+03	2.16E+02
		Cs-134	* - 2.76E+01	6.31E+00
		Cs-137	* 5.97E+00	5.85E+00
		Ba-140	* 1.58E+00	2.92E+01
		La-140	* - 5.61E+00	8.94E+00
		Th-228	* 5.63E+01	1.17E+02
	10/12/2004	Be-7	1.77E+02	7.47E+01
		K-40	7.36E+03	2.91E+02
		Cs-134	* - 2.61E+00	4.41E+00
		Cs-137	* 2.02E+00	4.53E+00
		Ba-140	* 1.27E+01	2.06E+01
		La-140	* - 1.84E+00	6.39E+00
		Th-228	* - 3.65E+02	1.34E+02

\* Denotes a result less than the detection limit.



Table A-14.1 (cont.)  
**GAMMA SPECTROMETRY OF BROADLEAF IN LIEU OF MILK**  
 Results in pCi/kilogram (wet)

Location	Collection Date	Nuclide	Result	Overall Uncertainty
9G Control Cornchop Meeker	11/16/2004	Be-7	* 1.24E+01	4.84E+01
		K-40	6.86E+03	3.09E+02
		Cs-134	* 2.00E+00	6.45E+00
		Cs-137	* 3.69E+00	6.44E+00
		Ba-140	* 1.27E+01	2.59E+01
		La-140	* - 9.74E-01	6.59E+00
		Th-228	* - 3.38E+02	1.46E+02
	12/14/2004	Be-7	* 2.17E+01	2.22E+01
		K-40	4.97E+03	1.72E+02
		Cs-134	* 1.93E+00	2.94E+00
		Cs-137	* - 5.56E-01	2.69E+00
		Ba-140	* 7.04E-01	1.30E+01
		La-140	* 8.93E-02	3.33E+00
		Th-228	* - 9.48E+01	6.40E+01

\* Denotes a result less than the detection limit.

TABLE A-14.2  
**GAMMA SPECTROMETRY OF BROADLEAF IN LIEU OF MILK - SUMMARY**  
 Results in pCi/kilogram (wet)

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Be-7	(C)	8.85E+01	1.24E+01	3.18E+02	12	4
K-40	(C)	5.68E+03	3.70E+03	7.36E+03	12	12
Cs-134	(C)	-4.86E+00	-2.76E+01	4.08E+00	12	0
Cs-137	(C)	6.13E-01	-5.39E+00	5.97E+00	12	0
Ba-140	(C)	8.15E+00	-2.64E+00	3.11E+01	12	0
La-140	(C)	-4.24E+00	-4.60E+01	5.51E+00	12	0
Th-228	(C)	-7.04E+01	-3.65E+02	1.64E+02	12	0

(C) Control Stations

TABLE A-15.1  
**GAMMA SPECTROMETRY OF ROOTS**  
 Results in pCi/kilogram (wet)

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
9C Control Onions	6/22/2004	Cs-134	* - 3.87E+00	7.45E+00
		Cs-137	* 1.39E+00	7.56E+00
		I-131	* 1.26E+00	1.25E+01
37 Onions	6/22/2004	Cs-134	* 3.40E+00	1.00E+01
		Cs-137	* - 6.57E-01	8.64E+00
		I-131	* - 4.89E+00	1.47E+01
9C Control Potatoes	7/27/2004	Cs-134	* - 7.25E+00	6.89E+00
		Cs-137	* - 6.31E+00	6.03E+00
		I-131	* 3.52E+00	1.04E+01
37 Potatoes	7/27/2004	Cs-134	* - 1.70E+00	5.40E+00
		Cs-137	* 1.04E+00	5.52E+00
		I-131	* 5.43E+00	7.87E+00
9C Control Potatoes	8/24/2004	Cs-134	* - 7.60E+00	9.81E+00
		Cs-137	* 5.00E-01	8.90E+00
		I-131	* 6.50E+00	1.60E+01
37 Potatoes	8/24/2004	Cs-134	* - 1.86E+00	9.02E+00
		Cs-137	* 1.09E+01	9.39E+00
		I-131	* 8.99E+00	1.62E+01
9C Control Potatoes	9/28/2004	Cs-134	* 1.78E+00	4.75E+00
		Cs-137	* 4.87E+00	4.98E+00
		I-131	* 5.86E+00	9.00E+00
37 Potatoes	9/28/2004	Cs-134	* 1.42E+00	7.93E+00
		Cs-137	* 8.98E-01	8.17E+00
		I-131	* 1.74E+01	1.31E+01

\* Denotes a result less than the detection limit.

TABLE A-15.2  
**GAMMA SPECTROMETRY OF ROOTS - SUMMARY**  
 Results in pCi/kilogram (wet)

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Cs-134	(I)	3.15E-01	-1.86E+00	3.40E+00	4	0
Cs-134	(C)	-4.24E+00	-7.60E+00	1.78E+00	4	0
Cs-137	(I)	3.05E+00	-6.57E-01	1.09E+01	4	0
Cs-137	(C)	1.13E-01	-6.31E+00	4.87E+00	4	0
I-131	(I)	6.73E+00	-4.89E+00	1.74E+01	4	0
I-131	(C)	4.29E+00	1.26E+00	6.50E+00	4	0

(I) Indicator Station  
 (C) Control Station

TABLE A-16.1  
**GAMMA SPECTROMETRY OF FRUIT**  
 Results in pCi/kilogram (wet)

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
9C	6/22/2004	Cs-134	* - 1.65E+00	9.67E+00
Control		Cs-137	* 1.34E-01	8.93E+00
Cherries		I-131	* 3.62E+00	1.41E+01
37	6/22/2004	Cs-134	* - 3.10E+01	9.18E+00
Cherries		Cs-137	* - 8.64E+00	7.56E+00
		I-131	* - 1.11E+00	1.26E+01
9C	7/27/2004	Cs-134	* - 1.68E+00	7.63E+00
Control		Cs-137	* 2.28E+00	7.68E+00
Nectarines		I-131	* - 4.33E+00	1.18E+01
37	7/27/2004	Cs-134	* - 9.97E-01	8.09E+00
Nectarines		Cs-137	* - 6.68E+00	7.68E+00
		I-131	* 7.10E+00	1.16E+01
9C	8/24/2004	Cs-134	* - 1.74E+01	1.17E+01
Control		Cs-137	* 6.21E+00	1.14E+01
Nectarines		I-131	* - 8.52E+00	1.86E+01
37	8/24/2004	Cs-134	* 1.32E-01	6.06E+00
Apples		Cs-137	* 1.50E-01	6.39E+00
		I-131	* - 3.46E+00	8.60E+00
91	8/24/2004	Cs-134	* - 9.65E-01	9.95E+00
Apples		Cs-137	* 3.96E+00	8.44E+00
		I-131	* 1.07E-01	1.60E+01
9C	9/28/2004	Cs-134	* - 2.55E+01	1.13E+01
Control		Cs-137	* - 8.50E+00	1.06E+01
Apples		I-131	* - 9.28E+00	1.54E+01
37	9/28/2004	Cs-134	* - 5.50E-01	6.47E+00
Apples		Cs-137	* - 6.40E+00	7.00E+00
		I-131	* - 3.73E+00	1.20E+01

\* Denotes a result less than the detection limit.

TABLE A-16.2  
**GAMMA SPECTROMETRY OF FRUIT - SUMMARY**  
 Results in pCi/kilogram (wet)

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Cs-134	(I)	-6.68E+00	-3.10E+01	1.32E-01	5	0
Cs-134	(C)	-1.16E+01	-2.55E+01	-1.65E+00	4	0
Cs-137	(I)	-3.52E+00	-8.64E+00	3.96E+00	5	0
Cs-137	(C)	3.10E-02	-8.50E+00	6.21E+00	4	0
I-131	(I)	-2.19E-01	-3.73E+00	7.10E+00	5	0
I-131	(C)	-4.63E+00	-9.28E+00	3.62E+00	4	0

(I) Indicator Station  
 (C) Control Station

TABLE A-17.1  
**GAMMA SPECTROMETRY OF VEGETABLES**  
 Results in pCi/kilogram (wet)

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
9C	4/27/2004	Cs-134	* - 3.77E-01	1.80E+00
Control		Cs-137	* - 1.14E+00	2.39E+00
Asparagus		I-131	* 6.99E-01	3.40E+00
37	4/27/2004	Cs-134	* - 9.23E-01	2.15E+00
Asparagus		Cs-137	* - 6.93E-01	3.12E+00
		I-131	* - 2.53E-01	3.56E+00
9C	5/25/2004	Cs-134	* - 6.63E-02	2.16E+00
Control		Cs-137	* - 1.36E+00	2.88E+00
Asparagus		I-131	* - 2.35E-01	5.66E+00
37	5/25/2004	Cs-134	* - 1.44E+00	2.80E+00
Asparagus		Cs-137	* - 1.26E+00	2.71E+00
		I-131	* - 6.37E+00	7.17E+00
9C	6/22/2004	Cs-134	* 3.10E+00	5.32E+00
Control		Cs-137	* - 3.04E+00	6.13E+00
Cabbage		I-131	* 8.81E+00	1.02E+01
37	6/22/2004	Cs-134	* - 5.18E-01	5.58E+00
Cabbage		Cs-137	* 1.73E+00	7.61E+00
		I-131	* 4.79E-01	9.42E+00
102G	6/22/2004	Cs-134	* 4.58E+00	9.26E+00
Broadleaf		Cs-137	* - 9.31E-01	9.23E+00
		I-131	* - 7.46E+00	1.60E+01
9C	7/27/2004	Cs-134	* - 3.01E+00	5.91E+00
Control		Cs-137	* 9.67E-01	5.60E+00
Cabbage		I-131	* 3.61E-01	8.72E+00
37	7/27/2004	Cs-134	* - 3.14E-01	7.28E+00
Cabbage		Cs-137	* 3.27E+00	8.61E+00
		I-131	* - 7.72E+00	1.42E+01
102G	7/28/2004	Cs-134	* 5.59E+00	6.46E+00
Broadleaf		Cs-137	* - 4.90E+00	7.55E+00
		I-131	* - 3.74E+00	9.37E+00

\* Denotes a result less than the detection limit.

TABLE A-17.1 (cont.)  
**GAMMA SPECTROMETRY OF VEGETABLES**  
 Results in pCi/kilogram (wet)

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
9C	8/24/2004	Cs-134	* - 1.95E+01	1.14E+01
Control		Cs-137	* 1.81E-01	1.61E-01
Cabbage		I-131	* 1.20E+00	1.48E+01
37	8/24/2004	Cs-134	* - 1.27E+00	6.75E+00
Cabbage		Cs-137	* 1.17E+00	7.91E+00
		I-131	* - 6.91E+00	1.43E+01
9C	9/28/2004	Cs-134	* 2.69E-01	7.70E+00
Control		Cs-137	* - 1.97E+00	9.27E+00
Cabbage		I-131	* 1.09E+01	1.49E+01
37	9/28/2004	Cs-134	* - 3.78E+00	8.53E+00
Cabbage		Cs-137	* 1.05E+00	8.01E+00
		I-131	* 5.04E+00	1.42E+01

\* Denotes a result less than the detection limit.



TABLE A-17.2  
**GAMMA SPECTROMETRY OF VEGETABLES - SUMMARY**  
 Results in pCi/kilogram (wet)

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Cs-134	(I)	2.41E-01	-3.78E+00	5.59E+00	8	0
Cs-134	(C)	-3.26E+00	-1.95E+01	3.10E+00	6	0
Cs-137	(I)	-7.05E-02	-4.90E+00	3.27E+00	8	0
Cs-137	(C)	-1.06E+00	-3.04E+00	9.67E-01	6	0
I-131	(I)	-3.37E+00	-7.72E+00	5.04E+00	8	0
I-131	(C)	3.62E+00	-2.35E-01	1.09E+01	6	0

(I) Indicator Station  
 (C) Control Station

TABLE B-2.1  
**GAMMA SPECTROMETRY OF STORM DRAIN WATER**  
 Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	1/7/2004 - 2/4/2004	Be-7	* 7.65E+00	1.37E+01
		K-40	* - 1.17E+02	4.34E+01
		Mn-54	* 4.53E-02	1.49E+00
		Co-58	* 4.75E-01	1.55E+00
		Fe-59	* 2.01E-01	2.86E+00
		Co-60	* 1.49E+00	1.55E+00
		Zn-65	* - 1.04E-01	3.49E+00
		Nb-95	* 3.64E-02	1.55E+00
		Zr-95	* 2.16E+00	2.58E+00
		Cs-134	* - 5.58E-01	1.56E+00
		Cs-137	* - 1.66E-01	1.56E+00
		Ba-140	* 2.37E+00	7.07E+00
		La-140	* - 9.44E-01	1.93E+00
		Ra-226	* - 1.01E+02	5.20E+01
		Th-228	* 3.31E+01	3.34E+01
	2/4/2004 - 3/3/2004	Be-7	* - 5.89E+00	1.54E+01
		K-40	* 1.61E+01	3.95E+01
		Mn-54	* - 4.25E-01	1.95E+00
		Co-58	* 3.70E-01	1.81E+00
		Fe-59	* 3.60E+00	4.12E+00
		Co-60	* 5.99E-01	2.10E+00
		Zn-65	* - 1.03E+01	4.38E+00
		Nb-95	* 4.45E-01	1.92E+00
		Zr-95	* 1.42E+00	3.35E+00
		Cs-134	* - 7.48E+00	2.10E+00
		Cs-137	* 1.27E+00	1.98E+00
		Ba-140	* 3.40E+00	8.80E+00
		La-140	* - 2.51E+00	3.07E+00
		Ra-226	* - 8.60E+00	4.92E+01
		Th-228	* - 6.46E+00	3.76E+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	3/3/2004 - 4/7/2004	Be-7	* 7.40E+00	1.62E+01
		K-40	* 1.00E+01	4.77E+01
		Mn-54	* - 8.08E-01	1.79E+00
		Co-58	* 1.56E+00	1.78E+00
		Fe-59	* - 1.16E+00	3.96E+00
		Co-60	* - 7.63E-02	1.77E+00
		Zn-65	* - 7.54E-01	4.36E+00
		Nb-95	* - 1.71E+00	1.99E+00
		Zr-95	* - 1.54E+00	3.03E+00
		Cs-134	* 4.45E-01	1.83E+00
		Cs-137	* - 7.04E-01	1.76E+00
		Ba-140	* - 3.84E-01	8.11E+00
		La-140	* - 4.18E+00	3.24E+00
		Ra-226	* 4.58E+01	7.39E+01
		Th-228	* - 6.77E+01	3.63E+01
	4/7/2004 - 5/4/2004	Be-7	* 7.15E-01	9.15E+00
		K-40	* - 2.50E+01	1.95E+01
		Mn-54	* 1.93E-01	1.04E+00
		Co-58	* 4.69E-02	1.06E+00
		Fe-59	* 2.17E+00	2.08E+00
		Co-60	* - 2.16E-01	9.74E-01
		Zn-65	* - 3.99E+00	2.22E+00
		Nb-95	* 5.30E-01	1.04E+00
		Zr-95	* 9.68E-01	1.86E+00
		Cs-134	* - 2.88E-01	1.17E+00
		Cs-137	* 5.55E-01	1.14E+00
		Ba-140	* 2.09E+00	5.01E+00
		La-140	* - 1.63E+00	1.55E+00
		Ra-226	* - 1.77E+01	2.89E+01
		Th-228	* 3.71E+01	2.66E+01

\* 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	5/4/2004 - 6/2/2004	Be-7	* 2.46E+00	1.41E+01
		K-40	* 1.69E+00	4.79E+01
		Mn-54	* - 1.06E+00	1.58E+00
		Co-58	* - 9.98E-01	1.73E+00
		Fe-59	* - 1.72E+00	3.59E+00
		Co-60	* 2.20E+00	3.56E+00
		Zn-65	* 3.84E-01	4.10E+00
		Nb-95	* - 1.39E+00	1.72E+00
		Zr-95	* - 2.70E+00	2.73E+00
		Cs-134	* 6.71E-01	1.61E+00
		Cs-137	* - 1.56E+00	1.94E+00
		Ba-140	* - 5.62E+00	7.48E+00
		La-140	* - 3.00E+00	3.38E+00
		Ra-226	* 1.12E+01	4.09E+01
		Th-228	* - 6.01E+01	3.80E+01
	6/2/2004 - 7/7/2004	Be-7	* - 2.78E-01	7.49E+00
		K-40	* 6.99E+00	2.83E+01
		Mn-54	* - 6.86E-02	7.40E-01
		Co-58	* - 2.74E-01	7.80E-01
		Fe-59	* - 6.48E-01	1.59E+00
		Co-60	* 4.13E-01	7.83E-01
		Zn-65	* - 1.10E+00	1.60E+00
		Nb-95	* - 9.22E-01	8.89E-01
		Zr-95	* 8.98E-01	1.46E+00
		Cs-134	* - 6.82E-01	8.01E-01
		Cs-137	* 5.50E-01	8.94E-01
		Ba-140	* - 2.39E+00	4.03E+00
		La-140	* - 3.41E-01	1.19E+00
		Ra-226	* 2.90E+01	4.02E+01
		Th-228	* - 3.43E+01	1.73E+01

\* 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	7/7/2004 - 8/3/2004	Be-7	* 7.15E+00	6.23E+00
		K-40	* - 3.11E+01	1.79E+01
		Mn-54	* - 2.42E-01	7.09E-01
		Co-58	* 3.60E-01	6.86E-01
		Fe-59	* 1.09E+00	1.41E+00
		Co-60	* - 1.56E-01	6.52E-01
		Zn-65	* - 4.04E-01	1.33E+00
		Nb-95	* - 5.93E-01	7.73E-01
		Zr-95	* 2.16E-01	1.19E+00
		Cs-134	* 9.15E-02	6.54E-01
		Cs-137	* - 8.02E-01	8.83E-01
		Ba-140	* 3.11E+00	3.14E+00
		La-140	* - 6.31E-01	9.25E-01
		Ra-226	* 1.20E+01	3.50E+01
		Th-228	* - 1.96E+00	1.49E+01
	8/3/2004 - 9/1/2004	Be-7	* 6.30E+00	7.27E+00
		K-40	* - 3.46E+00	1.59E+01
		Mn-54	* - 6.35E-02	8.32E-01
		Co-58	* - 5.22E-01	8.66E-01
		Fe-59	* 4.79E-01	1.73E+00
		Co-60	* 2.17E-01	8.71E-01
		Zn-65	* - 4.64E+00	1.82E+00
		Nb-95	* 2.69E-01	8.71E-01
		Zr-95	* - 6.25E-01	1.46E+00
		Cs-134	* - 4.28E+00	9.23E-01
		Cs-137	* 4.61E-02	8.95E-01
		Ba-140	* - 3.12E-01	4.00E+00
		La-140	* - 4.66E-01	1.25E+00
		Ra-226	* 2.61E+01	2.64E+01
		Th-228	* - 6.07E+01	2.34E+01

\* 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	9/1/2004 - 10/5/2004	Be-7	* - 1.66E+00	1.68E+01
		K-40	* - 8.64E+00	3.57E+01
		Mn-54	* 8.04E-01	1.90E+00
		Co-58	* - 3.72E-01	1.95E+00
		Fe-59	* 4.82E-01	3.21E+00
		Co-60	* 1.17E+00	1.84E+00
		Zn-65	* - 1.86E+00	5.04E+00
		Nb-95	* 3.53E+00	2.44E+00
		Zr-95	* 2.10E+00	3.30E+00
		Cs-134	* 3.75E-01	2.14E+00
		Cs-137	* - 6.69E-01	1.98E+00
		Ba-140	* 2.67E+00	8.15E+00
		La-140	* 1.69E+00	2.55E+00
		Ra-226	* 2.51E+01	7.49E+01
		Th-228	* 7.81E+01	4.54E+01
	10/5/2004 - 11/2/2004	Be-7	* 8.70E+00	1.74E+01
		K-40	* - 2.91E+01	3.54E+01
		Mn-54	* - 1.14E+00	2.05E+00
		Co-58	* 1.32E+00	1.80E+00
		Fe-59	* - 2.38E+00	3.88E+00
		Co-60	* 6.85E-01	2.02E+00
		Zn-65	* - 5.96E+00	4.21E+00
		Nb-95	* 3.92E-01	2.13E+00
		Zr-95	* - 1.25E+00	3.61E+00
		Cs-134	* 1.45E+00	2.10E+00
		Cs-137	* - 3.61E-01	1.96E+00
		Ba-140	* - 5.84E+00	8.58E+00
		La-140	* 7.13E-02	2.24E+00
		Ra-226	* - 2.31E+01	5.73E+01
		Th-228	* - 1.37E+01	4.63E+01

\* 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	11/2/2004 - 12/1/2004	Be-7	* 4.45E+00	1.42E+01
		K-40	* - 2.16E+01	2.88E+01
		Mn-54	* 1.22E+00	1.78E+00
		Co-58	* - 7.04E-01	1.61E+00
		Fe-59	* - 3.60E-01	3.58E+00
		Co-60	* - 9.20E-01	1.81E+00
		Zn-65	* - 3.64E+00	3.93E+00
		Nb-95	* 7.96E-01	1.59E+00
		Zr-95	* 2.97E+00	3.10E+00
		Cs-134	* - 2.99E+00	1.92E+00
		Cs-137	* - 7.23E-01	1.78E+00
		Ba-140	* - 2.51E+00	9.05E+00
		La-140	* 3.51E-01	2.73E+00
		Ra-226	* - 3.15E+00	4.68E+01
		Th-228	* - 1.31E+02	4.14E+01
	12/1/2004 - 1/4/2005	Be-7	* 8.11E+00	1.37E+01
		K-40	* 2.65E+00	4.99E+01
		Mn-54	* 1.33E+00	1.50E+00
		Co-58	* - 4.35E-01	1.49E+00
		Fe-59	* 1.45E-01	3.08E+00
		Co-60	* 4.83E-02	1.55E+00
		Zn-65	* 2.18E-01	3.22E+00
		Nb-95	* - 3.52E-01	1.60E+00
		Zr-95	* 1.50E+00	2.41E+00
		Cs-134	* 4.65E-01	1.77E+00
		Cs-137	* 8.20E-01	1.44E+00
		Ba-140	* 7.09E+00	7.02E+00
		La-140	* - 3.63E-01	1.92E+00
		Ra-226	* 2.77E+01	9.34E+01
		Th-228	* 2.73E+01	3.03E+01

\* 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
<b><u>Station 101 - Outfall</u></b>						
Be-7	(I)	3.76E+00	-5.89E+00	8.70E+00	12	0
K-40	(I)	-1.65E+01	-1.17E+02	1.61E+01	12	0
Mn-54	(I)	-1.79E-02	-1.14E+00	1.33E+00	12	0
Co-58	(I)	6.89E-02	-9.98E-01	1.56E+00	12	0
Fe-59	(I)	1.58E-01	-2.38E+00	3.60E+00	12	0
Co-60	(I)	4.55E-01	-9.20E-01	2.20E+00	12	0
Zn-65	(I)	-2.68E+00	-1.03E+01	3.84E-01	12	0
Nb-95	(I)	8.60E-02	-1.71E+00	3.53E+00	12	0
Zr-95	(I)	5.10E-01	-2.70E+00	2.97E+00	12	0
Cs-134	(I)	-1.07E+00	-7.48E+00	1.45E+00	12	0
Cs-137	(I)	-1.45E-01	-1.56E+00	1.27E+00	12	0
Ba-140	(I)	3.06E-01	-5.84E+00	7.09E+00	12	0
LA-140	(I)	-9.96E-01	-4.18E+00	1.69E+00	12	0
Ra-226	(I)	1.95E+00	-1.01E+02	4.58E+01	12	0
Th-228	(I)	-1.67E+01	-1.31E+02	7.81E+01	12	0

(I) Indicator Station



TABLE B-3.1  
**GROSS BETA IN STORM DRAIN WATER**  
 Results in pCi/liter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
101	1/7/2004 - 2/4/2004	4.56E+00	2.56E+00
	2/4/2004 - 3/3/2004	* 2.98E+00	2.09E+00
	3/3/2004 - 4/7/2004	4.16E+00	2.24E+00
	4/7/2004 - 5/4/2004	* 1.61E+00	2.03E+00
	5/4/2004 - 6/2/2004	* 1.76E+00	2.29E+00
	6/2/2004 - 7/7/2004	* 2.10E+00	2.11E+00
	7/7/2004 - 8/3/2004	* 2.43E+00	2.05E+00
	8/3/2004 - 9/1/2004	* 2.27E+00	2.11E+00
	9/1/2004 - 10/5/2004	4.98E+00	2.03E+00
	10/5/2004 - 11/2/2004	* 1.07E+00	1.83E+00
	11/2/2004 - 12/1/2004	4.58E+00	2.22E+00
	12/1/2004 - 1/4/2005	5.97E+00	2.27E+00

\* 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
<b><u>Station 101- Outfall</u></b>					
Gross Beta (I)	3.21E+00	1.07E+00	5.97E+00	12	5

(I) Indicator Station

TABLE B-4.1  
**TRITIUM IN STORM DRAIN WATER**  
 Results in pCi/liter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
101	1/7/2004 - 2/4/2004	1.66E+03	1.68E+02
	2/4/2004 - 3/3/2004	2.58E+03	1.71E+02
	3/3/2004 - 4/7/2004	1.24E+03	1.48E+02
	4/7/2004 - 5/4/2004	* 3.31E+01	1.16E+02
	5/4/2004 - 6/2/2004	5.04E+02	1.37E+02
	6/2/2004 - 7/7/2004	8.87E+02	1.37E+02
	7/7/2004 - 8/3/2004	5.49E+02	1.23E+02
	8/3/2004 - 9/1/2004	3.89E+02	9.45E+01
	9/1/2004 - 10/5/2004	1.35E+03	1.55E+02
	10/5/2004 - 11/2/2004	1.98E+03	1.68E+02
	11/2/2004 - 12/1/2004	9.14E+03	2.86E+02
	12/1/2004 - 1/4/2005	1.69E+04	3.89E+02

\* Denotes a result less than the detection limit.

TABLE B-4.2  
**TRITIUM IN STORM DRAIN WATER - SUMMARY**  
 Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLE	NUMBER POSITIVE
<b><u>Station 101 - Outfall</u></b>						
H-3	(I)	3.10E+03	3.31E+01	1.69E+04	12	11

(I) Indicator Station

TABLE B-5.1  
**GROSS ALPHA IN SANITARY WASTE TREATMENT WATER**  
 Results in pCi/liter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
102A	1/6/2004 - 2/3/2004	* - 4.87E-01	1.38E+00
	2/3/2004 - 3/2/2004	(a)	
	3/2/2004 - 4/6/2004	* - 9.82E-01	2.41E+00
	4/6/2004 - 4/30/2004	* 0.00E+00	3.78E+00
	4/30/2004 - 6/2/2004	* 1.13E+00	2.26E+00
	6/2/2004 - 7/7/2004	* 2.94E+00	3.25E+00
	7/7/2004 - 8/3/2004	* - 7.56E-01	2.14E+00
	8/3/2004 - 9/1/2004	* 1.11E+00	2.46E+00
	9/1/2004 - 10/5/2004	* - 1.34E+00	1.90E+00
	10/5/2004 - 11/2/2004	* 1.93E+00	2.57E+00
	11/2/2004 - 12/1/2004	* - 1.79E+00	3.35E+00
	12/1/2004 - 1/4/2005	* 3.72E-01	1.66E+00
102B	1/6/2004 - 2/3/2004	* 1.62E+00	1.72E+00
	2/24/2004 - 2/24/2004	* 1.48E+00	2.13E+00
	3/24/2004 - 3/24/2004	* 0.00E+00	1.84E+00
	3/24/2004 - 4/30/2004	* 3.77E-01	2.72E+00
	4/30/2004 - 6/2/2004	* 1.77E+00	1.87E+00
	6/2/2004 - 7/7/2004	* 2.52E+00	3.14E+00
	7/7/2004 - 8/3/2004	* - 8.36E-01	1.48E+00
	8/3/2004 - 9/1/2004	* 1.39E+00	2.41E+00
	9/1/2004 - 10/5/2004	* - 6.38E-01	2.02E+00
	10/5/2004 - 11/2/2004	* 0.00E+00	1.91E+00
	11/2/2004 - 12/1/2004	* - 2.42E+00	2.80E+00
	12/1/2004 - 1/4/2005	* 1.65E+00	1.98E+00

\* Denotes a result less than the detection limit.

(a) Sampler out of service.

TABLE B-5.2  
**GROSS ALPHA IN SANITARY WASTE TREATMENT WATER - SUMMARY**  
 Results in pCi/liter

NUCLIDE	AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
<b><u>102A</u></b>					
Gross Alpha (I)	1.93E-01	-1.79E+00	2.94E+00	11	0
<b><u>102B</u></b>					
Gross Alpha (I)	5.76E-01	-2.42E+00	2.52E+00	12	0

(I) Indicator Stations

TABLE B-6.1  
**GROSS BETA IN SANITARY WASTE TREATMENT WATER**  
 Results in pCi/liter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
102A	1/6/2004 - 2/3/2004	1.63E+01	2.28E+00
	2/3/2004 - 3/2/2004	(a)	
	3/2/2004 - 4/6/2004	3.37E+01	4.56E+00
	4/6/2004 - 4/30/2004	2.85E+01	4.63E+00
	4/30/2004 - 6/2/2004	4.34E+01	5.16E+00
	6/2/2004 - 7/7/2004	2.00E+01	3.58E+00
	7/7/2004 - 8/3/2004	2.48E+01	3.74E+00
	8/3/2004 - 9/1/2004	2.03E+01	3.76E+00
	9/1/2004 - 10/5/2004	2.18E+01	3.42E+00
	10/5/2004 - 11/2/2004	2.22E+01	3.50E+00
	11/2/2004 - 12/1/2004	1.84E+01	3.60E+00
	12/1/2004 - 1/4/2005	2.30E+01	3.73E+00
102B	1/6/2004 - 2/3/2004	1.22E+01	1.96E+00
	2/24/2004 - 2/24/2004	2.40E+01	2.78E+00
	3/24/2004 - 3/24/2004	3.74E+01	4.26E+00
	3/24/2004 - 4/30/2004	3.15E+01	4.31E+00
	4/30/2004 - 6/2/2004	7.35E+01	5.73E+00
	6/2/2004 - 7/7/2004	2.67E+01	3.94E+00
	7/7/2004 - 8/3/2004	2.60E+01	3.54E+00
	8/3/2004 - 9/1/2004	2.91E+01	4.13E+00
	9/1/2004 - 10/5/2004	3.09E+01	3.86E+00
	10/5/2004 - 11/2/2004	2.51E+01	3.67E+00
	11/2/2004 - 12/1/2004	2.57E+01	3.89E+00
	12/1/2004 - 1/4/2005	1.93E+01	3.41E+00

\* Denotes a result less than the detection limit.

(a) Sampler out of service.

TABLE B-6.2  
**GROSS BETA IN SANITARY WASTE TREATMENT WATER - SUMMARY**  
 Results in pCi/liter

NUCLIDE	AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
<b><u>102 A</u></b>					
Gross Beta (I)	2.48E+01	1.63E+01	4.34E+01	11	11
<b><u>102 B</u></b>					
Gross Beta (I)	3.01E+01	1.22E+01	7.35E+01	12	12

(I) Indicator Stations



TABLE B-7.1  
**GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER**  
 Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102A	1/6/2004 - 2/3/2004	Be-7	* - 2.41E+00	1.67E+01
		K-40	* - 2.53E+01	4.12E+01
		Mn-54	* - 7.02E-01	1.89E+00
		Co-58	* - 1.82E-01	2.00E+00
		Fe-59	* - 4.97E-01	4.18E+00
		Co-60	* 1.61E+00	1.98E+00
		Zn-65	* - 5.19E-02	4.91E+00
		Nb-95	* 1.08E+00	2.04E+00
		Zr-95	* 8.31E-01	3.41E+00
		Cs-134	* - 1.48E+00	2.21E+00
		Cs-137	* 1.64E+00	2.15E+00
		Ba-140	* 1.19E+00	9.01E+00
		La-140	* - 7.27E-01	3.34E+00
		Ra-226	* - 2.33E+01	5.36E+01
		Th-228	* 5.74E+01	3.95E+01
	2/3/2004 - 3/2/2004	Be-7		(a)
		K-40		
		Mn-54		
		Co-58		
		Fe-59		
		Co-60		
		Zn-65		
		Nb-95		
		Zr-95		
		Cs-134		
		Cs-137		
		Ba-140		
		La-140		
		Ra-226		
		Th-228		

\* Denotes a result less than the detection limit.

(a) Sampler out of service.

TABLE B-7.1 (cont.)  
**GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER**  
 Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102A	3/2/2004 - 4/6/2004	Be-7	* 2.08E+00	6.01E+00
		K-40	* 7.39E-01	2.46E+01
		Mn-54	* 4.61E-02	6.93E-01
		Co-58	* - 1.06E-01	6.50E-01
		Fe-59	* - 1.48E+00	1.51E+00
		Co-60	* - 6.78E-01	1.26E+00
		Zn-65	* 1.13E-01	1.43E+00
		Nb-95	* 3.88E-01	7.22E-01
		Zr-95	* 2.47E-01	1.20E+00
		Cs-134	* 2.81E-01	6.47E-01
		Cs-137	* 2.40E-01	9.67E-01
		Ba-140	* 8.93E-01	3.70E+00
		La-140	* - 4.59E-01	1.38E+00
		Ra-226	* 1.81E+01	3.55E+01
		Th-228	* - 7.12E+01	1.81E+01
	4/6/2004 - 4/30/2004	Be-7	* - 3.56E+00	9.86E+00
		K-40	* - 2.66E+01	2.40E+01
		Mn-54	* - 1.44E+00	1.19E+00
		Co-58	* - 5.39E-01	1.19E+00
		Fe-59	* 8.83E-01	2.53E+00
		Co-60	* 6.87E-01	1.21E+00
		Zn-65	* - 6.55E+00	2.75E+00
		Nb-95	* 2.18E-01	1.24E+00
		Zr-95	* - 7.77E-02	2.06E+00
		Cs-134	* - 3.92E+00	1.23E+00
		Cs-137	* - 1.10E+00	1.59E+00
		Ba-140	* 2.69E+00	5.10E+00
		La-140	* - 3.54E-01	1.62E+00
		Ra-226	* - 8.82E+00	3.21E+01
		Th-228	* - 5.84E+01	2.67E+01

\* Denotes a result less than the detection limit.

TABLE B-7.1 (cont.)  
**GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER**  
 Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102A	4/30/2004 - 6/2/2004	Be-7	* 6.01E+00	1.42E+01
		K-40	* 3.58E+01	4.72E+01
		Mn-54	* - 8.74E-02	1.44E+00
		Co-58	* - 8.02E-01	1.43E+00
		Fe-59	* 1.48E+00	2.88E+00
		Co-60	* 7.58E-01	1.49E+00
		Zn-65	* - 1.95E+00	3.00E+00
		Nb-95	* 1.90E+00	1.84E+00
		Zr-95	* - 5.14E-01	2.70E+00
		Cs-134	* 7.31E-01	1.64E+00
		Cs-137	* - 7.36E-01	1.94E+00
		Ba-140	* - 2.01E+00	8.52E+00
		La-140	* - 2.36E-01	2.48E+00
		Ra-226	* - 7.78E+00	4.60E+01
		Th-228	* - 5.75E+01	3.79E+01
	6/2/2004 - 7/7/2004	Be-7	* 4.35E+00	1.43E+01
		K-40	* 3.33E+01	2.85E+01
		Mn-54	* 2.25E-01	1.68E+00
		Co-58	* - 2.20E-01	1.71E+00
		Fe-59	* 2.73E+00	3.40E+00
		Co-60	* 2.70E-02	1.72E+00
		Zn-65	* - 9.62E-01	3.94E+00
		Nb-95	* 1.31E+00	1.74E+00
		Zr-95	* - 2.97E-01	2.91E+00
		Cs-134	* - 6.81E+00	2.24E+00
		Cs-137	* - 8.50E-01	1.80E+00
		Ba-140	* - 1.15E+00	8.63E+00
		La-140	* - 2.74E+00	2.75E+00
		Ra-226	* - 1.36E+01	4.45E+01
		Th-228	* 2.96E+01	3.92E+01

\* Denotes a result less than the detection limit.

TABLE B-7.1 (cont.)  
**GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER**  
 Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102A	7/7/2004 - 8/3/2004	Be-7	* 8.92E+00	1.60E+01
		K-40	* - 5.95E+00	3.45E+01
		Mn-54	* 3.92E-01	1.86E+00
		Co-58	* 4.18E-01	1.83E+00
		Fe-59	* - 8.73E-02	3.76E+00
		Co-60	* - 3.47E-01	1.95E+00
		Zn-65	* 1.26E+00	4.10E+00
		Nb-95	* 2.01E+00	2.05E+00
		Zr-95	* 5.83E-01	2.77E+00
		Cs-134	* 2.43E+00	1.92E+00
		Cs-137	* - 5.67E-01	1.99E+00
		Ba-140	* 1.17E-01	7.72E+00
		La-140	* 1.23E+00	2.53E+00
		Ra-226	* 2.49E+01	6.46E+01
		Th-228	* 5.67E+01	5.50E+01
	8/3/2004 - 9/1/2004	Be-7	* 6.09E+00	1.50E+01
		K-40	* 1.51E+01	4.24E+01
		Mn-54	* 8.67E-02	1.52E+00
		Co-58	* 3.86E-01	1.86E+00
		Fe-59	* - 1.76E+00	3.13E+00
		Co-60	* - 1.95E+00	1.26E+00
		Zn-65	* 8.88E-01	3.59E+00
		Nb-95	* - 2.17E-01	1.84E+00
		Zr-95	* 1.66E+00	3.22E+00
		Cs-134	* - 3.41E-01	1.61E+00
		Cs-137	* 5.80E-01	1.65E+00
		Ba-140	* - 4.18E+00	7.81E+00
		La-140	* - 3.97E+00	3.13E+00
		Ra-226	* 1.03E+01	8.96E+01
		Th-228	* - 2.62E+01	3.25E+01

\* Denotes a result less than the detection limit.

TABLE B-7.1 (cont.)  
**GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER**  
 Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102A	9/1/2004 - 10/5/2004	Be-7	* - 2.54E+00	1.20E+01
		K-40	* 1.50E+01	4.91E+01
		Mn-54	* - 5.71E-01	1.37E+00
		Co-58	* - 9.76E-01	1.47E+00
		Fe-59	* - 2.59E+00	5.75E+00
		Co-60	* 1.10E+00	3.77E+00
		Zn-65	* - 5.45E+00	6.74E+00
		Nb-95	* - 6.91E-01	1.71E+00
		Zr-95	* 1.27E-01	2.59E+00
		Cs-134	* - 9.05E-01	1.28E+00
		Cs-137	* - 5.40E-01	1.84E+00
		Ba-140	* - 2.76E+00	6.39E+00
		La-140	* 1.17E+00	2.06E+00
		Ra-226	* 1.71E+01	5.62E+01
		Th-228	* - 9.02E+01	3.30E+01
	10/5/2004 - 11/2/2004	Be-7	* 5.92E+00	1.38E+01
		K-40	* 1.45E+01	2.73E+01
		Mn-54	* - 1.29E-01	1.66E+00
		Co-58	* - 5.27E-01	1.57E+00
		Fe-59	* - 6.80E-01	3.28E+00
		Co-60	* - 1.60E-02	1.60E+00
		Zn-65	* - 5.47E+00	3.56E+00
		Nb-95	* - 4.22E-01	1.61E+00
		Zr-95	* - 1.90E+00	2.84E+00
		Cs-134	* - 8.36E+00	1.90E+00
		Cs-137	* 6.39E-01	1.75E+00
		Ba-140	* 1.17E-01	8.14E+00
		La-140	* 1.92E+00	2.57E+00
		Ra-226	* - 8.95E+00	4.52E+01
		Th-228	* - 5.03E+01	4.01E+01

\* Denotes a result less than the detection limit.

TABLE B-7.1 (cont.)  
**GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER**  
 Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102A	11/2/2004 - 12/1/2004	Be-7	* - 1.98E+00	1.70E+01
		K-40	* 3.25E+01	5.75E+01
		Mn-54	* 7.96E-01	1.56E+00
		Co-58	* 5.42E-02	1.92E+00
		Fe-59	* - 6.89E-01	3.39E+00
		Co-60	* 4.83E-01	3.13E+00
		Zn-65	* - 3.80E+00	3.44E+00
		Nb-95	* - 2.27E+00	1.94E+00
		Zr-95	* 7.27E-01	3.06E+00
		Cs-134	* - 1.32E+00	1.81E+00
		Cs-137	* 7.74E-01	2.16E+00
		Ba-140	* - 1.64E-01	7.50E+00
		La-140	* 2.64E+00	3.29E+00
		Ra-226	* 3.68E+01	8.11E+01
		Th-228	* - 4.84E+01	4.03E+01
	12/1/2004 - 1/4/2005	Be-7	* 7.88E+00	7.72E+00
		K-40	3.94E+01	2.34E+01
		Mn-54	* 2.73E-01	8.42E-01
		Co-58	* 9.70E-01	8.32E-01
		Fe-59	* - 1.14E+00	1.82E+00
		Co-60	* - 2.19E-01	8.28E-01
		Zn-65	* 1.63E+00	1.91E+00
		Nb-95	* 2.24E-01	8.39E-01
		Zr-95	* - 5.63E-01	1.46E+00
		Cs-134	* - 3.25E+00	9.06E-01
		Cs-137	* - 1.38E-01	8.54E-01
		Ba-140	* - 1.32E+00	4.14E+00
		La-140	* - 4.01E-02	1.25E+00
		Ra-226	* 1.60E+00	2.72E+01
		Th-228	* 2.38E+01	2.16E+01

\* Denotes a result less than the detection limit.

TABLE B-7.1 (cont.)  
**GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER**  
 Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102B Monthly Headworks	1/6/2004 - 2/3/2004	Be-7	* - 1.14E+01	1.67E+01
		K-40	* - 3.73E+01	4.35E+01
		Mn-54	* 6.23E-01	2.09E+00
		Co-58	* 9.22E-01	2.31E+00
		Fe-59	* 3.49E+00	4.37E+00
		Co-60	* 3.33E+00	2.26E+00
		Zn-65	* 3.51E+00	5.05E+00
		Nb-95	* 2.25E+00	2.13E+00
		Zr-95	* - 7.13E-01	3.66E+00
		Cs-134	* - 1.76E+00	2.36E+00
		Cs-137	* - 1.62E+00	2.84E+00
		Ba-140	* - 1.75E+00	9.51E+00
		La-140	* - 2.77E+00	3.32E+00
		Ra-226	* 7.97E+01	6.79E+01
		Th-228	* - 2.80E-01	5.04E+01
	2/24/2004 - 2/24/2004	Be-7	* - 2.89E+00	3.01E+01
		K-40	* 4.54E+01	9.60E+01
		Mn-54	* 8.46E-02	4.01E+00
		Co-58	* - 1.71E+00	4.22E+00
		Fe-59	* 4.37E+00	7.18E+00
		Co-60	* - 1.86E+00	5.25E+00
		Zn-65	* 2.78E+00	8.67E+00
		Nb-95	* - 1.74E+00	3.59E+00
		Zr-95	* 5.40E+00	6.49E+00
		Cs-134	* - 1.03E+00	3.49E+00
		Cs-137	* - 4.43E-01	4.76E+00
		Ba-140	* 8.35E+00	1.47E+01
		La-140	* - 6.29E-01	5.37E+00
		Ra-226	* 3.01E+01	1.83E+02
		Th-228	* 2.80E+00	7.15E+00

\* Denotes a result less than the detection limit.

TABLE B-7.1 (cont.)  
**GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER**  
 Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102B Monthly Headworks	3/24/2004 - 3/24/2004	Be-7	* - 1.46E+01	1.53E+01
		K-40	* 4.34E+01	4.75E+01
		Mn-54	* - 2.74E-02	1.78E+00
		Co-58	* 3.15E-02	1.78E+00
		Fe-59	* 1.38E+00	3.53E+00
		Co-60	* - 6.89E-01	1.73E+00
		Zn-65	* - 5.16E+00	3.94E+00
		Nb-95	* 2.72E-01	1.75E+00
		Zr-95	* 1.83E-01	2.97E+00
		Cs-134	* - 4.95E+00	1.85E+00
		Cs-137	* - 8.89E-01	1.76E+00
		Ba-140	* - 1.13E+00	7.91E+00
		La-140	* - 1.21E+00	2.36E+00
		Ra-226	* - 5.49E+01	5.32E+01
		Th-228	* 7.31E+01	3.77E+01
	3/24/2004 - 4/30/2004	Be-7	* 7.63E+00	6.85E+00
		K-40	* - 2.36E+01	1.77E+01
		Mn-54	* - 5.09E-01	8.31E-01
		Co-58	* - 1.79E-01	8.17E-01
		Fe-59	* 1.43E+00	1.77E+00
		Co-60	* - 5.08E-01	8.66E-01
		Zn-65	* - 3.87E+00	1.99E+00
		Nb-95	* 6.85E-01	8.48E-01
		Zr-95	* 2.18E-01	1.41E+00
		Cs-134	* - 2.72E+00	8.62E-01
		Cs-137	* 3.95E-01	8.57E-01
		Ba-140	* 4.76E-01	3.54E+00
		La-140	* - 6.96E-01	1.30E+00
		Ra-226	* - 4.84E+00	2.42E+01
		Th-228	* - 5.25E+01	1.89E+01

\* Denotes a result less than the detection limit.



TABLE B-7.1 (cont.)  
**GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER**  
 Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102B Monthly Headworks	4/30/2004 - 6/2/2004	Be-7	* - 4.08E+00	1.23E+01
		K-40	* - 1.67E+00	3.13E+01
		Mn-54	* 4.97E-01	1.43E+00
		Co-58	* - 1.27E+00	1.51E+00
		Fe-59	* - 2.03E+00	6.32E+00
		Co-60	* 1.17E+00	4.17E+00
		Zn-65	* - 9.19E-01	7.55E+00
		Nb-95	* - 1.42E+00	1.63E+00
		Zr-95	* - 1.87E+00	2.70E+00
		Cs-134	* 5.24E-01	1.43E+00
		Cs-137	* - 7.77E-01	1.65E+00
		Ba-140	* - 3.98E-01	7.47E+00
		La-140	* - 8.28E-01	2.88E+00
		Ra-226	* - 3.71E+01	4.88E+01
		Th-228	* - 5.29E+01	3.90E+01
	6/2/2004 - 7/7/2004	Be-7	* 1.49E+01	1.51E+01
		K-40	* - 1.27E+01	3.17E+01
		Mn-54	* - 4.80E-01	1.69E+00
		Co-58	* 3.38E-02	1.57E+00
		Fe-59	* - 9.13E-01	3.72E+00
		Co-60	* 1.30E+00	1.68E+00
		Zn-65	* - 5.05E+00	4.14E+00
		Nb-95	* - 1.09E+00	1.82E+00
		Zr-95	* - 2.44E+00	2.88E+00
		Cs-134	* - 5.51E+00	1.89E+00
		Cs-137	* - 5.43E-01	1.84E+00
		Ba-140	* 4.32E+00	8.26E+00
		La-140	* - 3.98E-01	2.34E+00
		Ra-226	* 2.47E+01	7.75E+01
		Th-228	* 1.63E+01	4.16E+01

\* Denotes a result less than the detection limit.

TABLE B-7.1 (cont.)  
**GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER**  
 Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102B Monthly Headworks	7/7/2004 - 8/3/2004	Be-7	* - 1.06E+00	1.17E+01
		K-40	* 1.79E+01	4.49E+01
		Mn-54	* - 2.44E-01	1.54E+00
		Co-58	* - 5.11E-01	1.59E+00
		Fe-59	* - 3.47E+00	2.96E+00
		Co-60	* - 8.14E-01	2.21E+00
		Zn-65	* 6.87E-01	2.56E+00
		Nb-95	* 1.89E-01	1.63E+00
		Zr-95	* 1.60E-01	2.52E+00
		Cs-134	* - 5.28E-01	1.38E+00
		Cs-137	* - 4.00E-01	1.76E+00
		Ba-140	* 2.65E+00	5.50E+00
		La-140	* - 2.31E+00	2.25E+00
		Ra-226	* - 3.34E+01	3.54E+01
		Th-228	* - 1.50E+01	3.17E+01
	8/3/2004 - 9/1/2004	Be-7	* 3.38E+00	5.62E+00
		K-40	* 2.18E+00	3.57E+01
		Mn-54	* 1.63E-01	6.68E-01
		Co-58	* - 9.11E-01	6.98E-01
		Fe-59	* - 4.68E-01	2.37E+00
		Co-60	* 2.60E+00	1.87E+00
		Zn-65	* - 3.14E+00	2.60E+00
		Nb-95	* - 5.13E-01	7.31E-01
		Zr-95	* - 7.24E-02	1.21E+00
		Cs-134	* - 3.83E-01	6.42E-01
		Cs-137	* 5.62E-01	7.32E-01
		Ba-140	* 1.00E+00	3.35E+00
		La-140	* 7.58E-01	1.12E+00
		Ra-226	* 1.84E+01	3.29E+01
		Th-228	* - 1.04E+02	1.96E+01

\* Denotes a result less than the detection limit.

TABLE B-7.1 (cont.)  
**GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER**  
 Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102B Monthly Headworks	9/1/2004 - 10/5/2004	Be-7	* - 3.78E+00	1.18E+01
		K-40	* 3.93E+01	4.66E+01
		Mn-54	* 1.43E+00	1.55E+00
		Co-58	* - 1.34E-01	1.45E+00
		Fe-59	* 2.13E+00	2.77E+00
		Co-60	* 1.66E-01	1.52E+00
		Zn-65	* - 7.80E-02	3.58E+00
		Nb-95	* 6.60E-01	1.57E+00
		Zr-95	* 6.70E-01	2.47E+00
		Cs-134	* 6.67E-01	1.41E+00
		Cs-137	* 9.18E-01	1.53E+00
		Ba-140	* 6.01E-01	6.98E+00
		La-140	* - 1.25E+00	2.12E+00
		Ra-226	* - 9.68E+00	3.85E+01
		Th-228	* - 7.60E+01	3.31E+01
	10/5/2004 - 11/2/2004	Be-7	* 3.76E+00	1.48E+01
		K-40	* - 5.35E+01	3.54E+01
		Mn-54	* - 2.03E+00	1.83E+00
		Co-58	* - 4.79E-01	1.87E+00
		Fe-59	* - 2.51E+00	2.80E+00
		Co-60	* 4.71E-02	1.75E+00
		Zn-65	* 4.64E-01	3.91E+00
		Nb-95	* - 3.00E+00	1.91E+00
		Zr-95	* - 2.84E+00	3.24E+00
		Cs-134	* 3.17E-01	1.68E+00
		Cs-137	* 7.55E-01	1.54E+00
		Ba-140	* - 2.59E+00	8.25E+00
		La-140	* 7.08E-01	2.38E+00
		Ra-226	* - 4.67E+01	4.55E+01
		Th-228	* - 3.15E+01	3.76E+01

\* Denotes a result less than the detection limit.

TABLE B-7.1 (cont.)  
**GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER**  
 Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102B Monthly Headworks	11/2/2004 - 12/1/2004	Be-7	* 1.00E+01	1.52E+01
		K-40	* - 2.36E+01	3.47E+01
		Mn-54	* - 1.03E-01	1.59E+00
		Co-58	* 9.54E-01	1.90E+00
		Fe-59	* - 1.53E+00	2.81E+00
		Co-60	* 9.01E-01	2.04E+00
		Zn-65	* 1.50E+00	3.32E+00
		Nb-95	* - 6.08E-01	1.95E+00
		Zr-95	* - 3.25E-01	3.59E+00
		Cs-134	* - 1.36E-01	1.65E+00
		Cs-137	* 1.41E+00	1.84E+00
		Ba-140	* 3.99E+00	8.12E+00
		La-140	* - 1.14E+00	2.71E+00
		Ra-226	* - 3.31E+01	4.38E+01
		Th-228	* - 2.03E+01	3.91E+01
	12/1/2004 - 1/4/2005	Be-7	* 4.43E+00	1.75E+01
		K-40	* - 5.29E+01	3.88E+01
		Mn-54	* - 1.51E+00	2.01E+00
		Co-58	* 5.13E-03	1.57E+00
		Fe-59	* - 1.01E+00	3.24E+00
		Co-60	* - 1.18E-01	2.12E+00
		Zn-65	* - 2.52E-01	4.26E+00
		Nb-95	* - 7.88E-01	2.31E+00
		Zr-95	* 8.25E-01	3.13E+00
		Cs-134	* 1.76E-01	1.60E+00
		Cs-137	* - 7.75E-01	2.14E+00
		Ba-140	* - 5.37E-01	8.52E+00
		La-140	* 6.16E-01	3.56E+00
		Ra-226	* - 9.22E+00	5.32E+01
		Th-228	* - 3.14E+01	4.42E+01

\* Denotes a result less than the detection limit.

TABLE B-7.2  
**GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER - SUMMARY**  
 Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
<b><u>102A</u></b>						
Be-7	(I)	2.80E+00	-3.56E+00	8.92E+00	11	0
K-40	(I)	1.17E+01	-2.66E+01	3.94E+01	11	1
Mn-54	(I)	-1.01E-01	-1.44E+00	7.96E-01	11	0
Co-58	(I)	-1.39E-01	-9.76E-01	9.70E-01	11	0
Fe-59	(I)	-3.48E-01	-2.59E+00	2.73E+00	11	0
Co-60	(I)	1.32E-01	-1.95E+00	1.61E+00	11	0
Zn-65	(I)	-1.85E+00	-6.55E+00	1.63E+00	11	0
Nb-95	(I)	3.21E-01	-2.27E+00	2.01E+00	11	0
Zr-95	(I)	7.48E-02	-1.90E+00	1.66E+00	11	0
Cs-134	(I)	-2.09E+00	-8.36E+00	2.43E+00	11	0
Cs-137	(I)	-5.27E-03	-1.10E+00	1.64E+00	11	0
Ba-140	(I)	-5.98E-01	-4.18E+00	2.69E+00	11	0
La-140	(I)	-1.42E-01	-3.97E+00	2.64E+00	11	0
Ra-226	(I)	4.21E+00	-2.33E+01	3.68E+01	11	0
Th-228	(I)	-2.13E+01	-9.02E+01	5.74E+01	11	0

(I) Indicator Station

TABLE B-8.1  
**TRITIUM IN SANITARY WASTE TREATMENT WATER**  
 Results in pCi/liter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
<b><u>FFTF - Effluent</u></b>			
H-3 102A	1/6/2004 - 2/3/2004	3.19E+03	2.85E+02
	2/3/2004 - 3/2/2004	(a)	
	3/2/2004 - 4/6/2004	3.14E+03	2.28E+02
	4/6/2004 - 4/30/2004	3.02E+03	2.19E+02
	4/30/2004 - 6/2/2004	2.67E+03	2.54E+02
	6/2/2004 - 7/7/2004	3.20E+03	2.17E+02
	7/7/2004 - 8/3/2004	3.26E+03	2.02E+02
	8/3/2004 - 9/1/2004	2.70E+03	1.69E+02
	9/1/2004 - 10/5/2004	3.11E+03	2.06E+02
	10/5/2004 - 11/2/2004	3.23E+03	2.04E+02
	11/2/2004 - 12/1/2004	3.19E+03	2.01E+02
	12/1/2004 - 1/4/2005	5.49E+03	2.65E+02
<b><u>Monthly Headworks</u></b>			
H-3 102B	1/6/2004 - 2/3/2004	4.54E+02	1.72E+02
	2/24/2004 - 2/24/2004	* - 7.20E+01	1.49E+02
	3/24/2004 - 3/24/2004	1.37E+03	1.86E+02
	3/24/2004 - 4/30/2004	5.05E+02	1.42E+02
	4/30/2004 - 6/2/2004	9.36E+02	1.39E+02
	6/2/2004 - 7/7/2004	9.84E+02	1.77E+02
	7/7/2004 - 8/3/2004	1.01E+03	1.54E+02
	8/3/2004 - 9/1/2004	8.46E+02	1.34E+02
	9/1/2004 - 10/5/2004	1.10E+03	1.75E+02
	10/5/2004 - 11/2/2004	9.06E+02	1.58E+02
	11/2/2004 - 12/1/2004	1.18E+03	1.59E+02
	12/1/2004 - 1/4/2005	1.72E+03	2.16E+02

\* Denotes a result less than the detection limit.

(a) Sampler out of service.

TABLE B-8.2  
**TRITIUM IN SANITARY WASTE TREATMENT WATER - SUMMARY**  
 Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
<b><u>All Samples</u></b>						
H-3	(I)	2.05E+03	-7.20E+01	5.49E+03	23	22
<b><u>FFTF Effluent</u></b>						
H-3 102A	(I)	3.29E+03	2.67E+03	5.49E+03	11	11
<b><u>Monthly Headworks</u></b>						
H-3 102B	(I)	9.12E+02	-7.20E+01	1.72E+03	12	11

(I) Indicator Stations

TABLE B-9.1  
**GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT SEDIMENT**  
 Results in pCi/kilogram

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102D	11/17/2004	Be-7	* 1.44E+02	2.01E+02
		K-40	1.11E+04	9.62E+02
		Mn-54	* 1.89E+01	2.52E+01
		Co-58	* - 1.76E+01	2.20E+01
		Fe-59	* - 1.75E+01	4.68E+01
		Co-60	* 7.16E+01	3.07E+01
		Zn-65	* 2.09E+01	6.14E+01
		Nb-95	* 6.99E+00	2.83E+01
		Zr-95	* 3.86E+01	4.25E+01
		Cs-134	* 6.58E+00	2.52E+01
		Cs-137	8.28E+01	3.58E+01
		Ba-140	* 2.65E+01	1.06E+02
		La-140	* - 1.78E+01	3.51E+01
		Ra-226	* 8.33E+02	7.90E+02
		Th-228	2.65E+03	8.57E+02

\* Denotes a result less than the detection limit.



TABLE B-9.2  
**GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER - SUMMARY**  
 Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
<b><u>102D</u></b>						
Be-7	(I)	1.44E+02	1.44E+02	1.44E+02	1	0
K-40	(I)	1.11E+04	1.11E+04	1.11E+04	1	1
Mn-54	(I)	1.89E+01	1.89E+01	1.89E+01	1	0
Co-58	(I)	-1.76E+01	-1.76E+01	-1.76E+01	1	0
Fe-59	(I)	-1.75E+01	-1.75E+01	-1.75E+01	1	0
Co-60	(I)	7.16E+01	7.16E+01	7.16E+01	1	0
Zn-65	(I)	2.09E+01	2.09E+01	2.09E+01	1	0
Nb-95	(I)	6.99E+00	6.99E+00	6.99E+00	1	0
Zr-95	(I)	3.86E+01	3.86E+01	3.86E+01	1	0
Cs-134	(I)	6.58E+00	6.58E+00	6.58E+00	1	0
Cs-137	(I)	8.28E+01	8.28E+01	8.28E+01	1	1
Ba-140	(I)	2.65E+01	2.65E+01	2.65E+01	1	0
La-140	(I)	-1.78E+01	-1.78E+01	-1.78E+01	1	0
Ra-226	(I)	8.33E+02	8.33E+02	8.33E+02	1	0
Th-228	(I)	2.65E+03	2.65E+03	2.65E+03	1	1

(I) Indicator Stations

TABLE B-10.1  
**GAMMA SPECTROMETRY OF COOLING TOWER SEDIMENT**  
 Results in pCi/kilogram

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
119B	6/16/2004	Be-7	5.51E+03	5.94E+02
		K-40	8.56E+03	9.93E+02
		Mn-54	* - 1.56E+01	3.41E+01
		Co-58	* - 1.21E+01	3.11E+01
		Fe-59	* - 1.77E+01	6.41E+01
		Co-60	* 3.55E+01	3.43E+01
		Zn-65	* 2.22E+01	7.91E+01
		Nb-95	* 3.29E+01	3.72E+01
		Zr-95	* 5.48E+01	6.49E+01
		Cs-134	* - 1.63E+01	3.27E+01
		Cs-137	1.85E+02	5.53E+01
		Ba-140	* 5.95E+01	2.15E+02
		La-140	* 1.04E+01	7.14E+01
		Ra-226	* 3.98E+03	1.04E+03
		Th-228	2.07E+03	9.83E+02
	9/8/2004	Be-7	1.54E+04	3.96E+02
		K-40	1.06E+04	4.70E+02
		Mn-54	* - 7.85E-01	1.51E+01
		Co-58	* - 4.55E-01	1.40E+01
		Fe-59	* - 3.75E-01	2.90E+01
		Co-60	* 1.37E+01	1.54E+01
		Zn-65	* 8.79E+00	3.63E+01
		Nb-95	* 4.60E+01	1.81E+01
		Zr-95	* 1.80E+01	2.61E+01
		Cs-134	* - 3.24E+00	1.58E+01
		Cs-137	2.46E+02	3.28E+01
		Ba-140	* - 7.45E+01	7.08E+01
		La-140	* - 1.45E+01	2.32E+01
		Ra-226	* 9.31E+02	2.43E+03
		Th-228	2.51E+03	5.15E+02

\* Denotes a result less than the detection limit.

TABLE B-10.2  
**GAMMA SPECTROMETRY OF COOLING TOWER SEDIMENT - SUMMARY**  
 Results in pCi/kilogram

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
<b><u>119B</u></b>						
Be-7	(I)	1.05E+04	5.51E+03	1.54E+04	2	2
K-40	(I)	9.58E+03	8.56E+03	1.06E+04	2	2
Mn-54	(I)	-8.19E+00	-1.56E+01	-7.85E-01	2	0
Co-58	(I)	-6.28E+00	-1.21E+01	-4.55E-01	2	0
Fe-59	(I)	-9.04E+00	-1.77E+01	-3.75E-01	2	0
Co-60	(I)	2.46E+01	1.37E+01	3.55E+01	2	0
Zn-65	(I)	1.55E+01	8.79E+00	2.22E+01	2	0
Nb-95	(I)	3.95E+01	3.29E+01	4.60E+01	2	0
Zr-95	(I)	3.64E+01	1.80E+01	5.48E+01	2	0
Cs-134	(I)	-9.77E+00	-1.63E+01	-3.24E+00	2	0
Cs-137	(I)	2.16E+02	1.85E+02	2.46E+02	2	2
Ba-140	(I)	-7.50E+00	-7.45E+01	5.95E+01	2	0
La-140	(I)	-2.05E+00	-1.45E+01	1.04E+01	2	0
Ra-226	(I)	2.46E+03	9.31E+02	3.98E+03	2	0
Th-228	(I)	2.29E+03	2.07E+03	2.51E+03	2	2

(I) Indicator Stations