April 29, 2011

ULNRC-05785

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Ladies and Gentlemen:

DOCKET NUMBER 50-483
CALLAWAY PLANT UNIT 1
UNION ELECTRIC CO.
FACILITY OPERATING LICENSE NPF-30
2010 ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

Please find enclosed the 2010 Annual Radiological Environmental Operating Report for Callaway Plant. This report is submitted in accordance with Section 5.6.2 of the Callaway Plant Technical Specifications and Appendix B to the Callaway Plant Operating License.

This letter does not contain new commitments.

If there are any questions, please contact us.

Sincerely,

Luke H. Graessle
Director, Operations Support

ACS/nls

Enclosed: 2010 Annual Radiological Environmental Operating Report

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DOCKET NO. 50-483

ANNUAL REPORT
to the

UNITED STATES NUCLEAR REGULATORY COMMISSION

Radiation Environmental Operating Report

January 1 to December 31, 2010

Prepared by

ENVIRONMENTAL, Inc.
Midwest Laboratory

Submitted by

UNION ELECTRIC CO.
dba Ameren Missouri Corp.

Project No. 8036

Approved : _____

Bronia Grob, M.S.
Laboratory Manager

PREFACE

This Annual Radiological Environmental Operating Report describes the Ameren Missouri Corp., Callaway Plant Radiological Environmental Monitoring Program (REMP), and the program results for the calendar year 2010. It is submitted in accordance with section 5.6.2 of the Callaway Plant Technical Specifications.

Staff members of the Environmental, Inc., Midwest Laboratory were responsible for the acquisition of data presented in this report. Environmental samples were collected by Ameren Missouri personnel or contractors to Ameren Missouri and shipped to Environmental, Inc. – Midwest Laboratory and Framatone for analysis.

The report was prepared by Environmental, Inc., Midwest Laboratory for the Ameren Missouri, Callaway Plant.

TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

PART II

LIST OF TABLES

In addition, the following tables are in the Appendices:

Appendix A

Appendix C

LIST OF FIGURES

1.0 INTRODUCTION

This report presents an analysis of the results of the Radiological Environmental Monitoring Program (REMP) conducted during 2010 for the Union Electric Company (dba Ameren Missouri Corp.), Callaway Plant.

The objectives of the REMP are to monitor potential critical pathways of radioactive effluent to man and determine the radiological impact on the environment caused by operation of Callaway Plant. The Radiological Environmental Monitoring Program was initiated in April 1982.

Callaway Plant consists of one 3565 MWt pressurized water reactor, which achieved initial criticality on October 2, 1984. The plant is located on a plateau approximately ten miles southeast of the City of Fulton in Callaway County, Missouri and approximately eighty miles west of the St. Louis metropolitan area. The Missouri River flows by the site in an easterly direction approximately five miles south of the site at its closest point.

Tabulation of the individual analyses for the year 2010 is included in Part II of this report.

2.0 SUMMARY

The Radiological Environmental Monitoring Program, as required by the U.S. Nuclear Regulatory Commission (NRC) Technical Specifications for the Callaway Plant is herein described. Results for the year 2010 are summarized and discussed.

For the year, the Callaway Plant was operated in compliance with Off Site Dose Calculation Manual (ODCM) requirements. Comparison of results for 2010 show no significant differences to historical data. Results from the REMP indicate the Callaway Plant has had no significant radiological impact on the health and safety of the public or on the environment.

3.0 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

3.1 Program Design and Data Interpretation

The purpose of the Radiological Environmental Monitoring Program at the Callaway Plant is to assess the impact of the plant on its environment. For this purpose, samples are collected from waterborne, airborne, ingestion and terrestrial pathways and analyzed for radioactive content. Ambient gamma radiation levels are monitored by thermoluminescent dosimeters (TLDs).

Sources of environmental radiation can include the following:

(1) Natural background radiation arising from cosmic rays and primordial radionuclides;
(2) Fallout from atmospheric nuclear detonations;
(3) Releases from nuclear power plants; and
(4) Industrial and medical radioactive waste.

In interpreting the data, effects due to operation of the Callaway Plant must be distinguished from those due to other sources.

A major interpretive aid in assessment of these effects is the design of the monitoring program at the Callaway Plant, based on the indicator-control concept. Most types of samples are collected at indicator locations (nearby, downwind, or downstream) and at control locations (distant, upwind, or upstream). A station effect would be indicated if the radiation level at an indicator location was significantly larger than that at the control location. The difference would have to be greater than could be accounted for by typical fluctuations in radiation levels arising from other sources.

An additional interpretive technique involves analyses for specific radionuclides present in the environmental samples collected from the Callaway site. The monitoring program includes analyses for iodine-131, a fission product, and tritium, which is produced by cosmic rays, atmospheric nuclear detonations, and also by nuclear power plants. Most samples are analyzed for gamma-emitting isotopes, with results for the following groups quantified: zirconium-95, cesium-137, and cerium-144. These three gamma-emitting isotopes are selected as radiological impact indicators because of the different characteristic proportions in which they appear in the fission product mix produced by a nuclear reactor and that produced by a nuclear detonation. Each of the three isotopes is produced in roughly equivalent amounts by a reactor: each constitutes about 10% of the total activity of fission products ten days after reactor shutdown. On the other hand, ten days after a nuclear explosion, the contributions of zirconium-95, cerium-144, and cesium-137 to the activity of the resulting debris are in the approximate ratio 4:1:0.03 (Eisenbud,1963).

The other group quantified consists of niobium-95, ruthenium-103 and -106, cesium-134, barium-lanthanum-140, and cerium-141. These isotopes are released in small quantities by nuclear power plants, but to date their major source of injection into the general environment has been atmospheric nuclear testing. Nuclides of the next group, manganese-54, cobalt-58 and-60, and zinc-65, are activation products and arise from activation of corrosion products. They are typical components of nuclear power plant effluents, but are not produced in significant quantities by nuclear detonation.

Nuclides of the final group, beryllium-7, which is of cosmogenic origin, and potassium-40, a naturally-occurring isotope, were chosen as calibration monitors and should not be considered radiological impact indicators.

Other means of distinguishing sources of environmental radiation can be employed in interpreting the data. Current radiation levels can be compared with previous levels, including pre-operational data. Results of the monitoring program can be related to those obtained in other parts of the world. Finally, results can be related to events known to cause elevated levels of radiation in the environment, e.g., a nuclear accident.

3.2 Program Description

The sampling and analysis schedules for the environmental radiological monitoring program at the Callaway Plant are summarized in Tables 5.1 and 5.2 and briefly reviewed below. Table 5.1 identifies sampling locations and specifies as to type (indicator or control) and its distance, direction, and sector relative to the reactor site. The types of samples collected at each location, required analyses and the frequency of collections are presented in Tables 5.2.

To monitor the air environment, airborne particulates and airborne iodine samples are collected by continuous pumping, at five locations. The airborne particulates are collected on glass fiber filters and the airborne iodine through an activated charcoal cartridge. Both filters and cartridges are exchanged weekly. Airborne particulates are analyzed for gamma-emitting isotopes. Charcoal cartridges are analyzed for iodine-131.

The ingestion pathway is monitored by sampling of milk (if available), fish and green leafy vegetation.

Milk samples are collected semimonthly during the grazing season (April 15 through December 15) and monthly the rest of the year. Samples are analyzed for iodine-131 and gamma-emitting isotopes.

Monthly during the growing season, edible green leafy vegetation is collected from both indicator and control locations. Vegetation samples typically consist of mustard greens, turnip greens, cabbage, lettuce, collards, radish greens, Swiss chard, broccoli and poke. Other edible broad leaf vegetation is collected if primary varieties are not available. The samples are analyzed for iodine-131 and other gamma-emitting isotopes.

Soybean collections were added to the program in 2008. The sites (FC-1 through FC-4) are located on Ameren property, traversed by the discharge pipeline. The samples are collected at harvest and analyzed for tritium and gamma emitting isotopes.

The waterborne pathway is monitored by sampling surface water, groundwater and drinking water, and bottom and shoreline sediments. Samples are analyzed for tritium and gamma-emitting isotopes.

The waterborne pathway is also monitored by upstream and downstream semiannual collections of fish. The five most abundant recreational or commercial fish species are collected. Samples are analyzed for gamma-emitting isotopes.

Monthly composite samples of surface water from the Missouri River are collected from one indicator location (SO2) and from one control location (SO1).

Twelve onsite surface water ponds are sampled semiannually and analyzed for tritium and gamma-emitting isotopes.

To monitor possible sources of ground water contamination due to plant operations, non-potable ground water is collected monthly or quarterly from 48 well locations both onsite and along the discharge pipeline. The samples are analyzed for tritium and gamma-emitting isotopes.

Potable well water samples are collected quarterly from the plant drinking water supply, neighboring property owners, and from the town of Portland, MO.

River bottom sediment is collected semiannually at the plant's intake (A) and discharge (C). The samples are taken from water at least 2 meters deep to prevent influence of bank erosion. Shoreline sediments are collected semiannually in the same area as bottom sediment. These samples are collected within two feet of the edge of the water. The samples are analyzed for gamma-emitting isotopes.

3.2 Program Description (continued)

Another pathway considered is direct ambient gamma radiation. This exposure is monitored by thermoluminescent dosimeters (TLDs), at forty-three locations in and around the Callaway site. The TLDs are placed in 16 sectors around the plant as specified in the ODCM-RECS. Three locations are designated as controls (IDM-26, IDM-27 and IDM-60). TLDs are placed at each location and exchanged and analyzed quarterly.

To monitor the terrestrial environment, soil is collected annually from seven indicator locations (F2, PR3, F6, PR7, W2, W3, and W4) and two control locations (V3, W1). The samples are analyzed for gamma-emitting isotopes.

Results of supplemental soil testing are included in Part II, App. C.

3.3 Program Execution

The program was executed as described in the preceding section with the following exceptions.

(1) Surface Water:

The surface water samples are composites of daily collections by automatic river sampler at two locations, S01 and S02. The sampler at S01 was 100% operable in 2010; down-time approximately 5 hours. The sampler at S02 was 91% operable through November 27, 2010; down-time approximately 690 hours.

The sampler at S02 was taken out of service from November 27 through December 31, 2010 to replace obsolete system controls with a programmable logic controller. This should improve system reliability by making the sampler less susceptible to short term power outages.

(2) Ground Water:

No ground water was available from monitoring wells U1MW-28, MW-939 and MW-940. The wells were added to the program in the fourth quarter, 2010, but were dry upon initial sampling.

(3) Vegetation:

No vegetation samples were available from station V-15 for the June 22, 2010 collection, due to damage from wild animals. Vegetation samples were not available from station V-14 for the August 17, 2010 collection. The garden was not producing.

(4) Food Crops:

Soybean samples were not available for harvest from two locations, FC-1, FC-2. No crops were planted in those locations for 2010.

(5) Direct Radiation:

The TLD for location IDM-36 was missing for the 2nd quarter, 2010. TLDs for locations IDM-17, IDM-30A and IDM-38 were missing for the 3rd quarter, 2010. The TLDs were replaced. Vandalism is suspected.

3.4 Laboratory Procedures

The iodine-131 analyses in milk were made using a sensitive radiochemical procedure involving separation of the iodine by ion-exchange, solvent extraction and subsequent beta counting.

Gamma-spectroscopic analyses were performed with HPGe detectors. Levels of iodine-131 in vegetation and concentrations of airborne iodine-131 in charcoal samples were also determined by gamma spectroscopy.

Tritium was measured by liquid scintillation.

Analytical Procedures used by Environmental, Inc. are on file and are available for inspection. Procedures are based on those prescribed by the Health and Safety Laboratory of the U.S. Dep't of Energy, Edition 28, 1997, U.S. Environmental Protection Agency for Measurement of Radioactivity in Drinking Water, 1980, and the U.S. Environmental Protection Agency, EERF, Radiochemical Procedures Manual, 1984.

Environmental, Inc., Midwest Laboratory has a comprehensive quality control/quality assurance program designed to assure the reliability of data obtained. Details of the QA Program are presented elsewhere (Environmental, Inc., Midwest Laboratory, 2009). The QA Program includes participation in Interlaboratory Comparison (crosscheck) Programs. Results obtained through Quality control samples and crosscheck program results are presented in Appendix A.

Environmental TLDs are processed by Framatome. The laboratory meets the requirements of Reg. Guide 4.13 and is accredited by NVLAP for photon, beta and photon/beta mixture categories, in accordance with ANSI N 13.11.

3.5 Program Modifications

Milk sampling was discontinued at location M-10 in 2010. The property owner declined to continue participation in the program.

Two TLD sites, IDM-22a and IDM-32a, were relocated slightly, due to access issues with the property owners.

Eighteen new monitoring wells were added to the program in 2010.

Fourteen of the new wells (U1MW-17, U1MW-18, U1MW-19, U1MW-20, U1MW-21, U1MW-22, U1MW-23, U1MW-24, U1MW-25, U1MW-26, U1MW-27, U1MW-28, U1MW-29 and U1MW-30) are located in the discharge pipeline corridor, downgradient of the discharge pipeline.

Four additional new wells (MW-938, MW-939, MW-940, MW-941) monitor the plant peninsula area.

The samples are collected quarterly and analyzed for tritium and gamma emitting isotopes.

3.6 Detection and Reporting Limits

Table 5.3 gives the minimum required detection limits for radiological environmental sample analysis. For each sample type, the table lists the detection level for each isotope. The lower limit of detection (LLD) used in this report is described in NRC Regulatory Guide 4.1 Rev. 1, "Program for Monitoring Radioactivity in the Environs of Nuclear Power Plants" and the NRC Radiological Assessment Branch Technical Position, Rev. 1, November 1979, "An Acceptable Radiological Environmental Monitoring Program".

3.7 Land Use Census

The Land Use Census is performed annually during the growing season. In 2010, the survey was conducted within a five mile canvassing radius of the Callaway Plant. The location of the nearest resident, milking animal, and garden greater than 50 square meters was identified by contacting residents by phone, mail and/or in field surveys for each of the sixteen meteorological sectors using the midpoint of the two units.

The Land Use Census was completed on October 15, 2010. The results of the census are presented in Table 5.4. The table includes radial direction and distance from the Callaway Plant for each location. These parameters were determined using a combination of map position, aerial photography, and Global Positioning System (GPS) receiver.

The census includes identification of drinking water wells along Mud Creek and Logan Creek. No new drinking water wells were identified in 2010.

No irrigation or drinking water intakes were found within 10 river miles downstream of the plant discharge point.

4.0 RESULTS AND DISCUSSION

All collections and analyses were made as scheduled, except for the listing in Table 5.5.

Results are summarized in Table 5.6 as recommended by the Nuclear Regulatory Commission. For each type of analysis and sample medium, the table lists the mean and range of all indicator and control locations, as well as that location with the highest mean and range.

The tabulated results of all measurements are not included in this section, although references to these results will be made in the discussion. A complete tabulation of results for 2010 is contained in Part II of the Annual Report on the Radiological Environmental Monitoring Program for the Callaway Plant.

4.1 Atmospheric Nuclear Detonations and Nuclear Accidents

There were no reported nuclear accidents or atmospheric nuclear testing done in 2010.

4.2 Program Findings

Results obtained show background levels of radioactivity in environmental samples collected beyond the plant property boundary in 2010. Tritium was identified in some groundwater samples collected within the Plant Protected Area and on Ameren property in the Missouri River alluvial plain. In no instances were REMP threshold reporting levels exceeded.

Airborne Particulates

The five air particulate sampling stations (A1, A7, A8, A9, and B3) are indicator locations. Station A-9 is located in Reform, MO, the community with the highest D/Q, station A-7 is on the outskirts of Fulton, Missouri, approximately 9.5 miles from the plant.

Gamma spectroscopic analysis of the air particulate filters yielded similar results for all locations. In 136 of the 260 samples tested, Beryllium-7 measured above an LLD value of 0.16 pCi/m^3, with an average activity of 0.23 pCi/m^3. Beryllium-7 is produced continuously in the upper atmosphere by cosmic radiation. No gamma emitting isotopes of plant origin were identified.

Airborne Iodine

There was no I-131 activity detected in weekly collections of charcoal canister samples. All measurements were below the required lower limit of detection (LLD) of 0.070 pCi/m^3.

Direct Radiation (TLDs)

Forty-three TLDs were placed in 16 sectors around the Callaway site. Measurements from forty indicator locations averaged 15.4 mrem /quarter and the three control locations averaged 14.4 mrem/quarter. The readings ranged from 10.5 to 17.4 mrem /quarter, with the highest from the location CA-IDM-40, averaging 16.7mrem /quarter. The differences are statistically insignificant.

The TLD readings are consistent with previously accumulated data and no effects from plant operation were identified.

4.2 Program Findings (continued)

Milk

Iodine-131 results were below the detection limit of 0.5 pCi/L in all samples.

No gamma-emitting isotopes, except naturally occurring potassium-40, were detected in any milk samples. This is consistent with the finding of the National Center for Radiological Health that most radiocontaminants in feed do not find their way into milk due to the selective metabolism of the cow. The common exceptions are radioisotopes of potassium, cesium, strontium, barium, and iodine (National Center for Radiological Health, 1968).

In summary, milk data for 2010 show no radiological effects of plant operation.

Vegetation

There was no I-131 activity detected in broadleaf vegetation samples. Measurements were below an LLD level of 57.0 pCi/kg wet weight in all samples.

Except for potassium-40, which was observed in all vegetation samples, all other gamma-emitting isotopes were below detection limits. No effect from plant operation is indicated.

Non-Food Crops

Soybeans were sampled in October, 2010, and analyzed for tritium and gamma-emitting isotopes.

No tritium activity was measured above a detection level of 164 pCi/L in any of the samples.

Potassium-40 activity ranged from 13,503 –14,225 pCi/kg wet weight and averaged 13,937 pCi/kg wet weight. All other gamma-emitting isotopes measured below detection limits.

No effect from the plant operation is indicated.

Fish

All gamma-emitting isotopes, except naturally-occurring potassium-40, in edible portions were below detection limits. The potassium-40 levels were similar at both indicator and control locations (2,675and 2,852 pCi/kg wet, respectively).

No plant effect on the fish population is indicated.

Soil

Cesium-137 activity was detected at both indicator and control locations, at average concentrations of 328 and 123 pCi/kg dry, respectively. The cesium-137 activity is similar to or less than levels observed from 1999 through 2009, these levels are generally attributable to deposition of fallout from previous decades.

Naturally-occurring potassium-40 averaged 11435 pCi/kg dry weight.

Analysis results for soil samples in 2010 were consistent with previously accumulated data and no plant operational effects were identified.

4.2 Program Findings (continued)

Surface Water

Slight tritium activity above the detection limit of 172 pCi/L was observed in four of the thirteen samples collected from the downstream location S-02. Measurements averaged 221 pCi/L.

Gamma-emitting isotopes measured below detection limits and were consistent with previously accumulated data.

Surface Water, Ponds

To monitor possible sources of groundwater contamination due to plant operations, twelve onsite surface water locations (SWA) are included in the permanent REMP. No tritium activity was measured above a detection level of 188 pCi/L in any of the samples.

Gamma-emitting isotopes measured below detection limits.

Drinking Water Wells (potable water)

In addition to potable ground water from wells D-01 and PW-01, the REMP includes nine additional potable water wells from adjacent properties and one additional potable water well from the town of Portland, MO. The samples were analyzed for tritium and gamma-emitting isotopes.

No tritium activity was measured above a detection level of 164 pCi/L in any of the samples. All gamma-emitting isotopes were below detection limits.

Analysis results for drinking water samples were consistent with previously accumulated data and no plant operational effects were identified.

Wells (non-potable water)

Ground water from wells F-05 and F-15 was tested for tritium and gamma-emitting isotopes. Both tritium and gamma-emitting isotopes measured below detection levels.

Forty-eight additional indicator ground water locations, on-site and along the discharge pipeline, are included in the REMP. Tritium activity (above a detection limit of 189 pCi/L) was detected in 52 of the 211 samples tested, with an average activity of 299 pCi/L. The highest concentrations were observed from samples taken at location MW-19, with an average activity of 528 pCi/L.

Wells OW-4, OW-5, GWS, 936, 937A to 937F, 938, 939, 940 and 941 are located in the Plant Protected Area, adjacent to the powerblock. Tritium activity in these wells is believed to be the result of washout from gaseous effluents.

The low level tritium activity observed in wells MW-014, MW-017 and MW-019 is due to residual low level contamination of the area downgradient from manholes 5 and 6B. The contamination was caused by moisture carryover during normal operation of air release valves (ARVs) in the now-retired discharge pipeline. The exhaust of the ARV's was secured in 2007, and the pipeline was replaced in 2008. The new discharge pipeline has no ARV's and only a single vacuum breaker, which is completely contained to prevent possible leakage to the ground water. The old pipeline has been abandoned in place.

4.2 Program Findings, Wells and Ponds (non-potable water, continued)

Wells have been established along the pipeline corridor to monitor the old pipeline and to ensure there is no leakage from the new pipeline. Monitored natural attenuation will be utilized to remediate the low level residual tritium contamination.

Samples were also analyzed for gamma-emitting isotopes. No gamma- emitting activities were detected above the respective LLDs.

Sediments

Bottom sediments were collected in April and October, 2010, and analyzed for gamma-emitting isotopes. Potassium-40 activity ranged from 12,998 to 14,786 pCi/kg dry weight and averaged 14,027 pCi/kg dry weight.

Shoreline sediments were also collected in April and October, 2010. Trace Cs-137 activity was detected in one of two control samples at a concentration of 30.2 pCi/kg dry weight. Potassium-40 activity ranged from 13,237 to 14,513 pCi/kg dry weight and averaged 14,039 pCi/kg dry weight.

Potassium-40 is a naturally occurring isotope. Slight cesium-137 activities observed are indicative of the influence of fallout deposition. All other gamma-emitting isotopes were below detection limits. No effect from the plant operation is indicated.

5.0 TABLES AND FIGURES

Table 5.1. Sampling Locations.

Location Code	Distance / Direction [1]	Description	Sample Types [2]
1a	10.8 mi. NW	City of Fulton on Hwy Z, 0.65 mi. E of Bus. 54, W of Campus Apartments.	IDM
3	1.2 mi. NW	0.1 mi. West of Hwy CC on Gravel Rd., 0.8 mi. South Hwy O, Pole No. 18559.	IDM
5	1.3 mi. ENE	Primary Meteorological Tower.	IDM
6	2.0 mi. W	Cty Rd. 428, 1.2 mi. West of Hwy CC, Utility Pole No. 18609.	IDM
7	1.4 mi. S	Cty Rd. 459, 2.6 mi. North of Hwy 94, Utility Pole No. 35097.	IDM
9	3.8 mi. S	NW Side of the Cty Rd. 459 and Hwy 94 Junction, Utility Pole No. 06754.	IDM
10	3.9 mi. SSE	Hwy 94, 1.8 mi. East of Cty Rd. 459, Utility Pole No. 12182.	IDM
11a	4.7 mi. SE	City of Portland, Utility Pole No. 12110.	IDM
14	4.9 mi. ESE	SE Side of Intersection D and 94, Utility Pole No. 11940.	IDM
17	3.8 mi. E	Cty Rd. 4053, 0.3 mi. E of Hwy 94, Kingdom Telephone Co., Pole No. 3X12.	IDM
18a	3.7 mi. ENE	East side of Hwy D, 0.5 mi. South of O, Utility Pole No. 38579.	IDM
20	4.7 mi. NE	City of Readsville, Utility Pole No. 12830.	IDM
21	3.8 mi. NNE	Cty Rd. 155, 1.9 mi. North of Hwy O, Utility Pole No. 19100.	IDM
22a	1.9 mi. NNE	North side of Hwy O, 100 feet East of Cty Rd. 150, Utility Pole No. 31094.	IDM
23	6.6 mi. NNE	City of Yucatan, Utility Pole No. 12670.	IDM
26 [3]	11.7 mi. E	Town of Americus, Utility Pole No. 11159.	IDM
27 [3]	9.3 mi. ESE	Town of Bluffton, Utility Pole No. 11496.	IDM
30a	4.4 mi. SSW	City of Steedman, Utility Pole No. 06557.	IDM
31a	7.8 mi. SW	City of Mokane, Hwy C and Cty Rd. 400, 0.9 mi. North of Hwy 94, Utility Pole.	IDM
32	5.4 mi. WSW	Hwy VV, 0.6 mi.West of Cty Rd. 447, Utility Pole No. 27031.	IDM
32a	5.0 mi. WSW	Cty Rd. 447, Utility Pole No. 06354.	IDM
33	7.4 mi. W	City of Hams Prairie, SE of Hwy C and AD Junction.	IDM
34	9.5 mi. WNW	NE Side of Hwy C and Cty Rd. 408 Junction.	IDM
35	5.8 mi. NNW	City of Toledo, Utility Pole No. 17684.	IDM
36	4.9 mi. N	Cty Rd. 155, 0.8 mi. South of Cty Rd. 132, Utility Pole No. 19137	IDM
37	0.5 mi. SSW	Cty Rd. 459, 0.9 mi. South of Hwy CC, Utility Pole No. 35077.	IDM
38	4.6 mi. NNW	Cty Rd. 133, 1.5 mi. South of Hwy UU, Utility Pole No. 34708.	IDM
39	5.4 mi. NW	Cty Rd. 111, Utility Pole No. 17516.	IDM
39a	5.0 mi. NW	Cty Rd. 111, Utility Pole No. 17526.	IDM
40	4.2 mi. WNW	NE Side of Cty Rd. 112 and Hwy O, Utility Pole No. 18145.	IDM
41	4.9 mi. W	Hwy AD, 2.8 mi. East of Hwy C, Utility Pole No. 18239.	IDM
42	4.4 mi. SW	Cty Rd. 447, 2.6 mi. North of Cty Rd. 463, Utility Pole No. 06326.	IDM
43	0.5 mi. SW	Cty Rd. 459, 0.7 mi. South of Hwy CC, Utility Pole No. 35073.	IDM
44	1.7 mi. WSW	Hwy CC, 1.0 mi. South of Cty Rd. 459, Utility Pole No. 18769.	IDM
45	1.0 mi. WNW	Cty Rd. 428, 0.1 mi. West of Hwy CC, Utility Pole No. 18580.	IDM
46	1.5 mi. NNW	NE Side of Hwy CC and Cty Rd. 466 Intersection, Utility Pole No. 28242.	IDM
47	1.0 mi. N	Cty Rd. 448, 0.9 mi. South of Hwy O, Utility Pole No. 28151.	IDM
48	0.4 mi. NE	Cty Rd. 448, 1.5 mi. South of Hwy O, Plant Security Sign Post.	IDM
49	1.6 mi. E	Cty Rd. 448, Utility Pole No. 06959, Reform Wildlife Mgmt. Parking Area.	IDM
50	0.9 mi. SSE	Cty Rd. 459, 3.3 mi. North of Hwy 94, Utility Pole No. 35086	IDM
51a	0.3 mi. SE	Owner Control Fence, SE of the Water Treatment Plant.	IDM
52	0.4 mi. ESE	Light Pole Near the East Plant Security Fence.	IDM
60 [3]	13.5 mi. SW	Utility Pole No. 43744, just past Tebbetts City sign.	IDM

Table 5.1. Sampling Locations continued.

Location Code	Distance / Direction [1]	Description	Sample Types [2]
A1	1.3 mi. ENE	Primary Meteorological Tower.	APT, AIO
A7	9.5 mi. NW	C. Bartley Farm, Fulton, MO.	APT, AIO
A8	0.9 mi. NNE	Cty Rd. 448, 0.9 miles South of Hwy 0.	APT, AIO
A9	1.9 mi. NNW	Community of Reform.	APT, AIO
B3	1.8 mi. NNW	0.3 mi. East of the O and CC Junction, Utility Pole No. 50422.	APT, AIO
D01	5.0 mi. SE	Holzhouser Grocery Store/Tavern (Portland, MO).	DWA
PW1	Onsite	Unit 1 Construction well #3	DWA
F05	0.9 mi. SSE	Offsite Groundwater Monitoring well.	WWA
F15	0.4 mi. NNE	Onsite Groundwater Monitoring well.	WWA
M9 [3]	13 mi. SW	Ferguson Farm, Tebbetts, MO.	MLK
V3 [3]	14.0 mi. SW	Beazley Farm, West of Tebbetts, MO.	SOL
V9	1.9 mi. WNW	Meehan Farm.	FPL
V11	3.2 mi. NW	Hickman Farm.	FPL
V12 [3]	18.7 mi. WSW	Kissock Farm, South of New Bloomfield, MO	FPL
V14	3.0 mi. NNE	Amorine Farm, Williamsburg, MO	FPL
V15	2.6 mi. NNE	Pate Farm, Steedman, MO	FPL
A [3,4]	4.9 mi. SSE	0.6 River Miles Upstream of Discharge North Bank.	AQS, AQF
C [4]	4.9 mi. SE	1.0 River Miles Downstream of Discharge North Bank.	AQS, AQF
S01 [3]	4.8 mi. SSE	105 feet Upstream of Discharge North Bank.	SWA
S02	4.9 mi. SE	1.1 River Miles Downstream of Discharge North Bank.	SWA
F2	1.0 mi. SW	Callaway Plant Forest Ecology Plot F2.	SOL
F6	1.6 mi. NE	Callaway Plant Forest Ecology Plot F6.	SOL
PR3	0.95 mi. ESE	Callaway Plant Forest Ecology Plot PR3.	SOL
PR7	0.46 mi. NNW	Callaway Plant Forest Ecology Plot PR7.	SOL
W1 [3]	0.52 mi. SE	Callaway Plant Wetlands, High Ground.	SOL
W2	0.52 mi. SSE	Callaway Plant Wetlands, Inlet Area.	SOL
W3	0.65 mi. SSE	Callaway Plant Wetlands, Discharge Area.	SOL
W4	0.63 mi. SSE	Callaway Plant Wetlands, SW Bank.	SOL
FC1	-	Between discharge pipeline MH-8 and the Katy Trail	FC
FC2	-	Between discharge pipeline MH-5 and MH-3B.	FC
FC3	-	Between Hwy 94 and the barge loading dock access road.	FC
FC4 [3]	-	Location unlikely to be influenced by Plant operations.	FC
3	2.9 mi. SSE	Potable water, County Road 448	DWA
4	2.6 mi. SSE	Potable water, County Road 448	DWA
5	2.5 mi. SSE	Potable water, County Road 448	DWA
6	2.2 mi. SE	Potable water, County Road 448	DWA
7	2.1 mi. ESE	Potable water, County Road 448	DWA
8	3.4 mi. SSW	Potable water, County Road 457	DWA
9	2.9 mi. SSW	Potable water, County Road 457	DWA
10	2.7 mi. SSW	Potable water, County Road 457	DWA
12	3.6 mi. SSE	Potable water, County Road 464	DWA
22	4.8 mi. SE	Potable water, State Road 94	DWA

Table 5.1. Sampling Locations, Wells and Ponds (non-potable water).

Location Code	Distance / Direction [1]	Description	Sample Types [2]
OW-4	Inside OCA	UHS Pond Berm	WWA
OW-5	Inside OCA	UHS Pond Berm	WWA
U1MW-001	0.3 mi. NNW	Outside OCA , Groundwater Monitoring Well	WWA
U1MW-002	0.4 mi. SSW	Outside OCA , Groundwater Monitoring Well	WWA
U1MW-004	3.7 mi. SSE	Dillon, Groundwater Monitoring Well	WWA
U1MW-005	3.8 mi. SSE	Brownlee / Hudson, Groundwater Monitoring Well	WWA
U1MW-006	3.0 mi. S	Ward, Groundwater Monitoring Well	WWA
U1MW-010	3.1 mi. S	Pipeline, Groundwater Monitoring Well	WWA
U1MW-012	3.0 mi. S	Ward, Groundwater Monitoring Well	WWA
U1MW-013	0.8 mi. SSE	Pipeline Corridor	WWA
U1MW-014	3.7 mi. S	Pipeline Corridor	WWA
U1MW-015	3.9 mi. SSE	Pipeline Corridor	WWA
U1MW-016	4.5 mi. SSE	Pipeline Corridor	WWA
U1MW-017	3.75 mi. S	Pipeline Corridor	WWA
U1MW-018	3.75 mi. S	Pipeline Corridor	WWA
U1MW-019	3.71 mi. S	Pipeline Corridor	WWA
U1MW-020	3.88 mi. SSE	Pipeline Corridor	WWA
U1MW-021	3.74 mi. S	Down gradient of Pipeline Corridor	WWA
U1MW-022	3.76 mi. S	Down gradient of Pipeline Corridor	WWA
U1MW-023	3.84 mi. S	Down gradient of Pipeline Corridor	WWA
U1MW-024	3.85 mi. S	Down gradient of Pipeline Corridor	WWA
U1MW-025	3.93 mi. S	Down gradient of Pipeline Corridor	WWA
U1MW-026	3.94 mi. S	Down gradient of Pipeline Corridor	WWA
U1MW-027	1.5 mi. S	Pipeline Corridor, downgrade of discharge vacuum breaker	WWA
U1MW-028	3.15 mi. S	Pipeline Corridor, downgrade of MH-9B	WWA
U1MW-029	0.2 mi. E	Downgradient of DMTdischarge piping	WWA
U1MW-030	0.2 mi. ESE	Downgradient of DMTdischarge piping	WWA
GWS	Inside OCA	Ground Water Sump, Plant East of containment and SFPB	WWA
936	Inside OCA	Diesel Fuel Remediation Well, Plant SE of SFPB	WWA
937A	Inside OCA	Monitoring Well, Plant, South of the Powerblock area	WWA
937B	Inside OCA	Monitoring Well, Plant, East of the Turbine Bldg.	WWA
937C	Inside OCA	Monitoring Well, Plant, E of Radwaste Bldg Drum Storage.	WWA
937D	Inside OCA	Monitoring Well, Plant, South of Discharge Monitor Tanks.	WWA
937E	Inside OCA	Monitoring Well, Plant, West of Auxilliary Bldg.	WWA
937F	Inside OCA	Monitoring Well, Plant, East of the Turbine Bldg.	WWA
MW-938	Inside OCA	Monitoring Well, Plant, East of the Powerblock area	WWA
MW-939	Inside OCA	Monitoring Well, Plant, West of the Fuel Bldg.	WWA
MW-940	Inside OCA	Monitoring Well, Plant, East of the Radwaste Bldg.	WWA
MW-941	Inside OCA	Monitoring Well, Plant, East of the Radwaste Bldg.	WWA
U2 MW-2S	1.8 mi. N	Groundwater Monitoring Well	WWA
U2 MW-5S	1.1 mi. E	Groundwater Monitoring Well	WWA
U2 MW-8	0.4 mi. N	Groundwater Monitoring Well	WWA
U2 MW-9	0.3 mi. W	Groundwater Monitoring Well	WWA
U2 MW-10	0.4 mi. SSW	Groundwater Monitoring Well	WWA

Table 5.1. Sampling Locations, Wells and Ponds (non-potable water).

Location Code	Distance / Direction [1]	Description	Sample Types [2]
U2 MW-12	0.5 mi. ENE	Groundwater Monitoring Well	WWA
U2 MW-16	2.9 mi. SSE	Groundwater Monitoring Well	WWA
UHS	Inside OCA	UHS Pond	SWA
Unit 2	Inside OCA	Unit 2 Pond	SWA
CTBD	Inside OCA	Cooling Tower Blowdown	SWA
POND 01	0.6 mi. W	Fishing Pond	SWA
POND 02	0.7 mi. SW	Fishing Pond	SWA
Outfall 010	0.6 mi. NE	Stormwater Run-Off Pond	SWA
Outfall 011	1.0 mi. ENE	Stormwater Run-Off Pond	SWA
Outfall 012	0.5 mi. S	Stormwater Run-Off Pond	SWA
Outfall 013	0.5 mi. S	Stormwater Run-Off Pond	SWA
Outfall 014	0.6 mi. NNW	Stormwater Run-Off Pond	SWA
Outfall 015	0.7 mi. N	Stormwater Run-Off Pond	SWA
Sludge Lagoon # 4	0.8 mi. SSE	On service Sewage Sludge Lagoon	SWA

[1] Distances are measured from the midpoint of the two reactors as described in Final Safety Analysis Report (FSAR) Sec. 2.1.1.1.
[2] AIO = Air Iodine, APT = Air Particulate, AQF = Fish, AQS = Sediment, FPL = Leafy Green Vegetables, FC = Food Crops, IDM = TLD, MLK = Milk, SOL = Soil, SWA = Surface Water, DWA = Drinking Water, WWA = Ground Water.
[3] Control Location.
[4] The fish collection area for location "A" is between 0.6 and 3.0 river miles upstream of the plant discharge on the north bank. Location "C" is sampled between the discharge area and 1.5 miles downstream of the discharge, on the north bank. The expanded collection areas guarantee sufficient habitat to collect the required number of species.

Figure 5.1. Radiological Environmental Monitoring Program, Air Sampling Stations

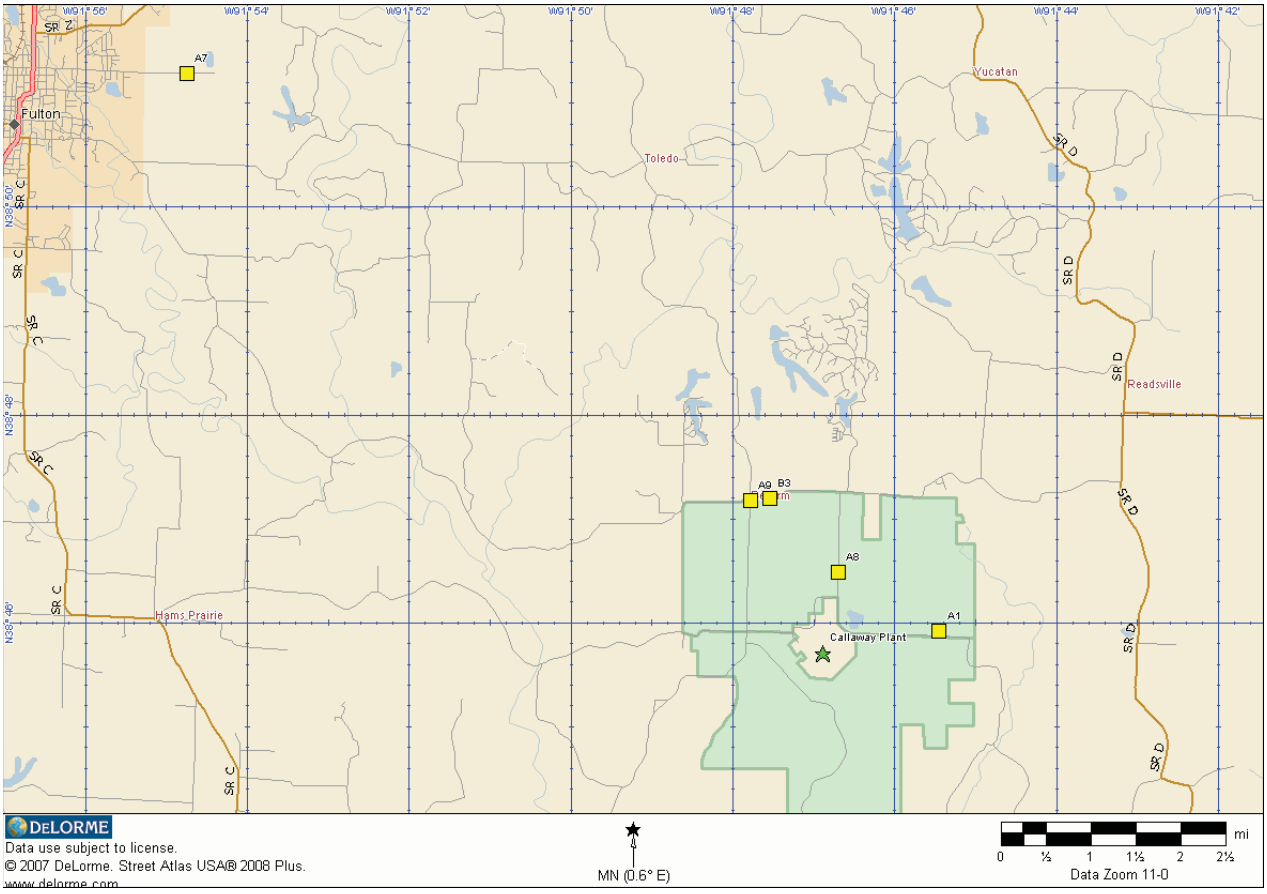


Figure 5.2a. Direct Radiation Monitoring Stations, Inner Ring Locations.

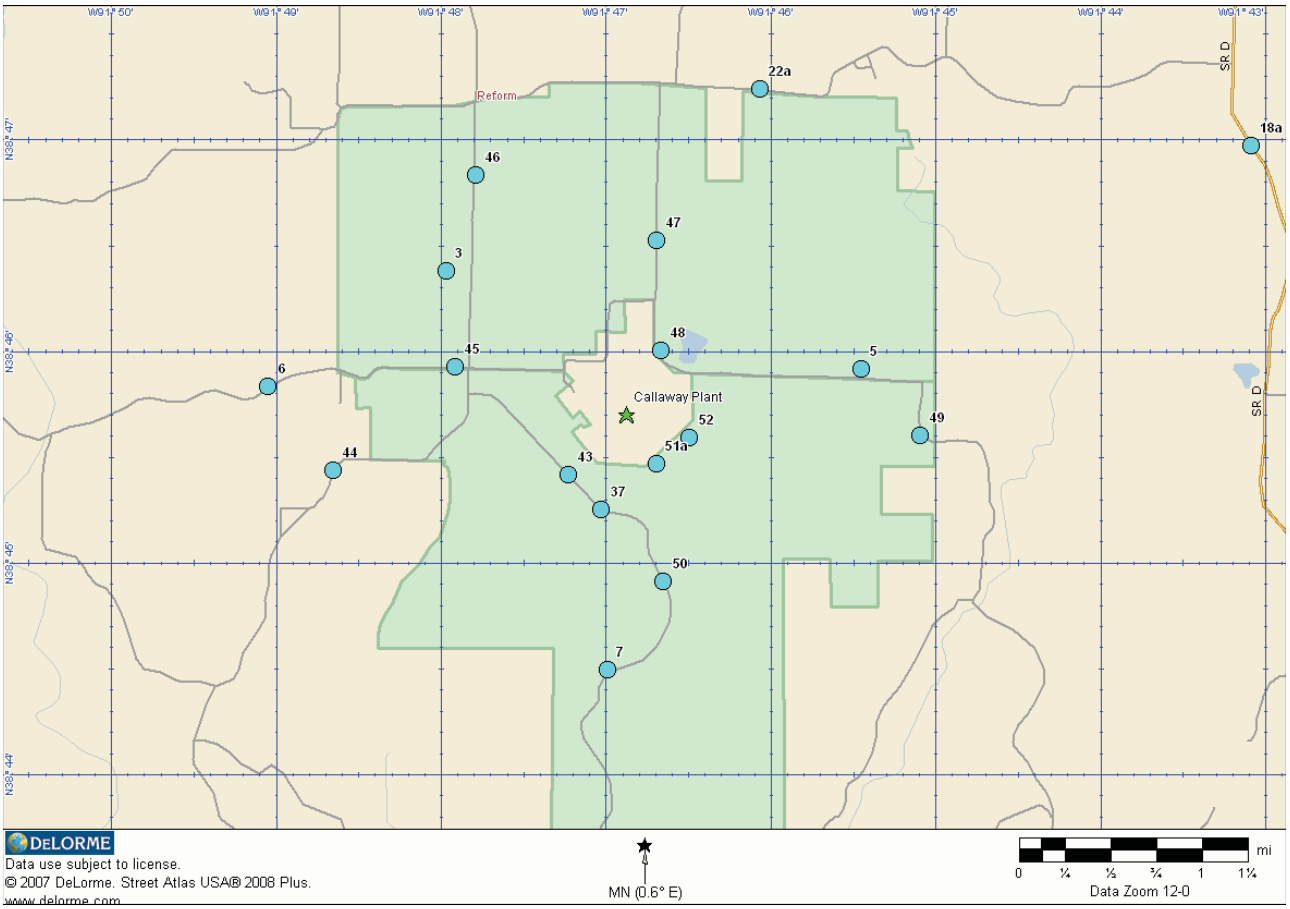


Figure 5.2b. Direct Radiation Monitoring, Outer Ring and Special Interest Locations.

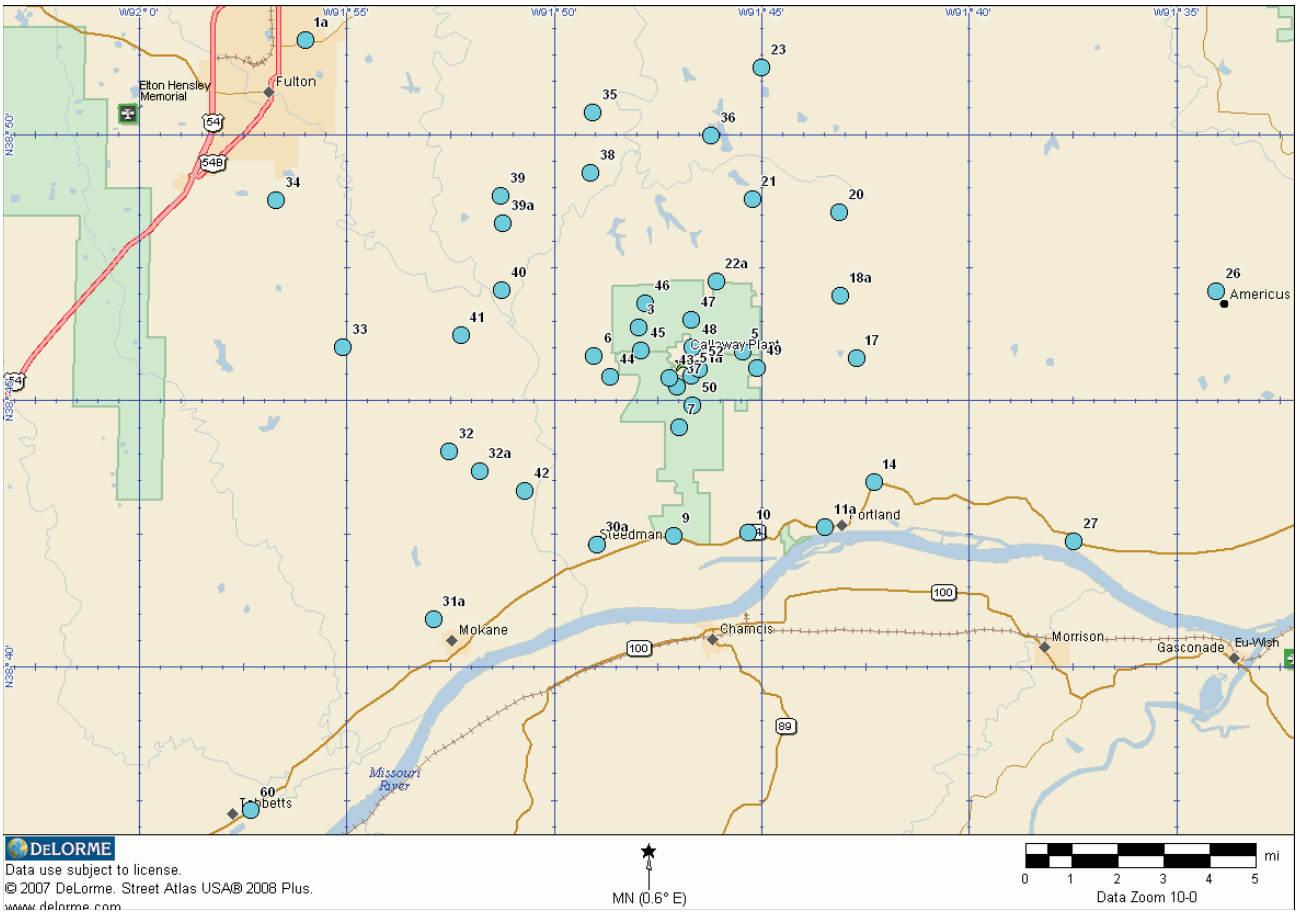


Figure 5.3. Drinking Well Water sample locations.

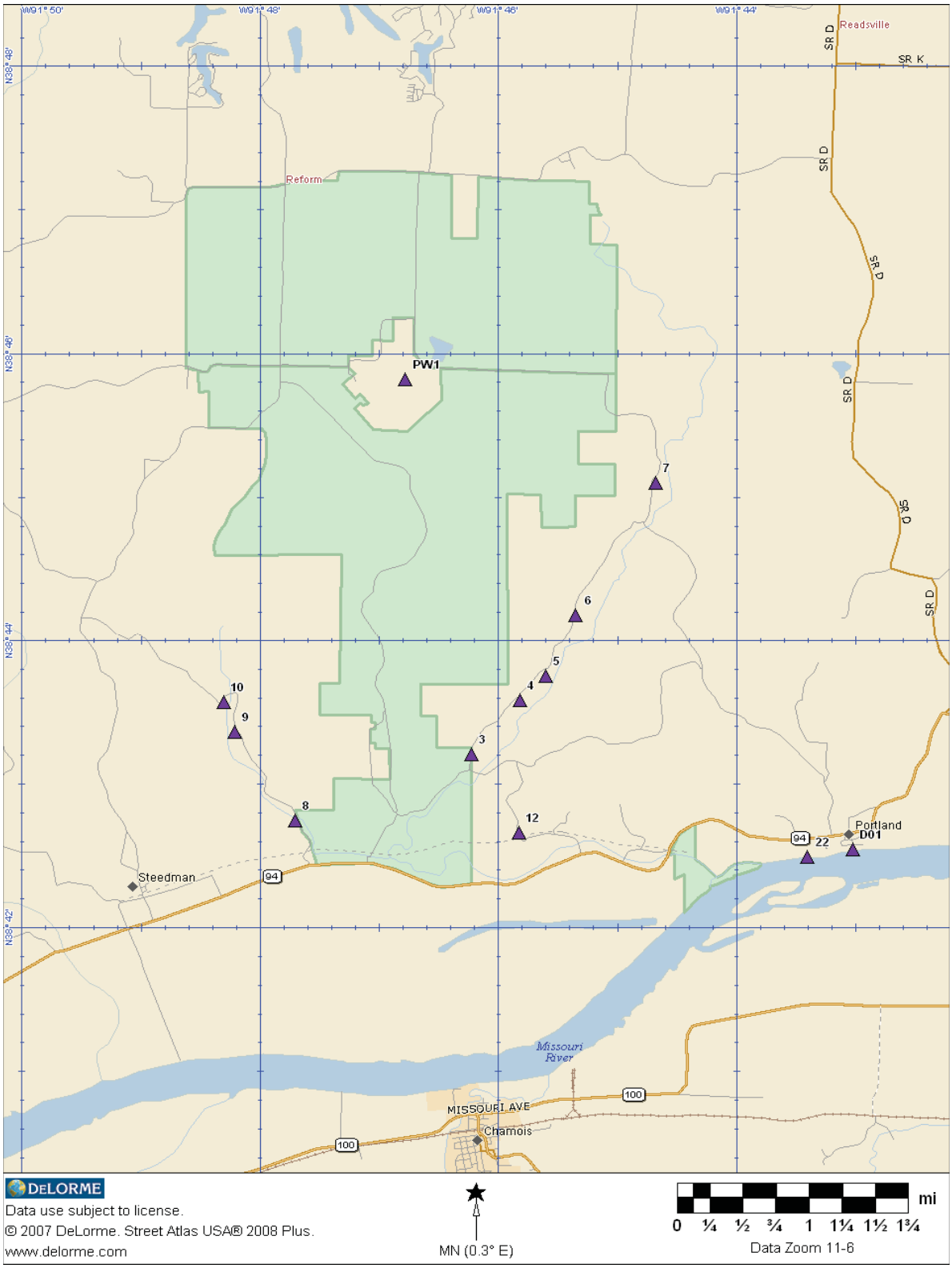
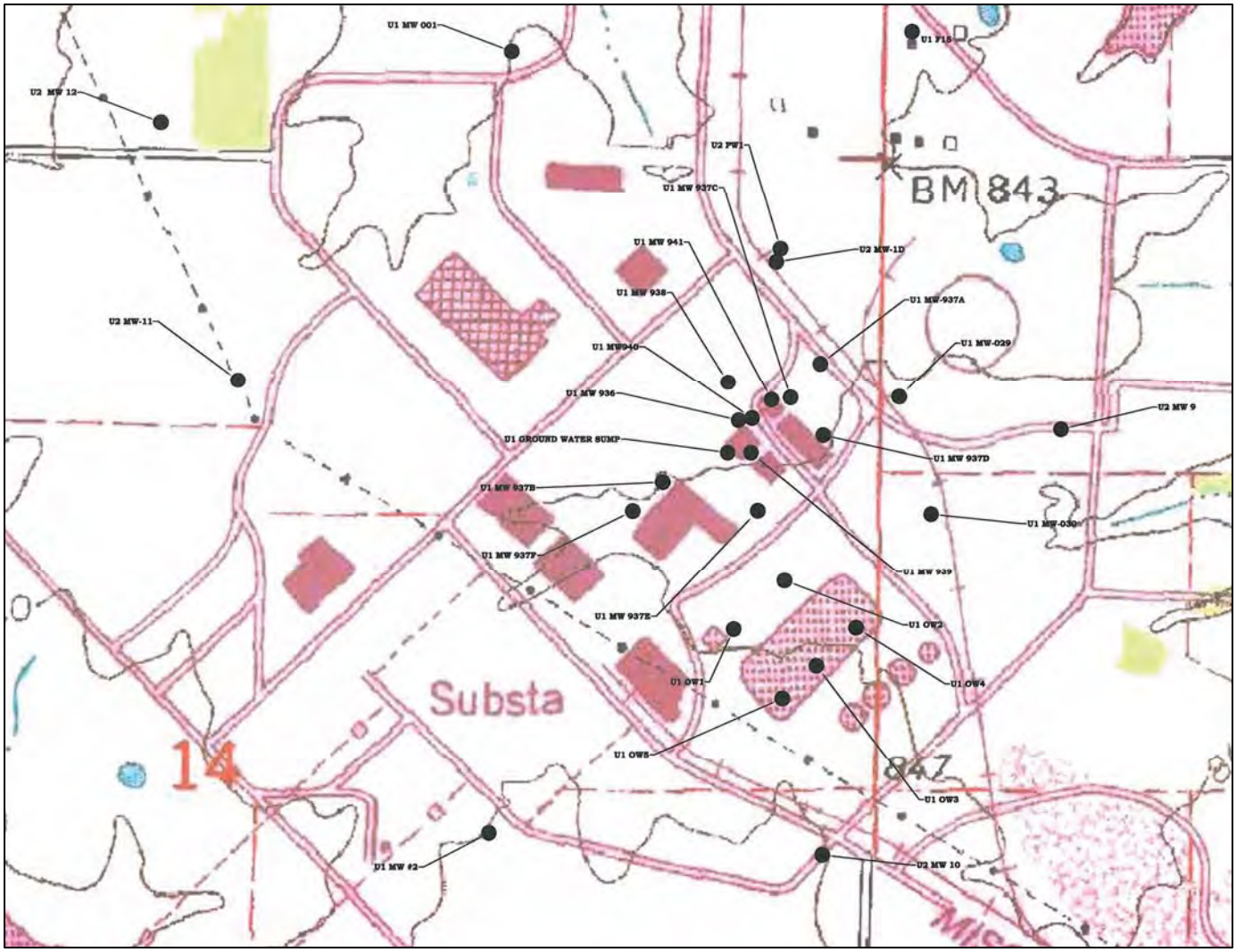
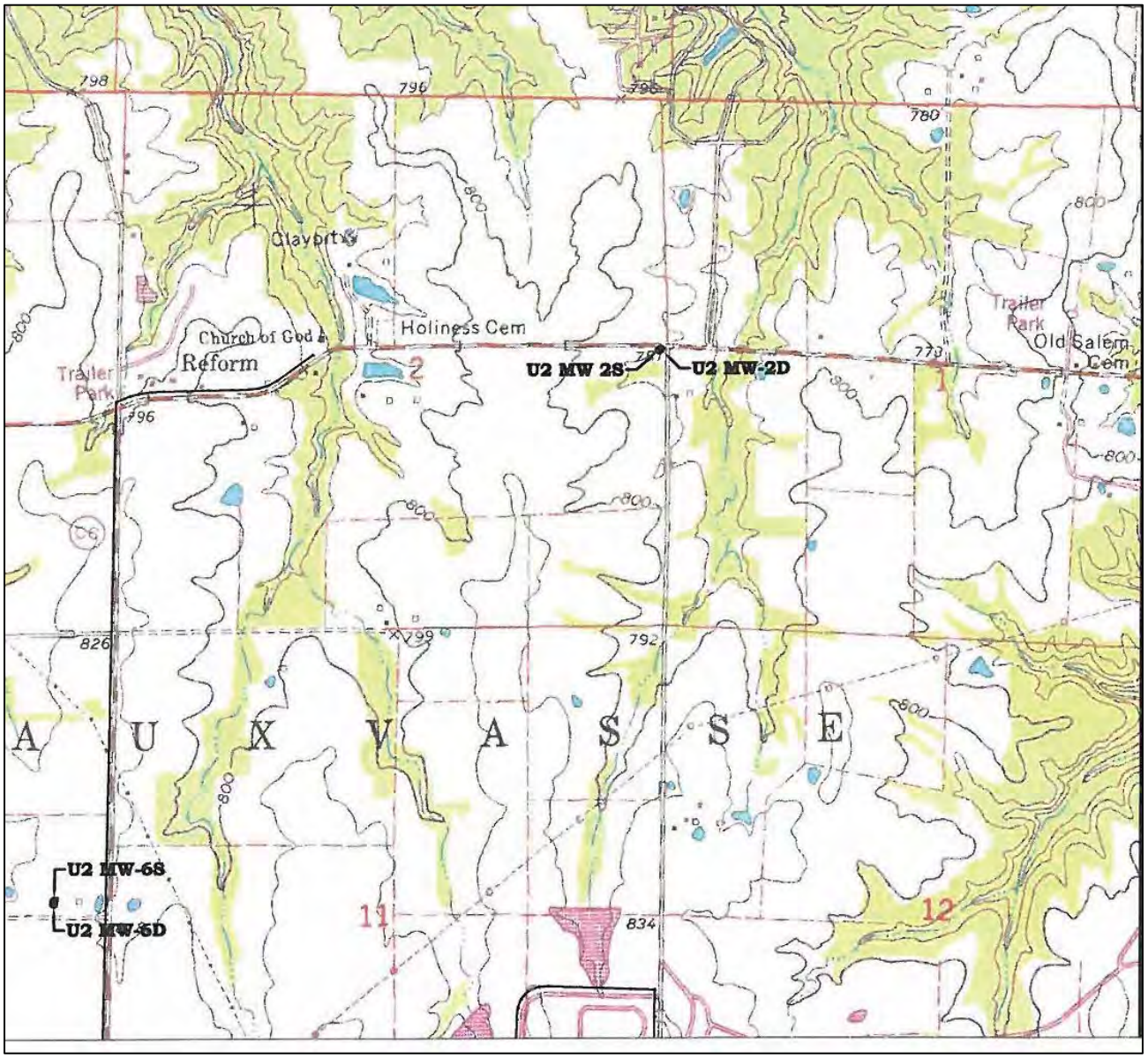


Figure 5.4a. Groundwater Monitoring Wells, Owner Controlled Area and Vicinity.



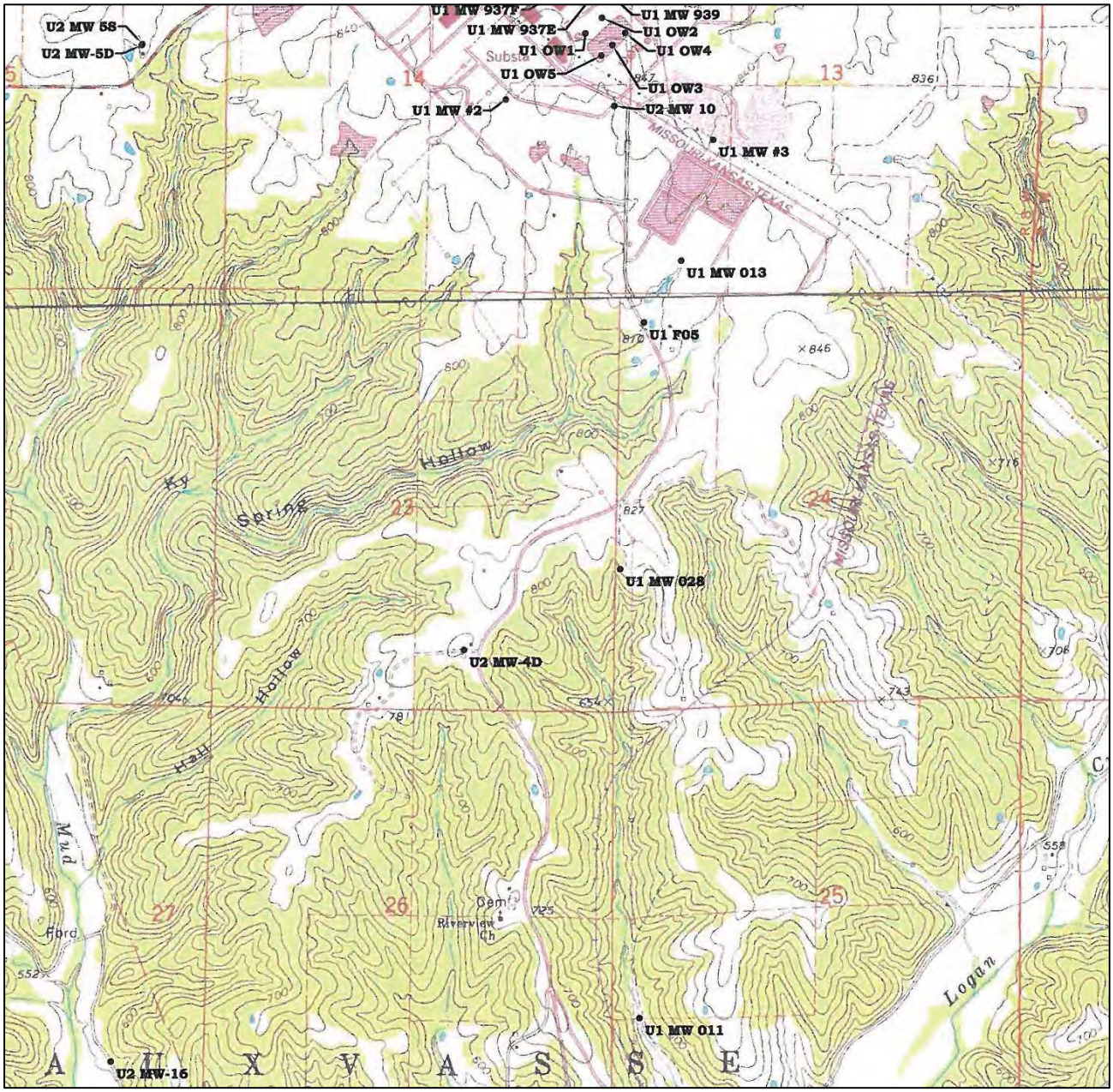
Note: Not all wells shown are included in the REMP. Refer to Table 5.1 for a listing of monitored wells.

Figure 5.4b. Groundwater Monitoring Wells, Northern Area.



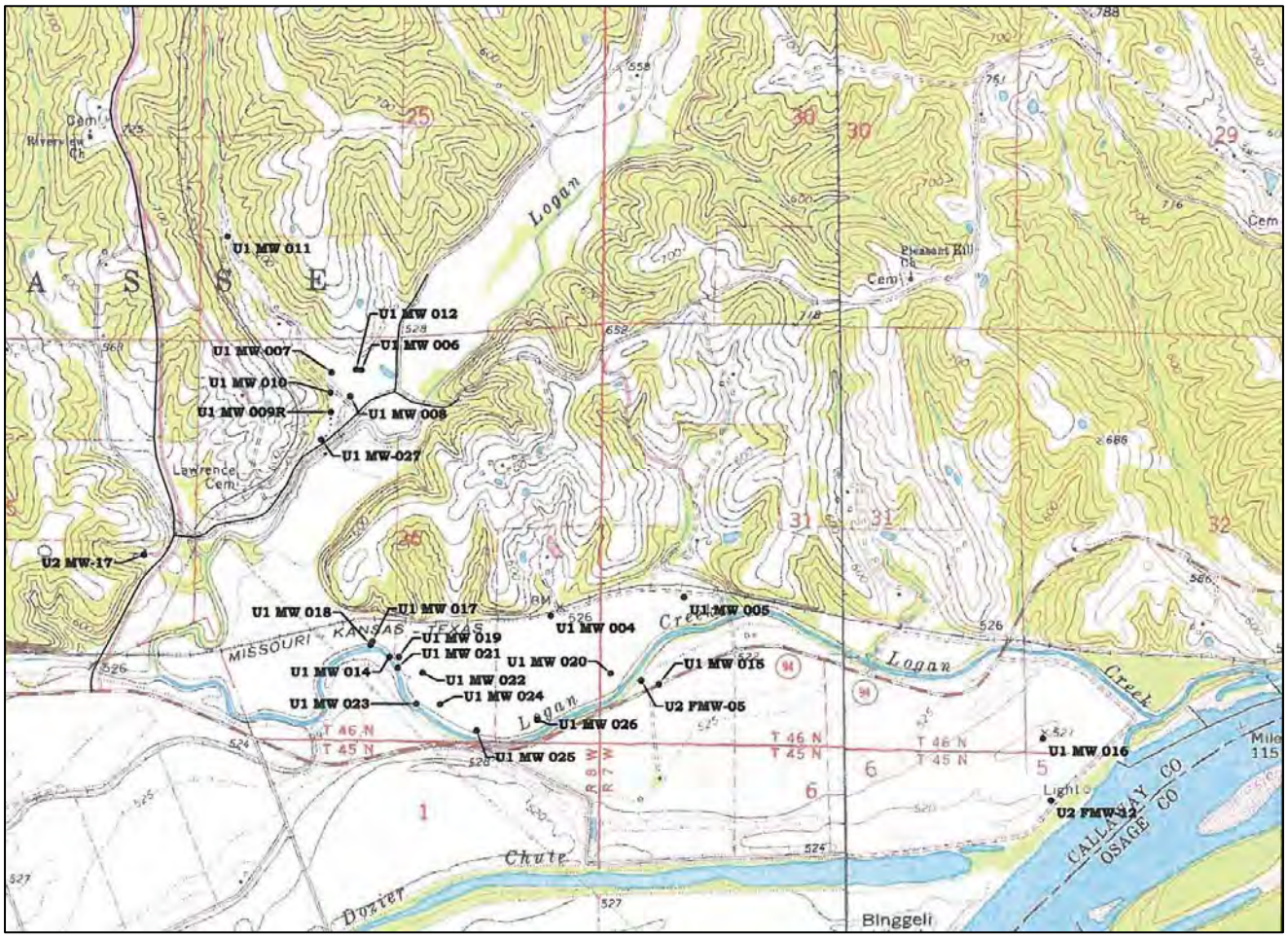
Note: Not all wells shown are included in the REMP. Refer to Table 5.1 for a listing of monitored wells.

Figure 5.4c. Groundwater Monitoring Wells, Central Area.



Note: Not all wells shown are included in the REMP. Refer to Table 5.1 for a listing of monitored wells.

Figure 5.4d. Groundwater Monitoring Wells, Southern Area.



Note: Not all wells shown are included in the REMP. Refer to Table 5.1 for a listing of monitored wells.

Figure 5.4e. Pond sampling locations

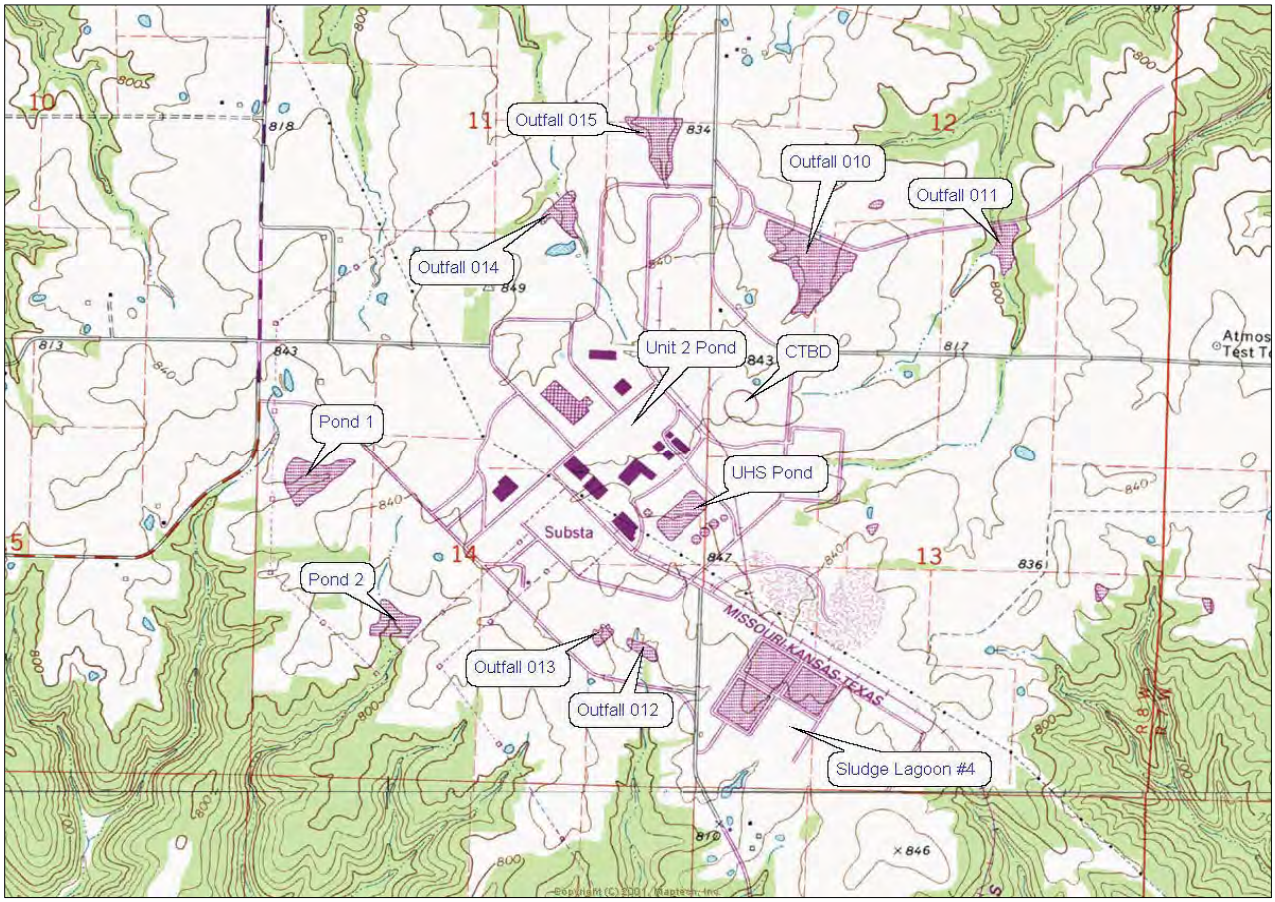
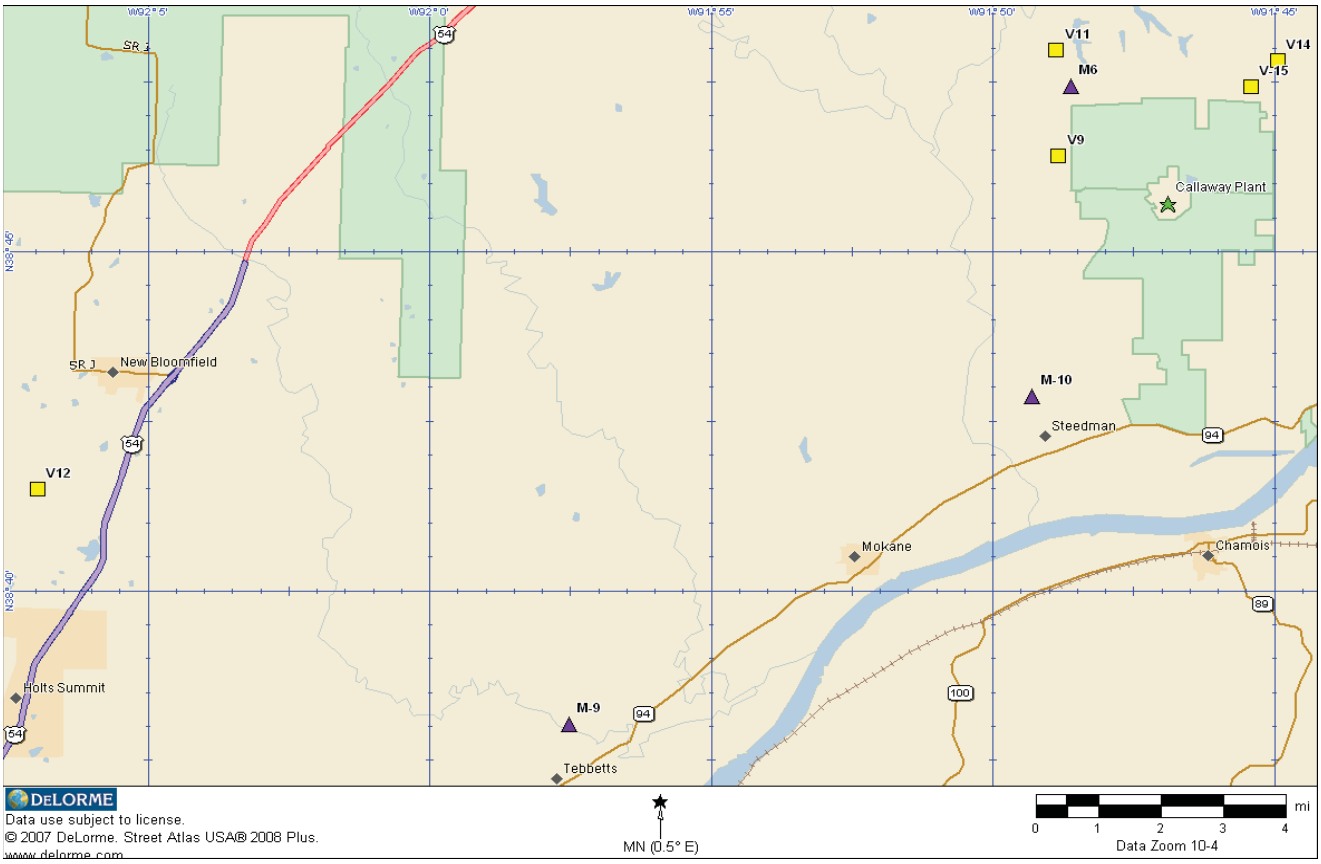


Figure 5.5. Milk and Edible Vegetation Samples.



Note: Stations M-6 and M-10 are no longer included in the monitoring program.

Figure 5.6. Non-Food Crops.

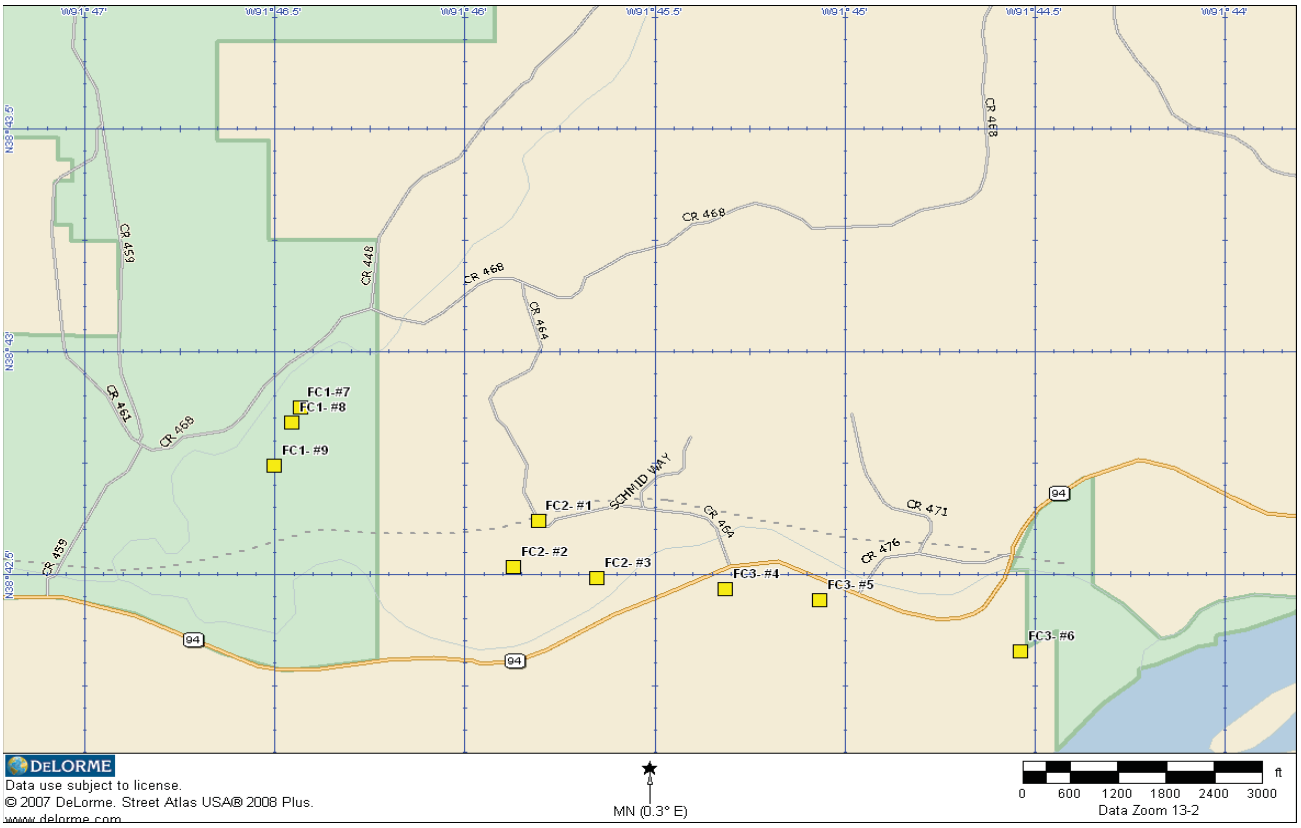


Figure 5.7a. Soil Samples, Near Plant locations.

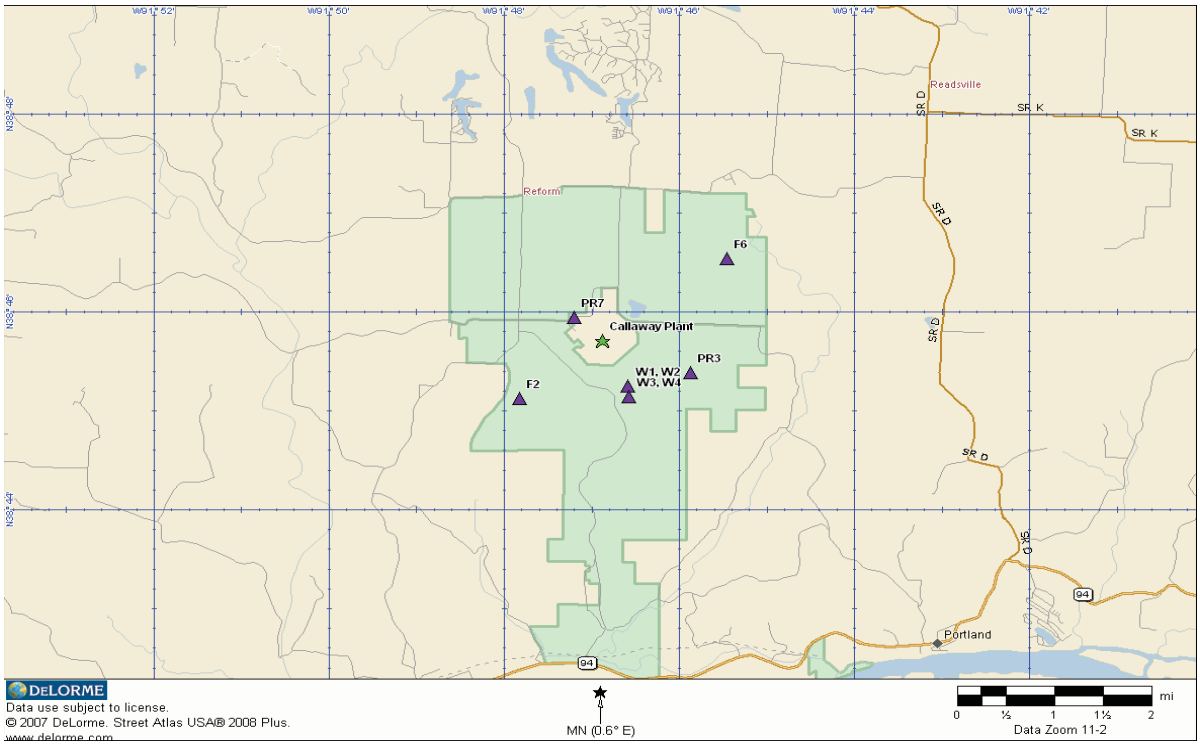


Figure 5.7b. Soil Samples, Distant locations

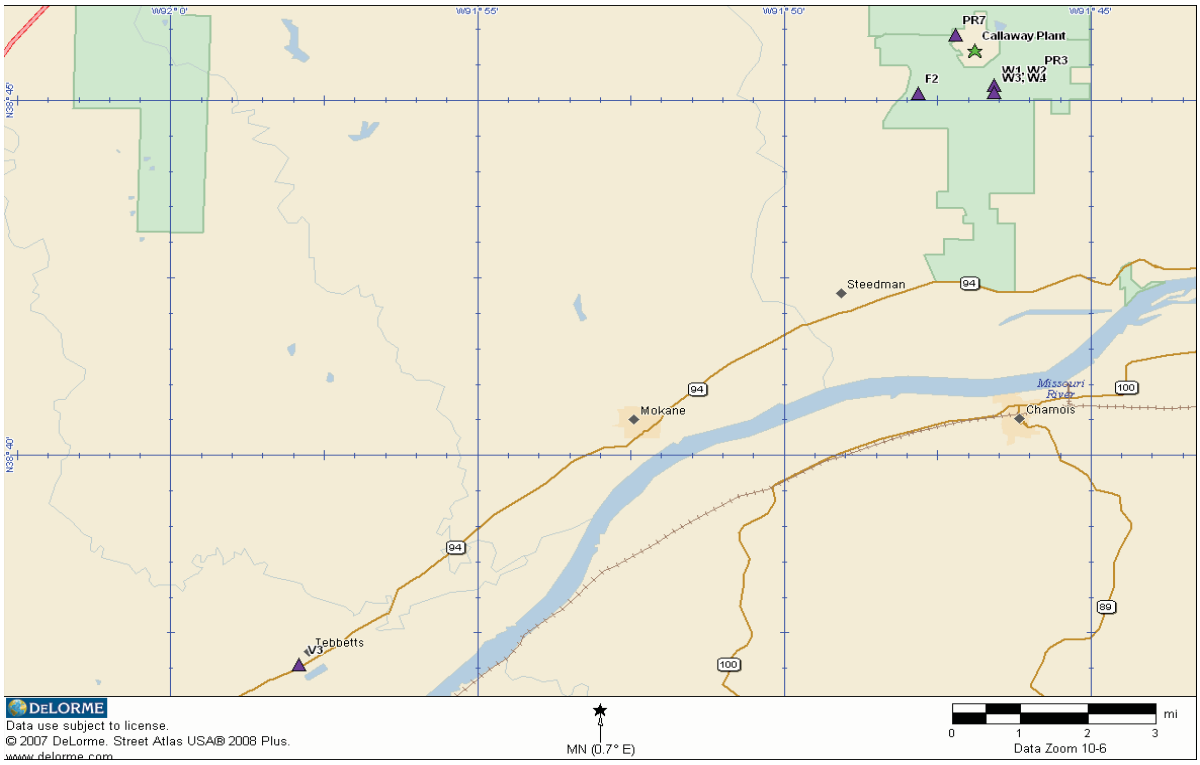


Figure 5.8. Fish, Sediment and Surface Water locations.

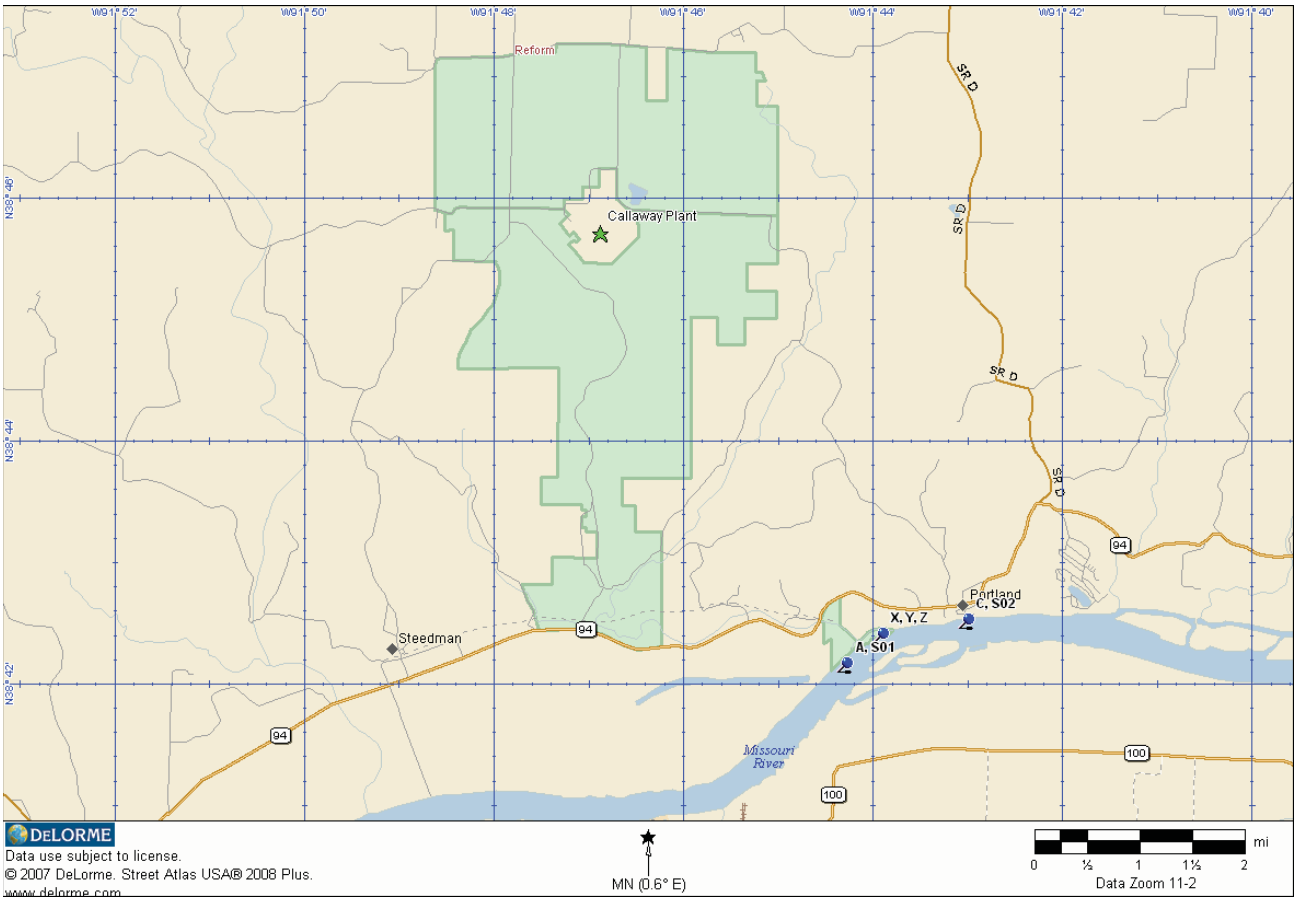


Table 5.2. Collection Frequencies and Required Analyses (January 1 through December 31, 2010) [1]

Sample Type	Media Code	Collection Frequency	Required Analyses
Direct radiation	IDM	Quarterly	Deep Dose Equivalent (DDE)
Airborne iodine	AIO	Weekly	^{131}I
Air particulate	APT	Weekly	PGE each sample
Surface water (river)	SWA	Monthly composite	PGE and ^{3}H
Surface water (except CTBD, UHS & Unit 2 ponds)	SWA	Semiannually	PGE and ^{3}H. If contaminated with gamma emitting nuclides of plant origin, analyze for HTD nuclides.
Surface water (CTBD, UHS, Unit 2 ponds)	SWA	Semiannually	PGE and ^{3}H
Groundwater (not potable)	WWA	Quarterly	PGE and ^{3}H. If contaminated with gamma emitting nuclides of plant origin, analyze for HTD nuclides.
Well water- potable	DWA	Quarterly	PGE and ^{3}H. If contaminated with gamma emitting nuclides of plant origin, analyze for HTD nuclides.
Shoreline sediment	AQS	Semiannually	PGE
Bottom sediment [2]	AQS	Semiannually	PGE
Sludge pond sediment	SOL	Annually	PGE
Soil	SOL	Annually	PGE
Milk animal	MLK	Semimonthly during grazing season, monthly other times [3]	PGE and ^{131}I
Leafy green vegetables	FPL	Monthly when available[4]	PGE and ^{131}I
Inedible crops	FC	At time of harvest	PGE and ^{3}H
Fish	AQF	Semiannually	PGE on edible portion

[1] Samples required by ODCM unless specified otherwise.

[2] Required by NPDES permit.

[3] The grazing season is defined as April 15- December 15, but will vary according to weather conditions.

[4] The growing season is defined as the months May- November, but will vary according to weather conditions.

Table 5.3. Minimum Required Detection Capabilities for REMP Sample Analysis[1]

Analysis	Water (pCi/L)	Airborne (pCi/m^3)	Fish (pCi/kg wet)	Milk (pCi/L)	Food Products (pCi/kg wet)	Soil and Sediment (pCi/kg dry)
Gross beta	4	0.01				
H-3	3000/2000 [3]					
Mn-54	15		130			
Fe-59	30		260			
Co-58/60	15		130			
Zn-65	30		260			
Zr-Nb-95 [2]	15					
I-131	1000/1 [3]	0.07		1	60	
Cs-134	15	0.05	130	15	60	150
Cs-137	18	0.06	150	18	80	180
Ba-La-140 [2]	15			15		

[1] This list does not mean only these nuclides will be detected and reported. Other peaks which are measurable and identifiable will be reported.

[2] Total activity, parent plus daughter activity.

[3] LLDs for Surface and Drinking / Ground water are the same, with the exception of H-3 and I-131. The Drinking / Ground water LLDs for H-3 and I-131 are 2000 and 1 pCi/liter respectively.

Table 5.4 2010 Land Use Census Results

Closest Receptor In Miles

Sector	Residence	Garden [1]	Milk [1]
N(A)	1.83	NI	NI
NNE(B)	2.16	2.40	NI
NE(C)	2.27	2.53	NI
ENE(D)	1.66	2.87	NI
E(E)	3.51	NI	NI
ESE(F)	2.12	4.40	NI
SE(G)	2.22	**2.22***	NI
SSE(H)	2.51	2.53	NI
S(J)	2.68	2.88	NI
SSW(K)	2.38	2.38	NI
SW(L)	2.64	2.64	**NI**
WSW(M)	1.20	3.21	NI
W(N)	1.56	2.27	NI
WNW(P)	1.93	1.93	2.38 *
NW(Q)	2.07	3.16	NI
NNW(R)	1.82	**1.82***	NI

Note: Distances in bold type indicate changes from the 2009 census.

[1] NI = None Identified.
* Declined to participate in the program.

Table 5.5. Missed collections and analyses, Callaway Plant.

Sample Type	Analysis	Location(s)	Collection Date or Period	Comments
WWA	Gamma	U1MW-28, MW-939, MW-940	December, 2010	No sample available.
VE	Gamma	V-14	June 22, 2010	Garden damaged by animals.
VE	Gamma	V-15	August 17, 2010	Garden not producing.
FC	H-3, Gamma	FC-1, FC-2	October, 2010	No crops planted.
TLD	Ambient Gamma	CA-IDM-36	2nd Qtr, 2010	Missing in the field.
TLD	Ambient Gamma	CA-IDM-17,	3rd Qtr, 2010	Missing in the field.
TLD	Ambient Gamma	CA-IDM-30A	3rd Qtr, 2010	Missing in the field.
TLD	Ambient Gamma	CA-IDM-38	3rd Qtr, 2010	Missing in the field.

Table 5.6 Radiological Environmental Monitoring Program Summary

Sample Type (Units)	Type and Number of Analyses [a]	LLD [b]	Indicator Locations Mean (F) [c] Range [c]	Location with Highest Annual Mean Location [d]	Location with Highest Annual Mean Mean (F) [c] Range [c]	Control Locations Mean (F) [c] Range [c]	Number Non-Routine Results [e]
Waterborne Pathway							
Surface Water (pCi/L)	H-3 26	172	221 (4/13) (173-263)	SW-02 4.9 mi. SE	221 (4/13) (173-263)	< LLD	0
	GS 26						
	Mn-54	15	< LLD	-	-	< LLD	0
	Fe-59	30	< LLD	-	-	< LLD	0
	Co-58	15	< LLD	-	-	< LLD	0
	Co-60	15	< LLD	-	-	< LLD	0
	Zn-65	30	< LLD	-	-	< LLD	0
	Zr-Nb-95	15	< LLD	-	-	< LLD	0
	I-131	1000	< LLD	-	-	< LLD	0
	Cs-134	15	< LLD	-	-	< LLD	0
	Cs-137	18	< LLD	-	-	< LLD	0
	Ba-La-140	15	< LLD	-	-	< LLD	0
Surface Water, Ponds (pCi/L)	H-3 30	188	< LLD	-	-	none	0
	GS 26						
	Mn-54	15	< LLD	-	-	none	0
	Fe-59	30	< LLD	-	-	none	0
	Co-58	15	< LLD	-	-	none	0
	Co-60	15	< LLD	-	-	none	0
	Zn-65	30	< LLD	-	-	none	0
	Zr-Nb-95	15	< LLD	-	-	none	0
	Cs-134	15	< LLD	-	-	none	0
	Cs-137	18	< LLD	-	-	none	0
	Ba-La-140	15	< LLD	-	-	none	0
Drinking Water, Wells (pCi/L)	H-3 48	164	< LLD	-	-	< LLD	0
	GS 48						
	Mn-54	15	< LLD	-	-	< LLD	0
	Fe-59	30	< LLD	-	-	< LLD	0
	Co-58	15	< LLD	-	-	< LLD	0
	Co-60	15	< LLD	-	-	< LLD	0
	Zn-65	30	< LLD	-	-	< LLD	0
	Zr-Nb-95	15	< LLD	-	-	< LLD	0
	Cs-134	15	< LLD	-	-	< LLD	0
	Cs-137	18	< LLD	-	-	< LLD	0
	Ba-La-140	15	< LLD	-	-	< LLD	0

Table 5.6 Radiological Environmental Monitoring Program Summary

Sample Type (Units)	Type and Number of Analyses [a]	LLD [b]	Indicator Locations Mean (F) [c] Range [c]	Location with Highest Annual Mean Location [d]	Location with Highest Annual Mean Mean (F) [c] Range [c]	Control Locations Mean (F) [c] Range [c]	Number Non-Routine Results [a]
Waterborne Pathway							
Wells, Ponds (non-potable)	H-3 211	189	299 (52/211) (192-579)	MW-19, 3.71 mi. / S	528 (2/2) (477-579)	None	0
(pCi/L)	GS 211						
	Mn-54	15	< LLD	-	-	None	0
	Fe-59	30	< LLD	-	-	None	0
	Co-58	15	< LLD	-	-	None	0
	Co-60	15	< LLD	-	-	None	0
	Zn-65	30	< LLD	-	-	None	0
	Zr-Nb-95	15	< LLD	-	-	None	0
	Cs-134	15	< LLD	-	-	None	0
	Cs-137	18	< LLD	-	-	None	0
	Ba-La-140	15	< LLD	-	-	None	0
Sediments	GS 8						
(pCi/kgdry)	K-40	50	14162 (4/4) (12998-14786)	CA-AQS-C 4.9 mi. SE	14162 (4/4) (12998-14786)	13904 (4/4) (13237-14536)	0
	Mn-54	30.6	< LLD	-	-	< LLD	0
	Fe-59	50.1	< LLD	-	-	< LLD	0
	Co-58	31.3	< LLD	-	-	< LLD	0
	Co-60	20.7	< LLD	-	-	< LLD	0
	Zr-Nb-95	29.3	< LLD	-	-	< LLD	0
	Cs-134	24.7	< LLD	-	-	< LLD	0
	Cs-137	28.9	< LLD	CA-AQS-A 4.9 mi. SSE	30.2 (1/4)	30.2 (1/4)	0
	Ba-La-140	42.5	< LLD	-	-	< LLD	0

Table 5.6 Radiological Environmental Monitoring Program Summary

Sample Type (Units)	Type and Number of Analyses [a]	LLD [b]	Indicator Locations Mean (F) [c] Range [c]	Location with Highest Annual Mean: Location [d]	Location with Highest Annual Mean: Mean (F) [c] Range [c]	Control Locations Mean (F) [c] Range [c]	Number Non-Routine Results [e]
Ingestion Pathway							
Food Products Leafy Green Vegetables (pCi/kg wet)	GS 42						
	K-40	100	4370 (36/36) (2587-9475)	V-9, 2.0 mi. WNW	5111 (17/17) (3316-9475)	4049 (6/6) (3292-5212)	0
	Mn-54	24.5	< LLD	-	-	< LLD	0
	Co-58	21.8	< LLD	-	-	< LLD	0
	Co-60	16.9	< LLD	-	-	< LLD	0
	I-131	57.0	< LLD	-	-	< LLD	0
	Cs-134	17.9	< LLD	-	-	< LLD	0
	Cs-137	23.4	< LLD	-	-	< LLD	0
Farm Crop (Soybeans) (pCi/kg wet)	H-3 4	164	< LLD	-	-	< LLD	0
	GS 4						
	K-40	100	13937 (3/3) (13503-14225)	FC-3, Between Hwy 94 and Dock Access Rd.	13937 (3/3) (13503-14225)	12374 (1/1)	0
	Mn-54	11.4	< LLD	-	-	< LLD	0
	Co-58	12.1	< LLD	-	-	< LLD	0
	Co-60	11.4	< LLD	-	-	< LLD	0
	I-131	59.2	< LLD	-	-	< LLD	0
	Cs-134	11.0	< LLD	-	-	< LLD	0
	Cs-137	12.2	< LLD	-	-	< LLD	0
Fish (Flesh) (pCi/kg wet)	GS 20						
	K-40	100	2675 (10/10) (2019-3147)	CA-AQF-A 4.9 mi. SSE	2852 (10/10) (2545-3035)	2852 (10/10) (2545-3035)	0
	Mn-54	20.4	< LLD	-	-		0
	Fe-59	52.1	< LLD	-	-		0
	Co-58	20.3	< LLD	-	-		0
	Co-60	19.7	< LLD	-	-		0
	Zn-65	42.9	< LLD	-	-		0
	Cs-134	19.0	< LLD	-	-		0
	Cs-137	23.2	< LLD	-	-		0
Milk (pCi/L)	I-131 20	1.0	none	-	-	< LLD	0
	GS 20						
	K-40	100	none none	M-9, Farm 13 mi. SW	1280 (20/20) (914-1470)	1280 (20/20) (914-1470)	0
	Cs-134	15	none	-	-	< LLD	0
	Cs-137	18	none	-	-	< LLD	0
	Ba-140	60	none	-	-	< LLD	0
	La-140	15	none	-	-	< LLD	0

Table 5.6 Radiological Environmental Monitoring Program Summary

Sample Type (Units)	Type and Number of Analyses [a]	LLD [b]	Indicator Locations Mean (F) [c] Range [c]	Location with Highest Annual Mean Location [d]	Mean (F) [c] Range [c]	Control Locations Mean (F) [c] Range [c]	Number Non-Routine Results [e]
Direct Radiation							
(Quarterly TLDs) (mR/90days)	Gamma 168	3.0	15.4 (156/156) (10.7-17.4)	CA-IDM-40 4.2 mi. WNW	16.7 (4/4) (16.5-17.0)	14.4 (12/12) (10.5-17.1)	0
Airborne Pathway							
Airborne Particulates (pCi/m^3)	GS 260						
	Be-7	0.16	0.23 (136/260) (0.16-0.41)	B-3. Utility Pole #50422, 1.8 mi. NNW	0.24 (25/52) (0.16-0.36)	None	0
	Co-58	0.014	< LLD	-	-	None	0
	Co-60	0.015	< LLD	-	-	None	0
	Zr-Nb-95	0.028	< LLD	-	-	None	0
	Cs-134	0.012	< LLD	-	-	None	0
	Cs-137	0.014	< LLD	-	-	None	0
	Ba-La-140	0.064	< LLD	-	-	None	0
	Ce-144	0.067	< LLD	-	-	None	0
Airborne Iodine (pCi/m3)	I-131 0	0.070	< LLD	-	-	None	0
Soil							
Soil (pCi/kg dry)	GS 18						
	K-40	50.0	11038 (14/14) (8554-14928)	V-003 0.12 mi. N	12858 (2/2) (10226-15489)	12826 (4/4) (10226-15489)	0
	Mn-54	70.4	< LLD	-	-	< LLD	0
	Fe-59	145.6	< LLD	-	-	< LLD	0
	Co-58	75.5	< LLD		-	< LLD	0
	Co-60	59.9	< LLD	-	-	< LLD	0
	Zr-Nb-95	77.2	< LLD	-	-	< LLD	
	Cs-134	56.3	< LLD	-	-	< LLD	0
	Cs-137	52.7	328 (10/14) (94-622)	F-006 1.72 mi. NE	584 (2/2) (545-622)	123 (4/4) (80-231)	0
	Ba-La-140	192.9	< LLD	-	-	< LLD	0

[a] GS = gamma spectroscopy

[b] LLD = nominal lower limit of detection based on a 4.66 sigma counting error for background sample.

[c] Mean and range are based on detectable measurements only (i.e., >LLD) Fraction of detectable measurements at specified locations is indicated in parentheses (F).

[d] Locations are specified by station code (Table 5.2) and distance (miles) and direction relative to reactor site.

[e] Non-routine results are those which exceed ten times the control station value. If no control station value is available, the result is considered non-routine if it exceeds ten times the preoperational value for the location.

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APPENDIX A

INTERLABORATORY COMPARISON PROGRAM RESULTS

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

January, 2010 through December, 2010

Appendix A

Interlaboratory Comparison Program Results

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

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

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

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

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

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

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

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

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

Attachment A lists the laboratory precision at the 1 sigma level for various analyses. The acceptance criteria in Table A-3 is set at ± 2 sigma.

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

Attachment A

ACCEPTANCE CRITERIA FOR "SPIKED" SAMPLES

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

Analysis	Level	One standard deviation for single determination
Gamma Emitters	5 to 100 pCi/liter or kg > 100 pCi/liter or kg	5.0 pCi/liter 5% of known value
Strontium-89[b]	5 to 50 pCi/liter or kg > 50 pCi/liter or kg	5.0 pCi/liter 10% of known value
Strontium-90[b]	2 to 30 pCi/liter or kg > 30 pCi/liter or kg	5.0 pCi/liter 10% of known value
Potassium-40	≥ 0.1 g/liter or kg	5% of known value
Gross alpha	≤ 20 pCi/liter > 20 pCi/liter	5.0 pCi/liter 25% of known value
Gross beta	≤ 100 pCi/liter > 100 pCi/liter	5.0 pCi/liter 5% of known value
Tritium	≤ 4,000 pCi/liter > 4,000 pCi/liter	$\pm 1\sigma$ = 169.85 x (known)$^{0.0933}$ 10% of known value
Radium-226,-228	≥ 0.1 pCi/liter	15% of known value
Plutonium	≥ 0.1 pCi/liter, gram, or sample	10% of known value
Iodine-131, Iodine-129[b]	≤ 55 pCi/liter > 55 pCi/liter	6 pCi/liter 10% of known value
Uranium-238, Nickel-63[b] Technetium-99[b]	≤ 35 pCi/liter > 35 pCi/liter	6 pCi/liter 15% of known value
Iron-55[b]	50 to 100 pCi/liter > 100 pCi/liter	10 pCi/liter 10% of known value
Other Analyses [b]	---	20% of known value

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

[b] Laboratory limit.

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

Lab Code	Date	Analysis	Concentration (pCi/L) Laboratory Result[b]	ERA Result[c]	Control Limits	Acceptance
STW-1205	04/05/10	Sr-89	63.0 ± 5.7	60.4	48.6 - 68.2	Pass
STW-1205	04/05/10	Sr-90	37.4 ± 2.4	41.3	30.4 - 47.4	Pass
STW-1206	04/05/10	Ba-133	63.6 ± 3.3	65.9	54.9 - 72.5	Pass
STW-1206	04/05/10	Co-60	83.3 ± 2.9	84.5	76.0 - 95.3	Pass
STW-1206	04/05/10	Cs-134	71.0 ± 3.4	71.6	58.4 - 78.8	Pass
STW-1206	04/05/10	Cs-137	145.5 ± 5.1	146.0	131.0 - 163.0	Pass
STW-1206	04/05/10	Zn-65	194.9 ± 7.8	186.0	167.0 - 219.0	Pass
STW-1207	04/05/10	Gr. Alpha	26.5 ± 1.7	32.9	16.9 - 42.6	Pass
STW-1207	04/05/10	Gr. Beta	34.5 ± 1.6	37.5	24.7 - 45.0	Pass
STW-1208	04/05/10	I-131	22.7 ± 0.8	26.4	21.9 - 31.1	Pass
STW-1209	04/05/10	Ra-226	15.2 ± 0.7	14.6	10.9 - 16.8	Pass
STW-1209	04/05/10	Ra-228	15.6 ± 1.8	15.1	10.1 - 18.3	Pass
STW-1209	04/05/10	Uranium	59.5 ± 0.7	62.3	50.7 - 69.1	Pass
STW-1210	04/05/10	H-3	12955 ± 332	12400.0	10800 - 13600	Pass
STW-1224	10/04/10	Sr-89	65.3 ± 5.7	68.5	55.8 - 76.7	Pass
STW-1224	10/04/10	Sr-90	39.9 ± 2.3	43.0	31.7 - 49.3	Pass
STW-1225	10/04/10	Ba-133	67.2 ± 4.3	68.9	57.5 - 75.8	Pass
STW-1225	10/04/10	Co-60	53.2 ± 3.3	53.4	48.1 - 61.3	Pass
STW-1225	10/04/10	Cs-134	47.3 ± 5.1	43.2	34.5 - 47.5	Pass
STW-1225	10/04/10	Cs-137	118.0 ± 5.9	123.0	111.0 - 138.0	Pass
STW-1225	10/04/10	Zn-65	107.0 ± 8.7	102.0	91.8 - 122.0	Pass
STW-1226	10/04/10	Gr. Alpha	30.7 ± 2.9	42.3	21.9 - 53.7	Pass
STW-1226	10/04/10	Gr. Beta	32.7 ± 0.8	36.6	24.0 - 44.2	Pass
STW-1227	10/04/10	I-131	28.6 ± 1.1	27.5	22.9 - 32.3	Pass
STW-1228	10/04/10	Ra-226	11.8 ± 0.6	11.4	8.5 - 13.2	Pass
STW-1228	10/04/10	Ra-228	12.0 ± 1.8	9.9	6.4 - 12.3	Pass
STW-1228	10/04/10	Uranium	34.8 ± 0.4	36.8	29.8 - 41.0	Pass
STW-1229	10/04/10	H-3	13682 ± 352	12900.0	11200 - 14200	Pass

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

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

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

TABLE A-2. Table has been intentionally omitted.

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

Lab Code [b]	Date	Concentration (pCi/L)[a] Analysis	Laboratory results 2s, n=1 [c]	Known Activity	Control Limits [d]	Acceptance
SPW-12648	1/20/2010	Ra-228	40.04 ± 2.99	40.54	28.38 - 52.70	Pass
SPW-279	1/27/2010	U-238	4.52 ± 0.22	4.17	0.00 - 16.17	Pass
SPW-391	2/4/2010	Ni-63	179.70 ± 2.96	209.62	146.73 - 272.51	Pass
W-21210	2/12/2010	Ra-226	16.05 ± 0.39	16.77	11.74 - 21.80	Pass
W-21710	2/17/2010	Gr. Alpha	17.54 ± 0.37	20.00	10.00 - 30.00	Pass
W-21710	2/17/2010	Gr. Beta	42.47 ± 0.39	45.20	35.20 - 55.20	Pass
SPAP-669	2/25/2010	Gr. Beta	45.78 ± 0.11	49.24	29.54 - 68.94	Pass
SPAP-671	2/25/2010	Cs-134	10.56 ± 3.15	10.38	0.38 - 20.38	Pass
SPAP-671	2/25/2010	Cs-137	105.36 ± 3.15	109.20	98.28 - 120.12	Pass
SPMI-674	2/25/2010	Co-60	67.38 ± 5.65	68.79	58.79 - 78.79	Pass
SPMI-674	2/25/2010	Cs-134	60.61 ± 6.28	51.91	41.91 - 61.91	Pass
SPMI-674	2/25/2010	Cs-137	173.80 ± 10.30	163.80	147.42 - 180.18	Pass
SPW-676	2/25/2010	Co-60	66.13 ± 5.22	68.79	58.79 - 78.79	Pass
SPW-676	2/25/2010	Cs-134	51.54 ± 5.97	51.91	41.91 - 61.91	Pass
SPW-676	2/25/2010	Cs-137	179.30 ± 9.95	163.80	147.42 - 180.18	Pass
SPW-678	2/25/2010	H-3	59213.70 ± 709.90	60407.70	48326.16 - 72489.24	Pass
SPF-680	2/25/2010	Cs-134	402.56 ± 22.40	415.00	373.50 - 456.50	Pass
SPF-680	2/25/2010	Cs-137	2267.90 ± 75.60	2180.00	1962.00 - 2398.00	Pass
SPW-682	2/25/2010	Tc-99	29.70 ± 1.51	32.34	20.34 - 44.34	Pass
SPW-2871	4/5/2010	Ra-228	33.91 ± 2.85	36.80	25.76 - 47.84	Pass
W-40510	4/5/2010	Gr. Alpha	20.65 ± 0.42	20.00	10.00 - 30.00	Pass
W-40510	4/5/2010	Gr. Beta	44.72 ± 0.40	45.20	35.20 - 55.20	Pass
SPW-2083	4/28/2010	U-238	4.20 ± 0.32	4.17	0.00 - 16.17	Pass
W-51310	5/13/2010	Ra-226	17.04 ± 0.50	16.77	11.74 - 21.80	Pass
SPW-3181	6/17/2010	Tc-99	29.87 ± 1.09	32.34	20.34 - 44.34	Pass
SPW-3272	6/25/2010	H-3	5489.00 ± 224.00	5928.00	4742.40 - 7113.60	Pass
SPW-3278	6/25/2010	Fe-55	17054.00 ± 348.00	19614.00	15691.20 - 23536.80	Pass
SPW-3280	6/25/2010	C-14	3410.60 ± 9.75	4738.00	2842.80 - 6633.20	Pass
SPAP-3270	6/28/2010	Cs-134	12.24 ± 3.13	10.38	0.38 - 20.38	Pass
SPAP-3270	6/28/2010	Cs-137	103.92 ± 7.14	109.20	98.28 - 120.12	Pass
SPW-3274	6/28/2010	Co-60	67.48 ± 5.53	65.84	55.84 - 75.84	Pass
SPW-3274	6/28/2010	Cs-134	49.55 ± 6.11	46.38	36.38 - 56.38	Pass
SPW-3274	6/28/2010	Cs-137	58.85 ± 6.54	54.17	44.17 - 64.17	Pass
SPW-3274	6/28/2010	Sr-90	41.59 ± 1.83	42.72	34.18 - 51.26	Pass
SPMI-3276	6/28/2010	Co-60	66.80 ± 5.25	65.84	55.84 - 75.84	Pass
SPMI-3276	6/28/2010	Cs-134	48.20 ± 3.88	46.38	36.38 - 56.38	Pass
SPMI-3276	6/28/2010	Cs-137	62.46 ± 6.33	54.17	44.17 - 64.17	Pass
SPMI-3276	6/28/2010	Sr-90	43.32 ± 1.63	42.72	34.18 - 51.26	Pass

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

Lab Code [b]	Date	Concentration (pCi/L)[a] Analysis	Laboratory results 2s, n=1	Known Activity	Control Limits[c]	Acceptance
SPW-5081	9/9/2010	Tc-99	30.22 ± 1.06	32.34	20.34 - 44.34	Pass
W-90910	9/9/2010	Gr. Alpha	20.95 ± 0.43	20.00	10.00 - 30.00	Pass
W-90910	9/9/2010	Gr. Beta	45.20 ± 0.41	45.20	35.20 - 55.20	Pass
W-91010	9/10/2010	Ra-226	17.48 ± 0.50	16.77	11.74 - 21.80	Pass
SPW-2874	9/23/2010	Ra-228	34.60 ± 2.68	36.80	25.76 - 47.84	Pass
XWW-5302	10/6/2010	Ba-133	154.13 ± 8.90	155.21	139.69 - 170.73	Pass
XWW-5302	10/6/2010	Co-60	24.65 ± 4.11	23.28	13.28 - 33.28	Pass
XWW-5302	10/6/2010	Cs-134	14.03 ± 3.87	13.95	3.95 - 23.95	Pass
XWW-5302	10/6/2010	Cs-137	61.16 ± 6.08	59.22	49.22 - 69.22	Pass
SPW-6035	10/21/2010	U-238	4.52 ± 0.20	4.17	0.00 - 16.17	Pass
W-120110	12/1/2010	Gr. Alpha	20.27 ± 0.41	20.00	10.00 - 30.00	Pass
W-120110	12/1/2010	Gr. Beta	46.75 ± 0.41	45.20	35.20 - 55.20	Pass
W-121610	12/16/2010	Ra-226	17.99 ± 0.43	16.77	11.74 - 21.80	Pass

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

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

[c] Results are based on single determinations.

[d] Control limits are established from the precision values listed in Attachment A of this report, adjusted to ± 2σ.

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

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

Lab Code	Sample Type	Date	Analysis[b]	Concentration (pCi/L)[a]		
				Laboratory results (4.66σ)		Acceptance
				LLD	Activity[c]	Criteria (4.66 σ)
SPW-12658	Water	1/20/2010	Ra-228	0.79	0.61 ± 0.44	2
SPW-280	Water	1/27/2010	U-238	0.18	0.07 ± 0.13	1
SPW-392	Water	2/4/2010	Ni-63	15.90	-11.80 ± 9.40	20
W-21210	Water	2/12/2010	Ra-226	0.03	0.06 ± 0.02	1
W-21710	Water	2/17/2010	Gr. Alpha	0.41	0.09 ± 0.30	1
W-21710	Water	2/17/2010	Gr. Beta	0.73	0.23 ± 0.52	3.2
SPAP-668	Air Filter	2/25/2010	Gr. Beta	0.11	0.008 ± 0.002	3.2
SPAP-670	Air Filter	2/25/2010	Cs-134	1.87	-	100
SPAP-670	Air Filter	2/25/2010	Cs-137	2.31	-	100
SPMI-672	Milk	2/25/2010	Cs-137	3.52	-	10
SPMI-672	Milk	2/25/2010	I-131(G)	6.09	-	20
SPW-675	Water	2/25/2010	Co-60	1.55	-	10
SPW-675	Water	2/25/2010	Cs-137	2.69	-	10
SPW-675	Water	2/25/2010	I-131(G)	5.68	-	20
SPF-679	Fish	2/25/2010	Cs-134	10.94	-	100
SPF-679	Fish	2/25/2010	Cs-137	18.37	-	100
SPW-681	Water	2/25/2010	Tc-99	16.11	-10.75 ± 9.53	10
SPW-2881	Water	4/5/2010	Ra-228	0.89	0.22 ± 0.44	2
W-40510	Water	4/5/2010	Gr. Alpha	0.40	-0.20 ± 0.26	1
W-40510	Water	4/5/2010	Gr. Beta	0.75	-0.09 ± 0.52	3.2
SPW-2084	Water	4/28/2010	U-238	0.14	0.03 ± 0.10	1
W-51310	Water	5/13/2010	Ra-226	0.03	0.06 ± 0.02	1
SPW-3271	Water	6/25/2010	H-3	151.60	-58.10 ± 71.90	200
SPW-3278	Water	6/25/2010	Fe-55	634.50	256.80 ± 396.40	1000
SPW-3279	water	6/25/2010	C-14	8.57	-1.84 ± 5.18	200
SPAP-3269	Air Filter	6/28/2010	Cs-134	1.71	-	100
SPAP-3269	Air Filter	6/28/2010	Cs-137	2.42	-	100
SPW-3273	Water	6/28/2010	Co-60	1.64	-	10
SPW-3273	Water	6/28/2010	Cs-134	3.89	-	10
SPW-3273	Water	6/28/2010	Cs-137	4.29	-	10
SPW-3273	water	6/25/2010	Sr-90	0.50	-0.04 ± 0.22	1
SPMI-3275	Milk	6/28/2010	Cs-134	3.33	-	10
SPMI-3275	Milk	6/28/2010	Cs-137	3.82	-	10
SPMI-3275	Milk	6/28/2010	I-131(G)	3.71	-	20
SPMI-3275	Milk	6/28/2010	Sr-90	0.58	0.81 ± 0.36	1

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

Lab Code	Sample Type	Date	Analysis[b]	Concentration (pCi/L)[a]		
				Laboratory results (4.66σ)		Acceptance Criteria (4.66 σ)
				LLD	Activity[c]	
SPW-5080	Water	9/9/2010	Tc-99	2.15	-0.71 ± 1.29	10
W-90910	Water	9/9/2010	Gr. Alpha	0.39	0.10 ± 0.28	1
W-90910	Water	9/9/2010	Gr. Beta	0.78	-0.09 ± 0.55	3.2
W-91010	Water	9/10/2010	Ra-226	0.04	0.07 ± 0.03	1
SPW-2884	Water	9/23/2010	Ra-228	0.71	1.14 ± 0.46	2
SPW-6036	Water	10/21/2010	U-238	0.11	0.07 ± 0.10	1
W-120110	Water	12/1/2010	Gr. Alpha	0.43	-0.05 ± 0.29	1
W-120110	Water	12/1/2010	Gr. Beta	0.75	-0.08 ± 0.53	3.2
W-121610	Water	12/16/2010	Ra-226	0.03	0.04 ± 0.02	1
BKW-120610	water	12/6/2010	Ba-133	5.66	-	10
BKW-120610	water	12/6/2010	Co-60	4.49	-	10
BKW-120610	water	12/6/2010	Cs-134	4.41	-	10
BKW-120610	water	12/6/2010	Cs-137	5.33	-	10
W-121610	Water	12/16/2010	Ra-226	0.03	0.04 ± 0.02	1

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

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

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

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

Lab Code	Date	Analysis	Concentration (pCi/L)[a] First Result	Second Result	Averaged Result	Acceptance
CF-20, 21	1/4/2010	Gr. Beta	10.96 ± 0.27	11.30 ± 0.28	11.13 ± 0.19	Pass
CF-20, 21	1/4/2010	K-40	8.88 ± 0.48	8.27 ± 0.78	8.58 ± 0.46	Pass
CF-20, 21	1/4/2010	Sr-90	0.02 ± 0.01	0.02 ± 0.01	0.02 ± 0.00	Pass
CF-41, 42	1/4/2010	Be-7	0.45 ± 0.11	0.41 ± 0.14	0.43 ± 0.09	Pass
CF-41, 42	1/4/2010	Gr. Beta	3.26 ± 0.10	3.33 ± 0.11	3.30 ± 0.07	Pass
CF-41, 42	1/4/2010	K-40	2.85 ± 0.36	3.04 ± 0.22	2.95 ± 0.21	Pass
MI-111, 112	1/12/2010	K-40	1276.00 ± 98.96	1334.80 ± 105.00	1305.40 ± 72.14	Pass
DW-10010, 10011	1/13/2010	Ra-226	0.48 ± 0.10	0.43 ± 0.10	0.46 ± 0.07	Pass
DW-10010, 10011	1/13/2010	Ra-226	1.59 ± 0.61	1.13 ± 0.47	1.36 ± 0.39	Pass
WW-215, 216	1/18/2010	H-3	211.16 ± 87.57	291.90 ± 91.31	251.53 ± 63.26	Pass
DW-10022, 10023	1/21/2010	Ra-226	8.57 ± 0.91	10.20 ± 1.08	9.39 ± 0.71	Pass
DW-10022, 10023	1/21/2010	Ra-228	5.68 ± 1.36	3.59 ± 1.17	4.64 ± 0.90	Pass
WW-424, 425	1/28/2010	H-3	422.30 ± 95.90	484.20 ± 98.50	453.25 ± 68.74	Pass
DW-10034, 10035	1/28/2010	Ra-226	0.93 ± 0.13	0.90 ± 0.11	0.92 ± 0.09	Pass
DW-10034, 10035	1/28/2010	Ra-228	1.16 ± 0.62	1.29 ± 0.62	1.23 ± 0.44	Pass
SW-382, 383	2/1/2010	Gr. Beta	2.22 ± 0.68	1.18 ± 0.71	1.70 ± 0.49	Pass
DW-10046, 10047	2/2/2010	Ra-226	6.11 ± 0.91	7.88 ± 1.17	7.00 ± 0.74	Pass
DW-10046, 10047	2/2/2010	Ra-228	5.84 ± 1.11	6.13 ± 1.14	5.99 ± 0.80	Pass
WW-693, 694	2/23/2010	H-3	1458.00 ± 131.00	1531.00 ± 133.00	1494.50 ± 93.34	Pass
SW-782, 783	3/1/2010	Gr. Beta	1.05 ± 0.42	1.60 ± 0.43	1.33 ± 0.30	Pass
SW-782, 783	3/1/2010	K-40	1.50 ± 0.15	1.52 ± 0.15	1.51 ± 0.11	Pass
MI-946, 947	3/9/2010	K-40	1485.00 ± 109.30	1347.40 ± 108.30	1416.20 ± 76.93	Pass
W-1035, 1036	3/17/2010	Ra-226	11.78 ± 1.51	9.76 ± 1.26	10.77 ± 0.98	Pass
W-1035, 1036	3/17/2010	Ra-228	5.31 ± 2.42	8.45 ± 2.78	6.88 ± 1.84	Pass
SW-1285, 1286	3/17/2010	H-3	377.60 ± 104.50	282.70 ± 100.70	330.15 ± 72.56	Pass
W-1103, 1104	3/18/2010	H-3	12690 ± 333	12679 ± 333	12685 ± 235	Pass
WW-1193, 1194	3/18/2010	H-3	227.38 ± 95.19	251.81 ± 96.15	239.60 ± 67.65	Pass
LW-1909, 1910	3/24/2010	H-3	1529.40 ± 144.60	1404.40 ± 140.80	1466.90 ± 100.91	Pass
LW-1909, 1910	3/25/2010	H-3	2.40 ± 0.97	1.99 ± 1.03	2.20 ± 0.71	Pass
DW-10068, 10069	3/25/2010	Gr. Alpha	1.08 ± 1.02	1.35 ± 1.05	1.22 ± 0.73	Pass
DW-10070, 10071	3/29/2010	Ra-226	1.58 ± 0.17	1.69 ± 0.16	1.64 ± 0.12	Pass
DW-10070, 10071	3/29/2010	Ra-228	1.16 ± 0.47	1.34 ± 0.49	1.25 ± 0.34	Pass
AP-1729, 1730	3/30/2010	Be-7	0.08 ± 0.01	0.08 ± 0.01	0.08 ± 0.01	Pass
AP-1782, 1783	3/30/2010	Be-7	0.08 ± 0.01	0.09 ± 0.01	0.09 ± 0.01	Pass
E-1392, 1393	4/1/2010	Gr. Beta	1.59 ± 0.07	1.66 ± 0.08	1.63 ± 0.05	Pass
E-1392, 1393	4/1/2010	K-40	902.30 ± 179.00	1076.70 ± 202.90	989.50 ± 135.29	Pass
WW-1422, 1423	4/1/2010	Gr. Beta	22.23 ± 1.58	19.42 ± 1.40	20.83 ± 1.06	Pass
SW-1464, 1465	4/1/2010	H-3	262.06 ± 98.96	233.18 ± 97.75	247.62 ± 69.55	Pass
XW-1666, 1667	4/1/2010	Fe-55	7.05 ± 0.71	7.25 ± 0.74	7.15 ± 0.51	Pass
SG-1532, 1533	4/6/2010	Ac-228	19.45 ± 1.14	20.07 ± 1.19	19.76 ± 0.82	Pass
SG-1532, 1533	4/6/2010	Pb-214	12.66 ± 0.52	13.32 ± 0.54	12.99 ± 0.38	Pass

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

Lab Code	Date	Analysis	Concentration (pCi/L)[a] First Result	Second Result	Averaged Result	Acceptance
SG-1506, 1507	4/7/2010	Ac-228	1.28 ± 0.15	1.15 ± 0.14	1.22 ± 0.10	Pass
SG-1506, 1507	4/7/2010	Pb-214	1.24 ± 0.10	1.22 ± 0.09	1.23 ± 0.07	Pass
SW-1645, 1646	4/14/2010	H-3	312.00 ± 100.00	352.00 ± 102.00	332.00 ± 71.42	Pass
DW-10095, 10096	4/14/2010	Ra-226	4.87 ± 0.53	5.57 ± 0.61	5.22 ± 0.40	Pass
DW-10095, 10096	4/14/2010	Ra-228	2.49 ± 0.56	2.76 ± 0.60	2.63 ± 0.41	Pass
W-2013, 2014	4/16/2010	Gr. Alpha	33.45 ± 3.98	39.11 ± 4.54	36.28 ± 3.02	Pass
W-2013, 2014	4/16/2010	Gr. Beta	14.83 ± 0.96	16.07 ± 0.96	15.45 ± 0.68	Pass
WW-2431, 2432	4/19/2010	H-3	400.40 ± 98.10	377.70 ± 97.10	389.05 ± 69.01	Pass
SO-2037, 2038	4/22/2010	K-40	2.89 ± 0.40	2.89 ± 0.51	2.89 ± 0.32	Pass
W-2325, 2326	4/26/2010	H-3	399.00 ± 92.00	429.00 ± 94.00	414.00 ± 65.76	Pass
AP-2149, 2150	4/29/2010	Be-7	0.14 ± 0.08	0.26 ± 0.12	0.20 ± 0.07	Pass
LW-2191, 2192	4/29/2010	Gr. Beta	1.16 ± 0.56	0.79 ± 0.52	0.97 ± 0.38	Pass
G-2170, 2171	5/3/2010	Be-7	0.91 ± 0.32	0.86 ± 0.26	0.89 ± 0.21	Pass
G-2170, 2171	5/3/2010	Gr. Beta	8.73 ± 0.22	9.01 ± 0.23	8.87 ± 0.16	Pass
G-2170, 2171	5/3/2010	K-40	7.24 ± 0.44	7.48 ± 0.78	7.36 ± 0.45	Pass
SWT-2282, 2283	5/4/2010	Gr. Beta	0.73 ± 0.52	1.58 ± 0.57	1.16 ± 0.39	Pass
WW-2233, 2234	5/5/2010	Gr. Alpha	1.56 ± 1.47	2.27 ± 1.65	1.92 ± 1.10	Pass
WW-2233, 2234	5/5/2010	Gr. Beta	2.33 ± 1.14	4.08 ± 1.24	3.21 ± 0.84	Pass
TD-2410, 2411	5/10/2010	H-3	431.92 ± 96.50	403.05 ± 95.26	417.48 ± 67.80	Pass
SG-2347, 2348	5/13/2010	Ra-226	37.34 ± 0.42	37.91 ± 0.36	37.63 ± 0.28	Pass
F-2463, 2464	5/17/2010	K-40	2.69 ± 0.56	2.65 ± 0.38	2.67 ± 0.34	Pass
XW-2834, 2835	5/20/2010	H-3	209.53 ± 83.34	263.11 ± 85.95	236.32 ± 59.86	Pass
WW-2597, 2598	5/25/2010	H-3	288.10 ± 98.20	155.80 ± 93.40	221.95 ± 67.76	Pass
MI-2639, 2640	5/25/2010	K-40	1428.80 ± 110.60	1408.60 ± 107.40	1418.70 ± 77.08	Pass
SL-2771, 2772	6/1/2010	Gr. Beta	5.33 ± 0.18	5.30 ± 0.18	5.32 ± 0.13	Pass
SL-2771, 2772	6/1/2010	K-40	4.67 ± 0.46	4.88 ± 0.46	4.78 ± 0.33	Pass
SW-2879, 2880	6/1/2010	H-3	335.60 ± 92.60	356.40 ± 93.60	346.00 ± 65.83	Pass
SG-2904, 2905	6/7/2010	Gamma	5.20 ± 0.20	5.50 ± 0.10	5.35 ± 0.11	Pass
SO-3039, 3040	6/8/2010	Be-7	0.12 ± 0.03	0.13 ± 0.08	0.13 ± 0.04	Pass
SO-3039, 3040	6/8/2010	Cs-137	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	Pass
SO-3039, 3040	6/8/2010	Gr. Beta	22.80 ± 2.05	23.84 ± 2.44	23.32 ± 1.59	Pass
SO-3039, 3040	6/8/2010	K-40	11.30 ± 1.20	11.70 ± 1.20	11.50 ± 0.85	Pass
SO-3039, 3040	6/8/2010	U-233/4	0.12 ± 0.02	0.13 ± 0.01	0.13 ± 0.01	Pass
SO-3039, 3040	6/8/2010	U-238	0.12 ± 0.01	0.13 ± 0.01	0.13 ± 0.01	Pass
WW-3060, 3061	6/14/2010	H-3	199.16 ± 95.13	203.59 ± 95.34	201.38 ± 67.34	Pass
VE-3351, 3352	6/21/2010	Be-7	1.86 ± 0.25	1.85 ± 0.27	1.85 ± 0.18	Pass
VE-3351, 3352	6/21/2010	K-40	6.10 ± 0.52	6.10 ± 0.57	6.10 ± 0.39	Pass
W-3469, 3470	6/25/2010	H-3	573.00 ± 110.00	525.00 ± 108.00	549.00 ± 77.08	Pass
SG-3539, 3540	6/29/2010	Ac-228	14.55 ± 0.51	14.57 ± 0.44	14.56 ± 0.34	Pass
SG-3539, 3540	6/29/2010	Pb-214	15.50 ± 1.56	16.80 ± 1.71	16.15 ± 1.16	Pass
AP-3743, 3744	6/30/2010	Be-7	0.07 ± 0.01	0.07 ± 0.01	0.07 ± 0.01	Pass

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

Lab Code	Date	Analysis	Concentration (pCi/L)[a] First Result	Second Result	Averaged Result	Acceptance
G-3427, 3428	7/1/2010	Be-7	1.18 ± 0.29	1.06 ± 0.25	1.12 ± 0.19	Pass
G-3427, 3428	7/1/2010	K-40	8.79 ± 0.64	7.85 ± 0.65	8.32 ± 0.46	Pass
SW-3512, 3513	7/6/2010	H-3	441.00 ± 103.00	423.00 ± 102.00	432.00 ± 72.48	Pass
AP-3680, 3681	7/8/2010	Be-7	0.16 ± 0.08	0.13 ± 0.07	0.15 ± 0.05	Pass
VE-3791, 3792	7/12/2010	K-40	4.37 ± 0.38	4.23 ± 0.35	4.30 ± 0.26	Pass
WW-3934, 3935	7/12/2010	H-3	3091.00 ± 187.00	3242.00 ± 191.00	3166.50 ± 133.65	Pass
DW-10135, 10136	7/13/2010	Ra-226	0.18 ± 0.07	0.26 ± 0.07	0.22 ± 0.05	Pass
DW-10135, 10136	7/13/2010	Ra-228	0.76 ± 0.44	0.81 ± 0.41	0.79 ± 0.30	Pass
W-4063, 4064	7/14/2010	H-3	469.00 ± 104.00	351.00 ± 99.00	410.00 ± 71.79	Pass
DW-10143, 10144	7/19/2010	Gr. Alpha	2.84 ± 0.74	2.49 ± 0.73	2.67 ± 0.52	Pass
DW-10148, 10149	7/23/2010	Ra-226	2.08 ± 0.39	2.97 ± 0.55	2.53 ± 0.34	Pass
DW-10148, 10149	7/23/2010	Ra-228	1.90 ± 0.61	2.00 ± 0.61	1.95 ± 0.43	Pass
DW-10159, 10160	7/23/2010	Ra-226	0.91 ± 0.14	0.79 ± 0.21	0.85 ± 0.13	Pass
DW-10159, 10160	7/23/2010	Ra-228	1.41 ± 0.54	1.30 ± 0.53	1.36 ± 0.38	Pass
SL-4106, 4107	8/2/2010	Be-7	2.05 ± 0.20	2.05 ± 0.18	2.05 ± 0.13	Pass
SL-4106, 4107	8/2/2010	Gr. Beta	5.06 ± 0.32	4.62 ± 0.30	4.84 ± 0.22	Pass
SL-4106, 4107	8/2/2010	K-40	1.89 ± 0.24	1.70 ± 0.17	1.80 ± 0.15	Pass
SG-4085, 4086	8/3/2010	Ra-226	20.23 ± 2.04	21.45 ± 2.16	20.84 ± 1.49	Pass
SG-4085, 4086	8/3/2010	Ra-228	15.88 ± 0.41	16.24 ± 0.36	16.06 ± 0.27	Pass
SWT-4304, 4305	8/3/2010	Gr. Beta	2.08 ± 1.07	2.44 ± 0.98	2.26 ± 0.73	Pass
BS-4398, 4399	8/10/2010	Cs-137	78.80 ± 33.50	94.30 ± 51.90	86.55 ± 30.89	Pass
BS-4398, 4399	8/10/2010	K-40	13708 ± 795	12091 ± 1110	12900 ± 683	Pass
VE-4531, 4532	8/11/2010	Gr. Beta	36.20 ± 0.90	35.80 ± 0.90	36.00 ± 0.64	Pass
VE-4531, 4532	8/11/2010	K-40	27.31 ± 0.70	27.58 ± 0.62	27.45 ± 0.47	Pass
VE-4531, 4532	8/11/2010	U-233/4	0.014 ± 0.003	0.014 ± 0.003	0.014 ± 0.002	Pass
VE-4531, 4532	8/11/2010	U-238	0.012 ± 0.003	0.010 ± 0.002	0.011 ± 0.002	Pass
DW-10170, 10171	8/13/2010	Ra-226	1.32 ± 0.14	1.26 ± 0.14	1.29 ± 0.10	Pass
DW-10170, 10171	8/13/2010	Ra-228	2.55 ± 0.78	1.76 ± 0.71	2.16 ± 0.53	Pass
AP-4766, 4767	8/26/2010	Be-7	0.18 ± 0.09	0.25 ± 0.13	0.22 ± 0.08	Pass
DW-10182, 10183	8/27/2010	Ra-226	0.15 ± 0.08	0.11 ± 0.07	0.13 ± 0.05	Pass
VE-4928, 4929	9/1/2010	K-40	2.99 ± 0.41	3.18 ± 0.28	3.09 ± 0.25	Pass
SL-4883, 4884	9/1/2010	Gr. Beta	6.90 ± 0.20	7.10 ± 0.20	7.00 ± 0.14	Pass
SL-4883, 4884[b]	9/1/2010	K-40	7.15 ± 0.99	5.07 ± 0.51	6.11 ± 0.56	Fail
W-5135, 5136	9/6/2010	H-3	658.60 ± 110.80	600.90 ± 108.50	629.75 ± 77.54	Pass
SW-5071, 5072	9/13/2010	H-3	186.70 ± 101.10	267.30 ± 104.40	227.00 ± 72.66	Pass
XWW-5246, 5247	9/14/2010	H-3	1990.60 ± 157.70	1986.20 ± 157.60	1988.40 ± 111.48	Pass

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

Lab Code	Date	Analysis	Concentration (pCi/L)[a] First Result	Second Result	Averaged Result	Acceptance
VE-5114, 5115	9/9/2010	Be-7	1.14 ± 0.35	1.48 ± 0.26	1.31 ± 0.22	Pass
VE-5114, 5115	9/9/2010	Gr. Beta	34.72 ± 1.29	33.38 ± 1.23	34.05 ± 0.89	Pass
VE-5114, 5115	9/9/2010	H-3	79367 ± 837	79421 ± 837	79394 ± 592	Pass
VE-5114, 5115	9/9/2010	K-40	22.13 ± 0.67	21.93 ± 0.58	22.03 ± 0.44	Pass
VE-5114, 5115	9/9/2010	U-233/4	0.08 ± 0.01	0.06 ± 0.01	0.07 ± 0.01	Pass
MI-5267, 5268	9/20/2010	K-40	1281.10 ± 118.90	1218.60 ± 110.80	1249.85 ± 81.26	Pass
SO-5357, 5358	9/23/2010	K-40	10894.00 ± 560.00	11175.00 ± 760.00	11034.50 ± 472.02	Pass
AP-5357, 5358	9/23/2010	Be-7	0.11 ± 0.02	0.09 ± 0.02	0.10 ± 0.01	Pass
DW-10194, 10195	9/23/2010	Ra-226	0.40 ± 0.10	0.20 ± 0.10	0.30 ± 0.07	Pass
DW-10194, 10195	9/23/2010	Ra-228	1.61 ± 0.65	0.88 ± 0.47	1.25 ± 0.40	Pass
WW-5442, 5443	9/29/2010	H-3	6706.00 ± 252.00	6510.00 ± 249.00	6608.00 ± 177.13	Pass
VE-5469, 5470	9/29/2010	K-40	2.86 ± 0.38	2.57 ± 0.37	2.72 ± 0.26	Pass
BS-5886, 5887	9/29/2010	Cs-137	83.36 ± 23.31	58.97 ± 21.16	71.17 ± 15.74	Pass
BS-5886, 5887	9/29/2010	K-40	13913.00 ± 775.40	13582.00 ± 710.30	13747.50 ± 525.78	Pass
G-5513, 5514	10/4/2010	Be-7	6.73 ± 0.40	6.36 ± 0.41	6.55 ± 0.29	Pass
E-5492, 5493	10/4/2010	Gr. Beta	1.74 ± 0.05	1.77 ± 0.05	1.76 ± 0.04	Pass
E-5492, 5493	10/4/2010	K-40	1.57 ± 0.17	1.55 ± 0.18	1.56 ± 0.12	Pass
G-5512, 5513	10/4/2010	Gr. Beta	10.86 ± 0.44	10.39 ± 0.39	10.63 ± 0.29	Pass
G-5512, 5513	10/4/2010	K-40	7.10 ± 0.54	7.41 ± 0.59	7.26 ± 0.40	Pass
MI-5541, 5542	10/4/2010	K-40	1090.60 ± 106.70	1246.10 ± 102.60	1168.35 ± 74.01	Pass
MI-5541, 5542	10/4/2010	Sr-90	1.44 ± 0.38	1.11 ± 0.35	1.27 ± 0.26	Pass
F-6061, 6062	10/9/2010	H-3	7.64 ± 0.23	7.49 ± 0.23	7.57 ± 0.16	Pass
F-6061, 6062	10/9/2010	K-40	2.81 ± 0.40	2.56 ± 0.50	2.68 ± 0.32	Pass
VE-5740, 5741	10/10/2010	K-40	4.92 ± 0.53	4.61 ± 0.34	4.77 ± 0.32	Pass
VE-5761, 5762	10/12/2010	Be-7	1.05 ± 0.29	0.69 ± 0.15	0.87 ± 0.16	Pass
VE-5761, 5762	10/12/2010	K-40	3.45 ± 0.45	3.34 ± 0.29	3.40 ± 0.27	Pass
AP-5910, 5911	10/14/2010	Be-7	0.23 ± 0.09	0.30 ± 0.12	0.26 ± 0.08	Pass
WW-6294, 6295	10/18/2010	H-3	1681.49 ± 146.32	1637.41 ± 144.98	1659.45 ± 102.99	Pass
P-6038, 6039	10/19/2010	H-3	2131.90 ± 159.50	2212.00 ± 161.70	2171.95 ± 113.56	Pass
AP-6195, 6196	10/21/2010	Be-7	0.27 ± 0.11	0.26 ± 0.13	0.26 ± 0.09	Pass
WW-6366, 6367	10/23/2010	H-3	477.28 ± 102.02	529.99 ± 104.27	503.64 ± 72.94	Pass
SWU-6315, 6316	10/26/2010	Gr. Beta	1.85 ± 1.00	1.40 ± 0.90	1.62 ± 0.67	Pass
SO-6336, 6337	10/28/2010	Cs-137	0.23 ± 0.03	0.23 ± 0.04	0.23 ± 0.02	Pass
SO-6336, 6337	10/28/2010	Gr. Beta	26.36 ± 1.67	24.78 ± 1.52	25.57 ± 1.13	Pass
SO-6336, 6337	10/28/2010	K-40	13.43 ± 0.76	13.73 ± 0.81	13.58 ± 0.56	Pass
AP-6453, 6454	10/28/2010	Be-7	0.23 ± 0.12	0.30 ± 0.15	0.26 ± 0.10	Pass
BS-6475, 6476	11/1/2010	Gr. Beta	13.13 ± 1.83	12.75 ± 1.67	12.94 ± 1.24	Pass
F-6658, 6659	11/3/2010	K-40	2.79 ± 0.40	2.94 ± 0.44	2.86 ± 0.30	Pass
F-6565, 6566	11/4/2010	Cs-137	0.06 ± 0.02	0.04 ± 0.01	0.05 ± 0.01	Pass
F-6565, 6566	11/4/2010	Gr. Beta	3.90 ± 0.10	4.10 ± 0.10	3.96 ± 0.06	Pass
F-6565, 6566	11/4/2010	K-40	2.63 ± 0.45	2.57 ± 0.35	2.60 ± 0.29	Pass
SS-5761, 5762	11/16/2010	K-40	15.42 ± 1.57	15.87 ± 1.21	15.65 ± 0.99	Pass
WW-7056, 7057	11/30/2010	Gr. Beta	2.09 ± 0.84	2.22 ± 0.80	2.16 ± 0.58	Pass

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

Lab Code	Date	Analysis	Concentration (pCi/L)[a] First Result	Second Result	Averaged Result	Acceptance
SO-7166, 7167	11/30/2010	Cs-137	0.12 ± 0.04	0.11 ± 0.03	0.11 ± 0.03	Pass
SO-7166, 7167	11/30/2010	K-40	14.93 ± 0.88	14.49 ± 0.86	14.71 ± 0.61	Pass
WW-7412, 7413	12/6/2010	H-3	469.78 ± 146.32	503.57 ± 93.96	486.68 ± 86.94	Pass
MI-7187, 7188	12/8/2010	K-40	1495.10 ± 129.00	1398.40 ± 109.10	1446.75 ± 84.47	Pass
MI-7187, 7188	12/8/2010	Sr-90	0.57 ± 0.31	0.66 ± 0.28	0.62 ± 0.21	Pass
WW-7255, 7256	12/8/2010	H-3	243.46 ± 90.39	327.34 ± 94.11	285.40 ± 65.24	Pass
AP-7276, 7277	12/9/2010	Be-7	0.13 ± 0.07	0.18 ± 0.10	0.16 ± 0.06	Pass
XWW-7297, 7298	12/9/2010	H-3	686.00 ± 102.00	764.60 ± 105.00	725.30 ± 73.19	Pass
AP-7344, 7345	12/16/2010	Be-7	0.16 ± 0.09	0.17 ± 0.09	0.16 ± 0.06	Pass
SWT-7480, 7481	12/28/2010	Gr. Beta	0.90 ± 0.40	1.03 ± 0.41	0.97 ± 0.29	Pass

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

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

[b] Analysis was repeated, result of reanalysis: 4.83 ± 0.29 pCi/L.

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

			Concentration [b]			
Lab Code [c]	Date	Analysis	Laboratory result	Known Activity	Control Limits [d]	Acceptance
STVE-1199	03/01/10	Co-57	0.01 ± 0.03	0.00	-	Pass
STVE-1199	03/01/10	Co-60	3.39 ± 0.12	3.27	2.29 - 4.25	Pass
STVE-1199	03/01/10	Cs-134	4.74 ± 0.15	4.39	3.07 - 5.71	Pass
STVE-1199	03/01/10	Cs-137	3.32 ± 0.17	3.06	2.14 - 3.98	Pass
STVE-1199	03/01/10	Mn-54	0.01 ± 0.05	0.00	-	Pass
STVE-1199	03/01/10	Zn-65	8.03 ± 0.33	7.10	4.97 - 9.23	Pass
STW-1200	03/01/10	Gr. Alpha	0.40 ± 0.05	0.68	0.00 - 1.35	Pass
STW-1200	03/01/10	Gr. Beta	3.03 ± 0.07	3.09	1.55 - 4.64	Pass
STW-1201	03/01/10	Am-241	1.05 ± 0.08	1.30	0.91 - 1.69	Pass
STW-1201	03/01/10	Co-57	28.90 ± 0.40	28.30	19.80 - 36.80	Pass
STW-1201	03/01/10	Co-60	0.06 ± 0.05	0.00	-	Pass
STW-1201	03/01/10	Cs-134	-0.03 ± 0.09	0.00	-	Pass
STW-1201	03/01/10	Cs-137	60.60 ± 0.60	60.60	42.40 - 78.80	Pass
STW-1201	03/01/10	Fe-55	3.00 ± 14.40	0.00	-	Pass
STW-1201	03/01/10	H-3	93.20 ± 18.30	90.80	63.60 - 118.00	Pass
STW-1201	03/01/10	Mn-54	27.80 ± 0.40	26.90	18.80 - 35.00	Pass
STW-1201	03/01/10	Ni-63	49.10 ± 3.50	59.90	41.90 - 77.90	Pass
STW-1201	03/01/10	Sr-90	-0.10 ± 0.60	0.00	-	Pass
STW-1201	03/01/10	Tc-99	0.50 ± 0.50	0.00	-	Pass
STW-1201	03/01/10	U-233/4	1.21 ± 0.05	1.22	0.85 - 1.59	Pass
STW-1201	03/01/10	U-238	1.20 ± 0.05	1.25	0.88 - 1.63	Pass
STW-1201	03/01/10	Zn-65	42.70 ± 0.80	40.70	28.50 - 52.90	Pass
STSO-1202	03/01/10	Co-57	520.00 ± 10.80	522.00	365.00 - 679.00	Pass
STSO-1202	03/01/10	Co-60	599.10 ± 2.80	622.00	435.00 - 809.00	Pass
STSO-1202	03/01/10	Cs-134	666.10 ± 4.70	733.00	513.00 - 953.00	Pass
STSO-1202	03/01/10	Cs-137	774.40 ± 4.50	779.00	545.00 - 1013.00	Pass
STSO-1202	03/01/10	K-40	562.00 ± 15.30	559.00	391.00 - 727.00	Pass
STSO-1202	03/01/10	Mn-54	866.20 ± 4.60	849.00	594.00 - 1104.00	Pass
STSO-1202	03/01/10	Sr-90	225.50 ± 11.80	288.00	202.00 - 374.00	Pass
STSO-1202	03/01/10	U-233/4	59.90 ± 2.50	60.00	42.00 - 78.00	Pass
STSO-1202	03/01/10	U-238	62.10 ± 2.60	64.00	45.00 - 83.00	Pass
STSO-1202	03/01/10	Zn-65	-1.23 ± 1.96	0.00	-	Pass
STAP-1203	03/01/10	Am-241	0.10 ± 0.01	0.15	0.10 - 0.19	Pass
STAP-1203	03/01/10	Co-57	0.01 ± 0.02	0.00	-	Pass
STAP-1203	03/01/10	Co-60	2.63 ± 0.19	2.47	1.73 - 3.22	Pass
STAP-1203	03/01/10	Cs-134	2.21 ± 0.34	2.13	1.49 - 2.77	Pass
STAP-1203	03/01/10	Cs-137	1.66 ± 0.22	1.53	1.07 - 1.99	Pass
STAP-1203	03/01/10	Mn-54	3.42 ± 0.26	3.02	2.11 - 3.93	Pass
STAP-1203	03/01/10	Sr-90	0.02 ± 0.06	0.00	-	Pass
STAP-1203	03/01/10	Zn-65	-0.05 ± 0.11	0.00	-	Pass

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

			Concentration [b]			
Lab Code [c]	Date	Analysis	Laboratory result	Known Activity	Control Limits [d]	Acceptance
STAP-1204	03/01/10	Gr. Alpha	0.13 ± 0.03	0.43	0.00 - 0.85	Pass
STAP-1204	03/01/10	Gr. Beta	1.46 ± 0.07	1.29	0.65 - 1.94	Pass
STW-1211	08/01/10	Am-241	0.02 ± 0.02	0.00	-	Pass
STW-1211	08/01/10	Co-57	36.40 ± 4.80	36.00	25.20 - 46.80	Pass
STW-1211	08/01/10	Co-60	28.30 ± 1.00	28.30	19.80 - 36.80	Pass
STW-1211	08/01/10	Cs-134	29.30 ± 2.10	31.40	22.00 - 40.80	Pass
STW-1211	08/01/10	Cs-137	44.60 ± 1.80	44.20	30.90 - 57.50	Pass
STW-1211	08/01/10	Fe-55	48.50 ± 20.10	60.20	42.10 - 78.30	Pass
STW-1211	08/01/10	H-3	503.60 ± 12.80	453.40	317.40 - 589.40	Pass
STW-1211	08/01/10	K-40	38.50 ± 2.50	38.90	27.20 - 50.60	Pass
STW-1211	08/01/10	Mn-54	0.10 ± 0.30	0.00	-	Pass
STW-1211	08/01/10	Ni-63	49.30 ± 3.10	56.10	39.30 - 72.90	Pass
STW-1211	08/01/10	Pu-238	1.49 ± 0.15	1.81	1.27 - 2.35	Pass
STW-1211	08/01/10	Pu-239/40	1.20 ± 0.10	1.35	0.95 - 1.76	Pass
STW-1211	08/01/10	Sr-90	9.20 ± 1.30	8.30	5.80 - 10.80	Pass
STW-1211	08/01/10	Tc-99	28.10 ± 0.90	33.60	23.50 - 43.70	Pass
STW-1211	08/01/10	U-233/4	2.04 ± 0.14	2.01	1.41 - 2.61	Pass
STW-1211	08/01/10	U-238	2.05 ± 0.14	2.07	1.45 - 2.69	Pass
STW-1211	08/01/10	Zn-65	32.80 ± 3.00	31.00	21.70 - 40.30	Pass
STW-1212	08/01/10	Gr. Alpha	1.54 ± 0.09	1.92	0.58 - 3.26	Pass
STW-1212	08/01/10	Gr. Beta	4.13 ± 0.15	4.39	2.20 - 6.59	Pass
STVE-1213	08/01/10	Co-57	9.60 ± 0.54	8.27	5.79 - 10.75	Pass
STVE-1213	08/01/10	Co-60	0.05 ± 0.08	0.00	-	Pass
STVE-1213	08/01/10	Cs-134	4.83 ± 0.26	4.79	3.35 - 6.23	Pass
STVE-1213	08/01/10	Cs-137	6.45 ± 0.66	5.88	4.12 - 7.64	Pass
STVE-1213	08/01/10	Mn-54	7.12 ± 0.66	6.29	4.40 - 8.17	Pass
STVE-1213	08/01/10	Zn-65	6.05 ± 0.74	5.39	3.77 - 7.01	Pass
STSO-1214	08/01/10	Co-57	0.10 ± 1.60	0.00	-	Pass
STSO-1214	08/01/10	Co-60	370.00 ± 6.00	343.00	240.00 - 446.00	Pass
STSO-1214	08/01/10	Cs-134	1005.00 ± 21.00	940.00	658.00 - 1222.00	Pass
STSO-1214	08/01/10	Cs-137	755.00 ± 15.00	670.00	469.00 - 871.00	Pass
STSO-1214	08/01/10	K-40	783.00 ± 54.00	699.00	489.00 - 909.00	Pass
STSO-1214	08/01/10	Mn-54	942.00 ± 15.00	820.00	574.00 - 1066.00	Pass
STSO-1214	08/01/10	Pu-238	69.20 ± 6.20	64.00	45.00 - 83.00	Pass
STSO-1214	08/01/10	Pu-239/40	76.50 ± 6.20	71.00	50.00 - 92.00	Pass
STSO-1214	08/01/10	Sr-90	3.50 ± 8.00	0.00	-	Pass
STSO-1214	08/01/10	U-233/4	76.50 ± 6.20	71.00	50.00 - 92.00	Pass
STSO-1214	08/01/10	U-238	271.40 ± 9.00	289.00	202.00 - 376.00	Pass
STSO-1214	08/01/10	Zn-65	310.00 ± 18.00	265.00	186.00 - 345.00	Pass

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

			Concentration [b]			
Lab Code [c]	Date	Analysis	Laboratory result	Known Activity	Control Limits [d]	Acceptance
STAP-1204	03/01/10	Gr. Alpha	0.13 ± 0.03	0.43	0.00 - 0.85	Pass
STAP-1204	03/01/10	Gr. Beta	1.46 ± 0.07	1.29	0.65 - 1.94	Pass
STW-1211	08/01/10	Am-241	0.02 ± 0.02	0.00	-	Pass
STW-1211	08/01/10	Co-57	36.40 ± 4.80	36.00	25.20 - 46.80	Pass
STW-1211	08/01/10	Co-60	28.30 ± 1.00	28.30	19.80 - 36.80	Pass
STW-1211	08/01/10	Cs-134	29.30 ± 2.10	31.40	22.00 - 40.80	Pass
STW-1211	08/01/10	Cs-137	44.60 ± 1.80	44.20	30.90 - 57.50	Pass
STW-1211	08/01/10	Fe-55	48.50 ± 20.10	60.20	42.10 - 78.30	Pass
STW-1211	08/01/10	H-3	503.60 ± 12.80	453.40	317.40 - 589.40	Pass
STW-1211	08/01/10	K-40	38.50 ± 2.50	38.90	27.20 - 50.60	
STW-1211	08/01/10	Mn-54	0.10 ± 0.30	0.00	-	Pass
STW-1211	08/01/10	Ni-63	49.30 ± 3.10	56.10	39.30 - 72.90	Pass
STW-1211	08/01/10	Pu-238	1.49 ± 0.15	1.81	1.27 - 2.35	Pass
STW-1211	08/01/10	Pu-239/40	1.20 ± 0.10	1.35	0.95 - 1.76	Pass
STW-1211	08/01/10	Sr-90	9.20 ± 1.30	8.30	5.80 - 10.80	Pass
STW-1211	08/01/10	Tc-99	28.10 ± 0.90	33.60	23.50 - 43.70	Pass
STW-1211	08/01/10	U-233/4	2.04 ± 0.14	2.01	1.41 - 2.61	Pass
STW-1211	08/01/10	U-238	2.05 ± 0.14	2.07	1.45 - 2.69	Pass
STW-1211	08/01/10	Zn-65	32.80 ± 3.00	31.00	21.70 - 40.30	Pass
STW-1212	08/01/10	Gr. Alpha	1.54 ± 0.09	1.92	0.58 - 3.26	Pass
STW-1212	08/01/10	Gr. Beta	4.13 ± 0.15	4.39	2.20 - 6.59	Pass
STVE-1213	08/01/10	Co-57	9.60 ± 0.54	8.27	5.79 - 10.75	Pass
STVE-1213	08/01/10	Co-60	0.05 ± 0.08	0.00	-	Pass
STVE-1213	08/01/10	Cs-134	4.83 ± 0.26	4.79	3.35 - 6.23	Pass
STVE-1213	08/01/10	Cs-137	6.45 ± 0.66	5.88	4.12 - 7.64	Pass
STVE-1213	08/01/10	Mn-54	7.12 ± 0.66	6.29	4.40 - 8.17	Pass
STVE-1213	08/01/10	Zn-65	6.05 ± 0.74	5.39	3.77 - 7.01	Pass
STSO-1214	08/01/10	Co-57	0.10 ± 1.60	0.00	-	Pass
STSO-1214	08/01/10	Co-60	370.00 ± 6.00	343.00	240.00 - 446.00	Pass
STSO-1214	08/01/10	Cs-134	1005.00 ± 21.00	940.00	658.00 - 1222.00	Pass
STSO-1214	08/01/10	Cs-137	755.00 ± 15.00	670.00	469.00 - 871.00	Pass
STSO-1214	08/01/10	K-40	783.00 ± 54.00	699.00	489.00 - 909.00	Pass
STSO-1214	08/01/10	Mn-54	942.00 ± 15.00	820.00	574.00 - 1066.00	Pass
STSO-1214	08/01/10	Pu-238	69.20 ± 6.20	64.00	45.00 - 83.00	Pass
STSO-1214	08/01/10	Pu-239/40	76.50 ± 6.20	71.00	50.00 - 92.00	Pass
STSO-1214	08/01/10	Sr-90	3.50 ± 8.00	0.00	-	Pass
STSO-1214	08/01/10	U-233/4	76.50 ± 6.20	71.00	50.00 - 92.00	Pass
STSO-1214	08/01/10	U-238	271.40 ± 9.00	289.00	202.00 - 376.00	Pass
STSO-1214	08/01/10	Zn-65	310.00 ± 18.00	265.00	186.00 - 345.00	Pass

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

			Concentration [b]			
Lab Code [c]	Date	Analysis	Laboratory result	Known Activity	Control Limits [d]	Acceptance
STAP-1215	08/01/10	Co-57	4.47 ± 0.21	4.08	2.86 - 5.30	Pass
STAP-1215	08/01/10	Co-60	3.15 ± 0.30	2.92	2.04 - 3.80	Pass
STAP-1215	08/01/10	Cs-134	3.03 ± 0.17	2.98	2.09 - 3.87	Pass
STAP-1215	08/01/10	Cs-137	0.01 ± 0.05	0.00	-	Pass
STAP-1215	08/01/10	Mn-54	3.69 ± 0.39	3.18	2.23 - 4.13	Pass
STAP-1215	08/01/10	Sr-90	1.00 ± 0.12	1.01	0.71 - 1.31	Pass
STAP-1215	08/01/10	Zn-65	0.03 ± 0.15	0.00	-	Pass
STAP-1216	08/01/10	Gr. Alpha	0.01 ± 0.01	0.00	-	Pass
STAP-1216	08/01/10	Gr. Beta	0.54 ± 0.05	0.50	0.25 - 0.75	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. A known value of "zero" indicates an analysis was included in the testing series as a "false positive". MAPEP does not provide control limits.

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

Lab Code [b]	Date	Analysis	Concentration (pCi/L) Laboratory Result [c]	ERA Result [d]	Control Limits	Acceptance
STAP-1217	09/20/10	Am-241	55.6 ± 2.9	74.1	43.3 - 102.0	Pass
STAP-1217	09/20/10	Co-60	517.1 ± 9.1	479.0	371.0 - 598.0	Pass
STAP-1217	09/20/10	Cs-134	384.6 ± 33.7	388.0	253.0 - 480.0	Pass
STAP-1217	09/20/10	Cs-137	589.4 ± 7.1	514.0	386.0 - 675.0	Pass
STAP-1217	09/20/10	Mn-54	0.0 ± 0.0	-	-	Pass
STAP-1217	09/20/10	Pu-238	76.5 ± 4.0	72.9	50.0 - 95.8	Pass
STAP-1217	09/20/10	Pu-239/40	73.0 ± 3.8	69.6	50.5 - 90.1	Pass
STAP-1217	09/20/10	Sr-90	172.9 ± 21.3	159.0	70.0 - 247.0	Pass
STAP-1217	09/20/10	U-233/234	64.9 ± 3.9	71.8	45.2 - 106.0	Pass
STAP-1217	09/20/10	U-238	68.0 ± 4.0	71.2	45.6 - 101.0	Pass
STAP-1217	09/20/10	Uranium	135.5 ± 8.7	146.0	74.6 - 232.0	Pass
STAP-1217	09/20/10	Zn-65	563.1 ± 15.3	465.0	322.0 - 644.0	Pass
STAP-1218	09/20/10	Gr. Alpha	66.1 ± 3.2	52.3	27.1 - 78.7	Pass
STAP-1218	09/20/10	Gr. Beta	69.9 ± 2.5	52.7	32.5 - 77.0	Pass
STSO-1219	09/20/10	Ac-228	1632.0 ± 80.4	1830.0	1170.0 - 2580.0	Pass
STSO-1219	09/20/10	Am-241	1063.0 ± 120.9	1120.0	669.0 - 1440.0	Pass
STSO-1219	09/20/10	Bi-212	1752.0 ± 255.6	2070.0	543.0 - 3100.0	Pass
STSO-1219	09/20/10	Bi-214	909.3 ± 38.9	983.0	603.0 - 1410.0	Pass
STSO-1219	09/20/10	Co-60	4852.0 ± 153.5	4780.0	3480.0 - 6420.0	Pass
STSO-1219	09/20/10	Cs-134	2190.0 ± 50.7	2240.0	1440.0 - 2700.0	Pass
STSO-1219	09/20/10	Cs-137	3584.0 ± 42.5	3530.0	2700.0 - 4580.0	Pass
STSO-1219	09/20/10	K-40	10017.0 ± 274.5	10700.0	7760.0 - 14500.0	Pass
STSO-1219	09/20/10	Mn-54	0.0 ± 0.0	-	-	Pass
STSO-1219	09/20/10	Pb-212	1573.0 ± 28.2	1640.0	1060.0 - 2310.0	Pass
STSO-1219	09/20/10	Pb-214	999.0 ± 39.2	969.0	580.0 - 1440.0	Pass
STSO-1219	09/20/10	Pu-238	1568.0 ± 155.0	1280.0	733.0 - 1800.0	Pass
STSO-1219	09/20/10	Pu-239/40	1445.0 ± 142.9	1180.0	805.0 - 1570.0	Pass
STSO-1219 [e]	09/20/10	U-233/234	599.4 ± 69.4	1360.0	862.0 - 1690.0	Fail
STSO-1219 [e]	09/20/10	U-238	633.8 ± 71.3	1340.0	819.0 - 1700.0	Fail
STSO-1219 [e]	09/20/10	Uranium	1248.0 ± 152.7	2770.0	1580.0 - 3740.0	Fail
STSO-1219	09/20/10	Zn-65	2447.0 ± 60.1	2300.0	1820.0 - 3080.0	Pass
STVE-1220	09/20/10	Co-60	1108.0 ± 38.7	1010.0	683.0 - 1450.0	Pass
STVE-1220	09/20/10	Cs-134	1161.0 ± 57.3	1040.0	595.0 - 1440.0	Pass
STVE-1220	09/20/10	Cs-137	1400.0 ± 43.0	1260.0	924.0 - 1750.0	Pass
STVE-1220	09/20/10	K-40	27400.0 ± 683.4	22600.0	16200.0 - 32000.0	Pass
STVE-1220	09/20/10	Mn-54	0.0 ± 0.0	-	-	Pass

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

Lab Code [b]	Date	Analysis	Concentration (pCi/L) Laboratory Result [c]	ERA Result [d]	Control Limits	Acceptance
STVE-1220	09/20/10	Am-241	4185.0 ± 180.0	4760.0	2710.0 - 6540.0	Pass
STVE-1220	09/20/10	Cm-244	2329.0 ± 132.5	2740.0	1350.0 - 4270.0	Pass
STVE-1220	09/20/10	Pu-238	4912.0 ± 194.0	4740.0	2560.0 - 6940.0	Pass
STVE-1220	09/20/10	Pu-239/40	4765.0 ± 111.0	4470.0	2770.0 - 6100.0	Pass
STVE-1220	09/20/10	Sr-90	7706.0 ± 583.9	7810.0	4360.0 - 10400.0	Pass
STVE-1220	09/20/10	U-233/234	3862.0 ± 203.0	4010.0	2750.0 - 5320.0	Pass
STVE-1220	09/20/10	U-238	3926.0 ± 205.3	3980.0	2800.0 - 5030.0	Pass
STVE-1220	09/20/10	Uranium	7671.0 ± 201.2	8180.0	5620.0 - 10600.0	Pass
STVE-1220	09/20/10	Zn-65	1443.0 ± 81.0	1210.0	874.0 - 1650.0	Pass
STW-1221	09/20/10	Am-241	127.9 ± 4.2	176.0	120.0 - 238.0	Pass
STW-1221	09/20/10	Co-60	697.8 ± 10.4	714.0	622.0 - 844.0	Pass
STW-1221	09/20/10	Cs-134	437.5 ± 13.3	492.0	363.0 - 565.0	Pass
STW-1221	09/20/10	Cs-137	612.8 ± 11.6	625.0	531.0 - 749.0	Pass
STW-1221	09/20/10	Fe-55	936.8 ± 508.2	825.0	480.0 - 1100.0	Pass
STW-1221	09/20/10	Mn-54	0.0 ± 0.0	-	-	Pass
STW-1221	09/20/10	Pu-238	148.1 ± 6.0	162.0	122.0 - 201.0	Pass
STW-1221	09/20/10	Pu-239/40	154.1 ± 6.2	148.0	114.0 - 183.0	Pass
STW-1221	09/20/10	Sr-90	872.3 ± 13.4	921.0	585.0 - 1230.0	Pass
STW-1221	09/20/10	U-233/234	99.1 ± 4.4	109.0	82.2 - 140.0	Pass
STW-1221	09/20/10	U-238	103.7 ± 4.5	108.0	82.5 - 134.0	Pass
STW-1221	09/20/10	Uranium	206.5 ± 9.8	221.0	159.0 - 294.0	Pass
STW-1221	09/20/10	Zn-65	489.1 ± 16.2	489.0	414.0 - 610.0	Pass
STW-1222	09/20/10	Gr. Alpha	110.6 ± 3.5	146.0	64.8 - 216.0	Pass
STW-1222	09/20/10	Gr. Beta	134.6 ± 2.6	143.0	83.6 - 210.0	Pass
STW-1223	09/20/10	H-3	23500.0 ± 1438.0	21600.0	14100.0 - 31900.0	Pass

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

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

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

[d] Results are presented as the known values, expected laboratory precision (1 sigma, 1 determination) and control limits as provided by ERA. A known value of "zero" indicates an analysis was included in the testing series as a "false positive". Control limits are not provided.

[e] Analysis was repeated using total dissolution. Results of the reanalysis, U-233/234: 1137 ± 254 pCi/kg, U-238: 1193 ± 116 pCi/kg, Total Uranium: 2379 ± 254 pCi/kg.

APPENDIX B

DATA REPORTING CONVENTIONS

Data Reporting Conventions

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

2.0. Single Measurements

Each single measurement is reported as follows: $x \pm s$
where: x = value of the measurement;
s = 2σ counting uncertainty (corresponding to the 95% confidence level).

In cases where the activity is less than the lower limit of detection L, it is reported as: < L,
where L = the lower limit of detection based on 4.66σ uncertainty for a background sample.

3.0. Duplicate analyses

If duplicate analyses are reported, the convention is as follows. :

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

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

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

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

4.0. Computation of Averages and Standard Deviations

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

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

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

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

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

4.5 In rounding off, the following rules are followed:

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

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

Appendix C. NON-RADIOLOGICAL MONITORING PROGRAM

1.0. Introduction

Union Electric Company, d.b.a. Ameren Missouri, in accordance with federal regulations and a desire to maintain the quality of the local environment around Callaway Plant has implemented an Environmental Protection Plan, (EPP) contained in Appendix B of the Callaway Plant Operating License.

The objective of the EPP is to provide for protection of non-radiological environmental values during operation of the Callaway Plant.

This report describes the conduct of the EPP for the Callaway Plant during 2010.

2.0. Unusual or Important Events

No unusual or important events reportable under the EPP Section 4.1 were identified during 2010.

3.0. EPP Non-compliances

During 2010, there were no non-compliances with the EPP.

4.0. Nonroutine Reports

There were no nonroutine reports submitted in accordance with the EPP, Section 5.4.2 in 2010.

5.0. Plant Design and Operation Environmental Evaluations.

This section lists all changes in the plant design, operation, tests or experiments installed during 2010, which could have involved a potentially significant unreviewed environmental question in accordance with section 3.1 of Appendix B.

During 2010, four plant changes could have involved a potentially significant unreviewed environmental question. The interpretations and conclusions regarding these plant changes along with a description of the change and activity are presented below.

MP 08-0031, Partial Makeup/Discharge Pipe Replacement

Description of Modification:

Modification MP 08-0031 replaced several sections of plant piping including a section of the plant makeup line from Manhole 86-4 (butterfly valve VDB1001) to a flanged tie-in located at the circulating/service water pump house and a section of the blowdown pipe near Manhole 86-2 to a flanged tie-in located at the circulating/service water pump house. The existing Techite piping was replaced with high-density polyethylene (HDPE) which is a more robust material. The old 72" diameter makeup pipe that splits into two 54" diameter pipes was replaced with one 54" diameter HDPE pipe from Manhole 86-4 to the circ/service water pump house. The other 54" pipe was abandoned in place. The tie-in for the existing 18" blowdown piping from Manhole 86-2 to the circ/service water pump house was completed using 18" diameter HDPE. The tie-in of the new blowdown piping, installed under MP 07-0012, to Manhole 86-2 was completed using 30" diameter HDPE. A new 12" diameter HDPE drain line was also installed from the low point of the new 54" makeup pipe to Manhole 86-4A.

In addition, this modification installed a new Manhole 86-2 to tie-in the new 30" and 18" blowdown lines as well as two 6" diameter stainless steel Radwaste liquid effluent lines. Existing Manholes 86-1, 86-2 and 86-3 were abandoned in place. Pipe penetrations into Manholes 86-2 and 86-3 were plugged and the interior surfaces of the manholes coated with Carboline elastomeric polyurethane to seal in any residual radioactive contamination.

Evaluation of Change:

As part of the evaluation, both the Callaway Plant ER and FES-OL were reviewed for any previously evaluated adverse environmental impacts and any new adverse environmental impacts not previously evaluated. This did not change any plant liquid effluents or the concentration of effluents released. The new section of blowdown piping was located within 20 feet of the existing blowdown line while the new section of makeup piping was located within about 50 feet of the existing makeup pipe. Approximately 1.25 acres of land was disturbed between the clearwell and the circulating/service water pump house to complete this modification. The construction area was located within the owner-controlled area and was previously disturbed during plant construction. Storm water runoff was controlled utilizing Best Management Practices and the construction area drained to the NPDES permitted Outfall #011. Previous cultural resource surveys of this area did not identify any significant archaeological sites. The evaluation concluded that installation of the replacement sections of the makeup and blowdown piping did not involve an unreviewed environmental question.

RFR 201000606, New Treatment for WTP Clarifiers & Cooling Tower to Prevent Algae Growth

Description of Modification:

This RFR approves the use of a new chemical additive at Callaway Plant for algae control in the cooling tower and the water treatment plant clarifiers. BULAB 6060 (4% aqueous dispersion of 2-chloro-4,6 dialkylamino-s triazine, CAS #5915-41-3) is utilized in addition to sodium hypochlorite (currently used) to inhibit the growth of algae in these plant systems.

BULAB 6060 is applied to the water treatment plant clarifiers approximately three times per week for a period of six months per year (April through October) at a dosage up to 4 ppm as product at the same times that sodium hypochlorite is applied. The addition of BULAB 6060 works synergistically to allow the sodium hypochlorite to be more effective. The use of this product is also expected to reduce the amount of hypochlorite currently being added to the clarifiers by up to 50%. The cooling tower bypass (Outfall 016) is isolated during this treatment for a minimum of six hours and placed back in service only after the total residual chlorine (TRC) concentration is within limits for discharge.

BULAB 6060 is also added to the circulating/service water system for up to one hour per day up to a maximum concentration of 5 ppm as product to prevent algae growth in the cooling tower basin and cooling tower fill material. The one hour per day addition occurs during the daily chlorination approximately five times during the period from June through September. The use of triazine (BULAB 6060) for both applications results in discharges from Outfall 002, cooling tower blowdown and very infrequent discharges from Outfall 016, cooling tower bypass. The highest concentration expected in the cooling tower basin or the cooling tower bypass is 5 ppm as product. This concentration of BULAB 6060 should not have any significant impact on the quality of the receiving water as significant mixing occurs at the point of discharge to the Missouri River providing a low aquatic toxicity in the Missouri River.

Evaluation of Change:

As part of the Final Environmental Evaluation, both the ER and FES-OL were reviewed for any previously evaluated adverse environmental impacts and any adverse environmental impacts not previously evaluated. No environmental impacts were identified. BULAB 6060 is a non-toxic algal control agent used intermittently with sodium hypochlorite. The cooling tower bypass is isolated during treatment of the water treatment plant clarifiers for a minimum of 6 hours after each addition of BULAB 6060. This product is also utilized in the circulating/service water system for up to one hour per day during the summer months. Some product is discharged in the cooling tower blowdown (Outfall 002) and the cooling tower bypass (Outfall 016), however, the discharge is diluted by other outfalls and the significant mixing that occurs at the point of discharge to the Missouri River. The Missouri Department of Natural Resources was informed in writing of the use of this new product at Callaway on November 24, 2009, as this product was not included in the current NPDES Permit or the most recent permit reapplication. On April 14, 2010, the Missouri DNR issued a minor revision to the NPDES Permit (MO-0098001). The minor permit modification changed the Whole Effluent Toxicity (WET) Acute and Chronic Testing to acknowledge the periodic and potential discharge of the algaecide BULAB 6060 from Outfall 002 and/or Outfall 016. The new NPDES permit was issued April 14, 2010. Based on the new NPDES permit and this evaluation, it was determined that the use of this new product to inhibit the growth of algae does not involve an unreviewed environmental question.

MP 10-0023, Temporary Diesel Generators

Description of Modification:

This modification MP 10-0023 installed five large temporary backup diesel generators, five transformers and associated equipment on the plant south side of the ultimate heat sink (UHS) cooling tower. The temporary diesel generators provided 2 MW per unit (10 MW total) to supplement the two permanent emergency diesel generators (EDGs) in the event of an EDG failure. The five diesel generators are portable trailer mounted units (each 8 X 40 ft) parked on a structurally sound gravel parking area. The diesel generators each contain a 1250 gallon double-walled self-contained fuel oil tank. Five 12,000 pound transformers were installed on concrete pads adjacent to each of the five diesel generators. Each of the transformers contains 387 gallons of oil with no secondary containment device. This modification included some land disturbance (grading and fill replacement) in the area for placement of this heavy equipment. In addition, some minor trenching was performed to run the conduit for completing the tie in to XNB02. Initially, this equipment was expected to remain on site for 18-20 months or longer if required. The temporary generator and associated equipment was removed from the site in April 2011.

Evaluation of Change:

As part of the Final Environmental Evaluation, both the ER and FES-OL were reviewed for any previously evaluated adverse environmental impacts and any adverse environmental impacts not previously evaluated. No environmental impacts were identified. The fuel oil tanks are double walled and are contained within the trailer-mounted unit. Based on design, fuel oil from these units is unlikely to reach the environment. The temporary diesel generators meet the requirements of NSPS for new compression ignition reciprocating internal combustion engines (CI RICE) under 40 CFR 60 Subgroup 1111. The use of the temporary diesel generators was expected to increase air emissions and result in an increased discharge of pollutants. Ameren applied to the Missouri DNR Air Pollution Control Program for a permit to construct and operate these new temporary diesel generators and the Air Permit issued on June 4, 2010. In addition, any leak or spill of transformer oil would be absorbed into the gravel and structural fill located around and beneath this equipment. It is highly unlikely that any oil would reach the storm water ditch that is located approximately 100 feet from the transformers.

The construction area was located within the owner-controlled area and was previously disturbed during plant construction. Based on the issuance of the Air Permit and this evaluation it was concluded that the installation of the temporary diesel generators and associated equipment does not involve an unreviewed environmental question.

MP 10-0032, Non-Safety Auxiliary Feed Pump

Description of Modification:

This modification is for the installation of a non-safety auxiliary feedwater pump, including piping, valves, electrical power, and instrumentation and controls. The suction, discharge and recirculation piping for the new pump connect to the plant systems using existing system connections and isolation valves. A new transformer containing 488 gallons of non-PCB transformer oil with no secondary containment device was installed west of the turbine building near the southwest stairwell. The electrical power for the pump is supplied by the alternate emergency power system. The electrical power for the transformer heaters is supplied by existing electrical distribution panels.

Evaluation of Change:

Since the non-safety auxiliary feedwater pump and associate equipment was installed in an existing plant building, this equipment was excluded from this evaluation. This evaluation looked at the transformer installed on a flat area near the turbine building that is part of the power block seismic backfill. Both the ER and FES-OL were reviewed for any previously evaluated adverse environmental impacts and any new adverse environmental impacts not previously evaluated. No environmental impacts were identified. In addition, any leakage of oil from the transformer would be contained in or absorbed by the granular fill around the transformer. It is highly unlikely that any oil leakage or spillage would reach the storm water drainage or navigable waters of the US. The evaluation concluded that the installation of this equipment does not involve an unreviewed environmental question.

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AMEREN UE, CALLAWAY PLANT
FULTON, MISSOURI
DOCKET NO. 50-483

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM (REMP)

ANNUAL REPORT - PART II
DATA TABULATIONS AND ANALYSES

January 1 to December 31, 2010

Prepared by

ENVIRONMENTAL, Inc.
Midwest Laboratory

Submitted by

Union Electric Co.
dba AmerenUE Corp.

Project No. 8036

Approved : _____

Bronia Grob, M.S.
Laboratory Manager

TABLE OF CONTENTS

LIST OF TABLES

In addition, The following tables may be found in Appendix C:

1.0 INTRODUCTION

The following constitutes a supplement to the Annual Report for the Radiological Environmental Monitoring Program conducted at the AmerenUE, Callaway Plant, Fulton, Missouri in 2010. Results of completed analyses are presented in the attached tables.

For information regarding sampling locations, type and frequency of collection, and sample codes, refer to Part I, Tables 5.1 - 5.2 and Figures 5.1 through 5.8.

Analyses results from additional sampling may be found in Appendix C.

2.0 DATA TABLES

CALLAWAY

Table 1. Air particulates and charcoal cartridges, analyses for gamma-emitting isotopes and I-131 [a].

Collection: Continuous, weekly exchange.

Units: pCi/m^3

Location		CA-A-001							
		Be-7	Co-58	Co-60	Zr-95	Cs-134	Cs-137	Ba-La-140	Ce-144
Required LLDs		-	-	-	-	0.050	0.060	-	-
Date Collected	Vol.								
01-07-10	312	< 0.09	< 0.007	< 0.005	< 0.010	< 0.008	< 0.006	< 0.008	< 0.030
01-14-10	289	< 0.11	< 0.010	< 0.006	< 0.013	< 0.007	< 0.006	< 0.006	< 0.044
01-21-10	280	< 0.10	< 0.008	< 0.007	< 0.012	< 0.007	< 0.007	< 0.017	< 0.040
01-28-10	285	0.09 ± 0.05	< 0.004	< 0.005	< 0.012	< 0.008	< 0.007	< 0.006	< 0.022
02-04-10	287	0.18 ± 0.08	< 0.004	< 0.008	< 0.006	< 0.006	< 0.009	< 0.006	< 0.049
02-11-10	290	0.18 ± 0.09	< 0.006	< 0.004	< 0.018	< 0.005	< 0.009	< 0.005	< 0.040
02-19-10	327	0.26 ± 0.11	< 0.006	< 0.007	< 0.014	< 0.008	< 0.010	< 0.008	< 0.046
02-25-10	243	0.19 ± 0.09	< 0.011	< 0.008	< 0.020	< 0.011	< 0.011	< 0.008	< 0.059
03-04-10	293	0.21 ± 0.09	< 0.005	< 0.010	< 0.011	< 0.005	< 0.008	< 0.009	< 0.024
03-11-10	285	0.26 ± 0.10	< 0.005	< 0.007	< 0.014	< 0.010	< 0.006	< 0.006	< 0.037
03-18-10	288	< 0.07	< 0.006	< 0.004	< 0.014	< 0.005	< 0.006	< 0.007	< 0.026
03-25-10	295	0.23 ± 0.10	< 0.003	< 0.004	< 0.010	< 0.008	< 0.007	< 0.005	< 0.040
04-01-10	340	0.22 ± 0.08	< 0.006	< 0.006	< 0.008	< 0.005	< 0.006	< 0.005	< 0.032
04-08-10	253	0.22 ± 0.11	< 0.009	< 0.011	< 0.016	< 0.008	< 0.007	< 0.011	< 0.050
04-15-10	264	0.31 ± 0.10	< 0.005	< 0.008	< 0.010	< 0.009	< 0.009	< 0.009	< 0.045
04-22-10	274	0.27 ± 0.11	< 0.005	< 0.008	< 0.008	< 0.007	< 0.007	< 0.009	< 0.047
04-29-10	285	0.23 ± 0.11	< 0.006	< 0.011	< 0.014	< 0.008	< 0.006	< 0.009	< 0.047
05-06-10	278	0.31 ± 0.13	< 0.005	< 0.008	< 0.010	< 0.005	< 0.006	< 0.006	< 0.038
05-13-10	286	0.24 ± 0.11	< 0.006	< 0.008	< 0.009	< 0.005	< 0.007	< 0.006	< 0.041
05-20-10	287	< 0.09	< 0.008	< 0.010	< 0.014	< 0.007	< 0.010	< 0.007	< 0.046
05-27-10	289	0.15 ± 0.07	< 0.010	< 0.008	< 0.014	< 0.007	< 0.008	< 0.014	< 0.044
06-02-10	252	0.28 ± 0.14	< 0.007	< 0.009	< 0.023	< 0.010	< 0.008	< 0.009	< 0.055
06-09-10	280	0.22 ± 0.08	< 0.006	< 0.008	< 0.017	< 0.008	< 0.009	< 0.013	< 0.045
06-17-10	305	0.16 ± 0.08	< 0.006	< 0.008	< 0.015	< 0.008	< 0.007	< 0.008	< 0.024
06-24-10	278	0.24 ± 0.11	< 0.008	< 0.013	< 0.015	< 0.009	< 0.007	< 0.010	< 0.033
07-01-10	283	0.18 ± 0.10	< 0.009	< 0.010	< 0.013	< 0.009	< 0.011	< 0.010	< 0.030
07-08-10	284	0.18 ± 0.09	< 0.006	< 0.008	< 0.014	< 0.006	< 0.009	< 0.013	< 0.031
07-15-10	285	0.25 ± 0.10	< 0.006	< 0.008	< 0.010	< 0.009	< 0.006	< 0.009	< 0.037
07-22-10	283	< 0.10	< 0.008	< 0.008	< 0.010	< 0.007	< 0.006	< 0.014	< 0.048
07-29-10	290	0.16 ± 0.08	< 0.005	< 0.009	< 0.019	< 0.007	< 0.008	< 0.008	< 0.033
08-05-10	294	< 0.08	< 0.010	< 0.010	< 0.009	< 0.008	< 0.010	< 0.012	< 0.040
08-12-10	302	< 0.13	< 0.005	< 0.009	< 0.017	< 0.007	< 0.005	< 0.010	< 0.034
08-19-10	260	0.27 ± 0.11	< 0.010	< 0.009	< 0.010	< 0.007	< 0.006	< 0.009	< 0.048
08-26-10	261	0.18 ± 0.09	< 0.007	< 0.009	< 0.017	< 0.008	< 0.007	< 0.007	< 0.048
09-02-10	262	< 0.11	< 0.006	< 0.010	< 0.011	< 0.009	< 0.007	< 0.011	< 0.052
09-09-10	259	0.17 ± 0.09	< 0.011	< 0.009	< 0.009	< 0.006	< 0.007	< 0.013	< 0.057
09-16-10	266	< 0.11	< 0.008	< 0.009	< 0.014	< 0.006	< 0.011	< 0.010	< 0.027
09-23-10	268	0.17 ± 0.08	< 0.004	< 0.013	< 0.013	< 0.008	< 0.010	< 0.008	< 0.047
09-30-10	268	0.19 ± 0.11	< 0.011	< 0.008	< 0.015	< 0.007	< 0.006	< 0.011	< 0.050

[a] Iodine-131 concentrations are < 0.07 pCi/m^3 unless noted otherwise.

CALLAWAY

Table 1. Air particulates and charcoal cartridges, analyses for gamma-emitting isotopes and I-131 [a].

Collection: Continuous, weekly exchange.
Units: pCi/m^3

Location		CA-A-001 (cont.)							
		Be-7	Co-58	Co-60	Zr-95	Cs-134	Cs-137	Ba-La-140	Ce-144
Required LLDs		-	-	-	-	0.050	0.060	-	-
Date Collected									
10-08-10	295	0.20 ± 0.12	< 0.008	< 0.008	< 0.011	< 0.007	< 0.009	< 0.015	< 0.028
10-14-10	235	0.23 ± 0.09	< 0.009	< 0.012	< 0.013	< 0.004	< 0.009	< 0.015	< 0.062
10-21-10	264	0.23 ± 0.10	< 0.012	< 0.010	< 0.011	< 0.007	< 0.006	< 0.012	< 0.058
10-28-10	263	0.23 ± 0.12	< 0.006	< 0.009	< 0.023	< 0.008	< 0.010	< 0.014	< 0.033
11-04-10	268	< 0.11	< 0.009	< 0.010	< 0.013	< 0.011	< 0.009	< 0.012	< 0.043
11-12-10	316	0.15 ± 0.07	< 0.006	< 0.005	< 0.010	< 0.007	< 0.005	< 0.013	< 0.028
11-18-10	227	< 0.09	< 0.008	< 0.010	< 0.016	< 0.009	< 0.009	< 0.008	< 0.053
11-24-10	232	< 0.08	< 0.005	< 0.009	< 0.013	< 0.008	< 0.011	< 0.005	< 0.056
12-02-10	308	< 0.10	< 0.004	< 0.007	< 0.010	< 0.007	< 0.005	< 0.016	< 0.048
12-09-10	276	0.13 ± 0.07	< 0.004	< 0.007	< 0.013	< 0.006	< 0.005	< 0.009	< 0.040
12-16-10	274	0.13 ± 0.06	< 0.006	< 0.005	< 0.009	< 0.005	< 0.008	< 0.007	< 0.031
12-22-10	232	< 0.09	< 0.007	< 0.004	< 0.015	< 0.006	< 0.008	< 0.007	< 0.041
12-30-10	332	< 0.08	< 0.006	< 0.010	< 0.012	< 0.007	< 0.004	< 0.008	< 0.032

[a] Iodine-131 concentrations are < 0.07 pCi/m^3 unless noted otherwise.

CALLAWAY

Table 1. Air particulates and charcoal cartridges, analyses for gamma-emitting isotopes and I-131 [a].

Collection: Continuous, weekly exchange.

Units: pCi/m^3

Location		CA-A-007							
		Be-7	Co-58	Co-60	Zr-95	Cs-134	Cs-137	Ba-La-140	Ce-144
Required LLDs		-	-	-	-	0.050	0.060	-	-
Date Collected									
01-07-10	351	0.11 ± 0.07	< 0.005	< 0.005	< 0.014	< 0.006	< 0.007	< 0.007	< 0.029
01-14-10	277	< 0.10	< 0.009	< 0.005	< 0.016	< 0.007	< 0.006	< 0.013	< 0.047
01-21-10	262	< 0.12	< 0.008	< 0.011	< 0.019	< 0.010	< 0.011	< 0.008	< 0.060
01-28-10	264	0.16 ± 0.08	< 0.006	< 0.007	< 0.013	< 0.008	< 0.005	< 0.006	< 0.041
02-04-10	283	0.20 ± 0.12	< 0.006	< 0.006	< 0.009	< 0.007	< 0.007	< 0.006	< 0.028
02-11-10	274	< 0.09	< 0.003	< 0.005	< 0.009	< 0.008	< 0.006	< 0.006	< 0.042
02-19-10	295	0.27 ± 0.11	< 0.010	< 0.005	< 0.018	< 0.007	< 0.005	< 0.008	< 0.050
02-25-10	223	< 0.13	< 0.009	< 0.006	< 0.017	< 0.012	< 0.010	< 0.015	< 0.041
03-04-10	263	< 0.09	< 0.009	< 0.008	< 0.016	< 0.009	< 0.005	< 0.007	< 0.043
03-11-10	245	0.21 ± 0.12	< 0.008	< 0.008	< 0.017	< 0.009	< 0.006	< 0.010	< 0.058
03-18-10	266	< 0.08	< 0.008	< 0.009	< 0.011	< 0.007	< 0.009	< 0.012	< 0.033
03-25-10	273	0.15 ± 0.08	< 0.004	< 0.005	< 0.016	< 0.006	< 0.010	< 0.008	< 0.031
04-01-10	293	0.30 ± 0.08	< 0.006	< 0.005	< 0.014	< 0.004	< 0.006	< 0.005	< 0.041
04-08-10	304	0.25 ± 0.11	< 0.005	< 0.006	< 0.011	< 0.009	< 0.004	< 0.009	< 0.032
04-15-10	327	0.37 ± 0.11	< 0.007	< 0.003	< 0.011	< 0.007	< 0.007	< 0.011	< 0.044
04-22-10	345	0.24 ± 0.09	< 0.006	< 0.006	< 0.007	< 0.004	< 0.004	< 0.005	< 0.036
04-29-10	280	0.19 ± 0.11	< 0.007	< 0.006	< 0.016	< 0.010	< 0.008	< 0.013	< 0.049
05-06-10	277	0.35 ± 0.10	< 0.006	< 0.008	< 0.017	< 0.007	< 0.005	< 0.010	< 0.024
05-13-10	276	0.20 ± 0.09	< 0.005	< 0.009	< 0.010	< 0.006	< 0.007	< 0.009	< 0.034
05-20-10	272	< 0.09	< 0.003	< 0.009	< 0.014	< 0.007	< 0.006	< 0.008	< 0.052
05-27-10	274	< 0.11	< 0.007	< 0.012	< 0.009	< 0.007	< 0.006	< 0.010	< 0.049
06-02-10	236	< 0.13	< 0.007	< 0.011	< 0.019	< 0.010	< 0.014	< 0.010	< 0.035
06-09-10	265	0.17 ± 0.08	< 0.009	< 0.007	< 0.014	< 0.005	< 0.009	< 0.011	< 0.047
06-17-10	293	< 0.07	< 0.005	< 0.008	< 0.015	< 0.004	< 0.005	< 0.009	< 0.047
06-24-10	274	0.23 ± 0.10	< 0.009	< 0.009	< 0.015	< 0.008	< 0.007	< 0.013	< 0.042
07-01-10	281	0.22 ± 0.11	< 0.009	< 0.010	< 0.015	< 0.008	< 0.005	< 0.014	< 0.038
07-08-10	302	0.16 ± 0.08	< 0.008	< 0.007	< 0.020	< 0.005	< 0.008	< 0.020	< 0.030
07-15-10	295	0.20 ± 0.10	< 0.006	< 0.008	< 0.019	< 0.006	< 0.006	< 0.013	< 0.032
07-22-10	301	< 0.10	< 0.005	< 0.008	< 0.015	< 0.004	< 0.008	< 0.006	< 0.039
07-29-10	304	0.20 ± 0.08	< 0.008	< 0.006	< 0.017	< 0.006	< 0.007	< 0.008	< 0.049
08-05-10	300	< 0.08	< 0.007	< 0.010	< 0.010	< 0.006	< 0.009	< 0.007	< 0.035
08-12-10	320	0.21 ± 0.09	< 0.005	< 0.007	< 0.011	< 0.004	< 0.007	< 0.006	< 0.024
08-19-10	314	0.18 ± 0.07	< 0.006	< 0.008	< 0.012	< 0.008	< 0.008	< 0.006	< 0.036
08-26-10	288	< 0.09	< 0.009	< 0.009	< 0.020	< 0.010	< 0.008	< 0.009	< 0.053
09-02-10	264	< 0.10	< 0.007	< 0.009	< 0.011	< 0.004	< 0.007	< 0.007	< 0.038
09-09-10	262	< 0.11	< 0.007	< 0.009	< 0.015	< 0.008	< 0.009	< 0.008	< 0.052
09-16-10	256	< 0.12	< 0.007	< 0.010	< 0.012	< 0.007	< 0.006	< 0.011	< 0.050
09-23-10	251	0.19 ± 0.10	< 0.007	< 0.008	< 0.015	< 0.007	< 0.006	< 0.008	< 0.040
09-30-10	283	0.23 ± 0.09	< 0.010	< 0.011	< 0.016	< 0.009	< 0.006	< 0.010	< 0.029

[a] Iodine-131 concentrations are < 0.07 pCi/m^3 unless noted otherwise.

CALLAWAY

Table 1. Air particulates and charcoal cartridges, analyses for gamma-emitting isotopes and I-131 [a].

Collection: Continuous, weekly exchange.

Units: pCi/m^3

Location		CA-A-007 (cont.)							
		Be-7	Co-58	Co-60	Zr-95	Cs-134	Cs-137	Ba-La-140	Ce-144
Required LLDs		-	-	-	-	0.050	0.060	-	-
Date Collected									
10-08-10	297	0.26 ± 0.10	< 0.008	< 0.007	< 0.014	< 0.006	< 0.010	< 0.014	< 0.031
10-14-10	214	< 0.13	< 0.013	< 0.011	< 0.018	< 0.010	< 0.008	< 0.021	< 0.051
10-21-10	266	0.27 ± 0.11	< 0.008	< 0.009	< 0.015	< 0.009	< 0.008	< 0.015	< 0.051
10-28-10	265	0.21 ± 0.09	< 0.008	< 0.008	< 0.013	< 0.009	< 0.010	< 0.020	< 0.052
11-04-10	273	0.20 ± 0.10	< 0.005	< 0.010	< 0.012	< 0.010	< 0.006	< 0.012	< 0.034
11-12-10	309	0.24 ± 0.11	< 0.007	< 0.004	< 0.013	< 0.005	< 0.004	< 0.017	< 0.044
11-18-10	239	< 0.16	< 0.010	< 0.010	< 0.018	< 0.010	< 0.011	< 0.029	< 0.050
11-24-10	246	< 0.12	< 0.007	< 0.008	< 0.013	< 0.008	< 0.010	< 0.033	< 0.061
12-02-10	326	< 0.11	< 0.008	< 0.008	< 0.013	< 0.008	< 0.007	< 0.021	< 0.048
12-09-10	287	< 0.10	< 0.008	< 0.009	< 0.018	< 0.007	< 0.008	< 0.015	< 0.034
12-16-10	284	0.16 ± 0.09	< 0.006	< 0.008	< 0.016	< 0.007	< 0.006	< 0.010	< 0.039
12-22-10	251	< 0.10	< 0.005	< 0.004	< 0.006	< 0.007	< 0.007	< 0.007	< 0.042
12-30-10	334	< 0.06	< 0.004	< 0.004	< 0.007	< 0.004	< 0.005	< 0.004	< 0.027

[a] Iodine-131 concentrations are < 0.07 pCi/m^3 unless noted otherwise.

CALLAWAY

Table 1. Air particulates and charcoal cartridges, analyses for gamma-emitting isotopes and I-131 [a].

Collection: Continuous, weekly exchange.

Units: pCi/m^3

Location		CA-A-008							
		Be-7	Co-58	Co-60	Zr-95	Cs-134	Cs-137	Ba-La-140	Ce-144
Required LLDs		-	-	-	-	0.050	0.060	-	-
Date Collected									
01-07-10	264	< 0.12	< 0.012	< 0.011	< 0.022	< 0.009	< 0.009	< 0.011	< 0.052
01-14-10	262	0.19 ± 0.09	< 0.010	< 0.005	< 0.018	< 0.009	< 0.008	< 0.020	< 0.036
01-21-10	248	0.16 ± 0.09	< 0.008	< 0.009	< 0.010	< 0.007	< 0.009	< 0.010	< 0.051
01-28-10	259	< 0.08	< 0.006	< 0.005	< 0.014	< 0.007	< 0.007	< 0.007	< 0.052
02-04-10	286	0.24 ± 0.13	< 0.005	< 0.009	< 0.012	< 0.007	< 0.007	< 0.006	< 0.024
02-11-10	246	< 0.08	< 0.009	< 0.008	< 0.010	< 0.010	< 0.007	< 0.006	< 0.044
02-18-10	287	0.17 ± 0.10	< 0.009	< 0.009	< 0.017	< 0.009	< 0.006	< 0.016	< 0.061
02-25-10	223	0.15 ± 0.08	< 0.011	< 0.015	< 0.019	< 0.010	< 0.007	< 0.018	< 0.063
03-04-10	248	< 0.11	< 0.008	< 0.007	< 0.012	< 0.009	< 0.007	< 0.009	< 0.038
03-11-10	245	0.22 ± 0.08	< 0.006	< 0.007	< 0.012	< 0.007	< 0.006	< 0.005	< 0.044
03-18-10	256	< 0.10	< 0.009	< 0.009	< 0.008	< 0.007	< 0.006	< 0.011	< 0.038
03-25-10	257	0.27 ± 0.12	< 0.007	< 0.004	< 0.010	< 0.009	< 0.008	< 0.006	< 0.047
04-01-10	283	0.24 ± 0.09	< 0.003	< 0.005	< 0.016	< 0.007	< 0.005	< 0.005	< 0.045
04-08-10	273	0.20 ± 0.11	< 0.007	< 0.008	< 0.011	< 0.009	< 0.007	< 0.008	< 0.042
04-15-10	294	0.39 ± 0.10	< 0.007	< 0.011	< 0.014	< 0.007	< 0.010	< 0.010	< 0.053
04-22-10	196	0.39 ± 0.12	< 0.008	< 0.011	< 0.018	< 0.010	< 0.006	< 0.010	< 0.067
04-29-10	288	0.14 ± 0.08	< 0.004	< 0.009	< 0.013	< 0.009	< 0.009	< 0.011	< 0.042
05-06-10	267	0.25 ± 0.11	< 0.008	< 0.009	< 0.009	< 0.007	< 0.008	< 0.007	< 0.036
05-13-10	267	0.19 ± 0.08	< 0.007	< 0.010	< 0.014	< 0.007	< 0.005	< 0.011	< 0.047
05-20-10	275	0.16 ± 0.09	< 0.008	< 0.009	< 0.013	< 0.005	< 0.007	< 0.007	< 0.037
05-27-10	281	< 0.10	< 0.009	< 0.007	< 0.014	< 0.005	< 0.011	< 0.014	< 0.045
06-02-10	241	0.29 ± 0.11	< 0.008	< 0.008	< 0.017	< 0.010	< 0.011	< 0.010	< 0.043
06-09-10	266	0.18 ± 0.08	< 0.008	< 0.008	< 0.013	< 0.009	< 0.008	< 0.011	< 0.050
06-17-10	288	< 0.08	< 0.006	< 0.008	< 0.011	< 0.008	< 0.009	< 0.007	< 0.036
06-24-10	265	< 0.10	< 0.007	< 0.009	< 0.016	< 0.009	< 0.010	< 0.013	< 0.040
07-01-10	265	0.22 ± 0.09	< 0.008	< 0.009	< 0.013	< 0.007	< 0.005	< 0.013	< 0.043
07-08-10	265	0.21 ± 0.11	< 0.005	< 0.008	< 0.021	< 0.008	< 0.006	< 0.014	< 0.049
07-15-10	263	< 0.14	< 0.009	< 0.014	< 0.011	< 0.009	< 0.009	< 0.015	< 0.050
07-22-10	263	< 0.10	< 0.008	< 0.008	< 0.015	< 0.009	< 0.009	< 0.008	< 0.043
07-29-10	259	0.20 ± 0.09	< 0.006	< 0.008	< 0.015	< 0.008	< 0.006	< 0.010	< 0.048
08-05-10	256	0.16 ± 0.08	< 0.010	< 0.009	< 0.011	< 0.009	< 0.013	< 0.008	< 0.040
08-12-10	257	< 0.15	< 0.009	< 0.009	< 0.012	< 0.010	< 0.007	< 0.012	< 0.040
08-19-10	256	< 0.11	< 0.010	< 0.013	< 0.016	< 0.007	< 0.010	< 0.017	< 0.046
08-26-10	259	0.20 ± 0.11	< 0.007	< 0.009	< 0.016	< 0.009	< 0.006	< 0.006	< 0.046
09-02-10	261	0.14 ± 0.08	< 0.009	< 0.009	< 0.012	< 0.008	< 0.008	< 0.008	< 0.039
09-09-10	273	< 0.10	< 0.007	< 0.010	< 0.012	< 0.007	< 0.005	< 0.008	< 0.040
09-16-10	265	0.21 ± 0.10	< 0.006	< 0.009	< 0.012	< 0.008	< 0.007	< 0.008	< 0.048
09-23-10	268	< 0.09	< 0.008	< 0.008	< 0.017	< 0.009	< 0.009	< 0.013	< 0.046
09-30-10	282	0.20 ± 0.10	< 0.010	< 0.007	< 0.015	< 0.007	< 0.006	< 0.011	< 0.051

[a] Iodine-131 concentrations are < 0.07 pCi/m^3 unless noted otherwise.

CALLAWAY

Table 1. Air particulates and charcoal cartridges, analyses for gamma-emitting isotopes and I-131 [a].

Collection: Continuous, weekly exchange.

Units: pCi/m^3

Location		CA-A-008 (cont.)							
		Be-7	Co-58	Co-60	Zr-95	Cs-134	Cs-137	Ba-La-140	Ce-144
Required LLDs		-	-	-	-	0.050	0.060	-	-
Date Collected									
10-08-10	349	0.20 ± 0.09	< 0.005	< 0.011	< 0.013	< 0.006	< 0.004	< 0.015	< 0.037
10-14-10	281	0.26 ± 0.12	< 0.010	< 0.007	< 0.015	< 0.008	< 0.006	< 0.017	< 0.039
10-21-10	248	0.25 ± 0.15	< 0.008	< 0.011	< 0.017	< 0.010	< 0.010	< 0.022	< 0.035
10-28-10	257	0.22 ± 0.11	< 0.009	< 0.010	< 0.013	< 0.008	< 0.009	< 0.014	< 0.056
11-04-10	261	< 0.11	< 0.006	< 0.008	< 0.013	< 0.008	< 0.009	< 0.019	< 0.042
11-12-10	300	< 0.11	< 0.008	< 0.003	< 0.013	< 0.005	< 0.007	< 0.018	< 0.036
11-18-10	234	0.17 ± 0.09	< 0.006	< 0.009	< 0.016	< 0.010	< 0.014	< 0.008	< 0.034
11-24-10	236	< 0.13	< 0.010	< 0.013	< 0.022	< 0.005	< 0.010	< 0.032	< 0.048
12-02-10	304	0.16 ± 0.09	< 0.008	< 0.005	< 0.016	< 0.005	< 0.007	< 0.014	< 0.033
12-09-10	268	< 0.09	< 0.010	< 0.004	< 0.010	< 0.007	< 0.010	< 0.009	< 0.048
12-16-10	276	< 0.10	< 0.006	< 0.009	< 0.019	< 0.010	< 0.006	< 0.011	< 0.054
12-22-10	250	< 0.11	< 0.012	< 0.012	< 0.011	< 0.006	< 0.014	< 0.010	< 0.053
12-30-10	343	< 0.08	< 0.006	< 0.010	< 0.013	< 0.006	< 0.006	< 0.006	< 0.040

[a] Iodine-131 concentrations are < 0.07 pCi/m^3 unless noted otherwise.

CALLAWAY

Table 1. Air particulates and charcoal cartridges, analyses for gamma-emitting isotopes and I-131 [a].

Collection: Continuous, weekly exchange.

Units: pCi/m^3

Location		CA-A-009							
		Be-7	Co-58	Co-60	Zr-95	Cs-134	Cs-137	Ba-La-140	Ce-144
Required LLDs		-	-	-	-	0.050	0.060	-	-
Date Collected									
01-07-10	371	0.18 ± 0.09	< 0.003	< 0.004	< 0.015	< 0.003	< 0.005	< 0.007	< 0.028
01-14-10	284	< 0.11	< 0.009	< 0.004	< 0.014	< 0.008	< 0.006	< 0.010	< 0.045
01-21-10	285	< 0.08	< 0.008	< 0.004	< 0.010	< 0.004	< 0.004	< 0.015	< 0.036
01-28-10	295	< 0.08	< 0.003	< 0.004	< 0.015	< 0.005	< 0.008	< 0.007	< 0.024
02-04-10	323	0.14 ± 0.07	< 0.003	< 0.005	< 0.009	< 0.005	< 0.005	< 0.010	< 0.047
02-11-10	296	0.13 ± 0.07	< 0.004	< 0.004	< 0.008	< 0.005	< 0.006	< 0.005	< 0.023
02-19-10	353	0.21 ± 0.09	< 0.008	< 0.008	< 0.009	< 0.006	< 0.005	< 0.014	< 0.036
02-25-10	262	< 0.13	< 0.008	< 0.011	< 0.017	< 0.009	< 0.005	< 0.012	< 0.030
03-04-10	313	0.22 ± 0.08	< 0.006	< 0.006	< 0.019	< 0.007	< 0.008	< 0.006	< 0.028
03-11-10	327	0.24 ± 0.11	< 0.007	< 0.005	< 0.017	< 0.007	< 0.006	< 0.005	< 0.029
03-18-10	353	< 0.08	< 0.005	< 0.004	< 0.014	< 0.006	< 0.006	< 0.009	< 0.028
03-25-10	276	0.23 ± 0.09	< 0.004	< 0.005	< 0.008	< 0.005	< 0.005	< 0.006	< 0.034
04-01-10	292	0.23 ± 0.09	< 0.003	< 0.005	< 0.012	< 0.005	< 0.007	< 0.005	< 0.045
04-08-10	277	0.25 ± 0.10	< 0.006	< 0.007	< 0.009	< 0.006	< 0.005	< 0.008	< 0.042
04-15-10	306	0.41 ± 0.12	< 0.005	< 0.007	< 0.011	< 0.007	< 0.007	< 0.009	< 0.036
04-22-10	337	0.24 ± 0.10	< 0.005	< 0.006	< 0.007	< 0.005	< 0.004	< 0.006	< 0.034
04-29-10	271	0.16 ± 0.09	< 0.009	< 0.007	< 0.008	< 0.008	< 0.007	< 0.013	< 0.058
05-06-10	273	0.33 ± 0.11	< 0.007	< 0.008	< 0.008	< 0.007	< 0.006	< 0.011	< 0.040
05-13-10	273	0.26 ± 0.13	< 0.007	< 0.006	< 0.014	< 0.009	< 0.011	< 0.011	< 0.065
05-20-10	281	< 0.10	< 0.007	< 0.010	< 0.016	< 0.009	< 0.007	< 0.007	< 0.039
05-27-10	282	< 0.10	< 0.009	< 0.008	< 0.021	< 0.008	< 0.008	< 0.013	< 0.057
06-02-10	246	0.22 ± 0.11	< 0.007	< 0.011	< 0.018	< 0.008	< 0.008	< 0.009	< 0.048
06-09-10	276	0.24 ± 0.10	< 0.005	< 0.008	< 0.015	< 0.010	< 0.006	< 0.011	< 0.030
06-17-10	300	0.21 ± 0.12	< 0.008	< 0.009	< 0.012	< 0.011	< 0.006	< 0.011	< 0.044
06-24-10	276	0.18 ± 0.10	< 0.006	< 0.009	< 0.015	< 0.009	< 0.008	< 0.010	< 0.048
07-01-10	281	0.17 ± 0.09	< 0.008	< 0.009	< 0.012	< 0.008	< 0.006	< 0.010	< 0.041
07-08-10	265	0.15 ± 0.09	< 0.010	< 0.010	< 0.015	< 0.009	< 0.009	< 0.033	< 0.049
07-15-10	289	< 0.10	< 0.005	< 0.008	< 0.010	< 0.006	< 0.005	< 0.008	< 0.026
07-22-10	295	0.21 ± 0.07	< 0.005	< 0.008	< 0.008	< 0.006	< 0.005	< 0.006	< 0.051
07-29-10	299	< 0.08	< 0.007	< 0.007	< 0.010	< 0.006	< 0.007	< 0.009	< 0.042
08-05-10	308	< 0.08	< 0.004	< 0.009	< 0.007	< 0.007	< 0.010	< 0.010	< 0.035
08-12-10	322	0.19 ± 0.10	< 0.007	< 0.007	< 0.020	< 0.006	< 0.006	< 0.006	< 0.030
08-19-10	328	0.15 ± 0.06	< 0.004	< 0.006	< 0.011	< 0.007	< 0.009	< 0.006	< 0.036
08-26-10	346	< 0.09	< 0.004	< 0.006	< 0.009	< 0.006	< 0.005	< 0.006	< 0.041
09-02-10	264	< 0.09	< 0.006	< 0.008	< 0.011	< 0.007	< 0.008	< 0.007	< 0.038
09-09-10	278	0.25 ± 0.12	< 0.006	< 0.012	< 0.021	< 0.009	< 0.011	< 0.015	< 0.036
09-16-10	271	0.13 ± 0.07	< 0.008	< 0.009	< 0.015	< 0.007	< 0.009	< 0.014	< 0.044
09-23-10	274	0.26 ± 0.11	< 0.010	< 0.007	< 0.011	< 0.009	< 0.009	< 0.010	< 0.055
09-30-10	287	0.23 ± 0.10	< 0.005	< 0.009	< 0.011	< 0.008	< 0.010	< 0.014	< 0.030

[a] Iodine-131 concentrations are < 0.07 pCi/m^3 unless noted otherwise.

CALLAWAY

Table 1. Air particulates and charcoal cartridges, analyses for gamma-emitting isotopes and I-131 [a].

Collection: Continuous, weekly exchange.
Units: pCi/m^3

Location		CA-A-009 (cont.)							
		Be-7	Co-58	Co-60	Zr-95	Cs-134	Cs-137	Ba-La-140	Ce-144
Required LLDs		-	-	-	-	0.050	0.060	-	-
Date Collected									
10-08-10	340	0.20 ± 0.10	< 0.007	< 0.006	< 0.012	< 0.005	< 0.006	< 0.015	< 0.029
10-14-10	246	0.27 ± 0.15	< 0.011	< 0.008	< 0.014	< 0.008	< 0.011	< 0.021	< 0.032
10-21-10	281	0.21 ± 0.12	< 0.006	< 0.009	< 0.014	< 0.008	< 0.007	< 0.018	< 0.048
10-28-10	285	0.23 ± 0.09	< 0.006	< 0.009	< 0.017	< 0.008	< 0.014	< 0.012	< 0.038
11-04-10	294	0.18 ± 0.08	< 0.009	< 0.010	< 0.019	< 0.005	< 0.008	< 0.009	< 0.049
11-12-10	327	0.24 ± 0.12	< 0.011	< 0.007	< 0.017	< 0.006	< 0.007	< 0.035	< 0.041
11-18-10	250	< 0.15	< 0.008	< 0.011	< 0.025	< 0.010	< 0.008	< 0.041	< 0.056
11-24-10	260	< 0.10	< 0.012	< 0.013	< 0.028	< 0.004	< 0.009	< 0.027	< 0.030
12-02-10	349	< 0.09	< 0.005	< 0.007	< 0.013	< 0.007	< 0.008	< 0.013	< 0.045
12-09-10	313	0.14 ± 0.06	< 0.007	< 0.005	< 0.010	< 0.005	< 0.005	< 0.011	< 0.035
12-16-10	300	< 0.08	< 0.005	< 0.007	< 0.012	< 0.007	< 0.007	< 0.008	< 0.046
12-22-10	269	< 0.06	< 0.006	< 0.004	< 0.011	< 0.010	< 0.007	< 0.007	< 0.049
12-30-10	342	< 0.07	< 0.006	< 0.006	< 0.011	< 0.006	< 0.007	< 0.005	< 0.039

[a] Iodine-131 concentrations are < 0.07 pCi/m^3 unless noted otherwise.

CALLAWAY

Table 1. Air particulates and charcoal cartridges, analyses for gamma-emitting isotopes and I-131 [a].

Collection: Continuous, weekly exchange.

Units: pCi/m^3

Location		CA-B-003							
		Be-7	Co-58	Co-60	Zr-95	Cs-134	Cs-137	Ba-La-140	Ce-144
Required LLDs		-	-	-	-	0.050	0.060	-	-
Date Collected									
01-07-10	371	< 0.08	< 0.006	< 0.003	< 0.009	< 0.005	< 0.007	< 0.014	< 0.031
01-14-10	312	< 0.10	< 0.004	< 0.005	< 0.015	< 0.005	< 0.005	< 0.011	< 0.030
01-21-10	313	0.13 ± 0.08	< 0.002	< 0.004	< 0.008	< 0.005	< 0.006	< 0.008	< 0.042
01-28-10	331	< 0.06	< 0.002	< 0.004	< 0.011	< 0.006	< 0.005	< 0.005	< 0.028
02-04-10	278	0.20 ± 0.09	< 0.007	< 0.004	< 0.008	< 0.006	< 0.009	< 0.006	< 0.025
02-11-10	274	0.20 ± 0.08	< 0.005	< 0.007	< 0.011	< 0.006	< 0.007	< 0.006	< 0.053
02-19-10	315	0.27 ± 0.10	< 0.007	< 0.005	< 0.017	< 0.006	< 0.004	< 0.011	< 0.028
02-25-10	235	0.23 ± 0.10	< 0.010	< 0.006	< 0.019	< 0.011	< 0.012	< 0.017	< 0.049
03-04-10	280	< 0.09	< 0.006	< 0.007	< 0.010	< 0.006	< 0.010	< 0.009	< 0.031
03-11-10	272	< 0.13	< 0.007	< 0.010	< 0.013	< 0.008	< 0.009	< 0.007	< 0.063
03-18-10	273	< 0.07	< 0.008	< 0.008	< 0.016	< 0.011	< 0.009	< 0.010	< 0.048
03-25-10	277	0.18 ± 0.10	< 0.006	< 0.005	< 0.019	< 0.006	< 0.007	< 0.006	< 0.031
04-01-10	298	0.28 ± 0.09	< 0.005	< 0.007	< 0.013	< 0.005	< 0.008	< 0.005	< 0.042
04-08-10	306	0.24 ± 0.07	< 0.006	< 0.003	< 0.011	< 0.004	< 0.007	< 0.008	< 0.023
04-15-10	360	0.36 ± 0.08	< 0.004	< 0.006	< 0.009	< 0.004	< 0.004	< 0.009	< 0.031
04-22-10	259	0.29 ± 0.11	< 0.005	< 0.008	< 0.020	< 0.007	< 0.009	< 0.009	< 0.052
04-29-10	265	0.15 ± 0.09	< 0.005	< 0.010	< 0.015	< 0.010	< 0.010	< 0.012	< 0.045
05-06-10	278	0.32 ± 0.11	< 0.005	< 0.008	< 0.010	< 0.008	< 0.009	< 0.007	< 0.035
05-13-10	278	0.28 ± 0.10	< 0.005	< 0.012	< 0.013	< 0.009	< 0.007	< 0.009	< 0.038
05-20-10	263	< 0.11	< 0.009	< 0.008	< 0.014	< 0.010	< 0.009	< 0.012	< 0.036
05-27-10	274	0.16 ± 0.09	< 0.009	< 0.007	< 0.015	< 0.005	< 0.008	< 0.014	< 0.039
06-02-10	228	0.19 ± 0.11	< 0.009	< 0.009	< 0.013	< 0.010	< 0.008	< 0.015	< 0.034
06-09-10	251	0.18 ± 0.10	< 0.007	< 0.012	< 0.015	< 0.007	< 0.010	< 0.013	< 0.042
06-17-10	303	< 0.08	< 0.005	< 0.007	< 0.013	< 0.006	< 0.005	< 0.007	< 0.045
06-24-10	252	0.28 ± 0.11	< 0.008	< 0.008	< 0.010	< 0.008	< 0.009	< 0.012	< 0.039
07-01-10	274	0.20 ± 0.10	< 0.009	< 0.010	< 0.016	< 0.005	< 0.009	< 0.013	< 0.045
07-08-10	257	< 0.10	< 0.013	< 0.010	< 0.017	< 0.010	< 0.006	< 0.031	< 0.049
07-15-10	262	0.16 ± 0.09	< 0.005	< 0.009	< 0.016	< 0.005	< 0.006	< 0.010	< 0.048
07-22-10	266	0.19 ± 0.10	< 0.006	< 0.009	< 0.022	< 0.005	< 0.006	< 0.009	< 0.035
07-29-10	256	< 0.10	< 0.009	< 0.007	< 0.018	< 0.007	< 0.009	< 0.010	< 0.030
08-05-10	253	< 0.10	< 0.009	< 0.008	< 0.019	< 0.008	< 0.007	< 0.011	< 0.032
08-12-10	256	0.22 ± 0.11	< 0.010	< 0.008	< 0.009	< 0.008	< 0.007	< 0.014	< 0.042
08-19-10	250	0.19 ± 0.08	< 0.005	< 0.010	< 0.019	< 0.007	< 0.008	< 0.016	< 0.040
08-26-10	346	0.11 ± 0.06	< 0.006	< 0.007	< 0.010	< 0.003	< 0.005	< 0.005	< 0.037
09-02-10	282	< 0.08	< 0.006	< 0.009	< 0.010	< 0.003	< 0.005	< 0.006	< 0.024
09-09-10	289	0.21 ± 0.10	< 0.006	< 0.010	< 0.014	< 0.005	< 0.007	< 0.011	< 0.036
09-16-10	295	0.14 ± 0.08	< 0.008	< 0.008	< 0.015	< 0.008	< 0.009	< 0.014	< 0.042
09-23-10	288	0.24 ± 0.11	< 0.005	< 0.008	< 0.009	< 0.008	< 0.008	< 0.018	< 0.039
09-30-10	290	0.26 ± 0.09	< 0.004	< 0.010	< 0.016	< 0.005	< 0.006	< 0.014	< 0.026

[a] Iodine-131 concentrations are < 0.07 pCi/m^3 unless noted otherwise.

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Table 1. Air particulates and charcoal cartridges, analyses for gamma-emitting isotopes and I-131 [a].

Collection: Continuous, weekly exchange.
Units: pCi/m^3

Location		CA-B-003 (cont.)							
		Be-7	Co-58	Co-60	Zr-95	Cs-134	Cs-137	Ba-La-140	Ce-144
Required LLDs		-	-	-	-	0.050	0.060	-	-
Date Collected									
10-08-10	340	0.28 ± 0.10	< 0.006	< 0.007	< 0.012	< 0.007	< 0.005	< 0.016	< 0.044
10-14-10	252	0.25 ± 0.11	< 0.008	< 0.009	< 0.018	< 0.008	< 0.007	< 0.021	< 0.047
10-21-10	288	< 0.12	< 0.008	< 0.009	< 0.019	< 0.008	< 0.006	< 0.014	< 0.042
10-28-10	292	< 0.10	< 0.011	< 0.008	< 0.012	< 0.007	< 0.009	< 0.023	< 0.040
11-04-10	298	0.19 ± 0.11	< 0.009	< 0.010	< 0.016	< 0.009	< 0.008	< 0.011	< 0.036
11-12-10	340	< 0.12	< 0.007	< 0.007	< 0.019	< 0.006	< 0.005	< 0.035	< 0.027
11-18-10	256	< 0.11	< 0.014	< 0.010	< 0.021	< 0.010	< 0.007	< 0.064	< 0.053
11-24-10	245	< 0.11	< 0.006	< 0.008	< 0.013	< 0.008	< 0.010	< 0.023	< 0.057
12-02-10	328	< 0.08	< 0.007	< 0.005	< 0.010	< 0.006	< 0.003	< 0.013	< 0.032
12-09-10	299	< 0.10	< 0.007	< 0.007	< 0.014	< 0.007	< 0.006	< 0.015	< 0.042
12-16-10	294	0.14 ± 0.07	< 0.004	< 0.006	< 0.009	< 0.006	< 0.005	< 0.005	< 0.032
12-22-10	262	< 0.09	< 0.004	< 0.009	< 0.012	< 0.009	< 0.007	< 0.009	< 0.040
12-30-10	361	< 0.07	< 0.005	< 0.004	< 0.006	< 0.006	< 0.005	< 0.005	< 0.028

[a] Iodine-131 concentrations are < 0.07 pCi/m^3 unless noted otherwise.

CALLAWAY

Table 2. Milk, analyses for iodine-131 and gamma-emitting isotopes.

Collection: Semimonthly during grazing season, monthly otherwise.

Units: pCi/L

Location		CA-MLK-M9					
Date	Lab	Concentration (pCi/L)					
Collected	Code	I-131	K-40	Zn-65	Cs-134	Cs-137	Ba-La-140
Required LLDs		1.0	-	-	15	18	15
01-10-10	CAMI -114	< 0.4	995 ± 97	< 8.6	< 3.6	< 4.0	< 2.4
02-07-10	CAMI -467	< 0.3	1389 ± 104	< 5.9	< 2.4	< 2.8	< 2.7
03-07-10	CAMI -934	< 0.4	914 ± 97	< 4.9	< 4.1	< 3.4	< 2.5
04-12-10	CAMI -1589	< 0.3	1203 ± 91	< 4.2	< 3.0	< 3.7	< 1.7
04-26-10	CAMI -2072	< 0.3	1425 ± 112	< 6.9	< 3.3	< 4.3	< 3.4
05-09-10	CAMI -2320	< 0.4	1438 ± 116	< 7.8	< 3.2	< 3.0	< 1.6
05-24-10	CAMI -2595	< 0.2	1164 ± 105	< 5.5	< 3.9	< 4.3	< 2.3
06-06-10	CAMI -2962	< 0.4	1454 ± 129	< 6.8	< 4.0	< 5.4	< 4.6
06-21-10	CAMI -3197	< 0.3	1355 ± 132	< 10.0	< 3.8	< 4.3	< 2.9
07-12-10	CAMI -3776	< 0.2	1470 ± 136	< 8.1	< 5.1	< 3.6	< 2.1
07-24-10	CAMI -3986	< 0.3	1445 ± 112	< 4.7	< 2.4	< 3.8	< 2.4
08-09-10	CAMI -4437	< 0.3	1318 ± 127	< 5.7	< 3.5	< 4.9	< 4.2
08-22-10	CAMI -4671	< 0.4	1174 ± 117	< 6.7	< 1.9	< 3.5	< 3.4
09-13-10	CAMI -5139	< 0.3	1204 ± 118	< 8.0	< 4.1	< 3.9	< 2.7
09-26-10	CAMI -5403	< 0.3	1120 ± 111	< 5.6	< 3.6	< 3.3	< 4.1
10-12-10	CAMI -5725	< 0.4	1413 ± 117	< 4.0	< 2.7	< 3.9	< 2.2
10-24-10	CAMI -6235	< 0.3	1322 ± 131	< 6.9	< 3.4	< 5.2	< 3.0
11-07-10	CAMI -6665	< 0.4	1306 ± 120	< 6.4	< 3.3	< 5.7	< 3.9
11-22-10	CAMI -6906	< 0.4	1235 ± 108	< 4.5	< 3.0	< 3.7	< 3.5
12-13-10	CAMI -7322	< 0.2	1258 ± 118	< 7.8	< 4.1	< 4.0	< 3.6

Table 3. Vegetation, analyses for Iodine-131 and gamma-emitting Isotopes.

Collection: Monthly, during growing season

Units: pCi/kg wet

Lab Code	Collection Date	Sample Type	Concentration (pCi/kg wet) K-40	Mn-54	Co-58	Co-60	I-131	Cs-134	Cs-137
			Location: CA-FPL-V9						
CAVE- 3192	6/21/2010	Mustard	3316 ± 295	< 11.1	< 4.2	< 8.0	< 12.7	< 4.5	< 4.8
CAVE- 3193	6/21/2010	Lettuce	5335 ± 327	< 8.9	< 11.7	< 9.4	< 10.7	< 9.2	< 11.5
CAVE- 3791	7/12/2010	Lettuce	4381 ± 380	< 7.6	< 15.4	< 10.7	< 15.0	< 15.0	< 14.3
CAVE- 3793	7/12/2010	Mustard	4072 ± 312	< 9.4	< 8.1	< 7.8	< 21.0	< 8.8	< 11.2
CAVE- 4438	8/9/2010	Collards	9475 ± 503	< 15.0	< 11.8	< 11.0	< 21.0	< 12.0	< 13.7
CAVE- 5460	9/27/2010	Lettuce	4686 ± 387	< 9.3	< 11.1	< 12.1	< 18.9	< 9.7	< 7.7
CAVE- 5461	9/27/2010	Mustard	4704 ± 396	< 8.3	< 6.8	< 14.3	< 27.7	< 6.8	< 13.5
CAVE- 5741	10/10/2010	Lettuce	4612 ± 339	< 11.6	< 9.2	< 10.0	< 23.2	< 9.7	< 6.9
CAVE- 5742	10/10/2010	Swiss Chard	6237 ± 444	< 7.1	< 13.0	< 11.2	< 24.3	< 12.5	< 10.2
CAVE- 5743	10/10/2010	Mustard	5015 ± 361	< 7.0	< 6.8	< 9.6	< 17.0	< 8.5	< 12.7
CAVE- 5744	10/10/2010	Turnips	3995 ± 357	< 11.7	< 6.8	< 10.0	< 20.4	< 9.5	< 13.9
CAVE- 6670	11/8/2010	Collard Greens	4620 ± 385	< 8.8	< 11.1	< 9.8	< 28.8	< 10.2	< 9.9
CAVE- 6671	11/8/2010	Mustard	5086 ± 336	< 9.2	< 4.9	< 7.5	< 21.1	< 8.5	< 11.4
CAVE- 6672	11/8/2010	Lettuce	4738 ± 391	< 12.3	< 10.5	< 13.4	< 25.7	< 12.3	< 8.3
CAVE- 6673	11/8/2010	Cabbage	4959 ± 304	< 6.7	< 9.0	< 5.6	< 20.3	< 6.2	< 6.4
CAVE- 6674	11/8/2010	Turnips	5396 ± 386	< 9.4	< 9.7	< 10.0	< 26.5	< 9.1	< 10.5
CAVE- 6675	11/9/2010	Swiss Chard	6267 ± 406	< 7.2	< 13.0	< 9.2	< 21.1	< 14.5	< 15.9
			Location: CA-FPL-V11						
CAVE- 2965	6/7/2010	Lettuce	4366 ± 415	< 5.8	< 14.0	< 10.1	< 24.1	< 13.8	< 15.5
CAVE- 3794	7/12/2010	Lettuce	3970 ± 335	< 8.7	< 9.6	< 8.3	< 18.3	< 9.7	< 13.0
CAVE- 3795	7/12/2010	Cabbage	2587 ± 258	< 7.9	< 6.2	< 8.1	< 16.3	< 7.4	< 8.8
CAVE- 4439	8/9/2010	Lettuce	6890 ± 482	< 14.8	< 11.7	< 10.7	< 22.4	< 13.9	< 13.7
CAVE- 4440	8/9/2010	Cabbage	2654 ± 302	< 13.1	< 12.8	< 6.6	< 16.1	< 6.5	< 9.2
CAVE- 5140	9/13/2010	Cabbage	2926 ± 245	< 9.4	< 4.2	< 9.9	< 12.5	< 7.5	< 8.9
CAVE- 5745	10/11/2010	Cabbage	4382 ± 323	< 5.7	< 11.1	< 9.9	< 25.1	< 10.5	< 14.0
CAVE- 6676	11/8/2010	Cabbage	5680 ± 522	< 14.4	< 14.6	< 9.3	< 57.0	< 17.6	< 18.6
			Location: CA-FPL-V12						
CAVE- 2963	6/7/2010	Cabbage	4173 ± 387	< 9.3	< 10.6	< 12.6	< 18.1	< 12.5	< 17.1
CAVE- 3796	7/12/2010	Lettuce	5212 ± 386	< 11.1	< 10.2	< 6.1	< 15.7	< 11.0	< 11.9
CAVE- 4441	8/9/2010	Collards	3292 ± 279	< 7.7	< 11.1	< 10.6	< 16.0	< 7.7	< 5.6
CAVE- 5141	9/14/2010	Collard Greens	3682 ± 303	< 8.6	< 5.6	< 13.6	< 18.2	< 10.9	< 9.9
CAVE- 5746	10/11/2010	Collard Greens	4557 ± 337	< 8.3	< 8.8	< 8.0	< 23.0	< 7.7	< 12.5
CAVE- 6678	11/8/2010	Collard Greens	3380 ± 327	< 7.1	< 11.4	< 9.1	< 30.7	< 9.0	< 14.9

Table 3. Vegetation, analyses for Iodine-131 and gamma-emitting isotopes.

Collection: Monthly, during growing season

Units: pCi/kg wet

Lab Code	Collection Date	Sample Type	Concentration (pCi/kg wet) K-40	Mn-54	Co-58	Co-60	I-131	Cs-134	Cs-137
			Location: CA-FPL-V14						
CAVE- 2321	5/11/2010	Turnips	4231 ± 395	< 11.7	< 11.8	< 11.2	< 20.0	< 12.2	< 15.7
CAVE- 2964	6/7/2010	Turnips	2995 ± 291	< 13.7	< 6.6	< 6.6	< 16.4	< 8.6	< 12.7
CAVE- 3797	7/13/2010	Turnips	3062 ± 315	< 10.5	< 7.2	< 10.6	< 12.1	< 11.1	< 13.9
CAVE- 3798	7/13/2010	Lettuce	3758 ± 461	< 19.7	< 13.3	< 12.0	< 30.6	< 16.5	< 23.4
CAVE- 5462	9/29/2010	Turnips	3225 ± 296	< 10.0	< 11.0	< 13.6	< 19.7	< 8.2	< 11.8
CAVE- 5747	10/11/2010	Turnips	4053 ± 365	< 7.9	< 11.9	< 12.2	< 23.7	< 10.5	< 12.7
CAVE- 6677	11/8/2010	Turnips	3792 ± 338	< 12.0	< 9.3	< 13.5	< 27.4	< 11.8	< 12.3
			Location: CA-FPL-V15						
CAVE- 3799	7/12/2010	Collards	5006 ± 457	< 15.6	< 10.2	< 14.7	< 22.1	< 15.0	< 13.9
CAVE- 3800	7/12/2010	Lettuce	5302 ± 565	< 24.5	< 21.8	< 10.7	< 29.8	< 17.9	< 17.0
CAVE- 3801	7/12/2010	Cabbage	3061 ± 355	< 20.1	< 15.3	< 16.9	< 17.0	< 15.1	< 14.0
CAVE- 4442	8/10/2010	Collards	5021 ± 421	< 10.7	< 12.6	< 3.6	< 17.8	< 10.8	< 13.8

Table 4. Non-food Crops, analyses for iodine-131 and gamma-emitting isotopes.

Collection: Annually, at harvest

Units: pCi/kg wet

Lab Code	Sample Type	Collection Date	H-3 (pCi/L)	Concentration (pCi/kg wet) K-40	Mn-54	Co-58	Co-60	I-131	Cs-134	Cs-137
				Location: CA-FC-1						
		10/13/2010				ND[a]				
				Location: CA-FC-2						
		10/13/2010				ND[a]				
				Location: CA-FC-3						
CAVE- 6406	3A-Soybeans	10/14/2010	< 155	14082 ± 465	< 11.4	< 12.1	< 9.3	< 59.2	< 11.0	< 11.9
CAVE- 6407	3B-Soybeans	10/13/2010	< 164	13503 ± 454	< 7.2	< 11.8	< 7.5	< 59.1	< 7.6	< 8.9
CAVE- 6408	3C-Soybeans	10/13/2010	< 164	14225 ± 421	< 6.3	< 10.4	< 6.6	< 54.1	< 6.8	< 8.4
				Location: CA-FC-4 (C)						
CAVE- 6409	Soybeans	10/27/2010	< 155	12374 ± 452	< 10.2	< 6.5	< 11.4	< 19.5	< 10.6	< 12.2

[a] ND = no data; see Table 2.0, Listing of Missed Samples.

Table 5. Soil, analyses for gamma-emitting isotopes.
Collection: Annually Units: pCi/kg dry

Lab Code	Collection Date	Concentration (pCi/kg dry) K-40	Mn-54	Fe-59	Co-58	Co-60	Nb-95	Cs-134	Cs-137	La-140
Location: SOL-F-002										
CASO- 7154	11/19/2010	11447 ± 764	< 27.4	< 47.9	< 14.0	< 17.4	< 23.0	< 23.5	378 ± 41	46.0
CASO- 7155	11/19/2010	11233 ± 710	< 30.1	< 74.7	< 29.7	< 13.2	< 33.8	< 20.6	449 ± 44	42.7
Location: SOL-F-006										
CASO- 7156	11/19/2010	12293 ± 786	< 29.1	< 52.9	< 31.8	< 12.8	< 22.1	< 28.3	622 ± 57	78.4
CASO- 7157	11/19/2010	11578 ± 800	< 34.0	< 55.3	< 31.6	< 24.6	< 32.7	< 22.6	545 ± 48	73.8
Location: SOL-PR-003										
CASO- 7158	11/19/2010	10912 ± 705	< 32.4	< 34.1	< 22.7	< 13.6	< 33.6	< 22.9	202 ± 36	28.2
CASO- 7159	11/19/2010	11509 ± 668	< 28.3	< 57.0	< 27.4	< 17.6	< 39.3	< 16.5	355 ± 42	62.1
Location: SOL-PR-007										
CASO- 7160	11/19/2010	11287 ± 847	< 31.4	< 61.8	< 22.7	< 13.3	< 27.8	< 26.6	272 ± 54	44.7
CASO- 7161	11/19/2010	9846 ± 789	< 30.1	< 86.0	< 31.0	< 28.9	< 58.1	< 26.7	242 ± 51	71.2
Location: SOL-V-003										
CASO- 7162	11/19/2010	10226 ± 1284	< 70.4	< 145.6	< 75.5	< 59.9	< 74.7	< 56.3	99 ± 56	135.5
CASO- 7163	11/19/2010	15489 ± 851	< 27.9	< 46.4	< 26.9	< 13.5	< 44.5	< 17.4	231 ± 40	36.7
Location: SOL-W-001										
CASO- 7164	11/19/2010	13796 ± 824	< 26.6	< 33.3	< 25.9	< 21.0	< 14.1	< 14.9	80 ± 31	33.4
CASO- 7165	11/19/2010	11792 ± 1181	< 48.5	< 126.4	< 54.4	< 47.0	< 56.4	< 41.5	82 ± 45	192.9
Location: SOL-W-002										
CASO- 7166	11/30/2010	14928 ± 876	< 24.3	< 20.0	< 25.0	< 15.5	< 22.0	< 24.3	116 ± 43	29.1
CASO- 7168	11/30/2010	8554 ± 651	< 23.7	< 37.1	< 13.3	< 15.2	< 25.2	< 19.7	< 18.7	22.7
Location: SOL-W-003										
CASO- 7169	11/30/2010	8906 ± 1019	< 32.7	< 53.3	< 8.3	< 23.7	< 53.0	< 36.0	< 45.4	64.4
CASO- 7170	11/30/2010	10217 ± 1311	< 62.8	< 85.6	< 55.7	< 36.2	< 77.2	< 39.8	94 ± 49	102.6
Location: SOL-W-004										
CASO- 7171	11/30/2010	11934 ± 656	< 24.4	< 31.9	< 25.5	< 17.1	< 36.1	< 23.0	< 25.0	11.8
CASO- 7172	11/30/2010	9884 ± 1170	< 51.0	< 118.4	< 57.8	< 40.0	< 60.1	< 40.0	< 52.7	140.8

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Table 6. Surface water, analyses for tritium and gamma-emitting isotopes.

Collection: Monthly
Location: CA-SWA-S01 Units: pCi/L

Lab Code Date Collected	Required LLD	CASW- 458 2/4/2010	CASW- 896 03-05-10	CASW- 1463 04-01-10	CASW- 2313 05-05-10
H-3	3000	< 153	< 149	< 144	< 144
Mn-54	15	< 2.8	< 3.7	< 4.2	< 3.6
Fe-59	30	< 5.6	< 6.9	< 5.1	< 4.7
Co-58	15	< 1.6	< 1.8	< 2.8	< 3.7
Co-60	15	< 1.9	< 2.2	< 4.2	< 2.5
Zn-65	30	< 3.6	< 6.9	< 5.9	< 2.8
Zr-Nb-95	15	< 2.7	< 2.9	< 5.0	< 2.7
I-131	1000	< 4.8	< 5.0	< 11.4	< 7.3
Cs-134	15	< 2.5	< 3.5	< 2.8	< 4.1
Cs-137	18	< 2.4	< 4.5	< 4.5	< 4.3
Ba-La-140	15	< 2.1	< 5.0	< 5.3	< 3.5

Lab Code Date Collected	Required LLD	CASW- 2899 06-01-10	CASW- 3499 06-30-10	CASW- 4077 07-28-10	CASW- 4811 08-30-10
H-3	3000	< 145	< 167	< 154	< 153
Mn-54	15	< 2.5	< 1.4	< 2.1	< 3.8
Fe-59	30	< 4.9	< 3.4	< 4.8	< 4.6
Co-58	15	< 1.5	< 2.3	< 3.3	< 3.1
Co-60	15	< 1.9	< 1.2	< 3.8	< 4.8
Zn-65	30	< 4.2	< 3.9	< 6.2	< 10.6
Zr-Nb-95	15	< 4.9	< 3.7	< 3.4	< 3.4
I-131	1000	< 11.3	< 11.0	< 8.7	< 5.0
Cs-134	15	< 2.6	< 1.7	< 4.1	< 5.2
Cs-137	18	< 2.6	< 2.2	< 4.4	< 4.0
Ba-La-140	15	< 4.5	< 4.5	< 5.1	< 3.3

Lab Code Date Collected	Required LLD	CASW- 5564 10-01-10	CASW- 6279 10-26-10	CASW- 6943 11-24-10	CASW- 7446 12-28-10
H-3	3000	< 172	< 163	< 139	< 143
Mn-54	15	< 2.1	< 1.9	< 6.2	< 2.9
Fe-59	30	< 5.4	< 4.6	< 10.1	< 5.8
Co-58	15	< 3.0	< 2.7	< 5.2	< 2.1
Co-60	15	< 2.8	< 2.5	< 4.5	< 1.0
Zn-65	30	< 3.5	< 3.1	< 8.0	< 4.4
Zr-Nb-95	15	< 3.1	< 3.8	< 5.2	< 3.2
I-131	1000	< 22.2	< 38.3	< 11.5	< 4.3
Cs-134	15	< 1.8	< 2.2	< 5.0	< 2.3
Cs-137	18	< 2.2	< 1.3	< 3.1	< 3.2
Ba-La-140	15	< 5.0	< 9.1	< 7.3	< 2.5

CALLAWAY

Table 6. Surface water, analyses for tritium and gamma-emitting isotopes.

Collection: Monthly

Location: CA-SWA-S01 Units: pCi/L

Lab Code Date Collected	Required LLD	CASW- 7063 01-04-10
H-3	3000	< 152
Mn-54	15	< 2.7
Fe-59	30	< 5.9
Co-58	15	< 2.1
Co-60	15	< 2.0
Zn-65	30	< 3.6
Zr-Nb-95	15	< 3.3
I-131	1000	< 5.7
Cs-134	15	< 2.6
Cs-137	18	< 3.0
Ba-La-140	15	< 2.0

CALLAWAY

Table 6. Surface water, analyses for tritium and gamma-emitting isotopes.
Collection: Monthly
Location: CA-SWA-S02 Units: pCi/L

Lab Code	Required	CASW- 459	CASW- 897	CASW- 1464	CASW- 2314
Date Collected	LLD	02-04-10	03-05-10	04-01-10	05-05-10
H-3	3000	< 153	263 ± 102	262 ± 99	< 144
Mn-54	15	< 2.4	< 3.9	< 5.5	< 2.2
Fe-59	30	< 2.9	< 7.3	< 7.0	< 4.8
Co-58	15	< 1.9	< 2.1	< 5.6	< 2.5
Co-60	15	< 2.0	< 1.5	< 4.8	< 1.2
Zn-65	30	< 3.2	< 2.5	< 4.0	< 4.0
Zr-Nb-95	15	< 2.0	< 3.9	< 3.6	< 1.9
I-131	1000	< 4.6	< 8.3	< 10.8	< 6.0
Cs-134	15	< 1.8	< 3.8	< 5.4	< 2.6
Cs-137	18	< 2.2	< 4.2	< 5.4	< 2.8
Ba-La-140	15	< 3.4	< 3.5	< 3.9	< 4.8

Lab Code	Required	CASW- 2900	CASW- 3500	CASW- 4078	CASW- 4813
Date Collected	LLD	06-01-10	06-30-10	07-28-10	08-30-10
H-3	3000	173 ± 85	< 167	< 154	< 153
Mn-54	15	< 3.0	< 1.5	< 3.8	< 2.4
Fe-59	30	< 4.0	< 4.9	< 5.9	< 5.2
Co-58	15	< 2.3	< 1.3	< 5.8	< 5.6
Co-60	15	< 2.1	< 1.4	< 3.8	< 4.9
Zn-65	30	< 4.9	< 2.4	< 2.5	< 6.7
Zr-Nb-95	15	< 3.5	< 2.2	< 5.1	< 4.7
I-131	1000	< 11.5	< 14.2	< 12.6	< 7.2
Cs-134	15	< 3.0	< 1.0	< 5.1	< 4.2
Cs-137	18	< 2.7	< 1.5	< 4.4	< 3.6
Ba-La-140	15	< 6.7	< 3.9	< 3.8	< 5.4

Lab Code	Required	CASW- 5565	CASW- 6280	CASW- 6945	CASW- 7447
Date Collected	LLD	10-01-10	10-26-10	11-24-10	12-28-10
H-3	3000	< 172	< 163	< 139	< 143
Mn-54	15	< 3.0	< 2.3	< 4.2	< 1.9
Fe-59	30	< 7.4	< 7.3	< 9.3	< 4.0
Co-58	15	< 3.0	< 2.2	< 4.5	< 2.4
Co-60	15	< 2.4	< 2.0	< 3.5	< 2.2
Zn-65	30	< 3.1	< 3.8	< 7.0	< 3.4
Zr-Nb-95	15	< 2.4	< 3.3	< 4.4	< 2.3
I-131	1000	< 24.2	< 47.1	< 13.2	< 5.3
Cs-134	15	< 2.3	< 1.8	< 4.8	< 2.0
Cs-137	18	< 2.9	< 2.2	< 2.8	< 2.4
Ba-La-140	15	< 7.2	< 11.9	< 4.5	< 3.3

CALLAWAY

Table 6. Surface water, analyses for tritium and gamma-emitting isotopes.

Collection: Monthly
Location: CA-SWA-S02 Units: pCi/L

Lab Code Date Collected	Required LLD	CASW- 7064 01-04-10
H-3	3000	187 ± 85
Mn-54	15	< 2.4
Fe-59	30	< 4.6
Co-58	15	< 2.7
Co-60	15	< 1.6
Zn-65	30	< 5.9
Zr-Nb-95	15	< 2.3
I-131	1000	< 8.2
Cs-134	15	< 3.3
Cs-137	18	< 3.7
Ba-La-140	15	< 2.5

7. Surface Water (Ponds), analyses for tritium and gamma-emitting isotopes.

Lab Code	Collection Date	Concentration (pCi/L) H-3	Mn-54	Fe-59	Co-58	Co-60	Zn-65	Nb-95	Cs-134	Cs-137	La-140
		Location: CA-SWA-CTBD									
CASW- 53	01/06/10	< 148	-	-	-	-	-	-	-	-	-
CASW- 1550	04/07/10	< 169	-	-	-	-	-	-	-	-	-
CASW- 3550	07/07/10	< 163	-	-	-	-	-	-	-	-	-
CASW- 5700	10/06/10	< 163	-	-	-	-	-	-	-	-	-
		Location: CA-SWA-UHS									
CASW- 378	01/26/10	< 152	< 2.2	< 4.1	< 3.2	< 2.4	< 4.4	< 3.0	< 2.5	< 2.5	< 2.0
CASW- 1871	04/15/10	< 171	< 1.6	< 2.1	< 1.3	< 1.8	< 2.5	< 2.7	< 1.6	< 1.8	< 3.7
CASW- 4296	07/19/10	< 188	< 1.1	< 2.0	< 1.1	< 1.2	< 2.4	< 2.0	< 1.0	< 1.2	< 6.9
CASW- 6398	10/25/10	< 157	< 2.0	< 3.4	< 2.3	< 2.0	< 3.7	< 3.2	< 2.0	< 1.9	< 9.8
		Location: CA-SWA-UNIT 2									
CASW- 379	01/26/10	< 154	< 2.8	< 6.3	< 2.2	< 3.2	< 5.2	< 2.7	< 3.0	< 2.2	< 2.0
CASW- 1872	04/14/10	183 ± 97	< 1.9	< 3.8	< 1.9	< 1.9	< 2.4	< 1.7	< 1.9	< 1.6	< 3.8
CASW- 4297	07/19/10	< 188	< 1.3	< 1.8	< 0.9	< 1.2	< 2.6	< 1.7	< 1.1	< 1.1	< 9.3
CASW- 6399	10/18/10	< 157	< 1.6	< 4.1	< 2.8	< 2.4	< 3.5	< 4.5	< 2.3	< 2.0	< 6.2
		Location: CA-SWA-POND 01									
CASW- 799	02/26/10	< 146	< 2.2	< 7.0	< 2.4	< 1.3	< 3.1	< 3.7	< 3.0	< 2.9	< 4.6
CASW- 4954	08/31/10	< 159	< 4.9	< 8.2	< 3.2	< 3.7	< 10.0	< 3.8	< 5.7	< 3.1	< 5.3
		Location: CA-SWA-POND 02									
CASW- 800	02/26/10	< 146	< 2.7	< 3.5	< 3.5	< 2.7	< 3.9	< 2.1	< 2.1	< 2.8	< 3.1
CASW- 4955	08/31/10	< 159	< 1.2	< 3.2	< 1.7	< 1.5	< 2.4	< 2.6	< 1.1	< 0.9	< 5.1
		Location: CA-SWA-SLUDGE LAGOON #4									
CASW- 808	02/26/10	< 146	< 4.1	< 8.2	< 2.5	< 1.5	< 5.3	< 5.0	< 3.2	< 4.2	< 6.6
CASW- 4962	08/31/10	< 159	< 4.8	< 10.0	< 4.7	< 4.2	< 10.3	< 2.1	< 6.2	< 3.7	< 8.0

7. Surface Water (Ponds), analyses for tritium and gamma-emitting isotopes.

Lab Code	Collection Date	Concentration (pCi/L) H-3	Mn-54	Fe-59	Co-58	Co-60	Zn-65	Nb-95	Cs-134	Cs-137	La-140
		Location: CA-SWA-OUTFALL 010									
CASW- 801	02/26/10	< 146	< 2.4	< 2.5	< 2.0	< 1.6	< 4.8	< 3.5	< 2.4	< 2.0	< 5.8
CASW- 4956	08/31/10	< 159	< 1.3	< 2.8	< 1.2	< 1.1	< 2.5	< 2.2	< 1.1	< 1.4	< 6.2
		Location: CA-SWA-OUTFALL 011									
CASW- 802	02/26/10	< 146	< 1.5	< 6.3	< 2.2	< 2.4	< 1.5	< 3.2	< 3.1	< 2.8	< 4.4
CASW- 4957	08/31/10	< 159	< 1.1	< 2.9	< 1.4	< 1.4	< 2.2	< 2.4	< 1.1	< 1.4	< 4.1
		Location: CA-SWA-OUTFALL 012									
CASW- 803	02/26/10	< 146	< 3.6	< 3.5	< 3.6	< 2.3	< 3.8	< 4.3	< 3.3	< 3.4	< 5.2
CASW- 4958	09/01/10	< 159	< 3.3	< 7.9	< 6.1	< 3.9	< 4.7	< 6.5	< 5.1	< 4.4	< 6.1
		Location: CA-SWA-OUTFALL 013									
CASW- 805	02/26/10	< 146	< 3.3	< 5.0	< 1.5	< 2.4	< 1.7	< 2.3	< 2.6	< 2.7	< 4.5
CASW- 4959	09/01/10	< 159	< 6.1	< 6.2	< 5.5	< 5.6	< 8.2	< 7.6	< 3.2	< 3.5	< 5.6
		Location: CA-SWA-OUTFALL 014									
CASW- 806	02/26/10	< 146	< 3.2	< 1.8	< 3.2	< 2.5	< 3.0	< 3.5	< 2.7	< 3.5	< 5.6
CASW- 4960	09/01/10	< 159	< 3.1	< 3.0	< 2.5	< 1.9	< 2.7	< 4.3	< 2.4	< 2.8	< 7.9
		Location: CA-SWA-OUTFALL 015									
CASW- 807	02/26/10	< 146	< 4.0	< 7.4	< 4.4	< 3.4	< 8.5	< 5.3	< 3.3	< 5.3	< 6.1
CASW- 4961	08/31/10	< 159	< 1.2	< 2.1	< 1.4	< 1.0	< 2.4	< 2.2	< 0.9	< 1.2	< 4.9

Table 8. Drinking Water Wells, analysis for tritium and gamma-emitting isotopes.

Lab Code	Collection Date	Concentration (pCi/L) H-3	Mn-54	Fe-59	Co-58	Co-60	Zn-65	Zr-Nb-95	Cs-134	Cs-137	La-140
					CA-DWA-003 (Ward)						
CADW- 765	2/24/2010	< 146	< 2.1	< 2.5	< 2.6	< 0.7	< 5.2	< 3.7	< 2.4	< 2.3	< 5.4
CADW- 2821	5/26/2010	< 164	< 1.9	< 2.2	< 3.3	< 3.1	< 4.6	< 3.9	< 2.1	< 2.2	< 7.1
CADW- 4734	8/24/2010	< 153	< 4.4	< 4.9	< 4.3	< 5.5	< 6.0	< 3.3	< 4.7	< 4.7	< 4.8
CAWW- 7136	11/29/2010	< 137	< 2.6	< 4.9	< 2.4	< 2.1	< 4.3	< 4.5	< 2.8	< 3.1	< 3.0
					CA-DWA-004 (Miller)						
CADW- 766	2/25/2010	< 146	< 2.1	< 5.8	< 2.9	< 1.2	< 2.9	< 3.1	< 2.3	< 3.2	< 3.0
CADW- 2822	5/27/2010	< 164	< 1.8	< 5.7	< 2.9	< 2.3	< 1.4	< 3.1	< 1.9	< 2.1	< 5.1
CADW- 4735	8/24/2010	< 153	< 4.7	< 6.6	< 4.8	< 4.2	< 7.9	< 6.2	< 5.8	< 5.4	< 6.6
CADW- 7137	12/2/2010	< 137	< 2.3	< 5.5	< 2.2	< 2.6	< 2.9	< 2.8	< 2.5	< 3.1	< 2.3
					CA-DWA-005 (Hux)						
CADW- 767	2/24/2010	< 146	< 2.6	< 3.7	< 1.6	< 2.1	< 5.1	< 2.5	< 2.1	< 1.8	< 2.8
CADW- 2823	5/26/2010	< 164	< 2.5	< 4.1	< 1.8	< 1.0	< 4.7	< 3.0	< 3.3	< 2.8	< 3.2
CADW- 4736	8/24/2010	< 153	< 4.0	< 5.4	< 3.4	< 3.8	< 6.0	< 6.1	< 4.9	< 5.7	< 5.1
CADW- 7138	11/29/2010	< 137	< 2.8	< 3.5	< 2.9	< 2.6	< 2.7	< 2.3	< 2.1	< 3.2	< 4.3
					CA-DWA-006 (Lindeman)						
CADW- 768	2/24/2010	< 146	< 2.2	< 1.9	< 1.6	< 2.2	< 5.2	< 2.1	< 2.8	< 2.6	< 4.3
CADW- 2824	5/26/2010	< 164	< 2.0	< 6.2	< 2.7	< 0.7	< 3.7	< 3.1	< 2.5	< 3.4	< 7.1
CADW- 4737	8/24/2010	< 153	< 2.5	< 7.3	< 2.5	< 3.1	< 3.0	< 2.9	< 2.6	< 2.7	< 6.1
CADW- 7139	11/29/2010	< 137	< 2.4	< 4.2	< 1.5	< 1.3	< 1.7	< 4.5	< 2.5	< 2.8	< 3.0
					CA-DWA-007 (Kriete)						
CADW- 769	2/24/2010	< 146	< 1.7	< 5.1	< 1.4	< 1.6	< 3.9	< 3.5	< 2.6	< 3.1	< 6.1
CADW- 2825	5/26/2010	< 164	< 2.2	< 5.9	< 2.2	< 2.3	< 2.9	< 2.3	< 2.6	< 2.9	< 5.2
CADW- 4738	8/24/2010	< 153	< 3.5	< 3.6	< 2.4	< 2.4	< 6.4	< 3.2	< 1.9	< 2.2	< 8.5
CADW- 7140	11/29/2010	< 137	< 2.9	< 8.6	< 2.8	< 3.3	< 4.3	< 3.0	< 3.7	< 3.6	< 2.5
					CA-DWA-008 (Brandt)						
CADW- 770	2/24/2010	< 146	< 3.5	< 5.1	< 2.5	< 2.5	< 4.5	< 3.8	< 3.1	< 3.3	< 2.9
CADW- 2826	5/27/2010	< 164	< 1.8	< 6.0	< 3.0	< 0.9	< 5.2	< 3.2	< 1.9	< 2.8	< 5.2
CADW- 4739	8/24/2010	< 153	< 2.4	< 4.8	< 1.8	< 2.6	< 5.2	< 3.7	< 2.8	< 2.8	< 3.2
CADW- 7141	11/29/2010	< 137	< 3.5	< 5.9	< 3.3	< 2.8	< 5.8	< 3.7	< 3.6	< 4.2	< 2.8

Table 8. Drinking Water Wells, analysis for tritium and gamma-emitting isotopes.

Lab Code	Collection Date	Concentration (pCi/L) H-3	Mn-54	Fe-59	Co-58	Co-60	Zn-65	Zr-Nb-95	Cs-134	Cs-137	La-140
					CA-DWA-009 (Clardy)						
CADW- 771	2/24/2010	< 146	< 2.5	< 4.4	< 2.0	< 1.8	< 3.8	< 3.4	< 2.7	< 3.2	< 4.3
CADW- 2827	5/26/2010	< 164	< 2.6	< 3.7	< 1.9	< 2.4	< 6.7	< 3.9	< 1.8	< 4.1	< 3.7
CASW- 4740	8/24/2010	< 153	< 3.9	< 6.2	< 3.3	< 5.6	< 5.2	< 5.6	< 4.6	< 6.3	< 7.3
CASW- 7142	11/29/2010	< 137	< 2.4	< 4.2	< 3.2	< 2.4	< 2.7	< 3.7	< 3.0	< 2.5	< 3.5
					CA-DWA-010 (Dillon, Susan)						
CADW- 772	2/24/2010	< 146	< 3.0	< 5.4	< 2.3	< 3.1	< 4.8	< 1.9	< 2.7	< 1.6	< 1.9
CADW- 2828	5/26/2010	< 164	< 3.0	< 6.4	< 2.1	< 2.4	< 5.3	< 4.4	< 2.3	< 2.2	< 6.6
CASW- 4742	8/24/2010	< 153	< 1.2	< 2.5	< 1.0	< 1.5	< 2.2	< 2.0	< 1.1	< 1.3	< 3.9
CASW- 7143	11/29/2010	< 137	< 2.8	< 6.6	< 2.0	< 3.6	< 3.3	< 3.2	< 3.2	< 3.3	< 3.4
					CA-DWA-012 (Dillon, Joe)						
CADW- 773	2/24/2010	< 146	< 2.2	< 1.8	< 2.7	< 2.7	< 5.6	< 4.4	< 2.2	< 2.9	< 6.1
CADW- 2829	5/26/2010	< 164	< 2.9	< 3.2	< 2.1	< 1.6	< 3.3	< 2.8	< 2.3	< 1.8	< 6.0
CADW- 4743	8/24/2010	< 153	< 2.1	< 4.4	< 2.7	< 2.7	< 5.9	< 4.5	< 2.3	< 2.0	< 5.8
CADW- 7144	11/29/2010	< 137	< 3.0	< 5.1	< 2.3	< 2.3	< 3.5	< 2.3	< 3.1	< 3.1	< 2.9
					CA-DWA-022 (Plummer)						
CADW- 774	2/24/2010	< 146	< 2.1	< 5.4	< 2.6	< 2.3	< 3.5	< 3.0	< 2.8	< 2.3	< 6.0
CADW- 2830	5/26/2010	< 145	< 2.4	< 6.7	< 2.0	< 2.3	< 2.7	< 3.6	< 2.1	< 2.7	< 6.4
CADW- 4744	8/24/2010	< 153	< 1.1	< 3.1	< 1.3	< 1.4	< 1.7	< 2.0	< 1.2	< 1.1	< 5.6
CADW- 7145	11/29/2010	< 137	< 3.6	< 11.4	< 6.1	< 5.5	< 10.8	< 7.1	< 7.4	< 3.9	< 7.5
					CA-DWA-D01 (Portland Bar/Grill)						
CADW- 775	2/24/2010	< 146	< 2.5	< 4.2	< 2.0	< 1.5	< 3.0	< 3.6	< 2.3	< 2.5	< 3.2
CADW- 2831	5/26/2010	< 164	< 3.2	< 3.1	< 2.1	< 1.8	< 3.8	< 3.5	< 3.1	< 3.1	< 5.7
CADW- 4745	8/24/2010	< 153	< 2.7	< 4.1	< 2.9	< 2.5	< 3.4	< 3.8	< 2.4	< 1.5	< 3.2
CADW- 7147	11/29/2010	< 137	< 1.9	< 4.5	< 1.7	< 3.1	< 4.7	< 3.2	< 3.2	< 3.3	< 3.2
					CA-DWA-PW1 (Plant Cafeteria)						
CADW- 776	2/24/2010	< 146	< 2.2	< 4.2	< 1.5	< 1.6	< 4.9	< 3.7	< 3.1	< 3.1	< 5.9
CADW- 2832	5/26/2010	< 164	< 2.4	< 5.9	< 3.8	< 2.0	< 4.8	< 4.9	< 3.0	< 2.9	< 6.1
CADW- 4746	8/24/2010	< 153	< 1.2	< 1.9	< 1.6	< 1.1	< 2.7	< 2.0	< 1.1	< 1.1	< 7.0
CADW- 7148	11/29/2010	< 137	< 2.7	< 5.8	< 3.0	< 2.5	< 3.9	< 3.7	< 3.4	< 2.6	< 3.5

Table 9. Wells and Ponds (non-potable), analyses for tritium and gamma-emitting isotopes.

Lab Code	Collection Date	Concentration (pCi/L) H-3	Mn-54	Fe-59	Co-58	Co-60	Zn-65	Nb-95	Cs-134	Cs-137	La-140
		Location: CA-WWA-936									
CAWW- 254	1/19/2010	312 ± 88	< 3.4	< 5.6	< 3.5	< 1.5	< 6.5	< 3.0	< 2.3	< 2.2	< 1.6
CAWW- 812	2/25/2010	480 ± 98	< 3.3	< 7.9	< 3.4	< 3.0	< 4.7	< 3.6	< 4.6	< 5.2	< 2.9
CAWW- 1193	3/18/2010	227 ± 95	< 3.7	< 6.1	< 3.3	< 1.6	< 6.5	< 4.9	< 3.1	< 2.2	< 2.7
CAWW- 1824	4/13/2010	175 ± 81	< 3.0	< 6.0	< 2.4	< 2.7	< 5.2	< 2.8	< 3.6	< 3.3	< 4.2
CAWW- 2483	5/12/2010	241 ± 91	< 2.3	< 3.4	< 3.2	< 2.3	< 4.9	< 3.8	< 2.7	< 3.9	< 2.8
CAWW- 3057	6/14/2010	< 162	< 2.6	< 5.8	< 2.9	< 4.0	< 4.1	< 2.9	< 3.6	< 3.3	< 3.5
CAWW- 4266	7/12/2010	355 ± 93	< 1.3	< 2.5	< 1.0	< 1.0	< 2.6	< 1.9	< 1.1	< 1.0	< 6.5
CAWW- 4543	8/12/2010	253 ± 93	< 0.7	< 2.8	< 1.3	< 1.6	< 2.3	< 2.1	< 1.2	< 1.7	< 3.2
CAWW- 5222	9/16/2010	200 ± 97	< 2.7	< 11.7	< 4.9	< 4.2	< 6.4	< 3.8	< 7.1	< 3.6	< 6.9
CAWW- 6358	10/13/2010	< 159	< 2.1	< 3.8	< 2.4	< 2.1	< 2.8	< 4.3	< 1.9	< 1.9	< 7.5
CAWW- 6748	11/11/2010	< 163	< 2.2	< 4.2	< 1.9	< 1.9	< 4.1	< 4.1	< 2.0	< 2.7	< 9.8
CAWW- 7381	12/15/2010	< 144	< 3.3	< 6.0	< 3.1	< 2.6	< 3.3	< 3.5	< 2.5	< 3.4	< 4.9
		Location: CA-WWA-937A									
CAWW- 248	1/19/2010	< 150	< 2.0	< 6.4	< 2.6	< 1.7	< 4.4	< 1.9	< 2.5	< 2.8	< 2.7
CAWW- 814	2/25/2010	< 151	< 2.5	< 6.6	< 1.2	< 1.1	< 4.6	< 3.4	< 2.6	< 3.0	< 5.4
CAWW- 1195	3/18/2010	< 163	< 3.0	< 4.0	< 2.5	< 3.5	< 6.0	< 2.6	< 2.8	< 3.4	< 2.0
CAWW- 1825	4/13/2010	< 144	< 2.8	< 5.9	< 2.9	< 2.3	< 3.8	< 2.9	< 2.8	< 2.8	< 3.5
CAWW- 2485	5/12/2010	< 151	< 1.9	< 3.2	< 2.5	< 2.2	< 3.4	< 2.5	< 2.8	< 3.7	< 3.2
CAWW- 3058	6/14/2010	168 ± 94	< 2.5	< 4.9	< 2.9	< 1.7	< 5.3	< 3.6	< 3.1	< 3.1	< 3.9
CAWW- 4267	7/12/2010	253 ± 88	< 1.1	< 3.4	< 1.0	< 1.7	< 2.8	< 2.6	< 1.1	< 1.6	< 3.4
CAWW- 4544	8/12/2010	< 153	< 1.9	< 5.9	< 3.3	< 2.5	< 3.9	< 3.3	< 2.3	< 2.3	< 5.8
CAWW- 5223	9/16/2010	< 166	< 6.0	< 10.9	< 5.0	< 4.2	< 8.5	< 7.7	< 5.7	< 7.6	< 7.3
CAWW- 6359	10/13/2010	< 159	< 3.6	< 4.9	< 3.0	< 2.3	< 3.0	< 3.0	< 2.4	< 3.7	< 7.7
CAWW- 6749	11/11/2010	< 163	< 3.4	< 6.3	< 4.0	< 3.2	< 5.6	< 3.7	< 2.8	< 3.5	< 4.9
CAWW- 7382	12/16/2010	< 144	< 2.3	< 5.3	< 4.1	< 2.9	< 5.7	< 3.6	< 3.0	< 3.1	< 4.2
		Location: CA-WWA-937B									
CAWW- 249	1/19/2010	339 ± 89	< 2.6	< 4.6	< 3.7	< 3.0	< 3.7	< 5.7	< 4.0	< 3.8	< 4.9
CAWW- 815	2/25/2010	305 ± 90	< 1.8	< 4.5	< 1.8	< 2.9	< 3.4	< 2.9	< 2.8	< 3.3	< 2.1
CAWW- 1196	3/18/2010	528 ± 106	< 2.8	< 6.2	< 2.5	< 2.4	< 5.4	< 2.8	< 2.5	< 3.5	< 5.2
CAWW- 1827	4/13/2010	363 ± 90	< 2.7	< 3.6	< 3.5	< 1.6	< 4.4	< 2.6	< 3.1	< 2.7	< 6.1
CAWW- 2486	5/11/2010	364 ± 96	< 3.4	< 3.5	< 2.6	< 2.9	< 5.3	< 2.3	< 2.0	< 2.6	< 3.8
CAWW- 3059	6/14/2010	345 ± 102	< 2.2	< 4.7	< 3.0	< 3.3	< 3.6	< 2.5	< 2.9	< 2.9	< 1.9
CAWW- 4268	7/12/2010	266 ± 89	< 1.2	< 1.5	< 1.0	< 1.5	< 2.4	< 1.8	< 0.9	< 1.0	< 4.6
CAWW- 4545	8/12/2010	301 ± 95	< 1.0	< 2.6	< 0.8	< 1.2	< 2.1	< 1.7	< 1.0	< 1.3	< 3.7
CAWW- 5224	9/16/2010	< 166	< 4.8	< 6.4	< 3.6	< 4.0	< 4.2	< 6.1	< 5.3	< 6.1	< 8.0
CAWW- 6360	10/13/2010	< 159	< 1.8	< 6.0	< 3.0	< 2.8	< 2.0	< 5.0	< 2.5	< 2.5	< 14.3
CAWW- 6750	11/11/2010	< 163	< 3.1	< 6.1	< 2.8	< 2.4	< 3.3	< 3.6	< 2.6	< 2.6	< 8.5
CAWW- 7383	12/14/2010	< 144	< 2.8	< 4.2	< 2.7	< 2.9	< 4.2	< 4.4	< 2.7	< 2.8	< 4.6

Table 9. Wells and Ponds (non-potable), analyses for tritium and gamma-emitting isotopes.

Lab Code	Collection Date	Concentration (pCi/L) H-3	Mn-54	Fe-59	Co-58	Co-60	Zn-65	Nb-95	Cs-134	Cs-137	La-140
					Location: CA-WWA-937C						
CAWW- 250	1/19/2010	< 150	< 2.1	< 5.1	< 1.5	< 1.3	< 4.3	< 2.6	< 1.9	< 3.3	< 2.7
CAWW- 816	2/25/2010	< 151	< 2.5	< 3.5	< 2.2	< 1.9	< 1.6	< 3.1	< 2.7	< 1.9	< 5.3
CAWW- 1197	3/18/2010	< 163	< 2.4	< 4.0	< 3.8	< 1.6	< 3.5	< 3.3	< 2.6	< 2.5	< 4.0
CAWW- 1828	4/13/2010	156 ± 80	< 2.8	< 2.7	< 2.8	< 3.5	< 2.4	< 2.3	< 2.7	< 2.9	< 3.5
CAWW- 2487	5/12/2010	< 151	< 3.6	< 7.5	< 4.1	< 2.3	< 7.5	< 4.5	< 4.4	< 4.2	< 3.0
CAWW- 3060	6/14/2010	199 ± 95	< 4.3	< 6.0	< 4.4	< 4.4	< 9.0	< 3.3	< 6.0	< 3.3	< 4.5
CAWW- 4269	7/12/2010	204 ± 86	< 1.2	< 3.3	< 1.6	< 1.4	< 2.1	< 2.0	< 1.1	< 1.2	< 4.3
CAWW- 4546	8/12/2010	< 156	< 1.6	< 2.2	< 1.8	< 1.3	< 3.5	< 1.9	< 1.4	< 1.5	< 4.8
CAWW- 5225	9/16/2010	< 166	< 4.0	< 9.5	< 4.3	< 4.4	< 6.0	< 3.4	< 6.4	< 6.3	< 5.2
CAWW- 6361	10/14/2010	207 ± 90	< 2.2	< 3.2	< 1.9	< 2.0	< 3.6	< 4.7	< 2.2	< 2.3	< 11.5
CAWW- 6751	11/11/2010	243 ± 97	< 3.6	< 8.3	< 4.1	< 2.6	< 4.0	< 3.2	< 3.3	< 2.8	< 10.8
CAWW- 7384	12/15/2010	< 144	< 1.8	< 5.0	< 1.5	< 2.4	< 4.7	< 2.4	< 2.5	< 3.2	< 4.6
					Location: CA-WWA-937D						
CAWW- 251	1/19/2010	< 150	< 2.3	< 4.3	< 1.4	< 2.3	< 3.0	< 2.2	< 2.6	< 2.6	< 2.0
CAWW- 817	2/25/2010	< 151	< 3.0	< 7.4	< 3.3	< 3.0	< 4.9	< 2.8	< 2.8	< 3.1	< 6.7
CAWW- 1198	3/18/2010	< 163	< 2.1	< 5.2	< 2.2	< 2.3	< 2.4	< 2.0	< 2.8	< 3.0	< 4.8
CAWW- 1829	4/13/2010	205 ± 83	< 2.0	< 3.2	< 3.3	< 3.0	< 4.6	< 2.6	< 2.5	< 2.2	< 4.1
CAWW- 2488	5/12/2010	< 151	< 3.0	< 8.0	< 2.1	< 2.2	< 3.9	< 4.1	< 3.9	< 3.4	< 2.1
CAWW- 3062	6/14/2010	246 ± 97	< 2.4	< 4.3	< 2.4	< 1.3	< 5.0	< 3.8	< 2.1	< 2.9	< 2.4
CAWW- 4270	7/12/2010	278 ± 89	< 1.1	< 3.1	< 1.0	< 1.3	< 2.3	< 2.2	< 1.2	< 1.1	< 4.4
CAWW- 4547	8/12/2010	261 ± 106	< 1.2	< 2.4	< 1.4	< 1.4	< 2.1	< 1.9	< 1.1	< 1.3	< 2.5
CAWW- 5227	9/16/2010	< 166	< 2.2	< 3.3	< 2.5	< 2.9	< 3.1	< 3.0	< 2.5	< 2.7	< 3.2
CAWW- 6362	10/14/2010	< 159	< 2.1	< 4.2	< 2.6	< 2.0	< 4.4	< 4.3	< 1.9	< 2.1	< 9.4
CAWW- 6753	11/11/2010	< 163	< 2.2	< 7.3	< 2.6	< 2.5	< 5.1	< 3.2	< 2.7	< 2.7	< 9.7
CAWW- 7385	12/15/2010	< 144	< 2.5	< 4.8	< 1.9	< 2.8	< 6.0	< 3.8	< 2.5	< 3.0	< 2.3
					Location: CA-WWA-937E						
CAWW- 252	1/19/2010	< 160	< 2.8	< 3.9	< 1.9	< 2.2	< 2.3	< 1.5	< 2.8	< 3.1	< 1.7
CAWW- 818	2/25/2010	209 ± 86	< 2.5	< 2.9	< 1.8	< 2.4	< 3.3	< 3.2	< 2.1	< 2.5	< 7.2
CAWW- 1199	3/18/2010	< 175	< 2.5	< 4.3	< 1.7	< 2.5	< 2.5	< 2.8	< 2.4	< 2.5	< 2.0
CAWW- 1830	4/13/2010	391 ± 92	< 2.7	< 6.1	< 2.0	< 2.7	< 4.6	< 3.7	< 3.0	< 2.7	< 4.4
CAWW- 2489	5/11/2010	220 ± 90	< 2.3	< 3.9	< 2.0	< 2.2	< 4.8	< 2.9	< 2.2	< 2.9	< 2.6
CAWW- 3063	6/14/2010	263 ± 98	< 2.6	< 5.1	< 2.7	< 2.4	< 4.1	< 2.9	< 2.4	< 2.0	< 2.3
CAWW- 4271	7/12/2010	< 151	< 1.2	< 2.4	< 1.3	< 0.8	< 2.4	< 2.1	< 1.2	< 0.9	< 7.0
CAWW- 4548	8/12/2010	< 156	< 1.1	< 1.8	< 1.2	< 1.4	< 1.9	< 1.4	< 0.9	< 1.2	< 4.4
CAWW- 5228	9/16/2010	< 166	< 2.0	< 5.6	< 3.0	< 2.9	< 4.3	< 3.5	< 2.6	< 2.4	< 4.5
CAWW- 6363	10/14/2010	< 159	< 1.9	< 3.2	< 1.6	< 2.2	< 3.6	< 3.9	< 1.9	< 1.5	< 6.9
CAWW- 6754	11/11/2010	< 163	< 2.8	< 3.3	< 3.5	< 2.7	< 4.9	< 3.0	< 3.1	< 1.9	< 6.0
CAWW- 7386	12/14/2010	< 144	< 2.3	< 3.6	< 1.9	< 2.4	< 7.3	< 4.3	< 2.8	< 2.6	< 3.8

Table 9. Wells and Ponds (non-potable), analyses for tritium and gamma-emitting isotopes.

Lab Code	Collection Date	Concentration (pCi/L) H-3	Mn-54	Fe-59	Co-58	Co-60	Zn-65	Nb-95	Cs-134	Cs-137	La-140
					Location: CA-WWA-937F						
CAWW- 253	1/19/2010	< 150	< 2.3	< 5.3	< 2.7	< 1.6	< 4.3	< 3.6	< 2.7	< 3.1	< 5.1
CAWW- 819	2/25/2010	< 151	< 2.7	< 3.9	< 2.1	< 2.6	< 5.2	< 2.1	< 2.6	< 3.6	< 5.3
CAWW- 1200	3/18/2010	< 163	< 1.8	< 2.6	< 2.8	< 2.1	< 2.6	< 4.1	< 2.8	< 2.9	< 5.3
CAWW- 1831	4/13/2010	156 ± 80	< 2.4	< 3.5	< 2.5	< 1.9	< 4.7	< 2.3	< 2.4	< 2.1	< 6.3
CAWW- 2490	5/11/2010	< 151	< 6.3	< 3.8	< 3.4	< 3.2	< 9.4	< 4.6	< 4.4	< 3.6	< 4.8
CAWW- 3064	6/14/2010	< 162	< 2.2	< 4.7	< 1.7	< 2.2	< 4.7	< 3.1	< 2.3	< 3.4	< 2.4
CAWW- 4272	7/12/2010	< 151	< 1.3	< 3.3	< 1.7	< 1.6	< 2.2	< 2.3	< 1.1	< 1.6	< 5.2
CAWW- 4549	8/12/2010	205 ± 104	< 1.1	< 1.8	< 1.4	< 1.2	< 1.8	< 2.1	< 1.1	< 1.5	< 4.5
CAWW- 5229	9/16/2010	< 166	< 2.2	< 3.5	< 1.9	< 2.9	< 3.2	< 3.6	< 2.3	< 2.9	< 4.7
CAWW- 6364	10/13/2010	< 159	< 2.1	< 3.7	< 1.6	< 2.4	< 3.4	< 2.9	< 2.5	< 1.5	< 4.3
CAWW- 6755	11/11/2010	< 163	< 4.1	< 8.0	< 2.9	< 3.0	< 5.4	< 5.3	< 3.3	< 2.4	< 6.4
CAWW- 7387	12/14/2010	< 144	< 3.1	< 3.8	< 2.2	< 3.2	< 3.5	< 4.1	< 3.0	< 3.1	< 3.2
					Location: CA-WWA-938						
CAWW- 7390	12/14/2010	< 144	< 2.4	< 4.4	< 2.1	< 1.9	< 4.3	< 2.0	< 3.2	< 3.3	< 4.7
					Location: CA-WWA-941						
CAWW- 7391	12/14/2010	< 144	< 2.6	< 6.4	< 1.3	< 1.3	< 2.8	< 3.2	< 2.9	< 3.0	< 4.0
					Location: CA-WWA-GWS						
CAWW- 247	1/19/2010	< 160	< 3.1	< 5.5	< 2.7	< 1.5	< 5.7	< 5.0	< 3.6	< 4.9	< 4.0
CAWW- 811	2/25/2010	< 154	< 2.9	< 5.0	< 2.7	< 1.3	< 6.4	< 4.1	< 2.3	< 2.0	< 4.5
CAWW- 1192	3/18/2010	< 163	< 1.8	< 5.4	< 1.9	< 3.0	< 4.4	< 3.4	< 3.2	< 3.3	< 5.0
CAWW- 1823	4/13/2010	188 ± 82	< 2.4	< 6.2	< 2.5	< 3.6	< 5.9	< 2.6	< 3.1	< 3.5	< 4.9
CAWW- 2491	5/12/2010	234 ± 91	< 1.9	< 3.1	< 3.6	< 2.6	< 5.2	< 3.3	< 3.3	< 3.7	< 4.9
CAWW- 3065	6/14/2010	237 ± 97	< 2.2	< 4.1	< 3.0	< 1.7	< 3.1	< 3.5	< 2.8	< 2.0	< 3.5
CAWW- 4273	7/12/2010	179 ± 84	< 1.1	< 2.3	< 1.2	< 1.3	< 2.3	< 1.6	< 0.9	< 0.9	< 6.5
CAWW- 4550	8/12/2010	209 ± 104	< 1.8	< 3.8	< 2.0	< 1.9	< 2.9	< 2.7	< 1.6	< 1.6	< 5.4
CAWW- 5230	9/16/2010	< 166	< 2.6	< 5.4	< 2.0	< 2.3	< 4.9	< 2.4	< 2.6	< 1.8	< 6.9
CAWW- 6365	10/13/2010	192 ± 89	< 1.5	< 2.8	< 2.1	< 2.7	< 3.7	< 4.2	< 2.4	< 3.0	< 7.5
CAWW- 6756	11/11/2010	168 ± 94	< 2.3	< 3.9	< 4.0	< 3.1	< 3.4	< 3.7	< 3.2	< 2.4	< 7.9
CAWW- 7389	12/15/2010	267 ± 85	< 2.5	< 5.5	< 2.4	< 2.5	< 5.1	< 2.6	< 3.7	< 3.4	< 3.5
					Location: CA-WWA-OW-4						
CAWW- 377	1/26/2010	245 ± 88	< 2.4	< 6.3	< 1.4	< 1.6	< 4.1	< 1.9	< 2.3	< 3.0	< 4.4
CAWW- 1849	4/15/2010	287 ± 87	< 4.5	< 6.7	< 3.9	< 2.6	< 6.6	< 4.8	< 3.0	< 3.4	< 5.8
CAWW- 4274	7/19/2010	282 ± 89	< 1.1	< 1.8	< 1.0	< 1.3	< 2.4	< 2.0	< 1.0	< 1.3	< 6.9
CAWW- 6382	10/21/2010	295 ± 93	< 1.3	< 3.6	< 1.4	< 1.3	< 2.3	< 2.6	< 1.1	< 1.3	< 7.4
					Location: CA-WWA-OW-5						
CAWW- 376	1/26/2010	385 ± 94	< 1.7	< 6.1	< 2.4	< 3.9	< 8.4	< 5.5	< 3.2	< 4.1	< 4.4
CAWW- 1850	4/15/2010	481 ± 96	< 3.1	< 6.2	< 2.0	< 2.5	< 7.4	< 3.5	< 3.1	< 2.4	< 2.8
CAWW- 4275	7/19/2010	378 ± 94	< 1.4	< 3.3	< 1.6	< 1.3	< 2.8	< 2.3	< 1.3	< 1.3	< 5.1
CAWW- 6383	10/14/2010	339 ± 95	< 2.5	< 3.4	< 2.0	< 2.4	< 2.6	< 4.1	< 1.8	< 2.7	< 12.5

Table 9. Wells and Ponds (non-potable), analyses for tritium and gamma-emitting isotopes.

Lab Code	Collection Date	Concentration (pCi/L) H-3	Mn-54	Fe-59	Co-58	Co-60	Zn-65	Nb-95	Cs-134	Cs-137	La-140
		Location: CA-WWA-U1MW-001									
CAWW- 372	1/14/2010	< 153	< 1.9	< 5.1	< 1.2	< 1.1	< 3.0	< 3.4	< 1.9	< 1.8	< 9.0
CAWW- 1851	4/12/2010	< 144	< 2.1	< 5.0	< 2.0	< 1.6	< 3.5	< 2.7	< 2.1	< 2.0	< 3.1
CAWW- 4276	7/19/2010	< 151	< 1.2	< 3.0	< 1.2	< 1.5	< 1.9	< 1.8	< 1.1	< 1.3	< 4.9
CAWW- 6384	10/23/2010	< 157	< 3.6	< 4.5	< 2.7	< 4.0	< 6.2	< 4.8	< 4.2	< 4.3	< 5.5
		Location: CA-WWA-U1MW-002									
CAWW- 375	1/13/2010	< 153	< 2.0	< 4.7	< 1.6	< 1.5	< 3.3	< 3.5	< 1.7	< 2.1	< 3.8
CAWW- 1852	4/12/2010	< 144	< 2.1	< 5.2	< 1.7	< 2.7	< 5.5	< 3.1	< 2.9	< 3.7	< 4.2
CAWW- 4277	7/16/2010	< 151	< 1.2	< 3.0	< 1.7	< 1.2	< 2.5	< 2.2	< 1.0	< 1.2	< 8.9
CAWW- 6385	10/23/2010	< 157	< 1.3	< 3.6	< 1.4	< 1.3	< 2.3	< 2.6	< 1.1	< 1.3	< 7.4
		Location: CA-WWA-U1MW-004									
CAWW- 358	1/5/2010	< 153	< 1.6	< 4.7	< 1.5	< 1.7	< 3.2	< 2.9	< 1.4	< 2.0	< 4.5
CAWW- 1853	4/5/2010	< 144	< 2.7	< 6.2	< 3.2	< 2.6	< 4.0	< 3.6	< 2.3	< 2.8	< 4.8
CAWW- 4278	7/13/2010	< 151	< 1.3	< 1.8	< 0.9	< 1.4	< 2.5	< 2.3	< 1.1	< 1.3	< 7.9
CAWW- 6386	10/21/2010	< 157	< 2.5	< 5.5	< 3.2	< 2.6	< 4.7	< 3.2	< 2.9	< 2.9	< 4.9
		Location: CA-WWA-U1MW-005									
CAWW- 359	1/5/2010	< 153	< 1.3	< 2.9	< 1.9	< 2.0	< 3.3	< 1.8	< 1.5	< 1.3	< 5.1
CAWW- 1854	4/5/2010	< 144	< 1.3	< 3.2	< 1.9	< 1.4	< 2.8	< 1.9	< 1.4	< 1.2	< 3.8
CAWW- 4279	7/13/2010	< 151	< 0.9	< 3.5	< 2.1	< 1.6	< 2.3	< 2.7	< 1.3	< 1.4	< 6.2
CAWW- 6387	10/21/2010	< 157	< 3.0	< 5.5	< 3.8	< 2.1	< 5.3	< 3.6	< 2.7	< 3.1	< 3.7
		Location: CA-WWA-U1MW-006									
CAWW- 369	1/11/2010	< 153	< 1.2	< 4.5	< 2.4	< 2.0	< 3.6	< 3.2	< 2.1	< 2.3	< 5.7
CAWW- 1855	4/12/2010	< 144	< 2.1	< 4.4	< 2.1	< 1.8	< 6.0	< 2.4	< 2.1	< 3.8	< 4.3
CAWW- 4280	7/21/2010	< 151	< 1.2	< 2.7	< 1.6	< 1.5	< 2.0	< 1.9	< 1.0	< 1.2	< 8.7
CAWW- 6389	10/25/2010	< 157	< 3.6	< 6.2	< 2.3	< 2.4	< 5.7	< 5.6	< 2.6	< 3.9	< 3.7
		Location: CA-WWA-U1MW-010									
CAWW- 364	1/6/2010	< 153	< 1.4	< 5.1	< 2.1	< 1.6	< 3.6	< 2.5	< 1.7	< 2.1	< 5.4
CAWW- 1856	4/8/2010	< 144	< 1.5	< 2.5	< 1.8	< 2.0	< 3.2	< 2.3	< 1.6	< 1.7	< 5.3
CAWW- 4281	7/13/2010	< 151	< 1.0	< 2.0	< 1.5	< 1.0	< 2.3	< 2.0	< 0.9	< 1.3	< 7.2
CAWW- 6390	10/25/2010	< 157	< 1.6	< 4.2	< 2.1	< 1.5	< 2.8	< 2.5	< 1.2	< 0.9	< 6.8
		Location: CA-WWA-U1MW-012									
CAWW- 368	1/11/2010	< 153	< 1.5	< 5.9	< 1.8	< 0.9	< 2.5	< 2.7	< 1.5	< 2.2	< 5.3
CAWW- 1857	4/12/2010	< 144	< 1.9	< 3.9	< 1.3	< 1.3	< 2.7	< 2.3	< 1.5	< 1.5	< 6.4
CAWW- 4282	7/21/2010	< 151	< 1.2	< 2.9	< 1.6	< 1.2	< 1.5	< 1.7	< 1.0	< 1.2	< 3.5
CAWW- 6391	10/25/2010	< 157	< 1.3	< 2.0	< 1.2	< 1.3	< 2.2	< 1.4	< 0.9	< 1.0	< 9.5

Table 9. Wells and Ponds (non-potable), analyses for tritium and gamma-emitting isotopes.

Lab Code	Collection Date	Concentration (pCi/L) H-3	Mn-54	Fe-59	Co-58	Co-60	Zn-65	Nb-95	Cs-134	Cs-137	La-140
					Location: CA-WWA-U1MW-013						
CAWW- 374	1/13/2010	< 153	< 1.3	< 3.7	< 2.0	< 1.8	< 3.3	< 2.8	< 1.5	< 2.2	< 5.9
CAWW- 1858	4/16/2010	< 144	< 1.2	< 3.9	< 1.6	< 1.8	< 2.9	< 1.8	< 1.6	< 1.9	< 5.7
CAWW- 4283	7/19/2010	< 151	< 1.1	< 2.6	< 1.8	< 1.1	< 2.7	< 2.6	< 1.3	< 1.2	< 3.6
CAWW- 6392	10/25/2010	172 ± 87	< 1.3	< 2.7	< 1.1	< 1.5	< 2.5	< 2.3	< 0.9	< 0.9	< 9.6
					Location: CA-WWA-U1MW-014						
CAWW- 366	1/7/2010	221 ± 87	< 1.5	< 3.2	< 1.3	< 0.8	< 2.0	< 2.2	< 1.3	< 1.5	< 5.2
CAWW- 1859	4/5/2010	370 ± 91	< 1.6	< 5.4	< 2.3	< 1.3	< 4.9	< 3.9	< 1.9	< 1.9	< 5.8
CAWW- 4285	7/20/2010	384 ± 94	< 1.3	< 1.8	< 0.9	< 1.5	< 1.7	< 2.3	< 0.9	< 1.1	< 6.6
CAWW- 6393	10/25/2010	249 ± 91	< 1.2	< 3.5	< 2.0	< 1.4	< 2.1	< 3.2	< 1.3	< 1.3	< 10.0
					Location: CA-WWA-U1MW-015						
CAWW- 361	1/6/2010	< 153	< 1.2	< 5.2	< 1.6	< 1.6	< 3.3	< 1.9	< 1.5	< 2.1	< 6.5
CAWW- 1860	4/8/2010	< 172	< 2.0	< 4.8	< 2.2	< 1.4	< 3.7	< 2.2	< 1.9	< 1.5	< 2.5
CAWW- 4286	7/13/2010	< 151	< 1.2	< 3.2	< 1.6	< 1.1	< 2.5	< 2.4	< 1.1	< 1.5	< 8.3
CAWW- 6394	10/21/2010	< 157	< 2.2	< 7.0	< 3.7	< 2.4	< 4.7	< 4.0	< 2.7	< 3.3	< 5.7
					Location: CA-WWA-U1MW-016						
CAWW- 357	1/5/2010	< 153	< 1.7	< 2.4	< 2.5	< 1.0	< 2.9	< 2.2	< 1.5	< 1.5	< 9.2
CAWW- 1861	4/5/2010	< 172	< 1.8	< 4.0	< 2.1	< 1.6	< 3.2	< 2.4	< 1.4	< 2.0	< 5.0
CAWW- 4287	7/15/2010	< 151	< 1.1	< 3.2	< 1.3	< 1.0	< 2.0	< 1.3	< 1.2	< 1.0	< 7.8
CAWW- 6395	10/21/2010	< 157	< 1.0	< 3.3	< 0.9	< 1.3	< 1.8	< 2.3	< 1.2	< 0.7	< 9.8
					Location: CA-WWA-U1MW-017						
CAWW- 365	1/7/2010	465 ± 98	< 1.9	< 2.8	< 2.5	< 1.2	< 3.0	< 2.0	< 1.7	< 1.2	< 8.5
CAWW- 1862	4/5/2010	228 ± 99	< 2.2	< 2.8	< 1.6	< 2.1	< 2.7	< 2.8	< 2.2	< 2.8	< 2.9
CAWW- 4288	7/20/2010	192 ± 106	< 1.3	< 2.1	< 1.6	< 1.3	< 2.4	< 2.5	< 0.9	< 1.4	< 5.6
CAWW- 6396	10/25/2010	267 ± 91	< 1.2	< 1.9	< 1.3	< 1.3	< 2.2	< 2.9	< 0.9	< 0.9	< 8.3
					Location: CA-WWA-U1MW-18						
CAWW- 4551	8/11/2010	< 156	< 2.4	< 6.5	< 2.3	< 2.6	< 3.7	< 3.3	< 1.8	< 2.3	< 4.6
CAWW- 6397	10/25/2010	< 157	< 1.1	< 3.4	< 1.1	< 1.2	< 2.5	< 2.6	< 0.9	< 1.0	< 9.0
					Location: CA-WWA-U1MW-19						
CAWW- 4552	8/11/2010	579 ± 118	< 1.9	< 3.2	< 2.2	< 2.6	< 3.5	< 3.3	< 2.2	< 2.7	< 6.3
CAWW- 6366	10/23/2010	477 ± 102	< 2.1	< 2.7	< 3.1	< 2.2	< 6.0	< 3.0	< 2.6	< 3.0	< 3.7

Table 9. Wells and Ponds (non-potable), analyses for tritium and gamma-emitting isotopes.

Lab Code	Collection Date	Concentration (pCi/L) H-3	Mn-54	Fe-59	Co-58	Co-60	Zn-65	Nb-95	Cs-134	Cs-137	La-140
						Location: CA-WWA-U1MW-20					
CAWW- 4553	8/11/2010	< 156	< 1.2	< 2.7	< 1.3	< 1.6	< 1.8	< 1.7	< 1.1	< 1.1	< 1.9
CAWW- 6368	10/21/2010	< 159	< 2.1	< 4.0	< 3.0	< 2.7	< 3.2	< 4.6	< 2.9	< 2.5	< 2.1
						Location: CA-WWA-U1MW-021					
CAWW- 5608	9/30/2010	< 158	< 1.5	< 3.5	< 3.7	< 2.3	< 5.0	< 5.1	< 3.4	< 1.6	< 4.3
CAWW- 6369	10/23/2010	< 159	< 3.3	< 5.1	< 2.0	< 3.1	< 3.4	< 4.1	< 4.1	< 1.4	< 2.2
						Location: CA-WWA-U1MW-022					
CAWW- 5609	9/30/2010	< 166	< 2.4	< 5.2	< 2.9	< 4.1	< 3.0	< 3.2	< 2.9	< 4.1	< 4.1
CAWW- 6370	10/23/2010	< 159	< 2.1	< 3.6	< 2.6	< 2.2	< 5.5	< 2.8	< 3.2	< 2.7	< 3.9
						Location: CA-WWA-U1MW-023					
CAWW- 5610	9/30/2010	< 166	< 4.1	< 10.3	< 6.0	< 4.2	< 7.1	< 3.8	< 4.3	< 3.9	< 8.6
CAWW- 6371	10/23/2010	< 159	< 2.6	< 3.8	< 2.5	< 2.3	< 2.9	< 3.6	< 2.6	< 3.1	< 4.6
						Location: CA-WWA-U1MW-024					
CAWW- 5611	9/30/2010	< 158	< 2.6	< 4.8	< 2.7	< 2.7	< 2.9	< 3.4	< 2.7	< 2.3	< 5.6
CAWW- 6372	10/23/2010	< 159	< 1.3	< 3.5	< 1.0	< 1.0	< 2.5	< 2.2	< 1.0	< 1.3	< 9.9
						Location: CA-WWA-U1MW-025					
CAWW- 5612	9/30/2010	< 166	< 2.4	< 2.3	< 2.3	< 2.2	< 2.5	< 3.8	< 2.3	< 2.6	< 6.9
CAWW- 6373	10/21/2010	< 159	< 2.4	< 3.3	< 2.0	< 2.5	< 3.1	< 4.9	< 2.0	< 4.0	< 6.4
						Location: CA-WWA-U1MW-26					
CAWW- 5613	9/30/2010	< 166	< 2.6	< 5.6	< 2.9	< 2.3	< 4.9	< 3.1	< 2.4	< 1.9	< 5.6
CAWW- 6374	10/21/2010	< 159	< 2.6	< 7.3	< 2.6	< 2.1	< 3.4	< 3.7	< 3.2	< 3.4	< 7.0

Table 9. Wells and Ponds (non-potable), analyses for tritium and gamma-emitting isotopes.

Lab Code	Collection Date	Concentration (pCi/L) H-3	Mn-54	Fe-59	Co-58	Co-60	Zn-65	Nb-95	Cs-134	Cs-137	La-140
					Location: CA-WWA-U1MW-27						
CAWW- 7392	12/16/2010	< 144	< 2.1	< 4.3	< 3.2	< 2.5	< 5.3	< 2.4	< 2.8	< 2.6	< 5.2
					Location: CA-WWA-U1MW-29						
CAWW- 7393	12/15/2010	< 144	< 2.0	< 5.1	< 2.3	< 2.3	< 3.8	< 2.3	< 3.3	< 3.5	< 4.4
					Location: CA-WWA-U1MW-30						
CAWW- 7394	12/15/2010	< 144	< 2.6	< 5.9	< 2.1	< 1.5	< 3.9	< 4.6	< 2.4	< 2.8	< 4.4
					Location: CA-WWA-U2MW-2S						
CAWW- 373	1/13/2010	< 153	< 1.3	< 2.8	< 1.8	< 1.6	< 3.5	< 2.8	< 1.6	< 2.5	< 3.9
CAWW- 1863	4/9/2010	< 172	< 1.3	< 4.7	< 2.0	< 1.1	< 3.6	< 1.6	< 1.5	< 1.6	< 5.9
CAWW- 4289	7/16/2010	< 188	< 1.1	< 2.8	< 1.7	< 1.5	< 1.9	< 2.0	< 1.0	< 1.1	< 4.0
CAWW- 6375	10/20/2010	< 159	< 2.9	< 2.5	< 3.1	< 2.8	< 3.9	< 3.1	< 2.5	< 2.0	< 6.8
					Location: CA-WWA-U2MW-5S						
CAWW- 360	1/6/2010	< 153	< 1.2	< 3.7	< 2.0	< 1.4	< 1.8	< 3.1	< 1.7	< 1.7	< 5.7
CAWW- 1864	4/8/2010	< 172	< 1.6	< 1.9	< 1.5	< 1.6	< 1.4	< 1.7	< 1.5	< 1.9	< 3.9
CAWW- 4290	7/12/2010	< 189	< 1.4	< 2.6	< 1.2	< 1.1	< 1.9	< 2.4	< 1.2	< 0.9	< 6.0
CAWW- 6376	10/20/2010	< 159	< 2.5	< 4.9	< 2.1	< 3.0	< 2.8	< 3.9	< 4.0	< 2.2	< 6.2
					Location: CA-WWA-U2MW-8						
CAWW- 367	1/7/2010	< 153	< 1.3	< 1.9	< 0.8	< 1.3	< 1.8	< 1.4	< 0.9	< 1.3	< 4.3
CAWW- 1865	4/12/2010	< 171	< 1.5	< 2.1	< 1.8	< 1.7	< 3.9	< 2.9	< 1.6	< 2.1	< 2.9
CAWW- 4291	7/15/2010	< 188	< 0.8	< 3.8	< 1.7	< 1.3	< 2.7	< 2.8	< 1.3	< 0.9	< 5.2
CAWW- 6377	10/20/2010	< 157	< 2.9	< 4.7	< 2.5	< 2.7	< 4.8	< 2.7	< 2.3	< 2.9	< 3.8
					Location: CA-WWA-U2MW-9						
CAWW- 370	1/11/2010	< 153	< 1.2	< 4.1	< 1.8	< 1.8	< 2.3	< 2.2	< 1.8	< 1.6	< 7.4
CAWW- 1866	4/9/2010	< 144	< 1.2	< 3.2	< 2.4	< 1.2	< 5.2	< 3.2	< 2.9	< 2.0	< 3.1
CAWW- 4292	7/16/2010	< 188	< 1.1	< 3.0	< 1.5	< 1.6	< 1.9	< 2.6	< 1.4	< 1.1	< 7.0
CAWW- 6378	10/20/2010	< 157	< 1.2	< 3.0	< 1.6	< 1.6	< 1.8	< 2.4	< 1.0	< 1.0	< 5.6
					Location: CA-WWA-U2MW-10						
CAWW- 363	1/6/2010	< 153	< 1.6	< 4.5	< 1.5	< 1.3	< 3.6	< 3.0	< 1.5	< 1.3	< 9.0
CAWW- 1867	4/8/2010	< 144	< 1.9	< 5.1	< 2.0	< 1.9	< 2.5	< 2.2	< 2.1	< 2.4	< 2.4
CAWW- 4293	7/16/2010	< 188	< 1.2	< 2.6	< 1.2	< 1.4	< 2.2	< 2.3	< 1.1	< 1.1	< 6.8
CAWW- 6379	10/21/2010	< 157	< 3.2	< 6.9	< 2.8	< 2.8	< 5.6	< 4.0	< 2.6	< 3.5	< 6.5
					Location: CA-WWA-U2MW-12						
CAWW- 371	1/13/2010	< 153	< 1.5	< 3.2	< 1.9	< 0.9	< 3.4	< 2.3	< 1.5	< 1.8	< 9.0
CAWW- 1869	4/8/2010	< 172	< 1.1	< 3.6	< 2.2	< 1.7	< 3.3	< 1.7	< 1.3	< 2.0	< 4.9
CAWW- 4294	7/15/2010	< 188	< 1.0	< 3.7	< 1.3	< 1.3	< 2.1	< 2.1	< 1.0	< 1.3	< 6.3
CAWW- 6380	10/20/2010	< 157	< 1.9	< 4.3	< 2.4	< 3.3	< 4.1	< 2.9	< 2.4	< 2.7	< 3.2
					Location: CA-WWA-U2MW-16						
CAWW- 356	1/5/2010	< 153	< 1.4	< 3.9	< 1.1	< 1.0	< 2.8	< 2.9	< 1.4	< 1.5	< 8.8
CAWW- 1870	4/8/2010	< 172	< 1.1	< 4.0	< 1.5	< 1.5	< 2.0	< 2.1	< 1.5	< 1.9	< 4.3
CAWW- 4295	7/2/2010	< 189	< 1.3	< 1.9	< 1.2	< 1.4	< 1.9	< 2.3	< 1.2	< 1.0	< 11.7
CAWW- 6381	10/11/2010	< 157	< 2.9	< 6.7	< 1.7	< 1.9	< 5.1	< 4.8	< 2.3	< 2.0	< 7.1

Table 9. Wells and Ponds (non-potable), analyses for tritium and gamma-emitting isotopes.

Lab Code	Collection Date	Concentration (pCi/L) H-3	Mn-54	Fe-59	Co-58	Co-60	Zn-65	Nb-95	Cs-134	Cs-137	La-140
					Location: CA-WWA-F-005						
CAWW- 171	1/11/2010	< 153	< 3.7	< 8.9	< 2.1	< 2.5	< 6.5	< 5.2	< 3.9	< 3.7	< 3.1
CAWW- 1482	3/31/2010	< 144	< 1.2	< 6.7	< 2.9	< 1.4	< 4.8	< 3.2	< 3.1	< 3.4	< 3.6
CAWW- 3548	7/7/2010	< 163	< 2.1	< 5.2	< 2.5	< 2.2	< 7.7	< 5.1	< 4.3	< 4.9	< 2.8
CAWW- 5561	10/1/2010	< 172	< 1.3	< 2.2	< 1.3	< 1.0	< 2.5	< 2.1	< 1.1	< 1.2	< 5.2
					Location: CA-WWA-F-015						
CAWW- 172	1/11/2010	< 153	< 3.1	< 3.0	< 3.9	< 3.2	< 5.0	< 4.6	< 3.5	< 3.0	< 3.6
CAWW- 1483	3/31/2010	< 144	< 2.9	< 4.0	< 1.5	< 2.6	< 4.8	< 4.3	< 2.2	< 2.5	< 2.6
CAWW- 3549	7/7/2010	< 163	< 3.5	< 5.8	< 2.1	< 3.3	< 3.6	< 2.9	< 3.2	< 3.6	< 2.4
CAWW- 5562	10/1/2010	< 172	< 1.4	< 3.4	< 1.0	< 1.4	< 2.2	< 1.8	< 1.4	< 1.3	< 4.3

Table 10a. Bottom sediments, analyses for gamma-emitting isotopes.
Collection: Semiannually
Units: pCi/kg dry

Location		CA-AQS-A	
Lab Code	Req. LLD	CABS- 2033	CABS- 5559
Date Collected	-	04-22-10	10-04-10
K-40	-	13789 ± 705	14536 ± 688
Mn-54	-	< 20.1	< 22.1
Fe-59	-	< 40.4	< 50.1
Co-58	-	< 15.3	< 20.3
Co-60	-	< 10.8	< 9.0
Zr-Nb-95	-	< 29.3	< 21.8
Cs-134	150	< 8.9	< 15.1
Cs-137	180	< 14.1	< 18.8
Ba-La-140	-	< 14.2	< 42.5

Location		CA-AQS-C	
Lab Code	Req. LLD	CABS- 2035	CABS- 5560
Date Collected	-	04-22-10	10-04-10
K-40	-	12998 ± 609	14786 ± 755
Mn-54	-	< 19.1	< 26.4
Fe-59	-	< 26.5	< 39.8
Co-58	-	< 14.8	< 23.9
Co-60	-	< 12.0	< 8.4
Zr-Nb-95	-	< 8.7	< 23.8
Cs-134	150	< 9.9	< 22.5
Cs-137	180	< 8.7	< 28.9
Ba-La-140	-	< 10.5	< 34.8

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Table 10b. Shoreline sediments, analyses for gamma-emitting isotopes.
Collection: Semiannually
Units: pCi/kg dry

Location		CA-AQS-A	
Lab Code	Req. LLD	CASS- 2032	CASS- 5557
Date Collected	-	04-22-10	10-04-10
K-40	-	13237 ± 707	14054 ± 745
Mn-54	-	< 19.8	< 27.8
Fe-59	-	< 25.1	< 29.5
Co-58	-	< 17.2	< 31.3
Co-60	-	< 17.1	< 12.8
Zr-Nb-95	-	< 25.5	< 27.9
Cs-134	150	< 15.7	< 17.5
Cs-137	180	< 17.0	30.2 ± 17.3
Ba-La-140	-	< 11.7	< 31.5

Location		CA-AQS-C	
Lab Code	Req. LLD	CASS- 2034	CASS- 5558
Date Collected	-	04-22-10	10-04-10
K-40	-	14351 ± 697	14513 ± 767
Mn-54	-	< 24.0	< 30.6
Fe-59	-	< 29.2	< 26.2
Co-58	-	< 17.9	< 20.5
Co-60	-	< 15.5	< 20.7
Zr-Nb-95	-	< 12.0	< 21.2
Cs-134	150	< 14.5	< 24.7
Cs-137	180	< 10.1	< 23.6
Ba-La-140	-	< 21.4	< 21.8

CALLAWAY

Table 11. Fish, analyses for gamma-emitting isotopes.
Collection: Semiannually
Units: pCi/kg wet

Location		CA-AQF-A				
Lab Code	Req. LLD	CAF- 2036	CAF- 2037	CAF- 2039	CAF- 2040	CAF- 2041
Date Collected		04-22-10	04-22-10	04-22-10	04-22-10	04-22-10
Sample Type		Smallmouth Buffalo	River Carpsucker	Freshwater Drum	Common Carp	Channel Catfish
K-40	-	2965 ± 418	2887 ± 399	2545 ± 339	2820 ± 356	2854 ± 389
Mn-54	130	< 20.4	< 12.7	< 10.8	< 13.3	< 15.3
Fe-59	260	< 27.9	< 26.0	< 23.5	< 24.8	< 27.4
Co-58	130	< 18.8	< 11.3	< 10.6	< 9.4	< 14.4
Co-60	130	< 15.4	< 11.9	< 10.9	< 10.3	< 8.8
Zn-65	260	< 22.4	< 16.3	< 7.4	< 35.1	< 42.9
Cs-134	130	< 15.1	< 8.8	< 7.1	< 9.4	< 13.9
Cs-137	150	< 19.2	< 7.4	< 13.2	< 11.0	< 18.5

Lab Code	Req. LLD	CAF- 5547	CAF- 5548	CAF- 5549	CAF- 5550	CAF- 5551
Date Collected		10-04-10	10-04-10	10-04-10	10-04-10	10-04-10
Sample Type		Blue Catfish	Freshwater Drum	Common Carp	Channel Catfish	River Carpsucker
K-40	-	3028 ± 361	2805 ± 364	2746 ± 413	2834 ± 366	3035 ± 379
Mn-54	130	< 9.2	< 14.5	< 16.2	< 14.7	< 11.2
Fe-59	260	< 19.1	< 36.8	< 41.1	< 52.1	< 31.9
Co-58	130	< 11.3	< 12.0	< 14.1	< 14.5	< 11.8
Co-60	130	< 12.1	< 11.3	< 10.2	< 10.8	< 11.4
Zn-65	260	< 11.4	< 10.1	< 20.5	< 35.2	< 19.4
Cs-134	130	< 9.5	< 8.8	< 15.5	< 14.1	< 13.6
Cs-137	150	< 11.6	< 10.5	< 10.6	< 20.2	< 12.3

CALLAWAY

Table 11. Fish, analyses for gamma-emitting isotopes.
Collection: Semiannually
Units: pCi/kg wet

Location		CA-AQF-C				
Lab Code	Req. LLD	CAF- 2042	CAF- 2043	CAF- 2044	CAF- 2045	CAF- 2046
Date Collected		04-22-10	04-22-10	04-22-10	04-22-10	04-22-10
Sample Type		Common Carp	Freshwater Drum	Smallmouth Buffalo	Channel Catfish	River Carpsucker
K-40	-	2920 ± 497	2019 ± 488	2960 ± 444	2997 ± 398	2505 ± 361
Mn-54	130	< 20.3	< 13.4	< 18.9	< 15.8	< 11.7
Fe-59	260	< 50.8	< 26.2	< 39.3	< 35.3	< 30.3
Co-58	130	< 13.2	< 6.2	< 16.5	< 18.4	< 8.0
Co-60	130	< 19.7	< 12.0	< 17.5	< 12.2	< 10.8
Zn-65	260	< 31.5	< 13.8	< 28.9	< 32.9	< 15.6
Cs-134	130	< 17.9	< 8.0	< 19.0	< 17.8	< 12.5
Cs-137	150	< 23.2	< 12.7	< 13.2	< 20.0	< 7.8

Lab Code	Req. LLD	CAF- 5552	CAF- 5553	CAF- 5554	CAF- 5555	CAF- 5556
Date Collected		10-04-10	10-04-10	10-04-10	10-04-10	10-04-10
Sample Type		Blue Catfish	Channel Catfish	Freshwater Drum	Common Carp	River Carpsucker
K-40	-	2271 ± 315	2308 ± 292	2993 ± 454	2626 ± 385	3147 ± 405
Mn-54	130	< 8.8	< 10.6	< 10.8	< 18.9	< 13.6
Fe-59	260	< 23.4	< 23.6	< 44.2	< 41.2	< 26.4
Co-58	130	< 9.6	< 8.0	< 20.3	< 15.8	< 11.5
Co-60	130	< 10.2	< 9.7	< 17.3	< 11.9	< 13.1
Zn-65	260	< 7.5	< 11.4	< 14.2	< 38.6	< 11.4
Cs-134	130	< 9.9	< 4.9	< 12.8	< 10.7	< 8.0
Cs-137	150	< 10.7	< 9.8	< 14.7	< 17.1	< 9.7

Table 12 Direct Radiation (quarterly exposure)

Location	Gamma Dose (mrem/90 days)			
	QTR 1	QTR 2	QTR 3	QTR 4
CA-IDM-1A	15.69	15.95	15.51	14.93
CA-IDM-3	16.73	16.12	16.41	15.58
CA-IDM-5	14.41	13.58	13.33	14.58
CA-IDM-6	16.10	15.98	16.39	15.40
CA-IDM-7	16.43	16.50	14.49	16.94
CA-IDM-9	15.57	14.51	13.88	14.88
CA-IDM-10	16.67	15.76	14.88	16.02
CA-IDM-11A	16.38	16.51	16.13	16.55
CA-IDM-14	15.36	15.48	15.25	15.42
CA-IDM-17	14.92	15.40	Missing [a]	16.64
CA-IDM-18A	15.13	15.63	15.13	15.84
CA-IDM-20	15.86	17.22	15.26	15.68
CA-IDM-21	15.87	15.63	14.38	15.03
CA-IDM-22A	15.33	14.98	15.35	13.32
CA-IDM-23	15.95	16.49	16.03	16.05
CA-IDM-26 (C)	11.81	11.51	10.50	10.71
CA-IDM-27 (C)	16.56	17.07	16.13	16.81
CA-IDM-30A	15.82	15.97	Missing [a]	16.44
CA-IDM-31A	16.98	16.67	16.22	16.76
CA-IDM-32	16.70	15.33	16.81	16.53
CA-IDM-32A	14.62	15.79	13.67	14.23
CA-IDM-33	16.98	16.73	15.09	15.58
CA-IDM-34	15.20	14.01	14.09	14.67
CA-IDM-35	14.13	14.72	14.15	14.85
CA-IDM-36	15.91	Missing [a]	15.06	15.40
CA-IDM-37	15.52	15.04	13.98	15.64
CA-IDM-38	11.36	11.84	Missing [a]	10.69
CA-IDM-39	15.87	15.96	15.45	13.67
CA-IDM-39A	16.14	15.86	15.64	15.66
CA-IDM-40	16.72	17.03	16.51	16.60
CA-IDM-41	15.93	15.71	14.37	15.02
CA-IDM-42	14.01	13.65	13.05	13.18
CA-IDM-43	15.33	15.94	14.73	15.08
CA-IDM-44	14.46	15.62	14.61	16.05
CA-IDM-45	13.77	14.62	14.50	13.61
CA-IDM-46	16.55	15.68	15.77	17.00
CA-IDM-47	16.32	15.72	13.83	16.06
CA-IDM-48	15.35	16.31	15.14	17.20
CA-IDM-49	15.45	14.87	13.68	15.48
CA-IDM-50	16.66	16.28	14.94	17.44
CA-IDM-51A	17.24	15.78	16.65	16.65
CA-IDM-52	16.91	15.95	16.81	15.98
CA-IDM-60	15.75	14.98	15.42	16.05

[a] TLD and holder missing from assigned location.

Appendix C

Supplemental Analyses

C-1. Soil, analyses for tritium and gamma-emitting isotopes.
Units: pCi/kg dry

Lab Code	Collection Date	H-3 (pCi/L)	Concentration (pCi/kg dry) K-40	Mn-54	Fe-59	Co-58	Co-60	Nb-95	Cs-134	Cs-137	La-140	Location
CASO- 3066	6/11/2010	< 162	9348 ± 623	< 27.8	< 33.0	< 17.7	< 10.5	< 25.1	< 15.5	< 21.8	< 16.4	CA-SOL-PB1
CASO- 3067	6/11/2010	< 162	9987 ± 633	< 23.3	< 35.9	< 16.7	< 10.9	< 34.6	< 21.9	< 21.9	< 21.8	CA-SOL-PB2
CASO- 4383	8/3/2010	< 152	13490 ± 671	< 19.2	< 26.2	< 7.4	< 13.4	< 11.8	< 13.9	< 16.3	< 7.5	MW-018 3.5-5`
CASO- 4384	8/3/2010	< 152	13224 ± 583	< 18.1	< 33.5	< 13.2	< 13.2	< 20.9	< 14.7	< 13.7	< 10.9	MW-018 8.5-10`
CASO- 4385	8/3/2010	320 ± 96	13146 ± 699	< 19.3	< 55.6	< 19.3	< 17.2	< 24.0	< 13.3	< 22.3	< 17.1	MW-018 13.5-15`
CASO- 4386	8/3/2010	487 ± 103	13526 ± 791	< 27.8	< 29.6	< 24.4	< 15.5	< 18.5	< 17.4	< 11.8	< 15.8	MW-018 18.5-20`
CASO- 4387	8/3/2010	< 152	14065 ± 671	< 20.0	< 39.8	< 12.9	< 11.7	< 15.5	< 14.0	< 16.4	< 20.5	MW-019 3.5-5`
CASO- 4388	8/3/2010	184 ± 89	12499 ± 626	< 19.1	< 40.0	< 13.5	< 17.6	< 21.4	< 14.2	< 18.8	< 16.3	MW-019 8.5-10`
CASO- 4389	8/3/2010	746 ± 113	11663 ± 569	< 19.6	< 15.3	< 8.4	< 13.1	< 13.6	< 13.6	< 12.5	< 13.2	MW-019 13.5-15`
CASO- 4390	8/3/2010	779 ± 114	12220 ± 589	< 18.8	< 25.0	< 13.0	< 5.8	< 15.0	< 11.2	< 12.7	< 12.4	MW-019 18.5-20`
CASO- 4391	8/4/2010	< 152	13693 ± 720	< 21.1	< 23.9	< 18.7	< 16.9	< 18.7	< 17.9	< 18.0	< 11.5	MW-020 3.5-5`
CASO- 4392	8/4/2010	< 152	12899 ± 1025	< 31.6	< 55.9	< 26.8	< 17.4	< 37.0	< 24.9	< 25.5	< 28.0	MW-020 8.5-10`
CASO- 4393	8/4/2010	< 152	10511 ± 882	< 30.2	< 31.4	< 20.3	< 27.3	< 26.7	< 22.8	< 16.6	< 25.9	MW-020 13.5-15`
CASO- 4394	8/4/2010	< 152	12543 ± 589	< 17.4	< 21.5	< 13.1	< 7.8	< 8.9	< 12.5	< 16.3	< 7.8	MW-020 18.5-20`
CASO- 5340	9/21/2010	< 157	12138 ± 608	< 17.0	< 41.3	< 15.1	< 5.3	< 16.0	< 10.4	< 11.9	< 20.5	MW-021 3`-5`
CASO- 5341	9/21/2010	< 157	13905 ± 697	< 21.0	< 30.2	< 16.1	< 8.0	< 16.2	< 16.7	< 15.9	< 19.0	MW-021 8`-10`
CASO- 5342	9/21/2010	< 157	12554 ± 630	< 19.5	< 45.3	< 14.7	< 11.1	< 12.0	< 15.3	< 10.9	< 23.3	MW-021 13`-15`
CASO- 5343	9/21/2010	< 157	13554 ± 662	< 18.9	< 20.9	< 18.3	< 19.3	< 17.1	< 15.8	< 11.2	< 52.0	MW-021 18`-20`
CASO- 5344	9/21/2010	< 157	12584 ± 597	< 16.4	< 38.7	< 16.4	< 16.2	< 21.5	< 15.1	< 13.1	< 15.9	MW-021 23`-25`
CASO- 5345	9/21/2010	< 157	12477 ± 604	< 15.5	< 43.1	< 8.5	< 8.8	< 29.1	< 15.5	< 8.9	< 12.4	MW-022 3`-5`
CASO- 5346	9/21/2010	< 157	12437 ± 818	< 31.4	< 79.9	< 27.5	< 26.6	< 22.4	< 24.6	< 20.8	< 51.0	MW-022 8`-10`
CASO- 5347	9/21/2010	< 157	12425 ± 739	< 25.4	< 57.0	< 23.8	< 21.5	< 23.0	< 21.9	< 23.0	< 35.1	MW-022 13`-15`
CASO- 5348	9/21/2010	< 157	12460 ± 589	< 20.7	< 39.4	< 18.0	< 10.5	< 16.4	< 15.9	< 17.2	< 12.5	MW-022 18`-20`
CASO- 5349	9/21/2010	< 157	11467 ± 532	< 15.4	< 26.2	< 15.6	< 9.2	< 19.3	< 9.6	< 11.4	< 15.5	MW-022 23`-25`
CASO- 5350	9/21/2010	< 160	12478 ± 598	< 20.9	< 44.9	< 22.3	< 8.9	< 12.4	< 13.6	< 20.0	< 34.4	MW-023 3`-5`
CASO- 5351	9/21/2010	< 160	12093 ± 558	< 18.2	< 43.3	< 15.1	< 9.7	< 28.6	< 10.0	< 12.8	< 23.7	MW-023 8`-10`
CASO- 5352	9/21/2010	< 160	12263 ± 577	< 15.6	< 25.5	< 17.8	< 11.3	< 22.7	< 15.4	< 14.4	< 35.7	MW-023 13`-15`
CASO- 5353	9/21/2010	< 160	12457 ± 573	< 18.1	< 38.6	< 18.0	< 8.5	< 19.4	< 6.5	< 9.8	< 24.0	MW-023 18`-20`
CASO- 5354	9/21/2010	< 160	11423 ± 513	< 16.8	< 14.3	< 16.0	< 5.1	< 15.2	< 13.0	< 12.1	< 13.6	MW-023 23`-25`
CASO- 5355	9/23/2010	< 160	12271 ± 563	< 18.6	< 38.4	< 18.6	< 17.6	< 19.8	< 12.9	< 13.4	< 19.4	MW-024 3`-5`
CASO- 5356	9/23/2010	< 167	13483 ± 866	< 30.1	< 64.1	< 23.0	< 27.0	< 26.5	< 20.3	< 23.6	< 26.4	MW-024 8`-10`
CASO- 5357	9/23/2010	< 167	10894 ± 560	< 19.0	< 51.2	< 14.0	< 11.9	< 18.3	< 12.1	< 15.2	< 22.8	MW-024 13`-15`

C-1. Soil, analyses for tritium and gamma-emitting isotopes.
Units: pCi/kg dry

Lab Code	Collection Date	H-3	Concentration (pCi/kg dry) K-40	Mn-54	Fe-59	Co-58	Co-60	Nb-95	Cs-134	Cs-137	La-140	Location
CASO- 5359	9/23/2010	< 167	11983 ± 582	< 22.1	< 42.7	< 20.0	< 16.1	< 16.8	< 16.9	< 10.8	< 30.5	MW-024 18`-20`
CASO- 5360	9/23/2010	< 167	12269 ± 513	< 16.9	< 15.3	< 14.4	< 5.9	< 9.4	< 8.0	< 12.6	< 15.1	MW-024 23`-25`
CASO- 5361	9/23/2010	< 167	12741 ± 630	< 19.9	< 32.8	< 24.2	< 16.6	< 22.4	< 7.7	49.0 ± 20.0	< 33.4	MW-025 3`-5`
CASO- 5362	9/23/2010	< 167	11694 ± 617	< 22.3	< 59.2	< 17.7	< 8.9	< 29.9	< 12.9	< 15.9	< 26.2	MW-025 8`-10`
CASO- 5363	9/23/2010	< 167	11695 ± 593	< 19.2	< 39.1	< 20.5	< 5.7	< 12.5	< 14.6	< 14.9	< 48.0	MW-025 13`-15`
CASO- 5364	9/23/2010	< 167	12277 ± 601	< 18.8	< 35.9	< 21.2	< 5.1	< 27.2	< 12.4	< 11.2	< 28.1	MW-025 18`-20`
CASO- 5365	9/23/2010	< 167	11933 ± 563	< 18.8	< 56.6	< 13.4	< 13.3	< 35.9	< 10.8	< 15.8	< 25.6	MW-025 23`-25`
CASO- 5366	9/23/2010	< 167	11602 ± 604	< 18.8	< 41.6	< 20.4	< 14.7	< 30.4	< 12.6	< 17.7	< 54.4	MW-026 3`-5`
CASO- 5367	9/23/2010	< 173	11372 ± 568	< 14.5	< 34.4	< 17.3	< 9.0	< 21.6	< 12.7	< 15.0	< 25.5	MW-026 8`-10`
CASO- 5368	9/23/2010	< 173	12333 ± 600	< 19.7	< 32.8	< 17.8	< 11.1	< 23.3	< 16.3	< 20.1	< 41.4	MW-026 13`-15`
CASO- 5369	9/23/2010	< 173	12105 ± 629	< 19.3	< 40.1	< 17.9	< 7.6	< 19.3	< 16.5	< 12.2	< 29.9	MW-026 18`-20`
CASO- 5370	9/23/2010	< 173	10884 ± 610	< 19.3	< 31.2	< 21.3	< 13.8	< 25.7	< 12.9	< 14.0	< 29.2	MW-026 23`-25`
CASO- 5566	10/1/2010	< 163	10163 ± 644	< 23.0	< 55.1	< 12.4	< 16.9	< 35.3	< 16.8	< 19.3	< 46.3	CA-CLAY SOIL
CASO- 5567	10/1/2010	< 163	12768 ± 562	< 17.1	< 21.9	< 13.1	< 17.8	< 16.5	< 11.6	< 10.7	< 10.6	CA-SAND SOIL