Docket No: 50-456
50-457

BRAIDWOOD STATION
UNITS 1 and 2

Release all

Annual Radiological Groundwater Protection Program Report

1 January Through 31 December 2006

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May 2007

H-54

Table Of Contents

Appendices

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 Braidwood Station. This evaluation involved numerous station personnel and contractor support personnel. At Braidwood, permanent groundwater monitoring wells were installed in 2006. The results of sampling these locations are included in this report. This is the first in a series of annual reports on the status of the Radiological Groundwater Protection Program (RGPP) conducted at Braidwood Station. This report covers groundwater and surface water samples, collected from the environment, both on and off station property in 2006. During that time period, 181 analyses were performed on 67 samples from 26 locations. The monitoring was conducted in two phases. Phase 1 of the monitoring was part of a comprehensive study initiated by Exelon to determine whether groundwater or surface water at and in the vicinity of Braidwood Station had been adversely impacted by any releases of radionuclides. Phase 1 was conducted by Conestoga 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 and station personnel to initiate follow up of Phase 1 and begin 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 Braidwood Station had no adverse radiological impact on the environment, and there are no know active releases into the groundwater at Braidwood 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 the Offsite Dose Calculation Manual (ODCM) in any of the groundwater or surface water samples. In the case of tritium, Exelon specified that it's laboratories achieve a lower limit of detection 10 times lower than that required by federal regulation.

Strontium-89/90 was not detected at a concentration greater than the LLD of 2.0 picoCuries 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. Low levels of tritium were detected at

concentrations greater than the LLD of 200 pCi/L in 13 of 26 groundwater monitoring locations. The tritium concentrations ranged from 206 ± 110 pCi/L to 16,500 ± 1,710 pCi/L. The tritium that was detected in groundwater is believed to be the result of isolated historical releases and/or background from external sources greater than 200 pCi/L. With ongoing investigation of the site groundwater, the RGPP will continue to expand as needed.

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II. Introduction

The Braidwood Station, consisting of two 3587 MWt pressurized water reactors owned and operated by Exelon Corporation, is located in Will County, Illinois. Unit No. 1 went critical on 29 May 1987. Unit No. 2 went critical on 08 March 1988. The site is located in northeastern Illinois, 15 miles south-southwest of Joliet, Illinois and 60 miles southwest of Chicago and southwest of the Kankakee River.

This report covers those analyses performed by Teledyne Brown Engineering (TBE) and Environmental Inc. Midwest Labs (EIML) 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 Braidwood Station as discussed below:

1. Exelon and its consultant identified locations as described in the Phase 1 study. Phase 1 studies were conducted by Conestoga 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 Braidwood Station reports describe the local hydrogeologic regime. Periodically, the flow patterns on the surface and shallow subsurface are updated based on ongoing measurements.

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

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

5. Braidwood 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 EPA 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, industry cross-check programs, as well as nuclear industry audits. Station personnel review and evaluate all analytical data deliverables as data are received.

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 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 Teledyne Brown Engineering (TBE) and Environmental Incorporated Midwest Laboratory (EIML) to analyze the environmental samples for radioactivity for the Braidwood 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 Braidwood Station becoming operational were used as a baseline with which these operational data were compared. For the purpose of this report, Braidwood 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, and foodstuffs. The results of the monitoring were detailed in the report entitled, Environmental Radiological Monitoring for Braidwood Nuclear Power Station, Commonwealth Edison Company, Annual Report 1986, May 1987.

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

At the upstream Kankakee River collection point, BD-7, monthly composites of weekly sample collections from all surface water locations indicated tritium concentrations were not detectable above the LLD (<200 pCi/L). Monthly composites of weekly sample collections from all surface water locations indicate (strontium-89, strontium-90, cesium-134 and cesium-137) concentrations were less than their specified LLDs.

Groundwater was collected from one off-site well on a quarterly basis. Gamma isotopic, radiostrontium and tritium analyses were performed on all samples. Strontium-89, strontium-90, tritium and gamma emitters were below their respective LLDs.

1. Background Concentrations of Tritium

The purpose of the following discussion is to summarize background measurements of tritium in various media performed by others. Additional detail may be found by consulting references (CRA 2006).

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. Water from previous years and decades is naturally captured in groundwater, so some well water sources today are affected by the surface water from the 1960s that was elevated in tritium.

c. Surface Water Data

Tritium concentrations are routinely measured in large surface water bodies, including Lake Michigan and the Mississippi River. Illinois surface water data were typically less than 100 pCi/L.

The USEPA RadNet surface water data typically has a reported 'Combined Standard Uncertainty' of 35 to 50 pCi/L. According to USEPA, this corresponds to a ±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

Samples were collected from on and off-site wells throughout the year in accordance with the station radiological groundwater protection program. Analytical results and anomalies are discussed below.

Tritium

Samples from all locations were analyzed for tritium activity (Table B–I.1 and B-I.2, Appendix B). Tritium values ranged from the

detection limit to 16,500 pCi/l. The location of the 16,500 pCi/liter sample is within the site boundary. This H-3 is a result of a spill from a failed berm from a temporary storage location. Due to the location of this contamination, additional monitoring is ongoing.

Strontium

Strontium-90 was detected in one sample at a concentration of 0.9 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

Potassium-40 was detected in 20 of 57 samples. The concentrations ranged from 24 pCi/liter to 263 pCi/liter. No other gamma emitting nuclides were detected. (Table B–I.5 and B–I.6, Appendix B).

B. Drinking Water Well Survey

A drinking water well survey was conducted during the summer 2006 by CRA (CRA 2006) around the Braidwood Station.

C. Summary of Results – Inter-Laboratory Comparison Program

Inter-Laboratory Comparison Program results for TBE and EIML are presented in the AREOR.

D. Leaks, Spills, and Releases

Previously identified contaminated groundwater plumes are being addressed by the Braidwood Station tritium remediation activities.

E. Trends

Monitoring of remediation activities indicate that tritium concentrations in affected areas is trending down.

F. Investigations

Investigation of historic spills and the groundwater contamination has resulted in groundwater remediation activities at Braidwood Station.

G. Actions Taken

1. Compensatory Actions

All Circ Water Blowdown valve vaults were plugged and coated to prevent any leakage of water from the vaults to the groundwater. A remote leakage detection system has been installed which provides continuous monitoring of the vaults. Operations procedures are in place for actions to take in the event the leak detection system alarms. Walkdowns of the Circ Water Blowdown pipeline and vaults are performed weekly.

2. Installation of Monitoring Wells

Exelon has installed a permanent monitoring well network that ensures that ground water will be appropriately monitored around the plant and at the various remediation sites. Monitoring well locations were based on the kind of up gradient potential contamination source, ground flow direction, and source concentration. Some monitoring points are not primarily used for sampling but rather to measure ground water elevation. Water elevation is used extensively around active remediation sites to verify that ground water is still flowing toward extraction wells.

3. Actions to Recover/Reverse Plumes

Vacuum Breaker 1 area: Three extraction wells have been installed in this area to remove contaminated ground water. Monitoring of this activity indicates the remediation is proceeding acceptably.

Vacuum Breakers 4, 6, & 7: Monitoring wells have been installed within and down gradient of these plumes which originated from vacuum breaker valves along the blowdown line. These sites are being remediated by monitored natural attenuation.

Exelon Pond area: The combination of sample monitoring and water level monitoring ensures that the active remedial pumping of Exelon Pond continues to capture the tritium that spilled from vacuum breakers 2 and 3 almost ten years ago. Monitoring to date has shown marked reduction in the most contaminated area and the station continues to monitor plume capture to determine whether adjustments are needed in the pumping rate.

APPENDIX A

LOCATION DESIGNATION

TABLE A-1: Radiological Groundwater Protection Program - Sampling Locations, Distance and Direction, Braidwood Station, 2006

Site	Site Type	Temporary/Permanent	Distance
MW-2	Monitoring Well		
MW-4	Monitoring Well		
MW-5	Monitoring Well		
MW-6	Monitoring Well		
MW-7	Monitoring Well		
MW-9	Monitoring Well		
MW-11	Monitoring Well		
MW-13	Monitoring Well		
MW-14	Monitoring Well		
MW-22	Monitoring Well		
MW-141	Monitoring Well		
MW-142	Monitoring Well		
MW-143	Monitoring Well		
MW-144	Monitoring Well		
MW-154	Monitoring Well		
MW-155	Monitoring Well		
MW-156	Monitoring Well		
MW-BW-201	Monitoring Well		
MW-BW-202	Distant Well		
MW-BW-203	Distant Well		
MW-BW-204	Distant Well		
MW-BW-205	Distant Well		
MW-BW-206	Distant Well		
MW-BW-207	Monitoring Well		
MW-BW-208	Monitoring Well		
SW-102	Surface Water		

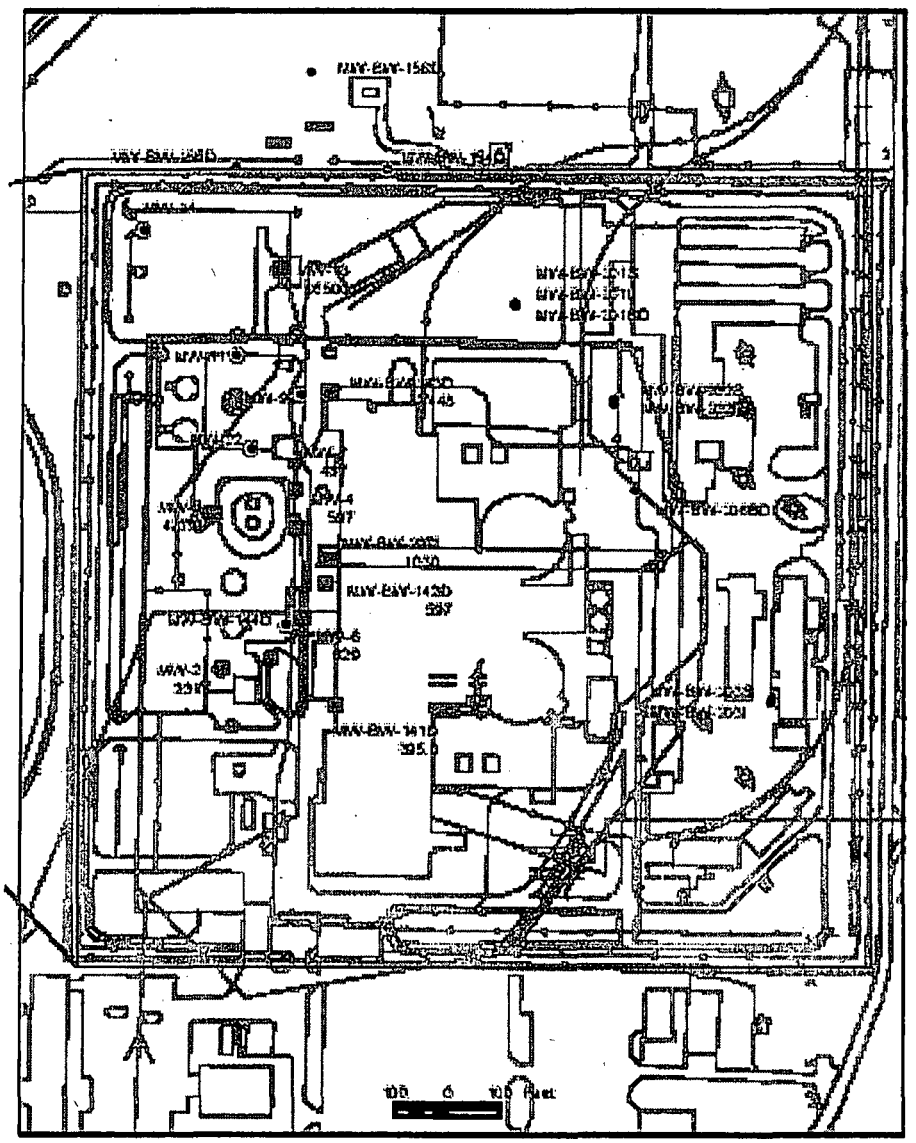

Figure A-1
Sampling Locations Near the Site Boundary of the Braidwood Station, 2006

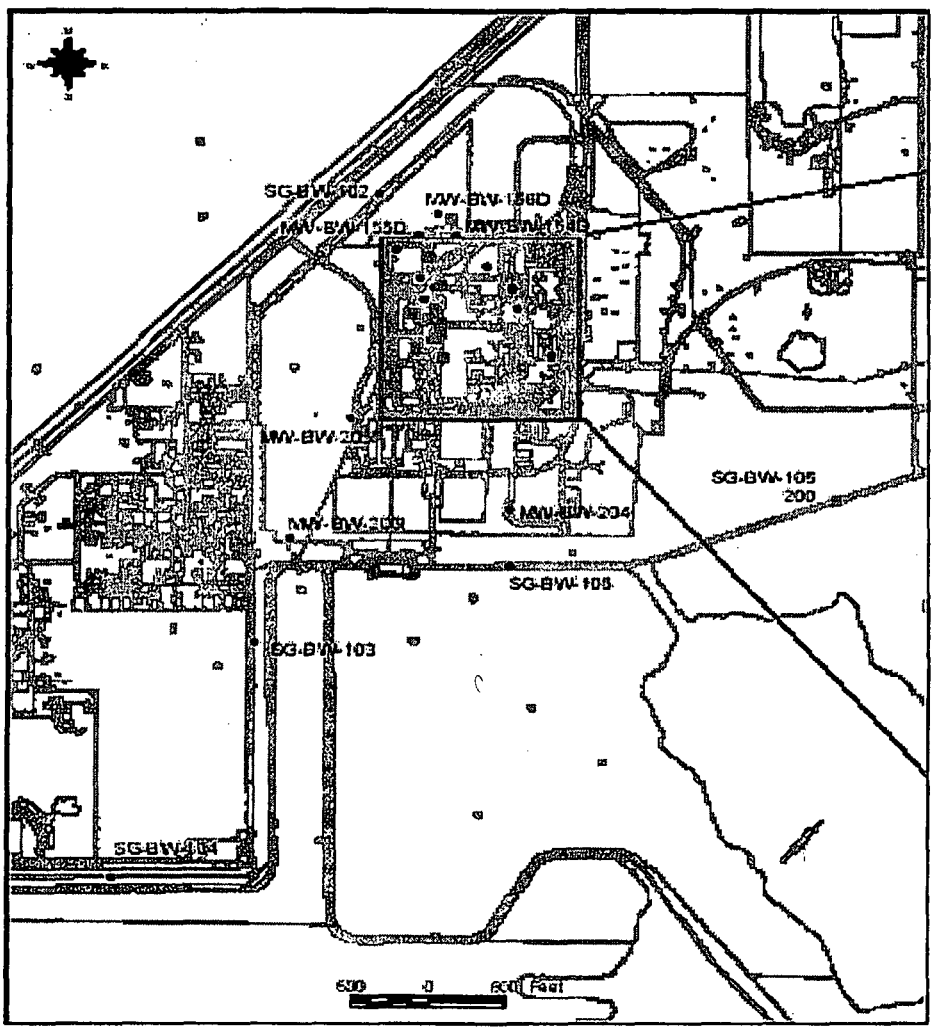

Figure A-2
Distant Sampling Locations of the Braidwood Station, 2006

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APPENDIX B

DATA TABLES

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM IN GROUNDWATER AND SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE		COLLECTION DATE		
MW-2		05/10/06	< 171	
MW-2	Orig	11/08/06	231 ± 131	*
MW-2	Dup	11/08/06	< 191	*
MW-4		05/11/06	196 ± 124	
MW-4	Orig	11/07/06	520 ± 131	*
MW-4	Dup	11/07/06	597 ± 150	*
MW-5		05/09/06	184 ± 114	
MW-5		11/07/06	477 ± 139	*
MW-5		11/07/06	457 ± 139	*
MW-6		05/09/06	288 ± 121	
MW-6	Orig	11/07/06	629 ± 143	*
MW-6	Dup	11/07/06	442 ± 140	*
MW-7		05/11/06	214 ± 101	
MW-7	Orig	11/07/06	346 ± 119	*
MW-7	Dup	11/07/06	487 ± 142	*
MW-9		05/11/06	311 ± 118	
MW-9	EIML	11/10/06	170 ± 80	
MW-9		11/10/06	< 191	*
MW-9 DUP		05/11/06	441 ± 131	
MW-11		05/10/06	< 170	
MW-11		11/10/06	< 191	*
MW-13		05/10/06	< 178	
MW-13	Orig	11/10/06	14100 ± 755	*
MW-13	Dup	11/10/06	16500 ± 1710	*
MW-14		05/10/06	< 179	
MW-14		11/10/06	< 182	*
MW-22		05/11/06	< 165	
MW-22		11/07/06	< 195	*
MW-141D	Orig	11/08/06	206 ± 110	*
MW-141D	Dup	11/08/06	395 ± 138	*
MW-142D	Orig	01/08/06	597 ± 138	*
MW-142D	Dup	01/08/06	537 ± 149	*
MW-143D	Orig	11/10/06	290 ± 116	*
MW-143D	Dup	11/10/06	448 ± 153	*
MW-144D		11/08/06	< 160	*
MW-154D		11/07/06	< 174	*
MW-155D		11/07/06	< 182	*
MW-156D		11/07/06	< 169	*
MW-BW-201BD	Orig	05/22/06	< 158	
MW-BW-201BD DUP	Dup	05/22/06	< 158	
MW-BW-201BD		11/10/06	< 168	*
MW-BW-201I	Orig	05/11/06	261 ± 104	
MW-BW-201I DUP	Dup	05/11/06	182 ± 98	
MW-BW-201I		11/10/06	< 181	*
MW-BW-201S		05/11/06	244 ± 100	
MW-BW-201S		11/10/06	192 ± 123	*
MW-BW-202I		05/11/06	< 174	
MW-BW-202I		11/10/06	< 186	*
MW-BW-202S		05/11/06	156 ± 94	

EIML = ENVIRONMENTAL INC. MIDWEST LAB
* INDICATES DISTILLED ANALYSIS

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM IN GROUNDWATER AND SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE		COLLECTION DATE		
MW-BW-202S		11/10/06	< 188	*
MW-BW-203I		05/11/06	139 ± 95	
MW-BW-203I		11/10/06	< 167	*
MW-BW-203S		05/11/06	< 130	
MW-BW-203S		11/10/06	< 188	*
MW-BW-204I		05/12/06	194 ± 99	
MW-BW-204I		11/07/06	< 162	*
MW-BW-205I		05/12/06	221 ± 102	
MW-BW-205I		11/07/06	< 168	*
MW-BW-206I		05/12/06	< 170	
MW-BW-206I		11/07/06	< 168	*
MW-BW-207I	Orig	07/28/06	438 ± 133*	
MW-BW-207I DUP	Dup	07/28/06	471 ± 137*	
MW-BW-207I	Orig	11/07/06	720 ± 139*	
MW-BW-207I	Dup	11/07/06	1030 ± 187*	
MW-BW-208BD		07/28/06	< 175	*
MW-BW-208BD		11/10/06	< 157	*
SW-102	EIML	11/09/06	< 145	

EIML = ENVIRONMENTAL INC. MIDWEST LAB

* INDICATES DISTILLED ANALYSIS

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

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE		COLLECTION DATE		
MW-13	Dup	11/10/06	16500 ± 1710	*
MW-13	Orig	11/10/06	14100 ± 755	*
MW-BW-207I	Dup	11/07/06	1030 ± 187	*
MW-BW-207I	Orig	11/07/06	720 ± 139	*
MW-6	Orig	11/07/06	629 ± 143	*
MW-4	Dup	11/07/06	597 ± 150	*
MW-142D	Orig	01/08/06	597 ± 138	*
MW-142D	Dup	01/08/06	537 ± 149	*
MW-4	Orig	11/07/06	520 ± 131	*
MW-7	Dup	11/07/06	487 ± 142	*
MW-5		11/07/06	477 ± 139	*
MW-BW-207I DUP	Dup	07/28/06	471 ± 137	*
MW-5		11/07/06	457 ± 139	*
MW-143D	Dup	11/10/06	448 ± 153	*
MW-6	Dup	11/07/06	442 ± 140	*
MW-9 DUP		05/11/06	441 ± 131	
MW-BW-207I	Orig	07/28/06	438 ± 133	*
MW-141D	Dup	11/08/06	395 ± 138	*
MW-7	Orig	11/07/06	346 ± 119	*
MW-9		05/11/06	311 ± 118	
MW-143D	Orig	11/10/06	290 ± 116	*
MW-6		05/09/06	288 ± 121	
MW-BW-201I	Orig	05/11/06	261 ± 104	
MW-BW-201S		05/11/06	244 ± 100	
MW-2	Orig	11/08/06	231 ± 131	*
MW-BW-205I		05/12/06	221 ± 102	
MW-7		05/11/06	214 ± 101	
MW-141D	Orig	11/08/06	206 ± 110	*
MW-4		05/11/06	196 ± 124	
MW-22		11/07/06	< 195	*
MW-BW-204I		05/12/06	194 ± 99	
MW-BW-201S		11/10/06	192 ± 123	*
MW-9		11/10/06	< 191	*
MW-2	Dup	11/08/06	< 191	*
MW-11		11/10/06	< 191	*
MW-BW-203S		11/10/06	< 188	*
MW-BW-202S		11/10/06	< 188	*
MW-BW-202I		11/10/06	< 186	*
MW-5		05/09/06	184 ± 114	
MW-BW-201I DUP	Dup	05/11/06	182 ± 98	
MW-155D		11/07/06	< 182	*
MW-14		11/10/06	< 182	*
MW-BW-201I		11/10/06	< 181	*
MW-14		05/10/06	< 179	
MW-13		05/10/06	< 178	
MW-BW-208BD		07/28/06	< 175	*
MW-BW-202I		05/11/06	< 174	
MW-154D		11/07/06	< 174	*
MW-2		05/10/06	< 171	

* INDICATES DISTILLED ANALYSIS

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

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE		COLLECTION DATE		
MW-BW-206I		05/12/06	< 170	
MW-9	EIML	11/10/06	170 ± 80	
MW-11		05/10/06	< 170	
MW-156D		11/07/06	< 169	*
MW-BW-206I		11/07/06	< 168	*
MW-BW-205I		11/07/06	< 168	*
MW-BW-201BD		11/10/06	< 168	*
MW-BW-203I		11/10/06	< 167	*
MW-22		05/11/06	< 165	
MW-BW-204I		11/07/06	< 162	*
MW-144D		11/08/06	< 160	*
MW-BW-201BD DUP	Dup	05/22/06	< 158	
MW-BW-201BD	Orig	05/22/06	< 158	
MW-BW-208BD		11/10/06	< 157	*
MW-BW-202S		05/11/06	156 ± 94	
SW-102	EIML	11/09/06	< 145	
MW-BW-203I		05/11/06	139 ± 95	
MW-BW-203S		05/11/06	< 130	

EIML = ENVIRONMENTAL INC. MIDWEST LAB
* INDICATES DISTILLED ANALYSIS

TABLE B-I.3 **CONCENTRATIONS OF STRONTIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	
BW-TW-25	05/19/06	0.9 ± 0.5

TABLE B-I.4 **HIGHEST TO LOWEST CONCENTRATIONS OF STRONTIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	
BW-TW-25	05/19/06	0.9 ± 0.5

TABLE B-I.5 **CONCENTRATIONS OF GAMMA EMITTERS IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE		COLLECTION DATE	Be-7	K-40
MW-4		11/07/06	-	24 ± 23
MW-5		11/07/06	-	175 ± 46
MW-7		11/07/06	-	188 ± 31
MW-9	EIML	11/10/07		79 ± 45
MW-13		11/10/06	-	30 ± 29
MW-14		05/10/06	-	152 ± 28
MW-14		11/10/06	-	263 ± 37
MW-141D		11/08/06	-	248 ± 41
MW-142D		01/08/06	-	160 ± 40
MW-144D		11/08/06	-	159 ± 53
MW-154D		11/07/06	-	105 ± 56
MW-156D		11/07/06	-	136 ± 40
MW-BW-201BD		11/10/06	-	166 ± 46
MW-BW-202I		11/10/06	-	57 ± 38
MW-BW-203I		05/11/06	-	51 ± 38
MW-BW-203I		11/10/06	-	67 ± 49
MW-BW-204I		05/12/06	-	39 ± 33
MW-BW-206I		05/12/06	-	69 ± 47
MW-BW-207I		07/28/06	-	51 ± 41
MW-BW-208BD		11/10/06	-	192 ± 45

EIML = ENVIRONMENTAL INC MIDWEST LAB

TABLE B-I.6 **HIGHEST TO LOWEST CONCENTRATIONS OF GAMMA EMITTERS IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE		COLLECTION DATE	K-40
MW-14		11/10/06	263 ± 37
MW-141D		11/08/06	248 ± 41
MW-BW-208BD		11/10/06	192 ± 45
MW-7		11/07/06	188 ± 31
MW-5		11/07/06	175 ± 46
MW-BW-201BD		11/10/06	166 ± 46
MW-142D		01/08/06	160 ± 40
MW-144D		11/08/06	159 ± 53
MW-14		05/10/06	152 ± 28
MW-156D		11/07/06	136 ± 40
MW-154D		11/07/06	105 ± 56
MW-9	EIML	11/10/07	79 ± 45
MW-BW-206I		05/12/06	69 ± 47
MW-BW-203I		11/10/06	67 ± 49
MW-BW-202I		11/10/06	57 ± 38
MW-BW-203I		05/11/06	51 ± 38
MW-BW-207I		07/28/06	51 ± 41
MW-BW-204I		05/12/06	39 ± 33
MW-13		11/10/06	30 ± 29
MW-4		11/07/06	24 ± 23

EIML = ENVIRONMENTAL INC MIDWEST LAB