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Subject: Clinton Power Station Annual Radiological Environmental Operating Report

In accordance with Technical Specification requirement 5.6.2, AmerGen Energy Company, LLC (AmerGen) is submitting the 2006 Annual Radiological Environmental Operating Report for Clinton Power Station. This report covers the period from January 1, 2006 through December 31, 2006. This report provides the results for the Radiological Environmental Monitoring Program as called for in the Offsite Dose Calculation Manual.

Respectfully,

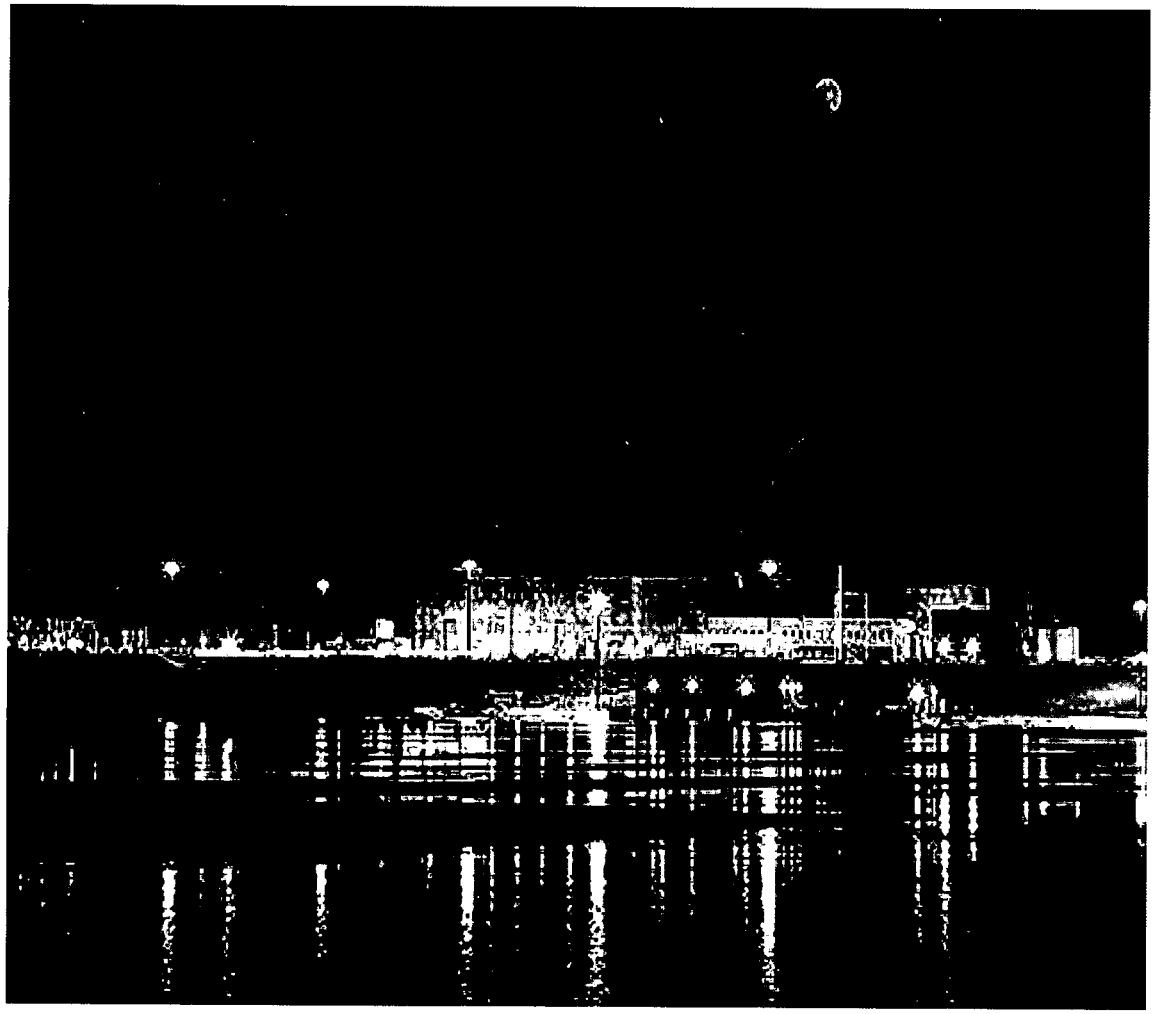
F. A. Kearney
Plant Manager
Clinton Power Station

EET/blf

Attachment

cc: Regional Administrator - NRC Region III
NRC Senior Resident Inspector – Clinton Power Station
Office of Nuclear Facility Safety – Illinois Emergency Management Agency

IE25



Docket No: 50-461

CLINTON POWER STATION

Annual Radiological Environmental Operating Report

1 January Through 31 December 2006

Prepared By

Teledyne Brown Engineering
Environmental Services

AmerGen
An Exelon Company

Clinton Power Station
Clinton, IL 61727

April 2007

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I. Summary and Conclusions

This report on the Radiological Environmental Monitoring Program conducted for the Clinton Power Station (CPS) by AmerGen covers the period 1 January 2006 through 31 December 2006. During that time period, 1,595 analyses were performed on 1,321 samples. In assessing all the data gathered for this report and comparing these results with preoperational data, it was concluded that the operation of CPS had no adverse radiological impact on the environment.

There were zero (0) radioactive liquid releases from CPS during 2006. Releases of gaseous radioactive materials were accurately measured in plant effluents. There was no gaseous effluent releases that approached the limits specified in the CPS Offsite Dose Calculation Manual (ODCM). The highest calculated offsite dose received by a member of the public due to the release of gaseous effluents from Clinton Power Station was 8.78 E-04 mR (or 0.000878 milli-Roentgen).

Surface, drinking, and ground water samples were analyzed for concentrations of tritium and gamma emitting nuclides. Drinking water samples were also analyzed for concentrations of gross beta and I-131. No fission or activation products were detected. Gross beta activities detected were consistent with those detected in previous years. No tritium activity was detected and the required lower limit of detection (LLD) was met.

Fish and shoreline sediment samples were analyzed for concentrations of gamma emitting nuclides. No fission or activation products were detected in fish or shoreline sediment samples.

Air particulate samples were analyzed for concentrations of gross beta and gamma emitting nuclides. Cosmogenic Be-7 was detected at levels consistent with those detected in previous years. No fission or activation products were detected.

High sensitivity I-131 analyses were performed on weekly air samples. All required LLDs were met.

Cow milk samples were analyzed for concentrations of I-131 and gamma emitting nuclides. All I-131 results were below the required LLDs with the exception of milk samples obtained on June 07, 2006 and June 21, 2006, as noted in the exceptions section. Concentrations of naturally occurring K-40 were consistent with those detected in previous years. No fission or activation products were found.

Food product samples were analyzed for concentrations of gross beta and gamma emitting nuclides. Gross beta activities detected were consistent with those detected in previous years. Concentrations of Cosmogenic Be-7 and naturally occurring K-40 were consistent with those detected in previous years. No fission or activation products were detected.

Grass samples were analyzed for concentrations of gamma emitting nuclides. Concentrations of Cosmogenic Be-7 and naturally occurring K-40 were consistent with those detected in previous years. No fission or activation products were detected.

Environmental gamma radiation measurements were performed quarterly using thermoluminescent dosimeters. Levels detected were consistent with those observed in previous years.

II. Introduction

The Clinton Power Station (CPS), consisting of one approximately 1140 MW gross electrical power output boiling water reactor is located in Harp Township, DeWitt County, Illinois. CPS is owned and operated by AmerGen Energy Company and became operational in 1987. Unit No. 1 went critical on 15 February 1987. The site encloses approximately 13,730 acres. This includes the 4,895 acre, man-made cooling lake and about 452 acres of property not owned by AmerGen. The plant is situated on approximately 150 acres. The cooling water discharge flume – which discharges to the eastern arm of the lake – occupies an additional 130 acres. Although the nuclear reactor, supporting equipment and associated electrical generation and distribution equipment lie in Harp Township, portions of the aforementioned 13,730 acre plot reside within Wilson, Rutledge, DeWitt, Creek, Nixon and Santa Anna Townships.

A Radiological Environmental Monitoring Program (REMP) for CPS was initiated in 1987. The preoperational period for most media covers the periods May 1980 through 27 February 1987 and was summarized in a separate report. This report covers those analyses performed by Teledyne Brown Engineering (TBE), Global Dosimetry, and Environmental Inc. (Midwest Labs) on samples collected during the period 1 January 2006 through 31 December 2006.

A. Objective of the REMP

The objectives of the REMP are to:

1. Provide data on measurable levels of radiation and radioactive materials in the site environs.

2. Evaluate the relationship between quantities of radioactive material released from the plant and resultant radiation doses to individuals from principal pathways of exposure.

B. Implementation of the Objectives

The implementation of the objectives is accomplished by:

1. Identifying significant exposure pathways.

2. Establishing baseline radiological data of media within those pathways.

3. Continuously monitoring those media before and during Station operation to assess Station radiological effects (if any) on man and the environment.

III. Program Description

A. Sample Collection

This section describes the general collection methods used by Environmental Inc. (Midwest Labs) to obtain environmental samples for the CPS REMP in 2006. Sample locations and descriptions can be found in Tables B–1 and B–2, and Figures B–1 through B–3, Appendix B. The sampling methods used by Environmental Inc. (Midwest Labs) are listed in Table B-2.

Aquatic Environment

The aquatic environment was evaluated by performing radiological analyses on samples of surface water, drinking water, well water, fish, and shoreline sediment. Two gallon water samples were collected monthly from continuous samplers located at three surface water locations (CL-90, CL-91 and CL-99) and one drinking water location (CL-14). A monthly grab sample was obtained from one surface water location (CL-13). Quarterly samples were obtained from two well water locations (CL-07D and CL-12). All samples were collected in new unused plastic bottles, which were rinsed at least twice with source water prior to collection. Fish samples comprising the flesh of largemouth bass, crappie, carp, and bluegill, the species most commonly harvested from the lakes by sporting fishermen, were collected semiannually at two locations, CL-19 and CL-105 (control). Shoreline sediment samples composed of recently deposited substrate were collected at one location semiannually, CL-07B.

Atmospheric Environment

The atmospheric environment was evaluated by performing radiological analyses on samples of air particulate, airborne iodine, milk, food produce and grass. Airborne iodine and particulate samples were collected and analyzed weekly at ten locations (CL-01, CL-02, CL-03, CL-04, CL-06, CL-07, CL-08, CL-11, CL-15, and CL-94). The control location was CL-11. Airborne iodine and particulate samples were obtained at each location, using a vacuum pump with charcoal and glass fiber filters attached. The pumps were run continuously and sampled air at the rate of approximately one cubic foot per minute. The filters were replaced weekly and sent to the laboratory for analysis.

Milk samples were collected biweekly at one location (CL-116) from May through October, and monthly from November through April to coincide with the grazing season. All samples were collected in new unused

plastic bottles from the bulk tank at each location, preserved with sodium bisulfite, and shipped promptly to the laboratory.

Food products were collected once a month from June through September at four locations (CL-114, CL-115, CL-117 and CL-118). The control location was CL-114. Various broadleaf vegetable samples were collected and placed in new unused plastic bags, and sent to the laboratory for analysis.

Grass samples were collected biweekly at four locations (CL-01, CL-02, CL-08 and CL-116) from May through October. The control location was CL-116. All samples were collected in new unused plastic bags and sent to the laboratory for analysis.

Ambient Gamma Radiation

Direct radiation measurements were made using Panasonic 814 calcium sulfate ($CaSO_4$) thermoluminescent dosimeters (TLD). The TLD locations were placed around the CPS site as follows:

An inner ring consisting of 16 locations (CL-01, CL-05, CL-22, CL-23, CL-24, CL-34, CL-35, CL-36, CL-42 CL-43, CL-44, CL-45, CL-46, CL-47, CL-48 and CL-63) near and within the site perimeter.

An outer ring consisting of 16 locations (CL-51, CL-52, CL-53, CL-54, CL-55, CL-56, CL-57, CL-58, CL-60, CL-61, CL-76, CL-77, CL-78, CL-79, CL-80 and CL-81) extending to approximately 5 miles from the site designed to measure possible exposures to close-in population.

A special interest set consisting of seven locations (CL-37, CL-41, CL-49, CL-64, CL65, CL-74 and CL-75) representing special interest areas.

A supplemental set consisting of 14 locations (CL-02, CL-03, CL-04, CL-06, CL-07, CL-08, CL-15, CL-33, CL-84, CL-90, CL-91, CL-97, CL-99, and CL-114).

The balance of 1 location (CL-11) representing the control station.

The specific TLD locations were determined by the following criteria:

1. The presence of relatively dense population;

2. Site meteorological data taking into account distance and elevation for each of the sixteen–22 1/2 degree sectors around the site, where estimated annual dose from CPS, if any, would be most

significant;

3. On hills free from local obstructions and within sight of the vents (where practical);

4. And near the closest dwelling to the vents in the prevailing downwind direction.

Two TLDs – each composed of two $CaSO_4$ thermoluminescent phosphors enclosed in plastic – were placed at each location in a vented PVC conduit located approximately three feet above ground level. The TLDs were exchanged quarterly and sent to Global Dosimetry for analysis.

B. Sample Analysis

This section describes the general analytical methodologies used by TBE and Environmental Inc. (Midwest Labs) to analyze the environmental samples for radioactivity for the CPS REMP in 2006. The analytical procedures used by the laboratories are listed in Table B-2.

In order to achieve the stated objectives, the current program includes the following analyses:

1. Concentrations of beta emitters in drinking water and air particulates.

2. Concentrations of gamma emitters in surface, drinking and well water, air particulates, milk, fish, grass, sediment and vegetables.

3. Concentrations of tritium in surface, drinking and well water.

4. Concentrations of I-131 in air, milk, vegetables and drinking water.

5. Ambient gamma radiation levels at various site environs.

C. Data Interpretation

The radiological and direct radiation data collected prior to CPS becoming operational was used as a baseline with which these operational data were compared. For the purpose of this report, CPS was considered operational at initial criticality. In addition, data were compared to previous years' operational data for consistency and trending. Several factors were important in the interpretation of the data:

1. Lower Limit of Detection and Minimum Detectable Concentration

The lower limit of detection (LLD) was defined as the smallest concentration of radioactive material in a sample that would yield a net count (above background) that would be detected with only a 5% probability of falsely concluding that a blank observation represents a "real" signal. The LLD was intended as a before the fact estimate of a system (including instrumentation, procedure and sample type) and not as an after the fact criteria for the presence of activity. All analyses were designed to achieve the required CPS detection capabilities for environmental sample analysis.

2. Net Activity Calculation and Reporting of Results

Net activity for a sample was calculated by subtracting background activity from the sample activity. Since the REMP measures extremely small changes in radioactivity in the environment, background variations may result in sample activity being lower than the background activity effecting a negative number. An MDC was reported in all cases where positive activity was not detected.

Gamma spectroscopy results for each type of sample were grouped as follows:

For surface water, drinking water, well water, fish, sediment and milk, 14 nuclides, Be-7, K-40, Mn-54, Co-58, Fe-59, Co-60, Zn-65, Zr-95, Nb-95, I-131, Cs-134, Cs-137, Ba-140, and La-140 were reported.

For grass and vegetation 14 nuclides, Be-7, K-40, Mn-54, Co-58, Fe-59, Co-60, Zn-65, Zr-95, Nb-95, I-131, Cs-134, Cs-137, Ba-140, and La-140 were reported.

For air particulate 7 nuclides, Be-7, K-40, Co-60, Nb-95, Zr-95, Cs-134, and Cs-137 were reported.

Means and standard deviations of the results were calculated. The standard deviations represent the variability of measured results for different samples rather than single analysis uncertainty.

D. Program Exceptions

The exceptions described below are those that are considered 'deviations' from the Radiological Environmental Monitoring Program as required by

the Station's ODCM. By definition, 'deviations' are permitted as delineated within NUREG-0133, "Preparation of Radiological Effluent Technical Specifications for Nuclear Power Plants", October 1978, and within Radiological Assessment Branch Technical Position, Revision 1, November 1979, which states...."Deviations are permitted from the required sampling schedule if specimens are unobtainable due to hazardous conditions, seasonal unavailability, malfunction of automatic sampling equipment and other legitimate reasons".... The below section addresses the reporting requirements found within Section 7.1 of the Station's ODCM.

May 24, 2006 – August 30, 2006 IR00545832

The May 24, 2006 grass and August 30, 2006 vegetation I-131 LLD of 60 pCi/kg, the May 31, 2006 surface water I-131 LLD of 15.0 pCi/L and the June 07, 2006 and June 21, 2006 milk I-131 LLD of 1.0 pCi/L were unachievable as a result of degraded performance by vendor supplied filter paper used in laboratory analysis (which was identified on vender Non-Conformance report NCR 06-13).

Although the October 3, 2006 I-131 LLD was achieved for two (2) of the broadleaf vegetables at Garden Control Location CL-114 and one broadleaf vegetable at Garden Indicator Location CL-118, the report was issued past the due date. (Reference vendor Non-Conformance Report NCR 06-16).

July 26, 2006 IR00513641

Environmental Air Sampler CL-15 was found not running during the performance of the weekly surveillance. Sample volume calculations revealed that the minimum sample volume had not been achieved. Upon investigation, it was determined a seized motor resulted in the inoperable condition of this sample station.

August 28, 2006 IR00524467

During the performance of a routine inspection, Water Compositor CL-91 was observed to have intermittent flow due to clogging and restricting water flow. Supplement grab samples were obtained as an interim measure.

October 18, 2006 IR00545852

Composite Water Sampler, CL-99 was found with an error message stating 'Broken Distributor Arm' and was unable to collect programmed composite aliquot sampling. Supplement grab samples were obtained as an interim measure.

November 15, 2006 IR00561223

During the performance of the weekly surveillance, Environmental Air Sampler CL-1 was found not running due to a mouse chewing the incoming wires. Sample volume calculations revealed that the minimum sample volume had not been achieved.

November 22, 2006 IR00561223

Due to delays in rewiring and coordinating with the utility to secure power, Environmental Air Sample CL-1, although returned to service, was unable to achieve minimum required air volume.

December 6, 2006 IR00566094

During the performance of weekly surveillance, Environmental Air Sampling Stations, CI-1, CI-94, CI-15, CI-4, CI-6, were found to be operable, but sample volume calculations revealed that the minimum sample volume had not been achieved. This was due to an ice storm causing 500,000 homes to lose electricity.

December 12, 2006 IR00570276

During the performance of the weekly surveillance, Environmental Air Sampling stations CL-4 and CL-6 were found not running due to intermittent power interruptions as a result of restoring electrical power lines throughout the state. Sample volume calculations revealed that the minimum sample volume had not been achieved.

December 20, 2006 IR00571896

Composite Water Sampler, CL-99, was found locked up and was unable to collect programmed composite aliquot sampling. Upon further investigation, it appears that intermittent power loss at this station resulted in a lock up of the unit.

Each program exception was reviewed to understand the causes of the program exception. Sampling and maintenance errors were reviewed with the personnel involved to prevent recurrence. Occasional equipment breakdowns and power outages were unavoidable.

The overall sample recovery rate indicates that the appropriate procedures and equipment are in place to assure reliable program implementation.

E. Program Changes

There were no Program Changes at the Clinton Power Station in 2006 regarding the Station's Radiological Environmental Monitoring Program (REMP). However, Clinton, in agreement with NRC Region III, National Energy Institute (NEI) and Exelon Nuclear, has provided – via Appendix E – the results from out participation in a fleet wide initiative; Tritium Assessment / Radioactive Groundwater Protection Plan. Clinton has included new Monitoring Wells with their subsequent analysis that was performed in 2006.

IV. Results and Discussion

A. Aquatic Environment

1. Surface Water

Samples were taken hourly from a continuous compositor at three locations (CL-90, CL-91 and CL-99) on a monthly schedule and grab samples were taken monthly from one station (CL-13). The following analyses were performed.

Iodine-131

Monthly samples from location CL-90 were analyzed for I-131 activity (Table C-I.1, Appendix C). The required LLD was met.

Tritium

Monthly samples from all locations were composited quarterly and analyzed for tritium activity (Table C–I.2, Appendix C). The required LLD was met.

Gamma Spectrometry

Samples from all locations were analyzed for gamma emitting nuclides (Table C–I.3, Appendix C). Naturally occurring K-40 was found in one sample at location CL-13 and two samples at location CL-99. No other nuclides were detected and all required LLDs were met.

2. Drinking Water

Monthly samples were collected from a continuous water sampler

at one location (CL-14). The following analyses were performed:

Gross Beta

Monthly samples were analyzed for concentrations of gross beta (Tables C–II.1, Appendix C). The values ranged from <1.7 to 2.2 pCi/l. Concentrations detected were consistent with those detected in previous years.

Tritium

Monthly samples were composited quarterly and analyzed for tritium activity (Table C–II.2, Appendix C). The required LLD was met.

Gamma Spectrometry

Monthly samples were analyzed for gamma emitting nuclides (Table C–II.3, Appendix C).). Naturally occurring K-40 was found in two samples at location CL-14. No other nuclides were detected and all required LLDs were met.

3. Ground Water

Quarterly grab samples were collected at two locations (CL-7D and CL-12, consisting of CL-12R and CL-12T). The following analyses were performed:

Tritium

Samples from all locations were analyzed for tritium activity (Table C–III.1, Appendix C). The required LLD was met.

Gamma Spectrometry

Samples from all locations were analyzed for gamma emitting nuclides (Table C–III.2, Appendix C). No nuclides were detected and all required LLDs were met.

4. Fish

Fish samples comprised of carp, bass, bluegill, crappie and channel catfish were collected at two locations (CL-19 and CL-105) semiannually. The following analysis was performed:

Gamma Spectrometry

The edible portion of fish samples from both locations was analyzed for gamma emitting nuclides (Table C–IV.1, Appendix C). Naturally occurring K-40 was found at both stations. No fission or activation products were found. No other nuclides were detected and the required LLDs were met.

5. Shoreline Sediment

Aquatic shoreline sediment samples were collected at one location (CL-07B) semiannually. The following analysis was performed:

Gamma Spectrometry

Shoreline sediment samples were analyzed for gamma emitting nuclides (Table C–V.1, Appendix C). Naturally occurring K-40 was detected in both samples. No fission or activation products were found. No other nuclides were detected and the required LLDs were met.

B. Atmospheric Environment

1. Airborne

a. Air Particulates

Continuous air particulate samples were collected from 10 locations on a weekly basis. The 10 locations were separated into three groups: Group I represents locations within one mile of the CPS site boundary (CL-02, CL-03, CL-04, CL-06, CL-15, and CL-94). Group II represents the locations at an intermediate distance within one to five miles of CPS (CL-01, CL-07, and CL-08), and Group III represents the control location greater than five miles from CPS (CL-11). The following analyses were performed:

Gross Beta

Weekly samples were analyzed for concentrations of beta emitters (Table C–VI.1 and C–VI.2 and Figure C–1, Appendix C).

Detectable gross beta activity was observed at all locations. Comparison of results among the three groups aid in

determining the effects, if any, resulting from the operation of CPS. The results from the On-Site locations (Group I) ranged from 5 to 37 E–3 pCi/m^3 with a mean of 20 E–3 pCi/m^3. The results from the Intermediate Distance location (Group II) ranged from 7 to 34 E–3 pCi/m^3 with a mean of 19 E–3 pCi/m^3. The results from the Control locations (Group III) ranged from 10 to 39 E–3 pCi/m^3 with a mean of 21 E–3 pCi/m^3. Comparison of the 2006 air particulate data with previous years data indicate no effects from the operation of CPS (Figure C–5, Appendix C). In addition a comparison of the weekly mean values for 2006 indicate no notable differences among the three groups.

Gamma Spectrometry

Weekly samples were composited quarterly and analyzed for gamma emitting nuclides (Table C–VI.3, Appendix C). Naturally occurring Be-7 due to cosmic ray activity was detected in all samples. Potassium-40 was detected in three samples. No other nuclides were detected and all required LLDs were met.

b. Airborne Iodine

Continuous air samples were collected from 10 locations (CL-01, CL-02, CL-03, CL-04, CL-06, CL-07, CL-08, CL-11, CL-15 and CL-94) and analyzed weekly for I-131 (Table C-VII.1, Appendix C). All results were less than the MDC and the required LLD was met.

2. Terrestrial

a. Milk

Samples were collected from one location (CL-116) biweekly May through October and monthly November through April, to coincide with the grazing season. The following analyses were performed:

Iodine-131

Milk samples were analyzed for concentrations of I-131 (Table C–VIII.1, Appendix C). The required LLD was met.

Gamma Spectrometry

Each milk sample was analyzed for concentrations of gamma emitting nuclides (Table C–VIII.2, Appendix C). Naturally occurring K-40 activity was found in all samples. No other nuclides were detected and all required LLDs were met.

b. Food Products

Samples were collected from four locations (CL-114, CL-115, CL-117 and CL-118) monthly June through September. The following analyses were performed:

Gamma Spectrometry

Each food product sample was analyzed for concentrations of gamma emitting nuclides (Table C–IX.1, Appendix C).

Naturally occurring Be–7 due to cosmic ray activity was detected in 47 of 48 samples. Naturally occurring K-40 activity was found in all samples. No other nuclides were detected and all required LLDs were met.

b. Grass

Samples were collected from four locations (CL-01, CL-02, CL-08, and CL-116) biweekly May through October. The following analyses were performed:

Gamma Spectrometry

Each grass sample was analyzed for concentrations of gamma emitting nuclides (Table C–IX.2, Appendix C).

Naturally occurring Be–7 due to cosmic ray activity was detected in all 52 samples. Naturally occurring K-40 activity was found in 51 of 52 samples. No other nuclides were detected and all required LLDs were met.

C. Ambient Gamma Radiation

Ambient gamma radiation levels were measured utilizing Panasonic 814 ($CaSO_4$) thermoluminescent dosimeters. Fifty-four TLD locations were established around the site. Results of TLD measurements are listed in

Tables C–X.1 to C–X.3, Appendix C.

A total of 216 TLD measurements were made in 2006. The average dose from the inner ring was 21.3 mR/quarter. The average dose from the outer ring was 21.3 mR/quarter. The average dose from the special interest group was 21.1 mR/quarter. The average dose from the supplemental group was 20.3 mR/quarter. The quarterly measurements ranged from 16.4 to 24.5 mR/quarter. The inner ring and outer ring measurements compared well to the control station, CL-11, which ranged from 18.2 mR/quarter to 21.9 mR/quarter with an average measurement of 20.1 mR/quarter. A comparison of the Inner Ring and Outer Ring data to the Control Location data indicate that the ambient gamma radiation levels from all the locations were comparable. The historical ambient gamma radiation data from the control location were plotted along with similar data from the Inner and Outer Ring Locations (Figure C–2, Appendix C).

D. Land Use Survey

A Land Use Survey conducted during the July through October 2006 growing season around the Clinton Power Station (CPS) was performed by Environmental Inc. (Midwest Labs) for AmerGen to comply with Clinton's Offsite Dose Calculation Manual, section 5.2. The purpose of the survey was to document the nearest resident, milk producing animal and garden of greater than 538 ft^2 in each of the sixteen 22 ½ degree sectors around the site. The distance and direction of all locations from the CPS Station HVAC vent stack were positioned using Global Positioning System (GPS) technology. There were no changes required to the CPS REMP, as a result of this survey. The results of this survey are summarized below.

Distance in Miles from the CPS Station HVAC Vent Stack			
Sector	Residence Miles	Garden Miles	Milk Farm Miles
1 N	0.9	0.9	0.9
2 NNE	1.0	2.3	2.3
3 NE	1.3	2.2	>5.0
4 ENE	1.8	2.6	>5.0
5 E	1.0	>5.0	>5.0
6 ESE	3.2	3.3	>5.0
7 SE	2.4	>5.0	>5.0
8 SSE	1.7	2.8	>5.0
9 S	3.0	3.0	4.1
10 SSW	2.9	>5.0	3.4
11 SW	0.7	>5.0	>5.0
12 WSW	1.6	2.9	3.4
13 W	1.2	1.2	>5.0
14 WNW	1.6	1.6	>5.0
15 NW	1.6	>5.0	>5.0
16 NNW	1.7	1.3	1.3

E. Summary of Results – Inter-Laboratory Comparison Program

The primary and secondary laboratories analyzed Performance Evaluation (PE) samples of air particulate, air iodine, milk, soil, vegetation and water matrices for 28 analytes (Appendix D). The PE samples, supplied by Analytics Inc., Environmental Resource Associates (ERA) and DOE's Mixed Analyte Performance Evaluation Program (MAPEP), were evaluated against the following pre-set acceptance criteria:

1. Analytics Evaluation Criteria

Analytics' evaluation report provides a ratio of TBE's result and

Analytics' known value. Since flag values are not assigned by Analytics, TBE-ES evaluates the reported ratios based on internal QC requirements, which are based on the DOE MAPEP criteria.

2. ERA Evaluation Criteria

   ERA's evaluation report provides an acceptance range for control and warning limits with associated flag values. ERA's acceptance limits are established per the USEPA, NELAC, state specific PT program requirements or ERA's SOP for the Generation of Performance Acceptance Limits, as applicable. The acceptance limits are either determined by a regression equation specific to each analyte or a fixed percentage limit promulgated under the appropriate regulatory document.

3. DOE Evaluation Criteria

   MAPEP's evaluation report provides an acceptance range with associated flag values.

   The MAPEP defines three levels of performance: Acceptable (flag = "A"), Acceptable with Warning (flag = "W"), and Not Acceptable (flag = "N"). Performance is considered acceptable when a mean result for the specified analyte is ± 20% of the reference value. Performance is acceptable with warning when a mean result falls in the range from ± 20% to ± 30% of the reference value (i.e., 20% < bias < 30%). If the bias is greater than 30%, the results are deemed not acceptable.

For the primary laboratory, 24 out of 28 analytes met the specified acceptance criteria. Four samples did not meet the specified acceptance criteria for the following reasons:

1. Teledyne Brown Engineering's MAPEP Series 15 January 2006 soil Cs-134 was evaluated as a false positive, although TBE considered the result a non-detect due to the peak not being identified by the gamma software. MAPEP suggests the Bi-214 is not being differentiated from the Cs-134 peak. When the ratio of activity to uncertainty exceeds 3, TBE will use a key line analysis rather than a weighted mean analysis when evaluating MAPEP non-detects.

2. Teledyne Brown Engineering's MAPEP Series 15 January 2006 Sr-90 in vegetation result of 2.22 Bq/kg exceeded the upper acceptance range of 2.029 Bq/kg. The samples were analyzed in triplicate and the results averaged. One high result of 2.43 Bq/kg

biased the submitted results on the high side. TBE was unable to determine the cause for the higher result. The Sr-90 in vegetation results for MAPEP Series 14 and MAPEP Series 16 were acceptable. No client samples were analyzed during the MAPEP Series 14 time period.

3. Teledyne Brown Engineering's MAPEP Series 15 January 2006 Pu-238 and Pu-239/240 in vegetation result of 2.22 Bq/kg failed the required acceptance ranges. TBE was evaluating the current preparation method for vegetation samples, which proved insufficient for the analyses. TBE does not perform isotopic Pu on client's vegetation samples.

For the secondary laboratory, 20 out of 25 analytes met the specified acceptance criteria. Seven samples did not meet the specified acceptance criteria for the following reasons:

1. Environmental Inc.'s ERA November 2006 water I-131 result of 28.4 pCi/L exceeded the upper control limit of 27.3 pCi/L. The reported result was an average of three analyses, results ranged from 25.36 pCi/L to 29.23 pCi/L. A fourth analysis was performed, with a result of 24.89 pCi/L.

2. Environmental Inc.'s MAPEP January 2006 vegetation Pu-238 result of 0.08 Bq/sample exceeded the lower control limit of 0.10 Bq/sample due to incomplete dissolution of the sample.

3. Environmental Inc.'s MAPEP January 2006 air particulate Pu-238 result of 0.03 Bq/sample exceeded the lower control limit of 0.05 Bq/sample due to incomplete dissolution of the sample.

4. Environmental Inc.'s MAPEP January 2006 soil Pu-238, Pu-239/240, U-233/234 and U-238 results of 14.6, 14.6, 13.5 and 15.4 Bq/kg, respectively, exceeded the lower control limits of 42.81, 32.09, 25.9 and 27.2 Bq/kg, respectively, due to incomplete dissolution of the sample.

The Inter-Laboratory Comparison Program provides evidence of the counting systems and methods, and that the laboratories are producing accurate and reliable data.

V. References

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Procedural Specifications for Thermoluminescent Dosimetry," ANSI N545-1975.

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7. International Commission on Radiation Protection, Publication 2, "Report of Committee II on Permissible Dose for Internal Radiation," (1959) with 1962 Supplement issued in ICRP Publication 6; Publication 9, "Recommendations on Radiation Exposure," (1965); ICRP Publication 7 (1965), amplifying specific recommendations of Publication 26 (1977).

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12. National Council on Radiation Protection and Measurements, Report No. 44, "Krypton-85 in the Atmosphere – Accumulation, Biological Significance, and Control Technology," July 1975.

13. National Council on Radiation Protection and Measurements, Report No. 91, "Recommendations on Limits for Exposure to Ionizing Radiation," June 1987.

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15. National Research Council, 1990, Committee on Biological Effects of Ionizing Radiation (BEIR V), Board on Radiation Effects Research on Life Sciences, "The Effects of Exposure to Low Levels of Ionizing Radiation".

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

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20. United States Nuclear Regulatory Commission, Regulatory Guide 4.15, "Quality Assurance for Radiological Monitoring Programs (Norm Operations) – Effluent Streams and the Environment," Revision 1, February 1979.

21. Technical Specifications, Clinton Power Station, Unit No. 1, Docket No. 50-461, Office of Nuclear Reactor Regulation, 1986. Facility Operating License Number NPF-62.

22. Clinton Power Station, Updated Safety Analysis Report.

23. Clinton Power Station, Unit 1, Off-Site Dose Calculation Manual.

APPENDIX A

RADIOLOGICAL ENVIRONMENTAL MONITORING REPORT SUMMARY

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR THE CLINTON POWER STATION, 2006

Name of Facility: CLINTON POWER STATION — **DOCKET NUMBER:** 50-461

Location of Facility: DEWITT COUNTY, IL — **REPORTING PERIOD:** ANNUAL 2006

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSES PERFORMED	NUMBER OF ANALYSES PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (F) RANGE	CONTROL LOCATION MEAN (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN: MEAN (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN: STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
SURFACE WATER (PCI/LITER)	I-131 (LOW LVL)	12	1	1.2 (0/12) (< 0.3/< 6.1)	(/) (/)	1.2 (0/12) (< 0.3/< 6.1)	CL-90 INDICATOR DISCHARGE FLUME 0.4 MILES SE OF SITE	0
	H-3	16	2000	169 (0/16) (<127/<196)	N/A	171 (0/4) (<131/<194)	CL-13 INDICATOR SALT CREEK BRIDGE ON RT. 10 3.6 MILES SW OF SITE	0
	GAMMA	48						
	BE-7		N/A	41 (0/48) (<13/<72)	N/A	44 (0/12) (<14/<72)	CL-91 INDICATOR PARNELL BOAT ACCESS 6.1 MILES ENE OF SITE	0
	K-40		N/A	63 (3/48) (<11/<139)	N/A	69 (0/12) (<14/<139)	CL-90 INDICATOR DISCHARGE FLUME 0.4 MILES SE OF SITE	0
	MN-54		15	5 (0/48) (<1/<9)	N/A	5 (0/12) (<1/<9)	CL-99 INDICATOR NORTH FORK ACCESS 3.5 MILES NNE OF SITE	0
	CO-58		15	5 (0/48) (<1/<8)	N/A	5 (0/12) (<2/<8)	CL-91 INDICATOR PARNELL BOAT ACCESS 6.1 MILES ENE OF SITE	0
	FE-59		30	10 (0/48) (<3/<18)	N/A	11 (0/12) (<4/<18)	CL-91 INDICATOR PARNELL BOAT ACCESS 6.1 MILES ENE OF SITE	0
	CO-60		15	5 (0/48) (<1/<10)	N/A	5 (0/12) (<1/<10)	CL-13 INDICATOR SALT CREEK BRIDGE ON RT. 10 3.6 MILES SW OF SITE	0

THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING BOTH THE MDAs AND THE POSITIVE VALUES
FRACTION OF DETECTABLE MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES (F)

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SURFACE WATER (PCI/LITER)	ZN-65		30	11 (0/48) (<2/<26)	N/A	11 (0/12) (<2/<22)	CL-99 INDICATOR NORTH FORK ACCESS 3.5 MILES NNE OF SITE	0
	NB-95		15	5 (0/48) (<2/<10)	N/A	5 (0/12) (<2/<10)	CL-13 INDICATOR SALT CREEK BRIDGE ON RT. 10 3.6 MILES SW OF SITE	0
	ZR-95		30	8 (0/48) (<3/<16)	N/A	9 (0/12) (<3/<15)	CL-99 INDICATOR NORTH FORK ACCESS 3.5 MILES NNE OF SITE	0
	CS-134		15	5 (0/48) (<1/<14)	N/A	6 (0/12) (<1/<13)	CL-99 INDICATOR NORTH FORK ACCESS 3.5 MILES NNE OF SITE	0
	CS-137		18	5 (0/48) (<1/<9)	N/A	5 (0/12) (<1/<9)	CL-99 INDICATOR NORTH FORK ACCESS 3.5 MILES NNE OF SITE	0
	BA-140		60	28 (0/48) (<10/<44)	N/A	30 (0/12) (<16/<41)	CL-99 INDICATOR NORTH FORK ACCESS 3.5 MILES NNE OF SITE	0
	LA-140		15	9 (0/48) (<3/<15)	N/A	9 (0/12) (<5/<14)	CL-99 INDICATOR NORTH FORK ACCESS 3.5 MILES NNE OF SITE	0
	CE-144		N/A	33 (0/48) (<9/<57)	N/A	35 (0/12) (<9/<56)	CL-91 INDICATOR PARNELL BOAT ACCESS 6.1 MILES ENE OF SITE	0

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DRINKING WATER (PCI/LITER)	GR-B	12	4	2.0 (4/12) (< 1.7/ 2.2)	N/A	2.0 (4/12) (< 1.7/ 2.2)	CL-14 INDICATOR STATION PLANT SERVICE BLDG ONSITE	0
	H-3	4	2000	169 (0/4) (<130/<190)	N/A	169 (0/4) (<130/<190)	CL-14 INDICATOR STATION PLANT SERVICE BLDG ONSITE	0
	GAMMA	12						
	BE-7		N/A	42 (0/12) (<13/<67)	N/A	42 (0/12) (<13/<67)	CL-14 INDICATOR STATION PLANT SERVICE BLDG ONSITE	0
	K-40		N/A	69 (2/12) (<26/<128)	N/A	69 (2/12) (<26/<128)	CL-14 INDICATOR STATION PLANT SERVICE BLDG ONSITE	0
	MN-54		15	5 (0/12) (<1/<8)	N/A	5 (0/12) (<1/<8)	CL-14 INDICATOR STATION PLANT SERVICE BLDG ONSITE	0
	CO-58		15	5 (0/12) (<1/<8)	N/A	5 (0/12) (<1/<8)	CL-14 INDICATOR STATION PLANT SERVICE BLDG ONSITE	0
	FE-59		30	10 (0/12) (<3/<16)	N/A	10 (0/12) (<3/<16)	CL-14 INDICATOR STATION PLANT SERVICE BLDG ONSITE	0
	CO-60		15	4 (0/12) (<1/<8)	N/A	4 (0/12) (<1/<8)	CL-14 INDICATOR STATION PLANT SERVICE BLDG ONSITE	0

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DRINKING WATER (PCI/LITER)	ZN-65		30	10 (0/12) (<2/<19)	N/A	10 (0/12) (<2/<19)	CL-14 INDICATOR STATION PLANT SERVICE BLDG ONSITE	0
	NB-95		15	5 (0/12) (<1/<9)	N/A	5 (0/12) (<1/<9)	CL-14 INDICATOR STATION PLANT SERVICE BLDG ONSITE	0
	ZR-95		30	8 (0/12) (<3/<13)	N/A	8 (0/12) (<3/<13)	CL-14 INDICATOR STATION PLANT SERVICE BLDG ONSITE	0
	CS-134		15	5 (0/12) (<1/<11)	N/A	5 (0/12) (<1/<11)	CL-14 INDICATOR STATION PLANT SERVICE BLDG ONSITE	0
	CS-137		18	5 (0/12) (<1/<8)	N/A	5 (0/12) (<1/<8)	CL-14 INDICATOR STATION PLANT SERVICE BLDG ONSITE	0
	BA-140		60	28 (0/12) (<13/<39)	N/A	28 (0/12) (<13/<39)	CL-14 INDICATOR STATION PLANT SERVICE BLDG ONSITE	0
	LA-140		15	9 (0/12) (<4/<14)	N/A	9 (0/12) (<4/<14)	CL-14 INDICATOR STATION PLANT SERVICE BLDG ONSITE	0
	CE-144		N/A	32 (0/12) (<8/<55)	N/A	32 (0/12) (<8/<55)	CL-14 INDICATOR STATION PLANT SERVICE BLDG ONSITE	0

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GROUND WATER (PCI/LITER)	H-3	12	2000	169 (0/12) (<153/<180)	N/A	174 (0/4) (<167/<180)	CL-12R INDICATOR DEWITT PUMP HOUSE 1.6 MILES E OF SITE	0
	GAMMA	12						
	BE-7		N/A	51 (0/12) (<36/<73)	N/A	56 (0/4) (<44/<66)	CL-12T INDICATOR DEWITT PUMP HOUSE 1.6 MILES E OF SITE	0
	K-40		N/A	85 (0/12) (<37/<119)	N/A	100 (0/4) (<86/<110)	CL-12T INDICATOR DEWITT PUMP HOUSE 1.6 MILES E OF SITE	0
	MN-54		15	5 (0/12) (<4/<9)	N/A	6 (0/4) (<4/<9)	CL-12R INDICATOR DEWITT PUMP HOUSE 1.6 MILES E OF SITE	0
	CO-58		15	6 (0/12) (<4/<8)	N/A	6 (0/4) (<5/<8)	CL-12R INDICATOR DEWITT PUMP HOUSE 1.6 MILES E OF SITE	0
	FE-59		30	13 (0/12) (<8/<17)	N/A	14 (0/4) (<11/<17)	CL-12T INDICATOR DEWITT PUMP HOUSE 1.6 MILES E OF SITE	0
	CO-60		15	6 (0/12) (<4/<9)	N/A	6 (0/4) (<5/<9)	CL-12R INDICATOR DEWITT PUMP HOUSE 1.6 MILES E OF SITE	0
	ZN-65		30	13 (0/12) (<9/<27)	N/A	15 (0/4) (<10/<27)	CL-12R INDICATOR DEWITT PUMP HOUSE 1.6 MILES E OF SITE	0

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GROUND WATER (PCI/LITER)	NB-95		15	6 (0/12) (<5/<10)	N/A	7 (0/4) (<6/<8)	CL-12T INDICATOR DEWITT PUMP HOUSE 1.6 MILES E OF SITE	0
	ZR-95		30	10 (0/12) (<7/<15)	N/A	12 (0/4) (<11/<15)	CL-12T INDICATOR DEWITT PUMP HOUSE 1.6 MILES E OF SITE	0
	CS-134		15	6 (0/12) (<4/<13)	N/A	7 (0/4) (<4/<13)	CL-12R INDICATOR DEWITT PUMP HOUSE 1.6 MILES E OF SITE	0
	CS-137		18	6 (0/12) (<4/<8)	N/A	6 (0/4) (<5/<8)	CL-12T INDICATOR DEWITT PUMP HOUSE 1.6 MILES E OF SITE	0
	BA-140		60	32 (0/12) (<24/<42)	N/A	35 (0/4) (<33/<37)	CL-12T INDICATOR DEWITT PUMP HOUSE 1.6 MILES E OF SITE	0
	LA-140		15	11 (0/12) (<8/<14)	N/A	12 (0/4) (<9/<14)	CL-12T INDICATOR DEWITT PUMP HOUSE 1.6 MILES E OF SITE	0
	CE-144		N/A	40 (0/12) (<28/<60)	N/A	43 (0/4) (<32/<55)	CL-12T INDICATOR DEWITT PUMP HOUSE 1.6 MILES E OF SITE	0
FISH (PCI/KG WET)	GAMMA	16						
	BE-7		N/A	370 (0/8) (<179/<580)	478 (0/8) (<379/<686)	478 (0/8) (<379/<686)	CL-105 CONTROL LAKE SHELBYVILLE 50 MILES S OF SITE	0

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FISH (PCI/KG WET)	K-40		N/A	3506 (8/8) (2,640/4,890)	3755 (8/8) (3,030/5,100)	3755 (8/8) (3,030/5,100)	CL-105 CONTROL LAKE SHELBYVILLE 50 MILES S OF SITE	0
	MN-54		130	40 (0/8) (<12/<71)	46 (0/8) (<24/<76)	46 (0/8) (<24/<76)	CL-105 CONTROL LAKE SHELBYVILLE 50 MILES S OF SITE	0
	CO-58		130	41 (0/8) (<18/<72)	55 (0/8) (<38/<79)	55 (0/8) (<38/<79)	CL-105 CONTROL LAKE SHELBYVILLE 50 MILES S OF SITE	0
	FE-59		260	95 (0/8) (<45/<167)	130 (0/8) (<99/<176)	130 (0/8) (<99/<176)	CL-105 CONTROL LAKE SHELBYVILLE 50 MILES S OF SITE	0
	CO-60		130	38 (0/8) (<11/<71)	46 (0/8) (<24/<76)	46 (0/8) (<24/<76)	CL-105 CONTROL LAKE SHELBYVILLE 50 MILES S OF SITE	0
	ZN-65		260	89 (0/8) (<28/<172)	109 (0/8) (<57/<184)	109 (0/8) (<57/<184)	CL-105 CONTROL LAKE SHELBYVILLE 50 MILES S OF SITE	0
	NB-95		N/A	43 (0/8) (<19/<66)	59 (0/8) (<47/<82)	59 (0/8) (<47/<82)	CL-105 CONTROL LAKE SHELBYVILLE 50 MILES S OF SITE	0
	ZR-95		N/A	78 (0/8) (<32/<147)	97 (0/8) (<64/<145)	97 (0/8) (<64/<145)	CL-105 CONTROL LAKE SHELBYVILLE 50 MILES S OF SITE	0

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Name of Facility: CLINTON POWER STATION — **DOCKET NUMBER:** 50-461

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MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSES PERFORMED	NUMBER OF ANALYSES PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (F) RANGE	CONTROL LOCATION MEAN (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN: MEAN (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN: STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
FISH (PCI/KG WET)	CS-134		100	42 (0/8) (<12/<78)	48 (0/8) (<26/<82)	48 (0/8) (<26/<82)	CL-105 CONTROL LAKE SHELBYVILLE 50 MILES S OF SITE	0
	CS-137		100	39 (0/8) (<12/<69)	46 (0/8) (<24/<80)	46 (0/8) (<24/<80)	CL-105 CONTROL LAKE SHELBYVILLE 50 MILES S OF SITE	0
	BA-140		N/A	574 (0/8) (<260/<947)	1127 (0/8) (<250/<2,140)	1127 (0/8) (<250/<2,140)	CL-105 CONTROL LAKE SHELBYVILLE 50 MILES S OF SITE	0
	LA-140		N/A	173 (0/8) (<74/<285)	361 (0/8) (<80/<684)	361 (0/8) (<80/<684)	CL-105 CONTROL LAKE SHELBYVILLE 50 MILES S OF SITE	0
	CE-144		N/A	228 (0/8) (<64/<528)	253 (0/8) (<140/<463)	253 (0/8) (<140/<463)	CL-105 CONTROL LAKE SHELBYVILLE 50 MILES S OF SITE	0
SEDIMENT (PCI/KG DRY)	GAMMA	2						
	BE-7		N/A	158 (0/2) (<151/<165)	N/A	158 (0/2) (<151/<165)	CL-07B INDICATOR CLINTON LAKE 2.1 MILES SE OF SITE	0
	K-40		N/A	7325 (2/2) (6,630/8,020)	N/A	7325 (2/2) (6,630/8,020)	CL-07B INDICATOR CLINTON LAKE 2.1 MILES SE OF SITE	0
	MN-54		N/A	17 (0/2) (<14/<20)	N/A	17 (0/2) (<14/<20)	CL-07B INDICATOR CLINTON LAKE 2.1 MILES SE OF SITE	0

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FRACTION OF DETECTABLE MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES (F)

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR THE CLINTON POWER STATION, 2006

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SEDIMENT (PCI/KG DRY)	CO-58		N/A	17 (0/2) (<16/<19)	N/A	17 (0/2) (<16/<19)	CL-07B INDICATOR CLINTON LAKE 2.1 MILES SE OF SITE	0
	FE-59		N/A	42 (0/2) (<38/<47)	N/A	42 (0/2) (<38/<47)	CL-07B INDICATOR CLINTON LAKE 2.1 MILES SE OF SITE	0
	CO-60		N/A	21 (0/2) (<18/<23)	N/A	21 (0/2) (<18/<23)	CL-07B INDICATOR CLINTON LAKE 2.1 MILES SE OF SITE	0
	ZN-65		N/A	43 (0/2) (<32/<54)	N/A	43 (0/2) (<32/<54)	CL-07B INDICATOR CLINTON LAKE 2.1 MILES SE OF SITE	0
	NB-95		N/A	20 (0/2) (<18/<22)	N/A	20 (0/2) (<18/<22)	CL-07B INDICATOR CLINTON LAKE 2.1 MILES SE OF SITE	0
	ZR-95		N/A	33 (0/2) (<29/<36)	N/A	33 (0/2) (<29/<36)	CL-07B INDICATOR CLINTON LAKE 2.1 MILES SE OF SITE	0
	CS-134		150	18 (0/2) (<13/<23)	N/A	18 (0/2) (<13/<23)	CL-07B INDICATOR CLINTON LAKE 2.1 MILES SE OF SITE	0
	CS-137		180	18 (0/2) (<15/<20)	N/A	18 (0/2) (<15/<20)	CL-07B INDICATOR CLINTON LAKE 2.1 MILES SE OF SITE	0

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SEDIMENT (PCI/KG DRY)	BA-140		N/A	136 (0/2) (<105/<167)	N/A	136 (0/2) (<105/<167)	CL-07B INDICATOR CLINTON LAKE 2.1 MILES SE OF SITE	0
	LA-140		N/A	41 (0/2) (<32/<50)	N/A	41 (0/2) (<32/<50)	CL-07B INDICATOR CLINTON LAKE 2.1 MILES SE OF SITE	0
	CE-144		N/A	104 (0/2) (<95/<112)	N/A	104 (0/2) (<95/<112)	CL-07B INDICATOR CLINTON LAKE 2.1 MILES SE OF SITE	0
AIR PARTICULATE (E-3 PCI/CU.METER)	GR-B	523	10	20 (470/470) (5/37)	21 (53/53) (10/39)	21 (53/53) (10/39)	CL-11 CONTROL ILLINOIS POWER SUBSTATION 16 MILES S OF SITE	0
	GAMMA	40						
	BE-7		N/A	79.3 (27/36) (48/119)	72.8 (3/4) (62/<83)	89.9 (3/4) (54/119)	CL-04 INDICATOR RESIDENCE NEAR RECREATION AREA 0.8 MILES SW OF SITE	0
	K-40		N/A	47 (3/36) (<21/<79)	43.6 (0/4) (<20/<61)	56.6 (1/4) (<40/<77)	CL-07 INDICATOR MASCOUTIN RECREATON AREA 2.3 MILES SE OF SITE	0
	CO-60		N/A	2.7 (0/36) (<1/<6)	3.0 (0/4) (<2/<4)	3.6 (0/4) (<2/<6)	CL-03 INDICATOR CLINTON'S SECONDARY ACCESS ROAD 0.7 MILES NE OF SITE	0
	NB-95		N/A	5.0 (0/36) (<2/<11)	4.2 (0/4) (<3/<7)	5.3 (0/4) (<3/<9)	CL-01 INDICATOR CAMP QUEST 1.8 MILES W OF SITE	0

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AIR PARTICULATE (E-3 PCI/CU.METER)	ZR-95		N/A	8.4 (0/36) (<3/<18)	7.9 (0/4) (<5/<16)	10.8 (0/4) (<5/<18)	CL-07 INDICATOR MASCOUTIN RECREATON AREA 2.3 MILES SE OF SITE	0
	RU-103		N/A	6.9 (0/36) (<1/<16)	6.4 (0/4) (<4/<10)	7.9 (0/4) (<3/<15)	CL-03 INDICATOR CLINTON'S SECONDARY ACCESS ROAD 0.7 MILES NE OF SITE	0
	RU-106		N/A	24 (0/36) (<12/<42)	22.3 (0/4) (<14/<38)	29.6 (0/4) (<20/<37)	CL-15 INDICATOR RT. 900N RESIDENCE 0.9 MILES N OF SITE	0
	CS-134		50	2.9 (0/36) (<1/<6)	2.6 (0/4) (<1/<5)	3.4 (0/4) (<2/<6)	CL-07 INDICATOR MASCOUTIN RECREATON AREA 2.3 MILES SE OF SITE	0
	CS-137		60	2.6 (0/36) (<1/<5)	2.1 (0/4) (<2/<3)	3.2 (0/4) (< 2/<5)	CL-07 INDICATOR MASCOUTIN RECREATON AREA 2.3 MILES SE OF SITE	0
	CE-141		N/A	11.5 (0/36) (<3/<36)	10 (0/4) (<4/<20)	14.5 (0/4) (<4/<36)	CL-02 INDICATOR CLINTON'S MAIN ACCESS ROAD 0.7 MILES NNE OF SITE	0
	CE-144		N/A	13.3 (0/36) (<6/<40)	11 (0/4) (<9/<15)	17 (0/4) (<8/<40)	CL-02 INDICATOR CLINTON'S MAIN ACCESS ROAD 0.7 MILES NNE OF SITE	0
AIR IODINE (E-3 PCI/CU.METER)	GAMMA	523						
	I-131		70	43 (0/470) (<10/<69)	45 (0/53) (<10/<67)	47 (0/52) (<23/<69)	CL-04 INDICATOR RESIDENCE NEAR RECREATION AREA 0.8 MILES SW OF SITE	0

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MILK (PCI/LITER)	I-131 (LOW LVL)	18	1	N/A	0.8 (0/18) (< 0.3/< 2.2)	0.8 (0/18) (< 0.3/< 2.2)	CL-116 CONTROL PASTURE IN RURAL KENNEY 14 MILES WSW OF SITE	0
	GAMMA	19						
	BE-7		N/A	N/A	63 (0/19) (<19/<100)	63 (0/19) (<19/<100)	CL-116 CONTROL PASTURE IN RURAL KENNEY 14 MILES WSW OF SITE	0
	K-40		N/A	N/A	1233 (19/19) (1,020/1,510)	1233 (19/19) (1,020/1,510)	CL-116 CONTROL PASTURE IN RURAL KENNEY 14 MILES WSW OF SITE	0
	MN-54		N/A	N/A	7 (0/19) (<2/<11)	7 (0/19) (<2/<11)	CL-116 CONTROL PASTURE IN RURAL KENNEY 14 MILES WSW OF SITE	0
	CO-58		N/A	N/A	7 (0/19) (<2/<13)	7 (0/19) (<2/<13)	CL-116 CONTROL PASTURE IN RURAL KENNEY 14 MILES WSW OF SITE	0
	FE-59		N/A	N/A	17 (0/19) (<5/<25)	17 (0/19) (<5/<25)	CL-116 CONTROL PASTURE IN RURAL KENNEY 14 MILES WSW OF SITE	0
	CO-60		N/A	N/A	8 (0/19) (<2/<13)	8 (0/19) (<2/<13)	CL-116 CONTROL PASTURE IN RURAL KENNEY 14 MILES WSW OF SITE	0
	ZN-65		N/A	N/A	18 (0/19) (<5/<31)	18 (0/19) (<5/<31)	CL-116 CONTROL PASTURE IN RURAL KENNEY 14 MILES WSW OF SITE	0

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MILK (PCI/LITER)	NB-95		N/A	N/A	8 (0/19) (<2/<11)	8 (0/19) (<2/<11)	CL-116 CONTROL PASTURE IN RURAL KENNEY 14 MILES WSW OF SITE	0
	ZR-95		N/A	N/A	13 (0/19) (<4/<24)	13 (0/19) (<4/<24)	CL-116 CONTROL PASTURE IN RURAL KENNEY 14 MILES WSW OF SITE	0
	CS-134		15	N/A	7 (0/19) (<2/<13)	7 (0/19) (<2/<13)	CL-116 CONTROL PASTURE IN RURAL KENNEY 14 MILES WSW OF SITE	0
	CS-137		18	N/A	8 (0/19) (<2/<14)	8 (0/19) (<2/<14)	CL-116 CONTROL PASTURE IN RURAL KENNEY 14 MILES WSW OF SITE	0
	BA-140		60	N/A	38 (0/19) (<19/<51)	38 (0/19) (<19/<51)	CL-116 CONTROL PASTURE IN RURAL KENNEY 14 MILES WSW OF SITE	0
	LA-140		15	N/A	11 (0/19) (<5/<15)	11 (0/19) (<5/<15)	CL-116 CONTROL PASTURE IN RURAL KENNEY 14 MILES WSW OF SITE	0
	CE-144		N/A	N/A	50 (0/19) (<14/<79)	50 (0/19) (<14/<79)	CL-116 CONTROL PASTURE IN RURAL KENNEY 14 MILES WSW OF SITE	0
VEGETATION (PCI/KG WET)	GAMMA	48						
	BE-7		N/A	302 (35/36) (62/787)	800 (12/12) (97/5,440)	800 (12/12) (97/5,440)	CL-114 CONTROL CISCO 12.5 MILES SSE OF SITE	0

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VEGETATION (PCI/KG WET)	K-40		N/A	4829 (36/36) (2,340/12,500)	5729 (12/12) (2,740/9,560)	5729 (12/12) (2,740/9,560)	CL-114 CONTROL CISCO 12.5 MILES SSE OF SITE	0
	MN-54		N/A	6 (0/36) (<2/<11)	9 (0/12) (<3/<38)	9 (0/12) (<3/<38)	CL-114 CONTROL CISCO 12.5 MILES SSE OF SITE	0
	CO-58		N/A	7 (0/36) (<3/<18)	11 (0/12) (<4/<55)	11 (0/12) (<4/<55)	CL-114 CONTROL CISCO 12.5 MILES SSE OF SITE	0
	FE-59		N/A	17 (0/36) (<8/<32)	26 (0/12) (<11/<110)	26 (0/12) (<11/<110)	CL-114 CONTROL CISCO 12.5 MILES SSE OF SITE	0
	CO-60		N/A	6 (0/36) (<2/<15)	9 (0/12) (<3/<37)	9 (0/12) (<3/<37)	CL-114 CONTROL CISCO 12.5 MILES SSE OF SITE	0
	ZN-65		N/A	15 (0/36) (<6/<37)	23 (0/12) (<7/<106)	23 (0/12) (<7/<106)	CL-114 CONTROL CISCO 12.5 MILES SSE OF SITE	0
	NB-95		N/A	7 (0/36) (<3/<13)	12 (0/12) (<4/<65)	12 (0/12) (<4/<65)	CL-114 CONTROL CISCO 12.5 MILES SSE OF SITE	0
	ZR-95		N/A	12 (0/36) (<5/<23)	16 (0/12) (<8/<54)	16 (0/12) (<8/<54)	CL-114 CONTROL CISCO 12.5 MILES SSE OF SITE	0

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VEGETATION (PCI/KG WET)	I-131		60	43 (0/36) (<23/<60)	47 (0/12) (<22/<60)	47 (0/12) (<22/<60)	CL-114 CONTROL CISCO 12.5 MILES SSE OF SITE	0
	CS-134		60	6 (0/36) (<2/<14)	10 (0/12) (<3/<54)	10 (0/12) (<3/<54)	CL-114 CONTROL CISCO 12.5 MILES SSE OF SITE	0
	CS-137		80	6 (0/36) (<2/<19)	9 (0/12) (<3/<38)	9 (0/12) (<3/<38)	CL-114 CONTROL CISCO 12.5 MILES SSE OF SITE	0
	BA-140		N/A	80 (0/36) (<42/<378)	204 (0/12) (<40/<1,560)	204 (0/12) (<40/<1,560)	CL-114 CONTROL CISCO 12.5 MILES SSE OF SITE	0
	LA-140		N/A	24 (0/36) (<11/<159)	71 (0/12) (<12/<597)	71 (0/12) (<12/<597)	CL-114 CONTROL CISCO 12.5 MILES SSE OF SITE	0
	CE-144		N/A	35 (0/36) (<14/<75)	56 (0/12) (<21/<233)	56 (0/12) (<21/<233)	CL-114 CONTROL CISCO 12.5 MILES SSE OF SITE	0
GRASS (PCI/KG WET)	GAMMA	52						
	BE-7		N/A	1402 (39/39) (276/3,250)	1626 (13/13) (828/2,590)	1694 (13/13) (727/2,910)	CL-02 INDICATOR CLINTON'S MAIN ACCESS ROAD 0.7 MILES NNE OF SITE	0
	K-40		N/A	6218 (38/39) (<565/8,820)	6425 (13/13) (4,460/7,940)	7450 (13/13) (3,860/8,820)	CL-08 INDICATOR DEWITT CEMETERY 2.2 MILES E OF SITE	0

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GRASS (PCI/KG WET)	MN-54		N/A	14 (0/39) (<3/<42)	15 (0/13) (<4/<33)	16 (0/13) (<3/<34)	CL-02 INDICATOR CLINTON'S MAIN ACCESS ROAD 0.7 MILES NNE OF SITE	0
	CO-58		N/A	17 (0/39) (<4/<52)	17 (0/13) (<5/<43)	19 (0/13) (<4/<42)	CL-02 INDICATOR CLINTON'S MAIN ACCESS ROAD 0.7 MILES NNE OF SITE	0
	FE-59		N/A	42 (0/39) (<9/<149)	47 (0/13) (<13/<140)	47 (0/13) (<13/<140)	CL-116 CONTROL PASTURE IN RURAL KENNEY 14 MILES WSW OF SITE	0
	CO-60		N/A	15 (0/39) (<3/<57)	15 (0/13) (<4/<31)	17 (0/13) (<3/<37)	CL-02 INDICATOR CLINTON'S MAIN ACCESS ROAD 0.7 MILES NNE OF SITE	0
	ZN-65		N/A	36 (0/39) (<7/<107)	39 (0/13) (<9/<82)	42 (0/13) (<7/<91)	CL-02 INDICATOR CLINTON'S MAIN ACCESS ROAD 0.7 MILES NNE OF SITE	0
	NB-95		N/A	17 (0/39) (<4/<56)	20 (0/13) (<5/<54)	20 (0/13) (<5/<54)	CL-116 CONTROL PASTURE IN RURAL KENNEY 14 MILES WSW OF SITE	0
	ZR-95		N/A	29 (0/39) (<7/<90)	31 (0/13) (<9/<65)	33 (0/13) (<7/<72)	CL-02 INDICATOR CLINTON'S MAIN ACCESS ROAD 0.7 MILES NNE OF SITE	0
	I-131		60	64 (0/30) (<18/<577)	48 (0/9) (<24/<60)	99 (0/10) (<18/<577)	CL-02 INDICATOR CLINTON'S MAIN ACCESS ROAD 0.7 MILES NNE OF SITE	0

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Name of Facility: CLINTON POWER STATION — **DOCKET NUMBER:** 50-461

Location of Facility: DEWITT COUNTY, IL — **REPORTING PERIOD:** ANNUAL 2006

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSES PERFORMED	NUMBER OF ANALYSES PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (F) RANGE	CONTROL LOCATION MEAN (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN: MEAN (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN: STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
GRASS (PCI/KG WET)	CS-134		60	15 (0/39) (<3/<43)	16 (0/13) (<4/<35)	17 (0/13) (<3/<36)	CL-02 INDICATOR CLINTON'S MAIN ACCESS ROAD 0.7 MILES NNE OF SITE	0
	CS-137		80	14 (0/39) (<3/<33)	16 (0/13) (<4/<39)	17 (0/13) (<3/<33)	CL-02 INDICATOR CLINTON'S MAIN ACCESS ROAD 0.7 MILES NNE OF SITE	0
	BA-140		N/A	210 (0/39) (<42/<997)	222 (0/13) (<50/<754)	231 (0/13) (<42/<717)	CL-02 INDICATOR CLINTON'S MAIN ACCESS ROAD 0.7 MILES NNE OF SITE	0
	LA-140		N/A	59 (0/39) (<10/<371)	65 (0/13) (<14/<234)	67 (0/13) (<10/<243)	CL-02 INDICATOR CLINTON'S MAIN ACCESS ROAD 0.7 MILES NNE OF SITE	0
	CE-144		N/A	96 (0/39) (<19/<228)	108 (0/13) (<26/<215)	112 (0/13) (<19/<218)	CL-02 INDICATOR CLINTON'S MAIN ACCESS ROAD 0.7 MILES NNE OF SITE	0
DIRECT RADIATION MILLI-ROENTGEN/STD.MO.	TLD-QUARTERLY	216	N/A	21 (208/208) (16/25)	20 (8/8) (18/23)	112 (4/4) (20/24)	CL-57 INDICATOR	0

THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING BOTH THE MDAs AND THE POSITIVE VALUES
FRACTION OF DETECTABLE MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES (F)

APPENDIX B

LOCATION DESIGNATION, DISTANCE & DIRECTION, AND SAMPLE COLLECTION & ANALYTICAL METHODS

TABLE B-1: Radiological Environmental Monitoring Program - Sampling Locations, Distance and Direction, Clinton Power Station, 2006

Location	Location Description	Distance & Direction From Site
A. Surface Water		
Cl-13	Salt Creek Bridge on Rt. 10 (indicator)	3.6 miles SW
CL-90	Discharge Flume (indicator)	0.4 miles SE
CL-91	Parnell Boat Access (indicator)	6.1 miles ENE
CL-99	North Fork Access (indicator)	3.5 miles NNE
B. Drinking (Potable) Water		
CL-14	Station Plant Service Bldg (indicator)	onsite
C. Well Water		
CL-07D	Mascoutin Recreation Area (indicator)	2.3 miles ESE
CL-12T	DeWitt Pump House (indicator)	1.6 miles E
CL-12R	DeWitt Pump House (indicator)	1.6 miles E
D. Milk - bi-weekly / monthly		
CL-116	Control	14 miles WSW
E. Air Particulates / Air Iodine		
CL-01	Camp Quest	1.8 miles W
CL-02	Clinton's Main Access Road	0.7 miles NNE
CL-03	Clinton's Secondary Access Road	0.7 miles NE
CL-04	Residence Near Recreation Area	0.8 miles SW
CL-06	Clinton's Recreation Area	0.7 miles WSW
CL-07	Mascoutin Recreation Area	2.3 miles SE
CL-08	DeWitt Cemetery	2.2 miles E
CL-11	Illinois Power Substation (Control)	16 miles S
CL-15	Rt. 900N Residence	0.9 miles N
CL-94	Old Clinton Road	0.6 miles E
F. Fish		
CL-19	End of Discharge Flume (indicator)	3.4 miles E
CL-105	Lake Shelbyville (control)	50 miles S
G. Shoreline Sediment		
CL-07B	Clinton Lake (indicator)	2.1miles SE
H. Food Products		
CL-114	Cisco (Control)	12.5 miles SSE
CL-115	Site's Secondary Access Road	0.7 miles NE
CL-117	Residence North of Site	0.9 miles N
CL-118	Site's Main Access Road	0.7 miles NNE
I. Grass		
CL-01	Camp Quest	1.8 miles W
CL-02	Clinton's Main Access Road	0.7 miles NNE
CL-08	DeWitt Cemetery	2.2 miles E
CL-116	Pasture in Rural Kenney	14 miles WSW

TABLE B-1: Radiological Environmental Monitoring Program - Sampling Locations, Distance and Direction, Clinton Power Station, 2006

Location	Location Description	Distance & Direction From Site
J. Environmental Dosimetry - TLD		
Inner Ring		
CL-01		1.8 miles W
CL-05		0.7 miles NNE
CL-22		0.6 miles NE
CL-23		0.5 miles ENE
CL-24		0.5 miles E
CL-34		0.8 miles WNW
CL-35		0.7 miles NW
CL-36		0.6 miles N
CL-42		2.8 miles ESE
CL-43		2.8 miles SE
CL-44		2.3 miles SSE
CL-45		2.8 miles S
CL-46		2.8 miles SSW
CL-47		3.3 miles SW
CL-48		2.3 miles WSW
CL-63		1.3 miles NNW
Outer Ring		
CL-51		4.4 miles NW
CL-52		4.3 miles NNW
CL-53		4.3 miles E
CL-54		4.6 miles ESE
CL-55		4.1 miles SE
CL-56		4.1 miles SSE
CL-57		4.6 miles S
CL-58		4.3 miles SSW
CL-60		4.5 miles SW
CL-61		4.5 miles WSW
CL-76		4.6 miles N
CL-77		4.5 miles NNE
CL-78		4.8 miles NE
CL-79		4.5 miles ENE
CL-80		4.1 miles W
CL-81		4.5 miles WNW

TABLE B-1: Radiological Environmental Monitoring Program - Sampling Locations, Distance and Direction, Clinton Power Station, 2006

Location	Location Description	Distance & Direction From Site
Special Interest		
CL-37		3.4 miles N
CL-41		2.4 miles E
CL-49		3.5 miles W
CL-64		2.1 miles WNW
CL-65		2.6 miles ENE
CL-74		1.9 miles W
CL-75		0.9 miles N
Supplemental		
CL-02		0.7 miles NNE
CL-03		0.7 miles NE
CL-04		0.8 miles SW
CL-06		0.8 miles WSW
CL-07		2.3 miles SE
CL-08		2.2 miles E
CL-15		0.9 miles N
CL-33		11.7 miles SW
CL-84		0.6 miles E
CL-90		0.4 miles SE
CL-91		6.1 miles ENE
CL-97		10.3 miles SW
CL-99		3.5 miles NNE
CL-114		12.5 miles SE
Control		
CL-11		16 miles S

TABLE B-2: Radiological Environmental Monitoring Program – Summary of Sample Collection and Analytical Methods, Clinton Power Station, 2006

Sample Medium	Analysis	Sampling Method	Analytical Procedure Number
Surface Water	Gamma Spectroscopy	Monthly composite from a continuous water compositor.	TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Surface Water	Tritium	Quarterly composite from a continuous water compositor.	TBE, TBE-2011 Tritium analysis in drinking water by liquid scintillation Env. Inc., T-02 Determination of tritium in water (direct method)
Drinking Water	Gross Beta	Monthly composite from a continuous water compositor.	TBE, TBE-2008 Gross Alpha and/or gross beta activity in various matrices Env. Inc., W(DS)-01 Determination of gross alpha and/or gross beta in water (dissolved solids or total residue) Env. Inc., W(SS)-02 Determination of gross alpha and/or gross beta in water (suspended solids)
Drinking Water	Gamma Spectroscopy	Monthly composite from a continuous water compositor.	TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Drinking Water	Tritium	Quarterly composite from a continuous water compositor.	TBE, TBE-2011 Tritium analysis in drinking water by liquid scintillation Env. Inc., T-02 Determination of tritium in water (direct method)
Well Water	Gamma Spectroscopy	Quarterly composite from a continuous water compositor.	TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Well Water	Tritium	Quarterly composite from a continuous water compositor.	TBE, TBE-2011 Tritium analysis in drinking water by liquid scintillation Env. Inc., T-02 Determination of tritium in water (direct method)
Fish	Gamma Spectroscopy	Semi-annual samples collected via electroshocking or other techniques	TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Air Particulates	Gross Beta	One-week composite of continuous air sampling through glass fiber filter paper	TBE, TBE-2008 Gross Alpha and/or gross beta activity in various matrices Env. Inc., AP-02 Determination of gross alpha and/or gross beta in air particulate filters
Air Particulates	Gamma Spectroscopy	Quarterly composite of each station	TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Air Iodine	Gamma Spectroscopy	One-week composite of continuous air sampling through charcoal filter	TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., I-131-02 Determination of I-131 in charcoal canisters by gamma spectroscopy (batch method)
Milk	I-131	Bi-weekly grab sample when cows are on pasture. Monthly all other times	TBE, TBE-2012 Radioiodine in various matrices Env. Inc., I-131-01 Determination of I-131 in milk by anion exchange

TABLE B-2: Radiological Environmental Monitoring Program – Summary of Sample Collection and Analytical Methods, Clinton Power Station, 2006

Sample Medium	Analysis	Sampling Method	Analytical Procedure Number
Food Products	Gross Beta	Monthly grab June through September	TBE, TBE-2008 Gross Alpha and/or gross beta activity in various matrices Env. Inc., EIML-AB-01 Gross alpha or gross beta in solid samples
Food Products	Gamma Spectroscopy	Monthly grab June through September	TBE, TBE-2007 Gamma emitting radioisotopes analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Grass	Gamma Spectroscopy	Biweekly May through October	TBE, TBE-2007 Gamma emitting radioisotopes analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
TLD	Thermoluminescence Dosimetry	Quarterly TLDs comprised of two Global Dosimetry CaF_2 elements.	Global Dosimetry

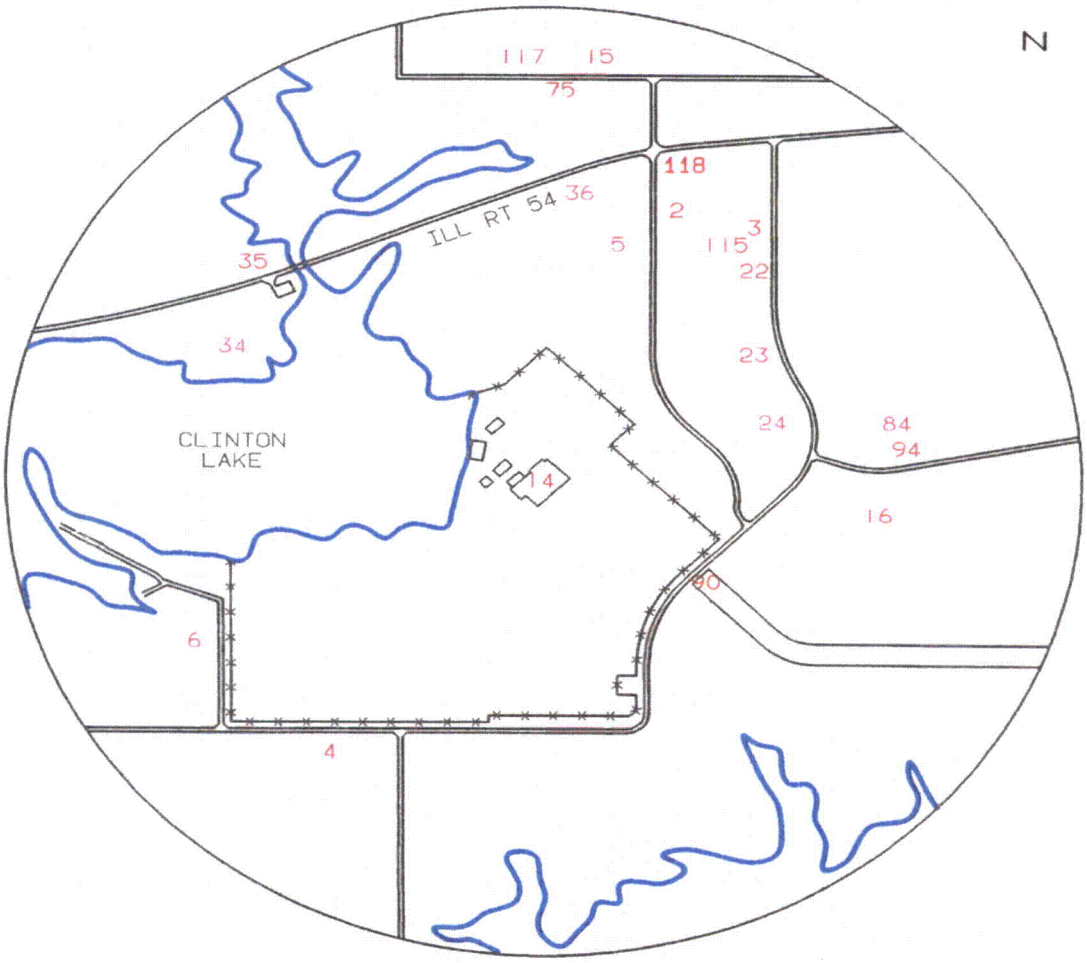


Figure B-1
Environmental Sampling Locations Within One
Mile of the Clinton Power Station, 2006

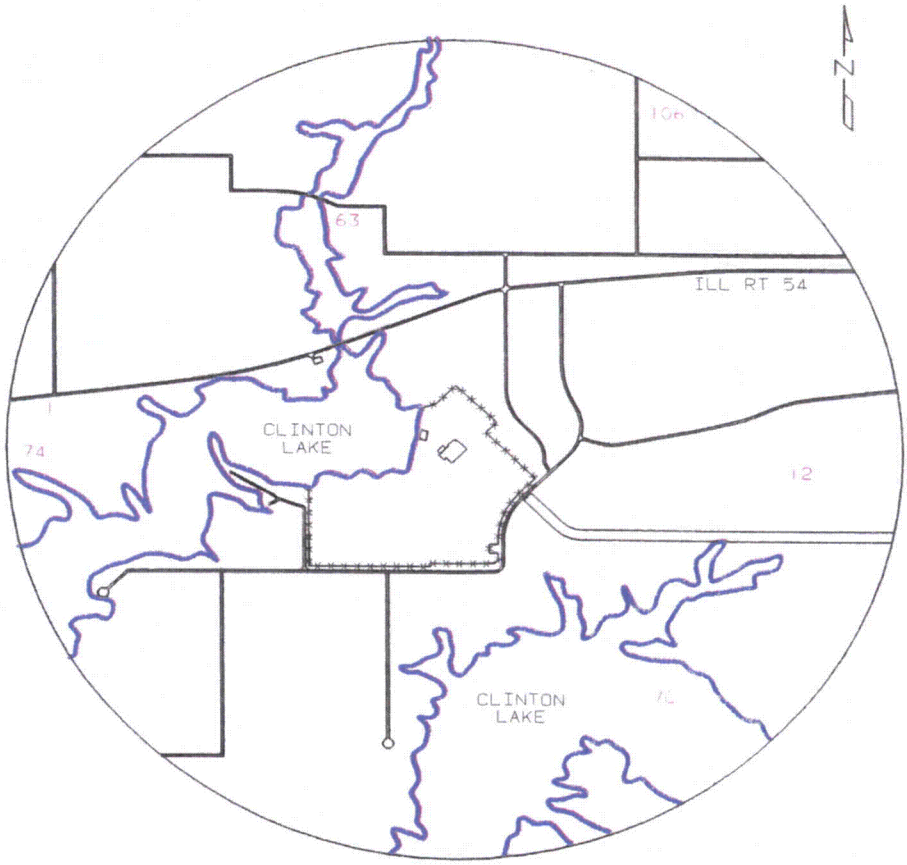


Figure B-2
Environmental Sampling Locations Between One and Two
Miles of the Clinton Power Station, 2006

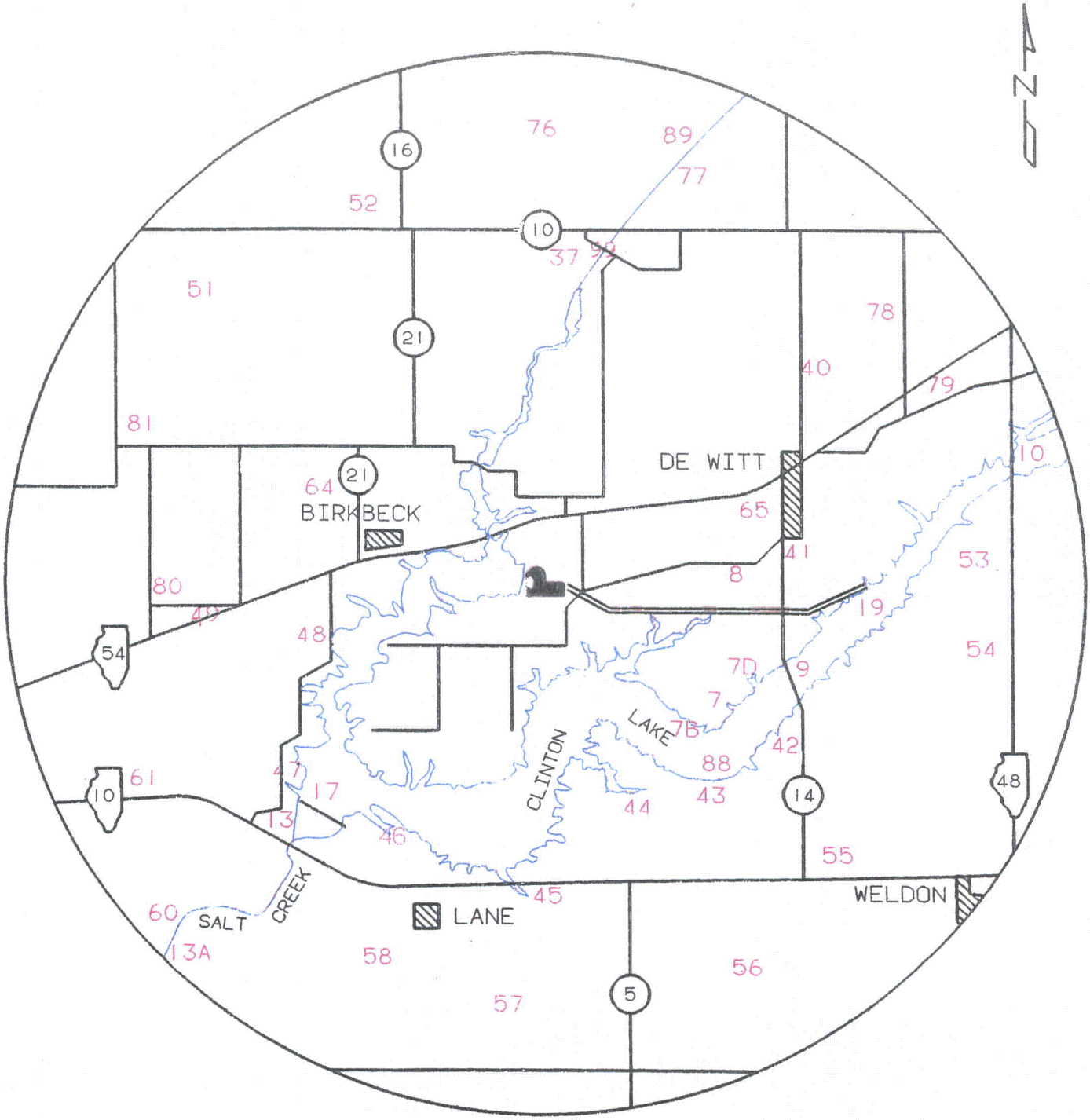


Figure B-3
Environmental Sampling Locations Between Two and Five Miles of the Clinton Power Station, 2006

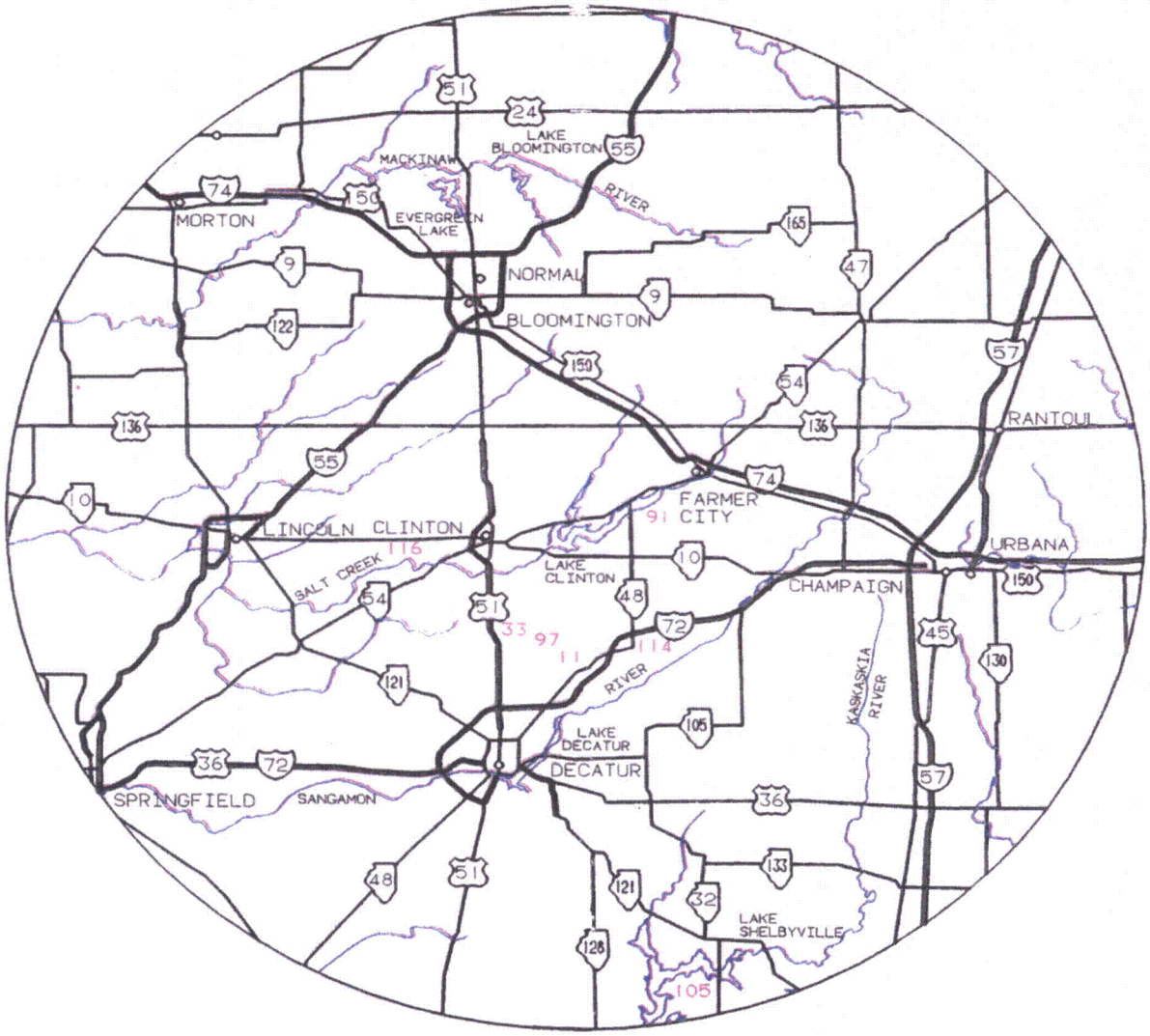


Figure B-4
Environmental Sampling Locations Greater Than Five
Miles of the Clinton Power Station, 2006

APPENDIX C

DATA TABLES AND FIGURES - PRIMARY LABORATORY

TABLE C-I.1 CONCENTRATIONS OF I-131 IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	CL-90
JAN	< 0.9
FEB	< 1.0
MAR	< 0.8
APR	< 0.3
MAY	< 6.1 (1)
JUN	< 0.9
JUL	< 1.0
AUG	< 0.9
SEP	< 0.8
OCT	< 0.8
NOV	< 0.5
DEC	< 0.7
MEAN	0.8 ± 0.4

TABLE C-I.2 CONCENTRATIONS OF TRITIUM IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	CL-13	CL-90	CL-91	CL-99
JAN-MAR	< 173	< 170	< 171	< 172
APR-JUN	< 184	< 183	< 182	< 183
JUL-SEP	< 194	< 190	< 193	< 196
OCT-DEC	< 131	< 129	< 128	< 127
MEAN	171 ± 55	168 ± 55	169 ± 57	170 ± 60

EXCEPTION RELATED VALUES ARE NOT INCLUDED IN THE MEAN AND 2 STANDARD DEVIATION CALCULATION
(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-I.3 CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	BE-7	K-40	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	CS-134	CS-137	BA-140	LA-140	CE-144
CL-13	JAN	< 53	< 60	< 6	< 6	< 12	< 6	< 14	< 6	< 10	< 7	< 6	< 30	< 9	< 45
	FEB	< 63	< 93	< 8	< 7	< 17	< 10	< 26	< 10	< 13	< 14	< 8	< 31	< 10	< 49
	MAR	< 52	62 ± 46	< 6	< 7	< 15	< 6	< 18	< 8	< 11	< 9	< 7	< 32	< 13	< 44
	APR	< 39	< 82	< 5	< 5	< 8	< 5	< 11	< 5	< 9	< 5	< 5	< 23	< 7	< 36
	MAY	< 42	< 60	< 4	< 4	< 10	< 4	< 9	< 5	< 7	< 4	< 4	< 44	< 15	< 31
	JUN	< 69	< 77	< 7	< 7	< 16	< 10	< 14	< 8	< 16	< 8	< 7	< 38	< 12	< 49
	JUL	< 17	< 14	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 1	< 2	< 20	< 6	< 11
	AUG	< 13	< 26	< 1	< 1	< 3	< 1	< 3	< 2	< 3	< 1	< 1	< 10	< 3	< 11
	SEP	< 51	< 68	< 6	< 7	< 12	< 6	< 10	< 7	< 10	< 5	< 5	< 31	< 14	< 42
	OCT	< 37	< 78	< 4	< 4	< 9	< 5	< 8	< 4	< 7	< 4	< 4	< 27	< 9	< 28
	NOV	< 34	< 66	< 4	< 4	< 8	< 5	< 8	< 5	< 7	< 3	< 4	< 30	< 10	< 25
	DEC	< 18	< 40	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 2	< 2	< 11	< 3	< 15
	MEAN	41 ± 36	60 ± 47	4 ± 4	5 ± 4	10 ± 9	5 ± 6	11 ± 14	5 ± 5	8 ± 8	5 ± 7	5 ± 4	27 ± 20	9 ± 8	32 ± 28
CL-90	JAN	< 50	< 93	< 6	< 6	< 13	< 7	< 15	< 7	< 11	< 7	< 6	< 29	< 10	< 40
	FEB	< 45	< 86	< 5	< 6	< 11	< 6	< 13	< 5	< 9	< 6	< 6	< 24	< 9	< 37
	MAR	< 50	< 91	< 6	< 6	< 11	< 6	< 14	< 6	< 10	< 6	< 6	< 24	< 10	< 39
	APR	< 46	< 60	< 5	< 6	< 12	< 5	< 13	< 5	< 9	< 6	< 6	< 26	< 9	< 42
	MAY	< 41	< 41	< 4	< 4	< 10	< 4	< 9	< 5	< 8	< 4	< 4	< 44	< 14	< 31
	JUN	< 70	< 129	< 7	< 8	< 16	< 8	< 17	< 9	< 13	< 8	< 8	< 38	< 13	< 56
	JUL	< 17	< 14	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 1	< 2	< 21	< 7	< 11
	AUG	< 19	< 40	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 2	< 2	< 14	< 5	< 13
	SEP	< 52	< 139	< 7	< 6	< 13	< 4	< 14	< 6	< 12	< 6	< 6	< 33	< 12	< 41
	OCT	< 27	< 39	< 3	< 3	< 7	< 3	< 6	< 3	< 5	< 3	< 3	< 20	< 5	< 20
	NOV	< 27	< 57	< 3	< 3	< 7	< 3	< 6	< 3	< 5	< 3	< 3	< 23	< 6	< 22
	DEC	< 17	< 36	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 2	< 2	< 10	< 3	< 16
	MEAN	38 ± 34	69 ± 78	4 ± 4	4 ± 4	9 ± 8	4 ± 4	10 ± 10	5 ± 4	8 ± 7	4 ± 5	4 ± 4	25 ± 19	8 ± 7	31 ± 28

THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING BOTH THE MDA AND POSITIVE VALUES

TABLE C-I.3 CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	BE-7	K-40	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	CS-134	CS-137	BA-140	LA-140	CE-144
CL-91	JAN	< 70	< 127	< 8	< 8	< 18	< 8	< 18	< 8	< 12	< 10	< 7	< 35	< 13	< 53
	FEB	< 57	< 65	< 6	< 7	< 16	< 8	< 15	< 8	< 14	< 8	< 7	< 34	< 12	< 50
	MAR	< 63	< 63	< 6	< 6	< 15	< 7	< 16	< 7	< 12	< 7	< 8	< 37	< 11	< 50
	APR	< 72	< 84	< 8	< 8	< 16	< 8	< 19	< 9	< 15	< 8	< 9	< 39	< 12	< 56
	MAY	< 21	< 32	< 2	< 2	< 6	< 2	< 4	< 3	< 4	< 2	< 2	< 26	< 9	< 15
	JUN	< 67	< 64	< 7	< 8	< 15	< 7	< 19	< 7	< 13	< 8	< 7	< 38	< 14	< 56
	JUL	< 14	< 11	< 1	< 2	< 4	< 2	< 3	< 2	< 3	< 1	< 1	< 19	< 7	< 9
	AUG	< 43	< 79	< 4	< 5	< 10	< 4	< 8	< 4	< 7	< 4	< 4	< 35	< 10	< 29
	SEP	< 39	< 109	< 5	< 5	< 12	< 4	< 10	< 5	< 9	< 4	< 5	< 26	< 7	< 33
	OCT	< 35	< 74	< 3	< 4	< 9	< 4	< 8	< 4	< 7	< 3	< 4	< 25	< 9	< 29
	NOV	< 26	< 55	< 3	< 3	< 7	< 3	< 6	< 3	< 5	< 2	< 3	< 20	< 7	< 20
	DEC	< 20	< 41	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 2	< 2	< 12	< 4	< 17
	MEAN	44 ± 43	67 ± 63	5 ± 5	5 ± 5	11 ± 10	5 ± 5	11 ± 12	5 ± 5	9 ± 9	5 ± 6	5 ± 5	29 ± 17	9 ± 6	35 ± 35
CL-99	JAN	< 64	< 71	< 9	< 7	< 18	< 8	< 21	< 9	< 15	< 10	< 9	< 41	< 13	< 57
	FEB	< 57	< 62	< 8	< 6	< 14	< 6	< 22	< 8	< 12	< 13	< 7	< 31	< 11	< 48
	MAR	< 59	< 80	< 7	< 7	< 15	< 5	< 15	< 6	< 13	< 8	< 8	< 32	< 12	< 53
	APR	< 65	74 ± 66	< 7	< 8	< 15	< 7	< 17	< 8	< 15	< 9	< 8	< 34	< 14	< 50
	MAY	< 23	< 19	< 2	< 2	< 6	< 2	< 5	< 2	< 4	< 2	< 2	< 27	< 9	< 15
	JUN	< 61	< 75	< 7	< 7	< 16	< 8	< 14	< 7	< 13	< 7	< 7	< 37	< 12	< 48
	JUL	< 14	< 11	< 1	< 1	< 3	< 1	< 2	< 2	< 3	< 1	< 1	< 19	< 6	< 10
	AUG	< 34	< 25	< 4	< 4	< 7	< 4	< 8	< 4	< 7	< 3	< 4	< 28	< 8	< 28
	SEP	< 45	< 111	< 6	< 6	< 13	< 4	< 11	< 5	< 8	< 5	< 5	< 41	< 11	< 34
	OCT	< 33	41 ± 36	< 3	< 4	< 8	< 4	< 7	< 4	< 6	< 3	< 4	< 24	< 7	< 22
	NOV	< 28	< 25	< 3	< 3	< 6	< 3	< 6	< 3	< 6	< 3	< 3	< 24	< 7	< 23
	DEC	< 25	< 56	< 3	< 3	< 6	< 3	< 6	< 3	< 5	< 3	< 3	< 16	< 5	< 15
	MEAN	42 ± 37	54 ± 61	5 ± 5	5 ± 5	11 ± 10	5 ± 4	11 ± 13	5 ± 5	9 ± 9	6 ± 7	5 ± 5	30 ± 16	9 ± 6	34 ± 34

THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING BOTH THE MDA AND POSITIVE VALUES

TABLE C-II.1 CONCENTRATIONS OF GROSS BETA IN DRINKING WATER SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	CL-14
JAN	< 2.1
FEB	2.1 ± 1.2
MAR	< 2.2
APR	2.2 ± 1.4
MAY	2.0 ± 1.4
JUN	< 1.9
JUL	< 2.1
AUG	2.2 ± 1.4
SEP	< 2.0
OCT	< 2.0
NOV	< 2.0
DEC	< 1.7
MEAN	2.0 ± 0.3

TABLE C-II.2 CONCENTRATIONS OF TRITIUM IN DRINKING WATER SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	CL-14
JAN-MAR	< 130
APR-JUN	< 170
JUL-SEP	< 184
OCT-DEC	< 190
MEAN	169 ± 54

THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING BOTH THE MDA AND POSITIVE VALUES

TABLE C-II.3 CONCENTRATIONS OF GAMMA EMITTERS IN DRINKING WATER SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006

RESULTS IN UNITS OF PCI/L ± 2 SIGMA

STC	COLLECTION PERIOD	BE-7	K-40	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	CS-134	CS-137	BA-140	LA-140	CE-144
CL-14	JAN	< 63	< 63	< 7	< 7	< 14	< 6	< 18	< 7	< 12	< 9	< 7	< 33	< 10	< 46
	FEB	< 62	< 57	< 7	< 7	< 16	< 6	< 16	< 8	< 12	< 9	< 7	< 33	< 13	< 55
	MAR	< 50	< 58	< 6	< 5	< 14	< 6	< 13	< 6	< 10	< 7	< 6	< 29	< 10	< 40
	APR	< 64	< 117	< 8	< 7	< 16	< 7	< 18	< 9	< 13	< 10	< 8	< 36	< 11	< 53
	MAY	< 28	< 43	< 3	< 3	< 7	< 3	< 6	< 3	< 5	< 3	< 3	< 32	< 11	< 20
	JUN	< 67	< 128	< 8	< 8	< 16	< 8	< 19	< 9	< 13	< 11	< 8	< 39	< 14	< 47
	JUL	< 13	< 26	< 1	< 1	< 3	< 1	< 2	< 1	< 3	< 1	< 1	< 17	< 6	< 8
	AUG	< 22	56 ± 34	< 2	< 2	< 6	< 2	< 5	< 3	< 5	< 2	< 2	< 20	< 5	< 18
	SEP	< 53	119 ± 57	< 6	< 6	< 12	< 5	< 10	< 6	< 10	< 5	< 6	< 34	< 12	< 37
	OCT	< 28	< 55	< 3	< 3	< 8	< 3	< 6	< 3	< 5	< 3	< 3	< 22	< 8	< 20
	NOV	< 36	< 63	< 3	< 3	< 8	< 3	< 7	< 5	< 7	< 3	< 3	< 26	< 9	< 26
	DEC	< 22	< 44	< 2	< 2	< 5	< 2	< 5	< 2	< 4	< 2	< 2	< 13	< 4	< 17
	MEAN	42 ± 39	69 ± 66	5 ± 5	5 ± 5	10 ± 9	4 ± 4	10 ± 12	5 ± 5	8 ± 8	5 ± 7	5 ± 5	28 ± 17	9 ± 6	32 ± 32

THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING BOTH THE MDA AND POSITIVE VALUES

TABLE C-III.1 CONCENTRATIONS OF TRITIUM IN GROUND WATER SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	CL-07D	CL-12R	CL-12T
JAN-MAR	< 153	< 180	< 164
APR-JUN	< 171	< 168	< 169
JUL-SEP	< 166	< 167	< 162
OCT-DEC	< 173	< 180	< 179
MEAN	166 ± 18	174 ± 14	169 ± 15

TABLE C-III.2 CONCENTRATIONS OF GAMMA EMITTERS IN GROUND WATER SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	BE-7	K-40	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	CS-134	CS-137	BA-140	LA-140	CE-144
CL-07D	MAR	< 47	< 55	< 6	< 6	< 13	< 6	< 14	< 6	< 11	< 6	< 7	< 28	< 11	< 38
	JUN	< 37	< 37	< 4	< 4	< 8	< 5	< 9	< 5	< 7	< 4	< 4	< 24	< 8	< 28
	SEP	< 56	< 87	< 4	< 7	< 13	< 4	< 13	< 7	< 11	< 5	< 6	< 35	< 11	< 38
	DEC	< 36	< 71	< 4	< 4	< 10	< 5	< 10	< 5	< 7	< 4	< 4	< 24	< 10	< 31
	MEAN	44 ± 19	62 ± 43	4 ± 2	5 ± 3	11 ± 4	5 ± 1	11 ± 5	6 ± 2	9 ± 4	5 ± 2	5 ± 3	27 ± 10	10 ± 3	34 ± 10
CL-12R	MAR	< 73	< 79	< 9	< 8	< 17	< 9	< 27	< 10	< 13	< 13	< 8	< 42	< 14	< 60
	JUN	< 57	< 119	< 6	< 6	< 13	< 6	< 12	< 7	< 11	< 6	< 6	< 36	< 11	< 47
	SEP	< 42	< 82	< 4	< 5	< 12	< 5	< 10	< 5	< 9	< 4	< 4	< 28	< 9	< 31
	DEC	< 37	< 87	< 4	< 5	< 9	< 6	< 11	< 5	< 9	< 5	< 4	< 29	< 12	< 31
	MEAN	53 ± 32	92 ± 37	6 ± 5	6 ± 3	13 ± 7	6 ± 3	15 ± 16	7 ± 4	10 ± 5	7 ± 8	6 ± 4	34 ± 13	11 ± 4	42 ± 28
CL-12T	MAR	< 66	< 86	< 7	< 7	< 16	< 7	< 17	< 8	< 15	< 10	< 8	< 37	< 13	< 55
	JUN	< 60	< 100	< 6	< 7	< 17	< 7	< 16	< 8	< 11	< 8	< 7	< 37	< 13	< 45
	SEP	< 44	< 110	< 5	< 5	< 12	< 5	< 13	< 6	< 11	< 4	< 5	< 33	< 14	< 39
	DEC	< 54	< 104	< 5	< 5	< 11	< 5	< 9	< 6	< 11	< 4	< 5	< 34	< 9	< 32
	MEAN	56 ± 19	100 ± 20	6 ± 2	6 ± 2	14 ± 6	6 ± 2	14 ± 8	7 ± 2	12 ± 4	6 ± 6	6 ± 3	35 ± 4	12 ± 4	43 ± 20

TABLE C-IV.1 **CONCENTRATIONS OF GAMMA EMITTERS IN FISH SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	BE-7	K-40	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	CS-134	CS-137	BA-140	LA-140	CE-144
CL-19															
Bluegill	04/17/06	< 561	2640 ± 839	< 67	< 66	< 133	< 59	< 153	< 64	< 108	< 77	< 69	< 260	< 90	< 304
Carp	04/17/06	< 580	4010 ± 711	< 65	< 60	< 132	< 59	< 126	< 66	< 111	< 63	< 68	< 333	< 102	< 528
Channel Catfish	04/17/06	< 544	3790 ± 949	< 71	< 72	< 167	< 71	< 172	< 66	< 147	< 78	< 65	< 337	< 81	< 392
Largemouth Bass	04/17/06	< 489	4890 ± 768	< 60	< 55	< 121	< 55	< 143	< 60	< 112	< 66	< 63	< 263	< 74	< 300
Carp	10/09/06	< 179	3000 ± 239	< 12	< 18	< 45	< 11	< 28	< 21	< 32	< 12	< 12	< 799	< 230	< 75
Bluegill	10/09/06	< 237	2830 ± 239	< 15	< 22	< 57	< 20	< 37	< 25	< 42	< 14	< 14	< 947	< 285	< 85
Channel Catfish	10/09/06	< 191	3470 ± 225	< 14	< 19	< 53	< 13	< 29	< 21	< 36	< 12	< 12	< 845	< 248	< 77
Largemouth Bass	10/09/06	< 179	3420 ± 383	< 13	< 19	< 53	< 16	< 28	< 19	< 37	< 12	< 13	< 809	< 276	< 64
	MEAN	370 ± 376	3506 ± 1458	40 ± 56	41 ± 48	95 ± 96	38 ± 50	89 ± 129	43 ± 45	78 ± 92	42 ± 63	39 ± 57	574 ± 599	173 ± 189	228 ± 355
CL-105 *															
Bluegill	04/17/06	< 511	3030 ± 777	< 63	< 63	< 115	< 63	< 144	< 66	< 110	< 70	< 57	< 300	< 91	< 333
Carp	04/17/06	< 686	3060 ± 805	< 76	< 79	< 176	< 76	< 184	< 82	< 145	< 82	< 80	< 404	< 121	< 463
Largemouth Bass	04/17/06	< 508	4640 ± 808	< 61	< 61	< 132	< 66	< 138	< 67	< 104	< 63	< 65	< 250	< 106	< 328
White Crappie	04/17/06	< 453	4170 ± 692	< 56	< 56	< 121	< 57	< 136	< 54	< 90	< 60	< 58	< 260	< 80	< 269
Crappie	10/09/06	< 432	5100 ± 496	< 27	< 46	< 124	< 26	< 67	< 49	< 87	< 26	< 29	< 1890	< 628	< 153
Carp	10/09/06	< 448	3290 ± 548	< 31	< 50	< 133	< 28	< 74	< 47	< 93	< 27	< 31	< 2010	< 684	< 155
Largemouth Bass	10/09/06	< 379	3630 ± 426	< 24	< 38	< 99	< 24	< 57	< 49	< 64	< 26	< 24	< 1760	< 568	< 140
Bluegill	10/09/06	< 406	3120 ± 506	< 31	< 44	< 137	< 31	< 70	< 56	< 81	< 29	< 26	< 2140	< 607	< 185
	MEAN	478 ± 191	3755 ± 1587	46 ± 40	55 ± 26	130 ± 45	46 ± 42	109 ± 95	59 ± 24	97 ± 48	48 ± 46	46 ± 43	1127 ± 1775	361 ± 562	253 ± 231

* INDICATES CONTROL SAMPLE

TABLE C-V.1 CONCENTRATIONS OF GAMMA EMITTERS IN SEDIMENT SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	BE-7	K-40	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	CS-134	CS-137	BA-140	LA-140	CE-144
CL-07B	04/17/06	< 165	6630 ± 366	< 20	< 19	< 47	< 23	< 54	< 22	< 36	< 23	< 20	< 105	< 32	< 112
	10/09/06	< 151	8020 ± 302	< 14	< 16	< 38	< 18	< 32	< 18	< 29	< 13	< 15	< 167	< 50	< 95
	MEAN	158 ± 20	7325 ± 1966	17 ± 9	17 ± 4	42 ± 13	21 ± 8	43 ± 31	20 ± 6	33 ± 10	18 ± 14	18 ± 8	136 ± 88	41 ± 25	104 ± 24

TABLE C-VI.1 CONCENTRATIONS OF GROSS BETA IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006

RESULTS IN UNITS OF E-3 PCI/CU METER ± 2 SIGMA

	GROUP I					
WEEK	CL-02	CL-03	CL-04	CL-06	CL-15	CL-94
1	22 ± 5	23 ± 5	17 ± 4	18 ± 4	19 ± 4	20 ± 5
2	25 ± 5	24 ± 5	23 ± 5	29 ± 5	25 ± 5	25 ± 5
3	26 ± 5	22 ± 4	20 ± 4	22 ± 4	22 ± 4	21 ± 4
4	15 ± 4	17 ± 4	21 ± 5	18 ± 4	16 ± 4	17 ± 4
5	16 ± 4	17 ± 4	16 ± 4	19 ± 4	13 ± 4	15 ± 4
6	18 ± 5	16 ± 4	16 ± 4	17 ± 4	21 ± 5	18 ± 5
7	12 ± 4	14 ± 4	15 ± 4	13 ± 4	13 ± 4	14 ± 4
8	27 ± 5	19 ± 4	27 ± 5	19 ± 4	22 ± 5	22 ± 5
9	23 ± 5	22 ± 5	24 ± 5	23 ± 5	24 ± 5	26 ± 5
10	17 ± 4	17 ± 4	19 ± 4	19 ± 4	18 ± 4	20 ± 4
11	18 ± 4	15 ± 4	18 ± 4	18 ± 4	15 ± 4	17 ± 4
12	19 ± 4	15 ± 4	19 ± 4	17 ± 4	17 ± 4	18 ± 4
13	11 ± 4	5 ± 3	10 ± 4	10 ± 4	7 ± 4	9 ± 4
14	19 ± 4	22 ± 4	14 ± 4	16 ± 4	17 ± 4	15 ± 4
15	19 ± 5	15 ± 4	15 ± 4	16 ± 4	12 ± 4	19 ± 5
16	23 ± 5	18 ± 4	22 ± 4	22 ± 5	21 ± 4	22 ± 5
17	13 ± 4	10 ± 4	14 ± 4	12 ± 4	16 ± 4	13 ± 4
18	14 ± 4	16 ± 4	21 ± 5	12 ± 4	14 ± 4	14 ± 4
19	14 ± 4	12 ± 4	12 ± 4	14 ± 4	16 ± 4	13 ± 4
20	6 ± 3	11 ± 4	7 ± 3	8 ± 4	5 ± 3	8 ± 4
21	13 ± 4	14 ± 4	11 ± 4	13 ± 4	10 ± 4	15 ± 4
22	23 ± 4	19 ± 4	22 ± 4	20 ± 4	20 ± 4	17 ± 4
23	22 ± 4	21 ± 4	15 ± 4	14 ± 4	14 ± 4	17 ± 4
24	11 ± 4	12 ± 4	12 ± 4	14 ± 4	7 ± 4	15 ± 4
25	22 ± 4	18 ± 4	19 ± 4	23 ± 4	23 ± 4	20 ± 4
26	20 ± 4	18 ± 4	18 ± 4	19 ± 4	17 ± 4	19 ± 4
27	26 ± 5	26 ± 5	30 ± 5	22 ± 5	26 ± 5	29 ± 5
28	23 ± 5	19 ± 4	20 ± 4	21 ± 4	20 ± 4	20 ± 4
29	31 ± 5	24 ± 5	26 ± 5	28 ± 5	26 ± 5	32 ± 5
30	21 ± 4	25 ± 5	23 ± 4	24 ± 5	(1)	23 ± 4
31	23 ± 4	19 ± 4	18 ± 4	20 ± 4	23 ± 4	19 ± 4
32	27 ± 5	21 ± 4	22 ± 4	26 ± 5	18 ± 4	26 ± 5
33	18 ± 4	18 ± 4	17 ± 4	18 ± 4	18 ± 4	16 ± 4
34	21 ± 4	24 ± 5	21 ± 5	20 ± 4	19 ± 4	20 ± 4
35	22 ± 5	25 ± 5	26 ± 5	24 ± 5	26 ± 5	25 ± 5
36	13 ± 4	16 ± 4	19 ± 4	19 ± 4	16 ± 4	19 ± 4
37	24 ± 5	24 ± 5	24 ± 5	28 ± 5	25 ± 5	33 ± 5
38	21 ± 4	20 ± 4	19 ± 4	20 ± 4	18 ± 4	21 ± 4
39	16 ± 3	15 ± 3	17 ± 3	17 ± 3	16 ± 3	17 ± 3
40	21 ± 4	26 ± 5	24 ± 5	25 ± 5	18 ± 4	24 ± 5
41	19 ± 4	21 ± 4	24 ± 5	22 ± 4	25 ± 5	19 ± 4
42	16 ± 4	13 ± 4	15 ± 4	18 ± 4	17 ± 4	14 ± 4
43	20 ± 4	21 ± 4	19 ± 4	19 ± 4	20 ± 4	17 ± 4
44	23 ± 4	15 ± 4	16 ± 4	16 ± 4	17 ± 4	16 ± 4
45	28 ± 5	29 ± 5	27 ± 5	25 ± 5	30 ± 5	28 ± 5
46	29 ± 5	23 ± 4	22 ± 4	21 ± 4	23 ± 4	25 ± 5
47	29 ± 5	30 ± 5	27 ± 5	30 ± 5	26 ± 5	26 ± 5
48	19 ± 4	18 ± 4	22 ± 5	19 ± 4	16 ± 4	18 ± 4
49	32 ± 5	32 ± 5	< 23 (1)	< 22 (1)	< 22 (1)	< 23 (1)
50	28 ± 5	28 ± 5	27 ± 8	23 ± 7	27 ± 5	30 ± 5
51	31 ± 5	32 ± 5	33 ± 5	36 ± 5	33 ± 5	30 ± 5
52	37 ± 6	31 ± 5	33 ± 5	32 ± 5	34 ± 5	33 ± 5
53	26 ± 5	26 ± 5	26 ± 5	27 ± 5	18 ± 4	30 ± 5
MEAN	21 ± 12	20 ± 12	20 ± 11	20 ± 11	19 ± 12	20 ± 12

THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING BOTH THE MDA AND POSITIVE VALUES, BUT NOT THE EXCEPTION RELATED VALUES

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-VI.1 CONCENTRATIONS OF GROSS BETA IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006

RESULTS IN UNITS OF E-3 PCI/CU METER ± 2 SIGMA

	GROUP II			GROUP III
WEEK	CL-01	CL-07	CL-08	CL-11 *
1	20 ± 5	22 ± 5	17 ± 4	19 ± 4
2	21 ± 4	22 ± 5	18 ± 4	24 ± 5
3	22 ± 4	18 ± 4	17 ± 4	23 ± 5
4	18 ± 4	16 ± 4	15 ± 4	17 ± 4
5	16 ± 4	16 ± 4	15 ± 4	23 ± 5
6	19 ± 5	21 ± 5	18 ± 5	17 ± 5
7	14 ± 4	14 ± 4	12 ± 4	13 ± 4
8	20 ± 4	26 ± 5	23 ± 5	23 ± 5
9	27 ± 5	24 ± 5	25 ± 5	25 ± 5
10	19 ± 4	20 ± 4	16 ± 4	17 ± 4
11	20 ± 5	16 ± 4	15 ± 4	13 ± 4
12	20 ± 4	16 ± 4	17 ± 4	20 ± 4
13	12 ± 4	8 ± 4	10 ± 4	10 ± 4
14	19 ± 4	17 ± 4	14 ± 4	16 ± 4
15	18 ± 5	19 ± 5	14 ± 4	17 ± 5
16	22 ± 4	23 ± 5	19 ± 4	21 ± 4
17	9 ± 4	11 ± 4	7 ± 4	13 ± 4
18	18 ± 4	12 ± 4	18 ± 4	19 ± 5
19	13 ± 4	14 ± 4	13 ± 4	15 ± 4
20	8 ± 4	9 ± 4	7 ± 4	11 ± 4
21	9 ± 3	12 ± 4	12 ± 4	16 ± 4
22	19 ± 4	21 ± 4	21 ± 4	27 ± 5
23	15 ± 4	16 ± 4	17 ± 4	20 ± 4
24	11 ± 4	8 ± 4	12 ± 4	13 ± 4
25	19 ± 4	18 ± 4	22 ± 4	25 ± 4
26	16 ± 4	16 ± 4	18 ± 4	21 ± 4
27	24 ± 5	24 ± 5	23 ± 5	30 ± 5
28	21 ± 4	18 ± 4	21 ± 5	19 ± 4
29	30 ± 5	25 ± 5	34 ± 5	29 ± 5
30	21 ± 4	21 ± 4	24 ± 5	24 ± 5
31	21 ± 4	20 ± 4	18 ± 4	23 ± 4
32	24 ± 5	22 ± 4	27 ± 5	22 ± 4
33	18 ± 4	18 ± 4	20 ± 4	23 ± 4
34	20 ± 4	15 ± 4	20 ± 4	24 ± 5
35	25 ± 5	26 ± 5	26 ± 5	30 ± 5
36	17 ± 4	18 ± 4	14 ± 4	14 ± 4
37	26 ± 5	25 ± 5	25 ± 5	29 ± 5
38	18 ± 4	19 ± 4	20 ± 4	18 ± 4
39	18 ± 3	17 ± 3	17 ± 3	17 ± 3
40	20 ± 4	22 ± 5	24 ± 5	22 ± 5
41	15 ± 4	22 ± 4	24 ± 5	22 ± 4
42	13 ± 4	16 ± 4	13 ± 4	16 ± 4
43	19 ± 4	19 ± 4	21 ± 4	17 ± 4
44	19 ± 4	14 ± 4	16 ± 4	16 ± 4
45	22 ± 4	26 ± 5	25 ± 5	29 ± 5
46	29 ± 5	24 ± 5	20 ± 4	29 ± 5
47	< 94 (1)	25 ± 5	27 ± 5	26 ± 5
48	< 48 (1)	21 ± 5	19 ± 4	22 ± 5
49	23 ± 9	30 ± 5	29 ± 5	30 ± 5
50	31 ± 5	27 ± 5	28 ± 5	20 ± 5
51	31 ± 5	26 ± 5	31 ± 5	31 ± 5
52	33 ± 5	32 ± 5	33 ± 5	39 ± 6
53	25 ± 5	24 ± 5	23 ± 5	29 ± 5
MEAN	20 ± 11	19 ± 11	19 ± 12	21 ± 12

THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING BOTH THE MDA AND POSITIVE VALUES, BUT NOT THE EXCEPTION RELATED VALUES

* INDICATES CONTROL STATION

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-V.2 **MONTHLY AND YEARLY MEAN VALUES OF GROSS BETA CONCENTRATIONS (E-3 PCI/CU METER) IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006**

GROUP I - ON-SITE LOCATIONS *				GROUP II - INTERMEDIATE DISTANCE ** LOCATIONS				GROUP III - CONTROL LOCATIONS ***			
COLLECTION PERIOD	MIN.	MAX.	MEAN ± 2 SD	COLLECTION PERIOD	MIN.	MAX.	MEAN ± 2 SD	COLLECTION PERIOD	MIN.	MAX.	MEAN ± 2 SD
12/28/05 - 02/01/06	13	29	20 ± 8	12/28/05 - 02/01/06	15	22	18 ± 5	12/28/05 - 02/01/06	17	24	21 ± 6
02/01/06 - 03/01/06	12	27	19 ± 9	02/01/06 - 03/01/06	12	27	20 ± 10	02/01/06 - 03/01/06	13	25	20 ± 11
03/01/06 - 03/29/06	5	20	15 ± 8	03/01/06 - 03/29/06	8	20	16 ± 8	03/01/06 - 03/29/06	10	20	15 ± 9
03/29/06 - 05/03/06	10	23	16 ± 7	03/29/06 - 05/03/06	7	23	16 ± 9	03/29/06 - 05/03/06	13	21	18 ± 6
05/03/06 - 05/31/06	5	23	13 ± 10	05/03/06 - 05/31/06	7	21	13 ± 10	05/03/06 - 05/31/06	11	27	17 ± 13
05/31/06 - 06/28/06	7	23	17 ± 8	05/31/06 - 06/28/06	8	22	16 ± 7	05/31/06 - 06/28/06	13	25	20 ± 10
06/28/06 - 08/02/06	18	32	24 ± 8	06/28/06 - 08/02/06	18	34	23 ± 9	06/28/06 - 08/02/06	19	30	25 ± 9
08/02/06 - 08/30/06	16	27	21 ± 7	08/02/06 - 08/30/06	15	27	22 ± 8	08/02/06 - 08/30/06	22	30	25 ± 7
08/30/06 - 09/27/06	13	33	20 ± 9	08/30/06 - 09/27/06	14	26	19 ± 8	08/30/06 - 09/27/06	14	29	19 ± 13
09/27/06 - 11/01/06	13	26	19 ± 7	09/27/06 - 11/01/06	13	24	18 ± 8	09/27/06 - 11/01/06	16	22	18 ± 6
11/01/06 - 11/29/06	16	30	25 ± 9	11/01/06 - 11/29/06	19	29	24 ± 6	11/01/06 - 11/29/06	22	29	26 ± 7
11/29/06 - 01/03/07	18	37	30 ± 8	11/29/06 - 01/03/07	23	33	28 ± 7	11/29/06 - 01/03/07	20	39	30 ± 14
12/28/05 - 01/03/07	5	37	20 ± 9	12/28/05 - 01/03/07	7	34	19 ± 9	12/28/05 - 01/03/07	10	39	21 ± 9

* GROUP I LOCATIONS WITHIN 1 MILE OF CPS
** GROUP II LOCATIONS WITHIN 1-5 MILES OF CPS
*** GROUP III LOCATIONS GREATER THAN 5 MILES OF CPS

TABLE C-VI.3 CONCENTRATIONS OF GAMMA EMITTERS IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	BE-7	K-40	CO-60	NB-95	ZR-95	RU-103	RU-106	CS-134	CS-137	CE-141	CE-144
CL-01	12/28/05	67 ± 33	< 69	< 4	< 9	< 11	< 9	< 34	< 5	< 3	< 17	< 17
	03/29/06	101 ± 40	< 44	< 2	< 4	< 8	< 3	< 17	< 2	< 2	< 5	< 7
	06/28/06	86 ± 41	< 21	< 2	< 6	< 7	< 8	< 21	< 2	< 2	< 11	< 11
	09/27/06	51 ± 28	< 31	< 3	< 3	< 6	< 4	< 20	< 3	< 3	< 5	< 12
	MEAN	76 ± 44	41 ± 42	3 ± 2	5 ± 6	8 ± 4	6 ± 6	23 ± 15	3 ± 3	2 ± 1	10 ± 12	12 ± 8
CL-02	12/28/05	< 61	< 73	< 3	< 11	< 18	< 16	< 30	< 6	< 3	< 36	< 40
	03/29/06	84 ± 46	< 36	< 3	< 3	< 6	< 6	< 22	< 2	< 2	< 7	< 8
	06/28/06	92 ± 28	< 25	< 2	< 4	< 5	< 4	< 16	< 2	< 1	< 11	< 10
	09/27/06	73 ± 18	< 45	< 2	< 3	< 5	< 3	< 19	< 2	< 2	< 4	< 10
	MEAN	77 ± 27	44 ± 41	2 ± 1	5 ± 7	8 ± 13	7 ± 11	22 ± 12	3 ± 4	2 ± 2	14 ± 29	17 ± 30
CL-03	12/28/05	< 70	< 62	< 6	< 9	< 12	< 15	< 33	< 5	< 4	< 24	< 21
	03/29/06	101 ± 40	26 ± 26	< 4	< 4	< 5	< 5	< 22	< 2	< 2	< 7	< 9
	06/28/06	100 ± 41	< 43	< 2	< 5	< 8	< 8	< 18	< 2	< 2	< 16	< 13
	09/27/06	48 ± 20	< 34	< 2	< 3	< 4	< 3	< 20	< 2	< 2	< 4	< 10
	MEAN	80 ± 51	41 ± 31	4 ± 4	5 ± 5	7 ± 7	8 ± 11	23 ± 13	3 ± 3	3 ± 2	13 ± 18	13 ± 10
CL-04	12/28/05	< 91	< 51	< 3	< 7	< 13	< 11	< 32	< 5	< 4	< 23	< 19
	03/29/06	95 ± 42	< 37	< 3	< 5	< 10	< 6	< 28	< 3	< 2	< 10	< 12
	06/28/06	119 ± 41	< 30	< 1	< 4	< 5	< 6	< 12	< 1	< 1	< 10	< 10
	09/27/06	54 ± 18	< 42	< 4	< 3	< 6	< 3	< 19	< 2	< 2	< 4	< 8
	MEAN	90 ± 54	40 ± 17	3 ± 2	5 ± 3	8 ± 8	6 ± 7	23 ± 18	3 ± 3	2 ± 2	12 ± 16	12 ± 10
CL-06	12/28/05	< 105	< 57	< 3	< 6	< 8	< 15	< 27	< 5	< 4	< 18	< 21
	03/29/06	77 ± 39	< 75	< 2	< 7	< 10	< 6	< 25	< 2	< 3	< 11	< 12
	06/28/06	< 81	< 34	< 2	< 5	< 11	< 7	< 17	< 2	< 2	< 15	< 14
	09/27/06	71 ± 22	< 25	< 2	< 2	< 3	< 1	< 14	< 1	< 1	< 3	< 6
	MEAN	84 ± 30	48 ± 45	2 ± 1	5 ± 4	8 ± 7	7 ± 11	21 ± 12	2 ± 3	3 ± 3	12 ± 13	13 ± 12

THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING BOTH THE MDA AND POSITIVE VALUES

TABLE C-VI.3 CONCENTRATIONS OF GAMMA EMITTERS IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	BE-7	K-40	CO-60	NB-95	ZR-95	RU-103	RU-106	CS-134	CS-137	CE-141	CE-144
CL-07	12/28/05	< 100	< 77	< 3	< 8	< 18	< 11	< 33	< 6	< 5	< 20	< 19
	03/29/06	98 ± 42	< 66	< 4	< 5	< 14	< 8	< 27	< 4	< 4	< 13	< 18
	06/28/06	53 ± 44	44 ± 19	< 2	< 3	< 8	< 5	< 21	< 2	< 2	< 10	< 8
	09/27/06	65 ± 18	< 40	< 2	< 3	< 4	< 3	< 23	< 2	< 2	< 4	< 12
	MEAN	79 ± 48	57 ± 35	3 ± 2	5 ± 4	11 ± 12	7 ± 7	26 ± 11	3 ± 3	3 ± 3	12 ± 13	14 ± 10
CL-08	12/28/05	< 86	< 79	< 4	< 10	< 15	< 11	< 42	< 5	< 4	< 22	< 23
	03/29/06	74 ± 28	< 50	< 2	< 4	< 7	< 4	< 22	< 2	< 2	< 8	< 11
	06/28/06	81 ± 35	44 ± 18	< 2	< 5	< 8	< 6	< 19	< 2	< 2	< 10	< 10
	09/27/06	49 ± 19	< 38	< 3	< 2	< 4	< 2	< 20	< 2	< 2	< 3	< 8
	MEAN	73 ± 32	52 ± 37	3 ± 2	5 ± 6	8 ± 9	6 ± 8	26 ± 22	3 ± 3	2 ± 2	11 ± 16	13 ± 14
CL-11*	12/28/05	< 83	< 61	< 4	< 7	< 16	< 10	< 38	< 5	< 3	< 20	< 15
	03/29/06	77 ± 39	< 39	< 3	< 3	< 4	< 5	< 14	< 1	< 2	< 6	< 9
	06/28/06	62 ± 37	< 20	< 2	< 3	< 6	< 7	< 16	< 1	< 1	< 11	< 10
	09/27/06	68 ± 28	< 54	< 2	< 3	< 5	< 4	< 22	< 3	< 3	< 4	< 11
	MEAN	73 ± 19	44 ± 37	3 ± 2	4 ± 4	8 ± 11	6 ± 5	22 ± 22	3 ± 3	2 ± 1	10 ± 14	11 ± 6
CL-15	12/28/05	< 86	< 70	< 4	< 6	< 13	< 12	< 37	< 3	< 3	< 15	< 15
	03/29/06	82 ± 30	< 51	< 1	< 6	< 8	< 7	< 35	< 3	< 3	< 10	< 12
	06/28/06	99 ± 43	< 39	< 3	< 6	< 8	< 9	< 20	< 2	< 2	< 15	< 14
	09/27/06	64 ± 28	< 24	< 2	< 3	< 6	< 3	< 28	< 2	< 2	< 5	< 13
	MEAN	83 ± 29	46 ± 40	2 ± 2	5 ± 3	8 ± 6	8 ± 8	30 ± 16	3 ± 1	3 ± 1	11 ± 10	13 ± 2
CL-94	12/29/04	< 77	< 74	< 4	< 8	< 13	< 11	< 26	< 4	< 3	< 15	< 14
	03/30/05	86 ± 35	< 48	< 3	< 4	< 7	< 6	< 20	< 2	< 2	< 8	< 10
	06/29/05	56 ± 51	< 48	< 2	< 2	< 7	< 5	< 16	< 2	< 2	< 11	< 9
	09/28/05	72 ± 23	< 48	< 4	< 4	< 6	< 4	< 28	< 3	< 3	< 5	< 13
	MEAN	73 ± 25	54 ± 26	3 ± 2	4 ± 5	8 ± 7	7 ± 6	23 ± 11	3 ± 2	2 ± 1	10 ± 9	12 ± 5

THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING BOTH THE MDA AND POSITIVE VALUES
* INDICATES CONTROL STATION

TABLE C-VII.1 CONCENTRATIONS OF I-131 IN AIR IODINE SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006

RESULTS IN UNITS OF E-3 PCI/CU METER ± 2 SIGMA

	GROUP I					
WEEK	CL-02	CL-03	CL-04	CL-06	CL-15	CL-94
1	< 35	< 35	< 34	< 23	< 46	< 35
2	< 38	< 38	< 38	< 25	< 33	< 26
3	< 37	< 37	< 37	< 37	< 33	< 22
4	< 39	< 42	< 42	< 27	< 43	< 21
5	< 28	< 42	< 42	< 42	< 36	< 20
6	< 33	< 33	< 33	< 25	< 40	< 30
7	< 43	< 24	< 43	< 43	< 40	< 26
8	< 41	< 41	< 41	< 30	< 63	< 42
9	< 46	< 46	< 25	< 46	< 41	< 31
10	< 48	< 48	< 48	< 27	< 42	< 31
11	< 43	< 43	< 43	< 32	< 40	< 22
12	< 42	< 42	< 42	< 23	< 29	< 19
13	< 49	< 49	< 49	< 25	< 40	< 39
14	< 28	< 28	< 28	< 21	< 30	< 22
15	< 44	< 44	< 44	< 33	< 48	< 47
16	< 39	< 39	< 39	< 26	< 40	< 30
17	< 43	< 43	< 43	< 24	< 49	< 48
18	< 42	< 42	< 42	< 42	< 36	< 36
19	< 65	< 65	< 65	< 36	< 36	< 66
20	< 60	< 60	< 60	< 30	< 62	< 34
21	< 63	< 63	< 63	< 42	< 61	< 41
22	< 67	< 66	< 66	< 66	< 66	< 43
23	< 69	< 69	< 69	< 69	< 66	< 44
24	< 59	< 59	< 59	< 32	< 54	< 30
25	< 50	< 49	< 49	< 37	< 47	< 26
26	< 56	< 56	< 56	< 45	< 50	< 40
27	< 55	< 55	< 55	< 44	< 48	< 38
28	< 58	< 58	< 58	< 46	< 46	< 36
29	< 40	< 40	< 40	< 22	< 59	< 33
30	< 51	< 63	< 63	< 63	(1)	< 49
31	< 35	< 47	< 47	< 47	< 46	< 25
32	< 41	< 23	< 41	< 41	< 36	< 28
33	< 36	< 36	< 36	< 35	< 57	< 45
34	< 25	< 25	< 26	< 13	< 22	< 15
35	< 45	< 44	< 44	< 35	< 52	< 41
36	< 22	< 54	< 23	< 12	< 68	< 67
37	< 35	< 35	< 35	< 28	< 38	< 21
38	< 61	< 61	< 61	< 40	< 60	< 59
39	< 33	< 33	< 33	< 33	< 34	< 34
40	< 64	< 64	< 64	< 64	< 65	< 65
41	< 61	< 61	< 61	< 61	< 59	< 59
42	< 67	< 66	< 66	< 66	< 58	< 58
43	< 46	< 46	< 46	< 46	< 67	< 66
44	< 49	< 49	< 48	< 49	< 49	< 48
45	< 65	< 65	< 65	< 65	< 32	< 47
46	< 38	< 38	< 38	< 38	< 36	< 36
47	< 64	< 64	< 63	< 64	< 45	< 57
48	< 45	< 45	< 45	< 45	< 42	< 21
49	< 18	< 18	< 86 (1)	< 86 (1)	< 94 (1)	< 97 (1)
50	< 18	< 33	< 58	< 59	< 45	< 43
51	< 43	< 23	< 42	< 42	< 47	< 46
52	< 48	< 48	< 47	< 32	< 48	< 36
53	< 24	< 24	< 24	< 13	< 9.5	< 9.6
MEAN	45 ± 27	46 ± 27	47 ± 25	39 ± 30	46 ± 25	38 ± 28

EXCEPTION RELATED VALUES ARE NOT INCLUDED IN THE MEAN AND 2 STANDARD DEVIATION CALCULATION

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-VII.1 CONCENTRATIONS OF I-131 IN AIR IODINE SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006

RESULTS IN UNITS OF E-3 PCI/CU METER ± 2 SIGMA

	GROUP II			GROUP III
WEEK	CL-01	CL-07	CL-08	CL-11 *
1	< 35	< 49	< 45	< 46
2	< 38	< 35	< 33	< 33
3	< 19	< 32	< 33	< 33
4	< 42	< 42	< 42	< 42
5	< 42	< 36	< 36	< 36
6	< 33	< 39	< 39	< 39
7	< 43	< 40	< 40	< 40
8	< 41	< 62	< 62	< 62
9	< 46	< 41	< 31	< 41
10	< 48	< 41	< 41	< 41
11	< 43	< 40	< 40	< 40
12	< 43	< 28	< 28	< 28
13	< 49	< 26	< 39	< 40
14	< 28	< 30	< 30	< 31
15	< 44	< 47	< 26	< 47
16	< 39	< 40	< 40	< 40
17	< 43	< 48	< 48	< 32
18	< 42	< 36	< 36	< 27
19	< 65	< 65	< 65	< 65
20	< 60	< 62	< 62	< 62
21	< 63	< 61	< 61	< 61
22	< 51	< 65	< 65	< 65
23	< 52	< 66	< 66	< 67
24	< 59	< 54	< 54	< 54
25	< 51	< 47	< 47	< 46
26	< 56	< 50	< 50	< 50
27	< 55	< 48	< 48	< 48
28	< 58	< 45	< 45	< 45
29	< 41	< 59	< 59	< 59
30	< 64	< 61	< 62	< 61
31	< 47	< 45	< 45	< 45
32	< 41	< 36	< 36	< 36
33	< 23	< 56	< 55	< 56
34	< 25	< 22	< 21	< 22
35	< 44	< 52	< 50	< 52
36	< 21	< 22	< 66	< 67
37	< 35	< 37	< 37	< 37
38	< 61	< 47	< 59	< 59
39	< 22	< 33	< 33	< 33
40	< 51	< 65	< 36	< 65
41	< 49	< 32	< 59	< 59
42	< 37	< 58	< 58	< 32
43	< 26	< 36	< 66	< 66
44	< 38	< 26	< 48	< 48
45	< 43	< 47	< 47	< 47
46	< 21	< 29	< 36	< 36
47	< 744 (1)	< 58	< 57	< 57
48	< 225 (1)	< 41	< 41	< 41
49	< 27	< 16	< 21	< 20
50	< 34	< 33	< 42	< 42
51	< 43	< 37	< 46	< 46
52	< 48	< 48	< 48	< 48
53	< 24	< 10	< 10	< 10
MEAN	42 ± 24	43 ± 27	45 ± 26	45 ± 27

EXCEPTION RELATED VALUES ARE NOT INCLUDED IN THE MEAN AND 2 STANDARD DEVIATION CALCULATION

* INDICATES CONTROL STATION

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-VIII.1 CONCENTRATIONS OF I-131 IN MILK SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	CONTROL FARM CL-116 *	
01/25/06	< 0.6	
02/22/06	< 0.6	
03/29/06	< 0.7	
04/26/06	< 0.7	
05/10/06	< 0.8	
05/24/06	< 0.3	
06/07/06		(1)
06/21/06	< 2.2	(1)
07/05/06	< 0.9	
07/19/06	< 0.5	
08/02/06	< 0.7	
08/16/06	< 0.9	
08/30/06	< 0.6	
09/13/06	< 0.4	
09/27/06	< 0.5	
10/11/06	< 0.9	
10/25/06	< 0.9	
11/29/06	< 0.6	
12/27/06	< 0.8	
MEAN	0.7 ± 0.3	

EXCEPTION RELATED VALUES ARE NOT INCLUDED IN THE MEAN AND 2 STANDARD DEVIATION CALCULATION
* INDICATES CONTROL STATION
(1) SEE PROGRAM EXECEPTIONS SECTION FOR EXPLANATION

TABLE C-VIII.2 CONCENTRATIONS OF GAMMA EMITTERS IN MILK SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	BE-7	K-40	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	CS-134	CS-137	BA-140	LA-140	CE-144
CL-116*	01/25/06	< 79	1510 ± 161	< 8	< 9	< 18	< 11	< 25	< 10	< 16	< 11	< 10	< 40	< 11	< 61
	02/22/06	< 57	1290 ± 152	< 8	< 7	< 19	< 9	< 20	< 8	< 11	< 8	< 8	< 28	< 10	< 50
	03/29/06	< 88	1390 ± 162	< 10	< 10	< 23	< 10	< 24	< 9	< 17	< 11	< 11	< 43	< 14	< 66
	04/26/06	< 45	1260 ± 113	< 6	< 6	< 13	< 7	< 15	< 6	< 11	< 6	< 6	< 26	< 9	< 38
	05/10/06	< 83	1260 ± 180	< 11	< 13	< 25	< 12	< 26	< 10	< 21	< 11	< 10	< 51	< 14	< 79
	05/24/06	< 81	1100 ± 172	< 9	< 10	< 23	< 11	< 24	< 11	< 14	< 11	< 10	< 48	< 13	< 70
	06/07/06	< 54	1180 ± 96	< 5	< 7	< 15	< 6	< 13	< 6	< 11	< 6	< 5	< 49	< 15	< 40
	06/21/06	< 86	1340 ± 182	< 9	< 10	< 25	< 11	< 29	< 11	< 18	< 10	< 12	< 48	< 13	< 70
	07/05/06	< 100	1220 ± 187	< 11	< 11	< 25	< 13	< 31	< 11	< 24	< 12	< 14	< 48	< 14	< 70
	07/19/06	< 97	1440 ± 183	< 11	< 10	< 25	< 13	< 22	< 10	< 19	< 13	< 10	< 47	< 14	< 79
	08/02/06	< 61	1220 ± 132	< 6	< 6	< 16	< 7	< 18	< 7	< 12	< 7	< 8	< 30	< 12	< 46
	08/16/06	< 19	1210 ± 50	< 2	< 2	< 5	< 2	< 5	< 2	< 4	< 2	< 2	< 19	< 5	< 14
	08/30/06	< 70	1280 ± 167	< 7	< 8	< 15	< 8	< 18	< 7	< 13	< 8	< 9	< 41	< 11	< 55
	09/13/06	< 43	1060 ± 140	< 6	< 6	< 14	< 7	< 15	< 5	< 10	< 4	< 5	< 28	< 7	< 38
	09/27/06	< 53	1090 ± 131	< 6	< 7	< 12	< 5	< 14	< 5	< 9	< 5	< 7	< 28	< 9	< 45
	10/11/06	< 40	1170 ± 108	< 4	< 4	< 12	< 5	< 9	< 5	< 10	< 3	< 4	< 38	< 15	< 25
	10/25/06	< 52	1260 ± 131	< 6	< 5	< 14	< 5	< 13	< 6	< 8	< 4	< 5	< 37	< 9	< 40
	11/29/06	< 62	1020 ± 138	< 7	< 7	< 15	< 7	< 14	< 7	< 11	< 6	< 7	< 51	< 13	< 44
	12/27/06	< 30	1120 ± 105	< 4	< 4	< 9	< 4	< 11	< 4	< 7	< 4	< 4	< 24	< 7	< 27
	MEAN	63 ± 46	1233 ± 257	7 ± 5	7 ± 6	17 ± 12	8 ± 6	18 ± 14	8 ± 5	13 ± 10	7 ± 6	8 ± 6	38 ± 21	11 ± 6	50 ± 37

* INDICATES CONTROL STATION

TABLE C-IX.1 CONCENTRATIONS OF GAMMA EMITTERS IN VEGETATION SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

STC	COLLECTION PERIOD	BE-7	K-40	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140	CE-144
CL-114* Kale	06/28/06	97 ± 53	5700 ± 175	< 8	< 9	< 21	< 8	< 18	< 9	< 16	< 55	< 7	< 8	< 91	< 30	< 49
CL-114* Swiss Chard	06/28/06	278 ± 57	9560 ± 167	< 8	< 9	< 22	< 8	< 21	< 9	< 17	< 59	< 8	< 8	< 93	< 25	< 51
CL-114* Lettuce	06/28/06	145 ± 65	4810 ± 176	< 10	< 11	< 27	< 10	< 25	< 12	< 21	< 60	< 10	< 10	< 107	< 34	< 62
CL-114* Cabbage	07/26/06	171 ± 41	2740 ± 108	< 4	< 5	< 12	< 4	< 10	< 5	< 9	< 29	< 4	< 5	< 50	< 16	< 27
CL-114* Kale	07/26/06	260 ± 49	6710 ± 148	< 5	< 6	< 16	< 5	< 13	< 6	< 11	< 40	< 5	< 5	< 62	< 18	< 32
CL-114* Swiss Chard	07/26/06	137 ± 55	4480 ± 146	< 6	< 6	< 16	< 6	< 13	< 7	< 11	< 35	< 5	< 6	< 61	< 16	< 36
CL-114* Kale	08/30/06	520 ± 91	4430 ± 164	< 4	< 6	< 15	< 4	< 10	< 6	< 11	< 60	< 4	< 4	< 156	< 45	< 24
CL-114* Soybean Leaves	08/30/06	5440 ± 1220	5750 ± 1470	< 38	< 55	< 110	< 37	< 106	< 65	< 54	< 58	< 54	< 38	< 1560	< 597	< 233
CL-114* Swiss Chard	08/30/06	271 ± 63	4020 ± 129	< 3	< 4	< 11	< 3	< 7	< 4	< 8	< 60	< 3	< 3	< 73	< 22	< 21
CL-114* Broadleaf Noxious Weed	09/27/06	1820 ± 275	6780 ± 425	< 11	< 11	< 26	< 8	< 21	< 12	< 21	< 57	< 9	< 11	< 101	< 28	< 78
CL-114* Cabbage	09/27/06	304 ± 59	9380 ± 206	< 6	< 7	< 20	< 8	< 17	< 7	< 12	< 32	< 5	< 6	< 56	< 16	< 33
CL-114* Swiss Chard	09/27/06	160 ± 40	4390 ± 111	< 4	< 5	< 12	< 4	< 10	< 5	< 8	< 22	< 4	< 4	< 40	< 12	< 23
	MEAN*	800 ± 3069	5729 ± 4170	9 ± 19	11 ± 28	26 ± 54	9 ± 18	23 ± 54	12 ± 33	16 ± 25	47 ± 29	10 ± 28	9 ± 19	204 ± 856	71 ± 332	56 ± 117

* INDICATES CONTROL STATION

TABLE C-IX.1 CONCENTRATIONS OF GAMMA EMITTERS IN VEGETATION SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

STC	COLLECTION PERIOD	BE-7	K-40	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140	CE-144
CL-115 Kale	06/28/06	292 ± 76	4280 ± 204	< 8	< 10	< 23	< 8	< 19	< 10	< 18	< 57	< 8	< 8	< 97	< 30	< 44
CL-115 Rhubarb	06/28/06	390 ± 65	4850 ± 192	< 10	< 11	< 29	< 10	< 25	< 11	< 20	< 60	< 10	< 10	< 100	< 31	< 53
CL-115 Lettuce	06/28/06	365 ± 66	2940 ± 147	< 9	< 10	< 22	< 9	< 21	< 10	< 18	< 56	< 10	< 9	< 95	< 30	< 52
CL-115 Cabbage	07/26/06	85 ± 41	2710 ± 117	< 5	< 6	< 15	< 5	< 12	< 6	< 11	< 39	< 5	< 5	< 64	< 19	< 30
CL-115 Kale	07/26/06	359 ± 60	4270 ± 129	< 5	< 5	< 14	< 5	< 11	< 6	< 10	< 30	< 4	< 5	< 55	< 15	< 28
CL-115 Swiss Chard	07/26/06	473 ± 48	5290 ± 118	< 5	< 6	< 14	< 5	< 11	< 6	< 10	< 35	< 4	< 5	< 57	< 17	< 30
CL-115 Cabbage	08/30/06	79 ± 46	2530 ± 114	< 3	< 4	< 13	< 4	< 9	< 5	< 8	< 59	< 3	< 4	< 72	< 19	< 27
CL-115 Kale	08/30/06	473 ± 45	5420 ± 112	< 2	< 3	< 8	< 2	< 6	< 3	< 5	< 51	< 2	< 2	< 59	< 15	< 14
CL-115 Swiss Chard	08/30/06	472 ± 64	5440 ± 136	< 3	< 4	< 10	< 3	< 7	< 4	< 7	< 56	< 3	< 3	< 64	< 18	< 18
CL-115 Cabbage	09/27/06	62 ± 35	2340 ± 96	< 4	< 5	< 11	< 4	< 10	< 5	< 9	< 23	< 4	< 4	< 43	< 13	< 26
CL-115 Kale	09/27/06	282 ± 63	5050 ± 183	< 7	< 8	< 19	< 7	< 18	< 8	< 15	< 40	< 6	< 7	< 74	< 19	< 46
CL-115 Swiss Chard	09/27/06	293 ± 49	6370 ± 161	< 5	< 7	< 16	< 6	< 15	< 7	< 11	< 27	< 5	< 5	< 51	< 14	< 31
	MEAN*	302 ± 306	4291 ± 2699	6 ± 5	7 ± 5	16 ± 12	6 ± 5	14 ± 12	7 ± 5	12 ± 10	44 ± 27	5 ± 5	6 ± 5	69 ± 38	20 ± 13	33 ± 25

TABLE C-IX.1 CONCENTRATIONS OF GAMMA EMITTERS IN VEGETATION SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

STC	COLLECTION PERIOD	BE-7	K-40	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140	CE-144
CL-117 Cabbage	06/28/06	111 ± 35	3260 ± 109	< 6	< 6	< 16	< 6	< 15	< 7	< 12	< 37	< 6	< 6	< 60	< 19	< 37
CL-117 Lettuce	06/28/06	398 ± 58	5310 ± 129	< 9	< 10	< 24	< 9	< 21	< 10	< 18	< 60	< 9	< 9	< 100	< 31	< 46
CL-117 Swiss Chard	06/28/06	374 ± 61	6650 ± 191	< 10	< 11	< 28	< 10	< 26	< 12	< 20	< 56	< 10	< 10	< 98	< 29	< 53
CL-117 Cabbage	07/26/06	88 ± 44	2900 ± 119	< 5	< 6	< 14	< 5	< 12	< 6	< 10	< 27	< 4	< 5	< 49	< 13	< 28
CL-117 Kale	07/26/06	230 ± 86	5810 ± 205	< 8	< 8	< 22	< 7	< 18	< 9	< 16	< 49	< 7	< 8	< 86	< 24	< 46
CL-117 Swiss Chard	07/26/06	334 ± 44	5600 ± 134	< 5	< 5	< 14	< 5	< 12	< 6	< 10	< 29	< 4	< 5	< 51	< 14	< 25
CL-117 Cabbage	08/30/06	457 ± 54	2640 ± 100	< 3	< 3	< 8	< 3	< 6	< 3	< 6	< 55	< 2	< 3	< 61	< 20	< 14
CL-117 Kale	08/30/06	445 ± 43	5240 ± 103	< 3	< 3	< 9	< 3	< 7	< 4	< 7	< 60	< 3	< 3	< 66	< 18	< 16
CL-117 Swiss Chard	08/30/06	< 264	5300 ± 833	< 11	< 18	< 32	< 15	< 37	< 11	< 23	< 23	< 14	< 19	< 378	< 159	< 75
CL-117 Cabbage	09/27/06	268 ± 55	4180 ± 140	< 6	< 6	< 15	< 5	< 13	< 6	< 11	< 29	< 5	< 5	< 54	< 13	< 32
CL-117 Kale	09/27/06	193 ± 52	5690 ± 159	< 6	< 7	< 17	< 6	< 14	< 7	< 12	< 38	< 5	< 6	< 62	< 16	< 43
CL-117 Swiss Chard	09/27/06	141 ± 42	6150 ± 146	< 5	< 6	< 15	< 5	< 13	< 6	< 10	< 25	< 4	< 5	< 47	< 13	< 27
	MEAN*	275 ± 255	4894 ± 2651	6 ± 5	7 ± 8	18 ± 14	7 ± 7	16 ± 17	7 ± 5	13 ± 11	41 ± 29	6 ± 7	7 ± 9	93 ± 183	31 ± 82	37 ± 34

THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING BOTH THE MDA AND POSITIVE VALUES

TABLE C-IX.1 CONCENTRATIONS OF GAMMA EMITTERS IN VEGETATION SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

STC	COLLECTION PERIOD	BE-7	K-40	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140	CE-144
CL-118 Swiss Chard	06/28/06	787 ± 65	12500 ± 205	< 9	< 10	< 26	< 9	< 23	< 10	< 18	< 59	< 8	< 8	< 99	< 30	< 45
CL-118 Kale	06/28/06	240 ± 61	5790 ± 212	< 8	< 8	< 20	< 8	< 17	< 9	< 16	< 53	< 7	< 7	< 87	< 25	< 41
CL-118 Lettuce	06/28/06	468 ± 54	5280 ± 143	< 7	< 9	< 21	< 7	< 19	< 9	< 16	< 56	< 8	< 8	< 89	< 25	< 47
CL-118 Cabbage	07/26/06	153 ± 43	3600 ± 139	< 5	< 6	< 14	< 5	< 12	< 6	< 11	< 31	< 5	< 5	< 51	< 16	< 30
CL-118 Kale	07/26/06	393 ± 90	4730 ± 240	< 11	< 11	< 26	< 10	< 25	< 13	< 20	< 51	< 10	< 11	< 97	< 27	< 65
CL-118 Swiss Chard	07/26/06	410 ± 61	6460 ± 166	< 5	< 6	< 16	< 7	< 14	< 6	< 10	< 32	< 5	< 5	< 54	< 16	< 28
CL-118 Cabbage	08/30/06	78 ± 49	2640 ± 115	< 3	< 4	< 10	< 3	< 6	< 4	< 7	< 57	< 2	< 3	< 63	< 16	< 19
CL-118 Kale	08/30/06	499 ± 92	3990 ± 177	< 5	< 7	< 19	< 5	< 12	< 7	< 13	< 59	< 5	< 5	< 188	< 55	< 27
CL-118 Swiss Chard	08/30/06	144 ± 34	4450 ± 89	< 2	< 3	< 8	< 4	< 6	< 3	< 6	< 55	< 2	< 2	< 58	< 15	< 15
CL-118 Cabbage	09/27/06	410 ± 69	5400 ± 178	< 7	< 8	< 21	< 7	< 17	< 8	< 15	< 37	< 7	< 7	< 66	< 20	< 44
CL-118 Kale	09/27/06	73 ± 34	2880 ± 99	< 4	< 4	< 11	< 4	< 9	< 5	< 8	< 24	< 4	< 4	< 42	< 11	< 26
CL-118 Swiss Chard	09/27/06	278 ± 58	5900 ± 179	< 6	< 7	< 18	< 6	< 16	< 7	< 12	< 32	< 5	< 6	< 58	< 15	< 37
	MEAN*	328 ± 418	5302 ± 5130	6 ± 5	7 ± 5	17 ± 12	6 ± 4	15 ± 12	7 ± 5	13 ± 9	45 ± 26	6 ± 5	6 ± 5	79 ± 78	22 ± 24	35 ± 28

TABLE C-IX.2 CONCENTRATIONS OF GAMMA EMITTERS IN GRASS SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

STC	COLLECTION PERIOD	BE-7	K-40	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140	CE-144
CL-01																
	05/10/06	763 ± 169	7140 ± 368	< 21	< 23	< 50	< 22	< 55	< 24	< 40	< 58	< 24	< 23	< 138	< 40	< 137
	05/24/06	470 ± 178	7740 ± 361	< 20	< 27	< 71	< 20	< 55	< 26	< 47	< 59	< 24	< 20	< 435	< 118	< 155
	06/07/06	759 ± 150	6950 ± 298	< 5	< 6	< 17	< 6	< 12	< 7	< 13	< 59	< 5	< 5	< 81	< 23	< 37
	06/21/06	1390 ± 174	6640 ± 357	< 20	< 21	< 50	< 22	< 49	< 20	< 37	< 54	< 22	< 21	< 125	< 34	< 126
	07/05/06	1470 ± 113	< 565	< 15	< 15	< 34	< 15	< 35	< 15	< 25	< 30	< 16	< 15	< 76	< 21	< 107
	07/19/06	753 ± 113	4180 ± 244	< 14	< 15	< 36	< 14	< 37	< 16	< 26	< 50	< 16	< 14	< 107	< 30	< 99
	08/02/06	994 ± 92	4210 ± 179	< 5	< 6	< 16	< 5	< 12	< 7	< 11	< 55	< 5	< 5	< 78	< 22	< 33
	08/16/06	2220 ± 675	5390 ± 871	< 42	< 52	< 149	< 57	< 107	< 56	< 90	< 49	< 43	< 33	< 997	< 371	< 228
	08/30/06	1660 ± 100	5310 ± 191	< 4	< 5	< 13	< 4	< 10	< 5	< 10	< 59	< 3	< 4	< 75	< 20	< 24
	09/13/06	1680 ± 201	4940 ± 378	< 10	< 11	< 26	< 10	< 23	< 11	< 19	< 54	< 11	< 11	< 101	< 16	< 63
	09/27/06	2000 ± 86	6340 ± 182	< 7	< 8	< 18	< 7	< 17	< 8	< 14	< 21	< 6	< 7	< 48	< 14	< 41
	10/11/06	2050 ± 252	4290 ± 482	< 20	< 16	< 42	< 18	< 43	< 20	< 39	< 55	< 19	< 21	< 118	< 23	< 138
	10/25/06	3250 ± 150	7150 ± 190	< 7	< 11	< 34	< 8	< 19	< 12	< 20	< 40	< 7	< 7	< 447	< 110	< 50
	MEAN	1497 ± 1546	5450 ± 3834	15 ± 21	17 ± 25	43 ± 72	16 ± 28	36 ± 54	17 ± 27	30 ± 44	49 ± 24	16 ± 22	14 ± 17	217 ± 537	65 ± 196	95 ± 121
CL-02																
	05/10/06	1030 ± 140	4830 ± 312	< 19	< 19	< 43	< 18	< 47	< 20	< 35	< 51	< 22	< 19	< 118	< 34	< 130
	05/24/06	727 ± 231	5590 ± 342	< 25	< 32	< 84	< 26	< 64	< 33	< 59	(1)	< 30	< 26	< 596	< 158	< 201
	06/07/06	2150 ± 339	6740 ± 619	< 34	< 42	< 100	< 35	< 91	< 41	< 72	< 20	< 36	< 33	< 521	< 149	< 202
	06/21/06	1100 ± 185	8310 ± 462	< 23	< 25	< 55	< 23	< 62	< 24	< 40	< 59	< 24	< 23	< 143	< 39	< 148
	07/05/06	2910 ± 239	6270 ± 420	< 29	< 29	< 65	< 30	< 70	< 28	< 47	< 57	< 31	< 30	< 140	< 41	< 218
	07/19/06	1940 ± 154	6490 ± 276	< 12	< 13	< 29	< 12	< 29	< 14	< 24	< 43	< 12	< 12	< 89	< 25	< 83
	08/02/06	1600 ± 104	6810 ± 197	< 5	< 6	< 16	< 5	< 12	< 6	< 11	< 52	< 4	< 5	< 76	< 17	< 33
	08/16/06	1460 ± 459	4970 ± 727	< 26	< 41	< 111	< 37	< 77	< 44	< 69	< 46	< 23	< 30	< 717	< 243	< 205
	08/30/06	900 ± 66	5290 ± 130	< 3	< 4	< 9	< 3	< 7	< 4	< 7	< 53	< 3	< 3	< 60	< 15	< 19
	09/13/06	2130 ± 272	3850 ± 392	< 13	< 15	< 29	< 16	< 33	< 15	< 25	< 60	< 11	< 15	< 101	< 33	< 87
	09/27/06	2210 ± 95	5840 ± 201	< 7	< 8	< 18	< 8	< 18	< 8	< 14	< 20	< 6	< 8	< 48	< 13	< 42
	10/11/06	1550 ± 90	3910 ± 156	< 7	< 7	< 16	< 7	< 15	< 8	< 13	< 18	< 6	< 7	< 42	< 10	< 50
	10/25/06	2320 ± 118	5900 ± 159	< 6	< 9	< 28	< 6	< 16	< 10	< 17	< 47	< 6	< 6	< 350	< 95	< 42
	MEAN	1694 ± 1296	5754 ± 2463	16 ± 21	19 ± 26	46 ± 68	17 ± 24	42 ± 57	20 ± 27	33 ± 45	44 ± 31	17 ± 23	17 ± 22	231 ± 468	67 ± 146	112 ± 150

THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING BOTH THE MDA AND POSITIVE VALUES

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-IX.2 CONCENTRATIONS OF GAMMA EMITTERS IN GRASS SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

STC	COLLECTION PERIOD	BE-7	K-40	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140	CE-144
CL-08																
	05/10/06	402 ± 166	6660 ± 396	< 21	< 23	< 55	< 23	< 58	< 23	< 42	< 56	< 24	< 22	< 137	< 36	< 136
	05/24/06	506 ± 181	7250 ± 374	< 24	< 30	< 78	< 23	< 56	< 32	< 54	< 42	< 25	< 22	< 502	< 146	< 144
	06/07/06	674 ± 141	7650 ± 352	< 7	< 8	< 15	< 7	< 15	< 8	< 12	< 59	< 5	< 6	< 78	< 19	< 33
	06/21/06	1050 ± 203	7800 ± 407	< 17	< 18	< 39	< 18	< 45	< 20	< 31	< 57	< 17	< 20	< 117	< 33	< 153
	07/05/06	1410 ± 115	8750 ± 261	< 15	< 15	< 34	< 16	< 37	< 15	< 25	< 26	< 16	< 15	< 68	< 21	< 84
	07/19/06	1200 ± 100	8640 ± 278	< 11	< 12	< 30	< 12	< 29	< 12	< 21	< 39	< 11	< 12	< 82	< 20	< 80
	08/02/06	276 ± 69	7960 ± 189	< 5	< 6	< 15	< 5	< 12	< 6	< 10	< 49	< 4	< 5	< 69	< 17	< 32
	08/16/06	970 ± 411	8690 ± 743	< 27	< 36	< 102	< 25	< 66	< 40	< 51	< 42	< 21	< 21	< 710	< 156	< 162
	08/30/06	1670 ± 99	7330 ± 188	< 4	< 5	< 13	< 5	< 9	< 5	< 8	< 60	< 3	< 4	< 74	< 17	< 24
	09/13/06	1050 ± 145	4860 ± 337	< 10	< 12	< 29	< 10	< 25	< 12	< 21	< 47	< 10	< 11	< 89	< 22	< 62
	09/27/06	1630 ± 83	8580 ± 190	< 7	< 7	< 19	< 9	< 18	< 8	< 13	< 25	< 7	< 7	< 49	< 12	< 51
	10/11/06	616 ± 105	3860 ± 282	< 11	< 10	< 25	< 10	< 26	< 12	< 18	< 22	< 9	< 10	< 55	< 13	< 57
	10/25/06	1750 ± 116	8820 ± 183	< 6	< 8	< 28	< 6	< 16	< 9	< 16	< 44	< 5	< 5	< 346	< 85	< 43
	MEAN	1016 ± 1000	7450 ± 3082	13 ± 15	15 ± 19	37 ± 53	13 ± 14	32 ± 38	15 ± 21	25 ± 31	44 ± 26	12 ± 15	12 ± 14	183 ± 414	46 ± 101	82 ± 100
CL-116 *																
	05/10/06	1550 ± 147	6230 ± 299	< 17	< 17	< 40	< 18	< 41	< 19	< 32	< 58	< 18	< 17	< 113	< 34	< 121
	05/24/06	828 ± 277	6220 ± 482	< 29	< 33	< 98	< 31	< 78	< 40	< 65	(1)	< 33	< 29	< 574	< 178	< 187
	06/07/06	1980 ± 189	5920 ± 354	< 16	< 20	< 50	< 15	< 42	< 21	< 37	< 8	< 16	< 17	< 238	< 64	< 141
	06/21/06	2120 ± 183	7000 ± 346	< 20	< 20	< 46	< 20	< 47	< 21	< 37	< 55	< 21	< 20	< 127	< 39	< 124
	07/05/06	1700 ± 116	6490 ± 248	< 16	< 16	< 36	< 17	< 39	< 16	< 28	< 33	< 18	< 16	< 81	< 23	< 122
	07/19/06	2150 ± 173	7390 ± 326	< 17	< 18	< 43	< 18	< 44	< 19	< 34	< 59	< 18	< 18	< 125	< 33	< 113
	08/02/06	902 ± 92	6900 ± 210	< 6	< 6	< 17	< 6	< 14	< 7	< 12	< 59	< 5	< 5	< 84	< 22	< 38
	08/16/06	992 ± 426	4460 ± 686	< 33	< 43	< 140	< 24	< 82	< 54	< 63	< 50	< 35	< 39	< 754	< 234	< 215
	08/30/06	1120 ± 85	4890 ± 147	< 4	< 5	< 13	< 4	< 9	< 5	< 9	< 57	< 4	< 4	< 73	< 19	< 26
	09/13/06	1790 ± 81	7230 ± 188	< 6	< 7	< 18	< 6	< 16	< 8	< 13	< 32	< 6	< 6	< 59	< 16	< 45
	09/27/06	1580 ± 97	6790 ± 236	< 7	< 8	< 18	< 8	< 18	< 8	< 15	< 24	< 6	< 8	< 50	< 14	< 45
	10/11/06	1840 ± 300	6060 ± 524	< 22	< 21	< 56	< 23	< 56	< 26	< 41	< 60	< 21	< 21	< 137	< 42	< 176
	10/25/06	2590 ± 167	7940 ± 223	< 8	< 11	< 40	< 9	< 22	< 13	< 21	< 55	< 7	< 7	< 476	< 123	< 49
	MEAN	1626 ± 1077	6425 ± 1937	15 ± 18	17 ± 22	47 ± 71	15 ± 16	39 ± 46	20 ± 28	31 ± 36	46 ± 34	16 ± 21	16 ± 20	222 ± 457	65 ± 140	108 ± 125

* INDICATES CONTROL STATION

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-X.1 QUARTERLY TLD RESULTS FOR CLINTON POWER STATION, 2006

RESULTS IN UNITS OF MILLI-ROENTGEN/QUARTER ± 2 STANDARD DEVIATIONS

STATION CODE	MEAN ± 2 S. D.	JAN - MAR	APR - JUN	JUL - SEP	OCT - DEC
CL-1	21.0 ± 3.9	19.0 ± 0.7	22.6 ± 2.3	19.7 ± 1.6	22.7 ± 1.5
CL-2	21.3 ± 3.5	19.3 ± 1.7	22.1 ± 2.5	20.5 ± 0.5	23.3 ± 1.5
CL-3	21.0 ± 3.9	19.3 ± 0.9	22.9 ± 1.3	19.3 ± 1.4	22.4 ± 1.0
CL-4	20.8 ± 3.9	19.0 ± 0.9	22.5 ± 0.5	19.2 ± 1.4	22.4 ± 3.6
CL-5	21.8 ± 4.3	19.6 ± 2.1	23.8 ± 0.9	20.4 ± 0.6	23.5 ± 2.4
CL-6	19.2 ± 4.1	17.2 ± 1.0	20.6 ± 1.0	17.8 ± 0.9	21.3 ± 2.1
CL-7	20.1 ± 3.4	18.3 ± 1.3	21.6 ± 1.9	18.9 ± 2.4	21.5 ± 1.8
CL-8	21.0 ± 3.9	19.3 ± 1.2	23.3 ± 1.9	19.4 ± 1.4	21.8 ± 1.6
CL-11	20.1 ± 3.6	18.2 ± 2.4	21.3 ± 1.5	18.9 ± 2.6	21.9 ± 1.6
CL-15	19.3 ± 3.1	18.2 ± 1.7	20.5 ± 1.1	17.8 ± 1.5	20.8 ± 2.1
CL-22	21.9 ± 4.5	19.6 ± 2.1	24.5 ± 1.8	20.6 ± 2.1	23.0 ± 2.0
CL-23	21.2 ± 4.1	19.0 ± 1.1	23.3 ± 2.8	19.9 ± 1.2	22.6 ± 0.9
CL-24	21.7 ± 4.9	18.5 ± 0.4	23.6 ± 1.4	21.1 ± 2.4	23.7 ± 1.0
CL-33	21.5 ± 3.9	19.6 ± 1.5	23.6 ± 1.9	20.1 ± 1.3	22.8 ± 1.8
CL-34	22.3 ± 4.5	19.0 ± 0.8	23.8 ± 1.5	22.9 ± 3.0	23.6 ± 2.4
CL-35	20.8 ± 3.9	18.3 ± 1.0	22.9 ± 1.1	20.4 ± 3.2	21.6 ± 3.4
CL-36	21.8 ± 3.4	19.4 ± 1.3	23.3 ± 1.4	21.9 ± 1.8	22.6 ± 2.1
CL-37	20.8 ± 3.8	18.8 ± 0.9	22.9 ± 2.8	19.6 ± 3.1	21.7 ± 1.1
CL-41	21.8 ± 4.0	19.4 ± 1.5	23.4 ± 1.0	21.0 ± 0.9	23.5 ± 1.6
CL-42	21.5 ± 3.5	19.0 ± 0.9	22.5 ± 2.5	21.6 ± 2.9	22.8 ± 2.2
CL-43	22.1 ± 4.5	19.5 ± 1.3	23.7 ± 3.2	21.0 ± 1.4	24.2 ± 1.1
CL-44	21.6 ± 3.5	20.0 ± 2.1	22.9 ± 3.0	20.2 ± 1.7	23.3 ± 1.5
CL-45	22.0 ± 4.5	19.8 ± 1.3	23.4 ± 1.7	20.3 ± 2.0	24.4 ± 1.1
CL-46	20.5 ± 2.4	18.7 ± 1.0	20.9 ± 2.0	20.8 ± 5.6	21.4 ± 1.1
CL-47	21.7 ± 4.0	19.1 ± 0.9	22.5 ± 2.7	21.5 ± 1.1	23.8 ± 1.2
CL-48	21.0 ± 3.5	19.0 ± 1.6	22.6 ± 1.9	20.0 ± 1.4	22.3 ± 1.0
CL-49	22.1 ± 3.4	21.0 ± 2.3	22.8 ± 1.0	20.5 ± 1.0	24.2 ± 2.1
CL-51	22.2 ± 3.3	20.4 ± 1.7	23.1 ± 1.2	21.2 ± 1.0	24.0 ± 3.2
CL-52	22.3 ± 2.8	20.3 ± 1.3	23.3 ± 1.7	23.3 ± 3.0	22.4 ± 0.8
CL-53	20.6 ± 3.7	19.0 ± 2.3	22.0 ± 0.9	18.9 ± 1.4	22.3 ± 0.7
CL-54	21.4 ± 4.1	19.6 ± 1.9	23.4 ± 2.1	19.7 ± 1.0	23.0 ± 2.0
CL-55	21.5 ± 3.3	19.9 ± 1.3	23.0 ± 2.3	20.3 ± 1.8	22.8 ± 1.5
CL-56	22.1 ± 4.0	20.4 ± 1.5	23.7 ± 2.6	20.3 ± 0.9	24.0 ± 1.7
CL-57	22.4 ± 4.1	20.3 ± 1.7	24.4 ± 1.1	21.0 ± 0.9	23.9 ± 2.1
CL-58	22.0 ± 4.6	20.0 ± 1.4	24.0 ± 2.5	20.0 ± 0.7	23.9 ± 2.7
CL-60	21.8 ± 3.3	20.2 ± 2.0	23.1 ± 1.2	20.5 ± 3.1	23.3 ± 0.9
CL-61	21.3 ± 4.5	18.9 ± 0.7	23.7 ± 1.2	20.0 ± 2.3	22.7 ± 1.9
CL-63	19.8 ± 3.8	19.2 ± 2.1	21.4 ± 1.8	17.3 ± 0.9	21.1 ± 1.2
CL-64	21.5 ± 4.4	19.9 ± 2.2	23.4 ± 1.2	19.3 ± 1.4	23.3 ± 0.7
CL-65	21.6 ± 2.8	20.1 ± 1.7	23.0 ± 1.7	20.8 ± 2.3	22.6 ± 1.6
CL-74	19.5 ± 4.0	17.6 ± 0.6	21.1 ± 1.7	18.0 ± 1.4	21.4 ± 2.3
CL-75	21.6 ± 2.6	20.4 ± 2.2	23.2 ± 2.4	20.7 ± 1.2	22.1 ± 1.1
CL-76	21.6 ± 3.1	19.8 ± 2.1	23.3 ± 2.5	20.8 ± 0.6	22.4 ± 1.5
CL-77	20.8 ± 4.5	18.2 ± 1.2	22.9 ± 2.4	19.6 ± 0.6	22.4 ± 0.8
CL-78	22.2 ± 4.8	19.4 ± 1.0	24.2 ± 1.1	21.0 ± 2.2	24.2 ± 1.5
CL-79	21.3 ± 3.9	19.2 ± 1.7	22.8 ± 1.9	20.1 ± 1.1	23.1 ± 1.8
CL-80	21.2 ± 4.0	19.3 ± 1.4	23.4 ± 1.0	19.7 ± 1.6	22.3 ± 1.1
CL-81	20.9 ± 4.4	18.4 ± 1.7	23.2 ± 1.5	19.8 ± 1.7	22.2 ± 1.6
CL-84	21.2 ± 3.4	19.3 ± 1.3	23.3 ± 1.9	20.5 ± 1.5	21.8 ± 1.2
CL-90	19.5 ± 6.2	16.7 ± 1.0	20.4 ± 1.4	17.4 ± 1.1	23.5 ± 5.2
CL-91	20.8 ± 4.5	18.6 ± 1.0	23.8 ± 3.0	19.7 ± 1.4	21.2 ± 2.0
CL-97	22.3 ± 4.4	20.4 ± 0.8	24.9 ± 1.4	20.5 ± 0.8	23.3 ± 1.6
CL-99	18.2 ± 3.9	16.4 ± 1.5	19.9 ± 1.8	16.6 ± 1.1	19.8 ± 0.9
CL-114	20.4 ± 4.6	17.9 ± 1.2	22.9 ± 2.9	19.0 ± 3.6	21.7 ± 1.0

TABLE C-X.2 MEAN QUARTERLY TLD RESULTS FOR THE INNER RING, OUTER RING, SPECIAL INTEREST, SUPPLEMENTAL AND CONTROL LOCATIONS FOR CLINTON POWER STATION, 2006

RESULTS IN UNITS OF MILLI-ROENTGEN/QUARTER ± 2 STANDARD DEVIATIONS OF THE STATION DATA

STATION CODE	INNER RING ± 2 S. D.	OUTER RING ± 2 S. D.	SPECIAL INTEREST ± 2 S. D.	SUPPLEMENTAL ± 2 S. D.	CONTROL
JAN-MAR	19.2 ± 0.9	19.6 ± 1.4	19.6 ± 2.3	18.5 ± 2.3	18.2 ± 2.4
APR-JUN	23.0 ± 1.8	23.3 ± 1.2	22.8 ± 1.6	22.3 ± 3.0	21.3 ± 1.5
JUL-SEP	20.6 ± 2.4	20.4 ± 2.0	20.0 ± 2.2	19.1 ± 2.5	18.9 ± 2.6
OCT-DEC	22.9 ± 1.9	23.1 ± 1.5	22.7 ± 2.1	22.0 ± 2.1	21.9 ± 1.6

TABLE C-X.3 SUMMARY OF THE AMBIENT DOSIMETRY PROGRAM FOR CLINTON POWER STATION, 2006

RESULTS IN UNITS OF MILLI-ROENTGEN/QUARTER

LOCATION	SAMPLES ANALYZED	PERIOD MINIMUM	PERIOD MAXIMUM	PERIOD MEAN ± 2 S. D.	PRE-OP MEAN, ± 2 S. D., ALL LOCATIOI
INNER RING	64	17.3	24.5	21.4 ± 3.7	
OUTER RING	64	18.2	24.4	21.6 ± 3.6	18.0 ± 2.4
SPECIAL	28	17.6	24.2	21.3 ± 3.6	
SUPPLEMENT	56	16.4	24.9	20.5 ± 4.2	
CONTROL	4	18.2	21.9	20.1 ± 3.6	

THE PRE-OPERATIONAL MEAN WAS CALCULATED FROM MONTHLY TLD READINGS MAY 1980 - FEBRUARY 27, 1987.

INNER RING STATIONS - CL-01, CL-05, CL-22, CL-23, CL-24, CL-34, CL-35, CL-36, CL-42, CL-43, CL-44, CL-45, CL-46, CL-47, CL-48, CL-63

OUTER RING STATIONS - CL-51, CL-52, CL-53, CL-54, CL-55, CL-56, CL-57, CL-58, CL-60, CL-61, CL-76, CL-77, CL-78, CL-79, CL-80, CL-81

SPECIAL INTEREST STATIONS - CL-37, CL-41, CL-49, CL-64, CL-65, CL-74, CL-75

SUPPLEMENTAL STATIONS- CL-02, CL-03, CL-04, CL-06, CL-07, CL-08, CL-15, CL-33, CL-84 CL-90, CL-91, CL-97, CL-99, CL-114

CONTROL STATION - CL-11

TABLE C-XI.1 SUMMARY OF COLLECTION DATES FOR SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006

SURFACE WATER (TRITIUM LIQUID SCINTILLATION)

COLLECTION PERIOD	CL-13	CL-90	CL-91	CL-99
JAN-MAR	12/28/05 - 03/29/06	12/28/05 - 03/29/06	12/28/05 - 03/29/06	12/28/05 - 03/29/06
APR-JUN	04/26/06 - 06/28/06	04/26/06 - 06/28/06	04/26/06 - 06/28/06	04/26/06 - 06/28/06
JUL-SEP	07/26/06 - 09/27/06	06/28/06 - 09/27/06	06/28/06 - 09/27/06	06/28/06 - 09/27/06
OCT-DEC	10/25/06 - 12/27/06	09/27/06 - 12/27/06	09/27/06 - 12/27/06	09/27/06 - 12/27/06

SURFACE WATER (I-131 {CL-90 only} & GAMMA SPECTROSCOPY)

COLLECTION PERIOD	CL-13	CL-90	CL-91	CL-99
JAN	12/28/05 - 01/25/06	12/28/05 - 01/25/06	12/28/05 - 01/25/06	12/28/05 - 01/25/06
FEB	01/25/06 - 02/22/06	01/25/06 - 02/22/06	01/25/06 - 02/22/06	01/25/06 - 02/22/06
MAR	02/22/06 - 03/29/06	02/22/06 - 03/29/06	02/22/06 - 03/29/06	02/22/06 - 03/29/06
APR	03/29/06 - 04/26/06	03/29/06 - 04/26/06	03/29/06 - 04/26/06	03/29/06 - 04/26/06
MAY	04/26/06 - 05/31/06	04/26/06 - 05/31/06	04/26/06 - 05/31/06	04/26/06 - 05/31/06
JUN	05/31/06 - 06/28/06	05/31/06 - 06/28/06	05/31/06 - 06/28/06	05/31/06 - 06/28/06
JUL	06/28/06 - 07/26/06	06/28/06 - 07/26/06	06/28/06 - 07/26/06	06/28/06 - 07/26/06
AUG	07/26/06 - 08/30/06	07/26/06 - 08/30/06	07/26/06 - 08/30/06	07/26/06 - 08/30/06
SEP	08/30/06 - 09/27/06	08/30/06 - 09/27/06	08/30/06 - 09/27/06	08/30/06 - 09/27/06
OCT	09/27/06 - 10/25/06	09/27/06 - 10/25/06	09/27/06 - 10/25/06	09/27/06 - 10/25/06
NOV	10/25/06 - 11/29/06	10/25/06 - 11/29/06	10/25/06 - 11/29/06	10/25/06 - 11/29/06
DEC	11/29/06 - 12/27/06	11/29/06 - 12/27/06	11/29/06 - 12/27/06	11/29/06 - 12/27/06

DRINKING WATER (TRITIUM)

COLLECTION PERIOD	CL-14
JAN-MAR	12/28/05 - 03/29/06
APR-JUN	04/26/06 - 06/28/06
JUL-SEP	06/28/06 - 09/27/06
OCT-DEC	09/27/06 - 12/27/06

DRINKING WATER (GROSS BETA & GAMMA SPECTROSCOPY)

COLLECTION PERIOD	CL-14
JAN	12/28/05 - 01/25/06
FEB	01/25/06 - 02/22/06
MAR	02/22/06 - 03/29/06
APR	03/29/06 - 04/26/06
MAY	04/26/06 - 05/31/06
JUN	05/31/06 - 06/28/06
JUL	06/28/06 - 07/26/06
AUG	07/26/06 - 08/30/06
SEP	08/30/06 - 09/27/06
OCT	09/27/06 - 10/25/06
NOV	10/25/06 - 11/29/06
DEC	11/29/06 - 12/27/06

TABLE C-XI.1 SUMMARY OF COLLECTION DATES FOR SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006

GROUND WATER (TRITIUM LIQUID SCINTILLATION AND GAMMA SPECTROSCOPY)

COLLECTION PERIOD	CL-07D	CL-12R	CL-12T
JAN-MAR	3/29/2006	3/29/2006	3/29/2006
APR-JUN	6/28/2006	6/28/2006	6/28/2006
JUL-SEP	9/27/2006	9/27/2006	9/27/2006
OCT-DEC	12/27/2006	12/27/2006	12/27/2006

AIR PARTICULATE (GAMMA SPECTROSCOPY)

COLLECTION PERIOD	CL-01	CL-02	CL-03	CL-04	CL-06
JAN-MAR	12/28/05 - 03/29/06	12/28/05 - 03/29/06	12/28/05 - 03/29/06	12/28/05 - 03/29/06	12/28/05 - 03/29/06
APR-JUN	03/29/06 - 06/28/06	03/29/06 - 06/28/06	03/29/06 - 06/28/06	03/29/06 - 06/28/06	03/29/06 - 06/28/06
JUL-SEP	06/28/06 - 09/27/06	06/28/06 - 09/27/06	06/28/06 - 09/27/06	06/28/06 - 09/27/06	06/28/06 - 09/27/06
OCT-DEC	09/27/06 - 01/03/07	09/27/06 - 01/03/07	09/27/06 - 01/03/07	09/27/06 - 01/03/07	09/27/06 - 01/03/07

AIR PARTICULATE (GAMMA SPECTROSCOPY)

COLLECTION PERIOD	CL-07	CL-08	CL-11	CL-15	CL-94
JAN-MAR	12/28/05 - 03/29/06	12/28/05 - 03/29/06	12/28/05 - 03/29/06	12/28/05 - 03/29/06	12/28/05 - 03/29/06
APR-JUN	03/29/06 - 06/28/06	03/29/06 - 06/28/06	03/29/06 - 06/28/06	03/29/06 - 06/28/06	03/29/06 - 06/28/06
JUL-SEP	06/28/06 - 09/27/06	06/28/06 - 09/27/06	06/28/06 - 09/27/06	06/28/06 - 09/27/06	06/28/06 - 09/27/06
OCT-DEC	09/27/06 - 01/03/07	09/27/06 - 01/03/07	09/27/06 - 01/03/07	09/27/06 - 01/03/07	09/27/06 - 01/03/07

TABLE C-XI.1 SUMMARY OF COLLECTION DATES FOR SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006

AIR PARTICULATE (GROSS BETA & I-131)

COLLECTION PERIOD	CL-01	CL-02	CL-03	CL-04	CL-06
1	12/28/05 - 01/04/06	12/28/05 - 01/04/06	12/28/05 - 01/04/06	12/28/05 - 01/04/06	12/28/05 - 01/04/06
2	01/04/06 - 01/11/06	01/04/06 - 01/11/06	01/04/06 - 01/11/06	01/04/06 - 01/11/06	01/04/06 - 01/11/06
3	01/11/06 - 01/18/06	01/11/06 - 01/18/06	01/11/06 - 01/18/06	01/11/06 - 01/18/06	01/11/06 - 01/18/06
4	01/18/06 - 01/25/06	01/18/06 - 01/25/06	01/18/06 - 01/25/06	01/18/06 - 01/25/06	01/18/06 - 01/25/06
5	01/25/06 - 02/01/06	01/25/06 - 02/01/06	01/25/06 - 02/01/06	01/25/06 - 02/01/06	01/25/06 - 02/01/06
6	02/01/06 - 02/08/06	02/01/06 - 02/08/06	02/01/06 - 02/08/06	02/01/06 - 02/08/06	02/01/06 - 02/08/06
7	02/08/06 - 02/15/06	02/08/06 - 02/15/06	02/08/06 - 02/15/06	02/08/06 - 02/15/06	02/08/06 - 02/15/06
8	02/15/06 - 02/22/06	02/15/06 - 02/22/06	02/15/06 - 02/22/06	02/15/06 - 02/22/06	02/15/06 - 02/22/06
9	02/22/06 - 03/01/06	02/22/06 - 03/01/06	02/22/06 - 03/01/06	02/22/06 - 03/01/06	02/22/06 - 03/01/06
10	03/01/06 - 03/08/06	03/01/06 - 03/08/06	03/01/06 - 03/08/06	03/01/06 - 03/08/06	03/01/06 - 03/08/06
11	03/08/06 - 03/15/06	03/08/06 - 03/15/06	03/08/06 - 03/15/06	03/08/06 - 03/15/06	03/08/06 - 03/15/06
12	03/15/06 - 03/22/06	03/15/06 - 03/22/06	03/15/06 - 03/22/06	03/15/06 - 03/22/06	03/15/06 - 03/22/06
13	03/22/06 - 03/29/06	03/22/06 - 03/29/06	03/22/06 - 03/29/06	03/22/06 - 03/29/06	03/22/06 - 03/29/06
14	03/29/06 - 04/05/06	03/29/06 - 04/05/06	03/29/06 - 04/05/06	03/29/06 - 04/05/06	03/29/06 - 04/05/06
15	04/05/06 - 04/12/06	04/05/06 - 04/12/06	04/05/06 - 04/12/06	04/05/06 - 04/12/06	04/05/06 - 04/12/06
16	04/12/06 - 04/19/06	04/12/06 - 04/19/06	04/12/06 - 04/19/06	04/12/06 - 04/19/06	04/12/06 - 04/19/06
17	04/19/06 - 04/26/06	04/19/06 - 04/26/06	04/19/06 - 04/26/06	04/19/06 - 04/26/06	04/19/06 - 04/26/06
18	04/26/06 - 05/03/06	04/26/06 - 05/03/06	04/26/06 - 05/03/06	04/26/06 - 05/03/06	04/26/06 - 05/03/06
19	05/03/06 - 05/10/06	05/03/06 - 05/10/06	05/03/06 - 05/10/06	05/03/06 - 05/10/06	05/03/06 - 05/10/06
20	05/10/06 - 05/17/06	05/10/06 - 05/17/06	05/10/06 - 05/17/06	05/10/06 - 05/17/06	05/10/06 - 05/17/06
21	05/17/06 - 05/24/06	05/17/06 - 05/24/06	05/17/06 - 05/24/06	05/17/06 - 05/24/06	05/17/06 - 05/24/06
22	05/24/06 - 05/31/06	05/24/06 - 05/31/06	05/24/06 - 05/31/06	05/24/06 - 05/31/06	05/24/06 - 05/31/06
23	05/31/06 - 06/07/06	05/31/06 - 06/07/06	05/31/06 - 06/07/06	05/31/06 - 06/07/06	05/31/06 - 06/07/06
24	06/07/06 - 06/14/06	06/07/06 - 06/14/06	06/07/06 - 06/14/06	06/07/06 - 06/14/06	06/07/06 - 06/14/06
25	06/14/06 - 06/21/06	06/14/06 - 06/21/06	06/14/06 - 06/21/06	06/14/06 - 06/21/06	06/14/06 - 06/21/06
26	06/21/06 - 06/28/06	06/21/06 - 06/28/06	06/21/06 - 06/28/06	06/21/06 - 06/28/06	06/21/06 - 06/28/06
27	06/28/06 - 07/05/06	06/28/06 - 07/05/06	06/28/06 - 07/05/06	06/28/06 - 07/05/06	06/28/06 - 07/05/06
28	07/05/06 - 07/12/06	07/05/06 - 07/12/06	07/05/06 - 07/12/06	07/05/06 - 07/12/06	07/05/06 - 07/12/06
29	07/12/06 - 07/19/06	07/12/06 - 07/19/06	07/12/06 - 07/19/06	07/12/06 - 07/19/06	07/12/06 - 07/19/06
30	07/19/06 - 07/26/06	07/19/06 - 07/26/06	07/19/06 - 07/26/06	07/19/06 - 07/26/06	07/19/06 - 07/26/06
31	07/26/06 - 08/02/06	07/26/06 - 08/02/06	07/26/06 - 08/02/06	07/26/06 - 08/02/06	07/26/06 - 08/02/06
32	08/02/06 - 08/09/06	08/02/06 - 08/09/06	08/02/06 - 08/09/06	08/02/06 - 08/09/06	08/02/06 - 08/09/06
33	08/09/06 - 08/16/06	08/09/06 - 08/16/06	08/09/06 - 08/16/06	08/09/06 - 08/16/06	08/09/06 - 08/16/06
34	08/16/06 - 08/23/06	08/16/06 - 08/23/06	08/16/06 - 08/23/06	08/16/06 - 08/23/06	08/16/06 - 08/23/06
35	08/23/06 - 08/30/06	08/23/06 - 08/30/06	08/23/06 - 08/30/06	08/23/06 - 08/30/06	08/23/06 - 08/30/06
36	08/30/06 - 09/06/06	08/30/06 - 09/06/06	08/30/06 - 09/06/06	08/30/06 - 09/06/06	08/30/06 - 09/06/06
37	09/06/06 - 09/13/06	09/06/06 - 09/13/06	09/06/06 - 09/13/06	09/06/06 - 09/13/06	09/06/06 - 09/13/06
38	09/13/06 - 09/20/06	09/13/06 - 09/20/06	09/13/06 - 09/20/06	09/13/06 - 09/20/06	09/13/06 - 09/20/06
39	09/20/06 - 09/27/06	09/20/06 - 09/27/06	09/20/06 - 09/27/06	09/20/06 - 09/27/06	09/20/06 - 09/27/06
40	09/27/06 - 10/04/06	09/27/06 - 10/04/06	09/27/06 - 10/04/06	09/27/06 - 10/04/06	09/27/06 - 10/04/06
41	10/04/06 - 10/11/06	10/04/06 - 10/11/06	10/04/06 - 10/11/06	10/04/06 - 10/11/06	10/04/06 - 10/11/06
42	10/11/06 - 10/18/06	10/11/06 - 10/18/06	10/11/06 - 10/18/06	10/11/06 - 10/18/06	10/11/06 - 10/18/06
43	10/18/06 - 10/25/06	10/18/06 - 10/25/06	10/18/06 - 10/25/06	10/18/06 - 10/25/06	10/18/06 - 10/25/06
44	10/25/06 - 11/01/06	10/25/06 - 11/01/06	10/25/06 - 11/01/06	10/25/06 - 11/01/06	10/25/06 - 11/01/06
45	11/01/06 - 11/08/06	11/01/06 - 11/08/06	11/01/06 - 11/08/06	11/01/06 - 11/08/06	11/01/06 - 11/08/06
46	11/08/06 - 11/15/06	11/08/06 - 11/15/06	11/08/06 - 11/15/06	11/08/06 - 11/15/06	11/08/06 - 11/15/06
47	11/15/06 - 11/22/06	11/15/06 - 11/22/06	11/15/06 - 11/22/06	11/15/06 - 11/22/06	11/15/06 - 11/22/06
48	11/22/06 - 11/29/06	11/22/06 - 11/29/06	11/22/06 - 11/29/06	11/22/06 - 11/29/06	11/22/06 - 11/29/06
49	11/29/06 - 12/06/06	11/29/06 - 12/06/06	11/29/06 - 12/06/06	11/29/06 - 12/06/06	11/29/06 - 12/06/06
50	12/06/06 - 12/13/06	12/06/06 - 12/13/06	12/06/06 - 12/13/06	12/06/06 - 12/13/06	12/06/06 - 12/13/06
51	12/13/06 - 12/20/06	12/13/06 - 12/20/06	12/13/06 - 12/20/06	12/13/06 - 12/20/06	12/13/06 - 12/20/06
52	12/20/06 - 12/27/06	12/20/06 - 12/27/06	12/20/06 - 12/27/06	12/20/06 - 12/27/06	12/20/06 - 12/27/06
53	12/27/06 - 01/03/07	12/27/06 - 01/03/07	12/27/06 - 01/03/07	12/27/06 - 01/03/07	12/27/06 - 01/03/07

TABLE C-XI.1 SUMMARY OF COLLECTION DATES FOR SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006

AIR PARTICULATE (GROSS BETA & I-131)

COLLECTION PERIOD	CL-07	CL-08	CL-11	CL-15	CL-94
1	12/28/05 - 01/04/06	12/28/05 - 01/04/06	12/28/05 - 01/04/06	12/28/05 - 01/04/06	12/28/05 - 01/04/06
2	01/04/06 - 01/11/06	01/04/06 - 01/11/06	01/04/06 - 01/11/06	01/04/06 - 01/11/06	01/04/06 - 01/11/06
3	01/11/06 - 01/18/06	01/11/06 - 01/18/06	01/11/06 - 01/18/06	01/11/06 - 01/18/06	01/11/06 - 01/18/06
4	01/18/06 - 01/25/06	01/18/06 - 01/25/06	01/18/06 - 01/25/06	01/18/06 - 01/25/06	01/18/06 - 01/25/06
5	01/25/06 - 02/01/06	01/25/06 - 02/01/06	01/25/06 - 02/01/06	01/25/06 - 02/01/06	01/25/06 - 02/01/06
6	02/01/06 - 02/08/06	02/01/06 - 02/08/06	02/01/06 - 02/08/06	02/01/06 - 02/08/06	02/01/06 - 02/08/06
7	02/08/06 - 02/15/06	02/08/06 - 02/15/06	02/08/06 - 02/15/06	02/08/06 - 02/15/06	02/08/06 - 02/15/06
8	02/15/06 - 02/22/06	02/15/06 - 02/22/06	02/15/06 - 02/22/06	02/15/06 - 02/22/06	02/15/06 - 02/22/06
9	02/22/06 - 03/01/06	02/22/06 - 03/01/06	02/22/06 - 03/01/06	02/22/06 - 03/01/06	02/22/06 - 03/01/06
10	03/01/06 - 03/08/06	03/01/06 - 03/08/06	03/01/06 - 03/08/06	03/01/06 - 03/08/06	03/01/06 - 03/08/06
11	03/08/06 - 03/15/06	03/08/06 - 03/15/06	03/08/06 - 03/15/06	03/08/06 - 03/15/06	03/08/06 - 03/15/06
12	03/15/06 - 03/22/06	03/15/06 - 03/22/06	03/15/06 - 03/22/06	03/15/06 - 03/22/06	03/15/06 - 03/22/06
13	03/22/06 - 03/29/06	03/22/06 - 03/29/06	03/22/06 - 03/29/06	03/22/06 - 03/29/06	03/22/06 - 03/29/06
14	03/29/06 - 04/05/06	03/29/06 - 04/05/06	03/29/06 - 04/05/06	03/29/06 - 04/05/06	03/29/06 - 04/05/06
15	04/05/06 - 04/12/06	04/05/06 - 04/12/06	04/05/06 - 04/12/06	04/05/06 - 04/12/06	04/05/06 - 04/12/06
16	04/12/06 - 04/19/06	04/12/06 - 04/19/06	04/12/06 - 04/19/06	04/12/06 - 04/19/06	04/12/06 - 04/19/06
17	04/19/06 - 04/26/06	04/19/06 - 04/26/06	04/19/06 - 04/26/06	04/19/06 - 04/26/06	04/19/06 - 04/26/06
18	04/26/06 - 05/03/06	04/26/06 - 05/03/06	04/26/06 - 05/03/06	04/26/06 - 05/03/06	04/26/06 - 05/03/06
19	05/03/06 - 05/10/06	05/03/06 - 05/10/06	05/03/06 - 05/10/06	05/03/06 - 05/10/06	05/03/06 - 05/10/06
20	05/10/06 - 05/17/06	05/10/06 - 05/17/06	05/10/06 - 05/17/06	05/10/06 - 05/17/06	05/10/06 - 05/17/06
21	05/17/06 - 05/24/06	05/17/06 - 05/24/06	05/17/06 - 05/24/06	05/17/06 - 05/24/06	05/17/06 - 05/24/06
22	05/24/06 - 05/31/06	05/24/06 - 05/31/06	05/24/06 - 05/31/06	05/24/06 - 05/31/06	05/24/06 - 05/31/06
23	05/31/06 - 06/07/06	05/31/06 - 06/07/06	05/31/06 - 06/07/06	05/31/06 - 06/07/06	05/31/06 - 06/07/06
24	06/07/06 - 06/14/06	06/07/06 - 06/14/06	06/07/06 - 06/14/06	06/07/06 - 06/14/06	06/07/06 - 06/14/06
25	06/14/06 - 06/21/06	06/14/06 - 06/21/06	06/14/06 - 06/21/06	06/14/06 - 06/21/06	06/14/06 - 06/21/06
26	06/21/06 - 06/28/06	06/21/06 - 06/28/06	06/21/06 - 06/28/06	06/21/06 - 06/28/06	06/21/06 - 06/28/06
27	06/28/06 - 07/05/06	06/28/06 - 07/05/06	06/28/06 - 07/05/06	06/28/06 - 07/05/06	06/28/06 - 07/05/06
28	07/05/06 - 07/12/06	07/05/06 - 07/12/06	07/05/06 - 07/12/06	07/05/06 - 07/12/06	07/05/06 - 07/12/06
29	07/12/06 - 07/19/06	07/12/06 - 07/19/06	07/12/06 - 07/19/06	07/12/06 - 07/19/06	07/12/06 - 07/19/06
30	07/19/06 - 07/26/06	07/19/06 - 07/26/06	07/19/06 - 07/26/06	07/19/06 - 07/26/06	07/19/06 - 07/26/06
31	07/26/06 - 08/02/06	07/26/06 - 08/02/06	07/26/06 - 08/02/06	07/26/06 - 08/02/06	07/26/06 - 08/02/06
32	08/02/06 - 08/09/06	08/02/06 - 08/09/06	08/02/06 - 08/09/06	08/02/06 - 08/09/06	08/02/06 - 08/09/06
33	08/09/06 - 08/16/06	08/09/06 - 08/16/06	08/09/06 - 08/16/06	08/09/06 - 08/16/06	08/09/06 - 08/16/06
34	08/16/06 - 08/23/06	08/16/06 - 08/23/06	08/16/06 - 08/23/06	08/16/06 - 08/23/06	08/16/06 - 08/23/06
35	08/23/06 - 08/30/06	08/23/06 - 08/30/06	08/23/06 - 08/30/06	08/23/06 - 08/30/06	08/23/06 - 08/30/06
36	08/30/06 - 09/06/06	08/30/06 - 09/06/06	08/30/06 - 09/06/06	08/30/06 - 09/06/06	08/30/06 - 09/06/06
37	09/06/06 - 09/13/06	09/06/06 - 09/13/06	09/06/06 - 09/13/06	09/06/06 - 09/13/06	09/06/06 - 09/13/06
38	09/13/06 - 09/20/06	09/13/06 - 09/20/06	09/13/06 - 09/20/06	09/13/06 - 09/20/06	09/13/06 - 09/20/06
39	09/20/06 - 09/27/06	09/20/06 - 09/27/06	09/20/06 - 09/27/06	09/20/06 - 09/27/06	09/20/06 - 09/27/06
40	09/27/06 - 10/04/06	09/27/06 - 10/04/06	09/27/06 - 10/04/06	09/27/06 - 10/04/06	09/27/06 - 10/04/06
41	10/04/06 - 10/11/06	10/04/06 - 10/11/06	10/04/06 - 10/11/06	10/04/06 - 10/11/06	10/04/06 - 10/11/06
42	10/11/06 - 10/18/06	10/11/06 - 10/18/06	10/11/06 - 10/18/06	10/11/06 - 10/18/06	10/11/06 - 10/18/06
43	10/18/06 - 10/25/06	10/18/06 - 10/25/06	10/18/06 - 10/25/06	10/18/06 - 10/25/06	10/18/06 - 10/25/06
44	10/25/06 - 11/01/06	10/25/06 - 11/01/06	10/25/06 - 11/01/06	10/25/06 - 11/01/06	10/25/06 - 11/01/06
45	11/01/06 - 11/08/06	11/01/06 - 11/08/06	11/01/06 - 11/08/06	11/01/06 - 11/08/06	11/01/06 - 11/08/06
46	11/08/06 - 11/15/06	11/08/06 - 11/15/06	11/08/06 - 11/15/06	11/08/06 - 11/15/06	11/08/06 - 11/15/06
47	11/15/06 - 11/22/06	11/15/06 - 11/22/06	11/15/06 - 11/22/06	11/15/06 - 11/22/06	11/15/06 - 11/22/06
48	11/22/06 - 11/29/06	11/22/06 - 11/29/06	11/22/06 - 11/29/06	11/22/06 - 11/29/06	11/22/06 - 11/29/06
49	11/29/06 - 12/06/06	11/29/06 - 12/06/06	11/29/06 - 12/06/06	11/29/06 - 12/06/06	11/29/06 - 12/06/06
50	12/06/06 - 12/13/06	12/06/06 - 12/13/06	12/06/06 - 12/13/06	12/06/06 - 12/13/06	12/06/06 - 12/13/06
51	12/13/06 - 12/20/06	12/13/06 - 12/20/06	12/13/06 - 12/20/06	12/13/06 - 12/20/06	12/13/06 - 12/20/06
52	12/20/06 - 12/27/06	12/20/06 - 12/27/06	12/20/06 - 12/27/06	12/20/06 - 12/27/06	12/20/06 - 12/27/06
53	12/27/06 - 01/03/07	12/27/06 - 01/03/07	12/27/06 - 01/03/07	12/27/06 - 01/03/07	12/27/06 - 01/03/07

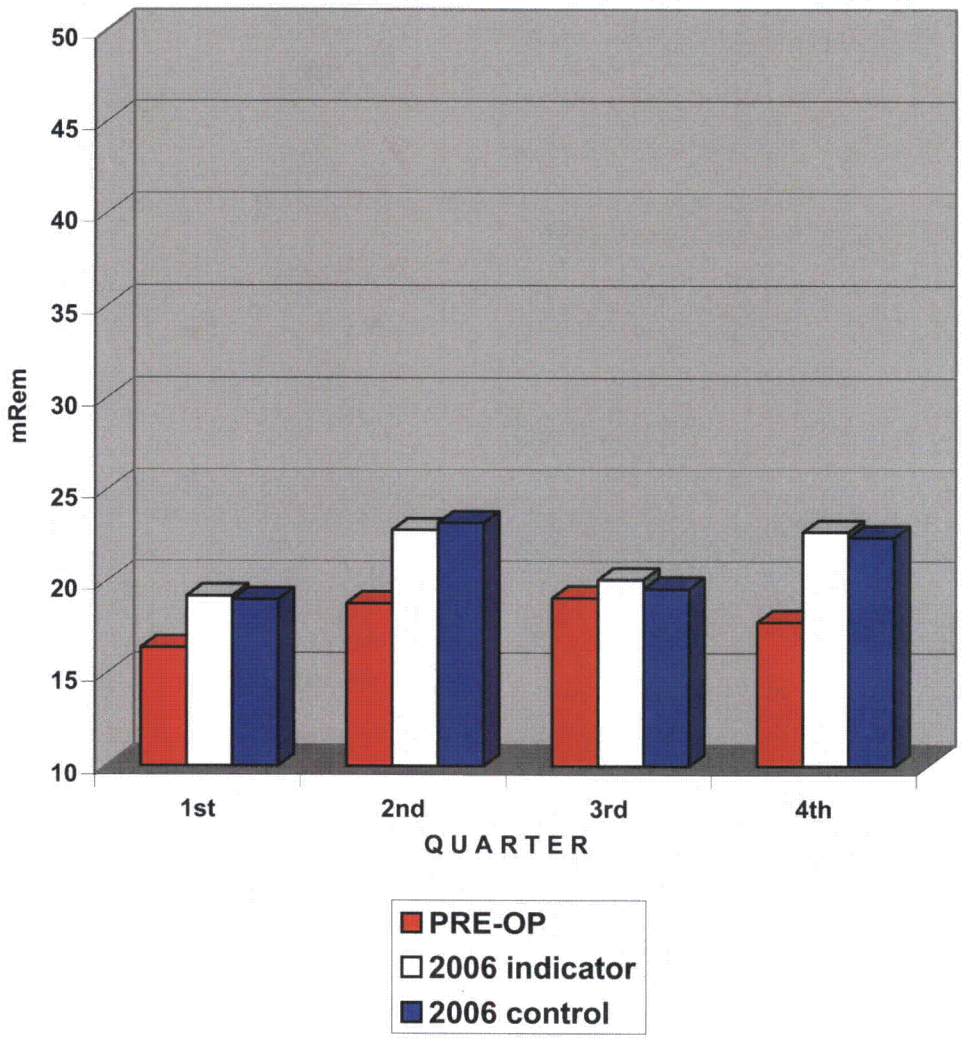
TABLE C-XI.1 SUMMARY OF COLLECTION DATES FOR SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006

TLD

STATION CODE	JAN - MAR	APR - JUN	JUL - SEP	OCT - DEC
CL-01	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-02	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-03	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-04	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-05	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-06	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-07	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-08	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-11	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-15	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-22	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-23	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-24	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-33	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-34	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-35	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-36	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-37	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-41	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-42	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-43	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-44	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-45	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-46	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-47	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-48	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-49	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-51	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-52	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-53	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-54	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-55	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-56	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-57	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-58	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-59	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-60	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-61	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-63	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-64	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-65	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-74	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-75	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-76	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-77	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-78	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-79	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-80	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-81	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-84	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-90	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-91	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-97	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-99	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06
CL-114	12/29/05 - 03/30/06	03/30/06 - 06/29/06	06/29/06 - 09/28/06	09/28/06 - 12/28/06

FIGURE C-1
MEAN MONTHLY GROSS BETA CONCENTRATION IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF CPS, 2006

FIGURE C-2
MEAN QUARTERLY AMBIENT GAMMA RADIATION LEVELS (TLD) IN THE VICINITY OF CPS, 2006



APPENDIX D

INTER-LABORATORY COMPARISON PROGRAM

TABLE D-1 ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2006
(PAGE 1 OF 3)

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)
March 2006	E4964-396	Milk	Sr-89	pCi/L	91.5	99.2	0.92	A
			Sr-90	pCi/L	12.2	10.8	1.13	A
	E4965-396	Milk	I-131	pCi/L	74.4	78.0	0.95	A
			Ce-141	pCi/L	95.1	104	0.91	A
			Cr-51	pCi/L	278	280	0.99	A
			Cs-134	pCi/L	103	121	0.85	A
			Cs-137	pCi/L	87.6	88.8	0.99	A
			Co-58	pCi/L	93.9	105	0.89	A
			Mn-54	pCi/L	90.0	93.3	0.96	A
			Fe-59	pCi/L	83.0	86.6	0.96	A
			Zn-65	pCi/L	178	176	1.01	A
			Co-60	pCi/L	118	128	0.92	A
	E4967-396	AP	Ce-141	pCi	89.9	74	1.21	W
			Cr-51	pCi	253	200	1.27	W
			Cs-134	pCi	71.5	86.1	0.83	A
			Cs-137	pCi	67.5	63.3	1.07	A
			Co-58	pCi	79.7	74.6	1.07	A
			Mn-54	pCi	74.9	67	1.12	A
			Fe-59	pCi	75.5	61.8	1.22	W
			Zn-65	pCi	146	126	1.16	A
			Co-60	pCi	91.2	91	1.00	A
	E4966-396	Charcoal	I-131	pCi	87.4	86.2	1.01	A
June 2006	E5018-396	Milk	Sr-89	pCi/L	118	129	0.91	A
			Sr-90	pCi/L	9.29	9.74	0.95	A
	E5019-396	Milk	I-131	pCi/L	49.9	63.2	0.79	W
			Ce-141	pCi/L	174	184	0.95	A
			Cr-51	pCi/L	266	259	1.03	A
			Cs-134	pCi/L	111	127	0.88	A
			Cs-137	pCi/L	116	117	0.99	A
			Co-58	pCi/L	101	100	1.01	A
			Mn-54	pCi/L	144	146	0.98	A
			Fe-59	pCi/L	96.7	93.6	1.03	A
			Zn-65	pCi/L	182	185	0.98	A
			Co-60	pCi/L	126	129	0.98	A
	E5021-396	AP	Ce-141	pCi	113	124	0.91	A
			Cr-51	pCi	176	174	1.01	A
			Cs-134	pCi	63.7	85.1	0.75	W
			Cs-137	pCi	76.8	79.0	0.97	A
			Co-58	pCi	63.1	67.4	0.94	A
			Mn-54	pCi	102	99	1.04	A
			Fe-59	pCi	64.6	62.9	1.03	A
			Zn-65	pCi	131	125	1.05	A
			Co-60	pCi	81.6	86.5	0.94	A
	E5020-396	Charcoal	I-131	pCi	65.4	65.9	0.99	A

TABLE D-1 ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2006
(PAGE 2 OF 3)

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)
September 2006	E5120-396	Milk	Sr-89	pCi/L	90.3	89.2	1.01	A
			Sr-90	pCi/L	11.6	12.4	0.94	A
	E5121-396	Milk	I-131	pCi/L	67.8	73.8	0.92	A
			Ce-141	pCi/L	85.0	86.0	0.99	A
			Cr-51	pCi/L	263	282	0.93	A
			Cs-134	pCi/L	74.7	85.0	0.88	A
			Cs-137	pCi/L	172	175	0.98	A
			Co-58	pCi/L	107	109	0.98	A
			Mn-54	pCi/L	110	113	0.98	A
			Fe-59	pCi/L	46.6	43.7	1.07	A
			Zn-65	pCi/L	144	145	0.99	A
			Co-60	pCi/L	127	134	0.95	A
	E5123-396	AP	Ce-141	pCi	67.1	66.4	1.01	A
			Cr-51	pCi	223	217	1.03	A
			Cs-134	pCi	51.7	65.6	0.79	W
			Cs-137	pCi	134	135.0	0.99	A
			Co-58	pCi	84.8	84.3	1.01	A
			Mn-54	pCi	95.2	87	1.10	A
			Fe-59	pCi	41.6	33.7	1.23	W
			Zn-65	pCi	123	112	1.10	A
			Co-60	pCi	98.9	103	0.96	A
			Co-57	pCi	0.922	(1)	NA	NA
	E5122-396	Charcoal	I-131	pCi	77.7	90.7	0.86	A
December 2006	E5172-396	Milk	Sr-89	pCi/L	72.4	72.0	1.01	A
			Sr-90	pCi/L	7.05	5.90	1.19	A
	E5173-396	Milk	I-131	pCi/L	71.9	70.8	1.02	A
			Ce-141	pCi/L	268	294	0.91	A
			Cr-51	pCi/L	420	433	0.97	A
			Cs-134	pCi/L	128	147	0.87	A
			Cs-137	pCi/L	231	237	0.97	A
			Co-58	pCi/L	82.0	83.8	0.98	A
			Mn-54	pCi/L	113	111	1.02	A
			Fe-59	pCi/L	79.8	79.7	1.00	A
			Zn-65	pCi/L	170	164	1.04	A
			Co-60	pCi/L	265	281	0.94	A
	E5175-396	AP	Ce-141	pCi	220	210	1.05	A
			Cr-51	pCi	343	309	1.11	A
			Cs-134	pCi	90.8	105	0.86	A
			Cs-137	pCi	185	169.0	1.09	A
			Co-58	pCi	65.0	59.7	1.09	A
			Mn-54	pCi	90.6	79	1.15	A
			Fe-59	pCi	70.7	56.7	1.25	W
			Zn-65	pCi	136	117	1.16	A
			Co-60	pCi	208	200	1.04	A

TABLE D-1 **ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM**
TELEDYNE BROWN ENGINEERING, 2006
(PAGE 3 OF 3)

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)
December 2006	E5174-396	Charcoal	I-131	pCi	77.4	85.4	0.91	A

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

TABLE D-2

ERA ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2006

(PAGE 1 OF 1)

Month/Year	Identification Number	Media	Nuclide	Units	Reported Value (a)	Known Value (b)	Control Limits	Evaluation (c)
May 2006	Rad 65	Water	Sr-89	pCi/L	30.2	32.4	23.6 - 41.1	A
			Sr-90	pCi/L	8.74	9.00	0.340 - 17.7	A
			Ba-133	pCi/L	10.9	10.0	1.34 - 18.7	A
			Cs-134	pCi/L	39.7	43.4	34.7 - 52.1	A
			Cs-137	pCi/L	199	214	195 - 233	A
			Co-60	pCi/L	111	113.0	103 - 123	A
			Zn-65	pCi/L	146	152	126 - 178	A
			Gr-A	pCi/L	22.9	21.3	12.1 - 30.5	A
			Gr-B	pCi/L	23.7	23.0	14.3 - 31.7	A
			Ra-226	pCi/L	2.64	3.02	2.23 - 3.81	A
			U-Nat	pCi/L	74.9	69.1	57.1 - 81.1	A
			H-3	pCi/L	7950	8130	6720 - 9540	A
	Rad 65	Water	I-131	pCi/L	18.2	19.1	13.9 - 24.3	A
November 2006	Rad 67	Water	Sr-89	pCi/L	40.0	39.9	31.2 - 48.6	A
			Sr-90	pCi/L	16.2	16.0	7.34 - 24.7	A
			Ba-133	pCi/L	65.0	70.2	58.1 - 82.3	A
			Cs-134	pCi/L	27.4	29.9	21.2 - 38.6	A
			Cs-137	pCi/L	74.4	78.2	69.5 - 86.9	A
			Co-60	pCi/L	61.6	62.3	53.6 - 71.0	A
			Zn-65	pCi/L	277	277	229 - 325	A
			Gr-A	pCi/L	23.3	28.7	16.3 - 41.1	A
			Gr-B	pCi/L	22.0	20.9	12.2 - 29.6	A
			U-Nat	pCi/L	3.18	3.20	0.00 - 8.40	A
			H-3	pCi/L	2930	3050	2430 - 3670	A
		Water	I-131	pCi/L	19.8	22.1	16.9 - 27.3	A

(a) Teledyne Brown Engineering reported result.

(b) The ERA known value is equal to 100% of the parameter present in the standard as determined by gravimetric and/or volumetric measurements made during standard preparation.

(c) ERA evaluation: A=acceptable. Reported result falls within the Warning Limits. NA=not acceptable. Reported result falls outside of the Control Limits. CE=check for Error. Reported result falls within the Control Limits and outside of the Warning Limit.

TABLE D-3 DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)
TELEDYNE BROWN ENGINEERING, 2006
(PAGE 1 OF 3)

Month/Year	Identification Number	Media	Nuclide	Units	Reported Value (a)	Known Value (b)	Acceptance Range	Evaluation (c)
January 2006	06-MaW15	Water	Am-241	Bq/L	1.29	1.30	0.91 - 1.69	A
			Cs-134	Bq/L	79.2	95.1	66.57 - 123.63	A
			Cs-137	Bq/L	-0.188			A
			Co-57	Bq/L	151	166.12	116.28 - 215.96	A
			Co-60	Bq/L	141	153.50	107.45 - 199.55	A
			H-3	Bq/L	988	952.01	666.41 - 1237.61	A
			Fe-55	Bq/L	106.0	129.60	90.72 - 168.48	A
			Mn-54	Bq/L	297	315.00	220.50 - 409.50	A
			Ni-63	Bq/L	61.5	60.34	44.24 - 78.44	A
			Pu-238	Bq/L	0.961	0.91	0.64 - 1.18	A
			Pu-239/240	Bq/L	0.00965	0.00710	(1)	A
			Sr-90	Bq/L	12.6	13.16	9.21- 17.11	A
			Tc-99	Bq/L	22.5	23.38	16.37 - 30.39	A
			U-234/233	Bq/L	2.20	2.09	1.46 - 2.72	A
			U-238	Bq/L	2.23	2.17	1.52 - 2.82	A
			Zn-65	Bq/L	219	228.16	159.71 - 296.61	A
	06-GrW15	Water	Gr-A	Bq/L	0.575	0.581	>0.0 - 1.162	A
			Gr-B	Bq/L	1.52	1.13	0.56 - 1.70	A
	06-MaS15	Soil	Am-241	Bq/kg	48.8	57.08	39.96 - 74.20	A
			Cs-134	Bq/kg	15.9			N (2)
			Cs-137	Bq/kg	370	339.69	237.78 - 441.60	A
			Co-57	Bq/kg	667	656.29	459.40 - 853.18	A
			Co-60	Bq/kg	478	447.10	312.97 - 581.23	A
			Mn-54	Bq/kg	384	346.77	242.74 - 450.80	A
			Ni-63	Bq/kg	394	323.51	226.46 - 420.56	W
			K-40	Bq/kg	667	604	423 - 785	A
			Sr-90	Bq/kg	253	314.35	220.04 - 408.66	A
			Tc-99	Bq/kg	146	154.76	108.33 - 201.19	A
			Zn-65	Bq/kg	740	657.36	460.15 - 854.57	A
	06-RdF15	AP	Am-241	Bq/sample	0.0850	0.093	0.065 - 0.121	A
			Cs-134	Bq/sample	2.34	2.934	2.054 - 3.814	A
			Cs-137	Bq/sample	2.45	2.531	1.772 - 3.290	A
			Co-57	Bq/sample	3.87	4.096	2.867 - 5.325	A
			Co-60	Bq/sample	2.12	2.186	1.530 - 2.842	A
			Mn-54	Bq/sample	0.0206			A
			Pu-238	Bq/sample	0.0766	0.067	0.047 - 0.087	A
			Pu-239/240	Bq/sample	0.00520	0.00041	(1)	A
			Sr-90	Bq/sample	0.761	0.792	0.554 - 1.030	A
			U-234/233	Bq/sample	0.0217	0.020	0.014 - 0.026	A
			U-238	Bq/sample	0.0220	0.021	0.015 - 0.027	A
			Zn-65	Bq/sample	3.86	3.423	2.396 - 4.450	A
	06-GrF15	AP	Gr-A	Bq/sample	0.257	0.361	>0.0 - 0.722	A
			Gr-B	Bq/sample	0.398	0.481	0.241 - 0.722	A

TABLE D-3 **DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)**
TELEDYNE BROWN ENGINEERING, 2006
(PAGE 2 OF 3)

Month/Year	Identification Number	Media	Nuclide	Units	Reported Value (a)	Known Value (b)	Acceptance Range	Evaluation (c)
January 2006	06-RdV15	Vegetation	Am-241	Bq/sample	0.156	0.156	0.109 - 0.203	A
			Cs-134	Bq/sample	0.369			A
			Cs-137	Bq/sample	3.15	3.074	2.152 - 3.996	A
			Co-57	Bq/sample	10.1	8.578	6.005 - 11.151	A
			Co-60	Bq/sample	4.69	4.520	3.164 - 5.876	A
			Mn-54	Bq/sample	6.53	6.247	4.373 - 8.121	A
			Pu-238	Bq/sample	0.183	0.137	0.096 - 0.178	N (3)
			Pu-239/240	Bq/sample	0.111	0.164	0.115 - 0.213	N (3)
			Sr-90	Bq/sample	2.22	1.561	1.093 - 2.029	N (3)
			U-234/233	Bq/sample	0.208	0.208	0.146 - 0.270	A
			U-238	Bq/sample	0.176	0.216	0.151 - 0.281	A
			Zn-65	Bq/sample	10.5	9.798	6.859 - 12.737	A
July 2006	06-MaW16	Water	Am-241	Bq/L	2.09	2.31	1.62 - 3.00	A
			Cs-134	Bq/L	99.8	112.82	78.98 - 146.66	A
			Cs-137	Bq/L	191	196.14	137.30 - 254.98	A
			Co-57	Bq/L	203	213.08	149.16 - 277.00	A
			Co-60	Bq/L	46.2	47.5	33.2 - 61.8	A
			H-3	Bq/L	471	428.85	300.20 - 557.50	A
			Fe-55	Bq/L	173	165.4	115.8 - 215.0	A
			Ni-63	Bq/L	109	118.62	83.03 - 154.21	A
			Pu-238	Bq/L	1.50	1.39	0.97 - 1.81	A
			Pu-239/240	Bq/L	2.01	1.94	1.36 - 2.52	A
			Sr-90	Bq/L	13.7	15.69	10.98- 20.40	A
			Tc-99	Bq/L	29.0	27.15	19.00 - 35.29	A
			U-234/233	Bq/L	2.19	2.15	1.50 - 2.80	A
			U-238	Bq/L	2.25	2.22	1.55 - 2.89	A
			Zn-65	Bq/L	178	176.37	123.46 - 229.28	A
	06-GrW16	Water	Gr-A	Bq/L	1.52	1.033	>0.0 - 2.066	A
			Gr-B	Bq/L	1.18	1.03	0.52 - 1.54	A
	06-MaS16	Soil	Am-241	Bq/kg	83.6	105.47	73.83 - 137.11	W
			Cs-134	Bq/kg	393	452.13	316.49 - 587.77	A
			Cs-137	Bq/kg	522	525.73	368.01 - 683.45	A
			Co-57	Bq/kg	636	676.33	473.43 - 879.23	A
			Co-60	Bq/kg	3.78	1.98		A (4)
			Mn-54	Bq/kg	598	594.25	415.98 - 772.52	A
			Ni-63	Bq/kg	571	627.3	470.6 - 874.0	A
			Pu-238	Bq/kg	71.2	82	57 - 107	A
			Pu-239240	Bq/kg	0.487	0.93		A (4)
			K-40	Bq/kg	615	604	423 - 785	A
			Sr-90	Bq/kg	178	223.3	156.3 - 290.3	W
			Tc-99	Bq/kg	175	218.01	152.61 - 283.41	A
			U-234/233	Bq/kg	119	152.44	106.71 - 198.17	W
			U-238	Bq/kg	115	158.73	111.11 -206.35	W
			Zn-65	Bq/kg	937	903.61	632.53 - 1174.69	A

TABLE D-3 **DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)**
TELEDYNE BROWN ENGINEERING, 2006
(PAGE 3 OF 3)

Month/Year	Identification Number	Media	Nuclide	Units	Reported Value (a)	Known Value (b)	Acceptance Range	Evaluation (c)
July 2006	06-RdF16	AP	Am-241	Bq/sample	0.124	0.142	0.099 - 0.185	A
			Cs-134	Bq/sample	2.62	3.147	2.203 - 4.091	A
			Cs-137	Bq/sample	1.98	1.805	1.263 - 2.346	A
			Co-57	Bq/sample	2.65	2.582	1.807 - 3.357	A
			Co-60	Bq/sample	1.63	1.577	1.104 - 2.050	A
			Mn-54	Bq/sample	2.10	1.92	1.34 - 2.50	A
			Pu-238	Bq/sample	0.118	0.118	0.083 - 0.153	A
			Pu-239/240	Bq/sample	0.00822			A
			Sr-90	Bq/sample	0.549	0.62	0.43 - 0.81	A
			U-234/233	Bq/sample	0.140	0.134	0.094 - 0.174	A
			U-238	Bq/sample	0.136	0.139	0.097 - 0.181	A
			Zn-65	Bq/sample	-0.163			A
	06-GrF16	AP	Gr-A	Bq/sample	0.134	0.290	>0.0 - 0.580	A
			Gr-B	Bq/sample	0.358	0.359	0.180 - 0.538	A

(1) False positive test

(2) Evaluated as a false positive by MAPEP although we considered the result a non-detect due to the peak not being identified by the gamma software. For Cs-134, MAPEP suggests the Bi-214 is not being differentiated from the Cs-134 peak. See email attached with MAPEP results in Appendix A. NCR 06-07.

(3) Sr samples analyzed in triplicate and one high result of 2.43 pCi/kg biased the submitted results on the high side. We were unable to determine the cause for the higher result. Since we do not analyze vegetation for isotpic Pu, no NCR was initiated for the Pu failure. MAPEP suggest pyrosulfate fusion preparation prior to analysis for isotopic Pu in vegetation samples.

(4) Not detected, reported a statistically zero result. (False positive test)

(a) Teledyne Brown Engineering reported result.

(b) The MAPEP known value is equal to 100% of the parameter present in the standard as determined by gravimetric and/or volumetric measurements made during standard preparation.

(c) DOE/MAPEP evaluation: A=acceptable, W=acceptable with warning, N=not acceptable.

TABLE D-4 ERA[a] STATISTICAL SUMMARY PROFICIENCY TESTING PROGRAM ENVIRONMENTAL, INC., 2006

(Page 1 of 2)

Lab Code	Date	Analysis	Concentration (pCi/L) Laboratory Result[b]	ERA Result[c]	Control Limits	Acceptance
STW-1078	01/16/06	Sr-89	49.9 ± 3.5	50.2	41.5 - 58.9	Pass
STW-1078	01/16/06	Sr-90	31.5 ± 1.5	30.7	22.0 - 39.4	Pass
STW-1079	01/16/06	Ba-133	86.5 ± 4.1	95.0	78.6 - 111.0	Pass
STW-1079	01/16/06	Co-60	96.3 ± 4.1	95.3	86.6 - 104.0	Pass
STW-1079	01/16/06	Cs-134	22.6 ± 3.0	23.1	14.4 - 31.8	Pass
STW-1079	01/16/06	Cs-137	109.0 ± 5.9	111.0	101.0 - 121.0	Pass
STW-1079	01/16/06	Zn-65	198.0 ± 11.2	192.0	159.0 - 225.0	Pass
STW-1080	01/16/06	Gr. Alpha	10.8 ± 1.4	9.6	1.0 - 18.3	Pass
STW-1080	01/16/06	Gr. Beta	56.9 ± 1.9	61.9	44.6 - 79.2	Pass
STW-1081	01/16/06	Ra-226	4.3 ± 0.4	4.6	3.4 - 5.8	Pass
STW-1081	01/16/06	Ra-228	7.1 ± 1.8	6.6	3.7 - 9.5	Pass
STW-1081	01/16/06	Uranium	20.7 ± 0.5	22.1	16.9 - 27.3	Pass
STW-1088	04/10/06	Sr-89	29.0 ± 1.8	32.4	23.7 - 41.1	Pass
STW-1088	04/10/06	Sr-90	8.7 ± 1.0	9.0	0.3 - 17.7	Pass
STW-1089	04/10/06	Ba-133	10.3 ± 0.4	10.0	1.3 - 18.7	Pass
STW-1089	04/10/06	Co-60	114.0 ± 2.8	113.0	103.0 - 123.0	Pass
STW-1089	04/10/06	Cs-134	41.9 ± 1.4	43.4	34.7 - 52.1	Pass
STW-1089	04/10/06	Cs-137	208.0 ± 1.1	214.0	195.0 - 233.0	Pass
STW-1089	04/10/06	Zn-65	154.0 ± 0.8	152.0	126.0 - 178.0	Pass
STW-1090	04/10/06	Gr. Alpha	13.4 ± 1.1	21.3	12.1 - 30.5	Pass
STW-1090	04/10/06	Gr. Beta	27.7 ± 2.1	23.0	14.3 - 31.7	Pass
STW-1091	04/10/06	I-131	22.0 ± 0.3	19.1	13.9 - 24.3	Pass
STW-1092	04/10/06	H-3	7960.0 ± 57.0	8130.0	6720.0 - 9540.0	Pass
STW-1092	04/10/06	Ra-226	2.9 ± 0.4	3.0	2.2 - 3.8	Pass
STW-1092	04/10/06	Ra-228	20.9 ± 1.2	19.1	10.8 - 27.4	Pass
STW-1092	04/10/06	Uranium	68.6 ± 3.4	69.1	57.1 - 81.1	Pass
STW-1094	07/10/06	Sr-89	15.9 ± 0.7	19.7	11.0 - 28.4	Pass
STW-1094	07/10/06	Sr-90	24.3 ± 0.4	25.9	17.2 - 34.6	Pass
STW-1095	07/10/06	Ba-133	94.9 ± 8.9	88.1	72.9 - 103.0	Pass
STW-1095	07/10/06	Co-60	104.0 ± 1.8	99.7	91.0 - 108.0	Pass
STW-1095	07/10/06	Cs-134	48.7 ± 1.3	54.1	45.4 - 62.8	Pass
STW-1095	07/10/06	Cs-137	236.0 ± 3.0	238.0	217.0 - 259.0	Pass
STW-1095	07/10/06	Zn-65	126.0 ± 8.0	121.0	100.0 - 142.0	Pass
STW-1096	07/10/06	Gr. Alpha	10.9 ± 1.0	10.0	1.3 - 18.6	Pass
STW-1096	07/10/06	Gr. Beta	9.7 ± 0.4	8.9	0.2 - 17.5	Pass
STW-1097	07/10/06	Ra-226	11.0 ± 0.5	10.7	7.9 - 13.5	Pass
STW-1097	07/10/06	Ra-228	12.2 ± 0.8	10.7	6.1 - 15.3	Pass
STW-1097	07/10/06	Uranium	43.4 ± 0.1	40.3	33.3 - 47.3	Pass

TABLE D-4 **ERA[a] STATISTICAL SUMMARY PROFICIENCY TESTING PROGRAM ENVIRONMENTAL, INC., 2006**

(Page 2 of 2)

Lab Code	Date	Analysis	Concentration (pCi/L) Laboratory Result[b]	ERA Result[c]	Control Limits	Acceptance
STW-1104	10/06/06	Sr-89	38.4 ± 1.3	39.9	31.2 - 45.7	Pass
STW-1104	10/06/06	Sr-90	15.5 ± 0.5	16.0	7.3 - 24.7	Pass
STW-1105	10/06/06	Ba-133	64.9 ± 2.8	70.2	58.1 - 82.3	Pass
STW-1105	10/06/06	Co-60	61.6 ± 1.0	62.3	53.6 - 71.0	Pass
STW-1105	10/06/06	Cs-134	29.0 ± 0.9	29.9	21.2 - 38.6	Pass
STW-1105	10/06/06	Cs-137	77.8 ± 2.4	78.2	69.5 - 86.9	Pass
STW-1105	10/06/06	Zn-65	293.0 ± 2.4	277.0	229.0 - 325.0	Pass
STW-1106	10/06/06	Gr. Alpha	23.9 ± 2.5	28.7	16.3 - 41.1	Pass
STW-1106	10/06/06	Gr. Beta	23.7 ± 1.4	20.9	12.2 - 29.6	Pass
STW-1107 [d]	10/06/06	I-131	28.4 ± 1.2	22.1	16.9 - 27.3	Fail
STW-1108	10/06/06	Ra-226	14.5 ± 0.5	14.4	10.7 - 18.1	Pass
STW-1108	10/06/06	Ra-228	6.6 ± 0.4	5.9	3.3 - 8.4	Pass
STW-1108	10/06/06	Uranium	2.9 ± 0.1	3.2	0.0 - 8.4	Pass
STW-1109	10/06/06	H-3	3000.0 ± 142.0	3050.0	2430.0 - 3670.0	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.

[d] The reported result was an average of three analyses, results ranged from 25.36 to 29.23 pCi/L. A fourth analysis was performed, result of analysis, 24.89 pCi/L.

TABLE D-5 DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)[a]
ENVIRONMENTAL, INC., 2006

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			Concentration [b]			
Lab Code[c]	Date	Analysis	Laboratory result	Known Activity	Control Limits [d]	Acceptance
STVE-1082	01/01/06	Am-241	0.16 ± 0.06	0.16	0.11 - 0.20	Pass
STVE-1082	01/01/06	Co-57	10.40 ± 0.20	8.58	6.00 - 11.15	Pass
STVE-1082	01/01/06	Co-60	5.00 ± 0.20	4.52	3.16 - 5.88	Pass
STVE-1082 [e]	01/01/06	Cs-134	< 0.20	0.00		Pass
STVE-1082	01/01/06	Cs-137	3.40 ± 0.20	3.07	2.15 - 4.00	Pass
STVE-1082	01/01/06	Mn-54	6.90 ± 0.20	6.25	4.37 - 8.12	Pass
STVE-1082 [f]	01/01/06	Pu-238	0.08 ± 0.03	0.14	0.10 - 0.18	Fail
STVE-1082	01/01/06	Pu-239/40	0.17 ± 0.03	0.16	0.11 - 0.21	Pass
STVE-1082	01/01/06	Sr-90	1.40 ± 0.20	1.56	1.09 - 2.03	Pass
STVE-1082	01/01/06	U-233/4	0.24 ± 0.05	0.21	0.15 - 0.27	Pass
STVE-1082	01/01/06	U-238	0.19 ± 0.04	0.22	0.15 - 0.28	Pass
STVE-1082	01/01/06	Zn-65	11.10 ± 0.50	9.80	6.86 - 12.74	Pass
STSO-1083	01/01/06	Am-241	54.60 ± 5.50	57.08	39.96 - 74.20	Pass
STSO-1083	01/01/06	Co-57	762.90 ± 12.70	656.29	459.40 - 853.18	Pass
STSO-1083	01/01/06	Co-60	504.90 ± 3.10	447.10	312.97 - 581.23	Pass
STSO-1083 [e]	01/01/06	Cs-134	< 1.70	0.00		Pass
STSO-1083	01/01/06	Cs-137	406.50 ± 3.70	339.69	237.78 - 441.60	Pass
STSO-1083	01/01/06	K-40	719.20 ± 18.40	604.00	422.80 - 785.20	Pass
STSO-1083	01/01/06	Mn-54	415.60 ± 4.80	346.77	242.74 - 450.80	Pass
STSO-1083	01/01/06	Ni-63	261.40 ± 14.70	323.51	226.46 - 420.56	Pass
STSO-1083	01/01/06	Pu-238	14.60 ± 2.90	61.15	42.81 - 79.50	Fail
STSO-1083	01/01/06	Pu-239/40	14.60 ± 2.40	45.85	32.09 - 59.61	Fail
STSO-1083	01/01/06	U-233/4	13.50 ± 1.70	37.00	25.90 - 48.10	Fail
STSO-1083	01/01/06	U-238	15.40 ± 1.80	38.85	27.20 - 50.50	Fail
STSO-1083	01/01/06	Zn-65	783.40 ± 7.00	657.36	460.15 - 854.57	Pass
STAP-1084	01/01/06	Gr. Alpha	0.26 ± 0.02	0.36	0.00 - 0.72	Pass
STAP-1084	01/01/06	Gr. Beta	0.51 ± 0.03	0.48	0.24 - 0.72	Pass
STAP-1085	01/01/06	Am-241	0.12 ± 0.02	0.09	0.07 - 0.12	Pass
STAP-1085	01/01/06	Co-57	4.32 ± 0.10	4.10	2.87 - 5.32	Pass
STAP-1085	01/01/06	Co-60	2.24 ± 0.16	2.19	1.53 - 2.84	Pass
STAP-1085	01/01/06	Cs-134	2.96 ± 0.19	2.93	2.05 - 3.81	Pass
STAP-1085	01/01/06	Cs-137	2.64 ± 0.20	2.53	1.77 - 3.29	Pass
STAP-1085 [f]	01/01/06	Pu-238	0.03 ± 0.01	0.07	0.05 - 0.09	Fail
STAP-1085 [e]	01/01/06	Pu-239/40	< 0.01	0.00		Pass
STAP-1085	01/01/06	Sr-90	0.77 ± 0.21	0.79	0.55 - 1.03	Pass
STAP-1085	01/01/06	U-233/4	0.03 ± 0.01	0.02	0.01 - 0.03	Pass
STAP-1085	01/01/06	U-238	0.02 ± 0.01	0.02	0.01 - 0.03	Pass
STAP-1085	01/01/06	Zn-65	3.94 ± 0.44	3.42	2.40 - 4.45	Pass

TABLE D-5 DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)[a] ENVIRONMENTAL, INC., 2006

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		Concentration [b]				
Lab Code[c]	Date	Analysis	Laboratory result	Known Activity	Control Limits [d]	Acceptance
STW-1086	01/01/06	Am-241	1.29 ± 0.05	1.30	0.91 - 1.69	Pass
STW-1086	01/01/06	Co-57	177.10 ± 1.00	166.12	116.28 - 215.96	Pass
STW-1086	01/01/06	Co-60	158.30 ± 1.00	153.50	107.45 - 199.55	Pass
STW-1086	01/01/06	Cs-134	96.40 ± 1.50	95.10	66.57 - 123.63	Pass
STW-1086 [e]	01/01/06	Cs-137	< 0.80	0.00		Pass
STW-1086	01/01/06	Fe-55	102.50 ± 18.10	129.60	90.72 - 168.48	Pass
STW-1086	01/01/06	H-3	956.60 ± 16.50	952.01	666.41 - 1238.00	Pass
STW-1086	01/01/06	Mn-54	335.30 ± 2.20	315.00	220.50 - 409.50	Pass
STW-1086	01/01/06	Ni-63	62.90 ± 3.60	60.34	42.24 - 78.44	Pass
STW-1086	01/01/06	Pu-238	0.96 ± 0.07	0.91	0.70 - 1.30	Pass
STW-1086 [e]	01/01/06	Pu-239/40	< 0.20	0.00		Pass
STW-1086	01/01/06	Sr-90	12.80 ± 1.60	13.16	9.21 - 17.11	Pass
STW-1086	01/01/06	Tc-99	22.30 ± 1.20	23.38	16.37 - 30.39	Pass
STW-1086	01/01/06	U-233/4	2.02 ± 0.12	2.09	1.46 - 2.72	Pass
STW-1086	01/01/06	U-238	2.03 ± 0.12	2.17	1.52 - 2.82	Pass
STW-1086	01/01/06	Zn-65	249.50 ± 3.40	228.16	159.71 - 296.61	Pass
STW-1087	01/01/06	Gr. Alpha	0.59 ± 0.10	0.58	0.00 - 1.16	Pass
STW-1087	01/01/06	Gr. Beta	1.69 ± 0.07	1.13	0.56 - 1.70	Pass
STVE-1098 [e]	07/01/06	Co-57	< 0.14	0.00		Pass
STVE-1098 [g]	07/01/06	Co-60	6.89 ± 0.17	5.81	4.06 - 7.55	Pass
STVE-1098	07/01/06	Cs-134	8.46 ± 0.16	7.49	5.24 - 9.73	Pass
STVE-1098	07/01/06	Cs-137	6.87 ± 0.29	5.50	3.85 - 7.14	Pass
STVE-1098	07/01/06	Mn-54	10.36 ± 0.29	8.35	5.85 - 10.86	Pass
STVE-1098	07/01/06	Zn-65	7.46 ± 0.50	5.98	4.19 - 7.78	Pass
STSO-1099	07/01/06	Am-241	130.00 ± 11.60	105.47	73.83 - 137.11	Pass
STSO-1099	07/01/06	Co-57	784.90 ± 3.80	676.33	473.43 - 879.23	Pass
STSO-1099	07/01/06	Co-60	2.10 ± 0.90	1.98	0.00 - 5.00	Pass
STSO-1099	07/01/06	Cs-134	500.70 ± 7.40	452.13	316.49 - 587.77	Pass
STSO-1099	07/01/06	Cs-137	624.20 ± 4.90	525.73	368.01 - 683.45	Pass
STSO-1099	07/01/06	K-40	701.30 ± 3.40	604.00	423.00 - 785.00	Pass
STSO-1099	07/01/06	Mn-54	699.20 ± 5.20	594.25	415.98 - 772.52	Pass
STSO-1099	07/01/06	Ni-63	614.40 ± 17.10	672.30	470.60 - 874.00	Pass
STSO-1099	07/01/06	Pu-238	79.90 ± 5.80	82.00	57.00 - 107.00	Pass
STSO-1099 [e]	07/01/06	Pu-239/40	< 0.70	0.00		Pass
STSO-1099	07/01/06	U-233/4	150.50 ± 5.90	152.44	106.71 - 198.17	Pass
STSO-1099	07/01/06	U-238	151.60 ± 6.00	158.73	111.11 - 206.35	Pass
STSO-1099	07/01/06	Zn-65	1021.90 ± 9.20	903.61	632.53 - 1175.00	Pass

TABLE D-5 DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)[a] ENVIRONMENTAL, INC., 2006

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			Concentration [b]			
Lab Code[c]	Date	Analysis	Laboratory result	Known Activity	Control Limits [d]	Acceptance
STAP-1100	07/01/06	Am-241	0.16 ± 0.03	0.14	0.10 - 0.19	Pass
STAP-1100	07/01/06	Co-57	2.17 ± 0.06	2.58	1.81 - 3.36	Pass
STAP-1100	07/01/06	Co-60	1.38 ± 0.07	1.58	1.10 - 2.05	Pass
STAP-1100	07/01/06	Cs-134	2.52 ± 0.13	3.15	2.20 - 4.09	Pass
STAP-1100	07/01/06	Cs-137	1.64 ± 0.08	1.81	1.26 - 2.35	Pass
STAP-1100	07/01/06	Mn-54	1.76 ± 0.18	1.92	1.34 - 2.50	Pass
STAP-1100	07/01/06	Pu-238	0.09 ± 0.02	0.12	0.08 - 0.15	Pass
STAP-1100	07/01/06	Sr-90	0.66 ± 0.21	0.62	0.43 - 0.81	Pass
STAP-1100	07/01/06	U-233/4	0.15 ± 0.02	0.13	0.09 - 0.17	Pass
STAP-1100	07/01/06	U-238	0.13 ± 0.02	0.14	0.10 - 0.18	Pass
STAP-1100 [e]	07/01/06	Zn-65	< 0.07	0.00		Pass
STAP-1101	07/01/06	Gr. Alpha	0.08 ± 0.03	0.29	0.00 - 0.58	Pass
STAP-1101	07/01/06	Gr. Beta	0.41 ± 0.05	0.36	0.18 - 0.54	Pass
STW-1102	07/01/06	Gr. Alpha	0.76 ± 0.07	1.03	0.00 - 2.07	Pass
STW-1102	07/01/06	Gr. Beta	1.23 ± 0.06	1.03	0.52 - 1.54	Pass
STW-1103	07/01/06	Am-241	1.86 ± 0.09	2.31	1.62 - 3.00	Pass
STW-1103	07/01/06	Co-57	224.10 ± 1.20	213.08	149.16 - 277.00	Pass
STW-1103	07/01/06	Co-60	49.40 ± 0.50	47.50	33.20 - 61.80	Pass
STW-1103	07/01/06	Cs-134	112.70 ± 0.90	112.82	78.97 - 146.66	Pass
STW-1103	07/01/06	Cs-137	206.60 ± 1.40	196.14	137.30 - 254.98	Pass
STW-1103	07/01/06	Fe-55	138.40 ± 5.40	165.40	115.80 - 215.00	Pass
STW-1103	07/01/06	H-3	446.50 ± 11.80	428.85	300.20 - 557.50	Pass
STW-1103 [e]	07/01/06	Mn-54	< 0.30	0.00		Pass
STW-1103	07/01/06	Ni-63	116.70 ± 3.60	118.62	83.03 - 154.21	Pass
STW-1103	07/01/06	Pu-238	1.27 ± 0.07	1.39	0.97 - 1.81	Pass
STW-1103	07/01/06	Pu-239/40	1.67 ± 0.08	1.94	1.36 - 2.52	Pass
STW-1103	07/01/06	Sr-90	16.40 ± 1.90	15.69	10.98 - 20.40	Pass
STW-1103	07/01/06	Tc-99	29.40 ± 1.10	27.15	19.00 - 35.29	Pass
STW-1103	07/01/06	U-233/4	1.97 ± 0.08	2.15	1.50 - 2.80	Pass
STW-1103	07/01/06	U-238	1.97 ± 0.08	2.22	1.55 - 2.89	Pass
STW-1103	07/01/06	Zn-65	192.50 ± 2.40	176.37	123.46 - 229.28	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] Included in the MAPEP as a false positive.

[f] Difficulties with the analyses for transuranics isotopes in solid samples (Filters, Soil and vegetation), were attributed to incomplete dissolution of the samples. Soil samples were repeated, results of reanalyses: Pu-238, 53.1 ± 5.3 bq/kg. Pu-239/240, 42.4 ± 4.7 bq/kg. U-233/4, 33.3 ± 3.5 bq/kg. U-238, 35.5 ± 3.6 bq/kg.

[g] The July vegetation sample was provided in two separate geometries, (100 ml. and 500 ml.). Results reported here used the 500 ml. standard size geometry. Results for the 100 ml. geometry showed approximately a 15% higher bias.

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APPENDIX E

ANNUAL RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM REPORT (ARGPPR)

Docket No: 50-461

CLINTON POWER STATION

Annual Radiological Groundwater Protection Program Report

1 January Through 31 December 2006

Prepared By

Teledyne Brown Engineering
Environmental Services

AmerGen℠
An Exelon Company

Clinton Power Station
Clinton, IL 61727

April 2007

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Security-Related Information: Maps of the Clinton Power Station have been withheld from public disclosure under 10CFR2.390 and N.J.S.A. 47:1A-1.1

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Table B-I.3 Concentrations of Strontium in Unit 2 Pit, Groundwater and Surface Water Samples Collected in the Vicinity of Clinton Power Station, 2006.

Table B-I.4 Highest to Lowest Concentrations of Strontium in Unit 2 Pit, Groundwater and Surface Water Samples Collected in the Vicinity of Clinton Power Station, 2006.

Table B-I.5 Concentrations of Gamma Emitters in Unit 2 Pit, Groundwater and Surface Water Samples Collected in the Vicinity of Clinton Power Station, 2006.

Table B-I.6 Highest to Lowest Concentrations of Gamma Emitters in Unit 2 Pit, Groundwater and Surface Water Samples Collected in the Vicinity of Clinton Power Station, 2006.

I. Summary and Conclusions

In 2006, Exelon instituted a comprehensive program to evaluate the impact of station operations on groundwater and surface water in the vicinity of Clinton Power Station. This evaluation involved numerous station personnel and contractor support personnel. At Clinton, 14 permanent groundwater monitoring wells were installed in 2006. The results for the remainder of the locations are included in this report. This report covers groundwater and surface water samples, collected outside of the Licensee required Off-Site Dose Calculation Manual (ODCM) requirements, both on and off station property in 2006. During that time period, 166 analyses were performed on 59 samples from 30 locations. The monitoring was conducted in two phases. Phase 1 of the monitoring was part of a comprehensive study initiated by Exelon to establish baseline data of groundwater and surface water radionuclides. Phase 1 was conducted by Connestoga Rovers and Associates (CRA) and the conclusions were made available to state and federal regulators as well as the public on an Exelon web site http://www.exeloncorp.com/ourcompanies/powergen/nuclear/Tritium.htm. Phase 2 of the RGPP was conducted by Exelon corporate, contractors and station personnel to initiate long-term monitoring at groundwater and surface water locations selected during Phase 1. All analytical results from both the Phase 1 and Phase 2 monitoring are reported herein.

In assessing all the data gathered for this report, it was concluded that the operation of Clinton Power Station had no adverse radiological impact on the environment, and there are no known active releases into the groundwater or surface water at Clinton Power Station.

Gamma-emitting radionuclides associated with licensed plant operations were not detected at concentrations greater than their respective Lower Limits of Detection (LLDs) as specified in NUREG-1302 in any of the groundwater or surface water samples. In the case of tritium, Exelon specified that the independent laboratory achieve a lower limit of detection 10 times lower than that required by the United States Environmental Protection Agency (USEPA) regulation.

Strontium-89/90 was not detected at a concentration greater than the LLD of 2.0 pico-Curies per liter (pCi/L) in any of the groundwater or surface water samples tested.

Tritium was not detected in any of the groundwater or surface water samples at concentrations greater than the United States Environmental Protection Agency (USEPA) drinking water standard (and the Nuclear Regulatory Commission Reporting Limit) of 20,000 pCi/L. Background levels of tritium were detected at concentrations greater than the self-imposed LLD of 200 pCi/L in 9 of 42

groundwater monitoring locations. The tritium concentrations ranged from 156 ± 112 pCi/L to 559 ± 157 pCi/L.

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II. Introduction

The Clinton Power Station (CPS), consisting of one approximately 1140 MW gross electrical power output boiling water reactor is located in Harp Township, DeWitt County, Illinois. CPS is owned and operated by AmerGen Energy Company and became operational in 1987. Unit No. 1 went critical on 15 February 1987. The site encloses approximately 13,730 acres. This includes the 4,895 acre, man-made cooling lake and about 452 acres of property not owned by AmerGen. The plant is situated on approximately 150 acres. The cooling water discharge flume – which discharges to the eastern arm of the lake – occupies an additional 130 acres. Although the nuclear reactor, supporting equipment and associated electrical generation and distribution equipment lie in Harp Township, portions of the aforementioned 13,730 acre plot reside within Wilson, Rutledge, DeWitt, Creek, Nixon and Santa Anna Townships.

This report covers those analyses performed by Teledyne Brown Engineering (TBE) and Environmental Inc. (Midwest Labs) on samples collected in 2006.

A. Objective of the RGPP

The long-term objectives of the RGPP are as follows:

1. Identify suitable locations to monitor and evaluate potential impacts from station operations before significant radiological impact to the environment and potential drinking water sources.

2. Understand the local hydrogeologic regime in the vicinity of the station and maintain up-to-date knowledge of flow patterns on the surface and shallow subsurface.

3. Perform routine water sampling and radiological analysis of water from selected locations.

4. Report new leaks, spills, or other detections with potential radiological significance to stakeholders in a timely manner.

5. Regularly assess analytical results to identify adverse trends.

6. Take necessary corrective actions to protect groundwater resources.

B. Implementation of the Objectives

The objectives identified have been implemented at Clinton Power Station as discussed below:

1. Exelon and its consultant identified locations as described in the Phase 1 study. Phase 1 studies were conducted by Connestoga Rovers and Associates (CRA) and the results and conclusions were made available to state and federal regulators as well as the public on an Exelon web site in station specific reports. http://www.exeloncorp.com/ourcompanies/powergen/nuclear/Tritium.htm

2. The Clinton Power Station reports describe the local hydrogeologic regime. Periodically, the flow patterns on the surface and shallow subsurface are updated based on ongoing measurements.

3. Clinton Power Station will continue to perform routine sampling and radiological analysis of water from selected locations.

4. Clinton Power Station has implemented new procedures to identify and report new leaks, spills, or other detections with potential radiological significance in a timely manner.

5. Clinton Power Station staff and consulting hydrogeologist assess analytical results on an ongoing basis to identify adverse trends.

C. Program Description

1. Sample Collection

Sample locations can be found in Table A–1 and Figures A–1 and A–2, Appendix A.

Groundwater and Surface Water

Samples of water are collected, managed, transported and analyzed in accordance with approved procedures following regulatory methods. Both groundwater and surface water are collected. Sample locations, sample collection frequencies and analytical frequencies are controlled in accordance with approved station procedures. Contractor and/or station personnel are trained in the collection, preservation management, and shipment of samples, as well as in documentation of sampling events. Analytical laboratories are subject to internal quality assurance programs, inter-laboratory cross-check programs, as well as nuclear industry audits. Station personnel review and evaluate all analytical data deliverables after initial review by the contractor.

Analytical data results are reviewed by both station personnel and

an independent hydrogeologist for adverse trends or changes to hydrogeologic conditions.

D. Characteristics of Tritium (H-3)

Tritium (chemical symbol H-3) is a radioactive isotope of hydrogen. The most common form of tritium is tritium oxide, which is also called "tritiated water." The chemical properties of tritium are essentially those of ordinary hydrogen.

Tritiated water behaves the same as ordinary water in both the environment and the body. Tritium can be taken into the body by drinking water, breathing air, eating food, or absorption through skin. Once tritium enters the body, it disperses quickly and is uniformly distributed throughout the body. Tritium is excreted primarily through urine with a clearance rate characterized by an effective biological half-life of about 14 days. Within one month or so after ingestion, essentially all tritium is cleared. Organically bound tritium (tritium that is incorporated in organic compounds) can remain in the body for a longer period.

Tritium is produced naturally in the upper atmosphere when cosmic rays strike air molecules. Tritium is also produced during nuclear weapons explosions, as a by-product in reactors producing electricity, and in special production reactors, where the isotopes lithium-7 and/or boron-10 are activated to produce tritium. Like normal water, tritiated water is colorless and odorless. Tritiated water behaves chemically and physically like non-tritiated water in the subsurface, and therefore tritiated water will travel at the same velocity as the average groundwater velocity.

Tritium has a half-life of approximately 12.3 years. It decays spontaneously to helium-3 (3He). This radioactive decay releases a beta particle (low-energy electron). The radioactive decay of tritium is the source of the health risk from exposure to tritium. Tritium is one of the least dangerous radionuclides because it emits very weak beta radiation and leaves the body relatively quickly. Since tritium is almost always found as water, it goes directly into soft tissues and organs. The associated dose to these tissues is generally uniform and is dependent on the water content of the specific tissue.

III. Program Description

A. Sample Analysis

This section describes the general analytical methodologies used by TBE and EIML to analyze the environmental samples for radioactivity for the

Clinton Power Station RGPP in 2006.

In order to achieve the stated objectives, the current program includes the following analyses:

1. Concentrations of gamma emitters in groundwater and surface water.

2. Concentrations of strontium in groundwater and surface water.

3. Concentrations of tritium in groundwater and surface water.

B. Data Interpretation

The radiological data collected prior to Clinton Power Station becoming operational were used as a baseline with which these operational data were compared. For the purpose of this report, Clinton Power Station was considered operational at initial criticality. Several factors were important in the interpretation of the data:

1. Lower Limit of Detection and Minimum Detectable Concentration

   The lower limit of detection (LLD) is specified by federal regulation as a minimum sensitivity value that must be achieved routinely by the analytical parameter.

2. Laboratory Measurements Uncertainty

   The estimated uncertainty in measurement of tritium in environmental samples is frequently on the order of 50% of the measurement value.

   Statistically, the exact value of a measurement is expressed as a range with a stated level of confidence. The convention is to report results with a 95% level of confidence. The uncertainty comes from calibration standards, sample volume or weight measurements, sampling uncertainty and other factors. Exelon reports the uncertainty of a measurement created by statistical process (counting error) as well as all sources of error (Total Propagated Uncertainty or TPU). Each result has two values calculated. Exelon reports the TPU by following the result with plus or minus ± the estimated sample standard deviation, as TPU, that is obtained by propagating all sources of analytical uncertainty in measurements.

Analytical uncertainties are reported at the 95% confidence level in this report for reporting consistency with the AREOR.

Gamma spectroscopy results for each type of sample were grouped as follows:

For groundwater and surface water 11 nuclides, Mn-54, Co-58, Fe-59, Co-60, Zn-65, Nb-95, Zr-95, Cs-134, Cs-137, Ba-140 and La-140 were reported.

C. Background Analysis

A pre-operational radiological environmental monitoring program (pre-operational REMP) was conducted to establish background radioactivity levels prior to operation of the Station. The environmental media sampled and analyzed during the pre-operational REMP were atmospheric radiation, fall-out, domestic water, surface water, marine life, milk, and vegetation. The results of the monitoring were detailed in the report entitled, Environmental Radiological Monitoring for Clinton Power Nuclear Power Station, Illinois Power Company, Annual Report 1987, May 1988.

The pre-operational REMP contained analytical results from samples collected from the surface water and groundwater.

1. Background Concentrations of Tritium

The purpose of the following discussion is to summarize background measurements of tritium in various media performed by others.

a. Tritium Production

Tritium is created in the environment from naturally occurring processes both cosmic and subterranean, as well as from anthropogenic (i.e., man-made) sources. In the upper atmosphere, "Cosmogenic" tritium is produced from the bombardment of stable nuclides and combines with oxygen to form tritiated water, which will then enter the hydrologic cycle. Below ground, "lithogenic" tritium is produced by the bombardment of natural lithium present in crystalline rocks by neutrons produced by the radioactive decay of naturally abundant uranium and thorium. Lithogenic production of tritium is usually negligible compared to other sources due to the limited abundance of lithium in rock. The lithogenic tritium is introduced directly to groundwater.

A major anthropogenic source of tritium and strontium-90 comes from the former atmospheric testing of thermonuclear weapons. Levels of tritium in precipitation increased significantly during the 1950s and early 1960s, and later with additional testing, resulting in the release of significant amounts of tritium to the atmosphere. The Canadian heavy water nuclear power reactors, other commercial power reactors, nuclear research and weapons production continue to influence tritium concentrations in the environment.

b. Precipitation Data

Precipitation samples are routinely collected at stations around the world for the analysis of tritium and other radionuclides. Two publicly available databases that provide tritium concentrations in precipitation are Global Network of Isotopes in Precipitation (GNIP) and USEPA's RadNet database. GNIP provides tritium precipitation concentration data for samples collected world wide from 1960 to 2006. RadNet provides tritium precipitation concentration data for samples collected at stations through out the U.S. from 1960 up to and including 2006. Based on GNIP data for sample stations located in the U.S. Midwest, tritium concentrations peaked around 1963. This peak, which approached 10,000 pCi/L for some stations, coincided with the atmospheric testing of thermonuclear weapons. Tritium concentrations in surface water showed a sharp decline up until 1975, followed by a gradual decline since that time. Tritium concentrations in Midwest precipitation have typically been below 100 pCi/L since around 1980. Tritium concentrations in wells may still be above the 200 pCi/L detection limit from the external causes described above.

c. Surface Water Data

Tritium concentrations are routinely measured in Clinton Lake. Illinois surface water data were typically less than 100 pCi/L.

According to the USEPA, surface water data typically has an uncertainty ± 70 to 100 pCi/L 95% confidence bound on each given measurement. Therefore, the typical background data provided may be subject to measurement uncertainty of approximately ± 70 to 100 pCi/L.

The radio-analytical laboratory is counting tritium results to an Exelon specified LLD of 200 pCi/L. Typically, the lowest positive measurement will be reported within a range of 40 – 240 pCi/L or 140 ± 100 pCi/L. Clearly, these sample results cannot be distinguished as different from background at this concentration.

IV. Results and Discussion

A. Groundwater Results

Groundwater

Baseline samples were collected from on and off-site wells during two (2) Phases at the station. Analytical results and anomalies are discussed below.

Tritium

Samples from 30 locations were analyzed for tritium activity (Table B–I.1 and B-I.2, Appendix B). Tritium values ranged from below the Exelon imposed LLD of 200 pico-curies per liter to 559 pCi/l.

Strontium

Strontium-90 was detected in one of 51 samples at a concentration of 1.6 pCi/liter. This was less than the required detection limit of 2.0 pCi/liter. (Table B–I.3 and B-I.4, Appendix B).

Gamma Emitters and Strontium

Naturally occurring Beryllium-7 was detected in three of 56 samples. The concentrations ranged from 73 pCi/liter to 207 pCi/liter. Additionally, naturally occurring Potassium-40 was also detected in 17 of 56 samples. The concentrations ranged from 26 pCi/liter to 905 pCi/liter. No other gamma emitting nuclides were detected. (Table B–I.5 and B–I.6, Appendix B).

APPENDIX A

LOCATION DESIGNATION OF THE ANNUAL RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM REPORT (ARGPPR)

TABLE A-1: Radiological Groundwater Protection Program - Sampling Locations, Clinton Power Station, 2006

Site	Site Type
B-3	Unit 2 Pit
CL-1A	Unit 2 Pit
CL-1B	Unit 2 Pit
CL-1C	Unit 2 Pit
CL-1D	Unit 2 Pit
CL-1E	Unit 2 Pit
MW-1	Unit 2 Pit
MW-CL-12I	Monitoring Well
MW-CL-13I	Monitoring Well
MW-CL-13S	Monitoring Well
MW-CL-14S	Monitoring Well
MW-CL-15I	Monitoring Well
MW-CL-15S	Monitoring Well
MW-CL-16S	Monitoring Well
MW-CL-17S	Monitoring Well
MW-CL-18I	Monitoring Well
MW-CL-18S	Monitoring Well
MW-CL-19S	Monitoring Well
MW-CL-2	Monitoring Well
MW-CL-20S	Monitoring Well
MW-CL-21S	Monitoring Well
MW-CL-22S	Monitoring Well
MW-CL-23S	Monitoring Well
MW-CL-321S	Monitoring Well
SW-CL-1	Surface Water
SW-CL-2	Surface Water
SW-CL-4	Surface Water
SW-CL-5	Surface Water
SW-CL-6	Surface Water
SW-CL-7	Surface Water

APPENDIX B

DATA TABLES OF THE ANNUAL RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM REPORT (ARGPPR)

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM IN UNIT 2 PIT, GROUNDWATER AND SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE			
B-3	05/24/06	< 170		
B-3	10/11/06	< 182	*	
CL-1A	06/27/06	< 182	*	
CL-1B	06/27/06	< 179	*	
CL-1C	06/27/06	< 179	*	
CL-1D	06/27/06	227 ± 126*		
CL-1E	06/27/06	< 188	*	
MW-1	05/25/06	< 167		
MW-1	10/12/06	< 182	*	
MW-CL-12I	05/23/06	< 178		
MW-CL-12I	10/11/06	< 181	*	
MW-CL-13I	05/08/06	< 223		(1)
MW-CL-13I	05/08/06	< 186	*	(1)
MW-CL-13I	05/23/06	< 175		
MW-CL-13I	10/11/06	< 183	*	
MW-CL-13S	05/08/06	< 184		
MW-CL-13S	05/08/06	< 200		
MW-CL-13S	05/23/06	230 ± 114		
MW-CL-13S	10/11/06	< 185	*	
MW-CL-14S	05/24/06	201 ± 107		
MW-CL-14S	10/10/06	< 181	*	
MW-CL-15I	05/23/06	< 173		
MW-CL-15I	10/11/06	< 180	*	
MW-CL-15S	05/23/06	< 173		
MW-CL-15S	10/11/06	< 173	*	
MW-CL-16S	05/24/06	< 200		
MW-CL-16S	10/10/06	< 177	*	
MW-CL-17S	05/25/06	< 169		
MW-CL-17S	10/10/06	< 168	*	
MW-CL-18I	05/23/06	< 167		
MW-CL-18I	10/11/06	< 182	*	
MW-CL-18S	05/23/06	< 170		
MW-CL-18S	10/10/06	< 182	*	
MW-CL-19S	05/23/06	< 177		
MW-CL-19S	10/10/06	< 180	*	
MW-CL-2	05/25/06	< 169		
MW-CL-2	10/12/06	< 183	*	
MW-CL-20S	05/23/06	< 172		
MW-CL-20S	10/12/06	< 181	*	
MW-CL-21S	08/04/06	545 ± 138*		
MW-CL-21S	10/12/06	530 ± 126*		
MW-CL-21S	10/12/06	497 ± 150*		
MW-CL-22S	08/04/06	< 175	*	
MW-CL-22S	10/10/06	< 182	*	
MW-CL-23S	10/10/06	< 184	*	
MW-CL-321S	10/12/06	409 ± 117*		
MW-CL-321S	10/12/06	559 ± 157*		

* INDICATES DISTILLED ANALYSIS

(1) MDC REQUIREMENT MISSED DUE TO COLOR OF SAMPLE. SAMPLE REANALYZED BY DISTILLATION METHOD MET REQUIRED 200 pCi/liter LLD REQUIREMENT (<186)

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM IN UNIT 2 PIT, GROUNDWATER AND SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE		
SW-CL-1	05/23/06	< 179	
SW-CL-1	10/09/06	< 171	*
SW-CL-2	05/24/06	< 170	
SW-CL-2	10/09/06	< 172	*
SW-CL-4	05/24/06	< 170	
SW-CL-4	10/09/06	< 170	*
SW-CL-5	05/24/06	< 170	
SW-CL-5	10/09/06	< 171	*
SW-CL-6	05/24/06	< 170	
SW-CL-6	10/09/06	< 172	*
SW-CL-7	05/24/06	< 169	
SW-CL-7	10/09/06	< 182	*

* INDICATES DISTILLED ANALYSIS

TABLE B-I.2 **HIGHEST TO LOWEST CONCENTRATIONS OF TRITIUM IN UNIT 2 PIT, GROUNDWATER AND SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE			
MW-CL-321S	10/12/06	559 ± 157*		
MW-CL-21S	08/04/06	545 ± 138*		
MW-CL-21S	10/12/06	530 ± 126*		
MW-CL-21S	10/12/06	497 ± 150*		
MW-CL-321S	10/12/06	409 ± 117*		
MW-CL-13S	05/23/06	230 ± 114		
CL-1D	06/27/06	227 ± 126*		
MW-CL-13I	05/08/06	< 223		(1)
MW-CL-14S	05/24/06	201 ± 107		
MW-CL-13S	05/08/06	< 200		
MW-CL-16S	05/24/06	< 200		
CL-1E	06/27/06	< 188	*	
MW-CL-13I	05/08/06	< 186	*	(1)
MW-CL-13S	10/11/06	< 185	*	
MW-CL-13S	05/08/06	< 184		
MW-CL-23S	10/10/06	< 184	*	
MW-CL-13I	10/11/06	< 183	*	
MW-CL-2	10/12/06	< 183	*	
B-3	10/11/06	< 182	*	
CL-1A	06/27/06	< 182	*	
MW-1	10/12/06	< 182	*	
MW-CL-18I	10/11/06	< 182	*	
MW-CL-18S	10/10/06	< 182	*	
MW-CL-22S	10/10/06	< 182	*	
SW-CL-7	10/09/06	< 182	*	
MW-CL-12I	10/11/06	< 181	*	
MW-CL-14S	10/10/06	< 181	*	
MW-CL-20S	10/12/06	< 181	*	
MW-CL-15I	10/11/06	< 180	*	
MW-CL-19S	10/10/06	< 180	*	
CL-1B	06/27/06	< 179	*	
CL-1C	06/27/06	< 179	*	
SW-CL-1	05/23/06	< 179		
MW-CL-12I	05/23/06	< 178		
MW-CL-16S	10/10/06	< 177	*	
MW-CL-19S	05/23/06	< 177		
MW-CL-13I	05/23/06	< 175		
MW-CL-22S	08/04/06	< 175	*	
MW-CL-15I	05/23/06	< 173		
MW-CL-15S	05/23/06	< 173		
MW-CL-15S	10/11/06	< 173	*	
MW-CL-20S	05/23/06	< 172		
SW-CL-2	10/09/06	< 172	*	
SW-CL-6	10/09/06	< 172	*	
SW-CL-1	10/09/06	< 171	*	
SW-CL-5	10/09/06	< 171	*	
B-3	05/24/06	< 170		

* INDICATES DISTILLED ANALYSIS

(1) MDC REQUIREMENT MISSED DUE TO COLOR OF SAMPLE. SAMPLE REANALYZED BY DISTILLATION METHOD MET REQUIRED 200 pCi/liter LLD REQUIREMENT (<186)

TABLE B-I.2 **HIGHEST TO LOWEST CONCENTRATIONS OF TRITIUM IN UNIT 2 PIT, GROUNDWATER AND SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE		
MW-CL-18S	05/23/06	< 170	
SW-CL-2	05/24/06	< 170	
SW-CL-4	05/24/06	< 170	
SW-CL-4	10/09/06	< 170	*
SW-CL-5	05/24/06	< 170	
SW-CL-6	05/24/06	< 170	
MW-CL-17S	05/25/06	< 169	
MW-CL-2	05/25/06	< 169	
SW-CL-7	05/24/06	< 169	
MW-CL-17S	10/10/06	< 168	*
MW-1	05/25/06	< 167	
MW-CL-18I	05/23/06	< 167	

* INDICATES DISTILLED ANALYSIS

TABLE B-I.3 **CONCENTRATIONS OF STRONTIUM IN UNIT 2 PIT, GROUNDWATER AND SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	
CL-SW-CL-7	05/24/06	1.6 ± 0.8*

* INDICATES STRONTIUM-90 FAST

TABLE B-I.4 **HIGHEST TO LOWEST CONCENTRATIONS OF STRONTIUM IN UNIT 2 PIT, GROUNDWATER AND SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	
CL-SW-CL-7	05/24/06	1.6 ± 0.8*

* INDICATES STRONTIUM-90 FAST

TABLE B-I.5 **CONCENTRATIONS OF GAMMA EMITTERS IN UNIT 2 PIT, GROUNDWATER AND SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE		COLLECTION DATE	Be-7	K-40
B-3		05/24/06		99 ± 41
B-3		10/11/06		463 ± 16
CL-1A		06/27/06	207 ± 40	905 ± 71
CL-1C		06/27/06	73 ± 45	738 ± 81
CL-1D		06/27/06		231 ± 73
CL-1E		06/27/06	194 ± 42	187 ± 59
MW-CL-12I		05/23/06		52 ± 50
MW-CL-14S		10/10/06		64 ± 55
MW-CL-15S		10/11/06		591 ± 88
MW-CL-18S		10/10/06		26 ± 19
MW-CL-19S		10/10/06		111 ± 23
MW-CL-21S		08/04/06		53 ± 35
MW-CL-22S	ORIG	08/04/06		114 ± 39
MW-CL-22S DUP	DUP	08/04/06		76 ± 63
MW-CL-22S		10/10/06		134 ± 30
MW-CL-23S		10/10/06		124 ± 33
SW-CL-1		10/09/06		155 ± 59

TABLE B-I.6 **HIGHEST TO LOWEST CONCENTRATIONS OF GAMMA EMITTERS IN UNIT 2 PIT, GROUNDWATER AND SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF CLINTON POWER STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	Be-7
CL-1A	06/27/06	207 ± 40
CL-1E	06/27/06	194 ± 42
CL-1C	06/27/06	73 ± 45

SITE	COLLECTION DATE	K-40
CL-1A	06/27/06	905 ± 71
CL-1C	06/27/06	738 ± 81
MW-CL-15S	10/11/06	591 ± 88
B-3	10/11/06	463 ± 16
CL-1D	06/27/06	231 ± 73
CL-1E	06/27/06	187 ± 59
SW-CL-1	10/09/06	155 ± 59
MW-CL-22S	10/10/06	134 ± 30
MW-CL-23S	10/10/06	124 ± 33
MW-CL-22S	08/04/06	114 ± 39
MW-CL-19S	10/10/06	111 ± 23
B-3	05/24/06	99 ± 41
MW-CL-22S DUP	08/04/06	76 ± 63
MW-CL-14S	10/10/06	64 ± 55
MW-CL-21S	08/04/06	53 ± 35
MW-CL-12I	05/23/06	52 ± 50
MW-CL-18S	10/10/06	26 ± 19