Dominion Energy Kewaunee, Inc.
N490 Highway 42, Kewaunee, WI 54216-9511

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DOMINION ENERGY KEWAUNEE, INC.
KEWAUNEE POWER STATION
2007 ANNUAL ENVIRONMENTAL MONITORING REPORT

Enclosed is the 2007 Annual Environmental Monitoring Report for the Kewaunee Power Station (KPS). This report was prepared by Environmental Inc. and satisfies the requirements of KPS Technical Specification 6.9.b.1.

The results of the 2007 Land Use Census, submitted in accordance with the KPS Radiological Environmental Monitoring Manual, Section 2.2.2/2.3.2, are also included in this report.

Section 3.1.4, "Program Execution," contains corrections to the 2005 and 2006 annual environmental monitoring reports submitted by Dominion Energy Kewaunee, Inc. (DEK) to the Nuclear Regulatory Commission (NRC) on April 28, 2006 (reference 1) and April 18, 2007 (reference 2).

If you have questions or require additional information, please feel free to contact Mr. Mike Hale at 920-388-8103.

Very truly yours,

Michael J. Wilson
Director Safety and Licensing

Commitments made by this letter: NONE

Enclosure

IE25
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References:

1. Letter from Michael G. Gaffney (DEK) to NRC (Document Control Desk), "Annual Environmental Monitoring Report January-December 2005," dated April 28, 2006 (ADAMS Accession No. ML061240127).
2. Letter from Leslie N. Hartz (DEK) to NRC (Document Control Desk), "2006 Annual Environmental Monitoring Report," dated April 18, 2007 (ADAMS Accession No. ML071350508).

cc: Regional Administrator, Region III
U. S. Nuclear Regulatory Commission
2443 Warrenville Road
Suite 210
Lisle, IL 60532-4352

Ms. M. H. Chernoff
Senior Project Manager
U.S. Nuclear Regulatory Commission
One White Flint North, Mail Stop O8-H4A
11555 Rockville Pike
Rockville, MD 20852-2738

NRC Senior Resident Inspector
Kewaunee Power Station

Mr. Don Hendrikse
WI Division of Public Health
Radiation Protection Section
Room 150
Madison, WI 53701-2659

Ms. Deborah Russo
American Nuclear Insurers
95 Glastonbury Blvd.
Glastonbury, CT 06033

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2007 Annual Environmental Monitoring Report

Kewaunee Power Station

Dominion Energy Kewaunee, Inc.

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2007 Annual Environmental Monitoring Report

Kewaunee Power Station

Part I

Summary and Interpretation

Dominion Energy Kewaunee, Inc.

Environmental, Inc.
Midwest Laboratory
an Allegheny Technologies Co.

700 Landwehr Road • Northbrook, IL 60062-2310
ph. (847) 564-0700 • fax (847) 564-4517

REPORT TO

DOMINION NUCLEAR

RADIOLOGICAL MONITORING PROGRAM FOR THE KEWAUNEE POWER STATION KEWAUNEE, WISCONSIN

ANNUAL REPORT - PART I SUMMARY AND INTERPRETATION

January 1 to December 31, 2007

Prepared and submitted by:

ENVIRONMENTAL Inc.
Midwest Laboratory
Project No. 8002

Approved :

Bronia Grob
Laboratory Manager

J. Michael Hale
Radiation Protection /
Chemistry Mgr., KPS

PREFACE

The staff of Environmental, Inc., Midwest Laboratory were responsible for the acquisition of data presented in this report. Assistance in sample collection was provided by Kewaunee Power Station personnel. The report was prepared by staff members of Environmental, Inc., Midwest Laboratory.

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1.0 INTRODUCTION

The Kewaunee Power Station is a 598 megawatt pressurized water reactor located on the Wisconsin shore of Lake Michigan in Kewaunee County. The Plant became critical on March 7, 1974. Initial power generation was achieved on April 8, 1974, and the Plant was declared commercial on June 16, 1974. This report summarizes the environmental operation data collected during the period January - December 2007.

Dominion Nuclear, an operating company for the Kewaunee Power Station, assumes the responsibility for the environmental program at the Plant and any questions relating to this subject should be directed to Mr. J. Michael Hale, Radiation Protection / Chemistry Manager, at (920) 388-8103.

2.0 SUMMARY

Results of sample analyses during the period January - December 2007 are summarized in Table 4.5. Radionuclide concentrations measured at indicator locations are compared with levels measured at control locations and in preoperational studies. The comparisons indicate background-level radioactivities in all samples collected.

3.0 RADIOLOGICAL SURVEILLANCE PROGRAM

Following is a description of the Radiological Surveillance Program and its execution.

3.1 Methodology

The sampling locations are shown in Figure 4-1. Table 4.1 describes the locations, lists for each direction and distance from the reactor, and indicates which are indicators and which are control locations.

The sampling program monitors the air, terrestrial, and aquatic environments. The types of samples collected at each location and the frequency of collections are presented in Table 4.2, using sample codes defined in Table 4.3. The collections and analyses that comprise the program are described below. Finally, the execution of the program in the current reporting year is discussed.

3.1.1 The Air Program

Airborne Particulates

Airborne particulates are collected on a 47 mm diameter, 0.8μ porosity glass fiber filter, at a volumetric rate of approx. one cubic foot per minute. The filters are collected weekly from six locations (K-1f, K-2, K-7, K-8, K-31 and K-41), and dispatched by mail to Environmental, Inc. for radiometric analysis. The particulate filters are counted for gross beta activity, a minimum of three days after the date of collection, to allow for the decay of naturally-occurring short-lived radionuclides.

Quarterly composites from each sampling location are analyzed for gamma-emitting isotopes on a high-purity germanium (HPGe) detector.

Airborne Iodine

Charcoal filters are located at locations K-1f, K-2, K-7, K-8, K-31 and K-41. The filters are changed bi-weekly and analyzed for iodine-131 immediately after arrival at the laboratory.

Ambient Gamma Radiation - TLDs

The integrated gamma-ray background is measured at the six air sampling locations (K-1f, K-2, K-7, K-8, K-31 and K-41), at four milk sampling locations (K-3, K-5, K-25 and K-39), and four additional sites (K-15, located 9.25 miles northwest of the plant; K-17, located 4.25 miles west of the plant; K-27, located 1.5 miles northwest of the plant and K-30, located 1.0 miles north of the plant) by thermoluminescent dosimetry (TLDs). Two TLD cards, each having four main readout areas containing $CaSO_4$:Dy phosphor, are placed at each location (eight TLDs at each location). One card is exchanged quarterly, the other card is exchanged annually and read only on an emergency basis.

Precipitation

Monthly composites of precipitation samples collected at K-11 are analyzed for tritium activity and counted using a liquid scintillation method.

3.1.2 The Terrestrial Program

Milk

Milk is collected semimonthly from May through October, and monthly during the rest of the year from five herds that graze within four miles of the reactor site (K-5, K-25, K-34, K-38 and K-39), from one herd grazing between four and ten miles from the reactor site (K-3), and from a dairy store in Green Bay (K-28). The samples are analyzed for iodine-131, strontium-89 and strontium-90, cesium-137, barium-lanthanum-140, potassium-40, calcium and stable potassium.

Well Water

One gallon of water is collected quarterly from the four off-site well locations K-10, K-11, K-13 and K-25 and from two on-site wells located at K-1g and K-1h.

Gamma spectroscopic analyses, tritium and gross beta on the total residue are performed for each water sample. The concentration of potassium-40 is calculated from the total potassium, on all samples.

Additionally, samples of water from two on-site wells (K-1g and K-1h) are analyzed for gross alpha. Water from the on-site well (K-1g) is analyzed for strontium-89 and strontium-90.

Domestic Meat

Domestic meat samples are obtained annually (in the third quarter) at locations K-24, K-29 and K-32 and if available at locations K-20, K-27 and K-34. The flesh is separated from the bone and analyzed for gross alpha, gross beta and gamma emitting isotopes.

Eggs

Eggs are collected quarterly from locations K-24, K-27 (if available) and K-32. Samples are analyzed for gross beta, strontium-89, strontium-90 and gamma-emitting isotopes.

Vegetables

Vegetable samples (6 varieties) are collected at locations K-17 (if available) and K-26, and two varieties of grain, if available, from location K-23. The samples are analyzed for gross beta, strontium-89, strontium-90 and gamma emitting isotopes.

Grass and Cattle Feed

Grass is collected during the second, third and fourth quarters from two on-site locations (K-1b and K-1f) and from the dairy farm locations. Cattle feed is collected during the first quarter from the same farms. The samples are analyzed for gross beta, strontium-89 and -90, and gamma emitting isotopes.

Soil

Soil samples are collected twice a year on-site at K-1f and from the dairy farm locations (K-3, K-5, K-25, K-34, K-38 and K-39). The samples are analyzed for gross alpha, gross beta, strontium-89, strontium-90 and gamma emitting isotopes.

3.1.3 The Aquatic Program

Surface Water

One-gallon water samples are taken monthly from three locations on Lake Michigan: 1) at the point where the condenser water is discharged into Lake Michigan (K-1d); 2) Two Creeks Park (K-14) located 2.5 miles south of the reactor site; and 3) at the main pumping station located approximately equidistant from Kewaunee and Green Bay, which pumps water from the Rostok water intake (K-9) located 11.5 miles north of the reactor site. Both raw and tap water are collected at K-9. One-gallon water samples are taken monthly from three creeks that pass through the site (K-1a, K-1b, and K-1e). Samples from North and Middle Creeks (K-1a, K-1b) are collected near the mouth of each creek. Samples from the South Creek (K-1e) are collected about ten feet downstream from the point where the outflow from the two drain pipes meet. Additionally, the drainage pond (K-1k), located approximately 0.6 miles southwest of the plant, is included in the sampling program. Water samples at K-14 are collected and analyzed in duplicate.

The water is analyzed for gamma emitting isotopes, gross beta activity in total residue, dissolved solids and suspended solids, and potassium-40. The concentration of potassium-40 is calculated from the total potassium concentration. In addition, quarterly composites of the monthly grab samples are analyzed for tritium, strontium-89 and strontium-90.

Fish

Fish samples are collected during the second, third and fourth quarters at location K-1d. The flesh is separated from the bones, gamma scanned and analyzed for gross beta activity. Ashed bone samples are analyzed for gross beta, strontium-89 and strontium-90 activities.

Slime

Slime samples are collected during the second and third quarters from three Lake Michigan locations (K-1d, K-9 and K-14), from three creek locations (K-1a, K-1b and K-1e) and from the drainage pond (K-1k), if available. The samples are analyzed for gross beta activity. If the quantity is sufficient, analyses for gamma-emitting isotopes and strontium-89 and strontium-90 activities are performed.

Bottom Sediment

Bottom sediments are collected in May and November from five locations (K-1c, K-1d, K-1j, K-9 and K-14). The samples are analyzed for gross beta, strontium-89, strontium-90 and gamma emitting isotopes. Measured radioactivity per unit mass of sediment increases with decreasing particle size, and the sampling procedure is designed to assure collection of fine particles.

3.1.4 Program Execution

Program execution is summarized in Table 4.4. The program was executed for the year 2007 as described in the preceding sections, with the following exceptions:

(1) CA17448 - A partial air particulate / air iodine sample (128 m^3) was collected at location K-1f for the week ending 09/18/2007. The sampler pump failed due to a tripped circuit breaker.

(2) A partial air particulate / air iodine sample (116 m^3) was collected at location K-31 for the week ending 05/08/2007. Sampling was interrupted due to a power failure.

(3) Vegetable samples were not available at the indicator location K-17, Jansky's Farm. The garden has been discontinued. Additional vegetable samples were collected at locations K-24 and K-38.

(4) The surface water from location K-1k could not be sampled in February, March or December of 2007. The pond was frozen.

Addendum to the 2005, 2006 Report:

Section 3.1.1, The airborne particulate samples are collected on a 47 mm diameter, 0.8μ porosity glass fiber filter, at a volumetric rate of approx. one cubic foot per minute.

Correction to the 2005 Report:

Table 4.5, pg. 24, Periphyton: The indicator values and highest location for Sr-90 were incorrect. Sr-90 was not detected in periphyton above an LLD level of 0.079 pCi/g wet.

Corrections to the 2006 Report:

Section 3.2.2, pg. 9, Ambient Gamma Radiation – TLDs: The indicator and control values in the discussion were not updated from the 2005 report. The correct values of 16.4 and 15.0 mR/91 days for indicator and control locations, respectively, were listed in Table 4.5.

Section 3.2.3, pg. 10, Milk: The Sr-90 mean values for control and indicator locations were reversed. Average Sr-90 activities should read 1.0 and 1.1 pCi/L, respectively. See Table 4.5.

Section 3.2.4, pg. 12, Periphyton: Sr-90 was detected at an average 0.094 pCi/g wet at 2 of 12 locations.

3.1.5 Program Modifications

Maps were updated to identify sampling locations K-34, K-38 and K-39. An emergency preparedness map has been added to coordinate zones with the sampling locations.

3.2 Results and Discussion

The results for the reporting period January to December 2007 are presented in summary form in Table 4.5. For each type of analysis, of each sampled medium, the table shows the annual mean and range for all indicator and control locations. The location with the highest annual mean and the results for this location are also given.

The discussion of the results has been divided into three broad categories: the air, terrestrial, and aquatic environments. Within each category, samples will be discussed in the order listed in Table 4.4. Any discussion of previous environmental data for the Kewaunee Power Station refers to data collected by Environmental Inc., Midwest Laboratory.

The tabulated results of all measurements made in 2007 are not included in this section, although references to these results will be made in the discussion. A complete tabulation of results is contained in Part II of the 2007 annual report on the Radiological Monitoring Program for the Kewaunee Power Station.

3.2.1 Atmospheric Nuclear Detonations and Nuclear Accidents

There were no atmospheric nuclear tests or accidents reported in 2007. The last reported test was conducted by the People's Republic of China on October 16, 1980.

3.2.2 The Air Environment

Airborne Particulates

The annual gross beta concentration in air particulates averaged 0.022 pCi/m^3 at indicator locations and 0.021 pCi/m^3 at the control locations. The averages were similar to the means observed from 1996 (and prior to) through 2006. Results are tabulated below.

Year	Average of Indicators	Average of Controls
	Concentration (pCi/m^3)	
1996	0.020	0.019
1997	0.019	0.019
1998	0.019	0.019
1999	0.022	0.023
2000	0.022	0.021
2001	0.024	0.023
2002	0.023	0.023
2003	0.022	0.022
2004	0.019	0.020
2005	0.023	0.023
2006	0.021	0.021
2007	0.022	0.021

Average annual gross beta concentrations in airborne particulates.

Airborne Particulates (continued)

Gamma spectroscopic analysis of quarterly composites of air particulate filters yielded similar results for indicator and control locations. Beryllium-7, which is produced continuously in the upper atmosphere by cosmic radiation (Arnold and Al-Salih, 1955) was detected in all samples, with an average activity of 0.066 pCi/m^3 for all locations. All other gamma-emitting isotopes were below their respective LLD limits.

Airborne Iodine

Bi-monthly levels of airborne iodine-131 were below the lower limit of detection (LLD) of 0.030 pCi/m^3 at all locations. There is no indication of an effect of plant operation on the local air environment.

Ambient Gamma Radiation - TLDs

Ambient gamma radiation was monitored by TLDs at fourteen locations: eight indicator and six control.

Quarterly TLDs at indicator locations measured a mean dose equivalent of (16.2 mR/91 days), in agreement with the mean at the control locations of (15.2 mR/91 days), and were similar to the means obtained from 1996 (and prior to) through 2006. The averages are tabulated below. No plant effect on ambient gamma radiation was indicated These values are slightly lower than the United States average value of 19.5 mR/91 days due to natural background radiation (National Council on Radiation Protection and Measurements, 1975). The highest annual mean was 18.9 mR/91 days, measured at the indicator location K-7.

Year	Average (Indicators)	Average (Controls)
	Dose rate (mR/91 days)	
1996	15.9	14.9
1997	16.0	15.1
1998	16.1	15.5
1999	17.4	16.9
2000	18.7	18.2
2001	18.6	18.3
2002	16.1	15.1
2003	14.1	13.7
2004	14.8	14.0
2005	15.7	14.3
2006	16.4	15.0
2007	16.2	15.2

Ambient gamma radiation as measured by thermoluminescent dosimetry.
Average quarterly dose rates.

Precipitation

Precipitation was monitored for tritium at indicator location, K-11. The concentration was below the LLD level of 193 pCi/L in all samples.

3.2.3 The Terrestrial Environment

Milk

Of 126 analyses for iodine-131 in milk, all were below the LLD level of 0.5 pCi/L.

Strontium-89 concentrations measured below an LLD level of 1.3 pCi/L in all samples. Low levels of strontium-90 were found in sixty-two of the eighty-four samples tested. Mean values were almost identical for indicator and control locations (1.0 and 1.2 pCi/L, respectively) and are similar to or less than averages seen from 1990 through 2006.

Barium-lanthanum-140 concentrations were below 15 pCi/L and cesium-134 and cesium-137 concentrations were below 10 pCi/L in all samples. Potassium-40 results were almost identical at both the indicator and control locations (1368 and 1363 pCi/L, respectively), and are comparable to levels observed from 1990 through 2006. There was no indication of any effect due to the operation of the Kewaunee Power Station.

Due to the chemical similarities between strontium and calcium, and cesium and potassium, organisms tend to deposit cesium-137 in the soft tissue and muscle and strontium-89 and strontium-90 in the bone. Consequently, ratios of strontium-90 activity to the weight of calcium in milk and cesium-137 activity to the weight of potassium in milk were monitored in order to detect potential environmental accumulation of these radionuclides. The measured concentrations of stable potassium and calcium are in agreement with previously determined values of 1.60 and 1.20 g/L, respectively (National Center for Radiological Health, 1968).

Well Water

Three of eight samples for gross alpha analysis, from two on-site wells (K-1g and K-1h), tested above the LLD value of 2.7 pCi/L. Measurements ranged from 2.8 to 4.7 pCi/L. Gross beta activity, above an LLD of 2.0 pCi/L was detected in 6 of the 20 indicator samples tested. Concentrations ranged from 2.2 to 5.2 pCi/L. and averaged 3.6 pCi/L.

Levels of strontium-89 and strontium-90 were measured for the on-site well (K-1g). The concentrations measured below the LLD value of 0.8 and 0.6 pCi/L, respectively.

All samples were tested for tritium and gamma emitting isotopes. Tritium concentrations measured below the LLD of 176 pCi/L. Gamma-emitting isotopes measured below respective LLDs.

Potassium-40 averages are generally in proportion to gross beta measurements and were in agreement with previously measured values. No plant effect was indicated.

Domestic Meat

In domestic meat samples, gross alpha concentration measured below the lower limit of detection for both indicator and control locations. Gross beta concentration averaged 3.13 pCi/g wet for indicator locations and 3.00 pCi/g wet for the control location. The differences are not significant. Gamma-spectroscopic analyses showed that almost all beta activity was due to naturally occurring potassium-40 (2.81 pCi/g wet and 2.79 pCi/g wet respectively). All other gamma-emitting isotopes were below their respective LLD limits.

Eggs

In egg samples, gross beta concentrations averaged 1.86 pCi/g wet for the indicator location and 1.76 pCi/g wet for the control, similar to concentrations of naturally-occurring potassium-40 observed in the samples (1.22 and 1.30 pCi/g wet respectively). Other gamma-emitting isotopes were below their respective LLDs. Levels of strontium-89 measured below the LLD of 0.016 pCi/g wet in all samples, strontium-90 measured below the LLD level of 0.005 pCi/g wet.

Vegetables and Grain

In vegetables, gross beta concentrations averaged 2.06 pCi/g wet at the control location K-26, due primarily to potassium-40 activity. All other gamma emitting isotopes measured below respective LLDs. Strontium-89 measured below the LLD level of 0.084 pCi/g wet. Strontium-90 measured below the LLD level of 0.036 pCi/g wet.

In two samples (clover and oats) from location K-23, gross beta concentrations averaged 7.94 pCi/g wet, due primarily to potassium-40 and beryllium-7 activity (5.72 and 0.79 pCi/g wet, respectively). Strontium-89 measured below the LLD level of 0.022 pCi/g wet, strontium-90 measured below the LLD level of 0.009 pCi/g wet.

Grass and Cattle Feed

In grass, mean gross beta concentrations measured 7.90 and 10.47 pCi/g wet at indicator and control locations, respectively, and in all cases was predominantly due to naturally occurring potassium-40 and beryllium-7. All other gamma-emitting isotopes were below their respective LLDs. Strontium-89 measured below the LLD levels of 0.075. Strontium-90 activity measured below the LLD levels of 0.023 pCi/gwet.

In cattlefeed, the mean gross beta concentration was lower at the control locations (5.97 pCi/g wet) than at indicator locations (13.18 pCi/g wet), and reflected the potassium-40 / beryllium-7 levels observed in the samples (7.46 and 11.49 pCi/gwet, respectively.). This pattern is similar to that observed since 1978. Strontium-89 levels were below the LLD level of 0.041 pCi/g wet in all samples. Strontium-90 activity , above the LLD value of 0.021 pCi/g wet, was detected in one of twelve at 0.039 pCi/g wet, similar or lower than levels observed in 1996 through 2006. The presence of radiostrontium in the environment can still be attributed to fallout from nuclear testing in previous decades.

With the exception of naturally-occurring potassium, gamma-emitting isotopes were below their respective LLD levels.

Soil

Gross alpha concentrations in soil samples averaged 11.92 pCi/g dry at the indicator locations and 12.76 pCi/g dry at the control location. Mean gross beta levels measured at the indicator and control locations averaged 35.48 and 34.28 pCi/g dry, respectively, primarily due to the potassium-40 activity. Strontium-89 was below the LLD level of 0.14 pCi/g dry in all samples. Low levels of strontium-90 activity were detected in nine of the fourteen samples tested and averaged 0.046 pCi/g dry.

Low levels of cesium-137 were detected in twelve of fourteen soil samples, similar at both indicator and control locations (0.13 and 0.16 pCi/g dry, respectively). Potassium-40 was detected in all samples and averaged 19.46 and 19.20 pCi/g dry at indicator and control locations, respectively. All other gamma-emitting isotopes were below their respective LLD's. These levels of detected activities are similar to those observed from 1990 through 2006. The data suggests no evidence of a plant effect on soil measurements.

3.2.4 The Aquatic Environment

Surface Water

In all surface water samples tested, gross beta activity in suspended solids measured below the LLD level of 1.3 pCi/L. Mean gross beta concentration in dissolved solids was higher at the indicator locations (5.7 pCi/L) as compared to the control locations (1.8 pCi/L). The pattern is similar to activity distribution observed from 1978 through 2006.

Year	Average (Indicators)	Average (Controls)
	Dose rate (mR/91 days)	
1996	4.3	2.2
1997	6.3	2.4
1998	5.9	2.1
1999	5.6	2.2
2000	7.0	2.4
2001	5.9	2.2
2002	5.7	2.2
2003	7.3	2.4
2004	6.2	2.3
2005	5.2	1.7
2006	5.5	1.8
2007	5.7	1.8

Average annual gross beta concentrations in surface water (DS).

The difference in levels are due in part to the indicator location (K-1k), a pond formed by drainage of surrounding fields to the southwest. The control sample is Lake Michigan water, which varies very little in gross beta concentration during the year, while indicator samples include the two creek locations (K-1a and K-1e) which are much higher in gross beta concentration and exhibit large month-to-month variations. The K-1a creek draws its water from the surrounding fields which are heavily fertilized; and the K-1e creek draws its water mainly from the Sewage Treatment Plant. In general, gross beta concentrations were high when potassium-40 levels were high and low when potassium-40 levels were low, indicating that the fluctuations in beta concentration were due to variations in potassium-40 concentrations and not to plant operations. The fact that similar fluctuations at these locations were observed in the pre-operational studies conducted prior to 1974 supports this assessment.

Tritium activity (240 pCi/L) was measured in one composite sample, from location K-1e (South Creek). All other samples measured below an LLD value of 172 pCi/L.

Strontium-89 concentrations were below the LLD of 1.6 pCi/L. Strontium-90 averaged 0.6 pCi/L in tthree of thirty-six indicator and control samples. All other samples measured below LLD.

Gamma-emitting isotopes measured below their respective LLDs in all samples.

Fish

In fish, gross beta concentration averaged 4.75 pCi/g wet in muscle and 1.90 pCi/g wet in bone fractions. In muscle, the gross beta concentration was primarily due to potassium-40 activity.

Cesium-137 concentration in muscle was detected in one of three samples tested at a level of 0.060 pCi/g wet, lower than levels observed between 1979 and 1991 (average of 0.12 pCi/g wet), and similar to levels seen from 1992 through 2006, averaging 0.060 pCi/gwet.

The strontium-89 concentration in bones was below the LLD of 0.32 pCi/g wet in all samples. Strontium-90 was detected in all samples and averaged 0.23 pCi/g wet.

Periphyton (Slime) or Aquatic Vegetation

In periphyton (slime) and aquatic vegetation samples, mean gross beta concentrations were similar at indicator and control locations (6.23 and 6.19 pCi/g wet, respectively), due primarily to combined potassium-40 and beryllium-7 activity (4.18 and 4.90 pCi/g wet, respectively).

Other gamma-emitting isotopes, with the exception of naturally-occurring beryllium-7 and potassium-40, were below their respective LLDs.

The strontium-89 concentration was below the LLD of 0.44 pCi/g wet in all samples. Strontium-90 was not detected above an LLD value of 0.11 pCi/g wet.

Bottom Sediments

In bottom sediment samples, the mean gross beta concentrations measured 11.01 pCi/g dry at the indicator locations and 34.65 pCi/g dry at the control location.

Cs-134 measured below the LLD level of 0.035 pCi/g dry in all samples. A low level of cesium-137 was observed in one of the two control samples tested and measured 0.090 pCi/g dry. On average, cesium-137 measurements are lower than or similar to levels observed from 1979 through 2006.

Levels of strontium-89 and strontium-90 measured below respective detection limits of 0.11 pCi/g dry and 0.016 pCi/g in all samples.

3.3 Land Use Census

The Land Use Census satisfies the requirements of the KPS Radiological Environmental Monitoring Manual. Section 2.2.2 states:

> "A land use census shall be conducted and shall identify within a distance of 8 km (5 mi.) the location, in each of the 10 meteorological sectors, of the nearest milk animal, the nearest residence and the nearest garden of greater than 50m^2 (500 ft^2) producing broad leaf vegetation."

The 2007 Land Use Census was completed to identify the presence of the nearest milk animals, gardens and farm crops of the Kewaunee Power Station.

The Land Use Census was completed on September 5, 2007. The census is conducted annually during the growing season per Health Physics Procedure HP 1.14.

Results of the 2007 census are summarized in Table 4.6. Changes from the 2006 census are listed by sector.

In summary, the highest D/Q locations for nearest garden, nearest residence and nearest milk animal did not change from the 2006 census.

4.0 FIGURES AND TABLES

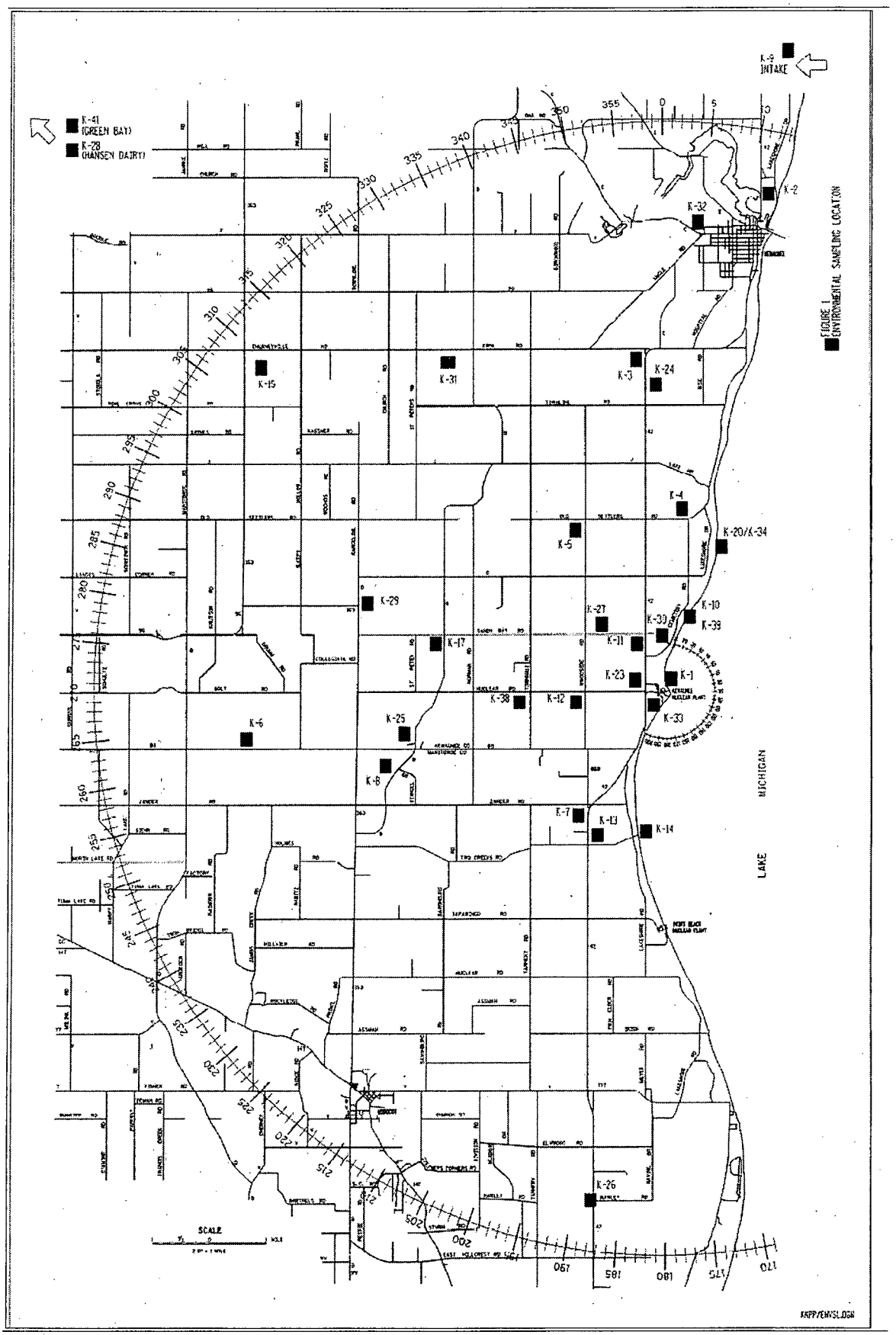

Figure 4-1. Sampling locations, Kewaunee Power Station

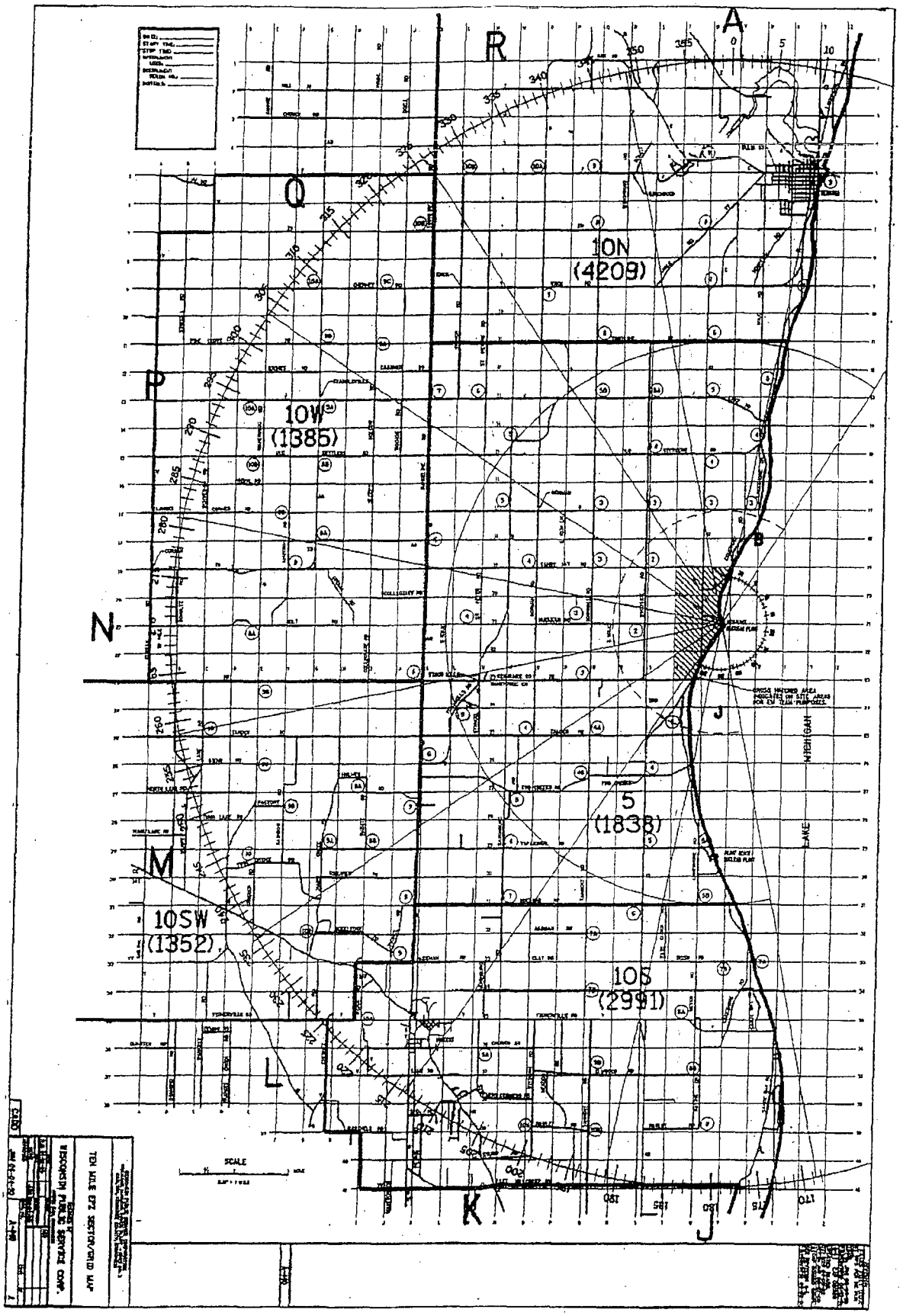

Figure 4-2. Emergency Plan Zone Map, Kewaunee Power Station

Table 1. Sampling locations, Kewaunee Power Station.

Code	Type[a]	Distance (miles)[b] and Sector	Location
K-1			Onsite
K-1a	I	0.62 N	North Creek
K-1b	I	0.12 N	Middle Creek
K-1c	I	0.10 N	500' north of condenser discharge
K-1d	I	0.10 E	Condenser discharge
K-1e	I	0.12 S	South Creek
K-1f	I	0.12 S	Meteorological Tower
K-1g	I	0.06 W	South Well
K-1h	I	0.12 NW	North Well
K-1j	I	0.10 S	500' south of condenser discharge
K-1k	I	0.60 SW	Drainage Pond, south of plant
K-2	C	9.5 NNE	WPS Operations Building in Kewaunee
K-3	C	6.0 N	Lyle and John Siegmund Farm, N2815 Hy 12, Kewaunee
K-5	I	3.5 NNW	Ed Paplham Farm, E4160 Old Settlers Rd, Kewaunee
K-7	I	2.75 SSW	Ron Zimmerman Farm, 17620 Nero Road, Two Rivers
K-8	C	5.0 WSW	Saint Isidore the Farmer Church, Tisch Mills
K-9	C	11.5 NNE	Rostok Water Intake for Green Bay, Wisconsin, two miles north of Kewaunee
K-10	I	1.5 NNE	Turner Farm, Kewaunee site
K-11	I	1.0 NW	Harlan Ihlenfeld Farm, N879 Hy 42, Kewaunee
K-13	C	3.0 SSW	Rand's General Store
K-14	I	2.5 S	Two Creeks Park, 2.5 miles south of site
K-15	C	9.25 NW	Gas Substation, 1.5 miles north of Stangelville
K-17	I	4.25 W	Jansky's Farm, N885 Tk B, Kewaunee
K-20	I	2.5 N	Carl Struck Farm, Lakeshore Dr, Kewaunee
K-23	I	0.5 W	0.5 miles west of plant, Kewaunee site
K-24	I	5.45 N	Fectum Farm, N2653 Hy 42, Kewaunee
K-25	I	2.75 SW	Wotachek Farm, 3968 E. Cty Tk BB, Two Rivers
K-26	C	10.7 SSW	Bertler's Fruit Stand (8.0 miles south of "BB")
K-27	I	1.5 NW	Schlies Farm, E4298 Sandy Bay Rd, Kewaunee
K-28	C	26 NW	Hansen's Dairy Store, Green Bay, Wisconsin
K-29	I	5.75 W	Kunesh Farm, Route 1, Kewaunee
K-30	I	1.00N	End of site boundary
K-31	C	6.25NNW	E. Krok Substation
K-32	C	11.50 N	Piggly Wiggly, 931 Marquette Dr., Kewaunee
K-34	I	2.5 N	Leon and Vicki Struck, N1549 Lakeshore Dr., Kewaunee
K-38	I	3.8 mi. WNW	Dave Sinkula Farm, N890 Town Hall Road, Kewaunee
K-39	I	4.0 mi. N	Francis and Sue Wojta, N1859 Lakeshore Dr., Kewaunee
K-41[c]	C	22 NW	KPS, EOF3060 Voyager Dr. , Green Bay

[a] I = indicator; C = control.

[b] Distances are measured from reactor stack.

[c] Location replaces K-16, January of 2007.

Table 4.2. Type and frequency of collection.

Location	Weekly	Biweekly	Monthly	Quarterly	Semiannually	Annually
K-1a			SW		SL	
K-1b			SW	GR[a]	SL	
K-1c					BS[b]	
K-1d			SW	FI[a]	BS[b], SL	
K-1e			SW		SL	
K-1f	AP	AI		GR[a], TLD	SO	
K-1g				WW		
K-1h				WW		
K-1j					BS[b]	
K-1k			SW		SL	
K-2	AP	AI		TLD		
K-3			MI[c]	GR[a], TLD, CF[d]	SO	
K-5			MI[c]	GR[a], TLD, CF[d]	SO	
K-7	AP	AI		TLD		
K-8	AP	AI		TLD		
K-9			SW		BS[b], SL	
K-10				WW		
K-11			PR	WW		
K-13				WW		
K-14			SW		BS[b], SL	
K-15				TLD		
K-16	AP	AI		TLD		
K-17				TLD		VE
K-20						DM
K-23						GRN
K-24				EG		DM
K-25			MI[c]	GR[a], TLD, CF[d], WW	SO	
K-26						VE
K-27				TLD, EG		DM
K-28			MI[c]			
K-29						DM
K-30				TLD		
K-31	AP	AI		TLD		
K-32				EG		DM
K-34			MI[c]	GR[a], CF[d]	SO	DM
K-38			MI[c]	GR[a], CF[d]	SO	
K-39			MI[c]	GR[a], TLD, CF[d]	SO	

[a] Three times a year, second, third and fourth quarters.
[b] To be collected in May and November.
[c] Monthly from November through April; semimonthly May through October.
[d] First quarter (January, February, March) only.

Table 4.3. Sample Codes:

AP	Airborne particulates	MI	Milk
AI	Airborne Iodine	PR	Precipitation
BS	Bottom sediments	SL	Slime
CF	Cattlefeed	SO	Soil
DM	Domestic Meat	SW	Surface water
EG	Eggs	TLD	Thermoluminescent Dosimeter
FI	Fish	VE	Vegetables
GRN	Grain	WW	Well water
GR	Grass		

Table 4.4. Sampling Summary, January - December 2007.

Sample Type	Collection Type and Frequency[a]	Number of Locations	Number of Samples Collected	Number of Samples Missed
Air Environment				
Airborne particulates	C/W	6	312	0
Airborne Iodine	C/BW	6	156	0
TLD's	C/Q	14	56	0
Precipitation	C/M	1	12	0
Terrestrial Environment				
Milk (May-Oct)	G/SM	7	84	0
(Nov-Apr)	G/M	7	42	0
Well water	G/Q	6	24	0
Domestic meat	G/A	3	3	0
Eggs	G/Q	2	8	0
Vegetables - 5 varieties	G/A	1	6	0
Grain - oats	G/A	1	1	0
- clover	G/A	1	1	0
Grass	G/TA	8	24	0
Cattle feed	G/A	6	12	0
Soil	G/SA	7	14	0
Aquatic Environment				
Surface water	G/M	7	105	3
Fish	G/TA	1	3	0
Slime	G/SA	7	14	0
Bottom sediments	G/SA	5	10	0

[a] Type of collection is coded as follows: C = continuous; G = grab.
Frequency is coded as follows: W = weekly; BW = bi-weekly; SM = semimonthly; M = monthly; Q = quarterly; SA = semiannually; TA = three times per year; A = annually.

Table 4.5 Environmental Radiation Monitoring Program Summary.

Name of Facility: Kewaunee Nuclear Power Plant — Docket No.: 50-305
Location of Facility: Kewaunee County, Wisconsin (County, State) — Reporting Period: January-December, 2007

Sample Type (Units)	Type and Number of Analyses[a]		LLD[b]	Indicator Locations Mean (F)[c] Range[c]	Location with Highest Annual Mean Location[d]	Location with Highest Annual Mean Mean (F)[c] Range[c]	Control Locations Mean (F)[c] Range[c]	Number Non-Routine Results[e]
TLDs (Quarterly) (mR/91days)	Gamma	56	3.0	16.2 (32/32) (11.5-20.8)	K-7, Zimmerman Farm 2.75 mi. SSW	18.9 (4/4) (17.5-20.8)	15.2 (24/24) (11.8-18.8)	0
Airborne Particulates (pCi/m3)	GB	312	0.002	0.023 (102/104) (0.007-0.047)	K-7, Zimmerman 2.75 mi. SSW	0.023 (51/52) (0.011-0.047)	0.023 (208/208) (0.008-0.056)	0
	GS	24						
	Be-7		0.020	0.075 (8/8) (0.057-0.111)	K-31, E. Krok Sub-station, 6.25 mi. NNW	0.080 (4/4) (0.061-0.104)	0.076 (16/16) (0.056-0.118)	0
	Nb-95		0.0010	< LLD	-	-	< LLD	0
	Zr-Nb-95		0.0017	< LLD	-	-	< LLD	0
	Ru-103		0.0013	< LLD	-	-	< LLD	0
	Ru-106		0.0082	< LLD	-	-	< LLD	0
	Cs-134		0.0009	< LLD	-	-	< LLD	0
	Cs-137		0.0008	< LLD	-	-	< LLD	0
	Ce-141		0.0017	< LLD	-	-	< LLD	0
	Ce-144		0.0049	< LLD	-	-	< LLD	0
Airborne Iodine (pCi/m3)	I-131	156	0.03	< LLD	-	-	< LLD	0
Precipitation (pCi/L)	H-3	12	193	< LLD	-	-	None	0
Milk (pCi/L)	I-131	126	0.5	< LLD	-	-	< LLD	0
	Sr-89	84	1.3	< LLD	-	-	< LLD	0
	Sr-90	84	0.8	1.0 (43/60) (0.8-1.7)	K-3, Siegmund Farm 6.0 mi. N	1.3 (12/12) (1.0-1.8)	1.2 (19/24) (0.8-1.8)	0
	GS	126						
	K-40		50	1368 (90/90) (1199-1586)	K-39, Wojta Farm, 3.8 mi. N	1424 (18/18) (1270-1586)	1363 (36/36) (1195-1502)	0
	Cs-134		10	< LLD	-	-	< LLD	0
	Cs-137		10	< LLD	-	-	< LLD	0
	Ba-La-140		15	< LLD	-	-	< LLD	0
(g/L)	K-stable	84	1.0	1.60 (60/60) (1.40-1.81)	K-39, Wojta Farm, 3.8 mi. N	1.63 (12/12) (1.47-1.81)	1.60 (24/24) (1.44-1.72)	0
(g/L)	Ca	84	0.4	1.20 (60/60) (0.94-1.37)	K-39, Wojta Farm, 3.8 mi. N	1.24 (12/12) (1.03-1.37)	1.19 (24/24) (1.00-1.40)	0

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Sample Type (Units)	Type and Number of Analyses[a]	LLD[b]	Indicator Locations Mean (F)[c] Range[c]	Location with Highest Annual Mean Location[d]	Location with Highest Annual Mean Mean (F)[c] Range[c]	Control Locations Mean (F)[c] Range[c]	Number Non-Routine Results[e]
Well Water (pCi/L)	GA 8	2.7	3.6 (3/8) (2.8-4.7)	K-1h, North Well 0.12 mi. NW	4.1 (2/4) (3.4-4.7)	None	0
	GB 24	3.1	4.7 (3/20) (4.3-5.2)	K-1g, South Well 0.06 mi. W	4.9 (2/4) (4.5-5.2)	< LLD	0
	H-3 24	176	< LLD	-	-	None	0
	K-40(fp) 24	0.69	1.90 (20/20) (0.69-3.55)	K-10, Turner Farm 1.5 mi. NNE	2.83 (4/4) (1.90-3.55)	0.91 (4/4) (0.87-0.95)	0
	Sr-89 4	0.8	< LLD	-	-	None	0
	Sr-90 4	0.6	< LLD	-	-	None	0
	GS 24						
	Mn-54	15	< LLD	-	-	< LLD	0
	Fe-59	30	< LLD	-	-	< LLD	0
	Co-58	15	< LLD	-	-	< LLD	0
	Co-60	15	< LLD	-	-	< LLD	0
	Zn-65	30	< LLD	-	-	< LLD	0
	Zr-Nb-95	15	< LLD	-	-	< LLD	0
	Cs-134	15	< LLD	-	-	< LLD	0
	Cs-137	18	< LLD	-	-	< LLD	0
	Ba-La-140	15	< LLD	-	-	< LLD	0
Domestic Meat (pCi/gwet)	GA 3	0.100	< LLD	-	-	< LLD	0
	GB 3	0.030	3.13 (2/2) (3.00-3.26)	K-24, Fectum Farm 5.45 mi. N	3.26 (1/1) -	3.00 (1/1) -	0
	GS 3						
	Be-7	0.77	< LLD	-	-	< LLD	0
	K-40	0.50	2.81 (2/2) (2.58-3.03)	K-29, Kunesh Farm 5.75 mi. W	3.03(1/1)	2.79 (1/1) -	0
	Nb-95	0.14	< LLD	-	-	< LLD	0
	Zr-95	0.070	< LLD	-	-	< LLD	0
	Ru-103	0.095	< LLD	-	-	< LLD	0
	Ru-106	0.25	< LLD	-	-	< LLD	0
	Cs-134	0.055	< LLD	-	-	< LLD	0
	Cs-137	0.048	< LLD	-	-	< LLD	0
	Ce-141	0.29	< LLD	-	-	< LLD	0
	Ce-144	0.37	< LLD	-	-	< LLD	0
Eggs (pCi/gwet)	GB 8	0.010	1.86 (4/4) (1.53-2.11)	K-24, Fectum Farm 5.45 mi. N	1.86 (4/4) (1.53-2.11)	1.76 (4/4) (1.69-1.82)	0
	Sr-89 8	0.016	< LLD	-	-	< LLD	0
	Sr-90 8	0.005	0.005 (1/4)	K-24, Fectum Farm 5.45 mi. N	0.005 (1/4)	< LLD	0
	GS 8						
	Be-7	0.081	< LLD	-	-	< LLD	0
	K-40	0.50	1.22 (4/4) (1.10-1.39)	K-32, Grocery 11.5 mi. N	1.30 (4/4) (1.11-1.49)	1.30 (4/4) (1.11-1.49)	0
	Nb-95	0.011	< LLD	-	-	< LLD	0
	Zr-95	0.021	< LLD	-	-	< LLD	0
	Ru-103	0.012	< LLD	-	-	< LLD	0
	Ru-106	0.066	< LLD	-	-	< LLD	0
	Cs-134	0.012	< LLD	-	-	< LLD	0
	Cs-137	0.010	< LLD	-	-	< LLD	0
	Ce-141	0.023	< LLD	-	-	< LLD	0
	Ce-144	0.067	< LLD	-	-	< LLD	0

Table 4.5 Environmental Radiation Monitoring Program Summary.

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Sample Type (Units)	Type and Number of Analyses[a]	LLD[b]	Indicator Locations Mean (F)[c] Range[c]	Location with Highest Annual Mean: Location[d]	Location with Highest Annual Mean: Mean (F)[c] Range[c]	Control Locations Mean (F)[c] Range[c]	Number Non-Routine Results[e]
Vegetables (pCi/gwet)	GB 6	0.010	None	K-26, Bertler's 10.7 mi. SSW	2.06 (6/6) (1.29-2.78)	2.06 (6/6) (1.29-2.78)	0
	Sr-89 6	0.084	None	-	-	< LLD	0
	Sr-90 6	0.036	None	-	-	<LLD	0
							0
	GS 6						
	Be-7	0.092	None	-	-	< LLD	0
				-			
	K-40	0.50	None	K-26, Bertler's 10.7 mi. SSW	1.95 (6/6) (1.60-2.39)	1.95 (6/6) (1.60-2.39)	0
			-				
	Nb-95	0.011	None	-	-	< LLD	0
	Zr-95	0.020	None	-	-	< LLD	0
	Ru-103	0.012	None	-	-	< LLD	0
	Ru-106	0.10	None	-	-	< LLD	0
	Cs-134	0.010	None	-	-	< LLD	0
	Cs-137	0.013	None	-	-	< LLD	0
	Ce-141	0.019	None	-	-	< LLD	0
	Ce-144	0.080	None	-	-	< LLD	0
Oats & Clover (pCi/gwet)	GB 2	0.010	7.94 (2/2) (5.50-10.37)	K-23, Kewaunee Site, 0.5 mi. W	7.94 (2/2) (5.50-10.37)	None	0
	Sr-89 2	0.022	< LLD	-	-	None	0
	Sr-90 2	0.009	< LLD	-	-	None	0
	GS 2						
	Be-7	0.10	0.79 (2/2) (0.45-1.12)	K-23, Kewaunee Site, 0.5 mi. W	0.79 (2/2) (0.45-1.12)	None	0
	K-40	0.50	5.72 (2/2) (3.36-8.08)	K-23, Kewaunee Site, 0.5 mi. W	5.72 (2/2) (3.36-8.08)	None	0
	Nb-95	0.021	< LLD	-	-	None	0
	Zr-95	0.040	< LLD	-	-	None	0
	Ru-103	0.023	< LLD	-	-	None	0
	Ru-106	0.14	< LLD	-	-	None	0
	Cs-134	0.020	< LLD	-	-	None	0
	Cs-137	0.025	< LLD	-	-	None	0
	Ce-141	0.050	< LLD	-	-	None	0
	Ce-144	0.23	< LLD	-	-	None	0
Cattlefeed (pCi/gwet)	GB 12	0.10	13.18 (10/10) (5.08-24.03)	K-5, Paplham Farm 3.5 mi. NNW	18.63 (2/2) (13.22-24.03)	5.97 (2/2) (5.96-5.97)	0
	Sr-89 12	0.041	< LLD	-	-	< LLD	0
	Sr-90 12	0.021	0.039 (1/10)	K-39, Wojta Farm 3.0 mi. N	0.039 (1/2)	<LLD	0
			-				
	GS 12						
	Be-7	0.36	0.60 (4/10) (0.42-0.74)	K-38, Sinkula Farm 3.8 mi. WNW	0.69 (1/2) -	0.37 (1/2) -	0
	K-40	0.10	10.89 (10/10) (3.69-23.34)	K-5, Paplham Farm 3.5 mi. NNW	15.33 (2/2) (9.86-20.79)	7.09 (2/2) (3.13-11.05)	0

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Sample Type (Units)	Type and Number of Analyses[a]	LLD[b]	Indicator Locations Mean (F)[c] Range[c]	Location with Highest Annual Mean Location[d]	Location with Highest Annual Mean Mean (F)[c] Range[c]	Control Locations Mean (F)[c] Range[c]	Number Non-Routine Results[e]
Cattlefeed (continued)	Nb-95	0.043	< LLD	-	-	< LLD	0
	Zr-95	0.074	< LLD	-	-	< LLD	0
	Ru-103	0.048	< LLD	-	-	< LLD	0
	Ru-106	0.31	< LLD	-	-	< LLD	0
	Cs-134	0.028	< LLD	-	-	< LLD	0
	Cs-137	0.044	< LLD	-	-	< LLD	0
	Ce-141	0.078	< LLD	-	-	< LLD	0
	Ce-144	0.31	< LLD	-	-	< LLD	0
Grass (pCi/gwet)	GB 24	0.10	7.90 (21/21) (3.59-14.43)	K-3, Siegmund Farm 6.0 mi. N	10.47 (3/3) (7.69-12.64)	10.47 (3/3) (7.69-12.64)	0
	Sr-89 24	0.075	< LLD	-	-	< LLD	0
	Sr-90 24	0.023	< LLD	-	-	< LLD	0
	GS 24						
	Be-7	0.10	1.33 (21/21) (0.38-2.47)	K-1b, Middle Creek 0.12 mi. N	1.79 (3/3) (0.72-2.47)	1.19 (3/3) (0.60-1.59)	0
	K-40	0.50	5.90 (21/21) (3.57-9.46)	K-25, Wotachek Farm 2.0 mi. WSW	6.73 (3/3) (6.06-7.71)	6.56 (3/3) (5.30-8.60)	0
	Nb-95	0.037	< LLD	-	-	< LLD	0
	Zr-95	0.059	< LLD	-	-	< LLD	0
	Ru-103	0.035	< LLD		-	< LLD	0
	Ru-106	0.26	< LLD	-	-	< LLD	0
	Cs-134	0.028	< LLD	-	-	< LLD	0
	Cs-137	0.028	< LLD	-	-	< LLD	0
	Ce-141	0.066	< LLD	-	-	< LLD	0
	Ce-144	0.23	< LLD	-	-	< LLD	0
Soil (pCi/gdry)	GA 14	1.0	11.92 (12/12) (6.69-20.02)	K-25, Wotachek Farm 2.0 mi. WSW	15.76 (2/2) (11.49-20.02)	12.76 (2/2) (11.69-13.82)	0
	GB 14	2.0	35.48 (12/12) (29.13-41.97)	K-5, Paplham Farm 3.5 mi. NNW	40.53 (2/2) (39.29-41.76)	34.28 (2/2) (32.84-35.71)	0
	Sr-89 14	0.14	< LLD	-	-	< LLD	0
	Sr-90 14	0.023	0.046 (7/12) (0.024-0.086)	K-25, Wotachek Farm 2.0 mi. WSW	0.067 (2/2) (0.048-0.086)	0.046 (2/2) (0.040-0.051)	0
	GS 14						
	Be-7	0.35	< LLD	-	-	< LLD	0
	K-40	1.4	19.46 (12/12) (16.9-23.70)	K-5, Paplham Farm 3.5 mi. NNW	22.53 (2/2) (21.30-23.70)	19.20 (2/2) (19.2-19.2)	0
	Nb-95	0.053	< LLD	-	-	< LLD	0
	Zr-95	0.067	< LLD	-	-	< LLD	0
	Ru-103	0.038	< LLD		-	< LLD	0
	Ru-106	0.29	< LLD	-	-	< LLD	0
	Cs-134	0.046	< LLD	-	-	< LLD	0
	Cs-137	0.034	0.13 (10/12) (0.040-0.19)	K-3, Siegmund Farm 6.0 mi. N	0.16 (2/2) (0.16-0.16)	0.16 (2/2) (0.16-0.16)	0
	Ce-141	0.067	< LLD	-	-	< LLD	0
	Ce-144	0.18	< LLD	-	-	< LLD	0

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Surface Water	GB (SS)	105	1.3	< LLD	-	-	< LLD	0
(pCi/L)	GB (DS)	105	0.8	5.7 (80/81) (1.3-38.3)	K-1e, South Creek 0.12 mi. S	10.1 (12/12) (2.6-38.3)	1.8 (24/24) (0.8-2.8)	0
	GB (TR)	105	1.2	5.7 (80/81) (1.3-38.3)	K-1e, South Creek 0.12 mi. S	10.2 (12/12) (2.6-38.3)	1.8 (24/24) (0.8-2.8)	0
	GS	105						
	Mn-54		15	< LLD	-	-	< LLD	0
	Fe-59		30	< LLD	-	-	< LLD	0
	Co-58		15	< LLD	-	-	< LLD	0
	Co-60		15	< LLD	-	-	< LLD	0
	Zn-65		30	< LLD	-	-	< LLD	0
	Zr-Nb-95		15	< LLD	-	-	< LLD	0
	Cs-134		10	< LLD	-	-	< LLD	0
	Cs-137		10	< LLD	-	-	< LLD	0
	Ba-La-140		15	< LLD	-	-	< LLD	0
	H-3	36	172	240 (1/28)	K-1e, South Creek 0.12 mi. S	240 (1/4)	< LLD	0
	Sr-89	36	1.6	< LLD	-	-	< LLD	0
	Sr-90	36	0.6	0.6 (1/28)	K-1b, Middle Creek 0.12 mi. N	0.6 (1/4)	0.6 (2/8)	0
	K-40	105	0.87	4.1 (81/81) (0.9-28.1)	K-1k, Drainage Pond 0.60 mi. SW	8.6 (9/9) (2.6-28.1)	1.2 (24/24) (1.0-1.4)	0
Fish (Muscle) (pCi/gwet)	GB	3	0.5	4.75 (3/3) (3.63-6.75)	K-1d, Cond. Discharge 0.10 mi. E	4.75 (3/3) (3.63-6.75)	None	0
	GS	3						
	K-40		0.5	2.84 (3/3) (2.47-3.40)	K-1d, Cond. Discharge 0.10 mi. E	2.84 (3/3) (2.47-3.40)	None	0
	Mn-54		0.019	< LLD	-	-	None	0
	Fe-59		0.074	< LLD	-	-	None	0
	Co-58		0.018	< LLD	-	-	None	0
	Co-60		0.022	< LLD	-	-	None	0
	Cs-134		0.018	< LLD	-	-	None	0
	Cs-137		0.019	0.060 (1/3)	K-1d, Cond. Discharge 0.10 mi. E	0.060 (1/3)	None	0
Fish (Bones) (pCi/gwet)	GB	3	0.5	1.90 (3/3) (1.61-2.34)	K-1d, Cond. Discharge 0.10 mi. E	1.90 (3/3) (1.61-2.34)	None	0
	Sr-89	3	0.32	< LLD	-	-	None	0
	Sr-90	3	0.05	0.23 (3/3) (0.095-0.41)	K-1d, Cond. Discharge 0.10 mi. E	0.23 (3/3) (0.095-0.41)	None	0
								0

Environmental Radiation Monitoring Program Summary.

Name of Facility: Kewaunee Nuclear Power Plant — Docket No. 50-305
Location of Facility: Kewaunee County, Wisconsin (County, State) — Reporting Period: January-December, 2007

Sample Type (Units)	Type and Number of Analyses[a]	LLD[b]	Indicator Locations Mean (F)[c] Range[c]	Location with Highest Annual Mean: Location[d]	Location with Highest Annual Mean: Mean (F)[c] Range[c]	Control Locations Mean (F)[c] Range[c]	Number Non-Routine Results[e]
Periphyton (Slime)	GB 14	0.1	6.23 (12/12) (2.20-13.61)	K-14, Two Creeks Park 2.5 mi. S	9.32 (2/2) (5.03-13.61)	6.19 (2/2) (4.96-7.42)	0
(pCi/gwet)	Sr-89 14	0.44	< LLD	-	-	< LLD	0
	Sr-90 14	0.11	< LLD	-	-	< LLD	0
	GS 14						
	Be-7	0.33	0.78 (8/12) (0.50-1.29)	K-1d, Cond. Discharge 0.10 mi. E	1.29 (1/2)	0.59 (1/2)	0
	K-40	0.5	3.40 (12/12) (1.29-5.78)	K-1k, Drainage Pond 0.60 mi. SW	4.31 (2/2) (2.84-5.78)	4.31 (2/2) (3.75-4.86)	0
	Mn-54	0.022	< LLD	-	-	< LLD	0
	Co-58	0.025	< LLD	-	-	< LLD	0
	Co-60	0.025	< LLD	-	-	< LLD	0
	Nb-95	0.036	< LLD	-	-	< LLD	0
	Zr-95	0.035	< LLD	-	-	< LLD	0
	Ru-103	0.029	< LLD	-	-	< LLD	0
	Ru-106	0.17	< LLD	-	-	< LLD	0
	Cs-134	0.018	< LLD	-	-	< LLD	0
	Cs-137	0.031	< LLD	-	-	< LLD	0
	Ce-141	0.047	< LLD	-	-	< LLD	0
	Ce-144	0.23	< LLD	-	-	< LLD	0
Bottom Sediments	GB 10	1.0	11.01 (8/8) (11.34-22.69)	K-9, Rostok Intake 11.5 mi. NNE	34.65 (2/2) (29.99-39.30)	34.65 (2/2) (29.99-39.30)	0
(pCi/gdry)	Sr-89 10	0.112	< LLD	-	-	< LLD	0
	Sr-90 10	0.016	0.019 (3/8) (0.016-0.022)	K-9, Rostok Intake 11.5 mi. NNE	0.050 (2/2) (0.027-0.073)	0.050 (2/2) (0.027-0.073)	0
	GS 10						
	K-40	0.5	6.10 (8/8) (3.25-9.92)	K-14, Two Creeks Park 2.5 mi. S	9.23 (2/2) (8.56-9.90)	8.80 (2/2) (7.42-10.17)	0
	Co-58	0.040	< LLD	-	-	< LLD	0
	Co-60	0.021	< LLD	-	-	< LLD	0
	Cs-134	0.035	< LLD	-	-	< LLD	0
	Cs-137	0.033	0.034 (1/8)	K-9, Rostok Intake 11.5 mi. NNE	0.090 (1/2)	0.090 (1/2)	0

[a] GA = gross alpha, GB = gross beta, GS = gamma spectroscopy, SS = suspended solids, DS = dissolved solids, TR = total residue.
[b] LLD = nominal lower limit of detection based on a 4.66 sigma counting error for background sample.
[c] Mean and range are based on detectable measurements only (i.e., >LLD) Fraction of detectable measurements at specified locations is indicated in parentheses (F).
[d] Locations are specified by station code (Table 4.1) and distance (miles) and direction relative to reactor site.
[e] Non-routine results are those which exceed ten times the control station value. If no control station value is available, the result is considered non-routine if it exceeds ten times the preoperational value for the location.

Table 4.6 Land Use Census

The following table lists an inventory of residence, gardens ≥ 500 ft^2 and milk animals found nearest to the plant in each of the 10 meteorological sectors within a five mile radius of the Kewaunee Power Station.

Sector	Township No.	Residence	Garden	Milk Animals	Distance From Plant (miles)	Location ID
A	12			X	3.23	
A	13		X		3.05	
A	24	X			1.81	
B	18			X	2.69	K-34
B	24	X			1.26	
B	24		X		1.47	K-19
R	23			X	2.21	
R	23		X		1.84	
R	26	X			1.05	K-11
Q	23	X	X		1.37	
Q	23			X	1.47	K-27
P	20			X	4.20	
P	26	X			1.42	
P	26		X		1.52	
N	26		X		1.16	
N	34			X	2.53	
N	35	X			1.05	
M	34		X		1.58	
M	34			X	1.98	K-25
M	35	X			1.42	
L	35	X			1.05	
L	35		X	X	1.30	
K	15			X	3.43	
K	35	X	X		0.96	
J	11	X	X	(Note 1)	2.68	

Note 1. There were no milk animals located in Sector J within five miles of the Kewaunee Power Station.

[a] denotes a change from 2006 census data.

Land Use Census (continued)

The following is a sector by sector listing of those changes between the 2006 and 2007 census.

Sector A	Township 13. B. Hardtke passed away in April, 2007. Residence maintained by surviving wife.
Sector B	No changes
Sector R	Township 23. Edward Augustain retired. Farm is operated by Todd Augustain.
Sector Q	No changes.
Sector P	Township 26. M. Steffel may have sold residence.
Sector N	No changes.
Sector M	No changes.
Sector K	No changes
Sector J	No changes.

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Environmental, Inc.
Midwest Laboratory
an Allegheny Technologies Co.

700 Landwehr Road • Northbrook, IL 60062-2310
ph. (847) 564-0700 • fax (847) 564-4517

APPENDIX A

INTERLABORATORY COMPARISON PROGRAM RESULTS

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

January through December, 2007

Appendix A

Interlaboratory Comparison Program Results

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

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

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

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

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

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

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

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

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

Attachment A lists acceptance criteria for "spiked" samples.

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

Attachment A

ACCEPTANCE CRITERIA FOR "SPIKED" SAMPLES

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

Analysis	Level	One standard deviation for single determination
Gamma Emitters	5 to 100 pCi/liter or kg	5.0 pCi/liter
	> 100 pCi/liter or kg	5% of known value
Strontium-89[b]	5 to 50 pCi/liter or kg	5.0 pCi/liter
	> 50 pCi/liter or kg	10% of known value
Strontium-90[b]	2 to 30 pCi/liter or kg	5.0 pCi/liter
	> 30 pCi/liter or kg	10% of known value
Potassium-40	≥ 0.1 g/liter or kg	5% of known value
Gross alpha	≤ 20 pCi/liter	5.0 pCi/liter
	> 20 pCi/liter	25% of known value
Gross beta	≤ 100 pCi/liter	5.0 pCi/liter
	> 100 pCi/liter	5% of known value
Tritium	≤ 4,000 pCi/liter	$\pm 1\sigma = 169.85 \times (\text{known})^{0.0933}$
	> 4,000 pCi/liter	10% of known value
Radium-226,-228	≥ 0.1 pCi/liter	15% of known value
Plutonium	≥ 0.1 pCi/liter, gram, or sample	10% of known value
Iodine-131, Iodine-129[b]	≤ 55 pCi/liter	6.0 pCi/liter
	> 55 pCi/liter	10% of known value
Uranium-238, Nickel-63[b] Technetium-99[b]	≤ 35 pCi/liter	6.0 pCi/liter
	> 35 pCi/liter	15% of known value
Iron-55[b]	50 to 100 pCi/liter	10 pCi/liter
	> 100 pCi/liter	10% of known value
Others[b]	---	20% of known value

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

[b] Laboratory limit.

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

Lab Code	Date	Concentration (pCi/L)				
		Analysis	Laboratory Result[b]	ERA Result[c]	Control Limits	Acceptance
STW-1121	04/09/07	Sr-89	30.7 ± 4.3	35.4	26.7 - 44.1	Pass
STW-1121	04/09/07	Sr-90	39.3 ± 1.8	42.1	33.4 - 50.8	Pass
STW-1122	04/09/07	Ba-133	30.0 ± 2.4	29.3	20.6 - 38.0	Pass
STW-1122	04/09/07	Co-60	118.5 ± 3.9	119.0	109.0 - 129.0	Pass
STW-1122	04/09/07	Cs-134	52.6 ± 2.3	54.3	45.6 - 63.0	Pass
STW-1122	04/09/07	Cs-137	49.5 ± 3.8	50.3	41.6 - 59.0	Pass
STW-1122	04/09/07	Zn-65	91.7 ± 6.3	88.6	73.3 - 104.0	Pass
STW-1123	04/09/07	Gr. Alpha	33.8 ± 3.5	56.5	32.0 - 81.0	Pass
STW-1123	04/09/07	Gr. Beta	24.2 ± 2.3	25.3	16.6 - 34.0	Pass
STW-1124	04/09/07	I-131	19.2 ± 1.2	18.9	13.7 - 24.1	Pass
STW-1125	04/09/07	H-3	7540.0 ± 255.0	8060.0	6660.0 - 9450.0	Pass
STW-1125	04/09/07	Ra-226	13.0 ± 0.6	13.4	9.9 - 16.9	Pass
STW-1125	04/09/07	Ra-228	19.9 ± 2.7	18.2	10.3 - 26.1	Pass
STW-1125	04/09/07	Uranium	4.5 ± 0.2	4.6	0.0 - 9.8	Pass
STW-1127	07/09/07	Sr-89	51.7 ± 5.0	58.2	49.5 - 66.9	Pass
STW-1127	07/09/07	Sr-90	21.4 ± 2.3	19.0	10.3 - 27.7	Pass
STW-1128	07/09/07	Ba-133	19.4 ± 2.2	19.4	10.7 - 28.1	Pass
STW-1128	07/09/07	Co-60	32.8 ± 2.0	33.5	24.8 - 42.2	Pass
STW-1128	07/09/07	Cs-134	67.0 ± 2.9	68.9	60.2 - 77.6	Pass
STW-1128	07/09/07	Cs-137	61.6 ± 3.8	61.3	52.6 - 70.0	Pass
STW-1128	07/09/07	Zn-65	55.6 ± 7.5	54.6	45.2 - 64.0	Pass
STW-1129	07/09/07	Gr. Alpha	19.2 ± 1.6	27.1	15.4 - 38.8	Pass
STW-1129	07/09/07	Gr. Beta	9.1 ± 0.9	11.5	2.8 - 20.2	Pass
STW-1130	07/09/07	Ra-226	7.0 ± 0.5	7.7	5.7 - 9.7	Pass
STW-1130	07/09/07	Ra-228	9.2 ± 2.3	9.1	5.2 - 13.1	Pass
STW-1130	07/09/07	Uranium	23.9 ± 1.1	25.1	19.9 - 30.3	Pass
STW-1131	10/05/07	Sr-89	27.3 ± 3.3	27.4	19.3 - 33.9	Pass
STW-1131	10/05/07	Sr-90	17.7 ± 1.2	18.2	12.9 - 21.6	Pass
STW-1132	10/05/07	Ba-133	12.2 ± 3.3	12.6	8.6 - 15.5	Pass
STW-1132	10/05/07	Co-60	23.8 ± 1.4	23.2	19.9 - 28.3	Pass
STW-1132	10/05/07	Cs-134	70.5 ± 4.2	71.1	58.0 - 78.2	Pass
STW-1132	10/05/07	Cs-137	178.2 ± 3.3	180.0	162.0 - 200.0	Pass
STW-1132	10/05/07	Zn-65	263.9 ± 6.9	251.0	226.0 - 294.0	Pass
STW-1133	10/05/07	Gr. Alpha	54.7 ± 2.1	58.6	30.6 - 72.9	Pass
STW-1133	10/05/07	Gr. Beta	11.9 ± 0.9	9.7	4.3 - 18.2	Pass
STW-1134	10/05/07	I-131	33.0 ± 1.5	28.9	24.0 - 33.8	Pass
STW-1135	10/05/07	H-3	9965.0 ± 250.0	9700.0	8430.0 - 10700.0	Pass
STW-1135	10/05/07	Ra-226	12.7 ± 0.2	12.9	9.6 - 14.9	Pass
STW-1135	10/05/07	Ra-228	19.6 ± 2.4	17.9	12.0 - 21.5	Pass
STW-1135	10/05/07	Uranium	27.3 ± 1.1	27.5	22.1 - 30.8	Pass

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

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

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

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

Lab Code	Date	Description	Known Value (mR)	Lab Result ± 2 sigma (mR)	Control Limits	Acceptance
Environmental, Inc.						
2007-1	7/13/2007	30 cm.	54.25	60.56 ± 5.54	37.98 - 70.53	Pass
2007-1	7/13/2007	40 cm.	30.51	34.23 ± 0.96	21.36 - 39.66	Pass
2007-1	7/13/2007	50 cm.	19.53	17.95 ± 1.86	13.67 - 25.39	Pass
2007-1	7/13/2007	60 cm.	13.56	16.61 ± 0.60	9.49 - 17.63	Pass
2007-1	7/13/2007	70 cm.	9.96	9.72 ± 0.90	6.97 - 12.95	Pass
2007-1	7/13/2007	80 cm.	7.63	7.79 ± 0.33	5.34 - 9.92	Pass
2007-1	7/13/2007	90 cm.	6.03	5.53 ± 0.72	4.22 - 7.84	Pass
2007-1	7/13/2007	100 cm.	4.88	5.32 ± 0.17	3.42 - 6.34	Pass
2007-1	7/13/2007	110 cm.	4.03	3.49 ± 0.14	2.82 - 5.24	Pass
2007-1	7/13/2007	120 cm.	3.39	2.64 ± 0.14	2.37 - 4.41	Pass
2007-1	7/13/2007	150 cm.	2.17	2.13 ± 0.87	1.52 - 2.82	Pass
Environmental, Inc.						
2007-2	11/12/2007	30 cm.	54.37	65.47 ± 5.25	38.06 - 70.68	Pass
2007-2	11/12/2007	40 cm.	30.59	37.43 ± 2.18	21.41 - 39.77	Pass
2007-2	11/12/2007	60 cm.	13.59	15.18 ± 0.50	9.51 - 17.67	Pass
2007-2	11/12/2007	70 cm.	9.99	12.18 ± 0.46	6.99 - 12.99	Pass
2007-2	11/12/2007	80 cm.	7.65	8.74 ± 0.39	5.36 - 9.95	Pass
2007-2	11/12/2007	90 cm.	6.04	5.89 ± 0.25	4.23 - 7.85	Pass
2007-2	11/12/2007	110 cm.	4.04	4.13 ± 0.41	2.83 - 5.25	Pass
2007-2	11/12/2007	120 cm.	3.4	2.92 ± 0.13	2.38 - 4.42	Pass
2007-2	11/12/2007	120 cm.	3.4	2.91 ± 0.31	2.38 - 4.42	Pass
2007-2	11/12/2007	150 cm.	2.17	1.95 ± 0.72	1.52 - 2.82	Pass
2007-2	11/12/2007	180 cm.	1.51	1.38 ± 0.05	1.06 - 1.96	Pass

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

Lab Code [b]	Date	Analysis	Concentration (pCi/L)[a] Laboratory results 2s, n=1 [c]	Known Activity	Control Limits [d]	Acceptance
W-30707	3/7/2007	Gr. Alpha	19.51 ± 0.40	20.08	10.04 - 30.12	Pass
W-30707	3/7/2007	Gr. Beta	67.45 ± 0.49	65.73	55.73 - 75.73	Pass
SPAP-1566	3/23/2007	Cs-134	25.35 ± 1.31	27.82	17.82 - 37.82	Pass
SPAP-1566	3/23/2007	Cs-137	107.52 ± 3.02	116.48	104.83 - 128.13	Pass
SPW-1568	3/23/2007	H-3	65595.00 ± 672.00	71118.00	56894.40 - 85341.60	Pass
SPW-1678	3/28/2007	Tc-99	28.44 ± 1.12	32.35	20.35 - 44.35	Pass
SPW-1595	4/5/2007	Cs-134	54.48 ± 2.12	54.99	44.99 - 64.99	Pass
SPW-1595	4/5/2007	Cs-137	59.03 ± 2.94	58.19	48.19 - 68.19	Pass
SPW-1595	4/5/2007	I-131(G)	83.11 ± 3.51	82.07	72.07 - 92.07	Pass
SPW-1595A	4/5/2007	I-131	78.40 ± 1.10	82.07	65.66 - 98.48	Pass
SPW-1595B	4/5/2007	I-131	78.97 ± 1.10	82.07	65.66 - 98.48	Pass
SPMI-1597	4/5/2007	Cs-134	54.03 ± 2.15	54.99	44.99 - 64.99	Pass
SPMI-1597	4/5/2007	Cs-137	59.81 ± 4.75	58.19	48.19 - 68.19	Pass
SPMI-1597	4/5/2007	I-131(G)	83.97 ± 4.07	82.07	72.07 - 92.07	Pass
SPMI-1597A	4/5/2007	I-131	79.53 ± 1.03	82.07	65.66 - 98.48	Pass
SPMI-1597B	4/5/2007	I-131	83.51 ± 1.05	82.07	65.66 - 98.48	Pass
SPCH-2839	5/17/2007	I-131(G)	78.70 ± 7.36	70.40	60.40 - 80.40	Pass
SPW-2847	5/17/2007	Cs-134	55.43 ± 1.68	52.85	42.85 - 62.85	Pass
SPW-2847	5/17/2007	Cs-137	59.86 ± 2.71	58.03	48.03 - 68.03	Pass
SPW-2847	5/17/2007	I-131(G)	63.95 ± 2.69	70.87	60.87 - 80.87	Pass
SPMI-2849	5/17/2007	Cs-134	51.37 ± 1.65	52.85	42.85 - 62.85	Pass
SPMI-2849	5/17/2007	Cs-137	60.42 ± 4.31	58.03	48.03 - 68.03	Pass
SPMI-2849	5/17/2007	I-131(G)	62.44 ± 3.14	70.87	60.87 - 80.87	Pass
SPCH-2922	5/17/2007	I-131(G)	80.00 ± 6.40	70.40	41.60 - 99.20	Pass
SPW-2847	5/18/2007	I-131	60.14 ± 0.89	70.87	56.70 - 85.04	Pass
SPW-2847	5/18/2007	Sr-89	104.93 ± 6.64	121.90	97.52 - 146.28	Pass
SPW-2847	5/18/2007	Sr-89	46.72 ± 1.97	46.08	36.08 - 56.08	Pass
SPMI-2849	5/18/2007	I-131	67.97 ± 0.88	70.87	56.70 - 85.04	Pass
SPW-2909 [e]	5/22/2007	Fe-55	11137.00 ± 316.00	14271.50	11417.20 - 17125.80	Fail
SPW-2911	5/22/2007	H-3	65023.00 ± 679.00	70485.00	56388.00 - 84582.00	Pass
SPAP-2913	5/22/2007	Gr. Beta	55.27 ± 8.51	52.65	42.12 - 73.71	Pass
SPAP-2915	5/22/2007	Cs-134	22.53 ± 1.12	26.42	16.42 - 36.42	Pass
SPAP-2915	5/22/2007	Cs-137	111.14 ± 3.57	116.06	104.45 - 127.67	Pass
SPF-2922	5/22/2007	Cs-134	0.52 ± 0.03	0.53	0.32 - 0.74	Pass
SPF-2922	5/22/2007	Cs-137	2.58 ± 0.07	2.32	1.39 - 3.25	Pass
SPW-3223	5/24/2007	Ni-63	2233.10 ± 10.32	2135.90	1281.54 - 2990.26	Pass
W-60507	6/5/2007	Gr. Alpha	20.93 ± 0.42	20.08	10.04 - 30.12	Pass
W-60507	6/5/2007	Gr. Beta	60.50 ± 0.46	65.73	55.73 - 75.73	Pass
SPW-4327	7/18/2007	Tc-99	25.58 ± 1.11	32.35	20.35 - 44.35	Pass
SPW-5476	8/17/2007	Ni-63	1925.18 ± 9.62	2135.90	1281.54 - 2990.26	Pass
W-92107	9/21/2007	Gr. Alpha	23.02 ± 0.44	20.08	10.04 - 30.12	Pass
W-92107	9/21/2007	Gr. Beta	61.48 ± 0.47	65.73	55.73 - 75.73	Pass

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

Lab Code	Date	Concentration (pCi/L)[a] Analysis	Laboratory results 2s, n=1[b]	Known Activity	Control Limits[c]	Acceptance
SPW-6880	10/10/2007	Tc-99	30.97 ± 1.21	32.35	20.35 - 44.35	Pass
w-111007	11/10/2007	Gr. Alpha	22.43 ± 0.42	20.08	10.04 - 30.12	Pass
w-111007	11/10/2007	Gr. Beta	64.49 ± 0.48	65.73	55.73 - 75.73	Pass
SPAP-7742	11/13/2007	Cs-134	21.18 ± 1.29	22.41	12.41 - 32.41	Pass
SPAP-7742	11/13/2007	Cs-137	113.61 ± 3.16	114.76	103.28 - 126.24	Pass
SPAP-7744	11/13/2007	Gr. Beta	53.41 ± 0.13	52.03	41.62 - 72.84	Pass
SPMI-7746	11/13/2007	Cs-134	42.20 ± 1.48	44.83	34.83 - 54.83	Pass
SPMI-7746	11/13/2007	Cs-137	56.05 ± 2.83	57.40	47.40 - 67.40	Pass
SPMI-7746	11/13/2007	Sr-90	41.02 ± 1.61	45.54	36.43 - 54.65	Pass
SPW-7748	11/13/2007	Cs-134	43.11 ± 1.52	44.80	34.80 - 54.80	Pass
SPW-7748	11/13/2007	Cs-137	59.28 ± 3.50	57.40	47.40 - 67.40	Pass
SPW-7748	11/13/2007	Sr-90	37.23 ± 1.51	45.54	36.43 - 54.65	Pass
SPW-7752	11/13/2007	Fe-55	12935.10 ± 357.00	12640.50	10112.40 - 15168.60	Pass
SPW-7758	11/13/2007	H-3	65405.00 ± 712.50	68618.00	54894.40 - 82341.60	Pass
SPF-7760	11/13/2007	Cs-134	0.45 ± 0.02	0.45	0.27 - 0.63	Pass
SPF-7760	11/13/2007	Cs-137	2.45 ± 0.07	2.29	1.37 - 3.21	Pass
SPW-8034	11/13/2007	Ni-63	2194.06 ± 10.77	2129.03	1277.42 - 2980.64	Pass

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

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

[c] Results are based on single determinations.

[d] Control limits are based on Attachment A, Page A2 of this report.

[e] Sample recount: 12557 ± 335.

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

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

Lab Code	Sample Type	Date	Analysis[b]	Concentration (pCi/L)[a]		
				Laboratory results (4.66σ)		Acceptance
				LLD	Activity[c]	Criteria (4.66 σ)
W-30707	water	3/7/2007	Gr. Alpha	0.40	0.01 ± 0.28	2
W-30707	water	3/7/2007	Gr. Beta	0.75	0.06 ± 0.53	4
SPAP-1567	Air Filter	3/23/2007	Cs-134	0.79		100
SPW-1567	Air Filter	3/23/2007	Cs-137	1.01		100
SPW-1568	water	3/23/2007	H-3	176.10	-26.16 ± 91.62	200
SPW-1596	water	4/5/2007	Cs-134	3.28		10
SPW-1596	water	4/5/2007	Cs-137	3.45		10
SPW-1596	water	4/5/2007	I-131	0.27	0.02 ± 0.18	0.5
SPW-1596	water	4/5/2007	I-131(G)	2.91		20
SPMI-1598	Milk	4/5/2007	Cs-134	3.30		10
SPMI-1598	Milk	4/5/2007	Cs-137	5.08		10
SPMI-1598	Milk	4/5/2007	I-131	0.26	-0.10 ± 0.17	0.5
SPMI-1598	Milk	4/5/2007	I-131(G)	4.10		20
SPCH-2839	Charcoal Canister	5/17/2007	I-131(G)	2.24		9.6
SPW-2848	water	5/17/2007	Cs-134	3.14		10
SPW-2848	water	5/17/2007	Cs-137	1.37		10
SPW-2848	water	5/17/2007	I-131(G)	5.34		20
SPMI-2850	Milk	5/17/2007	Cs-134	3.32		10
SPMI-2850	Milk	5/17/2007	Cs-137	2.60		10
SPMI-2850	Milk	5/17/2007	I-131(G)	4.77		20
SPW-2848	water	5/18/2007	I-131	0.34	-0.06 ± 0.19	0.5
SPW-2848	water	5/18/2007	Sr-89	0.81	-0.02 ± 0.65	5
SPW-2848	water	5/18/2007	Sr-90	0.53	0.01 ± 0.25	1
SPMI-2850	Milk	5/18/2007	I-131	0.45	0.20 ± 0.26	0.5
SPMI-2850	Milk	5/18/2007	Sr-89	0.96	-0.73 ± 1.02	5
SPMI-2850 [d]	Milk	5/18/2007	Sr-90	0.58	0.96 ± 0.38	1
SPAP-2914	Air Filter	5/22/2007	Gr. Beta	0.004	-0.002 ± 0.002	0.01
SPAP-2916	Air Filter	5/22/2007	Cs-134	2.84		100
SPAP-2916	Air Filter	5/22/2007	Cs-137	2.24		100
SPF-2923	Fish	5/22/2007	Cs-134	8.71		100
SPF-2923	Fish	5/22/2007	Cs-137	8.35		100
SPW-3224	water	5/24/2007	Ni-63	1.61	-0.30 ± 0.84	20
W-60507	water	6/5/2007	Gr. Alpha	0.43	-0.01 ± 0.30	2
W-60507	water	6/5/2007	Gr. Beta	0.77	0.01 ± 0.54	4
SPW-4328	water	7/18/2007	Tc-99	6.41	-3.12 ± 3.84	10
SPW-5477	water	8/17/2007	Ni-63	1.48	4.38 ± 1.01	20
W-92107	water	9/21/2007	Gr. Alpha	0.41	0.09 ± 0.29	2
W-92107	water	9/21/2007	Gr. Beta	0.75	-0.26 ± 0.51	4

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

Lab Code	Sample Type	Date	Analysis[b]	Concentration (pCi/L)[a]		
				Laboratory results (4.66σ)		Acceptance
				LLD	Activity[c]	Criteria (4.66 σ)
SPW-6881	water	10/10/2007	Tc-99	6.82	-6.58 ± 4.04	10
SPAP-7743	Air Filter	11/13/2007	Gr. Beta	0.003	-0.002 ± 0.002	0.01
SPMI-7745	Milk	11/13/2007	Cs-134	2.16		10
SPMI-7745	Milk	11/13/2007	Cs-137	3.46		10
SPMI-7745	Milk	11/13/2007	I-131(G)	5.89		20
SPMI-7745	Milk	11/13/2007	Sr-90	0.59	0.73 ± 0.35	1
SPW-7747	water	11/13/2007	Cs-134	2.39		10
SPW-7747	water	11/13/2007	Cs-137	3.53		10
SPW-7747	water	11/13/2007	I-131(G)	12.51		20
SPW-7747	water	11/13/2007	Sr-90	0.71	-0.04 ± 0.32	1
SPW-7751	water	11/13/2007	Fe-55	15.50	-4.18 ± 9.20	1000
SPW-7757	water	11/13/2007	H-3	151.35	-14.98 ± 78.85	200
SPF-7759	Fish	11/13/2007	Cs-134	5.50		100
SPF-7759	Fish	11/13/2007	Cs-137	5.10		100
SPW-8033	water	11/13/2007	Ni-63	1.45	-0.19 ± 0.87	20
W-120607	water	12/6/2007	Gr. Alpha	0.40	0.02 ± 0.28	2
W-120607	water	12/6/2007	Gr. Beta	0.77	-0.70 ± 0.51	4

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

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

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

[d] Low levels of Sr-90 are still detected in the environment. A concentration of (1-5 pCi/L) in milk is not unusual.

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

Lab Code	Date	Analysis	Concentration (pCi/L)[a] First Result	Second Result	Averaged Result	Acceptance
E-20, 21	1/2/2007	Gr. Beta	1.76 ± 0.07	1.70 ± 0.06	1.73 ± 0.05	Pass
E-20, 21	1/2/2007	K-40	1.49 ± 0.24	1.57 ± 0.27	1.53 ± 0.18	Pass
CF-41, 42	1/2/2007	Gr. Beta	18.02 ± 0.41	18.81 ± 0.42	18.42 ± 0.29	Pass
CF-41, 42	1/2/2007	K-40	11.68 ± 1.12	12.67 ± 0.97	12.18 ± 0.74	Pass
CF-41, 42	1/2/2007	Sr-90	0.039 ± 0.011	0.026 ± 0.010	0.033 ± 0.007	Pass
P-9516, 9517	1/3/2007	H-3	270.78 ± 91.74	301.18 ± 92.99	285.98 ± 65.31	Pass
LW-9579, 9580	1/4/2007	Gr. Beta	0.91 ± 0.31	0.93 ± 0.30	0.92 ± 0.22	Pass
DW-70085, 70086	1/9/2007	Gr. Alpha	7.95 ± 1.20	7.92 ± 1.42	7.94 ± 0.93	Pass
DW-70037, 70038	1/11/2007	Gr. Alpha	55.47 ± 3.99	52.87 ± 4.02	54.17 ± 2.83	Pass
DW-70054, 70055	1/18/2007	Gr. Alpha	2.68 ± 0.88	1.88 ± 0.78	2.28 ± 0.59	Pass
DW-70122, 70123	1/18/2007	Gr. Alpha	4.30 ± 1.14	6.25 ± 1.16	5.28 ± 0.81	Pass
DW-70122, 70123	1/18/2007	Gr. Beta	4.22 ± 0.70	5.33 ± 0.75	4.78 ± 0.51	Pass
DW-70098, 70099	1/25/2007	Gr. Alpha	3.27 ± 0.90	1.97 ± 0.92	2.62 ± 0.64	Pass
DW-70110, 70111	1/25/2007	Gr. Alpha	2.19 ± 0.92	1.69 ± 0.79	1.94 ± 0.61	Pass
SWU-676, 677	1/30/2007	Gr. Beta	1.77 ± 0.39	2.11 ± 0.39	1.94 ± 0.28	Pass
DW-70148, 70149	1/30/2007	Gr. Alpha	4.65 ± 1.37	5.20 ± 1.81	4.93 ± 1.14	Pass
SW-600, 601	2/1/2007	K-40	1.24 ± 0.12	1.20 ± 0.12	1.22 ± 0.08	Pass
SW-601, 602	2/1/2007	Gr. Beta	0.89 ± 0.37	1.02 ± 0.25	0.96 ± 0.22	Pass
DW-1138, 1139	2/9/2007	H-3	2707.00 ± 161.00	2700.00 ± 161.00	2703.50 ± 113.84	Pass
MI-721, 722	2/13/2007	K-40	1330.40 ± 117.60	1316.40 ± 116.50	1323.40 ± 82.77	Pass
SW-847, 848	2/13/2007	Gr. Alpha	3.82 ± 1.67	2.61 ± 1.24	3.22 ± 1.04	Pass
SW-847, 848	2/13/2007	Gr. Beta	7.33 ± 1.37	5.89 ± 0.90	6.61 ± 0.82	Pass
DW-70175, 70176	2/14/2007	Gr. Alpha	11.72 ± 1.68	8.84 ± 1.32	10.28 ± 1.07	Pass
DW-70187, 70188	2/14/2007	Gr. Alpha	6.79 ± 1.18	6.47 ± 1.08	6.63 ± 0.80	Pass
SWU-1162, 1163	2/27/2007	Gr. Beta	3.63 ± 0.69	2.61 ± 0.44	3.12 ± 0.41	Pass
DW-70205, 70206	2/28/2007	Gr. Alpha	0.88 ± 0.80	1.31 ± 0.79	1.10 ± 0.56	Pass
PW-1117, 1118	3/1/2007	Gr. Alpha	3.79 ± 1.91	3.62 ± 2.09	3.71 ± 1.42	Pass
PW-1117, 1118	3/1/2007	Gr. Beta	7.12 ± 1.40	7.20 ± 1.39	7.16 ± 0.99	Pass
W-2122, 2123	3/5/2007	Gr. Alpha	6.10 ± 4.16	3.80 ± 4.30	4.95 ± 2.99	Pass
W-2122, 2123	3/5/2007	Gr. Beta	10.65 ± 2.15	13.11 ± 2.42	11.88 ± 1.62	Pass
W-2085, 2086	3/6/2007	Gr. Alpha	2.51 ± 2.29	1.10 ± 2.78	1.81 ± 1.80	Pass
W-2085, 2086	3/6/2007	Gr. Beta	11.02 ± 1.85	9.50 ± 2.01	10.26 ± 1.37	Pass
DW-70232, 70233	3/8/2007	Gr. Alpha	4.75 ± 1.28	5.98 ± 1.31	5.37 ± 0.92	Pass
WW-1477, 1478	3/12/2007	Gr. Beta	6.41 ± 1.48	4.10 ± 1.25	5.26 ± 0.97	Pass
WW-1498, 1499	3/15/2007	Gr. Beta	0.83 ± 0.31	0.97 ± 0.33	0.90 ± 0.22	Pass
W-2140, 2141	3/19/2007	Gr. Alpha	2.31 ± 1.57	1.33 ± 1.64	1.82 ± 1.14	Pass
W-2140, 2141	3/19/2007	Gr. Beta	4.26 ± 1.00	5.58 ± 1.02	4.92 ± 0.71	Pass
DW-1626, 1627	3/21/2007	H-3	4973.00 ± 209.00	5190.00 ± 213.00	5081.50 ± 149.21	Pass
MI-1647, 1648	3/21/2007	K-40	1448.80 ± 120.20	1439.30 ± 126.00	1444.05 ± 87.07	Pass
DW-70248, 70249	3/21/2007	Gr. Alpha	11.10 ± 1.18	9.90 ± 1.16	10.50 ± 0.83	Pass
W-2150, 2151	3/26/2007	Gr. Alpha	3.56 ± 2.20	3.30 ± 1.81	3.43 ± 1.42	Pass
W-2150, 2151	3/26/2007	Gr. Beta	9.26 ± 1.00	10.17 ± 1.90	9.72 ± 1.07	Pass
LW-1941, 1942	3/31/2007	Gr. Beta	1.35 ± 0.43	1.36 ± 0.41	1.36 ± 0.30	Pass

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

Lab Code	Date	Analysis	Concentration (pCi/L)[a] First Result	Second Result	Averaged Result	Acceptance
MI-1824, 1825	4/2/2007	K-40	1316.10 ± 110.60	1229.80 ± 110.50	1272.95 ± 78.17	Pass
MI-1824, 1825	4/2/2007	Sr-90	1.20 ± 0.50	1.10 ± 0.36	1.15 ± 0.31	Pass
AP-2170, 2171	4/2/2007	Be-7	0.08 ± 0.01	0.08 ± 0.01	0.08 ± 0.01	Pass
WW-1850, 1851	4/3/2007	H-3	-5.83 ± 102.29	150.05 ± 80.14	72.11 ± 64.97	Pass
AP-2198, 2199	4/3/2007	Be-7	0.08 ± 0.01	0.08 ± 0.01	0.08 ± 0.01	Pass
AP-2370, 2371	4/3/2007	Be-7	0.07 ± 0.01	0.07 ± 0.01	0.07 ± 0.01	Pass
DW-70300, 70301	4/4/2007	Gr. Alpha	3.78 ± 0.89	3.66 ± 0.96	3.72 ± 0.65	Pass
DW-70300, 70301	4/4/2007	Gr. Beta	2.93 ± 0.61	2.91 ± 0.64	2.92 ± 0.44	Pass
DW-70335, 70336	4/5/2007	Gr. Alpha	24.37 ± 2.89	22.72 ± 2.91	23.55 ± 2.05	Pass
DW-70335, 70336	4/5/2007	Gr. Beta	20.26 ± 1.37	18.33 ± 1.34	19.30 ± 0.96	Pass
SW-1898, 1899	4/10/2007	Gr. Alpha	3.86 ± 1.40	4.78 ± 1.51	4.32 ± 1.03	Pass
SW-1898, 1899	4/10/2007	Gr. Beta	6.31 ± 1.36	7.03 ± 1.42	6.67 ± 0.98	Pass
SW-1898, 1899	4/10/2007	H-3	241.99 ± 93.35	318.10 ± 96.48	280.04 ± 67.12	Pass
DW-70346, 70347	4/11/2007	Gr. Alpha	1.83 ± 1.08	2.54 ± 1.04	2.19 ± 0.75	Pass
DW-70346, 70347	4/11/2007	Gr. Beta	4.62 ± 0.72	4.01 ± 0.71	4.32 ± 0.51	Pass
DW-70376, 70377	4/11/2007	Gr. Alpha	1.81 ± 0.80	1.66 ± 0.86	1.74 ± 0.59	Pass
DW-70376, 70377	4/11/2007	Gr. Beta	1.84 ± 0.62	2.24 ± 0.61	2.04 ± 0.44	Pass
DW-70311, 70312	4/12/2007	Gr. Alpha	10.82 ± 1.50	13.20 ± 1.56	12.01 ± 1.08	Pass
WW-2349, 2350	4/17/2007	Gr. Alpha	0.71 ± 0.56	0.62 ± 0.52	0.66 ± 0.38	Pass
WW-2461, 2462	4/25/2007	H-3	190.30 ± 100.31	115.95 ± 97.65	153.13 ± 70.00	Pass
LW-2437, 2438	4/26/2007	Gr. Beta	2.71 ± 0.50	2.15 ± 0.45	2.43 ± 0.34	Pass
LW-2917, 2918	4/30/2007	Gr. Beta	1.97 ± 0.79	2.78 ± 0.81	2.38 ± 0.57	Pass
SO-2583, 2584	5/1/2007	Be-7	544.99 ± 247.70	601.13 ± 192.20	573.06 ± 156.76	Pass
SO-2583, 2584	5/1/2007	Cs-137	119.22 ± 36.61	87.46 ± 23.97	103.34 ± 21.88	Pass
SO-2583, 2584	5/1/2007	K-40	17825.00 ± 749.90	17672.00 ± 724.30	17748.50 ± 521.29	Pass
SO-2583, 2584	5/1/2007	Gr. Alpha	11.49 ± 3.96	8.04 ± 3.88	9.77 ± 2.77	Pass
SO-2583, 2584	5/1/2007	Gr. Beta	31.02 ± 3.74	26.10 ± 3.40	28.56 ± 2.53	Pass
SO-2583, 2584	5/1/2007	Sr-90	0.086 ± 0.024	0.068 ± 0.025	0.077 ± 0.017	Pass
S-2620, 2621	5/2/2007	H-3	277.90 ± 126.70	304.40 ± 101.00	291.15 ± 81.02	Pass
MI-2610, 2611	5/3/2007	K-40	1549.20 ± 184.20	1388.80 ± 128.20	1469.00 ± 112.21	Pass
W-4469, 4470	5/7/2007	Gr. Beta	10.60 ± 1.90	11.10 ± 1.80	10.85 ± 1.31	Pass
SS-2697, 2698	5/8/2007	Cs-137	0.06 ± 0.02	0.05 ± 0.03	0.05 ± 0.02	Pass
SS-2697, 2698	5/8/2007	K-40	8.03 ± 0.57	7.36 ± 0.68	7.70 ± 0.44	Pass
MI-2790, 2791	5/14/2007	K-40	1694.30 ± 126.20	1627.60 ± 128.80	1660.95 ± 90.16	Pass
W-4505, 4506	5/14/2007	Gr. Beta	3.30 ± 1.70	3.90 ± 1.50	3.60 ± 1.13	Pass
DW-3219, 3220	5/26/2007	I-131	0.62 ± 0.32	0.69 ± 0.31	0.66 ± 0.22	Pass
SO-3416, 3417	5/31/2007	Cs-137	0.15 ± 0.03	0.15 ± 0.03	0.15 ± 0.02	Pass
SO-3416, 3417	5/31/2007	Gr. Beta	22.88 ± 2.33	22.46 ± 2.37	22.67 ± 1.66	Pass
SO-3416, 3417	5/31/2007	K-40	12.26 ± 0.80	12.36 ± 0.65	12.31 ± 0.52	Pass
F-3561, 3562	5/31/2007	K-40	3.06 ± 0.39	3.37 ± 0.45	3.21 ± 0.30	Pass
SL-3311, 3312	6/4/2007	Be-7	0.61 ± 0.29	0.55 ± 0.25	0.58 ± 0.19	Pass
SL-3311, 3312	6/4/2007	K-40	5.78 ± 0.67	4.87 ± 0.25	5.33 ± 0.36	Pass

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

Lab Code	Date	Analysis	Concentration (pCi/L)[a] First Result	Second Result	Averaged Result	Acceptance
SL-3992, 3993	6/4/2007	Be-7	0.75 ± 0.19	0.74 ± 0.32	0.75 ± 0.19	Pass
SL-3992, 3993	6/4/2007	Gr. Beta	13.61 ± 1.12	14.06 ± 1.08	13.84 ± 0.78	Pass
SL-3992, 3993	6/4/2007	K-40	2.43 ± 0.36	2.29 ± 0.40	2.36 ± 0.27	Pass
W-5087, 5088	6/11/2007	Gr. Beta	8.70 ± 1.90	7.70 ± 1.90	8.20 ± 1.34	Pass
SW-3710, 3711	6/14/2007	H-3	9571.51 ± 287.22	9879.21 ± 291.42	9725.36 ± 204.59	Pass
W-4062, 4063	6/28/2007	Gr. Alpha	0.76 ± 0.63	0.32 ± 0.66	0.54 ± 0.45	Pass
W-4062, 4063	6/28/2007	Gr. Beta	0.97 ± 0.53	0.58 ± 0.57	0.78 ± 0.39	Pass
AP-4448, 4449	6/28/2007	Be-7	0.10 ± 0.02	0.09 ± 0.02	0.10 ± 0.01	Pass
SG-3735, 3736	6/30/2007	Be-7	0.84 ± 0.12	0.82 ± 0.18	0.83 ± 0.11	Pass
SG-3735, 3736	6/30/2007	Cs-137	0.07 ± 0.01	0.07 ± 0.01	0.07 ± 0.01	Pass
SG-3735, 3736	6/30/2007	Gr. Beta	29.51 ± 2.22	30.81 ± 2.22	30.16 ± 1.57	Pass
SG-3735, 3736	6/30/2007	K-40	9.41 ± 0.31	8.90 ± 0.48	9.16 ± 0.29	Pass
LW-4175, 4176	6/30/2007	Gr. Beta	2.18 ± 0.60	1.93 ± 0.68	2.06 ± 0.45	Pass
SG-5422, 5423	7/2/2007	Gr. Alpha	10.31 ± 1.98	10.57 ± 1.99	10.44 ± 1.40	Pass
SG-5422, 5423	7/2/2007	Gr. Beta	18.59 ± 1.46	20.97 ± 1.49	19.78 ± 1.04	Pass
AP-4656, 4657	7/3/2007	Be-7	0.09 ± 0.02	0.10 ± 0.02	0.10 ± 0.01	Pass
AP-4763, 4764	7/3/2007	Be-7	0.11 ± 0.02	0.10 ± 0.02	0.11 ± 0.01	Pass
SG-5430, 5431	7/11/2007	Be-7	10.17 ± 0.48	10.06 ± 0.51	10.12 ± 0.35	Pass
SG-5430, 5431	7/11/2007	Cs-137	0.050 ± 0.010	0.059 ± 0.011	0.055 ± 0.007	Pass
SG-5430, 5431	7/11/2007	Gr. Alpha	17.86 ± 2.78	15.74 ± 2.70	16.80 ± 1.94	Pass
SG-5430, 5431	7/11/2007	Gr. Beta	26.19 ± 1.74	25.04 ± 1.86	25.62 ± 1.27	Pass
SG-5430, 5431	7/11/2007	K-40	7.69 ± 0.30	7.65 ± 0.28	7.67 ± 0.21	Pass
WW-4298, 4299	7/12/2007	Gr. Beta	1.74 ± 0.74	2.22 ± 0.80	1.98 ± 0.55	Pass
DW-70612, 70613	7/23/2007	Gr. Alpha	4.54 ± 1.11	4.19 ± 0.97	4.37 ± 0.74	Pass
WW-4918, 4919	7/25/2007	H-3	240.43 ± 111.12	216.68 ± 110.27	228.56 ± 78.27	Pass
MI-4742, 4743	7/26/2007	K-40	1820.30 ± 134.10	1802.90 ± 199.50	1811.60 ± 120.19	Pass
VE-4939, 4940	8/1/2007	Be-7	0.39 ± 0.21	0.45 ± 0.20	0.42 ± 0.15	Pass
VE-4939, 4940	8/1/2007	Gr. Beta	5.50 ± 0.14	5.76 ± 0.13	5.63 ± 0.10	Pass
VE-4939, 4940	8/1/2007	K-40	3.36 ± 0.45	3.36 ± 0.21	3.36 ± 0.25	Pass
SG-6274, 6275	8/6/2007	Gr. Alpha	16.68 ± 3.29	19.26 ± 3.39	17.97 ± 2.36	Pass
SG-6274, 6275	8/6/2007	Gr. Beta	40.93 ± 2.74	42.42 ± 2.66	41.68 ± 1.91	Pass
SW-5218, 5219	8/7/2007	I-131	1.31 ± 0.24	1.42 ± 0.24	1.37 ± 0.17	Pass
SG-6284, 6285	8/8/2007	Cs-137	0.043 ± 0.006	0.051 ± 0.007	0.047 ± 0.005	Pass
SG-6284, 6285	8/8/2007	Gr. Alpha	9.38 ± 2.93	13.61 ± 3.38	11.50 ± 2.24	Pass
SG-6284, 6285	8/8/2007	Gr. Beta	33.46 ± 2.84	32.87 ± 2.93	33.17 ± 2.04	Pass
SG-6284, 6285	8/8/2007	K-40	16.15 ± 0.24	16.23 ± 0.25	16.19 ± 0.17	Pass
WW-5310, 5311	8/9/2007	H-3	644.00 ± 106.00	831.00 ± 113.00	737.50 ± 77.47	Pass
SW-5393, 5394	8/14/2007	Gr. Beta	2.32 ± 1.31	1.71 ± 1.27	2.02 ± 0.92	Pass
SW-5393, 5394	8/14/2007	H-3	190.06 ± 86.80	69.05 ± 80.88	129.55 ± 59.32	Pass
W-5468, 5469	8/15/2007	H-3	262.58 ± 108.43	346.53 ± 111.42	304.55 ± 77.74	Pass

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

Lab Code	Date	Analysis	Concentration (pCi/L)[a] First Result	Second Result	Averaged Result	Acceptance
VE-5553, 5554	8/22/2007	K-40	1.89 ± 0.33	1.89 ± 0.22	1.89 ± 0.20	Pass
WW-5643, 5644	8/22/2007	H-3	259.00 ± 110.00	266.00 ± 110.00	262.50 ± 77.78	Pass
SWU-5799, 5800	8/28/2007	Gr. Beta	2.64 ± 1.18	3.62 ± 1.06	3.13 ± 0.79	Pass
DW-70752, 70753	8/31/2007	Gr. Alpha	14.41 ± 1.48	12.90 ± 1.50	13.66 ± 1.05	Pass
VE-5917, 5918	9/4/2007	Be-7	0.94 ± 0.17	0.83 ± 0.20	0.89 ± 0.13	Pass
VE-5917, 5918	9/4/2007	K-40	3.73 ± 0.37	3.58 ± 0.36	3.66 ± 0.26	Pass
VE-5917, 5918	9/4/2007	Gr. Beta	2.71 ± 0.10	2.69 ± 0.10	2.70 ± 0.07	Pass
MI-6009, 6010	9/11/2007	K-40	1348.90 ± 113.40	1388.10 ± 116.40	1368.50 ± 81.25	Pass
MI-6030, 6031	9/12/2007	K-40	1242.70 ± 118.00	1475.60 ± 119.60	1359.15 ± 84.01	Pass
MI-6030, 6031	9/12/2007	Sr-90	1.00 ± 0.38	0.90 ± 0.34	0.95 ± 0.26	Pass
DW-70718, 70719	9/12/2007	Gr. Alpha	23.04 ± 3.71	23.22 ± 3.61	23.13 ± 2.59	Pass
DW-70718, 70719	9/12/2007	Gr. Beta	16.13 ± 1.59	17.36 ± 1.69	16.75 ± 1.16	Pass
SO-6156, 6157	9/14/2007	H-3	181.99 ± 90.67	232.19 ± 92.95	207.09 ± 64.92	Pass
SO-6484, 6485	9/17/2007	Cs-137	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	Pass
SO-6484, 6485	9/17/2007	Gr. Beta	24.20 ± 2.60	23.30 ± 2.30	23.75 ± 1.74	Pass
SO-6484, 6485	9/17/2007	K-40	11.52 ± 1.16	10.89 ± 1.10	11.20 ± 0.80	Pass
WW-6469, 6470	9/21/2007	Gr. Beta	27.19 ± 2.51	24.23 ± 2.29	25.71 ± 1.70	Pass
E-6647, 6648	10/1/2007	Gr. Beta	1.82 ± 0.10	1.93 ± 0.11	1.88 ± 0.07	Pass
E-6647, 6648	10/1/2007	K-40	1.48 ± 0.24	1.31 ± 0.23	1.40 ± 0.17	Pass
WW-6656, 6657	10/1/2007	Gr. Beta	2.80 ± 0.97	1.95 ± 0.87	2.38 ± 0.65	Pass
TD-7080, 7081	10/2/2007	H-3	332.00 ± 229.00	383.00 ± 191.00	357.50 ± 149.10	Pass
SG-6891, 6892	10/3/2007	Gr. Alpha	12.93 ± 2.12	13.52 ± 2.07	13.23 ± 1.48	Pass
SG-6891, 6892	10/3/2007	Gr. Beta	18.08 ± 1.41	18.27 ± 1.36	18.18 ± 0.98	Pass
AP-7191, 7192	10/3/2007	Be-7	0.09 ± 0.01	0.09 ± 0.01	0.09 ± 0.01	Pass
WW-6786, 6787	10/8/2007	H-3	13333 ± 322	13532 ± 324	13433 ± 228	Pass
WW-6786, 6787	10/8/2007	H-3	13188 ± 322	13556 ± 326	13372 ± 229	Pass
VE-6828, 6829	10/8/2007	Gr. Alpha	0.06 ± 0.04	0.06 ± 0.05	0.06 ± 0.03	Pass
VE-6828, 6829	10/8/2007	Gr. Beta	5.55 ± 0.21	5.20 ± 0.22	5.38 ± 0.10	Pass
VE-6828, 6829	10/8/2007	K-40	5.45 ± 0.43	5.20 ± 0.49	5.32 ± 0.33	Pass
SS-6870, 6871	10/9/2007	Gr. Beta	18.10 ± 2.08	21.71 ± 2.19	19.90 ± 1.51	Pass
SS-6870, 6871	10/9/2007	K-40	10.19 ± 0.66	9.72 ± 0.68	9.95 ± 0.47	Pass
LW-7507, 7508	10/11/2007	Gr. Beta	1.40 ± 0.56	1.44 ± 0.54	1.42 ± 0.39	Pass
MI-6933, 6934	10/16/2007	K-40	1386.60 ± 104.70	1331.20 ± 106.70	1358.90 ± 74.74	Pass
MI-6933, 6934	10/16/2007	Sr-90	1.73 ± 0.52	2.17 ± 0.57	1.95 ± 0.39	Pass
MI-7059, 7060	10/17/2007	K-40	1424.80 ± 106.60	1448.60 ± 115.30	1436.70 ± 78.51	Pass
F-7213, 7214	10/24/2007	H-3	6.83 ± 0.22	7.24 ± 0.22	7.03 ± 0.16	Pass
F-7213, 7214	10/24/2007	K-40	3.13 ± 0.51	3.16 ± 0.48	3.15 ± 0.35	Pass
WW-7408, 7409	10/24/2007	H-3	340.71 ± 90.45	346.22 ± 90.67	343.46 ± 64.03	Pass
DW-70856, 70857	10/24/2007	Gr. Alpha	11.03 ± 1.66	10.71 ± 1.34	10.87 ± 1.07	Pass
SO-7508, 7509	10/26/2007	Cs-137	0.30 ± 0.04	0.29 ± 0.05	0.29 ± 0.03	Pass
SO-7508, 7509	10/26/2007	Gr. Beta	34.43 ± 2.72	37.25 ± 3.07	35.84 ± 2.05	Pass
SO-7508, 7509	10/26/2007	K-40	16.84 ± 0.84	17.43 ± 1.05	17.14 ± 0.67	Pass

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

Lab Code	Date	Analysis	Concentration (pCi/L)[a] First Result	Second Result	Averaged Result	Acceptance
SS-7529, 7530	10/29/2007	Cs-137	0.12 ± 0.03	0.12 ± 0.02	0.12 ± 0.02	Pass
SS-7529, 7530	10/29/2007	K-40	11.85 ± 0.68	11.75 ± 0.58	11.80 ± 0.45	Pass
SW-7589, 7590	10/30/2007	Gr. Beta	1.75 ± 0.29	1.24 ± 0.26	1.50 ± 0.19	Pass
SWU-7733, 7734	10/30/2007	Gr. Beta	1.66 ± 1.01	2.43 ± 1.13	2.05 ± 0.76	Pass
MI-7618, 7619	10/31/2007	K-40	1376.80 ± 114.30	1426.70 ± 128.80	1401.75 ± 86.10	Pass
VE-7666, 7667	11/5/2007	Gr. Alpha	0.07 ± 0.04	0.16 ± 0.05	0.11 ± 0.03	Pass
VE-7666, 7667	11/5/2007	Gr. Beta	6.03 ± 0.15	6.13 ± 0.15	6.08 ± 0.10	Pass
VE-7666, 7667	11/5/2007	K-40	5.82 ± 0.36	5.74 ± 0.36	5.78 ± 0.25	Pass
DW-7853, 7854	11/9/2007	I-131	1.61 ± 0.40	1.08 ± 0.39	1.35 ± 0.28	Pass
MI-7874, 7875	11/14/2007	K-40	1407.70 ± 101.30	1362.60 ± 114.50	1385.15 ± 76.44	Pass
WW-8142, 8143	11/28/2007	Gr. Beta	9.51 ± 2.21	7.86 ± 2.01	8.68 ± 1.49	Pass
DW-8094, 8095	11/29/2007	Gr. Beta	1.60 ± 0.58	1.25 ± 0.54	1.43 ± 0.40	Pass
F-8328, 8329	12/11/2007	Gr. Beta	3.97 ± 0.08	4.00 ± 0.08	3.99 ± 0.05	Pass
WW-8378, 8379	12/11/2007	H-3	296.00 ± 103.00	407.00 ± 107.00	351.50 ± 74.26	Pass

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

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

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

Lab Code[c]	Date	Concentration[b] Analysis	Laboratory result	Known Activity	Control Limits[d]	Acceptance
STW-1110	01/01/07	Gr. Alpha	0.45 ± 0.08	0.33	0.00 - 0.65	Pass
STW-1110	01/01/07	Gr. Beta	0.90 ± 0.14	0.85	0.43 - 1.28	Pass
STW-1111[e]	01/01/07	Am-241	2.80 ± 0.21	1.71	1.20 - 2.22	Fail
STW-1111	01/01/07	Co-57	151.60 ± 10.00	143.70	100.60 - 186.80	Pass
STW-1111	01/01/07	Cs-134	79.20 ± 8.00	83.50	58.50 - 108.60	Pass
STW-1111	01/01/07	Cs-137	168.70 ± 12.10	163.00	114.10 - 211.90	Pass
STW-1111	01/01/07	Fe-55	130.30 ± 19.90	129.30	90.50 - 168.10	Pass
STW-1111	01/01/07	H-3	262.20 ± 9.10	283.00	198.10 - 367.90	Pass
STW-1111	01/01/07	Mn-54	130.60 ± 11.50	123.80	86.70 - 160.90	Pass
STW-1111	01/01/07	Ni-63	127.80 ± 3.60	130.40	91.30 - 169.50	Pass
STW-1111	01/01/07	Ni-63	127.80 ± 3.60	130.40	91.30 - 169.50	Pass
STW-1111	01/01/07	Pu-238	2.03 ± 0.17	2.25	1.58 - 2.93	Pass
STW-1111	01/01/07	Pu-239/40	2.27 ± 0.17	2.22	1.55 - 2.89	Pass
STW-1111	01/01/07	Sr-90	9.60 ± 1.40	8.87	6.21 - 11.53	Pass
STW-1111	01/01/07	Tc-99	8.80 ± 1.50	88.00	7.40 - 13.70	Pass
STW-1111	01/01/07	U-233/4	2.44 ± 0.21	2.49	1.74 - 3.24	Pass
STW-1111	01/01/07	U-238	2.44 ± 0.21	2.48	1.74 - 3.22	Pass
STW-1111	01/01/07	Zn-65	123.70 ± 17.00	114.80	80.40 - 149.20	Pass
STSO-1112[f]	01/01/07	Am-241	46.40 ± 9.00	34.80	24.40 - 45.20	Fail
STSO-1112	01/01/07	Co-57	501.20 ± 2.90	471.20	329.80 - 612.60	Pass
STSO-1112	01/01/07	Co-60	285.90 ± 2.10	274.70	192.30 - 357.10	Pass
STSO-1112	01/01/07	Cs-134	325.90 ± 7.40	327.40	229.20 - 425.60	Pass
STSO-1112	01/01/07	Cs-137	855.70 ± 4.60	799.70	559.80 - 1039.60	Pass
STSO-1112	01/01/07	Mn-54	750.90 ± 4.70	685.20	479.60 - 890.80	Pass
STAP-1113	01/01/07	Gr. Alpha	0.27 ± 0.04	0.60	0.00 - 1.20	Pass
STAP-1113	01/01/07	Gr. Beta	0.57 ± 0.05	0.44	0.22 - 0.66	Pass
STAP-1114	01/01/07	Am-241	0.10 ± 0.03	0.10	0.07 - 0.13	Pass
STAP-1114	01/01/07	Co-57	3.51 ± 0.07	2.89	2.02 - 3.75	Pass
STAP-1114	01/01/07	Co-60	2.98 ± 0.10	2.91	2.03 - 3.78	Pass
STAP-1114	01/01/07	Cs-134	4.02 ± 0.16	4.20	2.94 - 5.45	Pass
STAP-1114	01/01/07	Cs-137	2.75 ± 0.12	2.57	1.80 - 3.34	Pass
STAP-1114	01/01/07	Mn-54	3.94 ± 0.12	3.52	2.46 - 4.57	Pass
STAP-1114	01/01/07	Pu-238	0.07 ± 0.01	0.07	0.05 - 0.09	Pass
STAP-1114	01/01/07	Pu-239/40	0.08 ± 0.01	0.08	0.06 - 0.11	Pass
STAP-1114	01/01/07	Sr-90	0.58 ± 0.18	0.61	0.43 - 0.79	Pass
STAP-1114	01/01/07	U-233/4	0.09 ± 0.01	0.10	0.07 - 0.13	Pass
STAP-1114	01/01/07	U-238	0.09 ± 0.01	0.10	0.07 - 0.13	Pass
STAP-1114	01/01/07	Zn-65	2.70 ± 0.10	2.68	1.88 - 3.49	Pass

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

Lab Code[c]	Date	Analysis	Concentration [b] Laboratory result	Known Activity	Control Limits [d]	Acceptance
STVE-1115	01/01/07	Co-57	8.90 ± 0.20	8.19	5.73 - 10.64	Pass
STVE-1115	01/01/07	Co-60	6.50 ± 0.20	5.82	4.08 - 7.57	Pass
STVE-1115	01/01/07	Cs-134	6.90 ± 0.30	6.21	4.35 - 8.07	Pass
STVE-1115	01/01/07	Cs-137	8.20 ± 0.30	6.99	4.90 - 9.09	Pass
STVE-1115	01/01/07	Mn-54	10.10 ± 0.30	8.46	5.91 - 10.98	Pass

[a] Results obtained by Environmental, Inc., Midwest Laboratory as a participant in the Department of Energy's Mixed Analyte Performance Evaluation Program, Idaho Operations office, Idaho Falls, Idaho

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

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

[d] MAPEP results are presented as the known values and expected laboratory precision (1 sigma, 1 determination) and control limits as defined by the MAPEP.

[e] Result of reanalysis, 2.08 ± 0.13 pCi/L.

[f] The test samples were recounted on lower background detectors. Result of the recounts: 41.4 ± 6.3 Bq/kg.

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

Lab Code [b]	Date	Analysis	Concentration (pCi/L) Laboratory Result [c]	ERA Result [d]	Control Limits	Acceptance
STAP-1116	03/19/07	Gr. Alpha	34.64 ± 2.56	25.8	12.4 - 39	Pass
STAP-1116	03/19/07	Gr. Beta	93.41 ± 3.20	79.5	48.8 - 116	Pass
STAP-1117	03/19/07	Am-241	56.04 ± 3.90	57.5	33.1 - 80	Pass
STAP-1117	03/19/07	Co-60	1610.00 ± 8.40	1300.0	1010.0 - 1620	Pass
STAP-1117	03/19/07	Cs-134	1340.40 ± 48.84	1120.0	732.0 - 1380	Pass
STAP-1117 [e]	03/19/07	Cs-137	345.30 ± 8.20	255.0	192.0 - 336	Fail
STAP-1117 [f]	03/19/07	Fe-55	< 134.0	0.0		Pass
STAP-1117 [f]	03/19/07	Mn-54	< 5.0	0.0		Pass
STAP-1117	03/19/07	Pu-238	43.32 ± 2.28	37.4	25.7 - 49	Pass
STAP-1117	03/19/07	Pu-239/40	35.23 ± 2.24	31.6	22.9 - 41	Pass
STAP-1117	03/19/07	Sr-90	156.10 ± 6.60	156.0	66.6 - 246	Pass
STAP-1117	03/19/07	U-233/4	42.22 ± 1.84	47.8	30.1 - 71	Pass
STAP-1117	03/19/07	U-238	42.00 ± 1.84	47.4	30.2 - 68	Pass
STAP-1117	03/19/07	Uranium	85.79 ± 3.60	97.3	49.5 - 155	Pass
STAP-1117	03/19/07	Zn-65	363.80 ± 11.90	245.0	208.0 - 412	Pass
STSO-1118	03/19/07	Ac-228	3097.77 ± 94.96	2790.0	1790.0 - 3930	Pass
STSO-1118	03/19/07	Am-241	1000.70 ± 156.10	927.0	548.0 - 1200	Pass
STSO-1118	03/19/07	Bi-212	2467.87 ± 114.33	2500.0	658.0 - 3730	Pass
STSO-1118	03/19/07	Co-60	7847.40 ± 86.60	7330.0	5340.0 - 9820	Pass
STSO-1118	03/19/07	Cs-134	7910.60 ± 356.88	7560.0	4850.0 - 9070	Pass
STSO-1118	03/19/07	Cs-137	4635.00 ± 99.10	4300.0	3290.0 - 5580	Pass
STSO-1118	03/19/07	K-40	12201.60 ± 423.20	11100.0	8050.0 - 15000	Pass
STSO-1118 [f]	03/19/07	Mn-54	< 34.0	0.0		Pass
STSO-1118	03/19/07	Pb-212	2046.80 ± 127.20	1730.0	1120.0 - 2430	Pass
STSO-1118	03/19/07	Pb-214	4142.80 ± 110.40	3330.0	1980.0 - 4980	Pass
STSO-1118	03/19/07	Pu-238	1099.20 ± 73.10	857.0	490.0 - 1200	Pass
STSO-1118	03/19/07	Pu-239/40	1586.10 ± 82.00	1360.0	928.0 - 1810	Pass
STSO-1118	03/19/07	Sr-90	6163.30 ± 791.60	7500.0	2610.0 - 12400	Pass
STSO-1118	03/19/07	Th-234	4329.40 ± 569.10	3590.0	2190.0 - 4560	Pass
STSO-1118	03/19/07	U-233/4	3236.70 ± 106.00	3620.0	2280.0 - 4520	Pass
STSO-1118	03/19/07	U-238	3425.20 ± 134.00	3590.0	2190.0 - 4560	Pass
STSO-1118	03/19/07	Uranium	6787.80 ± 240.00	7380.0	4210.0 - 9930	Pass
STSO-1118	03/19/07	Uranium	6787.80 ± 240.00	7380.0	4210.0 - 9930	Pass
STSO-1118 [f]	03/19/07	Zn-65	0.00 ± 0.00	0.0	0.0 - 0	Pass

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

Lab Code [b]	Date	Analysis	Concentration (pCi/L) Laboratory Result [c]	ERA Result [d]	Control Limits	Acceptance
STVE-1119	03/19/07	Am-241	3249.60 ± 150.30	3550.0	2020.0 - 4890	Pass
STVE-1119	03/19/07	Cm-244	1860.70 ± 91.50	1840.0	905.0 - 2870	Pass
STVE-1119	03/19/07	Co-60	2827.90 ± 62.40	2600.0	1760.0 - 3720	Pass
STVE-1119	03/19/07	Cs-134	654.80 ± 48.40	579.0	308.0 - 822	Pass
STVE-1119	03/19/07	Cs-137	3307.30 ± 58.80	2920.0	2150.0 - 4060	Pass
STVE-1119	03/19/07	K-40	40814.20 ± 618.80	37900.0	27200.0 - 53600	Pass
STVE-1119 [f]	03/19/07	Mn-54	< 27.6	0.0		Pass
STVE-1119	03/19/07	Pu-238	2762.00 ± 251.10	2430.0	1250.0 - 3600	Pass
STVE-1119	03/19/07	Pu-239/40	2156.60 ± 83.40	1900.0	1180.0 - 2600	Pass
STVE-1119	03/19/07	Sr-90	8999.70 ± 580.90	8890.0	4900.0 - 11800	Pass
STVE-1119	03/19/07	U-233/4	2821.90 ± 73.50	2940.0	1930.0 - 3920	Pass
STVE-1119	03/19/07	U-238	2896.10 ± 50.70	2910.0	2090.0 - 3610	Pass
STVE-1119	03/19/07	Uranium	5718.00 ± 124.15	5980.0	4110.0 - 7770	Pass
STVE-1119	03/19/07	Zn-65	474.30 ± 45.70	366.0	267.0 - 500	Pass
STW-1120	03/19/07	Am-241	133.50 ± 10.60	179.0	123.0 - 243	Pass
STW-1120	03/19/07	Co-60	541.40 ± 9.00	536.0	467.0 - 631	Pass
STW-1120	03/19/07	Cs-134	1623.80 ± 66.10	1750.0	1290.0 - 2020	Pass
STW-1120	03/19/07	Cs-137	1839.10 ± 17.90	1850.0	1570.0 - 2220	Pass
STW-1120	03/19/07	Fe-55	829.50 ± 226.80	671.0	392.0 - 896	Pass
STW-1120 [f]	03/19/07	Mn-54	< 8.1	0.0		Pass
STW-1120	03/19/07	Pu-238	123.30 ± 4.30	116.0	87.6 - 144	Pass
STW-1120	03/19/07	Pu-239/40	95.10 ± 3.80	90.9	70.3 - 113	Pass
STW-1120	03/19/07	Sr-90	949.40 ± 16.70	989.0	630.0 - 1320	Pass
STW-1120	03/19/07	U-233/4	164.20 ± 6.58	192.0	145.0 - 247	Pass
STW-1120	03/19/07	U-238	169.20 ± 8.22	190.0	145.0 - 236	Pass
STW-1120	03/19/07	Uranium	339.60 ± 10.66	391.0	282.0 - 521	Pass
STW-1120	03/19/07	Zn-65	2009.00 ± 36.40	1910.0	1600.0 - 2410	Pass

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

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

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

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

[e] A high bias (~ 20%) was observed in gamma results for air filters. A composite filter geometry was used in the calculations vs. a single filter geometry. Result of recalculation: Cs-137, 305.8 ± 6.0 pCi/filter.

[f] Included in the testing series as a "false positive". No activity expected.

APPENDIX B

DATA REPORTING CONVENTIONS

Data Reporting Conventions

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

2.0. Single Measurements

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

where: x = value of the measurement;

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

In cases where the activity is less than the lower limit of detection L, it is reported as: < L,

where L = the lower limit of detection based on 4.66σ uncertainty for a background sample.

3.0. Duplicate analyses

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

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

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

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

4.0. Computation of Averages and Standard Deviations

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

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

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

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

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

4.5 In rounding off, the following rules are followed:

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

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

APPENDIX C

Maximum Permissible Concentrations

of Radioactivity in Air and Water

Above Background in Unrestricted Areas

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

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

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

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

[c] A natural radionuclide.

Dominion®

2007 Annual Environmental Monitoring Report

Kewaunee Power Station
Part II, Data Tabulations, Graphs and Analyses

Dominion Energy Kewaunee, Inc.

Environmental, Inc.
Midwest Laboratory
an Allegheny Technologies Co.

700 Landwehr Road • Northbrook, IL 60062-2310
ph. (847) 564-0700 • fax (847) 564-4517

REPORT TO

DOMINION NUCLEAR

RADIOLOGICAL MONITORING PROGRAM FOR THE KEWAUNEE POWER STATION KEWAUNEE, WISCONSIN

ANNUAL REPORT - PART II
DATA TABULATIONS AND ANALYSES

January 1 to December 31, 2007

Prepared and submitted by

ENVIRONMENTAL, Inc.
Midwest Laboratory
Project No. 8002

Approved :

Bronia Grob
Laboratory Manager

J. Michael Hale
Radiation Protection /
Chemistry Mgr., KPS

PREFACE

The staff members of Environmental, Inc., Midwest Laboratory were responsible for the acquisition of data presented in this report. Samples were collected by the personnel of Environmental, Inc., Midwest Laboratory and the Kewaunee Power Station.

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LIST OF FIGURES

LIST OF TABLES

1.0 INTRODUCTION

The following constitutes Part II of the final report for the 2007 Radiological Monitoring Program conducted at the Kewaunee Power Station (KPS), Kewaunee, Wisconsin.

Included are tabulations of data for all samples collected in 2007, graphs of data trends and descriptions of radiochemical procedures. A summary and interpretation of the data presented here are published in Part I of the 2007 Annual Report on the Radiological Monitoring Program for the Kewaunee Power Station.

NOTE: Page 2 is intentionally left out.

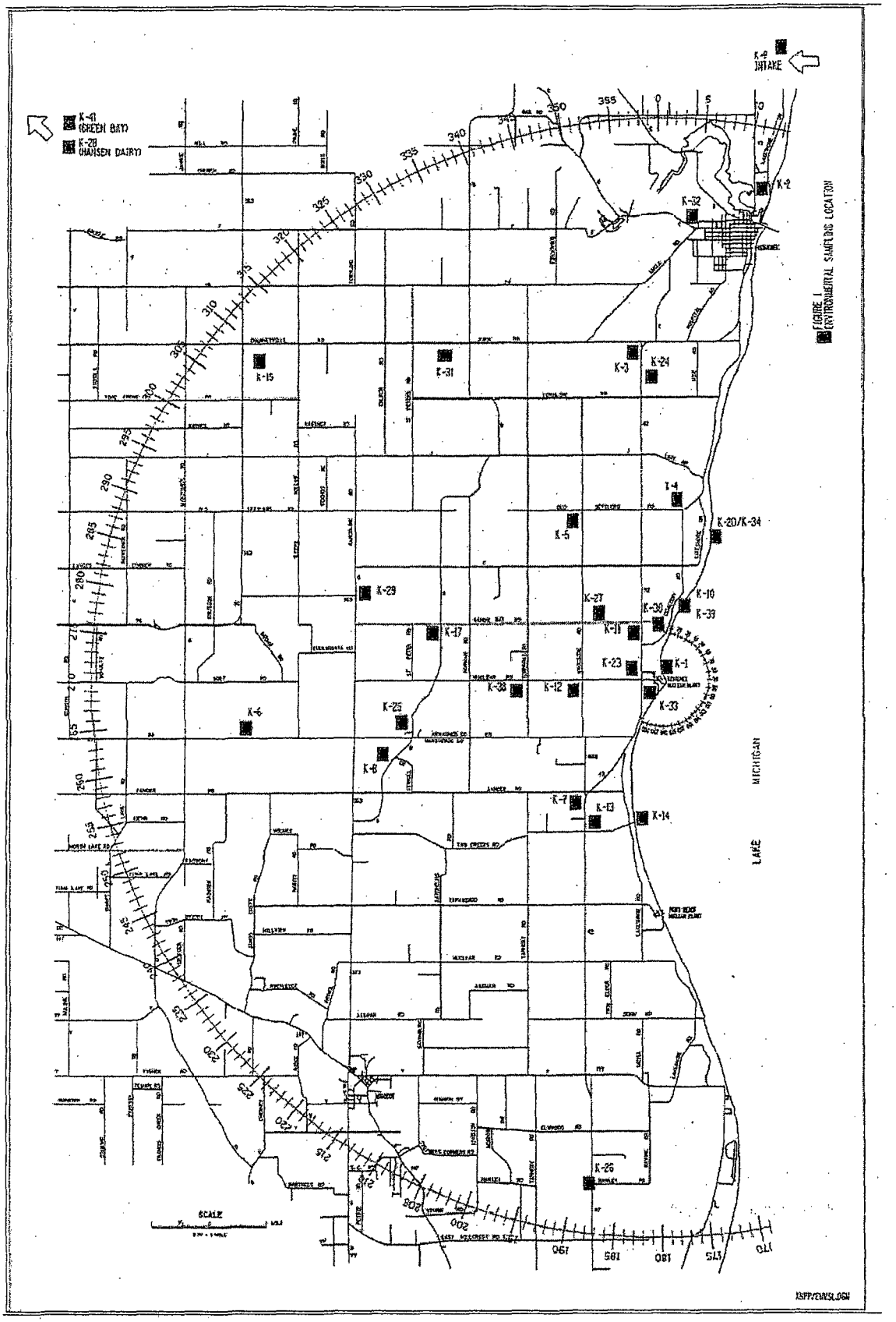

Figure 1. Sampling locations, Kewaunee Power Station

Table 1. Sampling locations, Kewaunee Power Station.

Code	Type[a]	Distance (miles)[b] and Sector	Location
K-1			Onsite
K-1a	I	0.62 N	North Creek
K-1b	I	0.12 N	Middle Creek
K-1c	I	0.10 N	500' north of condenser discharge
K-1d	I	0.10 E	Condenser discharge
K-1e	I	0.12 S	South Creek
K-1f	I	0.12 S	Meteorological Tower
K-1g	I	0.06 W	South Well
K-1h	I	0.12 NW	North Well
K-1j	I	0.10 S	500' south of condenser discharge
K-1k	I	0.60 SW	Drainage Pond, south of plant
K-2	C	9.5 NNE	WPS Operations Building in Kewaunee
K-3	C	6.0 N	Lyle and John Siegmund Farm, N2815 Hy 12, Kewaunee
K-5	I	3.5 NNW	Ed Paplham Farm, E4160 Old Settlers Rd, Kewaunee
K-7	I	2.75 SSW	Ron Zimmerman Farm, 17620 Nero Road, Two Rivers
K-8	C	5.0 WSW	Saint Isidore the Farmer Church, Tisch Mills
K-9	C	11.5 NNE	Rostok Water Intake for Green Bay, Wisconsin, two miles north of Kewaunee
K-10	I	1.5 NNE	Turner Farm, Kewaunee site
K-11	I	1.0 NW	Harlan Ihlenfeld Farm, N879 Hy 42, Kewaunee
K-13	C	3.0 SSW	Rand's General Store
K-14	I	2.5 S	Two Creeks Park, 2.5 miles south of site
K-15	C	9.25 NW	Gas Substation, 1.5 miles north of Stangelville
K-17	I	4.25 W	Jansky's Farm, N885 Tk B, Kewaunee
K-20	I	2.5 N	Carl Struck Farm, Lakeshore Dr, Kewaunee
K-23	I	0.5 W	0.5 miles west of plant, Kewaunee site
K-24	I	5.45 N	Fectum Farm, N2653 Hy 42, Kewaunee
K-25	I	2.75 SW	Wotachek Farm, 3968 E. Cty Tk BB, Two Rivers
K-26	C	10.7 SSW	Bertler's Fruit Stand (8.0 miles south of "BB")
K-27	I	1.5 NW	Schlies Farm, E4298 Sandy Bay Rd, Kewaunee
K-28	C	26 NW	Hansen's Dairy Store, Green Bay, Wisconsin
K-29	I	5.75 W	Kunesh Farm, Route 1, Kewaunee
K-30	I	1.00N	End of site boundary
K-31	C	6.25NNW	E. Krok Substation
K-32	C	11.50 N	Piggly Wiggly, 931 Marquette Dr., Kewaunee
K-34	I	2.5 N	Leon and Vicki Struck, N1549 Lakeshore Dr., Kewaunee
K-38	I	3.8 mi. WNW	Dave Sinkula Farm, N890 Town Hall Road, Kewaunee
K-39	I	4.0 mi. N	Francis and Sue Wojta, N1859 Lakeshore Dr., Kewaunee
K-41[c]	C	22 NW	KPS, EOF3060 Voyager Dr. , Green Bay

[a] I = indicator; C = control.

[b] Distances are measured from reactor stack.

Table 2. Type and frequency of collection.

Location	Weekly	Biweekly	Monthly	Quarterly	Semiannually	Annually
K-1a			SW		SL	
K-1b			SW	GR[a]	SL	
K-1c					BS[b]	
K-1d			SW	FI[a]	BS[b], SL	
K-1e			SW		SL	
K-1f	AP	AI		GR[a], TLD	SO	
K-1g				WW		
K-1h				WW		
K-1j					BS[b]	
K-1k			SW		SL	
K-2	AP	AI		TLD		
K-3			MI[c]	GR[a], TLD, CF[d]	SO	
K-5			MI[c]	GR[a], TLD, CF[d]	SO	
K-7	AP	AI		TLD		
K-8	AP	AI		TLD		
K-9			SW		BS[b], SL	
K-10				WW		
K-11			PR	WW		
K-13				WW		
K-14			SW		BS[b], SL	
K-15				TLD		
K-17				TLD		VE
K-20						DM
K-23						GRN
K-24				EG		DM
K-25			MI[c]	GR[a], TLD, CF[d], WW	SO	
K-26						VE
K-27				TLD, EG		DM
K-28			MI[c]			
K-29						DM
K-30				TLD		
K-31	AP	AI		TLD		
K-32				EG		DM
K-34			MI[c]	GR[a], CF[d]	SO	DM
K-38			MI[c]	GR[a], CF[d]	SO	
K-39			MI[c]	GR[a], TLD, CF[d]	SO	
K-41	AP	AI		TLD		

[a] Three times a year, second, third and fourth quarters.

[b] To be collected in May and November.

[c] Monthly from November through April; semimonthly May through October.

[d] First quarter (January, February, March) only.

Table 3. Sample Codes:

AP	Airborne particulates	MI	Milk
AI	Airborne Iodine	PR	Precipitation
BS	Bottom sediments	SL	Slime
CF	Cattlefeed	SO	Soil
DM	Domestic Meat	SW	Surface water
EG	Eggs	TLD	Thermoluminescent Dosimeter
FI	Fish	VE	Vegetables
GRN	Grain	WW	Well water
GR	Grass		

Note: Page 6 is intentionally left out.

GRAPHS OF DATA TRENDS

Note: Conventions used in trending data.
The following conventions should be used in the interpretation of the graphs of data trends:

1. Both solid and open data points may be used in the graphs. A solid point indicates an activity, an open point, a lower limit of detection (LLD) value.
2. Data points are connected by a solid line. A break in the plot indicates missing data.

Kewaunee

Air Particulates - Gross Beta

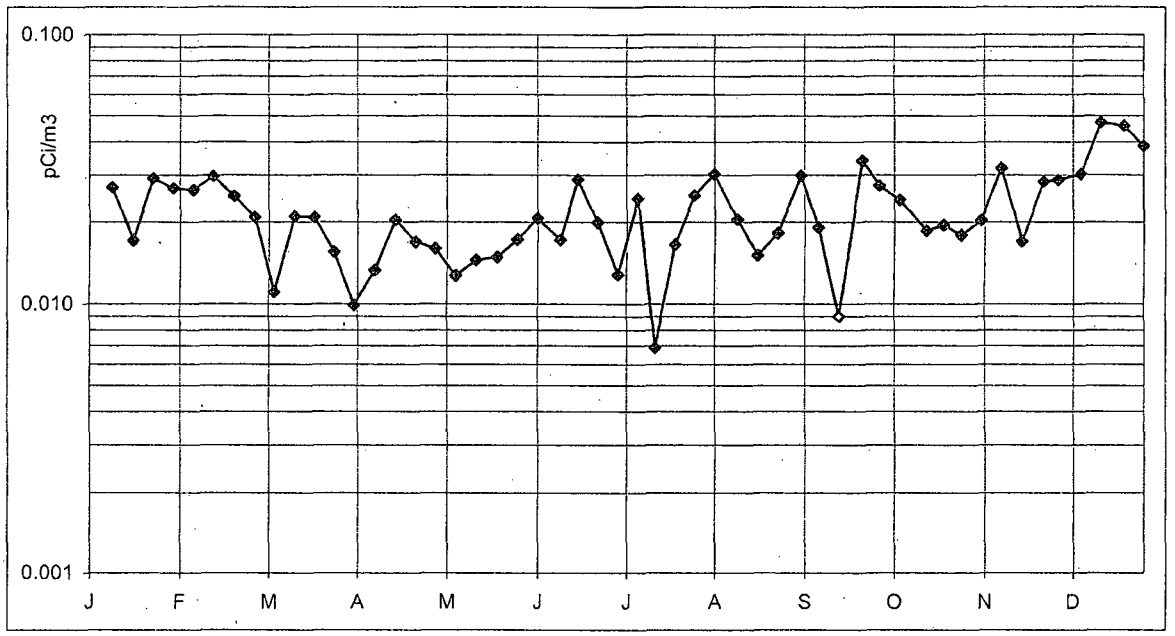

Figure 2. Location K-1f (weekly samples, 2007).

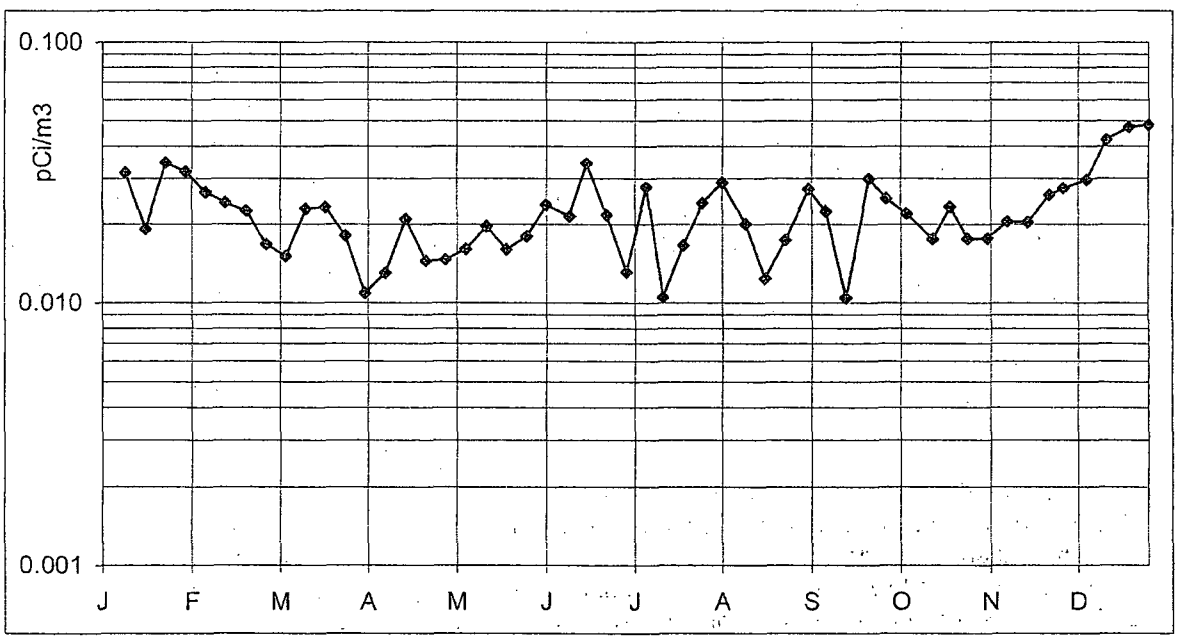

Figure 3. Location K-2 (weekly samples, 2007).

Kewaunee

Air Particulates - Gross Beta

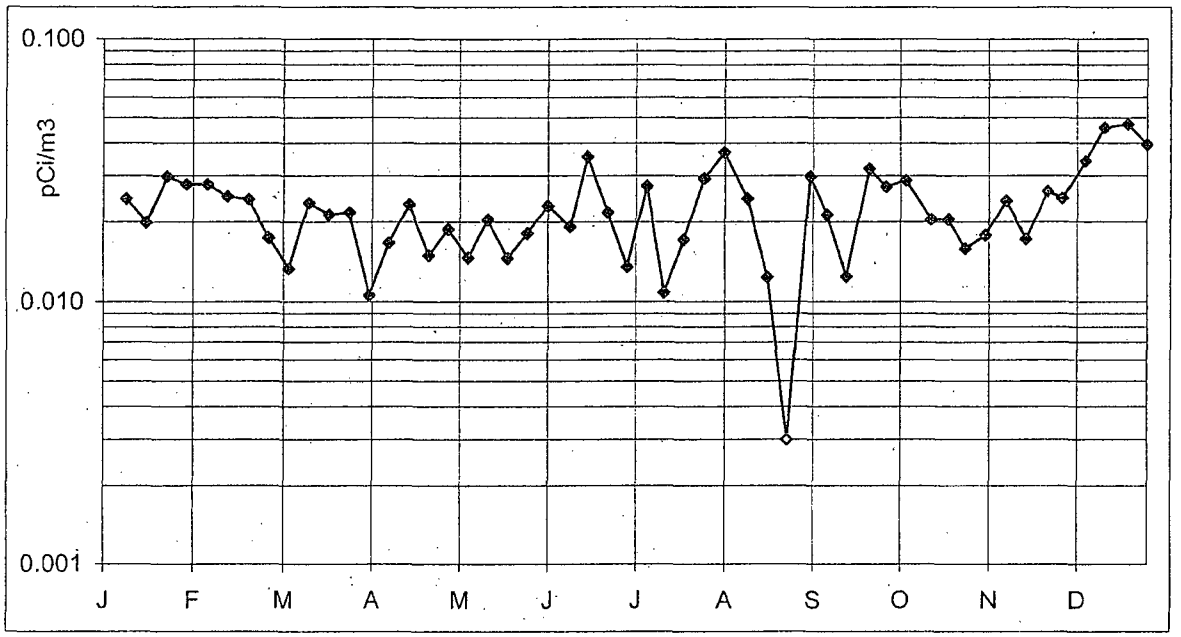

Figure 4. Location K-7 (weekly samples, 2007).

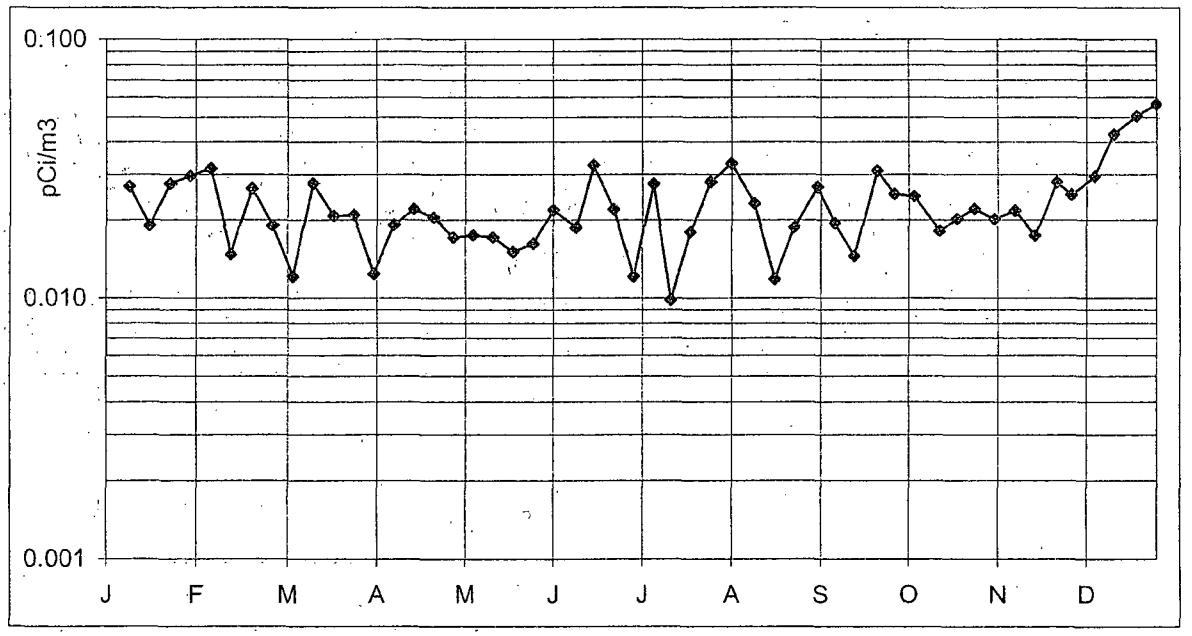

Figure 5. Location K-8 (weekly samples, 2007).

Kewaunee

Air Particulates - Gross Beta

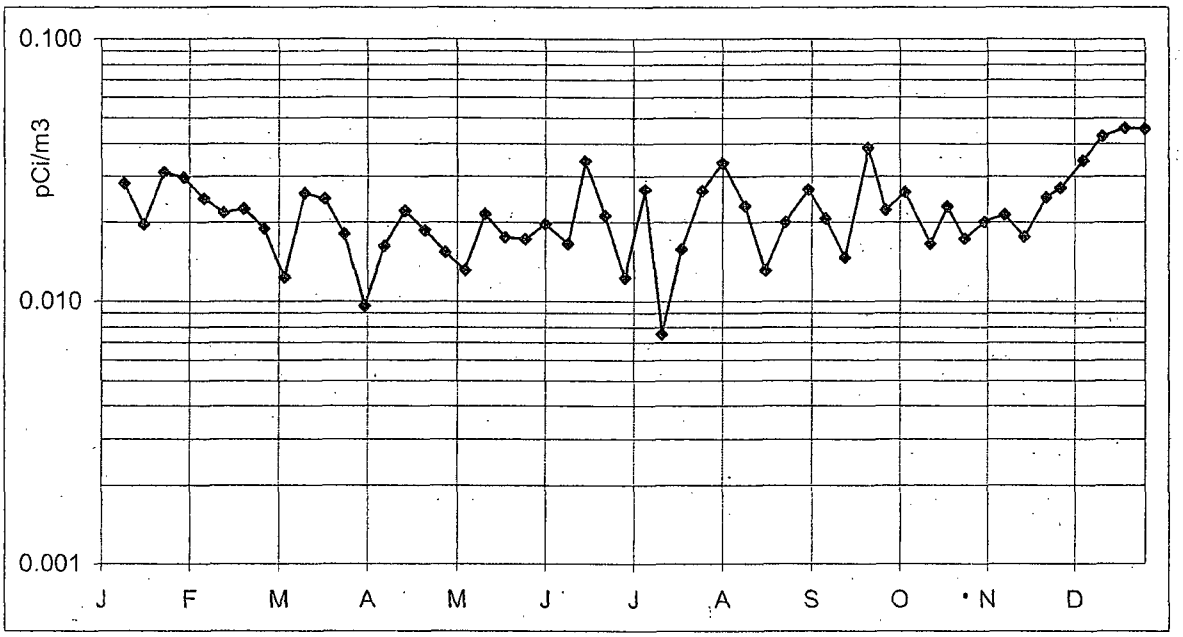

Figure 6. Location K-31 (weekly samples, 2007).

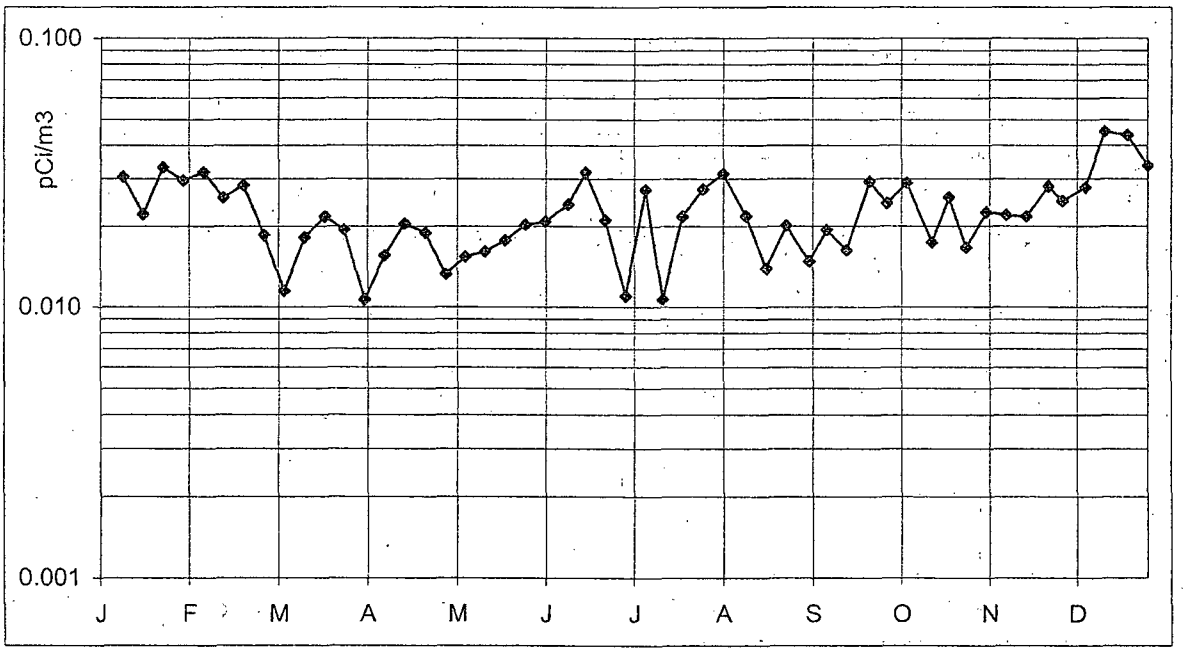

Figure 7. Location K-41 (weekly samples, 2007).

Kewaunee

Air Particulates - Gross Beta

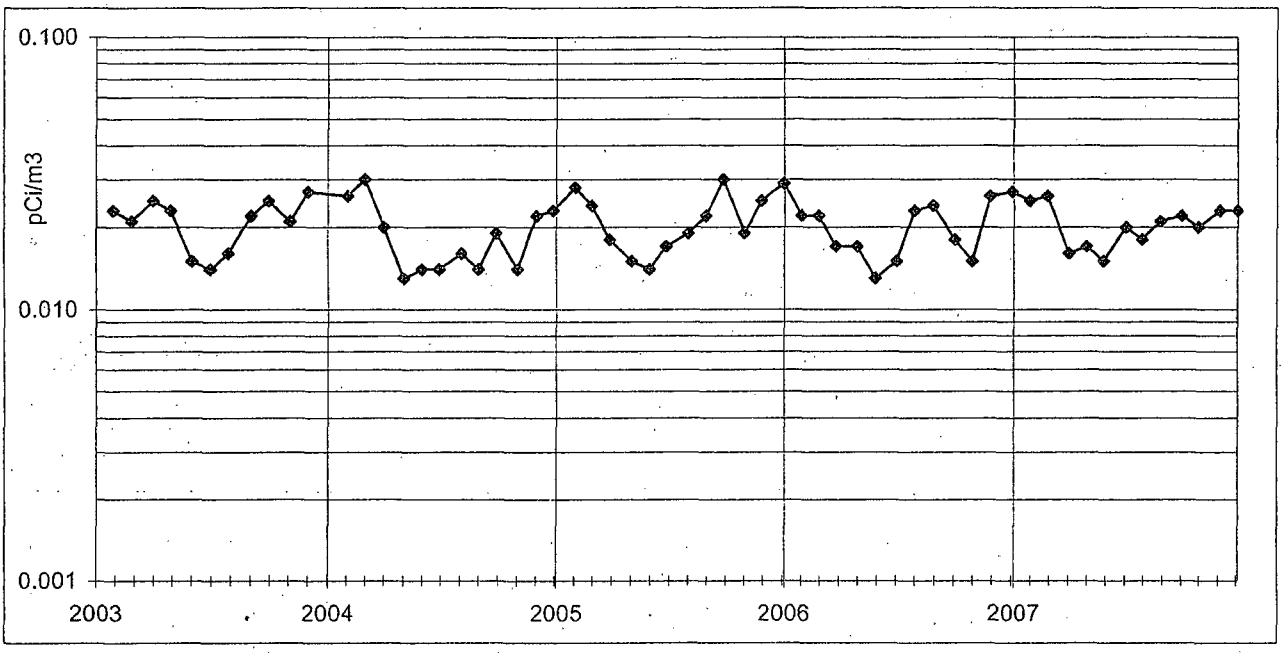

Figure 8. Location K-1f (monthly averages, 2003-2007).

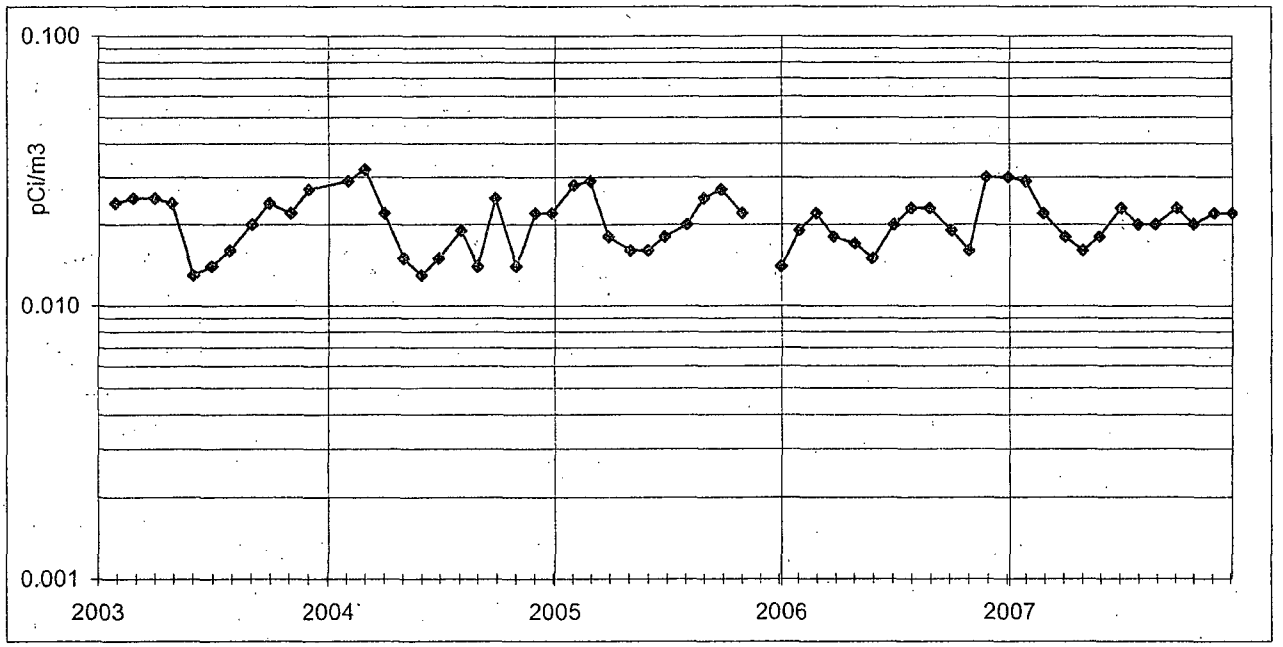

Figure 9. Location K-2 (monthly averages, 2003-2007).

Kewaunee

Air Particulates - Gross Beta

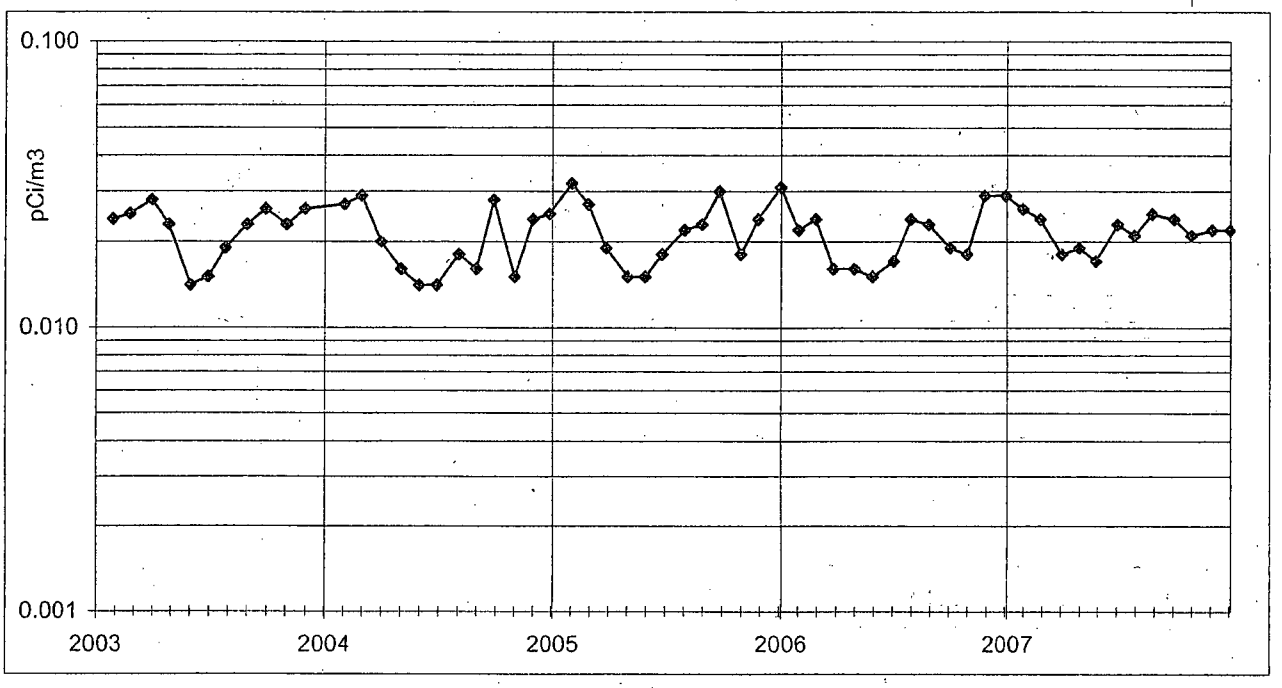

Figure 10. Location K-7 (monthly averages, 2003-2007).

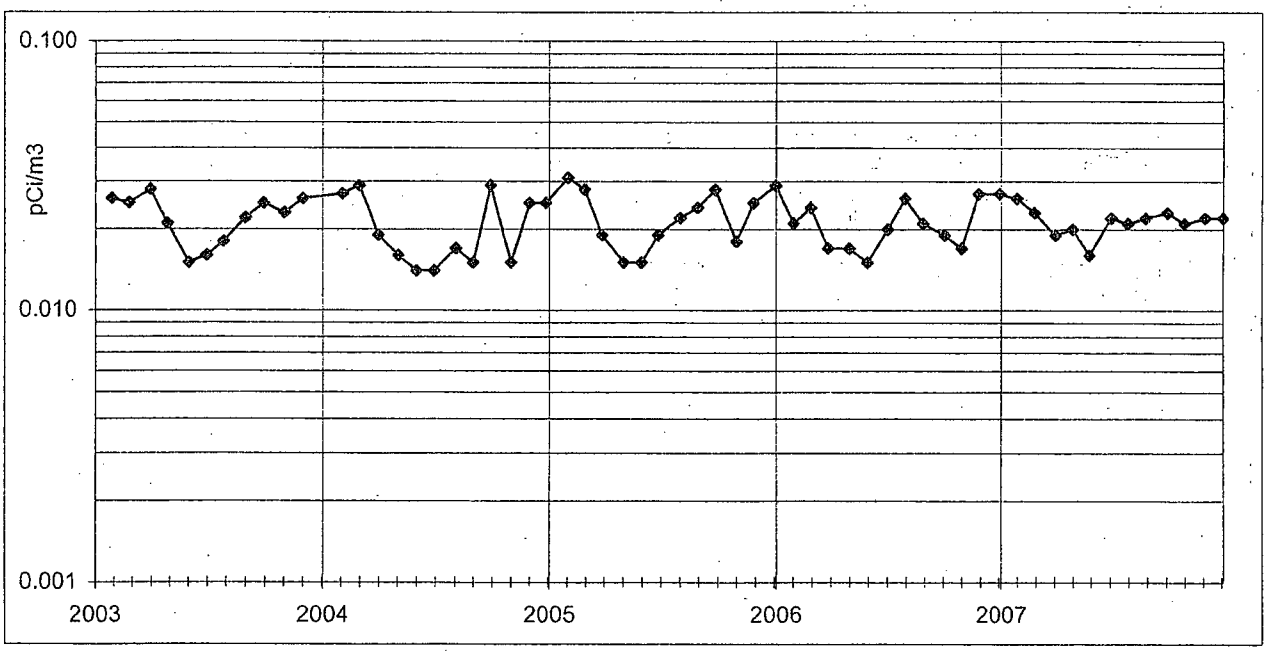

Figure 11. Location K-8 (monthly averages, 2003-2007).

Kewaunee

Air Particulates - Gross Beta

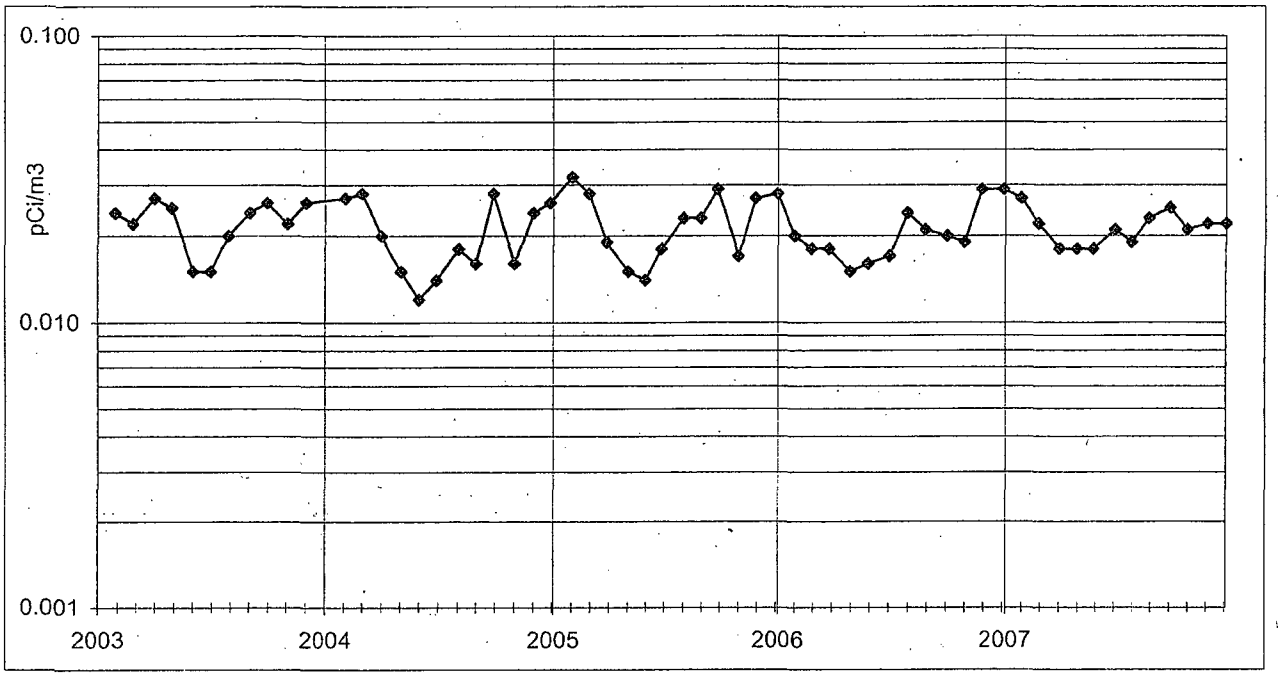

Figure 12. Location K-31 (monthly averages, 2003-2007).

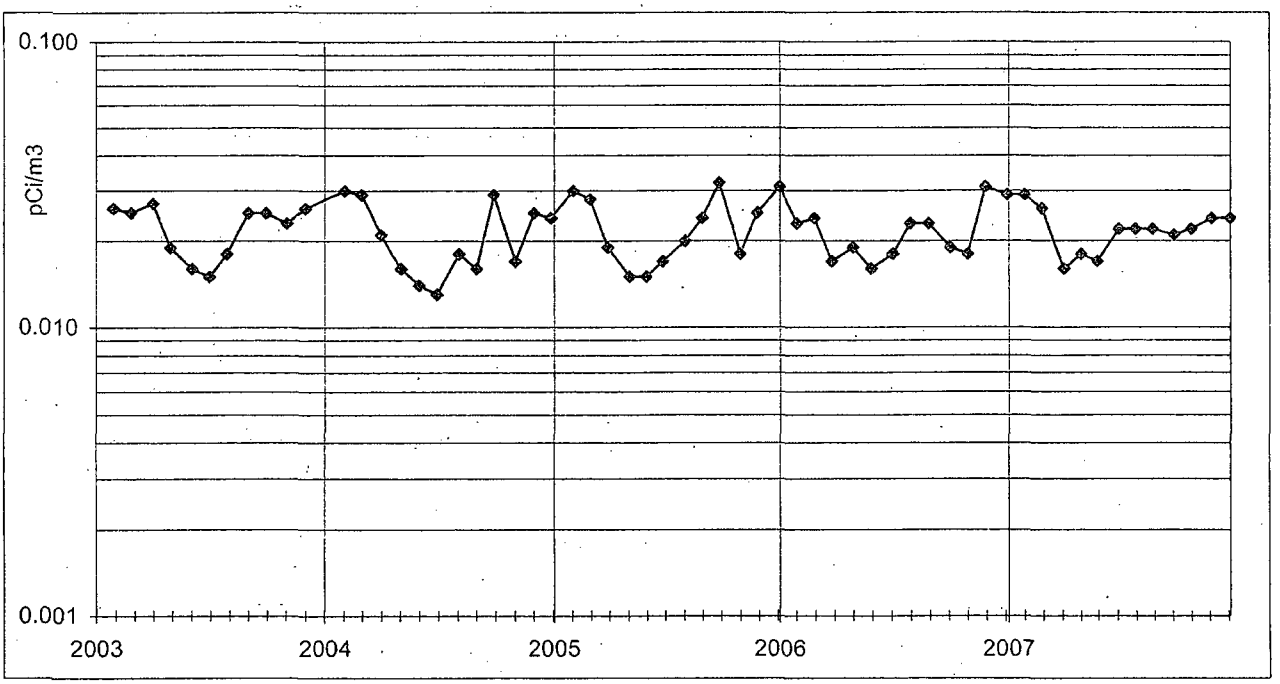

Figure 13. Location K-41[a] (monthly averages, 2003-2007).

[a] collected at location K-16 prior to 2007

Kewaunee

WELL WATER-GROSS ALPHA

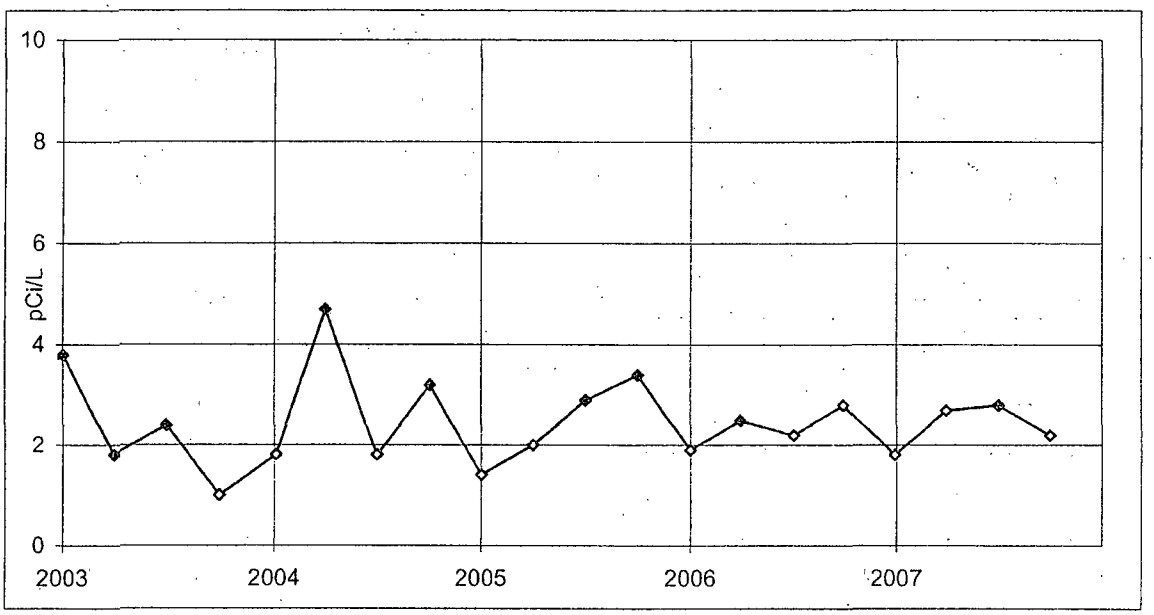

Figure 14. Location K-1g. Total Residue. Quarterly collection.

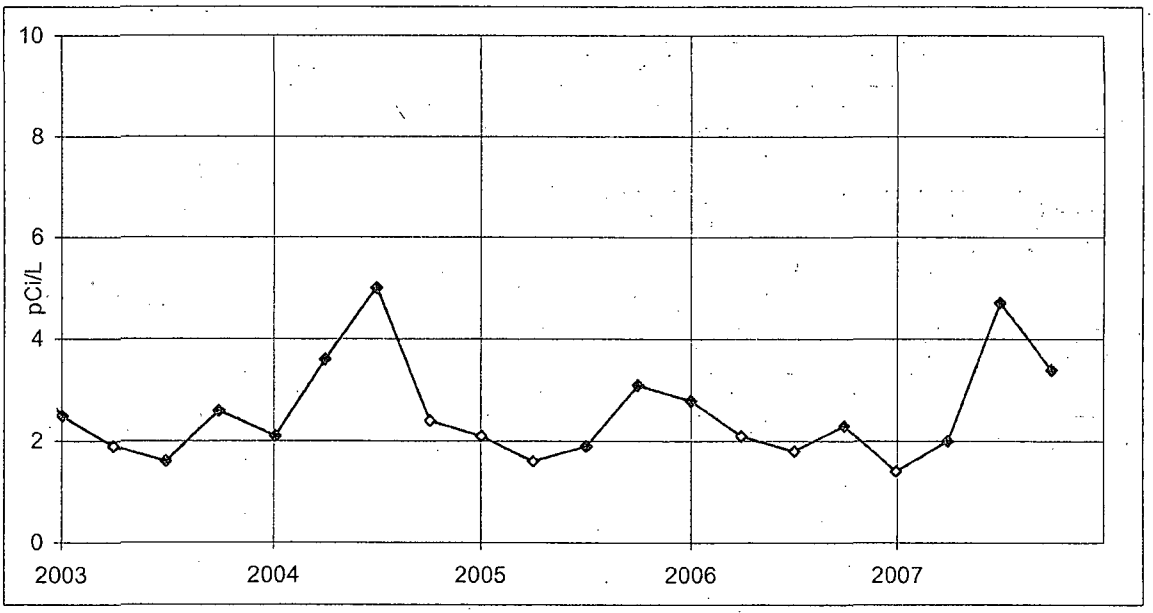

Figure 15. Location K-1h. Total Residue. Quarterly collection.

Kewaunee

WELL WATER-GROSS BETA

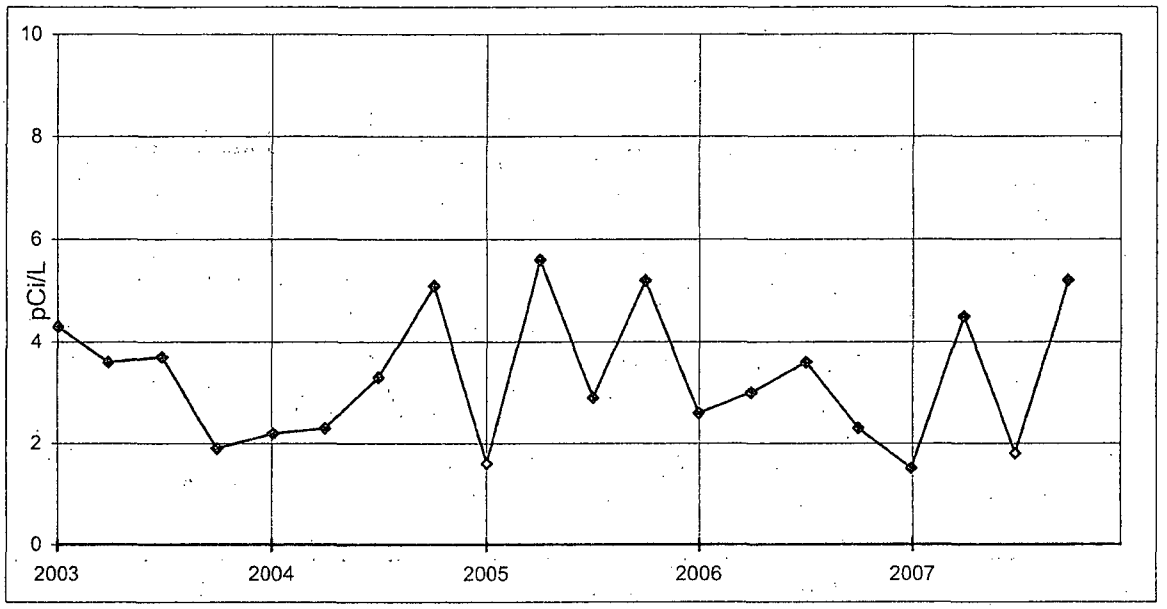

Figure 16. Location K-1g. Total Residue. Quarterly collection.

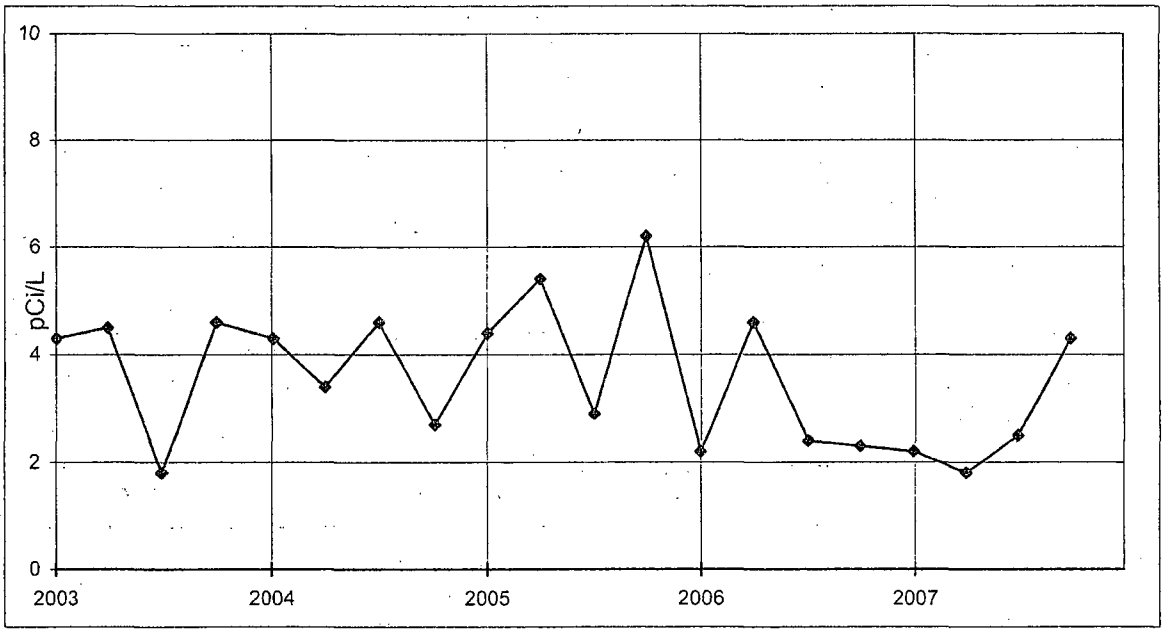

Figure 17. Location K-1h. Total Residue. Quarterly collection.

Kewaunee

WELL WATER-GROSS BETA

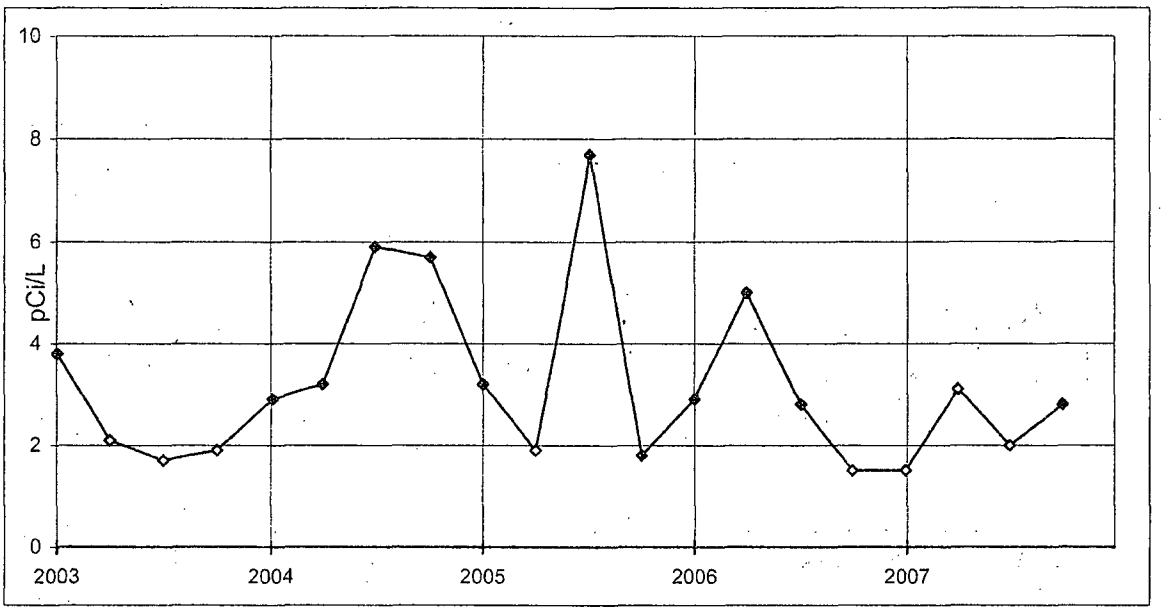

Figure 18. Location K-10. Total Residue. Quarterly collection.

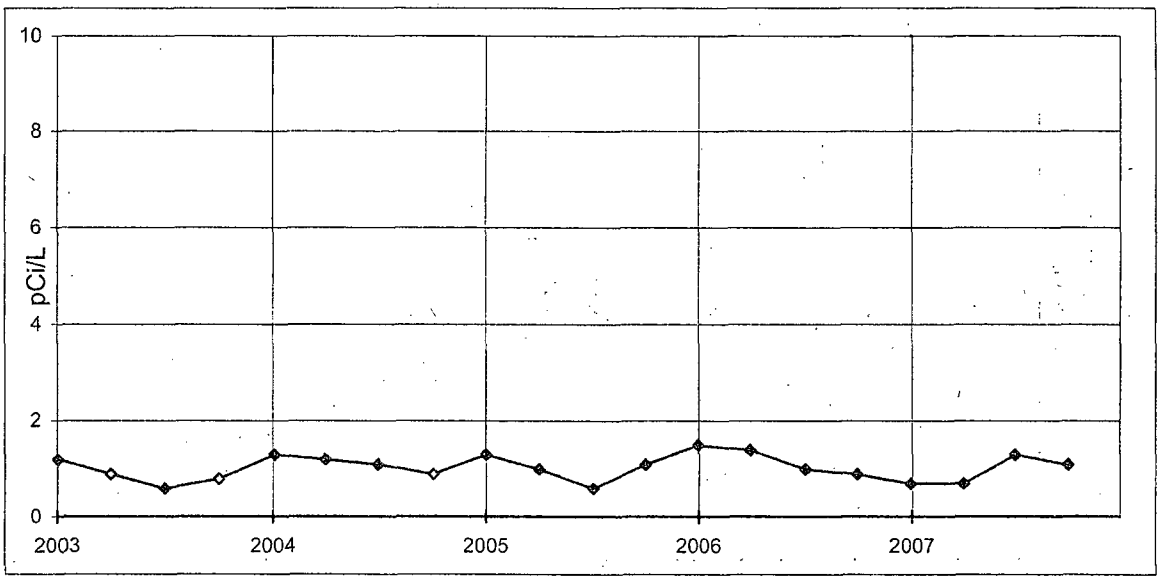

Figure 19. Location K-11. Total Residue. Quarterly collection.

Kewaunee

WELL WATER-GROSS BETA

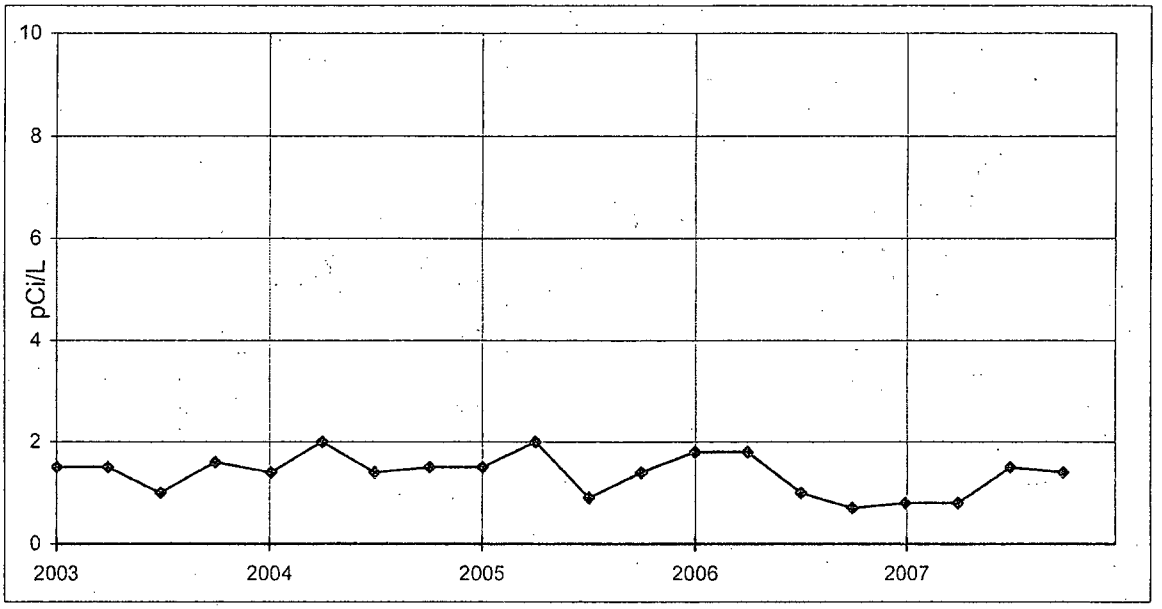

Figure 20. Location K-25. Total Residue. Quarterly collection.

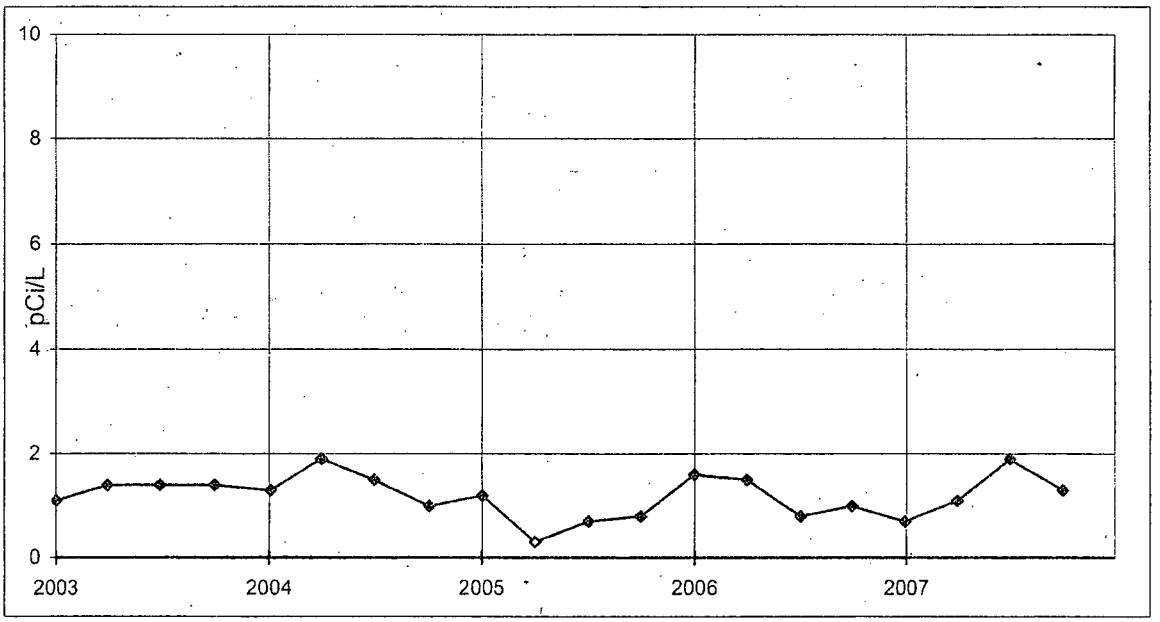

Figure 21. Location K-13. Total Residue. Quarterly collection.

Kewaunee
Milk - Strontium-90

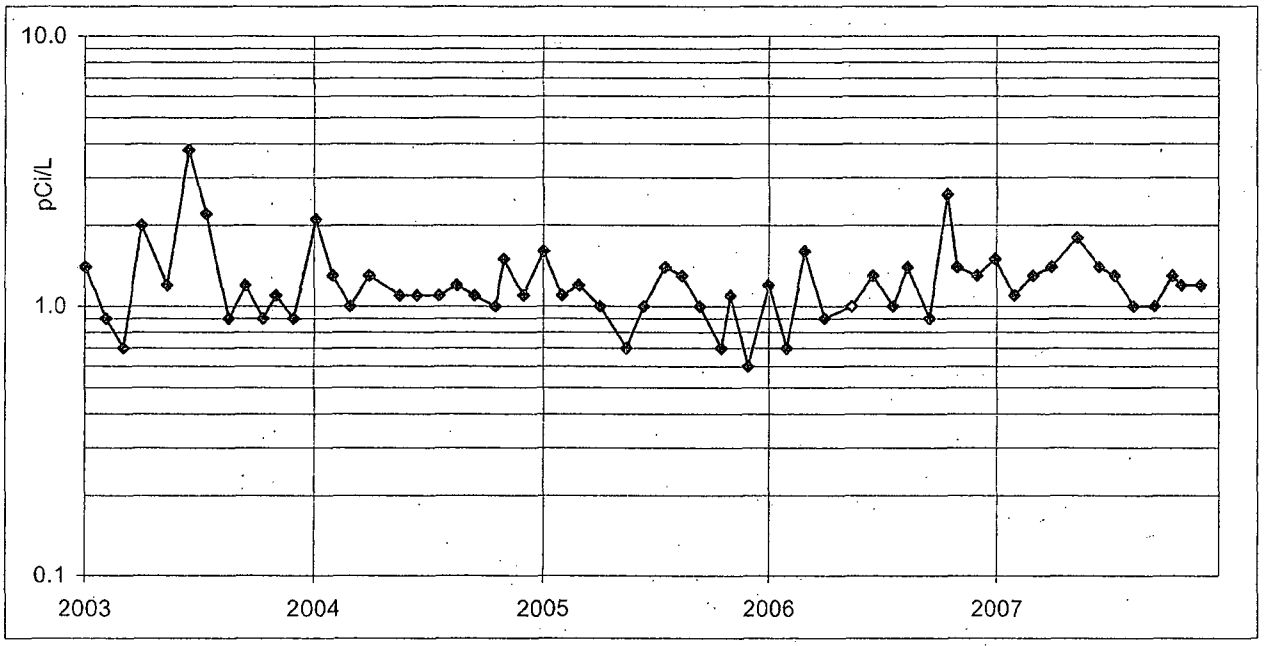

Figure 22. Milk samples. Location K-3.

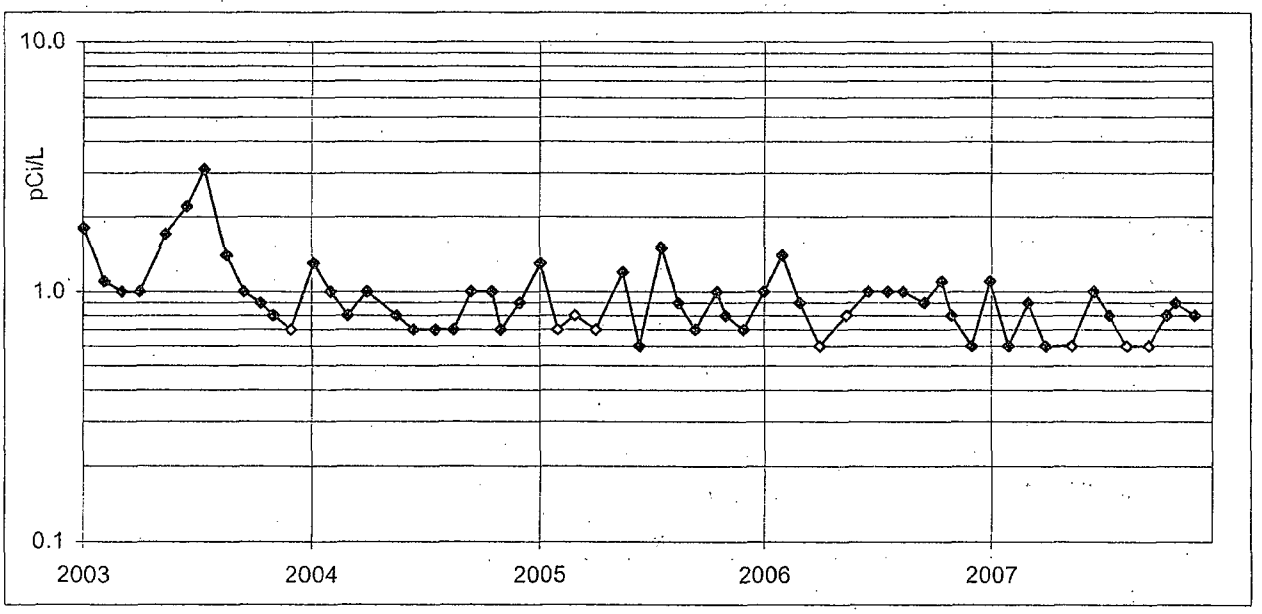

Figure 23. Milk samples. Location K-5.

Kewaunee
Milk - Strontium-90

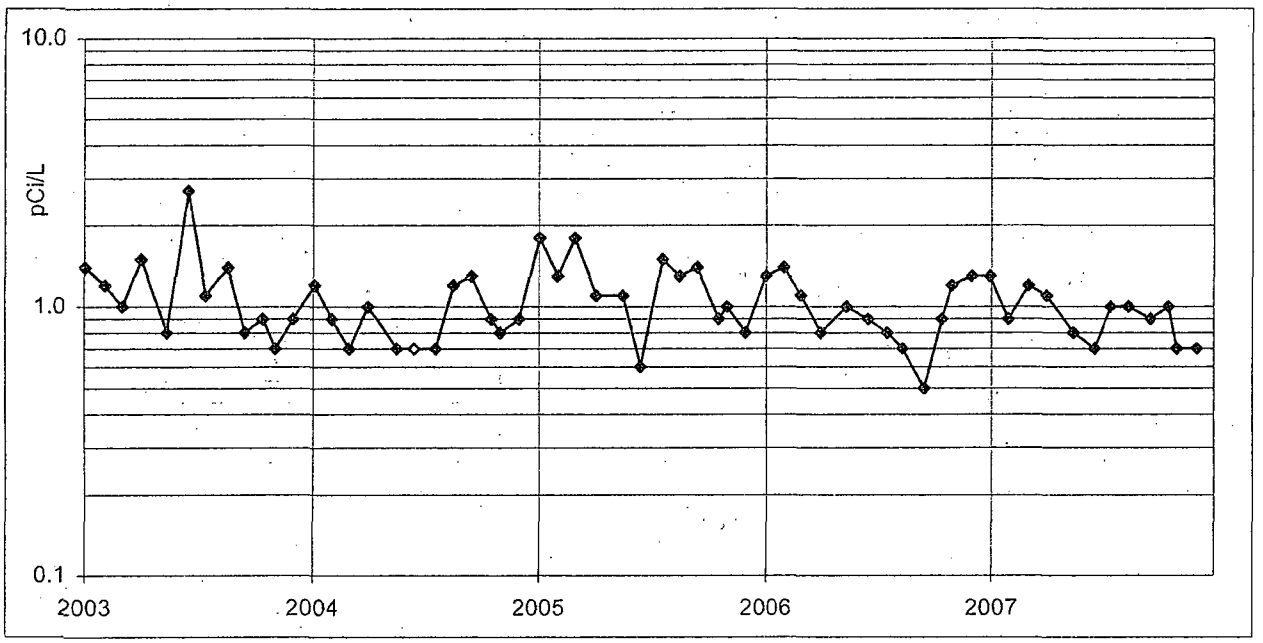

Figure 24. Milk samples. Location K-25.

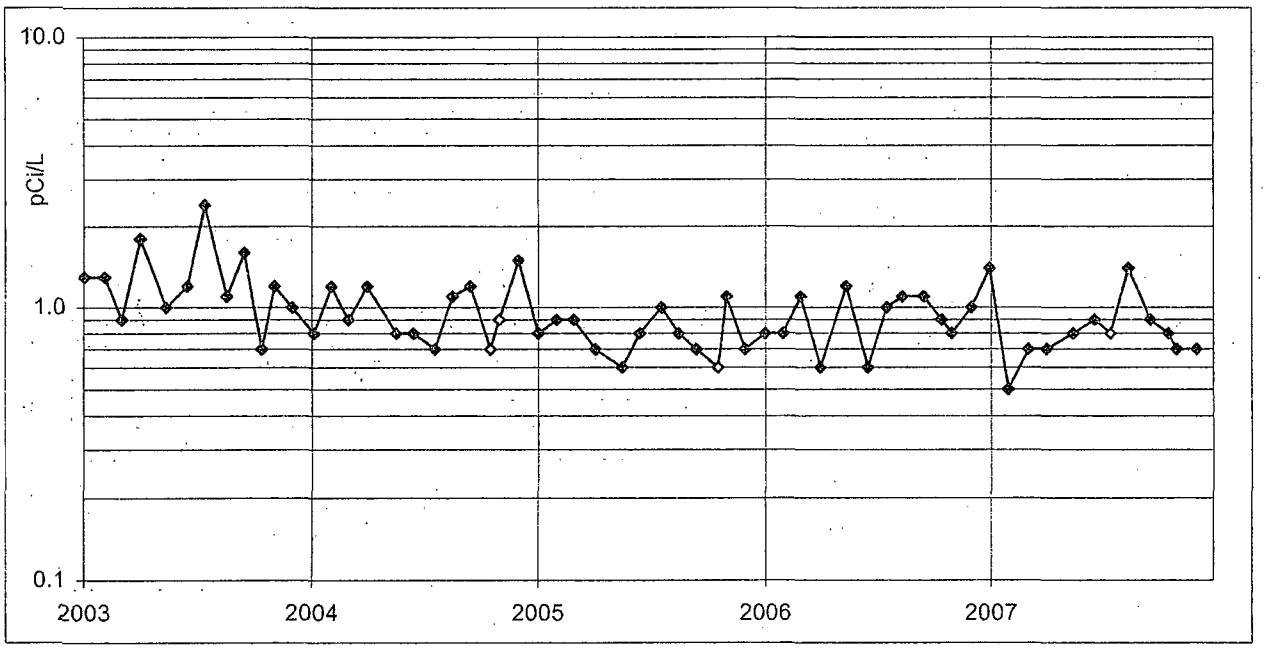

Figure 25. Milk samples. Location K-28.

Kewaunee
Milk - Strontium-90

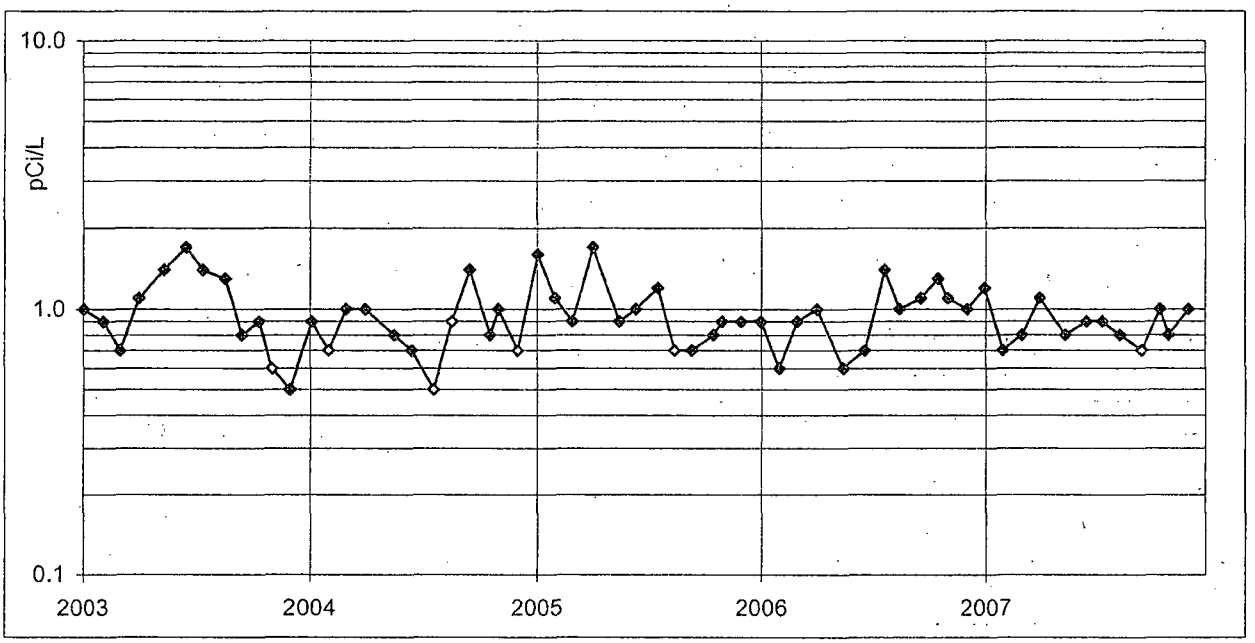

Figure 26. Milk samples. Location K-34.

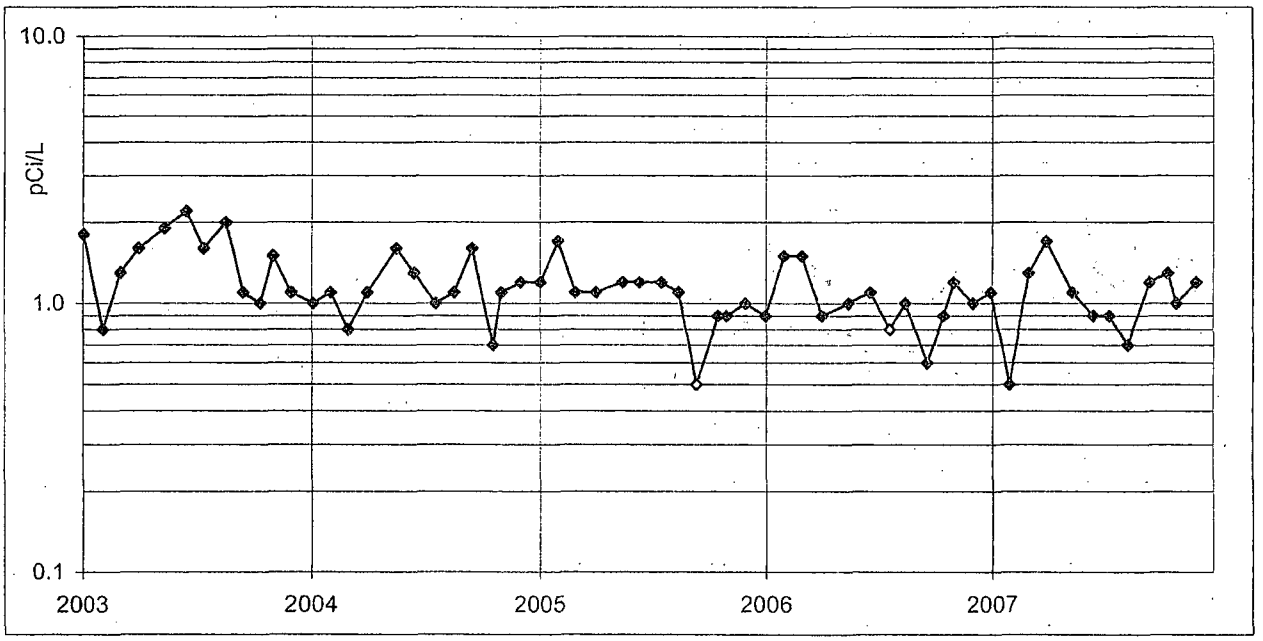

Figure 27. Milk samples. Location K-38.

Kewaunee
Milk - Strontium-90

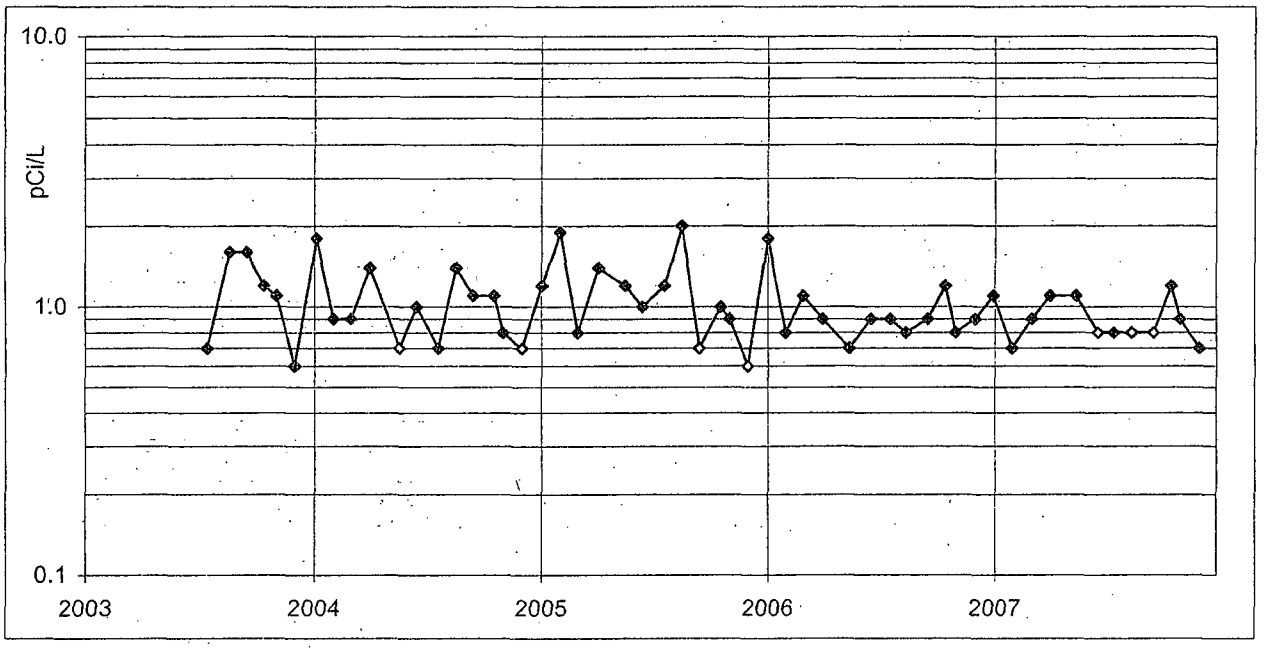

Figure 28. Milk samples. Location K-39.

Kewaunee

Surface Water - Gross Beta

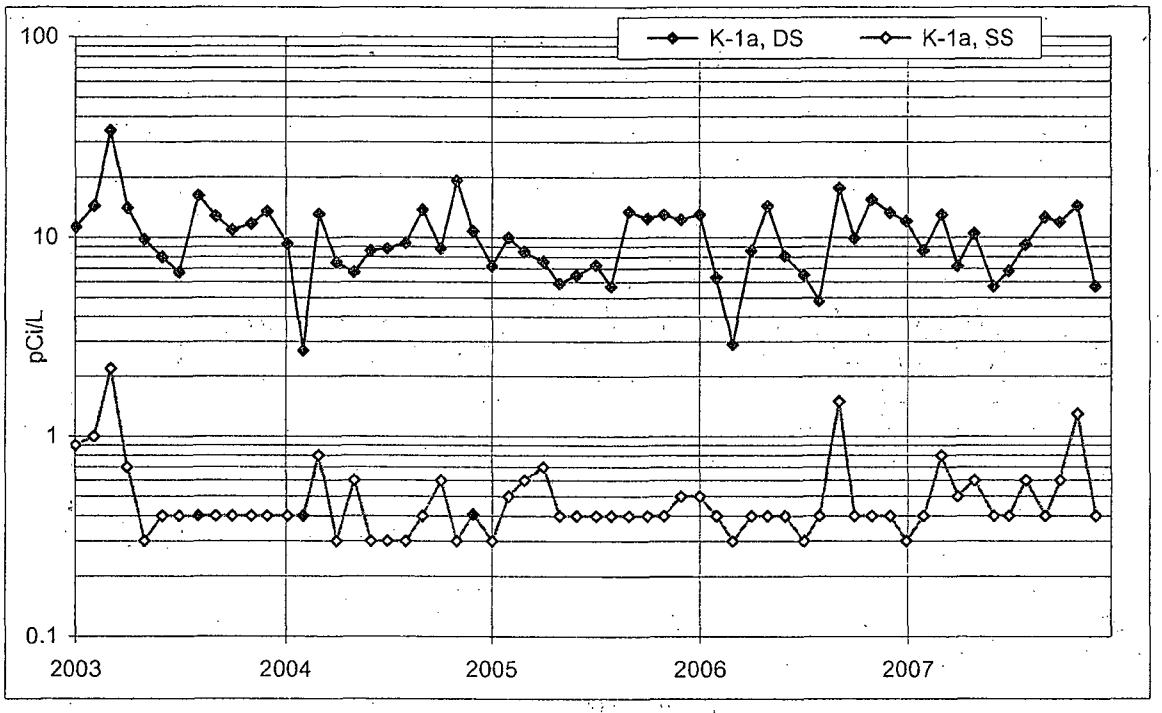

Figure 29. Surface water . North Creek, Onsite (K-1a).

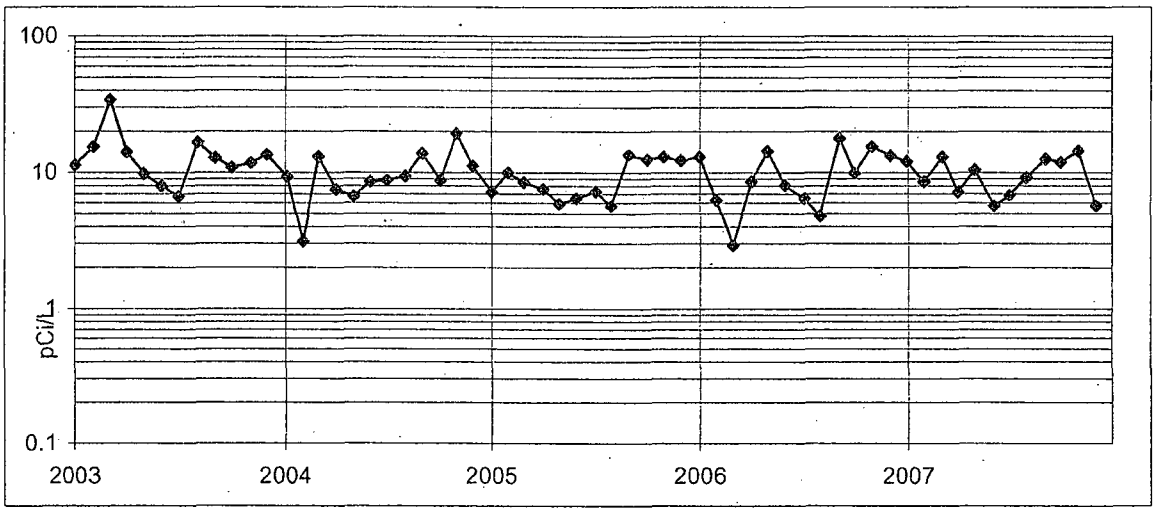

Figure 30. Surface water . North Creek, Onsite (K-1a).
Total Residue

Kewaunee

Surface Water - Gross Beta

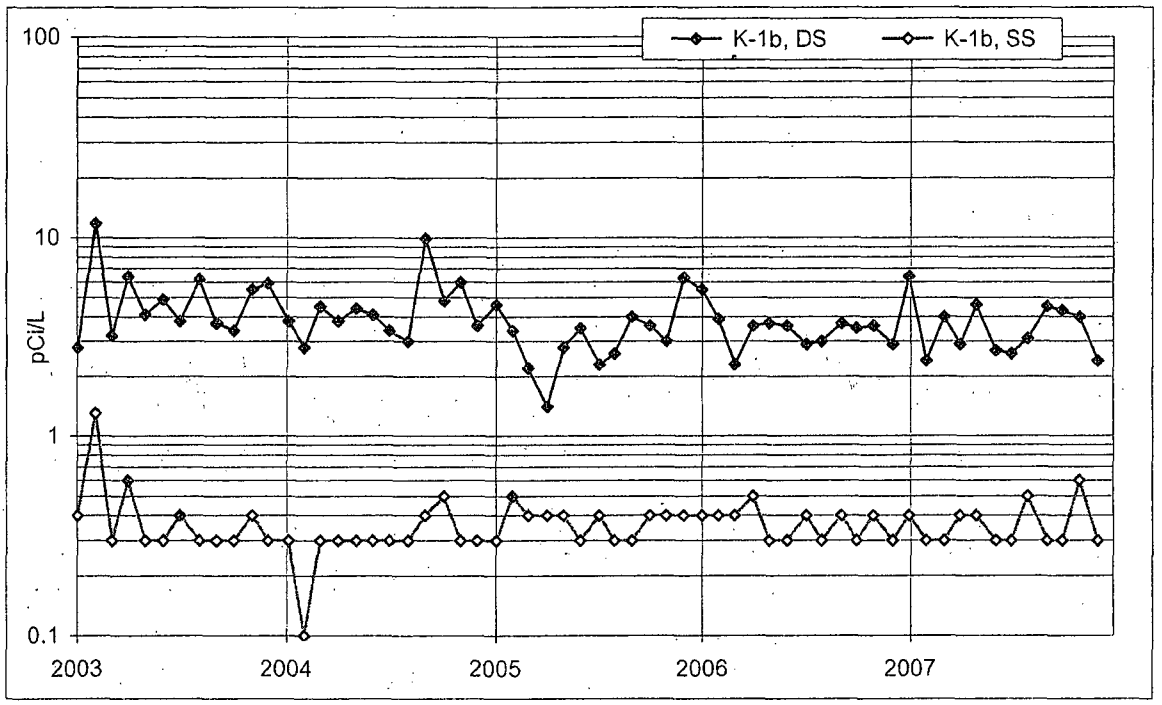

Figure 31. Surface water . Middle Creek, Onsite (K-1b).

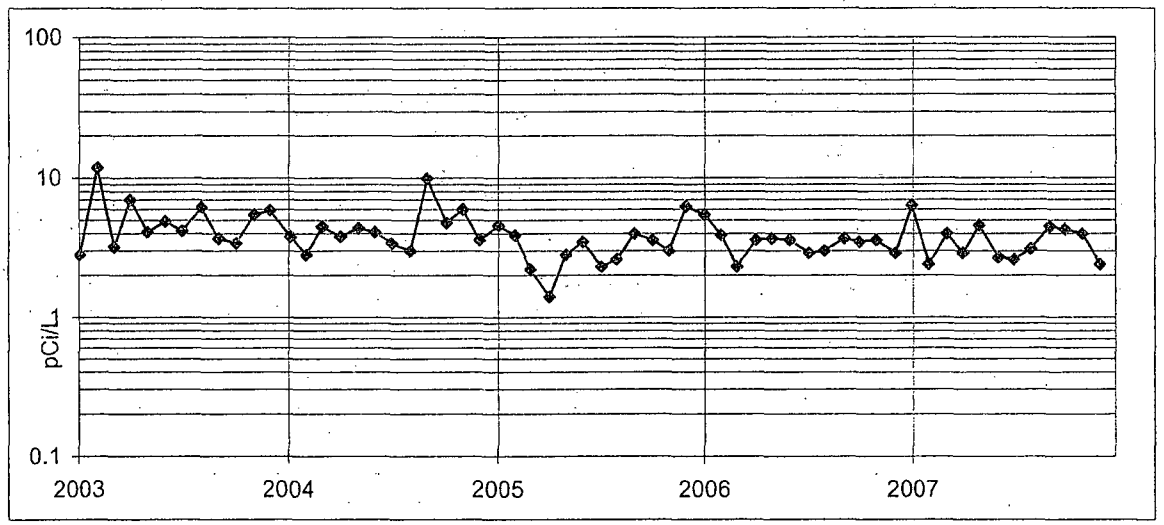

Figure 32. Surface water . Middle Creek, Onsite (K-1b).
Total Residue

Kewaunee

Surface Water - Gross Beta

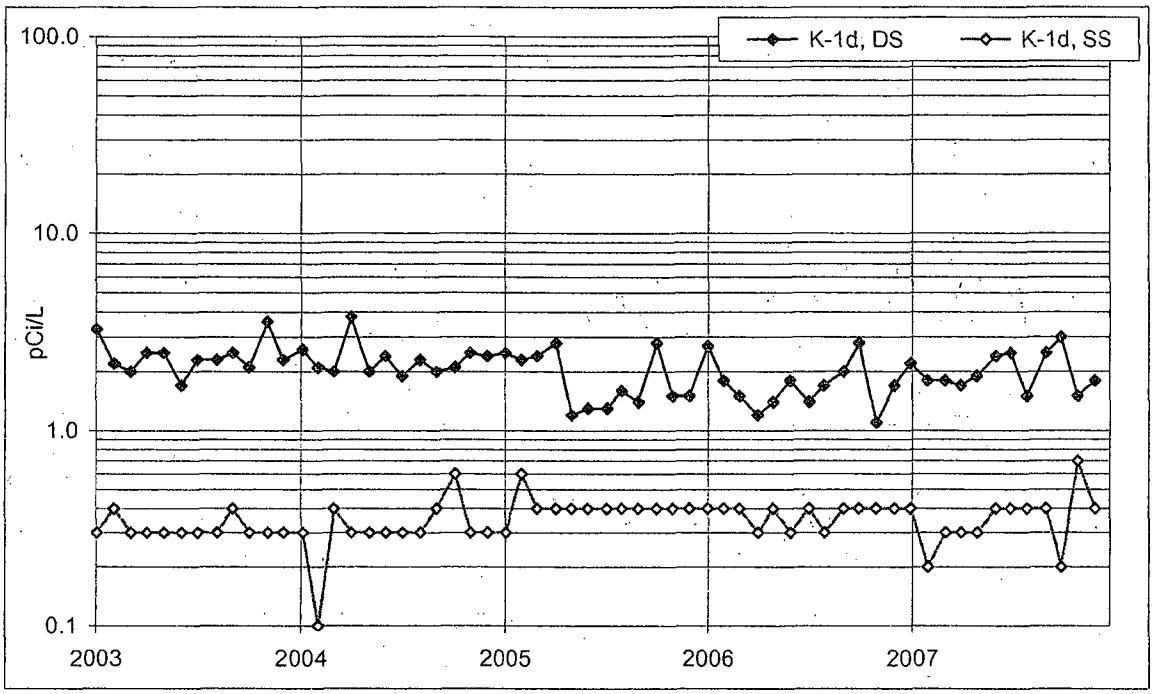

Figure 33. Surface water. Lake Michigan, condenser discharge, Onsite (K-1d).

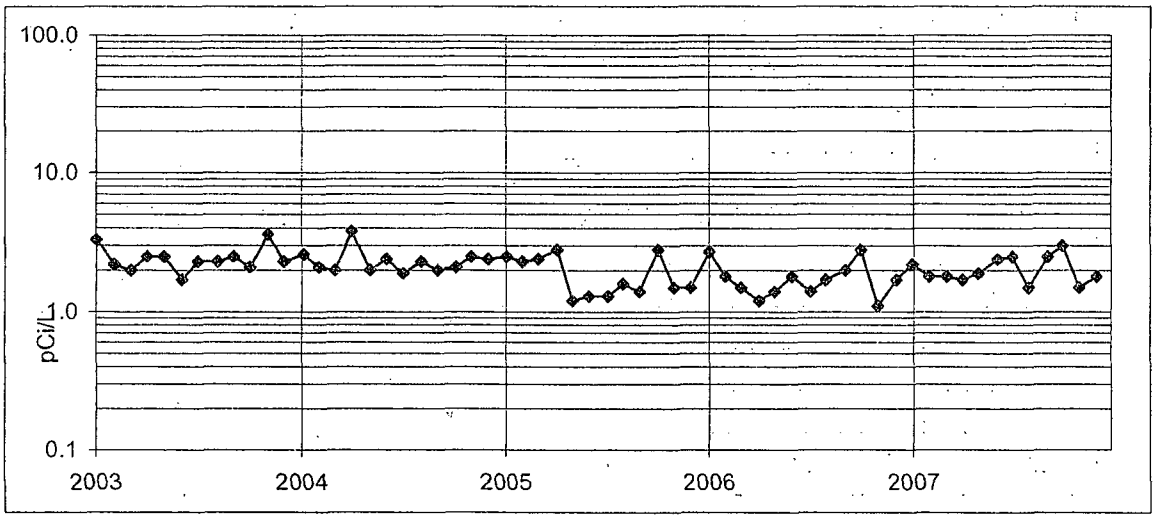

Figure 34. Surface water. Lake Michigan, condenser discharge, Onsite (K-1d).
Total Residue

Kewaunee

Surface Water - Gross Beta

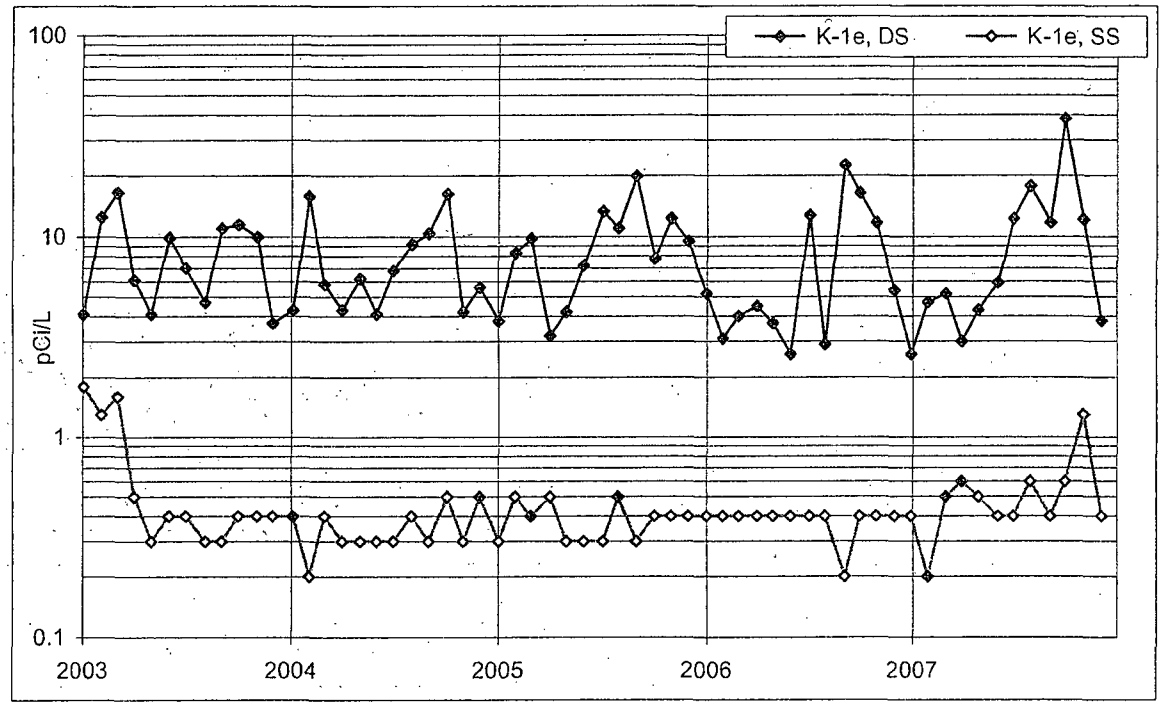

Figure 35. Surface water. South Creek, Onsite (K-1e).

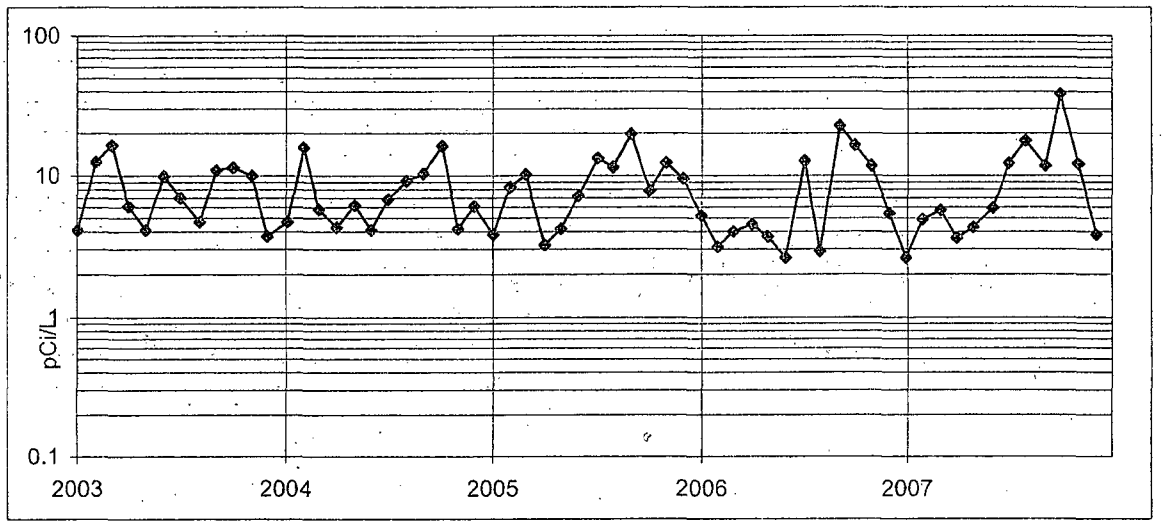

Figure 36. Surface water. South Creek, Onsite (K-1e).
Total Residue

Kewaunee

Surface Water - Gross Beta

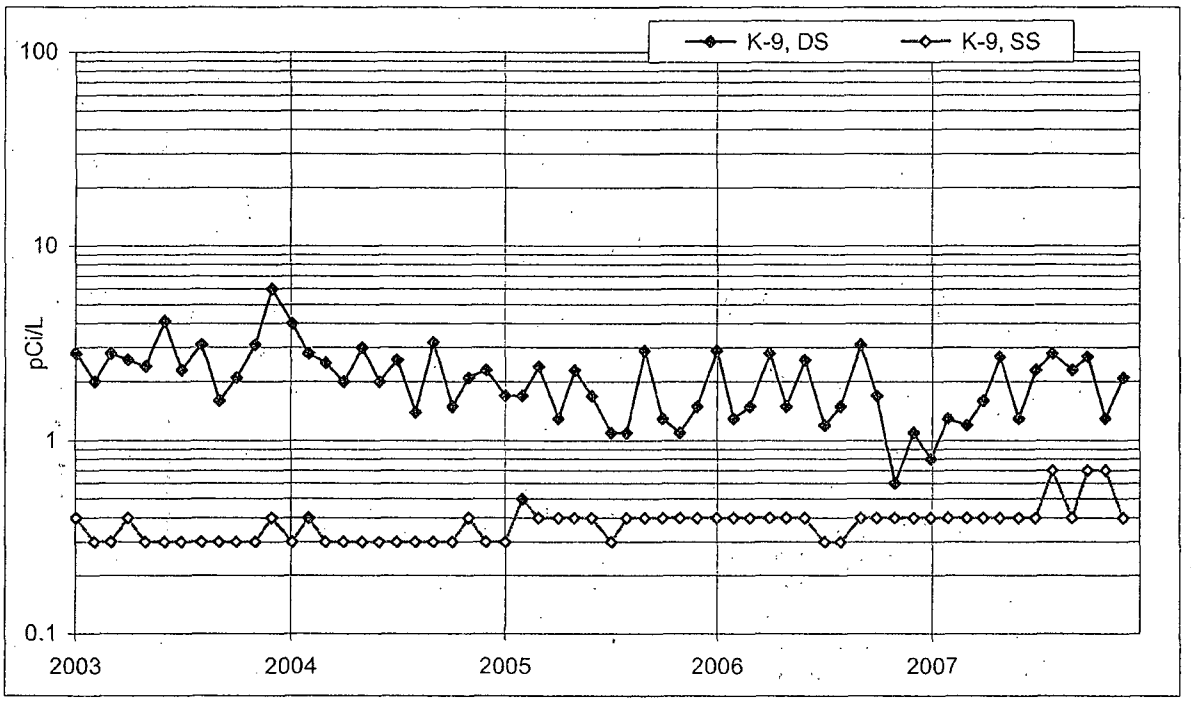

Figure 37. Surface water (raw). Lake Michigan, Rostok Intake (K-9)

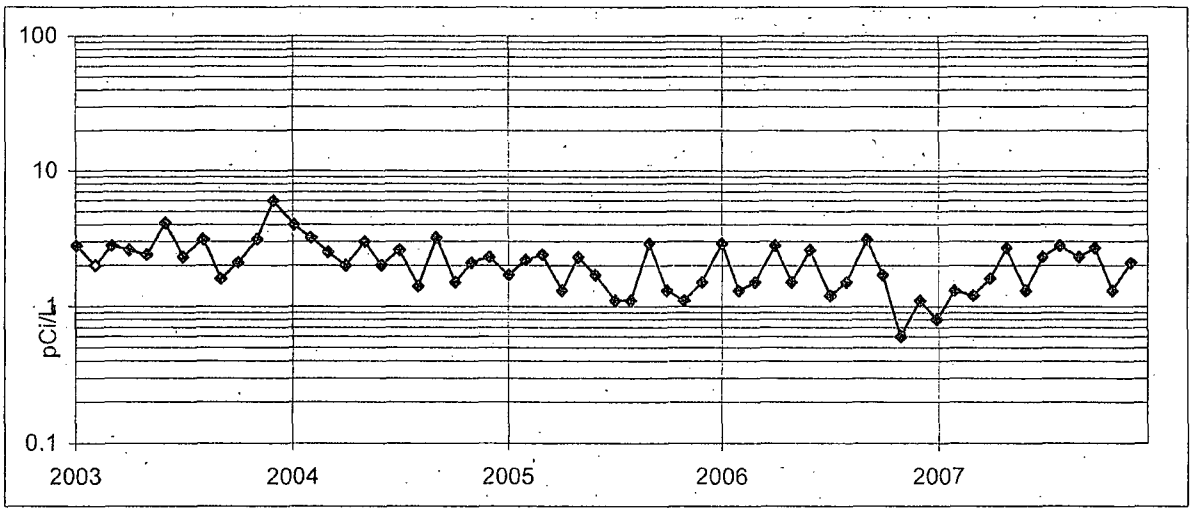

Figure 38. Surface water (raw). Lake Michigan, Rostok Intake (K-9)
Total Residue

Kewaunee

Surface Water - Gross Beta

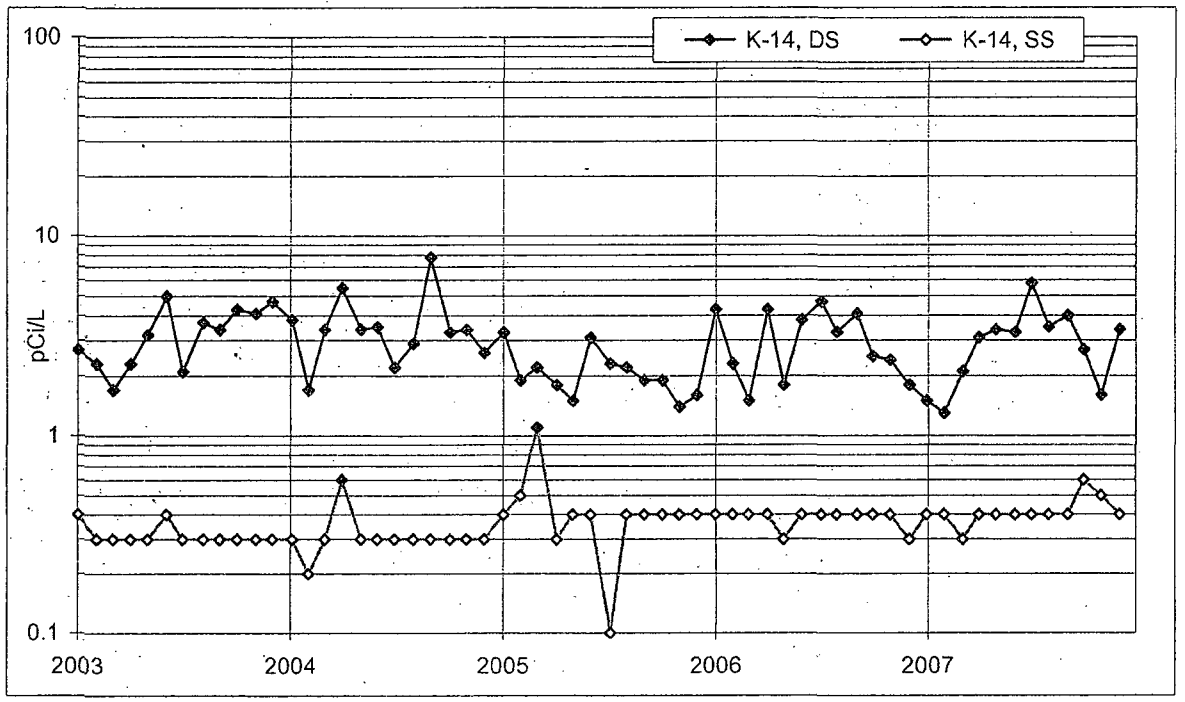

Figure 39. Surface water . Lake Michigan, Two Creeks Park (K-14a).

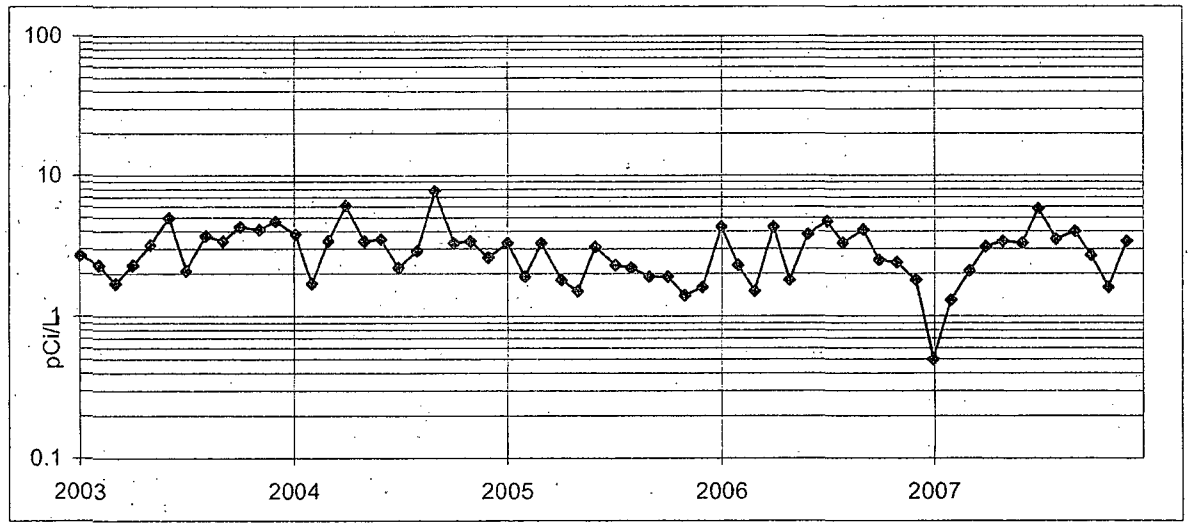

Figure 40. Surface water . Lake Michigan, Two Creeks Park (K-14a).
Total Residue

Kewaunee

Surface Water - Gross Beta

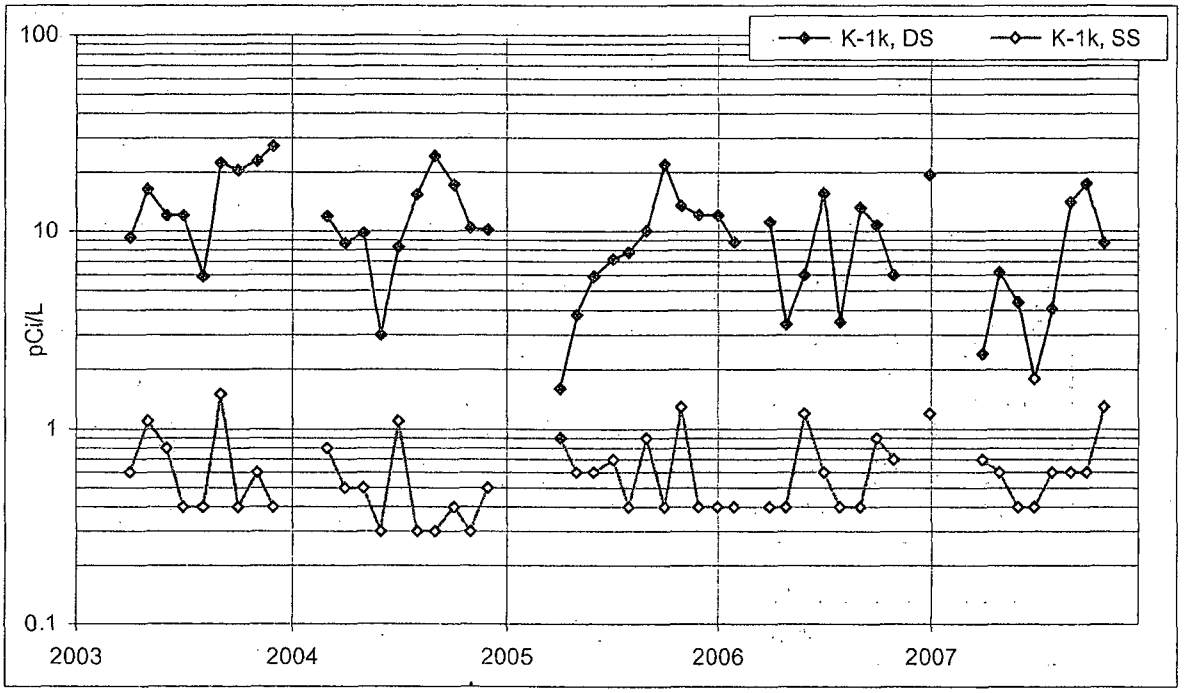

Figure 41. Surface water. School Forest Pond (K-1k).

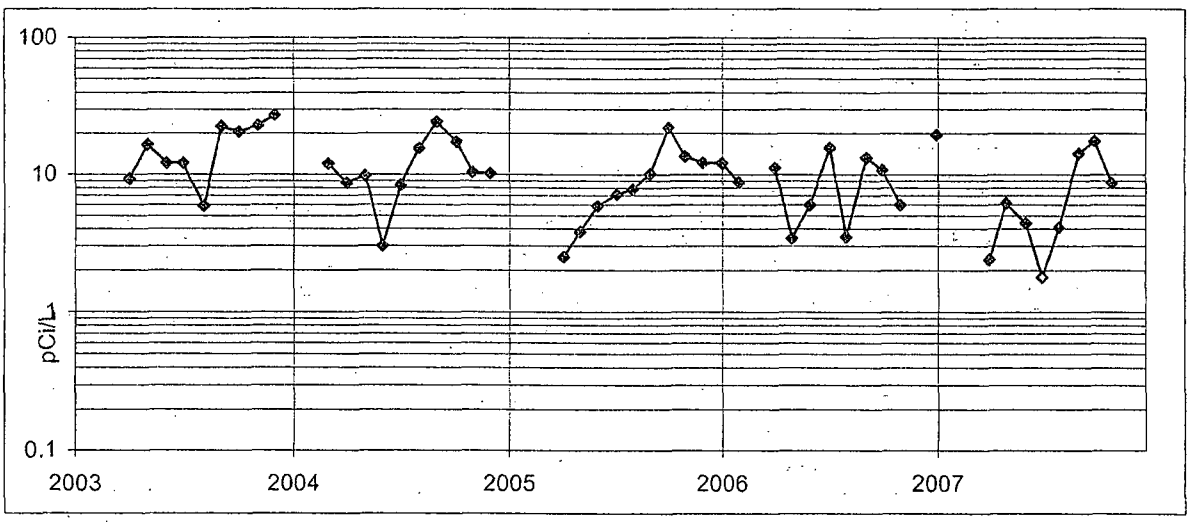

Figure 42. Surface water . School Forest Pond (K-1k).
Total Residue

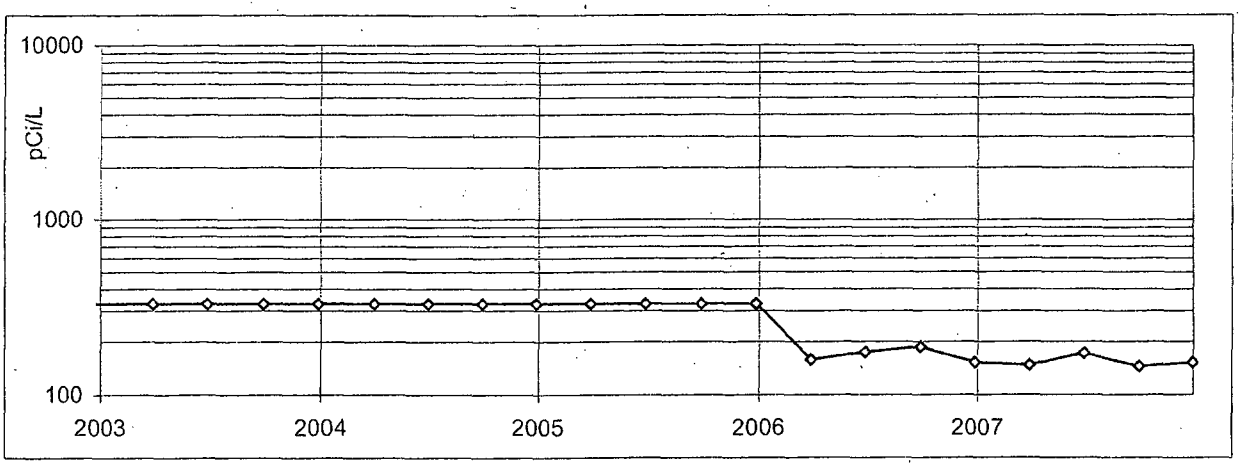

Figure 43. Surface water. Lake Michigan, condenser discharge, K-1d. Quarterly collection.

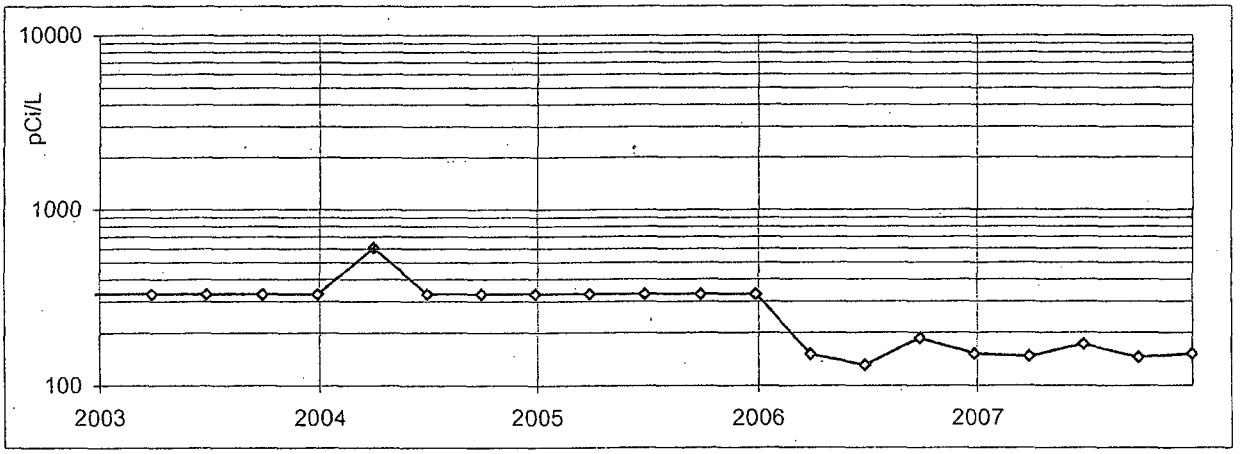

Figure 44. Surface water. Lake Michigan, Two Creeks Park, K-14a. Quarterly collection.

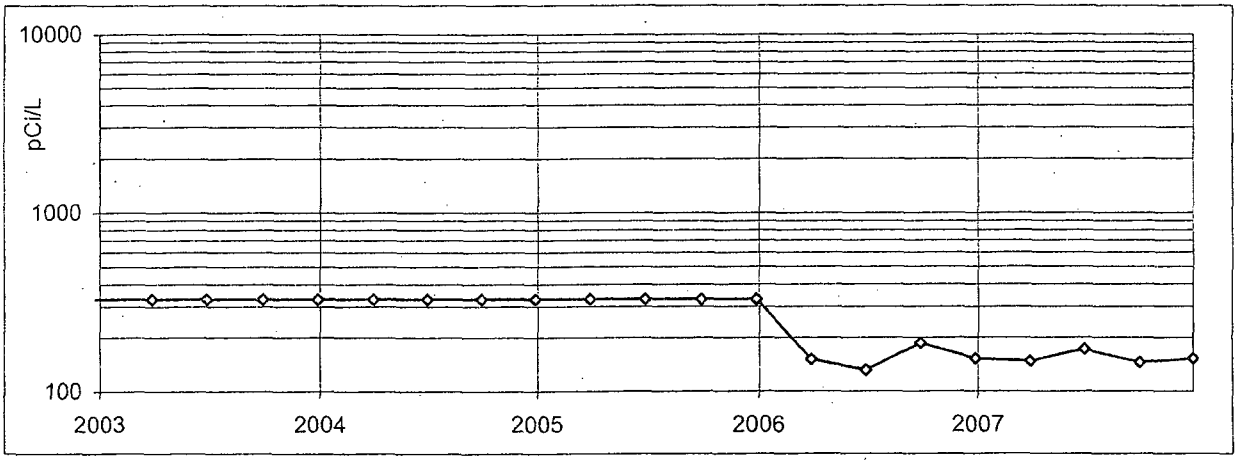

Figure 45. Surface water. Lake Michigan, Rostok Intake, K-9. Quarterly collection.

Note: Prior to 2006, LLD values were reported as compliant with technical specifications (< 330 pCi/L).

6.0 DATA TABULATIONS

Table 4. Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131[a].

Location: K-1f

Units: pCi/m^3

Collection: Continuous, weekly exchange.

Date Collected	Volume (m^3)	Gross Beta	Date Collected	Volume (m^3)	Gross Beta
Required LLD		0.010	Required LLD		0.010
01-09-07	353	0.027 ± 0.003	07-10-07	304	0.024 ± 0.004
01-16-07	353	0.017 ± 0.003	07-16-07	266	0.007 ± 0.003
01-23-07	354	0.029 ± 0.004	07-23-07	303	0.017 ± 0.003
01-30-07	358	0.027 ± 0.003	07-30-07	300	0.025 ± 0.004
02-06-07	350	0.026 ± 0.003	08-06-07	304	0.030 ± 0.004
02-13-07	358	0.030 ± 0.004	08-14-07	347	0.020 ± 0.003
02-20-07	353	0.025 ± 0.003	08-21-07	304	0.015 ± 0.003
02-27-07	355	0.021 ± 0.003	08-28-07	305	0.018 ± 0.003
03-06-07	358	0.011 ± 0.003	09-05-07	347	0.030 ± 0.004
03-13-07	327	0.021 ± 0.003	09-11-07	260	0.019 ± 0.004
03-20-07	303	0.021 ± 0.004	09-18-07	128	< 0.009 [b]
03-27-07	306	0.016 ± 0.003	09-26-07	371	0.034 ± 0.004
04-03-07	300	0.010 ± 0.003	10-02-07	290	0.027 ± 0.004
1st Quarter Mean ± s.d.		0.022 ± 0.007	3rd Quarter Mean ± s.d.		0.022 ± 0.008
04-10-07	305	0.013 ± 0.003	10-09-07	353	0.024 ± 0.003
04-17-07	303	0.020 ± 0.003	10-18-07	454	0.019 ± 0.002
04-24-07	306	0.017 ± 0.003	10-24-07	320	0.019 ± 0.003
05-01-07	302	0.016 ± 0.004	10-30-07	293	0.018 ± 0.004
05-08-07	305	0.013 ± 0.003	11-06-07	358	0.020 ± 0.003
05-15-07	304	0.015 ± 0.003	11-13-07	338	0.020 ± 0.003 [c]
05-22-07	307	0.015 ± 0.003	11-20-07	314	0.017 ± 0.003 [c]
05-29-07	300	0.017 ± 0.003	11-28-07	352	0.028 ± 0.003
			12-03-07	227	0.029 ± 0.005
06-05-07	307	0.021 ± 0.004			
06-13-07	345	0.017 ± 0.003	12-11-07	360	0.030 ± 0.004
06-19-07	258	0.029 ± 0.004	12-18-07	325	0.047 ± 0.004
06-26-07	307	0.020 ± 0.003	12-26-07	362	0.046 ± 0.004
07-03-07	305	0.013 ± 0.003	01-02-08	301	0.039 ± 0.004
2nd Quarter Mean ± s.d.		0.017 ± 0.004	4th Quarter Mean ± s.d.		0.027 ± 0.011
			Cumulative Average		0.022
			Previous Annual Average		0.020

[a] Iodine-131 is sampled biweekly. Concentrations are < 0.03 pCi/m^3 unless otherwise noted.

[b] Low volume due to sampler failure; tripped circuit breaker.

[c] Timer failure, volume is estimate.

Table 5. Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131[a].
Location: K-2
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Volume (m^3)	Gross Beta	Date Collected	Volume (m^3)	Gross Beta
Required LLD		0.010	Required LLD		0.010
01-09-07	305	0.032 ± 0.004	07-10-07	408	0.028 ± 0.003
01-16-07	303	0.019 ± 0.003	07-16-07	393	0.010 ± 0.002
01-23-07	304	0.035 ± 0.004	07-23-07	509	0.017 ± 0.002
01-30-07	307	0.032 ± 0.004	07-30-07	475	0.024 ± 0.003
02-06-07	325	0.027 ± 0.004	08-06-07	482	0.029 ± 0.003
02-13-07	357	0.024 ± 0.003	08-14-07	579	0.020 ± 0.002
02-20-07	353	0.022 ± 0.003	08-21-07	505	0.012 ± 0.002
02-27-07	329	0.017 ± 0.003	08-28-07	509	0.017 ± 0.002
03-06-07	315	0.015 ± 0.003	09-05-07	578	0.027 ± 0.003
03-13-07	322	0.023 ± 0.004	09-11-07	432	0.022 ± 0.003
03-20-07	338	0.023 ± 0.003	09-18-07	405	0.010 ± 0.002
03-27-07	360	0.018 ± 0.003	09-26-07	349	0.030 ± 0.003
04-03-07	349	0.011 ± 0.003	10-02-07	260	0.025 ± 0.004
1st Quarter Mean ± s.d.		0.023 ± 0.007	3rd Quarter Mean ± s.d.		0.021 ± 0.007
04-10-07	356	0.013 ± 0.003	10-09-07	328	0.022 ± 0.003
04-17-07	351	0.021 ± 0.003	10-18-07	455	0.018 ± 0.002
04-24-07	359	0.014 ± 0.003	10-24-07	317	0.023 ± 0.004
05-01-07	353	0.015 ± 0.003	10-30-07	294	0.018 ± 0.004
05-08-07	345	0.016 ± 0.003	11-06-07	358	0.018 ± 0.003
05-15-07	314	0.020 ± 0.003	11-13-07	354	0.021 ± 0.003
05-22-07	369	0.016 ± 0.003	11-20-07	344	0.020 ± 0.003
05-29-07	375	0.018 ± 0.003	11-28-07	369	0.026 ± 0.003
			12-03-07	231	0.027 ± 0.005
06-05-07	385	0.024 ± 0.003			
06-13-07	457	0.021 ± 0.003	12-11-07	371	0.030 ± 0.003
06-19-07	349	0.034 ± 0.004	12-18-07	318	0.042 ± 0.004
06-26-07	431	0.022 ± 0.003	12-26-07	353	0.047 ± 0.004
07-03-07	431	0.013 ± 0.002	01-02-08	295	0.048 ± 0.005
2nd Quarter Mean ± s.d.		0.019 ± 0.006	4th Quarter Mean ± s.d.		0.028 ± 0.011
			Cumulative Average		0.023
			Previous Annual Average		0.021

[a] Iodine-131 is sampled biweekly. Concentrations are < 0.03 pCi/m^3 unless otherwise noted.

Table 6. Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131[a].

Location: K-7

Units: pCi/m^3

Collection: Continuous, weekly exchange.

Date Collected	Volume (m^3)	Gross Beta	Date Collected	Volume (m^3)	Gross Beta
Required LLD		0.010	Required LLD		0.010
01-09-07	308	0.025 ± 0.004	07-10-07	300	0.027 ± 0.004
01-16-07	302	0.020 ± 0.003	07-16-07	260	0.011 ± 0.003
01-23-07	304	0.030 ± 0.004	07-23-07	311	0.017 ± 0.003
01-30-07	306	0.028 ± 0.004	07-30-07	302	0.029 ± 0.004
02-06-07	298	0.028 ± 0.004	08-06-07	302	0.037 ± 0.004
02-13-07	309	0.025 ± 0.004	08-14-07	345	0.025 ± 0.003
02-20-07	299	0.024 ± 0.004	08-21-07	304	0.012 ± 0.003
02-27-07	305	0.017 ± 0.003	08-28-07	309	< 0.003
03-06-07	308	0.013 ± 0.003	09-05-07	348	0.030 ± 0.004
03-13-07	302	0.024 ± 0.004	09-11-07	260	0.021 ± 0.004
03-20-07	299	0.021 ± 0.004	09-18-07	317	0.012 ± 0.003
03-27-07	308	0.022 ± 0.003	09-26-07	377	0.032 ± 0.003
04-03-07	300	0.011 ± 0.003	10-02-07	271	0.027 ± 0.004
1st Quarter Mean ± s.d.		0.022 ± 0.006	3rd Quarter Mean ± s.d.		0.023 ± 0.009
04-10-07	308	0.017 ± 0.003	10-09-07	302	0.029 ± 0.004
04-17-07	300	0.023 ± 0.004	10-18-07	385	0.020 ± 0.003
04-24-07	306	0.015 ± 0.003	10-24-07	298	0.020 ± 0.004
05-01-07	301	0.019 ± 0.004	10-30-07	296	0.016 ± 0.004
05-08-07	309	0.015 ± 0.003	11-06-07	356	0.018 ± 0.003
05-15-07	299	0.020 ± 0.004	11-13-07	341	0.024 ± 0.003
05-22-07	308	0.015 ± 0.003	11-20-07	325	0.017 ± 0.003
05-29-07	302	0.018 ± 0.003	11-28-07	360	0.026 ± 0.003
			12-03-07	231	0.025 ± 0.005
06-05-07	305	0.023 ± 0.004			
06-13-07	327	0.019 ± 0.003	12-11-07	369	0.034 ± 0.004
06-19-07	259	0.035 ± 0.005	12-18-07	323	0.046 ± 0.004
06-26-07	304	0.022 ± 0.004	12-26-07	348	0.047 ± 0.004
07-03-07	309	0.014 ± 0.003	01-02-08	298	0.039 ± 0.004
2nd Quarter Mean ± s.d.		0.020 ± 0.006	4th Quarter Mean ± s.d.		0.028 ± 0.011
			Cumulative Average		0.023
			Previous Annual Average		0.021

[a] Iodine-131 is sampled biweekly. Concentrations are < 0.03 pCi/m^3 unless otherwise noted.

[b] Precipitate very light.

Table 7. Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131[a].

Location: K-8
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Volume (m^3)	Gross Beta	Date Collected	Volume (m^3)	Gross Beta
Required LLD		0.010	Required LLD		0.010
01-09-07	301	0.027 ± 0.004	07-10-07	350	0.028 ± 0.003
01-16-07	307	0.019 ± 0.003	07-16-07	304	0.010 ± 0.003
01-23-07	304	0.028 ± 0.004	07-23-07	363	0.018 ± 0.003
01-30-07	306	0.030 ± 0.004	07-30-07	352	0.028 ± 0.004
02-06-07	299	0.032 ± 0.004	08-06-07	353	0.033 ± 0.004
02-13-07	309	0.015 ± 0.003	08-14-07	403	0.023 ± 0.003
02-20-07	303	0.026 ± 0.004	08-21-07	354	0.012 ± 0.003
02-27-07	301	0.019 ± 0.003	08-28-07	360	0.019 ± 0.003
03-06-07	307	0.012 ± 0.003	09-05-07	376	0.027 ± 0.003
03-13-07	302	0.028 ± 0.004	09-11-07	303	0.019 ± 0.003
03-20-07	303	0.021 ± 0.004	09-18-07	355	0.014 ± 0.003
03-27-07	304	0.021 ± 0.003	09-26-07	376	0.031 ± 0.003
04-03-07	326	0.012 ± 0.003	10-02-07	260	0.025 ± 0.004
1st Quarter Mean ± s.d.		0.022 ± 0.007	3rd Quarter Mean ± s.d.		0.022 ± 0.007
04-10-07	358	0.019 ± 0.003	10-09-07	302	0.025 ± 0.004
04-17-07	350	0.022 ± 0.003	10-18-07	386	0.018 ± 0.003
04-24-07	358	0.020 ± 0.003	10-24-07	275	0.020 ± 0.004
05-01-07	351	0.017 ± 0.003	10-30-07	254	0.022 ± 0.004
05-08-07	360	0.017 ± 0.003	11-06-07	306	0.020 ± 0.003
05-15-07	355	0.017 ± 0.003	11-13-07	305	0.022 ± 0.004
05-22-07	358	0.015 ± 0.003	11-20-07	305	0.017 ± 0.003
05-29-07	348	0.016 ± 0.003	11-28-07	349	0.028 ± 0.003
			12-03-07	220	0.025 ± 0.005
06-05-07	356	0.022 ± 0.003			
06-13-07	401	0.019 ± 0.003	12-11-07	336	0.029 ± 0.004
06-19-07	302	0.033 ± 0.004	12-18-07	307	0.043 ± 0.004
06-26-07	356	0.022 ± 0.003	12-26-07	319	0.051 ± 0.005
07-03-07	359	0.012 ± 0.003	01-02-08	247	0.056 ± 0.006
2nd Quarter Mean ± s.d.		0.019 ± 0.005	4th Quarter Mean ± s.d.		0.029 ± 0.013
			Cumulative Average		0.023
			Previous Annual Average		0.023

[a] Iodine-131 is sampled biweekly. Concentrations are < 0.03 pCi/m^3 unless otherwise noted.

Table 9. Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131[a].

Location: K-31
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Volume (m^3)	Gross Beta		Date Collected	Volume (m^3)	Gross Beta	
Required LLD		0.010		Required LLD		0.010	
01-09-07	319	0.028 ± 0.004		07-10-07	355	0.027 ± 0.003	
01-16-07	303	0.020 ± 0.003		07-16-07	303	0.008 ± 0.003	
01-23-07	304	0.031 ± 0.004		07-23-07	361	0.016 ± 0.003	
01-30-07	329	0.030 ± 0.004	b	07-30-07	349	0.026 ± 0.003	
02-06-07	339	0.025 ± 0.003	b	08-06-07	340	0.034 ± 0.004	
02-13-07	357	0.022 ± 0.003	b	08-14-07	371	0.023 ± 0.003	
02-20-07	354	0.023 ± 0.003	b	08-21-07	324	0.013 ± 0.003	
02-27-07	354	0.019 ± 0.003	b	08-28-07	326	0.020 ± 0.003	
03-06-07	357	0.012 ± 0.003	b	09-05-07	390	0.027 ± 0.003	
03-13-07	342	0.026 ± 0.004	b	09-11-07	260	0.021 ± 0.004	
03-20-07	303	0.025 ± 0.004	b, c	09-18-07	302	0.015 ± 0.003	
03-27-07	323	0.018 ± 0.003	b	09-26-07	378	0.039 ± 0.004	
04-03-07	307	0.010 ± 0.003		10-02-07	303	0.022 ± 0.003	
1st Quarter Mean ± s.d.		0.022 ± 0.006		3rd Quarter Mean ± s.d.		0.022 ± 0.008	
04-10-07	328	0.016 ± 0.003	c	10-09-07	353	0.026 ± 0.003	
04-17-07	316	0.022 ± 0.003		10-18-07	456	0.017 ± 0.002	
04-24-07	316	0.019 ± 0.003		10-24-07	318	0.023 ± 0.003	
05-01-07	313	0.015 ± 0.003		10-30-07	293	0.017 ± 0.004	c
05-08-07	116	0.013 ± 0.007	d	11-06-07	359	0.020 ± 0.003	
05-15-07	295	0.022 ± 0.004		11-13-07	353	0.021 ± 0.003	
05-22-07	277	0.018 ± 0.004		11-20-07	344	0.018 ± 0.003	
05-29-07	325	0.017 ± 0.003		11-28-07	400	0.025 ± 0.003	
				12-03-07	256	0.027 ± 0.004	
06-05-07	360	0.020 ± 0.003					
06-13-07	400	0.017 ± 0.003		12-11-07	394	0.034 ± 0.004	
06-19-07	296	0.034 ± 0.004		12-18-07	353	0.043 ± 0.004	
06-26-07	365	0.021 ± 0.003		12-26-07	382	0.046 ± 0.004	
07-03-07	354	0.012 ± 0.003		01-02-08	296	0.046 ± 0.005	
2nd Quarter Mean ± s.d.		0.019 ± 0.006		4th Quarter Mean ± s.d.		0.028 ± 0.011	
				Cumulative Average		0.023	
				Previous Annual Average		0.020	

[a] Iodine-131 is sampled biweekly. Concentrations are < 0.03 pCi/m^3 unless otherwise noted.
[b] Hour meter not advancing, volume is estimated.
[c] Duplicate analysis, results listed in Appendix A.
[d] Low volume due to power interruption.

Table 8. Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131[a].
Location: K-41
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Volume (m^3)	Gross Beta	Date Collected	Volume (m^3)	Gross Beta
Required LLD		0.010	Required LLD		0.010
01-09-07	319	0.031 ± 0.004	07-10-07	305	0.027 ± 0.004
01-16-07	302	0.022 ± 0.004	07-16-07	260	0.011 ± 0.003
01-23-07	314	0.033 ± 0.004	07-23-07	309	0.022 ± 0.003
01-30-07	306	0.030 ± 0.004	07-30-07	299	0.027 ± 0.004
02-06-07	301	0.032 ± 0.004	08-06-07	305	0.031 ± 0.004
02-13-07	306	0.025 ± 0.004	08-14-07	347	0.022 ± 0.003
02-20-07	303	0.028 ± 0.004	08-21-07	303	0.014 ± 0.003
02-27-07	304	0.018 ± 0.003	08-28-07	305	0.020 ± 0.003
03-06-07	305	0.011 ± 0.003	09-05-07	341	0.015 ± 0.003
03-13-07	302	0.018 ± 0.004	09-11-07	255	0.019 ± 0.004
03-20-07	334	0.022 ± 0.003	09-18-07	303	0.016 ± 0.003
03-27-07	308	0.019 ± 0.003	09-26-07	349	0.029 ± 0.003
04-03-07	299	0.011 ± 0.003	10-02-07	259	0.024 ± 0.004
1st Quarter Mean ± s.d.		0.023 ± 0.008	3rd Quarter Mean ± s.d.		0.021 ± 0.006
04-10-07	305	0.016 ± 0.003	10-09-07	302	0.029 ± 0.004
04-17-07	303	0.020 ± 0.003	10-18-07	392	0.017 ± 0.003
04-24-07	307	0.019 ± 0.003	10-24-07	269	0.026 ± 0.004
05-01-07	301	0.013 ± 0.003	10-30-07	260	0.017 ± 0.004
05-08-07	305	0.015 ± 0.003	11-06-07	328	0.023 ± 0.003
05-15-07	304	0.016 ± 0.003	11-13-07	313	0.022 ± 0.004
05-22-07	307	0.018 ± 0.003	11-20-07	304	0.022 ± 0.004
05-29-07	301	0.020 ± 0.004	11-28-07	352	0.028 ± 0.003
			12-03-07	220	0.025 ± 0.005
06-05-07	307	0.021 ± 0.004			
06-13-07	344	0.024 ± 0.004	12-11-07	339	0.028 ± 0.004
06-19-07	260	0.032 ± 0.004	12-18-07	301	0.045 ± 0.005
06-26-07	307	0.021 ± 0.003	12-26-07	353	0.044 ± 0.004
07-03-07	304	0.011 ± 0.003	01-02-08	296	0.034 ± 0.004
2nd Quarter Mean ± s.d.		0.019 ± 0.005	4th Quarter Mean ± s.d.		0.028 ± 0.009
			Cumulative Average		0.023
			Previous Annual Average		0.022

[a] Iodine-131 is sampled biweekly. Concentrations are < 0.03 pCi/m^3 unless otherwise noted.
[b] Duplicate analysis, results listed in Appendix A.

Table 10. Airborne particulate data, gross beta analyses, monthly averages, minima and maxima.

January

Location	Average	Minima	Maxima
Indicators	0.026	0.017	0.030
K-1f	0.025	0.017	0.029
K-7	0.026	0.020	0.030
Controls	0.028	0.019	0.035
K-2	0.030	0.019	0.035
K-8	0.026	0.019	0.030
K-31	0.027	0.020	0.031
K-41	0.029	0.022	0.033

February

Location	Average	Minima	Maxima
Indicators	0.021	0.007	0.032
K-1f	0.026	0.021	0.030
K-7	0.024	0.017	0.028
Controls	0.024	0.015	0.032
K-2	0.023	0.017	0.027
K-8	0.023	0.015	0.032
K-31	0.022	0.019	0.025
K-41	0.026	0.018	0.032

March

Location	Average	Minima	Maxima
Indicators	0.017	0.010	0.024
K-1f	0.016	0.010	0.021
K-7	0.018	0.011	0.024
Controls	0.019	0.007	0.029
K-2	0.018	0.011	0.023
K-8	0.019	0.012	0.028
K-31	0.018	0.010	0.026
K-41	0.016	0.011	0.022

April

Location	Average	Minima	Maxima
Indicators	0.018	0.013	0.023
K-1f	0.017	0.013	0.020
K-7	0.019	0.015	0.023
Controls	0.018	0.013	0.022
K-2	0.016	0.013	0.021
K-8	0.020	0.017	0.022
K-31	0.018	0.015	0.022
K-41	0.018	0.015	0.022

May

Location	Average	Minima	Maxima
Indicators	0.019	0.011	0.035
K-1f	0.015	0.013	0.017
K-7	0.017	0.015	0.020
Controls	0.017	0.013	0.022
K-2	0.018	0.016	0.020
K-8	0.016	0.015	0.017
K-31	0.018	0.013	0.022
K-41	0.017	0.015	0.020

June

Location	Average	Minima	Maxima
Indicators	0.022	0.013	0.035
K-1f	0.020	0.013	0.029
K-7	0.023	0.014	0.035
Controls	0.021	0.011	0.034
K-2	0.023	0.013	0.034
K-8	0.022	0.012	0.033
K-31	0.021	0.012	0.034
K-41	0.022	0.011	0.032

Note: Samples collected on the first, second or third day of the month are grouped with data of the previous month.

Table 10. Airborne particulate data, gross beta analyses, monthly averages, minima and maxima.

July

Location	Average	Minima	Maxima
Indicators	0.020	0.007	0.029
K-1f	0.018	0.007	0.025
K-7	0.021	0.011	0.029
Controls	0.021	0.008	0.028
K-2	0.020	0.010	0.028
K-8	0.021	0.010	0.028
K-31	0.019	0.008	0.027
K-41	0.022	0.011	0.027

August

Location	Average	Minima	Maxima
Indicators	0.023	0.012	0.037
K-1f	0.021	0.015	0.030
K-7	0.025	0.012	0.037
Controls	0.022	0.012	0.034
K-2	0.020	0.012	0.029
K-8	0.022	0.012	0.033
K-31	0.023	0.013	0.034
K-41	0.022	0.014	0.031

September

Location	Average	Minima	Maxima
Indicators	0.026	0.012	0.034
K-1f	0.028	0.019	0.034
K-7	0.024	0.012	0.032
Controls	0.023	0.010	0.039
K-2	0.023	0.010	0.030
K-8	0.023	0.014	0.031
K-31	0.025	0.015	0.039
K-41	0.021	0.015	0.029

October

Location	Average	Minima	Maxima
Indicators	0.021	0.016	0.029
K-1f	0.020	0.018	0.024
K-7	0.021	0.016	0.029
Controls	0.021	0.017	0.029
K-2	0.020	0.018	0.023
K-8	0.021	0.018	0.025
K-31	0.021	0.017	0.026
K-41	0.022	0.017	0.029

November

Location	Average	Minima	Maxima
Indicators	0.023	0.017	0.029
K-1f	0.023	0.017	0.029
K-7	0.022	0.017	0.026
Controls	0.023	0.017	0.028
K-2	0.022	0.018	0.027
K-8	0.022	0.017	0.028
K-31	0.022	0.018	0.027
K-41	0.024	0.022	0.028

December

Location	Average	Minima	Maxima
Indicators	0.042	0.030	0.047
K-1f	0.041	0.030	0.047
K-7	0.042	0.034	0.047
Controls	0.042	0.028	0.056
K-2	0.042	0.030	0.048
K-8	0.045	0.029	0.056
K-31	0.042	0.034	0.046
K-41	0.038	0.028	0.045

Note: Samples collected on the first, second or third day of the month are grouped with data of the previous month.

Table 11. Airborne particulate samples, quarterly composites of weekly samples, analysis for gamma-emitting isotopes.

	Sample Description and Concentration (pCi/m^3)			
	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Indicator				
K-1f				
Lab Code	KAP- 2383	KAP- 4761	KAP- 7392	KAP- 8907
Volume (m^3)	4428	3954	3829	4357
Be-7	0.071 ± 0.012	0.085 ± 0.014	0.070 ± 0.013	0.059 ± 0.013
Nb-95	< 0.0008	< 0.0008	< 0.0008	< 0.0010
Zr-95	< 0.0015	< 0.0007	< 0.0008	< 0.0015
Ru-103	< 0.0005	< 0.0008	< 0.0013	< 0.0010
Ru-106	< 0.0050	< 0.0053	< 0.0043	< 0.0049
Cs-134	< 0.0009	< 0.0006	< 0.0009	< 0.0003
Cs-137	< 0.0006	< 0.0006	< 0.0005	< 0.0007
Ce-141	< 0.0014	< 0.0008	< 0.0012	< 0.0017
Ce-144	< 0.0044	< 0.0032	< 0.0049	< 0.0024
K-7				
Lab Code	KAP- 2385	KAP- 4763 [a]	KAP- 7394	KAP- 8909
Volume (m^3)	3948	3937	4006	4232
Be-7	0.076 ± 0.016	0.111 ± 0.016	0.069 ± 0.015	0.057 ± 0.017
Nb-95	< 0.0009	< 0.0007	< 0.0008	< 0.0012
Zr-95	< 0.0006	< 0.0009	< 0.0011	< 0.0013
Ru-103	< 0.0011	< 0.0011	< 0.0006	< 0.0013
Ru-106	< 0.0055	< 0.0049	< 0.0036	< 0.0025
Cs-134	< 0.0007	< 0.0004	< 0.0003	< 0.0009
Cs-137	< 0.0007	< 0.0005	< 0.0008	< 0.0006
Ce-141	< 0.0010	< 0.0013	< 0.0009	< 0.0017
Ce-144	< 0.0049	< 0.0024	< 0.0046	< 0.0034

[a] Duplicate sample, KAP-4764; analyses results listed in Appendix A.

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Table 11. Airborne particulate samples, quarterly composites of weekly samples, analysis for gamma-emitting isotopes, (continued).

	Sample Description and Concentration (pCi/m^3)			
	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Control				
K-2				
Lab Code	KAP- 2384	KAP- 4762	KAP- 7393	KAP- 8908
Volume (m^3)	4267	4875	5884	4387
Be-7	0.061 ± 0.012	0.118 ± 0.019	0.061 ± 0.009	0.062 ± 0.011
Nb-95	< 0.0007	< 0.0009	< 0.0005	< 0.0006
Zr-95	< 0.0015	< 0.0017	< 0.0008	< 0.0010
Ru-103	< 0.0006	< 0.0004	< 0.0007	< 0.0007
Ru-106	< 0.0067	< 0.0082	< 0.0046	< 0.0048
Cs-134	< 0.0007	< 0.0007	< 0.0003	< 0.0005
Cs-137	< 0.0005	< 0.0008	< 0.0004	< 0.0007
Ce-141	< 0.0012	< 0.0008	< 0.0008	< 0.0012
Ce-144	< 0.0045	< 0.0038	< 0.0024	< 0.0036
K-8				
Lab Code	KAP- 2386	KAP- 4765	KAP- 7395	KAP- 8910
Volume (m^3)	3972	4612	4509	3911
Be-7	0.073 ± 0.013	0.088 ± 0.014	0.066 ± 0.012	0.056 ± 0.016
Nb-95	< 0.0007	< 0.0008	< 0.0007	< 0.0007
Zr-95	< 0.0008	< 0.0014	< 0.0013	< 0.0012
Ru-103	< 0.0009	< 0.0011	< 0.0008	< 0.0010
Ru-106	< 0.0052	< 0.0053	< 0.0035	< 0.0034
Cs-134	< 0.0007	< 0.0004	< 0.0005	< 0.0004
Cs-137	< 0.0007	< 0.0006	< 0.0003	< 0.0007
Ce-141	< 0.0013	< 0.0011	< 0.0017	< 0.0020
Ce-144	< 0.0044	< 0.0026	< 0.0028	< 0.0037

Table 11. Airborne particulate samples, quarterly composites of weekly samples, analysis for gamma-emitting isotopes, (continued).

	Sample Description and Concentration (pCi/m^3)			
	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Control				
K-31				
Lab Code	KAP- 2387	KAP- 4766	KAP- 7396	KAP- 8911
Volume (m^3)	4291	4061	4362	4557
Be-7	0.080 ± 0.015	0.104 ± 0.014	0.073 ± 0.013	0.061 ± 0.014
Nb-95	< 0.0007	< 0.0010	< 0.0010	< 0.0009
Zr-95	< 0.0009	< 0.0016	< 0.0009	< 0.0011
Ru-103	< 0.0011	< 0.0008	< 0.0007	< 0.0007
Ru-106	< 0.0053	< 0.0065	< 0.0033	< 0.0031
Cs-134	< 0.0007	< 0.0005	< 0.0006	< 0.0004
Cs-137	< 0.0006	< 0.0005	< 0.0007	< 0.0006
Ce-141	< 0.0012	< 0.0013	< 0.0015	< 0.0014
Ce-144	< 0.0031	< 0.0023	< 0.0044	< 0.0020
K-41				
Lab Code	KAP- 2388	KAP- 4767	KAP- 7397	KAP- 8912
Volume (m^3)	4003	3955	3940	4029
Be-7	0.079 ± 0.012	0.098 ± 0.012	0.069 ± 0.011	0.056 ± 0.013
Nb-95	< 0.0010	< 0.0010	< 0.0009	< 0.0013
Zr-95	< 0.0009	< 0.0012	< 0.0010	< 0.0008
Ru-103	< 0.0008	< 0.0009	< 0.0008	< 0.0012
Ru-106	< 0.0057	< 0.0029	< 0.0050	< 0.0053
Cs-134	< 0.0008	< 0.0005	< 0.0005	< 0.0006
Cs-137	< 0.0005	< 0.0005	< 0.0006	< 0.0004
Ce-141	< 0.0008	< 0.0011	< 0.0009	< 0.0011
Ce-144	< 0.0039	< 0.0029	< 0.0033	< 0.0030

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Table 12. Ambient gamma radiation (TLD), quarterly exposure.

	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	
Date Placed	01-02-07	04-02-07	07-02-07	10-01-07	
Date Removed	04-02-07	07-02-07	10-01-07	01-02-08	
	mR/91 days[a]				
Indicator					Mean±s.d.
K-1f	13.1 ± 0.7	12.1 ± 0.7	11.5 ± 0.6	13.4 ± 0.8	12.5 ± 0.9
K-5	18.2 ± 0.9	18.2 ± 0.8	17.5 ± 0.8	20.0 ± 0.7	18.5 ± 1.1
K-7	18.7 ± 0.6	18.6 ± 0.6	17.5 ± 0.5	20.8 ± 0.6	18.9 ± 1.4
K-17	15.8 ± 0.3	13.1 ± 0.3	15.6 ± 0.3	14.7 ± 0.4	14.8 ± 1.2
K-25	16.9 ± 0.6	16.5 ± 0.6	16.3 ± 0.6	18.6 ± 0.5	17.1 ± 1.0
K-27	14.9 ± 0.5	17.2 ± 0.7	14.9 ± 0.5	18.8 ± 0.9	16.5 ± 1.9
K-30	15.2 ± 0.5	14.1 ± 1.0	14.5 ± 0.5	16.4 ± 1.1	15.1 ± 1.0
K-39	15.7 ± 0.7	16.7 ± 0.7	15.6 ± 0.5	17.6 ± 0.8	16.4 ± 0.9
Mean ± s.d.	16.1 ± 1.8	15.8 ± 2.4	15.4 ± 1.9	17.5 ± 2.6	16.2 ± 0.9
Control					
K-2	15.7 ± 0.3	16.2 ± 1.0	15.2 ± 0.5	16.9 ± 0.7	16.0 ± 0.7
K-3	17.1 ± 0.7	17.5 ± 1.2	16.4 ± 0.8	18.8 ± 0.8	17.5 ± 1.0
K-8	15.4 ± 0.5	14.7 ± 0.5	15.0 ± 0.5	16.4 ± 0.5	15.4 ± 0.7
K-15	14.3 ± 0.5	14.3 ± 0.4	13.8 ± 0.2	16.0 ± 0.5	14.6 ± 1.0
K-31	12.6 ± 0.5	12.7 ± 0.3	11.8 ± 0.5	14.6 ± 0.3	12.9 ± 1.2
K-41	16.0 ± 0.7	14.3 ± 0.5	12.5 ± 1.6	16.0 ± 0.5	14.7 ± 1.7
Mean ± s.d.	15.2 ± 1.6	15.0 ± 1.7	14.1 ± 1.7	16.5 ± 1.4	15.2 ± 1.0

[a] The uncertainty for each location corresponds to the two-standard deviation error of the average dose of eight dosimeters placed at this location.

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Table 13. Precipitation samples collected at Location K-11; analysis for tritium.

Date Collected	Lab Code	H-3	
		pCi/L	T.U. (100 T.U. = 320 pCi/L)
01/02/07	KP- 43	< 146	< 46
02/06/07	KP- 686	< 144	< 45
03/06/07	KP- 1317	< 180	< 56
04/03/07	KP- 1869	< 155	< 48
05/01/07	KP- 2559	< 177	< 55
06/05/07	KP- 3431	< 143	< 45
07/03/07	KP- 4169	< 176	< 55
08/06/07	KP- 5248	< 147	< 46
09/05/07	KP- 6000	< 165	< 52
10/02/07	KP- 6819	< 193	< 60
11/06/07	KP- 7693	< 157	< 49
12/03/07	KP- 8229	< 188	< 59

Table 14. Milk, analyses for iodine-131 and gamma-emitting isotopes.
Collection: Semimonthly during grazing season, monthly at other times.

Collection Date	Lab Code	Concentration (pCi/L) I-131	Cs-134	Cs-137	Ba-La-140	K-40
Indicators						
K-5						
01-02-07	KMI- 4	< 0.5	< 10	< 10	< 15	1211 ± 125
02-01-07	KMI- 568	< 0.5	< 10	< 10	< 15	1354 ± 109
03-05-07	KMI- 1191	< 0.5	< 10	< 10	< 15	1278 ± 123
04-02-07	KMI- 1791	< 0.5	< 10	< 10	< 15	1388 ± 115
05-01-07	KMI- 2524	< 0.5	< 10	< 10	< 15	1375 ± 175
05-15-07	KMI- 2795	< 0.5	< 10	< 10	< 15	1231 ± 180
06-04-07	KMI- 3315	< 0.5	< 10	< 10	< 15	1521 ± 107
06-19-07	KMI- 3767	< 0.5	< 10	< 10	< 15	1296 ± 115
07-02-07	KMI- 3984	< 0.5	< 10	< 10	< 15	1301 ± 113
07-16-07	KMI- 4307	< 0.5	< 10	< 10	< 15	1536 ± 170
08-01-07	KMI- 4952	< 0.5	< 10	< 10	< 15	1310 ± 163
08-14-07	KMI- 5378	< 0.5	< 10	< 10	< 15	1412 ± 158
09-04-07	KMI- 5882	< 0.5	< 10	< 10	< 15	1256 ± 111
09-18-07	KMI- 6250	< 0.5	< 10	< 10	< 15	1312 ± 192
10-01-07	KMI- 6631	< 0.5	< 10	< 10	< 15	1307 ± 126
10-18-07	KMI- 6983	< 0.5	< 10	< 10	< 15	1229 ± 162
11-01-07	KMI- 7577	< 0.5	< 10	< 10	< 15	1315 ± 122
12-03-07	KMI- 8182	< 0.5	< 10	< 10	< 15	1298 ± 102
K-25						
01-02-07	KMI- 5	< 0.5	< 10	< 10	< 15	1380 ± 119
02-01-07	KMI- 569	< 0.5	< 10	< 10	< 15	1326 ± 113
03-05-07	KMI- 1192	< 0.5	< 10	< 10	< 15	1331 ± 111
04-02-07	KMI- 1792	< 0.5	< 10	< 10	< 15	1371 ± 124
05-01-07	KMI- 2525	< 0.5	< 10	< 10	< 15	1199 ± 164
05-15-07	KMI- 2796	< 0.5	< 10	< 10	< 15	1417 ± 175
06-04-07	KMI- 3316	< 0.5	< 10	< 10	< 15	1393 ± 110
06-19-07	KMI- 3768	< 0.5	< 10	< 10	< 15	1250 ± 116
07-02-07	KMI- 3985	< 0.5	< 10	< 10	< 15	1471 ± 116
07-16-07	KMI- 4308	< 0.5	< 10	< 10	< 15	1282 ± 161
08-01-07	KMI- 4953	< 0.5	< 10	< 10	< 15	1393 ± 179
08-14-07	KMI- 5379	< 0.5	< 10	< 10	< 15	1399 ± 169
09-04-07	KMI- 5883	< 0.5	< 10	< 10	< 15	1511 ± 127
09-18-07	KMI- 6251	< 0.5	< 10	< 10	< 15	1511 ± 186
10-02-07	KMI- 6632	< 0.5	< 10	< 10	< 15	1319 ± 161
10-18-07	KMI- 6984	< 0.5	< 10	< 10	< 15	1411 ± 111
11-02-07	KMI- 7578	< 0.5	< 10	< 10	< 15	1481 ± 122
12-04-07	KMI- 8183	< 0.5	< 10	< 10	< 15	1306 ± 143

Table 14. Milk, analyses for iodine-131 and gamma-emitting isotopes (continued).

Collection Date	Lab Code	Concentration (pCi/L)				
		I-131	Cs-134	Cs-137	Ba-La-140	K-40
Indicators						
K-34						
01-02-07	KMI- 7	< 0.5	< 10	< 10	< 15	1480 ± 122
02-01-07	KMI- 571	< 0.5	< 10	< 10	< 15	1458 ± 114
03-05-07	KMI- 1194	< 0.5	< 10	< 10	< 15	1313 ± 111
04-02-07	KMI- 1794	< 0.5	< 10	< 10	< 15	1464 ± 115
05-02-07	KMI- 2527	< 0.5	< 10	< 10	< 15	1390 ± 127
05-15-07	KMI- 2798	< 0.5	< 10	< 10	< 15	1409 ± 132
06-04-07	KMI- 3318	< 0.5	< 10	< 10	< 15	1364 ± 117
06-19-07	KMI- 3770	< 0.5	< 10	< 10	< 15	1296 ± 166
07-02-07	KMI- 3987	< 0.5	< 10	< 10	< 15	1272 ± 128
07-16-07	KMI- 4310	< 0.5	< 10	< 10	< 15	1382 ± 119
08-01-07	KMI- 4955	< 0.5	< 10	< 10	< 15	1378 ± 120
08-14-07	KMI- 5381	< 0.5	< 10	< 10	< 15	1256 ± 166
09-05-07	KMI- 5885	< 0.5	< 10	< 10	< 15	1383 ± 185
09-18-07	KMI- 6253	< 0.5	< 10	< 10	< 15	1419 ± 120
10-01-07	KMI- 6634	< 0.5	< 10	< 10	< 15	1346 ± 122
10-18-07	KMI- 6986	< 0.5	< 10	< 10	< 15	1458 ± 205
11-01-07	KMI- 7580	< 0.5	< 10	< 10	< 15	1322 ± 114
12-03-07	KMI- 8185	< 0.5	< 10	< 10	< 15	1422 ± 101

Table 14. Milk, analyses for iodine-131 and gamma-emitting isotopes (continued).

Collection Date	Lab Code	Concentration (pCi/L) I-131	Cs-134	Cs-137	Ba-La-140	K-40
Indicators						
K-38						
01-03-07	KMI- 8	< 0.5	< 10	< 10	< 15	1255 ± 170
02-02-07	KMI- 572	< 0.5	< 10	< 10	< 15	1309 ± 120
03-06-07	KMI- 1195	< 0.5	< 10	< 10	< 15	1251 ± 119
04-03-07	KMI- 1795	< 0.5	< 10	< 10	< 15	1324 ± 115
05-01-07	KMI- 2528	< 0.5	< 10	< 10	< 15	1266 ± 109
05-15-07	KMI- 2799	< 0.5	< 10	< 10	< 15	1339 ± 178
06-04-07	KMI- 3319	< 0.5	< 10	< 10	< 15	1291 ± 110
06-19-07	KMI- 3771	< 0.5	< 10	< 10	< 15	1475 ± 139
07-02-07	KMI- 3988	< 0.5	< 10	< 10	< 15	1370 ± 128
07-16-07	KMI- 4311	< 0.5	< 10	< 10	< 15	1498 ± 125
08-01-07	KMI- 4956	< 0.5	< 10	< 10	< 15	1411 ± 182
08-14-07	KMI- 5382	< 0.5	< 10	< 10	< 15	1225 ± 144
09-04-07	KMI- 5886	< 0.5	< 10	< 10	< 15	1354 ± 120
09-18-07	KMI- 6254	< 0.5	< 10	< 10	< 15	1342 ± 123
10-02-07	KMI- 6635	< 0.5	< 10	< 10	< 15	1485 ± 191
10-18-07	KMI- 6987	< 0.5	< 10	< 10	< 15	1223 ± 171
11-01-07	KMI- 7581	< 0.5	< 10	< 10	< 15	1281 ± 121
12-03-07	KMI- 8186	< 0.5	< 10	< 10	< 15	1350 ± 116
K-39						
01-03-07	KMI- 9	< 0.5	< 10	< 10	< 15	1270 ± 161
02-02-07	KMI- 573	< 0.5	< 10	< 10	< 15	1405 ± 123
03-06-07	KMI- 1196	< 0.5	< 10	< 10	< 15	1420 ± 122
04-03-07	KMI- 1796	< 0.5	< 10	< 10	< 15	1326 ± 113
05-01-07	KMI- 2529	< 0.5	< 10	< 10	< 15	1551 ± 187
05-15-07	KMI- 2800	< 0.5	< 10	< 10	< 15	1577 ± 188
06-04-07	KMI- 3320	< 0.5	< 10	< 10	< 15	1378 ± 123
06-19-07	KMI- 3772	< 0.5	< 10	< 10	< 15	1394 ± 181
07-02-07	KMI- 3989	< 0.5	< 10	< 10	< 15	1371 ± 118
07-16-07	KMI- 4312	< 0.5	< 10	< 10	< 15	1516 ± 130
08-01-07	KMI- 4957	< 0.5	< 10	< 10	< 15	1420 ± 171
08-14-07	KMI- 5383	< 0.5	< 10	< 10	< 15	1418 ± 110
09-04-07	KMI- 5887	< 0.5	< 10	< 10	< 15	1383 ± 120
09-18-07	KMI- 6255	< 0.5	< 10	< 10	< 15	1461 ± 167
10-02-07	KMI- 6636	< 0.5	< 10	< 10	< 15	1586 ± 171
10-18-07	KMI- 6988	< 0.5	< 10	< 10	< 15	1398 ± 122
11-01-07	KMI- 7582	< 0.5	< 10	< 10	< 15	1392 ± 127
12-03-07	KMI- 8187	< 0.5	< 10	< 10	< 15	1367 ± 102

Table 14. Milk, analyses for iodine-131 and gamma-emitting isotopes (continued).

Collection Date	Lab Code	Concentration (pCi/L)				
		I-131	Cs-134	Cs-137	Ba-La-140	K-40
Control						
K-3						
01-03-07	KMI- 3	< 0.5	< 10	< 10	< 15	1343 ± 114
02-02-07	KMI- 567	< 0.5	< 10	< 10	< 15	1469 ± 117
03-06-07	KMI- 1190	< 0.5	< 10	< 10	< 15	1244 ± 112
04-03-07	KMI- 1790	< 0.5	< 10	< 10	< 15	1445 ± 122
05-02-07	KMI- 2523	< 0.5	< 10	< 10	< 15	1401 ± 178
05-15-07	KMI- 2794	< 0.5	< 10	< 10	< 15	1320 ± 113
06-05-07	KMI- 3314	< 0.5	< 10	< 10	< 15	1327 ± 100
06-19-07	KMI- 3766	< 0.5	< 10	< 10	< 15	1282 ± 111
07-03-07	KMI- 3983	< 0.5	< 10	< 10	< 15	1323 ± 167
07-16-07	KMI- 4306	< 0.5	< 10	< 10	< 15	1428 ± 162
08-02-07	KMI- 4951	< 0.5	< 10	< 10	< 15	1426 ± 169
08-14-07	KMI- 5377	< 0.5	< 10	< 10	< 15	1406 ± 121
09-05-07	KMI- 5881	< 0.5	< 10	< 10	< 15	1478 ± 171
09-18-07	KMI- 6249	< 0.5	< 10	< 10	< 15	1301 ± 187
10-02-07	KMI- 6630	< 0.5	< 10	< 10	< 15	1361 ± 164
10-18-07	KMI- 6982	< 0.5	< 10	< 10	< 15	1311 ± 166
11-02-07	KMI- 7576	< 0.5	< 10	< 10	< 15	1396 ± 156
12-04-07	KMI- 8181	< 0.5	< 10	< 10	< 15	1261 ± 107
K-28						
01-03-07	KMI- 6	< 0.5	< 10	< 10	< 15	1315 ± 124
02-01-07	KMI- 570	< 0.5	< 10	< 10	< 15	1406 ± 113
03-06-07	KMI- 1193	< 0.5	< 10	< 10	< 15	1314 ± 106
04-03-07	KMI- 1793	< 0.5	< 10	< 10	< 15	1488 ± 122
05-02-07	KMI- 2526	< 0.5	< 10	< 10	< 15	1397 ± 121
05-15-07	KMI- 2797	< 0.5	< 10	< 10	< 15	1195 ± 113
06-05-07	KMI- 3317	< 0.5	< 10	< 10	< 15	1415 ± 117
06-19-07	KMI- 3769	< 0.5	< 10	< 10	< 15	1462 ± 119
07-03-07	KMI- 3986	< 0.5	< 10	< 10	< 15	1388 ± 163
07-16-07	KMI- 4309	< 0.5	< 10	< 10	< 15	1421 ± 162
08-02-07	KMI- 4954	< 0.5	< 10	< 10	< 15	1237 ± 170
08-14-07	KMI- 5380	< 0.5	< 10	< 10	< 15	1280 ± 107
09-06-07	KMI- 5884	< 0.5	< 10	< 10	< 15	1338 ± 182
09-18-07	KMI- 6252	< 0.5	< 10	< 10	< 15	1317 ± 180
10-02-07	KMI- 6633	< 0.5	< 10	< 10	< 15	1502 ± 174
10-18-07	KMI- 6985	< 0.5	< 10	< 10	< 15	1387 ± 115
11-02-07	KMI- 7579	< 0.5	< 10	< 10	< 15	1346 ± 174
12-04-07	KMI- 8184	< 0.5	< 10	< 10	< 15	1352 ± 134

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Table 15. Milk, analyses for strontium-89, strontium-90, stable potassium, stable calcium, and ratios of strontium-90 per gram of calcium and cesium-137 per gram of potassium. Collection: Monthly composites.

Collection Period	Lab Code	Concentration Sr-89 (pCi/L)	Sr-90 (pCi/L)	K (g/L)	Ca (g/L)	Ratios Sr-90 per gram Ca	Cs-137 per gram K
Indicators							
			K-5				
January	KMI - 4	< 1.2	1.1 ± 0.4	1.40 ± 0.14	1.21	0.91	< 7.14
February	- 568	< 0.8	0.6 ± 0.3	1.57 ± 0.13	1.16	0.52	< 6.37
March	- 1191	< 1.0	0.9 ± 0.3	1.48 ± 0.14	1.23	0.73	< 6.76
April	- 1791	< 1.0	0.6 ± 0.3	1.60 ± 0.13	1.27	0.47	< 6.25
May	- 2802	< 0.8	< 0.6	1.51 ± 0.21	1.31	< 0.46	< 6.62
June	- 3817	< 1.0	1.0 ± 0.4	1.63 ± 0.13	1.24	0.81	< 6.13
July	- 4355	< 0.8	0.8 ± 0.4	1.64 ± 0.16	1.05	0.76	< 6.10
August	- 5836	< 0.9	< 0.6	1.57 ± 0.19	1.03	< 0.58	< 6.37
September	- 6367	< 0.8	< 0.6	1.48 ± 0.18	1.09	< 0.55	< 6.76
October	- 7715	< 0.9	0.8 ± 0.4	1.47 ± 0.17	1.37	0.58	< 6.80
November	- 7577	< 1.0	0.9 ± 0.3	1.52 ± 0.14	1.20	0.75	< 6.58
December	- 8182	< 1.2	0.9 ± 0.4	1.50 ± 0.12	1.21	0.74	< 6.67
			K-25				
January	KMI - 5	< 0.8	1.3 ± 0.4	1.60 ± 0.14	1.34	0.97	< 6.25
February	- 569	< 0.8	0.9 ± 0.3	1.53 ± 0.13	1.09	0.83	< 6.54
March	- 1192	< 1.0	1.2 ± 0.4	1.54 ± 0.13	1.25	0.96	< 6.49
April	- 1792	< 0.9	1.1 ± 0.4	1.58 ± 0.14	1.33	0.83	< 6.33
May	- 2803	< 0.9	0.8 ± 0.4	1.51 ± 0.20	1.31	0.61	< 6.62
June	- 3818	< 0.8	0.7 ± 0.4	1.53 ± 0.13	1.23	0.57	< 6.54
July	- 4356	< 0.7	1.0 ± 0.4	1.59 ± 0.16	1.02	0.98	< 6.29
August	- 5837	< 0.8	1.0 ± 0.4	1.61 ± 0.20	1.03	0.97	< 6.21
September	- 6368	< 1.0	0.9 ± 0.5	1.75 ± 0.18	1.07	0.84	< 5.71
October	- 7716	< 1.1	1.0 ± 0.5	1.58 ± 0.16	1.21	0.83	< 6.33
November	- 7578	< 1.0	0.7 ± 0.4	1.71 ± 0.14	1.33	0.53	< 5.85
December	- 8183	< 1.0	0.7 ± 0.4	1.51 ± 0.17	1.24	0.56	< 6.62

Table 15. Milk, analyses for strontium-89, strontium-90, stable potassium, stable calcium, and ratios of strontium-90 per gram of calcium and cesium-137 per gram of potassium (continued).

Collection Period	Lab Code	Concentration				Ratios	
		Sr-89 (pCi/L)	Sr-90 (pCi/L)	K (g/L)	Ca (g/L)	Sr-90 per gram Ca	Cs-137 per gram K
Indicators							
				K-34			
January	KMI - 7	< 0.9	1.2 ± 0.4	1.71 ± 0.14	1.23	0.98	< 5.85
February	- 571	< 0.7	0.7 ± 0.3	1.69 ± 0.13	1.07	0.65	< 5.92
March	- 1194	< 0.8	0.8 ± 0.3	1.52 ± 0.13	1.22	0.66	< 6.58
April	- 1794	< 0.8	1.1 ± 0.3	1.69 ± 0.13	1.16	0.95	< 5.92
May	- 2805	< 0.7	0.8 ± 0.3	1.62 ± 0.15	1.10	0.73	< 6.17
June	- 3820	< 0.7	0.9 ± 0.4	1.54 ± 0.16	1.32	0.68	< 6.49
July	- 4358	< 0.7	0.9 ± 0.4	1.53 ± 0.14	1.03	0.87	< 6.54
August	- 5839	< 0.7	0.8 ± 0.4	1.52 ± 0.17	1.03	0.78	< 6.58
September	- 6370	< 0.8	< 0.7	1.62 ± 0.18	1.03	< 0.68	< 6.17
October	- 7718	< 1.1	1.0 ± 0.5	1.62 ± 0.19	1.30	0.77	< 6.17
November	- 7580	< 0.8	0.8 ± 0.3	1.53 ± 0.13	1.37	0.58	< 6.54
December	- 8185	< 1.0	1.0 ± 0.4	1.64 ± 0.12	1.35	0.74	< 6.10

Table 15. Milk, analyses for strontium-89, strontium-90, stable potassium, stable calcium, and ratios of strontium-90 per gram of calcium and cesium-137 per gram of potassium (continued).

Collection Period	Lab Code	Concentration Sr-89 (pCi/L)	Sr-90 (pCi/L)	K (g/L)	Ca (g/L)	Ratios Sr-90 per gram Ca	Cs-137 per gram K
Indicators							
			K-38				
January	KMI - 8	< 0.9	1.1 ± 0.4	1.45 ± 0.20	1.16	0.95	< 6.90
February	- 572	< 0.8	0.5 ± 0.3	1.51 ± 0.14	1.08	0.46	< 6.62
March	- 1195	< 0.9	1.3 ± 0.4	1.45 ± 0.14	1.27	1.02	< 6.90
April	- 1795	< 1.0	1.7 ± 0.5	1.53 ± 0.13	1.25	1.36	< 6.54
May	- 2806	< 0.7	1.1 ± 0.4	1.51 ± 0.17	1.31	0.84	< 6.62
June	- 3821	< 0.8	0.9 ± 0.4	1.60 ± 0.14	1.25	0.72	< 6.25
July	- 4359	< 0.7	0.9 ± 0.4	1.66 ± 0.15	1.02	0.88	< 6.02
August	- 5840	< 0.8	0.7 ± 0.4	1.52 ± 0.19	0.94	0.74	< 6.58
September	- 6371	< 0.8	1.2 ± 0.4	1.56 ± 0.14	1.16	1.03	< 6.41
October	- 7719	< 0.8	1.3 ± 0.4	1.57 ± 0.21	1.16	1.12	< 6.37
November	- 7581	< 0.9	1.0 ± 0.4	1.48 ± 0.14	1.33	0.75	< 6.76
December	- 8186	< 1.0	1.2 ± 0.4	1.56 ± 0.13	1.21	0.99	< 6.41
			K-39				
January	KMI - 9	< 1.0	1.1 ± 0.4	1.47 ± 0.19	1.33	0.83	< 6.80
February	- 573	< 0.9	0.7 ± 0.3	1.62 ± 0.14	1.18	0.59	< 6.17
March	- 1196	< 1.1	0.9 ± 0.4	1.64 ± 0.14	1.37	0.66	< 6.10
April	- 1796	< 1.1	1.1 ± 0.4	1.53 ± 0.13	1.23	0.89	< 6.54
May	- 2807	< 1.0	1.1 ± 0.4	1.81 ± 0.22	1.31	0.84	< 5.52
June	- 3822	< 1.0	< 0.8	1.60 ± 0.18	1.18	< 0.68	< 6.25
July	- 4360	< 0.9	0.8 ± 0.4	1.67 ± 0.14	1.03	0.78	< 5.99
August	- 5841	< 0.9	< 0.8	1.64 ± 0.16	1.06	< 0.75	< 6.10
September	- 6372	< 0.9	< 0.8	1.64 ± 0.17	1.17	< 0.68	< 6.10
October	- 7720	< 1.0	1.2 ± 0.4	1.72 ± 0.17	1.36	0.88	< 5.81
November	- 7582	< 1.1	0.9 ± 0.4	1.61 ± 0.15	1.35	0.67	< 6.21
December	- 8187	< 1.3	< 0.7	1.58 ± 0.12	1.26	< 0.56	< 6.33

Table 15. Milk, analyses for strontium-89, strontium-90, stable potassium, stable calcium, and ratios of strontium-90 per gram of calcium and cesium-137 per gram of potassium (continued).

Collection Period	Lab Code	Concentration				Ratios	
		Sr-89 (pCi/L)	Sr-90 (pCi/L)	K (g/L)	Ca (g/L)	Sr-90 per gram Ca	Cs-137 per gram K
Control							
				K-3			
January	KMI - 3	< 1.0	1.5 ± 0.4	1.55 ± 0.13	1.28	1.17	< 6.45
February	- 567	< 0.8	1.1 ± 0.4	1.70 ± 0.14	1.06	1.04	< 5.88
March	- 1190	< 0.9	1.3 ± 0.4	1.44 ± 0.13	1.28	1.02	< 6.94
April	- 1790	< 1.1	1.4 ± 0.4	1.67 ± 0.14	1.31	1.07	< 5.99
May	- 2801	< 0.8	1.8 ± 0.4	1.57 ± 0.17	1.36	1.32	< 6.37
June	- 3816	< 0.9	1.4 ± 0.5	1.51 ± 0.12	1.33	1.05	< 6.62
July	- 4354	< 0.7	1.3 ± 0.4	1.59 ± 0.19	1.08	1.20	< 6.29
August	- 5835	< 0.8	1.0 ± 0.4	1.64 ± 0.17	1.06	0.94	< 6.10
September	- 6366	< 0.8	1.0 ± 0.4	1.61 ± 0.21	1.17	0.85	< 6.21
October	- 7714	< 0.9	1.3 ± 0.5	1.54 ± 0.19	1.27	1.02	< 6.49
November	- 7576	< 0.9	1.2 ± 0.4	1.61 ± 0.18	1.24	0.97	< 6.21
December	- 8181	< 1.2	1.2 ± 0.5	1.46 ± 0.12	1.40	0.86	< 6.85
				K-28			
January	KMI - 6	< 0.9	1.4 ± 0.4	1.52 ± 0.14	1.14	1.23	< 6.58
February	- 570	< 0.7	0.5 ± 0.2	1.63 ± 0.13	1.00	0.50	< 6.13
March	- 1193	< 0.8	0.7 ± 0.3	1.52 ± 0.12	1.14	0.61	< 6.58
April	- 1793	< 0.9	0.7 ± 0.3	1.72 ± 0.14	1.20	0.58	< 5.81
May	- 2804	< 0.8	0.8 ± 0.3	1.50 ± 0.14	1.09	0.73	< 6.67
June	- 3819	< 0.9	0.9 ± 0.5	1.66 ± 0.14	1.18	0.76	< 6.02
July	- 4357	< 0.7	< 0.8	1.62 ± 0.19	1.03	< 0.78	< 6.17
August	- 5838	< 0.8	1.4 ± 0.4	1.45 ± 0.16	1.07	1.31	< 6.90
September	- 6369	< 0.7	0.9 ± 0.4	1.53 ± 0.21	1.19	0.76	< 6.54
October	- 7717	< 0.7	0.8 ± 0.3	1.67 ± 0.17	1.19	0.67	< 5.99
November	- 7579	< 1.0	0.7 ± 0.3	1.56 ± 0.20	1.23	0.57	< 6.41
December	- 8184	< 1.0	0.8 ± 0.3	1.56 ± 0.15	1.19	0.67	< 6.41

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Table 16. Well water, analyses for gross alpha, gross beta, tritium, strontium-89[a], strontium-90[a], potassium-40 and gamma-emitting isotopes.
Collection: Quarterly.

Sample Description and Concentration (pCi/L)				
Indicator				
K-1g				
Date Collected	01-02-07	04-02-07	07-02-07	10-01-07
Lab Code	KWW- 22	KWW- 1814	KWW- 4098	KWW- 6654
Gross alpha	< 1.8	< 2.7	2.8 ± 2.7	< 2.2
Gross beta	1.5 ± 1.2	4.5 ± 2.5	< 1.8	5.2 ± 1.4
H-3	< 152	< 167	< 176	< 175
Sr-89	< 0.8	< 0.7	< 0.7	< 0.5
Sr-90	< 0.4	< 0.5	< 0.6	< 0.5
K-40 (ICP)	2.51	2.68	2.42	2.08
Mn-54	< 15	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30	< 30
Co-58	< 15	< 15	< 15	< 15
Co-60	< 15	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15	< 15
K-1h				
Date Collected	01-02-07	04-02-07	07-02-07	10-01-07
Lab Code	KWW- 23	KWW- 1815	KWW- 4099	KWW- 6655
Gross alpha	< 1.4	2.0 ± 1.4	4.7 ± 1.3	3.4 ± 1.4
Gross beta	2.2 ± 0.8	1.8 ± 0.9	2.5 ± 1.2	4.3 ± 0.8
H-3	< 152	< 167	< 176	< 175
K-40 (ICP)	2.54	2.54	2.68	1.99
Mn-54	< 15	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30	< 30
Co-58	< 15	< 15	< 15	< 15
Co-60	< 15	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15	< 15

[a] Strontium analyses required on samples from K-1g only.

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Table 17. Well water, analyses for gross beta, tritium, potassium-40, and gamma-emitting isotopes.

Collection: Quarterly.

Sample Description and Concentration (pCi/L)				
Indicator				
K-10				
Date Collected	01-02-07	04-02-07	07-02-07	10-01-07
Lab Code	KWW- 24	KWW- 1816	KWW- 4100	KWW- 6656 [a]
Gross beta	< 1.5	<	< 2.0	2.8 ± 1.0
H-3	< 152	< 167	< 176	< 175
K-40 (ICP)	3.11	2.77	3.55	1.90
Mn-54	< 15	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30	< 30
Co-58	< 15	< 15	< 15	< 15
Co-60	< 15	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15	< 15
K-11				
Date Collected	01-02-07	04-02-07	07-02-07	10-01-07
Lab Code	KWW- 25	KWW- 1817	KWW- 4101	KWW- 6658
Gross beta	0.7 ± 0.2	0.7 ± 0.2	1.3 ± 0.3	1.1 ± 0.3
H-3	< 152	< 167	< 176	< 175
K-40 (ICP)	0.87	0.87	0.87	0.69
Mn-54	< 15	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30	< 30
Co-58	< 15	< 15	< 15	< 15
Co-60	< 15	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15	< 15

[a] Duplicate sample, KWW-6657; analyses results listed in Appendix A.

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Table 17. Well water, analyses for gross beta, tritium, potassium-40, and gamma-emitting isotopes.

Sample Description and Concentration (pCi/L)				
Indicator				
K-25				
Date Collected	01-02-07	04-02-07	07-02-07	10-01-07
Lab Code	KWW- 27	KWW- 1819	KWW- 4103	KWW- 6659
Gross beta	0.8 ± 0.2	0.8 ± 0.2	1.5 ± 0.4	1.4 ± 0.3
H-3	< 152	< 167	< 176	< 175
K-40 (ICP)	1.07	0.98	1.04	0.78
Mn-54	< 15	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30	< 30
Co-58	< 15	< 15	< 15	< 15
Co-60	< 15	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15	< 15
Control				
K-13				
Date Collected	01-02-07	04-02-07	07-02-07	10-01-07
Lab Code	KWW- 26	KWW- 1818	KWW- 4102	KWW- 6660
Gross beta	0.7 ± 0.2	1.1 ± 0.4	1.9 ± 0.4	1.3 ± 0.6
H-3	< 152	< 167	< 176	< 175
K-40 (ICP)	0.94	0.88	0.95	0.87
Mn-54	< 15	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30	< 30
Co-58	< 15	< 15	< 15	< 15
Co-60	< 15	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15	< 15

Note: Page 55 is intentionally left out.

Table 18. Domestic meat samples (chickens), analyses of flesh for gross alpha, gross beta, and gamma-emitting isotopes. Annual collection.

Sample Description and Concentration (pCi/g wet)				
	Indicator			Control
Location	K-24	K-29	K-20	K-32
Date Collected	09-04-07	09-04-07		09-04-07
Lab Code	KME- 5878	KME- 5879		KME- 5880
Gross Alpha	< 0.076	< 0.088		< 0.077
Gross Beta	3.26 ± 0.16	3.00 ± 0.16		3.00 ± 0.16
Be-7	< 0.770	< 0.327		< 0.252
K-40	2.58 ± 1.07	3.03 ± 0.43		2.79 ± 0.48
Nb-95	< 0.140	< 0.038		< 0.045
Zr-95	< 0.055	< 0.049		< 0.070
Ru-103	< 0.095	< 0.033		< 0.044
Ru-106	< 0.249	< 0.123		< 0.148
Cs-134	< 0.055	< 0.014		< 0.018
Cs-137	< 0.048	< 0.015		< 0.014
Ce-141	< 0.290	< 0.079		< 0.081
Ce-144	< 0.373	< 0.079		< 0.077

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Table 19. Eggs, analyses for gross beta, strontium-89, strontium-90 and gamma emitting isotopes.
Collection: Quarterly

Sample Description and Concentration (pCi/g wet)

Location	K-24			
Date Collected	01-02-07	04-02-07	07-02-07	10-01-07
Lab Code	KE- 19	KE- 1797	KE- 3981	KE- 6646
Gross beta	1.53 ± 0.05	2.11 ± 0.07	1.93 ± 0.06	1.86 ± 0.11
Sr-89	< 0.015	< 0.011	< 0.015	< 0.012
Sr-90	< 0.005	0.005 ± 0.003	< 0.004	< 0.005
Be-7	< 0.081	< 0.031	< 0.062	< 0.062
K-40	1.21 ± 0.21	1.10 ± 0.13	1.39 ± 0.14	1.17 ± 0.21
Nb-95	< 0.006	< 0.005	< 0.008	< 0.006
Zr-95	< 0.021	< 0.008	< 0.012	< 0.012
Ru-103	< 0.006	< 0.006	< 0.005	< 0.010
Ru-106	< 0.052	< 0.034	< 0.054	< 0.039
Cs-134	< 0.007	< 0.003	< 0.005	< 0.007
Cs-137	< 0.008	< 0.005	< 0.006	< 0.008
Ce-141	< 0.015	< 0.007	< 0.018	< 0.022
Ce-144	< 0.067	< 0.033	< 0.062	< 0.062

Location	K-32			
Date Collected	01-02-07	04-02-07	07-02-07	10-01-07
Lab Code	KE- 20 [a]	KE- 1798	KE- 3982	KE- 6647 [a]
Gross beta	1.76 ± 0.07	1.69 ± 0.07	1.75 ± 0.05	1.82 ± 0.10
Sr-89	< 0.016	< 0.011	< 0.013	< 0.010
Sr-90	< 0.005	< 0.004	< 0.004	< 0.005
Be-7	< 0.049	< 0.036	< 0.074	< 0.055
K-40	1.49 ± 0.24	1.13 ± 0.16	1.11 ± 0.15	1.48 ± 0.24
Nb-95	< 0.011	< 0.009	< 0.007	< 0.009
Zr-95	< 0.019	< 0.009	< 0.009	< 0.008
Ru-103	< 0.009	< 0.010	< 0.010	< 0.012
Ru-106	< 0.066	< 0.053	< 0.052	< 0.060
Cs-134	< 0.012	< 0.005	< 0.006	< 0.006
Cs-137	< 0.010	< 0.007	< 0.006	< 0.008
Ce-141	< 0.016	< 0.017	< 0.023	< 0.015
Ce-144	< 0.048	< 0.035	< 0.065	< 0.049

[a] Duplicate sample,analyses results listed in Appendix A.

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Table 20. Vegetable and grain samples, analyses for gross beta, strontium-89, strontium-90, and gamma-emitting isotopes. Annual collection.

Sample Description and Concentration (pCi/g wet)			
	Indicator		
Location	K-23		K-24
Date Collected	08-01-07	08-01-07	09-04-07
Lab Code	KVE- 4939	KVE- 4941	KVE- 5917
Type	Clover	Oats	Cabbage
Gross beta	5.50 ± 0.14	10.37 ± 0.26	2.71 ± 0.10
Sr-89	< 0.009	< 0.022	< 0.008
Sr-90	< 0.003	< 0.009	< 0.002
Be-7	0.45 ± 0.20	1.12 ± 0.24	0.94 ± 0.17
K-40	3.36 ± 0.45	8.08 ± 0.66	3.73 ± 0.37
Nb-95	< 0.021	< 0.021	< 0.007
Zr-95	< 0.038	< 0.040	< 0.016
Ru-103	< 0.023	< 0.018	< 0.015
Ru-106	< 0.105	< 0.139	< 0.086
Cs-134	< 0.015	< 0.020	< 0.009
Cs-137	< 0.017	< 0.025	< 0.009
Ce-141	< 0.050	< 0.041	< 0.015
Ce-144	< 0.228	< 0.085	< 0.088

Location	K-24		K-38	
Date Collected	09-04-07	09-04-07	09-04-07	09-04-07
Lab Code	KVE- 5919	KVE- 5920	KVE- 5926	KVE- 5927
Type	Brussels sprouts	Beet leaves	Cucumber	Cabbage
Gross beta	3.59 ± 0.12	9.69 ± 0.28	2.21 ± 0.05	7.33 ± 0.25
Sr-89	< 0.011	< 0.019	< 0.004	< 0.021
Sr-90	0.011 ± 0.003	< 0.007	< 0.002	0.016 ± 0.005
Be-7	0.51 ± 0.207	0.85 ± 0.166	< 0.060	1.27 ± 0.233
K-40	4.05 ± 0.43	11.46 ± 0.67	1.65 ± 0.20	5.79 ± 0.46
Nb-95	< 0.011	< 0.016	< 0.009	< 0.009
Zr-95	< 0.019	< 0.033	< 0.009	< 0.015
Ru-103	< 0.015	< 0.007	< 0.005	< 0.006
Ru-106	< 0.102	< 0.077	< 0.047	< 0.085
Cs-134	< 0.013	< 0.013	< 0.004	< 0.010
Cs-137	< 0.010	< 0.018	< 0.003	< 0.011
Ce-141	< 0.029	< 0.018	< 0.007	< 0.013
Ce-144	< 0.051	< 0.094	< 0.044	< 0.113

[a] Duplicate sample, analyses results listed in Appendix A.
[b] Not required by Technical Specifications.

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Table 20. Vegetable and grain samples, analyses for gross beta, strontium-89, strontium-90, and gamma-emitting isotopes (continued).

Sample Description and Concentration (pCi/g wet)				
Location	K-26 (control)			
Date Collected	09-04-07	09-04-07	09-04-07	09-04-07
Lab Code	KVE- 5921	KVE- 5922	KVE- 5923	KVE- 5924
Type	Cucumbers	Cabbage	Corn	Watermelon
Gross beta	1.29 ± 0.03	2.11 ± 0.05	1.64 ± 0.04	2.30 ± 0.05
Sr-89	< 0.002	< 0.002	< 0.084	< 0.006
Sr-90	< 0.001	< 0.001	< 0.036	< 0.002
Be-7	< 0.076	< 0.092	< 0.066	< 0.056
K-40	1.60 ± 0.22	1.65 ± 0.25	2.39 ± 0.31	2.01 ± 0.21
Nb-95	< 0.009	< 0.011	< 0.007	< 0.007
Zr-95	< 0.014	< 0.020	< 0.016	< 0.008
Ru-103	< 0.005	< 0.012	< 0.007	< 0.006
Ru-106	< 0.061	< 0.098	< 0.091	< 0.052
Cs-134	< 0.007	< 0.010	< 0.009	< 0.006
Cs-137	< 0.010	< 0.013	< 0.009	< 0.006
Ce-141	< 0.019	< 0.015	< 0.009	< 0.018
Ce-144	< 0.047	< 0.080	< 0.057	< 0.055

Date Collected	09-04-07	10-02-07
Lab Code	KVE- 5925	KVE- 6669
Type	Squash	Pumpkin
Gross beta	2.26 ± 0.06	2.78 ± 0.07
Sr-89	< 0.004	< 0.008
Sr-90	< 0.002	0.002 ± 0.001
Be-7	< 0.071	< 0.038
K-40	2.38 ± 0.27	1.65 ± 0.21
Nb-95	< 0.007	< 0.005
Zr-95	< 0.014	< 0.013
Ru-103	< 0.007	< 0.007
Ru-106	< 0.083	< 0.065
Cs-134	< 0.007	< 0.007
Cs-137	< 0.009	< 0.003
Ce-141	< 0.016	< 0.008
Ce-144	< 0.053	< 0.059

Table 21. Cattlefeed, analyses for gross beta, strontium-89, strontium-90, and gamma-emitting isotopes.
Collection: First Quarter.

Sample Description and Concentration (pCi/g wet)				
	Control			
Location	K-3	K-3		
Date Collected	01-03-07	01-02-07		
Lab Code	KCF- 30	KCF- 36		
Type	Silage	Hay		
Gross beta	5.97 ± 0.14	5.96 ± 0.11		
Sr-89	< 0.010	< 0.009		
Sr-90	0.006 ± 0.003	0.006 ± 0.003		
Be-7	0.37 ± 0.09	0.23 ± 0.11		
K-40	3.13 ± 0.26	11.05 ± 0.54		
Nb-95	< 0.007	< 0.014		
Zr-95	< 0.020	< 0.025		
Ru-103	< 0.006	< 0.013		
Ru-106	< 0.052	< 0.100		
Cs-134	< 0.006	< 0.012		
Cs-137	< 0.008	< 0.008		
Ce-141	< 0.018	< 0.017		
Ce-144	< 0.060	< 0.073		
	Indicator			
Location	K-5	K-5	K-25	K-25
Date Collected	01-03-07	01-02-07	01-03-07	01-02-07
Lab Code	KCF- 31	KCF- 37	KCF- 32	KCF- 38
Type	Silage	Hay	Silage	Hay
Gross beta	13.22 ± 0.28	24.03 ± 0.49	9.20 ± 0.23	14.65 ± 0.37
Sr-89	< 0.021	< 0.023	< 0.018	< 0.026
Sr-90	< 0.009	0.013 ± 0.007	0.015 ± 0.005	0.019 ± 0.008
Be-7	< 0.12	< 0.28	0.27 ± 0.13	< 0.34
K-40	9.86 ± 0.54	20.79 ± 1.14	6.40 ± 0.36	11.06 ± 0.79
Nb-95	< 0.010	< 0.034	< 0.010	< 0.027
Zr-95	< 0.017	< 0.056	< 0.022	< 0.035
Ru-103	< 0.007	< 0.026	< 0.010	< 0.039
Ru-106	< 0.075	< 0.196	< 0.065	< 0.188
Cs-134	< 0.012	< 0.027	< 0.009	< 0.028
Cs-137	< 0.011	< 0.024	< 0.010	< 0.026
Ce-141	< 0.020	< 0.040	< 0.018	< 0.039
Ce-144	< 0.087	< 0.192	< 0.098	< 0.252

Table 21. Cattlefeed, analyses for gross beta, strontium-89, strontium-90, and gamma-emitting isotopes (continued).

Sample Description and Concentration (pCi/g wet)				
	Indicator			
Location	K-34	K-34	K-38	K-38
Date Collected	01-03-07	01-02-07	01-03-07	01-02-07
Lab Code	KCF- 33	KCF- 39	KCF- 34	KCF- 40
Type	Silage	Hay	Silage	Hay
Gross beta	5.16 ± 0.11	18.06 ± 0.39	5.08 ± 0.13	16.41 ± 0.42
Sr-89	< 0.025	< 0.041	< 0.025	< 0.037
Sr-90	< 0.013	< 0.021	< 0.012	< 0.017
Be-7	0.54 ± 0.12	< 0.36	0.69 ± 0.14	< 0.30
K-40	4.41 ± 0.33	23.34 ± 1.14	3.69 ± 0.33	11.89 ± 0.91
Nb-95	< 0.009	< 0.043	< 0.013	< 0.028
Zr-95	< 0.014	< 0.074	< 0.010	< 0.056
Ru-103	< 0.009	< 0.048	< 0.011	< 0.025
Ru-106	< 0.091	< 0.280	< 0.073	< 0.194
Cs-134	< 0.010	< 0.026	< 0.008	< 0.026
Cs-137	< 0.009	< 0.044	< 0.010	< 0.029
Ce-141	< 0.013	< 0.078	< 0.024	< 0.057
Ce-144	< 0.076	< 0.308	< 0.064	< 0.137

Location	K-39	K-39
Date Collected	01-03-07	1/2/2007 [a]
Lab Code	KCF- 35	KCF- 41
Type	Silage	Hay
Gross beta	7.98 ± 0.19	18.02 ± 0.41
Sr-89	< 0.013	< 0.033
Sr-90	< 0.006	0.039 ± 0.011
Be-7	0.42 ± 0.12	0.74 ± 0.29
K-40	5.74 ± 0.36	11.68 ± 1.12
Nb-95	< 0.009	< 0.039
Zr-95	< 0.019	< 0.070
Ru-103	< 0.010	< 0.037
Ru-106	< 0.090	< 0.306
Cs-134	< 0.008	< 0.027
Cs-137	< 0.008	< 0.039
Ce-141	< 0.018	< 0.071
Ce-144	< 0.076	< 0.251

[a] Duplicate sample, KCF-42; analyses results listed in Appendix A.

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Table 22. Grass, analyses for gross beta, strontium-89, strontium-90, and gamma-emitting isotopes.
Collection: Quarterly, April through December
Units: pCi/g wet

Sample Description and Concentration

	Indicator			
Location	K-1b	K-1f	K-5	K-25
Date Collected	05-01-07	05-01-07	05-01-07	05-01-07
Lab Code	KG- 2551	KG- 2552	KG- 2554	KG- 2555
Gross beta	8.13 ± 0.20	9.32 ± 0.18	9.35 ± 0.18	8.14 ± 0.16
Sr-89	< 0.011	< 0.011	< 0.005	< 0.005
Sr-90	< 0.005	< 0.006	< 0.002	< 0.002
Be-7	2.47 ± 0.36	1.07 ± 0.25	1.13 ± 0.20	0.77 ± 0.34
K-40	4.54 ± 0.52	6.47 ± 0.57	6.26 ± 0.54	6.43 ± 0.78
Mn-54	< 0.023	< 0.019	< 0.017	< 0.021
Co-58	< 0.022	< 0.011	< 0.007	< 0.027
Co-60	< 0.024	< 0.019	< 0.011	< 0.014
Nb-95	< 0.028	< 0.019	< 0.021	< 0.018
Zr-95	< 0.036	< 0.028	< 0.017	< 0.049
Ru-103	< 0.024	< 0.012	< 0.016	< 0.027
Ru-106	< 0.231	< 0.171	< 0.083	< 0.157
Cs-134	< 0.018	< 0.019	< 0.013	< 0.022
Cs-137	< 0.023	< 0.018	< 0.012	< 0.027
Ce-141	< 0.043	< 0.034	< 0.032	< 0.035
Ce-144	< 0.198	< 0.104	< 0.065	< 0.105

	Indicator			Control
Location	K-34	K-38	K-39	K-3
Date Collected	05-01-07	05-01-07	05-01-07	05-01-07
Lab Code	KG- 2556	KG- 2557	KG- 2558	KG- 2553
Gross beta	8.45 ± 0.17	8.49 ± 0.19	10.49 ± 0.22	12.64 ± 0.25
Sr-89	< 0.010	< 0.007	< 0.007	< 0.007
Sr-90	< 0.005	< 0.003	< 0.003	< 0.003
Be-7	1.29 ± 0.19	1.53 ± 0.21	1.08 ± 0.31	1.37 ± 0.20
K-40	5.89 ± 0.45	6.13 ± 0.52	5.57 ± 0.83	5.77 ± 0.51
Mn-54	< 0.011	< 0.012	< 0.017	< 0.010
Co-58	< 0.010	< 0.017	< 0.026	< 0.015
Co-60	< 0.009	< 0.018	< 0.022	< 0.014
Nb-95	< 0.009	< 0.016	< 0.031	< 0.008
Zr-95	< 0.031	< 0.028	< 0.054	< 0.020
Ru-103	< 0.009	< 0.012	< 0.027	< 0.017
Ru-106	< 0.139	< 0.131	< 0.232	< 0.167
Cs-134	< 0.011	< 0.013	< 0.020	< 0.016
Cs-137	< 0.015	< 0.011	< 0.027	< 0.010
Ce-141	< 0.015	< 0.034	< 0.060	< 0.017
Ce-144	< 0.062	< 0.079	< 0.214	< 0.100

Table 22. Grass samples, analyses for gross beta, strontium-89, strontium-90, and gamma-emitting isotopes (continued).

Sample Description and Concentration				
	Indicator			
Location	K-1b	K-1f	K-5	K-25
Date Collected	07-02-07	07-02-07	07-02-07	07-02-07
Lab Code	KG- 3994	KG- 3995	KG- 3997	KG- 3998
Gross beta	8.70 ± 0.19	7.17 ± 0.19	8.50 ± 0.20	8.59 ± 0.18
Sr-89	< 0.023	< 0.018	< 0.026	< 0.025
Sr-90	< 0.009	< 0.005	0.012 ± 0.006	< 0.007
Be-7	0.72 ± 0.16	0.38 ± 0.17	0.73 ± 0.21	0.81 ± 0.13
K-40	8.79 ± 0.46	5.95 ± 0.40	6.58 ± 0.53	6.06 ± 0.41
Mn-54	< 0.016	< 0.016	< 0.010	< 0.007
Co-58	< 0.013	< 0.011	< 0.018	< 0.010
Co-60	< 0.014	< 0.012	< 0.019	< 0.011
Nb-95	< 0.010	< 0.012	< 0.019	< 0.015
Zr-95	< 0.027	< 0.023	< 0.030	< 0.025
Ru-103	< 0.017	< 0.016	< 0.019	< 0.010
Ru-106	< 0.112	< 0.139	< 0.090	< 0.129
Cs-134	< 0.013	< 0.015	< 0.015	< 0.012
Cs-137	< 0.013	< 0.016	< 0.025	< 0.012
Ce-141	< 0.030	< 0.030	< 0.027	< 0.013
Ce-144	< 0.103	< 0.141	< 0.163	< 0.080
	Indicator			Control
Location	K-34	K-38	K-39	K-3
Date Collected	07-02-07	07-02-07	07-02-07	07-03-07
Lab Code	KG- 3999	KG- 4000	KG- 4001	KG- 3996
Gross beta	10.50 ± 0.24	10.39 ± 0.25	14.43 ± 0.36	11.07 ± 0.23
Sr-89	< 0.028	< 0.034	< 0.075	< 0.027
Sr-90	< 0.008	< 0.013	< 0.023	< 0.008
Be-7	0.57 ± 0.17	0.71 ± 0.18	1.91 ± 0.41	0.60 ± 0.26
K-40	6.46 ± 0.50	6.42 ± 0.40	9.46 ± 0.68	8.60 ± 0.68
Mn-54	< 0.011	< 0.014	< 0.029	< 0.021
Co-58	< 0.018	< 0.010	< 0.014	< 0.023
Co-60	< 0.018	< 0.013	< 0.022	< 0.016
Nb-95	< 0.013	< 0.016	< 0.032	< 0.029
Zr-95	< 0.038	< 0.029	< 0.047	< 0.041
Ru-103	< 0.016	< 0.016	< 0.030	< 0.016
Ru-106	< 0.162	< 0.141	< 0.259	< 0.136
Cs-134	< 0.017	< 0.011	< 0.022	< 0.017
Cs-137	< 0.018	< 0.012	< 0.026	< 0.028
Ce-141	< 0.018	< 0.025	< 0.066	< 0.020
Ce-144	< 0.089	< 0.083	< 0.234	< 0.132

Table 22. Grass samples, analyses for gross beta, strontium-89, strontium-90, and gamma-emitting isotopes (continued).

Sample Description and Concentration (pCi/g wet)

	Indicator			
Location	K-1b	K-1f	K-5	K-25
Date Collected	10-01-07	10-01-07	10-01-07	10-01-07
Lab Code	KG- 6661	KG- 6662	KG- 6664	KG- 6665
Gross beta	6.32 ± 0.26	6.29 ± 0.25	3.90 ± 0.19	5.59 ± 0.15
Sr-89	< 0.010	< 0.009	< 0.017	< 0.010
Sr-90	< 0.004	< 0.004	< 0.009	< 0.004
Be-7	2.17 ± 0.25	1.97 ± 0.24	1.73 ± 0.26	1.25 ± 0.46
K-40	3.57 ± 0.39	4.17 ± 0.44	4.32 ± 0.60	7.71 ± 0.97
Mn-54	< 0.011	< 0.015	< 0.021	< 0.025
Co-58	< 0.012	< 0.013	< 0.021	< 0.027
Co-60	< 0.012	< 0.006	< 0.008	< 0.020
Nb-95	< 0.011	< 0.017	< 0.026	< 0.037
Zr-95	< 0.026	< 0.020	< 0.038	< 0.059
Ru-103	< 0.018	< 0.013	< 0.015	< 0.035
Ru-106	< 0.096	< 0.126	< 0.153	< 0.191
Cs-134	< 0.012	< 0.012	< 0.024	< 0.028
Cs-137	< 0.011	< 0.017	< 0.026	< 0.023
Ce-141	< 0.038	< 0.029	< 0.032	< 0.055
Ce-144	< 0.138	< 0.117	< 0.151	< 0.162

	Indicator			Control
Location	K-34	K-38 [a]	K-39	K-3
Date Collected	10-01-07	10-03-07	10-01-07	10-01-07
Lab Code	KG- 6666	KG- 6667	KG- 6668	KG- 6663
Gross beta	4.83 ± 0.15	3.59 ± 0.12	4.70 ± 0.18	7.69 ± 0.24
Sr-89	< 0.015	< 0.028	< 0.051	< 0.007
Sr-90	< 0.005	< 0.010	< 0.016	< 0.003
Be-7	2.08 ± 0.25	1.60 ± 0.30	1.91 ± 0.31	1.59 ± 0.32
K-40	4.90 ± 0.47	3.84 ± 0.46	4.32 ± 0.53	5.30 ± 0.64
Mn-54	< 0.017	< 0.017	< 0.018	< 0.020
Co-58	< 0.011	< 0.016	< 0.018	< 0.014
Co-60	< 0.017	< 0.020	< 0.013	< 0.018
Nb-95	< 0.010	< 0.022	< 0.014	< 0.010
Zr-95	< 0.028	< 0.034	< 0.032	< 0.020
Ru-103	< 0.009	< 0.019	< 0.011	< 0.018
Ru-106	< 0.116	< 0.184	< 0.217	< 0.162
Cs-134	< 0.010	< 0.016	< 0.018	< 0.015
Cs-137	< 0.014	< 0.022	< 0.016	< 0.022
Ce-141	< 0.021	< 0.031	< 0.038	< 0.031
Ce-144	< 0.089	< 0.156	< 0.141	< 0.147

[a] Gamma analysis was repeated.

Table 23. Soil samples, analyses for gross alpha, gross beta, strontium-89, strontium-90, and gamma-emitting isotopes.

Collection: Semiannually

Sample Description and Concentration (pCi/g dry)

	Indicator		
Location	K-1f	K-5	K-25
Date Collected	05-01-07	05-01-07	05-01-07
Lab Code	KSO- 2580	KSO- 2582	KSO- 2583
Gross alpha	6.69 ± 3.10	15.37 ± 4.04	11.49 ± 3.96
Gross beta	29.13 ± 3.44	41.76 ± 3.54	31.02 ± 3.74
Sr-89	< 0.046	< 0.115	< 0.139
Sr-90	< 0.013	0.024 ± 0.014	0.086 ± 0.024
Be-7	< 0.12	0.59 ± 0.27	0.54 ± 0.25
K-40	17.82 ± 0.66	23.73 ± 0.96	17.83 ± 0.75
Nb-95	< 0.022	< 0.022	< 0.027
Zr-95	< 0.024	< 0.044	< 0.047
Ru-103	< 0.017	< 0.012	< 0.023
Ru-106	< 0.102	< 0.188	< 0.172
Cs-134	< 0.023	< 0.017	< 0.026
Cs-137	0.043 ± 0.017	0.086 ± 0.030	0.119 ± 0.037
Ce-141	< 0.032	< 0.043	< 0.038
Ce-144	< 0.101	< 0.168	< 0.182
Date Collected	10-01-07	10-01-07	10-01-07
Lab Code	KSO- 6670	KSO- 6672	KSO- 6673
Gross alpha	7.40 ± 2.26	12.60 ± 2.57	20.02 ± 4.60
Gross beta	29.38 ± 2.20	39.29 ± 2.42	41.94 ± 3.46
Sr-89	< 0.069	< 0.098	< 0.120
Sr-90	< 0.016	< 0.022	0.048 ± 0.019
Be-7	< 0.29	< 0.27	< 0.27
K-40	16.92 ± 1.04	21.32 ± 1.10	19.66 ± 1.14
Nb-95	< 0.042	< 0.043	< 0.053
Zr-95	< 0.055	< 0.036	< 0.061
Ru-103	< 0.033	< 0.038	< 0.026
Ru-106	< 0.132	< 0.183	< 0.271
Cs-134	< 0.032	< 0.044	< 0.035
Cs-137	< 0.028	< 0.034	0.174 ± 0.049
Ce-141	< 0.054	< 0.055	< 0.058
Ce-144	< 0.159	< 0.161	< 0.184

Table 23. Soil samples, analyses for gross alpha, gross beta, strontium-89, strontium-90, and gamma-emitting isotopes (continued).

Sample Description and Concentration (pCi/g dry)

	Indicator		
Location	K-34	K-38	K-39
Date Collected	05-01-07	05-01-07	05-01-07
Lab Code	KSO- 2585	KSO- 2586	KSO- 2587
Gross alpha	10.24 ± 3.64	16.69 ± 4.43	10.94 ± 3.71
Gross beta	32.55 ± 3.50	37.82 ± 3.78	34.40 ± 3.58
Sr-89	< 0.115	< 0.100	< 0.107
Sr-90	0.034 ± 0.015	0.057 ± 0.018	0.024 ± 0.013
Be-7	< 0.19	< 0.16	< 0.18
K-40	17.52 ± 0.76	20.44 ± 0.88	17.54 ± 0.72
Nb-95	< 0.012	< 0.019	< 0.026
Zr-95	< 0.021	< 0.018	< 0.044
Ru-103	< 0.013	< 0.020	< 0.018
Ru-106	< 0.150	< 0.132	< 0.186
Cs-134	< 0.015	< 0.021	< 0.030
Cs-137	0.111 ± 0.025	0.191 ± 0.029	0.144 ± 0.028
Ce-141	< 0.033	< 0.033	< 0.040
Ce-144	< 0.079	< 0.153	< 0.120
Date Collected	10-01-07	10-01-07	10-01-07
Lab Code	KSO- 6674	KSO- 6675	KSO- 6676
Gross alpha	8.58 ± 3.06	12.03 ± 3.33	11.02 ± 3.31
Gross beta	33.10 ± 2.95	41.97 ± 3.08	33.34 ± 3.01
Sr-89	< 0.088	< 0.067	< 0.095
Sr-90	0.048 ± 0.016	0.019 ± 0.011	< 0.023
Be-7	< 0.26	< 0.34	< 0.29
K-40	18.54 ± 1.09	20.14 ± 1.08	17.83 ± 1.06
Nb-95	< 0.026	< 0.042	< 0.048
Zr-95	< 0.054	< 0.061	< 0.067
Ru-103	< 0.016	< 0.035	< 0.022
Ru-106	< 0.270	< 0.251	< 0.290
Cs-134	< 0.046	< 0.042	< 0.042
Cs-137	0.165 ± 0.037	0.066 ± 0.033	0.171 ± 0.037
Ce-141	< 0.065	< 0.057	< 0.062
Ce-144	< 0.138	< 0.175	< 0.134

Table 23. Soil samples, analyses for gross alpha, gross beta, strontium-89, strontium-90, and gamma-emitting isotopes (continued).

Sample Description and Concentration (pCi/g dry)

	Control	
Location	K-3	
Date Collected	05-01-07	10-01-07
Lab Code	KSO- 2581	KSO- 6671
Gross alpha	13.82 ± 4.00	11.69 ± 2.48
Gross beta	32.84 ± 3.36	35.71 ± 2.19
Sr-89	< 0.142	< 0.086
Sr-90	0.040 ± 0.020	0.051 ± 0.016
Be-7	< 0.19	< 0.35
K-40	19.19 ± 0.76	19.18 ± 1.11
Nb-95	< 0.019	< 0.034
Zr-95	< 0.035	< 0.059
Ru-103	< 0.017	< 0.038
Ru-106	< 0.159	< 0.277
Cs-134	< 0.029	< 0.044
Cs-137	0.156 ± 0.028	0.159 ± 0.047
Ce-141	< 0.034	< 0.067
Ce-144	< 0.127	< 0.099

Table 24. Surface water samples, analyses for gross beta, potassium-40 and gamma-emitting isotopes.
Collection: Monthly

Sample Description and Concentration (pCi/L)			
Indicator			
K-1a			
Date Collected	01-02-07	02-01-07	03-05-07
Lab Code	KSW- 10	KSW- 596	KSW- 1200
Gross beta			
Suspended Solids	< 0.3	< 0.4	< 0.8
Dissolved Solids	12.1 ± 1.3	8.6 ± 0.9	13.0 ± 1.1
Total Residue	12.1 ± 1.3	8.6 ± 0.9	13.0 ± 1.1
K-40 (ICP)	7.34	5.90	8.61
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15
K-1b			
Date Collected	01-02-07	02-01-07	03-05-07
Lab Code	KSW- 11	KSW- 597	KSW- 1201
Gross beta			
Suspended Solids	< 0.4	< 0.3	< 0.3
Dissolved Solids	6.4 ± 0.8	2.4 ± 0.5	4.0 ± 0.7
Total Residue	6.4 ± 0.8	2.4 ± 0.5	4.0 ± 0.7
K-40 (ICP)	2.74	1.62	3.45
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15

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Table 24. Surface water samples, analyses for gross beta, potassium-40, and gamma-emitting isotopes (continued).

Sample Description and Concentration (pCi/L)			
Indicator			
K-1a			
Date Collected	04-02-07	05-01-07	06-04-07
Lab Code	KSW- 1805	KSW- 2530	KSW- 3321
Gross beta			
Suspended Solids	< 0.5	< 0.6	< 0.4
Dissolved Solids	7.2 ± 0.8	10.5 ± 1.2	5.7 ± 0.8
Total Residue	7.2 ± 0.8	10.5 ± 1.2	5.7 ± 0.8
K-40 (ICP)	4.76	8.30	4.76
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15
K-1b			
Date Collected	04-02-07	05-01-07	06-04-07
Lab Code	KSW- 1806	KSW- 2531	KSW- 3322
Gross beta			
Suspended Solids	< 0.4	< 0.4	< 0.3
Dissolved Solids	2.9 ± 0.5	4.6 ± 0.8	2.7 ± 0.5
Total Residue	2.9 ± 0.5	4.6 ± 0.8	2.7 ± 0.5
K-40 (ICP)	1.87	2.18	1.92
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15

Table 24. Surface water samples, analyses for gross beta, potassium-40, and gamma-emitting isotopes (continued).

Sample Description and Concentration (pCi/L)			
Indicator			
K-1a			
Date Collected	07-02-07	08-01-07	09-04-07
Lab Code	KSW- 4002	KSW- 4942	KSW- 5903
Gross beta			
Suspended Solids	< 0.4	< 0.6	< 0.4
Dissolved Solids	6.8 ± 1.0	9.2 ± 0.9	12.6 ± 1.2
Total Residue	6.8 ± 1.0	9.2 ± 0.9	12.6 ± 1.2
K-40 (ICP)	5.26	7.63	10.55
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15
K-1b			
Date Collected	07-02-07	08-01-07	09-04-07
Lab Code	KSW- 4003	KSW- 4943	KSW- 5904
Gross beta			
Suspended Solids	< 0.3	< 0.6	< 0.3
Dissolved Solids	2.6 ± 0.6	3.1 ± 0.5	4.5 ± 0.7
Total Residue	2.6 ± 0.6	3.1 ± 0.5	4.5 ± 0.7
K-40 (ICP)	1.75	2.05	2.72
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15

Table 24. Surface water samples, analyses for gross beta, potassium-40, and gamma-emitting isotopes (continued).

Sample Description and Concentration (pCi/L)			
Indicator			
K-1a			
Date Collected	10-01-07	11-01-07	12-03-07
Lab Code	KSW- 6637	KSW- 7583	KSW- 8173
Gross beta			
Suspended Solids	< 0.6	< 1.3	< 0.4
Dissolved Solids	11.9 ± 0.9	14.4 ± 1.1	5.7 ± 2.2
Total Residue	11.9 ± 0.9	14.4 ± 1.1	5.7 ± 2.2
K-40 (ICP)	8.82	12.46	7.52
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15
K-1b			
Date Collected	10-01-07	11-01-07	12-03-07
Lab Code	KSW- 6638	KSW- 7584	KSW- 8174
Gross beta			
Suspended Solids	< 0.3	< 0.6	< 0.3
Dissolved Solids	4.3 ± 0.5	4.0 ± 0.6	2.4 ± 0.4
Total Residue	4.3 ± 0.5	4.0 ± 0.6	2.4 ± 0.4
K-40 (ICP)	2.44	2.92	2.15
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15

Table 24. Surface water samples, analyses for gross beta, potassium-40 and gamma-emitting isotopes (continued).

Sample Description and Concentration (pCi/L)			
Indicator			
K-1d			
Date Collected	01-02-07	02-01-07	03-05-07
Lab Code	KSW- 12	KSW- 598	KSW- 1202
Gross beta			
Suspended Solids	< 0.4	< 0.2	< 0.4
Dissolved Solids	2.2 ± 0.5	1.8 ± 0.3	1.8 ± 0.3
Total Residue	2.2 ± 0.5	1.8 ± 0.3	1.8 ± 0.3
K-40 (ICP)	1.33	1.14	1.25
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15
K-1e			
Date Collected	01-02-07	02-01-07	03-05-07
Lab Code	KSW- 13	KSW- 599	KSW- 1203
Gross beta			
Suspended Solids	< 0.4	0.2 ± 0.1	0.5 ± 0.2
Dissolved Solids	2.6 ± 0.5	4.7 ± 1.4	5.2 ± 1.0
Total Residue	2.6 ± 0.5	4.9 ± 1.4	5.7 ± 1.0
K-40 (ICP)	2.11	5.03	4.15
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15

Table 24. Surface water samples, analyses for gross beta, potassium-40, and gamma-emitting isotopes (continued).

Sample Description and Concentration (pCi/L)			
Indicator			
K-1d			
Date Collected	04-02-07	05-01-07	06-04-07
Lab Code	KSW- 1807	KSW- 2532	KSW- 3323
Gross beta			
Suspended Solids	< 0.3	< 0.3	< 0.4
Dissolved Solids	1.7 ± 0.4	1.9 ± 0.4	2.4 ± 0.3
Total Residue	1.7 ± 0.4	1.9 ± 0.4	2.4 ± 0.3
K-40 (ICP)	1.04	1.30	1.04
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15
K-1e			
Date Collected	04-02-07	05-01-07	06-04-07
Lab Code	KSW- 1808	KSW- 2533	KSW- 3324
Gross beta			
Suspended Solids	0.6 ± 0.2	< 0.5	< 0.4
Dissolved Solids	3.0 ± 0.7	4.3 ± 1.2	5.9 ± 1.0
Total Residue	3.6 ± 0.7	4.3 ± 1.2	5.9 ± 1.0
K-40 (ICP)	1.58	3.13	2.93
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15

Table 24. Surface water samples, analyses for gross beta, potassium-40, and gamma-emitting isotopes (continued).

Sample Description and Concentration (pCi/L)			
Indicator			
K-1d			
Date Collected	07-02-07	08-01-07	09-04-07
Lab Code	KSW- 4004	KSW- 4944	KSW- 5905
Gross beta			
Suspended Solids	< 0.4	< 0.4	< 0.4
Dissolved Solids	2.5 ± 0.5	1.5 ± 0.3	2.5 ± 0.5
Total Residue	2.5 ± 0.5	1.5 ± 0.3	2.5 ± 0.5
K-40 (ICP)	1.10	1.12	1.14
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15
K-1e			
Date Collected	07-02-07	08-01-07	09-04-07
Lab Code	KSW- 4005	KSW- 4945	KSW- 5906
Gross beta			
Suspended Solids	< 0.4	< 0.6	< 0.4
Dissolved Solids	12.2 ± 2.6	17.7 ± 1.8	11.7 ± 1.6
Total Residue	12.2 ± 2.6	17.7 ± 1.8	11.7 ± 1.6
K-40 (ICP)	12.46	12.54	10.73
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15

Table 24. Surface water samples, analyses for gross beta, potassium-40, and gamma-emitting isotopes (continued).

Sample Description and Concentration (pCi/L)			
Indicator			
K-1d			
Date Collected	10-01-07	11-01-07	12-03-07
Lab Code	KSW- 6639	KSW- 7585	KSW- 8175
Gross beta			
Suspended Solids	< 0.2	< 0.7	< 0.4
Dissolved Solids	3.0 ± 0.3	1.5 ± 0.3	1.8 ± 0.3
Total Residue	3.0 ± 0.3	1.5 ± 0.3	1.8 ± 0.3
K-40 (ICP)	0.94	1.23	1.21
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15
K-1e			
Date Collected	10-01-07	11-01-07	12-03-07
Lab Code	KSW- 6640	KSW- 7586	KSW- 8176
Gross beta			
Suspended Solids	< 0.6	< 1.3	< 0.4
Dissolved Solids	38.3 ± 2.2	12.1 ± 1.6	3.8 ± 1.3
Total Residue	38.3 ± 2.2	12.1 ± 1.6	3.8 ± 1.3
K-40 (ICP)	19.72	15.92	1.12
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15

Table 24. Surface water samples, analyses for gross beta, potassium-40 and gamma-emitting isotopes (continued).

Sample Description and Concentration (pCi/L)			
Indicator			
K-1k			
Date Collected	01-02-07	02-01-07	03-05-07
Lab Code	KSW- 14	NS[a]	NS[a]
Gross beta			
Suspended Solids	< 1.2	-	-
Dissolved Solids	19.5 ± 1.4	-	-
Total Residue	19.5 ± 1.4		
K-40 (ICP)	28.11		
Mn-54	< 15	-	-
Fe-59	< 30	-	-
Co-58	< 15	-	-
Co-60	< 15	-	-
Zn-65	< 30	-	-
Zr-Nb-95	< 15	-	-
Cs-134	< 10	-	-
Cs-137	< 10	-	-
Ba-La-140	< 15	-	-
Date Collected	04-02-07	05-01-07	06-04-07
Lab Code	KSW- 1809	KSW- 2534	KSW- 3325
Gross beta			
Suspended Solids	< 0.7	< 0.6	< 0.4
Dissolved Solids	2.4 ± 0.6	6.2 ± 1.2	4.4 ± 0.9
Total Residue	2.4 ± 0.6	6.2 ± 1.2	4.4 ± 0.9
K-40 (ICP)	2.59	5.79	2.63
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15

Table 24. Surface water samples, analyses for gross beta, potassium-40, and gamma-emitting isotopes (continued).

Sample Description and Concentration (pCi/L)			
Indicator			
K-1k			
Date Collected	07-02-07	08-01-07	09-04-07
Lab Code	KSW- 4006	KSW- 4946	KSW- 5907
Gross beta			
Suspended Solids	< 0.4	< 0.6	< 0.6
Dissolved Solids	< 1.8	4.1 ± 0.8	14.2 ± 1.5
Total Residue	< 1.8	4.1 ± 0.8	14.2 ± 1.5
K-40 (ICP)	6.92	3.46	10.64
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15
Date Collected	10-01-07	11-01-07	12-03-07
Lab Code	KSW- 6641	KSW- 7587	NS[a]
Gross beta			
Suspended Solids	< 0.6	< 1.3	-
Dissolved Solids	17.6 ± 0.9	8.7 ± 1.0	-
Total Residue	17.6 ± 0.9	8.7 ± 1.0	
K-40 (ICP)	7.71	9.26	
Mn-54	< 15	< 15	-
Fe-59	< 30	< 30	-
Co-58	< 15	< 15	-
Co-60	< 15	< 15	-
Zn-65	< 30	< 30	-
Zr-Nb-95	< 15	< 15	-
Cs-134	< 10	< 10	-
Cs-137	< 10	< 10	-
Ba-La-140	< 15	< 15	-

[a] NS= No sample; water frozen.

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Table 24. Surface water samples, analyses for gross beta, potassium-40 and gamma-emitting isotopes.
Collection: Monthly

Sample Description and Concentration (pCi/L)			
Indicator			
K-9 (Raw)			
Date Collected	01-02-07	02-01-07	03-05-07
Lab Code	KSW- 15	KSW- 600 [a]	KSW- 1204
Gross beta			
Suspended Solids	< 0.4	< 0.2	< 0.4
Dissolved Solids	0.8 ± 0.4	1.3 ± 0.4	1.2 ± 0.4
Total Residue	0.8 ± 0.4	1.3 ± 0.4	1.2 ± 0.4
K-40 (ICP)	1.22	1.04	1.14
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15
K-9 (Tap)			
Date Collected	01-02-07	02-01-07	03-05-07
Lab Code	KSW- 16	KSW- 602	KSW- 1205
Gross beta			
Suspended Solids	< 0.4	< 0.2	< 0.4
Dissolved Solids	0.9 ± 0.2	1.0 ± 0.2	1.3 ± 0.3
Total Residue	0.9 ± 0.2	1.0 ± 0.2	1.3 ± 0.3
K-40 (ICP)	1.19	1.07	1.19
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15

[a] Duplicate sample, KSW-601; analyses results listed in Appendix A.

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Table 24. Surface water samples, analyses for gross beta, potassium-40, and gamma-emitting isotopes (continued).

Sample Description and Concentration (pCi/L)			
Indicator			
K-9 (Raw)			
Date Collected	04-02-07	05-01-07	06-04-07
Lab Code	KSW- 1810	KSW- 2535	KSW- 3326
Gross beta			
Suspended Solids	< 0.4	< 0.4	< 0.4
Dissolved Solids	1.6 ± 0.4	2.7 ± 0.8	1.3 ± 0.4
Total Residue	1.6 ± 0.4	2.7 ± 0.8	1.3 ± 0.4
K-40 (ICP)	1.04	1.30	1.04
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15
K-9 (Tap)			
Date Collected	04-02-07	05-01-07	06-04-07
Lab Code	KSW- 1811	KSW- 2536	KSW- 3327
Gross beta			
Suspended Solids	< 0.4	< 0.3	< 0.3
Dissolved Solids	1.3 ± 0.3	2.2 ± 0.4	1.4 ± 0.3
Total Residue	1.3 ± 0.3	2.2 ± 0.4	1.4 ± 0.3
K-40 (ICP)	1.00	1.38	1.12
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15

Table 24. Surface water samples, analyses for gross beta, potassium-40, and gamma-emitting isotopes (continued).

Sample Description and Concentration (pCi/L)			
Indicator			
K-9 (Raw)			
Date Collected	07-02-07	08-01-07	09-04-07
Lab Code	KSW- 4007	KSW- 4947	KSW- 5908
Gross beta			
Suspended Solids	< 0.4	< 0.7	< 0.4
Dissolved Solids	2.3 ± 0.8	2.8 ± 0.4	2.3 ± 0.8
Total Residue	2.3 ± 0.8	2.8 ± 0.4	2.3 ± 0.8
K-40 (ICP)	1.05	1.08	1.25
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15
K-9 (Tap)			
Date Collected	07-02-07	08-01-07	09-04-07
Lab Code	KSW- 4008	KSW- 4948	KSW- 5909
Gross beta			
Suspended Solids	< 0.3	< 0.6	< 0.4
Dissolved Solids	1.5 ± 0.4	2.3 ± 0.5	1.7 ± 0.4
Total Residue	1.5 ± 0.4	2.3 ± 0.5	1.7 ± 0.4
K-40 (ICP)	1.09	1.08	1.19
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15

Table 24. Surface water samples, analyses for gross beta, potassium-40, and gamma-emitting isotopes (continued).

Sample Description and Concentration (pCi/L)			
Indicator			
K-9 (Raw)			
Date Collected	10-01-07	11-01-07	12-03-07
Lab Code	KSW- 6642	KSW- 7588	KSW- 8177
Gross beta			
Suspended Solids	< 0.7	< 0.7	< 0.4
Dissolved Solids	2.7 ± 0.8	1.3 ± 0.4	2.1 ± 0.7
Total Residue	2.7 ± 0.8	1.3 ± 0.4	2.1 ± 0.7
K-40 (ICP)	0.97	1.22	1.16
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15
K-9 (Tap)			
Date Collected	10-01-07	11-01-07	12-03-07
Lab Code	KSW- 6643	KSW- 7589 [a]	KSW- 8178
Gross beta			
Suspended Solids	< 0.4	< 0.5	< 0.4
Dissolved Solids	2.7 ± 0.4	1.7 ± 0.3	2.2 ± 0.4
Total Residue	2.7 ± 0.4	1.7 ± 0.3	2.2 ± 0.4
K-40 (ICP)	0.99	1.21	1.24
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15

[a] Duplicate sample, KSW-7590; analyses results listed in Appendix A.

Table 24. Surface water, analyses for gross beta, potassium-40 and gamma-emitting isotopes (continued).

Sample Description and Concentration (pCi/L)			
Indicator			
K-14a			
Date Collected	01-02-07	02-01-07	03-05-07
Lab Code	KSW- 17	KSW- 603	KSW- 1206
Gross beta			
Suspended Solids	< 0.4	< 0.4	< 0.3
Dissolved Solids	1.5 ± 0.4	1.3 ± 0.4	2.1 ± 0.4
Total Residue	1.5 ± 0.4	1.3 ± 0.4	2.1 ± 0.4
K-40 (ICP)	1.42	0.96	1.30
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15
K-14b			
Date Collected	01-02-07	02-01-07	03-05-07
Lab Code	KSW- 18	KSW- 604	KSW- 1207
Gross beta			
Suspended Solids	< 0.4	< 0.4	< 0.4
Dissolved Solids	1.4 ± 0.3	1.3 ± 0.3	1.9 ± 0.4
Total Residue	1.4 ± 0.3	1.3 ± 0.3	1.9 ± 0.4
K-40 (ICP)	1.34	1.12	1.33
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15

Table 24. Surface water, analyses for gross beta, potassium-40 and gamma-emitting isotopes (continued).

Sample Description and Concentration (pCi/L)			
Indicator			
K-14a			
Date Collected	04-02-07	05-01-07	06-04-07
Lab Code	KSW- 1812	KSW- 2537	KSW- 3328
Gross beta			
Suspended Solids	< 0.4	< 0.4	< 0.4
Dissolved Solids	3.1 ± 0.5	3.4 ± 0.7	3.3 ± 0.5
Total Residue	3.1 ± 0.5	3.4 ± 0.7	3.3 ± 0.5
K-40 (ICP)	1.64	1.82	0.95
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15
K-14b			
Date Collected	04-02-07	05-01-07	06-04-07
Lab Code	KSW- 1813	KSW- 2538	KSW- 3329
Gross beta			
Suspended Solids	< 0.4	< 0.4	< 0.4
Dissolved Solids	3.9 ± 0.7	3.6 ± 0.7	4.4 ± 0.3
Total Residue	3.9 ± 0.7	3.6 ± 0.7	4.4 ± 0.3
K-40 (ICP)	1.76	1.99	1.04
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15

Table 24. Surface water, analyses for gross beta, potassium-40 and gamma-emitting isotopes (continued).

Sample Description and Concentration (pCi/L)			
Indicator			
K-14a			
Date Collected	07-02-07	08-01-07	09-04-07
Lab Code	KSW- 4009	KSW- 4949	KSW- 5910
Gross beta			
Suspended Solids	< 0.4	< 0.4	< 0.4
Dissolved Solids	5.8 ± 0.8	3.5 ± 0.8	4.0 ± 0.5
Total Residue	5.8 ± 0.8	3.5 ± 0.8	4.0 ± 0.5
K-40 (ICP)	2.45	1.77	1.23
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15
K-14b			
Date Collected	07-02-07	08-01-07	09-04-07
Lab Code	KSW- 4010	KSW- 4950	KSW- 5911
Gross beta			
Suspended Solids	< 0.4	< 0.7	< 0.4
Dissolved Solids	3.0 ± 0.6	4.7 ± 0.8	3.0 ± 0.4
Total Residue	3.0 ± 0.6	4.7 ± 0.8	3.0 ± 0.4
K-40 (ICP)	1.75	1.80	1.28
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15

Table 24. Surface water, analyses for gross beta, potassium-40 and gamma-emitting isotopes (continued).

Sample Description and Concentration (pCi/L)			
Indicator			
K-14a			
Date Collected	10-01-07	11-01-07	12-03-07
Lab Code	KSW- 6644	KSW- 7591	KSW- 8179
Gross beta			
Suspended Solids	< 0.6	< 0.5	< 0.4
Dissolved Solids	2.7 ± 0.6	1.6 ± 0.4	3.4 ± 0.7
Total Residue	2.7 ± 0.6	1.6 ± 0.4	3.4 ± 0.7
K-40 (ICP)	1.03	1.35	1.17
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15
K-14b			
Date Collected	10-01-07	11-01-07	12-03-07
Lab Code	KSW- 6645	KSW- 7592	KSW- 8180
Gross beta			
Suspended Solids	< 0.6	< 0.5	< 0.4
Dissolved Solids	2.2 ± 0.6	1.7 ± 0.4	3.0 ± 0.7
Total Residue	2.2 ± 0.6	1.7 ± 0.4	3.0 ± 0.7
K-40 (ICP)	0.99	1.32	1.22
Mn-54	< 15	< 15	< 15
Fe-59	< 30	< 30	< 30
Co-58	< 15	< 15	< 15
Co-60	< 15	< 15	< 15
Zn-65	< 30	< 30	< 30
Zr-Nb-95	< 15	< 15	< 15
Cs-134	< 10	< 10	< 10
Cs-137	< 10	< 10	< 10
Ba-La-140	< 15	< 15	< 15

Table 25. Surface water, analyses for tritium, strontium-89 and strontium-90.
Collection: Quarterly composites of monthly samples.

Location and Collection Period	Lab Code	Concentration pCi/L H-3	Sr-89	Sr-90
Indicator				
K-1a				
1st Quarter	KSW -2428	< 147	< 1.1	< 0.5
2nd Quarter	-3806	< 172	< 1.1	< 0.5
3rd Quarter	-7127	< 145	< 1.2	0.5 ± 0.3
4th Quarter	-8637	< 152	< 0.9	< 0.5
K-1b				
1st Quarter	KSW -2429	< 147	< 1.3	< 0.5
2nd Quarter	-3807	< 172	< 1.2	< 0.5
3rd Quarter	-7128 [a]	< 145	< 1.4	< 0.5
4th Quarter	-8638	< 152	< 1.1	0.6 ± 0.3
K-1d				
1st Quarter	KSW -2430	< 147	< 1.1	< 0.5
2nd Quarter	-3808	< 172	< 1.0	< 0.5
3rd Quarter	-7130	< 145	< 1.3	< 0.6
4th Quarter	-8639	< 152	< 0.9	< 0.5
K-1e				
1st Quarter	KSW -2431	< 147	< 1.1	< 0.4
2nd Quarter	-3809	< 172	< 1.2	< 0.5
3rd Quarter	-7131	240 ± 83	< 1.4	< 0.5
4th Quarter	-8640	< 152	< 1.0	< 0.5

[a] Duplicate analyses, refer to Appendix A.

Table 25. Surface water, analyses for tritium, strontium-89 and strontium-90 (continued).

Location and Collection Period		Concentration pCi/L H-3	Sr-89	Sr-90
Indicator				
K-14a				
1st Quarter	KSW -2435	< 147	< 1.1	< 0.5
2nd Quarter	-3814	< 172	< 1.1	< 0.5
3rd Quarter	-7135	< 145	< 1.3	< 0.5
4th Quarter	-8644	< 152	< 0.9	< 0.6
K-14b				
1st Quarter	KSW -2436	< 147	< 1.1	< 0.4
2nd Quarter	-3815	< 172	< 1.0	< 0.4
3rd Quarter	-7136	< 145	< 1.6	< 0.6
4th Quarter	-8645	< 152	< 0.9	< 0.5
K-1k				
1st Quarter	KSW -2432	< 147	< 1.1	< 0.5
2nd Quarter	-3810 [a]	< 172	< 1.0	< 0.4
3rd Quarter	-7132	< 145	< 1.2	< 0.5
4th Quarter	-8641 [b]	< 153	< 1.4	< 0.4
Control				
K-9				
1st Quarter	KSW -2433 (Raw)	< 147	< 1.2	< 0.6
	-2434 (Tap)	< 147	< 1.4	< 0.6
2nd Quarter	KSW -3812 (Raw)	< 172	< 1.5	< 0.6
	-3813 (Tap)	< 172	< 1.3	0.6 ± 0.3
3rd Quarter	KSW -7133 (Raw)	< 145	< 1.3	< 0.4
	-7134 (Tap)	< 145	< 1.3	< 0.5
4th Quarter	KSW -8642 (Raw)	< 152	< 0.9	< 0.6
	-8643 (Tap)	< 152	< 1.1	0.6 ± 0.3

[a] Duplicate analyses, refer to Appendix A.

[b] No sample available for December; composite of October and November collections.

Table 26. Fish, collected at K-1d, analyses for gross beta, strontium-89, strontium-90 and gamma-emitting isotopes.
Collection: Three times a year

Sample Description and Concentration (pCi/g wet)				
Collected	04-13-07		07-06-07	
Lab Code	KF- 2522		KF- 4937	
Type	Carp		Brown Trout	
Portion	Flesh	Bones	Flesh	Bones
Gross beta	3.87 ± 0.59	2.34 ± 0.05	6.75 ± 0.15	1.61 ± 0.41
Sr-89	NA[a]	< 0.21	NA[a]	< 0.24
Sr-90	NA	0.41 ± 0.075	NA	0.19 ± 0.047
K-40	2.47 ± 0.34	NA[a]	3.40 ± 0.53	NA[a]
Mn-54	< 0.011	NA	< 0.019	NA
Fe-59	< 0.045	NA	< 0.074	NA
Co-58	< 0.017	NA	< 0.018	NA
Co-60	< 0.008	NA	< 0.022	NA
Cs-134	< 0.014	NA	< 0.018	NA
Cs-137	< 0.019	NA	0.062 ± 0.032	NA

Collected	10-04-07	
Lab Code	KF- 8191	
Type	Composite [b]	
Portion	Flesh	Bones
Gross beta	3.63 ± 0.07	1.76 ± 0.59
Sr-89	NA[a]	< 0.32
Sr-90	NA	0.095 ± 0.040
K-40	2.65 ± 0.31	NA[a]
Mn-54	< 0.010	NA
Fe-59	< 0.068	NA
Co-58	< 0.015	NA
Co-60	< 0.007	NA
Cs-134	< 0.008	NA
Cs-137	< 0.015	NA

[a] NA = Not analyzed; analyses not required.

[b] Composite sample: White Sucker, Yellow Perch, Lake Sturgeon, Brown Trout

Note: Page 89 is intentionally left out.

Table 27. Slime or aquatic vegetation, analyses for gross beta, strontium-89, strontium-90, and gamma-emitting isotopes.
Collection: Semiannually

Sample Description and Concentration

	Indicators			Control
Location	K-1a	K-1b	K-1d	K-9
Date Collected	06-04-07	06-04-07	04-02-07	06-04-07
Lab Code	KSL- 3309	KSL- 3310	KSL- 1820	KSL- 3313
Gross beta	6.44 ± 0.22	6.45 ± 0.17	8.11 ± 0.96	7.42 ± 0.21
Sr-89	< 0.031	< 0.017	< 0.26	< 0.023
Sr-90	< 0.015	0.009 ± 0.004	< 0.10	< 0.011
Be-7	0.82 ± 0.20	< 0.15	0.32 ± 0.14	< 0.17
K-40	4.53 ± 0.44	4.75 ± 0.43	4.51 ± 0.38	4.86 ± 0.48
Mn-54	< 0.007	< 0.012	< 0.009	< 0.015
Co-58	< 0.008	< 0.009	< 0.013	< 0.013
Co-60	< 0.011	< 0.007	< 0.006	< 0.013
Nb-95	< 0.009	< 0.009	< 0.015	< 0.014
Zr-95	< 0.016	< 0.017	< 0.017	< 0.021
Ru-103	< 0.009	< 0.014	< 0.014	< 0.017
Ru-106	< 0.087	< 0.057	< 0.105	< 0.088
Cs-134	< 0.014	< 0.013	< 0.012	< 0.015
Cs-137	< 0.014	< 0.010	< 0.014	< 0.017
Ce-141	< 0.033	< 0.015	< 0.020	< 0.023
Ce-144	< 0.098	< 0.102	< 0.089	< 0.077

Location	K-1e	K-1k	K-14
Date Collected	04-02-07	06-04-07 [a]	04-02-07
Lab Code	KSL- 1821	KSL- 3311	KSL- 1822
Gross beta	4.01 ± 0.30	5.77 ± 0.16	5.03 ± 0.28
Sr-89	< 0.043	< 0.019	< 0.046
Sr-90	< 0.018	< 0.016 [b]	< 0.016
Be-7	0.50 ± 0.13	0.61 ± 0.29	0.90 ± 0.21
K-40	1.90 ± 0.31	5.78 ± 0.67	1.72 ± 0.28
Mn-54	< 0.008	< 0.022	< 0.009
Co-58	< 0.010	< 0.017	< 0.008
Co-60	< 0.010	< 0.025	< 0.009
Nb-95	< 0.014	< 0.025	< 0.019
Zr-95	< 0.021	< 0.018	< 0.016
Ru-103	< 0.015	< 0.016	< 0.013
Ru-106	< 0.112	< 0.156	< 0.146
Cs-134	< 0.015	< 0.018	< 0.016
Cs-137	< 0.013	< 0.031	0.030 ± 0.016
Ce-141	< 0.029	< 0.046	< 0.042
Ce-144	< 0.065	< 0.227	< 0.080

[a] Duplicate sample, KSL-3312; analyses results listed in Appendix A.
[b] Result of reanalysis.

Table 27. Slime or aquatic vegetation, analyses for gross beta, strontium-89, strontium-90, and gamma-emitting isotopes.
Collection: Semiannually

Sample Description and Concentration

	Indicators			Control
Location	K-1a	K-1b	K-1d	K-9
Date Collected	08-01-07	07-02-07	09-04-07	09-04-07
Lab Code	KSL- 4938	KSL- 3990	KSL- 5888	KSL- 5916
Gross beta	3.04 ± 0.27	3.30 ± 0.21	7.44 ± 0.75	4.96 ± 0.15
Sr-89	< 0.033	< 0.087	< 0.082	< 0.033
Sr-90	0.031 ± 0.009	< 0.022	< 0.026	0.023 ± 0.007
Be-7	< 0.33	< 0.21	1.29 ± 0.29	0.59 ± 0.21
K-40	1.62 ± 0.36	1.29 ± 0.30	2.49 ± 0.28	3.75 ± 0.39
Mn-54	< 0.017	< 0.013	< 0.011	< 0.013
Co-58	< 0.017	< 0.017	< 0.017	< 0.014
Co-60	< 0.017	< 0.008	< 0.013	< 0.008
Nb-95	< 0.018	< 0.023	< 0.036	< 0.012
Zr-95	< 0.030	< 0.022	< 0.035	< 0.020
Ru-103	< 0.008	< 0.029	< 0.023	< 0.017
Ru-106	< 0.085	< 0.158	< 0.106	< 0.127
Cs-134	< 0.014	< 0.013	< 0.011	< 0.012
Cs-137	< 0.012	< 0.016	< 0.017	< 0.019
Ce-141	< 0.043	< 0.032	< 0.032	< 0.044
Ce-144	< 0.089	< 0.104	< 0.079	< 0.132

Location	K-1e	K-1k	K-14
Date Collected	07-02-07	09-04-07	07-02-07
Lab Code	KSL- 3991	KSL- 5915	KSL- 3992 [a]
Gross beta	9.47 ± 0.82	2.20 ± 0.08	13.61 ± 1.12
Sr-89	< 0.44	< 0.011	< 0.43
Sr-90	< 0.11	0.005 ± 0.002	< 0.10
Be-7	0.52 ± 0.27	1.08 ± 0.22	0.75 ± 0.19
K-40	5.18 ± 0.55	2.84 ± 0.34	2.43 ± 0.36
Mn-54	< 0.016	< 0.015	< 0.015
Co-58	< 0.025	< 0.014	< 0.013
Co-60	< 0.024	< 0.010	< 0.012
Nb-95	< 0.034	< 0.020	< 0.014
Zr-95	< 0.034	< 0.027	< 0.024
Ru-103	< 0.018	< 0.020	< 0.012
Ru-106	< 0.167	< 0.119	< 0.078
Cs-134	< 0.017	< 0.010	< 0.009
Cs-137	< 0.022	< 0.012	< 0.013
Ce-141	< 0.038	< 0.047	< 0.029
Ce-144	< 0.100	< 0.133	< 0.076

[a] Duplicate sample, KSL-3993; analyses results listed in Appendix A.

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Table 28. Bottom sediment samples, analyses for gross beta, strontium-89, strontium-90, and gamma-emitting isotopes.
Collection: May and November

Sample Description and Concentration (pCi/g dry)

	Indicator				Control
Location	K-1c	K-1d	K-1j	K-14	K-9
Collection Date	05-01-07	05-01-07	05-01-07	05-01-07	05-01-07
Lab Code	KBS- 2575	KBS- 2576	KBS- 2577	KBS- 2579	KBS- 2578
Gross beta	12.29 ± 2.10	11.34 ± 1.84	11.35 ± 1.87	17.12 ± 2.00	39.30 ± 4.40
Sr-89	< 0.079	< 0.054	< 0.049	< 0.050	< 0.112
Sr-90	< 0.013	0.022 ± 0.009	< 0.014	0.016 ± 0.008	0.073 ± 0.021
K-40	3.25 ± 0.48	6.32 ± 0.45	6.25 ± 0.42	8.56 ± 0.46	7.42 ± 0.70
Co-58	< 0.009	< 0.011	< 0.009	< 0.013	< 0.025
Co-60	< 0.010	< 0.011	< 0.010	< 0.007	< 0.017
Cs-134	< 0.009	< 0.009	< 0.009	< 0.009	< 0.020
Cs-137	0.031 ± 0.014	< 0.013	0.021 ± 0.011	0.023 ± 0.013	< 0.033
Location					
Collection Date	11-01-07	11-01-07	11-01-07	11-01-07	11-01-07
Lab Code	KBS- 7633	KBS- 7634	KBS- 7635	KBS- 7637	KBS- 7636
Gross beta	22.69 ± 2.53	15.18 ± 2.00	18.82 ± 2.35	15.67 ± 1.99	29.99 ± 2.61
Sr-89	< 0.054	< 0.047	< 0.056	< 0.049	< 0.062
Sr-90	< 0.015	< 0.016	< 0.016	0.020 ± 0.009	0.027 ± 0.011
K-40	9.92 ± 0.60	8.15 ± 0.44	8.03 ± 0.54	9.90 ± 0.52	10.17 ± 0.94
Co-58	< 0.027	< 0.019	< 0.024	< 0.015	< 0.040
Co-60	< 0.021	< 0.008	< 0.015	< 0.011	< 0.019
Cs-134	< 0.015	< 0.009	< 0.012	< 0.009	< 0.035
Cs-137	< 0.020	0.034 ± 0.014	< 0.017	0.028 ± 0.015	0.090 ± 0.046

APPENDIX A

DUPLICATE ANALYSES

A-1. Airborne particulates, duplicate analyses for gross beta.

Units: pCi/m^3

Collection: Continuous, weekly exchange. Required LLD: 0.010

Location	Date Collected	Volume (m^3)	Gross Beta
K-31	03-20-07	303	0.026 ± 0.004
K-31	04-10-07	328	0.015 ± 0.003
K-31	06-05-07	360	0.022 ± 0.003
K-7	06-13-07	327	0.021 ± 0.004
K-31	10-30-07	293	0.019 ± 0.004
K-1	11-13-07	338	0.021 ± 0.003
K-41	11-20-07	304	0.021 ± 0.004
K-41	12-11-07	339	0.028 ± 0.004

A-2. Surface water, duplicate analyses.

Sample Description and Concentration (pCi/L)			
Location	K-9 (Raw)	K-1K	K-1B
Date Collected	02-01-07	2nd Qtr.	3rd Qtr.
Lab Code	KSW-601	KSW-3811	KSW-7129
H-3	-	< 172	< 145
Sr-89	-	< 1.1	< 1.3
Sr-90	-	< 0.5	< 0.5
Gross beta			
Suspended Solids	< 0.2	-	-
Dissolved Solids	0.9 ± 0.4	-	-
Total Residue	0.9 ± 0.4	-	-
K-40 (ICP)	1.20	-	-
Mn-54	< 15	-	-
Fe-59	< 30	-	-
Co-58	< 15	-	-
Co-60	< 15	-	-
Zn-65	< 30	-	-
Zr-Nb-95	< 15	-	-
Cs-134	< 10	-	-
Cs-137	< 10	-	-
Ba-La-140	< 15	-	-

Location	K-10	K-9T
Date Collected	10-01-07	11-01-07
Lab Code	KWW-6657	KSW-7590
H-3	< 175	-
Sr-89	-	-
Sr-90	-	-
Gross beta	2.0 ± 0.9	
Suspended Solids	-	< 0.5
Dissolved Solids	-	1.2 ± 0.3
Total Residue	-	1.2 ± 0.3
K-40 (ICP)	1.90	1.24
Mn-54	< 15	< 15
Fe-59	< 30	< 30
Co-58	< 15	< 15
Co-60	< 15	< 15
Zn-65	< 30	< 30
Zr-Nb-95	< 15	< 15
Cs-134	< 10	< 10
Cs-137	< 10	< 10
Ba-La-140	< 15	< 15

A-3. Duplicate samples.

Location	K-39	K-39	K-25
Date Collected	01-03-07	01-02-07	05-01-07
Lab Code	KE- 21	KCF- 42	KSO- 2584
Sample Type	Egg	Silage	Soil
Gross alpha	- [a]	-	8.04 ± 3.88
Gross beta	1.70 ± 0.06	18.81 ± 0.42	26.10 ± 3.40
Sr-89	-	< 0.027	< 0.157
Sr-90	-	0.026 ± 0.010	0.068 ± 0.025
Be-7	< 0.058	< 0.351	0.60 ± 0.192
K-40	1.57 ± 0.27	12.67 ± 0.97	17.67 ± 0.72
Nb-95	< 0.009	< 0.036	< 0.024
Zr-95	< 0.029	< 0.055	< 0.037
Ru-103	< 0.010	< 0.030	< 0.012
Ru-106	< 0.086	< 0.251	< 0.168
Cs-134	< 0.003	< 0.029	< 0.024
Cs-137	< 0.011	< 0.035	0.087 ± 0.024
Ce-141	< 0.031	< 0.057	< 0.029
Ce-144	< 0.092	< 0.224	< 0.116

Location	K-1k	K-7	K-14
Date Collected	06-04-07	2nd Quarter	07-02-07
Lab Code	KSL- 3312	KAP- 4764	KSL- 3993
Sample Type	Aquatic Vegetation	Air Particulate Composite	Aquatic Vegetation
Gross beta	5.75 ± 0.15	-	14.06 ± 1.08
Sr-89	< 0.021	-	< 0.48
Sr-90	< 0.009	-	< 0.11
Be-7	0.55 ± 0.25	0.103 ± 0.015	0.74 ± 0.32
K-40	4.87 ± 0.57	< 0.017	2.29 ± 0.40
Nb-95	< 0.020	< 0.0006	< 0.028
Zr-95	< 0.038	< 0.0014	< 0.055
Ru-103	< 0.018	< 0.0010	< 0.031
Ru-106	< 0.190	< 0.0055	< 0.185
Cs-134	< 0.015	< 0.0008	< 0.016
Cs-137	< 0.017	< 0.0008	< 0.023
Ce-141	< 0.029	< 0.0014	< 0.052
Ce-144	< 0.148	< 0.0036	< 0.129

A-3. Duplicate samples.

Location	K-23	K-24	K-32
Date Collected	08-01-07	09-04-07	10-01-07
Lab Code	KVE- 4940	KVE- 5918	KE- 6648
Sample Type	Clover	Cabbage	
Gross beta	5.76 ± 0.13	2.69 ± 0.10	1.93 ± 0.11
Sr-89	< 0.009	< 0.008	< 0.011
Sr-90	< 0.003	< 0.002	< 0.005
Be-7	0.39 ± 0.206	0.83 ± 0.200	< 0.122
K-40	3.36 ± 0.43	3.58 ± 0.36	1.31 ± 0.23
Nb-95	< 0.013	< 0.006	< 0.007
Zr-95	< 0.031	< 0.014	< 0.016
Ru-103	< 0.013	< 0.011	< 0.015
Ru-106	< 0.080	< 0.071	< 0.062
Cs-134	< 0.013	< 0.011	< 0.010
Cs-137	< 0.020	< 0.007	< 0.008
Ce-141	< 0.033	< 0.016	< 0.023
Ce-144	< 0.138	< 0.074	< 0.053

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2007 Annual Environmental Monitoring Report

Kewaunee Power Station
Part III, Corrective Actions written during reporting period

Dominion Energy Kewaunee, Inc.

State Change History

Subtask	Draft	Assign Department	Assigned	Assign Evaluator	In Progress
by HEIRONIMUS, SUSAN	9/19/2007 12:07:48 Owner : HEIRONIMUS, SUSAN	by HEIRONIMUS, SUSAN	9/19/2007 12:08:00 Owner : ADAMS, RICHARD W	by ADAMS, RICHARD W	9/20/2007 6:37:44 Owner : SNIDER, TIMOTHY JAY

Section 1

Record #:	CA017448
Revision Number:	0
One-Line Description:	CA to RP to include in the annual REMM 2.4.1.c report.
Parent CR:	CR020264: KEWA - GFI found tripped on K-1f environmental air sampler
CR One-Line Description:	GFI found tripped on K-1f environmental air sampler
CR Description:	On 9/18/07 while performing SP-63-164 Environmental Sample Collection the GFI was found tripped on air sampler K-1f. The air sampler only accumulated 67.7 hours of run time for the week of 9/11/07-9/18/07. Per discussion with supervisor the timing of the GFI trip is consistent with work done at the Met towers which included maintenance on breaker MCC35. Work on met tower breakers has previously caused this GFI to trip. Recommend CA to electrical maintenance enhance procedure to check or request chemistry check this GFI after MCC35 maintenance.
CR Deficiency Type:	Equipment
CR Discovery Date:	9/18/2007
CR Discovery Time:	11:35:00
CR Submitted Date:	9/18/2007 12:29:08
CR Applicable to site:	KEWA
CR Applicable to unit:	None
CR Initial Actions:	Reset GFI and vacuum pump restarted. Notified supervisor. Wrote AR
CR Significance:	3
CR Potential Repeat:	No
CR Previous Issues:	CR13785 (similar, but for K7 GFI Tripped)
CR Equipment Location:	(None)
CR CRT Comments:	Sig Level 3 CA to RP to include in the annual REMM 2.4.1.c report. CA to Maint (EM) to initiate WR to investigate tripping of GFI.
Is this CA req'd to Restore Full Qualification or Functionality?:	No
Detailed Assignment:	Include in the annual REMM 2.4.1.c report.
CA Type:	Other
Additional Review Required:	No
Additional Reviewer 1:	(None)
Additional Reviewer 2:	(None)
Additional Reviewer 3:	(None)
Additional Reviewer 4:	(None)
Additional Reviewer 5:	(None)
Assigned Department:	KEWA - Rad Protection
Assigned DCAC:	ADAMS, RICHARD W
(a)(1) Corrective Action?:	No
Due By Event:	No
Event Description:	(None)
Event Mode:	(None)
Event Date:	(None)

State Change History

Subtask	Draft	Assign Department	Assigned	Assign Evaluator	In Progress
by OWENS, CYRENA JEAN	12/3/2007 14:40:57 Owner : OWENS, CYRENA JEAN	by OWENS, CYRENA JEAN	12/3/2007 14:41:09 Owner : ADAMS, RICHARD W	by ADAMS, RICHARD W	12/5/2007 8:30:02 Owner : SNIDER, TIMOTHY JAY

Section 1

Record #:	CA022292
Revision Number:	0
One-Line Description:	CA to RP to report discrepancy in next annual (2007) Annual Environmental Monit
Parent CR:	CR025855: KEWA - NOD Audit 7-10: REMM Figure 1 is missing 3 REMP sample locations
CR One-Line Description:	NOD Audit 7-10: REMM Figure 1 is missing 3 REMP sample locations
CR Description:	Radiological Environmental Monitoring Program sample locations: K-34 (Grass, Milk, Cattle Feed, Soil), K-38 (Grass, Milk, Cattle Feed, Soil), and K-39 (Grass, Milk, TLD, Cattle Feed, Soil) are missing from diagrams included in the following documents: The Radiological Environmental Monitoring Manual, Figure 1 Annual Environmental Monitoring Reports to the NRC, Figure 4-1, "Sampling Locations, Kewaunee Power Station" SP-63-164, "Environmental Sample Collection" Figure 1 "Environmental Sample Locations" Note: This issue was identified during NOD Audit 07-10, ODCM/REMP/EPP.
CR Deficiency Type:	Non-Equipment
CR Discovery Date:	11/29/2007
CR Discovery Time:	14:00:00
CR Submitted Date:	11/29/2007 16:36:55
CR Applicable to site:	KEWA
CR Applicable to unit:	None
CR Initial Actions:	Discussed with Supervisor RP. Three things need to be chanegd: 1) Procedure SP-63-164, "Environmental Sample Collection" Figure 1 "Environmental Sample Locations" . 2) Radiological Environmental Monitoring Manual (REMM) needs to be changed, 3) Needs to be reported to NRC in next annual (2007) Annual Environmental Monitoring Report.
CR Significance:	3
CR Potential Repeat:	No
CR Previous Issues:	REMM Maps have been updated, however not for this specific issue K-34 (Grass, Milk, Cattle Feed, Soil), K-38 (Grass, Milk, Cattle Feed, Soil), and K-39 (Grass, Milk, TLD, Cattle Feed, Soil)
CR Equipment Location:	(None)
CR CRT Comments:	CA to Chem to correct map in Procedure SP-63-164, "Environmental Sample Collection" Figure 1 "Environmental Sample Locations" . CA to RP to correct map in Radiological Environmental Monitoring Manual (REMM) needs to be changed,

State Change History

Subtask	Draft	Assign Department	Assigned	Assign Evaluator	In Progress
by ADAMS, RICHARD W	8/22/2007 8:19:06 Owner : ADAMS, RICHARD W	by ADAMS, RICHARD W	8/22/2007 8:19:17 Owner : ADAMS, RICHARD W	by ADAMS, RICHARD W	8/22/2007 8:19:58 Owner : SNIDER, TIMOTHY JAY

Section 1

Record #:	CA015336
Revision Number:	0
One-Line Description:	Ensure incident is included in Annual Env. Monitoring Report
Parent CR:	CR013785: KEWA - K-7 Environmental Air Sampler GFI tripped
CR One-Line Description:	K-7 Environmental Air Sampler GFI tripped
CR Description:	Found the K-7 Environmental Air Sampler GFI tripped while taking weekly samples per SP-63-164. The hours run for K-7 were 180.5, while the hours run for the other 5 air samplers ranged from 189.5 to 190.4. Reset GFI and the air sampler resumed s ampling.
CR Deficiency Type:	Non-Equipment
CR Discovery Date:	6/13/2007
CR Discovery Time:	9:15:00
CR Submitted Date:	6/13/2007 13:57:31
CR Applicable to site:	KEWA
CR Applicable to unit:	None
CR Initial Actions:	Reset GFI.
CR Significance:	3
CR Potential Repeat:	No
CR Previous Issues:	na
CR Equipment Location:	K7
CR CRT Comments:	Sig level 3 CA to Chem to determine if this is required for inclusion in the annual REMM 2.4.1.c report and initiate action.
Is this CA req'd to Restore Full Qualification or Functionality?:	No
Detailed Assignment:	Ensure the incident noted in original CR is included in Annual Env. Monitoring Report. Due date is as noted due to report not being submitted until April/May time frame each year.
CA Type:	Other
Additional Review Required:	No
Additional Reviewer 1:	(None)
Additional Reviewer 2:	(None)
Additional Reviewer 3:	(None)
Additional Reviewer 4:	(None)
Additional Reviewer 5:	(None)
Assigned Department:	KEWA - Rad Protection
Assigned DCAC:	ADAMS, RICHARD W
(a)(1) Corrective Action?:	No
Due By Event:	No
Event Description:	(None)
Event Mode:	(None)
Event Date:	(None)
Action Priority:	Low
Assigned Due Date:	5/31/2008
Assigned Evaluator:	SNIDER, TIMOTHY JAY
Assigned Supervisor:	HALE, JAMES M.
Text Question 1:	**Response:**
Text Answer 1:	

State Change History

Subtask by HEIRONIMUS, SUSAN	**Draft** 6/14/2007 12:22:31 Owner: HEIRONIMUS, SUSAN	**Assign Department** by HEIRONIMUS, SUSAN	**Assigned** 6/14/2007 12:23:00 Owner: ADAMS, RICHARD W	**Assign Evaluator** by ADAMS, RICHARD W	**In Progress** 6/14/2007 15:07:03 Owner: ADAMS, RICHARD W	**Return** by ADAMS, RICHARD W	**Assigned** 8/14/2007 11:02:52 Owner: ADAMS, RICHARD W
Assign Evaluator by ADAMS, RICHARD W	**In Progress** 8/14/2007 11:04:15 Owner: ADAMS, RICHARD W	**Complete** by ADAMS, RICHARD W	**Supervisor Review** 8/21/2007 16:32:09 Owner: HALE, JAMES M.	**Complete** by HALE, JAMES M.	**DCAC Review** 8/22/2007 7:33:17 Owner: ADAMS, RICHARD W	**Complete** by ADAMS, RICHARD W	**Complete** 8/22/2007 8:20:25 Owner: (None)

Section 1

Record #:	CA010779
Revision Number:	0
One-Line Description:	CA to Chem to determine if required for inclusion in annual REMM 2.4.1.c report
Parent CR:	CR013785: KEWA - K-7 Environmental Air Sampler GFI tripped
CR One-Line Description:	K-7 Environmental Air Sampler GFI tripped
CR Description:	Found the K-7 Environmental Air Sampler GFI tripped while taking weekly samples per SP-63-164. The hours run for K-7 were 180.5, while the hours run for the other 5 air samplers ranged from 189.5 to 190.4. Reset GFI and the air sampler resumed s ampling.
CR Deficiency Type:	Non-Equipment
CR Discovery Date:	6/13/2007
CR Discovery Time:	9:15:00
CR Submitted Date:	6/13/2007 13:57:31
CR Applicable to site:	KEWA
CR Applicable to unit:	None
CR Initial Actions:	Reset GFI.
CR Significance:	3
CR Potential Repeat:	No
CR Previous Issues:	na
CR Equipment Location:	K7
CR CRT Comments:	Sig level 3
	CA to Chem to determine if this is required for inclusion in the annual REMM 2.4.1.c report and initiate action.
Is this CA req'd to Restore Full Qualification or Functionality?:	No
Detailed Assignment:	Determine if this is required for inclusion in the annual REMM 2.4.1.c report and initiate action
CA Type:	Other
Additional Review Required:	No
Additional Reviewer 1:	(None)
Additional Reviewer 2:	(None)
Additional Reviewer 3:	(None)
Additional Reviewer 4:	(None)
Additional Reviewer 5:	(None)
Assigned Department:	KEWA - Chemistry
Assigned DCAC:	ADAMS, RICHARD W
(a)(1) Corrective Action?:	No
Due By Event:	No

State Change History

Subtask	Draft	Assign Department	Assigned	Assign Evaluator	In Progress
by OWENS, CYRENA JEAN	12/6/2007 11:23:43 Owner : OWENS, CYRENA JEAN	by OWENS, CYRENA JEAN	12/6/2007 11:23:59 Owner : ADAMS, RICHARD W	by ADAMS, RICHARD W	12/6/2007 12:03:09 Owner : SNIDER, TIMOTHY JAY

Section 1

Record #: CA022481

Revision Number: 0

One-Line Description: CA to RP to correct discrepancies as described by addendum to the 2007 Annual

Parent CR: CR025894: KEWA - NOD Audit 07-10: Errors found in 2005 and 2006 REMP reports provided to NRC

CR One-Line Description: NOD Audit 07-10: Errors found in 2005 and 2006 REMP reports provided to NRC

CR Description: This issue does not indicate exceedence of regulatory limits.
This issue was discovered during Nuclear Oversight Audit 07-10, REMP/ODCM

The following errors were found in the 2005 AND the 2006 Annual Environmental Monitoring Reports provided to the NRC:

On page 16 of the 2005 and 2006 reports, Table 4.1, The distances for Locations K-25, K-38 and K-39 differ from those in REMM Table 2.2.1-C.
- K-25 2.0 vs. 2.75 miles
- K-38 3.0 vs. 3.8 miles
- K-39 3.8 vs. 4.00 miles

Also, the Sector for K-25 differs from that in the REMM table. WSW vs. SW

On page 17of the 2005 and 2006 reports, Table 4.2, DM (Domestic Meat) should be added for Location K-34, Annually.
Domestic Meat is in REMM table 2.2.1-B, for K-34.

The following issue applies only to the 2005 Annual Environmental Monitoring Report (REMP report).

On page 12, Section 3.2.4, Periphyton (Slime) States "Strontium-90 was not detected above an LLD value of 0.079 pCi/g wet." However, Table 4.5, on page 24, indicates that Sr-90 was detected at an average 0.17 pCi/g wet at 2 of 12 locations. This is above the LLD.

The following errors are applicable only to the 2006 Annual Environmental Monitoring Report (REMP report) provided to the NRC in 2007:

On page 12, Section 3.2.4, Periphyton (Slime) States "Strontium-90 was not detected above an LLD value of 0.019 pCi/g wet." However, Table 4.5, page 24, indicates that Sr-90 was detected at an average 0.094 pCi/g wet at 2 of 12 locations. This is above the stated LLD.

On page 8, Section 3.2.2, TLDs, The values given on the first two lines are from the 2005 report:
15.7 mR/91 days at the indicator locations and 14.3 mR/91 days at the control locations. The 2006 values from Table 4.5 are:
16.4 mR/91 days for the indicator locations, and 15.0

	mR/91 days for the control locations. The verbiage does not agree with the values provided in Table 4.5. The paragraph in the 2006 report has the 2005 data. On page 9, Section 3.2.3, Milk, 2nd para., 3rd line, The Sr-90 mean values for control and indicator locations are reversed. 1.1 and 1.0 pCi/L should be 1.0 and 1.1 pCi/L. See Table 4.5. The 2005 report values were replicated and not updated in the 2006 report.
CR Deficiency Type:	Non-Equipment
CR Discovery Date:	11/30/2007
CR Discovery Time:	8:00:00
CR Submitted Date:	11/30/2007 10:02:58
CR Applicable to site:	KEWA
CR Applicable to unit:	None
CR Initial Actions:	Informed Supervisor Radiological Protection.
CR Significance:	3
CR Potential Repeat:	Yes
CR Previous Issues:	CR25912 from same NOD audit 07-10 referenced in this CR
CR Equipment Location:	(None)
CR CRT Comments:	Sig. 3
	CA to RP to correct discrepancies as described by addendum to the 2007 Annual Environmental Monitoring Report (REMP report) and mail to the NRC in 2008
Is this CA req'd to Restore Full Qualification or Functionality?:	No
Detailed Assignment:	Correct discrepancies as described by addendum to the 2007 Annual Environmental Monitoring Report (REMP report) and mail to the NRC in 2008
CA Type:	Other
Additional Review Required:	No
Additional Reviewer 1:	(None)
Additional Reviewer 2:	(None)
Additional Reviewer 3:	(None)
Additional Reviewer 4:	(None)
Additional Reviewer 5:	(None)
Assigned Department:	KEWA - Rad Protection
Assigned DCAC:	ADAMS, RICHARD W
(a)(1) Corrective Action?:	No
Due By Event:	No
Event Description:	(None)
Event Mode:	(None)
Event Date:	(None)
Action Priority:	Low
Assigned Due Date:	5/24/2008
Assigned Evaluator:	SNIDER, TIMOTHY JAY
Assigned Supervisor:	HALE, JAMES M.
Text Question 1:	**Response:**
Text Answer 1:	
Requested extension date:	
# of Extensions Approved:	0
Extension Comments:	
Follow-on Assignments Req'd?:	(None)
Literal 1:	**NOTE: If Follow-on Assignments are required, you must gain concurrence from all Responsible Departments prior to proposing any actions that will be assigned to them.**
Literal 2:	**If Yes, describe any follow-on action(s) below, including Department to receive the action. Otherwise, enter N/A:**

State Change History

Subtask	Draft	Assign Department	Assigned	Assign Evaluator	In Progress
by OWENS, CYRENA JEAN	12/6/2007 11:30:23 Owner : OWENS, CYRENA JEAN	by OWENS, CYRENA JEAN	12/6/2007 11:30:38 Owner : ADAMS, RICHARD W	by ADAMS, RICHARD W	12/6/2007 12:04:43 Owner : SNIDER, TIMOTHY JAY

Section 1

Record #: CA022485
Revision Number: 0
One-Line Description: CA to RP to review and correct 2005 & 2006 Annual Environmental Monitoring Rep
Parent CR: CR025912: KEWA - NOD Audit 07-10: REMP sample data is missing from 2005 & 2006 annual REMP report
CR One-Line Description: NOD Audit 07-10: REMP sample data is missing from 2005 & 2006 annual REMP report
CR Description: 2005 & 2006 Annual Environmental Monitoring Reports Part II, page 56, Table 18 includes Locations K-20 with no data, and K-24, K-29, and K-32 each with data.
Per REMM Table 2.2.1-A, locations K-27 and K-34 should also be included.

2005 & 2006 Annual Environmental Monitoring Reports Part II, page 57, Table 19 includes sample data for Locations K-24 and K-32.
Per REMM Table 2.2.1-A, it should also include location K-27.
CR Deficiency Type: Non-Equipment
CR Discovery Date: 11/30/2007
CR Discovery Time: 12:00:00
CR Submitted Date: 11/30/2007 13:29:24
CR Applicable to site: KEWA
CR Applicable to unit: None
CR Initial Actions: Informed Supervisor Radiological Protection
CR Significance: 3
CR Potential Repeat: No
CR Previous Issues: CR25894 cross referenced from same NOD audit 07-10
CR Equipment Location: (None)
CR CRT Comments: CA to RP to review and correct 2005 & 2006 Annual Environmental Monitoring Reports Part II, page 56, Table 18 includes Locations K-20 with no data, and K-24, K-29, and K-32 each with data.
Per REMM Table 2.2.1-A, locations K-27 and K-34 should also be included.

2005 & 2006 Annual Environmental Monitoring Reports Part II, page 57, Table 19 includes sample data for Locations K-24 and K-32.
Per REMM Table 2.2.1-A, it should also include location K-27.
Is this CA req'd to Restore Full Qualification or Functionality?: No
Detailed Assignment: Review and correct 2005 & 2006 Annual Environmental Monitoring Reports Part II, page 56, Table 18 includes Locations K-20 with no data, and K-24, K-29, and K-32 each with data.
Per REMM Table 2.2.1-A, locations K-27 and K-34 should also be included
CA Type: Other
Additional Review Required: No
Additional Reviewer 1: (None)
Additional Reviewer 2: (None)
Additional Reviewer 3: (None)

State Change History

Subtask	Draft	Assign Department	Assigned	Assign Evaluator	In Progress
by OWENS, CYRENA JEAN	11/14/2007 12:50:18 Owner : OWENS, CYRENA JEAN	by OWENS, CYRENA JEAN	11/14/2007 12:50:32 Owner : ADAMS, RICHARD W	by ADAMS, RICHARD W	11/14/2007 13:39:32 Owner : SNIDER, TIMOTHY JAY

Section 1

Record #:	CA021213
Revision Number:	0
One-Line Description:	CA to RP to document the timer OOS in the REMM annual report.
Parent CR:	CR024785: KEWA - K-1f air sampler hour meter not working correctly
CR One-Line Description:	K-1f air sampler hour meter not working correctly
CR Description:	K-1f air monitor hour meter is not keeping accurate time. The hour meter only tracked 107 hours when it should have had 168 hours on it. Air monitor appears to be working correctly. This task is being performed in accordance with SP-63-164 "Environmental Sample Collection". This sample is required by the Radiological Environmental Monitoring Manual (REMM). Pease consider a CA to evaluate the need to document the timer OOS in the REMM annual report
CR Deficiency Type:	Equipment
CR Discovery Date:	11/13/2007
CR Discovery Time:	9:02:00
CR Submitted Date:	11/13/2007 12:59:09
CR Applicable to site:	KEWA
CR Applicable to unit:	Unit 1
CR Initial Actions:	checked that monitor was working then wrote this cr, notified supervision
CR Significance:	4
CR Potential Repeat:	Yes
CR Previous Issues:	Similar issues in CAPs 30232, 21982 for this Sewage Treatment Area monitor.
CR Equipment Location:	(None)
CR CRT Comments:	Sig level 4; -Ref this WO generated. -CA to RP to document the timer OOS in the REMM annual report.
Is this CA req'd to Restore Full Qualification or Functionality?:	No
Detailed Assignment:	Document the timer OOS in the REMM annual report.
CA Type:	Other
Additional Review Required:	No
Additional Reviewer 1:	(None)
Additional Reviewer 2:	(None)
Additional Reviewer 3:	(None)
Additional Reviewer 4:	(None)
Additional Reviewer 5:	(None)
Assigned Department:	KEWA - Rad Protection
Assigned DCAC:	ADAMS, RICHARD W
(a)(1) Corrective Action?:	No
Due By Event:	No
Event Description:	(None)
Event Mode:	(None)

Event Date:	(None)
Action Priority:	N/A
Assigned Due Date:	5/30/2008
Assigned Evaluator:	SNIDER, TIMOTHY JAY
Assigned Supervisor:	HALE, JAMES M.
Text Question 1:	**Response:**
Text Answer 1:	
Requested extension date:	
# of Extensions Approved:	0
Extension Comments:	
Follow on Assignments Req'd?:	(None)
Literal 1:	**NOTE: If Follow-on Assignments are required, you must gain concurrence from all Responsible Departments prior to proposing any actions that will be assigned to them.**
Literal 2:	**If Yes, describe any follow-on action(s) below, including Department to receive the action. Otherwise, enter N/A:**
Follow-on assignments:	
Manager Review Requested?:	No
Manager to Review:	(None)
Additional Review Comments:	
Director O&M Comments:	
Management comments:	
Comments:	3/25/2008 21:32:48 - WALESH, DEBRA J - power: Per PI-KW-200, page 9: NA PRIORITY should be given to those items that are not conditions adverse to quality. This CA is being reassigned the NA priority due it meets those conditions
CAS Record#:	

Section 5

RM Attachment Links:

Subtasks

CR024785: KEWA - K-1f air sampler hour meter not working correctly

[Current Item]

Notes

OTH 16630 Included non-CAP OTH action by **ADAMS, RICHARD W** (11/14/2007 13:43:37)
Non-CAP Other 16630 was closed to this action. This one action will track inclusion of all minor issues of the REMM sampling for 2007 that needs to be included in the annual environmental monitoring report. The activity read:

K-8 air sampler filter had small tear upon removal (see CAP041690). Consider for inclusion in the 2007 Annual Environmental Monitoring Report. Due date set to allow for 2007 report submittal in May of 2008.

CA 29464 to be include in this activity by **ADAMS, RICHARD W** (11/14/2007 13:57:26)
CA 29464 from t-Track was closed to this action. This one action will track inclusion of all minor issues of the REMM sampling for 2007 that needs to be included in the annual environmental monitoring report. The activity read:

When performing SP-63-164 on 01-30-2007 K-31 had a problem which indicated that it was shut off. Total hours run time indicated 77.5 hrs. Other samplers which are changed out in the same time period indicated 169 hours. When further investigating we determined that the hour totalizer had stopped. This problem will need to be noted in the annual radiological environmental report.

CA 42249 to be included in this activity. by **ADAMS, RICHARD W** (11/14/2007 14:02:03)
CA from t-Track was closed to this action. This one action will track inclusion of all minor issues of the REMM sampling for 2007 that needs to be included in the annual environmental monitoring report. The activity read:

On 2/27/2007 while performing SP-63-164, "Environmental Sample Collection", the air filter at sample location K-41 had a small tear in the filter. The tear was about 1 inch long and was located just inside the outer curve of material deposited upon the filter. The tear may have allowed some material to not be deposited on the filter during this filter's filtering process (1