

April 30, 2010

ULNRC-05702

U.S. Nuclear Regulatory Commission
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Ladies and Gentlemen:

**DOCKET NUMBER 50-483
CALLAWAY PLANT UNIT 1
UNION ELECTRIC CO.
FACILITY OPERATING LICENSE NPF-30
2009 ANNUAL RADIOLOGICAL
ENVIRONMENTAL OPERATING REPORT**

Please find enclosed the 2009 Annual Radiological Environmental Operating Report for Callaway Plant. This report is submitted in accordance with Section 5.6.2 of the 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,

A handwritten signature in black ink that reads "Scott Maglio".

Scott Maglio,
Regulatory Affairs Manager

ACS/nls

Attachment: Annual Radiological Environmental Operating Report

ULNRC-05702

April 30, 2010

Page 2

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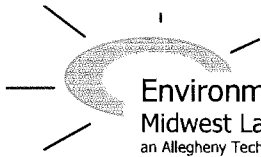
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**AMEREN UE, CALLAWAY PLANT
FULTON, MISSOURI**

DOCKET NO. 50-483

**ANNUAL REPORT
to the**

UNITED STATES NUCLEAR REGULATORY COMMISSION

Radiation Environmental Operating Report

January 1 to December 31, 2009

Prepared by

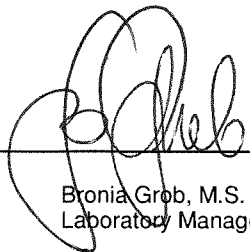
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Submitted by

UNION ELECTRIC CO.
dba AmerenUE Corp.

Project No. 8036

Approved :



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PREFACE

This Annual Radiological Environmental Operating Report describes the AmerenUE Corp., Callaway Plant Radiological Environmental Monitoring Program (REMP), and the program results for the calendar year 2009. 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 AmerenUE personnel or contractors to AmerenUE and shipped to Environmental, Inc. – Midwest Laboratory and Framatone for analysis.

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

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1.0 INTRODUCTION

This report presents an analysis of the results of the Radiological Environmental Monitoring Program (REMP) conducted during 2009 for the Union Electric Company (dba AmerenUE 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 2009 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 2009 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 2009 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 through September) and monthly during the winter. 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.

This 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.

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

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 locations are sampled semiannually.

To monitor possible sources of ground water contamination due to plant operations, non-potable ground water is collected monthly or quarterly from 30 well locations both onsite and along the discharge pipeline.

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

Additional testing of ground and surface water samples is included in Part II, App. C.

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:

Surface water samples are composites of daily collections by automatic river sampler at two locations, S01 and S02. For 2009, down-time for the sampler at S01 was 35 hours (0.4%); the sampler at S02 was out of service for 544 hours (6.2%).

(2) Groundwater:

Gamma spectroscopic analysis was missed for nine groundwater sites in the first quarter, 2009. The collector was not aware of new requirements for the REMP. Most of the samples have been subsequently analyzed, though not all required LLDs could be met.

Excavation for a new essential service water pipeline blocked access to well #937E. No samples were available during the first quarter, 2009. Sampling was resumed in the second quarter.

No sample was available for October, 2009, for well 936. The well was under water due to large amounts of rain and inoperability of the groundwater sump. The water table rose sufficiently to submerge the flush-finished well.

(3) Milk:

Milk samples were not available from location M-06 after April, 2009, due to the death of the dairy owner.

Milk was available from location M-10 for the period of May through September, 2009. The goats were pregnant during January- April and did not provide milk. The station withdrew from the program in October, 2009.

(4) Fish:

Fish, collected July 16, 2009, was sampled 29 days beyond the +/- 25% grace period. Flooding on the Missouri River created unsafe river conditions and delayed the collection.

(5) Direct Radiation:

TLDs for locations IDM-23 and IDM-31A were missing for the 3rd quarter, 2009. Vandalism is suspected. The TLDs were replaced for the 4th quarter.

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 samples were not available from location M-06 after April, 2009, due to the death of the dairy owner. The location has been dropped from the program.

Milk sample location M-10 withdrew from the program in October, 2009.

In the second quarter, 2009, twelve wells (M-2, M-7, OW-1, OW-2, OW-3, 501, 502, MW-003, MW-007, MW-008, MW-009, and MW-011) were removed from the REMP and seven Unit 2 wells (MW-2S, MW-5S, MW-8, MW-9, MW-10, MW-12, and MW-16) were added based on section 2.4.12 (Hydrology) of the Unit 2 Environmental Report and the Rizzo hydrological report for Unit 1.

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 2009, 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 22, 2009. 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 drinking water wells along Mud Creek and Logan Creek. No new drinking water wells were identified in 2009.

Missouri river water intakes, within 10 river miles downstream of the plant, were checked, and new construction identified. No new water intake was developed in 2009.

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 2009 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 2009.

4.2 Program Findings

Results obtained show background levels of radioactivity in environmental samples collected beyond the plant property boundary in 2009. 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 ODCM was revised, effective July 8, 2008, to replace the gross beta analysis with a gamma spectroscopic analysis for each particulate air sample (REMP airborne sampling stations A1, A7, A8, A9, and B3). Annual gross beta concentrations in airborne particulates had averaged approximately 0.024 pCi/m³ from 1998 through 2008.

The five air particulate sampling stations are indicator locations. One station is located at the community with the highest D/Q, another on the outskirts of Fulton, Missouri.

Gamma spectroscopic analysis of the air particulate filters yielded similar results for all locations. In 16 of the 260 samples tested, Beryllium-7 measured above an LLD value of 0.20 pCi/m³, with an average activity of 0.27 pCi/m³. 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/m³.

Direct Radiation (TLDs)

Forty-three TLDs were placed in 16 sectors around the Callaway site. Measurements from forty indicator locations averaged 16.2 mrem /quarter and the three control locations averaged 15.4 mrem/quarter. The readings ranged from 10.9 to 19.8 mrem /quarter, with the highest from the control location CA-IDM-27, average 18.0 mrem /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 2009 show no radiological effects of plant operation.

Vegetation

There was no I-131 activity detected in broadleaf vegetation samples. Measurement levels were below an LLD level of 35.2 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 November, 2009, and analyzed for tritium and gamma-emitting isotopes. No tritium activity was measured above a detection level of 157 pCi/L in any of the samples. Potassium-40 activity ranged from 12,595 – 16,794 pCi/kg wet weight and averaged 15,001 pCi/kg wet weight. Trace Cs-137 was detected in two of nine indicator samples at a concentration of 19.4 pCi/kg wet weight, most likely contributed by uptake from the soil. The detection of Cs-137 activity alone, in environmental samples, with no indication of other fission products, is generally attributable to deposition of fallout from previous decades. 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 (2,843 and 2,663 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 324 and 204 pCi/kg dry, respectively. The cesium-137 activity is similar to or less than levels observed from 1999 through 2008, these levels are generally attributable to deposition of fallout from previous decades.

Naturally-occurring potassium-40 averaged 12,073 pCi/kg dry weight.

Analysis results for soil samples in 2009 were consistent with previously accumulated data and no plant operational effects were identified.

4.2 Program Findings (continued)

Surface Water

In 2008, slight tritium activity had been observed in samples from the downstream location S-02. In 2009, levels of tritium had dropped below an LLD value of 163 pCi/L for both indicator and control samples. Gamma spectroscopic analysis for surface water samples were consistent with previously accumulated data.

There was no indication of any radiological impact due to plant operations.

Surface Water, Ponds

To further monitor possible sources of groundwater contamination due to plant operations, an additional twelve onsite surface water locations (SWA) were added to the permanent REMP in 2009. Slight tritium activity was detected in 4 of 34 samples tested. The samples were collected from the Unit 2 Pond, adjacent to the power block structures, and averaged 313 pCi/L. It is believed the low level activity is due to washout of tritium in gaseous effluents released from the plant unit vent. The absence of tritium in on-site ponds (Pond-1, Pond-2, Outfalls 010 through 015, and sludge lagoon #4) indicate there is no off-site effect from the washout.

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, there are nine additional potable water wells from adjacent property and one additional potable water well from the town of Portland, MO in the REMP. The samples were analyzed for tritium and gamma-emitting isotopes.

No tritium activity was measured above a detection level of 158 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.

Twenty-eight additional indicator locations, on-site and along the discharge pipeline, are included in the REMP. Tritium activity was detected in 35 of the 173 samples tested, at an average activity of 286 pCi/L. The highest concentrations were observed from samples taken at on-site location OW-5, with an average activity of 455 pCi/L.

Wells OW-4, OW-5, GWS, 936, 937A to 937F 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 and MW-017 is due to residual low level contamination of the area downgradient from manholes 6B and 5. The contamination was caused by normal operation of air release valves (ARVs) in the now-abandoned 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

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

possible leakage to the ground water. The old pipeline has been abandoned in place. Wells have been established along the pipeline 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 July and December, 2009, and analyzed for gamma-emitting isotopes. Potassium-40 activity ranged from 12,416 to 13,895 pCi/kg dry weight and averaged 13,120 pCi/kg dry weight.

Shoreline sediments were also collected in July and December, 2009. Trace Cs-137 activity was detected in one of two control samples at a concentration of 51.9 pCi/kg dry weight. Potassium-40 activity ranged from 12,379 – 15,189 pCi/kg dry weight and averaged 13,660 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. East of Business 54, West 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, Utility 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. East of Hwy 94, Kingdom Telephone Company, 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, N side of Belgian Dr., 150 feet East of Hwy CC, 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

Table 5.1. Sampling Locations continued.

Location Code	Distance / Direction ¹	Description	Sample Types ²
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
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 O.	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	Holzouser 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

Table 5.1. Sampling Locations, continued.

Location Code	Distance / Direction ¹	Description	Sample Types ²
M9 ³	13 mi. SW	Ferguson Farm, Tebbetts, MO.	MLK
M10	3.8 mi. SW	Dodd Farm, Steedman, 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

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, Groundwater Monitoring Well	WWA
U1MW-014	3.7 mi. S	Pipeline, Groundwater Monitoring Well	WWA
U1MW-015	3.9 mi. SSE	Pipeline, Groundwater Monitoring Well	WWA
U1MW-016	4.5 mi. SSE	Pipeline, Groundwater Monitoring Well	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
937C	Inside OCA	Monitoring Well, Plant East of Radwaste Building Drum Storage.	WWA
937D	Inside OCA	Monitoring Well, Plant South of Discharge Monitor Tanks.	WWA
937E	Inside OCA	Granular Fill Monitoring Well	WWA
937F	Inside OCA	Granular Fill Monitoring Well	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
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

Table 5.1. Sampling Locations, Potable Well Water.

Location Code	Distance / Direction ¹	Description	Sample Types ²
3	2.9 mi. SSE	Ward, Rick & Nancy, 9204 County Road 448	DWA
4	2.6 mi. SSE	Miller, Albert, 9057 County Road 448	DWA
5	2.5 mi. SSE	Hux, Ron, 8802 County Road 448	DWA
6	2.2 mi. SE	Lindeman, Henry, 8754 County Road 448	DWA
7	2.1 mi. ESE	Kriete, Stan, 8304 County Road 448	DWA
8	3.4 mi. SSW	Brandt, John, 9400 County Road 457	DWA
9	2.9 mi. SSW	Clardy, Scott & Tammy, 9142 County Road 457	DWA
10	2.7 mi. SSW	Dillon, Susan, 9076 County Road 457	DWA
12	3.6 mi. SSE	Dillon, Joe, 9549 County Road 464	DWA
22	4.8 mi. SE	Robert Plummer, 10402 State Road 94	DWA

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

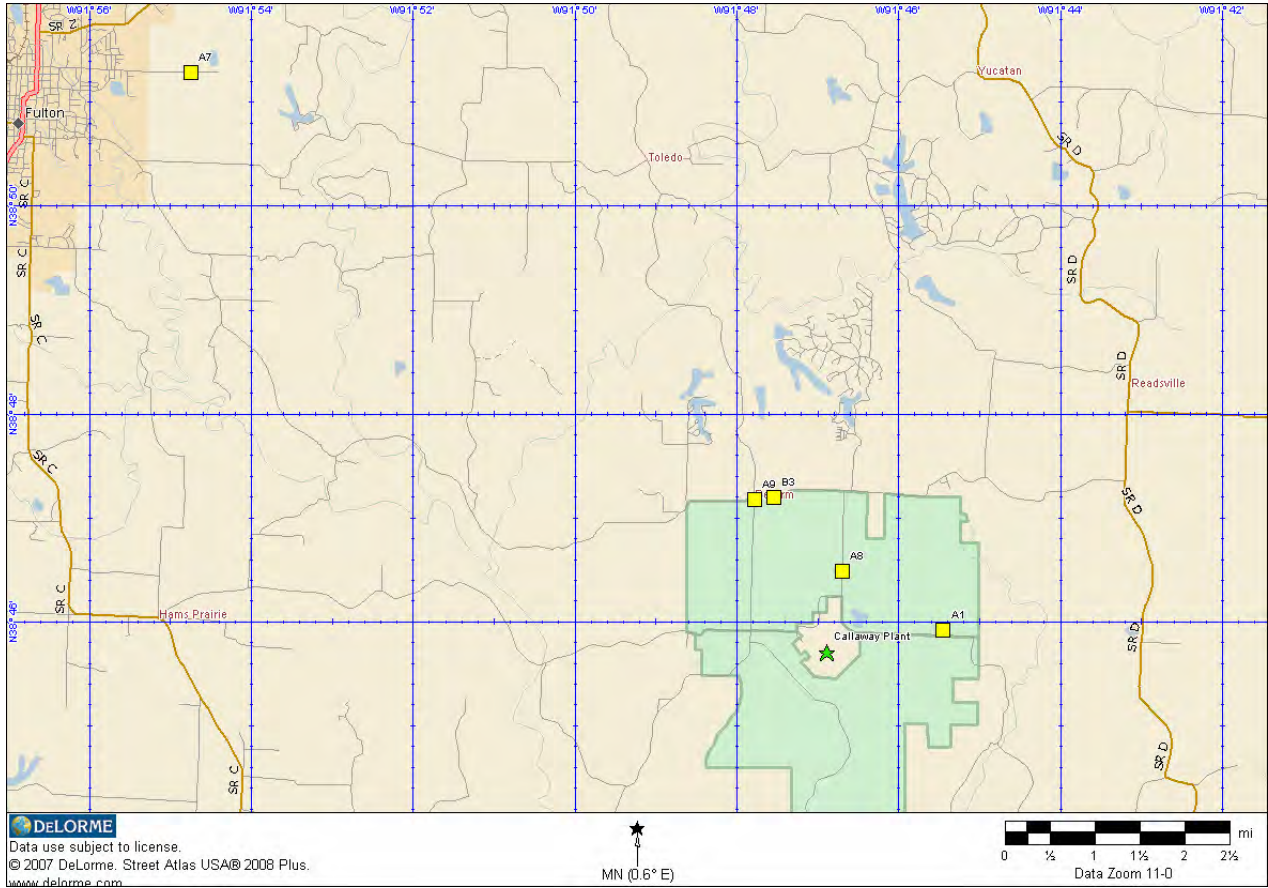


Figure 5.2a. Direct Radiation Monitoring Stations, Inner Ring Locations.

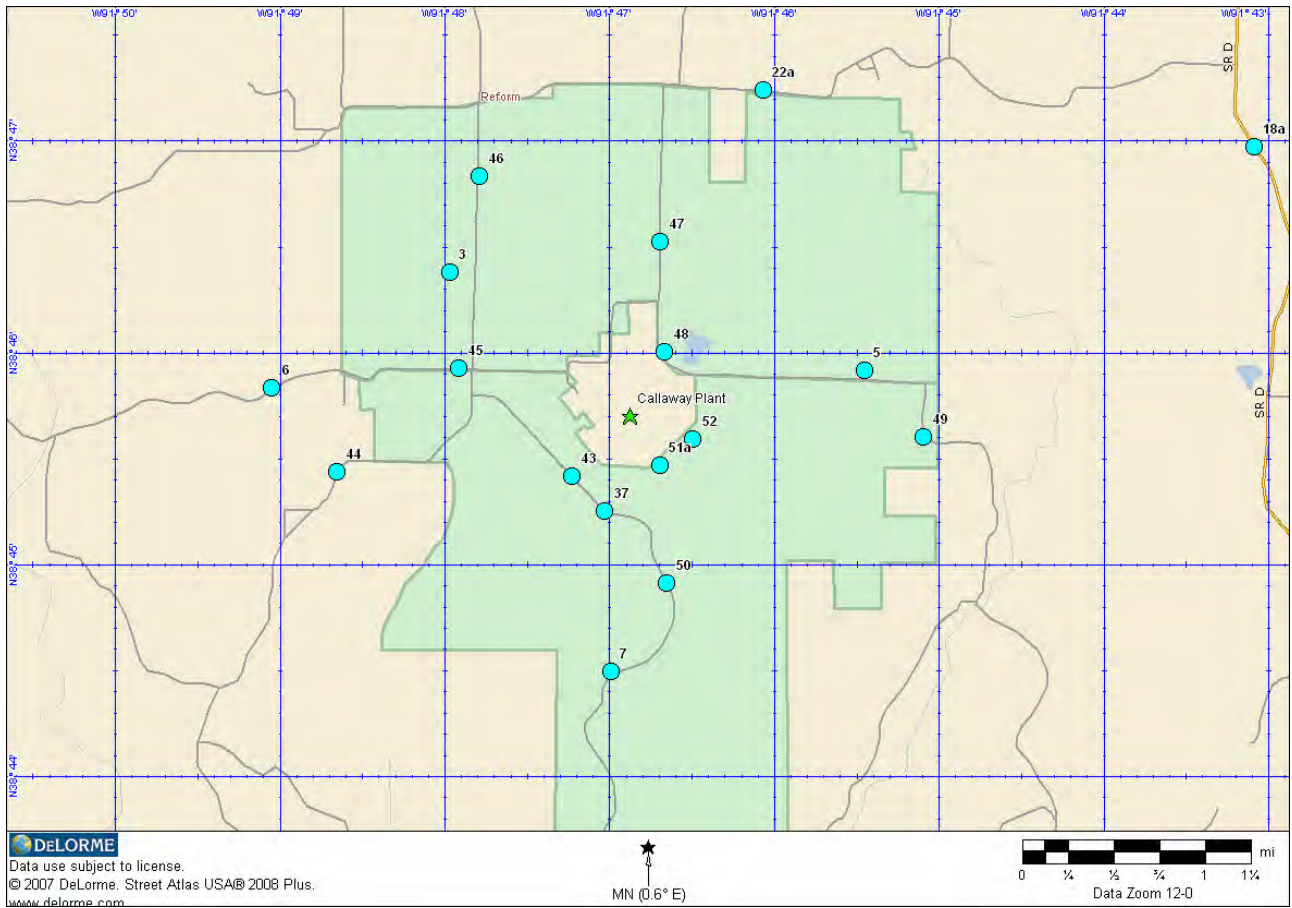


Figure 5.2b. Direct Radiation Monitoring, Outer Ring and Special Interest Locations.

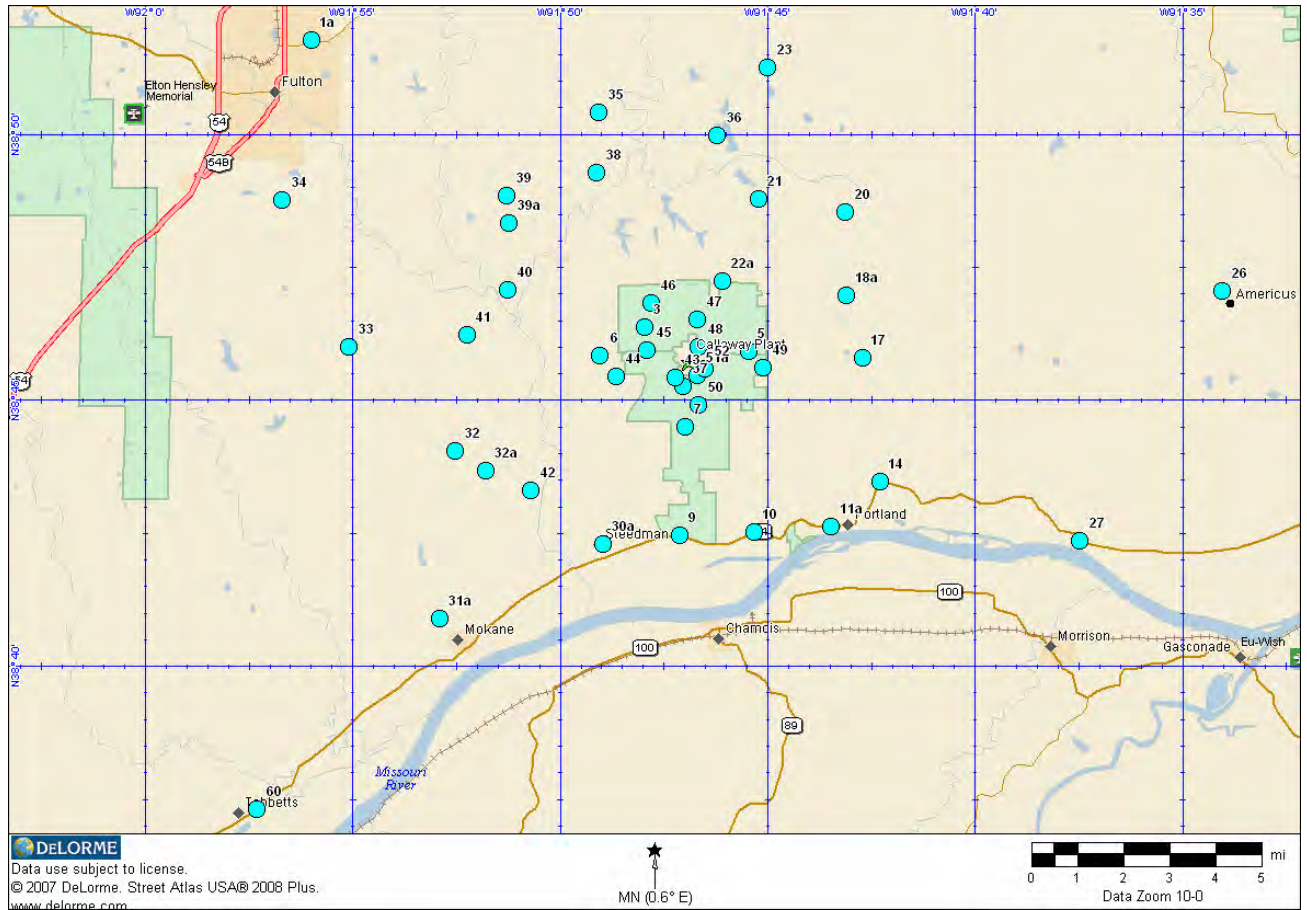


Figure 5.3. Drinking Well Water sample locations.

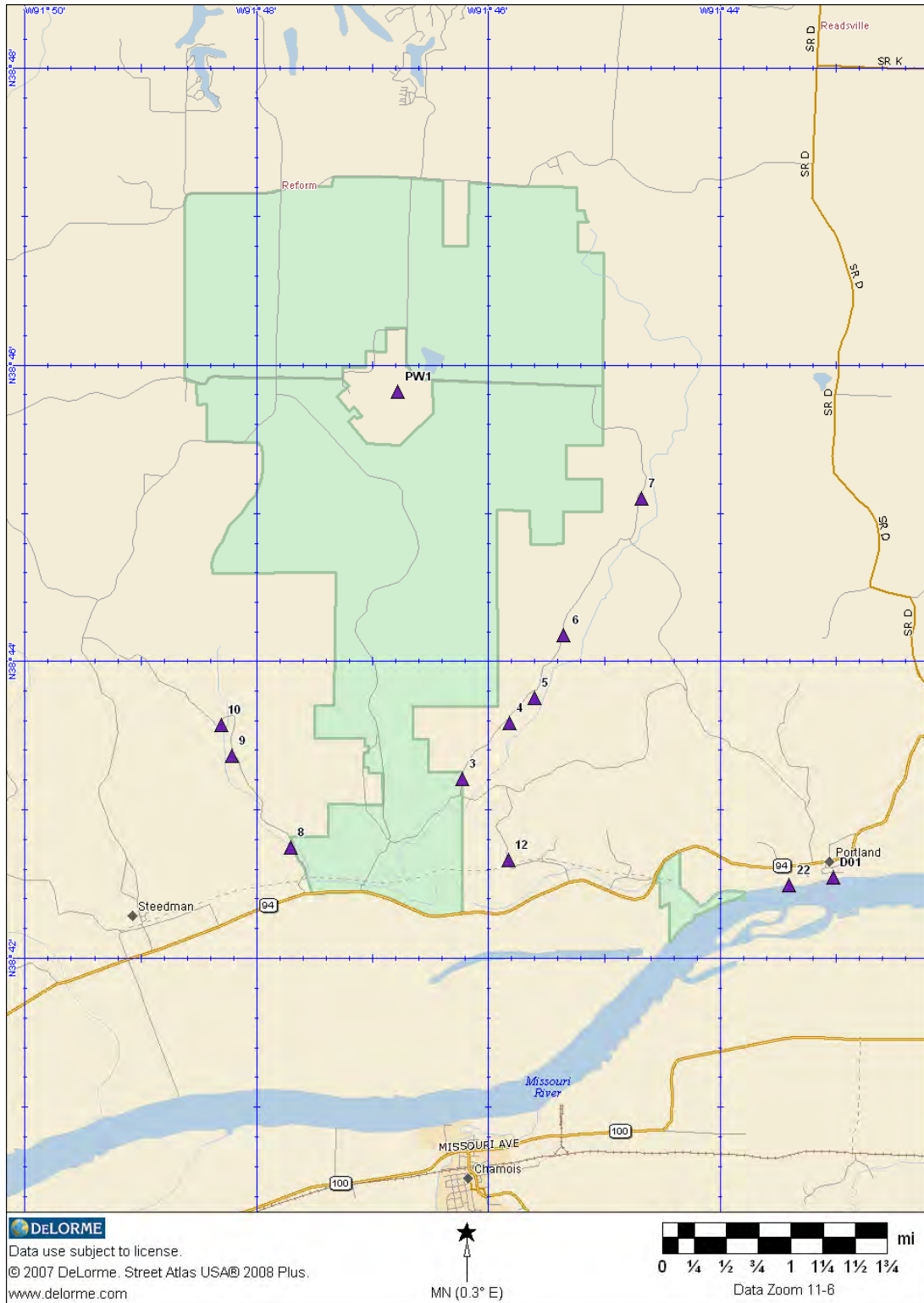


Figure 5.4a. Groundwater Monitoring Wells, Owner Controlled Area and Vicinity.

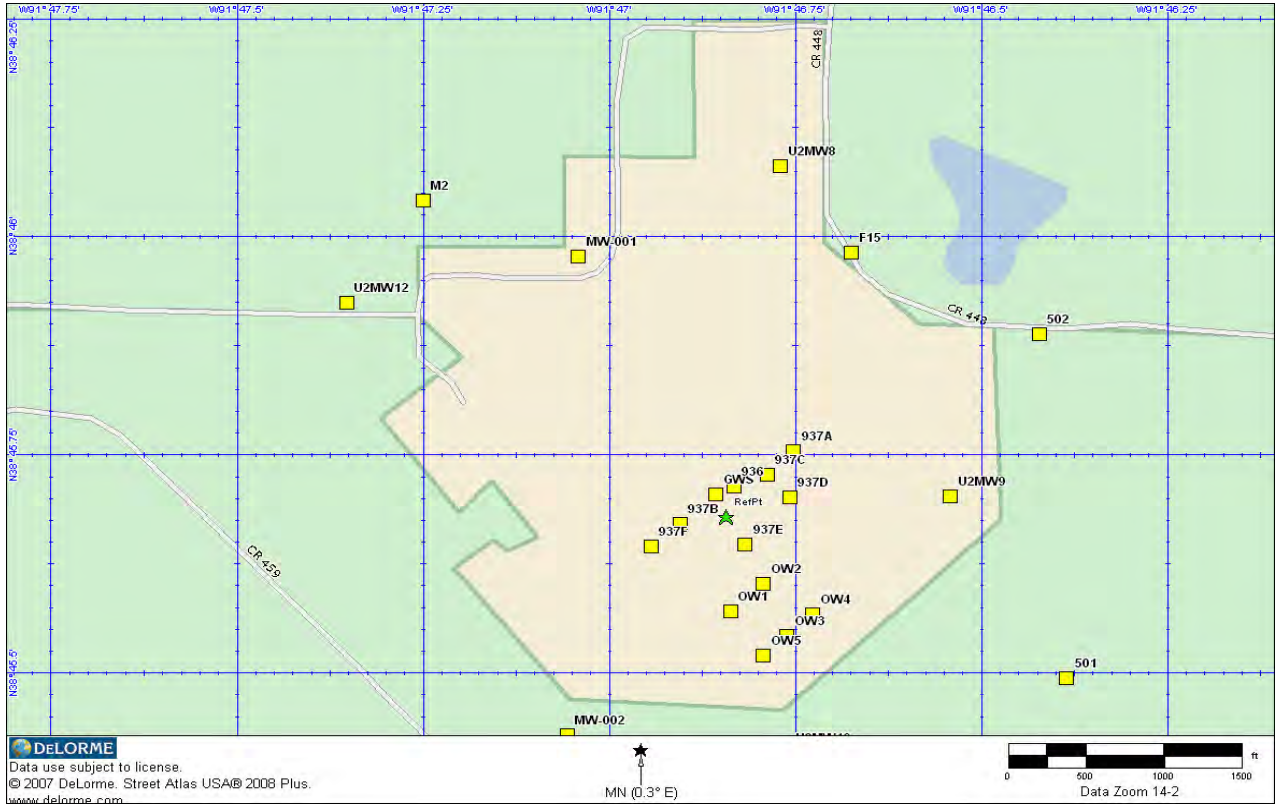


Figure 5.4b. Groundwater Monitoring Wells, Plateau Area.

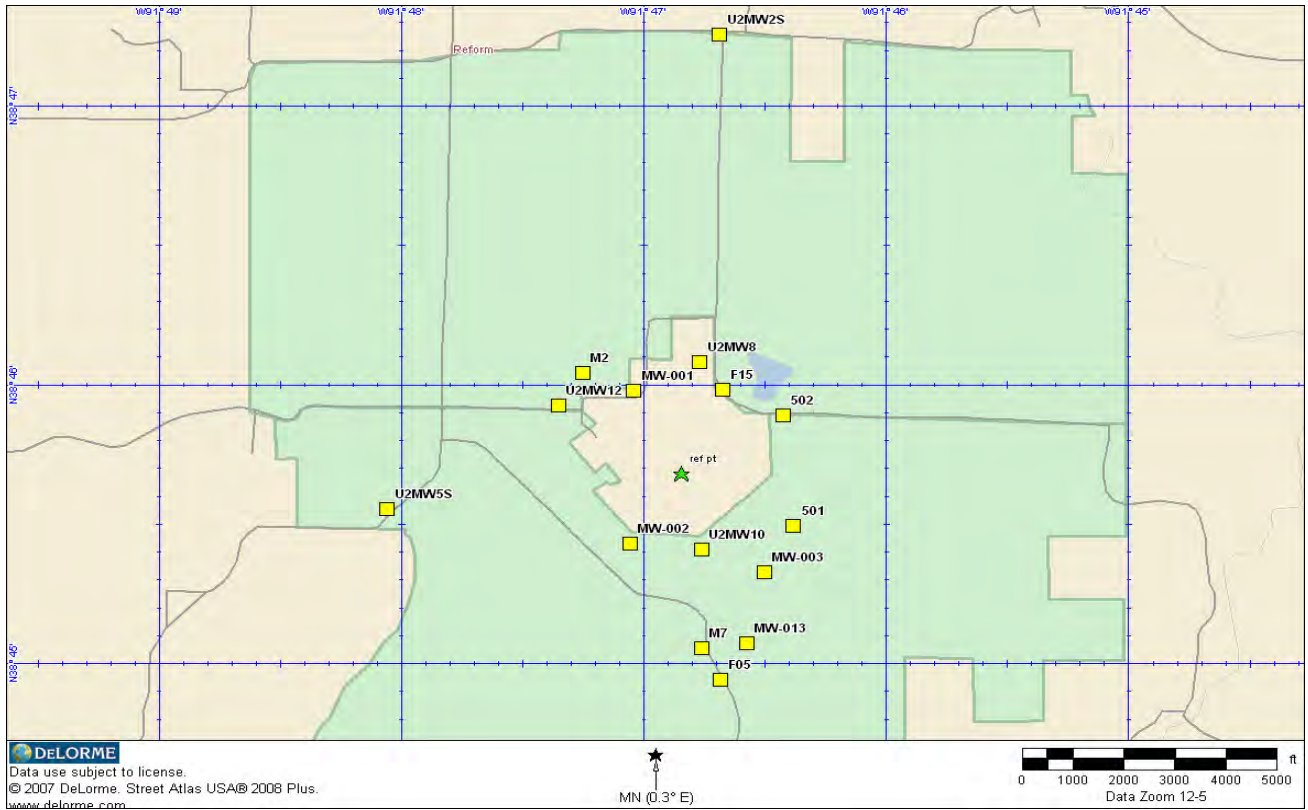


Figure 5.4c. Groundwater Monitoring Wells, Missouri River Flood Plain, Highway 94 Area

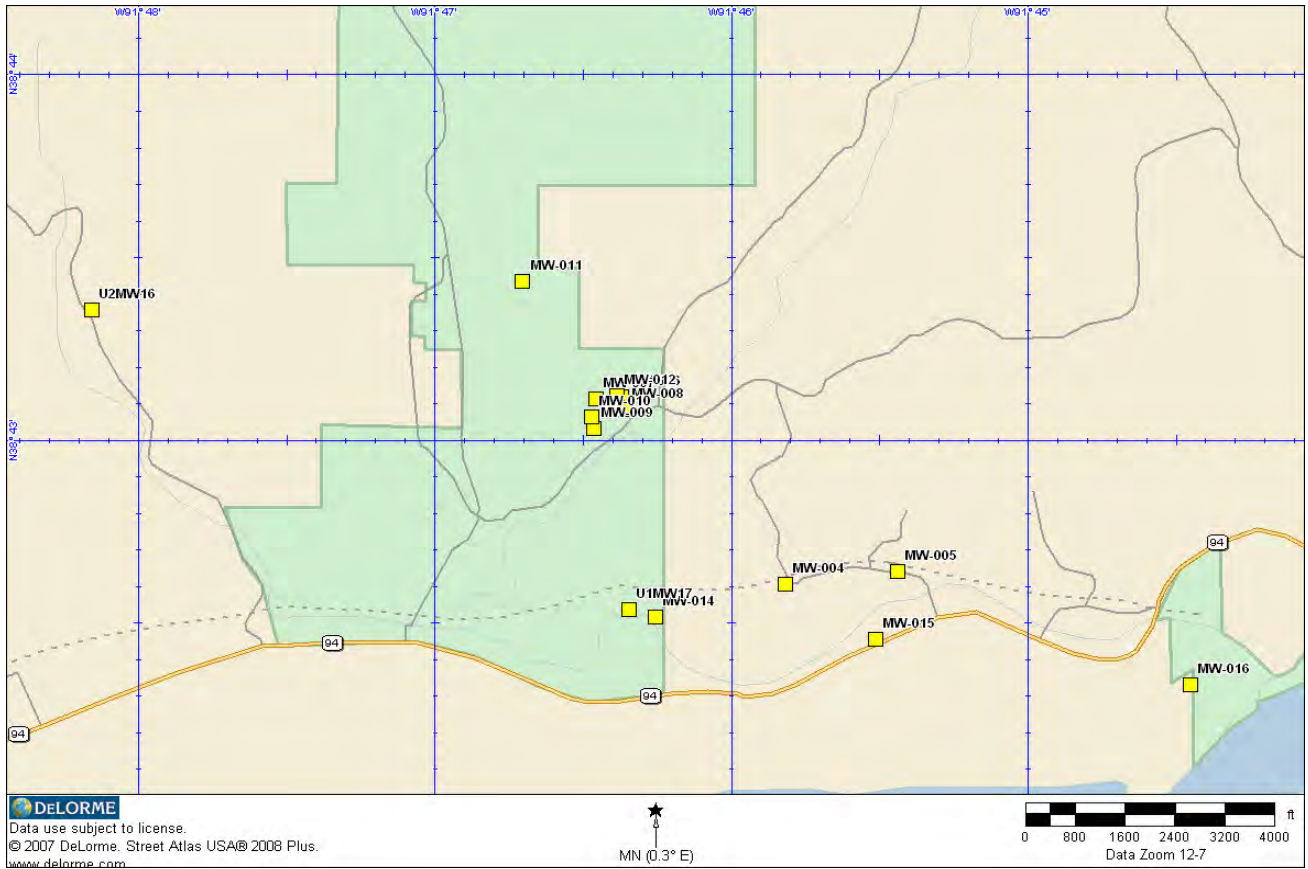


Figure 5.4d. Groundwater Monitoring Wells, Logan Creek Area.

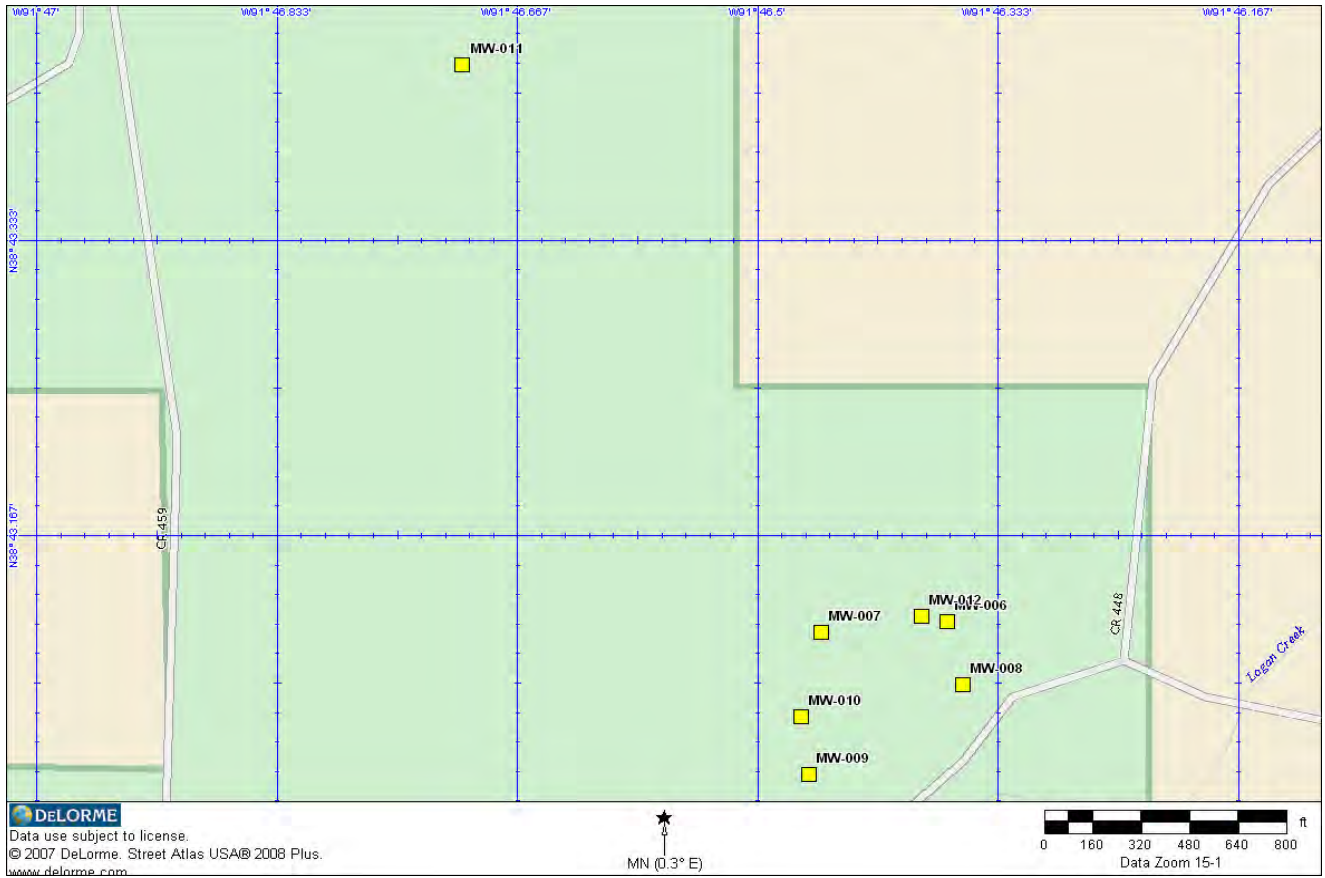


Figure 5.4e. Pond sampling locations

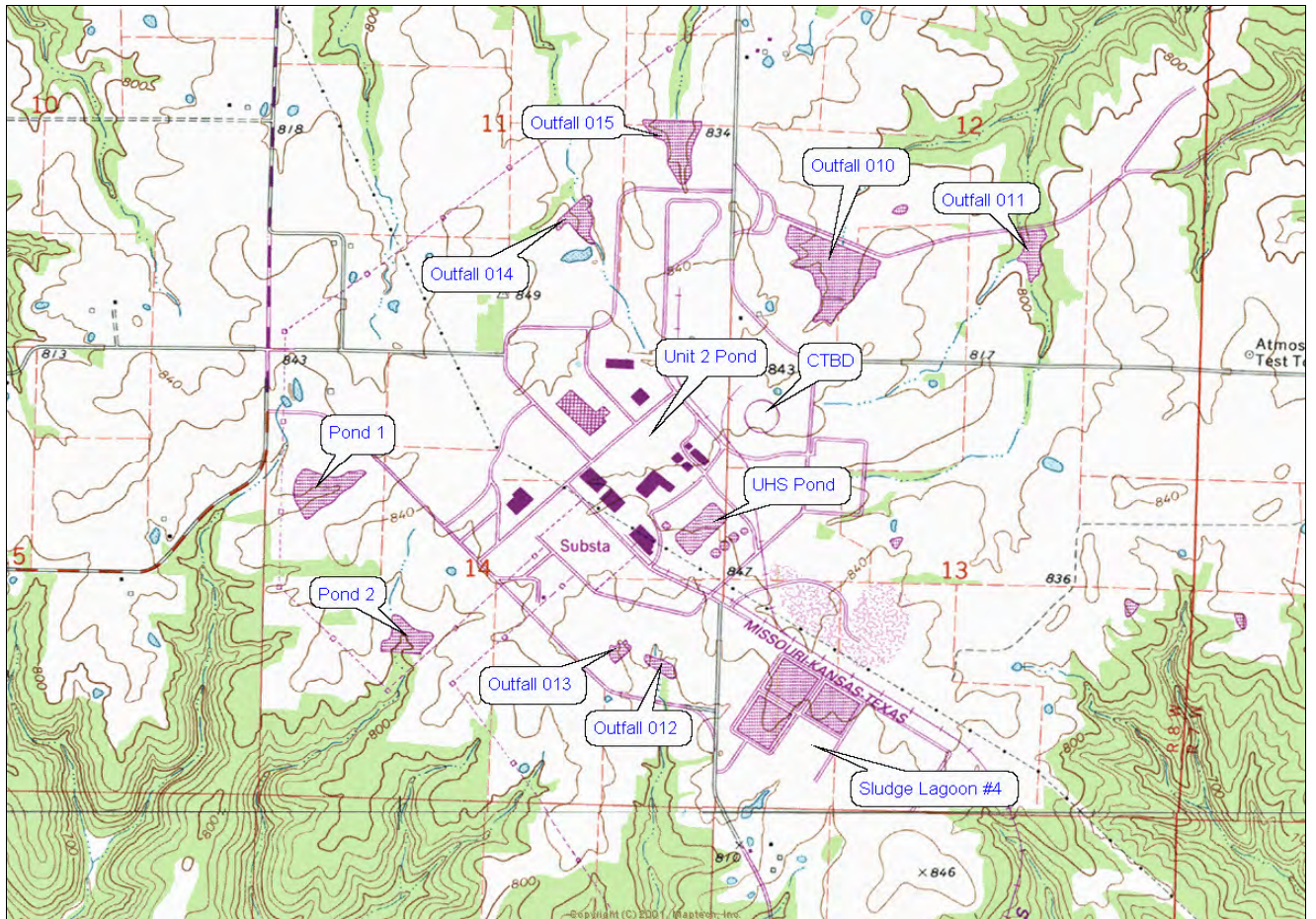


Figure 5.5. Milk and Edible Vegetation Samples.

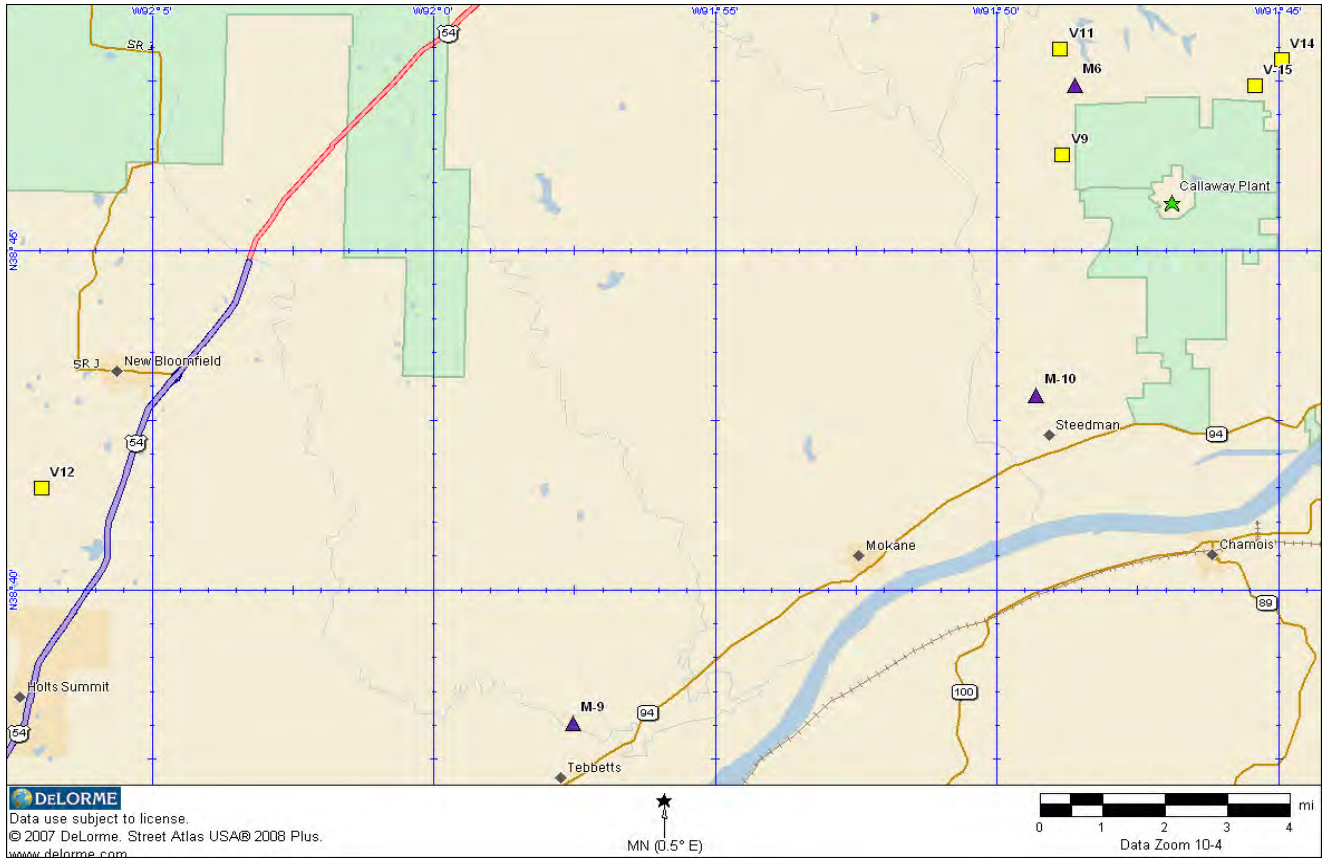


Figure 5.6a. Non-Food Crops (Indicator locations).

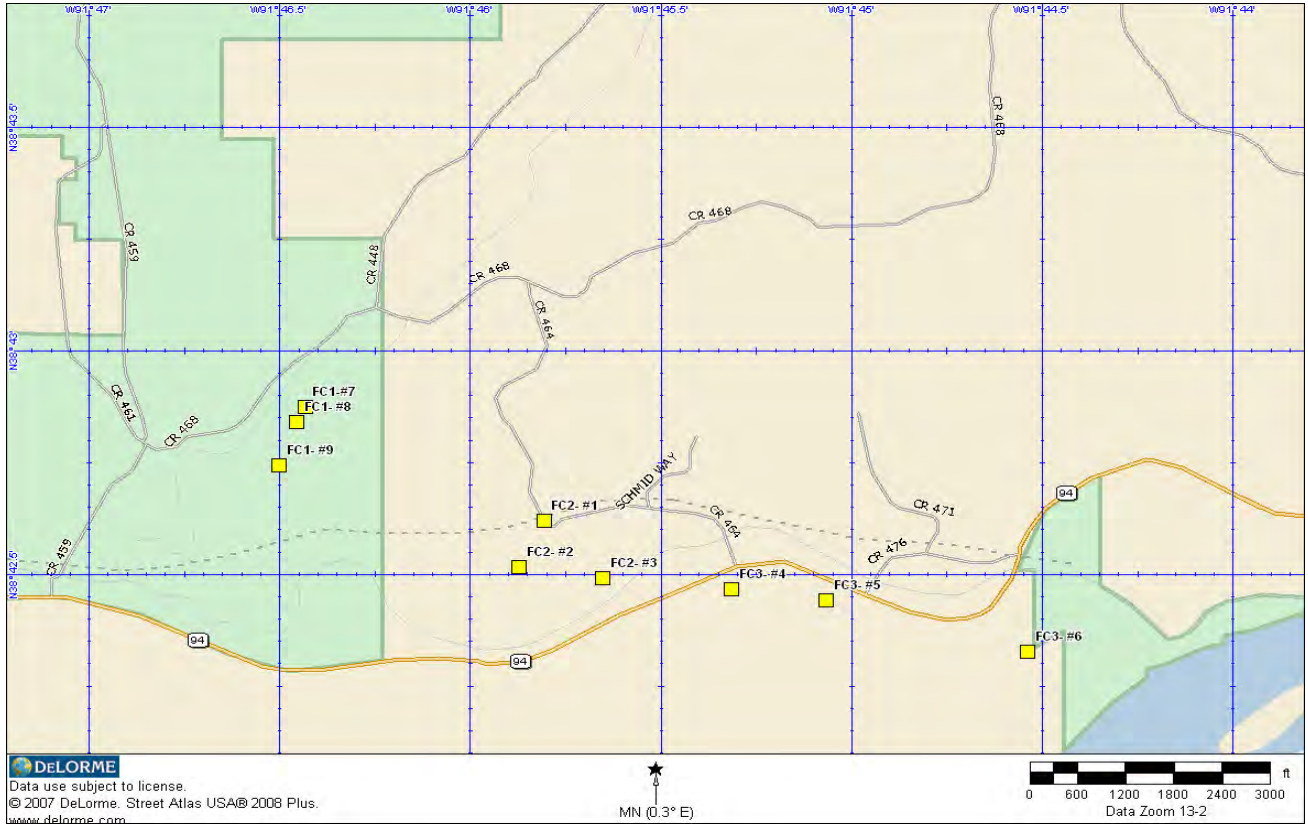


Figure 5.6b. Non-Food Crops (Control Station).

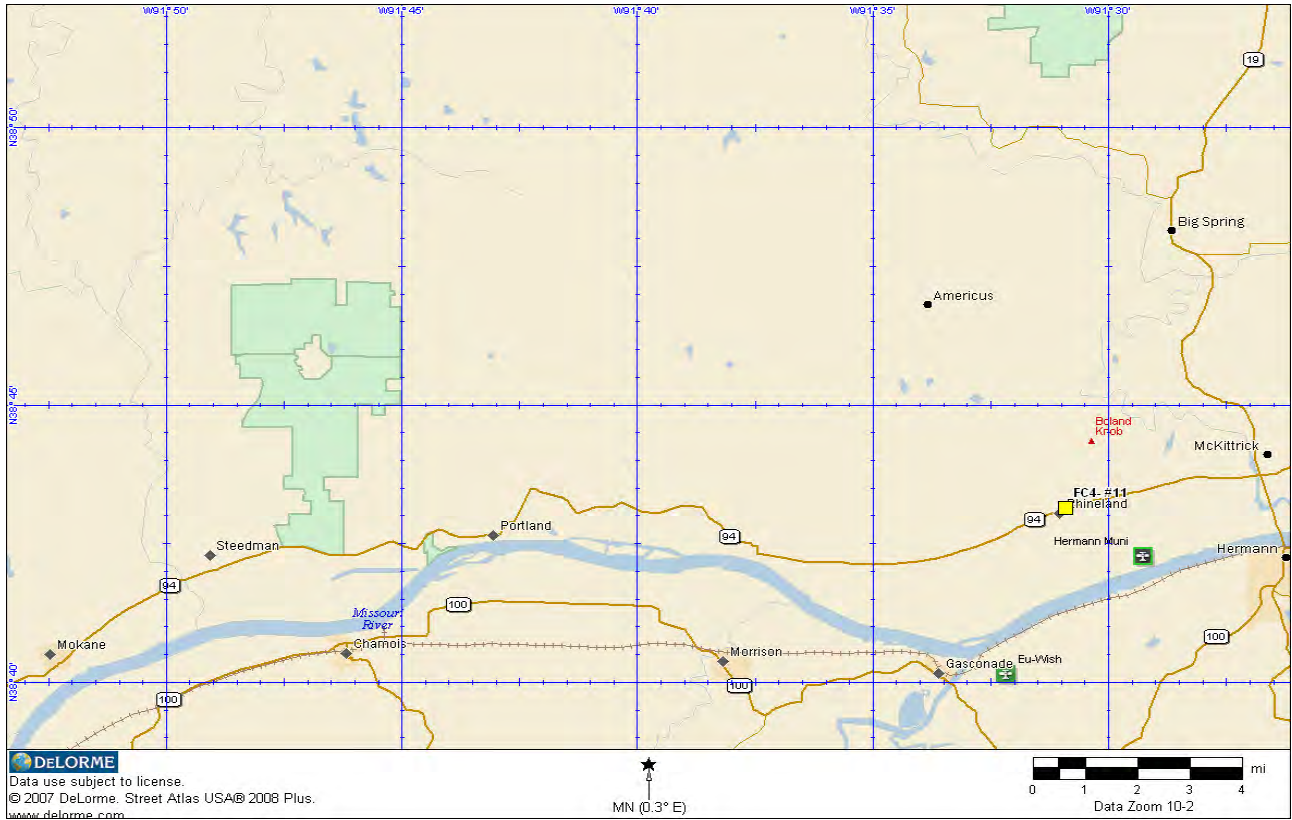


Figure 5.7a. Soil Samples, Near Plant locations.

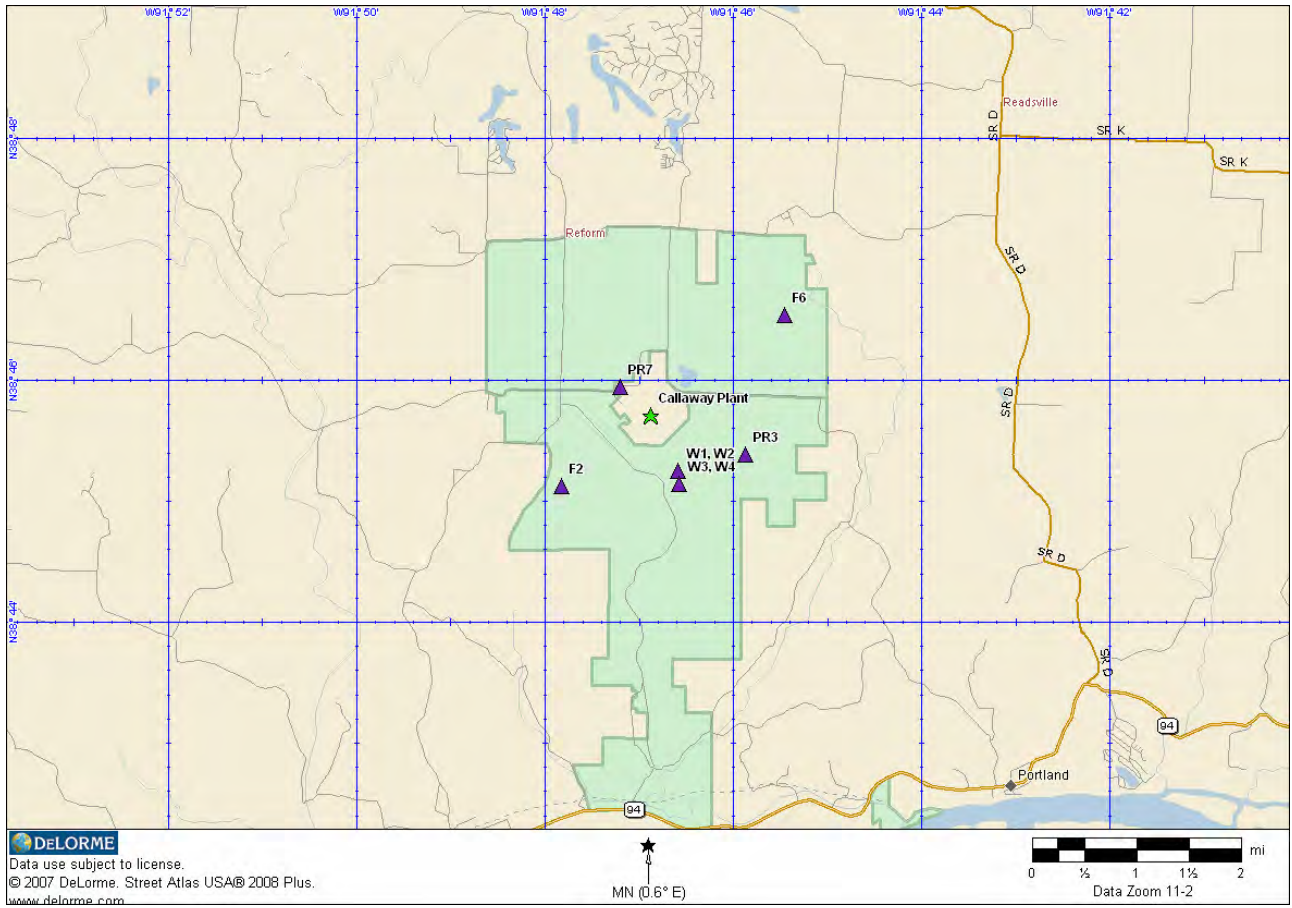


Figure 5.7b. Soil Samples, Distant locations

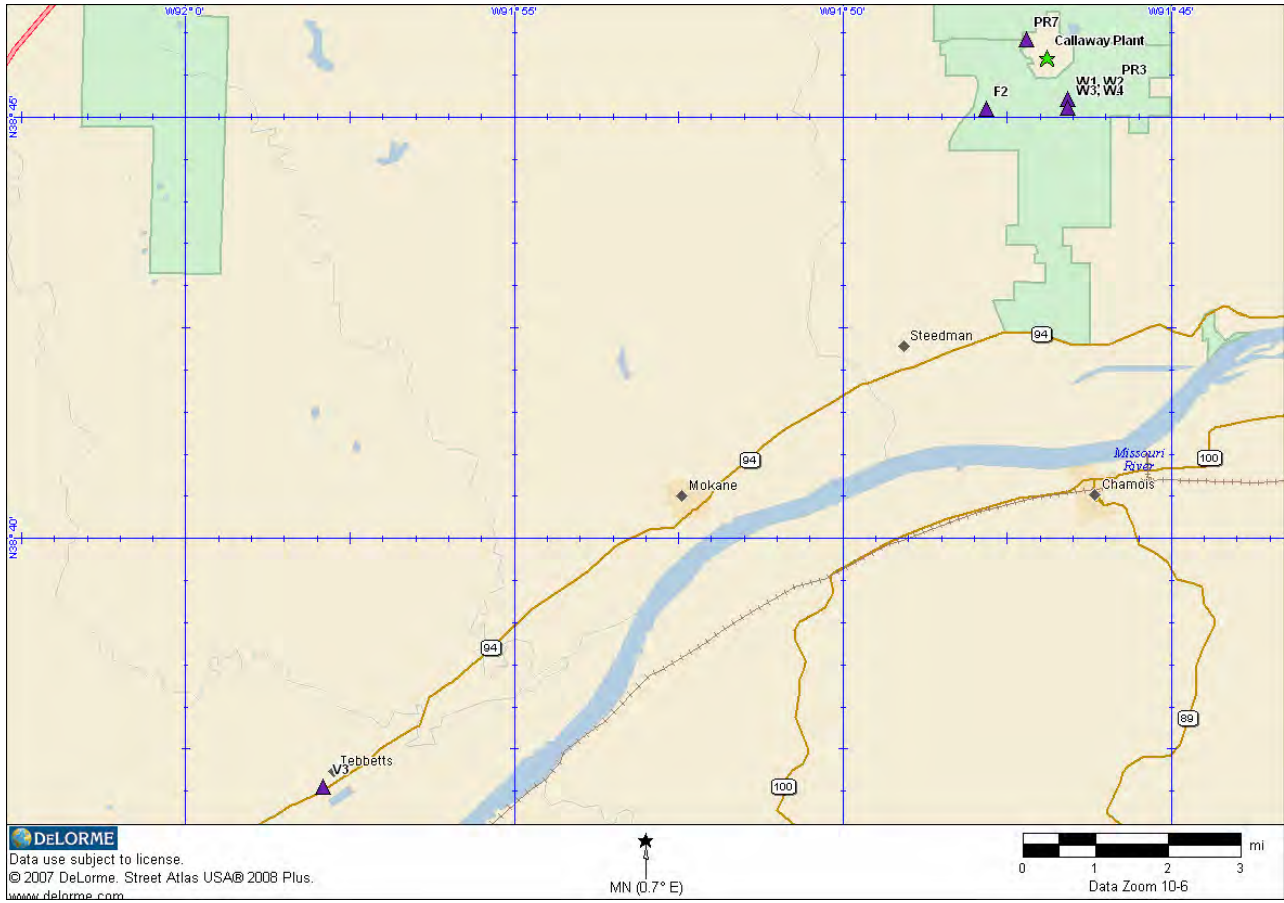


Figure 5.8. Fish, Sediment and Surface Water locations.

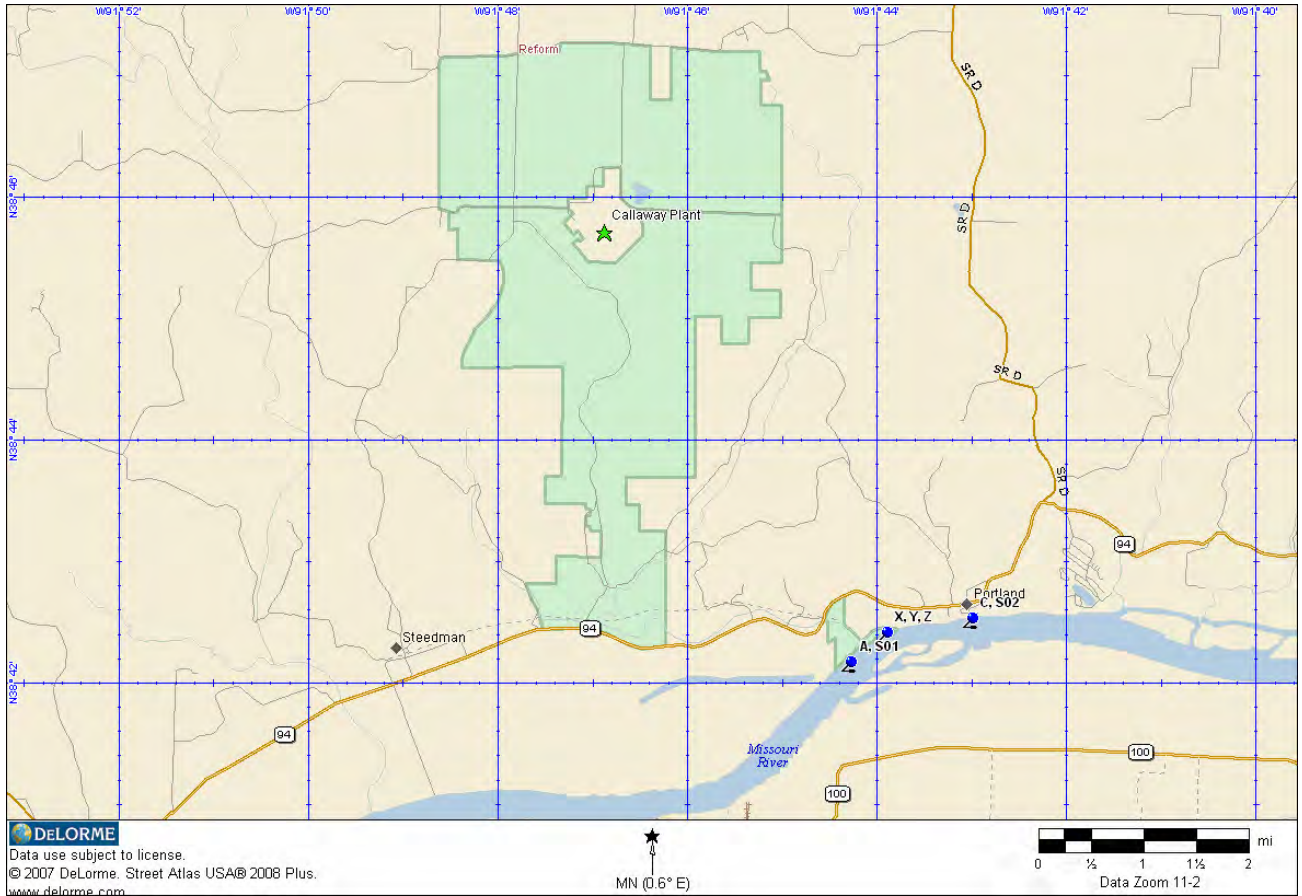


Table 5.2. Collection Frequencies and Required Analyses (January 1 through December 31, 2009) ¹

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
Non-food 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 Analysis¹

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 2009 Land Use Census Results

Closest Receptor in Miles

Sector	Residence	Garden ¹	Milk ¹
N(A)	1.8	NI	NI
NNE(B)	2.2	2.4	NI
NE(C)	2.3	2.5	NI
ENE(D)	1.7	2.9	NI
E(E)	3.5	NI	NI
ESE(F)	2.1	4.4	NI
SE(G)	2.2	4.7	NI
SSE(H)	2.5	2.5	NI
S(J)	2.7	2.9	NI
SSW(K)	2.4	2.4	NI
SW(L)	2.6	3.1	3.3 *
WSW(M)	1.2	3.2	NI
W(N)	1.6	2.3	NI
WNW(P)	1.9	1.9	2.4 **
NW(Q)	2.1	3.2	NI
NNW(R)	1.8	3.5	NI

¹ NI = None Identified.

* Declined to participate in the program for 2010.

** 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	H-3, Gamma	936	October, 2009	Sample not collected, well under water.
WWA	H-3, Gamma	937E	1st Qtr, 2009	Access blocked by construction
WWA	Gamma	U1MW-001, 002, 003, 009R, 0.010, 013, 014, 015, 016	1st Qtr, 2009	Analysis missed (Note 1).
MI	I-131, Gamma	M-10	1/12 to 4/27, 2009	No milk, goats not producing.
MI	I-131, Gamma	M-10	10/11 to 12/07, 2009	Station withdrew from program.
TLD	Ambient Gamma	CA-IDM-23	3 rd Qtr, 2009	Missing in the field.
TLD	Ambient Gamma	CA-IDM-31A	3 rd Qtr, 2009	Missing in the field.

1. A principal gamma isotopic analysis was not initially included on the chain of custody submitted to the laboratory, due to miscommunication between the program lead and the contractor collecting the samples. Some LLD requirements could not be met due to decay periods and small sample size.

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		Control Locations Mean (F) ^c Range ^c	Number Non-Routine Results ^e	
				Location ^d	Mean (F) ^c Range ^c			
Waterborne Pathway								
Surface Water (pCi/L)	H-3	24	163	< LLD	-	-	< LLD	0
	GS	24						
	Mn-54		15	< LLD	-	-	< LLD	0
	Fe-59		30	< LLD	-	-	< LLD	0
	Co-58		15	< LLD	-	-	< LLD	0
	Co-60		15	< LLD	-	-	< LLD	0
	Zn-65		30	< LLD	-	-	< LLD	0
	Zr-Nb-95		15	< LLD	-	-	< LLD	0
	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	34	169	313 (4/34) (299-330)	UNIT 2 Pond On-site	313 (4/6) (299-330)	none	0
	GS	31						
	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
Drinking Water, Wells (pCi/L)	H-3	48	158	< 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		Control Locations Mean (F) ^c Range ^c	Number Non-Routine Results ^e	
				Location ^d	Mean (F) ^c Range ^c			
Waterborne Pathway								
Wells, Ponds (non-potable) (pCi/L)	H-3	173	169	286 (35/173) (173-814)	OW-5, UHS Pond Berth, Inside OCA	455 (4/4) (431-469)	None	0
	GS	171						
	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 (pCi/kgdry)	GS	8						
	K-40		50	12921 (4/4) (12379-13895)	CA-AQS-A 4.9 mi. SSE	13859 (4/4) (12853-15189)	13859 (4/4) (12853-15189)	0
	Mn-54		40.7	< LLD	-	-	< LLD	0
	Fe-59		90.4	< LLD	-	-	< LLD	0
	Co-58		42.6	< LLD	-	-	< LLD	0
	Co-60		25.3	< LLD	-	-	< LLD	0
	Zr-Nb-95		45.5	< LLD	-	-	< LLD	0
	Cs-134		22.8	< LLD	-	-	< LLD	0
	Cs-137		44.5	< LLD	CA-AQS-A 4.9 mi. SSE	51.9 (1/4)	51.9 (1/4)	0
	Ba-La-140		49.6	< 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		Control Locations Mean (F) ^c Range ^c	Number Non-Routine Results ^e
				Location ^d	Mean (F) ^c Range ^c		
Ingestion Pathway							
Food Products Leafy Green Vegetables (pCi/kg wet)	GS 34						
	K-40	100	4257 (29/29) (1822-7200)	V-12, Farm 18.7 mi. WSW	5085 (5/5) (2807-7702)	5085 (5/5) (2807-7702)	0
	Mn-54	21.8	< LLD	-	-	< LLD	0
	Co-58	15.0	< LLD	-	-	< LLD	0
	Co-60	14.5	< LLD	-	-	< LLD	0
	I-131	35.2	< LLD	-	-	< LLD	0
	Cs-134	17.9	< LLD	-	-	< LLD	0
	Cs-137	21.9	< LLD	-	-	< LLD	0
Non-food Crop (Soybeans) (pCi/kg wet ^f)	H-3 10	157	< LLD	-	-	< LLD	0
	GS 10						
	K-40	100	15038 (9/9) (12595-16794)	FC-3, Between Hwy 94 and Dock Access Rd.	16514 (3/3) (16122-16794)	14661 (1/1)	0
	Mn-54	11.9	< LLD	-	-	< LLD	0
	Co-58	13.9	< LLD	-	-	< LLD	0
	Co-60	14.0	< LLD	-	-	< LLD	0
	I-131	18.5	< LLD	-	-	< LLD	0
	Cs-134	10.4	< LLD	-	-	< LLD	0
Cs-137	13.3	19.4 (2/9) (17.1-21.6)	FC-1, Between MH-8 and Katy Trail	19.4 (2/3) (17.1-21.6)	< LLD	0	
Fish (Flesh) (pCi/kg wet)	GS 20						
	K-40	100	2843 (10/10) (2340-3312)	CA-AQF-C 4.9 mi. SE	2843 (10/10) (2340-3312)	2663 (10/10) (2173-3433)	0
	Mn-54	20.0	< LLD	-	-	< LLD	0
	Fe-59	67.8	< LLD	-	-	< LLD	0
	Co-58	25.0	< LLD	-	-	< LLD	0
	Co-60	18.6	< LLD	-	-	< LLD	0
	Zn-65	47.0	< LLD	-	-	< LLD	0
	Cs-134	21.0	< LLD	-	-	< LLD	0
	Cs-137	20.6	< LLD	-	-	< LLD	0
Milk (pCi/L)	I-131 32	1.0	< LLD	-	-	< LLD	0
	GS 32						
	K-40	100	1156 (12/12) (1092-1636)	M-10 2.53 mi. SSE	1531 (10/10) (1179-1636)	1282 (20/20) (1111-1459)	0
	Cs-134	15	< LLD	-	-	< LLD	0
	Cs-137	18	< LLD	-	-	< LLD	0
	Ba-140	60	< LLD	-	-	< LLD	0
	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		Control Locations Mean (F) ^c Range ^c	Number Non-Routine Results ^e
				Location ^d	Mean (F) ^c Range ^c		
Direct Radiation							
(Quarterly TLDs) (mR/90days)	Gamma 170	3.0	16.2 (158/158) (10.9-19.8)	CA-IDM-27, 9.3 mi. ESE	18.0 (4/4) (17.1-19.3)	15.4 (12/12) (11.1-19.3)	0
Airborne Pathway							
Airborne Particulates (pCi/m ³)	GS 260						
	Be-7	0.020	0.27 (16/260) (0.25-0.32)	B-3, Utility Pole #50422, 1.8 mi. NNW	0.29 (4/52) (0.26-0.32)	None	0
	Co-58	0.016	< LLD	-	-	None	0
	Co-60	0.014	< LLD	-	-	None	0
	Zr-Nb-95	0.031	< LLD	-	-	None	0
	Cs-134	0.013	< LLD	-	-	None	0
	Cs-137	0.014	< LLD	-	-	None	0
	Ba-La-140	1.180	< LLD	-	-	None	0
Ce-144	0.083	< LLD	-	-	None	0	
Airborne Iodine (pCi/m ³)	I-131 260	0.070	< LLD	-	-	None	0
Soil							
Soil (pCi/kg dry)	GS 20						
	K-40	50.0	12016 (16/16) (8629-15428)	V-003 0.12 mi. N	15277 (2/2) (15148-15406)	13901 (4/4) (12030-15406)	0
	Mn-54	68.9	< LLD	-	-	< LLD	0
	Fe-59	198.3	< LLD	-	-	< LLD	0
	Co-58	74.8	< LLD	-	-	< LLD	0
	Co-60	67.3	< LLD	-	-	< LLD	0
	Zr-Nb-95	107.1	< LLD	-	-	< LLD	0
	Cs-134	58.6	< LLD	-	-	< LLD	0
	Cs-137	81.8	324 (13/16) (96-563)	F-002 1.64 mi. SW	489 (2/2) (415-563)	204 (2/4) (199-210)	0
Ba-La-140	128.5	< 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.

^f Results for tritium are reported in units of pCi/L.

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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, 2009 through December, 2009

Appendix A

Interlaboratory Comparison Program Results

Environmental, Inc., Midwest Laboratory has participated in interlaboratory comparison (crosscheck) programs since the formulation of its 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 is intentionally left blank.

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	± 1σ = 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)			Acceptance
			aboratory Result ^b	ERA Result ^c	Control Limits	
STW-1181	04/06/09	Sr-89	41.0 ± 5.8	48.3	37.8 - 55.7	Pass
STW-1181	04/06/09	Sr-90	32.4 ± 2.4	31.4	22.9 - 36.4	Pass
STW-1182	04/06/09	Ba-133	44.6 ± 3.1	52.7	43.4 - 58.3	Pass
STW-1182	04/06/09	Co-60	81.0 ± 3.1	88.9	80.0 - 100.0	Pass
STW-1182	04/06/09	Cs-134	65.6 ± 5.2	72.9	59.5 - 80.2	Pass
STW-1182 ^d	04/06/09	Cs-137	147.7 ± 5.3	168.0	151.0 - 187.0	Fail
STW-1182	04/06/09	Zn-65	79.8 ± 7.5	84.4	76.0 - 101.0	Pass
STW-1183	04/06/09	Gr. Alpha	47.6 ± 2.1	54.2	28.3 - 67.7	Pass
STW-1183	04/06/09	Gr. Beta	38.5 ± 1.3	43.5	29.1 - 50.8	Pass
STW-1184	04/06/09	I-131	24.4 ± 2.5	26.1	21.7 - 30.8	Pass
STW-1185	04/06/09	Ra-226	14.0 ± 0.7	15.1	11.2 - 17.3	Pass
STW-1185	04/06/09	Ra-228	14.3 ± 2.1	13.6	9.0 - 16.6	Pass
STW-1185	04/06/09	Uranium	25.0 ± 0.2	25.7	20.6 - 28.8	Pass
STW-1186 ^e	04/06/09	H-3	22819.0 ± 453.0	20300.0	17800.0 - 22300.0	Fail
STW-1193	10/05/09	Sr-89	53.0 ± 6.0	62.2	50.2 - 70.1	Pass
STW-1193	10/05/09	Sr-90	31.1 ± 2.2	30.7	22.4 - 35.6	Pass
STW-1194	10/05/09	Ba-133	82.5 ± 3.5	92.9	78.3 - 102.0	Pass
STW-1194	10/05/09	Co-60	116.8 ± 3.3	117.0	105.0 - 131.0	Pass
STW-1194	10/05/09	Cs-134	78.8 ± 5.7	78.8	65.0 - 87.3	Pass
STW-1194	10/05/09	Cs-137	54.2 ± 3.7	54.6	49.1 - 62.9	Pass
STW-1194	10/05/09	Zn-65	102.5 ± 6.2	99.5	89.6 - 119.0	Pass
STW-1195	10/05/09	Gr. Alpha	20.3 ± 2.0	23.2	11.6 - 31.1	Pass
STW-1195	10/05/09	Gr. Beta	23.7 ± 1.4	26.0	16.2 - 33.9	Pass
STW-1196	10/05/09	I-131	22.4 ± 1.4	22.2	18.4 - 26.5	Pass
STW-1197	10/05/09	Ra-226	15.0 ± 0.7	13.9	10.4 - 16.0	Pass
STW-1197	10/05/09	Ra-228	17.4 ± 2.0	14.9	10.0 - 18.0	Pass
STW-1197	10/05/09	Uranium	32.5 ± 0.4	33.8	27.3 - 37.8	Pass
STW-1198	10/05/09	H-3	17228.0 ± 694.0	16400.0	14300.0 - 18000.0	Pass

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

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

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

^d All gamma -emitters showed a low bias. A large plastic burr found on the base of the Marinelli kept the beaker from sitting directly on the detector. Result of recount in a different beaker, Cs-137, 155.33 ± 14.55 pCi/L.

^e Samples were recounted and also reanalyzed. A recount of the original vials averaged 23,009 pCi/L. Reanalysis results were acceptable, 19,170 pCi/L.

TABLE A-2. Table has been intentionally omitted.

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

Lab Code ^b	Date	Analysis	Concentration (pCi/L) ^a			Acceptance
			Laboratory results 2s, n=1 ^c	Known Activity	Control Limits ^d	
W-12009	1/20/2009	Ra-226	12.88 ± 0.41	12.69	8.88 - 16.50	Pass
W-12009	1/27/2009	Gr. Alpha	20.20 ± 0.40	20.08	10.04 - 30.12	Pass
W-12709	1/27/2009	Gr. Beta	46.26 ± 0.42	45.60	35.60 - 55.60	Pass
SPW-5553	1/27/2009	Ra-228	29.11 ± 2.53	28.66	20.06 - 37.26	Pass
SPW-217	1/29/2009	U-238	44.98 ± 2.30	41.70	29.19 - 54.21	Pass
SPW-539	2/24/2009	Ni-63	167.93 ± 3.79	211.00	147.70 - 274.30	Pass
SPW-718	3/6/2009	C-14	4893.50 ± 21.69	4740.20	2844.12 - 6636.28	Pass
SPMI-814	3/16/2009	Cs-134	34.91 ± 3.85	35.70	25.70 - 45.70	Pass
SPMI-814	3/16/2009	Cs-137	59.17 ± 6.70	55.60	45.60 - 65.60	Pass
SPMI-814	3/16/2009	Sr-90	40.82 ± 1.59	44.07	35.26 - 52.88	Pass
SPMI-815	3/16/2009	I-131	70.99 ± 0.62	69.60	55.68 - 83.52	Pass
SPMI-815	3/16/2009	I-131(G)	63.08 ± 7.12	69.60	59.60 - 79.60	Pass
SPW-817	3/16/2009	I-131	62.11 ± 0.59	69.60	55.68 - 83.52	Pass
SPW-817	3/16/2009	I-131(G)	64.55 ± 8.32	69.60	59.60 - 79.60	Pass
SPW-818	3/16/2009	Co-60	50.84 ± 4.70	51.99	41.99 - 61.99	Pass
SPW-818	3/16/2009	Cs-134	33.78 ± 3.42	35.70	25.70 - 45.70	Pass
SPW-818	3/16/2009	Cs-137	61.27 ± 7.18	55.64	45.64 - 65.64	Pass
SPW-818	3/16/2009	Sr-90	47.26 ± 1.89	44.07	35.26 - 52.88	Pass
SPAP-903	3/23/2009	Cs-134	13.29 ± 2.89	14.19	4.19 - 24.19	Pass
SPAP-903	3/23/2009	Cs-137	103.24 ± 7.54	111.23	100.11 - 122.35	Pass
SPCH-916	3/24/2009	I-131(G)	0.22 ± 0.02	0.22	0.13 - 0.31	Pass
SPVE-888	4/1/2009	I-131(G)	0.40 ± 0.08	0.35	0.21 - 0.49	Pass
SPF-820	4/7/2009	Cs-134	0.58 ± 0.02	0.56	0.34 - 0.78	Pass
W-40909	4/9/2009	Gr. Alpha	19.26 ± 0.40	20.08	10.04 - 30.12	Pass
W-40909	4/9/2009	Gr. Beta	48.04 ± 0.42	45.60	35.60 - 55.60	Pass
SPW-12641	4/10/2009	Ra-228	40.06 ± 2.79	40.54	28.38 - 52.70	Pass
SPW-1267	4/10/2009	U-238	41.71 ± 2.25	41.70	29.19 - 54.21	Pass
TWW-2124	4/21/2009	H-3	7932.00 ± 279.00	7063.00	5650.40 - 8475.60	Pass
W-42809	4/28/2009	Ra-226	14.49 ± 0.53	16.78	11.75 - 21.81	Pass
SPMI-2186	5/12/2009	Cs-134	32.55 ± 1.26	33.89	23.89 - 43.89	Pass
SPMI-2186	5/12/2009	Cs-137	54.27 ± 2.60	55.60	45.60 - 65.60	Pass
SPMI-2186	5/12/2009	I-131	60.81 ± 0.63	52.40	40.40 - 64.40	Pass
SPMI-2186	5/12/2009	I-131(G)	56.89 ± 2.56	52.40	42.40 - 62.40	Pass
SPMI-2186	5/12/2009	Sr-90	43.88 ± 1.68	52.40	41.92 - 62.88	Pass
SPW-2497	5/27/2009	Fe-55	2472.37 ± 10.76	2106.35	1685.08 - 2527.62	Pass
SPW-3448	7/14/2009	Cs-137	171.06 ± 9.21	166.10	149.49 - 182.71	Pass
SPW-3497	7/15/2009	Ni-63	179.99 ± 3.06	210.40	147.28 - 273.52	Pass
SPW-3499	7/15/2009	Tc-99	29.61 ± 0.81	32.34	20.34 - 44.34	Pass
SPMI-3582	7/17/2009	Cs-134	32.86 ± 3.72	31.89	21.89 - 41.89	Pass
SPMI-3582	7/17/2009	Cs-137	182.49 ± 10.54	166.10	149.49 - 182.71	Pass
SPAP-3595	7/17/2009	Cs-134	13.01 ± 3.00	12.75	2.75 - 22.75	Pass
SPAP-3595	7/17/2009	Cs-137	110.63 ± 6.58	110.73	99.66 - 121.80	Pass

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

Lab Code ^b	Date	Analysis	Concentration (pCi/L) ^a			Acceptance
			Laboratory results 2s, n=1	Known Activity	Control Limits ^c	
SPF-3597	7/17/2009	Cs-134	0.53 ± 0.03	0.51	0.31 - 0.71	Pass
SPF-3597	7/17/2009	Cs-137	2.43 ± 0.05	2.22	1.33 - 3.10	Pass
SPW-3599	7/17/2009	H-3	63246.00 ± 725.00	62495.00	49996.00 - 74994.00	Pass
SPW-12643	8/3/2009	Ra-228	38.18 ± 2.72	40.54	28.38 - 52.70	Pass
W-80709	8/7/2009	Ra-226	16.28 ± 0.41	16.77	11.74 - 21.80	Pass
W-81009	8/10/2009	Gr. Alpha	20.58 ± 0.44	20.08	10.04 - 30.12	Pass
W-81009	8/10/2009	Gr. Beta	44.44 ± 0.40	45.60	35.60 - 55.60	Pass
W-100109	10/1/2009	Ra-226	15.68 ± 0.41	16.77	11.74 - 21.80	Pass
W-102709	10/27/2009	Gr. Alpha	21.50 ± 0.43	20.08	10.04 - 30.12	Pass
W-102709	10/27/2009	Gr. Beta	44.83 ± 0.40	45.60	35.60 - 55.60	Pass
SPW-5964	10/28/2009	U-238	40.20 ± 1.87	41.70	29.19 - 54.21	Pass
SPW-12647	11/6/2009	Ra-228	44.49 ± 3.33	40.54	28.38 - 52.70	Pass
SPAP-6769	12/14/2009	Gr. Beta	45.43 ± 0.11	49.48	29.69 - 69.27	Pass
SPAP-6774	12/14/2009	Cs-134	10.32 ± 0.83	11.11	1.11 - 21.11	Pass
SPAP-6774	12/14/2009	Cs-137	106.58 ± 2.51	109.70	98.73 - 120.67	Pass
SPF-6776	12/14/2009	Cs-134	0.43 ± 0.02	0.44	0.26 - 0.62	Pass
SPF-6776	12/14/2009	Cs-137	2.33 ± 0.05	2.19	1.31 - 3.07	Pass
SPW-6780	12/14/2009	Tc-99	30.71 ± 1.09	32.34	20.34 - 44.34	Pass
SPMI-6782	12/14/2009	Co-60	74.30 ± 5.41	72.81	62.81 - 82.81	Pass
SPMI-6782	12/14/2009	Cs-134	58.82 ± 3.75	55.54	45.54 - 65.54	Pass
SPMI-6782	12/14/2009	Cs-137	178.18 ± 9.68	164.55	148.10 - 181.01	Pass
SPW-6784	12/14/2009	Co-60	74.03 ± 4.64	72.81	62.81 - 82.81	Pass
SPW-6784	12/14/2009	Cs-134	54.84 ± 3.83	55.54	45.54 - 65.54	Pass
SPW-6784	12/14/2009	Cs-137	180.06 ± 8.81	164.55	148.10 - 181.01	Pass

^a Liquid sample results are reported in pCi/Liter, air filters (pCi/filter), charcoal (pCi/m³), 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.

^e Control limits based on the laboratory limit, Attachment A ("Other Analyses").

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 Criteria (4.66 σ)
				LLD	Activity ^c	
W-12009	Water	1/20/2009	Ra-226	0.05	0.06 ± 0.04	1
SPW-5554	Water	1/27/2009	Ra-228	0.08	0.17 ± 0.40	2
W-12709	Water	1/27/2009	Gr. Alpha	0.35	0.22 ± 0.27	1
W-12709	Water	1/27/2009	Gr. Beta	0.74	-0.08 ± 0.51	3.2
SPW-218	Water	1/29/2009	U-238	0.19	-0.06 ± 0.09	1
SPW-538	Water	2/24/2009	Ni-63	7.91	4.96 ± 4.93	20
SPW-717	Water	3/6/2009	C-14	7.66	3.03 ± 4.71	200
SPMI-816	Milk	3/16/2009	Cs-134	3.24	-	10
SPMI-816	Milk	3/16/2009	Cs-137	3.38	-	10
SPMI-816	Milk	3/16/2009	I-131	0.31	0.04 ± 0.17	0.5
SPMI-816	Milk	3/16/2009	I-131(G)	3.65	-	20
SPMI-816	Milk	3/16/2009	Sr-90	0.48	0.41 ± 0.27	1
SPW-819	Water	3/16/2009	Co-60	3.02	-	10
SPW-819	Water	3/16/2009	Cs-134	2.25	-	10
SPW-819	Water	3/16/2009	Cs-137	2.03	-	10
SPW-819	Water	3/16/2009	I-131	0.42	-0.06 ± 0.19	0.5
SPW-819	Water	3/16/2009	I-131(G)	3.02	-	20
SPW-819	Water	3/16/2009	Sr-90	1.10	-0.63 ± 0.44	1
SPAP-902	Air Filter	3/23/2009	Gr. Beta	0.003	0.006 ± 0.002	3.2
SPAP-904	Air Filter	3/23/2009	Cs-134	1.68	-	100
SPAP-904	Air Filter	3/23/2009	Cs-137	2.62	-	100
SPW-32709	Water	3/23/2009	Ni-63	2.84	1.37 ± 1.75	20
SPF-821	Fish	4/7/2009	Cs-134	3.12	-	100
SPF-821	Fish	4/7/2009	Cs-137	3.93	-	100
W-40909	Water	4/9/2009	Gr. Alpha	0.40	-0.25 ± 0.26	1
W-40909	Water	4/9/2009	Gr. Beta	0.77	-0.30 ± 0.53	3.2
SPW-12651	Water	4/10/2009	Ra-228	0.77	0.77 ± 0.45	2
SPW-1268	Water	4/10/2009	U-238	0.11	0.24 ± 0.17	1
W-42809	Water	4/28/2009	Ra-226	0.04	0.09 ± 0.04	1
SPMI-2186	Milk	5/12/2009	Sr-90	0.43	0.52 ± 0.26	1
SPMI-2187	Milk	5/12/2009	Cs-134	3.61	-	10
SPMI-2187	Milk	5/12/2009	Cs-137	3.13	-	10
SPMI-2187	Milk	5/12/2009	I-131	0.15	-0.02 ± 0.10	0.5
SPMI-2187	Milk	5/12/2009	I-131(G)	3.77	-	20
SPW-2498	Water	5/27/2009	Ni-63	1.60	0.00 ± 0.97	20

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-3497	Water	7/15/2009	Ni-63	1.55	-0.24 ± 0.94	20
SPW-3500	Water	7/15/2009	Tc-99	0.90	-1.71 ± 0.53	10
SPMI-3589	Milk	7/17/2009	I-131(G)	5.75	-	20
SPAP-3594	Air Filter	7/17/2009	Cs-134	1.14	-	100
SPAP-3594	Air Filter	7/17/2009	Cs-137	2.47	-	100
SPF-3596	Fish	7/17/2009	Co-60	5.00	-	100
SPF-3596	Fish	7/17/2009	Cs-134	8.00	-	100
SPF-3596	Fish	7/17/2009	Cs-137	11.50	-	100
SPW-3598	Water	7/17/2009	H-3	148.40	0.69 ± 73.60	200
SPW-12653	Water	8/3/2009	Ra-228	0.76	1.46 ± 0.51	2
W-80709	Water	8/7/2009	Ra-226	0.04	0.08 ± 0.03	1
W-81009	Water	8/10/2009	Gr. Alpha	0.44	0.08 ± 0.31	1
W-81009	Water	8/10/2009	Gr. Beta	0.75	-0.31 ± 0.52	3.2
W-100109	Water	10/1/2009	Ra-226	0.04	0.09 ± 0.03	1
W-102709	Water	10/27/2009	Gr. Alpha	0.38	0.33 ± 0.30	1
W-102709	Water	10/27/2009	Gr. Beta	0.81	-0.59 ± 0.55	3.2
SPW-5965	Water	10/28/2009	U-238	0.15	0.09 ± 0.13	1
SPW-12657	Water	11/6/2009	Ra-228	0.86	0.80 ± 0.50	2
SPAP-6769	Air Filter	12/14/2009	Gr. Beta	0.003	0.010 ± 0.002	3.2
SPAP-6773	Air Filter	12/14/2009	Cs-137	1.31	-	100
SPF-6775	Fish	12/14/2009	Cs-134	5.70	-	100
SPF-6775	Fish	12/14/2009	Cs-137	4.18	-	100
SPW-6777	Water	12/14/2009	Ni-63	2.29	0.25 ± 1.38	20
SPW-6779	Water	12/14/2009	Tc-99	1.16	-0.98 ± 0.69	10
SPMI-6781	Milk	12/14/2009	Cs-134	2.62	-	10
SPMI-6781	Milk	12/14/2009	Cs-137	3.29	-	10
SPMI-6781	Milk	12/14/2009	I-131(G)	2.65	-	20
SPW-6783	Water	12/14/2009	Cs-134	2.18	-	10
SPW-6783	Water	12/14/2009	Cs-137	2.90	-	10
SPW-6783	Water	12/14/2009	I-131(G)	2.30	-	20

^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			Acceptance
			First Result	Second Result	Averaged Result	
AP-7464, 7465	1/1/2009	Be-7	0.063 ± 0.012	0.065 ± 0.010	0.064 ± 0.008	Pass
E-20, 21	1/5/2009	K-40	1.34 ± 0.21	1.13 ± 0.13	1.24 ± 0.12	Pass
CF-67, 68	1/5/2009	Be-7	0.34 ± 0.12	0.39 ± 0.08	0.37 ± 0.07	Pass
CF-67, 68	1/5/2009	Gr. Beta	4.34 ± 0.11	4.38 ± 0.12	4.36 ± 0.08	Pass
CF-67, 68	1/5/2009	K-40	3.16 ± 0.26	3.00 ± 0.16	3.08 ± 0.15	Pass
DW-90010, 90011	1/9/2009	Ra-226	2.97 ± 0.22	2.76 ± 0.21	2.87 ± 0.15	Pass
DW-90010, 90011	1/9/2009	Ra-228	3.13 ± 0.71	3.55 ± 0.81	3.34 ± 0.54	Pass
SG-198, 199	1/23/2009	Gr. Alpha	101.90 ± 6.50	101.70 ± 6.10	101.80 ± 4.46	Pass
SG-198, 199	1/23/2009	Gr. Beta	97.80 ± 3.50	94.00 ± 3.20	95.90 ± 2.37	Pass
SW-308, 309	1/27/2009	Gr. Beta	1.43 ± 0.58	1.41 ± 0.54	1.42 ± 0.40	Pass
LW-330, 331	1/27/2009	Gr. Beta	2.09 ± 0.58	2.33 ± 0.63	2.21 ± 0.43	Pass
SW-308, 309	1/29/2009	Gr. Beta	1.51 ± 0.56	1.61 ± 0.57	1.56 ± 0.40	Pass
DW-375, 376	2/4/2009	Gr. Beta	2.72 ± 0.65	3.06 ± 0.69	2.89 ± 0.47	Pass
SWU-606, 607	2/24/2009	Gr. Beta	2.66 ± 0.68	2.16 ± 0.67	2.41 ± 0.48	Pass
U-651, 652	2/27/2009	Beta-K40	3.90 ± 2.30	1.70 ± 2.50	2.80 ± 1.70	Pass
U-651, 652	2/27/2009	H-3	597.00 ± 292.00	507.00 ± 288.00	552.00 ± 205.07	Pass
SG-739, 740	3/2/2009	Ra-226	8.20 ± 0.20	8.30 ± 0.20	8.25 ± 0.14	Pass
MI-875, 876	3/17/2009	K-40	1286.50 ± 111.60	1471.70 ± 111.50	1379.10 ± 78.88	Pass
MI-875, 876	3/17/2009	Sr-90	0.67 ± 0.31	0.36 ± 0.36	0.52 ± 0.24	Pass
WW-970, 971	3/24/2009	Gr. Beta	13.59 ± 2.32	17.33 ± 2.69	15.46 ± 1.78	Pass
XWW-980, 981	3/24/2009	H-3	7143.00 ± 262.00	7262.00 ± 264.00	7202.50 ± 185.97	Pass
AP-1441, 1442	3/30/2009	Be-7	0.076 ± 0.012	0.075 ± 0.014	0.076 ± 0.009	Pass
SWT-1123, 1124	3/31/2009	Gr. Beta	1.40 ± 0.55	1.86 ± 0.62	1.63 ± 0.41	Pass
WW-1102, 1103	4/1/2009	Gr. Beta	2.13 ± 1.34	2.30 ± 1.32	2.22 ± 0.94	Pass
XWW-1174, 1175	4/1/2009	H-3	2814 ± 176	2787 ± 176	2801 ± 124	Pass
AP-1462, 1463	4/2/2009	Be-7	0.085 ± 0.014	0.10 ± 0.016	0.091 ± 0.011	Pass
SL-2024, 2025	5/4/2009	Be-7	0.80 ± 0.18	0.82 ± 0.13	0.81 ± 0.11	Pass
SL-2024, 2025	5/4/2009	Gr. Beta	2.41 ± 0.19	2.68 ± 0.21	2.55 ± 0.14	Pass
SL-2024, 2025	5/4/2009	K-40	1.20 ± 0.21	1.30 ± 0.15	1.25 ± 0.13	Pass
SO-2045, 2046	5/4/2009	Gr. Alpha	6.22 ± 2.87	6.50 ± 3.26	6.36 ± 2.17	Pass
SO-2045, 2046	5/4/2009	Gr. Beta	28.85 ± 3.15	30.39 ± 3.34	29.62 ± 2.30	Pass
SO-2045, 2046	5/4/2009	Sr-90	0.036 ± 0.010	0.024 ± 0.010	0.030 ± 0.007	Pass
mi-2251, 2252	5/14/2009	K-40	1220.60 ± 155.10	1455.50 ± 118.20	1338.05 ± 97.50	Pass
mi-2381, 2382	5/19/2009	K-40	1472.50 ± 122.90	1412.80 ± 117.40	1442.65 ± 84.98	Pass
SWT-2534, 2535	5/26/2009	Gr. Beta	1.12 ± 0.57	1.66 ± 0.58	1.39 ± 0.41	Pass
G-2626, 2627	5/28/2009	Gr. Beta	6.32 ± 0.19	6.18 ± 0.19	6.25 ± 0.13	Pass
G-2626, 2627	5/28/2009	K-40	4.13 ± 0.35	4.05 ± 0.34	4.09 ± 0.24	Pass
WW-2732, 2733	6/1/2009	H-3	240.73 ± 93.21	190.39 ± 90.81	215.56 ± 65.07	Pass

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

Lab Code	Date	Analysis	Concentration (pCi/L) ^a		Averaged Result	Acceptance
			First Result	Second Result		
SO-3141, 3142	6/22/2009	Ac-228	1.07 ± 0.06	1.06 ± 0.05	1.07 ± 0.04	Pass
SO-3141, 3142	6/22/2009	Be-7	0.55 ± 0.14	0.62 ± 0.08	0.59 ± 0.08	Pass
SO-3141, 3142	6/22/2009	Bi-212	1.16 ± 0.17	1.14 ± 0.16	1.15 ± 0.12	Pass
SO-3141, 3142	6/22/2009	Bi-214	0.96 ± 0.03	1.01 ± 0.03	0.99 ± 0.02	Pass
SO-3141, 3142	6/22/2009	Cs-137	0.72 ± 0.07	0.76 ± 0.08	0.74 ± 0.05	Pass
SO-3141, 3142	6/22/2009	Pb-212	1.00 ± 0.02	1.03 ± 0.02	1.02 ± 0.01	Pass
SO-3141, 3142	6/22/2009	Pb-214	1.01 ± 0.03	1.04 ± 0.03	1.03 ± 0.02	Pass
SO-3141, 3142	6/22/2009	Pu-239/40	0.022 ± 0.008	0.030 ± 0.009	0.026 ± 0.006	Pass
SO-3141, 3142	6/22/2009	Th-232	0.51 ± 0.04	0.48 ± 0.05	0.50 ± 0.03	Pass
SO-3141, 3142	6/22/2009	Tl-208	0.35 ± 0.02	0.36 ± 0.02	0.36 ± 0.01	Pass
SO-3141, 3142	6/22/2009	U-233/4	0.16 ± 0.02	0.18 ± 0.02	0.17 ± 0.01	Pass
SO-3141, 3142	6/22/2009	U-238	0.14 ± 0.02	0.18 ± 0.03	0.16 ± 0.02	Pass
SG-3187, 3188	6/25/2009	Ac-228	11.07 ± 0.33	10.88 ± 0.33	10.97 ± 0.24	Pass
SG-3187, 3188	6/25/2009	Pb-214	26.54 ± 0.23	26.17 ± 0.25	26.36 ± 0.17	Pass
SL-3297, 3298	7/1/2009	Be-7	1.15 ± 0.13	1.15 ± 0.12	1.15 ± 0.09	Pass
SL-3297, 3298	7/1/2009	Gr. Beta	3.38 ± 0.23	3.37 ± 0.12	3.38 ± 0.13	Pass
SL-3297, 3298	7/1/2009	K-40	1.43 ± 0.18	1.50 ± 0.19	1.47 ± 0.13	Pass
AP-3944, 3945	7/1/2009	Be-7	0.064 ± 0.009	0.068 ± 0.010	0.066 ± 0.007	Pass
DW-90222, 90223	7/15/2009	Ra-226	5.36 ± 0.60	4.62 ± 0.51	4.99 ± 0.39	Pass
DW-90222, 90223	7/15/2009	Ra-228	2.91 ± 0.73	2.80 ± 0.70	2.86 ± 0.51	Pass
DW-90237, 90238	7/17/2009	Gr. Alpha	3.54 ± 0.99	4.22 ± 1.09	3.88 ± 0.74	Pass
F-3790, 3791	7/21/2009	K-40	1.10 ± 0.35	1.41 ± 0.44	1.26 ± 0.28	Pass
DW-90250, 90251	7/22/2009	Ra-226	14.58 ± 0.39	15.13 ± 0.40	14.86 ± 0.28	Pass
DW-90250, 90251	7/22/2009	Ra-228	6.71 ± 1.05	6.10 ± 1.01	6.41 ± 0.73	Pass
VE-3965, 3966	7/28/2009	K-40	1.48 ± 0.16	1.56 ± 0.19	1.52 ± 0.13	Pass
VE-4098, 4099	8/3/2009	Be-7	0.54 ± 0.16	0.58 ± 0.16	0.56 ± 0.11	Pass
VE-4098, 4099	8/3/2009	Gr. Beta	5.15 ± 0.17	5.07 ± 0.18	5.11 ± 0.12	Pass
VE-4098, 4099	8/3/2009	K-40	4.91 ± 0.49	5.17 ± 0.15	5.04 ± 0.26	Pass
SO-4325, 4326	8/14/2009	Be-7	0.59 ± 0.21	0.68 ± 0.28	0.64 ± 0.18	Pass
SO-4325, 4326	8/14/2009	Cs-137	0.29 ± 0.05	0.28 ± 0.05	0.28 ± 0.03	Pass
SO-4325, 4326	8/14/2009	K-40	13.41 ± 0.77	13.46 ± 0.80	13.43 ± 0.56	Pass
SG-4283, 4284	8/17/2009	Ac-228	7.16 ± 0.28	7.10 ± 0.26	7.13 ± 0.19	Pass
SG-4283, 4284	8/17/2009	Pb-214	6.27 ± 0.13	6.21 ± 0.13	6.24 ± 0.09	Pass
VE-4436, 4437	8/25/2009	K-40	2.28 ± 0.28	2.67 ± 0.26	2.48 ± 0.19	Pass
SL-4589, 4590	9/1/2009	Be-7	1.25 ± 0.22	1.25 ± 0.16	1.25 ± 0.14	Pass
SL-4589, 4590	9/1/2009	K-40	2.96 ± 0.30	2.70 ± 0.27	2.83 ± 0.20	Pass
AV-4882, 4883	9/8/2009	Be-7	0.93 ± 0.18	0.95 ± 0.17	0.94 ± 0.12	Pass
AV-4882, 4883	9/8/2009	K-40	2.50 ± 0.26	2.47 ± 0.29	2.49 ± 0.20	Pass

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

Lab Code	Date	Analysis	Concentration (pCi/L) ^a			Acceptance
			First Result	Second Result	Averaged Result	
WW-4721, 4722	9/9/2009	H-3	19191.00 ± 404.00	18677.00 ± 399.00	18934.00 ± 283.91	Pass
WW-4903, 4904	9/11/2009	H-3	1075.00 ± 130.00	1281.00 ± 136.00	1178.00 ± 94.07	Pass
BS-5119, 5120	9/16/2009	Be-7	2067.50 ± 327.90	2225.40 ± 371.10	2146.45 ± 247.61	Pass
BS-5119, 5120	9/16/2009	Cs-137	86.24 ± 35.40	145.10 ± 31.54	115.67 ± 23.71	Pass
BS-5119, 5120	9/16/2009	K-40	16.85 ± 0.90	17.27 ± 0.79	17.06 ± 0.60	Pass
SS-5188, 5189	9/23/2009	Be-7	1.02 ± 0.31	1.04 ± 0.43	1.03 ± 0.26	Pass
SS-5188, 5189	9/23/2009	K-40	10.21 ± 0.65	9.94 ± 0.93	10.07 ± 0.57	Pass
AP-3944, 3945	9/29/2009	Be-7	0.09 ± 0.02	0.09 ± 0.02	0.09 ± 0.01	Pass
E-5251, 5252	10/1/2009	Gr. Beta	2.30 ± 0.10	2.10 ± 0.10	2.20 ± 0.07	Pass
E-5251, 5252	10/1/2009	K-40	1.18 ± 0.24	1.15 ± 0.18	1.17 ± 0.15	Pass
G-5272, 5273	10/1/2009	Be-7	3.31 ± 0.29	3.60 ± 0.26	3.46 ± 0.19	Pass
G-5272, 5273	10/1/2009	Gr. Alpha	19.81 ± 0.80	21.10 ± 0.74	20.46 ± 0.54	Pass
G-5272, 5273	10/1/2009	K-40	16.47 ± 0.75	17.00 ± 0.74	16.74 ± 0.53	Pass
F-5690, 5691	10/15/2009	H-3	8895.00 ± 250.00	9051.00 ± 252.00	8973.00 ± 177.49	Pass
F-5690, 5691	10/15/2009	K-40	3.62 ± 0.40	3.09 ± 0.48	3.36 ± 0.31	Pass
DW-90396, 90397	10/16/2009	Ra-226	0.54 ± 0.09	0.42 ± 0.08	0.48 ± 0.06	Pass
DW-90396, 90397	10/16/2009	Ra-228	1.44 ± 0.56	0.94 ± 0.51	1.19 ± 0.38	Pass
DW-90408, 90409	10/19/2009	Ra-226	0.99 ± 0.12	1.10 ± 0.14	1.05 ± 0.09	Pass
DW-90408, 90409	10/19/2009	Ra-228	2.76 ± 0.66	1.38 ± 0.92	2.07 ± 0.57	Pass
DW-90420, 90421	10/21/2009	Ra-226	1.95 ± 0.17	1.77 ± 0.15	1.86 ± 0.11	Pass
DW-90420, 90421	10/21/2009	Ra-228	3.10 ± 0.73	3.32 ± 0.80	3.21 ± 0.54	Pass
SG-5962, 5963	10/22/2009	Ac-228	16.39 ± 0.79	16.51 ± 0.63	16.45 ± 0.51	Pass
SG-5962, 5963	10/22/2009	Pb-214	18.03 ± 0.41	17.74 ± 0.42	17.89 ± 0.29	Pass
DW-90423, 90424	10/27/2009	Gr. Alpha	12.04 ± 1.68	15.28 ± 1.97	13.66 ± 1.29	Pass
ME-6116, 6117	11/3/2009	Gr. Beta	0.86 ± 0.03	0.83 ± 0.03	0.85 ± 0.02	Pass
ME-6116, 6117	11/3/2009	K-40	2.57 ± 0.08	2.65 ± 0.08	2.61 ± 0.06	Pass
F-6567, 6568	11/6/2009	Gr. Beta	2.72 ± 1.05	3.04 ± 0.92	2.88 ± 0.70	Pass
F-6567, 6568	11/6/2009	Sr-90	0.09 ± 0.03	0.12 ± 0.04	0.11 ± 0.02	Pass
W-6495, 6496	11/8/2009	H-3	2638.00 ± 173.00	2451.00 ± 168.00	2544.50 ± 120.57	Pass
WW-6313, 6314	11/9/2009	H-3	1514.00 ± 137.00	1483.00 ± 136.00	1498.50 ± 96.52	Pass
SWU-6611, 6612	11/24/2009	Gr. Beta	1.88 ± 0.60	1.67 ± 0.59	1.78 ± 0.42	Pass
DW-90446, 90447	12/30/2009	Ra-226	0.30 ± 0.10	0.54 ± 0.14	0.42 ± 0.09	Pass
DW-90446, 90447	12/30/2009	Ra-228	2.60 ± 0.64	2.65 ± 0.65	2.63 ± 0.46	Pass

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

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

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

Lab Code ^c	Date	Analysis	Laboratory result	Concentration ^b		Acceptance
				Known Activity	Control Limits ^d	
STW-1170 [†]	01/01/09	Am-241	1.15 ± 0.06	0.64	0.45 - 0.83	Fail
STW-1170	01/01/09	Co-57	19.60 ± 0.40	18.90	13.20 - 24.60	Pass
STW-1170	01/01/09	Co-60	16.60 ± 0.30	17.21	12.05 - 22.37	Pass
STW-1170	01/01/09	Cs-134	20.40 ± 0.50	22.50	15.80 - 29.30	Pass
STW-1170 ^e	01/01/09	Cs-137	0.10 ± 0.20	0.00	0.00 - 1.00	Pass
STW-1170	01/01/09	Fe-55	51.60 ± 20.60	48.20	33.70 - 62.70	Pass
STW-1170	01/01/09	H-3	359.90 ± 33.90	330.90	231.60 - 430.20	Pass
STW-1170	01/01/09	Mn-54	15.00 ± 0.40	14.66	10.26 - 19.06	Pass
STW-1170	01/01/09	Ni-63	50.50 ± 3.25	53.50	37.45 - 69.55	Pass
STW-1170	01/01/09	Pu-238	1.17 ± 0.04	1.18	0.83 - 1.53	Pass
STW-1170	01/01/09	Pu-239/40	0.74 ± 0.03	0.85	0.60 - 1.11	Pass
STW-1170	01/01/09	Sr-90	7.87 ± 1.39	7.21	5.05 - 9.37	Pass
STW-1170	01/01/09	Tc-99	12.70 ± 0.80	14.46	10.12 - 18.80	Pass
STW-1170	01/01/09	U-233/4	2.78 ± 0.07	2.77	1.94 - 3.60	Pass
STW-1170	01/01/09	U-238	2.87 ± 0.07	2.88	2.02 - 3.74	Pass
STW-1170	01/01/09	Zn-65	14.00 ± 0.70	13.60	9.50 - 17.70	Pass
STW-1171	01/01/09	Gr. Alpha	0.56 ± 0.06	0.64	0.00 - 1.27	Pass
STW-1171	01/01/09	Gr. Beta	1.29 ± 0.05	1.27	0.64 - 1.91	Pass
STSO-1172 ^e	01/01/09	Co-57	0.00 ± 0.00	0.00	0.00 - 1.00	Pass
STSO-1172	01/01/09	Cs-134	458.60 ± 7.40	467.00	327.00 - 607.00	Pass
STSO-1172	01/01/09	Cs-137	652.30 ± 3.50	605.00	424.00 - 787.00	Pass
STSO-1172	01/01/09	K-40	636.40 ± 9.50	570.00	360.40 - 669.40	Pass
STSO-1172	01/01/09	Mn-54	346.40 ± 3.10	307.00	215.00 - 399.00	Pass
STSO-1172	01/01/09	Pu-238	28.60 ± 2.20	25.30	17.70 - 32.90	Pass
STSO-1172 ^e	01/01/09	Pu-239/40	0.50 ± 0.40	0.00	0.00 - 1.00	Pass
STSO-1172	01/01/09	Sr-90	180.60 ± 12.10	257.00	180.00 - 334.00	Pass
STSO-1172	01/01/09	U-233/4	152.20 ± 4.30	149.00	104.00 - 194.00	Pass
STSO-1172	01/01/09	U-238	154.90 ± 4.40	155.00	109.00 - 202.00	Pass
STSO-1172	01/01/09	Zn-65	268.30 ± 4.00	242.00	169.00 - 315.00	Pass
STVE-1173	01/01/09	Co-57	2.75 ± 0.11	2.36	1.65 - 3.07	Pass
STVE-1173 ^e	01/01/09	Co-60	0.06 ± 0.09	0.00	0.00 - 1.00	Pass
STVE-1173	01/01/09	Cs-134	3.49 ± 0.22	3.40	2.38 - 4.42	Pass
STVE-1173	01/01/09	Cs-137	1.01 ± 0.11	0.93	0.65 - 1.21	Pass
STVE-1173	01/01/09	Mn-54	2.52 ± 0.14	2.30	1.61 - 2.99	Pass
STVE-1173	01/01/09	Zn-65	1.52 ± 0.18	1.35	0.95 - 1.76	Pass

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

Lab Code ^c	Date	Analysis	Laboratory result	Concentration ^b		Acceptance
				Known Activity	Control Limits ^d	
STAP-1174 ^g	01/01/09	Am-241	0.29 ± 0.03	0.21	0.14 - 0.27	Fail
STAP-1174	01/01/09	Co-57	1.25 ± 0.05	1.30	0.91 - 1.69	Pass
STAP-1174	01/01/09	Co-60	1.17 ± 0.06	1.22	0.85 - 1.59	Pass
STAP-1174	01/01/09	Cs-134	2.67 ± 0.14	2.93	2.05 - 3.81	Pass
STAP-1174	01/01/09	Cs-137	1.53 ± 0.08	1.52	1.06 - 1.98	Pass
STAP-1174	01/01/09	Mn-54	2.34 ± 0.09	2.27	1.59 - 2.95	Pass
STAP-1174 ^h	01/01/09	Sr-90	0.93 ± 0.14	0.64	0.45 - 0.83	Fail
STAP-1174	01/01/09	Zn-65	1.44 ± 0.14	1.36	0.95 - 1.77	Pass
STAP-1175	01/01/09	Gr. Alpha	0.22 ± 0.03	0.35	0.00 - 0.70	Pass
STAP-1175	01/01/09	Gr. Beta	0.36 ± 0.04	0.28	0.14 - 0.42	Pass
STSO-1188	07/01/09	Co-57	674.60 ± 9.00	586.00	410.00 - 762.00	Pass
STSO-1188	07/01/09	Co-60	356.40 ± 6.30	327.00	229.00 - 425.00	Pass
STSO-1188	07/01/09	Cs-134	0.20 ± 1.90	0.00	0.00 - 1.00	Pass
STSO-1188	07/01/09	Cs-137	767.50 ± 12.00	669.00	468.00 - 870.00	Pass
STSO-1188	07/01/09	K-40	433.00 ± 37.20	375.00	263.00 - 488.00	Pass
STSO-1188	07/01/09	Mn-54	931.60 ± 14.10	796.00	557.00 - 1035.00	Pass
STSO-1188	07/01/09	Pu-238	53.10 ± 9.00	63.20	44.20 - 82.20	Pass
STSO-1188	07/01/09	Pu-239/40	107.10 ± 12.60	116.30	81.40 - 151.20	Pass
STSO-1188 ⁱ	07/01/09	Sr-90	310.50 ± 12.20	455.00	319.00 - 592.00	Fail
STSO-1188	07/01/09	U-233/4	188.20 ± 11.90	209.00	146.00 - 272.00	Pass
STSO-1188	07/01/09	U-238	197.40 ± 12.20	217.00	152.00 - 282.00	Pass
STSO-1188	07/01/09	Zn-65	1433.90 ± 25.20	1178.00	825.00 - 1531.00	Pass
STAP-1189	07/01/09	Gr. Alpha	0.33 ± 0.04	0.66	0.00 - 1.32	Pass
STAP-1189	07/01/09	Gr. Beta	1.57 ± 0.07	1.32	0.66 - 1.98	Pass
STAP-1190	07/01/09	Am-241	0.01 ± 0.02	0.00	0.01 - 0.05	Pass
STAP-1190	07/01/09	Co-57	6.78 ± 0.27	6.48	4.54 - 8.42	Pass
STAP-1190	07/01/09	Co-60	1.06 ± 0.18	1.03	0.72 - 1.34	Pass
STAP-1190	07/01/09	Cs-134	0.01 ± 0.06	0.00	0.01 - 0.05	Pass
STAP-1190	07/01/09	Cs-137	1.49 ± 0.27	1.40	0.98 - 1.82	Pass
STAP-1190	07/01/09	Mn-54	6.00 ± 0.45	5.49	3.84 - 7.14	Pass
STAP-1190	07/01/09	Sr-90	0.79 ± 0.13	0.84	0.59 - 1.09	Pass
STAP-1190	07/01/09	Zn-65	4.55 ± 0.66	3.93	2.75 - 5.11	Pass
STVE-1190	07/01/09	Co-57	8.90 ± 0.60	8.00	5.60 - 10.40	Pass
STVE-1190	07/01/09	Co-60	2.50 ± 0.36	2.57	1.80 - 3.34	Pass
STVE-1190	07/01/09	Cs-134	0.01 ± 0.11	0.00	0.00 - 0.10	Pass
STVE-1190	07/01/09	Cs-137	2.42 ± 0.16	2.43	1.70 - 3.16	Pass
STVE-1190	07/01/09	Mn-54	8.35 ± 0.70	7.90	5.50 - 10.30	Pass
STVE-1190	07/01/09	Zn-65	0.01 ± 0.26	0.00	0.00 - 0.10	Pass

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

Lab Code ^c	Date	Analysis	Laboratory result	Concentration ^b		Acceptance
				Known Activity	Control Limits ^d	
STW-1191	07/01/09	Gr. Alpha	0.88 ± 0.07	1.05	0.00 - 2.09	Pass
STW-1191	07/01/09	Gr. Beta	7.29 ± 0.10	7.53	3.77 - 11.30	Pass
STW-1192	07/01/09	Am-241	0.88 ± 0.08	1.04	0.73 - 1.35	Pass
STW-1192	07/01/09	Co-57	37.20 ± 1.50	36.60	25.60 - 47.60	Pass
STW-1192	07/01/09	Co-60	15.10 ± 0.90	15.40	10.80 - 20.00	Pass
STW-1192	07/01/09	Cs-134	30.30 ± 2.10	32.20	22.50 - 41.90	Pass
STW-1192	07/01/09	Cs-137	41.90 ± 1.80	41.20	28.80 - 53.60	Pass
STW-1192	07/01/09	Fe-55	54.50 ± 15.50	60.80	42.60 - 79.00	Pass
STW-1192	07/01/09	H-3	680.30 ± 33.60	634.10	443.90 - 824.30	Pass
STW-1192 ^e	07/01/09	Mn-54	0.01 ± 0.26	0.00	0.00 - 1.00	Pass
STW-1192	07/01/09	Ni-63	38.70 ± 2.60	44.20	30.90 - 57.50	Pass
STW-1192	07/01/09	Pu-238	0.02 ± 0.01	0.02	0.00 - 0.05	Pass
STW-1192	07/01/09	Pu-239/40	1.70 ± 0.10	1.64	1.15 - 2.13	Pass
STW-1192	07/01/09	Sr-90	12.90 ± 1.70	12.99	9.09 - 16.89	Pass
STW-1192	07/01/09	Tc-99	7.60 ± 0.40	10.00	7.00 - 13.00	Pass
STW-1192	07/01/09	Tc-99	7.60 ± 0.40	10.00	7.00 - 13.00	Pass
STW-1192	07/01/09	U-233/4	2.90 ± 0.10	2.96	2.07 - 3.85	Pass
STW-1192	07/01/09	U-238	3.00 ± 0.10	3.03	2.12 - 3.94	Pass
STW-1192	07/01/09	Zn-65	28.50 ± 2.40	26.90	18.80 - 35.00	Pass

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

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

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

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

^e Included in the testing series as a "false positive".

^f No errors were found in procedure or calculation. There was not enough sample for a reanalysis. Americium-241 in water was included in the ERA studies (Tbl. A-7) and also in the second round of MAPEP testing. Both analysis results were acceptable.

^g One determination was eliminated from the average, due to poor recovery. Average of three determinations, 0.25 ± 0.03 pCi/filter.

^h No reason was determined for the initial high results. The analysis was repeated; result of reanalysis; 0.54 ± 0.12 Bq/filter.

ⁱ Incomplete separation of strontium from calcium could result in a higher recovery percentage and consequently lower reported activity. The analysis was repeated; result of reanalysis 363.3 ± 28.6 Bq/kg.

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

Lab Code ^b	Date	Analysis	Concentration (pCi/L)			Acceptance
			Laboratory Result ^c	ERA Result ^d	Control Limits	
STAP-1176	03/23/09	Am-241	47.20 ± 3.10	55.4	32.4 - 76.0	Pass
STAP-1176	03/23/09	Co-60	543.60 ± 8.90	490.0	379.0 - 612.0	Pass
STAP-1176	03/23/09	Cs-134	941.30 ± 30.70	865.0	563.0 - 1070.0	Pass
STAP-1176	03/23/09	Cs-137	850.60 ± 19.40	724.0	544.0 - 951.0	Pass
STAP-1176 ^e	03/23/09	Mn-54	0.00 ± 0.00	0.0	0.0 - 0.0	Pass
STAP-1176	03/23/09	Pu-238	64.50 ± 3.60	57.4	39.4 - 75.5	Pass
STAP-1176	03/23/09	Pu-239/40	88.50 ± 4.20	78.2	56.7 - 101.0	Pass
STAP-1176	03/23/09	Sr-90	93.90 ± 10.00	95.3	41.9 - 148.0	Pass
STAP-1176	03/23/09	U-233/4	50.00 ± 2.47	53.5	33.7 - 79.3	Pass
STAP-1176	03/23/09	U-238	50.40 ± 2.48	53.1	34.0 - 75.4	Pass
STAP-1176	03/23/09	Uranium	101.60 ± 5.30	109.0	55.7 - 173.0	Pass
STAP-1176	03/23/09	Zn-65	237.30 ± 23.70	185.0	128.0 - 256.0	Pass
STAP-1177	03/23/09	Gr. Alpha	76.30 ± 3.47	63.8	33.1 - 96.0	Pass
STAP-1177	03/23/09	Gr. Beta	98.50 ± 3.04	80.7	49.7 - 118.0	Pass
STSO-1178	03/23/09	Ac-228	1370.00 ± 121.00	1330.0	860.0 - 1880.0	Pass
STSO-1178	03/23/09	Am-241	1853.00 ± 185.50	1660.0	992.0 - 2130.0	Pass
STSO-1178	03/23/09	Bi-212	1449.00 ± 308.80	1550.0	406.0 - 2310.0	Pass
STSO-1178	03/23/09	Bi-214	1355.00 ± 66.20	1420.0	872.0 - 2050.0	Pass
STSO-1178	03/23/09	Co-60	7475.00 ± 46.40	7520.0	5470.0 - 10100.0	Pass
STSO-1178	03/23/09	Cs-134	5073.00 ± 74.70	5170.0	3330.0 - 6220.0	Pass
STSO-1178	03/23/09	Cs-137	5040.00 ± 49.70	4970.0	3800.0 - 6460.0	Pass
STSO-1178	03/23/09	K-40	10884.00 ± 292.70	11200.0	8060.0 - 15100.0	Pass
STSO-1178	03/23/09	Mn-54	0.00 ± 0.00	0.0	0.0 - 20.0	Pass
STSO-1178	03/23/09	Pb-212	1259.00 ± 28.40	1260.0	820.0 - 1780.0	Pass
STSO-1178	03/23/09	Pb-214	1464.00 ± 56.80	1510.0	902.0 - 2260.0	Pass
STSO-1178	03/23/09	Pu-238	1853.00 ± 185.50	1590.0	910.0 - 2240.0	Pass
STSO-1178	03/23/09	Pu-239/40	1516.50 ± 168.30	1360.0	928.0 - 1800.0	Pass
STSO-1178	03/23/09	Sr-90	5270.90 ± 290.20	5750.0	2080.0 - 9380.0	Pass
STSO-1178	03/23/09	U-233/4	1452.30 ± 114.40	1600.0	1010.0 - 1990.0	Pass
STSO-1178	03/23/09	Uranium	3013.70 ± 131.10	3270.0	1860.0 - 4410.0	Pass
STSO-1178	03/23/09	Zn-65	2083.00 ± 59.00	1940.0	1540.0 - 2600.0	Pass

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

Lab Code ^b	Date	Analysis	Concentration (pCi/L)		Control Limits	Acceptance
			Laboratory Result ^c	ERA Result ^d		
STVE-1179	03/23/09	Am-241	2849.70 ± 237.60	3660.0	2090.0 - 5030.0	Pass
STVE-1179	03/23/09	Cm-244	808.00 ± 85.70	954.0	470.0 - 1480.0	Pass
STVE-1179	03/23/09	Co-60	1546.80 ± 31.60	1710.0	1160.0 - 2460.0	Pass
STVE-1179	03/23/09	Cs-134	1706.00 ± 59.20	1880.0	1080.0 - 2600.0	Pass
STVE-1179	03/23/09	Cs-137	1940.50 ± 44.80	1800.0	1320.0 - 2500.0	Pass
STVE-1179	03/23/09	K-40	30107.30 ± 598.00	30800.0	22300.0 - 43700.0	Pass
STVE-1179	03/23/09	Mn-54	0.00 ± 0.00	0.0	0.0 - 0.0	Pass
STVE-1179	03/23/09	Sr-90	6604.80 ± 440.10	8860.0	4950.0 - 11800.0	Pass
STVE-1179	03/23/09	U-233/4	1718.00 ± 128.90	2040.0	1400.0 - 2710.0	Pass
STVE-1179	03/23/09	U-238	1718.30 ± 128.80	2020.0	1420.0 - 2550.0	Pass
STVE-1179	03/23/09	Uranium	3499.40 ± 371.00	4150.0	2850.0 - 5360.0	Pass
STVE-1179	03/23/09	Zn-65	869.40 ± 63.60	878.0	634.0 - 1200.0	Pass
STW-1180	03/23/09	Am-241	127.50 ± 5.10	132.0	90.4 - 178.0	Pass
STW-1180	03/23/09	Co-60	1174.10 ± 11.70	1230.0	1070.0 - 1450.0	Pass
STW-1180	03/23/09	Cs-134	742.20 ± 18.30	790.0	584.0 - 907.0	Pass
STW-1180	03/23/09	Cs-137	887.50 ± 14.00	913.0	776.0 - 1090.0	Pass
STW-1180	03/23/09	Fe-55	323.00 ± 362.00	492.0	286.0 - 657.0	Pass
STW-1180	03/23/09	Mn-54	0.00 ± 0.00	0.0	0.0 - 0.0	Pass
STW-1180	03/23/09	Pu-238	96.60 ± 2.20	108.0	81.7 - 134.0	Pass
STW-1180	03/23/09	Pu-239/40	89.50 ± 2.10	86.3	66.8 - 107.0	Pass
STW-1180	03/23/09	Sr-90	763.20 ± 12.90	834.0	530.0 - 1120.0	Pass
STW-1180	03/23/09	U-233/4	95.00 ± 1.80	96.6	72.8 - 124.0	Pass
STW-1180	03/23/09	U-238	97.40 ± 1.80	95.8	73.2 - 119.0	Pass
STW-1180	03/23/09	Uranium	195.50 ± 3.70	197.0	142.0 - 262.0	Pass
STW-1180	03/23/09	Zn-65	653.10 ± 24.10	631.0	535.0 - 786.0	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.

^e Included in the testing series as a "false positive". No activity expected.

^f The analysis was repeated by leaching and total dissolution methods. Total dissolution yielded results within expected range. Results of the reanalysis: U-233,4, 1655 ± 95 pCi/kg. U-238 1805 ± 97 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;
 $s = 2\sigma$ counting uncertainty (corresponding to the 95% confidence level).

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

3.0. Duplicate analyses

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 $x_1, x_2 \dots x_n$ 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

Appendix C. NON-RADIOLOGICAL MONITORING PROGRAM

1.0. Introduction

Union Electric Company, d.b.a. AmerenUE, 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 2009.

2.0. Unusual or Important Events

No unusual or important events reportable under the EPP Section 4.1 were identified during 2009.

3.0. EPP Non-compliances

During 2009, there were no non-compliances with the EPP.

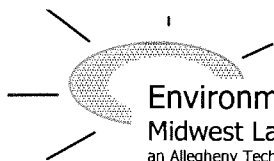
4.0. Nonroutine Reports

There were no nonroutine reports submitted in accordance with the EPP, Section 5.4.2 in 2009.

5.0. Plant Design and Operation Environmental Evaluations.

This section lists all changes in the plant design, operation, tests or experiments installed during 2009, which could have involved a potentially significant unreviewed environmental question in accordance with section 3.1 of Appendix B.

During 2009, there were no changes to the plant that could have involved a potentially significant 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, 2009

Prepared by

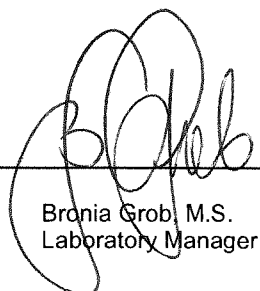
ENVIRONMENTAL, Inc.
Midwest Laboratory

Submitted by

Union Electric Co.
dba AmerenUE Corp.

Project No. 8036

Approved :



Bronia Grob, M.S.
Laboratory Manager

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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 2009. 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/m³

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.								
01-08-09	431	< 0.15	< 0.012	< 0.007	< 0.011	< 0.003	< 0.004	< 0.82	< 0.030
01-15-09	426	< 0.20	< 0.011	< 0.006	< 0.021	< 0.003	< 0.004	< 0.58	< 0.036
01-22-09	433	< 0.14	< 0.011	< 0.004	< 0.021	< 0.005	< 0.007	< 0.32	< 0.025
01-29-09	423	< 0.18	< 0.010	< 0.007	< 0.025	< 0.005	< 0.005	< 0.58	< 0.040
02-05-09	433	< 0.19	< 0.010	< 0.005	< 0.025	< 0.008	< 0.007	< 0.37	< 0.047
02-12-09	428	< 0.16	< 0.006	< 0.005	< 0.024	< 0.007	< 0.005	< 0.20	< 0.046
02-19-09	423	< 0.14	< 0.011	< 0.005	< 0.019	< 0.007	< 0.008	< 0.12	< 0.032
02-26-09	431	< 0.25	< 0.016	< 0.010	< 0.029	< 0.009	< 0.011	< 0.18	< 0.083
03-05-09	423	0.20 ± 0.10	< 0.005	< 0.007	< 0.013	< 0.005	< 0.006	< 0.064	< 0.025
03-12-09	428	0.27 ± 0.13	< 0.005	< 0.006	< 0.008	< 0.005	< 0.005	< 0.046	< 0.029
03-19-09	426	0.19 ± 0.10	< 0.008	< 0.006	< 0.013	< 0.005	< 0.005	< 0.032	< 0.025
03-26-09	428	0.17 ± 0.10	< 0.005	< 0.006	< 0.009	< 0.002	< 0.004	< 0.028	< 0.032
04-02-09	433	< 0.09	< 0.007	< 0.006	< 0.015	< 0.005	< 0.007	< 0.027	< 0.023
04-09-09	426	0.25 ± 0.07	< 0.006	< 0.004	< 0.005	< 0.004	< 0.004	< 0.019	< 0.019
04-17-09	487	0.20 ± 0.07	< 0.003	< 0.005	< 0.008	< 0.006	< 0.005	< 0.024	< 0.028
04-23-09	367	0.18 ± 0.09	< 0.008	< 0.007	< 0.009	< 0.006	< 0.007	< 0.015	< 0.025
04-30-09	431	0.20 ± 0.07	< 0.004	< 0.004	< 0.011	< 0.003	< 0.004	< 0.007	< 0.022
05-07-09	428	0.24 ± 0.09	< 0.004	< 0.006	< 0.004	< 0.003	< 0.004	< 0.004	< 0.034
05-15-09	484	0.17 ± 0.06	< 0.002	< 0.004	< 0.007	< 0.004	< 0.003	< 0.004	< 0.019
05-21-09	372	0.30 ± 0.10	< 0.007	< 0.004	< 0.011	< 0.005	< 0.008	< 0.010	< 0.045
05-29-09	482	0.11 ± 0.05	< 0.004	< 0.003	< 0.006	< 0.003	< 0.003	< 0.006	< 0.026
06-04-09	372	0.22 ± 0.08	< 0.006	< 0.005	< 0.007	< 0.008	< 0.007	< 0.006	< 0.036
06-11-09	428	0.17 ± 0.08	< 0.007	< 0.003	< 0.012	< 0.004	< 0.006	< 0.008	< 0.027
06-18-09	436	0.15 ± 0.05	< 0.002	< 0.004	< 0.010	< 0.007	< 0.005	< 0.007	< 0.033
06-25-09	423	0.16 ± 0.06	< 0.005	< 0.005	< 0.008	< 0.006	< 0.004	< 0.004	< 0.035
07-02-09	423	0.20 ± 0.06	< 0.003	< 0.008	< 0.012	< 0.004	< 0.004	< 0.004	< 0.026
07-10-09	489	0.14 ± 0.04	< 0.002	< 0.004	< 0.003	< 0.004	< 0.005	< 0.004	< 0.018
07-17-09	426	0.20 ± 0.06	< 0.003	< 0.005	< 0.008	< 0.004	< 0.006	< 0.008	< 0.025
07-23-09	365	0.13 ± 0.08	< 0.004	< 0.007	< 0.011	< 0.005	< 0.007	< 0.007	< 0.030
07-30-09	431	0.20 ± 0.05	< 0.003	< 0.006	< 0.007	< 0.004	< 0.007	< 0.004	< 0.032
08-06-09	428	0.15 ± 0.06	< 0.002	< 0.005	< 0.008	< 0.006	< 0.005	< 0.004	< 0.020
08-13-09	428	0.18 ± 0.06	< 0.005	< 0.005	< 0.010	< 0.006	< 0.006	< 0.006	< 0.019
08-20-09	428	0.14 ± 0.04	< 0.003	< 0.004	< 0.006	< 0.004	< 0.003	< 0.004	< 0.021
08-27-09	428	0.17 ± 0.05	< 0.005	< 0.003	< 0.003	< 0.004	< 0.004	< 0.008	< 0.030
09-03-09	428	0.18 ± 0.08	< 0.004	< 0.004	< 0.009	< 0.006	< 0.004	< 0.006	< 0.031
09-10-09	428	0.18 ± 0.05	< 0.005	< 0.002	< 0.009	< 0.005	< 0.004	< 0.007	< 0.018
09-17-09	428	0.24 ± 0.07	< 0.004	< 0.006	< 0.008	< 0.005	< 0.004	< 0.004	< 0.028
09-24-09	431	0.19 ± 0.08	< 0.007	< 0.003	< 0.005	< 0.005	< 0.006	< 0.006	< 0.026
10-01-09	423	0.10 ± 0.05	< 0.004	< 0.003	< 0.010	< 0.007	< 0.006	< 0.004	< 0.026

^a No iodine-131 was detected. Concentrations are < 0.07 pCi/m³ 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/m³

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									
10-08-09	426	0.13 ± 0.06	< 0.004	< 0.004	< 0.011	< 0.005	< 0.007	< 0.007	< 0.031
10-15-09	428	< 0.06	< 0.005	< 0.007	< 0.006	< 0.005	< 0.006	< 0.006	< 0.019
10-22-09	431	0.19 ± 0.08	< 0.004	< 0.005	< 0.009	< 0.005	< 0.005	< 0.006	< 0.020
10-29-09	428	< 0.05	< 0.006	< 0.005	< 0.004	< 0.003	< 0.005	< 0.004	< 0.016
11-05-09	431	0.17 ± 0.06	< 0.004	< 0.004	< 0.010	< 0.005	< 0.007	< 0.007	< 0.022
11-12-09	426	0.17 ± 0.06	< 0.004	< 0.005	< 0.007	< 0.004	< 0.003	< 0.004	< 0.027
11-20-09	492	< 0.05	< 0.005	< 0.005	< 0.008	< 0.003	< 0.004	< 0.004	< 0.028
11-25-09	194	< 0.12	< 0.007	< 0.011	< 0.013	< 0.008	< 0.012	< 0.009	< 0.061
12-03-09	330	0.17 ± 0.08	< 0.008	< 0.005	< 0.007	< 0.008	< 0.006	< 0.006	< 0.041
12-11-09	328	< 0.07	< 0.004	< 0.007	< 0.012	< 0.007	< 0.006	< 0.007	< 0.034
12-17-09	245	0.15 ± 0.09	< 0.008	< 0.008	< 0.016	< 0.008	< 0.010	< 0.031	< 0.040
12-23-09	290	< 0.08	< 0.007	< 0.005	< 0.015	< 0.007	< 0.009	< 0.013	< 0.047
12-31-09	403	0.12 ± 0.06	< 0.005	< 0.006	< 0.009	< 0.005	< 0.003	< 0.007	< 0.030

^a No iodine-131 was detected. Concentrations are < 0.07 pCi/m³ 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/m³

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									
01-08-09	433	< 0.18	< 0.012	< 0.004	< 0.023	< 0.006	< 0.006	< 0.82	< 0.037
01-15-09	426	< 0.13	< 0.012	< 0.005	< 0.008	< 0.005	< 0.003	< 0.58	< 0.022
01-22-09	428	< 0.16	< 0.011	< 0.004	< 0.020	< 0.005	< 0.006	< 0.70	< 0.038
01-29-09	431	< 0.16	< 0.010	< 0.005	< 0.021	< 0.006	< 0.004	< 0.42	< 0.030
02-05-09	431	< 0.13	< 0.008	< 0.003	< 0.016	< 0.005	< 0.004	< 0.34	< 0.026
02-12-09	428	< 0.13	< 0.009	< 0.005	< 0.023	< 0.008	< 0.006	< 0.21	< 0.030
02-19-09	426	< 0.17	< 0.009	< 0.005	< 0.015	< 0.006	< 0.006	< 0.16	< 0.056
02-26-09	428	< 0.11	< 0.004	< 0.006	< 0.008	< 0.003	< 0.005	< 0.088	< 0.038
03-05-09	431	0.25 ± 0.10	< 0.006	< 0.007	< 0.008	< 0.005	< 0.004	< 0.066	< 0.028
03-12-09	426	0.18 ± 0.09	< 0.004	< 0.007	< 0.013	< 0.005	< 0.004	< 0.047	< 0.027
03-19-09	423	0.29 ± 0.11	< 0.003	< 0.006	< 0.011	< 0.006	< 0.004	< 0.033	< 0.032
03-26-09	433	0.21 ± 0.12	< 0.006	< 0.007	< 0.005	< 0.003	< 0.004	< 0.023	< 0.019
04-02-09	423	0.25 ± 0.09	< 0.007	< 0.006	< 0.010	< 0.003	< 0.006	< 0.016	< 0.027
04-09-09	428	0.15 ± 0.06	< 0.006	< 0.003	< 0.010	< 0.004	< 0.004	< 0.014	< 0.017
04-17-09	489	< 0.08	< 0.006	< 0.005	< 0.006	< 0.003	< 0.007	< 0.016	< 0.038
04-23-09	367	< 0.09	< 0.008	< 0.004	< 0.010	< 0.004	< 0.008	< 0.015	< 0.027
04-30-09	431	0.14 ± 0.07	< 0.003	< 0.004	< 0.007	< 0.003	< 0.003	< 0.008	< 0.028
05-07-09	426	0.16 ± 0.06	< 0.005	< 0.006	< 0.013	< 0.005	< 0.006	< 0.007	< 0.034
05-15-09	484	0.16 ± 0.06	< 0.003	< 0.004	< 0.009	< 0.004	< 0.004	< 0.005	< 0.017
05-21-09	372	0.22 ± 0.10	< 0.005	< 0.004	< 0.010	< 0.005	< 0.007	< 0.006	< 0.051
05-29-09	484	0.09 ± 0.05	< 0.004	< 0.005	< 0.007	< 0.002	< 0.004	< 0.005	< 0.022
06-04-09	372	0.21 ± 0.06	< 0.007	< 0.004	< 0.014	< 0.006	< 0.007	< 0.010	< 0.037
06-11-09	426	< 0.08	< 0.005	< 0.003	< 0.008	< 0.005	< 0.005	< 0.009	< 0.027
06-18-09	433	< 0.07	< 0.002	< 0.006	< 0.007	< 0.005	< 0.006	< 0.011	< 0.034
06-25-09	431	< 0.07	< 0.006	< 0.004	< 0.008	< 0.004	< 0.006	< 0.005	< 0.022
07-02-09	416	0.16 ± 0.08	< 0.005	< 0.004	< 0.007	< 0.005	< 0.007	< 0.003	< 0.027
07-10-09	492	0.19 ± 0.06	< 0.003	< 0.004	< 0.012	< 0.005	< 0.004	< 0.007	< 0.018
07-17-09	426	0.17 ± 0.08	< 0.003	< 0.006	< 0.013	< 0.004	< 0.005	< 0.008	< 0.031
07-23-09	372	0.13 ± 0.06	< 0.002	< 0.006	< 0.011	< 0.005	< 0.007	< 0.007	< 0.033
07-30-09	428	0.20 ± 0.06	< 0.003	< 0.005	< 0.011	< 0.005	< 0.004	< 0.004	< 0.022
08-06-09	426	0.14 ± 0.06	< 0.002	< 0.005	< 0.008	< 0.006	< 0.006	< 0.004	< 0.021
08-13-09	428	0.18 ± 0.08	< 0.005	< 0.006	< 0.005	< 0.005	< 0.006	< 0.006	< 0.019
08-20-09	428	0.17 ± 0.07	< 0.004	< 0.003	< 0.012	< 0.005	< 0.007	< 0.004	< 0.036
08-27-09	428	0.16 ± 0.07	< 0.005	< 0.004	< 0.008	< 0.005	< 0.005	< 0.006	< 0.033
09-03-09	428	0.17 ± 0.05	< 0.004	< 0.005	< 0.009	< 0.004	< 0.005	< 0.005	< 0.030
09-10-09	428	0.20 ± 0.08	< 0.004	< 0.005	< 0.007	< 0.005	< 0.006	< 0.006	< 0.031
09-17-09	426	0.19 ± 0.07	< 0.004	< 0.005	< 0.011	< 0.004	< 0.003	< 0.004	< 0.021
09-24-09	431	0.12 ± 0.06	< 0.005	< 0.005	< 0.007	< 0.005	< 0.007	< 0.006	< 0.029
10-01-09	426	< 0.07	< 0.004	< 0.004	< 0.012	< 0.006	< 0.004	< 0.007	< 0.025

^a No iodine-131 was detected. Concentrations are < 0.07 pCi/m³ 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/m³

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									
10-08-09	428	< 0.05	< 0.003	< 0.005	< 0.011	< 0.005	< 0.006	< 0.007	< 0.023
10-15-09	426	< 0.06	< 0.005	< 0.003	< 0.008	< 0.003	< 0.003	< 0.007	< 0.034
10-22-09	434	0.19 ± 0.07	< 0.004	< 0.004	< 0.005	< 0.002	< 0.004	< 0.010	< 0.031
10-29-09	423	0.07 ± 0.04	< 0.004	< 0.005	< 0.005	< 0.004	< 0.006	< 0.004	< 0.025
11-05-09	436	0.14 ± 0.06	< 0.005	< 0.005	< 0.013	< 0.005	< 0.005	< 0.005	< 0.031
11-12-09	426	0.21 ± 0.06	< 0.003	< 0.005	< 0.005	< 0.003	< 0.003	< 0.004	< 0.021
11-20-09	489	0.08 ± 0.04	< 0.004	< 0.005	< 0.008	< 0.004	< 0.005	< 0.010	< 0.017
11-25-09	212	0.20 ± 0.11	< 0.007	< 0.010	< 0.011	< 0.010	< 0.006	< 0.008	< 0.056
12-03-09	358	0.10 ± 0.05	< 0.006	< 0.005	< 0.011	< 0.007	< 0.007	< 0.007	< 0.035
12-11-09	384	< 0.06	< 0.002	< 0.004	< 0.008	< 0.007	< 0.008	< 0.010	< 0.031
12-17-09	284	< 0.11	< 0.007	< 0.007	< 0.016	< 0.008	< 0.008	< 0.019	< 0.065
12-23-09	279	< 0.09	< 0.005	< 0.005	< 0.008	< 0.006	< 0.005	< 0.014	< 0.026
12-31-09	384	< 0.09	< 0.004	< 0.004	< 0.007	< 0.003	< 0.003	< 0.006	< 0.030

^a No iodine-131 was detected. Concentrations are < 0.07 pCi/m³ 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/m³

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									
01-08-09	431	< 0.21	< 0.011	< 0.004	< 0.031	< 0.007	< 0.007	< 1.18	< 0.043
01-15-09	428	< 0.16	< 0.007	< 0.006	< 0.016	< 0.005	< 0.005	< 0.84	< 0.032
01-22-09	431	< 0.20	< 0.013	< 0.006	< 0.017	< 0.008	< 0.007	< 0.54	< 0.052
01-29-09	423	< 0.20	< 0.006	< 0.005	< 0.018	< 0.006	< 0.006	< 0.33	< 0.038
02-05-09	431	< 0.18	< 0.008	< 0.007	< 0.018	< 0.007	< 0.006	< 0.21	< 0.027
02-12-09	431	< 0.17	< 0.011	< 0.005	< 0.020	< 0.006	< 0.006	< 0.18	< 0.027
02-19-09	423	< 0.15	< 0.007	< 0.007	< 0.018	< 0.008	< 0.007	< 0.15	< 0.049
02-26-09	433	< 0.10	< 0.007	< 0.006	< 0.023	< 0.003	< 0.003	< 0.087	< 0.031
03-05-09	423	0.25 ± 0.15	< 0.006	< 0.008	< 0.025	< 0.006	< 0.006	< 0.12	< 0.037
03-12-09	426	0.19 ± 0.09	< 0.003	< 0.006	< 0.008	< 0.004	< 0.006	< 0.047	< 0.020
03-19-09	428	0.25 ± 0.10	< 0.005	< 0.006	< 0.007	< 0.003	< 0.003	< 0.032	< 0.034
03-26-09	428	0.22 ± 0.09	< 0.005	< 0.006	< 0.007	< 0.005	< 0.003	< 0.022	< 0.025
04-02-09	431	0.19 ± 0.07	< 0.005	< 0.007	< 0.006	< 0.006	< 0.005	< 0.019	< 0.032
04-09-09	428	< 0.10	< 0.003	< 0.006	< 0.011	< 0.005	< 0.005	< 0.023	< 0.031
04-17-09	487	0.15 ± 0.07	< 0.005	< 0.005	< 0.006	< 0.003	< 0.003	< 0.014	< 0.027
04-23-09	365	0.16 ± 0.09	< 0.004	< 0.006	< 0.012	< 0.007	< 0.005	< 0.013	< 0.040
04-30-09	431	0.15 ± 0.07	< 0.004	< 0.004	< 0.005	< 0.003	< 0.004	< 0.006	< 0.024
05-07-09	428	0.15 ± 0.09	< 0.005	< 0.006	< 0.009	< 0.007	< 0.007	< 0.004	< 0.032
05-15-09	484	0.15 ± 0.06	< 0.003	< 0.004	< 0.006	< 0.003	< 0.003	< 0.004	< 0.024
05-21-09	370	0.20 ± 0.10	< 0.003	< 0.004	< 0.005	< 0.004	< 0.004	< 0.007	< 0.038
05-29-09	484	0.10 ± 0.05	< 0.006	< 0.005	< 0.012	< 0.004	< 0.004	< 0.004	< 0.027
06-04-09	372	0.22 ± 0.07	< 0.003	< 0.004	< 0.008	< 0.004	< 0.004	< 0.005	< 0.031
06-11-09	413	0.13 ± 0.08	< 0.007	< 0.004	< 0.011	< 0.007	< 0.008	< 0.012	< 0.045
06-18-09	438	0.15 ± 0.07	< 0.004	< 0.004	< 0.010	< 0.005	< 0.004	< 0.006	< 0.027
06-25-09	423	0.18 ± 0.07	< 0.005	< 0.003	< 0.008	< 0.004	< 0.006	< 0.006	< 0.029
07-02-09	426	0.19 ± 0.07	< 0.006	< 0.003	< 0.008	< 0.005	< 0.006	< 0.005	< 0.028
07-10-09	492	0.18 ± 0.05	< 0.005	< 0.004	< 0.008	< 0.003	< 0.003	< 0.015	< 0.024
07-17-09	426	0.22 ± 0.09	< 0.002	< 0.005	< 0.010	< 0.005	< 0.005	< 0.008	< 0.033
07-23-09	365	0.21 ± 0.08	< 0.004	< 0.006	< 0.009	< 0.007	< 0.006	< 0.007	< 0.026
07-30-09	431	0.16 ± 0.06	< 0.004	< 0.005	< 0.007	< 0.005	< 0.006	< 0.005	< 0.021
08-06-09	428	0.17 ± 0.07	< 0.003	< 0.005	< 0.007	< 0.005	< 0.005	< 0.004	< 0.027
08-13-09	431	0.15 ± 0.08	< 0.005	< 0.005	< 0.011	< 0.004	< 0.004	< 0.006	< 0.030
08-20-09	431	0.14 ± 0.05	< 0.004	< 0.004	< 0.010	< 0.003	< 0.006	< 0.004	< 0.020
08-27-09	426	0.16 ± 0.06	< 0.004	< 0.004	< 0.007	< 0.004	< 0.005	< 0.007	< 0.026
09-03-09	426	0.18 ± 0.07	< 0.005	< 0.005	< 0.006	< 0.004	< 0.005	< 0.005	< 0.031
09-10-09	431	0.19 ± 0.08	< 0.007	< 0.004	< 0.012	< 0.006	< 0.005	< 0.004	< 0.021
09-17-09	426	0.22 ± 0.08	< 0.006	< 0.004	< 0.011	< 0.006	< 0.007	< 0.004	< 0.034
09-24-09	433	0.09 ± 0.04	< 0.004	< 0.004	< 0.006	< 0.005	< 0.005	< 0.005	< 0.023
10-01-09	426	< 0.07	< 0.005	< 0.005	< 0.006	< 0.003	< 0.007	< 0.005	< 0.032

^a No iodine-131 was detected. Concentrations are < 0.07 pCi/m³ 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/m³

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									
10-08-09	428	0.11 ± 0.05	< 0.004	< 0.003	< 0.008	< 0.005	< 0.004	< 0.006	< 0.033
10-15-09	426	< 0.06	< 0.005	< 0.004	< 0.006	< 0.005	< 0.004	< 0.009	< 0.028
10-22-09	431	0.13 ± 0.07	< 0.005	< 0.006	< 0.011	< 0.006	< 0.005	< 0.007	< 0.030
10-29-09	426	< 0.07	< 0.006	< 0.005	< 0.011	< 0.005	< 0.004	< 0.011	< 0.021
11-05-09	436	0.11 ± 0.06	< 0.003	< 0.005	< 0.008	< 0.003	< 0.005	< 0.007	< 0.030
11-12-09	423	0.16 ± 0.05	< 0.004	< 0.005	< 0.008	< 0.003	< 0.003	< 0.004	< 0.026
11-20-09	492	0.07 ± 0.04	< 0.003	< 0.005	< 0.006	< 0.004	< 0.004	< 0.004	< 0.021
11-25-09	176	< 0.16	< 0.011	< 0.013	< 0.011	< 0.006	< 0.014	< 0.010	< 0.073
12-03-09	290	0.16 ± 0.08	< 0.009	< 0.007	< 0.014	< 0.006	< 0.006	< 0.007	< 0.031
12-11-09	308	< 0.08	< 0.007	< 0.006	< 0.016	< 0.007	< 0.008	< 0.009	< 0.028
12-17-09	243	0.22 ± 0.12	< 0.013	< 0.011	< 0.013	< 0.008	< 0.011	< 0.021	< 0.068
12-23-09	305	< 0.08	< 0.005	< 0.010	< 0.011	< 0.007	< 0.005	< 0.010	< 0.028
12-31-09	285	< 0.09	< 0.009	< 0.008	< 0.010	< 0.008	< 0.005	< 0.009	< 0.050

^a No iodine-131 was detected. Concentrations are < 0.07 pCi/m³ 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/m³

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									
01-08-09	431	< 0.20	< 0.009	< 0.005	< 0.023	< 0.006	< 0.004	< 1.12	< 0.026
01-15-09	426	< 0.19	< 0.008	< 0.006	< 0.015	< 0.004	< 0.005	< 0.57	< 0.021
01-22-09	431	< 0.08	< 0.005	< 0.005	< 0.017	< 0.004	< 0.005	< 0.40	< 0.028
01-29-09	423	< 0.10	< 0.008	< 0.005	< 0.021	< 0.003	< 0.007	< 0.28	< 0.036
02-05-09	431	< 0.12	< 0.004	< 0.006	< 0.008	< 0.003	< 0.005	< 0.22	< 0.040
02-12-09	433	< 0.15	< 0.011	< 0.005	< 0.026	< 0.006	< 0.005	< 0.21	< 0.030
02-19-09	426	< 0.15	< 0.010	< 0.004	< 0.015	< 0.006	< 0.005	< 0.16	< 0.036
02-26-09	428	< 0.11	< 0.008	< 0.006	< 0.007	< 0.005	< 0.008	< 0.092	< 0.031
03-05-09	423	< 0.15	< 0.005	< 0.005	< 0.014	< 0.006	< 0.005	< 0.12	< 0.040
03-12-09	428	0.30 ± 0.12	< 0.007	< 0.006	< 0.015	< 0.002	< 0.005	< 0.066	< 0.041
03-19-09	428	0.27 ± 0.08	< 0.005	< 0.006	< 0.007	< 0.004	< 0.004	< 0.032	< 0.029
03-26-09	428	0.21 ± 0.11	< 0.006	< 0.007	< 0.020	< 0.004	< 0.005	< 0.022	< 0.020
04-02-09	431	0.23 ± 0.09	< 0.003	< 0.007	< 0.011	< 0.003	< 0.006	< 0.016	< 0.042
04-09-09	426	0.28 ± 0.11	< 0.005	< 0.003	< 0.011	< 0.005	< 0.003	< 0.030	< 0.028
04-17-09	489	0.20 ± 0.06	< 0.004	< 0.003	< 0.007	< 0.003	< 0.005	< 0.016	< 0.016
04-23-09	365	< 0.08	< 0.007	< 0.007	< 0.010	< 0.003	< 0.004	< 0.011	< 0.029
04-30-09	431	0.18 ± 0.07	< 0.004	< 0.004	< 0.006	< 0.003	< 0.006	< 0.006	< 0.022
05-07-09	426	0.20 ± 0.06	< 0.003	< 0.005	< 0.013	< 0.004	< 0.005	< 0.004	< 0.025
05-15-09	487	0.15 ± 0.06	< 0.002	< 0.003	< 0.007	< 0.004	< 0.004	< 0.005	< 0.019
05-21-09	370	0.27 ± 0.08	< 0.003	< 0.004	< 0.008	< 0.004	< 0.006	< 0.009	< 0.020
05-29-09	486	< 0.07	< 0.004	< 0.005	< 0.012	< 0.005	< 0.004	< 0.006	< 0.028
06-04-09	372	0.20 ± 0.11	< 0.006	< 0.005	< 0.009	< 0.006	< 0.008	< 0.007	< 0.036
06-11-09	413	0.16 ± 0.09	< 0.005	< 0.007	< 0.008	< 0.006	< 0.005	< 0.010	< 0.034
06-18-09	438	0.14 ± 0.06	< 0.005	< 0.004	< 0.008	< 0.004	< 0.006	< 0.006	< 0.031
06-25-09	423	0.15 ± 0.05	< 0.006	< 0.004	< 0.007	< 0.005	< 0.007	< 0.004	< 0.031
07-02-09	426	0.18 ± 0.07	< 0.004	< 0.004	< 0.009	< 0.005	< 0.007	< 0.005	< 0.031
07-10-09	492	0.20 ± 0.07	< 0.004	< 0.006	< 0.006	< 0.005	< 0.005	< 0.007	< 0.026
07-17-09	426	0.22 ± 0.08	< 0.003	< 0.005	< 0.009	< 0.004	< 0.003	< 0.008	< 0.013
07-23-09	365	0.20 ± 0.07	< 0.005	< 0.006	< 0.011	< 0.008	< 0.004	< 0.007	< 0.031
07-30-09	431	0.14 ± 0.06	< 0.006	< 0.004	< 0.008	< 0.004	< 0.008	< 0.005	< 0.028
08-06-09	428	0.16 ± 0.06	< 0.002	< 0.006	< 0.009	< 0.005	< 0.003	< 0.004	< 0.023
08-13-09	428	0.19 ± 0.08	< 0.003	< 0.005	< 0.009	< 0.005	< 0.003	< 0.006	< 0.028
08-20-09	433	0.13 ± 0.06	< 0.006	< 0.002	< 0.010	< 0.002	< 0.003	< 0.010	< 0.023
08-27-09	423	0.18 ± 0.07	< 0.004	< 0.003	< 0.009	< 0.005	< 0.005	< 0.008	< 0.025
09-03-09	428	0.13 ± 0.06	< 0.005	< 0.003	< 0.011	< 0.006	< 0.006	< 0.004	< 0.044
09-10-09	428	0.18 ± 0.06	< 0.005	< 0.004	< 0.007	< 0.005	< 0.007	< 0.008	< 0.033
09-17-09	428	0.19 ± 0.06	< 0.004	< 0.005	< 0.009	< 0.004	< 0.004	< 0.007	< 0.018
09-24-09	433	0.20 ± 0.06	< 0.006	< 0.004	< 0.009	< 0.006	< 0.006	< 0.010	< 0.024
10-01-09	426	< 0.06	< 0.007	< 0.005	< 0.011	< 0.005	< 0.007	< 0.006	< 0.027

^a No iodine-131 was detected. Concentrations are < 0.07 pCi/m³ 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/m³

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									
10-08-09	426	< 0.07	< 0.004	< 0.005	< 0.008	< 0.007	< 0.004	< 0.007	< 0.025
10-15-09	428	< 0.06	< 0.005	< 0.005	< 0.008	< 0.005	< 0.005	< 0.008	< 0.027
10-22-09	428	0.17 ± 0.08	< 0.006	< 0.005	< 0.012	< 0.005	< 0.005	< 0.007	< 0.022
10-29-09	428	0.10 ± 0.06	< 0.004	< 0.005	< 0.007	< 0.004	< 0.003	< 0.004	< 0.029
11-05-09	436	0.15 ± 0.07	< 0.005	< 0.007	< 0.010	< 0.003	< 0.004	< 0.007	< 0.034
11-12-09	421	0.13 ± 0.05	< 0.004	< 0.005	< 0.009	< 0.004	< 0.005	< 0.005	< 0.028
11-20-09	492	0.11 ± 0.05	< 0.003	< 0.004	< 0.013	< 0.004	< 0.003	< 0.004	< 0.021
11-25-09	195	0.22 ± 0.12	< 0.011	< 0.014	< 0.018	< 0.012	< 0.012	< 0.018	< 0.056
12-03-09	324	0.13 ± 0.07	< 0.007	< 0.006	< 0.010	< 0.009	< 0.006	< 0.007	< 0.033
12-11-09	320	< 0.11	< 0.010	< 0.010	< 0.017	< 0.008	< 0.010	< 0.016	< 0.039
12-17-09	239	0.18 ± 0.10	< 0.007	< 0.006	< 0.015	< 0.008	< 0.008	< 0.023	< 0.036
12-23-09	264	< 0.10	< 0.006	< 0.007	< 0.017	< 0.008	< 0.007	< 0.016	< 0.038
12-31-09	390	0.15 ± 0.06	< 0.006	< 0.005	< 0.014	< 0.005	< 0.004	< 0.007	< 0.034

^a No iodine-131 was detected. Concentrations are < 0.07 pCi/m³ 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/m³

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									
01-08-09	431	< 0.14	< 0.011	< 0.005	< 0.023	< 0.004	< 0.005	< 0.61	< 0.033
01-15-09	428	< 0.19	< 0.006	< 0.006	< 0.011	< 0.002	< 0.004	< 0.57	< 0.025
01-22-09	428	< 0.13	< 0.008	< 0.004	< 0.010	< 0.005	< 0.004	< 0.62	< 0.023
01-29-09	423	0.27 ± 0.12	< 0.007	< 0.006	< 0.015	< 0.006	< 0.005	< 0.46	< 0.019
02-05-09	431	< 0.18	< 0.013	< 0.003	< 0.015	< 0.009	< 0.008	< 0.30	< 0.039
02-12-09	433	< 0.15	< 0.006	< 0.004	< 0.017	< 0.006	< 0.009	< 0.22	< 0.042
02-19-09	423	0.20 ± 0.11	< 0.012	< 0.004	< 0.016	< 0.007	< 0.004	< 0.17	< 0.037
02-26-09	431	< 0.12	< 0.005	< 0.006	< 0.009	< 0.003	< 0.004	< 0.092	< 0.027
03-05-09	423	0.21 ± 0.10	< 0.005	< 0.007	< 0.009	< 0.005	< 0.006	< 0.083	< 0.038
03-12-09	428	< 0.12	< 0.009	< 0.007	< 0.019	< 0.005	< 0.007	< 0.052	< 0.038
03-19-09	426	0.20 ± 0.09	< 0.004	< 0.007	< 0.009	< 0.005	< 0.003	< 0.033	< 0.037
03-26-09	431	0.20 ± 0.11	< 0.004	< 0.006	< 0.013	< 0.006	< 0.004	< 0.022	< 0.022
04-02-09	431	0.21 ± 0.08	< 0.005	< 0.006	< 0.015	< 0.007	< 0.005	< 0.016	< 0.022
04-09-09	426	0.21 ± 0.07	< 0.005	< 0.003	< 0.008	< 0.004	< 0.004	< 0.015	< 0.025
04-17-09	489	0.20 ± 0.06	< 0.004	< 0.003	< 0.005	< 0.003	< 0.004	< 0.008	< 0.020
04-23-09	365	< 0.06	< 0.006	< 0.006	< 0.015	< 0.004	< 0.004	< 0.011	< 0.031
04-30-09	431	0.14 ± 0.05	< 0.003	< 0.004	< 0.012	< 0.004	< 0.003	< 0.006	< 0.031
05-07-09	426	0.21 ± 0.07	< 0.003	< 0.004	< 0.003	< 0.004	< 0.004	< 0.004	< 0.017
05-15-09	484	0.17 ± 0.07	< 0.003	< 0.004	< 0.005	< 0.002	< 0.004	< 0.005	< 0.017
05-21-09	372	0.32 ± 0.08	< 0.005	< 0.005	< 0.005	< 0.006	< 0.006	< 0.007	< 0.030
05-29-09	484	0.13 ± 0.06	< 0.003	< 0.003	< 0.008	< 0.005	< 0.006	< 0.010	< 0.016
06-04-09	372	0.29 ± 0.09	< 0.004	< 0.005	< 0.010	< 0.005	< 0.004	< 0.012	< 0.027
06-11-09	416	< 0.08	< 0.005	< 0.005	< 0.010	< 0.006	< 0.007	< 0.010	< 0.031
06-18-09	438	0.23 ± 0.08	< 0.004	< 0.005	< 0.010	< 0.005	< 0.005	< 0.007	< 0.033
06-25-09	423	0.14 ± 0.07	< 0.006	< 0.004	< 0.009	< 0.004	< 0.005	< 0.006	< 0.023
07-02-09	423	0.18 ± 0.06	< 0.001	< 0.005	< 0.008	< 0.005	< 0.004	< 0.004	< 0.035
07-10-09	489	0.15 ± 0.06	< 0.004	< 0.005	< 0.011	< 0.004	< 0.006	< 0.007	< 0.024
07-17-09	426	0.18 ± 0.08	< 0.005	< 0.005	< 0.010	< 0.005	< 0.004	< 0.008	< 0.023
07-23-09	365	0.16 ± 0.06	< 0.005	< 0.006	< 0.008	< 0.006	< 0.004	< 0.007	< 0.017
07-30-09	431	< 0.10	< 0.007	< 0.003	< 0.008	< 0.005	< 0.005	< 0.006	< 0.026
08-06-09	428	0.15 ± 0.06	< 0.004	< 0.005	< 0.007	< 0.004	< 0.005	< 0.004	< 0.014
08-13-09	428	0.26 ± 0.08	< 0.004	< 0.003	< 0.011	< 0.004	< 0.006	< 0.006	< 0.023
08-20-09	431	0.23 ± 0.09	< 0.007	< 0.004	< 0.007	< 0.004	< 0.005	< 0.007	< 0.031
08-27-09	426	0.16 ± 0.04	< 0.004	< 0.004	< 0.002	< 0.004	< 0.005	< 0.005	< 0.015
09-03-09	426	0.15 ± 0.07	< 0.005	< 0.002	< 0.007	< 0.005	< 0.005	< 0.006	< 0.037
09-10-09	431	0.17 ± 0.07	< 0.004	< 0.004	< 0.012	< 0.005	< 0.005	< 0.009	< 0.028
09-17-09	426	0.23 ± 0.07	< 0.006	< 0.003	< 0.009	< 0.005	< 0.004	< 0.010	< 0.028
09-24-09	433	0.17 ± 0.08	< 0.004	< 0.005	< 0.011	< 0.007	< 0.004	< 0.007	< 0.030
10-01-09	426	< 0.08	< 0.005	< 0.004	< 0.008	< 0.003	< 0.004	< 0.006	< 0.029

^a No iodine-131 was detected. Concentrations are < 0.07 pCi/m³ 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/m³

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									
10-08-09	428	< 0.06	< 0.003	< 0.005	< 0.007	< 0.005	< 0.006	< 0.006	< 0.039
10-15-09	426	< 0.05	< 0.005	< 0.004	< 0.009	< 0.005	< 0.005	< 0.007	< 0.029
10-22-09	431	0.19 ± 0.07	< 0.003	< 0.004	< 0.008	< 0.005	< 0.005	< 0.011	< 0.036
10-29-09	428	0.08 ± 0.04	< 0.005	< 0.006	< 0.009	< 0.005	< 0.006	< 0.008	< 0.018
11-05-09	433	< 0.07	< 0.005	< 0.006	< 0.010	< 0.006	< 0.004	< 0.005	< 0.030
11-12-09	423	0.18 ± 0.05	< 0.003	< 0.005	< 0.006	< 0.004	< 0.003	< 0.005	< 0.030
11-20-09	492	0.11 ± 0.06	< 0.005	< 0.006	< 0.003	< 0.003	< 0.003	< 0.004	< 0.026
11-25-09	200	< 0.12	< 0.011	< 0.007	< 0.023	< 0.013	< 0.011	< 0.020	< 0.046
12-03-09	324	0.13 ± 0.08	< 0.006	< 0.006	< 0.011	< 0.007	< 0.008	< 0.009	< 0.045
12-11-09	320	< 0.09	< 0.008	< 0.007	< 0.011	< 0.008	< 0.010	< 0.030	< 0.063
12-17-09	250	< 0.10	< 0.011	< 0.009	< 0.014	< 0.004	< 0.010	< 0.022	< 0.042
12-23-09	264	< 0.09	< 0.006	< 0.005	< 0.011	< 0.005	< 0.008	< 0.010	< 0.049
12-31-09	390	< 0.06	< 0.005	< 0.004	< 0.009	< 0.005	< 0.005	< 0.007	< 0.037

^a No iodine-131 was detected. Concentrations are < 0.07 pCi/m³ unless noted otherwise.

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

Collection: Semimonthly during grazing season, monthly otherwise.

Units: pCi/L

Location		CA-MLK-M6					
Date	Lab	Concentration (pCi/L)					
Collected	Code	I-131	K-40	Zn-65	Cs-134	Cs-137	Ba-La-140
Required LLDs		1	-	-	15	18	15
01-13-09	CAMI -88	< 0.3	1221 ± 130	< 10.0	< 3.2	< 5.6	< 3.2
02-10-09	CAMI -432	< 0.3	1092 ± 91	< 5.6	< 2.8	< 3.0	< 2.1
03-09-09	NS ^a	-	-	-	-	-	-
04-12-09	NS ^a	-	-	-	-	-	-

^a "NS" = No sample; see Part I, Table 2.0, Listing of Missed Samples.

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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	-	-	15	18	15
01-12-09	CAMI -89	< 0.4	1311 ± 106	< 4.4	< 3.6	< 3.9	< 2.1
02-08-09	CAMI -433	< 0.2	1395 ± 114	< 3.4	< 2.9	< 4.2	< 1.8
03-09-09	CAMI -784	< 0.3	1218 ± 112	< 7.6	< 3.4	< 2.3	< 2.7
04-12-09	CAMI -1377	< 0.5	1204 ± 81	< 3.6	< 2.1	< 2.6	< 1.9
04-27-09	CAMI -1936	< 0.4	1111 ± 111	< 10.1	< 3.3	< 4.5	< 2.3
05-10-09	CAMI -2231	< 0.4	1188 ± 98	< 5.0	< 2.5	< 2.5	< 2.3
05-26-09	CAMI -2515	< 0.2	1290 ± 154	< 13.4	< 4.9	< 5.1	< 2.5
06-09-09	CAMI -2804	< 0.3	1204 ± 113	< 3.7	< 2.6	< 4.0	< 2.3
06-21-09	CAMI -3131	< 0.2	1187 ± 109	< 3.8	< 2.7	< 3.6	< 2.7
07-13-09	CAMI -3489	< 0.3	1395 ± 175	< 6.5	< 5.7	< 6.8	< 5.4
07-26-09	CAMI -3958	< 0.4	1399 ± 114	< 6.9	< 2.9	< 4.5	< 2.7
08-10-09	CAMI -4222	< 0.3	1256 ± 107	< 7.2	< 2.8	< 3.2	< 2.5
08-23-09	CAMI -4440	< 0.3	1421 ± 122	< 7.6	< 3.3	< 3.6	< 2.8
09-07-09	CAMI -4652	< 0.3	1324 ± 120	< 4.1	< 4.6	< 5.0	< 3.4
09-21-09	CAMI -5054	< 0.6	1303 ± 119	< 7.4	< 4.0	< 3.9	< 2.8
10-11-09	CAMI -5463	< 0.5	1459 ± 119	< 9.3	< 2.3	< 4.6	< 3.1
10-25-09	CAMI -5966	< 0.3	1117 ± 116	< 8.2	< 4.5	< 4.9	< 2.8
11-10-09	CAMI -6233	< 0.2	1239 ± 119	< 5.7	< 5.0	< 4.7	< 3.3
11-23-09	CAMI -6501	< 0.3	1240 ± 114	< 5.3	< 4.0	< 4.0	< 2.3
12-07-09	CAMI -6730	< 0.3	1377 ± 110	< 8.1	< 2.7	< 4.1	< 1.3

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

Collection: Semimonthly during grazing season, monthly otherwise.

Units: pCi/L

Location		CA-MLK-M10					
Date	Lab	Concentration (pCi/L)					
Collected	Code	I-131	K-40	Zn-65	Cs-134	Cs-137	Ba-La-140
Required LLDs		1	-	-	15	18	15
01-12-09	NS ^a	-	-	-	-	-	-
02-10-09	NS ^a	-	-	-	-	-	-
03-09-09	NS ^a	-	-	-	-	-	-
04-12-09	NS ^a	-	-	-	-	-	-
04-27-09	NS ^a	-	-	-	-	-	-
05-12-09	CAMI -2232	< 0.4	1597 ± 105	< 3.7	< 2.7	< 3.1	< 3.0
05-26-09	CAMI -2516	< 0.2	1456 ± 117	< 6.0	< 2.8	< 4.5	< 2.1
06-09-09	CAMI -2805	< 0.3	1486 ± 124	< 9.7	< 3.0	< 3.4	< 2.6
06-23-09	CAMI -3132	< 0.3	1623 ± 136	< 5.0	< 4.2	< 4.8	< 2.3
07-13-09	CAMI -3490	< 0.2	1545 ± 131	< 8.8	< 3.4	< 4.4	< 2.1
07-26-09	CAMI -3959	< 0.4	1593 ± 133	< 9.9	< 4.7	< 4.8	< 1.5
08-08-09	CAMI -4223	< 0.3	1593 ± 107	< 7.4	< 3.1	< 3.5	< 1.7
08-23-09	CAMI -4441	< 0.3	1601 ± 115	< 7.6	< 2.9	< 2.3	< 2.5
09-07-09	CAMI -4653	< 0.3	1636 ± 111	< 6.4	< 3.4	< 2.8	< 1.8
09-21-09	CAMI -5055	< 0.2	1179 ± 117	< 8.4	< 3.0	< 2.8	< 1.9
10-11-09	NS ^{a, b}	-	-	-	-	-	-
10-25-09	NS ^{a, b}	-	-	-	-	-	-
11-10-09	NS ^{a, b}	-	-	-	-	-	-
11-23-09	NS ^{a, b}	-	-	-	-	-	-
12-07-09	NS ^{a, b}	-	-	-	-	-	-

^a No sample; see Part I, Table 2.0, Listing of Missed Samples.

^b Provider withdrew from program.

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

Collection: Monthly, during growing season

Units: pCi/kg wet

Lab Code	Collection		Concentration (pCi/kg wet)						
	Date	Sample Type	K-40	Mn-54	Co-58	Co-60	I-131	Cs-134	Cs-137
<u>Location: CA-FPL-V9</u>									
CAVE- 3133	6/22/2009	Turnips	5470 ± 393	< 11.3	< 6.2	< 8.3	< 11.3	< 9.1	< 12.7
CAVE- 3134	6/22/2009	Collards	5027 ± 371	< 9.0	< 9.4	< 11.5	< 13.3	< 9.0	< 10.8
CAVE- 3135	6/22/2009	Lettuce	5854 ± 417	< 9.6	< 10.7	< 5.7	< 19.7	< 10.8	< 7.9
CAVE- 4231	8/10/2009	Turnip Greens	5246 ± 335	< 8.3	< 9.6	< 7.7	< 9.7	< 7.2	< 8.0
CAVE- 4654	9/7/2009	Collard Greens	5398 ± 400	< 13.1	< 10.2	< 9.1	< 15.6	< 12.7	< 12.6
CAVE- 4655	9/7/2009	Mustard Greens	5240 ± 402	< 11.4	< 4.6	< 9.9	< 19.3	< 8.6	< 14.6
CAVE- 5464	10/12/2009	Mustard	3916 ± 329	< 8.2	< 9.9	< 9.8	< 12.6	< 10.6	< 11.1
CAVE- 5465	10/12/2009	Turnips	5079 ± 409	< 11.6	< 14.6	< 11.8	< 11.4	< 9.8	< 13.6
CAVE- 5466	10/12/2009	Lettuce	4533 ± 318	< 10.4	< 8.2	< 6.6	< 9.4	< 6.7	< 11.6
CAVE- 5467	10/12/2009	Collards	3960 ± 333	< 8.6	< 12.0	< 9.3	< 13.1	< 9.7	< 7.3
CAVE- 5468	10/12/2009	Cabbage	2961 ± 270	< 6.9	< 6.1	< 6.4	< 13.2	< 6.2	< 6.4
CAVE- 6227	11/9/2009	Cabbage	3532 ± 277	< 10.4	< 6.7	< 10.9	< 15.3	< 9.4	< 12.1
CAVE- 6229	11/9/2009	Turnips	5369 ± 381	< 9.9	< 13.5	< 8.1	< 20.2	< 7.8	< 9.4
CAVE- 6230	11/9/2009	Mustard	4419 ± 301	< 6.3	< 7.6	< 9.2	< 11.6	< 9.1	< 8.4
CAVE- 6231	11/9/2009	Collards	4890 ± 313	< 6.2	< 4.0	< 6.1	< 12.4	< 6.7	< 8.9
CAVE- 6232	11/9/2009	Lettuce	5142 ± 377	< 11.0	< 9.6	< 6.2	< 18.3	< 8.9	< 10.8
<u>Location: CA-FPL-V11</u>									
CAVE- 2512	5/26/2009	Lettuce	4617 ± 499	< 21.8	< 11.2	< 12.1	< 20.4	< 17.9	< 21.9
CAVE- 2810	6/9/2009	Lettuce	5936 ± 492	< 14.4	< 10.0	< 7.5	< 15.7	< 16.3	< 21.5
CAVE- 3491	7/14/2009	Cabbage	1964 ± 263	< 9.4	< 5.8	< 6.6	< 12.8	< 11.4	< 13.3
CAVE- 4233	8/10/2009	Cabbage	1822 ± 232	< 6.2	< 7.4	< 9.7	< 12.0	< 6.1	< 8.9
CAVE- 4234	8/10/2009	Swiss Chard	7200 ± 454	< 11.8	< 7.1	< 12.4	< 17.8	< 10.5	< 14.0
CAVE- 4656	9/7/2009	Cabbage	2140 ± 282	< 9.3	< 8.6	< 10.8	< 18.3	< 12.0	< 12.2
<u>Location: CA-FPL-V12</u>									
CAVE- 2513	5/26/2009	Pokeweed	6113 ± 465	< 15.9	< 9.7	< 8.6	< 22.2	< 11.9	< 11.7
CAVE- 2811	6/9/2009	Pokeweed	7702 ± 535	< 12.6	< 9.6	< 14.5	< 19.3	< 13.4	< 14.2
CAVE- 3492	7/14/2009	Collard Greens	2807 ± 287	< 11.3	< 7.0	< 9.7	< 12.0	< 10.0	< 11.0
CAVE- 4235	8/10/2009	Collard Greens	4214 ± 356	< 10.5	< 7.5	< 8.6	< 22.5	< 8.3	< 11.2
CAVE- 4657	9/7/2009	Collard Greens	4589 ± 427	< 12.9	< 6.5	< 8.8	< 25.7	< 12.2	< 10.2

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

Collection: Monthly, during growing season

Units: pCi/kg wet

Lab Code	Collection		Concentration (pCi/kg wet)						
	Date	Sample Type	K-40	Mn-54	Co-58	Co-60	I-131	Cs-134	Cs-137
<u>Location: CA-FPL-V14</u>									
CAVE- 2233	5/11/2009	Turnip Greens	5201 ± 373	< 8.8	< 11.6	< 11.5	< 16.0	< 10.1	< 14.6
CAVE- 2812	6/9/2009	Lettuce	3007 ± 349	< 9.2	< 5.8	< 10.6	< 14.6	< 8.7	< 16.9
CAVE- 2813	6/9/2009	Turnips	3961 ± 382	< 13.3	< 8.9	< 10.1	< 16.2	< 14.6	< 11.0
CAVE- 4236	8/10/2009	Turnip Greens	4122 ± 305	< 8.1	< 7.6	< 11.4	< 12.6	< 6.6	< 12.1
<u>Location: CA-FPL-V15</u>									
CAVE- 3136	6/20/2009	Lettuce	5017 ± 506	< 13.7	< 15.0	< 14.5	< 35.2	< 11.2	< 16.9
CAVE- 3960	7/26/2009	Lettuce	1883 ± 316	< 15.9	< 12.7	< 11.9	< 19.0	< 13.8	< 9.0
CAVE- 4237	8/8/2009	Cabbage	2619 ± 262	< 7.3	< 10.8	< 9.4	< 14.5	< 10.0	< 11.8

Table 4. Non-food Crops, analyses for tritium 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
<u>Location: CA-FC-1</u>										
CAVE- 6260	Soybeans #7	11/9/2009	< 150	14327 ± 396	< 10.0	< 10.4	< 8.2	< 15.9	< 9.0	21.6 ± 11.5
CAVE- 6261	Soybeans #8	11/9/2009	< 150	12595 ± 327	< 8.8	< 10.1	< 9.2	< 12.3	< 7.9	17.1 ± 8.8
CAVE- 6262	Soybeans #9	11/9/2009	< 150	14891 ± 393	< 10.6	< 9.7	< 11.3	< 14.0	< 8.1	< 11.2
<u>Location: CA-FC-2</u>										
CAVE- 6254	Soybeans #1	11/6/2009	< 150	13931 ± 446	< 9.7	< 7.9	< 8.2	< 18.5	< 9.6	< 9.5
CAVE- 6255	Soybeans #2	11/6/2009	< 150	15262 ± 464	< 5.7	< 8.8	< 11.5	< 14.4	< 9.1	< 10.6
CAVE- 6256	Soybeans #3	11/6/2009	< 150	14797 ± 483	< 10.3	< 10.2	< 8.7	< 13.8	< 7.1	< 9.4
<u>Location: CA-FC-3</u>										
CAVE- 6257	Soybeans #4	11/6/2009	< 157	16122 ± 448	< 8.9	< 7.3	< 12.1	< 14.1	< 8.6	< 10.9
CAVE- 6258	Soybeans #5	11/6/2009	< 150	16794 ± 464	< 7.4	< 8.7	< 14.0	< 18.5	< 8.0	< 11.6
CAVE- 6259	Soybeans #6	11/6/2009	< 157	16627 ± 429	< 8.3	< 9.1	< 6.4	< 17.6	< 7.2	< 12.6
<u>Location: CA-FC-4 (C)</u>										
CAVE- 6263	Soybeans #10	11/9/2009	< 150	14661 ± 560	< 11.9	< 13.9	< 12.8	< 16.9	< 10.4	< 13.3

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
<u>Location: SOL-F-002</u>										
CASO- 6235	11/4/2009	11722 ± 727	< 28.4	< 35.3	< 20.8	< 20.3	< 21.0	< 19.1	415 ± 55	41.5
CASO- 6236	11/4/2009	12510 ± 772	< 25.3	< 35.9	< 23.5	< 18.4	< 22.2	< 19.6	563 ± 54	13.8
<u>Location: SOL-F-006</u>										
CASO- 6237	11/4/2009	11919 ± 704	< 27.1	< 63.5	< 10.6	< 12.7	< 35.7	< 10.5	330 ± 39	79.5
CASO- 6238	11/4/2009	11789 ± 770	< 25.8	< 36.3	< 15.8	< 15.1	< 31.3	< 24.3	488 ± 52	32.7
<u>Location: SOL-PR-003</u>										
CASO- 6239	11/4/2009	11808 ± 710	< 19.3	< 60.0	< 24.5	< 18.3	< 59.9	< 20.1	471 ± 63	28.9
CASO- 6240	11/4/2009	10812 ± 717	< 29.8	< 45.8	< 30.2	< 15.6	< 69.3	< 26.5	403 ± 52	128.5
<u>Location: SOL-PR-007</u>										
CASO- 6241	11/4/2009	10393 ± 760	< 23.8	< 36.5	< 23.2	< 18.3	< 30.6	< 24.6	257 ± 45	20.8
CASO- 6242	11/4/2009	10657 ± 720	< 27.1	< 36.1	< 31.5	< 4.7	< 35.9	< 18.1	289 ± 40	56.9
<u>Location: SOL-V-003</u>										
CASO- 6243	11/6/2009	15148 ± 865	< 28.6	< 43.3	< 30.0	< 13.0	< 23.0	< 16.5	199 ± 38	31.8
CASO- 6244	11/6/2009	15406 ± 784	< 27.8	< 58.1	< 21.5	< 15.5	< 24.5	< 18.6	210 ± 37	43.6
<u>Location: SOL-W-001</u>										
CASO- 6245	11/6/2009	13020 ± 803	< 29.7	< 41.5	< 20.7	< 24.0	< 22.7	< 9.5	< 26.1	16.1
CASO- 6246	11/6/2009	12030 ± 692	< 20.2	< 40.3	< 21.4	< 19.2	< 15.7	< 16.6	< 28.1	21.6
<u>Location: SOL-W-002</u>										
CASO- 6247	11/6/2009	15428 ± 885	< 30.7	< 49.9	< 22.5	< 14.6	< 41.2	< 22.2	132 ± 34	33.9
CASO- 6248	11/6/2009	14529 ± 805	< 25.9	< 20.8	< 30.0	< 14.4	< 49.8	< 21.5	117 ± 38	62.4
<u>Location: SOL-W-003</u>										
CASO- 6250	11/6/2009	10476 ± 1672	< 68.9	< 198.3	< 74.8	< 67.3	< 107.1	< 55.5	< 81.8	128.2
CASO- 6251	11/6/2009	12117 ± 790	< 26.7	< 48.7	< 29.0	< 17.1	< 37.8	< 25.3	96 ± 44	57.0
<u>Location: SOL-W-004</u>										
CASO- 6252	11/6/2009	8629 ± 1277	< 65.7	< 91.7	< 59.2	< 44.3	< 34.2	< 58.6	< 48	41.9
CASO- 6253	11/6/2009	8916 ± 687	< 25.9	< 57.9	< 25.9	< 21.1	< 51.5	< 22.5	< 21	37.6

CALLAWAY

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

Collection: Monthly

Location: CA-SWA-S01

Units: pCi/L

Lab Code	Required	CASW- 195	CASW- 550	CASW- 886	CASW- 1378
Date Collected	LLD	01-22-09	02-19-09	03-17-09	04-14-09
H-3	3000	< 148	< 146	< 160	< 158
Mn-54	15	< 3.7	< 2.7	< 3.3	< 4.8
Fe-59	30	< 5.5	< 3.3	< 4.0	< 7.8
Co-58	15	< 3.5	< 1.5	< 3.2	< 3.0
Co-60	15	< 3.0	< 1.6	< 3.4	< 5.0
Zn-65	30	< 3.4	< 3.3	< 5.4	< 6.8
Zr-Nb-95	15	< 2.9	< 2.3	< 2.5	< 2.6
I-131	1000	< 5.1	< 4.4	< 4.5	< 5.9
Cs-134	15	< 3.0	< 2.5	< 2.9	< 4.5
Cs-137	18	< 2.3	< 2.7	< 3.0	< 4.2
Ba-La-140	15	< 2.7	< 2.2	< 3.6	< 1.9

Lab Code	Required	CASW- 2364	CASW- 2946	CASW- 3495	CASW- 4124
Date Collected	LLD	05-15-09	06-11-09	07-10-09	08-04-09
H-3	3000	< 163	< 159	< 135	< 149
Mn-54	15	< 2.6	< 2.2	< 3.1	< 4.0
Fe-59	30	< 5.3	< 4.1	< 3.4	< 7.4
Co-58	15	< 2.3	< 2.7	< 2.9	< 5.6
Co-60	15	< 2.3	< 1.9	< 0.9	< 4.6
Zn-65	30	< 3.2	< 4.2	< 2.9	< 10.8
Zr-Nb-95	15	< 4.0	< 2.2	< 3.5	< 3.6
I-131	1000	< 9.8	< 4.6	< 6.4	< 9.7
Cs-134	15	< 1.6	< 2.1	< 3.2	< 4.4
Cs-137	18	< 3.1	< 2.0	< 3.5	< 5.4
Ba-La-140	15	< 6.6	< 2.8	< 3.3	< 2.9

Lab Code	Required	CASW- 4664	CASW- 5443	CASW- 6173	CASW- 6588
Date Collected	LLD	09-04-09	10-06-09	11-03-09	12-01-09
H-3	3000	< 146	< 151	< 155	< 150
Mn-54	15	< 2.9	< 2.2	< 2.7	< 2.6
Fe-59	30	< 3.7	< 6.2	< 4.5	< 4.0
Co-58	15	< 2.0	< 2.1	< 1.1	< 1.5
Co-60	15	< 3.0	< 1.8	< 2.9	< 2.1
Zn-65	30	< 2.3	< 4.0	< 4.6	< 3.5
Zr-Nb-95	15	< 1.6	< 3.4	< 4.2	< 2.9
I-131	1000	< 5.8	< 7.5	< 6.4	< 3.1
Cs-134	15	< 3.7	< 3.0	< 3.3	< 2.2
Cs-137	18	< 3.3	< 2.5	< 3.8	< 2.9
Ba-La-140	15	< 6.2	< 2.9	< 2.9	< 2.1

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- 196	CASW- 551	CASW- 887	CASW- 1380
Date Collected	LLD	01-22-09	02-19-09	03-17-09	04-14-09
H-3	3000	< 148	< 146	< 160	< 158
Mn-54	15	< 3.6	< 3.1	< 2.8	< 2.9
Fe-59	30	< 6.8	< 2.8	< 4.2	< 2.8
Co-58	15	< 3.2	< 2.6	< 3.3	< 1.1
Co-60	15	< 4.0	< 2.0	< 3.7	< 2.3
Zn-65	30	< 6.0	< 4.6	< 3.5	< 1.5
Zr-Nb-95	15	< 2.6	< 2.1	< 3.2	< 2.7
I-131	1000	< 7.6	< 6.0	< 6.2	< 3.8
Cs-134	15	< 3.0	< 3.5	< 3.0	< 2.3
Cs-137	18	< 4.7	< 3.4	< 4.2	< 2.6
Ba-La-140	15	< 1.9	< 1.7	< 4.4	< 1.5

Lab Code	Required	CASW- 2365	CASW- 2947	CASW- 3496	CASW- 4125
Date Collected	LLD	05-15-09	06-11-09	07-10-09	08-04-09
H-3	3000	< 163	< 159	< 135	< 149
Mn-54	15	< 1.6	< 2.3	< 3.5	< 4.1
Fe-59	30	< 4.4	< 5.7	< 5.6	< 8.9
Co-58	15	< 1.6	< 3.7	< 2.9	< 3.6
Co-60	15	< 2.0	< 1.7	< 1.4	< 5.2
Zn-65	30	< 3.4	< 3.2	< 5.2	< 4.5
Zr-Nb-95	15	< 2.4	< 2.2	< 1.9	< 5.0
I-131	1000	< 10.6	< 6.2	< 6.7	< 10.4
Cs-134	15	< 3.4	< 3.0	< 3.0	< 4.7
Cs-137	18	< 2.6	< 3.3	< 4.2	< 5.7
Ba-La-140	15	< 3.7	< 3.6	< 3.0	< 4.5

Lab Code	Required	CASW- 4665	CASW- 5444	CASW- 6174	CASW- 6590
Date Collected	LLD	09-04-09	10-06-09	11-03-09	12-01-09
H-3	3000	< 146	< 151	161 ± 100	< 150
Mn-54	15	< 2.9	< 2.9	< 3.3	< 1.7
Fe-59	30	< 3.0	< 2.8	< 4.3	< 4.4
Co-58	15	< 2.0	< 1.9	< 1.9	< 2.3
Co-60	15	< 2.7	< 1.9	< 2.5	< 2.4
Zn-65	30	< 6.5	< 4.1	< 2.8	< 4.1
Zr-Nb-95	15	< 3.0	< 3.0	< 2.7	< 2.7
I-131	1000	< 6.3	< 3.6	< 5.4	< 4.6
Cs-134	15	< 3.2	< 2.3	< 3.0	< 2.6
Cs-137	18	< 2.6	< 3.0	< 4.6	< 3.7
Ba-La-140	15	< 6.4	< 1.7	< 3.2	< 1.4

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
<u>Location: CA-SWA-CTBD</u>											
CASW- 78	01/07/09	< 132	-	-	-	-	-	-	-	-	-
CASW- 1187	04/01/09	< 155	-	-	-	-	-	-	-	-	-
CASW- 3432	07/01/09	< 147	< 4.7	< 7.8	< 4.0	< 4.4	< 5.0	< 4.2	< 3.8	< 4.7	< 7.8
CASW- 5449	10/07/09	< 151	-	-	-	-	-	-	-	-	-
<u>Location: CA-SWA-UHS</u>											
CASW- 243	01/12/09	< 149	< 2.5	< 4.7	< 3.3	< 2.2	< 5.6	< 3.1	< 2.7	< 2.2	< 6.4
CASW- 396	02/05/09	< 156	< 2.4	< 2.3	< 1.7	< 2.0	< 2.8	< 2.7	< 2.4	< 2.7	< 3.8
CASW- 780	03/06/09	162 ± 84	< 3.1	< 3.4	< 2.3	< 2.4	< 1.7	< 3.6	< 2.8	< 2.9	< 1.6
CASW- 1706	04/07/09	< 154	< 1.4	< 3.9	< 2.3	< 1.4	< 2.3	< 2.1	< 2.1	< 2.0	< 6.4
CASW- 3774	07/13/09	< 169	< 1.6	< 4.8	< 2.2	< 1.3	< 3.2	< 3.4	< 1.9	< 2.7	< 6.6
CASW- 5716	10/07/09	< 156	< 1.9	< 3.4	< 3.4	< 1.9	< 4.5	< 3.4	< 1.8	< 2.5	< 12.5
<u>Location: CA-SWA-UNIT 2</u>											
CASW- 247	01/12/09	330 ± 94	< 1.8	< 6.5	< 2.4	< 2.1	< 4.1	< 4.6	< 2.7	< 1.9	< 5.0
CASW- 469	02/13/09	309 ± 86	< 4.8	< 7.3	< 5.0	< 5.0	< 9.3	< 4.4	< 3.9	< 4.7	< 3.2
CASW- 783	03/06/09	299 ± 90	< 2.6	< 2.4	< 1.9	< 2.7	< 4.1	< 1.7	< 3.1	< 2.5	< 3.2
CASW- 1720	04/08/09	312 ± 95	< 2.4	< 7.1	< 4.1	< 3.5	< 4.0	< 3.9	< 2.7	< 3.1	< 5.7
CASW- 3767	07/08/09	< 161	< 2.8	< 5.2	< 3.0	< 2.2	< 3.5	< 4.2	< 2.7	< 3.7	< 4.0
CASW- 5715	10/06/09	< 156	< 2.0	< 8.2	< 2.6	< 2.5	< 3.9	< 3.2	< 3.1	< 2.9	< 3.9
<u>Location: CA-SWA-POND 01</u>											
CASW- 637	02/27/09	< 149	< 2.1	< 4.1	< 1.8	< 2.7	< 3.4	< 2.6	< 2.1	< 2.1	< 1.9
CASW- 4666	09/04/09	< 141	< 4.0	< 4.5	< 3.3	< 1.9	< 5.3	< 3.8	< 3.6	< 4.1	< 3.2
<u>Location: CA-SWA-POND 02</u>											
CASW- 638	02/27/09	< 149	< 2.3	< 5.1	< 1.9	< 3.1	< 3.9	< 1.9	< 3.1	< 4.0	< 1.8
CASW- 4667	09/04/09	< 146	< 2.5	< 4.6	< 2.7	< 2.3	< 2.6	< 2.5	< 2.7	< 2.8	< 3.7
<u>Location: CA-SWA-SLUDGE LAGOON #4</u>											
CASW- 645	02/27/09	< 149	< 2.7	< 4.5	< 1.7	< 1.8	< 4.6	< 3.0	< 2.9	< 2.9	< 3.9
CASW- 4674	09/04/09	< 150	< 1.3	< 4.3	< 2.9	< 1.8	< 3.1	< 2.9	< 2.1	< 3.3	< 4.0

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

Lab Code	Collection		Concentration (pCi/L)									
	Date		H-3	Mn-54	Fe-59	Co-58	Co-60	Zn-65	Nb-95	Cs-134	Cs-137	La-140
<u>Location: CA-SWA-OUTFALL 010</u>												
CASW- 639	02/27/09		< 149	< 1.7	< 5.4	< 3.0	< 0.9	< 3.9	< 2.5	< 3.0	< 3.4	< 1.5
CASW- 4668	09/04/09		< 146	< 2.6	< 3.8	< 2.3	< 2.7	< 3.8	< 2.5	< 2.3	< 3.1	< 3.9
<u>Location: CA-SWA-OUTFALL 011</u>												
CASW- 640	02/27/09		< 149	< 3.2	< 2.5	< 2.2	< 2.1	< 3.6	< 3.4	< 2.3	< 3.5	< 1.2
CASW- 4669	09/04/09		< 146	< 2.0	< 3.4	< 2.5	< 3.4	< 2.7	< 2.9	< 2.8	< 3.7	< 4.3
<u>Location: CA-SWA-OUTFALL 012</u>												
CASW- 641	02/27/09		< 149	< 2.4	< 3.0	< 2.7	< 2.5	< 2.5	< 2.4	< 2.5	< 2.8	< 1.6
CASW- 4670	09/04/09		< 150	< 2.4	< 5.6	< 2.9	< 2.6	< 3.9	< 2.2	< 2.6	< 3.5	< 2.9
<u>Location: CA-SWA-OUTFALL 013</u>												
CASW- 642	02/27/09		< 149	< 2.6	< 4.3	< 3.1	< 3.5	< 2.8	< 3.6	< 3.0	< 4.4	< 4.3
CASW- 4671	09/04/09		< 150	< 2.9	< 6.5	< 1.5	< 1.9	< 2.4	< 3.3	< 2.3	< 2.8	< 4.0
<u>Location: CA-SWA-OUTFALL 014</u>												
CASW- 643	02/27/09		< 149	< 2.7	< 3.5	< 2.4	< 2.5	< 4.2	< 2.1	< 3.9	< 3.6	< 4.1
CASW- 4672	09/04/09		< 150	< 2.8	< 4.2	< 2.7	< 3.3	< 2.8	< 3.1	< 2.6	< 2.3	< 1.8
<u>Location: CA-SWA-OUTFALL 015</u>												
CASW- 644	02/27/09		< 149	< 1.5	< 3.6	< 2.5	< 1.8	< 2.1	< 3.1	< 2.1	< 3.3	< 2.5
CASW- 4673	09/04/09		< 150	< 3.5	< 2.1	< 2.0	< 2.3	< 4.1	< 1.5	< 2.8	< 2.8	< 4.5

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
<u>CA-DWA-003 (Ward)</u>											
CADW- 580	2/24/2009	< 148	< 3.0	< 6.7	< 3.8	< 4.2	< 2.9	< 3.9	< 4.6	< 3.5	< 5.0
CADW- 2449	5/19/2009	< 157	< 2.0	< 5.9	< 1.9	< 2.1	< 3.5	< 2.9	< 2.4	< 2.5	< 4.5
CADW- 4396	8/21/2009	< 146	< 4.7	< 4.3	< 2.7	< 1.9	< 4.6	< 2.2	< 3.2	< 2.7	< 3.0
CAWW- 6543	11/24/2009	± 150	< 2.8	< 2.4	< 2.2	< 2.0	< 4.9	< 2.7	< 2.5	< 2.8	< 4.5
<u>CA-DWA-004 (Miller)</u>											
CADW- 590	2/25/2009	< 148	< 2.2	< 5.2	< 4.4	< 3.7	< 9.4	< 3.9	< 5.4	< 4.7	< 3.0
CADW- 2450	5/19/2009	< 157	< 2.9	< 7.8	< 2.8	< 2.6	< 5.4	< 4.1	< 2.9	< 2.9	< 4.1
CADW- 4397	8/21/2009	< 146	< 2.1	< 3.2	< 2.8	< 1.3	< 4.2	< 2.3	< 2.3	< 3.0	< 3.3
CADW- 6521	11/24/2009	< 150	< 4.2	< 9.3	< 3.7	< 5.7	< 8.8	< 3.4	< 4.9	< 4.8	< 5.8
<u>CA-DWA-005 (Hux)</u>											
CADW- 582	2/24/2009	< 148	< 2.6	< 4.6	< 3.4	< 2.0	< 5.9	< 4.2	< 4.6	< 2.5	< 3.0
CADW- 2451	5/19/2009	< 157	< 3.1	< 6.5	< 2.0	< 2.6	< 4.4	< 2.2	< 2.4	< 3.1	< 2.4
CADW- 4398	8/21/2009	< 146	< 2.5	< 3.3	< 1.9	< 0.9	< 7.2	< 2.9	< 4.0	< 2.5	< 2.5
CADW- 6522	11/24/2009	< 150	< 3.7	< 3.6	< 2.0	< 2.0	< 4.3	< 4.1	< 2.6	< 3.0	< 3.7
<u>CA-DWA-006 (Lindeman)</u>											
CADW- 583	2/24/2009	< 148	< 3.0	< 3.2	< 2.4	< 2.0	< 2.8	< 2.4	< 2.7	< 2.4	< 1.8
CADW- 2452	5/19/2009	< 157	< 2.3	< 4.4	< 2.6	< 1.7	< 1.4	< 2.5	< 2.4	< 2.0	< 5.5
CADW- 4399	8/21/2009	< 146	< 2.2	< 4.8	< 2.4	< 2.1	< 4.0	< 2.8	< 1.7	< 1.6	< 4.3
CADW- 6544	11/24/2009	< 150	< 3.5	< 3.0	< 2.6	< 1.8	< 3.9	< 2.6	< 2.2	< 2.9	< 3.9
<u>CA-DWA-007 (Kriete)</u>											
CADW- 584	2/24/2009	< 148	< 1.9	< 4.5	< 1.8	< 2.0	< 5.7	< 2.6	< 2.6	< 2.9	< 1.8
CADW- 2453	5/19/2009	< 157	< 1.8	< 3.3	< 1.7	< 2.3	< 3.9	< 2.4	< 3.2	< 2.2	< 2.7
CADW- 4400	8/21/2009	< 146	< 1.8	< 4.6	< 2.7	< 2.8	< 2.7	< 2.9	< 2.4	< 2.9	< 2.8
CADW- 6523	11/24/2009	< 150	< 2.6	< 5.4	< 2.7	< 2.6	< 4.9	< 4.7	< 3.1	< 2.9	< 2.2
<u>CA-DWA-008 (Brandt)</u>											
CADW- 585	2/24/2009	< 148	< 2.8	< 5.0	< 2.0	< 1.6	< 3.9	< 3.5	< 2.3	< 2.4	< 2.7
CADW- 2454	5/19/2009	< 157	< 2.6	< 3.2	< 1.8	< 2.2	< 2.4	< 2.6	< 2.7	< 2.5	< 2.8
CADW- 4407	8/21/2009	< 146	< 4.2	< 6.9	< 3.5	< 2.2	< 3.3	< 4.9	< 3.4	< 3.9	< 4.6
CADW- 6545	11/24/2009	< 150	< 3.0	< 2.3	< 3.0	< 2.9	< 6.2	< 2.9	< 3.3	< 3.4	< 2.0

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
<u>CA-DWA-009 (Clardy)</u>											
CADW- 586	2/24/2009	< 148	< 2.4	< 7.5	< 2.6	< 3.2	< 3.4	< 2.9	< 3.2	< 4.3	< 5.7
CADW- 2455	5/19/2009	< 157	< 2.2	< 4.2	< 1.4	< 2.6	< 3.6	< 2.0	< 1.7	< 2.6	< 4.4
CASW- 4401	8/21/2009	< 146	< 2.5	< 3.8	< 2.2	< 1.3	< 4.8	< 2.1	< 3.8	< 3.0	< 2.3
CASW- 6546	11/24/2009	< 150	< 1.6	< 5.0	< 2.8	< 1.1	< 4.5	< 2.1	< 2.1	< 3.2	< 1.9
<u>CA-DWA-010 (Dillon, Susan)</u>											
CADW- 587	2/24/2009	< 148	< 2.6	< 5.3	< 4.7	< 4.1	< 8.6	< 5.5	< 5.0	< 4.0	< 4.7
CADW- 2456	5/19/2009	< 157	< 2.7	< 5.2	< 2.9	< 1.5	< 3.7	< 2.8	< 2.9	< 2.9	< 4.2
CASW- 4402	8/21/2009	< 146	< 1.7	< 4.6	< 3.1	< 1.8	< 4.5	< 1.7	< 3.1	< 2.9	< 2.5
CASW- 6524	11/24/2009	< 150	< 2.7	< 3.8	< 1.8	< 1.8	< 3.8	< 2.9	< 3.2	< 3.2	< 5.4
<u>CA-DWA-012 (Dillon, Joe)</u>											
CADW- 588	2/24/2009	< 148	< 2.1	< 3.4	< 2.7	< 2.3	< 6.2	< 3.5	< 2.9	< 2.5	< 1.7
CADW- 2457	5/19/2009	< 157	< 2.8	< 7.7	< 4.0	< 1.8	< 2.6	< 3.0	< 2.8	< 3.4	< 4.8
CADW- 4403	8/21/2009	< 146	< 4.3	< 2.8	< 1.5	< 2.3	< 4.5	< 3.7	< 3.4	< 1.5	< 3.0
CADW- 6525	11/24/2009	< 150	< 3.2	< 3.6	< 2.7	< 3.5	< 4.8	< 3.7	< 2.7	< 2.4	< 2.8
<u>CA-DWA-022 (Plummer)</u>											
CADW- 589	2/24/2009	< 148	< 3.5	< 3.7	< 3.5	< 3.1	< 6.3	< 2.2	< 3.5	< 4.5	< 5.2
CADW- 2458	5/19/2009	< 157	< 2.2	< 3.8	< 2.7	< 2.8	< 4.2	< 2.9	< 2.2	< 3.1	< 3.4
CADW- 4404	8/21/2009	< 146	< 2.1	< 4.4	< 2.9	< 2.2	< 4.8	< 3.1	< 3.0	< 3.3	< 2.1
CADW- 6526	11/24/2009	< 150	< 1.1	< 4.6	< 1.5	< 3.0	< 6.2	< 2.2	< 2.4	< 3.8	< 3.8
<u>CA-DWA-D01 (Portland Bar/Grill)</u>											
CADW- 165	1/16/2009	< 144	< 5.7	< 11.7	< 4.7	< 5.6	< 12.0	< 4.0	< 5.4	< 3.3	< 4.8
CADW- 1268	4/2/2009	< 158	< 1.7	< 2.3	< 3.0	< 2.2	< 3.1	< 2.9	< 2.0	< 2.2	< 2.2
CADW- 2459	5/19/2009	< 157	< 1.9	< 2.9	< 2.4	< 1.2	< 4.2	< 2.6	< 3.3	< 2.8	< 3.9
CADW- 6527	11/24/2009	< 150	< 2.4	< 4.8	< 2.6	< 2.1	< 5.0	< 2.5	< 2.7	< 2.7	< 2.6
<u>CA-DWA-PW1 (Plant Cafeteria)</u>											
CADW- 166	1/16/2009	< 144	< 2.5	< 4.6	< 3.2	< 2.0	< 3.8	< 2.9	< 2.9	< 4.2	< 3.1
CADW- 1271	4/2/2009	< 158	< 2.0	< 2.1	< 1.6	< 1.7	< 2.6	< 2.5	< 2.9	< 3.2	< 2.3
CADW- 2460	5/19/2009	< 157	< 2.9	< 6.1	< 2.9	< 1.3	< 2.5	< 2.8	< 2.2	< 1.8	< 4.3
CADW- 6528	11/24/2009	< 150	< 1.4	< 6.7	< 3.8	< 1.8	< 3.7	< 2.3	< 2.7	< 2.3	< 1.7

Table 9. Wells (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
<u>Location: CA-WWA-936</u>											
CAWW- 250	1/12/2009	337 ± 95	< 1.2	< 3.1	< 1.4	< 1.7	< 3.2	< 2.8	< 2.6	< 2.4	< 5.5
CAWW- 401	2/5/2009	193 ± 87	< 2.3	< 4.7	< 1.5	< 1.8	< 3.3	< 2.4	< 2.6	< 2.7	< 1.7
CAWW- 777	3/6/2009	156 ± 84	< 2.4	< 7.7	< 3.6	< 2.9	< 7.1	< 3.8	< 4.4	< 4.7	< 4.7
CAWW- 1718	4/8/2009	< 160	< 2.4	< 9.6	< 6.2	< 4.0	< 6.1	< 7.4	< 5.2	< 5.9	< 10.5
CAWW- 2405	5/12/2009	< 158	< 2.4	< 7.2	< 2.9	< 2.0	< 4.3	< 3.0	< 1.8	< 1.9	< 4.0
CAWW- 2835	6/9/2009	< 159	< 2.5	< 4.3	< 3.4	< 1.5	< 2.9	< 1.5	< 2.8	< 1.9	< 2.3
CAWW- 3782	7/13/2009	< 169	< 2.8	< 4.6	< 1.7	< 2.5	< 2.8	< 2.9	< 2.1	< 2.6	< 8.5
CAWW- 4262	8/5/2009	264 ± 85	< 1.8	< 4.5	< 2.0	< 1.9	< 5.8	< 1.8	< 1.9	< 2.2	< 4.0
CAWW- 4764	9/9/2009	215 ± 95	< 3.8	< 3.8	< 2.4	< 3.6	< 5.8	< 4.5	< 3.7	< 4.4	< 2.0
ND ^a	10/6/2009	-	-	-	-	-	-	-	-	-	-
CAWW- 6426	11/9/2009	272 ± 95	< 2.4	< 5.8	< 1.7	< 2.8	< 2.9	< 2.4	< 3.2	< 4.5	< 5.3
CAWW- 6852	12/14/2009	814 ± 125	< 2.5	< 3.6	< 2.9	< 3.4	< 4.5	< 2.5	< 2.1	< 3.5	< 2.1
<u>Location: CA-WWA-937A</u>											
CAWW- 404	2/5/2009	< 154	< 3.3	< 4.4	< 4.5	< 3.3	< 7.0	< 3.5	< 3.4	< 4.9	< 5.8
CAWW- 781	3/6/2009	< 143	< 2.5	< 4.2	< 2.2	< 2.2	< 5.0	< 3.5	< 2.7	< 3.1	< 3.1
CAWW- 782	3/6/2009	173 ± 84	< 3.2	< 6.7	< 3.0	< 3.4	< 7.9	< 2.3	< 3.0	< 3.9	< 2.5
CAWW- 1712	4/8/2009	< 160	< 2.7	< 7.0	< 1.7	< 2.2	< 3.7	< 3.6	< 2.5	< 3.0	< 6.4
CAWW- 2407	5/15/2009	< 158	< 2.7	< 4.0	< 1.9	< 1.8	< 3.6	< 3.0	< 3.5	< 1.8	< 2.6
CAWW- 2831	6/9/2009	< 142	< 2.4	< 3.8	< 2.4	< 1.6	< 6.5	< 2.6	< 2.8	< 3.2	< 2.5
CAWW- 3784	7/14/2009	< 169	< 3.8	< 5.3	< 1.7	< 2.7	< 7.0	< 4.1	< 3.1	< 2.9	< 7.7
CAWW- 4258	8/7/2009	< 147	< 1.9	< 3.2	< 1.5	< 2.0	< 3.2	< 2.8	< 2.5	< 3.2	< 3.8
CAWW- 4765	9/9/2009	< 149	< 3.3	< 3.7	< 3.2	< 2.9	< 3.7	< 2.3	< 4.6	< 4.2	< 3.1
CAWW- 5714	10/6/2009	< 152	< 2.2	< 3.9	< 2.8	< 2.8	< 3.5	< 3.4	< 3.2	< 3.5	< 4.9
CAWW- 6420	11/11/2009	< 156	< 3.9	< 9.3	< 3.7	< 3.0	< 7.4	< 3.1	< 4.1	< 2.3	< 6.1
CAWW- 6853	12/14/2009	< 155	< 2.9	< 3.0	< 3.0	< 1.9	< 4.5	< 3.0	< 2.2	< 3.4	< 1.1
<u>Location: CA-WWA-937B</u>											
CAWW- 253	1/16/2009	269 ± 90	< 3.0	< 3.2	< 2.5	< 2.3	< 4.4	< 3.9	< 2.6	< 1.9	< 3.4
CAWW- 398	2/5/2009	< 156	< 2.9	< 2.9	< 1.6	< 2.1	< 2.0	< 2.2	< 2.7	< 2.6	< 3.5
CAWW- 775	3/6/2009	144 ± 83	< 4.7	< 9.1	< 2.8	< 3.5	< 4.9	< 4.5	< 5.8	< 3.1	< 2.7
CAWW- 1709	4/7/2009	262 ± 94	< 2.3	< 4.0	< 2.0	< 3.0	< 4.5	< 3.0	< 2.4	< 3.3	< 3.9
CAWW- 2401	5/12/2009	267 ± 92	< 1.9	< 3.9	< 1.9	< 1.6	< 1.3	< 4.8	< 2.3	< 2.7	< 5.8
CAWW- 2837	6/9/2009	297 ± 85	< 2.7	< 4.2	< 1.2	< 2.8	< 4.7	< 2.5	< 2.1	< 3.6	< 3.3
CAWW- 3769	7/13/2009	< 169	< 2.0	< 6.2	< 1.6	< 2.0	< 2.6	< 5.0	< 2.5	< 3.5	< 3.0
CAWW- 4264	8/5/2009	248 ± 84	< 1.1	< 5.3	< 2.2	< 1.4	< 3.7	< 3.1	< 1.8	< 2.4	< 4.2
CAWW- 4766	9/8/2009	< 149	< 2.3	< 4.0	< 1.8	< 1.3	< 5.9	< 2.6	< 2.5	< 3.1	< 3.6
CAWW- 5709	10/6/2009	< 156	< 2.9	< 2.0	< 1.8	< 2.2	< 3.4	< 3.5	< 2.5	< 3.3	< 13.1
CAWW- 6421	11/9/2009	223 ± 93	< 2.7	< 3.4	< 2.5	< 2.4	< 3.7	< 3.9	< 2.5	< 2.9	< 2.3
CAWW- 6854	12/14/2009	273 ± 106	< 4.1	< 7.1	< 2.0	< 3.9	< 2.9	< 3.7	< 3.6	< 3.7	< 1.7

^a ND = No data; Well inaccessible due to flooding.

Table 9. Wells (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
<u>Location: CA-WWA-937C</u>											
CAWW- 255	1/16/2009	< 155	< 2.8	< 3.6	< 2.0	< 2.6	< 3.0	< 2.7	< 2.0	< 3.5	< 4.3
CAWW- 403	2/5/2009	187 ± 86	< 3.8	< 6.6	< 2.4	< 3.7	< 2.7	< 4.0	< 3.7	< 3.8	< 5.7
CAWW- 778	3/6/2009	< 143	< 2.5	< 4.7	< 2.8	< 2.7	< 6.5	< 2.6	< 2.9	< 2.4	< 4.3
CAWW- 1710	4/7/2009	192 ± 91	< 1.8	< 2.4	< 2.6	< 2.0	< 1.7	< 2.8	< 1.8	< 3.0	< 5.0
CAWW- 2404	5/12/2009	< 165	< 2.4	< 8.2	< 2.0	< 1.7	< 2.8	< 2.8	< 4.1	< 3.5	< 6.1
CAWW- 2833	6/9/2009	< 142	< 2.9	< 4.9	< 1.6	< 2.3	< 4.0	< 2.0	< 1.7	< 3.2	< 1.4
CAWW- 3783	7/13/2009	< 169	< 2.8	< 5.1	< 3.3	< 1.2	< 3.7	< 3.6	< 2.4	< 1.9	< 5.4
CAWW- 4257	8/5/2009	< 147	< 1.9	< 5.5	< 1.9	< 2.0	< 3.6	< 3.2	< 2.1	< 2.7	< 3.9
CAWW- 4767	9/9/2009	< 149	< 3.2	< 6.0	< 1.7	< 2.3	< 4.5	< 2.7	< 4.0	< 3.2	< 3.0
CAWW- 5711	10/6/2009	< 156	< 2.6	< 6.5	< 3.9	< 3.0	< 7.3	< 3.9	< 3.8	< 3.1	< 5.2
CAWW- 6422	11/9/2009	< 156	< 1.7	< 4.3	< 1.7	< 1.8	< 3.2	< 3.3	< 2.5	< 3.0	< 2.2
CAWW- 6855	12/14/2009	< 155	< 2.9	< 5.1	< 2.4	< 2.7	< 4.2	< 3.0	< 3.0	< 3.0	< 3.5
<u>Location: CA-WWA-937D</u>											
CAWW- 248	1/14/2009	294 ± 93	< 2.3	< 3.9	< 2.4	< 2.8	< 2.5	< 3.8	< 2.4	< 2.2	< 4.4
CAWW- 399	2/5/2009	303 ± 92	< 3.3	< 7.0	< 7.0	< 3.0	< 4.1	< 5.2	< 6.0	< 3.6	< 6.4
CAWW- 776	3/6/2009	< 143	< 2.8	< 2.8	< 2.1	< 2.0	< 4.8	< 3.0	< 3.5	< 2.7	< 2.5
CAWW- 1719	4/7/2009	< 160	< 2.5	< 5.1	< 2.3	< 1.7	< 5.0	< 2.9	< 3.2	< 2.9	< 8.3
CAWW- 2402	5/12/2009	< 158	< 4.0	< 6.0	< 2.2	< 3.6	< 4.1	< 4.6	< 3.5	< 3.3	< 2.6
CAWW- 2834	6/9/2009	< 142	< 2.8	< 5.4	< 2.2	< 3.0	< 4.2	< 3.6	< 2.2	< 2.6	< 4.6
CAWW- 3771	7/13/2009	< 169	< 2.5	< 3.0	< 3.2	< 1.7	< 4.8	< 3.7	< 2.2	< 2.5	< 6.5
CAWW- 4261	8/5/2009	< 147	< 2.1	< 5.3	< 2.3	< 2.5	< 3.9	< 3.4	< 1.7	< 2.8	< 3.2
CAWW- 4768	9/8/2009	< 149	< 2.4	< 2.5	< 2.8	< 3.3	< 3.7	< 3.7	< 2.8	< 3.1	< 3.9
CAWW- 5710	10/6/2009	< 156	< 2.2	< 3.9	< 3.2	< 2.1	< 4.4	< 3.7	< 2.2	< 3.0	< 6.6
CAWW- 6423	11/9/2009	< 156	< 2.2	< 3.0	< 2.9	< 2.8	< 3.8	< 3.3	< 3.1	< 3.1	< 4.8
CAWW- 6856	12/14/2009	< 155	< 3.1	< 2.3	< 2.6	< 2.5	< 4.7	< 3.7	< 2.8	< 3.2	< 2.6
<u>Location: CA-WWA-937E</u>											
ND ^a	1/14/2009	-	-	-	-	-	-	-	-	-	-
ND ^a	2/5/2009	-	-	-	-	-	-	-	-	-	-
ND ^a	3/6/2009	-	-	-	-	-	-	-	-	-	-
CAWW- 1730	4/15/2009	< 160	< 2.3	< 4.5	< 2.8	< 2.3	< 4.1	< 5.4	< 3.0	< 3.2	< 4.9
CAWW- 2408	5/21/2009	< 158	< 3.6	< 4.6	< 1.7	< 3.0	< 4.5	< 4.7	< 2.4	< 3.6	< 4.0
CAWW- 2832	6/9/2009	206 ± 98	< 4.1	< 4.9	< 4.2	< 3.6	< 4.5	< 5.0	< 4.4	< 4.9	< 4.1
CAWW- 3772	7/13/2009	< 169	< 2.9	< 3.4	< 1.8	< 2.6	< 4.9	< 3.0	< 2.8	< 2.5	< 8.4
CAWW- 4260	8/12/2009	< 143	< 5.4	< 10.8	< 2.3	< 3.7	< 6.7	< 3.4	< 5.4	< 4.6	< 3.8
CAWW- 4769	9/8/2009	< 149	< 2.2	< 3.0	< 2.3	< 2.8	< 3.5	< 2.5	< 4.5	< 2.8	< 3.5
CAWW- 5707	10/6/2009	192 ± 90	< 3.6	< 4.8	< 2.7	< 1.7	< 6.6	< 4.4	< 3.0	< 2.8	< 8.3
CAWW- 6424	11/9/2009	< 156	< 1.7	< 5.6	< 1.8	< 1.6	< 6.8	< 3.9	< 2.3	< 1.9	< 5.4
CAWW- 6857	12/14/2009	< 155	< 3.1	< 5.5	< 2.6	< 2.7	< 4.1	< 3.5	< 3.7	< 3.6	< 4.2

^a ND = No Data; Access to well blocked during construction.

Table 9. Wells (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
<u>Location: CA-WWA-937F</u>											
CAWW- 252	1/16/2009	< 148	< 2.2	< 5.1	< 1.4	< 2.3	< 3.2	< 3.6	< 2.2	< 2.0	< 4.2
CAWW- 397	2/5/2009	< 156	< 2.2	< 3.1	< 2.4	< 2.2	< 3.3	< 3.0	< 3.3	< 2.4	< 4.8
CAWW- 774	3/6/2009	< 143	< 2.6	< 5.0	< 4.9	< 3.8	< 4.7	< 5.7	< 4.4	< 5.2	< 4.7
CAWW- 1708	4/7/2009	< 154	< 2.1	< 5.5	< 1.8	< 1.6	< 4.9	< 2.3	< 2.1	< 2.8	< 5.9
CAWW- 2400	5/12/2009	< 158	< 3.7	< 10.1	< 3.6	< 3.2	< 5.5	< 3.5	< 3.0	< 3.3	< 6.6
CAWW- 2836	6/9/2009	< 136	< 2.2	< 4.4	< 1.6	< 2.6	< 6.0	< 2.7	< 2.9	< 3.8	< 1.4
CAWW- 3768	7/13/2009	< 169	< 2.4	< 4.5	< 2.6	< 2.2	< 3.4	< 3.8	< 3.2	< 1.6	< 7.2
CAWW- 4263	8/5/2009	< 147	< 3.0	< 5.2	< 2.0	< 2.5	< 3.9	< 2.5	< 2.7	< 3.3	< 3.0
CAWW- 4771	9/8/2009	< 149	< 2.5	< 4.1	< 0.9	< 2.6	< 3.8	< 2.4	< 2.1	< 2.5	< 2.0
CAWW- 5708	10/6/2009	< 156	< 2.5	< 4.1	< 0.9	< 2.6	< 3.8	< 2.4	< 2.1	< 2.5	< 2.0
CAWW- 6425	11/9/2009	< 156	< 2.5	< 4.1	< 0.9	< 2.6	< 3.8	< 2.4	< 2.1	< 2.5	< 2.0
CAWW- 6859	12/14/2009	< 154	< 2.5	< 4.1	< 0.9	< 2.6	< 3.8	< 2.4	< 2.1	< 2.5	< 2.0
<u>Location: CA-WWA-GWS</u>											
CAWW- 254	1/16/2009	< 155	< 2.3	< 5.5	< 2.3	< 2.4	< 3.5	< 3.7	< 3.0	< 2.8	< 4.9
CAWW- 402	2/5/2009	< 154	< 2.3	< 4.8	< 2.2	< 2.3	< 2.2	< 3.7	< 2.3	< 2.8	< 1.8
CAWW- 779	3/6/2009	150 ± 83	< 1.7	< 5.1	< 2.3	< 2.3	< 2.4	< 2.8	< 2.3	< 2.9	< 2.0
CAWW- 1717	4/7/2009	< 161	< 3.1	< 6.8	< 2.4	< 2.0	< 5.2	< 5.6	< 3.6	< 3.1	< 8.9
CAWW- 2406	5/12/2009	< 165	< 1.8	< 3.7	< 1.7	< 3.0	< 3.7	< 3.1	< 3.5	< 3.3	< 5.7
CAWW- 2830	6/9/2009	204 ± 98	< 2.2	< 6.1	< 2.8	< 2.2	< 6.7	< 2.3	< 4.2	< 3.3	< 2.8
CAWW- 3781	7/13/2009	< 169	< 2.3	< 7.7	< 2.8	< 1.8	< 5.3	< 3.7	< 3.3	< 2.1	< 4.5
CAWW- 4256	8/5/2009	234 ± 83	< 2.7	< 4.5	< 2.0	< 2.0	< 3.7	< 2.3	< 2.3	< 1.4	< 3.8
CAWW- 4772	9/9/2009	< 149	< 4.1	< 3.6	< 4.2	< 2.6	< 3.1	< 4.4	< 3.4	< 3.5	< 3.8
CAWW- 5713	10/6/2009	< 156	< 1.8	< 5.5	< 1.4	< 1.5	< 3.9	< 4.0	< 1.5	< 2.1	< 3.6
CAWW- 6419	11/9/2009	204 ± 92	< 3.3	< 4.3	< 2.7	< 2.1	< 1.9	< 3.7	< 3.1	< 2.5	< 3.8
CAWW- 6851	12/14/2009	< 154	< 2.8	< 3.6	< 1.8	< 3.2	< 5.1	< 2.4	< 2.6	< 2.4	< 3.6
<u>Location: CA-WWA-OW-4</u>											
CAWW- 241	1/12/2009	232 ± 90	-	-	-	-	-	-	-	-	-
CAWW- 1704	4/7/2009	314 ± 92	< 2.3	< 6.2	< 2.9	< 2.3	< 4.2	< 3.7	< 2.4	< 2.6	< 4.3
CAWW- 3773	7/14/2009	251 ± 112	< 1.6	< 6.2	< 2.5	< 2.2	< 3.5	< 3.1	< 2.7	< 2.2	< 8.5
CAWW- 5718	10/7/2009	245 ± 93	< 1.7	< 3.6	< 1.1	< 2.2	< 2.5	< 3.1	< 1.6	< 1.3	< 8.1
<u>Location: CA-WWA-OW-5</u>											
CAWW- 245	1/12/2009	469 ± 101	-	-	-	-	-	-	-	-	-
CAWW- 1703	4/6/2009	459 ± 99	< 3.5	< 7.8	< 3.6	< 2.3	< 4.7	< 2.5	< 3.5	< 3.1	< 7.1
CAWW- 3775	7/14/2009	459 ± 118	< 2.5	< 4.3	< 2.1	< 2.0	< 2.7	< 2.1	< 2.4	< 2.2	< 7.9
CAWW- 5717	10/7/2009	431 ± 101	< 1.3	< 2.4	< 2.1	< 1.5	< 3.8	< 3.3	< 1.9	< 2.2	< 5.5

Table 9. Wells (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
<u>Location: CA-WWA-U1MW-001</u>											
CAWW- 235 ^a	1/7/2009	< 152	< 10.4	-	-	< 3.7	< 23.3	-	< 5.6	< 3.4	-
CAWW- 1701	4/3/2009	< 153	< 4.3	< 5.1	< 2.2	< 3.7	< 5.8	< 4.3	< 2.3	< 3.8	< 9.6
CAWW- 3757	7/7/2009	< 161	< 2.2	< 5.2	< 2.3	< 1.5	< 2.4	< 2.9	< 1.6	< 1.8	< 9.0
CAWW- 5724	10/13/2009	< 156	< 2.1	< 4.0	< 2.2	< 2.0	< 1.6	< 3.9	< 2.5	< 2.1	< 4.8
<u>Location: CA-WWA-U1MW-002</u>											
CAWW- 238 ^a	1/9/2009	< 149	< 10.0	-	-	< 4.8	< 20.5	-	< 5.0	< 4.2	-
CAWW- 1728	4/14/2009	< 160	< 3.6	< 5.0	< 3.0	< 2.1	< 4.4	< 3.7	< 4.2	< 3.2	< 5.7
CAWW- 3780	7/16/2009	< 169	< 3.4	< 4.1	< 1.6	< 2.2	< 3.7	< 2.5	< 2.8	< 2.5	< 5.4
CAWW- 5706	10/5/2009	< 156	< 2.3	< 4.9	< 2.3	< 0.9	< 3.6	< 2.8	< 2.0	< 1.4	< 6.1
<u>Location: CA-WWA-U1MW-004</u>											
CAWW- 239	1/9/2009	< 149	< 1.5	< 3.9	< 2.7	< 2.6	< 4.9	< 3.9	< 1.9	< 2.3	< 4.3
CAWW- 1723	4/10/2009	< 160	< 1.6	< 6.0	< 1.3	< 2.4	< 3.9	< 2.0	< 2.1	< 2.7	< 4.5
CAWW- 3760	7/7/2009	< 161	< 1.9	< 4.8	< 2.0	< 1.9	< 3.7	< 3.1	< 2.0	< 2.4	< 8.6
CAWW- 5699	10/1/2009	< 152	< 2.4	< 7.9	< 2.0	< 2.5	< 3.9	< 3.7	< 2.3	< 2.3	< 6.0
<u>Location: CA-WWA-U1MW-005</u>											
CAWW- 240	1/9/2009	< 149	< 2.1	< 3.8	< 3.0	< 2.0	< 4.6	< 2.5	< 2.4	< 2.5	< 5.6
CAWW- 1724	4/10/2009	< 160	< 2.5	< 4.9	< 1.9	< 1.9	< 1.9	< 2.8	< 2.2	< 2.9	< 4.4
CAWW- 3761	7/7/2009	< 161	< 1.7	< 4.7	< 0.9	< 2.1	< 2.9	< 3.0	< 1.6	< 1.8	< 7.8
CAWW- 5700	10/1/2009	< 152	< 2.2	< 2.2	< 1.7	< 2.3	< 5.6	< 4.0	< 2.3	< 2.0	< 5.1
<u>Location: CA-WWA-U1MW-006</u>											
CAWW- 257	1/20/2009	< 148	< 3.8	< 5.6	< 5.0	< 3.8	< 5.2	< 8.0	< 4.9	< 5.0	< 5.4
CAWW- 1722	4/9/2009	< 160	< 2.6	< 4.9	< 3.1	< 1.9	< 3.5	< 2.1	< 2.8	< 3.0	< 6.9
CAWW- 3778	7/15/2009	< 169	< 2.2	< 6.4	< 2.8	< 2.0	< 3.3	< 2.7	< 2.3	< 3.9	< 5.8
CAWW- 5704	10/5/2009	< 152	< 2.1	< 3.2	< 1.8	< 2.2	< 2.8	< 3.2	< 2.1	< 2.8	< 7.4
<u>Location: CA-WWA-U1MW-010</u>											
CAWW- 231 ^a	1/7/2009	< 152	< 12.2	-	-	< 5.3	< 30.6	-	< 5.2	< 5.0	-
CAWW- 1700	4/3/2009	< 153	< 4.1	< 7.3	< 4.0	< 2.8	< 6.6	< 4.5	< 3.5	< 4.6	< 9.6
CAWW- 3763	7/7/2009	< 161	< 1.8	< 5.9	< 2.4	< 3.3	< 5.1	< 2.9	< 2.3	< 3.3	< 6.2
CAWW- 5702	10/2/2009	< 152	< 2.0	< 4.1	< 2.9	< 1.7	< 2.5	< 2.8	< 2.6	< 2.5	< 5.8
<u>Location: CA-WWA-U1MW-012</u>											
CAWW- 259	1/20/2009	< 148	< 2.5	< 4.5	< 2.9	< 2.8	< 4.6	< 2.9	< 2.3	< 2.1	< 4.0
CAWW- 1721	4/9/2009	< 160	< 3.4	< 5.1	< 2.7	< 1.8	< 4.1	< 4.6	< 2.5	< 2.2	< 6.4
CAWW- 3779	7/15/2009	< 169	< 1.2	< 7.3	< 1.9	< 1.3	< 4.1	< 3.3	< 2.5	< 3.3	< 7.2
CAWW- 5703	10/5/2009	< 152	< 2.3	< 3.2	< 2.2	< 1.9	< 4.9	< 3.2	< 3.1	< 3.1	< 3.2

^a Some required gamma LLDs exceeded due to insufficient sample size and delay in counting.

Table 9. Wells (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
<u>Location: CA-WWA-U1MW-013</u>											
CAWW- 237 ^a	1/9/2009	< 149	< 10.4	-	-	< 5.5	< 23.8	-	< 5.9	< 4.9	-
CAWW- 1726	4/14/2009	< 160	< 2.2	< 6.0	< 2.1	< 1.1	< 5.0	< 3.1	< 2.0	< 3.1	< 5.2
CAWW- 3776	7/15/2009	< 169	< 1.6	< 4.8	< 2.5	< 2.0	< 2.7	< 4.4	< 2.5	< 2.4	< 4.3
CAWW- 5722	10/12/2009	< 156	< 1.4	< 3.4	< 1.9	< 1.0	< 3.0	< 2.2	< 2.0	< 2.0	< 3.0
<u>Location: CA-WWA-U1MW-014</u>											
CAWW- 234 ^a	1/7/2009	298 ± 90	< 12.0	-	-	< 4.0	< 26.1	-	< 5.5	< 3.5	-
CAWW- 1716	4/8/2009	321 ± 96	< 2.4	< 8.3	< 3.1	< 2.6	< 2.6	< 5.0	< 2.9	< 2.7	< 7.2
CAWW- 3777	7/15/2009	211 ± 110	< 2.3	< 7.1	< 3.5	< 3.1	< 6.8	< 3.0	< 2.5	< 3.6	< 4.7
CAWW- 5725	10/14/2009	212 ± 92	< 2.6	< 5.3	< 3.5	< 1.9	< 2.1	< 3.1	< 2.7	< 3.1	< 5.6
<u>Location: CA-WWA-U1MW-015</u>											
CAWW- 233 ^a	1/7/2009	< 152	< 9.1	-	-	< 3.8	< 17.6	-	< 3.9	< 4.1	-
CAWW- 1697	4/2/2009	< 153	< 2.7	< 4.9	< 2.1	< 2.1	< 4.0	< 3.6	< 1.8	< 2.3	< 6.5
CAWW- 3762	7/7/2009	< 161	< 2.4	< 6.7	< 3.0	< 2.1	< 6.6	< 3.2	< 3.5	< 2.8	< 5.5
CAWW- 5701	10/2/2009	< 152	< 2.7	< 7.2	< 2.4	< 2.6	< 4.6	< 4.1	< 2.1	< 2.1	< 3.5
<u>Location: CA-WWA-U1MW-016</u>											
CAWW- 232 ^a	1/7/2009	< 152	< 10.7	-	-	< 3.4	< 21.2	-	< 6.6	< 3.3	-
CAWW- 1696	4/2/2009	< 153	< 2.9	< 2.5	< 2.3	< 1.6	< 4.9	< 3.8	< 1.6	< 2.2	< 4.3
CAWW- 3759	7/7/2009	< 161	< 1.9	< 5.8	< 2.3	< 1.2	< 4.5	< 3.1	< 1.8	< 2.6	< 5.6
CAWW- 5698	10/1/2009	< 152	< 2.6	< 3.3	< 1.5	< 2.2	< 4.8	< 3.4	< 2.0	< 2.2	< 3.7
<u>Location: CA-WWA-U2MW-2S</u>											
CAWW- 1691	4/1/2009	< 153	< 1.9	< 4.5	< 3.3	< 2.0	< 6.1	< 2.9	< 2.7	< 2.5	< 7.2
CAWW- 3756	7/6/2009	< 161	< 2.1	< 2.9	< 1.4	< 1.9	< 3.3	< 2.4	< 1.9	< 0.9	< 6.3
CAWW- 5721	10/7/2009	< 156	< 1.8	< 4.1	< 2.0	< 1.0	< 3.5	< 3.0	< 1.7	< 1.8	< 6.1
<u>Location: CA-WWA-U2MW-5S</u>											
CAWW- 1693	4/1/2009	< 153	< 3.3	< 9.5	< 2.5	< 2.9	< 5.5	< 5.1	< 3.4	< 4.2	< 10.6
CAWW- 3754	7/6/2009	< 161	< 1.6	< 4.2	< 1.6	< 1.5	< 2.3	< 3.1	< 2.1	< 1.7	< 8.2
CAWW- 5696	10/1/2009	< 152	< 2.5	< 4.3	< 2.1	< 2.3	< 2.6	< 3.2	< 2.3	< 2.2	< 4.6

^a Some required gamma LLDs exceeded due to insufficient sample size and delay in counting.

Table 9. Wells (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
<u>Location: CA-WWA-U2MW-8</u>											
CAWW- 1695	4/2/2009	< 153	< 3.5	< 9.0	< 3.4	< 2.4	< 4.3	< 3.5	< 2.6	< 2.6	< 8.5
CAWW- 3764	7/8/2009	< 161	< 1.9	< 4.5	< 1.7	< 1.2	< 3.0	< 2.8	< 1.4	< 1.9	< 8.8
CAWW- 5719	10/7/2009	< 156	< 2.1	< 3.1	< 3.0	< 2.8	< 2.8	< 2.0	< 2.1	< 2.7	< 8.3
<u>Location: CA-WWA-U2MW-9</u>											
CAWW- 1694	4/2/2009	< 153	< 2.1	< 5.4	< 1.8	< 2.0	< 2.6	< 5.8	< 2.1	< 1.9	< 6.8
CAWW- 3765	7/8/2009	< 169	< 1.8	< 2.1	< 1.7	< 1.7	< 3.4	< 2.5	< 1.5	< 2.2	< 7.2
CAWW- 5720	10/7/2009	< 156	< 3.2	< 6.2	< 3.0	< 1.5	< 3.7	< 3.7	< 2.2	< 2.5	< 3.2
<u>Location: CA-WWA-U2MW-10</u>											
CAWW- 1692	4/1/2009	< 153	< 2.2	< 6.0	< 1.8	< 2.6	< 4.2	< 2.3	< 2.6	< 2.5	< 8.9
CAWW- 3766	7/8/2009	< 169	< 2.0	< 5.3	< 1.7	< 2.6	< 4.4	< 4.2	< 2.2	< 2.3	< 5.5
CAWW- 5705	10/5/2009	< 152	< 2.2	< 7.0	< 2.6	< 1.3	< 4.9	< 4.6	< 2.8	< 2.9	< 2.9
<u>Location: CA-WWA-U2MW-12</u>											
CAWW- 1689	4/1/2009	< 153	< 2.8	< 4.5	< 2.6	< 2.3	< 4.2	< 3.5	< 2.9	< 3.5	< 5.9
CAWW- 3758	7/7/2009	< 161	< 1.9	< 4.5	< 4.1	< 1.6	< 5.2	< 3.7	< 3.4	< 3.8	< 8.4
CAWW- 5723	10/12/2009	< 156	< 1.4	< 3.1	< 2.1	< 0.9	< 4.1	< 3.1	< 1.6	< 1.7	< 3.6
<u>Location: CA-WWA-U2MW-16</u>											
CAWW- 1698	4/3/2009	< 153	< 2.6	< 6.5	< 2.8	< 4.8	< 6.0	< 4.6	< 4.0	< 3.6	< 14.3
CAWW- 3755	7/6/2009	< 161	< 1.7	< 4.5	< 2.1	< 1.5	< 4.3	< 3.5	< 1.5	< 1.6	< 6.0
CAWW- 5697	10/1/2009	< 152	< 1.4	< 5.8	< 2.3	< 2.2	< 2.9	< 3.4	< 2.5	< 3.1	< 4.2
<u>Location: CA-WWA-F-005</u>											
CAWW- 86	1/9/2009	< 133	< 2.6	< 6.7	< 1.4	< 2.4	< 3.1	< 2.6	< 2.9	< 2.2	< 4.2
CAWW- 1269	4/7/2009	< 158	< 3.9	< 9.9	< 3.0	< 3.8	< 6.4	< 3.4	< 4.2	< 6.3	< 2.8
CAWW- 3444	7/7/2009	< 147	< 2.7	< 6.2	< 2.1	< 2.4	< 3.4	< 3.4	< 3.6	< 3.1	< 3.9
CAWW- 5445	10/7/2009	< 151	< 2.0	< 3.7	< 2.3	< 1.9	< 4.2	< 2.6	< 2.5	< 3.1	< 2.2
<u>Location: CA-WWA-F-015</u>											
CAWW- 87	1/9/2009	< 133	< 2.8	< 5.8	< 2.2	< 2.7	< 3.2	< 4.6	< 2.3	< 2.5	< 1.7
CAWW- 1270	4/3/2009	< 158	< 2.9	< 5.3	< 2.5	< 2.4	< 4.2	< 2.7	< 1.6	< 2.7	< 2.4
CAWW- 3445	7/7/2009	< 147	< 1.5	< 4.9	< 2.7	< 2.1	< 5.5	< 2.3	< 1.8	< 2.4	< 2.1
CAWW- 5446	10/7/2009	< 151	< 2.3	< 4.8	< 1.7	< 2.0	< 4.3	< 2.9	< 2.5	< 2.9	< 4.0

Table 10a. Bottom sediments, analyses for gamma-emitting isotopes.

Collection: Semiannually

Units: pCi/kg dry

Location		CA-AQS-A	
Lab Code	Req. LLD	CABS- 3750	CABS- 6847
Date Collected	-	07-16-09	12-07-09
K-40	-	13314 ± 714	12853 ± 569
Mn-54	-	< 23.0	< 10.8
Fe-59	-	< 33.6	< 56.5
Co-58	-	< 21.8	< 16.9
Co-60	-	< 12.3	< 3.9
Zr-Nb-95	-	< 22.2	< 17.2
Cs-134	150	< 12.2	< 7.6
Cs-137	180	< 21.8	< 11.7
Ba-La-140	-	< 20.2	< 34.9

Location		CA-AQS-C	
Lab Code	Req. LLD	CABS- 3751	CABS- 6848
Date Collected	-	07-16-09	12-07-09
K-40	-	13895 ± 795	12416 ± 654
Mn-54	-	< 23.5	< 17.5
Fe-59	-	< 64.2	< 46.3
Co-58	-	< 26.2	< 21.6
Co-60	-	< 9.6	< 15.3
Zr-Nb-95	-	< 41.2	< 15.3
Cs-134	150	< 16.0	< 7.3
Cs-137	180	< 26.9	< 16.8
Ba-La-140	-	< 45.8	< 33.4

CALLAWAY

Table 10b. Shoreline sediments, analyses for gamma-emitting isotopes.

Collection: Semiannually

Units: pCi/kg dry

Location		CA-AQS-A	
Lab Code	Req. LLD	CASS- 3752	CASS- 6849
Date Collected	-	07-16-09	12-07-09
K-40	-	14080 ± 723	15189 ± 775
Mn-54	-	< 24.9	< 26.9
Fe-59	-	< 29.0	< 43.2
Co-58	-	< 19.4	< 25.2
Co-60	-	< 17.1	< 9.2
Zr-Nb-95	-	< 21.9	< 31.7
Cs-134	150	< 13.6	< 16.5
Cs-137	180	< 25.2	51.9 ± 28.7
Ba-La-140	-	< 24.5	< 39.7

Location		CA-AQS-C	
Lab Code	Req. LLD	CASS- 3753	CASS- 6850
Date Collected	-	07-16-09	12-07-09
K-40	-	12993 ± 983	12379 ± 603
Mn-54	-	< 40.7	< 23.5
Fe-59	-	< 90.4	< 42.6
Co-58	-	< 42.6	< 21.6
Co-60	-	< 25.3	< 13.8
Zr-Nb-95	-	< 45.5	< 32.1
Cs-134	150	< 22.8	< 7.2
Cs-137	180	< 44.5	< 19.4
Ba-La-140	-	< 27.9	< 49.6

CALLAWAY

Table 11. Fish, analyses for gamma-emitting isotopes.

Collection: Semiannually

Units: pCi/kg wet

Location		CA-AQF-A				
Lab Code	Req. LLD	CAF- 3739	CAF- 3740	CAF- 3741	CAF- 3742	CAF- 3743
Date Collected		07-16-09	07-16-09	07-16-09	07-16-09	07-16-09
Sample Type		River Carpsucker	Silver Carp	Carp	Smallmouth Buffalo	Grass Carp
K-40	-	3013 ± 449	3005 ± 376	2810 ± 374	3433 ± 493	2691 ± 379
Mn-54	130	< 20.0	< 12.5	< 12.1	< 12.9	< 15.0
Fe-59	260	< 22.2	< 48.8	< 15.4	< 25.3	< 26.0
Co-58	130	< 13.0	< 18.6	< 9.7	< 17.3	< 9.5
Co-60	130	< 13.6	< 17.0	< 12.7	< 9.4	< 14.8
Zn-65	260	< 42.3	< 24.5	< 23.1	< 30.3	< 17.0
Cs-134	130	< 21.0	< 12.6	< 11.4	< 18.7	< 17.7
Cs-137	150	< 12.8	< 10.5	< 17.3	< 19.4	< 10.5
Lab Code	Req. LLD	CAF- 6836	CAF- 6838	CAF- 6839	CAF- 6840	CAF- 6841
Date Collected		12-07-09	12-07-09	12-07-09	12-07-09	12-07-09
Sample Type		Common Carp	Freshwater Drum	River Carpsucker	Smallmouth Buffalo	Bigmouth Buffalo
K-40	-	2405 ± 336	2218 ± 352	2173 ± 347	2369 ± 329	2511 ± 404
Mn-54	130	< 8.6	< 11.7	< 14.8	< 9.3	< 12.8
Fe-59	260	< 32.8	< 26.7	< 22.6	< 27.7	< 44.4
Co-58	130	< 14.1	< 9.5	< 10.0	< 13.6	< 13.9
Co-60	130	< 10.3	< 10.5	< 9.6	< 10.2	< 9.9
Zn-65	260	< 21.5	< 14.4	< 25.1	< 24.4	< 27.2
Cs-134	130	< 10.1	< 9.1	< 12.5	< 14.1	< 12.5
Cs-137	150	< 10.4	< 15.8	< 17.1	< 14.0	< 12.8

CALLAWAY

Table 11. Fish, analyses for gamma-emitting isotopes.

Collection: Semiannually

Units: pCi/kg wet

Location		CA-AQF-C				
Lab Code	Req. LLD	CAF- 3744	CAF- 3745	CAF- 3746	CAF- 3747	CAF- 3748
Date Collected		07-16-09	07-16-09	07-16-09	07-16-09	07-16-09
Sample Type		Grass Carp	Silver Carp	River Carpsucker	Smallmouth Buffalo	Carp
K-40	-	2810 ± 327	3056 ± 415	2858 ± 353	2822 ± 366	2959 ± 564
Mn-54	130	< 13.6	< 18.9	< 10.6	< 11.1	< 15.3
Fe-59	260	< 31.6	< 44.2	< 19.1	< 30.7	< 23.7
Co-58	130	< 6.9	< 18.1	< 15.2	< 14.8	< 25.0
Co-60	130	< 9.1	< 11.3	< 11.5	< 12.1	< 13.8
Zn-65	260	< 18.9	< 22.6	< 22.7	< 36.9	< 47.0
Cs-134	130	< 10.1	< 17.2	< 10.9	< 12.3	< 14.8
Cs-137	150	< 12.5	< 20.1	< 12.8	< 13.2	< 10.8
Lab Code	Req. LLD	CAF- 6842	CAF- 6843	CAF- 6844	CAF- 6845	CAF- 6846
Date Collected		12-07-09	12-07-09	12-07-09	12-07-09	12-07-09
Sample Type		Smallmouth Buffalo	Freshwater Drum	River Carpsucker	Bigmouth Buffalo	Common Carp
K-40	-	3312 ± 345	3141 ± 457	2561 ± 341	2340 ± 339	2574 ± 391
Mn-54	130	< 9.9	< 18.1	< 14.7	< 8.5	< 16.8
Fe-59	260	< 20.8	< 49.8	< 39.8	< 28.7	< 67.8
Co-58	130	< 16.4	< 14.4	< 9.5	< 8.8	< 22.3
Co-60	130	< 12.0	< 18.6	< 9.0	< 11.5	< 13.7
Zn-65	260	< 39.9	< 36.8	< 23.6	< 24.3	< 28.5
Cs-134	130	< 15.8	< 13.8	< 11.5	< 11.9	< 14.0
Cs-137	150	< 13.2	< 20.6	< 11.9	< 13.7	< 10.5

Table 12 Direct Radiation (quarterly exposure)

Location	Gamma Dose (mrem/90 days)			
	QTR 1	QTR 2	QTR 3	QTR 4
CA-IDM-1A	16.33	14.36	17.00	15.35
CA-IDM-3	17.31	16.55	18.03	17.07
CA-IDM-5	13.93	14.58	17.08	15.37
CA-IDM-6	16.36	15.98	18.68	17.00
CA-IDM-7	15.35	16.43	18.85	15.47
CA-IDM-9	14.87	14.54	16.70	15.48
CA-IDM-10	16.40	16.78	18.04	17.07
CA-IDM-11A	16.82	17.51	18.91	15.98
CA-IDM-14	15.25	16.27	18.65	15.82
CA-IDM-17	15.97	15.83	17.62	15.77
CA-IDM-18A	15.48	15.83	17.71	14.95
CA-IDM-20	15.33	16.63	17.70	15.73
CA-IDM-21	15.66	17.11	17.31	15.86
CA-IDM-22A	15.59	16.18	17.64	15.79
CA-IDM-23	15.89	17.88	Missing ^a	16.64
CA-IDM-26 (C)	11.32	11.68	13.05	11.14
CA-IDM-27 (C)	17.98	17.62	19.27	17.10
CA-IDM-30A	17.06	14.65	18.20	15.43
CA-IDM-31A	16.50	17.20	Missing ^a	16.52
CA-IDM-32	16.40	16.28	19.00	15.42
CA-IDM-32A	15.77	15.43	19.26	16.64
CA-IDM-33	15.46	15.99	18.01	14.98
CA-IDM-34	14.29	14.95	16.90	14.86
CA-IDM-35	14.63	14.42	17.27	13.92
CA-IDM-36	14.20	16.09	18.69	15.56
CA-IDM-37	16.43	15.53	17.24	15.84
CA-IDM-38	10.92	11.67	13.85	11.85
CA-IDM-39	15.41	16.17	18.34	15.74
CA-IDM-39A	16.68	16.03	18.00	15.55
CA-IDM-40	16.00	17.61	19.01	16.71
CA-IDM-41	14.40	15.27	18.70	15.31
CA-IDM-42	13.61	13.84	15.39	13.59
CA-IDM-43	15.55	15.66	18.02	15.96
CA-IDM-44	16.63	15.53	17.70	16.74
CA-IDM-45	14.46	13.79	15.41	14.73
CA-IDM-46	16.49	16.57	17.65	17.07
CA-IDM-47	15.35	16.04	17.20	15.20
CA-IDM-48	16.03	17.02	18.03	16.50
CA-IDM-49	15.36	14.89	16.59	15.43
CA-IDM-50	15.81	16.81	18.60	16.46
CA-IDM-51A	17.16	16.86	19.78	17.10
CA-IDM-52	16.76	16.67	19.05	16.75
CA-IDM-60	16.65	16.14	17.26	15.87

^a TLD and holder missing from assigned location.

Appendix C

Supplemental Analyses

C-1. Airborne particulates, analyses for gross beta.

Units: pCi/m³

Collection: Continuous, weekly exchange.

Date Collected	Volume (m ³)	Gross Beta	Date Collected	Volume (m ³)	Gross Beta
Location: A-1			Location: B-3		
01-08-09	431	0.030 ± 0.003	01-08-09	431	0.030 ± 0.003
01-15-09	426	0.031 ± 0.003	01-15-09	428	0.029 ± 0.003
01-22-09	433	0.026 ± 0.003	01-22-09	428	0.030 ± 0.003
01-29-09	423	0.027 ± 0.003	01-29-09	423	0.032 ± 0.003
02-05-09	433	0.015 ± 0.003	02-05-09	431	0.017 ± 0.003
02-12-09	428	0.030 ± 0.003	02-12-09	433	0.025 ± 0.003
02-19-09	423	0.024 ± 0.003	02-19-09	423	0.022 ± 0.003
02-26-09	431	0.037 ± 0.003	02-26-09	431	0.036 ± 0.003
03-05-09	423	0.024 ± 0.003	03-05-09	423	0.027 ± 0.003
03-12-09	428	0.021 ± 0.003	03-12-09	428	0.024 ± 0.003
03-19-09	426	0.028 ± 0.003	03-19-09	426	0.026 ± 0.003
03-26-09	428	0.022 ± 0.003	03-26-09	431	0.019 ± 0.003
04-02-09	433	0.018 ± 0.003	04-02-09	431	0.017 ± 0.003
Location: A-7			Location: A-8		
01-08-09	433	0.024 ± 0.003	01-08-09	431	0.026 ± 0.003
01-15-09	426	0.027 ± 0.003	01-15-09	428	0.025 ± 0.003
01-22-09	428	0.027 ± 0.003	01-22-09	431	0.025 ± 0.003
01-29-09	431	0.032 ± 0.003	01-29-09	423	0.026 ± 0.003
02-05-09	431	0.018 ± 0.003	02-05-09	431	0.018 ± 0.003
02-12-09	428	0.029 ± 0.003	02-12-09	431	0.033 ± 0.003
02-19-09	426	0.024 ± 0.003	02-19-09	423	0.022 ± 0.003
02-26-09	428	0.033 ± 0.003	02-26-09	433	0.034 ± 0.003
03-05-09	431	0.026 ± 0.003	03-05-09	423	0.029 ± 0.003
03-12-09	426	0.022 ± 0.003	03-12-09	426	0.022 ± 0.003
03-19-09	423	0.023 ± 0.003	03-19-09	428	0.028 ± 0.003
03-26-09	433	0.021 ± 0.003	03-26-09	428	0.022 ± 0.003
04-02-09	423	0.017 ± 0.003	04-02-09	431	0.016 ± 0.003
Location: A-9					
01-08-09	431	0.031 ± 0.003			
01-15-09	426	0.028 ± 0.003			
01-22-09	431	0.026 ± 0.003			
01-29-09	423	0.028 ± 0.003			
02-05-09	431	0.016 ± 0.003			
02-12-09	433	0.031 ± 0.003			
02-19-09	426	0.027 ± 0.003			
02-26-09	428	0.037 ± 0.003			
03-05-09	423	0.025 ± 0.003			
03-12-09	428	0.025 ± 0.003			
03-19-09	428	0.026 ± 0.003			
03-26-09	428	0.022 ± 0.003			
04-02-09	431	0.015 ± 0.002			

C-2. Potable Well and Surface water, analyses for gross alpha, gross beta and iodine-131.

Units: pCi/L

Location		CA-WWA-PW-001	
Date Collected	1/16/2009	4/2/2009	
Lab Code	CAWW- 166	CAWW- 1271	
Gross Alpha	-	-	
Gross Beta	5.6 ± 1.2	-	
I-131	< 0.3	< 0.4	

Location		CA-WWA-D01	
Date Collected	1/16/2009	4/2/2009	
Lab Code	CAWW- 165	CAWW- 1268	
Gross Alpha	-	-	
Gross Beta	< 2.0	-	
I-131	< 0.3	< 0.3	

Location		CA-WWA-F05	
Date Collected	1/16/2009	4/2/2009	
Lab Code	CAWW- 86	CAWW- 1269	
Gross Alpha	-	-	
Gross Beta	9.0 ± 1.4	-	
I-131	< 0.3	< 0.4	

Location		CA-WWA-F015	
Date Collected	1/16/2009	4/2/2009	
Lab Code	CAWW- 87	CAWW- 1270	
Gross Alpha	-	-	
Gross Beta	8.6 ± 1.4	-	
I-131	< 0.3	< 0.4	

Location		CA-SWA-S01		
Date Collected	1/22/2009	2/19/2009	3/17/2009	
Lab Code	CASW- 195	CASW- 550	CASW- 886	
Gross Alpha	3.8 ± 1.9	4.4 ± 1.9	5.1 ± 0.9	
Gross Beta	9.5 ± 2.3	3.6 ± 1.2	10.8 ± 0.8	
I-131	-	-	-	

Location		CA-SWA-S02		
Date Collected	1/22/2009	2/19/2009	3/17/2009	
Lab Code	CAWW- 196	CAWW- 551	CASW- 887	
Gross Alpha	5.0 ± 2.1	3.4 ± 1.8	4.7 ± 0.9	
Gross Beta	8.0 ± 2.1	3.9 ± 1.2	9.6 ± 0.8	
I-131	-	-	-	

C-3, Wells and Ponds (non-potable), analyses for tritium and gamma-emitting isotopes.

Location	Collection Date	Concentration (pCi/L)										
		H-3	Mn-54	Fe-59	Co-58	Co-60	Zn-65	Zr-Nb-91	Cs-134	Cs-137	La-140	
M-2	1/26/2009	< 158	-	-	-	-	-	-	-	-	-	-
M-2	4/16/2009	< 153	-	-	-	-	-	-	-	-	-	-
M-7	1/28/2009	< 158	-	-	-	-	-	-	-	-	-	-
M-7	4/14/2009	< 153	-	-	-	-	-	-	-	-	-	-
MW-003 ^a	1/9/2009	< 149	< 9.5	-	-	< 4.4	< 27.7	-	< 4.8	< 3.0	-	-
MW-003	4/15/2009	< 160	< 1.9	< 2.8	< 1.7	< 2.5	< 6.6	< 4.6	< 2.9	< 2.2	< 4.3	-
MW-007	1/20/2009	< 152	< 1.0	< 3.0	< 0.8	< 0.9	< 1.8	< 1.7	< 1.1	< 1.3	< 2.0	-
MW-007	2/4/2009	< 156	< 2.7	< 5.7	< 2.3	< 1.9	< 5.2	< 2.6	< 2.8	< 1.7	< 1.9	-
MW-007	3/4/2009	< 144	< 3.5	< 4.0	< 3.0	< 1.9	< 4.8	< 4.8	< 3.2	< 2.5	< 3.8	-
MW-007	4/8/2009	< 160	< 1.9	< 5.7	< 2.1	< 1.5	< 4.3	< 3.6	< 3.5	< 2.9	< 3.8	-
MW-008	1/20/2009	< 148	< 1.8	< 4.9	< 1.8	< 2.4	< 4.5	< 4.4	< 2.4	< 2.4	< 3.7	-
MW-008	2/4/2009	< 156	< 3.5	< 8.7	< 3.2	< 3.1	< 8.4	< 6.5	< 4.0	< 4.7	< 6.5	-
MW-008	3/4/2009	< 144	< 3.5	< 3.9	< 3.1	< 3.0	< 6.7	< 4.1	< 3.0	< 3.4	< 3.2	-
MW-008	4/8/2009	< 160	< 3.0	< 7.5	< 2.3	< 1.9	< 3.9	< 2.6	< 3.0	< 2.8	< 8.0	-
MW-009r ^b	1/7/2009	< 152	-	-	-	-	-	-	-	-	-	-
MW-009r	4/3/2009	< 153	< 2.5	< 7.3	< 1.8	< 2.8	< 7.0	< 3.0	< 3.1	< 2.4	< 8.1	-
MW-011	1/14/2009	< 148	-	-	-	-	-	-	-	-	-	-
MW-011	4/8/2009	< 160	< 2.6	< 3.0	< 2.7	< 3.2	< 3.6	< 3.6	< 2.3	< 2.3	< 9.1	-
MW-017	12/21/2009	615 ± 116	< 4.0	< 4.9	< 2.9	< 2.2	< 6.0	< 2.8	< 3.2	< 3.0	< 2.4	-
MW-501	1/26/2009	< 158	-	-	-	-	-	-	-	-	-	-
MW-501	2/4/2009	< 156	-	-	-	-	-	-	-	-	-	-
MW-501	4/16/2009	< 153	-	-	-	-	-	-	-	-	-	-
MW-502	1/26/2009	< 158	-	-	-	-	-	-	-	-	-	-
MW-502	2/4/2009	< 156	-	-	-	-	-	-	-	-	-	-
MW-502	4/14/2009	< 153	-	-	-	-	-	-	-	-	-	-
OW-1	1/12/2009	< 160	-	-	-	-	-	-	-	-	-	-
OW-1	4/6/2009	277 ± 90	< 1.9	< 4.0	< 1.2	< 2.0	< 4.9	< 4.1	< 2.1	< 1.6	< 5.0	-
OW-2	1/12/2009	< 160	-	-	-	-	-	-	-	-	-	-
OW-2	4/7/2009	316 ± 92	-	-	-	-	-	-	-	-	-	-
OW-3	1/12/2009	< 149	-	-	-	-	-	-	-	-	-	-
OW-3	4/6/2009	213 ± 87	-	-	-	-	-	-	-	-	-	-

^a Some required gamma LLDs exceeded due to insufficient sample size and delay in counting.

^b Not enough sample for gamma isotopic analysis.

C-4. Soil, analyses for tritium and gamma-emitting isotopes.

Collection Date: 12/17/09

Units: pCi/kg dry

		Concentration									
Location		H-3 (pCi/L)	K-40	Mn-54	Fe-59	Co-58	Co-60	Nb-95	Cs-134	Cs-137	La-140
MW-017	3.5-5`	< 153	17687 ± 1462	< 58	< 140	< 34	< 43	< 46	< 39	< 47	< 59
MW-017	8.5-10`	< 153	17640 ± 1506	< 69	< 134	< 71	< 46	< 66	< 37	< 38	< 59
MW-017	13.5-15`	506 ± 100	18170 ± 1770	< 49	< 100	< 63	< 53	< 53	< 38	< 28	< 61
MW-017	18.5-20`	529 ± 101	17978 ± 1534	< 47	< 148	< 61	< 35	< 97	< 43	< 28	< 60