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Dominion[SM]

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U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

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Docket Nos.	50-245
	50-336
	50-423
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	DPR-65
	NPF-49

DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNITS 1, 2, AND 3
2009 ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

This letter transmits the Annual Radiological Environmental Operating Report for the Millstone Power Station, for the period January 2009 through December 2009. This satisfies the provisions of Section 5.7.2 of Millstone Power Station Unit 1 Permanently Defueled Technical Specifications (PDTS), and Sections 6.9.1.6a and 6.9.1.3 of the Millstone Power Station Units 2 and 3 Technical Specifications, respectively.

If you have any questions or require additional information, please contact Mr. William D. Bartron at (860) 444 4301.

Sincerely,

R. K. MacManus
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Attachments: 1

Commitments made in this letter: None.

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ATTACHMENT 1

2009 ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

MILLSTONE POWER STATION UNITS 1, 2, AND 3
DOMINION NUCLEAR CONNECTICUT, INC. (DNC)

Millstone Power Station

2009
Radiological Environmental Operating Report

January 1, 2009 – December 31, 2009

Dominion Nuclear Connecticut, Inc.

Unit	License	Docket
1	DPR-21	50-245
2	DPR-65	50-336
3	NPF-49	50-423

Dominion

ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

MILLSTONE POWER STATION

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

2009

MILLSTONE UNIT 1, DOCKET NO. 50-245
MILLSTONE UNIT 2, DOCKET NO. 50-336
MILLSTONE UNIT 3, DOCKET NO. 50-423

By the

Dominion Nuclear Connecticut, Inc.
Waterford, Connecticut

~ TABLE OF CONTENTS ~

EXECUTIVE SUMMARY

INTRODUCTION

This report summarizes the results of the Radiological Environmental Monitoring Program (REMP) conducted in the vicinity of Millstone Power Station (MPS) during the period from January 1 to December 31, 2009. This document has been prepared in accordance with the requirements of Millstone Unit 1, Unit 2 and 3 Technical Specifications.

The REMP has been established to monitor the radiation and radioactivity released to the environment as a result of Millstone Station's operation. This program, initiated in April 1967, includes the collection, analysis, and evaluation of radiological data in order to assess the impact of Millstone Station on the environment and on the general public.

SAMPLING AND ANALYSIS

The environmental sampling media collected in the vicinity of MPS and at distant locations included air particulate filters, charcoal cartridges, soil, goat milk, pasture grass, hay, well water, broadleaf vegetation, fruits, vegetables, seawater, bottom sediment, aquatic flora, fish, mussels, oysters, clams and lobster.

During 2009, there were 1082 samples collected from the atmospheric, aquatic, and terrestrial environments. In addition, 176 exposure measurements were obtained using environmental thermoluminescent dosimeters (TLDs).

A small number of inadvertent issues were encountered in 2009 in the collection of environmental samples in accordance with the Millstone Radiological Effluent Monitoring and Offsite Dose Calculation Manual (REMODCM). Equipment failures and electrical outages resulted in a small number of instances in which lower than normal sampling volumes were collected at the airborne monitoring stations. However, in all cases sufficient volume was obtained to perform all the appropriate analyses. Therefore, all 416 air particulate and charcoal cartridges were collected and analyzed as required. A full description of all discrepancies encountered with the environmental monitoring program is presented in the Notes for the Data Tables of this report.

There were 1412 analyses performed on the environmental media samples. The AREVA-NP Environmental Laboratory of Westborough, MA, performed these analyses. Samples were analyzed as required by the Millstone REMODCM.

LAND USE CENSUS

The annual land use census in the vicinity of Millstone Station was conducted as required by the Millstone REMODCM between July 15 and December 31, 2009. Although broadleaf sampling may be used in lieu of a garden census, gardens were included in the 2009 census. Only vegetable gardens having an area of more than 500 square feet need to be identified. Due to the difficulty of measuring individual gardens, the nearest garden within each directional sector identified by a drive-by survey is listed in Appendix A. No new dairy animals within 10 miles of the Station were located during the census. Monthly broad leaf sampling was also performed; it may be used in lieu of the garden census.

RADIOLOGICAL IMPACT TO THE ENVIRONMENT

Most samples collected as part of the Millstone REMP continued to contain detectable amounts of naturally-occurring and man-made radioactive materials. There was no plant related activity detected in any of the terrestrial samples. Offsite ambient radiation measurements using environmental TLDs beyond the site boundary ranged between 55 and 90 milliRoentgens per year. The range of ambient radiation levels observed with the TLDs is consistent with natural background radiation levels for Connecticut.

Monitoring of the aquatic environment in the area of the discharge indicated the presence of the following station related radionuclide: Tritium. This station related nuclide was only found onsite inside the mixing zone of the quarry discharge at levels that were expected from routine plant operation. No plant related activity was detected in any offsite samples. The predominant radioactivity for all samples was from non-plant related sources, such as fallout from nuclear weapons tests and naturally occurring radionuclides.

RADIOLOGICAL IMPACT TO THE GENERAL PUBLIC

During 2009, radiation doses to the general public as a result of Millstone Station's operation continued to be well below the federal limits and much less than the dose due to other sources of man-made (e.g., X-rays, medical) and naturally-occurring (e.g., cosmic, radon) radiation.

The calculated total body dose to the maximally exposed member of the general public from radioactive effluents and ambient radiation resulting from MPS operations for 2009 was approximately 0.2 mrem for the year. This conservative estimate is well below the Environmental Protection Agency's (EPA) annual dose limit to any member of the general public and is a fraction of a percent of the typical dose received from natural and other sources of man-made radiation.

CONCLUSIONS

The 2009 Radiological Environmental Monitoring Program for Millstone Station resulted in the collection and analysis of over a thousand environmental samples and measurements. The data obtained were used to determine the impact of Millstone Station's operation on the environment and on the general public.

An evaluation of direct radiation measurements, environmental sample analyses, and dose calculations indicates all applicable federal criteria were met. Furthermore, radiation levels and resulting doses from station operation were a small fraction of those attributed to natural and man-made background radiation.

Based on this information, there is no significant radiological impact on the environment or on the general public due to Millstone Station's operation.

1. INTRODUCTION

This section provides an overview of the Millstone Power Station Radiological Environmental Monitoring Program. It also includes background information to allow a reader to have an informed understanding of radiation and nuclear power operation.

1.1 Overview

The Radiological Environmental Monitoring Program for 2009 performed by Dominion Nuclear Connecticut for Millstone Nuclear Power Station (MPS) is discussed in this report. Since the operation of a nuclear power plant results in the release of small amounts of radioactivity and low levels of radiation, the Nuclear Regulatory Commission (NRC) requires a program to be established to monitor radiation and radioactivity in the environment (Reference 1). This report, published annually per Millstone Station's Technical Specifications (section 6.9.1.6 for Unit 2 and Section 6.9.1.3 for Unit 3), summarizes the results of measurements of radiation and radioactivity in the environment in the vicinity of the Millstone Station and at distant locations during the period January 1 to December 31, 2009.

The Radiological Environmental Monitoring Program consists of taking radiation measurements and collecting samples from the environment, analyzing them for radioactivity content, and interpreting the results. With emphasis on the critical radiation exposure pathways to humans, samples from the aquatic, atmospheric, and terrestrial environments are collected. These samples include, but are not limited to: air, soil, goat milk, pasture grass, hay, well water, broadleaf vegetation, fruits, vegetables, seawater, bottom sediment, aquatic flora, fish, mussels, oysters, clams and lobster. Thermoluminescent dosimeters (TLDs) are placed in the environment to measure gamma radiation levels. The TLDs are processed and the environmental samples are analyzed to measure the very low levels of radiation and radioactivity present in the environment as a result of MPS operation and other natural and man-made sources. These results are reviewed by MPS's radiological staff and have been reported semiannually or annually to the Nuclear Regulatory Commission and others for over 30 years.

In order to more fully understand how a nuclear power plant impacts humans and the environment, background information on radiation and radioactivity, natural and man-made sources of radiation, reactor operations, radioactive effluent controls, and radiological impact on humans is provided. It is believed that this information will assist the reader in understanding the radiological impact on the environment and humans from the operation of Millstone Station.

1.2 Radiation and Radioactivity

All matter is made of atoms. An atom is the smallest part into which matter can be broken down and still maintain all its chemical properties. Nuclear radiation is energy, in the form of waves or particles that is given off from atoms in an excited state (e.g., unstable, radioactive atoms).

Radioactive material exists naturally and has always been a part of our environment. The earth's crust, for example, contains radioactive uranium, radium, thorium, and potassium. Some radioactivity is a result of nuclear weapons testing. Examples of radioactive fallout that is normally present in environmental samples are cesium-137 and strontium-90. Some examples of radioactive materials released from a nuclear power plant are cesium-137, iodine-131, strontium-90, and cobalt-60.

Radiation is measured in units of millirem, much like temperature is measured in degrees. A millirem (mrem) is a measure of the biological effect of the energy deposited in tissue. The natural and man-made radiation dose received in one year by the average American is 300 to 600 mrem (References 2, 3, 4, and 5). The per capita dose has increased substantially since the mid 1980's because of the increased usage of medical procedures involving exposure to radiation (see Reference 3).

Radioactivity is measured in Curies. Levels of radioactivity commonly seen in the environment are typically a small fraction of a Curie, therefore radioactivity in the environment is typically measured in picocuries. One picocurie (pCi) is equal to 0.037 disintegrations per second (2.22 disintegrations per minute).

1.3 Sources of Radiation

As mentioned previously, naturally occurring radioactivity has always been a part of our environment. Table 1.3 shows the sources and doses of radiation from natural and man-made sources.

Table 1.3

Radiation Sources and Corresponding Doses [1]

NATURAL		MAN-MADE	
Source	Radiation Dose (millirem/year)	Source	Radiation Dose (millirem/year)
Internal, inhalation[2]	228	Medical[3]	300
External, space	33	Consumer[4]	13
Internal, ingestion	29	Industrial, security, [5]	0.3
External, terrestrial	21	Occupational	0.5
		Weapons Fallout	< 1
		Nuclear Power Plants	< 1
Approximate Total	311	Approximate Total	314

(1) information from References 3 and 4
(2) from radon and thoron
(3) includes CT (147 millirem), nuclear medicine (77 mrem), interventional fluoroscopy (43 mrem) and conventional radiography and fluoroscopy (33 mrem)
(4) primarily from cigarette smoking (4.6 mrem), commercial air travel (3.4 mrem), building materials (3.5 mrem) and mining and agriculture (0.8 mrem)
(5) Industrial, security, medical, educational and research

Cosmic radiation (external, space) from the sun and outer space penetrates the earth's atmosphere and continuously bombards us with rays and charged particles. Some of this cosmic radiation interacts with gases and particles in the atmosphere, making them radioactive. These radioactive byproducts from cosmic ray bombardment are referred to as cosmogenic radionuclides. Isotopes such as beryllium-7 and carbon-14 are formed in this way. Exposure to cosmic and cosmogenic sources of radioactivity results in about 30 mrem of radiation dose per year.

Additionally, natural radioactivity is in our body and in the food we eat (about 30 millirem/year), the ground we walk on (about 20 millirem/year) and the air we breathe (about 230 millirem/year). The majority of a person's annual dose results from exposure to radon and thoron in the air we breathe. These gases and their radioactive decay products arise from the decay of naturally occurring uranium, thorium and radium in the soil and building products such as brick, stone, and concrete. Radon and thoron levels vary greatly with location, primarily due to changes in the concentration of uranium and thorium in the soil. Residents at some locations in Colorado, New York, Pennsylvania, New Jersey and even Connecticut have a higher annual dose as a result of higher levels of radon/thoron gases in these areas. In total, these various sources of naturally-occurring radiation and radioactivity contribute to a total dose of about 310 mrem per year.

In addition to natural radiation, we are normally exposed to radiation from a number of man-made sources. The single largest doses from man-made sources result from therapeutic and diagnostic applications of x-rays and radiopharmaceuticals. The annual dose to an individual in the U.S. from medical and dental exposure is about 300 millirem. Consumer products/uses, such cigarettes, building materials and commercial air travel contribute about 10 millirem/year. Much smaller doses result from weapons fallout (less than 1 millirem/year) and nuclear power plants (less than 1 mrem/year). Typically, the average person in the United States receives about 310 millirem per year from man-made sources.

1.4 Nuclear Reactor Operations

Millstone Station generates about 2100 megawatts of electricity at full power, which provides approximately one-third of the power consumed in the State of Connecticut. Unit 2 and Unit 3 are pressurized water reactors (Unit 1, which is permanently shutdown, was a boiling water reactor). The nuclear station is located on an approximate 500-acre site about 5 kilometers (three miles) west of New London, CT. Commercial operation of Unit 2 began in December 1975 and Unit 3 in May 1986.

Millstone Station was operational during most of 2009, with the exception of a refueling outage at Unit 2 and a mini-outages at each unit. Unit 2 refueling outage was performed between October 6 and November 18. The resulting monthly capacity factors are presented in Table 1.4.

Nuclear-generated electricity is produced by many of the same techniques used for conventional oil and coal-generated electricity. Both systems use heat to boil water in order to produce steam. The steam turns a turbine, which turns a generator, producing electricity. In both cases, the steam passes through a condenser where it changes back into water and recirculates back through the system. The cooling water source for Millstone Station is the Niantic Bay.

TABLE 1.4

MPS OPERATING CAPACITY FACTOR DURING 2009
(Based on designed electrical rating)

Month	Unit 2 Percent Capacity	Unit 3 Percent Capacity
January	98.7%	100.6%
February	98.7%	100.6%
March	98.5%	99.8%
April	98.6%	100.7%
May	98.6%	100.5%
June	98.4%	100.3%
July	26.7%*	99.7%
August	97.9%	98.8%
September	98.0%	99.3%
October	17.9%**	100.2%
November	38.3%**	100.3%
December	99.3%	61.2%*
Annual Average	80.6%	96.8%

* shutdown for mini-outages these months
** shutdown for refueling during these months

The key difference between nuclear power and conventional power is the source of heat used to boil the water. Conventional plants burn fossil fuels in a boiler, while nuclear plants use uranium fission in a nuclear reactor.

Inside the reactor, a nuclear reaction called fission takes place. Particles, called neutrons, strike the nucleus of a uranium-235 atom, causing it to split into fragments called radioactive fission products. The splitting of the atoms releases both heat and more neutrons. The newly-released neutrons then collide with and split other uranium atoms, thus making more heat and releasing even more neutrons, and on and on until the uranium fuel is depleted or spent. This process is called a chain reaction. When this chain reaction is self sustaining, the reactor is called "critical."

The operation of a nuclear reactor results in the release of small amounts of radioactivity and low levels of radiation. The radioactivity originates from two major sources, radioactive fission products and radioactive activation products. Radioactive fission products, as illustrated in Figure 1.4-1 (Reference 6), originate from the fissioning of the nuclear fuel. These fission products get into the reactor coolant from their release by minute amounts of uranium on the outside surfaces of the fuel cladding, by diffusion through the fuel pellets and cladding and, on occasion, through defects or failures in the fuel cladding. These fission products circulate along with the reactor coolant water and will deposit on the internal surfaces of pipes and equipment. The radioactive fission products on the pipes and equipment emit radiation. Examples of some fission products are krypton-85 (Kr-85), strontium-90 (Sr-90), iodine-131 (I-131), xenon-133 (Xe-133), and cesium-137 (Cs-137).

Nuclear Fission

Fission is the splitting of atoms (e.g., Uranium-235) by a neutron to release heat and more neutrons, creating a chain reaction. Radiation and fission products are by-products of the process.

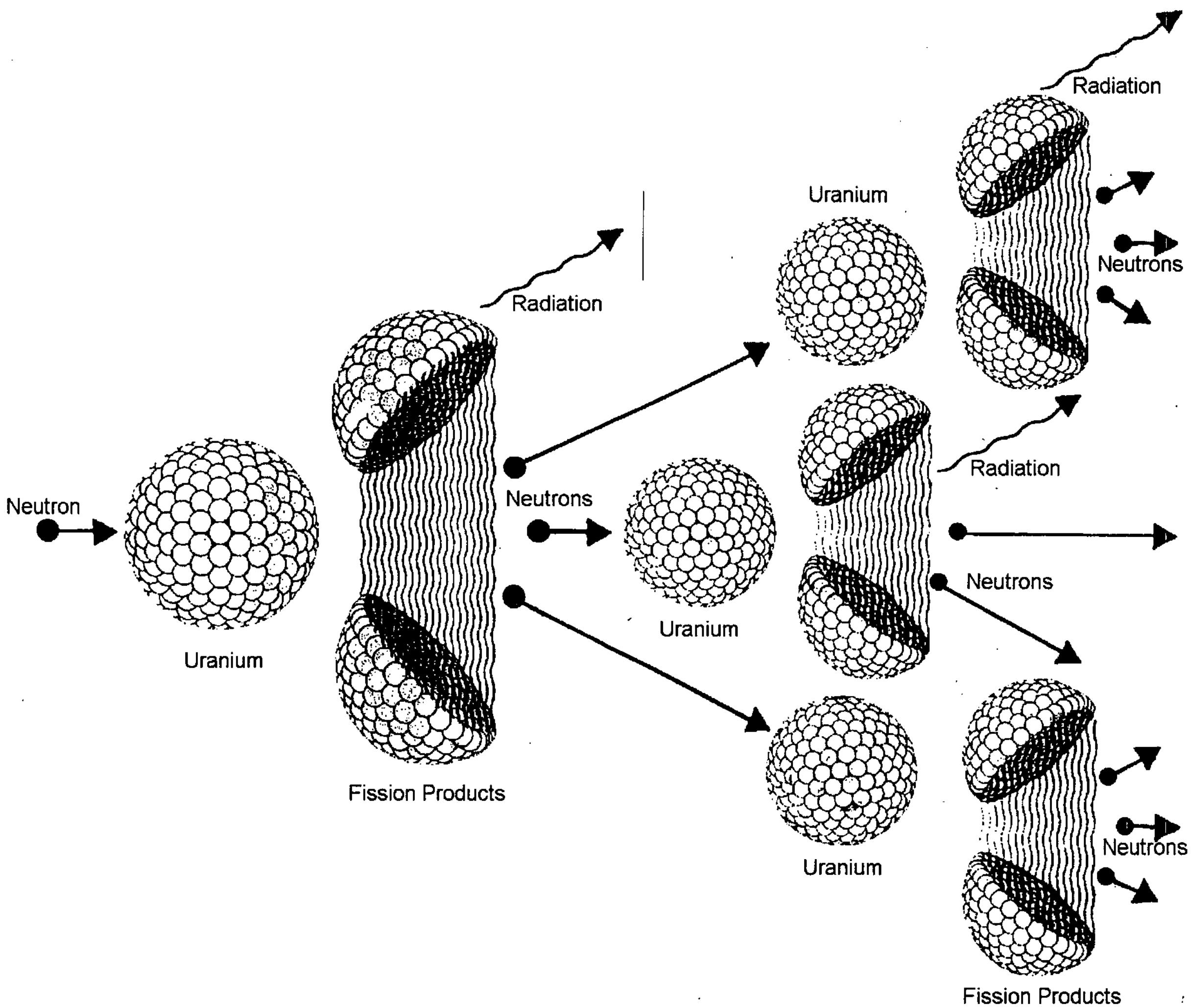


Figure 1.4-1
Radioactive Fission Product Formation

Radioactive activation products (see Figure 1.4-2), on the other hand, originate from two sources. The first is by neutron bombardment of the hydrogen, oxygen and other gas (helium, argon, nitrogen) molecules in the reactor cooling water. The second is a result of the fact that the internals of any piping system or component are subject to minute yet constant corrosion from the reactor cooling water. These minute metallic particles (for example: nickel, iron, cobalt, or magnesium) are transported through the reactor core into the fuel region, where neutrons may react with the nuclei of these particles, producing radioactive products. So, activation products are nothing more than ordinary naturally-occurring atoms that are made unstable or radioactive by neutron bombardment. These activation products circulate along with the reactor coolant water and will deposit on the internal surfaces of pipes and equipment. The radioactive activation products on the pipes and equipment emit radiation. Examples of some activation products are manganese-54 (Mn-54), iron-59 (Fe-59), cobalt-60 (Co-60), and zinc-65 (Zn-65).

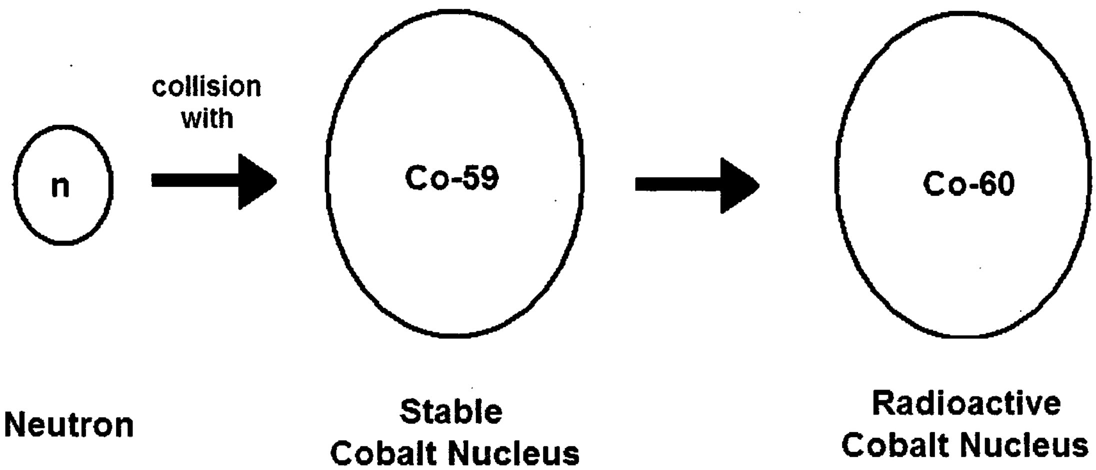


Figure 1.4-2
Radioactive Activation Product Formation

At Millstone Nuclear Power Station there are five independent protective barriers that confine these radioactive materials. These five barriers, which are shown in Figure 1.4-3 (Reference 6), are:

- fuel pellets;
- fuel cladding;
- reactor vessel and associated piping and equipment;
- primary containment and,
- secondary containment (enclosure building).

SIMPLIFIED DIAGRAM OF A PRESSURIZED WATER REACTOR

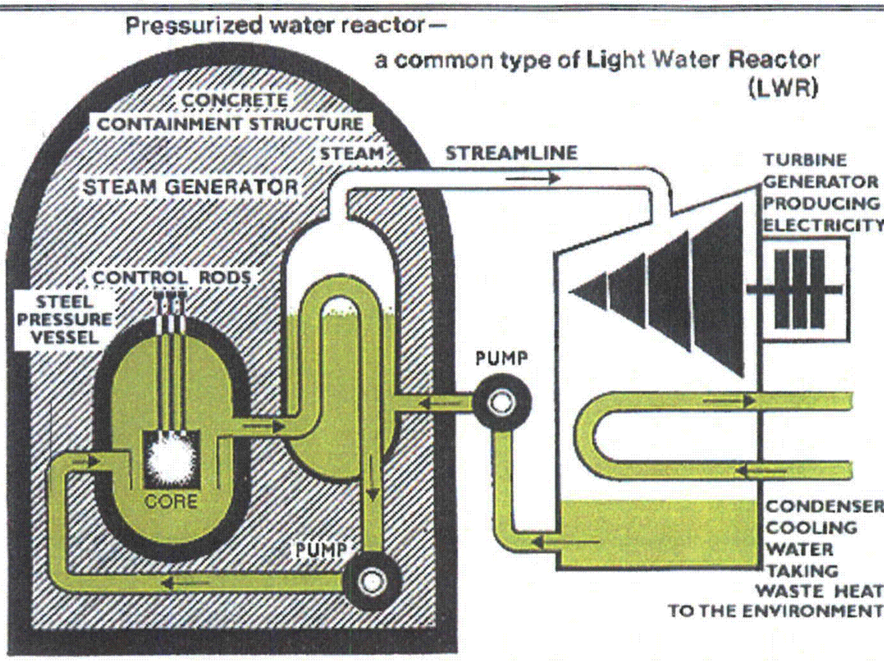


Figure 1.4-3

The ceramic uranium fuel pellets provide the first barrier. Most of the radioactive fission products are either physically trapped or chemically bound between the uranium atoms, where they will remain. However, a few fission products that are volatile or gaseous may diffuse through the fuel pellets into small gaps between the pellets and the fuel cladding.

The second barrier, the fuel cladding, consists of zirconium alloy tubes that confine the fuel pellets. The small gaps between the fuel and the cladding contain the noble gases and volatile iodines that are types of radioactive fission products. This radioactivity can diffuse to a small extent through the fuel cladding into the reactor coolant water.

The third barrier consists of the reactor pressure vessel, steel piping and equipment that confine the reactor cooling water. The reactor pressure vessel, which holds the reactor fuel, is typically a steel tank 40 feet high by 14 feet in diameter with walls about five to nine inches thick. These vessels and associated piping provide containment for radioactivity in the primary coolant and the reactor core. However, during the course of operations and maintenance, small amounts of radioactive fission and activation products can escape through valve leaks or upon breaching of the primary coolant system for maintenance.

The fourth barrier is the primary containment. It is a cylindrical enclosure with approximately five-foot thick steel reinforced concrete walls lined by steel on the inside. Small amounts of radioactivity may be released from primary containment during operation to maintain proper containment pressure and during maintenance and refueling outages.

The fifth barrier is the secondary containment or enclosure building. The enclosure building is a steel building that surrounds the primary containment. This barrier is an additional safety feature at Millstone's reactor units to contain radioactivity that may escape from the primary containment. This enclosure building is equipped with a filtered ventilation system that is used when needed to reduce the radioactivity that escapes from the primary containment.

The five barriers confine most of the radioactive fission and activation products. However, small amounts of radioactivity do escape via mechanical failures and maintenance on valves, piping, and equipment associated with the reactor cooling water system. The small amounts of radioactive liquids and gases that do escape the various containment systems are further controlled by the liquid purification and ventilation filtration systems. Also, prior to a release to the environment, control systems exist to collect and purify the radioactive effluents in order to reduce releases to the environment to as low as is reasonably achievable. The control of radioactive effluents at Millstone Station will be discussed in more detail in the next section.

1.5 Radioactive Effluent Control

The small amounts of radioactive liquids and gases that might escape the first two barriers are purified in the liquid and gaseous waste treatment systems, then monitored for radioactivity, and released only if the radioactivity levels are below the federal release limits.

Radioactivity released from the liquid effluent system to the environment is limited, controlled, and monitored by a variety of systems and procedures which include:

- reactor water cleanup system;
- liquid radwaste treatment system;
- sampling and analysis of the liquid radwaste tanks; and,
- liquid waste effluent discharge radioactivity monitor.

The purpose of the reactor water cleanup system is to continuously purify the reactor cooling water by removing radioactive atoms and non-radioactive impurities that may become activated by neutron bombardment. A portion of the reactor coolant water is diverted from the primary coolant system and is directed through ion exchange resins where radioactive elements, dissolved and suspended in the water, are removed through chemical processes. The net effect is a substantial reduction of the radioactive material that is present in the primary coolant water and consequently the amount of radioactive material that might escape from the system.

Reactor cooling water that might escape the primary cooling system and other radioactive water sources are collected in floor and equipment drains. These drains direct this radioactive liquid waste to large holdup tanks. The liquid waste collected in the tanks is purified again using the liquid radwaste treatment system, which consists of a filter and ion exchange resins.

Processing of liquid radioactive waste results in large reductions of radioactive liquids discharged into Niantic Bay. Wastes processed through liquid radwaste treatment can be purified and when necessary the processed liquid is re-used in plant systems.

Prior to release, the radioactivity in the liquid radwaste tank is sampled and analyzed to determine if the level of radioactivity is below the release limits and to quantify the total amount of radioactive liquid effluent that would be released. If the levels are below the federal release limits, the tank is drained to the liquid effluent discharge header.

This liquid waste effluent discharge line is provided with a shielded radioactivity monitor. This detector is connected to a radiation level meter and a recorder in the Control Room. The radiation alarm is set so that the detector will alarm before radioactivity levels exceed the release limits. The liquid effluent discharge header has an isolation valve. If an alarm is received, the liquid effluent discharge valve will automatically close, thereby terminating the release to the Niantic Bay and preventing any liquid radioactivity from being released that may exceed the release limits. An audible alarm notifies the Control Room operator that this has occurred.

Some liquid waste sources, which have a low potential for containing radioactivity, and/or may contain very low levels of contamination, may be discharged directly to the Long Island Sound. One such source of liquid is the turbine building sump. However, periodic representative samples are collected for analysis of radioactivity content to track the amounts of radioactivity being discharged.

Another means for adjusting liquid effluent concentrations to below federal limits is by mixing plant cooling water from the condenser with the liquid effluents in the discharge canal. This larger volume of cooling water further lowers the radioactivity levels to below the release concentration limits.

The preceding discussion illustrates that many controls exist to reduce the radioactive liquid effluents released to the Niantic Bay to as far below the release limits as is reasonably achievable.

Radioactive releases from the radioactive gaseous effluent system to the environment are limited, controlled, and monitored by a variety of systems and procedures which include:

- containment building ventilation system;
- containment building radioactivity monitors;
- sampling and analysis of containment building vent and purge effluents;
- process gas treatment system;
- auxiliary building (and engineered safeguards and fuel building for Unit 3) ventilation system;
- stack and vent effluent radioactivity monitors;
- sampling and analysis of stack and vent effluents;
- process radiation monitors; and
- steam jet air ejector (SJAE) monitor

The primary sources of gaseous radioactive waste are degassing of the primary coolant, gaseous liquid drains, and gaseous vents. Additional sources of gaseous waste activity include ventilation air released from the auxiliary building and purging and venting of the containment building. The radiation level meter and recorders for the effluent radioactivity monitors are located in the Control Room. The plant process computer aids in tracking the monitor readings. To supplement the information continuously provided by the detector, air samples are taken periodically from the containment, stack and vents. These samples are analyzed to quantify the total amount of tritium and radioactive gaseous and particulate effluents released.

Gases from the primary coolant are held up in waste gas decay tanks for decay at Unit 2. Gaseous waste at Unit 3 is purified through a process gas system, consisting of high-efficiency particulate air filters and charcoal adsorber beds. Gases from periodic venting of the Unit 2 containment are released through a similar process system (Enclosure Building Filtration System) while gases from the Unit 3 containment vacuum pumps are released without treatment. If necessary, Unit 3 containment air can be filtered by an internal particulate and charcoal treatment system. Containment purges (purge is the forced ventilation process while containment vents are pressure releases) for Unit 2 are filtered by high-efficiency particulate filters while at Unit 3 these are not normally filtered. If necessary, particulate and charcoal filters can be used for these purges.

The auxiliary building ventilation system provides for ventilation of the auxiliary building and enclosure building (and service building and contiguous areas, waste disposal building, and fuel building for Unit 3, for Unit 2 these are all part of the auxiliary building). Normally, the air from the ventilation of these areas will exhaust through the ventilation vent (which has a particulate filter for Unit 2). If exhaust from these areas reaches a predetermined level, the ventilation flow can be diverted by operator control to a particulate and charcoal filtration system.

Therefore, for both liquid and gaseous releases, radioactive effluent control systems exist to collect and purify the radioactive effluents in order to reduce releases to the environment to as low as is reasonably achievable. The effluents are always monitored, sampled and analyzed to make sure that radioactivity levels are below the release limits. If the release limits are being approached, isolation valves in some of the waste effluent lines will automatically shut to stop the release, or Control Room operators can implement procedures to ensure that federal regulatory limits are always met.

1.6 Radiological Impact on Humans

The final step in the effluent control process is the determination of the radiological dose impact to humans and comparison with the federal dose limits to the public. This step is performed in three stages. As mentioned previously, the purpose of continuous radiation monitoring and periodic sampling and analysis is to measure the quantities of radioactivity being released to determine compliance with the radioactivity release limits. This is the first stage for assessing releases to the environment.

The second stage is calculations of the dose impact to the general public from Millstone Station's radioactive effluents are performed. The purpose of these calculations is to periodically assess the doses to the general public resulting from radioactive effluents to ensure that these doses are being maintained as far below the federal dose limits as is reasonably achievable. This is the second stage for assessing releases to the environment.

The types and quantities of radioactive liquid and gaseous effluents released from Millstone Station during each given year are reported to the Nuclear Regulatory Commission annually in the Radiological Effluent Release Report (RERR). Similar to this report, the RERR is submitted annually to the Nuclear Regulatory Commission. Section 5 of this report discusses the detailed dose calculations from the RERR and provides a comparison to REMP dose calculations. The liquid and gaseous effluents were well below the federal release limits and were a small percentage of the MPS REMODCM effluent control limits.

The measurements of the physical and chemical nature of the effluents are used to determine how the radionuclides will interact with the environment and how they can result in radiation exposure to humans. The environmental interaction mechanisms depend upon factors such as the hydrological (water) and meteorological (atmospheric) characteristics in the area. Information on the water flow, wind speed, wind direction, and atmospheric mixing characteristics are used to estimate how radioactivity will distribute and disperse in the ocean and the atmosphere.

The most important type of information that is used to evaluate the radiological impact on humans is data on the use of the environment. Information on fish and shellfish consumption, boating usage, beach usage, locations of cows and goats, locations of residences, locations of gardens, drinking water supplies, and other usage information are utilized to estimate the amount of radiation and radioactivity received by the general public.

The radiation exposure pathway to humans is the path radioactivity takes from its release point at Millstone Station to its effect on man. The movement of radioactivity through the environment and its transport to humans is portrayed in Figure 1.6.

EXAMPLES OF MILLSTONE STATION'S RADIATION EXPOSURE PATHWAYS

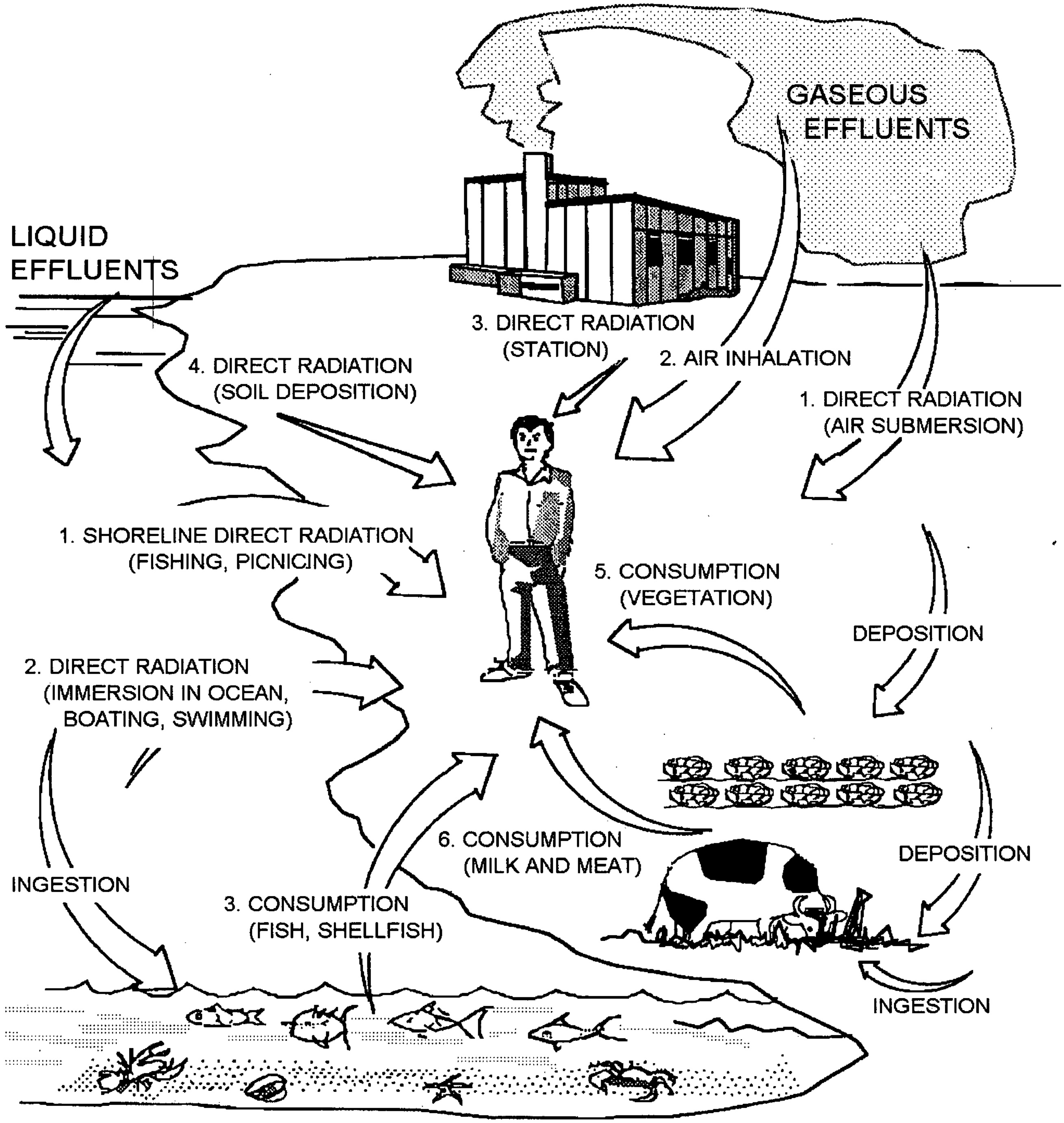


Figure 1.6

Radiation Exposure Pathways

There are three major pathways in which liquid effluents affect humans:

- external radiation from liquid effluents that deposit and accumulate on the shoreline;
- external radiation from immersion in ocean water containing radioactive liquids; and,
- internal radiation from consumption of fish and shellfish containing radioactivity absorbed from the liquid effluents.

There are six major ways in which gaseous effluents affect humans:

- external radiation from an airborne plume of radioactivity;
- internal radiation from inhalation of airborne radioactivity;
- external radiation from deposition of radioactive effluents on soil;
- ambient (direct) radiation from contained sources at the power plant;
- internal radiation from consumption of vegetation containing radioactivity deposited on the vegetation from airborne deposition and absorbed from the soil due to ground deposition of radioactive effluents; and,
- internal radiation from consumption of milk and meat containing radioactivity deposited on forage that is eaten by cattle and other livestock.

In addition, ambient (direct) radiation emitted from contained sources of radioactivity at MPS contributes to radiation exposure in the vicinity of the plant. For example, small amounts of ambient radiation result from low-level radioactive waste being processed and stored at the site prior to shipping and disposal. Also, the operation of the ISFSI (Independent Spent Fuel Storage Installation, operation began in 2005) results in very small amounts of direct radiation at the site boundary.

The radiological dose impact on humans is based both on effluent analyses and modeling and on direct measurements of radiation and radioactivity in the environment. When MPS-related radioactivity is detected in samples that represent a plausible exposure pathway, the resulting dose from such exposure is assessed (see Sections 4 and 5). However, the operation of Millstone Power Station results in releases of only small amounts of radioactivity, and, as a result of dilution in the atmosphere and ocean, even the most sensitive radioactivity measurement and analysis techniques cannot usually detect these tiny amounts of radioactivity above that which is naturally present in the environment. Therefore, radiation doses are calculated using radioactive effluent release data and computerized dose calculations that are based on conservative NRC-recommended models that tend to result in over-estimates of the resulting dose. These computerized dose calculations are performed by Dominion Nuclear personnel. These computer codes use the guidelines and methodology set forth by the NRC in Regulatory Guide 1.109 (Reference 7). The dose calculations are documented and described in detail in the Millstone Nuclear Power Station's Radiological Effluent Monitoring and Offsite Dose Calculation Manual (Reference 8), which has been reviewed by the NRC.

It should be emphasized that because of the conservative assumptions made in the computer code calculations, the maximum hypothetical dose to an individual is considerably higher than the dose that would actually be received by a real individual.

After dose calculations are performed, the results are compared to the federal dose limits for the public. The two federal agencies that are charged with the responsibility of protecting the public from radiation and radioactivity are the Nuclear Regulatory Commission (NRC) and The Environmental Protection Agency (EPA).

The NRC, in 10CFR 20.1301 (Reference 9) limits the levels of radiation to unrestricted areas resulting from the possession or use of radioactive materials such that they limit any individual to a dose of:

- less than or equal to 100 mrem per year to the total body.

In addition to this dose limit, the NRC has established design objectives for nuclear plant licensees. Conformance to these guidelines ensures that nuclear power reactor effluents are maintained as far below the legal limits as is reasonably achievable.

The NRC, in 10CFR 50 Appendix I (Reference 10) establishes design objectives for the dose to a member of the general public from radioactive material in liquid effluents released to unrestricted areas to be limited to:

- less than or equal to 3 mrem per year to the total body; and,
- less than or equal to 10 mrem per year to any organ.

The air dose due to release of noble gases in gaseous effluents is restricted to:

- less than or equal to 10 mrad per year for gamma radiation; and,
- less than or equal to 20 mrad per year for beta radiation.

The dose to a member of the general public from iodine-131, tritium, and all particulate radionuclides with half-lives greater than 8 days in gaseous effluents is limited to:

- less than or equal to 15 mrem per year to any organ.

The EPA, in 40CFR190.10 Subpart B (Reference 11), sets forth the environmental standards for the uranium fuel cycle. During normal operation, the annual dose to any member of the public, at or beyond the site boundary, from the entire uranium fuel cycle shall be limited to:

- less than or equal to 25 mrem per year to the total body;
- less than or equal to 75 mrem per year to the thyroid; and,
- less than or equal to 25 mrem per year to any other organ.

The summary of the 2009 radiological impact for Millstone Station and comparison with the EPA dose limits and Appendix I guidelines is presented in Section 5 of this report.

The third stage of assessing releases to the environment is the Radiological Environmental Monitoring Program (REMP). The description and results of the REMP at Millstone Power Station during 2009 is discussed in Sections 2 through 4 of this report.

2. PROGRAM DESCRIPTION

2.1 Sampling Schedule and Locations

The sample locations and the sample types and frequency of analysis are given in Tables 2-1 and 2-2 and Figures 2.1, 2.2 and 2.3. The program as described on Table 2-2 only lists the required samples as specified in the Radiological Effluent Monitoring and Offsite Dose Calculation Manual. However, in order to identify the locations of the extra samples, all locations (both required and extra) are listed in Table 2-1 and shown on the figures.

Table 2 Environmental Monitoring Program Sampling Types and Locations

Location Number*	Location Name	Direction & Distance From Release Point**	Sample Types
1-I	On-site - Old Millstone Rd.	0.6 Mi, NNW	TLD, Air Particulate, Iodine, Vegetation
2-I	On-site - Weather Shack	0.3 Mi, S	TLD, Air Particulate, Iodine
3-I	On-site - Bird Sanctuary	0.3 Mi, NE	TLD, Air Particulate, Iodine, Soil
4-I	On-site - Albacore Drive	1.0 Mi, N	TLD, Air Particulate, Iodine, Soil
5-I	MP3 Discharge	0.1 Mi, SSE	TLD
6-I	Quarry Discharge	0.3 Mi, SSE	TLD
7-I	Environmental Lab Dock	0.3 Mi, SE	TLD
8-I	Environmental Lab	0.3 Mi, SE	TLD
9-I	Bay Point Beach	0.4 Mi, W	TLD
10-I	Pleasure Beach	1.2 Mi, E	TLD, Air Particulate, Iodine, Vegetation
11-I	New London Country Club	1.6 Mi, ENE	TLD, Air Particulate, Iodine
12-C	Fisher's Island, NY	8.0 Mi, ESE	TLD
13-C	Mystic, CT	11.5 Mi, ENE	TLD
14-C	Ledyard, CT	12.0 Mi, NE	TLD, Soil
15-C	Norwich, CT	14.0 Mi, N	TLD, Air Particulate, Iodine
16-C	Old Lyme, CT	8.8 Mi, W	TLD
17-I	Site Boundary	0.5 Mi, NE	Vegetation
21-I	Goat Location #1	2.0 Mi, N	Milk
22-I	Goat Location #2	2.7 Mi, NE	Milk
24-C	Goat Location #4	29.0 Mi, NNW	Milk
25-I	Within 10 Miles	Within 10 Miles	Fruits & Vegetables
26-C	Beyond 10 Miles	Beyond 10 Miles	Fruits & Vegetables
27-I	Niantic	1.7 Mi, WNW	TLD, Air Particulate, Iodine
28-I	Two Tree Island	0.8 Mi, SSE	Mussels
29-I	West Jordan Cove	0.4 Mi, NNE	Clams
29-X	West Jordan Cove	0.4 Mi, NNE	Bottom Sediment, Fucus
30-I	Niantic Shoals	1.5 Mi, NNW	Mussels
31-I	Niantic Shoals	1.8 Mi, NW	Bottom Sediment, Oysters
31-X	Niantic Shoals	1.8 Mi, NW	Scallops
32-I	Vicinity of Discharge	< 0.1 Mi	Bottom Sediment, Oysters, Lobster, Fish, Seawater
32-X	Vicinity of Discharge	< 0.1 Mi	Fucus
33-I	Seaside Point	1.8 Mi, ESE	Bottom Sediment
33-X	Seaside Point	1.8 Mi, ESE	Fucus
34-I	Thames River Yacht Club	4.0 Mi, ENE	Bottom Sediment
34-X	Thames River Yacht club	4.0 Mi, ENE	Oysters
35-I	Niantic Bay	0.3 Mi, WNW	Lobster, Fish
35-X	Niantic Bay	0.3 Mi, WNW	Bottom Sediment, Clams, Fucus
36-I,X	Black Point	3.0 Mi, WSW	Oysters
36-X	Black Point	3.0 Mi, WSW	Fucus
37-C	Giant's Neck	3.5 Mi, WSW	Bottom Sediment, Oysters, Seawater

*Key: **I** - Indicator **C** - Control **X** - Extra - sample not required by REMODCM
**The release points are the Site Stack for terrestrial locations and the quarry cut for aquatic locations.

Location Number*	Location Name	Direction & Distance From Release Point**	Sample Types
37-X	Giant's Neck	3.5 Mi, WSW	Lobster
38-I	Waterford Shellfish Bed #1	1.0 Mi, NW	Clams
39-X	Jordon Cove Bar	0.8 Mi, NE	Bottom Sediment, Clams
40-X	Quarry	-------------	Fish
41-I	Myrock Avenue	3.2 Mi, ENE	TLD
42-I	Billow Road	2.4 Mi, WSW	TLD
43-I	Black Point	2.6 Mi, SW	TLD
44-I	Onsite - Schoolhouse	0.1 Mi, NNE	TLD
45-I	Onsite Access Road	0.5 Mi, NNW	TLD
46-I	Old Lyme - Hillcrest Ave.	4.6 Mi, WSW	TLD
47-I	East Lyme - W. Main St.	4.5 Mi, W	TLD
48-I	East Lyme - Corey Rd.	3.4 Mi, WNW	TLD
49-I	East Lyme - Society Rd.	3.6 Mi, NW	TLD
50-I	East Lyme - Manwaring Rd.	2.1 Mi, W	TLD
51-I	East Lyme - Smith Ave.	1.5 Mi, NW	TLD
52-I	Waterford - River Rd.	1.1 Mi, NNW	TLD
53-I	Waterford - Gardiners Wood Rd.	1.4 Mi, NNE	TLD
55-I	Waterford - Magonk Point	1.8 Mi, ESE	TLD
56-I	New London - Mott Ave.	3.7 Mi, E	TLD
57-I	New London - Ocean Ave.	3.6 Mi, ENE	TLD
59-I	Waterford -Miner Ave.	3.4 Mi, NNE	TLD
60-I	Waterford - Parkway South	4.0 Mi, N	TLD
61-I	Waterford - Boston Post Rd.	4.3 Mi, NNW	TLD
62-I	East Lyme - Columbus Ave.	1.9 Mi, WNW	TLD
63-I	Waterford - Jordon Cove Rd.	0.8 Mi, NE	TLD
64-I	Waterford - Shore Rd.	1.1 Mi, ENE	TLD
65-I	Waterford - Bank St.	3.2 Mi, NE	TLD
66-X	NAP Parking Lot - Fitness Center	0.4 Mi, NW	TLD
67-X	Golden Spur	4.7 Mi, NNW	Bottom Sediment
69-X	Pleasure Beach	0.8 Mi, E	Bottom Sediment
71-I	1-MW-XFMR-03	Onsite	Well Water
72-I	MW-GPI-1	Onsite	Well Water
73-X	Site Switchyard Fence	0.3 Mi, N	TLD
74-X	Ball Field Foul Pole	0.6 Mi, N	TLD
75-X	Waterford – Windward Way & Shotgun	0.5 Mi, NE	TLD
76-X	ISFSI-1	Up-gradient of ISFSI	Well Water
77-X	ISFSI-2A	Down-gradient of ISFSI	Well Water
78-X	ISFSI-3	Down-gradient of ISFSI	Well Water
79-I	M3-MW-1	Onsite	Well Water
80-I	S12-MW-2	Onsite	Well Water
81-I	S2-MW-1	Onsite	Well Water
82-I	MW-GPI-2	Onsite	Well Water
83-I	MW-GPI-3	Onsite	Well Water
84-I	MW-GPI-4	Onsite	Well Water
85-I	MW-GPI-5	Onsite	Well Water
86-I	MW-GPI-6	Onsite	Well Water
88-I,X	DEP Dock	Onsite	Oysters
90-C	Thames River	4 Mi, E	Fucus

*Key: **I** - Indicator **C** - Control **X** - Extra - sample not required by the REMODCM
**The release points are the Site Stack for terrestrial locations and the quarry cut for aquatic locations.

Table 2-2 Required Sampling Frequency & Type of Analysis

	Exposure Pathway and/or Sample	No. of Locations	Sampling & Collection Frequency	Type of Analysis
1.	Gamma Dose - Environmental TLD	40[a]	Quarterly	Gamma Dose - Quarterly
2.	Airborne Particulate	8	Continuous sampler - weekly filter change	Gross Beta - Weekly Gamma Spectrum - Quarterly on composite (by location), and on individual sample if gross beta is greater than 10 times the mean of the weekly control station's gross beta results
3.	Airborne Iodine	8	Continuous sampler - weekly canister change	I-131 - Weekly
4.	Vegetation	5	One sample near middle and one near end of growing season	Gamma Isotopic on each sample
5.	Milk	2	Semimonthly when animals are on pasture; monthly at other times.	Gamma Isotopic and I-131 on each sample; Sr-89 and Sr-90 on quarterly composite
5a.	Pasture Grass	3	Sample as necessary to substitute for unavailable milk	Gamma Isotopic and I-131 on each sample
6.	Sea Water	2	Continuous sampler with a monthly collection at indicator location. Quarterly at control location - Composite of 6 weekly grab samples.	Gamma Isotopic and Tritium on each sample.
6a.	Well Water	6	Semiannual	Gamma Isotopic and Tritium on each sample
7.	Bottom Sediment	5	Semiannual	Gamma Isotopic on each sample
7a.	Soil	3	Annually	Gamma Isotopic on each sample
8.	Fin Fish - Flounder and one other type of edible fin fish	2	Quarterly	Gamma Isotopic on each sample
9.	Mussels (edible portion)	2	Quarterly	Gamma Isotopic on each sample
10.	Oysters (edible portion)	4	Quarterly	Gamma Isotopic on each sample
11.	Clams (edible portion)	2	Quarterly	Gamma Isotopic on each sample
12.	Lobster (edible portion)	2	Quarterly	Gamma Isotopic on each sample

(a) Two or more TLDs or TLD with two or more elements per location.

Figure 2.1 Millstone Sampling Locations

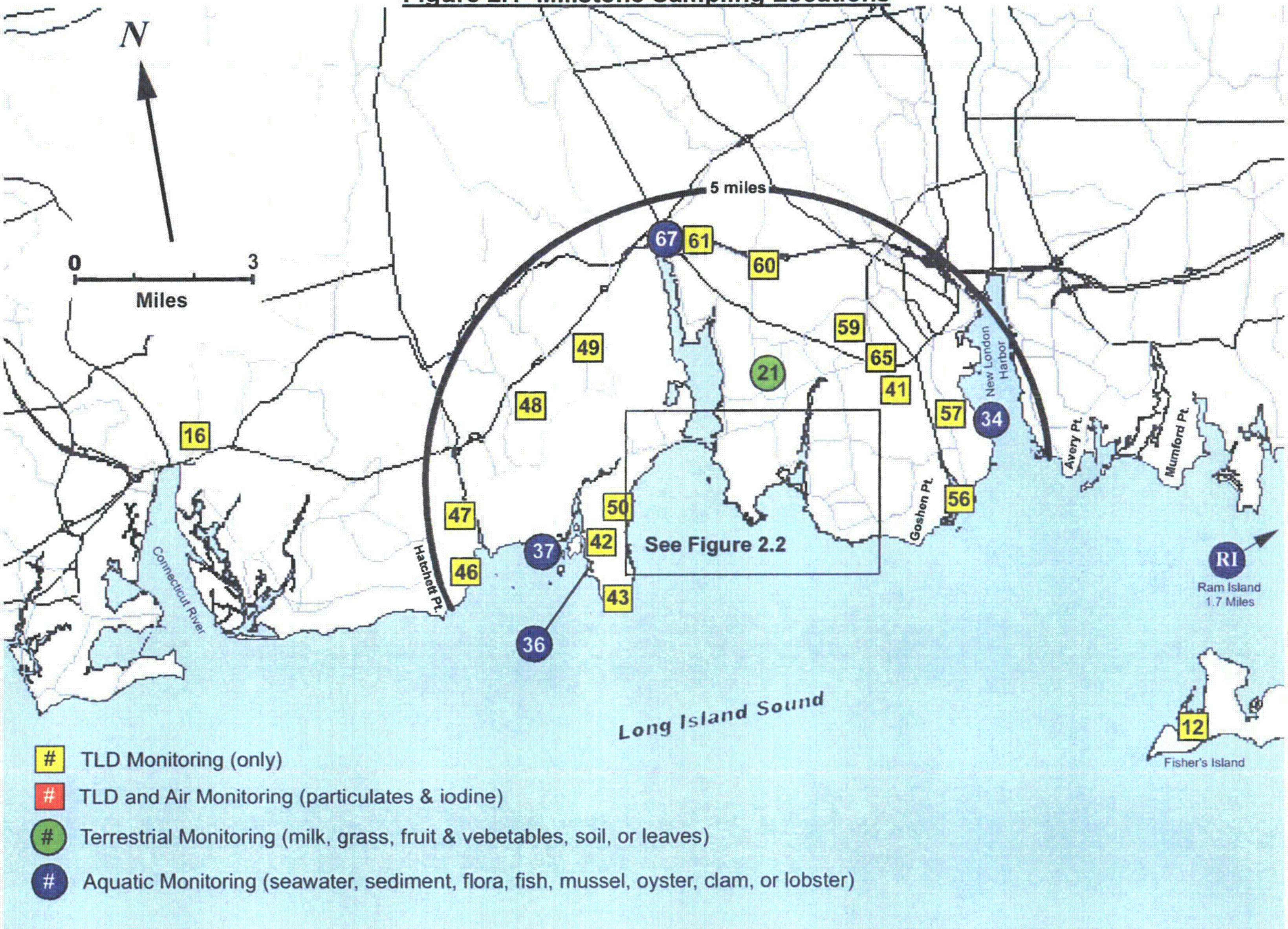


Figure 2.2 Millstone Sampling Locations (Within 2 miles)

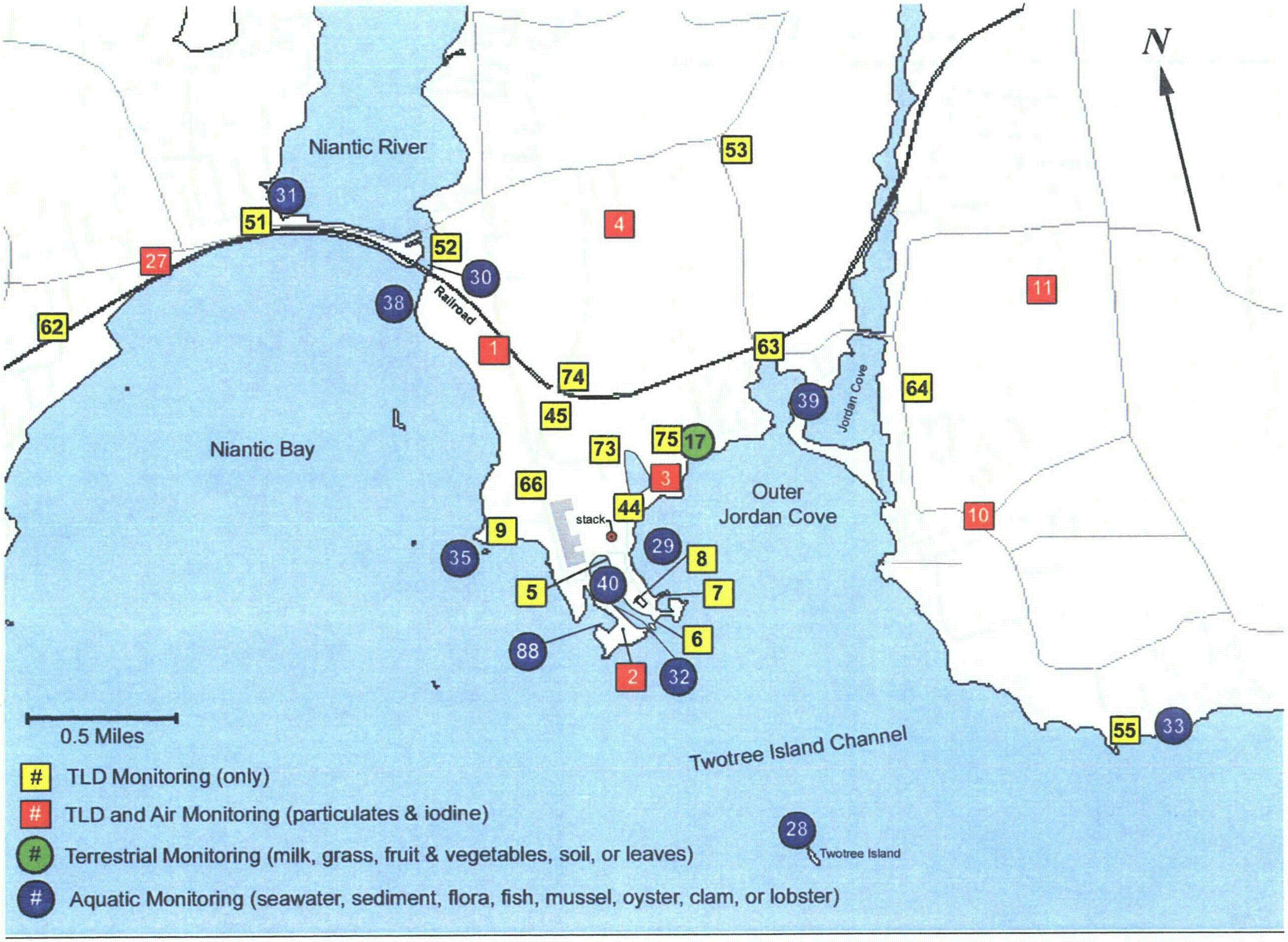


Figure 2.3 Millstone Sampling Wells

2.2 Samples Collected During Report Period

The following table summarizes the number of samples of each type collected and analyzed during 2009:

Sample Type	Number of Technical Specification Required Samples	Number of Technical Specification Required Samples Analyzed	Number of Extra Samples Analyzed
Gamma Exposure (Environmental TLD)	160	160	16
Air Particulates	416	416	0
Air Iodine	416	416	0
Soil	3	3	0
Goat Milk	38	13[1]	0
Pasture Grass	Variable[2]	25	0
Fruit and Vegetables	8	8	1
Broad Leaf Vegetation	6	6	12
Well Water	12	12	41
Sea Water	16	16	0
Bottom Sediment	10	10	10
Aquatic Flora	0	0	24
Fish	16	12[3]	3
Mussels	8	6[3]	0
Oysters	16	16	4
Clams	8	8	8
Lobster	8	8	4
Total All Types	**1,141**	**1,135**	**123**

1 Pasture grass sampled as necessary to substitute for unavailable milk. Hay or grain was substituted when grass was not available.
2 Depends upon availability of goat milk samples
3 Due to sample unavailability, not all required fish and shellfish samples could be obtained (see Notes at end of Section 3 for details)

3. RADIOCHEMICAL RESULTS

3.1 Summary Table

In accordance with the Radiological Effluent Monitoring and Offsite Dose Calculation Manual (REMODCM), Section I.F.1, a summary table of the radiochemical results has been prepared and is presented on the following pages.

The mean and range recorded are based only upon detectable measurements. The parentheses indicate the fraction of the measurements that are considered above the detection limit for each individual analysis.

A more detailed analysis of the data is given in Section 4.0 where a discussion of the variations in the data explains many aspects that are not evident in the Summary Table because of the basic limitation of data summaries. The data summaries include the extra ("X") samples collected throughout the year. These samples are taken to enhance the monitoring program, or are the results of special studies.

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

DOCKETS 50-245, 50-336 & 50-339

Medium or Pathway Sampled (Units)	Analysis		* LLD	Indicator Locations	Location with Highest Mean			Control Locations	Non-Routine Reported Measurements
	Type	Total No		Mean Range	Name	Distance Direction	Mean Range	Mean Range	
TLD (uR/hr)	Gamma Dose	176	-	7.79 (156/156) (4.52-11.6)	08	0.3 mi SE	11.1 (4/4) (10-11.6)	8.23 (20/20) (5.76-10.7)	
AP Gross Beta (1E-3 pCi/m3)	Gross Beta	416	10	20.3 (364/364) (5.1-41.5)	11	1.6 mi ENE	20.9 (52/52) (7.5-38.2)	20.6 (52/52) (6.8-37.1)	
Air Iodine (1E-3 pCi/m3)	I-131	416	70	(0/364)	-	-	< LLD	(0/52)	
AP Gamma (1E-3 pCi/m3)	Ba-140	32	-	(0/28)	-	-	< LLD	(0/4)	
	Be-7	32	-	107 (28/28) (72-154)	27	1.7 mi WNW	117 (4/4) (88-149)	93.8 (4/4) (82-112)	
	Ce-141	32	-	(0/28)	-	-	< LLD	(0/4)	
	Ce-144	32	-	(0/28)	-	-	< LLD	(0/4)	
	Co-58	32	-	(0/28)	-	-	< LLD	(0/4)	
	Co-60	32	-	(0/28)	-	-	< LLD	(0/4)	
	Cr-51	32	-	(0/28)	-	-	< LLD	(0/4)	
	Cs-134	32	50	(0/28)	-	-	< LLD	(0/4)	
	Cs-137	32	60	(0/28)	-	-	< LLD	(0/4)	
	Mn-54	32	-	(0/28)	-	-	< LLD	(0/4)	
	Nb-95	32	-	(0/28)	-	-	< LLD	(0/4)	
	Ru-103	32	-	(0/28)	-	-	< LLD	(0/4)	
	Ru-106	32	-	(0/28)	-	-	< LLD	(0/4)	
	Zr-95	32	-	(0/28)	-	-	< LLD	(0/4)	

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

DOCKETS 50-245, 50-336 & 50-339

Medium or Pathway Sampled (Units)	Analysis		* LLD	Indicator Locations	Location with Highest Mean			Control Locations	Non-Routine Reported Measurements
	Type	Total No		Mean Range	Name	Distance Direction	Mean Range	Mean Range	
Soil (pCi/g dry)	Be-7	3	-	(0/2)	-	-	< LLD	(0/1)	
	Ce-141	3	-	(0/2)	-	-	< LLD	(0/1)	
	Ce-144	3	-	(0/2)	-	-	< LLD	(0/1)	
	Co-58	3	-	(0/2)	-	-	< LLD	(0/1)	
	Co-60	3	-	(0/2)	-	-	< LLD	(0/1)	
	Cr-51	3	-	(0/2)	-	-	< LLD	(0/1)	
	Cs-134	3	0.15	(0/2)	-	-	< LLD	(0/1)	
	Cs-137	3	0.18	0.593 (2/2) (0.455-0.73)	14-C	12.0 mi NE	1.19 (1/1) (1.19-1.19)	1.19 (1/1) (1.19-1.19)	
	Fe-59	3	-	(0/2)	-	-	< LLD	(0/1)	
	K-40	3	-	12.5 (2/2) (11.8-13.2)	03	0.3 mi NE	13.2 (1/1) (13.2-13.2)	11.2 (1/1) (11.2-11.2)	
	Mn-54	3	-	(0/2)	-	-	< LLD	(0/1)	
	Nb-95	3	-	(0/2)	-	-	< LLD	(0/1)	
	Ru-103	3	-	(0/2)	-	-	< LLD	(0/1)	
	Ru-106	3	-	(0/2)	-	-	< LLD	(0/1)	
	Sb-125	3	-	(0/2)	-	-	< LLD	(0/1)	
	Th-228	3	-	0.965 (2/2) (0.87-1.06)	14-C	12.0 mi NE	1.5 (1/1) (1.5-1.5)	1.5 (1/1) (1.5-1.5)	
	Zn-65	3	-	(0/2)	-	-	< LLD	(0/1)	
	Zr-95	3	-	(0/2)	-	-	< LLD	(0/1)	

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

DOCKETS 50-245, 50-336 & 50-339

Medium or Pathway Sampled (Units)	Analysis		*	Indicator Locations	Location with Highest Mean			Control Locations	Non-Routine Reported Measurements
	Type	Total No	LLD	Mean Range	Name	Distance Direction	Mean Range	Mean Range	
Goat Milk (pCi/L)	Ba-140	13	70	(0/6)	-	-	< LLD	(0/7)	
	Cs-134	13	15	(0/6)	-	-	< LLD	(0/7)	
	Cs-137	13	18	17 (1/6) (17-17)	21	2.0 mi N	17 (1/6) (17-17)	(0/7)	
	I-131	13	1	(0/6)	-	-	< LLD	(0/7)	
	K-40	13	-	1332 (6/6) (1010-1740)	24-C	29.0 mi NNW	1516 (7/7) (1230-1790)	1516 (7/7) (1230-1790)	
	La-140	13	25	(0/6)	-	-	< LLD	(0/7)	
	Sr-89	5	-	(0/2)	-	-	< LLD	(0/3)	
	Sr-90	5	-	1.7 (1/2) (1.7-1.7)	24-C	29.0 mi NNW	2.85 (2/3) (2.2-3.5)	2.85 (2/3) (2.2-3.5)	
Pasture Grass (Hay) (pCi/g dry)	Ba-140	25	-	(0/13)	-	-	< LLD	(0/12)	
	Be-7	25	-	4.23 (5/13) (0.57-7.14)	21	2.0 mi N	4.23 (5/13) (0.57-7.14)	2.15 (10/12) (0.75-8.26)	
	Ce-141	25	-	(0/13)	-	-	< LLD	(0/12)	
	Ce-144	25	-	(0/13)	-	-	< LLD	(0/12)	
	Co-58	25	-	(0/13)	-	-	< LLD	(0/12)	
	Co-60	25	-	(0/13)	-	-	< LLD	(0/12)	
	Cr-51	25	-	(0/13)	-	-	< LLD	(0/12)	
	Cs-134	25	0.06	(0/13)	-	-	< LLD	(0/12)	
	Cs-137	25	0.08	0.084 (1/13) (0.084-0.084)	21	2.0 mi N	0.084 (1/13) (0.084-0.084)	0.05 (1/12) (0.05-0.05)	
	Fe-59	25	-	(0/13)	-	-	< LLD	(0/12)	

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

DOCKETS 50-245, 50-336 & 50-339

Medium or Pathway Sampled (Units)	Analysis		*	Indicator Locations	Location with Highest Mean			Control Locations	Non-Routine Reported Measurements
	Type	Total No	LLD	Mean Range	Name	Distance Direction	Mean Range	Mean Range	
Pasture Grass (Hay) (pCi/g dry)	I-131	25	0.06	(0/13)	-	-	< LLD	(0/12)	
	K-40	25	-	8.83 (13/13) (4.47-15.6)	21	2.0 mi N	8.83 (13/13) (4.47-15.6)	6.79 (12/12) (3.94-11.5)	
	La-140	25	-	(0/13)	-	-	< LLD	(0/12)	
	Mn-54	25	-	(0/13)	-	-	< LLD	(0/12)	
	Nb-95	25	-	(0/13)	-	-	< LLD	(0/12)	
	Ru-103	25	-	(0/13)	-	-	< LLD	(0/12)	
	Ru-106	25	-	(0/13)	-	-	< LLD	(0/12)	
	Sb-125	25	-	(0/13)	-	-	< LLD	(0/12)	
	Th-228	25	-	(0/13)	-	-	< LLD	(0/12)	
	Zn-65	25	-	(0/13)	-	-	< LLD	(0/12)	
	Zr-95	25	-	(0/13)	-	-	< LLD	(0/12)	
Well Water (pCi/L)	Ba-140	53	60	(0/53)	-	-	< LLD	(0/0)	
	Be-7	53	-	(0/53)	-	-	< LLD	(0/0)	
	Co-58	53	15	(0/53)	-	-	< LLD	(0/0)	
	Co-60	53	15	(0/53)	-	-	< LLD	(0/0)	
	Cr-51	53	-	(0/53)	-	-	< LLD	(0/0)	
	Cs-134	53	15	(0/53)	-	-	< LLD	(0/0)	
	Cs-137	53	18	(0/53)	-	-	< LLD	(0/0)	

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

DOCKETS 50-245, 50-336 & 50-339

Medium or Pathway Sampled (Units)	Analysis		*	Indicator Locations	Location with Highest Mean			Control Locations	Non-Routine Reported Measurements
	Type	Total No	LLD	Mean Range	Name	Distance Direction	Mean Range	Mean Range	
Well Water (pCi/L)	Fe-59	53	30	(0/53)	-	-	< LLD	(0/0)	
	H-3	53	2000	(0/53)	-	-	< LLD	(0/0)	
	I-131	53	15	(0/53)	-	-	< LLD	(0/0)	
	K-40	53	-	49 (1/53) (49-49)	79		49 (1/5) (49-49)	(0/0)	
	La-140	53	15	(0/53)	-	-	< LLD	(0/0)	
	Mn-54	53	15	(0/53)	-	-	< LLD	(0/0)	
	Nb-95	53	15	(0/53)	-	-	< LLD	(0/0)	
	Ru-103	53	-	(0/53)	-	-	< LLD	(0/0)	
	Ru-106	53	-	(0/53)	-	-	< LLD	(0/0)	
	Sb-125	53	-	(0/53)	-	-	< LLD	(0/0)	
	Sr-89	53	-	(0/53)	-	-	< LLD	(0/0)	
	Sr-90	53	-	(0/53)	-	-	< LLD	(0/0)	
	Th-228	53	-	(0/53)	-	-	< LLD	(0/0)	
	Zn-65	53	30	(0/53)	-	-	< LLD	(0/0)	
	Zr-95	53	30	(0/53)	-	-	< LLD	(0/0)	

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

DOCKETS 50-245, 50-336 & 50-339

Medium or Pathway Sampled (Units)	Analysis		* LLD	Indicator Locations	Location with Highest Mean			Control Locations	Non-Routine Reported Measurements
	Type	Total No		Mean Range	Name	Distance Direction	Mean Range	Mean Range	
Fruits & Vegetables (pCi/g wet)	Ba-140	9	-	(0/5)	-	-	< LLD	(0/4)	
	Be-7	9	-	(0/5)	-	-	< LLD	(0/4)	
	Ce-141	9	-	(0/5)	-	-	< LLD	(0/4)	
	Ce-144	9	-	(0/5)	-	-	< LLD	(0/4)	
	Co-58	9	-	(0/5)	-	-	< LLD	(0/4)	
	Co-60	9	-	(0/5)	-	-	< LLD	(0/4)	
	Cr-51	9	-	(0/5)	-	-	< LLD	(0/4)	
	Cs-134	9	0.06	(0/5)	-	-	< LLD	(0/4)	
	Cs-137	9	0.08	(0/5)	-	-	< LLD	(0/4)	
	Fe-59	9	-	(0/5)	-	-	< LLD	(0/4)	
	I-131	9	0.06	(0/5)	-	-	< LLD	(0/4)	
	K-40	9	-	2.06 (4/5) (0.85-3.97)	26-C	10+ mi	2.23 (4/4) (1.02-4.73)	2.23 (4/4) (1.02-4.73)	
	La-140	9	-	(0/5)	-	-	< LLD	(0/4)	
	Mn-54	9	-	(0/5)	-	-	< LLD	(0/4)	
	Nb-95	9	-	(0/5)	-	-	< LLD	(0/4)	
	Ru-103	9	-	(0/5)	-	-	< LLD	(0/4)	
	Ru-106	9	-	(0/5)	-	-	< LLD	(0/4)	
	Sb-125	9	-	(0/5)	-	-	< LLD	(0/4)	

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

DOCKETS 50-245, 50-336 & 50-339

Medium or Pathway Sampled (Units)	Analysis		*	Indicator Locations	Location with Highest Mean			Control Locations	Non-Routine Reported Measurements
	Type	Total No	LLD	Mean Range	Name	Distance Direction	Mean Range	Mean Range	
Fruits & Vegetables (pCi/g wet)	Th-228	9	-	(0/5)	-	-	< LLD	(0/4)	
	Zn-65	9	-	(0/5)	-	-	< LLD	(0/4)	
	Zr-95	9	-	(0/5)	-	-	< LLD	(0/4)	
Broadleaf Vegetation (pCi/g wet)	Ba-140	18	-	(0/18)	-	-	< LLD	(0/0)	
	Be-7	18	-	1.19 (16/18) (0.42-2.21)	17	0.5 mi NE	1.39 (5/6) (0.42-2.16)	(0/0)	
	Ce-141	18	-	(0/18)	-	-	< LLD	(0/0)	
	Ce-144	18	-	(0/18)	-	-	< LLD	(0/0)	
	Co-58	18	-	(0/18)	-	-	< LLD	(0/0)	
	Co-60	18	-	(0/18)	-	-	< LLD	(0/0)	
	Cr-51	18	-	(0/18)	-	-	< LLD	(0/0)	
	Cs-134	18	0.06	(0/18)	-	-	< LLD	(0/0)	
	Cs-137	18	0.08	(0/18)	-	-	< LLD	(0/0)	
	Fe-59	18	-	(0/18)	-	-	< LLD	(0/0)	
	I-131	18	0.06	(0/18)	-	-	< LLD	(0/0)	
	K-40	18	-	3.46 (18/18) (2.53-4.44)	10	1.2 mi E	3.54 (6/6) (3.05-4.07)	(0/0)	
	La-140	18	-	(0/18)	-	-	< LLD	(0/0)	
	Mn-54	18	-	(0/18)	-	-	< LLD	(0/0)	
	Nb-95	18	-	(0/18)	-	-	< LLD	(0/0)	

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

DOCKETS 50-245, 50-336 & 50-339

Medium or Pathway Sampled (Units)	Analysis		*	Indicator Locations	Location with Highest Mean			Control Locations	Non-Routine Reported Measurements
	Type	Total No	LLD	Mean Range	Name	Distance Direction	Mean Range	Mean Range	
Broadleaf Vegetation (pCi/g wet)	Ru-103	18	-	(0/18)	-	-	< LLD	(0/0)	
	Ru-106	18	-	(0/18)	-	-	< LLD	(0/0)	
	Sb-125	18	-	(0/18)	-	-	< LLD	(0/0)	
	Th-228	18	-	0.21 (1/18) (0.21-0.21)	17	0.5 mi NE	0.21 (1/6) (0.21-0.21)	(0/0)	
	Zn-65	18	-	(0/18)	-	-	< LLD	(0/0)	
	Zr-95	18	-	(0/18)	-	-	< LLD	(0/0)	
Sea Water (pCi/L)	Ba-140	16	60	(0/12)	-	-	< LLD	(0/4)	
	Be-7	16	-	(0/12)	-	-	< LLD	(0/4)	
	Co-58	16	15	(0/12)	-	-	< LLD	(0/4)	
	Co-60	16	15	(0/12)	-	-	< LLD	(0/4)	
	Cr-51	16	-	(0/12)	-	-	< LLD	(0/4)	
	Cs-134	16	15	(0/12)	-	-	< LLD	(0/4)	
	Cs-137	16	18	(0/12)	-	-	< LLD	(0/4)	
	Fe-59	16	30	(0/12)	-	-	< LLD	(0/4)	
	H-3	16	2000	848 (4/12) (410-1910)	32		848 (4/12) (410-1910)	(0/4)	
	I-131	16	15	(0/12)	-	-	< LLD	(0/4)	
	K-40	16	-	286 (12/12) (236-362)	32		286 (12/12) (236-362)	279 (4/4) (245-302)	
	La-140	16	15	(0/12)	-	-	< LLD	(0/4)	

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

DOCKETS 50-245, 50-336 & 50-339

Medium or Pathway Sampled (Units)	Analysis		*	Indicator Locations	Location with Highest Mean			Control Locations	Non-Routine Reported Measurements
	Type	Total No	LLD	Mean Range	Name	Distance Direction	Mean Range	Mean Range	
Sea Water (pCi/L)	Mn-54	16	15	(0/12)	-	-	< LLD	(0/4)	
	Nb-95	16	15	(0/12)	-	-	< LLD	(0/4)	
	Ru-103	16	-	(0/12)	-	-	< LLD	(0/4)	
	Ru-106	16	-	(0/12)	-	-	< LLD	(0/4)	
	Sb-125	16	-	(0/12)	-	-	< LLD	(0/4)	
	Th-228	16	-	(0/12)	-	-	< LLD	(0/4)	
	Zn-65	16	30	(0/12)	-	-	< LLD	(0/4)	
	Zr-95	16	30	(0/12)	-	-	< LLD	(0/4)	
Bottom Sediment (pCi/g dry)	Ag-110m	20	-	(0/18)	-	-	< LLD	(0/2)	
	Be-7	20	-	(0/18)	-	-	< LLD	(0/2)	
	Co-58	20	-	(0/18)	-	-	< LLD	(0/2)	
	Co-60	20	-	(0/18)	-	-	< LLD	(0/2)	
	Cr-51	20	-	(0/18)	-	-	< LLD	(0/2)	
	Cs-134	20	0.15	(0/18)	-	-	< LLD	(0/2)	
	Cs-137	20	0.18	0.153 (1/18) (0.153-0.153)	67-X	4.7 mi NNW	0.153 (1/2) (0.153-0.153)	(0/2)	
	Fe-59	20	-	(0/18)	-	-	< LLD	(0/2)	
	I-131	20	-	(0/18)	-	-	< LLD	(0/2)	
	K-40	20	-	15.2 (18/18) (9.5-20.1)	29-X	0.4 mi NNE	18.1 (2/2) (16-20.1)	14.2 (2/2) (12.8-15.5)	
	Mn-54	20	-	(0/18)	-	-	< LLD	(0/2)	

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

DOCKETS 50-245, 50-336 & 50-339

Medium or Pathway Sampled (Units)	Analysis Type	Analysis Total No	* LLD	Indicator Locations Mean Range	Location with Highest Mean Name	Location with Highest Mean Distance Direction	Location with Highest Mean Mean Range	Control Locations Mean Range	Non-Routine Reported Measurements
Bottom Sediment (pCi/g dry)	Nb-95	20	-	(0/18)	-	-	< LLD	(0/2)	
	Ru-103	20	-	(0/18)	-	-	< LLD	(0/2)	
	Ru-106	20	-	(0/18)	-	-	< LLD	(0/2)	
	Sb-125	20	-	(0/18)	-	-	< LLD	(0/2)	
	Th-228	20	-	0.964 (11/18) (0.25-2.71)	31	1.8 mi NW	2.71 (1/2) (2.71-2.71)	(0/2)	
	Zn-65	20	-	(0/18)	-	-	< LLD	(0/2)	
	Zr-95	20	-	(0/18)	-	-	< LLD	(0/2)	
Aquatic Flora (pCi/g wet)	Ag-	24	-	(0/20)	-	-	< LLD	(0/4)	
	Be-7	24	-	(0/20)	-	-	< LLD	(0/4)	
	Co-58	24	-	(0/20)	-	-	< LLD	(0/4)	
	Co-60	24	-	(0/20)	-	-	< LLD	(0/4)	
	Cr-51	24	-	(0/20)	-	-	< LLD	(0/4)	
	Cs-134	24	-	(0/20)	-	-	< LLD	(0/4)	
	Cs-137	24	-	(0/20)	-	-	< LLD	(0/4)	
	Fe-59	24	-	(0/20)	-	-	< LLD	(0/4)	
	I-131	24	-	(0/20)	-	-	< LLD	(0/4)	
	K-40	24	-	6.64 (20/20) (5.73-8.3)	32-X		7.05 (4/4) (6.12-8.3)	5.93 (4/4) (5.06-6.5)	
	Mn-54	24	-	(0/20)	-	-	< LLD	(0/4)	
	Nb-95	24	-	(0/20)	-	-	< LLD	(0/4)	

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

DOCKETS 50-245, 50-336 & 50-339

Medium or Pathway Sampled (Units)	Analysis		* LLD	Indicator Locations	Location with Highest Mean			Control Locations	Non-Routine Reported Measure-ments
	Type	Total No		Mean Range	Name	Distance Direction	Mean Range	Mean Range	
Aquatic Flora (pCi/g wet)	Ru-103	24	-	(0/20)	-	-	< LLD	(0/4)	
	Ru-106	24	-	(0/20)	-	-	< LLD	(0/4)	
	Sb-125	24	-	(0/20)	-	-	< LLD	(0/4)	
	Th-228	24	-	(0/20)	-	-	< LLD	(0/4)	
	Zn-65	24	-	(0/20)	-	-	< LLD	(0/4)	
	Zr-95	24	-	(0/20)	-	-	< LLD	(0/4)	
Fish-Flounder (pCi/g wet)	Ag-110m	6	-	(0/6)	-	-	< LLD	(0/0)	
	Be-7	6	-	(0/6)	-	-	< LLD	(0/0)	
	Co-58	6	0.13	(0/6)	-	-	< LLD	(0/0)	
	Co-60	6	0.13	(0/6)	-	-	< LLD	(0/0)	
	Cr-51	6	-	(0/6)	-	-	< LLD	(0/0)	
	Cs-134	6	0.13	(0/6)	-	-	< LLD	(0/0)	
	Cs-137	6	0.15	(0/6)	-	-	< LLD	(0/0)	
	Fe-59	6	0.26	(0/6)	-	-	< LLD	(0/0)	
	I-131	6	-	(0/6)	-	-	< LLD	(0/0)	
	K-40	6	-	3.77 (6/6) (3.27-4.07)	32		3.78 (3/3) (3.47-4.05)	(0/0)	
	Mn-54	6	0.13	(0/6)	-	-	< LLD	(0/0)	
	Nb-95	6	-	(0/6)	-	-	< LLD	(0/0)	
	Ru-103	6	-	(0/6)	-	-	< LLD	(0/0)	

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

DOCKETS 50-245, 50-336 & 50-339

Medium or Pathway Sampled (Units)	Analysis		* LLD	Indicator Locations	Location with Highest Mean			Control Locations	Non-Routine Reported Measurements
	Type	Total No		Mean Range	Name	Distance Direction	Mean Range	Mean Range	
Fish-Flounder (pCi/g wet)	Ru-106	6	-	(0/6)	-	-	< LLD	(0/0)	
	Sb-125	6	-	(0/6)	-	-	< LLD	(0/0)	
	Th-228	6	-	(0/6)	-	-	< LLD	(0/0)	
	Zn-65	6	0.26	(0/6)	-	-	< LLD	(0/0)	
	Zr-95	6	-	(0/6)	-	-	< LLD	(0/0)	
Fish-Other (pCi/g wet)	Ag-110m	9	-	(0/9)	-	-	< LLD	(0/0)	
	Be-7	9	-	(0/9)	-	-	< LLD	(0/0)	
	Co-58	9	0.13	(0/9)	-	-	< LLD	(0/0)	
	Co-60	9	0.13	(0/9)	-	-	< LLD	(0/0)	
	Cr-51	9	-	(0/9)	-	-	< LLD	(0/0)	
	Cs-134	9	0.13	(0/9)	-	-	< LLD	(0/0)	
	Cs-137	9	0.15	(0/9)	-	-	< LLD	(0/0)	
	Fe-59	9	0.26	(0/9)	-	-	< LLD	(0/0)	
	I-131	9	-	(0/9)	-	-	< LLD	(0/0)	
	K-40	9	-	4 (9/9) (3.2-5.2)	32	4.18	(3/3) (3.2-4.7)	(0/0)	
	Mn-54	9	0.13	(0/9)	-	-	< LLD	(0/0)	
	Nb-95	9	-	(0/9)	-	-	< LLD	(0/0)	
	Ru-103	9	-	(0/9)	-	-	< LLD	(0/0)	
	Ru-106	9	-	(0/9)	-	-	< LLD	(0/0)	

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

DOCKETS 50-245, 50-336 & 50-339

Medium or Pathway Sampled (Units)	Analysis Type	Analysis Total No	* LLD	Indicator Locations Mean Range	Location with Highest Mean Name	Distance Direction	Mean Range	Control Locations Mean Range	Non-Routine Reported Measurements
Fish-Other (pCi/g wet)	Sb-125	9	-	(0/9)	-	-	< LLD	(0/0)	
	Th-228	9	-	(0/9)	-	-	< LLD	(0/0)	
	Zn-65	9	0.26	(0/9)	-	-	< LLD	(0/0)	
	Zr-95	9	-	(0/9)	-	-	< LLD	(0/0)	
Mussels (pCi/g wet)	Ag-110m	6	-	(0/6)	-	-	< LLD	(0/0)	
	Be-7	6	-	(0/6)	-	-	< LLD	(0/0)	
	Co-58	6	0.13	(0/6)	-	-	< LLD	(0/0)	
	Co-60	6	0.13	(0/6)	-	-	< LLD	(0/0)	
	Cr-51	6	-	(0/6)	-	-	< LLD	(0/0)	
	Cs-134	6	0.13	(0/6)	-	-	< LLD	(0/0)	
	Cs-137	6	0.15	(0/6)	-	-	< LLD	(0/0)	
	Fe-59	6	0.26	(0/6)	-	-	< LLD	(0/0)	
	I-131	6	-	(0/6)	-	-	< LLD	(0/0)	
	K-40	6	-	1.72 (6/6) (1.33-2.08)	30	1.5 mi NNW	1.88 (4/4) (1.75-2.08)	(0/0)	
	Mn-54	6	0.13	(0/6)	-	-	< LLD	(0/0)	
	Nb-95	6	-	(0/6)	-	-	< LLD	(0/0)	
	Ru-103	6	-	(0/6)	-	-	< LLD	(0/0)	
	Ru-106	6	-	(0/6)	-	-	< LLD	(0/0)	
	Sb-125	6	-	(0/6)	-	-	<LLD	(0/0)	

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

DOCKETS 50-245, 50-336 & 50-339

Medium or Pathway Sampled (Units)	Analysis Type	Analysis Total No	* LLD	Indicator Locations Mean Range	Location with Highest Mean Name	Location with Highest Mean Distance Direction	Location with Highest Mean Mean Range	Control Locations Mean Range	Non-Routine Reported Measurements
Mussels (pCi/g wet)	Th-228	6	-	(0/6)	-	-	< LLD	(0/0)	
	Zn-65	6	0.26	(0/6)	-	-	< LLD	(0/0)	
	Zr-95	6	-	(0/6)	-	-	< LLD	(0/0)	
Oysters (pCi/g wet)	Ag-110m	20	-	(0/16)	-	-	< LLD	(0/4)	
	Be-7	20	-	(0/16)	-	-	< LLD	(0/4)	
	Co-58	20	0.13	(0/16)	-	-	< LLD	(0/4)	
	Co-60	20	0.13	(0/16)	-	-	< LLD	(0/4)	
	Cr-51	20	-	(0/16)	-	-	< LLD	(0/4)	
	Cs-134	20	0.13	(0/16)	-	-	< LLD	(0/4)	
	Cs-137	20	0.15	(0/16)	-	-	< LLD	(0/4)	
	Fe-59	20	0.26	(0/16)	-	-	< LLD	(0/4)	
	I-131	20	-	(0/16)	-	-	< LLD	(0/4)	
	K-40	20	-	1.88 (16/16) (1.1-2.57)	37-C	3.5 mi WSW	2.22 (4/4)	2.22 (4/4) (2.07-2.48)	
	Mn-54	20	0.13	(0/16)	-	-	< LLD	(0/4)	
	Nb-95	20	-	(0/16)	-	-	< LLD	(0/4)	
	Ru-103	20	-	(0/16)	-	-	< LLD	(0/4)	
	Ru-106	20	-	(0/16)	-	-	< LLD	(0/4)	
	Sb-125	20	-	(0/16)	-	-	< LLD	(0/4)	
	Th-228	20	-	(0/16)	-	-	<LLD	(0/4)	

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

DOCKETS 50-245, 50-336 & 50-339

Medium or Pathway Sampled (Units)	Analysis		*	Indicator Locations	Location with Highest Mean			Control Locations	Non-Routine Reported Measurements
	Type	Total No	LLD	Mean Range	Name	Distance Direction	Mean Range	Mean Range	
Oysters (pCi/g wet)	Zn-65	20	0.26	(0/16)	-	-	< LLD	(0/4)	
	Zr-95	20	-	(0/16)	-	-	< LLD	(0/4)	
Clams (pCi/g wet)	Ag-110m	16	-	(0/16)	-	-	< LLD	(0/0)	
	Be-7	16	-	(0/16)	-	-	< LLD	(0/0)	
	Co-58	16	0.13	(0/16)	-	-	< LLD	(0/0)	
	Co-60	16	0.13	(0/16)	-	-	< LLD	(0/0)	
	Cr-51	16	-	(0/16)	-	-	< LLD	(0/0)	
	Cs-134	16	0.13	(0/16)	-	-	< LLD	(0/0)	
	Cs-137	16	0.15	(0/16)	-	-	< LLD	(0/0)	
	Fe-59	16	0.26	(0/16)	-	-	< LLD	(0/0)	
	I-131	16	-	(0/16)	-	-	< LLD	(0/0)	
	K-40	16	-	1.95 (16/16) (1.3-3.15)	29	0.4 mi NNE	2.17 (4/4) (1.7-2.9)	(0/0)	
	Mn-54	16	0.13	(0/16)	-	-	< LLD	(0/0)	
	Nb-95	16	-	(0/16)	-	-	< LLD	(0/0)	
	Ru-103	16	-	(0/16)	-	-	< LLD	(0/0)	
	Ru-106	16	-	(0/16)	-	-	< LLD	(0/0)	
	Sb-125	16	-	(0/16)	-	-	< LLD	(0/0)	
	Th-228	16	-	(0/16)	-	-	< LLD	(0/0)	
	Zn-65	16	-	(0/16)	-	-	<LLD	(0/0)	

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

DOCKETS 50-245, 50-336 & 50-339

Medium or Pathway Sampled (Units)	Analysis		* LLD	Indicator Locations	Location with Highest Mean			Control Locations	Non-Routine Reported Measurements
	Type	Total No		Mean Range	Name	Distance Direction	Mean Range	Mean Range	
Clams (pCi/g wet)	Zr-95	16	-	(0/16)	-	-	< LLD	(0/0)	
Lobsters (Crabs) (pCi/g wet)	Ag-110m	12	-	(0/12)	-	-	< LLD	(0/0)	
	Be-7	12	-	(0/12)	-	-	< LLD	(0/0)	
	Co-58	12	0.13	(0/12)	-	-	< LLD	(0/0)	
	Co-60	12	0.13	(0/12)	-	-	< LLD	(0/0)	
	Cr-51	12	-	(0/12)	-	-	< LLD	(0/0)	
	Cs-134	12	0.13	(0/12)	-	-	< LLD	(0/0)	
	Cs-137	12	0.15	(0/12)	-	-	< LLD	(0/0)	
	Fe-59	12	0.26	(0/12)	-	-	< LLD	(0/0)	
	I-131	12	-	(0/12)	-	-	< LLD	(0/0)	
	K-40	12	-	2.24 (12/12) (1.7-2.73)	37-X	3.5 mi WSW	2.4 (4/4) (2.05-2.73)	(0/0)	
	Mn-54	12	0.13	(0/12)	-	-	< LLD	(0/0)	
	Nb-95	12	-	(0/12)	-	-	< LLD	(0/0)	
	Ru-103	12	-	(0/12)	-	-	< LLD	(0/0)	
	Ru-106	12	-	(0/12)	-	-	< LLD	(0/0)	
	Sb-125	12	-	(0/12)	-	-	< LLD	(0/0)	
	Th-228	12	-	(0/12)	-	-	< LLD	(0/0)	
	Zn-65	12	0.26	(0/12)	-	-	< LLD	(0/0)	

NOTES FOR SUMMARY TABLE

* For gamma measurements the Minimum Detectable Level (MDL) $\simeq$ the Lower Limit of Detection (LLD) / 2.33. For all others, MDL = 2 x (the standard deviation of the background). These MDLs are based on the absence of large amounts of interfering activity (excluding naturally occurring radionuclides). Deviations by factors of 3 to 4 can occur.

The LLD at a confidence level of 95% is the smallest concentration of radioactive material in a sample that will be detected with a 5% probability of falsely concluding that a blank observation represents a "real" signal.

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

$$LLD = \frac{4.66\ S_b}{E * V * 2.22 * Y * \exp(-\lambda\Delta t)}$$

where,

LLD	is the lower limit of detection as defined above (as pCi per unit mass or volume)
S_b	is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute)
E	is the counting efficiency (as counts per transformation)
V	is the sample size (in units of mass or volume)
2.22	is the number of transformation per minute per picoCurie
Y	is the fractional radiochemical yield (when applicable)
Δ	is the radioactive decay constant for the particular radionuclide
λt	is the elapsed time between sample collection (or end of the sample collection period) and time of counting

The LLD is defined as “a priori” (before the fact) limit representing the capability of a measurement system and not an “a posteriori” (after the fact) limit for a particular measurement.

Analyses shall be performed in such a manner that the stated LLDs will be achieved under routine conditions. Occasionally background fluctuations, unavoidably small sample sizes, the presence of interfering nuclides, or other uncontrollable circumstances may render these a priori LLDs unachievable. In such cases, the contributing factors will be identified and described in this report (see Notes for Section 3 or Section 4). As shown in the equation above, for composite samples taken over a period of time, the LLD is decayed to the end of the sample period.

The listed I-131 LLD for all the vegetation samples is for leafy vegetables.
The I-131, Ba-140 and La-140 LLDs for the water samples are from end of sample period.

3.2 Data Tables

The data reported in this section are strictly counting statistics. The reported error is two times the standard deviation (2σ) of the net activity. Unless otherwise noted, the overall error (counting, sample size, chemistry, errors, etc.) is estimated to be 2 to 5 times that listed. Results are considered positive when the measured value exceeds 1.5 times the listed 2σ error (i.e., the measured value exceeds 3σ). Any errors listed as zero are the artifact that there were no background counts in the area of the peak for these nuclides.

Because of counting statistics, negative values, zeros and numbers below the Minimum Detectable Level (MDL) are statistically valid pieces of data. For the purposes of this report, in order to indicate any background biases, all the valid data are presented. This practice was recommended by Health and Safety Laboratory (HASL) ("Reporting of Analytical Results from HASL," letter by Leo B. Higginbotham), NUREG 0475 and NUREG/CR-4007 (Sept. 1984). In instances where zeros are listed after significant digits, this is an artifact of the computer data-handling program.

Data are given according to sample type as indicated below.

1. Gamma Exposure Rate
2. Air Particulates, Gross Beta Radioactivity
3. Air Particulates, Weekly I-131
4. Air Particulates, Quantitative Gamma Spectra
5. Air Particulates, Quarterly Strontium*
6. Soil
7. Milk - Dairy Farms*
8. Milk - Goat Farms
9. Pasture Grass
10. Well Water
11. Reservoir Water*
12. Fruits & Vegetables
13. Broad Leaf Vegetation
14. Seawater
15. Bottom Sediment
16. Aquatic Flora
17. Fin Fish
18. Mussels
19. Oysters
20. Clams
21. Scallops*
22. Lobster (and Crabs)

* This type of sampling or analysis was not performed; therefore there is no table for these.

Table 1, Quarterly TLD Gamma Exposure Rate (uR/hr)

Location Number	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Average ± 2 s.d.
01	7.77 ± 0.40	8.65 ± 0.30	8.52 ± 0.46	8.42 ± 0.25	8.34 ± 0.68
02	9.18 ± 0.37	9.56 ± 0.44	10.55 ± 0.89	10.14 ± 0.31	9.86 ± 1.05
03	6.64 ± 0.30	7.72 ± 0.23	8.04 ± 0.33	7.92 ± 0.23	7.58 ± 1.11
04	7.35 ± 0.31	7.88 ± 0.22	7.93 ± 0.31	8.13 ± 0.41	7.82 ± 0.58
05	8.21 ± 0.33	9.61 ± 0.45	10.05 ± 0.38	9.29 ± 0.29	9.29 ± 1.36
06	7.88 ± 0.42	8.37 ± 0.24	8.37 ± 0.35	8.62 ± 0.22	8.31 ± 0.54
07	5.19 ± 0.18	5.02 ± 0.32	4.52 ± 0.25	4.57 ± 0.12	4.83 ± 0.57
08	10.01 ± 0.28	11.61 ± 0.39	11.60 ± 0.62	11.24 ± 0.36	11.12 ± 1.31
09	8.45 ± 0.33	9.70 ± 0.44	9.44 ± 0.45	9.25 ± 0.23	9.21 ± 0.93
10	9.49 ± 0.29	10.43 ± 0.35	10.74 ± 0.41	10.48 ± 0.47	10.29 ± 0.95
11	6.28 ± 0.22	7.25 ± 0.22	7.02 ± 0.43	6.90 ± 0.28	6.86 ± 0.72
12-C	7.10 ± 0.28	7.43 ± 0.25	7.70 ± 0.30	7.91 ± 0.21	7.54 ± 0.61
13-C	9.13 ± 0.50	10.66 ± 0.68	10.17 ± 0.49	10.59 ± 0.40	10.14 ± 1.22
14-C	8.86 ± 0.36	9.89 ± 0.29	9.68 ± 0.48	9.58 ± 0.29	9.50 ± 0.77
15-C	7.27 ± 0.56	7.87 ± 0.22	7.84 ± 0.35	8.10 ± 0.24	7.77 ± 0.61
16-C	5.76 ± 0.32	6.39 ± 0.32	6.44 ± 0.37	6.31 ± 0.20	6.23 ± 0.54
27	7.53 ± 0.38	8.17 ± 0.29	8.38 ± 0.34	8.36 ± 0.35	8.11 ± 0.69
41	6.42 ± 0.26	7.29 ± 0.41	6.95 ± 0.27	6.88 ± 0.26	6.89 ± 0.62
42	7.01 ± 0.32	8.12 ± 0.29	8.12 ± 0.40	8.13 ± 0.29	7.85 ± 0.96
43	6.43 ± 0.32	7.11 ± 0.21	6.93 ± 0.40	6.89 ± 0.21	6.84 ± 0.50
44	7.54 ± 0.27	8.26 ± 0.29	8.18 ± 0.43	7.95 ± 0.20	7.98 ± 0.56
45	6.53 ± 0.22	7.45 ± 0.22	7.13 ± 0.34	7.13 ± 0.22	7.06 ± 0.67
46	7.59 ± 0.23	8.28 ± 0.30	7.68 ± 0.51	8.35 ± 0.23	7.98 ± 0.68
47	7.27 ± 0.25	8.18 ± 0.29	7.70 ± 0.46	7.85 ± 0.51	7.75 ± 0.65
48	8.94 ± 0.72	9.71 ± 0.35	9.42 ± 0.42	9.47 ± 0.27	9.39 ± 0.56
49	6.45 ± 0.19	7.19 ± 0.27	7.16 ± 0.39	7.09 ± 0.28	6.97 ± 0.61
50	7.42 ± 0.22	8.03 ± 0.36	7.89 ± 0.38	7.85 ± 0.26	7.80 ± 0.46
51	5.87 ± 0.45	6.63 ± 0.20	6.16 ± 0.24	6.50 ± 0.17	6.29 ± 0.59
52	6.82 ± 0.23	7.57 ± 0.26	6.97 ± 0.34	7.41 ± 0.37	7.19 ± 0.61
53	6.81 ± 0.21	7.70 ± 0.36	7.49 ± 0.38	7.32 ± 0.32	7.33 ± 0.66
55	7.28 ± 0.56	7.77 ± 0.32	7.33 ± 0.58	7.45 ± 0.45	7.46 ± 0.38
56	6.44 ± 0.52	7.18 ± 0.22	6.48 ± 0.34	6.79 ± 0.24	6.72 ± 0.59
57	6.67 ± 0.32	7.58 ± 0.25	7.06 ± 0.31	7.41 ± 0.24	7.18 ± 0.70
59	7.03 ± 0.26	8.15 ± 0.38	8.14 ± 0.42	8.05 ± 0.21	7.84 ± 0.94
60	6.19 ± 0.23	6.74 ± 0.35	6.65 ± 0.28	6.72 ± 0.18	6.58 ± 0.45
61	6.69 ± 0.44	7.21 ± 0.22	7.25 ± 0.45	7.31 ± 0.28	7.12 ± 0.50
62	7.84 ± 0.47	8.21 ± 0.32	7.95 ± 0.35	8.43 ± 0.30	8.11 ± 0.46
63	8.52 ± 0.30	8.57 ± 0.44	8.80 ± 0.48	8.75 ± 0.45	8.66 ± 0.24
64	7.02 ± 0.25	8.00 ± 0.80	7.01 ± 0.32	7.38 ± 0.32	7.35 ± 0.80
65	7.41 ± 0.23	8.03 ± 0.31	7.87 ± 0.34	8.25 ± 0.26	7.89 ± 0.62
66-X	6.53 ± 0.31	6.98 ± 0.30	6.83 ± 0.32	7.17 ± 0.26	6.88 ± 0.47
73-X	8.91 ± 0.36	9.17 ± 0.33	8.99 ± 0.35	9.16 ± 0.24	9.06 ± 0.22

Table 1, Quarterly TLD Gamma Exposure Rate (uR/hr)

Location Number	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Average ± 2 s.d.
74-X	7.22 ± 0.25	7.61 ± 0.22	7.15 ± 0.28	7.60 ± 0.31	7.40 ± 0.42
75-X	6.22 ± 0.39	6.73 ± 0.21	6.71 ± 0.28	7.08 ± 0.18	6.69 ± 0.61

Table 2, Air Particulate Gross Beta Radioactivity (1E-3 pCi/m^3)

Collection Date	Locations						
JANUARY							
	01		02	03	04	10	11
12/29 - 01/04	25.70 ± 4.50	#	22.70 ± 3.90	28.50 ± 4.60	27.50 ± 4.30	27.20 ± 4.10	25.80 ± 4.50
01/05 - 01/11	21.70 ± 4.40		22.60 ± 3.90	24.40 ± 4.40	21.10 ± 4.10	21.30 ± 3.80	20.00 ± 4.30
01/12 - 01/18	28.00 ± 4.60		27.40 ± 4.10	27.80 ± 4.50	28.50 ± 4.40	27.70 ± 4.10	29.70 ± 4.60
01/19 - 01/25	37.40 ± 4.30		34.10 ± 4.30	41.50 ± 5.00	38.70 ± 4.70	36.90 ± 4.30	37.00 ± 4.30
FEBRUARY							
	01		02	03	04	10	11
01/26 - 02/01	35.10 ± 6.00		30.70 ± 5.90	35.00 ± 6.70	27.70 ± 6.00	28.90 ± 5.80	35.40 ± 6.00
02/02 - 02/08	36.10 ± 6.30		27.60 ± 5.90	33.20 ± 6.70	31.00 ± 6.40	33.10 ± 6.30	38.20 ± 6.40
02/09 - 02/15	13.30 ± 3.40		17.50 ± 3.60	15.40 ± 3.90	15.20 ± 3.80	17.50 ± 3.60	18.80 ± 3.70
02/16 - 02/22	18.40 ± 3.90		17.30 ± 3.80	19.60 ± 4.30	18.30 ± 4.00	19.00 ± 3.80	20.20 ± 3.90
MARCH							
	01		02	03	04	10	11
02/23 - 03/01	18.40 ± 5.60		25.50 ± 5.80	17.50 ± 6.00	25.90 ± 6.20	24.50 ± 5.80	19.90 ± 5.60
03/02 - 03/08	23.30 ± 4.10		23.80 ± 4.00	24.50 ± 4.40	30.10 ± 4.60	30.10 ± 4.30	21.80 ± 4.00
03/09 - 03/15	36.00 ± 4.70		28.90 ± 4.30	34.30 ± 5.00	39.00 ± 4.90	32.10 ± 4.40	36.10 ± 4.70
03/16 - 03/22	30.90 ± 4.40		26.00 ± 4.10	30.10 ± 4.70	29.80 ± 4.50	31.20 ± 4.20	29.20 ± 4.30
03/23 - 03/29	14.30 ± 4.00		13.20 ± 3.80	11.60 ± 4.10	11.90 ± 4.00	13.50 ± 3.70	14.20 ± 3.90
Qtr Avg ± 2 sd	26.05 ± 16.48		24.41 ± 11.19	26.42 ± 16.68	26.52 ± 15.62	26.38 ± 13.16	26.64 ± 15.63

JANUARY		
	15-C	27
12/29 - 01/04	24.10 ± 4.10	26.50 ± 4.30
01/05 - 01/11	22.40 ± 4.10	20.50 ± 4.00
01/12 - 01/18	28.90 ± 4.40	23.60 ± 4.10
01/19 - 01/25	36.30 ± 4.60	38.10 ± 4.60
FEBRUARY		
	15-C	27
01/26 - 02/01	36.50 ± 6.60	27.40 ± 6.00
02/02 - 02/08	28.00 ± 6.30	34.50 ± 6.50
02/09 - 02/15	19.00 ± 3.90	18.80 ± 3.90
02/16 - 02/22	19.70 ± 4.10	22.50 ± 4.20
MARCH		
	15-C	27
02/23 - 03/01	24.00 ± 6.20	18.80 ± 5.80
03/02 - 03/08	28.30 ± 4.50	24.90 ± 4.30
03/09 - 03/15	37.10 ± 5.00	30.20 ± 4.50
03/16 - 03/22	27.20 ± 4.40	26.80 ± 4.30
03/23 - 03/29	11.70 ± 4.00	13.90 ± 3.90
Qtr Avg ± 2 sd	26.40 ± 14.36	25.12 ± 12.75

Table 2, Air Particulate Gross Beta Radioactivity (1E-3 pCi/m^3)

Collection Date	01	02	03	04	10	11
APRIL						
03/30 - 04/05	9.60 ± 3.80	8.40 ± 3.50	9.20 ± 4.00	10.20 ± 3.90	8.60 ± 3.40	8.10 ± 3.60
04/06 - 04/12	21.40 ± 4.20	21.80 ± 3.90	20.00 ± 4.40 A	22.50 ± 4.30	21.00 ± 3.80	21.50 ± 4.10
04/13 - 04/19	28.70 ± 6.40	22.50 ± 5.80	26.70 ± 5.70	24.90 ± 5.70	18.20 ± 5.40	27.60 ± 6.30
04/20 - 04/26	19.40 ± 5.00	13.70 ± 4.50	21.60 ± 4.70	21.90 ± 4.70	19.30 ± 4.50	18.50 ± 5.00
MAY						
04/27 - 05/03	21.40 ± 5.90	19.20 ± 5.50	22.30 ± 5.60	23.10 ± 5.60	28.20 ± 5.90	24.70 ± 6.10
05/04 - 05/10	9.20 ± 3.50	7.70 ± 3.20	8.90 ± 3.30	11.20 ± 3.30	10.00 ± 3.20	13.20 ± 3.70
05/11 - 05/17	16.00 ± 4.80	17.10 ± 4.50	15.70 ± 4.40	17.00 ± 4.40	13.70 ± 4.30	20.10 ± 4.80
05/18 - 05/24	17.90 ± 4.20	17.50 ± 4.00	18.70 ± 4.00	19.50 ± 3.90	18.90 ± 3.90	20.00 ± 4.30
05/25 - 05/31	10.50 ± 4.00	12.00 ± 3.80	12.20 ± 3.80	10.50 ± 3.50	10.20 ± 3.50	9.60 ± 3.90
JUNE						
06/01 - 06/07	23.20 ± 5.00	23.00 ± 4.70	20.60 ± 4.40	22.60 ± 4.50	22.10 ± 4.40	22.00 ± 4.90
06/08 - 06/14	12.50 ± 3.40	13.00 ± 3.60	15.00 ± 3.70	14.00 ± 3.50	13.70 ± 3.50	10.10 ± 3.70
06/15 - 06/21	6.20 ± 3.20	7.60 ± 3.50	7.10 ± 3.30	5.10 ± 3.10	5.50 ± 3.10	7.50 ± 3.60
06/22 - 06/28	14.60 ± 5.00	20.10 ± 5.80	14.70 ± 5.20	14.70 ± 4.90	14.60 ± 4.90	16.10 ± 5.00
Qtr Avg ± 2 sd	16.20 ± 12.57	15.66 ± 10.83	16.36 ± 11.39	16.71 ± 12.01	15.69 ± 12.17	16.85 ± 12.70

Collection Date	15-C	27
APRIL		
03/30 - 04/05	8.70 ± 3.90	11.80 ± 3.80
04/06 - 04/12	19.10 ± 4.30	21.90 ± 4.20
04/13 - 04/19	23.30 ± 5.60	28.10 ± 6.20
04/20 - 04/26	21.30 ± 4.70	20.80 ± 4.90
MAY		
04/27 - 05/03	23.40 ± 5.60	20.80 ± 5.80
05/04 - 05/10	13.80 ± 3.40	9.50 ± 3.50
05/11 - 05/17	20.90 ± 4.50	14.70 ± 4.60
05/18 - 05/24	20.80 ± 4.10	16.70 ± 4.00
05/25 - 05/31	9.70 ± 3.50	11.90 ± 3.80
JUNE		
06/01 - 06/07	22.40 ± 4.50 B	21.30 ± 4.80
06/08 - 06/14	12.30 ± 3.40	12.20 ± 3.20
06/15 - 06/21	6.80 ± 3.30	7.50 ± 3.00
06/22 - 06/28	15.60 ± 5.10	14.30 ± 4.80
Qtr Avg ± 2 sd	16.78 ± 11.40	16.27 ± 11.41

Table 2, Air Particulate Gross Beta Radioactivity (1E-3 pCi/m^3)

Collection Date	Locations					
JULY	**01**	**02**	**03**	**04**	**10**	**11**
06/29 - 07/05	20.50 ± 3.90	15.00 ± 4.10	23.00 ± 7.60 C	15.80 ± 3.70	18.50 ± 3.90	18.80 ± 3.70
07/06 - 07/12	15.30 ± 5.10	14.70 ± 5.70	10.50 ± 4.70	15.60 ± 5.20	17.10 ± 5.40	11.70 ± 4.80
07/13 - 07/19	17.10 ± 5.30	18.60 ± 5.30	17.60 ± 5.30	17.50 ± 5.30	20.90 ± 5.60	20.40 ± 5.40
07/20 - 07/26	15.50 ± 5.00	12.70 ± 4.60	17.60 ± 5.10	18.60 ± 5.20	20.80 ± 5.40	14.90 ± 4.90
AUGUST	**01**	**02**	**03**	**04**	**10**	**11**
07/27 - 08/02	25.50 ± 4.70	20.30 ± 4.30	20.80 ± 4.50	23.40 ± 4.70	25.50 ± 4.80	23.80 ± 4.30
08/03 - 08/09	24.30 ± 4.70	25.70 ± 4.50	24.90 ± 4.70	24.90 ± 4.80	24.90 ± 4.80	23.80 ± 4.40
08/10 - 08/16	28.20 ± 4.90	29.50 ± 4.60	25.10 ± 4.70	24.90 ± 4.80	35.00 ± 5.10	27.40 ± 4.50
08/17 - 08/23	22.20 ± 4.00	23.10 ± 3.70	22.70 ± 4.00	24.00 ± 4.20	26.50 ± 4.20	24.50 ± 3.90
08/24 - 08/30	16.20 ± 3.80	14.60 ± 3.50	13.50 ± 3.60	17.70 ± 3.90	14.40 ± 3.60	16.70 ± 3.60
SEPTEMBER	**01**	**02**	**03**	**04**	**10**	**11**
08/31 - 09/06	19.80 ± 5.40	23.10 ± 5.20	22.90 ± 5.50	19.20 ± 5.30	23.50 ± 5.40	22.30 ± 5.20
09/07 - 09/13	19.20 ± 5.70	12.50 ± 4.80	20.60 ± 5.70	18.50 ± 5.70	18.20 ± 5.30	16.40 ± 5.10
09/14 - 09/20	19.10 ± 5.50	19.10 ± 5.00	14.10 ± 5.00	15.10 ± 5.20	17.90 ± 5.10	17.20 ± 5.00
09/21 - 09/27	16.20 ± 5.70	13.80 ± 5.30	14.70 ± 5.50	19.40 ± 5.80	12.30 ± 5.20	16.60 ± 5.50
Qtr Avg ± 2 sd	19.93 ± 7.89	18.67 ± 10.41	19.08 ± 9.14	19.58 ± 6.82	21.19 ± 11.44	19.58 ± 8.71

Collection Date		
JULY	**15-C**	**27**
06/29 - 07/05	17.10 ± 3.80	20.20 ± 3.80
07/06 - 07/12	12.60 ± 5.00	13.20 ± 4.80
07/13 - 07/19	19.80 ± 5.50	17.90 ± 5.10
07/20 - 07/26	16.80 ± 5.20	14.50 ± 4.70
AUGUST	**15-C**	**27**
07/27 - 08/02	28.60 ± 5.00	20.90 ± 4.30
08/03 - 08/09	22.60 ± 4.80	23.70 ± 4.50
08/10 - 08/16	27.40 ± 5.00	27.40 ± 4.50
08/17 - 08/23	24.80 ± 4.30	28.00 ± 4.10
08/24 - 08/30	14.70 ± 3.80	14.00 ± 3.50
SEPTEMBER	**15-C**	**27**
08/31 - 09/06	22.20 ± 5.70	25.30 ± 5.40
09/07 - 09/13	18.20 ± 5.70	16.50 ± 5.10
09/14 - 09/20	16.90 ± 5.10	21.30 ± 5.20
09/21 - 09/27	15.30 ± 5.70	20.50 ± 5.50
Qtr Avg ± 2 sd	19.77 ± 9.59	20.26 ± 9.47

Table 2, Air Particulate Gross Beta Radioactivity (1E-3 pCi/m^3)

Collection Date	Locations					
OCTOBER	**01**	**02**	**03**	**04**	**10**	**11**
09/28 - 10/04	12.20 ± 5.20	10.00 ± 4.90	10.80 ± 5.10	11.60 ± 5.20	8.70 ± 4.70	14.90 ± 5.30
10/05 - 10/11	15.20 ± 5.40	14.90 ± 5.30	12.50 ± 5.30	17.20 ± 5.60	14.80 ± 5.50	20.40 ± 5.80
10/12 - 10/18	19.00 ± 5.40	21.40 ± 5.40	11.10 ± 5.00	14.30 ± 5.20	17.30 ± 5.20	17.40 ± 5.30
10/19 - 10/25	27.00 ± 5.60	31.40 ± 6.00	27.20 ± 5.70	27.10 ± 5.70	31.60 ± 5.90	29.10 ± 5.70
NOVEMBER	**01**	**02**	**03**	**04**	**10**	**11**
10/26 - 11/01	18.10 ± 5.10	14.30 ± 4.80	12.80 ± 4.80	20.10 ± 5.30	17.50 ± 5.10	17.50 ± 5.10
11/02 - 11/08	22.70 ± 5.70	23.30 ± 5.70	18.60 ± 5.50	25.50 ± 5.90	25.60 ± 5.90	24.10 ± 5.80
11/09 - 11/15	19.80 ± 4.00	18.90 ± 5.50	20.50 ± 5.70	18.60 ± 5.50	23.80 ± 5.90	20.60 ± 5.50
11/16 - 11/22	26.40 ± 5.90	19.00 ± 5.50	16.90 ± 5.40	22.20 ± 5.70	17.80 ± 5.40	21.70 ± 5.60
11/23 - 11/29	20.70 ± 3.90	17.70 ± 3.80	17.00 ± 4.10 D	20.20 ± 3.90	16.90 ± 3.80	21.30 ± 3.90
DECEMBER	**01**	**02**	**03**	**04**	**10**	**11**
11/30 - 12/06	20.10 ± 3.90	17.00 ± 3.80	17.70 ± 3.80	17.00 ± 3.70	20.40 ± 4.10	18.80 ± 3.80
12/07 - 12/13	21.80 ± 4.50	20.60 ± 4.50	19.80 ± 4.50	25.30 ± 4.60	19.30 ± 4.50	22.30 ± 4.50
12/14 - 12/20	25.30 ± 6.10	24.50 ± 5.90	24.10 ± 6.00	29.00 ± 6.20	23.90 ± 5.70	23.60 ± 5.80
12/21 - 12/27	9.60 ± 5.40	14.90 ± 5.70	10.30 ± 5.40	16.40 ± 5.80	14.50 ± 5.40	14.70 ± 5.50
Qtr Avg ± 2 sd	19.84 ± 10.01	19.07 ± 10.42	16.87 ± 10.13	20.35 ± 10.04	19.39 ± 11.15	20.49 ± 7.61
Ann Avg ± 2 sd	20.50 ± 14.07	19.45 ± 12.43	19.68 ± 14.60	20.79 ± 13.60	20.67 ± 14.27	20.89 ± 13.65

OCTOBER	**15-C**	**27**
09/28 - 10/04	10.90 ± 5.30	12.60 ± 5.20 E
10/05 - 10/11	17.30 ± 4.70	14.20 ± 5.10
10/12 - 10/18	13.80 ± 4.50	16.60 ± 5.10
10/19 - 10/25	26.20 ± 5.30	27.60 ± 5.50
NOVEMBER	**15-C**	**27**
10/26 - 11/01	15.00 ± 4.60	20.70 ± 5.10
11/02 - 11/08	28.40 ± 5.70	23.30 ± 5.50
11/09 - 11/15	19.90 ± 5.40	16.20 ± 5.10
11/16 - 11/22	25.00 ± 5.60	19.60 ± 5.30
11/23 - 11/29	18.00 ± 3.60	17.00 ± 3.50
DECEMBER	**15-C**	**27**
11/30 - 12/06	21.70 ± 3.80	18.70 ± 3.60
12/07 - 12/13	20.60 ± 4.30	21.00 ± 4.10
12/14 - 12/20	24.00 ± 5.80	24.60 ± 5.60
12/21 - 12/27	14.10 ± 5.30	15.10 ± 5.30
Qtr Avg ± 2 sd	19.61 ± 10.28	19.02 ± 8.37
Ann Avg ± 2 sd	20.64 ± 13.54	20.17 ± 12.42

Table 3, Airborne Iodine I-131 (1E-3 pCi/m^3)

Collection Date **Locations**

JANUARY

	01		02	03	04	10	11
12/29 - 01/04	12 ± 19	#	-1 ± 17	-9 ± 18	13 ± 18	-4 ± 19	3 ± 22
01/05 - 01/11	-5 ± 12		10 ± 11	-11 ± 17	-6 ± 14	4 ± 12	0 ± 13
01/12 - 01/18	6 ± 19		12 ± 16	8 ± 15	-18 ± 19	7 ± 18	-17 ± 17
01/19 - 01/25	-14 ± 21		-16 ± 21	-6 ± 19	6 ± 20	6 ± 18	6 ± 17

FEBRUARY

	01	02	03	04	10	11
01/26 - 02/01	-5 ± 10	-3 ± 13	-8 ± 14	-12 ± 12	9 ± 11	-7 ± 10
02/02 - 02/08	-3 ± 10	13 ± 12	5 ± 10	0 ± 11	-9 ± 13	-8 ± 12
02/09 - 02/15	1 ± 18	-9 ± 16	-1 ± 19	14 ± 23	12 ± 19	-9 ± 17
02/16 - 02/22	9 ± 11	11 ± 9	-7 ± 14	3 ± 14	-10 ± 12	1 ± 13

MARCH

	01	02	03	04	10	11
02/23 - 03/01	7 ± 12	6 ± 11	-8 ± 16	14 ± 10	-4 ± 10	8 ± 15
03/02 - 03/08	-3 ± 15	3 ± 16	0 ± 18	20 ± 18	-9 ± 14	1 ± 17
03/09 - 03/15	-14 ± 12	-3 ± 9	2 ± 12	-4 ± 12	-4 ± 11	-14 ± 13
03/16 - 03/22	11 ± 12	1 ± 12	-3 ± 13	0 ± 11	7 ± 10	-1 ± 11
03/23 - 03/29	1 ± 14	5 ± 13	0 ± 12	5 ± 15	3 ± 11	-3 ± 14

JANUARY

	15-C	27
12/29 - 01/04	-5 ± 18	3 ± 18
01/05 - 01/11	-2 ± 12	-1 ± 11
01/12 - 01/18	-25 ± 19	3 ± 17
01/19 - 01/25	2 ± 27	-2 ± 20

FEBRUARY

	15-C	27
01/26 - 02/01	-12 ± 12	2 ± 11
02/02 - 02/08	17 ± 12	-7 ± 14
02/09 - 02/15	-11 ± 22	4 ± 20
02/16 - 02/22	1 ± 12	7 ± 13

MARCH

	15-C	27
02/23 - 03/01	-6 ± 15	-4 ± 11
03/02 - 03/08	-4 ± 19	-14 ± 19
03/09 - 03/15	2 ± 20	-7 ± 13
03/16 - 03/22	-9 ± 13	-5 ± 13
03/23 - 03/29	-1 ± 12	-6 ± 12

Table 3, Airborne Iodine I-131 (1E-3 pCi/m^3)

Collection Date	Locations					
APRIL						
	01	**02**	**03**	**04**	**10**	**11**
03/30 - 04/05	-4 ± 19	0 ± 15	2 ± 20	-8 ± 16	-4 ± 19	5 ± 15
04/06 - 04/12	16 ± 17	-8 ± 18	-10 ± 21 A	-4 ± 19	-4 ± 15	8 ± 17
04/13 - 04/19	-7 ± 17	11 ± 13	-2 ± 15	6 ± 12	11 ± 12	-10 ± 14
04/20 - 04/26	2 ± 13	18 ± 17	2 ± 9	-4 ± 11	13 ± 14	4 ± 14
MAY						
	01	**02**	**03**	**04**	**10**	**11**
04/27 - 05/03	-17 ± 20	7 ± 17	-19 ± 17	9 ± 16	9 ± 18	-3 ± 18
05/04 - 05/10	-21 ± 19	-4 ± 15	2 ± 15	0 ± 18	-7 ± 17	-11 ± 23
05/11 - 05/17	4 ± 15	1 ± 10	9 ± 14	-7 ± 10	0 ± 15	-2 ± 18
05/18 - 05/24	5 ± 14	-8 ± 12	-3 ± 13	1 ± 16	-9 ± 17	2 ± 15
05/25 - 05/31	-7 ± 15	19 ± 15	12 ± 16	-1 ± 14	0 ± 14	10 ± 16
JUNE						
	01	**02**	**03**	**04**	**10**	**11**
06/01 - 06/07	-8 ± 14	4 ± 11	-2 ± 13	-4 ± 12	6 ± 16	2 ± 12
06/08 - 06/14	0 ± 9	-4 ± 10	7 ± 13	-4 ± 13	5 ± 10	-1 ± 12
06/15 - 06/21	-11 ± 16	-5 ± 16	-8 ± 17	2 ± 17	-2 ± 17	5 ± 19
06/22 - 06/28	-15 ± 15	7 ± 14	-2 ± 14	2 ± 15	-2 ± 16	12 ± 19

Collection Date		
APRIL		
	15-C	**27**
03/30 - 04/05	-2 ± 21	-10 ± 22
04/06 - 04/12	13 ± 18	2 ± 16
04/13 - 04/19	4 ± 19	6 ± 14
04/20 - 04/26	-7 ± 13	5 ± 13
MAY		
	15-C	**27**
04/27 - 05/03	-14 ± 19	-2 ± 18
05/04 - 05/10	6 ± 21	-13 ± 24
05/11 - 05/17	8 ± 21	5 ± 17
05/18 - 05/24	-18 ± 16	6 ± 14
05/25 - 05/31	12 ± 14	0 ± 17
JUNE		
	15-C	**27**
06/01 - 06/07	-12 ± 18 B	19 ± 14
06/08 - 06/14	8 ± 11	-1 ± 9
06/15 - 06/21	8 ± 17	13 ± 19
06/22 - 06/28	0 ± 19	-6 ± 14

Table 3, Airborne Iodine I-131 (1E-3 pCi/m^3)

Collection Date	Locations					
JULY	**01**	**02**	**03**	**04**	**10**	**11**
06/29 - 07/05	-2 ± 15	5 ± 19	-23 ± 26 C	11 ± 15	-8 ± 14	7 ± 14
07/06 - 07/12	-2 ± 12	7 ± 17	13 ± 19	8 ± 18	0 ± 17	2 ± 17
07/13 - 07/19	-4 ± 20	6 ± 17	0 ± 14	-4 ± 16	5 ± 15	2 ± 14
07/20 - 07/26	-1 ± 12	-1 ± 15	1 ± 13	0 ± 14	-6 ± 16	8 ± 13
AUGUST	**01**	**02**	**03**	**04**	**10**	**11**
07/27 - 08/02	0 ± 16	-1 ± 14	10 ± 16	-7 ± 18	0 ± 15	0 ± 16
08/03 - 08/09	5 ± 12	5 ± 9	3 ± 12	0 ± 10	-5 ± 12	-3 ± 12
08/10 - 08/16	-12 ± 19	9 ± 16	0 ± 17	-7 ± 15	-14 ± 16	-7 ± 17
08/17 - 08/23	4 ± 12	6 ± 11	14 ± 11	-7 ± 12	-1 ± 11	4 ± 15
08/24 - 08/30	8 ± 15	-2 ± 18	-4 ± 17	0 ± 16	17 ± 18	-6 ± 19
SEPTEMBER	**01**	**02**	**03**	**04**	**10**	**11**
08/31 - 09/06	-9 ± 13	-5 ± 9	-5 ± 10	7 ± 12	0 ± 13	-3 ± 11
09/07 - 09/13	6 ± 17	-7 ± 12	2 ± 16	-4 ± 18	-2 ± 17	4 ± 16
09/14 - 09/20	-13 ± 17	13 ± 18	0 ± 17	-11 ± 16	-17 ± 16	5 ± 16
09/21 - 09/27	-16 ± 17	-16 ± 17	26 ± 20	8 ± 17	-8 ± 20	14 ± 15

Collection Date		
JULY	**15-C**	**27**
06/29 - 07/05	11 ± 13	13 ± 15
07/06 - 07/12	-7 ± 18	1 ± 16
07/13 - 07/19	4 ± 15	2 ± 14
07/20 - 07/26	3 ± 13	3 ± 15
AUGUST	**15-C**	**27**
07/27 - 08/02	4 ± 12	-6 ± 16
08/03 - 08/09	-2 ± 11	2 ± 12
08/10 - 08/16	9 ± 20	14 ± 14
08/17 - 08/23	0 ± 14	10 ± 15
08/24 - 08/30	-5 ± 16	2 ± 11
SEPTEMBER	**15-C**	**27**
08/31 - 09/06	-3 ± 16	2 ± 10
09/07 - 09/13	7 ± 13	-8 ± 15
09/14 - 09/20	-7 ± 17	7 ± 21
09/21 - 09/27	0 ± 17	12 ± 17

Table 3, Airborne Iodine I-131 (1E-3 pCi/m^3)

Collection Date — **Locations**

OCTOBER

	01	02	03	04	10	11
09/28 - 10/04	2 ± 17	9 ± 19	2 ± 23	-7 ± 21	13 ± 20	0 ± 22
10/05 - 10/11	-8 ± 20	-10 ± 17	-15 ± 20	6 ± 19	-20 ± 21	9 ± 22
10/12 - 10/18	-5 ± 9	-9 ± 12	-4 ± 12	-11 ± 15	2 ± 14	3 ± 14
10/19 - 10/25	0 ± 17	6 ± 14	-1 ± 11	2 ± 14	-22 ± 17	6 ± 17

NOVEMBER

	01	02	03	04	10	11
10/26 - 11/01	-6 ± 18	14 ± 16	-2 ± 22	-5 ± 19	24 ± 18	-7 ± 15
11/02 - 11/08	-5 ± 14	1 ± 15	-6 ± 16	-6 ± 16	17 ± 18	-5 ± 17
11/09 - 11/15	-10 ± 15	-2 ± 21	0 ± 17	-19 ± 17	13 ± 20	9 ± 16
11/16 - 11/22	-3 ± 15	3 ± 17	-2 ± 23	2 ± 19	0 ± 19	2 ± 19
11/23 - 11/29	-10 ± 13	2 ± 21	7 ± 20	D -18 ± 19	12 ± 20	4 ± 22

DECEMBER

	01	02	03	04	10	11
11/30 - 12/06	-10 ± 15	3 ± 20	7 ± 17	-3 ± 20	20 ± 21	-23 ± 19
12/07 - 12/13	1 ± 15	23 ± 20	12 ± 13	8 ± 15	-5 ± 21	-8 ± 15
12/14 - 12/20	11 ± 16	3 ± 17	-19 ± 17	-6 ± 19	3 ± 17	3 ± 17
12/21 - 12/27	-9 ± 16	-8 ± 17	4 ± 18	-9 ± 17	10 ± 15	-5 ± 16

OCTOBER

	15-C	27
09/28 - 10/04	5 ± 22	2 ± 23 E
10/05 - 10/11	-9 ± 15	10 ± 17
10/12 - 10/18	0 ± 12	6 ± 13
10/19 - 10/25	-1 ± 13	-1 ± 14

NOVEMBER

	15-C	27
10/26 - 11/01	-2 ± 20	-3 ± 19
11/02 - 11/08	4 ± 13	-1 ± 17
11/09 - 11/15	4 ± 14	-21 ± 21
11/16 - 11/22	-10 ± 22	11 ± 17
11/23 - 11/29	-5 ± 16	-3 ± 19

DECEMBER

	15-C	27
11/30 - 12/06	2 ± 16	5 ± 20
12/07 - 12/13	-6 ± 17	-3 ± 19
12/14 - 12/20	-10 ± 19	-6 ± 16
12/21 - 12/27	-11 ± 17	15 ± 14

Table 4-A, Air Particulates Gamma Spectra - Quarter 1 (1E-3 pCi/m^3)

Location	Ba-140	Be-7	Ce-141	Ce-144	Co-58	Co-60	Cr-51
01	7.0 ± 38.0	130.0 ± 32.0	-0.3 ± 3.5	1.9 ± 2.9	-0.2 ± 1.3	0.0 ± 0.7	-8.0 ± 28.0
02	33.0 ± 38.0	96.0 ± 31.0	-1.1 ± 2.7	0.1 ± 2.3	0.5 ± 1.4	-0.2 ± 0.7	-11.0 ± 25.0
03	-21.0 ± 42.0	154.0 ± 52.0	1.3 ± 4.1	-0.8 ± 3.0	-0.4 ± 1.6	0.4 ± 0.7	12.0 ± 49.0
04	24.0 ± 33.0	125.0 ± 37.0	1.1 ± 3.1	0.4 ± 2.6	0.3 ± 1.2	0.0 ± 1.0	22.0 ± 26.0
10	-11.0 ± 22.0	130.0 ± 36.0	0.6 ± 2.7	-1.4 ± 2.8	-0.7 ± 0.8	-0.5 ± 0.9	-13.0 ± 33.0
11	-21.0 ± 32.0	128.0 ± 30.0	-1.2 ± 2.7	-1.1 ± 2.8	-0.2 ± 1.3	0.0 ± 0.6	3.0 ± 31.0
15-C	-26.0 ± 37.0	97.0 ± 34.0	0.2 ± 3.3	-1.2 ± 2.7	-1.1 ± 1.4	-0.6 ± 0.7	-2.0 ± 21.0
27	-12.0 ± 52.0	119.0 ± 34.0	1.0 ± 3.4	-0.6 ± 2.9	0.9 ± 1.6	0.2 ± 1.0	7.0 ± 32.0

Location	Cs-134	Cs-137	Mn-54	Nb-95	Ru-103	Ru-106	Zr-95
01	0.1 ± 0.5	-0.6 ± 0.7	0.4 ± 0.6	1.0 ± 2.6	-0.7 ± 2.4	-0.3 ± 6.8	2.4 ± 2.8
02	0.2 ± 0.5	-0.1 ± 0.7	0.0 ± 0.7	0.6 ± 2.2	0.6 ± 2.2	-5.5 ± 7.9	0.2 ± 2.5
03	0.4 ± 0.7	0.1 ± 1.3	-0.2 ± 0.9	-1.6 ± 3.6	1.2 ± 2.5	-8.0 ± 12.0	-0.8 ± 1.6
04	0.3 ± 0.4	0.3 ± 0.7	0.3 ± 0.4	2.9 ± 2.9	1.7 ± 2.5	-0.7 ± 6.8	1.6 ± 2.6
10	-0.1 ± 0.4	0.2 ± 0.5	-0.2 ± 0.9	3.2 ± 2.9	-1.0 ± 2.1	0.5 ± 5.9	0.8 ± 3.0
11	-0.1 ± 0.5	-0.1 ± 0.6	0.6 ± 0.8	0.6 ± 2.9	-1.0 ± 2.5	-4.7 ± 5.2	0.3 ± 2.6
15-C	-0.7 ± 0.6	0.2 ± 0.5	0.2 ± 0.7	-0.9 ± 2.0	0.3 ± 2.1	-0.6 ± 5.9	0.7 ± 2.5
27	-0.2 ± 0.5	0.2 ± 0.5	0.1 ± 0.7	0.3 ± 3.0	1.7 ± 2.1	7.6 ± 6.8	-0.1 ± 3.1

Table 4-B, Air Particulates Gamma Spectra - Quarter 2 (1E-3 pCi/m^3)

Location	Ba-140	Be-7	Ce-141	Ce-144	Co-58	Co-60	Cr-51
01	4.0 ± 23.0	91.0 ± 30.0	-1.2 ± 2.5	3.3 ± 3.3	0.4 ± 1.4	-0.4 ± 0.7	2.0 ± 22.0
02	-12.0 ± 17.0	102.0 ± 34.0	-0.7 ± 2.3	1.0 ± 3.0	-0.2 ± 1.0	-0.6 ± 0.9	9.0 ± 18.0
03	4.0 ± 13.0	75.0 ± 25.0	0.5 ± 2.2	-2.6 ± 3.2	0.4 ± 1.2	0.2 ± 0.6	0.0 ± 19.0
04	-1.0 ± 17.0	136.0 ± 37.0	-0.1 ± 2.3	1.3 ± 3.0	-0.6 ± 1.7	-1.1 ± 1.1	-12.0 ± 18.0
10	-11.0 ± 16.0	122.0 ± 33.0	0.2 ± 2.5	-0.7 ± 3.0	0.0 ± 0.8	-1.3 ± 1.6	-8.0 ± 25.0
11	0.0 ± 16.0	119.0 ± 33.0	0.7 ± 2.3	-1.4 ± 3.1	0.0 ± 1.3	-0.4 ± 0.8	0.0 ± 23.0
15-C	18.0 ± 20.0	112.0 ± 38.0	-0.4 ± 2.1	-4.7 ± 3.2	0.3 ± 1.6	0.0 ± 0.8	-1.0 ± 21.0
27	6.0 ± 32.0	110.0 ± 35.0	-0.2 ± 2.3	2.9 ± 3.3	0.5 ± 1.8	-1.3 ± 1.7	-21.0 ± 24.0

Location	Cs-134	Cs-137	Mn-54	Nb-95	Ru-103	Ru-106	Zr-95
01	-0.1 ± 0.6	0.1 ± 0.7	0.3 ± 0.7	-2.0 ± 2.0	-0.3 ± 2.1	0.9 ± 3.9	2.4 ± 2.8
02	0.2 ± 0.5	-0.1 ± 0.8	-0.2 ± 0.6	-0.9 ± 1.3	0.3 ± 2.0	-1.0 ± 11.0	-0.4 ± 2.3
03	0.1 ± 0.6	-0.4 ± 0.6	0.1 ± 0.5	-0.1 ± 2.3	0.3 ± 1.7	-4.4 ± 8.2	1.2 ± 2.3
04	0.0 ± 0.6	-0.1 ± 0.9	-0.4 ± 1.1	1.1 ± 2.0	0.0 ± 1.6	10.6 ± 9.8	0.7 ± 2.3
10	0.5 ± 0.6	0.1 ± 0.9	-0.4 ± 0.7	1.8 ± 3.2	0.3 ± 1.9	8.1 ± 8.0	-0.8 ± 2.4
11	0.0 ± 0.7	0.0 ± 0.8	-0.1 ± 0.5	-1.3 ± 2.8	-0.8 ± 1.8	-0.4 ± 4.6	-0.4 ± 2.7
15-C	0.3 ± 0.5	0.4 ± 0.7	0.0 ± 0.9	-0.3 ± 2.5	-0.6 ± 1.3	0.0 ± 11.0	1.7 ± 2.4
27	0.2 ± 0.7	-0.6 ± 0.9	-0.2 ± 0.8	2.3 ± 2.9	-0.7 ± 1.4	-0.7 ± 7.7	0.1 ± 1.5

Table 4-C, Air Particulates Gamma Spectra - Quarter 3 (1E-3 pCi/m^3)

Location	Ba-140	Be-7	Ce-141	Ce-144	Co-58	Co-60	Cr-51
01	-12.0 ± 43.0	101.0 ± 43.0	0.8 ± 3.1	4.5 ± 4.1	-0.4 ± 0.9	-0.1 ± 1.3	-5.0 ± 31.0
02	-15.0 ± 21.0	124.0 ± 40.0	-2.4 ± 2.8	-1.0 ± 3.8	1.0 ± 1.4	0.0 ± 0.7	-15.0 ± 35.0
03	25.0 ± 35.0	79.0 ± 39.0	-0.6 ± 3.4	-0.8 ± 3.5	0.0 ± 1.4	0.4 ± 0.9	-1.0 ± 28.0
04	25.0 ± 35.0	90.0 ± 39.0	-2.0 ± 3.7	-0.9 ± 3.0	-0.4 ± 0.9	0.0 ± 0.0	10.0 ± 25.0
10	-8.0 ± 26.0	87.0 ± 37.0	3.9 ± 3.3	2.7 ± 4.5	-0.3 ± 1.5	-0.5 ± 0.7	11.0 ± 29.0
11	-50.0 ± 50.0	116.0 ± 43.0	1.5 ± 3.0	-1.2 ± 4.0	-0.5 ± 0.9	0.8 ± 1.1	-1.0 ± 25.0
15-C	13.0 ± 44.0	82.0 ± 41.0	-3.8 ± 3.4	2.2 ± 4.0	1.1 ± 2.0	-1.0 ± 1.9	37.0 ± 38.0
27	7.0 ± 25.0	149.0 ± 41.0	-2.0 ± 3.0	1.8 ± 3.5	0.3 ± 1.4	-0.3 ± 0.9	11.0 ± 26.0

Location	Cs-134	Cs-137	Mn-54	Nb-95	Ru-103	Ru-106	Zr-95
01	0.3 ± 0.7	0.4 ± 1.2	-0.2 ± 1.2	-1.4 ± 3.2	-0.6 ± 2.5	4.0 ± 11.0	0.2 ± 3.3
02	0.2 ± 0.7	0.1 ± 1.0	-0.2 ± 1.1	1.8 ± 2.3	-0.2 ± 2.0	-1.0 ± 10.0	0.0 ± 2.3
03	-0.4 ± 0.6	0.2 ± 0.9	0.0 ± 1.2	1.8 ± 2.5	0.0 ± 1.6	-0.7 ± 9.5	1.1 ± 3.8
04	-0.4 ± 0.7	0.2 ± 0.9	-1.6 ± 1.3	1.0 ± 3.0	-0.6 ± 2.5	-5.5 ± 9.9	1.1 ± 3.8
10	0.9 ± 0.9	0.2 ± 0.9	-0.4 ± 1.4	0.0 ± 4.3	-0.5 ± 3.2	-2.5 ± 8.8	1.2 ± 3.4
11	0.2 ± 0.5	-0.5 ± 1.0	0.5 ± 1.1	-0.5 ± 3.4	0.0 ± 2.5	-5.0 ± 9.0	-2.0 ± 3.3
15-C	0.1 ± 0.9	0.2 ± 0.5	-1.1 ± 1.1	0.0 ± 0.0	0.0 ± 3.6	-1.0 ± 12.0	1.3 ± 4.6
27	0.2 ± 0.6	-1.4 ± 0.8	0.0 ± 1.1	1.7 ± 2.8	-0.3 ± 2.6	-2.1 ± 7.0	0.0 ± 3.6

Table 4-D, Air Particulates Gamma Spectra - Quarter 4 (1E-3 pCi/m^3)

Location	Ba-140	Be-7	Ce-141	Ce-144	Co-58	Co-60	Cr-51
01	-0.3 ± 9.0	72.0 ± 29.0	0.3 ± 2.3	0.6 ± 3.0	0.0 ± 1.0	0.4 ± 0.9	-7.0 ± 16.0
02	4.0 ± 17.0	107.0 ± 32.0	1.4 ± 1.9	-1.2 ± 1.9	0.0 ± 0.9	0.7 ± 1.0	0.0 ± 19.0
03	0.0 ± 20.0	75.0 ± 31.0	-0.2 ± 2.6	-1.0 ± 2.6	0.1 ± 1.7	0.0 ± 1.0	-7.0 ± 22.0
04	-7.0 ± 13.0	103.0 ± 28.0	0.6 ± 2.6	-0.4 ± 3.5	-0.7 ± 1.3	-0.2 ± 0.8	7.0 ± 20.0
10	9.0 ± 14.0	90.0 ± 25.0	-0.7 ± 1.6	-0.7 ± 2.3	0.7 ± 1.1	0.4 ± 1.0	-6.0 ± 13.0
11	-9.0 ± 10.0	82.0 ± 27.0	-0.1 ± 1.6	0.8 ± 2.4	0.0 ± 0.6	0.0 ± 0.8	-8.0 ± 11.0
15-C	1.6 ± 6.3	84.0 ± 22.0	0.3 ± 1.9	-1.6 ± 2.6	0.0 ± 0.9	0.0 ± 0.9	12.0 ± 15.0
27	5.6 ± 7.9	88.0 ± 24.0	0.0 ± 1.6	-2.4 ± 2.4	0.1 ± 1.3	0.6 ± 0.7	10.0 ± 12.0

Location	Cs-134	Cs-137	Mn-54	Nb-95	Ru-103	Ru-106	Zr-95
01	0.1 ± 0.6	0.5 ± 0.8	0.2 ± 0.9	-2.5 ± 2.4	-0.4 ± 1.5	-5.3 ± 5.9	-3.0 ± 2.3
02	0.5 ± 0.7	-0.4 ± 0.6	0.2 ± 1.0	-0.3 ± 2.3	-0.7 ± 1.4	1.1 ± 8.2	-2.7 ± 2.4
03	0.1 ± 0.7	-0.3 ± 1.2	0.7 ± 0.9	0.6 ± 1.9	-0.7 ± 1.1	-2.7 ± 8.9	-1.1 ± 1.6
04	-0.2 ± 0.8	0.3 ± 0.8	0.0 ± 0.9	0.1 ± 2.6	-1.4 ± 2.0	2.2 ± 8.5	-0.4 ± 2.6
10	0.2 ± 0.5	-0.2 ± 0.6	0.1 ± 0.7	-0.2 ± 1.4	-0.6 ± 1.3	3.8 ± 6.1	-0.9 ± 1.8
11	-0.2 ± 0.6	-0.2 ± 0.7	0.1 ± 0.9	1.4 ± 1.9	-1.8 ± 1.4	-2.5 ± 3.5	1.6 ± 2.1
15-C	-0.4 ± 0.5	0.1 ± 0.6	-0.2 ± 0.8	2.4 ± 1.7	0.6 ± 1.3	2.1 ± 5.6	0.2 ± 1.6
27	-0.2 ± 0.4	0.0 ± 0.7	0.1 ± 0.6	0.1 ± 1.4	-0.2 ± 1.2	-4.2 ± 7.8	0.5 ± 2.0

Table 6, Soil (pCi/g Dry)

Location	Collection Date	Isotope					
03		Be-7	Ce-141	Ce-144	Co-58	Co-60	Cr-51
	08/18/09	0.33 ± 0.38	0.08 ± 0.08	-0.04 ± 0.23	0.00 ± 0.04	-0.02 ± 0.03	-0.58 ± 0.44
		Cs-134	Cs-137	Fe-59	K-40	Mn-54	Nb-95
	08/18/09	0.03 ± 0.05	0.46 ± 0.09	-0.09 ± 0.11	13.20 ± 1.50	-0.02 ± 0.04	0.04 ± 0.06
		Ru-103	Ru-106	Sb-125	Th-228	Zn-65	Zr-95
	08/18/09	0.02 ± 0.05	-0.05 ± 0.35	-0.04 ± 0.09	0.87 ± 0.18	0.02 ± 0.18	-0.05 ± 0.07
04		Be-7	Ce-141	Ce-144	Co-58	Co-60	Cr-51
	08/18/09	0.66 ± 0.74	0.14 ± 0.16	-0.47 ± 0.41	0.03 ± 0.09	0.06 ± 0.07	0.18 ± 0.93
		Cs-134	Cs-137	Fe-59	K-40	Mn-54	Nb-95
	08/18/09	0.02 ± 0.06	0.73 ± 0.19	0.01 ± 0.23	11.80 ± 2.90	0.02 ± 0.09	-0.03 ± 0.11
		Ru-103	Ru-106	Sb-125	Th-228	Zn-65	Zr-95
	08/18/09	0.10 ± 0.11	-0.43 ± 0.86	-0.04 ± 0.19	1.06 ± 0.43	0.01 ± 0.42	0.00 ± 0.17
14-C		Be-7	Ce-141	Ce-144	Co-58	Co-60	Cr-51
	08/18/09	0.72 ± 0.87	-0.02 ± 0.17	-0.29 ± 0.51	-0.09 ± 0.09	0.06 ± 0.06	-0.20 ± 1.10
		Cs-134	Cs-137	Fe-59	K-40	Mn-54	Nb-95
	08/18/09	0.01 ± 0.06	1.19 ± 0.22	-0.10 ± 0.21	11.20 ± 2.40	-0.02 ± 0.08	0.03 ± 0.13
		Ru-103	Ru-106	Sb-125	Th-228	Zn-65	Zr-95
	08/18/09	0.09 ± 0.12	-0.14 ± 0.76	-0.13 ± 0.20	1.50 ± 0.43	-0.25 ± 0.22	0.14 ± 0.14

Table 8, Goat Milk (pCi/L)

Location	Collection Date	Ba-140	Cs-134	Cs-137	I-131	K-40	La-140
21	04/22/09	-0.60 ± 6.30	0.80 ± 2.60	3.40 ± 4.30	-0.14 ± 0.04	1430.00 ± 140.00	-0.60 ± 6.30
	05/20/09	1.30 ± 7.50	-0.30 ± 3.30	-1.40 ± 4.20	-0.06 ± 0.15	1060.00 ± 130.00	1.30 ± 7.50
	06/10/09	4.30 ± 6.70	-0.40 ± 3.00	17.00 ± 6.30	-0.08 ± 0.04	1740.00 ± 160.00	4.30 ± 6.70
	06/24/09	3.70 ± 6.20	0.10 ± 3.30	5.10 ± 4.40	-0.25 ± 0.08	1360.00 ± 160.00	3.70 ± 6.20
	07/08/09	-0.90 ± 6.70	-1.10 ± 4.10	6.60 ± 6.00	-0.15 ± 0.05	1390.00 ± 170.00	-0.90 ± 6.70
	07/22/09	2.80 ± 6.30	-0.90 ± 3.10	2.40 ± 4.00	-0.24 ± 0.08	1010.00 ± 120.00	2.80 ± 6.30

Location	Collection Date	Sr-89	Sr-90
21	06/24/09	3.10 ± 3.30	1.70 ± 1.10
	07/22/09	-4.80 ± 5.80	1.60 ± 1.20

Location	Collection Date	Ba-140	Cs-134	Cs-137	I-131	K-40	La-140
24-C	03/11/09	-2.90 ± 7.30	-1.20 ± 3.00	5.80 ± 4.70	0.19 ± 0.43	1450.00 ± 150.00	-2.90 ± 7.30
	04/09/09	1.80 ± 6.90	1.40 ± 3.20	4.60 ± 4.10	-0.13 ± 0.26	1460.00 ± 150.00	1.80 ± 6.90
	04/22/09	0.60 ± 7.90	0.50 ± 2.90	8.20 ± 6.70	0.00 ± 0.25	1540.00 ± 170.00	0.60 ± 7.90
	05/06/09	-2.40 ± 7.20	-0.40 ± 3.30	2.30 ± 4.50	-0.15 ± 0.04	1580.00 ± 170.00	-2.40 ± 7.20
	05/20/09	-3.10 ± 7.40	-3.70 ± 3.00	8.10 ± 5.90	0.06 ± 0.37	1560.00 ± 160.00	-3.10 ± 7.40
	06/10/09	3.80 ± 8.40	0.90 ± 3.00	5.00 ± 4.60	0.02 ± 0.31	1230.00 ± 160.00	3.80 ± 8.40
	07/22/09	2.20 ± 7.90	2.20 ± 3.70	3.50 ± 6.20	0.16 ± 0.45	1790.00 ± 200.00	2.20 ± 7.90

Location	Collection Date	Sr-89	Sr-90
24-C	03/11/09	2.80 ± 3.90	2.20 ± 1.20
	06/10/09	6.40 ± 4.60	3.50 ± 1.30
	07/22/09	-20.30 ± 7.00	0.00 ± 1.00

Table 9, Pasture Grass (pCi/g Dry)

Location	Collection Date	Isotope					
21		Ba-140	Be-7	Ce-141	Ce-144	Co-58	Co-60
	01/14/09	0.002 ± 0.045 F	0.080 ± 0.220	-0.003 ± 0.027	-0.030 ± 0.100	-0.004 ± 0.026	0.019 ± 0.030
	02/11/09	0.035 ± 0.057 F	0.000 ± 0.170	0.004 ± 0.029	-0.020 ± 0.100	-0.018 ± 0.028	-0.019 ± 0.033
	03/11/09	0.016 ± 0.052 F	0.000 ± 0.150	0.003 ± 0.022	0.053 ± 0.075	0.005 ± 0.018	-0.003 ± 0.026
	04/09/09	0.014 ± 0.079 F	0.060 ± 0.260	-0.009 ± 0.035	0.010 ± 0.120	0.003 ± 0.034	-0.017 ± 0.038
	05/06/09	0.017 ± 0.066 F	-0.050 ± 0.270	0.005 ± 0.029	0.020 ± 0.140	-0.025 ± 0.031	0.010 ± 0.031
	08/05/09	-0.010 ± 0.032	0.570 ± 0.280	-0.020 ± 0.027	-0.024 ± 0.094	-0.006 ± 0.023	0.003 ± 0.022
	08/19/09	0.070 ± 0.110	0.530 ± 0.410	-0.023 ± 0.046	0.040 ± 0.120	0.025 ± 0.038	0.021 ± 0.036
	09/09/09	-0.050 ± 0.230	5.680 ± 0.540	0.022 ± 0.061	-0.110 ± 0.140	-0.002 ± 0.035	0.001 ± 0.028
	09/23/09	0.030 ± 0.160	3.320 ± 0.640	-0.021 ± 0.056	-0.060 ± 0.150	-0.021 ± 0.034	0.007 ± 0.034
	10/07/09	-0.045 ± 0.084 F	0.090 ± 0.250	0.009 ± 0.039	-0.050 ± 0.120	0.011 ± 0.027	-0.017 ± 0.027
	10/21/09	-0.030 ± 0.057	4.420 ± 0.440	-0.013 ± 0.028	-0.073 ± 0.076	0.001 ± 0.019	0.010 ± 0.020
	11/10/09	0.043 ± 0.078	7.140 ± 0.510	0.011 ± 0.034	0.037 ± 0.094	0.010 ± 0.024	0.012 ± 0.025
	12/16/09	-0.052 ± 0.076 F	0.030 ± 0.230	0.005 ± 0.077	0.030 ± 0.220	0.000 ± 0.028	0.006 ± 0.026
		Cr-51	Cs-134	Cs-137	Fe-59	I-131	K-40
	01/14/09	-0.060 ± 0.160	0.000 ± 0.018	0.029 ± 0.026	0.012 ± 0.076	0.022 ± 0.037	11.000 ± 1.200
	02/11/09	-0.160 ± 0.170	-0.005 ± 0.018	0.001 ± 0.025	-0.011 ± 0.067	0.026 ± 0.052	12.400 ± 1.300
	03/11/09	0.170 ± 0.190	0.004 ± 0.014	-0.034 ± 0.023	0.027 ± 0.061	0.020 ± 0.051	8.400 ± 1.000
	04/09/09	-0.100 ± 0.230	-0.017 ± 0.028	0.004 ± 0.036	-0.011 ± 0.078	-0.040 ± 0.070	12.500 ± 1.000
	05/06/09	0.110 ± 0.270	0.019 ± 0.026	0.027 ± 0.033	-0.011 ± 0.069	0.019 ± 0.084	15.600 ± 0.950
	08/05/09	0.000 ± 0.170	0.001 ± 0.017	0.019 ± 0.023	-0.029 ± 0.055	0.008 ± 0.019	4.910 ± 0.790
	08/19/09	0.320 ± 0.360	0.011 ± 0.029	0.028 ± 0.029	0.007 ± 0.094	0.038 ± 0.043	5.600 ± 1.000
	09/09/09	-0.020 ± 0.450	-0.007 ± 0.021	0.084 ± 0.037	-0.021 ± 0.081	0.001 ± 0.019	6.310 ± 0.650
	09/23/09	0.000 ± 0.420	0.008 ± 0.026	0.002 ± 0.035	-0.004 ± 0.077	0.001 ± 0.017	5.700 ± 1.000
	10/07/09	0.000 ± 0.280	-0.006 ± 0.022	0.032 ± 0.027	0.008 ± 0.065	-0.170 ± 0.150	12.210 ± 0.790
	10/21/09	-0.100 ± 0.230	0.009 ± 0.016	-0.011 ± 0.018	0.002 ± 0.050	0.003 ± 0.016	4.470 ± 0.590
	11/10/09	0.060 ± 0.250	-0.007 ± 0.016	-0.001 ± 0.021	0.025 ± 0.057	0.003 ± 0.018	4.630 ± 0.590
	12/16/09	0.060 ± 0.300	-0.016 ± 0.025	-0.003 ± 0.023	-0.053 ± 0.064	-0.090 ± 0.170	11.000 ± 1.000
		La-140	Mn-54	Nb-95	Ru-103	Ru-106	Sb-125
	01/14/09	0.002 ± 0.045	0.008 ± 0.027	-0.008 ± 0.024	-0.012 ± 0.024	-0.140 ± 0.220	-0.015 ± 0.053
	02/11/09	0.035 ± 0.057	0.002 ± 0.023	-0.001 ± 0.029	0.000 ± 0.025	0.040 ± 0.210	0.015 ± 0.062
	03/11/09	0.016 ± 0.052	0.016 ± 0.019	-0.018 ± 0.024	-0.017 ± 0.017	-0.190 ± 0.160	0.003 ± 0.040
	04/09/09	0.014 ± 0.079	0.005 ± 0.035	-0.004 ± 0.036	0.017 ± 0.030	-0.190 ± 0.300	0.046 ± 0.077
	05/06/09	0.017 ± 0.066	0.035 ± 0.030	0.021 ± 0.040	-0.008 ± 0.034	0.060 ± 0.290	0.040 ± 0.078
	08/05/09	-0.010 ± 0.032	-0.015 ± 0.022	-0.004 ± 0.026	-0.010 ± 0.022	-0.070 ± 0.240	0.011 ± 0.058
	08/19/09	0.070 ± 0.110	0.017 ± 0.033	-0.027 ± 0.048	-0.007 ± 0.033	0.120 ± 0.280	0.055 ± 0.072
	09/09/09	-0.050 ± 0.230	-0.018 ± 0.028	-0.006 ± 0.058	0.015 ± 0.058	-0.150 ± 0.370	-0.013 ± 0.073
	09/23/09	0.030 ± 0.160	-0.010 ± 0.030	-0.027 ± 0.049	-0.026 ± 0.044	0.000 ± 0.310	0.012 ± 0.080
	10/07/09	-0.045 ± 0.084	-0.002 ± 0.027	0.014 ± 0.039	-0.046 ± 0.041	-0.050 ± 0.260	-0.004 ± 0.069
	10/21/09	-0.030 ± 0.057	-0.007 ± 0.019	0.010 ± 0.025	-0.009 ± 0.023	-0.050 ± 0.160	0.008 ± 0.052
	11/10/09	0.043 ± 0.078	0.014 ± 0.023	0.017 ± 0.032	-0.021 ± 0.029	-0.060 ± 0.200	0.029 ± 0.061
	12/16/09	-0.052 ± 0.076	0.017 ± 0.023	-0.039 ± 0.037	-0.017 ± 0.031	-0.020 ± 0.200	-0.005 ± 0.065
		Th-228	Zn-65	Zr-95			
	01/14/09	0.050 ± 0.110	-0.010 ± 0.077	-0.023 ± 0.040			
	02/11/09	-0.080 ± 0.100	-0.037 ± 0.076	-0.008 ± 0.038			
	03/11/09	0.042 ± 0.086	0.000 ± 0.062	-0.011 ± 0.035			
	04/09/09	0.050 ± 0.190	0.019 ± 0.086	0.000 ± 0.055			
	05/06/09	0.010 ± 0.160	0.040 ± 0.100	0.012 ± 0.056			
	08/05/09	-0.006 ± 0.087	-0.014 ± 0.056	0.007 ± 0.041			
	08/19/09	-0.090 ± 0.130	-0.075 ± 0.081	-0.022 ± 0.062			
	09/09/09	-0.050 ± 0.150	0.140 ± 0.110	-0.009 ± 0.065			
	09/23/09	0.030 ± 0.130	-0.012 ± 0.076	-0.052 ± 0.069			

Table 9, Pasture Grass (pCi/g Dry)

Location	Collection Date	Th-228	Zn-65	Zr-95
21	10/07/09	-0.020 ± 0.130	-0.007 ± 0.089	-0.017 ± 0.051
	10/21/09	-0.046 ± 0.070	-0.061 ± 0.051	0.042 ± 0.037
	11/10/09	0.002 ± 0.099	0.001 ± 0.072	-0.002 ± 0.043
	12/16/09	0.070 ± 0.064	-0.024 ± 0.061	-0.013 ± 0.055

Location	Collection Date	Ba-140	Be-7	Ce-141	Ce-144	Co-58	Co-60
24-C	01/14/09	0.024 ± 0.045 F	0.350 ± 0.240	0.010 ± 0.026	0.030 ± 0.120	-0.006 ± 0.023	-0.012 ± 0.025
	02/11/09	-0.066 ± 0.089 F	0.310 ± 0.390	-0.062 ± 0.045	-0.050 ± 0.130	-0.004 ± 0.034	0.047 ± 0.039
	06/24/09	0.017 ± 0.024	0.750 ± 0.320	-0.015 ± 0.029	-0.060 ± 0.100	-0.019 ± 0.025	0.000 ± 0.026
	07/08/09	0.000 ± 0.042	1.240 ± 0.390	-0.012 ± 0.027	0.020 ± 0.110	-0.014 ± 0.023	-0.015 ± 0.029
	08/05/09	0.009 ± 0.045	1.150 ± 0.360	-0.034 ± 0.032	-0.100 ± 0.110	0.005 ± 0.027	0.009 ± 0.030
	08/19/09	0.036 ± 0.063	1.290 ± 0.350	0.004 ± 0.037	0.026 ± 0.094	-0.015 ± 0.024	-0.005 ± 0.028
	09/09/09	0.000 ± 0.096	1.140 ± 0.390	-0.008 ± 0.041	-0.070 ± 0.110	-0.004 ± 0.029	-0.011 ± 0.024
	09/23/09	0.020 ± 0.120	1.420 ± 0.490	-0.029 ± 0.055	0.010 ± 0.120	0.005 ± 0.035	-0.003 ± 0.028
	10/07/09	0.020 ± 0.100 F	1.270 ± 0.430	-0.008 ± 0.063	-0.040 ± 0.140	-0.022 ± 0.034	0.025 ± 0.033
	10/21/09	-0.065 ± 0.089	3.590 ± 0.610	-0.024 ± 0.040	0.020 ± 0.110	-0.017 ± 0.029	0.015 ± 0.031
	11/10/09	0.039 ± 0.084	8.260 ± 0.610	-0.038 ± 0.033	-0.020 ± 0.110	-0.001 ± 0.026	-0.011 ± 0.034
	12/16/09	-0.060 ± 0.170 F	1.420 ± 0.340	0.005 ± 0.043	-0.030 ± 0.110	0.000 ± 0.032	0.025 ± 0.033

Location	Collection Date	Cr-51	Cs-134	Cs-137	Fe-59	I-131	K-40
24-C	01/14/09	-0.100 ± 0.190	0.009 ± 0.025	0.050 ± 0.027	0.046 ± 0.055	-0.034 ± 0.050	10.850 ± 0.750
	02/11/09	0.080 ± 0.300	-0.001 ± 0.030	0.015 ± 0.038	0.027 ± 0.080	-0.009 ± 0.088	10.200 ± 1.000
	06/24/09	0.080 ± 0.210	-0.002 ± 0.016	0.017 ± 0.024	-0.031 ± 0.055	-0.017 ± 0.005	4.240 ± 0.860
	07/08/09	-0.050 ± 0.190	-0.004 ± 0.016	-0.012 ± 0.027	-0.002 ± 0.036	-0.004 ± 0.001	4.010 ± 0.760
	08/05/09	0.110 ± 0.220	-0.021 ± 0.021	0.017 ± 0.027	-0.008 ± 0.060	0.010 ± 0.025	5.220 ± 0.810
	08/19/09	-0.070 ± 0.260	0.014 ± 0.020	0.000 ± 0.022	-0.038 ± 0.052	0.036 ± 0.041	3.940 ± 0.670
	09/09/09	0.050 ± 0.260	-0.017 ± 0.023	0.001 ± 0.030	0.036 ± 0.072	0.014 ± 0.029	6.020 ± 0.890
	09/23/09	-0.190 ± 0.380	0.013 ± 0.025	0.001 ± 0.029	0.053 ± 0.073	-0.008 ± 0.003	5.130 ± 0.870
	10/07/09	0.050 ± 0.350	0.025 ± 0.033	0.021 ± 0.033	-0.015 ± 0.080	0.020 ± 0.150	8.180 ± 0.790
	10/21/09	0.020 ± 0.310	0.006 ± 0.018	-0.002 ± 0.026	-0.036 ± 0.066	-0.005 ± 0.002	5.370 ± 0.890
	11/10/09	-0.050 ± 0.210	0.008 ± 0.019	-0.021 ± 0.027	0.015 ± 0.066	0.004 ± 0.019	6.770 ± 0.900
	12/16/09	0.060 ± 0.310	-0.008 ± 0.022	0.011 ± 0.031	-0.067 ± 0.091	0.040 ± 0.190	11.490 ± 0.890

Location	Collection Date	La-140	Mn-54	Nb-95	Ru-103	Ru-106	Sb-125
24-C	01/14/09	0.024 ± 0.045	-0.023 ± 0.025	-0.015 ± 0.027	0.006 ± 0.025	0.040 ± 0.230	0.002 ± 0.062
	02/11/09	-0.066 ± 0.089	-0.016 ± 0.034	0.016 ± 0.040	-0.002 ± 0.034	0.010 ± 0.320	-0.004 ± 0.081
	06/24/09	0.017 ± 0.024	-0.005 ± 0.023	0.009 ± 0.026	0.000 ± 0.025	-0.100 ± 0.170	-0.030 ± 0.062
	07/08/09	0.000 ± 0.042	-0.009 ± 0.019	0.000 ± 0.021	-0.014 ± 0.025	0.090 ± 0.220	-0.009 ± 0.058
	08/05/09	0.009 ± 0.045	0.013 ± 0.026	0.017 ± 0.029	0.013 ± 0.027	0.110 ± 0.260	-0.052 ± 0.059
	08/19/09	0.036 ± 0.063	0.017 ± 0.021	0.003 ± 0.033	0.004 ± 0.029	0.030 ± 0.170	0.032 ± 0.053
	09/09/09	0.000 ± 0.096	0.004 ± 0.025	-0.001 ± 0.043	-0.009 ± 0.032	-0.020 ± 0.220	0.015 ± 0.055
	09/23/09	0.020 ± 0.120	-0.006 ± 0.033	-0.018 ± 0.046	-0.015 ± 0.045	0.050 ± 0.240	-0.012 ± 0.063
	10/07/09	0.020 ± 0.100	0.007 ± 0.034	0.011 ± 0.059	0.017 ± 0.041	-0.120 ± 0.290	-0.008 ± 0.075
	10/21/09	-0.065 ± 0.089	-0.004 ± 0.028	0.009 ± 0.038	0.023 ± 0.032	-0.080 ± 0.220	0.020 ± 0.072
	11/10/09	0.039 ± 0.084	0.002 ± 0.027	0.019 ± 0.034	-0.011 ± 0.028	-0.120 ± 0.260	-0.026 ± 0.068
	12/16/09	-0.060 ± 0.170	0.001 ± 0.029	0.000 ± 0.041	0.024 ± 0.035	-0.050 ± 0.260	-0.036 ± 0.064

Table 9, Pasture Grass (pCi/g Dry)

Location	Collection Date	Isotope		
24-C		Th-228	Zn-65	Zr-95
	01/14/09	-0.030 ± 0.110	0.060 ± 0.100	0.035 ± 0.044
	02/11/09	-0.020 ± 0.180	-0.016 ± 0.088	0.067 ± 0.063
	06/24/09	-0.024 ± 0.098	0.013 ± 0.058	0.009 ± 0.035
	07/08/09	-0.030 ± 0.120	-0.025 ± 0.063	0.012 ± 0.042
	08/05/09	0.034 ± 0.097	0.003 ± 0.066	0.018 ± 0.049
	08/19/09	0.002 ± 0.090	-0.038 ± 0.060	0.010 ± 0.046
	09/09/09	0.080 ± 0.140	-0.066 ± 0.071	-0.016 ± 0.051
	09/23/09	0.110 ± 0.120	-0.046 ± 0.069	0.000 ± 0.062
	10/07/09	0.080 ± 0.130	0.150 ± 0.130	0.042 ± 0.061
	10/21/09	0.104 ± 0.097	0.057 ± 0.070	0.022 ± 0.053
	11/10/09	-0.040 ± 0.120	0.160 ± 0.120	-0.003 ± 0.047
	12/16/09	0.010 ± 0.170	0.000 ± 0.110	-0.018 ± 0.057

Table 10, Well Water (pCi/L)

Location	Collection Date	Isotope					
71		Ba-140	Be-7	Co-58	Co-60	Cr-51	Cs-134
	03/20/09	-1.3 ± 7.5	3.0 ± 23.0	-2.0± 3.0	0.2± 2.7	-9.0 ± 24.0	-0.8 ± 2.5
	06/17/09	0.6 ± 6.0	26.0± 30.0	-2.3± 3.3	0.6± 3.6	-39.0 ± 31.0	0.0 ± 2.5
	09/21/09	-6.4 ± 7.2	-6.0 ± 19.0	-1.2± 2.4	-0.4 ± 2.6	16.0 ± 23.0	0.7 ± 1.9
	12/14/09	-3.2 ± 4.7	12.0± 26.0	-0.4± 3.3	-0.8 ± 3.7	-29.0 ± 28.0	1.0 ± 2.4
		Cs-137	Fe-59	H-3	I-131	K-40	La-140
	03/20/09	-0.6 ± 3.0	2.0± 6.6	57.0 ± 84.0	0.9± 6.1	19.0 ± 47.0	-1.3 ± 7.5
	06/17/09	-0.2 ± 3.7	-0.5 ± 7.6	40.0 ± 870.0	1.1± 7.1	21.0 ± 49.0	0.6 ± 6.0
	09/21/09	-0.8 ± 2.5	0.0± 5.3	-410.0± 820.0	1.0± 7.3	10.0 ± 37.0	-6.4 ± 7.2
	12/14/09	-0.9 ± 3.4	4.4± 7.0	-50.0 ± 890.0	0.7± 6.4	-13.0 ± 55.0	-3.2 ± 4.7
		Mn-54	Nb-95	Ru-103	Ru-106	Sb-125	Sr-89
	03/20/09	-1.4 ± 2.7	-0.7 ± 3.3	-1.7± 2.9	10.0± 25.0	2.4 ± 6.7	1.6 ± 4.7
	06/17/09	0.4 ± 2.9	0.7± 4.2	-0.2± 3.8	-21.0 ± 32.0	-5.0 ± 8.9	-3.8 ± 2.2
	09/21/09	-1.5 ± 2.0	-0.1 ± 2.7	-0.9± 2.6	-15.0 ± 21.0	0.3 ± 5.5	-3.3 ± 2.3
	12/14/09	-0.2 ± 3.4	-2.1 ± 4.3	0.9 ± 3.5	-18.0 ± 27.0	-2.1 ± 9.2	-2.1 ± 2.4
		Sr-90	Th-228	Zn-65	Zr-95		
	03/20/09	-0.4 ± 1.1	11.0± 14.0	0.0 ± 11.0	1.6± 4.5		
	06/17/09	-0.6 ± 0.8	-19.0 ± 14.0	-4.9± 9.3	-1.1 ± 6.3		
	09/21/09	-0.8 ± 0.7	12.3 ± 8.5	0.0 ± 4.9	-0.9 ± 4.0		
	12/14/09	-0.3 ± 0.7	3.0 ± 14.0	10.0 ± 14.0	6.9± 6.5		
72		Ba-140	Be-7	Co-58	Co-60	Cr-51	Cs-134
	03/18/09	-1.8 ± 5.2	10.0± 33.0	4.8 ± 4.6	-1.5 ± 5.0	-25.0 ± 39.0	0.5 ± 3.7
	06/11/09	6.4 ± 7.5	20.0± 26.0	-0.6± 3.1	1.4± 3.3	9.0 ± 30.0	-0.2 ± 2.7
	09/16/09	-4.5 ± 7.0	-38.0 ± 36.0	2.0 ± 4.0	0.4± 3.8	-10.0 ± 37.0	-0.6 ± 3.7
	12/14/09	1.4 ± 7.4	12.0± 24.0	1.6 ± 3.1	0.8± 3.6	-1.0 ± 24.0	1.0 ± 3.2
		Cs-137	Fe-59	H-3	I-131	K-40	La-140
	03/18/09	-1.7 ± 4.2	-2.7 ± 9.3	1250.0 ± 860.0	3.9± 8.0	-25.0 ± 52.0	-1.8 ± 5.2
	06/11/09	-0.9 ± 2.9	-4.9 ± 7.1	-280.0± 860.0	0.0± 8.5	2.0 ± 50.0	6.4 ± 7.5
	09/16/09	1.6 ± 4.1	-4.5 ± 7.4	-520.0± 840.0	2.6± 8.0	-22.0 ± 55.0	-4.5 ± 7.0
	12/14/09	-1.8 ± 3.2	-3.3 ± 7.8	-40.0 ± 890.0	0.7± 4.5	-9.0 ± 50.0	1.4 ± 7.4
		Mn-54	Nb-95	Ru-103	Ru-106	Sb-125	Sr-89
	03/18/09	0.0 ± 4.1	1.1± 5.0	-2.9± 4.6	-23.0 ± 40.0	-7.0 ± 12.0	0.1 ± 3.8
	06/11/09	1.0 ± 3.0	0.4± 3.9	-1.0± 3.7	-16.0 ± 28.0	1.4 ± 7.3	1.2 ± 2.6
	09/16/09	2.2 ± 3.3	-1.2 ± 4.5	-3.2± 4.7	-18.0 ± 33.0	-4.0 ± 11.0	1.1 ± 2.7
	12/14/09	-2.8 ± 3.2	2.5± 3.4	-3.7± 3.0	-1.0 ± 30.0	-0.7 ± 7.7	2.4 ± 3.3
		Sr-90	Th-228	Zn-65	Zr-95		
	03/18/09	0.9 ± 1.0	-16.0 ± 18.0	-3.0 ± 11.0	-3.3 ± 7.5		
	06/11/09	-0.1 ± 0.9	-5.0 ± 12.0	-7.8± 7.7	-0.6 ± 5.8		
	09/16/09	-0.5 ± 0.8	17.0± 15.0	5.0 ± 16.0	0.0± 6.4		
	12/14/09	0.0 ± 0.9	5.0 ± 13.0	-16.2 ± 9.5	3.7± 4.9		

Table 10, Well Water (pCi/L)

Location	Collection Date	Isotope					
76-X		Ba-140	Be-7	Co-58	Co-60	Cr-51	Cs-134
	03/16/09	6.4 ± 5.9	-12.0± 24.0	0.3 ± 2.6	0.5 ± 2.6	-14.0 ± 23.0	1.8 ± 2.7
	06/09/09	-4.9 ± 6.1	12.0 ± 21.0	-0.9± 2.9	2.8 ± 3.1	-8.0 ± 20.0	0.4 ± 1.9
	09/14/09	-3.3 ± 6.0	-15.0± 23.0	1.0 ± 2.9	0.2 ± 3.0	-11.0 ± 20.0	0.6 ± 2.0
	12/07/09	-5.4 ± 7.0	-17.0± 29.0	4.4 ± 6.2	1.1 ± 3.4	25.0 ± 29.0	-2.5 ± 2.4
		Cs-137	Fe-59	H-3	I-131	K-40	La-140
	03/16/09	-0.6 ± 2.7	1.9 ± 5.6	510.0 ± 850.0	-0.8± 5.9	-10.0 ± 39.0	6.4 ± 5.9
	06/09/09	1.7 ± 2.9	-4.4± 6.0	-560.0± 850.0	-5.3± 4.5	21.0 ± 45.0	-4.9 ± 6.1
	09/14/09	-0.4 ± 3.1	1.1 ± 5.8	-120.0± 840.0	-1.8± 5.5	7.0 ± 45.0	-3.3 ± 6.0
	12/07/09	-2.1 ± 3.3	-1.5± 6.6	-740.0± 840.0	5.5 ± 5.9	-12.0 ± 43.0	-5.4 ± 7.0
		Mn-54	Nb-95	Ru-103	Ru-106	Sb-125	Sr-89
	03/16/09	-0.5 ± 2.7	-3.5± 3.3	-4.0± 2.8	-5.0 ± 24.0	1.5 ± 7.4	-3.0 ± 3.6
	06/09/09	-1.7 ± 2.9	0.5 ± 2.8	-0.6± 2.6	17.0 ± 26.0	2.1 ± 6.7	0.0 ± 2.5
	09/14/09	-2.0 ± 2.7	-1.4± 3.1	-1.6± 2.6	20.0 ± 24.0	0.5 ± 6.1	-1.2 ± 2.7
	12/07/09	-1.4 ± 3.1	0.6 ± 4.2	0.4 ± 3.7	-6.0 ± 27.0	0.3 ± 9.2	-3.7 ± 2.8
		Sr-90	Th-228	Zn-65	Zr-95		
	03/16/09	0.6 ± 0.9	-9.0 ± 11.0	12.0 ± 9.5	-1.5± 4.6		
	06/09/09	0.2 ± 0.8	14.0 ± 15.0	-5.3± 7.7	-0.2± 4.9		
	09/14/09	0.6 ± 0.8	-1.0 ± 12.0	-8.3± 6.9	2.5 ± 4.7		
	12/07/09	-0.5 ± 1.0	-3.0 ± 12.0	-6.9± 7.3	0.0 ± 5.5		
77-X		Ba-140	Be-7	Co-58	Co-60	Cr-51	Cs-134
	03/16/09	-0.4 ± 6.7	3.0 ± 24.0	-0.9± 3.0	-2.0± 3.2	-9.0 ± 27.0	2.4 ± 3.0
	06/11/09	3.9 ± 7.7	20.0 ± 37.0	2.5 ± 3.5	-0.4± 4.0	-23.0 ± 38.0	-2.3 ± 3.4
	09/14/09	-0.5 ± 6.0	4.0 ± 21.0	-1.4± 2.6	-0.8± 3.0	-2.0 ± 25.0	2.6 ± 2.1
	12/07/09	4.8 ± 8.7	-13.0± 35.0	-1.4± 3.5	-1.9± 4.3	5.0 ± 38.0	0.9 ± 4.5
		Cs-137	Fe-59	H-3	I-131	K-40	La-140
	03/16/09	-1.2 ± 3.1	3.3 ± 6.6	920.0 ± 850.0	-6.1± 5.4	-36.0 ± 39.0	-0.4 ± 6.7
	06/11/09	-2.6 ± 4.5	5.4 ± 8.2	-500.0± 860.0	-1.8± 8.1	2.0 ± 48.0	3.9 ± 7.7
	09/14/09	-4.6 ± 3.1	-4.1± 6.6	-320.0± 840.0	-3.0± 6.2	19.0 ± 43.0	-0.5 ± 6.0
	12/07/09	-1.2 ± 3.9	-2.6± 7.5	-600.0± 860.0	-4.6± 6.7	-32.0 ± 58.0	4.8 ± 8.7
		Mn-54	Nb-95	Ru-103	Ru-106	Sb-125	Sr-89
	03/16/09	0.0 ± 3.0	-1.0± 3.9	0.5 ± 3.0	-20.0± 28.0	2.1 ± 6.9	0.0 ± 3.9
	06/11/09	-0.3 ± 3.8	-0.2± 5.2	-0.3± 4.0	14.0 ± 38.0	11.0 ± 12.0	1.5 ± 3.0
	09/14/09	0.9 ± 2.7	-1.0± 3.3	-1.5± 2.9	-2.0 ± 26.0	-1.6 ± 7.1	0.7 ± 3.0
	12/07/09	-2.7 ± 4.0	-0.5± 5.0	-3.8± 4.9	-1.0 ± 34.0	-2.0 ± 12.0	-0.2 ± 3.2
		Sr-90	Th-228	Zn-65	Zr-95		
	03/16/09	0.6 ± 1.0	-8.0 ± 13.0	13.0 ± 12.0	-2.4± 4.5		
	06/11/09	0.0 ± 1.0	-2.0 ± 14.0	-1.0 ± 12.0	1.4 ± 6.8		
	09/14/09	0.8 ± 0.9	3.0 ± 15.0	5.4 ± 9.4	-1.7± 4.9		
	12/07/09	-0.6 ± 1.1	8.0 ± 13.0	4.0 ± 14.0	-1.0± 8.1		

Table 10, Well Water (pCi/L)

Location	Collection Date	Isotope					
78-X		Ba-140	Be-7	Co-58	Co-60	Cr-51	Cs-134
	03/16/09	1.2 ± 6.6	6.0 ± 25.0	0.8 ± 3.2	1.2± 3.4	13.0± 24.0	-1.4 ± 2.1
	06/11/09	6.5 ± 6.9	2.0 ± 31.0	0.7 ± 4.4	-3.1 ± 4.2	19.0± 38.0	4.5 ± 3.2
	09/14/09	-9.1 ± 7.1	16.0± 23.0	-2.2± 3.2	0.4± 3.3	14.0± 23.0	0.4 ± 2.1
	12/07/09	7.0 ± 7.7	8.0 ± 34.0	-1.9± 4.1	0.7± 4.2	17.0± 33.0	-1.4 ± 2.6
		Cs-137	Fe-59	H-3	I-131	K-40	La-140
	03/16/09	2.9 ± 3.1	0.8± 8.0	1070.0 ± 860.0	-0.4 ± 5.0	5.0 ± 51.0	1.2 ± 6.6
	06/11/09	1.1 ± 4.2	0.9± 9.2	-250.0± 860.0	3.2± 7.4	-16.0 ± 56.0	6.5 ± 6.9
	09/14/09	0.8 ± 3.7	4.5± 6.1	410.0 ± 860.0	1.7± 5.4	-24.0 ± 45.0	-9.1 ± 7.1
	12/07/09	0.0 ± 3.7	-2.1 ± 8.1	-590.0± 850.0	4.1± 6.6	35.0± 50.0	7.0 ± 7.7
		Mn-54	Nb-95	Ru-103	Ru-106	Sb-125	Sr-89
	03/16/09	0.0 ± 3.2	0.6± 3.8	-0.4± 3.3	-12.0 ± 25.0	6.7± 7.5	-1.3 ± 3.4
	06/11/09	-3.4 ± 4.1	-0.8 ± 4.2	-2.4± 4.8	-29.0 ± 42.0	-1.3 ± 9.5	-0.6 ± 2.4
	09/14/09	0.7 ± 2.8	1.9± 3.9	0.1 ± 3.2	8.0 ± 24.0	4.2± 7.8	-0.8 ± 2.8
	12/07/09	-1.6 ± 3.7	0.0± 4.8	-2.7± 4.0	8.0 ± 32.0	3.0 ± 11.0	-1.2 ± 2.6
		Sr-90	Th-228	Zn-65	Zr-95		
	03/16/09	0.1 ± 0.8	2.0 ± 13.0	-7.2± 7.9	-0.6 ± 5.6		
	06/11/09	0.4 ± 0.8	-6.0 ± 15.0	-2.0 ± 11.0	1.7± 6.2		
	09/14/09	-0.3 ± 0.8	15.0± 12.0	2.0 ± 6.5	5.1± 5.8		
	12/07/09	-0.2 ± 0.9	5.0 ± 13.0	-14.4 ± 9.8	-5.2 ± 6.4		
79		Ba-140	Be-7	Co-58	Co-60	Cr-51	Cs-134
	01/13/09	6.1 ± 6.8	-15.0 ± 31.0	-0.4± 2.8	1.5± 3.2	-9.0 ± 27.0	-0.2 ± 2.6
	03/18/09	2.7 ± 7.6	-11.0 ± 33.0	-1.6± 3.2	-1.8 ± 4.7	-20.0 ± 33.0	0.6 ± 3.0
	06/11/09	-1.8 ± 7.7	4.0 ± 23.0	-2.1± 2.8	-0.8 ± 3.0	-27.0 ± 21.0	0.4 ± 1.9
	09/16/09	0.1 ± 6.1	-7.0 ± 33.0	1.3 ± 4.1	4.1± 4.1	-4.0 ± 31.0	0.5 ± 4.7
	12/14/09	0.0 ± 6.4	8.0 ± 22.0	0.5 ± 3.0	2.1± 3.5	-20.0 ± 24.0	-1.8 ± 3.1
		Cs-137	Fe-59	H-3	I-131	K-40	La-140
	01/13/09	-2.3 ± 3.9	4.5± 6.2	-820.0± 900.0	3.1± 5.8	61.0± 46.0	6.1 ± 6.8
	03/18/09	-0.5 ± 3.6	-2.9 ± 7.6	900.0 ± 850.0	0.2± 7.6	17.0± 50.0	2.7 ± 7.6
	06/11/09	-0.8 ± 2.6	-4.2 ± 7.1	-550.0± 860.0	4.2± 7.7	49.0± 30.0	-1.8 ± 7.7
	09/16/09	-0.3 ± 4.2	0.7± 8.8	-270.0± 850.0	0.1± 6.6	1.0 ± 58.0	0.1 ± 6.1
	12/14/09	1.7 ± 3.2	2.7± 7.1	-230.0± 870.0	0.6± 5.4	-12.0 ± 51.0	0.0 ± 6.4
		Mn-54	Nb-95	Ru-103	Ru-106	Sb-125	Sr-89
	01/13/09	1.3 ± 3.2	-0.7 ± 4.0	-1.8± 3.8	17.0± 30.0	5.0± 9.6	1.5 ± 3.0
	03/18/09	-0.8 ± 4.0	-4.3 ± 4.2	-1.6± 3.8	-8.0 ± 36.0	6.0 ± 10.0	-2.0 ± 3.6
	06/11/09	0.9 ± 2.6	-1.9 ± 3.1	-1.8± 2.7	2.0 ± 26.0	-1.2 ± 6.3	0.7 ± 2.8
	09/16/09	-0.4 ± 4.4	1.8± 5.1	-2.5± 4.3	23.0± 28.0	-6.0 ± 11.0	-0.6 ± 2.6
	12/14/09	-1.7 ± 3.1	-1.1 ± 3.3	0.3 ± 3.2	-6.0 ± 29.0	1.6± 7.4	3.4 ± 3.4
		Sr-90	Th-228	Zn-65	Zr-95		
	01/13/09	-0.5 ± 1.1	9.0 ± 16.0	-10.5 ± 8.2	-1.1 ± 5.9		
	03/18/09	0.4 ± 0.9	13.0± 15.0	-14.0 ± 9.5	-4.5 ± 7.6		
	06/11/09	0.2 ± 1.0	9.0 ± 12.0	-6.3± 6.9	-0.1 ± 4.7		
	09/16/09	0.0 ± 0.8	6.0 ± 21.0	-7.2± 9.8	3.5± 7.5		
	12/14/09	0.4 ± 1.0	0.0 ± 15.0	2.0 ± 14.0	-0.9 ± 5.1		

Table 10, Well Water (pCi/L)

Location	Collection Date	Isotope					
80		**Ba-140**	**Be-7**	**Co-58**	**Co-60**	**Cr-51**	**Cs-134**
	03/20/09	2.5 ± 7.1	-9.0 ± 25.0	0.5± 3.1	-0.4 ± 3.5	0.0 ± 29.0	3.6 ± 3.3
	06/17/09	1.8 ± 7.3	3.0 ± 29.0	0.5± 4.0	-0.3 ± 3.6	-23.0± 33.0	0.5 ± 3.0
	09/21/09	3.2 ± 6.7	17.0± 20.0	0.1± 2.6	1.1± 2.4	-13.0± 21.0	0.0 ± 1.6
	12/14/09	-2.8 ± 4.6	-20.0 ± 24.0	-3.2± 2.8	0.1± 2.6	-11.0± 23.0	-0.2 ± 2.7
		Cs-137	**Fe-59**	**H-3**	**I-131**	**K-40**	**La-140**
	03/20/09	1.3 ± 3.4	0.0± 7.1	1010.0 ± 860.0	2.3± 7.9	-4.0 ± 51.0	2.5 ± 7.1
	06/17/09	-4.5 ± 4.1	2.9± 7.0	580.0± 900.0	2.4± 6.5	11.0 ± 61.0	1.8 ± 7.3
	09/21/09	2.3 ± 2.2	4.0± 5.7	620.0± 860.0	6.9± 7.1	22.0 ± 38.0	3.2 ± 6.7
	12/14/09	-2.3 ± 2.6	1.2± 5.4	-180.0± 880.0	2.9± 4.5	-15.0± 35.0	-2.8 ± 4.6
		Mn-54	**Nb-95**	**Ru-103**	**Ru-106**	**Sb-125**	**Sr-89**
	03/20/09	-0.4 ± 3.1	-1.9 ± 3.9	-3.2± 3.5	-22.0 ± 30.0	-5.3± 7.9	-1.5 ± 2.7
	06/17/09	-3.2 ± 4.3	-2.0 ± 5.1	-0.7± 4.2	-6.0 ± 39.0	1.0 ± 10.0	-0.9 ± 2.6
	09/21/09	0.9 ± 2.4	0.5± 3.2	-1.4± 2.7	-2.0 ± 20.0	2.7 ± 5.6	0.3 ± 2.5
	12/14/09	-2.1 ± 2.5	3.6± 4.3	-4.0± 2.9	13.0± 21.0	2.9 ± 7.3	0.5 ± 3.3
		Sr-90	**Th-228**	**Zn-65**	**Zr-95**		
	03/20/09	0.1 ± 0.9	-1.0 ± 15.0	2.0 ± 15.0	-2.8 ± 5.3		
	06/17/09	-0.5 ± 0.9	-7.0 ± 15.0	18.0± 18.0	0.0± 6.9		
	09/21/09	-0.3 ± 0.8	1.5± 9.4	9.2± 9.0	1.1± 4.3		
	12/14/09	0.6 ± 1.0	-1.0 ± 11.0	12.0± 10.0	-1.1 ± 4.3		
81		**Ba-140**	**Be-7**	**Co-58**	**Co-60**	**Cr-51**	**Cs-134**
	03/20/09	-2.6 ± 5.4	7.0 ± 21.0	0.1± 2.9	1.1± 2.7	-18.0± 25.0	-0.4 ± 2.1
	06/17/09	0.0 ± 5.6	5.0 ± 24.0	-2.4± 2.7	0.2± 3.2	-22.0± 25.0	1.0 ± 2.2
	09/21/09	1.1 ± 7.4	12.0± 19.0	-1.5± 2.7	-0.4 ± 2.5	3.0 ± 20.0	-1.0 ± 2.2
	11/04/09	0.6 ± 5.8	-20.0 ± 23.0	0.4± 2.2	-2.9 ± 2.3	18.0 ± 25.0	1.5 ± 2.2
		Cs-137	**Fe-59**	**H-3**	**I-131**	**K-40**	**La-140**
	03/20/09	1.9 ± 2.7	1.0± 6.2	880.0± 850.0	2.4± 6.8	-11.0± 35.0	-2.6 ± 5.4
	06/17/09	-3.3 ± 2.8	0.5± 6.1	-510.0± 870.0	-3.7 ± 4.9	-15.0± 39.0	0.0 ± 5.6
	09/21/09	-0.1 ± 2.2	-5.7 ± 6.0	-130.0± 850.0	1.4± 7.4	12.0 ± 40.0	1.1 ± 7.4
	11/04/09	-0.9 ± 2.4	-0.9 ± 4.7	840.0± 700.0	6.5± 8.0	-18.0± 30.0	0.6 ± 5.8
		Mn-54	**Nb-95**	**Ru-103**	**Ru-106**	**Sb-125**	**Sr-89**
	03/20/09	-0.7 ± 2.6	-0.3 ± 3.3	-2.4± 3.3	5.0 ± 24.0	-2.7± 6.8	-1.3 ± 3.0
	06/17/09	-4.1 ± 3.0	6.4± 4.4	-3.5± 3.3	-13.0 ± 27.0	5.4 ± 7.1	2.8 ± 2.7
	09/21/09	-0.1 ± 2.3	-0.5 ± 2.8	-1.0± 2.4	-1.0 ± 20.0	1.8 ± 5.4	0.5 ± 3.0
	11/04/09	-1.5 ± 2.4	-0.3 ± 2.9	-0.8± 3.0	-22.0 ± 22.0	-3.0± 5.9	-3.1 ± 2.9
		Sr-90	**Th-228**	**Zn-65**	**Zr-95**		
	03/20/09	0.1 ± 1.0	1.0 ± 11.0	-6.0± 6.6	-1.2 ± 4.5		
	06/17/09	0.0 ± 1.0	-4.0 ± 11.0	1.9± 6.1	4.1± 4.8		
	09/21/09	0.3 ± 0.9	4.1± 9.4	6.7± 9.4	-3.2 ± 4.0		
	11/04/09	1.2 ± 1.0	-10.3 ± 9.6	4.7± 4.1	1.5± 4.0		

Table 10, Well Water (pCi/L)

Location	Collection Date	Isotope					
82		Ba-140	Be-7	Co-58	Co-60	Cr-51	Cs-134
	03/18/09	6.0 ± 6.7	13.0± 34.0	0.8± 3.5	-2.0 ± 3.7	-25.0 ± 35.0	-1.1 ± 4.0
	06/11/09	1.1 ± 8.1	6.0 ± 28.0	-0.9 ± 3.1	1.6± 3.1	-9.0 ± 30.0	0.8 ± 2.7
	09/16/09	-1.2 ± 7.7	-19.0 ± 26.0	-1.5 ± 3.4	-0.3 ± 3.3	-2.0 ± 25.0	1.7 ± 2.4
	12/14/09	0.6 ± 7.0	10.0± 31.0	-2.6 ± 3.9	-2.6 ± 4.8	-19.0 ± 30.0	-1.6 ± 2.7
		Cs-137	Fe-59	H-3	I-131	K-40	La-140
	03/18/09	-5.1 ± 4.0	-2.8 ± 8.7	600.0± 830.0	2.7± 8.2	-10.0 ± 54.0	6.0 ± 6.7
	06/11/09	-1.6 ± 3.3	-2.4 ± 6.1	-50.0 ± 860.0	7.3± 8.6	-5.0 ± 44.0	1.1 ± 8.1
	09/16/09	0.1 ± 3.4	-2.3 ± 7.8	210.0± 840.0	-1.4 ± 6.1	-16.0 ± 52.0	-1.2 ± 7.7
	12/14/09	-1.7 ± 4.3	4.0± 8.1	430.0± 900.0	1.8± 5.6	16.0 ± 56.0	0.6 ± 7.0
		Mn-54	Nb-95	Ru-103	Ru-106	Sb-125	Sr-89
	03/18/09	1.7 ± 3.3	-0.7 ± 4.6	-3.6 ± 3.9	8.0 ± 36.0	2.9 ± 9.8	-0.4 ± 3.5
	06/11/09	0.0 ± 3.0	0.6± 3.9	0.4± 3.5	-12.0 ± 32.0	0.7 ± 7.7	1.4 ± 2.9
	09/16/09	0.2 ± 3.5	-2.2 ± 3.8	1.3± 3.0	-17.0 ± 32.0	1.7 ± 8.4	-1.2 ± 2.5
	12/14/09	0.1 ± 3.8	1.1± 6.8	1.6± 3.9	9.0 ± 34.0	-7.1 ± 9.5	0.9 ± 3.0
		Sr-90	Th-228	Zn-65	Zr-95		
	03/18/09	0.7 ± 0.9	-11.0 ± 16.0	13.0± 15.0	-6.6 ± 6.2		
	06/11/09	0.1 ± 1.0	-2.0 ± 12.0	-7.3 ± 7.7	-1.4 ± 5.3		
	09/16/09	0.1 ± 0.8	4.0 ± 15.0	18.0± 16.0	-1.8 ± 5.3		
	12/14/09	-0.7 ± 0.9	-4.0 ± 16.0	10.0± 17.0	-0.7 ± 6.7		
83		Ba-140	Be-7	Co-58	Co-60	Cr-51	Cs-134
	03/18/09	0.0 ± 6.9	1.0 ± 33.0	-1.6 ± 3.6	1.9± 4.2	5.0 ± 34.0	4.0 ± 3.7
	06/17/09	-4.4 ± 7.5	-10.0 ± 26.0	-0.9 ± 3.7	0.0± 4.4	0.0 ± 25.0	-1.0 ± 2.6
	09/16/09	-4.9 ± 7.4	-7.0 ± 30.0	-3.1 ± 3.3	1.3± 3.7	4.0 ± 32.0	2.7 ± 3.6
	11/09/09	0.0 ± 6.4	15.0± 30.0	0.9± 3.5	2.1± 4.3	5.0 ± 30.0	0.4 ± 2.4
		Cs-137	Fe-59	H-3	I-131	K-40	La-140
	03/18/09	3.3 ± 5.9	-2.6 ± 6.7	1060.0 ± 860.0	1.7± 7.3	7.0 ± 52.0	0.0 ± 6.9
	06/17/09	0.0 ± 3.6	-0.7 ± 8.4	-400.0 ± 860.0	3.5± 6.0	-12.0 ± 48.0	-4.4 ± 7.5
	09/16/09	-4.1 ± 3.6	0.4± 7.2	-380.0 ± 830.0	5.0± 6.6	5.0 ± 47.0	-4.9 ± 7.4
	11/09/09	-1.0 ± 4.4	4.3± 8.0	670.0± 670.0	2.7± 6.2	51.0 ± 53.0	0.0 ± 6.4
		Mn-54	Nb-95	Ru-103	Ru-106	Sb-125	Sr-89
	03/18/09	-1.7 ± 3.7	1.4± 6.1	-3.2 ± 4.1	-19.0 ± 33.0	10.0 ± 11.0	2.2 ± 4.2
	06/17/09	-4.6 ± 3.9	1.5± 6.2	-0.6 ± 3.5	26.0± 29.0	-6.5 ± 9.5	1.6 ± 2.9
	09/16/09	-2.3 ± 3.1	2.3± 6.3	2.8± 3.3	16.0± 31.0	3.1 ± 8.6	0.1 ± 2.6
	11/09/09	0.1 ± 3.2	-4.6 ± 4.6	0.2± 3.8	-8.0 ± 30.0	-3.2 ± 9.2	1.3 ± 2.6
		Sr-90	Th-228	Zn-65	Zr-95		
	03/18/09	1.5 ± 1.1	-3.0 ± 15.0	-7.0 ± 17.0	0.0± 6.3		
	06/17/09	0.1 ± 1.1	-7.0 ± 14.0	17.0± 18.0	-4.8 ± 5.8		
	09/16/09	0.5 ± 0.8	3.0 ± 14.0	4.0 ± 17.0	-0.8 ± 5.7		
	11/09/09	0.1 ± 0.8	-3.0 ± 15.0	2.0 ± 15.0	5.4± 6.5		

Table 10, Well Water (pCi/L)

Location	Collection Date	Isotope					
84		**Ba-140**	**Be-7**	**Co-58**	**Co-60**	**Cr-51**	**Cs-134**
	03/20/09	-8.4 ± 6.2	17.0± 25.0	-1.3± 3.4	-0.3± 3.9	0.0 ± 26.0	-1.2 ± 2.3
	06/17/09	0.8 ± 7.1	-3.0 ± 37.0	-2.5± 4.1	0.8 ± 3.9	11.0 ± 33.0	-1.8 ± 3.4
	09/16/09	-8.5 ± 5.9	-18.0 ± 32.0	-0.2± 3.4	-1.5± 3.3	-3.0 ± 32.0	-1.4 ± 3.6
	11/09/09	-0.4 ± 5.1	-3.0 ± 26.0	-0.3± 2.6	-0.7± 2.3	10.0 ± 24.0	0.5 ± 2.8
		Cs-137	**Fe-59**	**H-3**	**I-131**	**K-40**	**La-140**
	03/20/09	0.8 ± 3.3	-4.4 ± 7.2	930.0 ± 870.0	-2.5± 6.5	-44.0± 47.0	-8.4 ± 6.2
	06/17/09	-2.0 ± 3.9	2.5± 7.7	400.0 ± 880.0	-3.7± 7.9	-57.0± 58.0	0.8 ± 7.1
	09/16/09	-0.4 ± 3.5	-0.3 ± 7.1	-210.0± 830.0	-5.8± 6.9	23.0 ± 55.0	-8.5 ± 5.9
	11/09/09	-1.3 ± 2.9	-5.0 ± 5.3	620.0 ± 680.0	-1.3± 5.4	-13.0± 35.0	-0.4 ± 5.1
		Mn-54	**Nb-95**	**Ru-103**	**Ru-106**	**Sb-125**	**Sr-89**
	03/20/09	-0.3 ± 3.1	-5.8 ± 4.2	-2.4± 3.5	-6.0 ± 26.0	3.1 ± 7.8	-0.8 ± 2.6
	06/17/09	0.3 ± 4.2	-4.4 ± 4.4	-0.3± 4.1	5.0 ± 38.0	-5.0 ± 11.0	0.6 ± 2.4
	09/16/09	-0.2 ± 3.8	-0.8 ± 4.7	-0.8± 3.8	-3.0 ± 32.0	-7.2± 9.3	1.1 ± 2.7
	11/09/09	-1.1 ± 2.5	0.6± 3.4	-0.3± 2.9	-7.0 ± 23.0	-4.4± 7.6	-0.8 ± 2.5
		Sr-90	**Th-228**	**Zn-65**	**Zr-95**		
	03/20/09	0.1 ± 0.8	3.0 ± 14.0	0.9 ± 9.2	3.1 ± 6.1		
	06/17/09	0.1 ± 0.8	-9.0 ± 14.0	-11.0± 11.0	-1.3± 6.6		
	09/16/09	-0.1 ± 0.8	4.0 ± 14.0	1.0 ± 15.0	-0.8± 6.3		
	11/09/09	0.8 ± 0.9	4.0 ± 10.0	-6.6± 8.3	4.4 ± 5.3		
85		**Ba-140**	**Be-7**	**Co-58**	**Co-60**	**Cr-51**	**Cs-134**
	03/25/09	-0.6 ± 6.7	-9.0 ± 25.0	-2.9± 3.2	2.2 ± 3.2	-1.0 ± 28.0	0.0 ± 2.1
	06/22/09	-1.7 ± 7.5	-13.0 ± 28.0	-6.6± 3.9	0.0 ± 4.0	-17.0± 29.0	-0.5 ± 2.5
	09/21/09	11.5 ± 7.9	5.0 ± 20.0	-1.0± 2.8	1.5 ± 2.6	-18.0± 22.0	0.9 ± 2.1
	12/21/09	1.5 ± 5.3	-7.0 ± 19.0	-0.2± 1.9	-1.2± 2.0	-4.0 ± 21.0	-0.4 ± 1.3
		Cs-137	**Fe-59**	**H-3**	**I-131**	**K-40**	**La-140**
	03/25/09	0.4 ± 5.3	0.4± 6.6	-400.0± 880.0	-5.7± 7.4	-4.0 ± 41.0	-0.6 ± 6.7
	06/22/09	1.1 ± 3.7	7.1± 7.6	-410.0± 860.0	-1.2± 7.5	-2.0 ± 51.0	-1.7 ± 7.5
	09/21/09	-0.1 ± 2.5	2.2± 5.8	300.0 ± 860.0	2.7 ± 8.1	-7.0 ± 39.0	11.5 ± 7.9
	12/21/09	-1.3 ± 2.0	-1.0 ± 4.7	70.0 ± 890.0	-5.0± 6.7	-1.0 ± 30.0	1.5 ± 5.3
		Mn-54	**Nb-95**	**Ru-103**	**Ru-106**	**Sb-125**	**Sr-89**
	03/25/09	-0.3 ± 2.9	6.1± 5.6	-0.4± 3.3	4.0 ± 26.0	-0.2± 7.5	-8.4 ± 2.9
	06/22/09	-4.6 ± 3.6	1.7± 7.2	-0.4± 3.4	-19.0± 30.0	1.3 ± 8.2	1.3 ± 3.7
	09/21/09	-0.1 ± 2.5	1.6± 4.3	-1.6± 2.6	-5.0 ± 22.0	-2.6± 5.7	2.4 ± 2.4
	12/21/09	-0.8 ± 1.9	-0.3 ± 2.7	-0.7± 2.4	-16.0± 16.0	-2.4± 5.3	0.3 ± 2.7
		Sr-90	**Th-228**	**Zn-65**	**Zr-95**		
	03/25/09	0.9 ± 0.7	8.0 ± 10.0	4.0 ± 14.0	1.1 ± 5.0		
	06/22/09	-0.4 ± 0.8	-7.0 ± 14.0	11.0 ± 17.0	2.2 ± 5.9		
	09/21/09	0.5 ± 0.7	10.0± 12.0	8.0 ± 10.0	0.3 ± 4.1		
	12/21/09	0.7 ± 0.6	5.5± 6.3	-0.3± 7.5	1.0 ± 3.5		

Table 10, Well Water (pCi/L)

Location	Collection Date	Isotope					
86		Ba-140	Be-7	Co-58	Co-60	Cr-51	Cs-134
	03/25/09	-3.0 ± 6.9	6.0 ± 27.0	0.3 ± 3.6	0.7 ± 3.1	-11.0± 29.0	-1.1 ± 2.6
	06/22/09	6.8 ± 8.5	-26.0± 34.0	0.7 ± 3.9	-1.9± 5.4	-45.0± 39.0	-0.8 ± 4.3
	09/21/09	-1.6 ± 7.6	-14.0± 20.0	-0.6± 2.4	-0.8± 2.8	-13.0± 25.0	0.1 ± 2.3
	12/21/09	5.3 ± 5.4	-10.0± 23.0	0.1 ± 2.1	0.8 ± 2.2	0.0 ± 21.0	0.7 ± 2.1
		Cs-137	Fe-59	H-3	I-131	K-40	La-140
	03/25/09	-2.3 ± 3.2	-6.1± 5.9	600.0 ± 920.0	-2.3± 7.8	18.0 ± 47.0	-3.0 ± 6.9
	06/22/09	-1.2 ± 4.7	5.0 ± 11.0	10.0 ± 860.0	7.9 ± 8.9	-11.0± 59.0	6.8 ± 8.5
	09/21/09	-1.1 ± 2.3	-0.5± 5.7	-420.0± 830.0	-1.5± 7.5	32.0 ± 36.0	-1.6 ± 7.6
	12/21/09	1.0 ± 2.2	-1.2± 4.1	480.0 ± 900.0	-1.6± 6.8	-30.0± 30.0	5.3 ± 5.4
		Mn-54	Nb-95	Ru-103	Ru-106	Sb-125	Sr-89
	03/25/09	-0.6 ± 3.2	0.7 ± 3.9	-1.8± 3.5	18.0 ± 27.0	7.2 ± 7.8	-7.0 ± 3.0
	06/22/09	1.4 ± 3.9	-7.1± 5.3	-1.8± 4.7	-20.0± 43.0	0.0 ± 11.0	-2.0 ± 4.1
	09/21/09	-0.4 ± 2.2	0.6 ± 2.8	-1.1± 2.5	-6.0 ± 20.0	-2.3± 5.5	1.6 ± 3.3
	12/21/09	-0.7 ± 2.0	1.2 ± 2.8	-1.2± 2.5	-3.0 ± 18.0	5.3 ± 5.7	3.5 ± 3.4
		Sr-90	Th-228	Zn-65	Zr-95		
	03/25/09	0.3 ± 0.7	-6.0 ± 13.0	-4.7± 7.2	-4.3± 5.6		
	06/22/09	-0.9 ± 1.0	-10.0± 19.0	-15.6 ± 9.9	1.2 ± 8.1		
	09/21/09	0.7 ± 1.1	-3.9± 9.6	-0.7± 5.0	-0.5± 3.7		
	12/21/09	0.3 ± 0.8	7.0 ± 9.2	-0.2± 4.4	-2.4± 3.8		

Table 12, Fruits & Vegetables (pCi/g Wet)

Location	Collection Date	Sample Type	Isotope				
25			**Ba-140**	**Be-7**	**Ce-141**	**Ce-144**	**Co-58**
	06/10/09	LETTUCE	0.000 ± 0.059	0.120 ± 0.250	0.011 ± 0.036	0.060 ± 0.130	0.007 ± 0.024
	06/11/09	STRAWBERRIES	-0.014 ± 0.025	0.070 ± 0.140	-0.004 ± 0.024	-0.027 ± 0.088	0.000 ± 0.013
	08/11/09	BLUEBERRIES	-0.017 ± 0.034	0.020 ± 0.140	0.012 ± 0.025	-0.012 ± 0.079	-0.001 ± 0.017
	09/08/09	APPLES	-0.012 ± 0.020	0.016 ± 0.049	0.004 ± 0.009	0.009 ± 0.023	-0.002 ± 0.006
	09/08/09	KALE	0.006 ± 0.016	0.021 ± 0.048	0.008 ± 0.009	-0.010 ± 0.026	-0.004 ± 0.006
			Co-60	**Cr-51**	**Cs-134**	**Cs-137**	**Fe-59**
	06/10/09	LETTUCE	0.013 ± 0.029	0.070 ± 0.270	0.005 ± 0.020	-0.010 ± 0.035	0.012 ± 0.083
	06/11/09	STRAWBERRIES	-0.007 ± 0.015	0.000 ± 0.150	-0.009 ± 0.012	-0.011 ± 0.018	0.005 ± 0.028
	08/11/09	BLUEBERRIES	0.009 ± 0.017	0.100 ± 0.120	-0.001 ± 0.013	0.005 ± 0.015	-0.012 ± 0.032
	09/08/09	APPLES	-0.005 ± 0.006	0.010 ± 0.055	0.002 ± 0.005	0.006 ± 0.006	0.006 ± 0.014
	09/08/09	KALE	-0.003 ± 0.005	0.031 ± 0.055	0.002 ± 0.004	0.003 ± 0.005	0.005 ± 0.013
			I-131	**K-40**	**La-140**	**Mn-54**	**Nb-95**
	06/10/09	LETTUCE	0.061 ± 0.043	2.390 ± 0.950	0.000 ± 0.059	-0.005 ± 0.033	0.004 ± 0.034
	06/11/09	STRAWBERRIES	-0.025 ± 0.025	1.040 ± 0.370	-0.014 ± 0.025	-0.008 ± 0.017	-0.002 ± 0.018
	08/11/09	BLUEBERRIES	0.006 ± 0.026	0.350 ± 0.340	-0.017 ± 0.034	0.003 ± 0.014	-0.015 ± 0.020
	09/08/09	APPLES	-0.024 ± 0.025	0.850 ± 0.140	-0.012 ± 0.020	0.006 ± 0.006	-0.002 ± 0.007
	09/08/09	KALE	-0.035 ± 0.031	3.970 ± 0.170	0.006 ± 0.016	-0.001 ± 0.005	-0.004 ± 0.007
			Ru-103	**Ru-106**	**Sb-125**	**Th-228**	**Zn-65**
	06/10/09	LETTUCE	-0.007 ± 0.026	0.200 ± 0.290	-0.098 ± 0.082	-0.010 ± 0.100	0.024 ± 0.048
	06/11/09	STRAWBERRIES	0.006 ± 0.019	0.020 ± 0.140	-0.027 ± 0.043	-0.012 ± 0.062	0.000 ± 0.037
	08/11/09	BLUEBERRIES	-0.011 ± 0.018	-0.050 ± 0.160	0.013 ± 0.050	-0.045 ± 0.064	0.008 ± 0.039
	09/08/09	APPLES	0.001 ± 0.006	-0.030 ± 0.056	-0.005 ± 0.013	-0.002 ± 0.027	0.014 ± 0.014
	09/08/09	KALE	-0.003 ± 0.008	0.001 ± 0.047	0.011 ± 0.013	-0.006 ± 0.025	-0.006 ± 0.013
			Zr-95				
	06/10/09	LETTUCE	0.005 ± 0.049				
	06/11/09	STRAWBERRIES	-0.009 ± 0.027				
	08/11/09	BLUEBERRIES	0.001 ± 0.028				
	09/08/09	APPLES	0.007 ± 0.010				
	09/08/09	KALE	0.008 ± 0.010				
26-C			**Ba-140**	**Be-7**	**Ce-141**	**Ce-144**	**Co-58**
	06/10/09	STRAWBERRIES	0.016 ± 0.019	0.020 ± 0.150	0.019 ± 0.026	-0.024 ± 0.084	0.014 ± 0.015
	06/11/09	LETTUCE	0.009 ± 0.044	-0.090 ± 0.150	-0.019 ± 0.017	0.078 ± 0.086	0.000 ± 0.021
	09/09/09	PEACHES	-0.002 ± 0.020	0.026 ± 0.063	-0.002 ± 0.012	-0.020 ± 0.025	0.006 ± 0.007
	09/09/09	SWISS CHARD	0.015 ± 0.019	0.080 ± 0.070	0.000 ± 0.010	0.012 ± 0.030	-0.001 ± 0.007
			Co-60	**Cr-51**	**Cs-134**	**Cs-137**	**Fe-59**
	06/10/09	STRAWBERRIES	0.007 ± 0.021	-0.070 ± 0.170	0.000 ± 0.013	-0.011 ± 0.015	-0.009 ± 0.039
	06/11/09	LETTUCE	-0.015 ± 0.021	-0.050 ± 0.130	0.003 ± 0.014	-0.005 ± 0.019	0.029 ± 0.037
	09/09/09	PEACHES	-0.003 ± 0.007	0.027 ± 0.063	0.003 ± 0.005	0.001 ± 0.010	0.001 ± 0.016
	09/09/09	SWISS CHARD	0.005 ± 0.008	-0.069 ± 0.070	0.002 ± 0.006	0.001 ± 0.007	-0.002 ± 0.018
			I-131	**K-40**	**La-140**	**Mn-54**	**Nb-95**
	06/10/09	STRAWBERRIES	0.006 ± 0.026	1.310 ± 0.410	0.016 ± 0.019	0.003 ± 0.014	0.017 ± 0.019
	06/11/09	LETTUCE	0.004 ± 0.031	1.020 ± 0.480	0.009 ± 0.044	0.005 ± 0.020	-0.002 ± 0.019
	09/09/09	PEACHES	0.021 ± 0.028	1.850 ± 0.180	-0.002 ± 0.020	-0.002 ± 0.006	-0.002 ± 0.009
	09/09/09	SWISS CHARD	-0.001 ± 0.029	4.730 ± 0.250	0.015 ± 0.019	-0.006 ± 0.006	-0.003 ± 0.008
			Ru-103	**Ru-106**	**Sb-125**	**Th-228**	**Zn-65**
	06/10/09	STRAWBERRIES	-0.009 ± 0.019	0.060 ± 0.160	-0.004 ± 0.046	0.040 ± 0.066	-0.027 ± 0.039
	06/11/09	LETTUCE	0.000 ± 0.021	0.040 ± 0.210	0.000 ± 0.051	0.041 ± 0.097	-0.004 ± 0.043

Table 12, Fruits & Vegetables (pCi/g Wet)

Location	Collection Date	Sample Type	Isotope				
26-C			Ru-103	Ru-106	Sb-125	Th-228	Zn-65
	09/09/09	PEACHES	0.002 ± 0.008	-0.046 ± 0.057	0.005 ± 0.017	0.030 ± 0.036	-0.001 ± 0.015
	09/09/09	SWISS CHARD	-0.007 ± 0.007	0.042 ± 0.062	-0.016 ± 0.015	-0.013 ± 0.032	0.004 ± 0.016
			Zr-95				
	06/10/09	STRAWBERRIES	0.018 ± 0.031				
	06/11/09	LETTUCE	-0.017 ± 0.028				
	09/09/09	PEACHES	-0.007 ± 0.013				
	09/09/09	SWISS CHARD	-0.002 ± 0.012				

Table 13, Broadleaf Vegetation (pCi/g Wet)

Location 01

Collection Date	Ba-140	Be-7	Ce-141	Ce-144	Co-58	Co-60
05/26/09	0.029 ± 0.046 G	0.860 ± 0.390	-0.012 ± 0.029	0.080 ± 0.110	0.020 ± 0.027	0.005 ± 0.030
06/17/09	-0.038 ± 0.085	0.870 ± 0.390	0.007 ± 0.039	-0.090 ± 0.100	-0.030 ± 0.026	-0.018 ± 0.030
07/15/09	0.008 ± 0.083	1.390 ± 0.500	-0.010 ± 0.038	0.000 ± 0.110	-0.003 ± 0.031	-0.009 ± 0.035
08/25/09	-0.028 ± 0.061	1.170 ± 0.260	-0.008 ± 0.030	-0.052 ± 0.081	0.003 ± 0.020	-0.012 ± 0.018
09/15/09	0.000 ± 0.055	1.650 ± 0.390	0.009 ± 0.033	-0.010 ± 0.110	-0.010 ± 0.027	-0.033 ± 0.025
10/14/09	0.021 ± 0.056	2.210 ± 0.460	0.011 ± 0.029	-0.020 ± 0.100	0.000 ± 0.026	-0.016 ± 0.030

Collection Date	Cr-51	Cs-134	Cs-137	Fe-59	I-131	K-40
05/26/09	-0.060 ± 0.190	-0.007 ± 0.020	-0.004 ± 0.026	0.018 ± 0.072	0.009 ± 0.020	3.700 ± 0.990
06/17/09	-0.170 ± 0.300	0.005 ± 0.019	0.007 ± 0.031	0.027 ± 0.071	-0.009 ± 0.003	2.830 ± 0.750
07/15/09	0.150 ± 0.250	0.020 ± 0.021	-0.026 ± 0.036	0.053 ± 0.083	0.030 ± 0.036	4.200 ± 1.000
08/25/09	0.170 ± 0.200	0.013 ± 0.014	0.005 ± 0.019	-0.026 ± 0.042	-0.010 ± 0.003	3.360 ± 0.510
09/15/09	-0.250 ± 0.220	0.006 ± 0.020	0.003 ± 0.025	0.037 ± 0.058	0.021 ± 0.031	2.710 ± 0.620
10/14/09	0.000 ± 0.210	0.010 ± 0.019	0.008 ± 0.027	0.028 ± 0.062	-0.003 ± 0.001	3.730 ± 0.900

Collection Date	La-140	Mn-54	Nb-95	Ru-103	Ru-106	Sb-125
05/26/09	0.029 ± 0.046	-0.006 ± 0.030	0.002 ± 0.021	0.005 ± 0.023	-0.200 ± 0.260	-0.040 ± 0.066
06/17/09	-0.038 ± 0.085	0.010 ± 0.030	-0.009 ± 0.035	0.004 ± 0.031	-0.030 ± 0.260	-0.008 ± 0.064
07/15/09	0.008 ± 0.083	0.006 ± 0.031	-0.011 ± 0.036	-0.019 ± 0.031	0.240 ± 0.300	0.000 ± 0.063
08/25/09	-0.028 ± 0.061	-0.006 ± 0.018	-0.022 ± 0.028	-0.001 ± 0.023	-0.050 ± 0.180	0.013 ± 0.038
09/15/09	0.000 ± 0.055	-0.007 ± 0.026	0.010 ± 0.028	-0.015 ± 0.028	-0.160 ± 0.220	0.017 ± 0.060
10/14/09	0.021 ± 0.056	0.008 ± 0.032	0.027 ± 0.032	0.008 ± 0.024	-0.150 ± 0.270	0.085 ± 0.065

Collection Date	Th-228	Zn-65	Zr-95
05/26/09	-0.010 ± 0.100	-0.019 ± 0.078	0.011 ± 0.044
06/17/09	0.020 ± 0.120	-0.057 ± 0.059	0.007 ± 0.052
07/15/09	0.110 ± 0.110	0.004 ± 0.051	0.037 ± 0.059
08/25/09	0.085 ± 0.075	-0.037 ± 0.045	0.015 ± 0.037
09/15/09	0.010 ± 0.110	-0.058 ± 0.061	0.007 ± 0.044
10/14/09	0.060 ± 0.110	-0.088 ± 0.087	0.033 ± 0.044

Location 10

Collection Date	Ba-140	Be-7	Ce-141	Ce-144	Co-58	Co-60
05/26/09	0.000 ± 0.024 G	0.670 ± 0.340	-0.017 ± 0.027	0.062 ± 0.092	0.016 ± 0.020	-0.039 ± 0.033
06/17/09	0.027 ± 0.078	0.480 ± 0.310	-0.034 ± 0.033	0.036 ± 0.098	-0.002 ± 0.022	-0.005 ± 0.023
07/15/09	-0.030 ± 0.053	0.500 ± 0.360	-0.011 ± 0.031	0.049 ± 0.094	0.002 ± 0.025	0.015 ± 0.033
08/25/09	-0.038 ± 0.060	0.680 ± 0.320	-0.010 ± 0.039	-0.010 ± 0.120	-0.013 ± 0.028	0.013 ± 0.029
09/15/09	0.054 ± 0.043	0.730 ± 0.280	0.010 ± 0.030	0.000 ± 0.089	0.004 ± 0.023	0.005 ± 0.025
10/14/09	0.000 ± 0.031	1.420 ± 0.350	-0.010 ± 0.024	-0.029 ± 0.091	0.005 ± 0.025	0.008 ± 0.020

Collection Date	Cr-51	Cs-134	Cs-137	Fe-59	I-131	K-40
05/26/09	0.000 ± 0.180	-0.001 ± 0.020	0.020 ± 0.026	-0.014 ± 0.050	0.002 ± 0.010	3.960 ± 0.920
06/17/09	0.070 ± 0.240	-0.009 ± 0.019	0.006 ± 0.024	0.031 ± 0.050	-0.008 ± 0.003	4.070 ± 0.710
07/15/09	-0.130 ± 0.230	0.008 ± 0.015	0.012 ± 0.029	-0.007 ± 0.066	0.011 ± 0.024	3.630 ± 0.810
08/25/09	0.030 ± 0.230	-0.011 ± 0.020	-0.002 ± 0.026	-0.005 ± 0.061	-0.012 ± 0.004	3.050 ± 0.760
09/15/09	0.040 ± 0.180	0.019 ± 0.016	0.013 ± 0.022	0.002 ± 0.045	0.014 ± 0.030	3.190 ± 0.640
10/14/09	-0.100 ± 0.190	-0.006 ± 0.015	0.007 ± 0.023	0.005 ± 0.047	-0.003 ± 0.001	3.320 ± 0.710

Table 13, Broadleaf Vegetation (pCi/g Wet)

Location	Collection Date	Isotope					
10		La-140	Mn-54	Nb-95	Ru-103	Ru-106	Sb-125
	05/26/09	0.000 ± 0.024	0.009 ± 0.024	0.006 ± 0.031	0.007 ± 0.021	-0.310 ± 0.250	0.015 ± 0.060
	06/17/09	0.027 ± 0.078	0.007 ± 0.021	-0.007 ± 0.029	0.005 ± 0.026	0.000 ± 0.210	0.017 ± 0.061
	07/15/09	-0.030 ± 0.053	0.003 ± 0.023	-0.004 ± 0.024	0.015 ± 0.029	0.160 ± 0.190	-0.009 ± 0.057
	08/25/09	-0.038 ± 0.060	-0.005 ± 0.029	0.016 ± 0.030	-0.016 ± 0.028	0.000 ± 0.200	0.032 ± 0.060
	09/15/09	0.054 ± 0.043	0.005 ± 0.020	0.000 ± 0.025	0.014 ± 0.021	0.090 ± 0.180	-0.002 ± 0.055
	10/14/09	0.000 ± 0.031	-0.001 ± 0.020	-0.002 ± 0.023	0.003 ± 0.019	0.060 ± 0.200	-0.041 ± 0.049
		Th-228	Zn-65	Zr-95			
	05/26/09	0.014 ± 0.076	-0.065 ± 0.073	0.011 ± 0.043			
	06/17/09	-0.011 ± 0.091	-0.042 ± 0.058	-0.017 ± 0.048			
	07/15/09	0.033 ± 0.086	-0.012 ± 0.049	-0.027 ± 0.038			
	08/25/09	0.100 ± 0.120	0.030 ± 0.071	0.009 ± 0.032			
	09/15/09	0.028 ± 0.067	-0.004 ± 0.051	-0.006 ± 0.033			
	10/14/09	0.013 ± 0.086	0.011 ± 0.053	0.013 ± 0.034			
17		Ba-140	Be-7	Ce-141	Ce-144	Co-58	Co-60
	05/26/09	0.053 ± 0.048 G	0.420 ± 0.280	0.021 ± 0.031	0.063 ± 0.092	0.003 ± 0.023	-0.013 ± 0.039
	06/17/09	-0.013 ± 0.076	0.370 ± 0.310	-0.018 ± 0.047	0.040 ± 0.120	-0.011 ± 0.027	-0.017 ± 0.029
	07/15/09	-0.082 ± 0.094	1.040 ± 0.430	-0.006 ± 0.040	-0.040 ± 0.100	0.012 ± 0.034	-0.004 ± 0.040
	08/25/09	0.020 ± 0.084	1.290 ± 0.470	0.020 ± 0.038	-0.060 ± 0.110	0.019 ± 0.034	0.009 ± 0.035
	09/15/09	-0.065 ± 0.069	2.160 ± 0.480	-0.018 ± 0.042	-0.010 ± 0.140	-0.035 ± 0.033	0.006 ± 0.031
	10/14/09	-0.014 ± 0.044	2.020 ± 0.380	-0.010 ± 0.030	0.050 ± 0.110	0.000 ± 0.027	0.005 ± 0.022
		Cr-51	Cs-134	Cs-137	Fe-59	I-131	K-40
	05/26/09	-0.050 ± 0.190	0.000 ± 0.020	0.003 ± 0.026	-0.033 ± 0.068	0.003 ± 0.010	4.440 ± 0.980
	06/17/09	-0.110 ± 0.320	0.003 ± 0.022	0.007 ± 0.025	0.031 ± 0.080	0.006 ± 0.023	3.080 ± 0.780
	07/15/09	0.050 ± 0.260	-0.002 ± 0.022	0.022 ± 0.032	-0.019 ± 0.080	-0.006 ± 0.002	3.650 ± 0.880
	08/25/09	0.180 ± 0.250	-0.013 ± 0.024	0.035 ± 0.032	-0.047 ± 0.086	0.028 ± 0.032	3.080 ± 0.860
	09/15/09	0.130 ± 0.270	-0.025 ± 0.022	0.002 ± 0.030	-0.016 ± 0.074	0.002 ± 0.016	3.660 ± 0.780
	10/14/09	0.050 ± 0.200	0.001 ± 0.018	0.046 ± 0.033	0.017 ± 0.055	0.004 ± 0.016	2.530 ± 0.620
		La-140	Mn-54	Nb-95	Ru-103	Ru-106	Sb-125
	05/26/09	0.053 ± 0.048	0.000 ± 0.026	0.014 ± 0.030	-0.012 ± 0.023	0.050 ± 0.240	0.030 ± 0.053
	06/17/09	-0.013 ± 0.076	-0.014 ± 0.027	0.032 ± 0.040	-0.004 ± 0.036	-0.100 ± 0.290	0.023 ± 0.065
	07/15/09	-0.082 ± 0.094	-0.014 ± 0.031	0.004 ± 0.033	0.010 ± 0.032	0.060 ± 0.260	-0.034 ± 0.073
	08/25/09	0.020 ± 0.084	0.006 ± 0.034	-0.008 ± 0.036	-0.010 ± 0.036	0.020 ± 0.260	0.056 ± 0.063
	09/15/09	-0.065 ± 0.069	-0.025 ± 0.028	0.003 ± 0.032	-0.008 ± 0.034	0.130 ± 0.240	0.034 ± 0.068
	10/14/09	-0.014 ± 0.044	-0.009 ± 0.021	-0.004 ± 0.027	-0.006 ± 0.023	-0.010 ± 0.210	-0.010 ± 0.060
		Th-228	Zn-65	Zr-95			
	05/26/09	0.060 ± 0.100	-0.049 ± 0.073	0.022 ± 0.047			
	06/17/09	0.020 ± 0.120	-0.025 ± 0.073	-0.014 ± 0.053			
	07/15/09	0.100 ± 0.130	0.029 ± 0.070	0.035 ± 0.055			
	08/25/09	0.210 ± 0.130	-0.023 ± 0.090	-0.014 ± 0.060			
	09/15/09	0.190 ± 0.150	0.000 ± 0.078	0.017 ± 0.054			
	10/14/09	0.096 ± 0.096	0.035 ± 0.096	-0.040 ± 0.039			

Table 14, Sea Water (pCi/L)

Location	Collection Date	Ba-140	Be-7	Co-58	Co-60	Cr-51	Cs-134
32	01/27/09	1.4 ± 6.7 H	35.0± 33.0	-4.4± 4.0	-1.1 ± 3.8	0.0 ± 36.0	4.0± 3.2
	02/24/09	3.9 ± 7.8	-7.0 ± 38.0	-1.6± 4.4	-2.6 ± 5.3	-29.0 ± 38.0	0.8± 3.5
	03/31/09	2.1 ± 7.1	-15.0 ± 26.0	-0.7± 2.7	-1.1 ± 3.2	27.0 ± 29.0	-1.0 ± 2.2
	04/28/09	0.5 ± 5.8	0.0 ± 25.0	0.8 ± 3.2	0.3± 3.7	-15.0 ± 26.0	1.4± 2.8
	05/26/09	2.1 ± 7.9	-1.0 ± 33.0	-0.3± 4.0	0.4± 4.3	8.0 ± 31.0	-2.1 ± 3.0
	06/30/09	2.2 ± 7.0	11.0± 29.0	-2.8± 4.1	3.3± 4.0	-22.0 ± 33.0	-3.2 ± 3.0
	07/28/09	-0.4 ± 3.4	3.0 ± 11.0	0.7 ± 1.2	0.9± 1.2	4.0 ± 13.0	-0.7 ± 0.9
	08/25/09	0.6 ± 5.9	-1.0 ± 26.0	0.8 ± 3.9	-0.5 ± 3.4	5.0 ± 28.0	0.5± 2.1
	09/29/09	-5.4 ± 6.7	-24.0 ± 28.0	-3.4± 3.3	-2.6 ± 3.9	12.0 ± 32.0	-0.4 ± 2.5
	10/27/09	2.5 ± 7.9	-11.0 ± 32.0	0.8 ± 3.5	-1.7 ± 3.9	-16.0 ± 34.0	-2.9 ± 3.0
	11/24/09	3.3 ± 6.3	-2.0 ± 23.0	0.2 ± 2.3	2.4± 2.5	1.0 ± 23.0	3.2± 2.6
	12/29/09	3.7 ± 7.1	31.0± 36.0	-2.7± 3.7	2.7± 4.4	4.0 ± 39.0	-2.4 ± 2.9

Location	Collection Date	Cs-137	Fe-59	H-3	I-131	K-40	La-140
32	01/27/09	2.5 ± 3.6	-0.6 ± 7.3	60.0 ± 180.0	4.3± 7.6	299.0 ± 82.0	1.4± 6.7
	02/24/09	-4.7 ± 4.5	-3.7 ± 9.7	410.0 ± 180.0	1.9± 7.8	236.0 ± 99.0	3.9± 7.8
	03/31/09	0.0 ± 3.0	1.9± 6.6	80.0 ± 160.0	0.7± 7.8	274.0 ± 66.0	2.1± 7.1
	04/28/09	-2.6 ± 3.1	-5.7 ± 6.6	100.0 ± 170.0	2.2± 5.9	265.0 ± 69.0	0.5± 5.8
	05/26/09	0.0 ± 3.9	4.9± 7.8	-120.0± 180.0	0.3± 6.6	301.0 ± 86.0	2.1± 7.9
	06/30/09	-0.6 ± 3.5	-4.8 ± 8.0	-100.0± 180.0	-6.7 ± 7.7	342.0 ± 92.0	2.2± 7.0
	07/28/09	-0.3 ± 1.1	-2.0 ± 2.8	1910.0 ± 180.0	1.0± 4.7	263.0 ± 28.0	-0.4 ± 3.4
	08/25/09	2.8 ± 3.9	2.2± 7.2	210.0 ± 180.0	-1.8 ± 6.0	277.0 ± 78.0	0.6± 5.9
	09/29/09	1.2 ± 3.2	2.9± 7.2	120.0 ± 180.0	-0.3 ± 7.2	362.0 ± 78.0	-5.4 ± 6.7
	10/27/09	1.3 ± 3.4	-2.2 ± 8.2	100.0 ± 150.0	8.0± 8.2	267.0 ± 79.0	2.5± 7.9
	11/24/09	0.8 ± 2.4	2.2± 5.0	570.0 ± 150.0	-2.5 ± 7.2	285.0 ± 49.0	3.3± 6.3
	12/29/09	0.2 ± 4.3	0.4± 8.4	500.0 ± 150.0	4.1± 7.7	265.0 ± 91.0	3.7± 7.1

Location	Collection Date	Mn-54	Nb-95	Ru-103	Ru-106	Sb-125	Th-228
32	01/27/09	1.3 ± 3.8	-3.6 ± 4.4	2.8 ± 4.0	-13.0 ± 33.0	-10.0 ± 10.0	-2.0 ± 15.0
	02/24/09	-1.9 ± 4.2	1.2± 4.6	1.3 ± 5.0	-18.0 ± 36.0	-3.0 ± 14.0	2.0 ± 18.0
	03/31/09	0.2 ± 2.6	-1.1 ± 3.8	-2.9± 3.5	-12.0 ± 28.0	-3.7 ± 8.0	2.0 ± 13.0
	04/28/09	-1.3 ± 3.2	-0.2 ± 3.4	-1.2± 3.4	7.0 ± 28.0	0.4 ± 8.0	9.0 ± 14.0
	05/26/09	2.1 ± 3.6	-3.7 ± 4.3	-0.9± 3.9	28.0± 35.0	4.0 ± 11.0	-1.0 ± 15.0
	06/30/09	2.9 ± 3.7	0.8± 4.3	-0.3± 4.0	11.0± 34.0	-5.3 ± 9.5	9.0 ± 17.0
	07/28/09	-0.5 ± 1.2	1.0± 2.2	-3.2± 1.5	-8.0 ± 11.0	-1.6 ± 2.8	0.4± 4.9
	08/25/09	-0.8 ± 3.5	0.1± 4.4	-2.5± 3.5	14.0± 28.0	1.6 ± 9.6	5.0 ± 15.0
	09/29/09	-0.2 ± 3.0	5.1± 4.4	0.0 ± 4.1	-1.0 ± 31.0	0.0 ± 8.5	10.0± 12.0
	10/27/09	2.4 ± 3.4	2.0± 3.8	-2.9± 3.6	-9.0 ± 28.0	7.7 ± 9.2	8.0 ± 13.0
	11/24/09	0.9 ± 2.3	2.5± 3.2	-1.1± 2.8	-11.0 ± 19.0	-2.6 ± 6.1	5.3± 5.0
	12/29/09	-1.3 ± 4.8	4.1± 4.5	-2.3± 4.7	2.0 ± 42.0	0.0 ± 10.0	5.0 ± 15.0

Location	Collection Date	Zn-65	Zr-95
32	01/27/09	-12.0 ± 11.0	0.9± 6.2
	02/24/09	-6.0 ± 11.0	2.6± 7.4
	03/31/09	-4.2 ± 7.5	-2.2 ± 5.1
	04/28/09	-5.8 ± 7.5	-0.1 ± 5.5
	05/26/09	-1.3 ± 8.1	-2.6 ± 6.7
	06/30/09	-2.7 ± 7.8	-1.0 ± 7.2
	07/28/09	-1.4 ± 2.8	-0.4 ± 2.3
	08/25/09	-1.1 ± 7.4	1.8± 6.6
	09/29/09	-1.0 ± 12.0	1.0± 5.4
	10/27/09	0.8 ± 8.5	2.7± 7.6
	11/24/09	-0.6 ± 6.7	2.3± 4.2
	12/29/09	-6.0 ± 10.0	2.3± 8.1

Table 14, Sea Water (pCi/L)

Location	Collection Date	Isotope					
37-C		Ba-140	Be-7	Co-58	Co-60	Cr-51	Cs-134
	03/24/09	0.5 ± 5.7	-14.0 ± 27.0	-1.1 ± 3.2	-0.2 ± 3.3	-27.0 ± 27.0	1.4 ± 3.3
	06/09/09	0.0 ± 6.4	-4.0 ± 19.0	-0.7 ± 2.5	-0.7 ± 2.4	-3.0 ± 23.0	0.1 ± 1.9
	09/01/09	2.7 ± 7.3	-6.0 ± 28.0	0.3 ± 4.0	0.6 ± 3.4	4.0 ± 31.0	-1.9 ± 2.6
	12/01/09	1.0 ± 6.2	-4.0 ± 30.0	-1.4 ± 3.5	-2.2 ± 3.3	6.0 ± 33.0	1.0 ± 2.9
		Cs-137	Fe-59	H-3	I-131	K-40	La-140
	03/24/09	2.2 ± 3.3	-3.5 ± 6.6	-230.0 ± 170.0	-2.8 ± 6.5	289.0 ± 72.0	0.5 ± 5.7
	06/09/09	-0.3 ± 2.4	2.5 ± 5.6	-200.0 ± 170.0	-0.5 ± 8.4	245.0 ± 49.0	0.0 ± 6.4
	09/01/09	0.9 ± 3.9	6.1 ± 7.9	-50.0 ± 160.0	-2.0 ± 6.0	302.0 ± 84.0	2.7 ± 7.3
	12/01/09	-0.2 ± 3.7	-6.3 ± 7.0	-60.0 ± 150.0	2.2 ± 7.3	278.0 ± 70.0	1.0 ± 6.2
		Mn-54	Nb-95	Ru-103	Ru-106	Sb-125	Th-228
	03/24/09	0.2 ± 2.9	-3.3 ± 3.9	-1.5 ± 3.3	9.0 ± 33.0	0.7 ± 8.4	0.0 ± 13.0
	06/09/09	-0.9 ± 2.3	-2.5 ± 2.9	-2.0 ± 2.7	-11.0 ± 21.0	-1.7 ± 5.9	-0.2 ± 9.7
	09/01/09	-3.0 ± 3.6	-2.8 ± 4.2	-4.9 ± 4.0	-11.0 ± 32.0	4.0 ± 9.0	-5.0 ± 13.0
	12/01/09	-3.1 ± 2.9	-3.9 ± 3.5	-5.7 ± 4.3	2.0 ± 34.0	5.8 ± 9.6	0.0 ± 12.0
		Zn-65	Zr-95				
	03/24/09	11.0 ± 13.0	-6.2 ± 5.6				
	06/09/09	-1.5 ± 4.8	-0.7 ± 4.4				
	09/01/09	-2.8 ± 8.1	-2.4 ± 6.0				
	12/01/09	-1.3 ± 7.9	1.6 ± 6.1				

Table 15, Bottom Sediment (pCi/g Dry)

Location	Collection Date	Isotope					
29-X		Ag-110m	Be-7	Co-58	Co-60	Cr-51	Cs-134
	04/28/09	0.005 ± 0.025	-0.070 ± 0.310	-0.008 ± 0.035	0.038 ± 0.030	0.150 ± 0.370	-0.015 ± 0.041
	10/21/09	0.115 ± 0.098	0.240 ± 0.600	0.025 ± 0.064	0.022 ± 0.084	-0.350 ± 0.730	0.015 ± 0.054
		Cs-137	Fe-59	I-131	K-40	Mn-54	Nb-95
	04/28/09	-0.010 ± 0.034	0.001 ± 0.081	-0.030 ± 0.110	16.000 ± 1.300	-0.022 ± 0.032	0.032 ± 0.049
	10/21/09	0.060 ± 0.067	0.070 ± 0.190	0.060 ± 0.310	20.100 ± 3.100	-0.005 ± 0.069	0.055 ± 0.098
		Ru-103	Ru-106	Sb-125	Th-228	Zn-65	Zr-95
	04/28/09	-0.002 ± 0.039	0.050 ± 0.300	0.027 ± 0.083	1.050 ± 0.150	-0.020 ± 0.160	0.010 ± 0.066
	10/21/09	-0.024 ± 0.085	-0.460 ± 0.660	-0.050 ± 0.170	1.130 ± 0.340	-0.260 ± 0.200	0.050 ± 0.140
31		Ag-110m	Be-7	Co-58	Co-60	Cr-51	Cs-134
	04/28/09	-0.018 ± 0.021	0.100 ± 0.310	0.010 ± 0.027	-0.007 ± 0.021	0.010 ± 0.320	-0.021 ± 0.037
	11/24/09	-0.011 ± 0.060	0.170 ± 0.380	-0.018 ± 0.039	-0.036 ± 0.040	-0.320 ± 0.480	0.002 ± 0.025
		Cs-137	Fe-59	I-131	K-40	Mn-54	Nb-95
	04/28/09	0.003 ± 0.030	-0.001 ± 0.052	-0.040 ± 0.120	16.130 ± 0.890	-0.006 ± 0.028	-0.004 ± 0.038
	11/24/09	-0.003 ± 0.039	-0.110 ± 0.120	0.110 ± 0.200	16.800 ± 1.900	-0.016 ± 0.043	-0.027 ± 0.057
		Ru-103	Ru-106	Sb-125	Th-228	Zn-65	Zr-95
	04/28/09	-0.024 ± 0.035	0.180 ± 0.260	-0.087 ± 0.076	2.710 ± 0.130	0.040 ± 0.100	0.012 ± 0.059
	11/24/09	0.016 ± 0.043	0.050 ± 0.310	0.025 ± 0.096	-0.040 ± 0.330	-0.110 ± 0.100	0.000 ± 0.072
32		Ag-110m	Be-7	Co-58	Co-60	Cr-51	Cs-134
	04/28/09	0.009 ± 0.052	-0.110 ± 0.480	0.001 ± 0.064	0.037 ± 0.076	0.500 ± 0.620	0.016 ± 0.050
	10/21/09	-0.009 ± 0.087	0.720 ± 0.720	-0.062 ± 0.060	-0.016 ± 0.059	0.210 ± 0.700	0.010 ± 0.046
		Cs-137	Fe-59	I-131	K-40	Mn-54	Nb-95
	04/28/09	0.041 ± 0.069	0.060 ± 0.130	0.070 ± 0.210	12.600 ± 2.400	0.002 ± 0.061	-0.012 ± 0.081
	10/21/09	0.016 ± 0.059	-0.060 ± 0.170	0.090 ± 0.310	14.200 ± 2.200	-0.018 ± 0.055	0.070 ± 0.100
		Ru-103	Ru-106	Sb-125	Th-228	Zn-65	Zr-95
	04/28/09	0.014 ± 0.082	-0.500 ± 0.630	0.000 ± 0.180	0.980 ± 0.330	-0.130 ± 0.190	0.020 ± 0.120
	10/21/09	0.014 ± 0.072	-0.070 ± 0.450	0.190 ± 0.180	0.950 ± 0.280	-0.180 ± 0.180	0.110 ± 0.100
33		Ag-110m	Be-7	Co-58	Co-60	Cr-51	Cs-134
	04/28/09	0.013 ± 0.018	0.130 ± 0.230	-0.008 ± 0.030	-0.023 ± 0.029	0.000 ± 0.320	-0.014 ± 0.026
	11/24/09	0.075 ± 0.065	0.100 ± 0.420	0.047 ± 0.074	0.027 ± 0.054	-0.480 ± 0.520	-0.020 ± 0.035
		Cs-137	Fe-59	I-131	K-40	Mn-54	Nb-95
	04/28/09	-0.015 ± 0.025	-0.064 ± 0.068	0.019 ± 0.090	14.100 ± 1.400	0.007 ± 0.027	-0.005 ± 0.040
	11/24/09	-0.013 ± 0.047	-0.100 ± 0.170	-0.070 ± 0.210	15.400 ± 2.400	0.006 ± 0.059	0.033 ± 0.065

Table 15, Bottom Sediment (pCi/g Dry)

Location	Collection Date	Isotope					
33		**Ru-103**	**Ru-106**	**Sb-125**	**Th-228**	**Zn-65**	**Zr-95**
	04/28/09	0.011 ± 0.032	-0.070 ± 0.230	-0.042 ± 0.061	0.180 ± 0.150	-0.090 ± 0.080	0.010 ± 0.055
	11/24/09	0.013 ± 0.065	-0.090 ± 0.520	-0.010 ± 0.100	0.260 ± 0.250	-0.120 ± 0.160	0.040 ± 0.110
34		**Ag-110m**	**Be-7**	**Co-58**	**Co-60**	**Cr-51**	**Cs-134**
	04/28/09	0.003 ± 0.025	0.270 ± 0.280	-0.008 ± 0.027	-0.010 ± 0.043	0.020 ± 0.400	0.016 ± 0.031
	11/24/09	0.020 ± 0.070	-0.380 ± 0.360	-0.004 ± 0.039	-0.033 ± 0.043	0.060 ± 0.370	-0.034 ± 0.031
		Cs-137	**Fe-59**	**I-131**	**K-40**	**Mn-54**	**Nb-95**
	04/28/09	0.031 ± 0.036	-0.030 ± 0.095	-0.020 ± 0.100	15.900 ± 1.900	-0.015 ± 0.035	-0.001 ± 0.045
	11/24/09	-0.030 ± 0.058	0.000 ± 0.140	-0.040 ± 0.270	9.500 ± 2.000	0.004 ± 0.041	0.023 ± 0.051
		Ru-103	**Ru-106**	**Sb-125**	**Th-228**	**Zn-65**	**Zr-95**
	04/28/09	0.003 ± 0.033	0.180 ± 0.270	-0.029 ± 0.080	0.080 ± 0.170	-0.028 ± 0.096	0.069 ± 0.062
	11/24/09	0.007 ± 0.056	-0.420 ± 0.460	0.070 ± 0.100	0.120 ± 0.190	0.030 ± 0.120	0.009 ± 0.083
35-X		**Ag-110m**	**Be-7**	**Co-58**	**Co-60**	**Cr-51**	**Cs-134**
	04/28/09	-0.010 ± 0.043	-0.120 ± 0.460	-0.008 ± 0.054	-0.014 ± 0.055	-0.190 ± 0.560	0.010 ± 0.052
	10/21/09	-0.017 ± 0.043	-0.170 ± 0.370	-0.012 ± 0.042	-0.036 ± 0.046	0.220 ± 0.430	0.048 ± 0.040
		Cs-137	**Fe-59**	**I-131**	**K-40**	**Mn-54**	**Nb-95**
	04/28/09	0.034 ± 0.069	-0.090 ± 0.140	-0.100 ± 0.160	13.000 ± 2.100	0.003 ± 0.049	-0.044 ± 0.082
	10/21/09	-0.013 ± 0.043	-0.010 ± 0.120	-0.050 ± 0.220	14.400 ± 1.400	0.017 ± 0.041	-0.005 ± 0.086
		Ru-103	**Ru-106**	**Sb-125**	**Th-228**	**Zn-65**	**Zr-95**
	04/28/09	0.015 ± 0.066	0.130 ± 0.510	0.090 ± 0.140	0.700 ± 0.310	-0.150 ± 0.140	-0.113 ± 0.091
	10/21/09	0.028 ± 0.050	-0.020 ± 0.360	0.066 ± 0.089	0.960 ± 0.160	0.160 ± 0.190	0.012 ± 0.075
37-C		**Ag-110m**	**Be-7**	**Co-58**	**Co-60**	**Cr-51**	**Cs-134**
	04/28/09	-0.015 ± 0.040	0.200 ± 0.470	-0.003 ± 0.043	-0.002 ± 0.041	0.000 ± 0.540	-0.019 ± 0.037
	11/24/09	0.012 ± 0.055	0.010 ± 0.360	-0.030 ± 0.044	-0.022 ± 0.045	-0.270 ± 0.460	0.011 ± 0.028
		Cs-137	**Fe-59**	**I-131**	**K-40**	**Mn-54**	**Nb-95**
	04/28/09	0.045 ± 0.065	-0.040 ± 0.120	-0.140 ± 0.160	12.800 ± 2.300	-0.045 ± 0.050	0.012 ± 0.074
	11/24/09	-0.019 ± 0.032	-0.016 ± 0.079	-0.120 ± 0.220	15.500 ± 1.900	-0.004 ± 0.033	0.026 ± 0.059
		Ru-103	**Ru-106**	**Sb-125**	**Th-228**	**Zn-65**	**Zr-95**
	04/28/09	0.046 ± 0.060	0.280 ± 0.500	-0.095 ± 0.090	0.330 ± 0.230	0.050 ± 0.110	0.025 ± 0.096
	11/24/09	0.009 ± 0.042	0.040 ± 0.280	-0.100 ± 0.110	0.150 ± 0.160	-0.050 ± 0.082	0.026 ± 0.063

Table 15, Bottom Sediment (pCi/g Dry)

Location	Collection Date	Isotope					
39-X		**Ag-110m**	**Be-7**	**Co-58**	**Co-60**	**Cr-51**	**Cs-134**
	04/28/09	0.012 ± 0.065	0.250 ± 0.660	-0.014 ± 0.067	0.026 ± 0.075	0.150 ± 0.790	0.068 ± 0.058
	10/22/09	-0.028 ± 0.082	0.340 ± 0.470	-0.029 ± 0.069	0.048 ± 0.058	-0.890 ± 0.520	0.028 ± 0.049
		Cs-137	**Fe-59**	**I-131**	**K-40**	**Mn-54**	**Nb-95**
	04/28/09	0.071 ± 0.093	0.100 ± 0.170	-0.150 ± 0.210	16.400 ± 2.400	-0.019 ± 0.053	0.031 ± 0.083
	10/22/09	0.012 ± 0.069	-0.020 ± 0.130	-0.100 ± 0.250	17.500 ± 2.600	0.009 ± 0.057	-0.013 ± 0.072
		Ru-103	**Ru-106**	**Sb-125**	**Th-228**	**Zn-65**	**Zr-95**
	04/28/09	0.025 ± 0.078	0.220 ± 0.610	-0.040 ± 0.160	0.860 ± 0.340	-0.090 ± 0.170	0.062 ± 0.096
	10/22/09	0.006 ± 0.067	-0.050 ± 0.560	0.030 ± 0.120	0.430 ± 0.250	-0.100 ± 0.160	-0.070 ± 0.110
67-X		**Ag-110m**	**Be-7**	**Co-58**	**Co-60**	**Cr-51**	**Cs-134**
	04/28/09	-0.015 ± 0.049	0.360 ± 0.410	0.010 ± 0.044	-0.069 ± 0.054	-0.570 ± 0.540	-0.011 ± 0.042
	11/30/09	0.000 ± 0.080	0.250 ± 0.610	0.025 ± 0.064	-0.025 ± 0.079	0.360 ± 0.590	-0.003 ± 0.046
		Cs-137	**Fe-59**	**I-131**	**K-40**	**Mn-54**	**Nb-95**
	04/28/09	0.153 ± 0.072	-0.110 ± 0.120	-0.010 ± 0.160	15.200 ± 2.000	-0.038 ± 0.050	-0.017 ± 0.071
	11/30/09	0.130 ± 0.091	-0.020 ± 0.180	-0.110 ± 0.180	15.500 ± 2.900	0.009 ± 0.063	-0.028 ± 0.085
		Ru-103	**Ru-106**	**Sb-125**	**Th-228**	**Zn-65**	**Zr-95**
	04/28/09	-0.030 ± 0.051	-0.470 ± 0.450	0.020 ± 0.120	0.580 ± 0.210	-0.050 ± 0.120	-0.109 ± 0.085
	11/30/09	-0.073 ± 0.059	0.140 ± 0.570	-0.120 ± 0.160	-0.420 ± 0.590	-0.190 ± 0.210	0.080 ± 0.130
69-X		**Ag-110m**	**Be-7**	**Co-58**	**Co-60**	**Cr-51**	**Cs-134**
	04/28/09	0.008 ± 0.029	0.240 ± 0.290	-0.021 ± 0.029	0.021 ± 0.033	-0.080 ± 0.290	0.021 ± 0.045
	11/24/09	0.007 ± 0.054	0.110 ± 0.460	0.016 ± 0.057	0.030 ± 0.031	-0.040 ± 0.480	0.003 ± 0.025
		Cs-137	**Fe-59**	**I-131**	**K-40**	**Mn-54**	**Nb-95**
	04/28/09	0.047 ± 0.038	-0.008 ± 0.089	-0.076 ± 0.088	16.100 ± 1.600	0.002 ± 0.026	0.009 ± 0.042
	11/24/09	0.005 ± 0.035	0.060 ± 0.140	-0.040 ± 0.220	15.200 ± 1.900	-0.005 ± 0.037	0.019 ± 0.052
		Ru-103	**Ru-106**	**Sb-125**	**Th-228**	**Zn-65**	**Zr-95**
	04/28/09	-0.013 ± 0.030	0.140 ± 0.250	0.038 ± 0.079	0.070 ± 0.140	-0.056 ± 0.086	-0.009 ± 0.056
	11/24/09	0.000 ± 0.056	-0.160 ± 0.340	0.056 ± 0.093	0.250 ± 0.160	-0.100 ± 0.120	0.009 ± 0.076

Table 16, Aquatic Flora - Fucus (pCi/g Wet)

Location	Collection Date	Ag-110m	Be-7	Co-58	Co-60	Cr-51	Cs-134
29	02/16/09	-0.026 ± 0.033	-0.100 ± 0.220	-0.011 ± 0.026	-0.003 ± 0.029	0.070 ± 0.220	0.002 ± 0.020
	04/29/09	0.013 ± 0.035	0.140 ± 0.190	-0.006 ± 0.025	-0.005 ± 0.029	-0.190 ± 0.200	0.004 ± 0.019
	09/02/09	-0.033 ± 0.035	0.000 ± 0.180	0.004 ± 0.028	0.005 ± 0.028	0.080 ± 0.190	0.006 ± 0.020
	11/23/09	0.000 ± 0.031	0.130 ± 0.240	0.002 ± 0.023	-0.002 ± 0.025	-0.020 ± 0.230	0.002 ± 0.022
		Cs-137	**Fe-59**	**I-131**	**K-40**	**Mn-54**	**Nb-95**
	02/16/09	-0.007 ± 0.025	0.011 ± 0.058	-0.013 ± 0.042	5.740 ± 0.860	-0.002 ± 0.028	-0.007 ± 0.034
	04/29/09	0.009 ± 0.020	0.077 ± 0.064	0.030 ± 0.043	6.020 ± 0.860	0.018 ± 0.025	-0.011 ± 0.028
	09/02/09	-0.015 ± 0.027	-0.025 ± 0.059	-0.006 ± 0.039	7.800 ± 1.000	0.009 ± 0.022	0.023 ± 0.032
	11/23/09	-0.016 ± 0.023	-0.038 ± 0.058	0.004 ± 0.087	7.120 ± 0.850	0.017 ± 0.025	0.008 ± 0.030
		Ru-103	**Ru-106**	**Sb-125**	**Th-228**	**Zn-65**	**Zr-95**
	02/16/09	-0.003 ± 0.029	0.270 ± 0.250	-0.050 ± 0.060	0.040 ± 0.120	-0.065 ± 0.067	-0.004 ± 0.050
	04/29/09	0.001 ± 0.029	0.040 ± 0.220	0.025 ± 0.066	-0.030 ± 0.110	0.011 ± 0.066	-0.020 ± 0.047
	09/02/09	0.001 ± 0.026	0.020 ± 0.230	0.030 ± 0.064	0.110 ± 0.110	0.004 ± 0.062	0.003 ± 0.044
	11/23/09	0.012 ± 0.026	0.200 ± 0.220	0.029 ± 0.061	0.075 ± 0.087	-0.024 ± 0.067	0.009 ± 0.052
32-X		**Ag-110m**	**Be-7**	**Co-58**	**Co-60**	**Cr-51**	**Cs-134**
	02/16/09	-0.009 ± 0.034	0.080 ± 0.180	0.008 ± 0.028	0.006 ± 0.021	-0.040 ± 0.170	0.017 ± 0.023
	04/29/09	0.002 ± 0.042	0.140 ± 0.210	-0.017 ± 0.026	0.000 ± 0.027	0.110 ± 0.210	-0.004 ± 0.019
	09/02/09	-0.013 ± 0.030	0.070 ± 0.200	-0.002 ± 0.025	0.000 ± 0.027	0.040 ± 0.180	-0.018 ± 0.021
	11/23/09	0.007 ± 0.040	0.140 ± 0.300	-0.021 ± 0.037	-0.011 ± 0.029	-0.060 ± 0.310	0.019 ± 0.024
		Cs-137	**Fe-59**	**I-131**	**K-40**	**Mn-54**	**Nb-95**
	02/16/09	-0.015 ± 0.027	-0.044 ± 0.066	-0.005 ± 0.041	6.320 ± 0.940	0.000 ± 0.029	-0.007 ± 0.029
	04/29/09	0.007 ± 0.025	0.009 ± 0.054	0.005 ± 0.049	6.120 ± 0.900	-0.015 ± 0.027	0.000 ± 0.032
	09/02/09	-0.014 ± 0.025	0.018 ± 0.055	0.009 ± 0.037	7.460 ± 0.930	0.000 ± 0.027	-0.035 ± 0.029
	11/23/09	0.011 ± 0.039	0.059 ± 0.083	0.040 ± 0.130	8.300 ± 1.200	0.013 ± 0.032	0.011 ± 0.045
		Ru-103	**Ru-106**	**Sb-125**	**Th-228**	**Zn-65**	**Zr-95**
	02/16/09	-0.005 ± 0.025	-0.050 ± 0.240	0.015 ± 0.047	-0.020 ± 0.110	0.010 ± 0.064	-0.005 ± 0.047
	04/29/09	-0.009 ± 0.026	-0.090 ± 0.260	0.046 ± 0.065	0.030 ± 0.110	0.050 ± 0.061	0.026 ± 0.054
	09/02/09	0.008 ± 0.025	-0.070 ± 0.220	-0.021 ± 0.065	0.090 ± 0.110	-0.057 ± 0.053	-0.009 ± 0.047
	11/23/09	-0.010 ± 0.037	0.020 ± 0.290	-0.083 ± 0.085	0.140 ± 0.130	-0.047 ± 0.088	0.074 ± 0.065
33-X		**Ag-110m**	**Be-7**	**Co-58**	**Co-60**	**Cr-51**	**Cs-134**
	02/17/09	-0.030 ± 0.037	-0.020 ± 0.170	-0.036 ± 0.021	0.004 ± 0.024	-0.120 ± 0.190	-0.021 ± 0.019
	04/28/09	-0.017 ± 0.035	-0.010 ± 0.180	0.014 ± 0.033	0.006 ± 0.031	-0.160 ± 0.190	-0.011 ± 0.018
	08/31/09	0.016 ± 0.040	-0.040 ± 0.240	-0.024 ± 0.033	0.014 ± 0.029	0.250 ± 0.230	-0.002 ± 0.021
	11/24/09	0.015 ± 0.040	0.100 ± 0.250	-0.006 ± 0.034	-0.030 ± 0.032	0.260 ± 0.230	-0.004 ± 0.023
		Cs-137	**Fe-59**	**I-131**	**K-40**	**Mn-54**	**Nb-95**
	02/17/09	0.014 ± 0.025	0.005 ± 0.049	0.026 ± 0.041	5.870 ± 0.800	0.009 ± 0.023	0.008 ± 0.026
	04/28/09	-0.038 ± 0.028	-0.028 ± 0.065	-0.035 ± 0.046	7.100 ± 1.000	-0.006 ± 0.026	0.002 ± 0.029
	08/31/09	-0.014 ± 0.035	0.034 ± 0.071	0.006 ± 0.053	7.000 ± 1.100	0.015 ± 0.029	-0.017 ± 0.033
	11/24/09	0.005 ± 0.030	0.095 ± 0.095	-0.033 ± 0.081	6.500 ± 1.100	-0.002 ± 0.033	0.005 ± 0.043

Table 16, Aquatic Flora - Fucus (pCi/g Wet)

Location	Collection Date	Isotope					
33-X		Ru-103	Ru-106	Sb-125	Th-228	Zn-65	Zr-95
	02/17/09	0.006 ± 0.023	0.330 ± 0.240	-0.007 ± 0.061	0.100 ± 0.110	0.026 ± 0.059	-0.006 ± 0.038
	04/28/09	-0.008 ± 0.024	-0.130 ± 0.230	0.024 ± 0.059	0.060 ± 0.110	-0.028 ± 0.067	-0.012 ± 0.045
	08/31/09	-0.011 ± 0.025	-0.080 ± 0.250	-0.063 ± 0.068	0.010 ± 0.120	-0.028 ± 0.071	0.005 ± 0.051
	11/24/09	-0.002 ± 0.028	-0.050 ± 0.240	-0.079 ± 0.068	0.100 ± 0.110	-0.135 ± 0.091	-0.005 ± 0.057
35-X		Ag-110m	Be-7	Co-58	Co-60	Cr-51	Cs-134
	02/16/09	0.016 ± 0.033	0.100 ± 0.250	0.013 ± 0.024	0.012 ± 0.024	-0.140 ± 0.230	0.006 ± 0.017
	04/29/09	-0.014 ± 0.033	0.190 ± 0.190	-0.012 ± 0.025	-0.007 ± 0.027	-0.020 ± 0.180	-0.018 ± 0.019
	09/14/09	0.011 ± 0.038	0.100 ± 0.260	0.022 ± 0.030	-0.009 ± 0.029	0.110 ± 0.270	0.016 ± 0.020
	11/24/09	0.026 ± 0.046	0.070 ± 0.310	-0.015 ± 0.031	-0.021 ± 0.035	-0.050 ± 0.240	-0.011 ± 0.020
		Cs-137	Fe-59	I-131	K-40	Mn-54	Nb-95
	02/16/09	-0.010 ± 0.027	-0.008 ± 0.052	0.003 ± 0.048	5.990 ± 0.830	-0.004 ± 0.026	0.023 ± 0.029
	04/29/09	-0.003 ± 0.025	0.031 ± 0.048	-0.034 ± 0.053	5.730 ± 0.810	0.003 ± 0.022	-0.005 ± 0.028
	09/14/09	0.010 ± 0.027	0.000 ± 0.071	0.046 ± 0.082	6.910 ± 0.990	0.003 ± 0.029	0.039 ± 0.039
	11/24/09	0.013 ± 0.031	0.015 ± 0.068	0.011 ± 0.095	7.000 ± 1.200	-0.014 ± 0.027	0.027 ± 0.041
		Ru-103	Ru-106	Sb-125	Th-228	Zn-65	Zr-95
	02/16/09	0.025 ± 0.026	-0.070 ± 0.240	0.020 ± 0.070	0.070 ± 0.120	0.086 ± 0.096	0.010 ± 0.044
	04/29/09	-0.008 ± 0.025	-0.160 ± 0.230	0.017 ± 0.057	-0.070 ± 0.110	0.053 ± 0.063	0.006 ± 0.043
	09/14/09	-0.017 ± 0.029	0.020 ± 0.270	0.091 ± 0.071	-0.060 ± 0.110	-0.006 ± 0.071	-0.011 ± 0.060
	11/24/09	0.007 ± 0.031	-0.190 ± 0.270	-0.014 ± 0.074	0.100 ± 0.140	-0.080 ± 0.073	0.015 ± 0.053
36-X		Ag-110m	Be-7	Co-58	Co-60	Cr-51	Cs-134
	02/16/09	0.003 ± 0.039	0.040 ± 0.230	-0.001 ± 0.025	0.012 ± 0.030	0.070 ± 0.200	0.003 ± 0.021
	04/30/09	0.005 ± 0.029	0.160 ± 0.170	0.007 ± 0.018	-0.003 ± 0.024	0.010 ± 0.160	-0.001 ± 0.015
	09/14/09	0.007 ± 0.051	0.050 ± 0.310	-0.021 ± 0.033	-0.026 ± 0.040	-0.130 ± 0.270	-0.001 ± 0.028
	11/10/09	0.008 ± 0.029	0.050 ± 0.190	-0.008 ± 0.023	0.006 ± 0.025	0.030 ± 0.170	0.005 ± 0.019
		Cs-137	Fe-59	I-131	K-40	Mn-54	Nb-95
	02/16/09	0.011 ± 0.026	0.016 ± 0.066	-0.007 ± 0.042	5.820 ± 0.910	0.004 ± 0.026	-0.021 ± 0.027
	04/30/09	-0.005 ± 0.019	-0.020 ± 0.047	-0.006 ± 0.037	6.150 ± 0.700	-0.015 ± 0.018	-0.008 ± 0.024
	09/14/09	0.021 ± 0.034	-0.026 ± 0.062	-0.020 ± 0.110	6.300 ± 1.000	-0.016 ± 0.030	-0.035 ± 0.039
	11/10/09	0.012 ± 0.021	0.013 ± 0.045	0.061 ± 0.045	7.450 ± 0.800	-0.008 ± 0.023	0.020 ± 0.026
		Ru-103	Ru-106	Sb-125	Th-228	Zn-65	Zr-95
	02/16/09	-0.015 ± 0.026	0.100 ± 0.230	-0.012 ± 0.066	0.040 ± 0.110	-0.021 ± 0.067	-0.005 ± 0.043
	04/30/09	0.002 ± 0.021	0.000 ± 0.180	-0.042 ± 0.049	0.040 ± 0.090	-0.038 ± 0.053	-0.011 ± 0.035
	09/14/09	0.005 ± 0.039	-0.070 ± 0.340	-0.023 ± 0.084	0.050 ± 0.140	-0.100 ± 0.083	0.026 ± 0.056
	11/10/09	0.004 ± 0.022	-0.070 ± 0.170	0.041 ± 0.057	0.020 ± 0.100	-0.032 ± 0.051	-0.008 ± 0.042
90-C		Ag-110m	Be-7	Co-58	Co-60	Cr-51	Cs-134
	02/17/09	-0.023 ± 0.032	-0.090 ± 0.200	0.012 ± 0.027	0.000 ± 0.022	-0.080 ± 0.210	0.008 ± 0.017
	04/28/09	0.000 ± 0.033	0.210 ± 0.180	0.005 ± 0.021	-0.009 ± 0.020	0.080 ± 0.170	-0.011 ± 0.015
	08/31/09	0.009 ± 0.047	0.190 ± 0.260	0.000 ± 0.033	-0.010 ± 0.043	-0.080 ± 0.220	0.006 ± 0.023
	11/24/09	0.005 ± 0.031	0.090 ± 0.220	0.004 ± 0.024	0.000 ± 0.026	0.100 ± 0.270	0.001 ± 0.022

Table 16, Aquatic Flora - Fucus (pCi/g Wet)

Location	Collection Date	Isotope					
90-C		Cs-137	Fe-59	I-131	K-40	Mn-54	Nb-95
	02/17/09	-0.002 ± 0.024	-0.001 ± 0.062	0.028 ± 0.043	5.650 ± 0.790	-0.032 ± 0.026	-0.017 ± 0.027
	04/28/09	0.012 ± 0.021	-0.033 ± 0.044	0.039 ± 0.033	5.060 ± 0.630	-0.002 ± 0.020	0.000 ± 0.024
	08/31/09	-0.001 ± 0.034	-0.040 ± 0.110	-0.026 ± 0.057	6.500 ± 1.200	-0.016 ± 0.034	0.005 ± 0.031
	11/24/09	0.019 ± 0.026	-0.058 ± 0.055	-0.004 ± 0.088	6.500 ± 0.850	0.013 ± 0.026	0.002 ± 0.030
		Ru-103	Ru-106	Sb-125	Th-228	Zn-65	Zr-95
	02/17/09	-0.003 ± 0.023	0.210 ± 0.220	-0.007 ± 0.060	0.064 ± 0.099	0.010 ± 0.066	-0.020 ± 0.044
	04/28/09	0.001 ± 0.022	0.020 ± 0.170	0.039 ± 0.052	0.030 ± 0.100	0.032 ± 0.050	0.006 ± 0.033
	08/31/09	0.012 ± 0.027	-0.230 ± 0.270	0.017 ± 0.080	0.090 ± 0.140	0.013 ± 0.087	-0.017 ± 0.054
	11/24/09	-0.006 ± 0.029	0.000 ± 0.210	0.049 ± 0.066	0.070 ± 0.140	-0.024 ± 0.055	-0.016 ± 0.047

Table 17-A, Fish - Flounder (pCi/g Wet)

Location	Collection Date	Isotope					
32		**Ag-110m**	**Be-7**	**Co-58**	**Co-60**	**Cr-51**	**Cs-134**
	05/13/09	0.004 ± 0.034	0.020 ± 0.170	-0.008 ± 0.027	0.011 ± 0.029	-0.090 ± 0.250	0.009 ± 0.018
	08/18/09	0.008 ± 0.024	0.020 ± 0.150	-0.016 ± 0.016	-0.002 ± 0.018	-0.090 ± 0.150	-0.005 ± 0.012
	10/29/09	-0.004 ± 0.032	-0.110 ± 0.210	-0.010 ± 0.023	-0.008 ± 0.029	-0.110 ± 0.240	0.018 ± 0.022
		Cs-137	**Fe-59**	**I-131**	**K-40**	**Mn-54**	**Nb-95**
	05/13/09	-0.003 ± 0.023	-0.043 ± 0.060	0.012 ± 0.066	3.830 ± 0.780	-0.008 ± 0.029	0.000 ± 0.034
	08/18/09	0.019 ± 0.020	0.027 ± 0.038	0.006 ± 0.046	3.470 ± 0.580	-0.009 ± 0.019	0.011 ± 0.023
	10/29/09	-0.016 ± 0.026	0.032 ± 0.045	-0.027 ± 0.098	4.050 ± 0.880	-0.014 ± 0.028	-0.005 ± 0.033
		Ru-103	**Ru-106**	**Sb-125**	**Th-228**	**Zn-65**	**Zr-95**
	05/13/09	-0.030 ± 0.030	-0.030 ± 0.240	0.031 ± 0.057	-0.034 ± 0.084	-0.063 ± 0.067	0.005 ± 0.049
	08/18/09	-0.003 ± 0.018	-0.100 ± 0.170	0.028 ± 0.050	-0.019 ± 0.065	-0.007 ± 0.039	0.003 ± 0.030
	10/29/09	0.008 ± 0.030	-0.050 ± 0.240	-0.035 ± 0.066	0.005 ± 0.078	-0.015 ± 0.070	-0.029 ± 0.059
35		**Ag-110m**	**Be-7**	**Co-58**	**Co-60**	**Cr-51**	**Cs-134**
	05/13/09	0.005 ± 0.040	0.070 ± 0.210	0.004 ± 0.026	-0.015 ± 0.038	0.170 ± 0.230	-0.013 ± 0.018
	09/15/09	0.015 ± 0.026	0.010 ± 0.170	-0.006 ± 0.028	0.013 ± 0.028	-0.030 ± 0.170	0.006 ± 0.016
	10/01/09	0.005 ± 0.042	-0.030 ± 0.310	-0.018 ± 0.047	-0.006 ± 0.033	-0.290 ± 0.290	0.013 ± 0.023
		Cs-137	**Fe-59**	**I-131**	**K-40**	**Mn-54**	**Nb-95**
	05/13/09	-0.002 ± 0.030	-0.065 ± 0.069	-0.007 ± 0.069	4.070 ± 0.980	-0.013 ± 0.023	0.025 ± 0.024
	09/15/09	0.007 ± 0.027	-0.006 ± 0.054	-0.013 ± 0.049	3.270 ± 0.740	0.010 ± 0.023	0.005 ± 0.029
	10/01/09	0.004 ± 0.034	-0.038 ± 0.075	0.110 ± 0.120	3.900 ± 1.100	-0.001 ± 0.037	-0.009 ± 0.053
		Ru-103	**Ru-106**	**Sb-125**	**Th-228**	**Zn-65**	**Zr-95**
	05/13/09	0.009 ± 0.021	0.140 ± 0.200	0.012 ± 0.068	-0.058 ± 0.083	-0.041 ± 0.058	-0.003 ± 0.030
	09/15/09	-0.007 ± 0.022	-0.070 ± 0.180	0.000 ± 0.052	0.108 ± 0.083	-0.032 ± 0.050	0.015 ± 0.048
	10/01/09	0.009 ± 0.041	-0.180 ± 0.270	-0.051 ± 0.069	0.010 ± 0.100	-0.044 ± 0.083	0.004 ± 0.049

Table 17-B, Fish - Other (pCi/g Wet)

Location	Collection Date	Sample Type	Isotope				
32			**Ag-110m**	**Be-7**	**Co-58**	**Co-60**	**Cr-51**
	05/13/09	STRIPED BASS	-0.005 ± 0.041	-0.020 ± 0.200	0.017 ± 0.022	0.023 ± 0.043	0.070 ± 0.250
	09/01/09	TAUTOG	-0.014 ± 0.026	-0.020 ± 0.130	0.004 ± 0.021	0.011 ± 0.025	0.110 ± 0.140
	10/14/09	BLUEFISH	-0.039 ± 0.049	0.370 ± 0.260	0.012 ± 0.031	-0.034 ± 0.044	0.090 ± 0.220
			Cs-134	**Cs-137**	**Fe-59**	**I-131**	**K-40**
	05/13/09	STRIPED BASS	-0.024 ± 0.020	0.003 ± 0.027	0.010 ± 0.071	-0.036 ± 0.089	4.700 ± 1.100
	09/01/09	TAUTOG	-0.006 ± 0.014	0.008 ± 0.023	-0.002 ± 0.048	0.004 ± 0.031	4.630 ± 0.800
	10/14/09	BLUEFISH	-0.006 ± 0.023	-0.020 ± 0.044	0.000 ± 0.047	-0.027 ± 0.041	3.200 ± 1.100
			Mn-54	**Nb-95**	**Ru-103**	**Ru-106**	**Sb-125**
	05/13/09	STRIPED BASS	-0.021 ± 0.023	0.021 ± 0.035	-0.003 ± 0.028	-0.140 ± 0.270	0.013 ± 0.068
	09/01/09	TAUTOG	0.013 ± 0.020	-0.001 ± 0.019	0.009 ± 0.019	-0.040 ± 0.190	-0.028 ± 0.041
	10/14/09	BLUEFISH	-0.001 ± 0.030	0.007 ± 0.030	0.023 ± 0.029	-0.150 ± 0.290	-0.019 ± 0.074
			Th-228	**Zn-65**	**Zr-95**		
	05/13/09	STRIPED BASS	0.010 ± 0.100	-0.009 ± 0.076	-0.013 ± 0.048		
	09/01/09	TAUTOG	0.097 ± 0.067	0.004 ± 0.046	0.023 ± 0.037		
	10/14/09	BLUEFISH	-0.020 ± 0.120	0.012 ± 0.094	0.020 ± 0.060		
35			**Ag-110m**	**Be-7**	**Co-58**	**Co-60**	**Cr-51**
	06/17/09	STRIPED BASS	0.005 ± 0.035	-0.050 ± 0.180	0.000 ± 0.030	0.000 ± 0.037	0.060 ± 0.230
	07/15/09	TAUTOG	0.010 ± 0.032	0.000 ± 0.230	0.007 ± 0.025	0.005 ± 0.017	-0.060 ± 0.210
	10/09/09	TAUTOG	0.005 ± 0.050	0.000 ± 0.280	0.005 ± 0.033	-0.001 ± 0.029	0.190 ± 0.290
			Cs-134	**Cs-137**	**Fe-59**	**I-131**	**K-40**
	06/17/09	STRIPED BASS	-0.006 ± 0.014	0.017 ± 0.030	0.057 ± 0.065	0.065 ± 0.069	3.740 ± 0.980
	07/15/09	TAUTOG	-0.001 ± 0.021	0.007 ± 0.026	-0.024 ± 0.062	0.000 ± 0.048	3.490 ± 0.920
	10/09/09	TAUTOG	0.025 ± 0.022	0.014 ± 0.041	0.000 ± 0.083	0.005 ± 0.076	5.200 ± 1.400
			Mn-54	**Nb-95**	**Ru-103**	**Ru-106**	**Sb-125**
	06/17/09	STRIPED BASS	-0.011 ± 0.026	-0.001 ± 0.027	0.003 ± 0.028	-0.030 ± 0.210	-0.007 ± 0.061
	07/15/09	TAUTOG	0.028 ± 0.024	0.014 ± 0.035	-0.020 ± 0.026	-0.010 ± 0.270	-0.036 ± 0.066
	10/09/09	TAUTOG	0.004 ± 0.039	0.001 ± 0.053	-0.017 ± 0.034	-0.050 ± 0.310	0.075 ± 0.093
			Th-228	**Zn-65**	**Zr-95**		
	06/17/09	STRIPED BASS	-0.002 ± 0.095	0.021 ± 0.076	-0.027 ± 0.041		
	07/15/09	TAUTOG	-0.094 ± 0.092	-0.037 ± 0.080	0.025 ± 0.050		
	10/09/09	TAUTOG	-0.060 ± 0.130	0.033 ± 0.081	0.018 ± 0.072		
40-X			**Ag-110m**	**Be-7**	**Co-58**	**Co-60**	**Cr-51**
	03/25/09	FISH-OTHER	0.016 ± 0.038	0.120 ± 0.200	0.016 ± 0.033	-0.022 ± 0.045	-0.170 ± 0.250
	06/04/09	STRIPED BASS	-0.012 ± 0.034	-0.030 ± 0.150	0.013 ± 0.028	0.000 ± 0.018	0.030 ± 0.170
	12/30/09	STRIPED BASS	-0.008 ± 0.018	-0.040 ± 0.140	0.010 ± 0.017	0.005 ± 0.014	0.020 ± 0.140
			Cs-134	**Cs-137**	**Fe-59**	**I-131**	**K-40**
	03/25/09	FISH-OTHER	0.005 ± 0.020	0.018 ± 0.029	-0.010 ± 0.076	0.033 ± 0.076	4.000 ± 1.000
	06/04/09	STRIPED BASS	-0.008 ± 0.019	0.032 ± 0.033	-0.032 ± 0.087	0.000 ± 0.040	3.600 ± 1.000
	12/30/09	STRIPED BASS	0.004 ± 0.013	-0.003 ± 0.016	-0.017 ± 0.032	0.002 ± 0.036	3.450 ± 0.520
			Mn-54	**Nb-95**	**Ru-103**	**Ru-106**	**Sb-125**
	03/25/09	FISH-OTHER	0.004 ± 0.029	-0.020 ± 0.029	0.000 ± 0.022	-0.100 ± 0.270	0.014 ± 0.058
	06/04/09	STRIPED BASS	-0.016 ± 0.031	-0.016 ± 0.030	-0.010 ± 0.025	0.000 ± 0.250	-0.015 ± 0.068
	12/30/09	STRIPED BASS	-0.002 ± 0.015	-0.004 ± 0.019	-0.002 ± 0.017	-0.040 ± 0.150	-0.020 ± 0.037

Table 17-B, Fish - Other (pCi/g Wet)

Location	Collection Date	Sample Type	Isotope		
			Th-228	Zn-65	Zr-95
40-X					
	03/25/09	FISH-OTHER	0.050 ± 0.110	-0.009 ± 0.062	-0.021 ± 0.039
	06/04/09	STRIPED BASS	-0.013 ± 0.091	-0.028 ± 0.065	0.010 ± 0.036
	12/30/09	STRIPED BASS	0.016 ± 0.064	-0.013 ± 0.037	-0.004 ± 0.023

Table 18, Mussels (pCi/g Wet)

Location	Collection Date	Ag-110m	Be-7	Co-58	Co-60	Cr-51	Cs-134
28	03/31/09	-0.006 ± 0.035 J	0.250 ± 0.240	0.002 ± 0.019	0.003 ± 0.038	0.060 ± 0.270	-0.004 ± 0.021
	06/24/09	-0.004 ± 0.031 K	0.210 ± 0.220	0.008 ± 0.019	0.007 ± 0.030	-0.210 ± 0.180	-0.002 ± 0.019
30	03/23/09	0.006 ± 0.038	0.110 ± 0.170	0.011 ± 0.026	0.004 ± 0.032	-0.150 ± 0.280	0.005 ± 0.022
	06/23/09	-0.016 ± 0.026	0.070 ± 0.160	0.003 ± 0.021	-0.021 ± 0.028	0.010 ± 0.180	-0.003 ± 0.017
	09/23/09	-0.005 ± 0.025	0.000 ± 0.120	-0.007 ± 0.019	0.000 ± 0.019	-0.100 ± 0.150	0.001 ± 0.012
	11/30/09	0.007 ± 0.029	0.150 ± 0.240	0.024 ± 0.030	0.005 ± 0.024	0.080 ± 0.230	-0.006 ± 0.021

Location	Collection Date	Cs-137	Fe-59	I-131	K-40	Mn-54	Nb-95
28	03/31/09	-0.011 ± 0.026	0.039 ± 0.062	0.009 ± 0.054	1.460 ± 0.750	0.000 ± 0.031	0.002 ± 0.022
	06/24/09	-0.010 ± 0.026	-0.007 ± 0.054	0.014 ± 0.045	1.330 ± 0.640	0.004 ± 0.025	0.010 ± 0.026
30	03/23/09	-0.008 ± 0.031	0.011 ± 0.065	-0.033 ± 0.087	1.760 ± 0.780	0.000 ± 0.026	0.021 ± 0.031
	06/23/09	0.010 ± 0.026	-0.015 ± 0.063	0.042 ± 0.038	1.910 ± 0.700	0.000 ± 0.023	0.009 ± 0.025
	09/23/09	0.000 ± 0.018	-0.035 ± 0.045	-0.007 ± 0.046	2.080 ± 0.500	0.018 ± 0.017	-0.009 ± 0.019
	11/30/09	0.028 ± 0.027	-0.040 ± 0.058	0.015 ± 0.059	1.750 ± 0.650	0.007 ± 0.024	0.007 ± 0.032

Location	Collection Date	Ru-103	Ru-106	Sb-125	Th-228	Zn-65	Zr-95
28	03/31/09	-0.035 ± 0.030	-0.010 ± 0.260	-0.007 ± 0.078	-0.010 ± 0.110	0.020 ± 0.086	-0.026 ± 0.050
	06/24/09	0.010 ± 0.027	0.020 ± 0.200	0.045 ± 0.059	-0.138 ± 0.098	0.038 ± 0.051	0.021 ± 0.042
30	03/23/09	-0.007 ± 0.033	-0.110 ± 0.280	0.015 ± 0.058	-0.100 ± 0.120	-0.050 ± 0.066	0.017 ± 0.040
	06/23/09	0.002 ± 0.022	0.180 ± 0.210	0.010 ± 0.049	0.025 ± 0.090	0.010 ± 0.053	-0.001 ± 0.034
	09/23/09	0.004 ± 0.017	0.020 ± 0.160	0.000 ± 0.040	0.030 ± 0.066	-0.011 ± 0.046	-0.021 ± 0.028
	11/30/09	-0.003 ± 0.024	-0.050 ± 0.270	0.019 ± 0.074	0.030 ± 0.110	-0.016 ± 0.063	-0.029 ± 0.037

Table 19, Oysters (pCi/g Wet)

Location	Collection Date	Ag-110m	Be-7	Co-58	Co-60	Cr-51	Cs-134
31	03/11/09	-0.025 ± 0.061	-0.290 ± 0.230	0.025 ± 0.033	-0.012 ± 0.042	0.060 ± 0.300	-0.012 ± 0.025
	06/03/09	0.009 ± 0.028	0.040 ± 0.180	-0.003 ± 0.019	-0.004 ± 0.019	-0.030 ± 0.190	-0.006 ± 0.017
	09/14/09	-0.008 ± 0.020	0.110 ± 0.120	0.004 ± 0.015	0.003 ± 0.016	-0.050 ± 0.150	0.005 ± 0.012
	12/29/09	-0.013 ± 0.020	0.060 ± 0.130	-0.015 ± 0.016	-0.003 ± 0.015	0.050 ± 0.160	-0.005 ± 0.017

Location	Collection Date	Cs-137	Fe-59	I-131	K-40	Mn-54	Nb-95
31	03/11/09	0.008 ± 0.033	-0.014 ± 0.075	0.012 ± 0.041	1.720 ± 0.860	-0.019 ± 0.030	-0.024 ± 0.036
	06/03/09	0.015 ± 0.025	-0.007 ± 0.043	0.028 ± 0.036	2.120 ± 0.630	0.003 ± 0.020	0.030 ± 0.029
	09/14/09	0.015 ± 0.016	-0.024 ± 0.034	0.002 ± 0.031	1.680 ± 0.370	-0.005 ± 0.014	-0.009 ± 0.020
	12/29/09	0.001 ± 0.015	-0.013 ± 0.036	0.002 ± 0.041	1.730 ± 0.370	-0.006 ± 0.015	-0.006 ± 0.020

Location	Collection Date	Ru-103	Ru-106	Sb-125	Th-228	Zn-65	Zr-95
31	03/11/09	-0.009 ± 0.029	0.310 ± 0.280	-0.098 ± 0.090	-0.050 ± 0.130	-0.015 ± 0.089	0.014 ± 0.051
	06/03/09	0.003 ± 0.024	0.060 ± 0.230	0.039 ± 0.060	0.033 ± 0.094	0.006 ± 0.063	0.018 ± 0.032
	09/14/09	-0.013 ± 0.018	0.080 ± 0.150	0.024 ± 0.036	0.009 ± 0.050	-0.028 ± 0.040	0.015 ± 0.026
	12/29/09	-0.010 ± 0.019	0.010 ± 0.140	0.021 ± 0.043	-0.008 ± 0.060	0.028 ± 0.050	0.006 ± 0.027

Location	Collection Date	Ag-110m	Be-7	Co-58	Co-60	Cr-51	Cs-134
32	03/10/09	0.005 ± 0.025	0.010 ± 0.120	0.004 ± 0.014	0.007 ± 0.019	-0.100 ± 0.130	-0.008 ± 0.013
	05/27/09	0.078 ± 0.055	0.060 ± 0.220	-0.018 ± 0.029	0.007 ± 0.023	0.090 ± 0.210	0.002 ± 0.020
	07/08/09	0.022 ± 0.028	0.100 ± 0.170	0.017 ± 0.018	0.003 ± 0.024	0.140 ± 0.210	0.002 ± 0.015
	12/29/09	0.025 ± 0.029	0.070 ± 0.200	-0.021 ± 0.023	0.007 ± 0.025	0.040 ± 0.180	0.002 ± 0.016

Location	Collection Date	Cs-137	Fe-59	I-131	K-40	Mn-54	Nb-95
32	03/10/09	-0.020 ± 0.019	0.011 ± 0.041	-0.011 ± 0.025	1.930 ± 0.410	0.002 ± 0.014	0.015 ± 0.020
	05/27/09	-0.019 ± 0.053	0.021 ± 0.046	0.000 ± 0.043	1.100 ± 0.680	0.004 ± 0.029	0.023 ± 0.040
	07/08/09	-0.030 ± 0.021	0.016 ± 0.041	-0.004 ± 0.051	2.390 ± 0.560	0.000 ± 0.020	0.003 ± 0.028
	12/29/09	-0.035 ± 0.029	0.033 ± 0.052	0.022 ± 0.048	2.180 ± 0.580	0.020 ± 0.023	0.011 ± 0.026

Location	Collection Date	Ru-103	Ru-106	Sb-125	Th-228	Zn-65	Zr-95
32	03/10/09	0.006 ± 0.019	0.060 ± 0.140	0.010 ± 0.037	-0.030 ± 0.063	-0.013 ± 0.037	-0.026 ± 0.032
	05/27/09	0.031 ± 0.032	0.040 ± 0.260	0.041 ± 0.064	-0.130 ± 0.110	-0.043 ± 0.074	-0.002 ± 0.048
	07/08/09	-0.010 ± 0.026	0.100 ± 0.180	0.055 ± 0.056	-0.034 ± 0.076	0.008 ± 0.050	-0.014 ± 0.027
	12/29/09	0.004 ± 0.024	0.100 ± 0.200	-0.036 ± 0.046	0.009 ± 0.080	-0.011 ± 0.052	0.027 ± 0.037

Location	Collection Date	Ag-110m	Be-7	Co-58	Co-60	Cr-51	Cs-134
34-X	03/11/09	-0.005 ± 0.034	-0.200 ± 0.210	-0.007 ± 0.030	0.000 ± 0.035	-0.020 ± 0.170	-0.025 ± 0.023
	06/03/09	0.015 ± 0.036	-0.130 ± 0.200	0.016 ± 0.035	0.008 ± 0.041	0.020 ± 0.200	0.016 ± 0.020
	09/14/09	-0.006 ± 0.020	0.040 ± 0.120	0.009 ± 0.016	-0.003 ± 0.015	0.020 ± 0.120	0.002 ± 0.010
	12/29/09	0.000 ± 0.029	0.010 ± 0.140	-0.007 ± 0.021	0.007 ± 0.018	-0.140 ± 0.140	0.004 ± 0.015

Location	Collection Date	Cs-137	Fe-59	I-131	K-40	Mn-54	Nb-95
34-X	03/11/09	0.009 ± 0.023	-0.006 ± 0.062	0.037 ± 0.037	1.620 ± 0.660	-0.004 ± 0.026	-0.013 ± 0.028
	06/03/09	-0.004 ± 0.033	0.006 ± 0.079	0.000 ± 0.045	2.570 ± 0.970	-0.010 ± 0.025	0.008 ± 0.030
	09/14/09	0.005 ± 0.013	0.004 ± 0.025	-0.018 ± 0.032	2.070 ± 0.390	-0.011 ± 0.013	-0.005 ± 0.014
	12/29/09	0.007 ± 0.019	0.020 ± 0.042	0.048 ± 0.047	1.700 ± 0.530	-0.004 ± 0.017	0.002 ± 0.023

Table 19, Oysters (pCi/g Wet)

Location	Collection Date	Isotope					
34-X		Ru-103	Ru-106	Sb-125	Th-228	Zn-65	Zr-95
	03/11/09	0.014 ± 0.021	0.130 ± 0.310	0.022 ± 0.061	0.050 ± 0.120	-0.083 ± 0.077	0.032 ± 0.056
	06/03/09	0.008 ± 0.032	0.020 ± 0.230	-0.019 ± 0.080	-0.084 ± 0.097	0.049 ± 0.076	0.004 ± 0.047
	09/14/09	0.003 ± 0.014	-0.010 ± 0.130	0.012 ± 0.034	-0.023 ± 0.052	-0.009 ± 0.032	-0.012 ± 0.022
	12/29/09	-0.003 ± 0.021	0.010 ± 0.180	-0.017 ± 0.045	0.047 ± 0.088	-0.014 ± 0.039	0.001 ± 0.029
37-C		Ag-110m	Be-7	Co-58	Co-60	Cr-51	Cs-134
	03/10/09	-0.025 ± 0.033	-0.140 ± 0.160	0.012 ± 0.027	0.004 ± 0.024	-0.070 ± 0.190	0.014 ± 0.019
	06/02/09	0.000 ± 0.028	-0.060 ± 0.190	-0.030 ± 0.024	0.000 ± 0.035	-0.050 ± 0.150	0.006 ± 0.023
	09/14/09	-0.028 ± 0.022	0.050 ± 0.160	0.008 ± 0.019	-0.003 ± 0.023	-0.160 ± 0.120	0.009 ± 0.014
	12/28/09	0.002 ± 0.020	0.060 ± 0.130	0.004 ± 0.016	0.003 ± 0.013	-0.020 ± 0.140	-0.007 ± 0.011
		Cs-137	Fe-59	I-131	K-40	Mn-54	Nb-95
	03/10/09	-0.016 ± 0.018	0.025 ± 0.045	-0.025 ± 0.040	2.480 ± 0.680	-0.017 ± 0.020	-0.008 ± 0.027
	06/02/09	-0.019 ± 0.033	-0.016 ± 0.058	0.010 ± 0.053	2.070 ± 0.930	0.000 ± 0.027	-0.016 ± 0.029
	09/14/09	0.002 ± 0.020	0.022 ± 0.053	0.003 ± 0.049	2.080 ± 0.570	-0.009 ± 0.018	-0.002 ± 0.021
	12/28/09	0.003 ± 0.015	-0.001 ± 0.028	-0.017 ± 0.038	2.260 ± 0.420	-0.007 ± 0.013	-0.013 ± 0.020
		Ru-103	Ru-106	Sb-125	Th-228	Zn-65	Zr-95
	03/10/09	0.000 ± 0.028	0.140 ± 0.220	0.048 ± 0.058	-0.023 ± 0.085	-0.024 ± 0.068	0.010 ± 0.036
	06/02/09	-0.004 ± 0.023	-0.090 ± 0.320	0.027 ± 0.074	0.010 ± 0.110	-0.020 ± 0.079	-0.025 ± 0.054
	09/14/09	-0.005 ± 0.017	0.020 ± 0.170	-0.026 ± 0.043	0.063 ± 0.079	0.015 ± 0.038	-0.005 ± 0.029
	12/28/09	-0.012 ± 0.016	-0.110 ± 0.130	-0.025 ± 0.041	0.073 ± 0.058	-0.022 ± 0.039	-0.004 ± 0.026
88-I		Ag-110m	Be-7	Co-58	Co-60	Cr-51	Cs-134
	03/11/09	0.023 ± 0.038	-0.100 ± 0.260	0.014 ± 0.027	0.020 ± 0.034	-0.020 ± 0.180	0.001 ± 0.018
	06/02/09	-0.032 ± 0.056	-0.070 ± 0.200	0.023 ± 0.043	0.008 ± 0.029	-0.190 ± 0.210	0.003 ± 0.022
	08/31/09	0.002 ± 0.026	-0.030 ± 0.180	-0.004 ± 0.021	0.000 ± 0.017	0.040 ± 0.160	-0.003 ± 0.015
	12/28/09	-0.007 ± 0.028	-0.140 ± 0.180	-0.005 ± 0.017	-0.003 ± 0.024	-0.040 ± 0.170	0.006 ± 0.012
		Cs-137	Fe-59	I-131	K-40	Mn-54	Nb-95
	03/11/09	0.014 ± 0.027	-0.004 ± 0.047	0.008 ± 0.045	1.820 ± 0.690	-0.018 ± 0.023	0.014 ± 0.032
	06/02/09	-0.003 ± 0.032	-0.095 ± 0.087	-0.006 ± 0.049	1.690 ± 0.910	0.022 ± 0.031	0.001 ± 0.022
	08/31/09	0.006 ± 0.015	0.053 ± 0.044	0.021 ± 0.039	1.790 ± 0.530	-0.010 ± 0.019	0.003 ± 0.022
	12/28/09	0.005 ± 0.024	0.024 ± 0.047	-0.044 ± 0.057	2.020 ± 0.510	-0.020 ± 0.023	-0.022 ± 0.028
		Ru-103	Ru-106	Sb-125	Th-228	Zn-65	Zr-95
	03/11/09	0.007 ± 0.031	-0.230 ± 0.260	0.034 ± 0.072	0.040 ± 0.100	-0.017 ± 0.060	0.025 ± 0.039
	06/02/09	0.022 ± 0.032	-0.090 ± 0.320	0.083 ± 0.065	0.020 ± 0.140	-0.023 ± 0.092	0.023 ± 0.053
	08/31/09	-0.008 ± 0.019	-0.090 ± 0.170	0.057 ± 0.056	0.062 ± 0.086	0.000 ± 0.045	0.021 ± 0.032
	12/28/09	0.013 ± 0.020	-0.170 ± 0.150	-0.010 ± 0.052	0.011 ± 0.078	-0.004 ± 0.050	-0.032 ± 0.037

Table 20, Clams (pCi/g Wet)

Location	Collection Date	Ag-110m	Be-7	Co-58	Co-60	Cr-51	Cs-134
29	01/08/09	0.016 ± 0.038	0.140 ± 0.170	0.011 ± 0.024	0.000 ± 0.023	-0.010 ± 0.140	-0.002 ± 0.014
	06/17/09	-0.014 ± 0.031	0.070 ± 0.190	-0.030 ± 0.026	0.012 ± 0.033	-0.140 ± 0.250	0.000 ± 0.017
	07/20/09	-0.014 ± 0.026	0.170 ± 0.170	0.020 ± 0.024	-0.013 ± 0.021	0.050 ± 0.190	0.006 ± 0.015
	11/05/09	0.011 ± 0.042	0.320 ± 0.270	0.000 ± 0.042	-0.022 ± 0.025	-0.080 ± 0.280	-0.012 ± 0.018

Location	Collection Date	Cs-137	Fe-59	I-131	K-40	Mn-54	Nb-95
29	01/08/09	0.006 ± 0.020	-0.005 ± 0.050	0.003 ± 0.027	1.980 ± 0.690	0.019 ± 0.025	0.018 ± 0.020
	06/17/09	-0.002 ± 0.018	-0.036 ± 0.050	0.048 ± 0.078	2.100 ± 0.740	0.010 ± 0.024	-0.015 ± 0.028
	07/20/09	0.008 ± 0.023	-0.005 ± 0.048	0.004 ± 0.052	1.700 ± 0.570	-0.007 ± 0.023	-0.007 ± 0.023
	11/05/09	0.000 ± 0.038	-0.052 ± 0.074	0.033 ± 0.087	2.900 ± 1.000	0.003 ± 0.029	-0.006 ± 0.044

Location	Collection Date	Ru-103	Ru-106	Sb-125	Th-228	Zn-65	Zr-95
29	01/08/09	0.009 ± 0.020	-0.170 ± 0.190	0.026 ± 0.049	0.058 ± 0.093	0.021 ± 0.067	-0.044 ± 0.038
	06/17/09	-0.023 ± 0.022	-0.170 ± 0.230	0.006 ± 0.062	-0.034 ± 0.075	-0.008 ± 0.055	0.014 ± 0.055
	07/20/09	0.004 ± 0.025	-0.120 ± 0.190	0.000 ± 0.050	-0.023 ± 0.092	0.002 ± 0.041	-0.022 ± 0.036
	11/05/09	-0.009 ± 0.028	0.000 ± 0.330	0.030 ± 0.073	-0.020 ± 0.130	0.026 ± 0.051	-0.017 ± 0.062

Location	Collection Date	Ag-110m	Be-7	Co-58	Co-60	Cr-51	Cs-134
35-X	01/06/09	0.013 ± 0.039	0.100 ± 0.170	-0.016 ± 0.029	0.005 ± 0.024	-0.150 ± 0.150	-0.021 ± 0.017
	05/11/09	-0.005 ± 0.035	-0.220 ± 0.220	0.004 ± 0.014	-0.011 ± 0.033	0.020 ± 0.180	-0.008 ± 0.018
	07/20/09	-0.021 ± 0.045	0.000 ± 0.200	-0.012 ± 0.028	-0.015 ± 0.035	-0.180 ± 0.250	0.019 ± 0.020
	11/03/09	-0.006 ± 0.037	-0.030 ± 0.220	-0.004 ± 0.031	0.023 ± 0.023	0.190 ± 0.200	0.003 ± 0.019

Location	Collection Date	Cs-137	Fe-59	I-131	K-40	Mn-54	Nb-95
35-X	01/06/09	0.015 ± 0.022	0.004 ± 0.048	-0.003 ± 0.033	1.940 ± 0.670	0.009 ± 0.020	-0.033 ± 0.025
	05/11/09	-0.013 ± 0.022	0.008 ± 0.048	0.000 ± 0.089	1.300 ± 0.670	-0.004 ± 0.022	-0.002 ± 0.025
	07/20/09	0.006 ± 0.029	-0.026 ± 0.047	-0.022 ± 0.055	1.540 ± 0.640	-0.001 ± 0.021	-0.018 ± 0.036
	11/03/09	-0.023 ± 0.032	0.000 ± 0.049	0.035 ± 0.046	2.070 ± 0.840	-0.008 ± 0.026	-0.001 ± 0.036

Location	Collection Date	Ru-103	Ru-106	Sb-125	Th-228	Zn-65	Zr-95
35-X	01/06/09	0.012 ± 0.020	-0.240 ± 0.230	0.011 ± 0.053	0.041 ± 0.097	0.007 ± 0.074	-0.028 ± 0.045
	05/11/09	-0.007 ± 0.028	-0.060 ± 0.220	-0.052 ± 0.045	0.050 ± 0.110	0.014 ± 0.062	-0.020 ± 0.047
	07/20/09	0.003 ± 0.029	0.100 ± 0.280	-0.020 ± 0.059	0.040 ± 0.110	0.035 ± 0.073	0.041 ± 0.048
	11/03/09	0.007 ± 0.028	-0.120 ± 0.180	0.022 ± 0.062	-0.050 ± 0.130	0.020 ± 0.048	-0.014 ± 0.051

Location	Collection Date	Ag-110m	Be-7	Co-58	Co-60	Cr-51	Cs-134
38	01/06/09	-0.038 ± 0.038	-0.020 ± 0.220	-0.006 ± 0.028	0.008 ± 0.025	-0.090 ± 0.200	-0.010 ± 0.018
	05/11/09	-0.008 ± 0.026	-0.070 ± 0.140	-0.016 ± 0.025	0.002 ± 0.018	0.220 ± 0.210	0.011 ± 0.014
	07/20/09	0.016 ± 0.039	-0.170 ± 0.190	-0.012 ± 0.026	0.006 ± 0.025	-0.030 ± 0.180	0.001 ± 0.017
	11/03/09	0.021 ± 0.029	0.040 ± 0.240	0.014 ± 0.028	-0.005 ± 0.025	0.110 ± 0.240	0.008 ± 0.020

Location	Collection Date	Cs-137	Fe-59	I-131	K-40	Mn-54	Nb-95
38	01/06/09	0.017 ± 0.033	-0.033 ± 0.052	0.023 ± 0.044	1.530 ± 0.640	-0.007 ± 0.020	-0.008 ± 0.030
	05/11/09	0.012 ± 0.019	0.004 ± 0.047	0.033 ± 0.073	1.630 ± 0.470	-0.004 ± 0.017	0.003 ± 0.030
	07/20/09	-0.001 ± 0.015	-0.005 ± 0.059	0.016 ± 0.057	1.440 ± 0.700	0.000 ± 0.021	-0.003 ± 0.017
	11/03/09	0.011 ± 0.032	-0.041 ± 0.059	-0.034 ± 0.049	3.150 ± 0.850	0.008 ± 0.023	0.012 ± 0.041

Table 20, Clams (pCi/g Wet)

Location	Collection Date	Ru-103	Ru-106	Sb-125	Th-228	Zn-65	Zr-95
38	01/06/09	0.013 ± 0.019	0.020 ± 0.230	-0.006 ± 0.053	0.070 ± 0.100	0.025 ± 0.073	0.020 ± 0.037
	05/11/09	0.001 ± 0.023	-0.040 ± 0.190	-0.015 ± 0.044	0.012 ± 0.066	-0.013 ± 0.051	0.021 ± 0.045
	07/20/09	-0.019 ± 0.023	0.150 ± 0.240	-0.007 ± 0.063	-0.043 ± 0.095	0.016 ± 0.057	-0.003 ± 0.038
	11/03/09	0.017 ± 0.021	0.000 ± 0.210	-0.039 ± 0.063	-0.020 ± 0.110	0.008 ± 0.059	0.012 ± 0.049

Location	Collection Date	Ag-110m	Be-7	Co-58	Co-60	Cr-51	Cs-134
39-X	01/08/09	0.013 ± 0.034	-0.040 ± 0.190	0.012 ± 0.024	0.004 ± 0.016	-0.030 ± 0.210	0.008 ± 0.019
	06/17/09	0.009 ± 0.028	-0.030 ± 0.190	-0.007 ± 0.019	-0.003 ± 0.025	0.040 ± 0.190	-0.009 ± 0.016
	09/14/09	0.033 ± 0.030	0.060 ± 0.160	-0.010 ± 0.020	0.009 ± 0.023	0.140 ± 0.180	0.009 ± 0.015
	12/01/09	0.000 ± 0.032	0.100 ± 0.170	-0.013 ± 0.024	0.014 ± 0.037	-0.010 ± 0.170	-0.002 ± 0.019

Location	Collection Date	Cs-137	Fe-59	I-131	K-40	Mn-54	Nb-95
39-X	01/08/09	-0.003 ± 0.023	0.007 ± 0.053	0.000 ± 0.033	2.090 ± 0.770	0.012 ± 0.024	-0.004 ± 0.020
	06/17/09	0.005 ± 0.018	-0.012 ± 0.050	0.052 ± 0.061	2.200 ± 0.540	-0.026 ± 0.024	0.020 ± 0.025
	09/14/09	-0.001 ± 0.022	0.020 ± 0.052	0.036 ± 0.056	1.680 ± 0.530	-0.003 ± 0.016	0.013 ± 0.025
	12/01/09	-0.020 ± 0.027	0.011 ± 0.060	-0.012 ± 0.036	2.020 ± 0.710	-0.005 ± 0.023	-0.020 ± 0.025

Location	Collection Date	Ru-103	Ru-106	Sb-125	Th-228	Zn-65	Zr-95
39-X	01/08/09	0.002 ± 0.026	0.060 ± 0.240	0.040 ± 0.052	0.041 ± 0.089	-0.023 ± 0.064	0.004 ± 0.034
	06/17/09	0.004 ± 0.022	-0.090 ± 0.190	0.021 ± 0.046	-0.026 ± 0.071	0.030 ± 0.047	0.012 ± 0.039
	09/14/09	-0.012 ± 0.020	-0.040 ± 0.190	0.014 ± 0.044	-0.020 ± 0.072	0.014 ± 0.040	0.003 ± 0.034
	12/01/09	0.021 ± 0.024	-0.200 ± 0.240	0.035 ± 0.062	-0.078 ± 0.092	-0.035 ± 0.073	0.011 ± 0.042

Table 22, Lobsters (pCi/g Wet)

Location	Collection Date	Ag-110m	Be-7	Co-58	Co-60	Cr-51	Cs-134
32	02/02/09	0.016 ± 0.038	-0.140 ± 0.230	-0.008 ± 0.032	-0.016 ± 0.033	0.160 ± 0.210	-0.003 ± 0.022
	05/04/09	0.000 ± 0.039	0.030 ± 0.190	0.006 ± 0.017	-0.016 ± 0.022	0.080 ± 0.240	0.006 ± 0.025
	07/13/09	-0.005 ± 0.042	-0.100 ± 0.270	-0.021 ± 0.020	0.005 ± 0.025	0.190 ± 0.270	-0.015 ± 0.021
	11/10/09	0.026 ± 0.042	-0.220 ± 0.320	0.022 ± 0.035	-0.003 ± 0.042	-0.070 ± 0.250	-0.015 ± 0.027

Location	Collection Date	Cs-137	Fe-59	I-131	K-40	Mn-54	Nb-95
32	02/02/09	-0.009 ± 0.019	-0.008 ± 0.073	0.008 ± 0.041	2.010 ± 0.740	-0.029 ± 0.027	-0.016 ± 0.037
	05/04/09	0.001 ± 0.032	-0.074 ± 0.069	0.013 ± 0.052	1.700 ± 0.850	0.025 ± 0.028	0.014 ± 0.037
	07/13/09	-0.009 ± 0.026	-0.042 ± 0.067	-0.036 ± 0.054	2.440 ± 0.790	-0.017 ± 0.024	0.002 ± 0.027
	11/10/09	-0.001 ± 0.043	0.029 ± 0.070	0.019 ± 0.062	2.300 ± 0.990	0.008 ± 0.028	-0.019 ± 0.044

Location	Collection Date	Ru-103	Ru-106	Sb-125	Th-228	Zn-65	Zr-95
32	02/02/09	0.012 ± 0.023	-0.040 ± 0.250	0.020 ± 0.075	0.010 ± 0.110	-0.068 ± 0.076	-0.010 ± 0.052
	05/04/09	-0.008 ± 0.027	-0.100 ± 0.360	0.018 ± 0.080	-0.040 ± 0.120	-0.012 ± 0.073	-0.001 ± 0.058
	07/13/09	-0.002 ± 0.028	-0.110 ± 0.290	-0.069 ± 0.059	-0.090 ± 0.100	0.012 ± 0.055	0.025 ± 0.035
	11/10/09	0.010 ± 0.027	0.130 ± 0.270	-0.021 ± 0.080	-0.040 ± 0.140	-0.014 ± 0.085	0.012 ± 0.076

Location	Collection Date	Ag-110m	Be-7	Co-58	Co-60	Cr-51	Cs-134
35	02/02/09	0.006 ± 0.033	-0.080 ± 0.210	0.005 ± 0.019	0.025 ± 0.023	-0.110 ± 0.170	-0.007 ± 0.021
	05/04/09	-0.013 ± 0.035	0.070 ± 0.210	0.003 ± 0.022	-0.008 ± 0.027	0.040 ± 0.180	-0.010 ± 0.016
	07/13/09	-0.024 ± 0.053	-0.040 ± 0.260	0.030 ± 0.030	0.005 ± 0.046	-0.030 ± 0.270	0.004 ± 0.021
	11/03/09	-0.014 ± 0.037	0.120 ± 0.250	-0.012 ± 0.028	-0.007 ± 0.024	0.030 ± 0.190	-0.020 ± 0.021

Location	Collection Date	Cs-137	Fe-59	I-131	K-40	Mn-54	Nb-95
35	02/02/09	-0.013 ± 0.021	-0.002 ± 0.037	-0.003 ± 0.039	2.450 ± 0.610	-0.018 ± 0.021	-0.022 ± 0.023
	05/04/09	-0.005 ± 0.024	0.030 ± 0.043	-0.009 ± 0.048	2.280 ± 0.700	-0.006 ± 0.020	0.012 ± 0.028
	07/13/09	-0.009 ± 0.034	0.014 ± 0.075	-0.038 ± 0.069	2.420 ± 0.980	-0.035 ± 0.033	-0.025 ± 0.033
	11/03/09	0.009 ± 0.033	0.044 ± 0.059	-0.012 ± 0.047	1.700 ± 0.600	-0.013 ± 0.023	-0.017 ± 0.031

Location	Collection Date	Ru-103	Ru-106	Sb-125	Th-228	Zn-65	Zr-95
35	02/02/09	0.000 ± 0.021	-0.060 ± 0.220	0.012 ± 0.059	-0.015 ± 0.083	-0.093 ± 0.061	0.012 ± 0.033
	05/04/09	-0.024 ± 0.028	0.070 ± 0.270	-0.033 ± 0.068	0.029 ± 0.097	-0.049 ± 0.057	0.026 ± 0.034
	07/13/09	0.018 ± 0.037	0.150 ± 0.290	0.010 ± 0.062	0.040 ± 0.130	-0.014 ± 0.063	-0.012 ± 0.058
	11/03/09	0.023 ± 0.026	0.030 ± 0.240	-0.040 ± 0.059	0.055 ± 0.089	-0.079 ± 0.063	-0.007 ± 0.051

Location	Collection Date	Ag-110m	Be-7	Co-58	Co-60	Cr-51	Cs-134
37-X	02/02/09	-0.012 ± 0.037	-0.210 ± 0.230	-0.013 ± 0.024	0.004 ± 0.033	0.110 ± 0.260	0.007 ± 0.015
	05/06/09	-0.004 ± 0.033	0.120 ± 0.200	-0.022 ± 0.030	-0.008 ± 0.023	0.020 ± 0.200	-0.002 ± 0.019
	07/20/09	-0.020 ± 0.037	-0.180 ± 0.250	0.001 ± 0.033	-0.008 ± 0.024	0.010 ± 0.240	0.014 ± 0.019
	11/10/09	-0.021 ± 0.051	0.090 ± 0.270	-0.011 ± 0.039	-0.014 ± 0.053	-0.060 ± 0.240	-0.004 ± 0.026

Location	Collection Date	Cs-137	Fe-59	I-131	K-40	Mn-54	Nb-95
37-X	02/02/09	0.005 ± 0.026	-0.040 ± 0.070	-0.009 ± 0.048	2.730 ± 0.890	0.012 ± 0.030	0.003 ± 0.026
	05/06/09	-0.007 ± 0.024	0.014 ± 0.066	-0.008 ± 0.040	2.050 ± 0.660	0.006 ± 0.021	-0.009 ± 0.028
	07/20/09	0.008 ± 0.026	0.068 ± 0.064	0.037 ± 0.072	2.430 ± 0.880	0.033 ± 0.031	-0.007 ± 0.043
	11/10/09	-0.005 ± 0.044	-0.050 ± 0.110	-0.056 ± 0.065	2.400 ± 1.100	-0.004 ± 0.027	-0.004 ± 0.038

Table 22, Lobsters (pCi/g Wet)

Location	Collection Date	Isotope					
37-X		Ru-103	Ru-106	Sb-125	Th-228	Zn-65	Zr-95
	02/02/09	0.016 ± 0.028	-0.200± 0.250	-0.038 ± 0.072	0.000 ± 0.098	-0.031 ± 0.061	-0.010 ± 0.037
	05/06/09	0.016 ± 0.030	0.120 ± 0.230	0.006 ± 0.061	-0.109 ± 0.085	-0.014 ± 0.056	-0.005 ± 0.039
	07/20/09	0.011 ± 0.031	-0.030± 0.290	0.032 ± 0.076	-0.020 ± 0.110	-0.022 ± 0.062	0.023 ± 0.037
	11/10/09	-0.011 ± 0.027	-0.100± 0.350	-0.012 ± 0.074	0.040 ± 0.130	-0.032 ± 0.079	0.019 ± 0.060

NOTES FOR DATA TABLES

#	Collection Dates for Air Particulates and Iodines are listed as Monday through Sunday, however the typical change-out days are on Tuesdays
A	Moved sampler at Bird Sanctuary (location 03) to new area on April 7, 2009, approximately 75 feet southeast of previous location
B	Moved sampler at Norwich (location 15) to new area on June 2, 2009, approximately 800 feet northwest of previous location
C	Low volume (5,743 cubic feet, 77 hours) of air sampled during sampling week of June 30, 2009 to July 7, 2009 at Bird Sanctuary (location 03), caused by blown fuse.
D	Air sampler at Bird Sanctuary (location 03) experienced loss of power from November 27, 2009 09:19 to November 28, 2009 14:33. 11,188 cubic feet of air was sampled. Loss of power was caused by a blown fuse.
E	Air sampler at Niantic location (location 27) experienced loss of power during sampling week of September 30, 2009 0:34 to September 30, 09 09:54. 13,039 cubic feet of air was sampled. Shut down was caused by a breaker trip.
F	Non-pasture grass samples (i.e. hay, grain).
G	Broadleaf Vegetation was unavailable due to scarcity in April 2009.
H	First quarter continuous seawater samples at Vicinity of Discharge (location 32) had low volume during the week of January 20, 2009 due to freezing/clogging of the intake tubing line, which has since been corrected. Subsequent low volumes during weeks of January 27, 2009 and February 10, 2009 were caused by freezing of the intake tubing from cold air temperatures.
I	First quarter flounder and other fish species at Vicinity of Discharge (location 32) and Niantic Bay (location 35) were unavailable due to scarcity during winter season.
J	Third quarter mussels at Two Tree Island (location 28) were unavailable due to not being found inter-tidally and sub-tidally using SCUBA.
K	Fourth quarter mussels at Two Tree Island (location28) were unavailable due to not being found inter-tidally and sub-tidally using SCUBA.

4. DISCUSSION OF RESULTS

This section summarizes the results of the analyses on the REMP (Radiological Environmental Monitoring Program) samples. DNC has carefully examined the data throughout the year and has presented in this section all cases where station related radioactivity could be detected. The results are compared with previous environmental surveillance data.

Few impacts of the station operation on the environment were observed. Sub-sections contain a description of each particular media or potential exposure pathway. Naturally occurring nuclides such as Be-7, K-40, and Th-228 were detected in numerous samples. Be-7, which is produced by cosmic processes, was observed predominantly in airborne and vegetation samples. Th-228 results were variable and are generally at levels higher than plant related radionuclides.

Cs-137 and Sr-90 were observed at levels similar to those of past years. The levels of Cs-137 and Sr-90 detected were the result of atmospheric nuclear weapons testing in the 1960's.

4.1 Gamma Exposure Rate (Table 1)

Gamma exposure rate is determined from the integrated exposure measured over a calendar quarter using $CaSO_4$(Tm) Panasonic model UD-804 ASx thermoluminescent dosimeters (TLDs). In 2000, the TLDs (Victoreen glass bulb CaF_2(Mn)), which historically were used to measure radioactivity around Millstone for over 20 years, were replaced with the Panasonic TLDs.

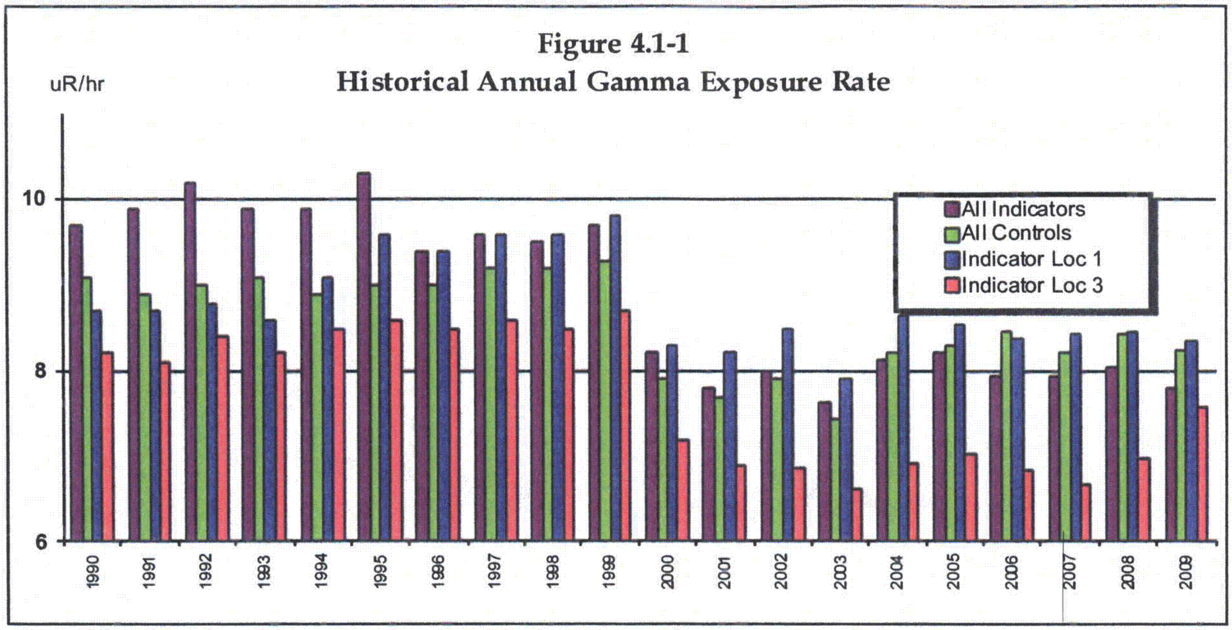
The dosimeters are strategically placed at a number of on-site locations, as well as at inner and outer off-site locations. Starting in 2001, the collection of TLDs was changed from monthly to quarterly and additional measurement locations were incorporated into the REMP requirements listed in the REMODCM (Radiological Effluent Monitoring and Offsite Dose Calculation Manual – Reference 8). Three more locations were added in mid-2003 to prepare for monitoring the potential effect of ISFSI (Independent Spent Fuel Storage Installation – Dry Cask Storage). Two Dry Cask Containers were loaded in the first quarter 2005. Three containers were loaded in mid 2006, three in October 2007 and three in April 2009. None were loaded in 2008. The exposure rate measurements at these three additional TLD locations remain basically unchanged from the background measurements performed prior to any cask loading (six quarter background average mid 2003 – 2004: 9.5 uR/hour at location 73X, 7.6 uR/hour at location 74X and 6.9 uR/hour at location 75X).

Table 1 lists the exposure rate measurements for all 44 monitored locations. Trends similar to those of past years are apparent. These measurements demonstrate the general variations in background radiation between the various on-site and off-site locations and include gamma exposure from all sources of radioactivity. For example, the Weather Shack (location 02), MP3 Discharge (location 05), Environmental Laboratory (location 08), Bay Point Beach (location 09), Pleasure Beach (location 10), Corey Road (location 48), and Site Switchyard Fence (location 73) experience higher exposure rates due to their proximity to granite beds and stonewalls. In addition, the Mystic (location 13C) and Ledyard (location 14C) control locations experience relatively higher background exposure rate than the other control locations at Fisher's Island, Norwich and Old Lyme (locations 12C, 15C and 16C). The only appreciable effect seen in the recent TLD data is that attributable to the variation in the background radiation that is consistent with previous years.

Figure 4.1-1 shows a historical trend of TLD exposure rate measurements, comparing an annual average of all indicator TLDs, an annual average of all control TLDs, and the annual average of the two most critical indicator locations which are used to represent the two closest site boundary residences in the North-northwest and Northeast directions. Examination of the average measurements since 1990, shows interesting site changes and site characteristics. For example, the average of all indicator locations for the period when Unit 1 was still in operation (through 1995) display the effects of N-16 BWR turbine building sky-shine to immediate areas onsite. As discussed in previous annual reports, the effects of sky-shine at onsite monitoring stations were increased exposure rates as high as 6 uR/hr at certain onsite locations. The elevated exposure rates from sky-shine decreased rapidly with distance to levels indistinguishable from normal background measurements at even the nearest offsite monitoring stations. Also apparent in Figure 4.1-1 is the replacement of the historical Victoreen TLD monitoring system with the Panasonic system in year 2000. The difference in response between the two systems is very apparent, with the new Panasonic TLDs reading 15% to 20% lower. This lower response is consistent for all locations, including both indicator and control locations.

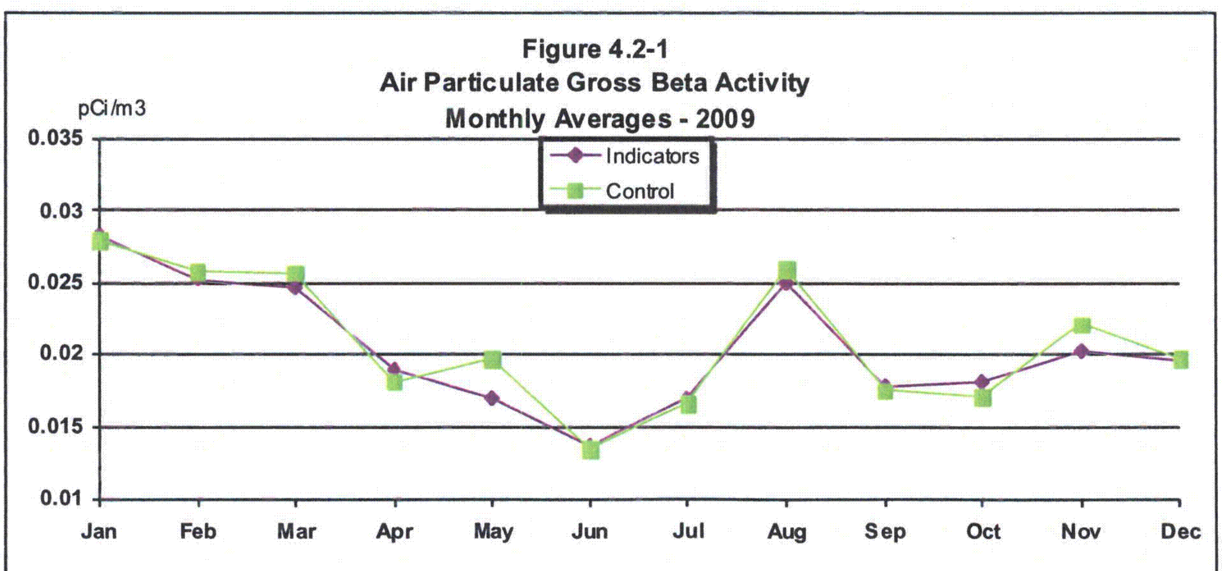
The figure also relates the difference in critical indicator locations 1 and 3 and the annual average of all indicator TLDs to the annual average of the control TLDs collected and measured during coincident periods throughout the year. As discussed earlier, the exposure measurements of many indicator locations onsite (and two of the control locations) are influenced by natural background exposure differences caused by the many granite out-croppings typical of the local area. Figure 4.1-1 shows the annual average at indicator location 1 is slightly higher in gamma exposure rate than the average control gamma exposure rate. An opposite trend is shown for location 3. These differences are the result of the differences in granite at these locations. Location 3 was moved in the second quarter to minimize the effect of tree covering for the air sampler also located at this location. The 2009 data for location 3 shows an increase likely attributable to the being closer to granite at the new location.

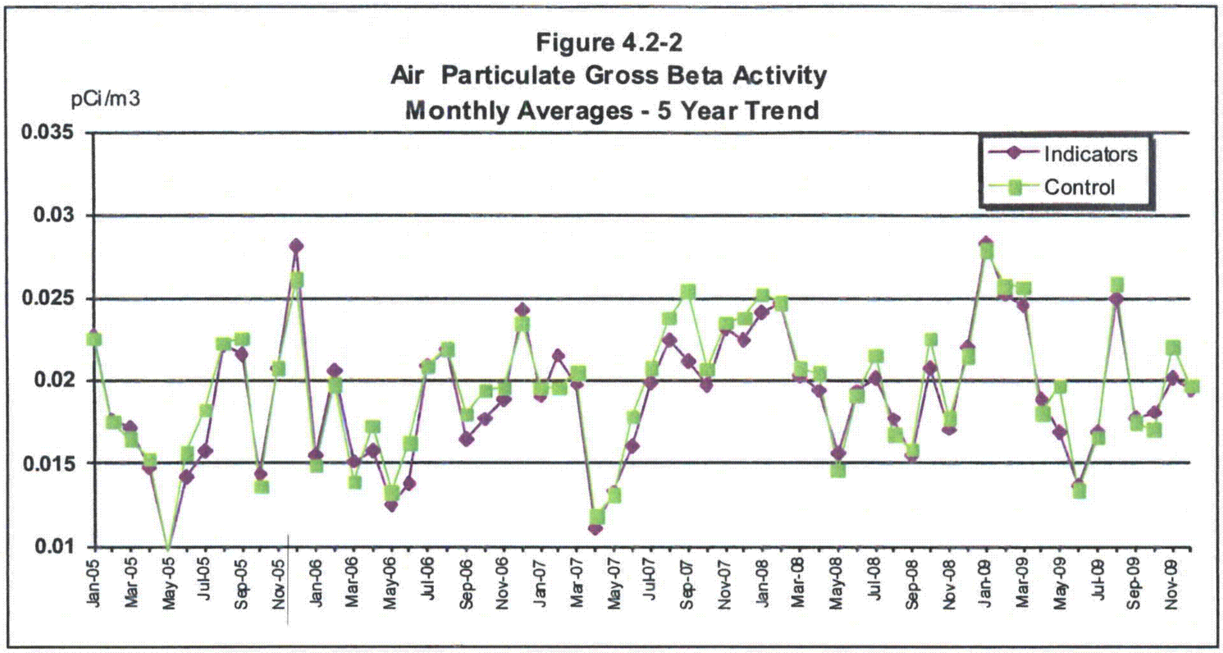
In 2005 and 2006, there was a small increase noted at locations 5 and 8 caused by storage of the Unit 2 replaced reactor head. As expected, this increase exhibited a decreasing trend because of radioactive decay. The head was shipped offsite for disposal in the fourth quarter 2006; the measured levels at these two locations have returned to the background levels measured prior to the head being placed in the storage area. Although not measurable, any resulting site boundary doses are bounded by dose rates from the radwaste storage areas and are discussed in Section 5.



4.2 Air Particulate Gross Beta Radioactivity (Table 2)

Air is continuously sampled at seven inner ring (0 to 2 miles) locations and one control location (14 miles N) by passing it through glass fiber particulate filters. These samples are collected weekly and analyzed for gross beta radioactivity. Results are shown on Figure 4.2-1 and Table 2. Gross beta activity remained at levels similar to that seen over the last decade. Inner and control monitoring locations continue to show no significant variation in measured activities (see Figure 4.2-2). This indicates that any station contribution is not measurable.





4.3 Airborne Iodine (Table 3)

Charcoal cartridges are included at all of the air particulate monitoring stations for the collection of atmospheric iodine. These cartridges are analyzed on a weekly basis for I-131. No detectable levels of I-131 were seen in the 2009 charcoal samples.

4.4 Air Particulate Gamma (Table 4A-D)

The air particulate samples that are utilized for the weekly gross beta analyses are composited quarterly and analyzed for gamma emitting isotopes. The results, as shown in Tables 4A - 4D, indicate the presence of naturally occurring Be-7, which is produced by cosmic radiation. No other positive results are seen. These analyses indicate the lack of station effects.

4.5 Air Particulate Strontium (Table 5)

Prior to 1989 Table 5 was used for listing the data for measurements of Sr-89 and Sr-90 in quarterly composite air particulate filters. The historical data indicated the lack of any detectable station related activity. Since these analyses are not listed in NUREG 1301 (Reference 15), these measurements were discontinued. In the event of widespread station related contamination or other unusual events (such as the 1986 Chernobyl incident), these measurements could be made. Historically, when world events created conditions that caused detectable measurements of these nuclides, there was no difference noted between indicator and control locations. This further confirms that any of the detectable levels for these nuclides were not plant related.

4.6 Soil (Table 6)

Millstone resumed collection of soil as a required media type in 2001. Prior to 2001, it had not been sampled for over fifteen years. These samples were discontinued due to the fact that, previous sample results never indicated any station related detectable activity. Similarly, since 2001, no station detectable activity has been seen in these samples. The results of these samples, allows for the determination of baseline activity levels in soil. This is particularly important for Cs-137, since significant levels from past weapons testing fallout remain in the soil. Baseline levels should be useful in the future, when site characterization and decommissioning of the station become the focus during preparations for License termination. This media is collected annually from one control and two indicator locations.

4.7 Cow Milk (Table 7)

Typically, the most sensitive indicator of fission product existence in the terrestrial environment is the radiological analysis of milk samples. Milk is a widely consumed food, therefore it is usually one of the most critical exposure pathways. Since 1996 all dairy (cow) farms close enough to Millstone to be considered an indicator location (i.e. conservatively within 10 miles, reference 15 specifies within 5 miles) have ceased operation. Therefore, the sampling of cow milk has been discontinued until such time dairy activities in the nearby area resume. Each year the Land Use Census is used to identify locations of milk animals that should be included in the monitoring program. It is performed annually and is maintained by observations, door-to-door surveys and consulting with local agriculture authorities. The 2009 census is listed in Appendix A. If a new dairy farm is identified close enough to Millstone to be considered an indicator location, the collection of cow milk will resume.

4.8 Goat Milk (Table 8)

When available, these samples are collected twice per month during grazing season and once per month during the rest of the year. Each sample is analyzed for I-131 and gamma emitting nuclides. Although not required by the REMODCM, samples from each location are composited quarterly and analyzed for Strontium.

Goat milk samples are typically a more sensitive indicator of fission products in the terrestrial environment than cow milk samples. It should be noted that the uptake of radionuclides in milk is dependent on a number of parameters. These include: metabolism of these animals, feeding habits, farming practices and feed type. Similar to previous years, Cs-137 and Sr-90 are observed in goat milk. During past weapons testing periods, samples taken at certain milk locations indicated higher uptake of fallout than others. This was especially apparent in past samples collected in the immediate area around Millstone (see previous Annual Operating Reports). One of these sites, located at 5.2 Mi. NNE of Millstone (previous location 22, sampled from 1994 through 2004), exhibited a trend of showing higher Sr-90 and Cs-137 concentrations than at some of the other locations (including ones located closer to Millstone). The Station and regulatory authorities (e.g., see Reference 17) have carefully reviewed past and present data. The presence of the Sr-90 and Cs-137 is the result of residual radioactivity deposited into the environment from the fallout of past nuclear weapons testing. The facts that lead to this conclusion are presented in Section 6.0. These facts include: effluent release totals for these isotopes show insufficient quantities to account for such measurements; Sr-89 and Cs-134 which are chemically similar and generally released in comparable quantities were not detected, and a trend since the early 1960's that shows a consistent declining presence of Cs-137 and Sr-90 in milk from Connecticut.

The 2009 results indicate no detectable I-131 in this media. In the 1970's and 1980's low levels of plant related I-131 were seen in some of these samples. However, for over 19 years, no plant related detectable levels of I-131 have been seen in goat milk samples. The only other occasions where I-131 was detected were fallout episodes from the Chinese Weapons Tests of the mid to late 1970's and Chernobyl Accident in 1986.

Goat milk was unavailable at all locations both early and later in the year. Per requirements, pasture grass or feed is collected as a substitute when milk is not available (see 4.9. Pasture Grass and Feed).

4.9 Pasture Grass and Feed (Table 9)

When the routine milk samples are unavailable, samples of pasture grass are required as a replacement. These samples may also be taken to further investigate the levels of radioactivity in milk. During the winter months and early spring, insufficient growth often prohibits sampling of pasture grass. Feed (e.g., hay or grain) is typically sampled whenever pasture grass is not available.

No station effects are noted in these samples. Cosmic produced Be-7 was observed in the majority of the pasture grass samples and many of the hay samples. Due to its relatively short half-life (52 days), it was not detected in the several of the "older" hay samples. Naturally occurring K-40 was approximately two times higher in hay compared to pasture grass samples. Similar to goat milk, the Cs-137 values at the indicator and control locations are comparable. This provides an indication that the levels observed are the result of residual fallout from weapons testing.

4.10 Well Water (Table 10)

These samples were discontinued in 1985, because no detectable station activity was ever observed in these samples. However, based upon lessons learned at other nuclear plants, including several undergoing decommissioning, sampling was resumed at several locations starting in the fourth quarter 2003. Three additional locations were added in 2005 to monitor potential leakage from the ISFSI. Due to the heightened sensitivity on this potential pathway, three more locations were added in 2006 and five more in the summer of 2008. One of these new wells, location 86 (GPI 6 – inside the Unit 3 RCA between the Boron and Waste Test Tank berm and the Fuel Building) indicated a positive tritium result (2310 +/- 250 pCi/liter) on August 28, 2008. This was the first sample from this new well. The temporary well located nearby also indicated positive levels (see 2008 Annual Radiological Environmental Operating Report and the 2008 Radiological Effluent Report) due to penetrations in the berm and a leaky pressure gauge for one of the Boron Recovery Tanks. The penetrations have been sealed and the pressure gauge repaired. The H-3 levels have since become undetectable at this location. These positive levels were localized and transitory in nature; they were not indicative of any contamination in any drinking water supplies. Consistent with the past data, there were no other incidents of any station activity detected in these samples.

4.11 Reservoir Water (Table 11)

Reservoir water samples are special samples not required by the REMP. Previous data has shown the lack of detectable station activity in this media. This fact and the extremely unlikely possibility of observing routine station effluents in this media have resulted in discontinuing these samples. In the event of widespread station related contamination, these samples may be collected.

4.12 Fruits and Vegetables (Table 12)

Consistent with past years, this media did not show any station effects. Naturally occurring K-40 was detected in all samples.

4.13 Broad Leaf Vegetation (Table 13)

Consistent with past years, this media did not show any station effects. Most samples had detectable levels of cosmic produced Be-7, at levels consistent with previous years.

This media can be an early and sensitive indicator of releases from the station for both unplanned releases and normal operations. Therefore, to enhance program-monitoring effectiveness, samples of broadleaf vegetation are collected monthly during the growing season, May - October, even though requirements are to collect this media twice a year.

4.14 Seawater (Table 14)

The guidance in Reference 15 specifies one sample upstream (control – beyond significant influence of the discharge) and one sample downstream (indicator – beyond but near the mixing zone) for surface water samples. Historically the downstream sample for Millstone has been located in the vicinity of discharge (location 32 – see Reference 8) which is prior to the mixing zone. This location was chosen since it was readily accessible by power and not affected by cold weather conditions. Operation of an automatic sampler at the indicator location is necessary for providing a representative sample. Although samples obtained at this location actually monitor the undiluted discharge activity, it provides for an excellent check on the effluent monitoring program. Any dose consequences can be assessed by use of the appropriate dilution factors. It's not as important to have a continuous sampler at the control location due to the relative consistency noted in seawater background activity near the Millstone Site.

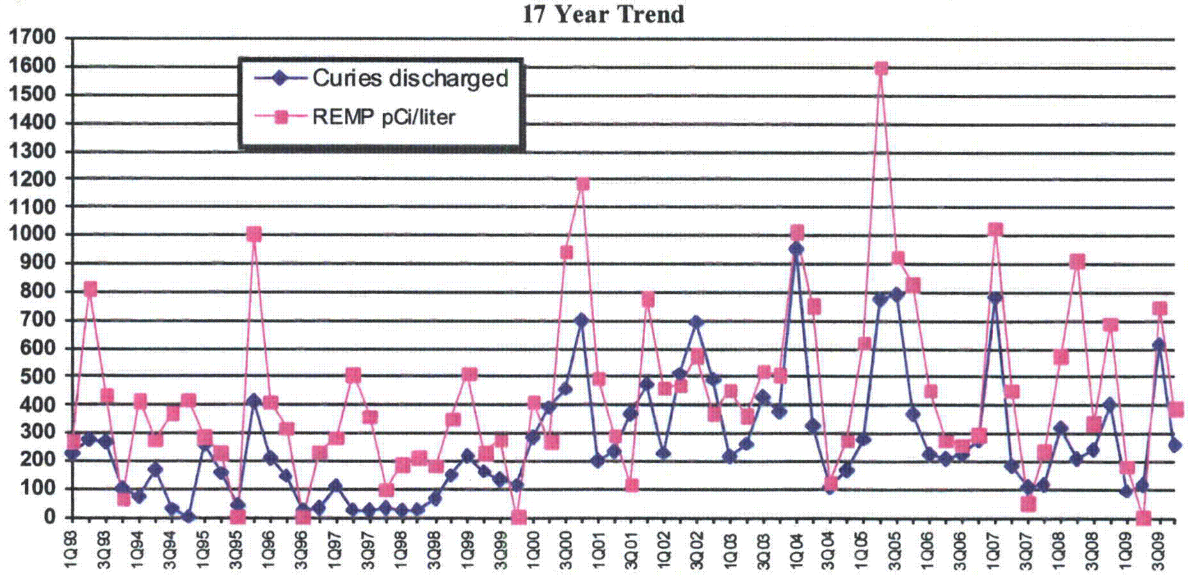
A technician collects an aliquot from the automatic sampler at Location 32 on a weekly frequency. These samples are composited for monthly analyses. In September 1999, Millstone increased the required analysis frequency for this composite sample to monthly to increase monitoring effectiveness. For the Control Location, Giant's Neck (Location 37C), six weekly grab samples are obtained for quarterly compositing. In 2003, the LLD for H-3 (tritium) at the indicator location (32) was lowered by approximately a factor of four to further enhance monitoring effectiveness. This lower LLD was continued through 2009.

Naturally occurring K-40 was the only detectable gamma activity seen in several of these samples. Measured plant related levels of H-3 in seawater from the immediate vicinity of discharge (location 32) were observed in 4 of the 12 samples. This is similar to the frequency observed in 2007 and less than in 2008. Only Unit 2 experienced a refueling outages in 2009 and tritium releases are typically higher near these outages (due to the need for increased liquid processing during these times). As mentioned above, these samples are taken directly from liquid effluent flow prior to dilution into the Long Island Sound. Dilution studies performed for this discharge have determined that a dilution factor of 3 is appropriate to estimate concentrations immediately outside the quarry within a near-field area.

Tritium builds up in the reactor coolant during each fuel cycle. It is generated during plant operation from fission and neutron reactions. Between 1992 and 2002, H-3 was not typically detected. However, due to the enhanced detection sensitivity, H-3 levels are now often detected at the indicator location. Figure 4.14-1 shows a seventeen-year trend of H-3 releases in the Millstone liquid effluents versus the measured environmental concentrations from the vicinity of discharge location.

Sampling "undiluted discharge water" and analyzing to a "low H-3 LLD" enables a direct comparison of effluent monitoring to environmental monitoring for this exposure pathway. Figure 4.14-2 (one year trend) and Figure 4.14-3 (four year trend) show this comparison. This comparison is more accurate than Figure 4.1-1 since it takes into account the dilution flow during each month. Dilution flow can change substantially during plant outages. By plotting the data monthly, the resolution of the comparison is further enhanced, although there can be slight discrepancies due to the REMP sample not necessarily being on the last day of each month.

Figure 4.14-1
H-3 Curies Released versus Seawater Concentration
17 Year Trend



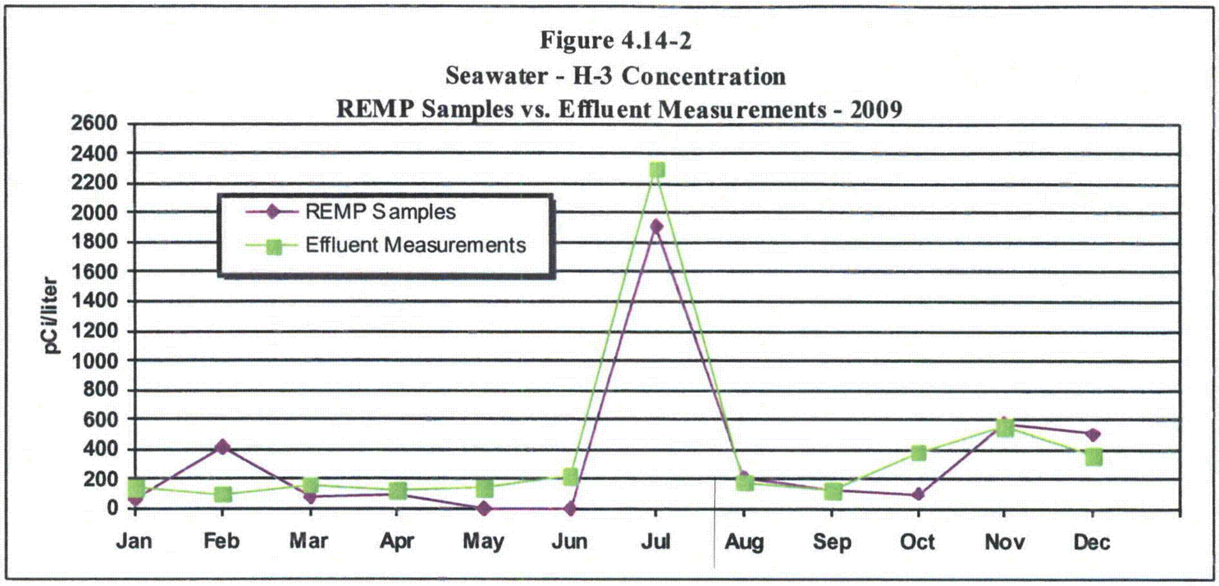


Figure 4.14-2
Seawater - H-3 Concentration
REMP Samples vs. Effluent Measurements - 2009
pCi/liter
REMP Samples
Effluent Measurements
2600
2400
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

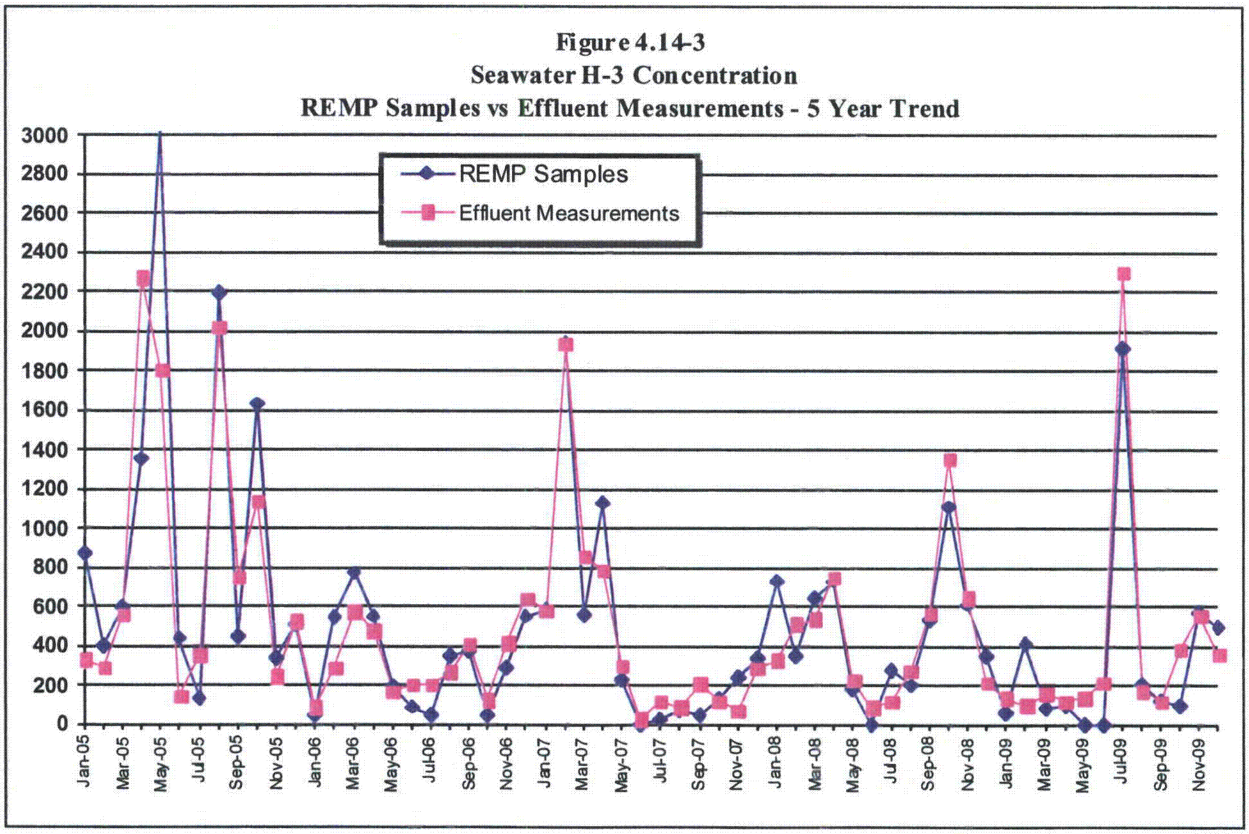


Figure 4.14-3
Seawater H-3 Concentration
REMP Samples vs Effluent Measurements - 5 Year Trend
REMP Samples
Effluent Measurements
3000
2800
2600
2400
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
Jan-05
Mar-05
May-05
Jul-05
Sep-05
Nov-05
Jan-06
Mar-06
May-06
Jul-06
Sep-06
Nov-06
Jan-07
Mar-07
May-07
Jul-07
Sep-07
Nov-07
Jan-08
Mar-08
May-08
Jul-08
Sep-08
Nov-08
Jan-09
Mar-09
May-09
Jul-09
Sep-09
Nov-09

4.15 Bottom Sediment (Table 15)

Cs-137 was at positive levels in both samples from Golden Spur (67X); one detectable and the other just below the cutoff of 3 standard deviations. This is typical for this location, since it is a fresh water area. The levels of Cs-137 at this location are comparable to those observed in past river water sediments taken from other fresh water areas (e.g., the Connecticut River). Because of the relative distance and direction of the Golden Spur location from the station and comparable levels seen the more distant river water locations, the Cs-137 detected at Golden Spur is from weapons testing fallout.

Although in previous years Cs-137 was also detected in the extra samples from Jordon Cove Bar (39X), this year the levels have decreased below detectable. The previous low levels likely exhibit some effect of the fresh water drainage from Jordan Brook.

Similar to 2009, Co-60 was noted in the samples from Jordan Cove Bar at levels just below detectable. The levels for 2008 and 2009 show a decreasing trend from the somewhat higher levels noted in 2004 – 2006. Present levels of Co-60 are similar to those seen in 2003. Prior to 2003, plant related activity had not been detected in bottom sediment for over a decade. Bottom sediment is not a significant dose pathway to man, especially at areas not typically used by the public. Examinations of other aquatic media, including seafood, sampled from near these locations (discussions that follow) do not show any detectable Co-60 or Cs-137.

A new sediment location was added in 2006 near the closest public beach (location 69X). The data for this location has not indicated any plant related activity.

4.16 Aquatic Flora (Table 16)

Although sampling of this media is not required, it provides useful information since it a very sensitive indicator of radioactivity in the environment. Low levels of activity (e.g., Mn-54, Co-58, Co-60, Zn-65, I-131 and Ag-110m) have been detected in the past. Since 2000, levels have decreased to undetectable for all nuclides except for I-131. One positive I-131 measurement was noted in 2004 and 2007, several in 2005 and in 2006 and two in 2008. The I-131 levels noted in 2004 through 2008 have been determined to be caused by medical usage. Seaweed has a significant bioaccumulation factor for iodine which makes it an extremely sensitive indicator of iodine in the environment.

Due to the initial positive I-131 indications in 2004 and 2005, additional monitoring and studies were conducted in 2006. Extra samples were obtained at Thames River and Rocky Neck to determine if there may have been other sources for these very low levels of I-131. These extra samples indicated the most likely cause for the 2004 – 2008 positive I-131 results was the outfall from nearby wastewater (sewage) treatment plants. The usage of I-131 in medical treatments is becoming more common and it is not unusual for it to be in the wastewater. The New London Waste Water Treatment Plant is located on the west side of the Thames River near Fort Trumbull. Groton has two wastewater treatment plants, one located across the Thames River (and slightly upstream) from the New London treatment plant and the other near Bluff Point. The highest I-131 results were in the samples from within the Thames River, which were taken near the outfall from the New London Waste Water Treatment Plant. There was no other activity detected in the flora samples. Therefore, no Station related radioactivity was detected in aquatic flora since 2000.

4.17 Fish (Tables 17A and 17B)

4.17.1 Flounder (Table 17A)

The activity in Flounder is the same as that seen for the past decade. No activity was observed except for the naturally occurring nuclides.

4.17.2 Fish - Other (Table 17B)

The activity in other fish is the same as that seen for the past decade. No activity was observed in this media except for naturally occurring nuclides, including samples taken from within the quarry.

4.18 Mussels (Table 18)

Similar to the last several years, this sampling media showed no station related radioactivity at all locations.

4.19 Oysters (Table 19)

All locations utilize oysters stocked in trays. The oysters used for stocking these trays have been obtained from Ram Island for the last several years. To confirm that the stocked oysters are not initially contaminated, the oysters from Ram Island are also analyzed. The stocked trays are kept at most of the sampling areas to guarantee samples and facilitate sample collection. Historically, native oysters were sampled at the quarry (location 40X), which was an extra location. Due to safety concerns about diving operations, sampling at location 40X was suspended after the 2nd quarter 2007 samples. Similarly, due to other safety concerns, location 32 was moved to a more accessible area in the middle of the quarry. Although it is labeled as vicinity of the discharge, it was previously located at the end of the quarry.

No station related activity was observed in any of the samples. Station related Ag-110m has typically been detected in samples from location 32. This year, the levels have decreased below the detectable levels.

For several previous years, high levels of Zn-65 were observed in oysters. This was caused by their high capacity for accumulating zinc. Studies have shown that oysters can accumulate as much as 50 times or more the amount of zinc compared to most other seafood (Wolfe, 1979). A remarkable correlation existed between the Zn-65 concentration measured in the native quarry oysters and the amount of Zn-65 discharged into the environment. However, since the permanent shutdown of Millstone Unit 1 in 1996, the amount of Zn-65 in liquid effluents has decreased significantly. Starting in 2001, no Zn-65 has been detected in either the liquid effluents or in oysters. Figure 4.19-1, shows a historical trend that existed between Zn-65 releases and measured concentrations in quarry oysters. The decreasing trend in effluent radioactive releases is apparent in both the curies released and the measured concentrations in oysters.

Figure 4.19-2 shows the trend of Ag-110m concentration in quarry oysters compared to the liquid effluents discharged. Similar to Zn-65, the correlation between Ag-110m discharged and the Ag-110m concentration measured in the native quarry oysters is apparent. Section 5 provides for a comparison of doses based upon effluent measurements (method 1) to doses based upon environmental measurements (method 2). Per regulatory guidance (reference 7), the bioaccumulation factors for both Zn and Ag were adjusted based upon several years of historical data to account for the higher measured uptakes. These adjustments have typically shown good agreement between the two methods, with method 1 usually being conservative. The 2006 and 2007 data indicate an unusual trend (see Section 5, Table 5-2). Method 2 (REMP dose assessment) indicates higher doses than method 1 (effluent dose assessment). Due to significant effluent reductions over the last several years, the low resulting doses (less than 0.01 mrem) make this comparison difficult and subject to significant error. Trending of these comparisons is routinely performed and adjustments are made, if appropriate.

The location of the quarry is on-site and not available for public use. No station activity was observed at locations beyond the station discharge area. Therefore, the actual concentration of the nuclides in oysters available for public consumption is much less than the levels found inside the quarry. The near-field dilution factor for liquid discharges from the Millstone quarry discharge is a factor of 3. The dose consequence of the station related radioactivity via this pathway is discussed in Section 5.0.

4.20 Clams (Table 20)

Occasionally this media indicates the presence of station related radioactivity. No station related radioactivity was observed in any of the clam samples taken in 2009.

4.21 Scallops (Table 21)

Scallops are not required by the REMP. However, attempts are made to sample this media to confirm station effects because scallops could be available for public consumption. No scallop samples have been available for several years.

4.22 Lobsters (Table 22)

Like the last several years, no station related radioactivity was detected in this sample media in 2009.

Figure 4.19-1

Zn-65 COMPARISON

Curies Discharged vs. Native Oyster Concentration

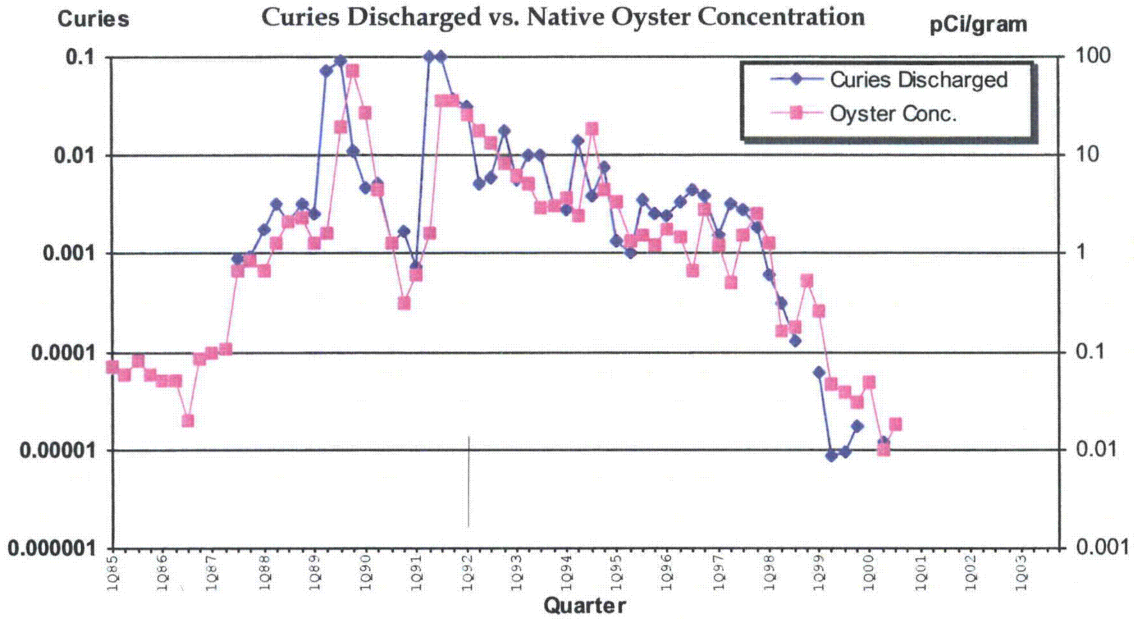
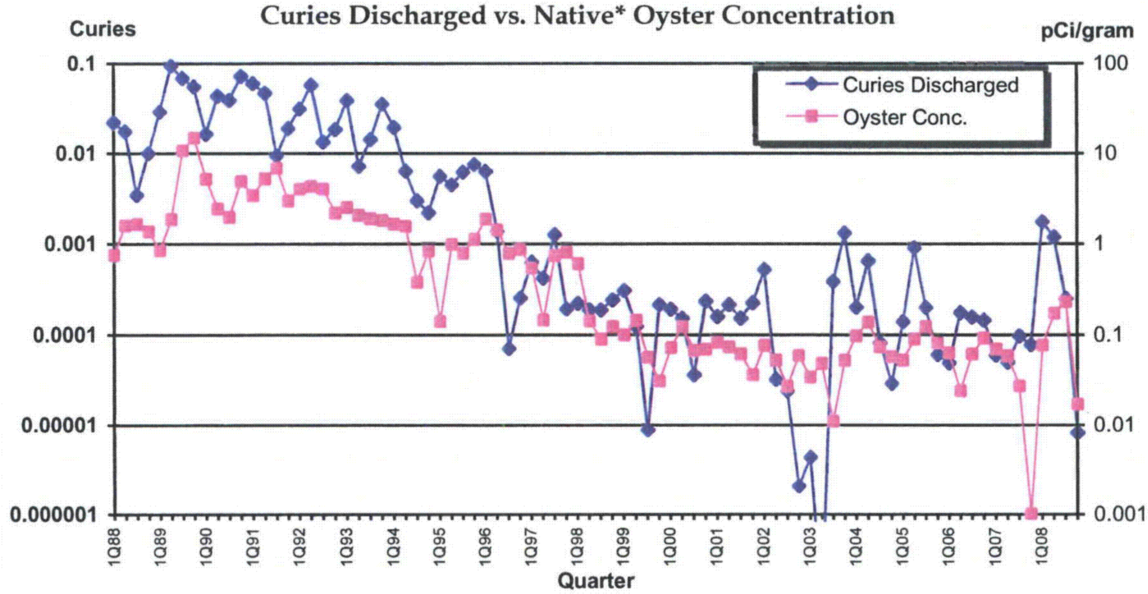


Figure 4.19-2

Ag-110m COMPARISON

Curies Discharged vs. Native* Oyster Concentration



* Native oysters until 3Q 2007; because of diver safety issues now the only oysters sampled in the Quarry are stocked in trays similar to what has historically been performed at all the other locations.

5. OFFSITE DOSE EQUIVALENT COMMITMENTS

The off-site dose consequences (dose equivalent commitments) of the station's radioactive liquid and airborne effluents have been evaluated using two methods.

The first method utilizes calculations of direct dose from sources onsite and the station's measured radioactive discharges as input parameters into conservative models to simulate the transport mechanism through the environment to man. This results in the calculation of the maximum dose consequences to individuals. The results of these computations have been submitted to the NRC in the Radioactive Effluent Release Report written in accordance with the Radiological Effluent Monitoring and Offsite Site Calculation Manual, Section I.F.2. This method, which is usually conservative (i.e., computes higher doses than that which actually occur), has the advantage of approximating an upper bound to the dose consequences. This is important in those cases where the actual dose consequence cannot be measured because they are so small as to be well below the capabilities of conventional monitoring techniques.

The second method utilizes the actual measurements of the concentrations of radioactivity in various environmental media (e.g., fish, shellfish) and then computes the dose consequences resulting from the consumption of these foods.

The results of both methods are compared in Table 5.1 for those pathways where a potential dose consequence exists and a comparison is possible. The doses presented in this table are calculated at the location of maximum effect from the station effluents for that pathway and for the critical age group. For example, the external gamma dose from gaseous effluents is calculated for the site boundary location which is not only the nearest but also has the greatest directional wind frequency and fish and shellfish doses are calculated assuming they are from an area within 500 feet of the station discharge.

Summarizing the data in Table 5.1:

MAXIMUM TOTAL INDIVIDUAL DOSES :

WHOLE BODY = 0.20 mrem
GI(LLI) = 0.040 mrem
Thyroid = 0.015 mrem

The majority of the whole body dose is due to a conservative determination of dose (≈0.18 mrem) to the nearest resident as a result of direct radiation from on-site radioactive waste operation/storage facilities and continuous occupancy. The GI(LLI) (gastro-intestinal tract, lower large intestine) dose is essentially all attributable to the liquid pathway based upon Method 2. The thyroid dose is based upon conservative assessments using Method 1. Since the maximum dose consequence to an individual is at the location of highest dose consequence, doses will be less for all other locations. The average whole body dose to an individual within 50 miles historically is on the order of 1000 times less than the maximum individual whole body dose.

In order to provide perspective on the doses in Table 5.1, the standards on the allowable maximum dose to an individual of the general public are given in 40CFR190 as 25 mrem whole body, 75 mrem thyroid, and 25 mrem to any other organ. These standards are a fraction of the normal background radiation dose of approximately 311 mrem per year and are designed to be inconsequential in regard to public health and safety. Since station related doses are even a smaller fraction of natural background, they have insignificant public health consequences. In fact, the station related doses to the maximum individual are less than 10% of the variation in natural background.

TABLE 5.1

COMPARISON OF DOSE CALCULATION METHODS
MILLSTONE POWER STATION
2009 Annual Dose (millirem)

Pathway	Individual	Organ	Method 1[1]				Method 2[1]
			Unit 1 (BWR)	Unit 2 (PWR)	Unit 3 (PWR)	Station Total	Station
Airborne Effluents							
1. External Gamma Dose (gamma air)[8]	Max[2]	Whole Body	0.0000	0.00255	0.00018	0.0027	ND[3]
2. Whole Body Dose (internal and external)	Max[2]	Whole Body	0.00021	0.0072	0.00062	0.014	ND
3. Inhalation, vegetables and goat milk	Max[2]	Thyroid	0.00020	0.0089	0.0062	0.015	ND
4. Inhalation, vegetables and goat milk	Max[2]	Max Organ	0.00025	0.0073	0.0062	0.014	ND
Direct Dose							
Nearest Residence	Max[2]	Whole Body	N/A	N/A	N/A	~0.18[4]	<1.8[5,8]

TABLE 5.1 (Cont.)

COMPARISON OF DOSE CALCULATION METHODS
MILLSTONE POWER STATION
2009 Annual Dose (millirem)

Pathway	Max Individual	Organ	Method 1 [1] Unit 1 (BWR)	Method 1 [1] Unit 2 (PWR)	Method 1 [1] Unit 3 (PWR)	Method 1 [1] Station Total	Method 2 [1] Station
Liquid Effluents							
1. Fish	* Adult	Whole Body	0.00000009	0.000333	0.000221	0.000555	ND[3]
	Teen	"	0.00000005	0.000308	0.000179	0.000487	
	Child	"	0.00000002	0.000329	0.000160	0.000489	
	* Adult	GI(LLI)[6]	0.00000000	0.003808	0.000781	0.00459	ND
	Teen	"	0.00000000	0.002730	0.000564	0.00330	
	Child	"	0.00000000	0.001043	0.000266	0.00131	
	Adult	Liver	0.00000013	0.000769	0.000295	0.00107	ND
	* Teen	"	0.00000014	0.000774	0.000261	0.00104	
	Child	"	0.00000013	0.000720	0.000232	0.00095	
2. Shellfish	* Adult	Whole Body	0.00000001	0.000347	0.000106	0.000454	ND[7]
	Teen	"	0.00000001	0.000355	0.000099	0.000453	ND
	Child	"	0.00000000	0.000433	0.000109	0.000542	ND
	* Adult	GI(LLI)	0.00000000	0.003869	0.001408	0.00528	ND
	Teen	"	0.00000000	0.002744	0.000981	0.00373	ND
	Child	"	0.00000000	0.001008	0.000171	0.00138	ND
	Adult	Liver	0.00000002	0.001023	0.000211	0.00123	ND
	* Teen	"	0.00000002	0.001072	0.000211	0.00128	ND
	Child	"	0.00000002	0.001049	0.000207	0.00126	ND

Notes:

1. Except for direct dose, method 1 uses measured station discharges and meteorological data as input parameters to transport-to-man models that conservatively calculate dose to people; method 2 uses actual measured concentrations in environmental media to estimate the dose.
2. Maximum individual - The maximum individual dose is the dose to the most critical age group at the location of maximum concentration of station related activity. The dose to the average individual is much less than the maximum individual dose.
3. ND - Not Detectable - No station related activity could be detected above natural background or above the minimum detectable level (MDL).
4. The dominant source of direct dose from the station is from storage and movement of radioactive waste. Storage of radioactive waste is allowed in several areas onsite. Operation of the storage facilities is limited by design to ensure that the maximum direct dose at the site boundary from each area does not exceed one millirem. Actual exposure throughout the year was maintained much less than this operational limit. Each facility is monitored onsite by the Radiation Protection Department using TLDs. The exposure measured for each facility TLD was corrected for distance to the nearest site boundary residence. The resultant exposure was conservatively multiplied by 1.5 to account for sky-shine. These maximum estimated doses from each facility were summed for a cumulative site commitment of approximately 0.18 millirem. The whole body dose from airborne effluents was 0.014 and from liquid effluents was 0.0015 (seafood consumption, swimming & boating and shoreline recreation dose total). This results in a total estimated whole body dose to the maximum individual of 0.20 mrem (0.18 + 0.014 + 0.0015).
5. Measured dose was derived from monthly TLD readings. There are two residences that qualify as the closest residence; each has a TLD near enough to use as an estimate to each residence. The one with the highest average dose rate was used to estimate the direct dose to the closest residence. A background dose rate was subtracted. This background was derived from the average of the five control TLD locations. This method is very conservative assuming natural exposure influences, such as granite, are actually plant related exposure. This method provides a bounding high value. The exposure measurements of the select indicator locations are influenced by natural background exposure differences caused by the many granite out-croppings typical of the Millstone area. Historical data has shown that TLD sample locations in the vicinity of granite can be dramatically influenced by natural radioactivity contained within the granite.
6. GI (LLI) - Gastrointestinal Tract - Lower Large Intestine.
7. Based on measured levels in the native quarry oysters. A measured near field dilution factor of 3 was used to adjust for the fact that these oysters are on-site and inaccessible to the public. This factor adjusts the measured on-site concentration to that which could occur to a public accessible off-site location after dilution of the effluent by the Long Island Sound. The measured levels in the stocked oysters within the quarry were about one-half the native quarry oysters. For conservatism, it was assumed the maximum individual consumed primarily oysters (activity in clams was much lower than in the oysters).
8. Based upon the conservatively assuming no correction for building shielding and occupancy.

6. DISCUSSION

The evaluation of the effects of station operation on the environment requires the careful consideration of many factors. Those factors depend upon the media being affected. They include station release rates, effluent dispersion, occurrence of nuclear weapons tests, seasonal variability of fallout, local environment, and locational variability of fallout. Additional factors affecting the uptake of radionuclides in milk include soil conditions (mineral content, pH, etc.), quality of fertilization, quality of land management (e.g., irrigation), pasturing habits of animals, and type of pasturage. Any of these factors could cause significant variations in the measured radioactivity. A failure to consider these factors could cause erroneous conclusions.

Consider, for example, the problem of deciphering the effect of station releases on the radioactivity measured in milk samples. This is an important issue because this product is widely consumed and several fission products readily concentrate in this media. Some of these fission products, such as I-131 and Sr-89 are relatively short-lived. Therefore they can result from station effluents, nuclear weapons tests or nuclear incidents (e.g. Chernobyl). Sr-89's lifetime is longer than I-131's, therefore it will remain around for much longer periods of time. The even longer-lived fission products, Sr-90 and Cs-137, cause more of a concern. These isotopes are still remaining from the weapons testing era of the 1960's. This results in measurable amounts of Sr-90 and Cs-137 appearing in some milk samples. Distinguishing between this "background" of fallout activity and station effects is of prime interest for a Radiological Environmental Monitoring Program.

In reviewing the historical and present Sr-90 and Cs-137 measured in cow and goat milk in the areas around Millstone station, a casual observer could notice that in some cases the levels of these isotopes are higher at farms closer to the station than at those further away from the station. The station's effluents might at first appear to be responsible. However, the investigation of the following facts proves this conclusion wrong.

(1) The stations accurately measure many fission products, including Sr-90 and Cs-137 in their releases. Based on these measurements and proven models developed by the Nuclear Regulatory Commission, concentrations in the environment can be calculated. These calculations (generally conservative, see Section 5.0) show that insufficient quantities of Sr-90 and Cs-137 have been released from the plants to yield the measured concentrations in milk.
(2) Over the many years of station operation, Sr-89 has often been released in comparable quantity to Sr-90. Since they are chemically similar, comparable levels should have been detected in milk if the Sr-90 was station related. No station related Sr-89 has ever been detected in milk samples.
(3) Similar to Sr-89, Cs-134 can be used as an indication of station related Cs-137. Although not as conclusive as Sr-89, the lack of any measurable Cs-134 in any of the milk samples suggests that the Cs-137 is not station related. This is further confirmed by the evaluation of the air particulate data. The only occurrences of detectable Cs-134 in milk resulted from the Chernobyl incident.
(4) Dairy milk sampling in Connecticut began in the 1960's, several years prior to nuclear station operation. The highest levels of weapons fallout related Sr-90 and Cs-137 (see Figures 6-1 and 6-2), were measured in the years prior to station operation. Samples taken in the immediate station areas have always shown higher levels of weapons related fallout than samples taken from the Central Connecticut Region (CT Pooled Milk). Radioactivity levels of fallout related Sr-90 and Cs-137 have decreased significantly since the 1964 Nuclear Test Ban Treaty due to decay.

(5) Local variability of Sr-90 and Cs-137 in milk is common throughout the United States. Due to the variability in soil conditions, pasturing methods, rainfall, etc., it is the rule rather than the exception. Therefore, it is not surprising that certain farms have higher levels of radioactivity than other farms. In fact, in the past there are some cases where the farms further from the station have higher Sr-90 and Cs-137 values than the farms that are closer to the station.
(6) In the past when a goat farm operated near Millstone (2.0 Mi - ENE), the highest levels of Sr-90 and Cs-137 were typically indicated. This same farm also experienced the highest levels of short-lived activity from the 1976 and 1977 Chinese Tests and the 1986 Chernobyl accident. This indicates that for some unknown reason this farm had the ability for higher reconcentration. Special studies performed at this and other farms failed to find any link to the station.

Based on these facts, the observation that the station effluents are responsible is evidently false. The cause must be one or more of the other variables.

Dominion has carefully examined the data throughout the years and has presented in this report all cases where station related radioactivity could be detected. An analysis of the potential exposure to the maximum individual from any station related activity has been performed and shows that in all cases the exposure is insignificant.

The Connecticut Department of Environmental Protection (DEP) performs an independent check on certain environmental program analyses. The results of their analyses are comparable to the results from this program's analyses. These comparisons can be used as a cross-reference to verify measured station activity. DEP performed a comprehensive review of all the historical Millstone data in 2006 (reference 17). It concluded that "the collective sampling in and around Millstone Power Station show expected levels of residual fallout from weapons testing and the Chernobyl event and are unrelated to the operation of the Millstone Power Station."

Figure 6-1 Strontium-90 in Milk

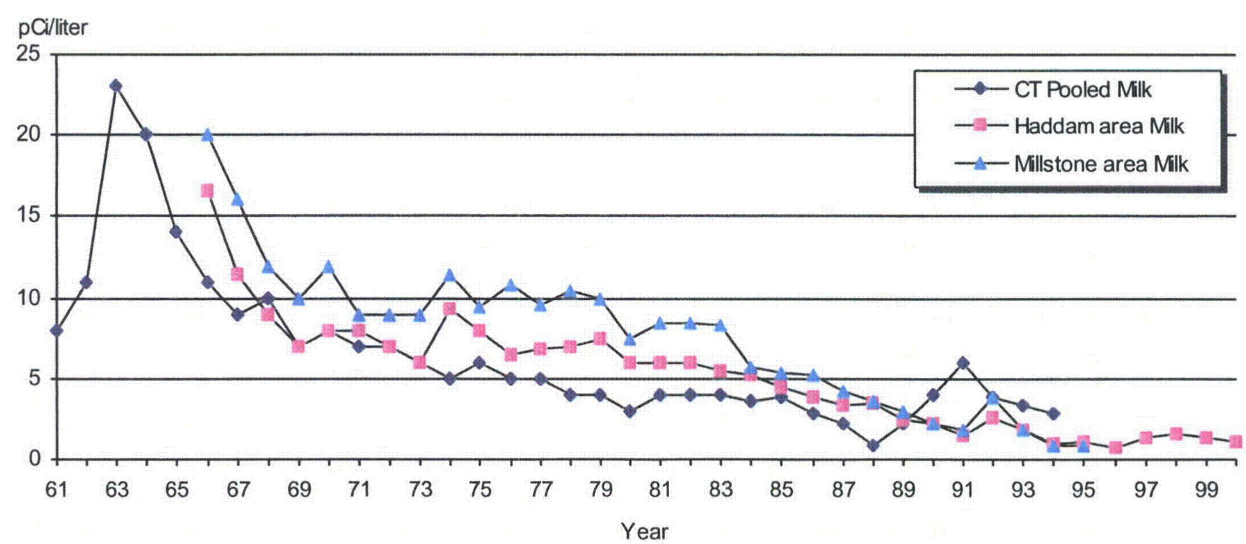
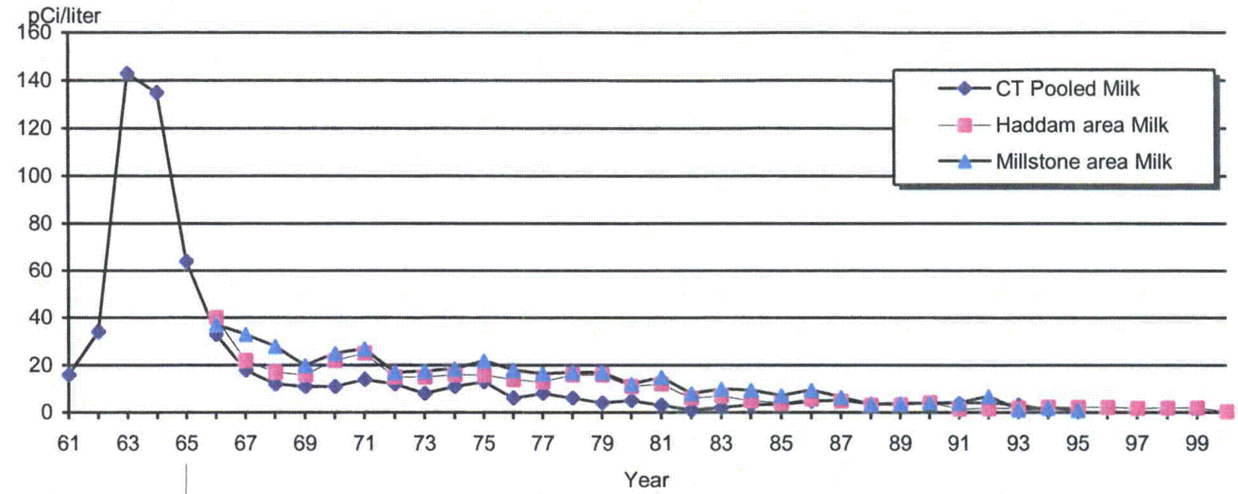


Figure 6-2 Cesium-137 in Milk



Dairy milk is no longer available in the Millstone area, Haddam Neck no longer collects milk, and CT Pooled milk has not been collected by the State of CT since 1994. Graphs provided to show historical trends.

CY Start-up occurred:	July 24, 1967	MP2 Start-up occurred:	December, 1975
MP1 Start-up occurred:	October 26, 1970	MP3 Start-up occurred:	January 23, 1986

7. REFERENCES

1) United States of America, Code of Federal Regulations, Title 10, Part 50, Appendix A Criteria 64.

2) Donald T. Oakley, "Natural Radiation Exposure in the United States." U. S. Environmental Protection Agency, ORP/SID 72-1, June 1972.

3) National Council on Radiation Protection and Measurements, Report No. 160, "Ionizing Radiation Exposures of the Population of the United States," March 2009.

4) National Council on Radiation Protection and Measurements, Report No. 94, "Exposure of the Population of the United States and Canada from Natural Background Radiation," December 1987.

5) United States Nuclear Regulatory Commission, Regulatory Guide 8.29, "Instructions Concerning Risks from Occupational Radiation Exposure," Revision 0, July 1981.

6) Millstone Training Brochure.

7) United States Nuclear Regulatory Commission, Regulatory Guide 1.109, "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I," Revision 1, October 1977.

8) Millstone Power Station Radiological Effluent Monitoring and Offsite Dose Calculation Manual, Revision 025-02, December 2006.

9) United States of America, Code of Federal Regulations, Title 10, Part 20.1301.

10) United States of America, Code of Federal Regulations, Title 10, Part 50, Appendix I.

11) United States of America, Code of Federal Regulations, Title 40, Part 190.

12) United States Nuclear Regulatory Commission, Regulatory Guide 4.1, "Program for Monitoring Radioactivity in the Environs of Nuclear Power Plants," Revision 1, April 1975.

13) ICN/Tracerlab, "Millstone Nuclear Power Station Pre-operational Environmental Radiation Survey Program, Quarterly Reports," April 1967 to June 1970.

14) International Commission of Radiological Protection, Publication No. 43, "Principles of Monitoring for the Radiation Protection of the Population," May 1984.

15) United States Nuclear Regulatory Commission, NUREG-1301, "Offsite Dose Calculation Manual Guidance: Standard Radiological Effluent Controls for Pressurized Water Reactors," April 1991.

16) United States Nuclear Regulatory Commission, Branch Technical Position, "An Acceptable Radiological Environmental Monitoring Program," Revision 1, November 1979.

17) Reassessment of Millstone Power Station's Environmental Monitoring Data, Connecticut Department of Environmental Protection, Division of Radiation, March 2006.

APPENDIX A

LAND USE CENSUS FOR 2009

INTRODUCTION

The annual land use census in the vicinity of Millstone Station was conducted as required by the Millstone REMODCM between July 15 and December 31, 2009. Typically the cow milk locations are identified by a review of the annual registration information obtained from the State of Connecticut Department of Agriculture. Gardens are located by a drive-by during the harvest season. Although broadleaf sampling was performed and may be used in lieu of a garden census, gardens were included in the 2009 census. Only vegetable gardens having an area of more than 500 square feet need to be identified. Due to the difficulty of measuring individual gardens, the nearest garden within each directional sector identified by a drive-by survey is listed. Goat locations are more difficult to determine, but best efforts are made to consult goat association records, contact previous owners and or drive-bys, if necessary.

RESULTS

Tables A-1 through A-3 indicate information from the latest land use census. No new dairy animals within 10 miles of the Station were located during the census. Several changes were identified, these include:

- several new dairies were identified in the 10 to 20 mile range (see Table A-1)
- closest garden in WNW moved from 2740 meters to 2910 meters

These changes indicate that no changes were required in the current sampling locations. The dose modeling incorporates the above listed changes.

TABLE A-1

Dairy Cows Within 20 miles of Millstone Point - 2009*

Direction	Distance	Location
N	14 Miles	Preston
N	5 Miles	Norwich
N	20 Miles	Norwich
NNE	16 Miles	Norwich
NNE	16 Miles	Preston
NNE	16 Miles	Preston
NNE	17 Miles	Preston
NNE	18 Miles	Preston
NE	13.5 Miles	Ledyard
NE	14 Miles	Ledyard
NE	14.5 Miles	Ledyard
NE	18 Miles	Preston
NE	18 Miles	North Stonington
NE	19 Miles	Preston
NE	19 Miles	North Stonington
ENE	17.5 Miles	North Stonington
ENE	20 Miles	North Stonington
WNW	10.4 Miles	Lyme
NW	10.4 Miles	Lyme
NW	19 Miles	East Haddam
NNW	12.3 Miles	Salem

* previous years the data included the number of cows at each location; this is no longer tracked in the census records

Note: None of these cow farms are used for sampling since all farms are greater than ten miles from plant (NUREG 1301, Reference 15, uses a cutoff distance of 5 miles)

TABLE A-2

Dairy Goats Within 20 miles of Millstone Point- 2009

Direction	Distance	Location (Sample Location)
N	2.4 Miles	Waterford **(LOCATION 21)**
N	11.5 Miles	Oakdale
NE	2.7 Miles	Waterford (**LOCATION 22)***
ENE	12 Miles	Stonington
ENE	13 Miles	Stonington
WNW	18 Miles	Haddam
NW	17 Miles	East Haddam
NNW	12.4 Miles	Salem
NNW	18 Miles	Colchester
NNW	21 Miles	Colchester
NNW	29 Miles	Hebron **(LOCATION 24)**

* not milking, raised for meat only, pigs also at this location

TABLE A-3

2009 Resident/Garden Survey

Downwind Direction	Distance to Closest Resident (meters)	Distance to Closest Garden (meters)
N	1500	1490
NNE	860	820
NE	790	840
ENE	1590	1590
E	1500	1670
ESE	1690	1990
SE	*	*
SSE	*	*
S	*	*
SSW	*	*
SW	3700	3840
WSW	3190	3210
W	2870	2950
WNW	2400	2910
NW	770	2180
NNW	740	1050

* N/A - not applicable (over water sectors)

APPENDIX B

DNC QA PROGRAM

INTRODUCTION

Dominion Nuclear Connecticut (DNC) maintains an independent non-required quality assurance (QA) program as part of the radiological environmental monitoring program (REMP). The QA program consists of contractor appraisals and quality control samples. This independent program is applicable to all Dominion nuclear facilities because they share a joint contract with AREVA-NP Environmental Laboratory.

DNC QA PROGRAM

The DNC independent QA Program includes spikes of various sample media and duplicate samples. Sample spikes are a check on the accuracy of results of the contractor's radioanalyses. Duplicate samples test the contractor's precision, or reproducibility of results, by comparing analytical results of split samples. The number and type of DNC QA Program quality control samples are defined in Millstone Nuclear Power Station Procedure REMP 1.4, "Quality Control of Radiological Environmental Monitoring Program." An investigation is conducted on any result or trend that does not satisfy acceptance criteria.

OTHER QA PROGRAMS

The DNC Independent QA Program is not the only QA Program which monitors REMP radioanalysis performance. Other programs include:

1. Contractor lab's internal QA program. In addition to the Millstone quality control samples, the radioanalysis contractor has its own quality control samples. In total, at least five percent of the contractor's sample analyses include quality control samples.

2. Contractor lab's interlaboratory comparison program with an independent third party, Analytics, Inc. Results of the Analytics intercomparison are contained in Appendix C. Primary contractor participation in an interlaboratory comparison program is required by station Technical Specifications. The Analytics comparison satisfies this requirement.

3. Contractor lab's participation in the National Institute of Standards and Technology (NIST) Measurement Assurance Program (MAP), the Environmental Resource Associates (ERA) Proficiency Test (PT) Program, the Department of Energy (DOE) Quality Assessment Program (QAP), and the Mixed Analyte performance Evaluation Program (MAPEP). The lab participates in these interlaboratory QA programs because of other clients' needs, not because of nuclear power station environmental sample analyses. However, some of these intercomparison samples are also applicable to nuclear power environmental samples.

RESULTS OF DNC QA PROGRAM FOR CONTRACTOR RADIOANALYSES

Criteria for passing QA sample analysis is that the result be within 20% of the known spike except in the case of Sr-89 or Sr-90 spikes in milk which have to be within 30% of the known spike. To allow more tolerance for lower activity spikes the following alternate criterion may be used: If the two sigma error range of the analyzed result includes the known spike value the result passes.

Table 1 lists the numbers of QC and routine samples for various sample media for 2009. The results of the QC samples are shown on Table 2. All of the TLD spike tests satisfied the procedural criteria. Of the 77 individual nuclide analysis results on QA samples, 67 passed the acceptance criteria, a 87 % success rate. Of the 10 failures, 5 were low by 27 – 34% and 3 high by 22 – 28 %. The other two occurred in the two December water spikes. The fist spike was low by 96 % (-3.1 σ) for Mn-54 due to a very low level spike; the other 4 nuclides were in agreement with the spiked values. The second spike was high by 355% for Cs-137 (+11.3 σ); the other 4 nuclides were in agreement with the spiked values. Vendor's results are consistent with the State of Connecticut which had a split of this sample. This indicates a spiking problem with this sample. Based upon investigation of the results for these water spikes, small deviations for 8 of the failures and the relatively high acceptance rate, the Millstone QA Program indicated that the contractor lab's environmental radiological analysis program was adequate in 2009.

TABLE 1
2008 QUALITY CONTROL SAMPLES

SAMPLE TYPE	QC SAMPLES (Note 1)	ROUTINE SAMPLES
TLD Spike	16	160
Milk - Strontium	2	6
Milk - Iodine	2	~30
Milk - Gamma	(Note 2)	~30
Pasture Grass/Hay – Gamma (Milk Substitute)	0	~30
Water - Gamma	8	60
Water - Tritium	8	60
Fish/Invertebrate - Gamma	4	80
Vegetation/Aquatic Flora/Sediment/Soil - Gamma	0	74
Air Particulate - Gross Beta - Iodine - Gamma	5 2 2	416 416 32

FOOTNOTES (Table 1):
1. All samples are spikes except fish/invertebrate which are duplicate oyster samples.
2. Gamma in water QA spikes are treated as milk surrogates.

TABLE 2
RESULTS OF 2009 QUALITY CONTROL SAMPLE ANALYSES*

SAMPLE TYPE	ANALYSES PASSED	ANALYSES FAILED
TLD Spike	16	0
Milk - Strontium	2	0
Milk - Iodine	0	2 (Note 1)
Water - Gamma	42	2 (Note 2)
Water - Tritium	6	2 (Note 3)
Oysters - Gamma	4	0
Air Particulate - Gross Beta	5	0
- Iodine	0	2 (Note 4)
- Gamma	8	2 (Note 5)
TOTALS	TLDs: 16 Individual Nuclides: 67	TLDs: 0 Individual Nuclides: 10

FOOTNOTES (Table 2):
* To provide a more detailed comparison of pass versus failure, each nuclide was considered for the gamma and strontium analyses.
1. These ranged from 29 to 34 percent low, caused by Iodine spiking or preservation issues
2. One low by 96% (- 3.61 σ), second high by 355% (+ 11.3 σ); results consistent with State of CT
3. One low by 27% (- 3.64 σ), second high by 28% (+ 3.53 σ)
4. Low by 27 – 29 %. Similar results for State of CT; this indicates a low bias with the I-131 spike. The iodine in milk was also low confirming this bias.
5. High by 22 - 24% (just outside the 20% acceptance criteria)

APPENDIX C

SUMMARY OF INTERLABORATORY COMPARISONS

INTRODUCTION

This appendix covers the Intercomparison Program of the AREVA-NP Environmental Laboratory as required by technical specifications for each Millstone unit. AREVA-NP uses QA/QC samples provided by Analytics, Inc to monitor the quality of analytical processing associated with the Radiological Environmental Monitoring Program (REMP). The suite of Analytics QA/QC samples are designed to be comparable with the pre-1996 US EPA Interlaboratory Cross-Check Program in terms of sample number, matrices, and nuclides. It was modified to more closely match the media mix presently being processed by AREVA-NP and includes:

- milk for gamma (10 nuclides) and low-level (LL) Iodine-131 analyses once per quarter
- water for gamma (10 nuclides) and low-level (LL) Iodine-131 analyses during the 1st and 3rd quarters
- water for Sr-89 and Sr-90 analyses during the 1st and 4th quarters
- water tritium analysis during the 2nd and 4th quarters
- air filter for gamma (9 nuclides) analyses during the 2nd quarter
- air filter for gross beta analysis during the 1st and 3rd quarters
- charcoal filter for I-131 during the 1st and 3rd quarters
- air filter for Sr-89 and Sr-90 analyses during the 2nd and 4th quarters

In addition to the Analytics Intercomparison Program, AREVA-NP also participates in other intercomparsion programs which include radionuclides and media similar to those required by the Millstone program. These programs are the National Institute of Standards and Technology (NIST) Measurement Assurance Program (MAP), the Environmental Resource Associates (ERA) Proficiency Test (PT) Program, the Department of Energy (DOE) Quality Assessment Program (QAP), and the Mixed Analyte Performance Evaluation Program (MAPEP).

RESULTS

Intercomparison program results are evaluated using AREVA-NP's internal bias acceptance criterion. The criterion is defined as within 25% of the known strontium value for samples containing both Sr-89 and Sr-90 and within 15% of the known value for other radionuclides, or within two sigma of the known value. Any sample analysis result which does not pass the criteria is investigated by AREVA-NP. Analytics Intercomparison Program results are included on pages C-3 through C-7 for 2009. Since the Fourth Quarter Analytics results are not usually available until mid April, the previous year's results are listed.

A total of 141 analysis results were obtained with 140 passing criteria, a 99% success rate. The low bias on gross alpha on an water sample (E6558-162) was investigated by AREVA (AREVA CR 09-21). Gross alpha analyses are not performed on any Millstone REMP samples.

AREVA NP ENVIRONMENTAL LABORATORY
ANALYTICS RADIOLOGICAL ENVIRONMENTAL CROSS-CHECK
PERFORMANCE EVALUATION

Sample Number	Quarter/ Year	Sample Media	Nuclide	Units	Reported Value	Known Value	E-LAB/ Analytics
E6346-162	4th/2008	Water	Gross Alpha	pCi/L	104	114	0.91
E6346-162	4th/2008	Water	Gross Beta	pCi/L	208	204	1.02
E6347-162	4th/2008	Water	I-131LL	pCi/L	57.5	64.1	0.90
E6347-162	4th/2008	Water	I-131	pCi/L	54.3	64.1	0.85
E6347-162	4th/2008	Water	Ce-141	pCi/L	209	224	0.93
E6347-162	4th/2008	Water	Cr-51	pCi/L	299	288	1.04
E6347-162	4th/2008	Water	Cs-134	pCi/L	141	157	0.90
E6347-162	4th/2008	Water	Cs-137	pCi/L	134	140	0.96
E6347-162	4th/2008	Water	Co-58	pCi/L	115	122	0.94
E6347-162	4th/2008	Water	Mn-54	pCi/L	172	178	0.97
E6347-162	4th/2008	Water	Fe-59	pCi/L	122	117	1.04
E6347-162	4th/2008	Water	Zn-65	pCi/L	203	214	0.95
E6347-162	4th/2008	Water	Co-60	pCi/L	154	156	0.99
E6348-162	4th/2008	Water	Sr-89	pCi/L	78.8	97.7	0.81
E6348-162	4th/2008	Water	Sr-90	pCi/L	14.1	13.4	1.05
E6349-162	4th/2008	Water	H-3	pCi/L	10300	10200	1.01
E6350-162	4th/2008	Charcoal	I-131	pCi	53.1	53.6	0.99
E6351-162	4th/2008	Filter	Gross Alpha	pCi	72.3	63.2	1.14
E6351-162	4th/2008	Filter	Gross Beta	pCi	127	113	1.12
E6352-162	4th/2008	Filter	Ce-141	pCi	112	119	0.94
E6352-162	4th/2008	Filter	Cr-51	pCi	152	153	0.99
E6352-162	4th/2008	Filter	Cs-134	pCi	77.8	83.6	0.93
E6352-162	4th/2008	Filter	Cs-137	pCi	76.8	74.6	1.03
E6352-162	4th/2008	Filter	Co-58	pCi	63.1	64.9	0.97
E6352-162	4th/2008	Filter	Mn-54	pCi	91.8	94.6	0.97
E6352-162	4th/2008	Filter	Fe-59	pCi	60.4	62.5	0.97
E6352-162	4th/2008	Filter	Zn-65	pCi	110	114	0.96
E6353-162	4th/2008	Milk	I-131LL	pCi/L	72.4	79.9	0.91
E6353-162	4th/2008	Milk	I-131	pCi/L	74.3	79.9	0.93
E6353-162	4th/2008	Milk	Ce-141	pCi/L	184	191	0.96
E6353-162	4th/2008	Milk	Cr-51	pCi/L	235	246	0.96
E6353-162	4th/2008	Milk	Cs-134	pCi/L	125	134	0.93
E6353-162	4th/2008	Milk	Cs-137	pCi/L	119	120	1.00
E6353-162	4th/2008	Milk	Co-58	pCi/L	105	104	1.01
E6353-162	4th/2008	Milk	Mn-54	pCi/L	152	152	1.00
E6353-162	4th/2008	Milk	Fe-59	pCi/L	107	100	1.06
E6353-162	4th/2008	Milk	Zn-65	pCi/L	177	183	0.97
E6353-162	4th/2008	Milk	Co-60	pCi/L	135	133	1.01

AREVA NP ENVIRONMENTAL LABORATORY

ANALYTICS ENVIRONMENTAL CROSS CHECK PROGRAM

PERFORMANCE EVALUATION

Sample Number	Quarter/ Year	Sample Media	Nuclide	Units	Reported Value	Known Value	E-LAB/ Analytics
E6558-162	1st/2009	Water	Gross Alpha	pCi/L	120	162	0.75
E6558-162	1st/2009	Water	Gross Beta	pCi/L	189	203	0.93
E6559-162	1st/2009	Water	I-131LL	pCi/L	63.2	69.0	0.92
E6559-162	1st/2009	Water	I-131	pCi/L	58.8	69.0	0.85
E6559-162	1st/2009	Water	Ce-141	pCi/L	114	120	0.95
E6559-162	1st/2009	Water	Cr-51	pCi/L	365	387	0.94
E6559-162	1st/2009	Water	Cs-134	pCi/L	107	119	0.90
E6559-162	1st/2009	Water	Cs-137	pCi/L	136	141	0.96
E6559-162	1st/2009	Water	Co-58	pCi/L	145	151	0.96
E6559-162	1st/2009	Water	Mn-54	pCi/L	165	162	1.02
E6559-162	1st/2009	Water	Fe-59	pCi/L	128	127	1.01
E6559-162	1st/2009	Water	Zn-65	pCi/L	192	197	0.97
E6559-162	1st/2009	Water	Co-60	pCi/L	184	180	1.02
E6560-162	1st/2009	Water	Sr-89	pCi/L	80.5	94.5	0.85
E6560-162	1st/2009	Water	Sr-90	pCi/L	14.9	15.1	0.99
E6561-162	1st/2009	Water	H-3	pCi/L	4090	4480	0.91
E6562-162	1st/2009	Charcoal	I-131	pCi	70.5	79.4	0.89
E6563-162	1st/2009	Filter	Gross Alpha	pCi	140	122	1.15
E6563-162	1st/2009	Filter	Gross Beta	pCi	168	153	1.10
E6564-162	1st/2009	Milk	I-131LL	pCi/L	72.9	79.3	0.92
E6564-162	1st/2009	Milk	I-131	pCi/L	69.1	79.3	0.87
E6564-162	1st/2009	Milk	Ce-141	pCi/L	91.7	94.9	0.97
E6564-162	1st/2009	Milk	Cr-51	pCi/L	300	305	0.98
E6564-162	1st/2009	Milk	Cs-134	pCi/L	85	93.7	0.91
E6564-162	1st/2009	Milk	Cs-137	pCi/L	115	111	1.04
E6564-162	1st/2009	Milk	Co-58	pCi/L	121	119	1.01
E6564-162	1st/2009	Milk	Mn-54	pCi/L	135	128	1.05
E6564-162	1st/2009	Milk	Fe-59	pCi/L	109	99.9	1.09
E6564-162	1st/2009	Milk	Zn-65	pCi/L	155	156	0.99
E6564-162	1st/2009	Milk	Co-60	pCi/L	146	142	1.03
E6565-162	1st/2009	Milk	Sr-89	pCi/L	80.1	97.7	0.82
E6565-162	1st/2009	Milk	Sr-90	pCi/L	14.5	15.6	0.93

AREVA NP ENVIRONMENTAL LABORATORY
ANALYTICS RADIOLOGICAL ENVIRONMENTAL CROSS-CHECK
PERFORMANCE EVALUATION

Sample Number	Quarter/ Year	Sample Media	Nuclide	Units	Reported Value	Known Value	E-LAB/ Analytics
E6711-162	2nd/2009	Water	Gross Alpha	pCi/L	272	281	0.97
E6711-162	2nd/2009	Water	Gross Beta	pCi/L	157	141	1.11
E6712-162	2nd/2009	Water	I-131LL	pCi/L	83.5	88.3	0.95
E6712-162	2nd/2009	Water	I-131	pCi/L	87.4	88.3	0.99
E6712-162	2nd/2009	Water	Ce-141	pCi/L	206	216	0.96
E6712-162	2nd/2009	Water	Cr-51	pCi/L	290	304	0.95
E6712-162	2nd/2009	Water	Cs-134	pCi/L	111	126	0.88
E6712-162	2nd/2009	Water	Cs-137	pCi/L	148	146	1.02
E6712-162	2nd/2009	Water	Co-58	pCi/L	70.3	69.8	1.01
E6712-162	2nd/2009	Water	Mn-54	pCi/L	107	104	1.03
E6712-162	2nd/2009	Water	Fe-59	pCi/L	97.7	92.9	1.05
E6712-162	2nd/2009	Water	Zn-65	pCi/L	142	133	1.07
E6712-162	2nd/2009	Water	Co-60	pCi/L	231	237	0.97
E6713-162	2nd/2009	Water	Sr-89	pCi/L	77.8	91.1	0.85
E6713-162	2nd/2009	Water	Sr-90	pCi/L	13.1	13.6	0.96
E6714-162	2nd/2009	Water	H-3	pCi/L	12300	13300	0.92
E6715-162	2nd/2009	Charcoal	I-131	pCi	92.5	95.1	0.97
E6716-162	2nd/2009	Filter	Gross Alpha	pCi	102	118	0.86
E6716-162	2nd/2009	Filter	Gross Beta	pCi	60.3	59.3	1.02
E6717-162	2nd/2009	Filter	Ce-141	pCi	79.7	85.6	0.93
E6717-162	2nd/2009	Filter	Cr-51	pCi	116	121	0.96
E6717-162	2nd/2009	Filter	Cs-134	pCi	46.9	49.9	0.94
E6717-162	2nd/2009	Filter	Cs-137	pCi	59.8	57.9	1.03
E6717-162	2nd/2009	Filter	Co-58	pCi	27.4	27.7	0.99
E6717-162	2nd/2009	Filter	Mn-54	pCi	41.0	41.3	0.99
E6717-162	2nd/2009	Filter	Fe-59	pCi	34.8	36.9	0.94
E6717-162	2nd/2009	Filter	Zn-65	pCi	52.4	52.9	0.99
E6717-162	2nd/2009	Filter	Co-60	pCi	88.3	94.0	0.94
E6718-162	2nd/2009	Milk	I-131LL	pCi/L	94.7	102	0.93
E6718-162	2nd/2009	Milk	I-131	pCi/L	97.7	102	0.96
E6718-162	2nd/2009	Milk	Ce-141	pCi/L	275	284	0.97
E6718-162	2nd/2009	Milk	Cr-51	pCi/L	395	400	0.99
E6718-162	2nd/2009	Milk	Cs-134	pCi/L	146	166	0.88
E6718-162	2nd/2009	Milk	Cs-137	pCi/L	187	192	0.97
E6718-162	2nd/2009	Milk	Co-58	pCi/L	90.0	91.9	0.98
E6718-162	2nd/2009	Milk	Mn-54	pCi/L	138	137	1.01
E6718-162	2nd/2009	Milk	Fe-59	pCi/L	130	122	1.06
E6718-162	2nd/2009	Milk	Zn-65	pCi/L	185	175	1.05
E6718-162	2nd/2009	Milk	Co-60	pCi/L	316	312	1.01

AREVA NP ENVIRONMENTAL LABORATORY
ANALYTICS ENVIRONMENTAL CROSS CHECK PROGRAM
PERFORMANCE EVALUATION

Sample Number	Quarter/ Year	Sample Media	Nuclide	Units	Reported Value	Known Value	E-LAB/ Analytics
E6823-162	3rd/2009	Water	Gross Alpha	pCi/L	275	324	0.85
E6823-162	3rd/2009	Water	Gross Beta	pCi/L	281	287	0.98
E6824-162	3rd/2009	Water	I-131LL	pCi/L	100.9	98.4	1.02
E6824-162	3rd/2009	Water	I-131	pCi/L	87.7	98.4	0.89
E6824-162	3rd/2009	Water	Ce-141	pCi/L	258	264	0.98
E6824-162	3rd/2009	Water	Cr-51	pCi/L	199	212	0.94
E6824-162	3rd/2009	Water	Cs-134	pCi/L	108	118	0.92
E6824-162	3rd/2009	Water	Cs-137	pCi/L	175	177	0.99
E6824-162	3rd/2009	Water	Co-58	pCi/L	94.8	95.4	0.99
E6824-162	3rd/2009	Water	Mn-54	pCi/L	200	198	1.01
E6824-162	3rd/2009	Water	Fe-59	pCi/L	146	141	1.04
E6824-162	3rd/2009	Water	Zn-65	pCi/L	198	195	1.01
E6824-162	3rd/2009	Water	Co-60	pCi/L	149	154	0.97
E6825-162	3rd/2009	Water	Sr-89	pCi/L	88.9	105	0.85
E6825-162	3rd/2009	Water	Sr-90	pCi/L	18.1	18.5	0.98
E6826-162	3rd/2009	Water	H-3	pCi/L	13500	14100	0.96
E6827-162	3rd/2009	Charcoal	I-131	pCi	89.5	92.0	0.97
E6828-162	3rd/2009	Filter	Gross Alpha	pCi	251	265	0.95
E6828-162	3rd/2009	Filter	Gross Beta	pCi	239	235	1.02
E6829-162	3rd/2009	Milk	I-131LL	pCi/L	97.2	98.6	0.99
E6829-162	3rd/2009	Milk	I-131	pCi/L	104	98.6	1.06
E6829-162	3rd/2009	Milk	Ce-141	pCi/L	270	275	0.98
E6829-162	3rd/2009	Milk	Cr-51	pCi/L	217	221	0.98
E6829-162	3rd/2009	Milk	Cs-134	pCi/L	111	123	0.90
E6829-162	3rd/2009	Milk	Cs-137	pCi/L	188	185	1.02
E6829-162	3rd/2009	Milk	Co-58	pCi/L	99.2	99.4	1.00
E6829-162	3rd/2009	Milk	Mn-54	pCi/L	210	206	1.02
E6829-162	3rd/2009	Milk	Fe-59	pCi/L	159	147	1.08
E6829-162	3rd/2009	Milk	Zn-65	pCi/L	209	204	1.02
E6829-162	3rd/2009	Milk	Co-60	pCi/L	160	160	1.00
E6830-162	3rd/2009	Milk	Sr-89	pCi/L	91.8	107	0.86
E6830-162	3rd/2009	Milk	Sr-90	pCi/L	18.1	18.8	0.96