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Edwin I. Hatch Nuclear Plant – Units 1 & 2
Joseph M. Farley Nuclear Plant – Units 1 & 2
Vogtle Electric Generating Plant – Units 1 & 2
Annual Radiological Environmental Operating Reports for 2019

Ladies and Gentlemen:

In accordance with section 5.6.2 of the referenced plants' Technical Specifications, Southern Nuclear Operating Company hereby submits the Annual Radiological Environmental Operating Reports for 2019.

This letter contains no NRC commitments. If you have any questions, please contact Jamie Coleman at 205.992.6611.

Respectfully submitted,

Cheryl A. Gayheart
Regulatory Affairs Director

CAG/kgf/sm

- Enclosures:
1. Hatch Annual Radiological Environmental Operating Report for 2019
 2. Farley Annual Radiological Environmental Operating Report for 2019
 3. Vogtle Annual Radiological Environmental Operating Report for 2019

IEZS
NRR

NL-20-0548

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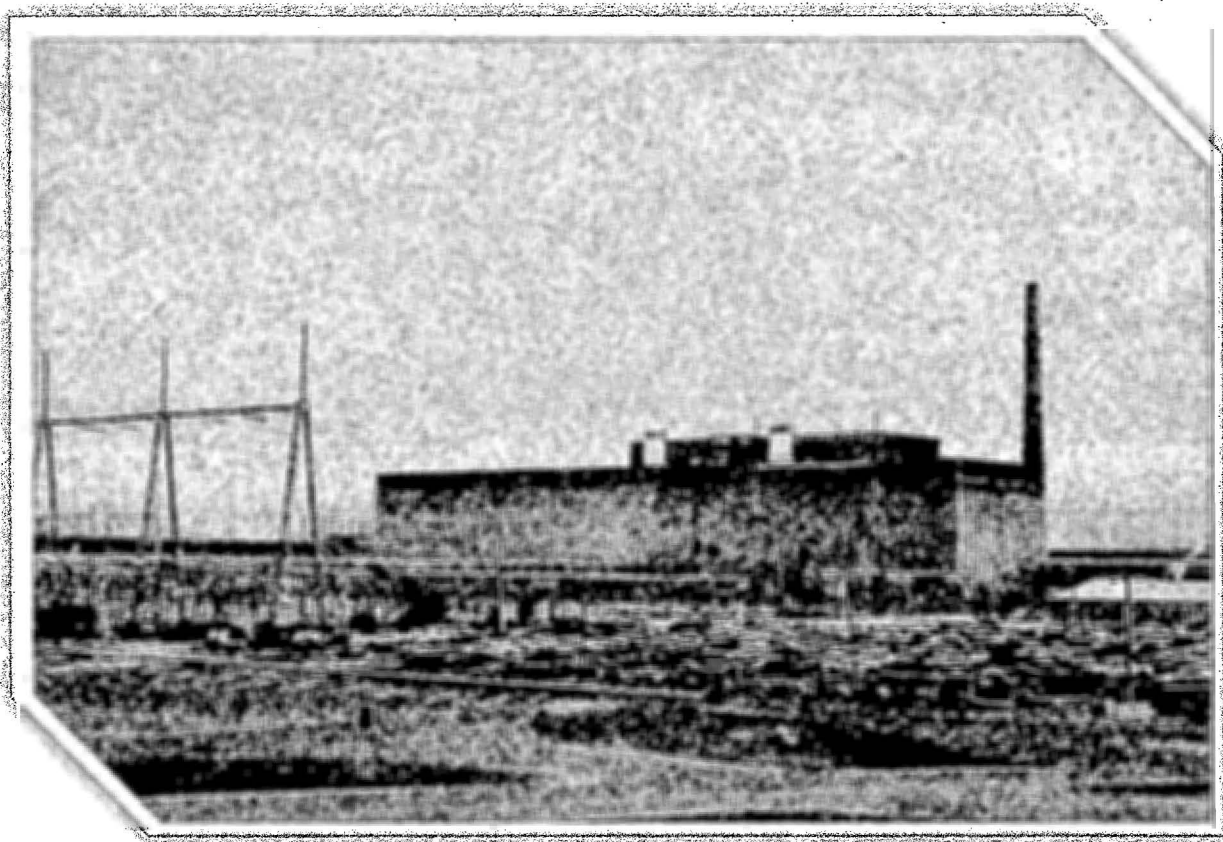
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NRR Project Manager – Farley, Hatch, Vogtle 1 & 2
Senior Resident Inspector – Farley, Hatch, Vogtle 1 & 2
RType: CGA02.001
State of Alabama Department of Public Health, Office of Radiation Control
State of Georgia Department of Natural Resources
American Nuclear Insurers

**Edwin I. Hatch Nuclear Plant – Units 1 & 2
Joseph M. Farley Nuclear Plant– Units 1 & 2
Vogtle Electric Generating Plant– Units 1 & 2
Annual Radiological Environmental Operating Reports for 2019**

Enclosure 1

Hatch Annual Radiological Environmental Operating Report for 2019

**EDWIN I. HATCH NUCLEAR PLANT
2019 ANNUAL RADIOLOGICAL ENVIRONMENTAL
OPERATING REPORT**



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LIST OF ACRONYMS

AREOR	Annual Radiological Environmental Operating Report
BWR	Boiling Water Reactor
CL	Confidence Level
GPC	Georgia Power Company
GPCEL	Georgia Power Company Environmental Laboratory
HNP	Edwin I. Hatch Nuclear Plant
ICP	Interlaboratory Comparison Program
MDC	Minimum Detectable Concentration
MDD	Minimum Detectable Difference
MWt	MegaWatts Thermal
NA	Not Applicable
NDM	No Detectable Measurement(s)
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
OSLD	Optically Stimulated Luminescence
REMP	Radiological Environmental Monitoring Program
RL	Reporting Level
RM	River Mile
SNC	Southern Nuclear Operating Company
TLD	Thermoluminescent Dosimeter
TS	Technical Specification



1 INTRODUCTION

The Radiological Environmental Monitoring Program (REMP) was conducted in accordance with Chapter 4 of the Offsite Dose Calculation Manual (ODCM). The REMP activities for 2019 were reported herein in accordance with Technical Specification (TS) 5.6.2 and ODCM 7.1.

The objectives of the REMP were to:

- 1) Determine the levels of radiation and the concentrations of radioactivity in the environs and;
- 2) Assess the radiological impact (if any) to the environment due to the operation of the Edwin I. Hatch Nuclear Plant (HNP).

The assessments included comparisons between the results of analyses of samples obtained at locations where radiological levels were not expected to be affected by plant operation (control stations), areas of higher population (community stations), and at locations where radiological levels were more likely to be affected by plant operation (indicator stations), as well as comparisons between preoperational and operational sample results.

HNP is owned by Georgia Power Company (GPC), Oglethorpe Power Corporation, the Municipal Electric Authority of Georgia, and Dalton Utilities. The plant is located in Appling County, Georgia on the southwest side of the Altamaha River near Baxley, Georgia. Unit 1, a General Electric Company Boiling Water Reactor (BWR) with a licensed core thermal output of 924 MegaWatts (MWt), began commercial operation on December 31, 1975. Unit 2, also a General Electric Company BWR rated for 924 MWt, began commercial operation on September 5, 1979.

The pre-operational stage of the REMP began with the establishment and activation of the environmental monitoring stations in January of 1972. The operational stage of the REMP began on September 12, 1974 with Unit 1 initial criticality.

- A description of the REMP is provided in Section 2 of this report
- Section 3 provides a summary of the results, an assessment of any radiological impacts to the environment, and the results from the interlaboratory comparison
- A summary of the land use census and the river survey are included in Section 4
- Conclusions are included in Section 5



2 REMP DESCRIPTION

The following section provides a description of the sampling and laboratory protocols associated with the REMP. Table 2-1 provides a summary of the sample types to be collected and the analyses to be performed in order to monitor the airborne, direct radiation, waterborne and ingestion pathways, and also summarizes the collection and analysis frequencies (in accordance with ODCM Section 4.2). Table 2-2 provides specific information regarding the station locations, their proximity to the plant, and exposure pathways. Additionally, Appendix A of this report provides Maps A-1 through A-3 that depict the georeferenced location of sampling stations. Any Errata from previous reports are provided in Appendix B. All data points resulting from REMP sampling are provided in Appendix C.

Beginning in October 2017 and continuing through 2019, a contractor through Southern Nuclear Operating Company (SNC) provided services for the collection of most of the REMP samples, only fish samples were collected by the Alabama Power Company. All samples were analyzed by the Georgia Power Environmental Lab (GPCEL) in Atlanta, Georgia. The GPCEL analyzed all REMP samples.



Table 2-1. Summary Description of Radiological Environmental Monitoring Program

Exposure Pathway and/or Sample	Approximate Number of Sample Locations	Sampling/Collection Frequency	Type/Frequency of Analysis
Direct Radiation	37 routine monitoring stations	Quarterly	Gamma dose/Quarterly
Airborne Radioiodine and Particulates	Samples from six locations:	Continuous sampler operation with sample collection weekly	Particulate sampler: Analyze for gross beta radioactivity not less than 24 hours following filter change/Weekly; perform gamma isotopic analysis on affected sample when gross beta activity is 10 times the yearly mean of control samples. Perform gamma isotopic analysis on composite sample (by location)/Quarterly. Radioiodine canister: I-131 analysis/Weekly
Waterborne			
Surface	One sample upriver One sample downriver	Composite sample over one month period ¹	Gamma isotopic analysis ² /Monthly Composite for tritium analysis/Quarterly
Drinking ^{3,4}	One sample of river water near the intake and one sample of finished water from each of one to three of the nearest water supplies which could be affected by HNP discharges.	River water collected near the intake will be a composite sample; the finished water will be a grab sample. These samples will be collected monthly unless the calculated dose due to consumption of the water is greater than 1 mrem/year; then the collection will be biweekly. The collections may revert to monthly should the calculated doses become less than 1 mrem/year.	I-131 analysis on each sample when biweekly collections are required. Gross beta and gamma isotopic analysis on each sample; composite (by location) for tritium analysis/Quarterly.
Groundwater	See Table 3-8 and Map A-4 in Appendix A for on-site well locations. These are part of the GWPP (NEI 07-07).	Quarterly sample; pump used to sample GW wells; grab sample from yard drains and ponds Groundwater is sampled per the guidance under NEI 07-07.	Tritium, gamma isotopic, and field parameters of each sample; hard-to-detects based on tritium and gamma results
Shoreline Sediment	Two	Semiannually	Gamma isotopic analysis ² /Semiannually



Table 2-1. Summary Description of Radiological Environmental Monitoring Program

Exposure Pathway and/or Sample	Approximate Number of Sample Locations	Sampling/Collection Frequency	Type/Frequency of Analysis
Ingestion			
Milk ⁵	One	Bimonthly	Gamma isotopic analysis ^{2,7} /Bimonthly
Fish or Clams ⁶	Two	Semiannually during spawning season	Gamma isotopic analysis ² on edible portions /Semiannually
Grass or Leafy Vegetation	Three	Monthly during growing season	Gamma isotopic analysis ^{2,7} /Monthly
<p>Notes:</p> <p>¹Composite sample aliquots were collected at time intervals were are very short (e.g., hourly) relative to the compositing period (e.g., monthly) to ensure obtaining a representative sample.</p> <p>²Gamma isotopic analysis means the identification and quantification of gamma-emitting radionuclides that may be attributable to the effluents from the facility.</p> <p>³If it is found that river water downstream of the plant is used for drinking, drinking water samples will be collected and analyzed as specified herein.</p> <p>⁴A survey shall be conducted annually at least 50 river miles downstream of the plant to identify those who use water from the Altamaha River for drinking.</p> <p>⁵Up to three sampling locations within five miles and in different sectors will be used as available. In addition, one or more control locations beyond 10 miles will be used.</p> <p>⁶Commercially or recreationally important fish may be sampled. Clams may be sampled if difficulties are encountered in obtaining sufficient fish samples.</p> <p>⁷If the gamma isotopic analysis is not sensitive enough to meet the Minimum Detectable Concentration (MDC) for I-131, a separate analysis for I-131 may be performed.</p>			



Table 2-2. Radiological Environmental Sampling Locations

Station Number	Station Type	Descriptive Location	Direction ¹	Distance (miles) ¹	Radiation Sample Type
064	Other	Roadside Park	WNW	0.8	Direct
101	Indicator	Inner Ring	N	1.9	Direct
102	Indicator	Inner Ring	NNE	2.5	Direct
103	Indicator	Inner Ring	NE	1.8	Airborne, Direct
104	Indicator	Inner Ring	ENE	1.6	Direct
105	Indicator	Inner Ring	E	3.7	Direct
106	Indicator	Inner Ring	ESE	1.1	Direct, Vegetation
107	Indicator	Inner Ring	SE	1.2	Airborne, Direct
108	Indicator	Inner Ring	SSE	1.6	Direct
109	Indicator	Inner Ring	S	0.9	Direct
110	Indicator	Inner Ring	SSW	1.0	Direct
111	Indicator	Inner Ring	SW	0.9	Direct
112	Indicator	Inner Ring	WSW	1.0	Airborne, Direct, Vegetation
113	Indicator	Inner Ring	W	1.1	Direct
114	Indicator	Inner Ring	WNW	1.2	Direct
115	Indicator	Inner Ring	NW	1.1	Direct
116	Indicator	Inner Ring	NNW	2.0 ⁴	Airborne, Direct
170	Control	Upstream	WNW	**2	River ³
172	Indicator	Downstream	E	**2	River ³
201	Other	Outer Ring	N	5.0	Direct
202	Other	Outer Ring	NNE	4.9	Direct
203	Other	Outer Ring	NE	5.0	Direct
204	Other	Outer Ring	ENE	5.0	Direct
205	Other	Outer Ring	E	7.2	Direct
206	Other	Outer Ring	ESE	4.8	Direct
207	Other	Outer Ring	SE	4.3	Direct
208	Other	Outer Ring	SSE	4.8	Direct
209	Other	Outer Ring	S	4.4	Direct
210	Other	Outer Ring	SSW	4.3	Direct
211	Other	Outer Ring	SW	4.7	Direct
212	Other	Outer Ring	WSW	4.4	Direct
213	Other	Outer Ring	W	4.3	Direct
214	Other	Outer Ring	WNW	5.4	Direct
215	Other	Outer Ring	NW	4.4	Direct
216	Other	Outer Ring	NNW	4.8	Direct
301	Other	Toombs Central School	N	8.0	Direct



Table 2-2. Radiological Environmental Sampling Locations

Station Number	Station Type	Descriptive Location	Direction ¹	Distance (miles) ¹	Radiation Sample Type
304	Control	State Prison	ENE	11.2	Airborne, Direct
304	Control	State Prison	ENE	10.3	Milk
309	Control	Baxley Substation	S	10.0	Airborne, Direct
416	Control	Emergency News Center	NNW	21.0	Direct, Vegetation

Notes:

¹Direction and distance were determined from the main stack.

²Station 170 was located approximately 0.6 river miles upstream of the intake structure for river water, 1.1 river miles for sediment and clams, and 1.5 river miles for fish.

Station 172 was located approximately 3.0 river miles downstream of the discharge structure for river water, sediment and clams, and 1.7 river miles for fish.

The locations from which river water and sediment may be taken can be sharply defined. However, the sampling locations for clams often have to be extended over a wide area to obtain a sufficient quantity. High water adds to the difficulty in obtaining clam samples and may also make an otherwise suitable location for sediment sampling unavailable. A stretch of the river of a few miles or so was generally needed to obtain adequate fish samples. The mile locations given above represent approximations of the locations where samples were collected.

³River (fish or clams, shoreline sediment, and surface water)

⁴This station was shifted approximately 0.4 miles due to a highway widening project. Sector did not change. Map A-1 shows the new station location.



3 RESULTS SUMMARY

Included in this section are statistical evaluations of the laboratory results, comparison of the results by media, and a summary of the anomalies and deviations. Overall, 877 analyses were performed across nine exposure pathways. Tables and figures are provided throughout this section to provide an enhanced presentation of the information.

In recent history, man-made nuclides have been released into the environment and have resulted in wide spread distribution of radionuclides across the globe. For example, atmospheric nuclear weapons tests from the mid-1940s through 1980 distributed man-made nuclides around the world. The most recent atmospheric tests in the 1970s and in 1980 have had a significant impact upon the radiological concentrations found in the environment prior to and during pre-operation, and through early operation. Some long-lived radionuclides, such as Cs-137, continue to be detected and a portion of these detections are believed to be attributed to the nuclear weapons tests.

Additionally, data associated with certain radiological effects created by off-site events have been removed from the historical evaluation, this includes: the nuclear atmospheric weapon test in the fall of 1980, the Chernobyl incident in the spring of 1986 and the Fukushima accident in the spring of 2011.

As indicated in ODCM 7.1.2.1, the results for naturally occurring radionuclides that are also found in plant effluents must be reported along with man-made radionuclides. Historically, the radionuclide Be-7, which occurs abundantly in nature, is often detected in REMP samples, and occasionally detected in the plant's liquid and gaseous effluents. When it is detected in effluents and REMP samples, it is also included in the REMP results. In 2019, Be-7 was not detected in plant effluents and therefore it was not included in this report. The Be-7 detected in select REMP samples likely represents naturally occurring and/or background conditions

As part of the data evaluation process, SNC considered the impact of the non-plant associated nuclides along with a statistical evaluation of the REMP data. The statistical evaluations included within this report include the Minimum Detectable Concentration (MDC), the Minimum Detectable Difference (MDD), and Chauvenet's Criterion as described below.

Minimum Detectable Concentration

The minimum detectable concentration is defined as an estimate of the true concentration of an analyte required to give a specified high probability that the measured response will be greater than the critical value.

Minimum Detectable Difference

The Minimum Detectable Difference (MDD) compares the lowest significant difference (between the means) of a control station, versus an indicator station or a community



station, that can be determined statistically at the 99% Confidence Level (CL). A difference in mean values which was less than the MDD was considered to be statistically indiscernible. The MDD is used to evaluate the statistical proximity between the indicator/community and control sample results, but generally, any results that are less than the MDC and/or Reporting Levels (RL) are considered to have minimal impact on the surrounding environs.

Chauvenet's Criterion

All results were tested for conformance with Chauvenet's Criterion (G. D. Chase and J. L. Rabinowitz, Principles of Radioisotope Methodology, Burgess Publishing Company, 1962, pages 87-90) to identify values which differed from the mean of a set by a statistically significant amount. Identified outliers were investigated to determine the reason(s) for the difference. If equipment malfunction or other valid physical reasons were identified as causing the variation, the anomalous result was excluded from the data set as non-representative.

Table 3-1 summarizes and evaluates the annual results for the indicator stations against the control and community stations (where applicable) and as appropriate, results were evaluated against the MDCs (listed in Table 3-1) and RLs (listed in Table 3-2). The required MDCs were achieved during laboratory sample analysis. The 2019 results were compared with previous results, including those obtained during pre-operation. No data points were excluded for violating Chauvenet's Criterion.



Table 3-1. Radiological Environmental Monitoring Program Annual Summary

Medium or Pathway Sampled (Units)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Mean (b), Range (Fraction)	Location with the Highest Annual Mean		Other Stations (f) Mean (b), Range (Fraction)	Control Locations Mean (b), Range (Fraction)
				Name Distance and Direction	Mean (b), Range (Fraction)		
Airborne Particulates (fCi/m3)	Gross Beta 317	10	22.1 11.7 to 42.6 (211/211)	Inner Ring SE 1.2 mi. (Indicator)	23.1 13.9 to 34.7 (53/53)		21.3 12.1 to 37.3 (106/106)
	Gamma Isotopic 24						
	Be-7	24					
	I-131	70	NDM(c)		NDM		NDM
	Cs-134	50	NDM		NDM		NDM
	Cs-137	60	NDM		NDM		NDM
Airborne Radioiodine (fCi/m3)	I-131 317	70	NDM		NDM	NDM	NDM
Direct Radiation (mR/91 days)	Gamma Dose 148		11.4 8.6 to 18.6 (64/64)	Inner Ring NW 1.1 mi.	17.4 15.4 to 18.6 (4/4)	11.1 7.3 to 17.3 (72/72)	11.5 10.1 to 12.9 (12/12)
Milk (pCi/l)	Gamma Isotopic 24						
	I-131	1			NDM		NDM
	Cs-134	15			NDM		NDM
	Cs-137	18			NDM		NDM
	Ba-140	60			NDM		NDM
	La-140	15			NDM		NDM
Vegetation (pCi/kg-wet)	Gamma Isotopic 36						
	Be-7						
	I-131	60	NDM				NDM
	Cs-134	60	NDM				NDM



Table 3-1. Radiological Environmental Monitoring Program Annual Summary

Medium or Pathway Sampled (Units)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Mean (b), Range (Fraction)	Location with the Highest Annual Mean		Other Stations (f) Mean (b), Range (Fraction)	Control Locations Mean (b), Range (Fraction)
				Name Distance and Direction	Mean (b), Range (Fraction)		
	Cs-137	80	36.8 0 to 141 (13/24)	Inner Ring ESE 1.1 mi. Indicator	76.8 0 to 141 (11/12)		7.5 0 to 40.9 (3/12)
River Water (pCi/l)	Gamma Isotopic 12						
	Mn-54	15	NDM		NDM		NDM
	Fe-59	30	NDM		NDM		NDM
	Co-58	15	NDM		NDM		NDM
	Co-60	15	NDM		NDM		NDM
	Zn-65	30	NDM		NDM		NDM
	Zr-95	30	NDM		NDM		NDM
	Nb-95	15	NDM		NDM		NDM
	I-131	15(d)	NDM		NDM		NDM
	Cs-134	15	NDM		NDM		NDM
	Cs-137	18	NDM		NDM		NDM
	Ba-140	60	NDM		NDM		NDM
La-140	15	NDM		NDM		NDM	
	Tritium 8	3000 (e)	-80.2 -244 to -2.6 (4/4)	Downstream E ~ 3.0 RM from intake	-73.2 -161 to -23.2 (4/4)		-73.2 -161 to -23.2 (4/4)
Fish (pCi/kg-wet)	Gamma Isotopic 1						
	Be-7	655(d)	NDM				NDM
	Mn-54	130	NDM				NDM
	Fe-59	260	NDM				NDM
	Co-58	130	NDM				NDM



Table 3-1. Radiological Environmental Monitoring Program Annual Summary

Medium or Pathway Sampled (Units)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Mean (b), Range (Fraction)	Location with the Highest Annual Mean		Other Stations (f) Mean (b), Range (Fraction)	Control Locations Mean (b), Range (Fraction)
				Name Distance and Direction	Mean (b), Range (Fraction)		
	Co-60	130	NDM				NDM
	Zn-65	260	NDM				NDM
	Cs-134	130	NDM				NDM
	Cs-137	150	NDM				NDM
Sediment (pCi/kg-dry)	Gamma Isotopic 4						
	Cs-134	150	NDM				NDM
	Cs-137	180	21.8 0 to 43.6 (2/2)	Downstream E ~ 3.0 RM from intake	21.8 0 to 43.6 (2/2)		15.3 0 to 30.6 (2/2)
<p>Notes:</p> <p>(a) The MDC is defined in ODCM 10.1. Except as noted otherwise, the values listed in this column are the detection capabilities required by ODCM Table 4-3. The values listed in this column are a priori (before the fact) MDCs. In practice, the a posteriori (after the fact) MDCs are generally lower than the values listed.</p> <p>(b) Mean and range were based upon detectable measurements only. The fraction of all measurements at a specified location that are detectable is placed in parenthesis.</p> <p>(c) No Detectable Measurement(s) (NDM).</p> <p>(d) If a drinking water pathway were to exist, a MDC of 1pCi/L would have been used.</p> <p>(e) If a drinking water pathway were to exist, a MDC of 2000 pCi/L would have been used.</p> <p>Not Applicable (NA) (sample not required)</p>							



Table 3-2. Reporting Levels (RL)

Analysis	Water (pCi/l)	Airborne Particulate or Gases (fCi/m3)	Fish (pCi/kg-wet)	Milk (pCi/l)	Grass or Leafy Vegetation (pCi/kg-wet)
H-3	20,000 ^a				
Mn-54	1,000		30,000		
Fe-59	400		10,000		
Co-58	1,000		30,000		
Co-60	300		10,000		
Zn-65	300		20,000		
Zr-95	400				
Nb-95	700				
I-131	2 ^b	900		3	100
Cs-134	30	10,000	1,000	60	1,000
Cs-137	50	20,000	2,000	70	2,000
Ba-140	200			300	
La-140	100			400	

^a This is the 40 CFR 141 value for drinking water samples. If no drinking water pathway exists, a value of 30,000 may be used.

^b If no drinking water pathway exists, a value of 20 pCi/l may be used.

In accordance with ODCM 4.1.1.2.1, deviations from the required sampling schedule were permitted, if samples were unobtainable due to hazardous conditions, unavailability, inclement weather, equipment malfunction or other just reasons. Deviations from conducting the REMP sampling (as described in Table 2-1) are summarized in Table 3-3 along with their causes and resolution.



Table 3-3. Anomalies and Deviations from Radiological Environmental Monitoring Program

Collection Period	Affected Samples	Anomaly (A)* or Deviation (D)**	Cause	Resolution
02/19/19 – 02/26/19	Station 103	Suspect elapsed run time error. (D)	Station timer indicated an additional 200 hours during the sample cycle.	Timer replaced.
04/09/19 – 04/16/19	Station 103	Non-representative sample of airborne particulates and iodine. (A)	Lost significant sample time due after local EMC disconnect tripped off due to power spike.	Station returned to normal operation when local utility restored power.
05/21/19 – 06-04/19	Milk	Sample delayed in transit. (D)	Label became dislodged from shipping container. Shipper discovered the error and forwarded the package. However, it arrived too late for analysis	Additional sample was collected and analyzed.
08/06/19 – 08/13/19	Station 103	Non-representative sample of airborne iodine and particulates (A)	Lost 108 hours of sample time due to local EMC disconnect tripped off due to power spike.	Station returned to normal operation when local utility restored power.
08/06/19 – 08/13/19	Station 304	Non-representative sample of airborne iodine and particulates (A)	Lost 88 hours of sample time due to local EMC disconnect tripped off due to power spike. (See previous report. Both stations affected by same thunderstorm activity.)	Station returned to normal operation when local utility restored power.

* An anomaly is considered a non-standard sample that still meets sampling criteria outlined in SNC and Georgia Power Lab procedures.
 ** A deviation is a sample result that is not recorded due to not meeting scheduling and/or procedural requirements as outlined by SNC and Georgia Power Labs



3.1 Airborne Particulates

As specified in Table 2-1, airborne particulate filters and charcoal canisters were collected weekly at four indicator stations (Stations 103, 107, 112 and 116) which encircle the plant at the site periphery and at two control stations (Station 304 and 309) which is approximately 10 miles from the main stack. At each sampling location containing a filter and cartridge series, air was continuously drawn through a glass fiber filter to retain airborne particulate and an activated charcoal canister was placed in series with the particulate filter in order to adsorb radioiodine.

3.1.1 Gross Beta

As provided in Table 3-1, the 2019 annual average weekly gross beta activity was 19.7 fCi/m³ for the indicator stations. It was 0.2 fCi/m³ less than the control station average of 19.9 fCi/m³ for the year. No MDD was applied since the indicator average was less than the control.

Average Air Gross Beta historical data (Table 3-4) is graphed to show trends associated with a prevalent exposure pathway (Figure 3-1). In general, there was close agreement between the results for the indicator, control and community stations. This close agreement supports the position that the plant was not contributing significantly to the gross beta concentrations in air.

Table 3-4. Average Weekly Gross Beta Air Concentration

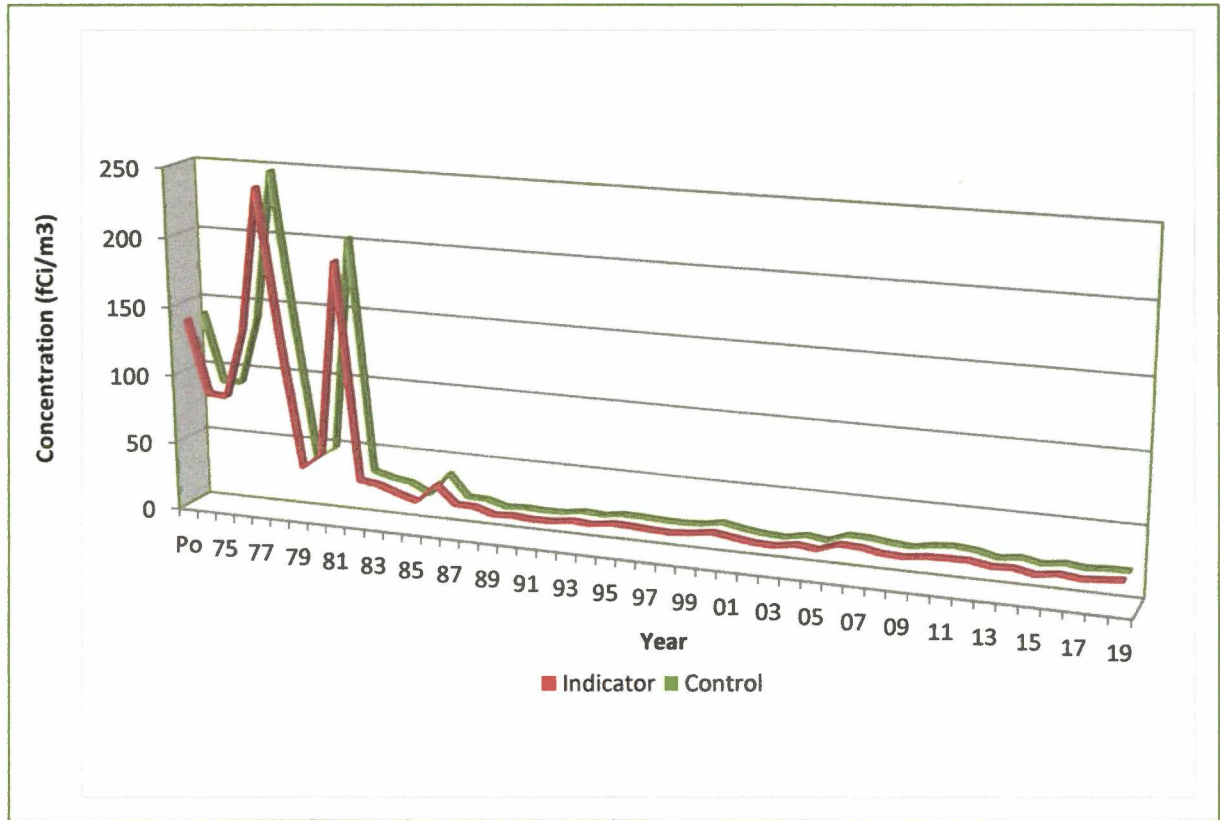
Period	Indicator (fCi/m ³)	Control (fCi/m ³)	Period	Indicator (fCi/m ³)	Control (fCi/m ³)
Pre-op	140	140	1997	20.3	20.7
1974	87	90	1998	20.0	20.5
1975	85	90	1999	21.3	21.3
1976	135	139	2000	23.6	23.9
1977	239	247	2001	21.5	21.0
1978	130	137	2002	19.3	19.2
1979	38	39	2003	18.8	18.2
1980	49	48	2004	21.4	21.3
1981	191	203	2005	19.7	19.4
1982	33	34	2006	24.9	24.7
1983	31	30	2007	24.4	24.3
1984	26	28	2008	21.8	22.5
1985	22	21	2009	21.2	21.4
1986	36	38	2010	23.1	24.0
1987	23	22	2011	23.5	25.1
1988	22.6	21.7	2012	23.7	22.7
1989	18.4	17.8	2013	21.3	20.3
1990	19.3	18.7	2014	22.0	22.3
1991	18.1	18	2015	19.1	19.6
1992	18.5	18.4	2016	21.4	21.6
1993	20.4	20.7	2017	19.7	19.9



Table 3-4. Average Weekly Gross Beta Air Concentration

Period	Indicator (fCi/m3)	Control (fCi/m3)	Period	Indicator (fCi/m3)	Control (fCi/m3)
1994	19.5	19.7	2018	20.8	21.2
1995	21.7	21.7	2019	22.1	21.3
1996	21.3	21.4			

Figure 3-1. Average Weekly Gross Beta Air Concentration



3.1.2 Gamma Particulates

During 2019, no man-made radionuclides were detected from the gamma isotopic analysis of the quarterly composites of the air particulate filter.

Airborne Radioiodine - I-131 was not detected in the air cartridges at either the indicator or control stations in 2019. Historically, gamma isotopes have been detected as a result of offsite events. On only one occasion since 1986, has a man-made radionuclide been detected in a quarterly composite. A small amount of Cs-137 (1.7 fCi/m3) was identified in the first quarter of 1991 at Station 304. The MDC and RL for Cs-137 in air are 60 and 20,000 fCi/m3, respectively.



3.2 Direct Radiation

In 2019, direct (external) radiation was measured with Optically Stimulated Luminescent (OSLD) dosimeters by placing two OSLD badges at each station. The gamma dose at each station was reported as the average reading of the two badges. The badges were analyzed on a quarterly basis. An inspection was performed near mid-quarter for offsite badges to ensure that the badges were on-station and to replace any missing or damaged badges.

Two direct radiation stations were established in each of the 16 compass sectors, to form two concentric rings. The inner ring (Stations 101 through 116) was located near the plant perimeter as shown in Map A-1 in Appendix A and the outer ring (Stations 201 through 216) was located at distances of four to five miles from the plant as shown in Map A-2 in Appendix A. The stations in the East sector were a few additional miles away with regards to the other stations in their respective rings due to large swamps making normal access extremely difficult. The 16 stations forming the inner ring were designated as the indicator stations. The two-ring configuration of stations was established in accordance with NRC Branch Technical Position "An Acceptable Radiological Environmental Monitoring Program", Revision 1, November 1979. The three control stations (Nos. 304, 309 and 416) were located at distances greater than 10 miles from the plant as shown in Map A-2. The mean and range values presented in the "Other" column in Table 3-1 includes the outer ring stations (stations 201 through 216) as well as stations 064 and 301, which monitor special interest areas. Station 064 was located at the onsite roadside park, while Station 301 was located near the Toombs Central School. Station 210, in the outer ring, was located near the Altamaha School (the only other nearby school).

As provided in Table 3-1, the 2019 average quarterly exposure at the indicator stations (inner ring) was 11.4 mR with a range of 8.6-18.6 mR. The indicator station average was 0.1 mR less than the control station average (11.5 mR with a range of 10.1-12.9 mR). No MDD was applied since the indicator average was less than the control.

The quarterly exposures acquired at the community/other (outer ring) stations during 2019 ranged from 7.3 to 17.3 mR with an average of 11.1 mR which was also less than control station average.

Average Direct Radiation historical data (Table 3-5) is graphed to show trends associated with a prevalent exposure pathway (Figure 3-2). The decrease between 1991 and 1992 values was attributed to a change in Thermoluminescent Dosimeters (TLDs) from Teledyne to Panasonic. It should be noted however that the differences between indicator and control and outer ring values did not change. The increase shown in 2010 reflected issues with the aging Panasonic TLD reader. The close agreement between the station groups has supported the position that the plant was not contributing significantly to direct radiation in the environment.



Figure 3-3 below provides a more detailed view of the 2019 values. The values for the special interest areas detailed below, indicate that Plant Hatch did not significantly contribute to direct radiation at those areas.

Table 3-5. Average Quarterly Exposure from Direct Radiation (Historical)

Period	Indicator (mR)	Control (mR)	Outer Ring (mR)	Period	Indicator (mR)	Control (mR)	Outer Ring (mR)
Pre-op	22.3	23.0	NA	1997	12.3	11.8	12.3
1974	23.2	25.6	NA	1998	12.1	12.3	12.3
1975	10.0	10.5	NA	1999	12.8	13.2	13.0
1976	8.18	6.90	NA	2000	13.6	13.3	13.3
1977	7.31	6.52	NA	2001	12.0	12.1	11.8
1978	6.67	6.01	NA	2002	11.7	11.7	11.5
1979	5.16	6.77	NA	2003	11.4	11.4	11.4
1980	4.44	5.04	4.42	2004	12.2	12.4	12.2
1981	5.90	5.70	5.70	2005	12.1	12.5	12.0
1982	12.3	12.0	11.3	2006	12.4	11.9	11.8
1983	11.4	11.3	10.6	2007	12.8	12.5	12.6
1984	13.3	12.9	11.9	2008	13.0	12.3	12.4
1985	14.7	14.7	13.7	2009	12.4	12.2	12.2
1986	15.0	14.0	14.5	2010	15.8	15.6	16.0
1987	14.9	14.6	15.3	2011	19.7	19.1	19.2
1988	15.0	14.7	15.2	2012	14.4	13.6	14.1
1989	16.4	18.0	16.5	2013	12.7	10.2	12.4
1990	14.9	13.9	14.7	2014	12.0	11.7	11.8
1991	15.1	13.7	15.6	2015	12.1	11.7	12.1
1992	11.9	10.9	12.3	2016	12.1	11.0	11.3
1993	11.6	10.7	11.5	2017	12.5	11.5	12.1
1994	11.0	10.7	11.2	2018	11.4	11.3	11.1
1995	11.5	10.8	11.3	2019	11.4	11.5	11.1
1996	11.6	11.3	11.6				

Figure 3-2. Average Quarterly Exposure from Direct Radiation



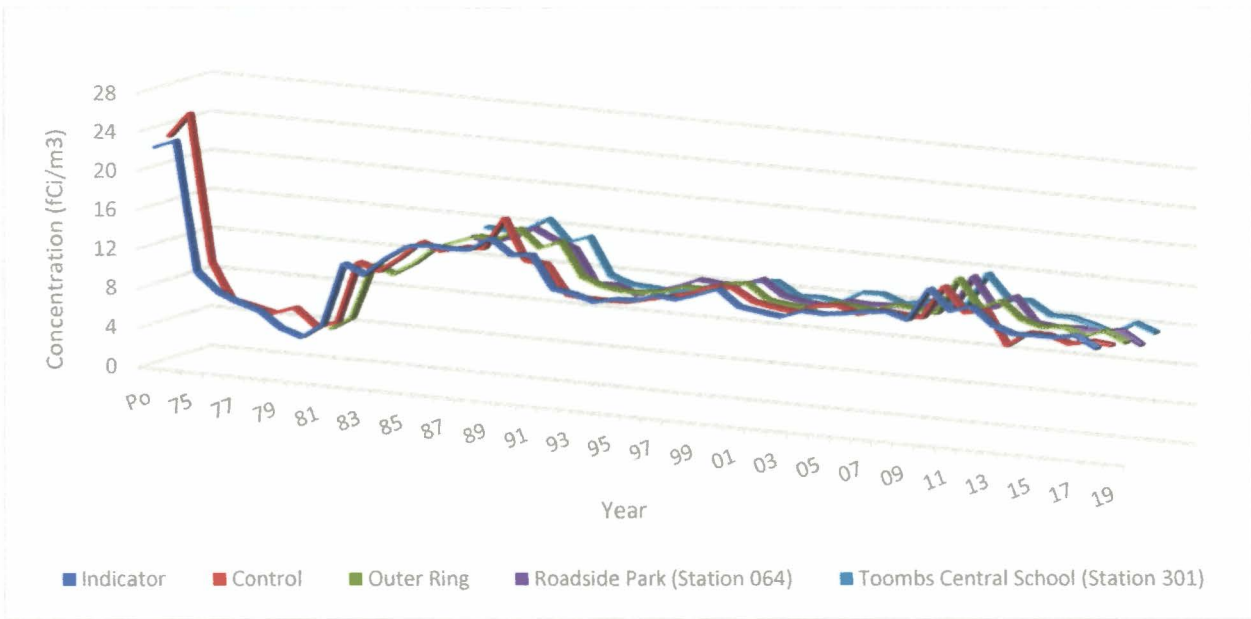
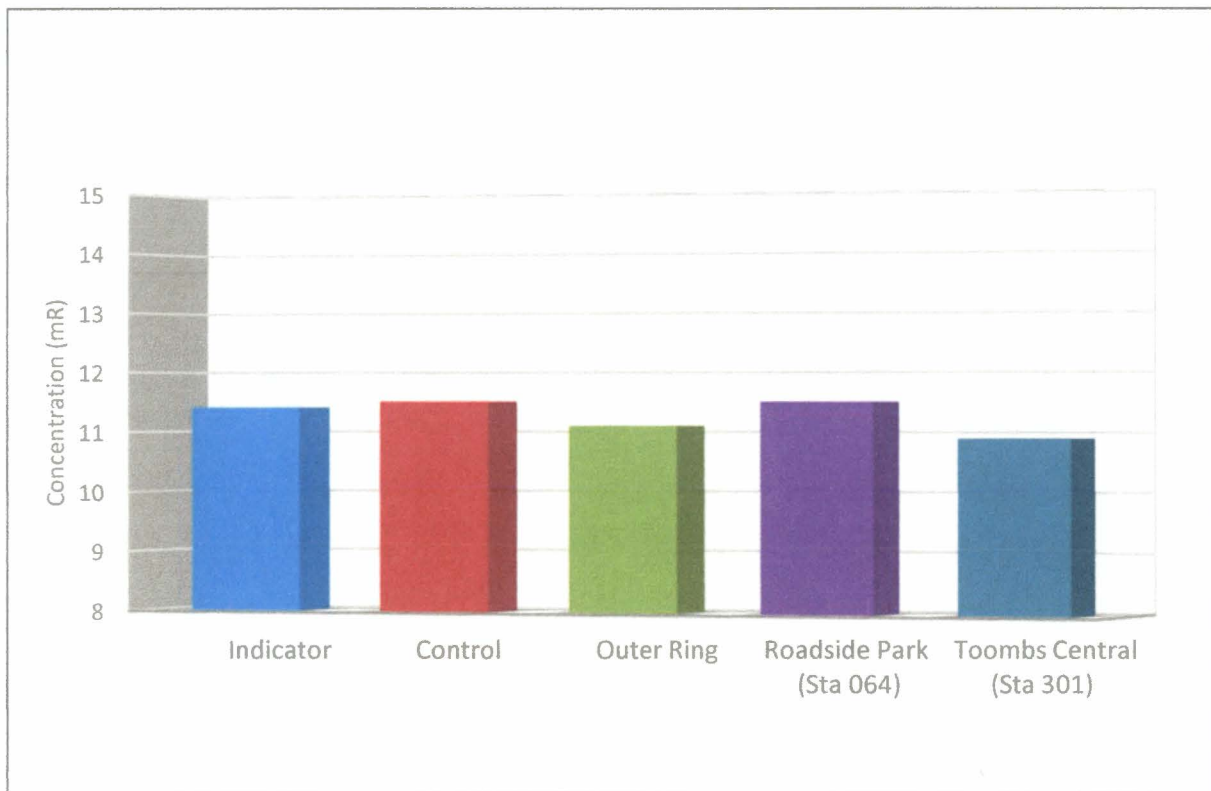


Figure 3-3. 2019 Average Exposure from Direct Radiation



3.3 Biological Media

Cs-137 was the only radionuclide analyzed across all three biological mediums. As indicated in Figure 3-4, the Cs-137 activity levels were below the respective MDCs and well below that of the respective RLs for each sample media for both the indicator and control stations.

3.3.1 Milk

In accordance with Tables 2-1 and 2-2, milk samples were collected semi-monthly from Station 304 (the state prison dairy) which was a control station located more than 10 miles from the plant. Since 1989, efforts to locate a reliable milk sample source within five miles of the plant have been unsuccessful and the 2019 land census did not identify a milk animal within five miles of the plant.

Gamma isotopic (including I-131 and Cs-137) analyses were performed on each collected milk sample and there were no detectable results for gamma isotopes.

3.3.2 Vegetation

In accordance with Tables 2-1 and 2-2, vegetation (forage) samples were collected monthly for gamma isotopic analyses at two indicator locations near the site boundary (Stations 106 and 112) and at one control station located about 21 miles from the plant (Station 416). Cs-137 was detected in both the indicator (average of 36.8 pCi/kg-wet) or control station samples (average of 7.5 pCi/kg-wet). This difference of 29.2 pCi/kg-wet is greater than the MDD of 16.9 pCi/kg-wet, which indicates a statistically discernible difference. However, the values are well below the MDC and RL for Cs-137 and are therefore not considered as an impact to the environment. The man-made radionuclide Cs-137 is periodically identified in vegetation samples and is generally attributed to offsite sources (such as weapons testing, Chernobyl, and Fukushima).

While Cs-137 and I-131 were periodically found in vegetation samples during pre-operation, the historical trends and the relationship between the indicator and control stations demonstrate that plant operations were having no adverse impact to the environment. The sample results have consistently been below the MDC and the RL for Cs-137 (80 and 2000 pCi/kg-wet, respectively).

During 2019, outside of Cs-137, no man-made gamma isotopes were detected in any Hatch REMP vegetation samples.

3.3.3 Fish

Fish samples were collected in accordance with the ODCM (as indicated in Table 2-1). For the semi-annual collections, the control location (Station 170) was located upriver of the plant intake



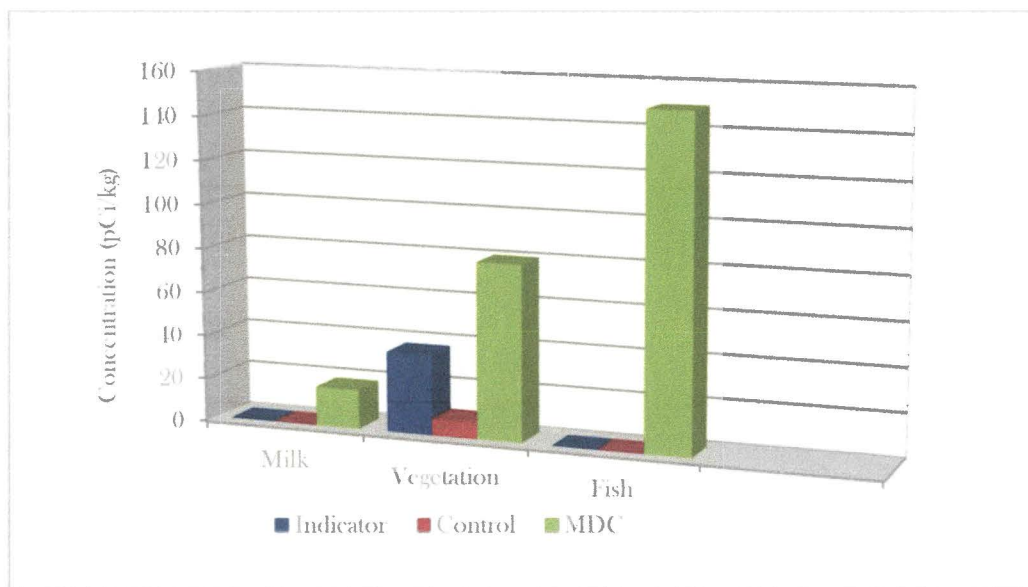
structure, and the indicator location (Station 172) was located downriver of the plant discharge structure.

Laboratory analysis did not indicate any radionuclide activity in 2019.

3.3.4 Biological Media Summary

There were no statistical differences, trends, or anomalies associated with the 2019 biological media samples when compared to historical data. Figure 3-4 below, details the 2019 Cs-137 concentration compared to the MDC.

Figure 3-4. 2019 Biological Media Average Cs-137 Concentrations



3.4 Surface Water

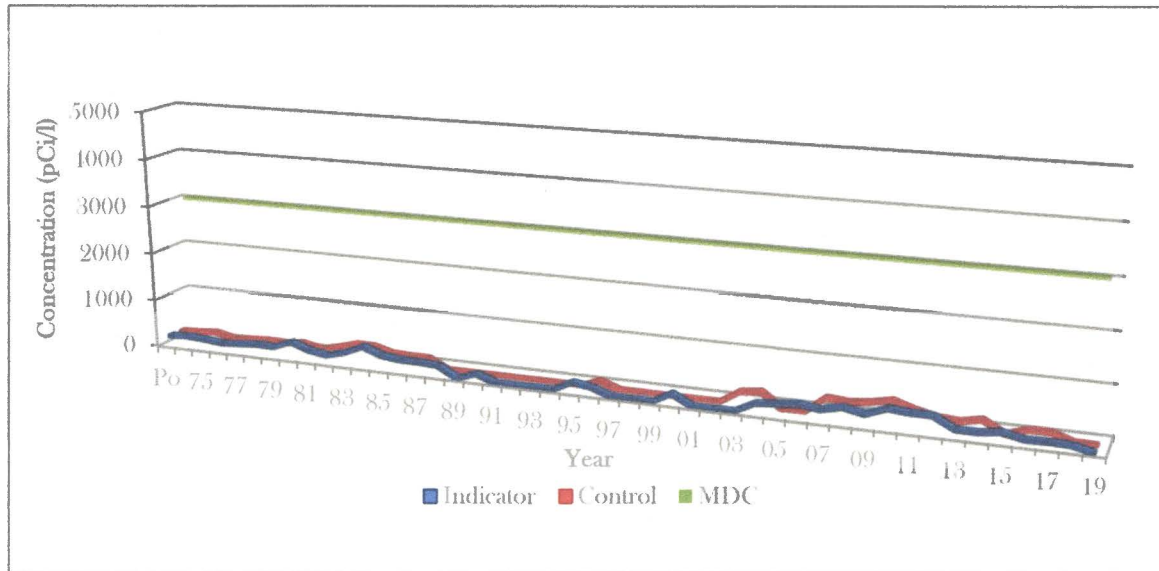
Composite river water samples were collected monthly at one upstream control location and at one downstream indicator location (shown on Map A-3 in Appendix A). The details of the sampling protocols are outlined in Tables 2-1 and Table 2-2. A gamma isotopic analysis was conducted on each monthly sample. The monthly aliquots were combined to form quarterly composite samples in order to be analyzed for tritium.

As provided in Table 3-1, there were no positive results during 2019 from the gamma isotopic analysis of the river water samples. Also indicated in Table 3-1, the average tritium concentration found at the indicator station was -80.2 pCi/l which was 6.9 pCi/l more than the average at the control station (-73.3 pCi/l). No MDD was calculated because both averages were negative.



Historically, the relationship between the indicator and control stations has remained consistent. Figure 3-5 below details the 2019 historical average tritium concentrations in river water.

Figure 3-5. Average Annual Tritium Concentrations in River Water



3.5 Sediment

Sediment was collected along the shoreline of the Altamaha River in the spring and fall at the upstream control station (No. 170) and the downstream indicator station (No. 172). A gamma isotopic analysis was performed on each sample. There were no man-made radionuclides detected in sediment samples, except for Cs-137, which is plotted along with biological media (Cs-137 across all detected mediums) in Section 3.3.4 and Figure 3-4. The Cs-137 average at the indicator stations was 43.60 pCi/kg which was 13.0 pCi/kg more than the control station average of 30.6 pCi/kg. No MDD was applied because the amount of samples are too small, however the values for Cs-137 in sediment were both below the MDC of 180 pCi/kg.

3.6 Interlaboratory Comparison Program

In accordance with ODCM 4.1.3, GPCEL participated in an Interlaboratory Comparison Program (ICP) which satisfied the requirements of Regulatory Guide 4.15, Revision 1, "Quality Assurance for Radiological Monitoring Programs (Normal Operations) - Effluent Streams and the Environment", February 1979. The ICP included the required determinations (sample medium/radionuclide combinations) included in the REMF.

The ICP was conducted by Eckert & Ziegler Analytics, Inc. (EZA) of Atlanta, Georgia. EZA has a documented Quality Assurance (QA) program and the capability to prepare Quality Control (QC) materials traceable to the National Institute of Standards and Technology. The ICP is a third-party



blind testing program which provided a means to ensure independent checks were performed on the accuracy and precision of the measurements of radioactive materials in environmental sample matrices. EZA supplied the crosscheck samples to GPCEL which performed routine laboratory analyses. Each of the specified analyses was performed three times.

The accuracy of each result was measured by the normalized deviation, which is the ratio of the reported average less the known value to the total error. An investigation was undertaken whenever the absolute value of the normalized deviation was greater than three or whenever the coefficient of variation was greater than 15% for all radionuclides other than Cr-51 and Fe-59. For Cr-51 and Fe-59, an investigation was undertaken when the coefficient of variation exceeded the values shown on Table 3-6 below:

Table 3-6. Interlaboratory Comparison Limits

Nuclide	Concentration *	Total Sample Activity (pCi)	Percent Coefficient of Variation
Cr-51	<300	NA	25
	NA	>1000	25
	>300	<1000	15
Fe-59	<80	NA	25
	>80	NA	15

* For air filters, concentration units are pCi/filter. For all other media, concentration units are pCi/liter (pCi/l).

As required by ODCM 4.1.3.3 and 7.1.2.3, a summary of the results of the GPCEL's participation in the ICP is provided in Table 3-7 for:

- gross beta and gamma isotopic analyses of an air filter
- gamma isotopic analyses of milk samples
- gross beta, tritium and gamma isotopic analyses of water samples

The 2019 analyses included tritium, gross beta and gamma emitting radio-nuclides in different matrices. The attached results for all analyses were within acceptable limits for accuracy (less than 15% coefficient of variation and less than 3.0 normalized deviations, except for Cr-51 and Fe-59, which are outlined in Table 3-6).



Table 3-7. Interlaboratory Comparison Summary

Analysis or Radionuclide	Date Prepared	Reported Average	Known Value	Standard Deviation EL	Uncertainty Analytics (3S)	Percent Coefficient of Variation	Normalized Deviation
I-131 ANALYSIS OF AN AIR CARTRIDGE (pCi/cartridge)							
I-131	9/12/2019	96.6	95.7	3.46	1.60	6.26	0.15
GAMMA ISOTOPIC ANALYSIS OF AN AIR FILTER (pCi/filter)							
Ce-141	9/12/2019	152	147	2.08	2.45	5.06	0.64
Co-58		165	154	2.83	2.57	4.98	1.38
Co-60		194	185	3.62	3.09	4.52	1.07
Cr-51		304	291	9.52	4.85	8.14	0.52
Cs-134		187	182	4.01	3.04	5.00	0.58
Cs-137		145	132	2.77	2.21	4.98	1.75
Fe-59		134	130	4.30	2.18	5.87	0.50
Mn-54		154	135	2.58	2.26	4.94	2.54
Zn-65		295	257	5.78	4.30	5.11	2.50
GROSS BETA ANALYSIS OF AN AIR FILTER (PCI/FILTER)							
Gross Beta	9/12/2019	181	221	7.07	3.69	5.07	-4.39
GAMMA ISOTOPIC ANALYSIS OF A MILK SAMPLE (PCI/LITER)							
Co-58	9/12/2019	177	175	3.46	2.92	5.88	0.17
Co-60		216	211	5.28	3.52	5.16	0.42
Cr-51		350	331	28.4	5.53	13.4	0.41
Cs-134		216	207	6.64	3.46	5.17	0.78
Cs-137		158	151	4.91	2.52	6.46	0.65
Fe-59		143	148	6.44	2.48	8.86	-0.37
I-131		97.3	92.1	5.11	1.54	9.99	0.54
Mn-54		166	154	8.00	2.58	7.34	1.01
Zn-65		315	293	8.23	4.90	6.55	1.07
Ce-141		173	167	6.19	2.79	7.10	0.46
GROSS BETA ANALYSIS OF WATER SAMPLE (PCI/LITER)							
Gross Beta	9/12/2019	268	252	4.38	4.22	5.88	1.04
GAMMA ISOTOPIC ANALYSIS OF WATER SAMPLES (PCI/LITER)							
Co-58	9/12/2019	140	133	5.11	1.55	6.76	0.74



Table 3-7. Interlaboratory Comparison Summary

Analysis or Radionuclide	Date Prepared	Reported Average	Known Value	Standard Deviation EL	Uncertainty Analytics (3S)	Percent Coefficient of Variation	Normalized Deviation
Co-60		168	160	5.17	1.98	5.69	0.82
Cr-51		294	251	26.3	4.16	14.65	1.00
Cs-134		163	157	8.53	1.98	7.00	0.54
Cs-137		123	114	1.72	1.72	6.15	1.17
Fe-59		117	112	5.46	1.50	9.14	0.48
I-131		94.7	89.9	2.44	1.24	8.88	0.57
Mn-54		129	117	3.80	2.26	6.55	1.39
Zn-65		245	222	7.51	2.74	6.90	1.33
Ce-141		138	127	7.87	1.43	8.80	0.87
TRITIUM ANALYSIS OF WATER SAMPLES (PCI/LITER)							
H-3	9/12/2019	13700	14000	455	234	4.30	-0.59
GAMMA ISOTOPIC ANALYSIS OF VEGETATION SAMPLES (PCI/LITER)							
Co-58	9/12/2019	290	286	7.39	4.78	7.26	0.21
Co-60		349	345	5.01	5.76	5.27	0.24
Cr-51		452	542	47.9	9.04	23.2	-0.86
Cs-134		362	339	8.00	5.66	5.02	1.29
Cs-137		248	247	14.9	4.12	7.03	0.08
Fe-59		252	243	9.73	4.05	10.5	0.33
Mn-54		260	252	7.25	4.22	7.38	0.43
Zn-65		513	480	29.2	8.01	8.79	0.73
Ce-141		261	273	8.84	4.56	8.57	-0.55



3.7 Groundwater

To ensure compliance with NEI 07-07 (Industry Ground Water Protection Initiative – Final Guidance Document), Southern Nuclear developed the Nuclear Management Procedure, Radiological Groundwater Protection Program. The procedure contains detailed site-specific monitoring plans, program technical bases, and communications protocol (to ensure that radioactive leaks and spills are addressed and communicated appropriately). In an effort to prevent future leaks of radioactive material to groundwater, SNC plants have established buried piping and tanks inspection programs. No changes were made to the Groundwater Protection Program in 2019.

Plant Hatch maintained the following wells (Table 3-8), which were sampled at a frequency that satisfied the requirements of NEI 07-07. Table 3-9 contains the results of the Groundwater Protection Program for tritium (in pCi/L). See Map A-4 in Appendix A for well locations.

Table 3-8. Groundwater Monitoring Locations

Well	Depth (Feet)	Monitoring Purpose
R1	82.9	Confined Aquifer Upgradient
R2	82.7	Confined Aquifer Near Diesel Generator Bldg.
R3	89.2	Confined Aquifer Near CST-1
R4	41	Dilution Line Near River Water Discharge Structure
R5	33.6	Between Subsurface Drain Lines Downgradient
R6	38.2	Between Subsurface Drain Lines Downgradient
NW2A	27	Water Table Near CST-2 Inside of Subsurface Drain
NW2B	27	Water Table Outside of Subsurface Drain
NW3A	26.5	Water Table Inside of Subsurface Drain
NW3B	25.3	Water Table Outside of Subsurface Drain
NW4A	27	Water Table Upgradient Inside of Subsurface Drain
NW5A	26.7	Water Table Upgradient Inside of Subsurface Drain
NW5B	26.3	Water Table Upgradient Outside of Subsurface Drain
NW6	27	Water Table Near Diesel Generator Bldg.
NW8	23	Water Table Near Diesel Generator Bldg.
NW9	26.1	Water Table Downgradient Inside of Subsurface Drain
NW10	26.2	Water Table Near CST-2
T3	18	Water Table Near Turbine Bldg.
T7	21.4	Water Table Near Diesel Generator Bldg.
T10	18.8	Water Table Near CST-1
T12	23.2	Water Table Near CST-1
T15	27.4	Water Table Near CST-1



Table 3-8. Groundwater Monitoring Locations

Well	Depth (Feet)	Monitoring Purpose
P15A	74.5	Confined Aquifer Near Turbine Bldg.
P15B	18	Water Table Near Turbine Bldg.
P17A	77	Confined Aquifer Near Diesel Generator Bldg.
P17B	14.8	Water Table Near Diesel Generator Bldg.
Deep Well 1	680	Backup Supply for Potable Water (infrequently used)
Deep Well 2	711	Plant Potable Water Supply
Deep Well 3	710	Potable Water Supply – Rec. Center, Firing Range, and Garage
NU-2 ¹	~60	Confined Aquifer Near CST-1
GW-1 ¹	19.6	Water Table downstream of CST-1 (outside CW tunnel boundary)
GW-2 ¹	19.7	Water Table downstream of CST-1 (inside CW tunnel boundary)
GW-3 ¹	21.0	Water Table downstream of CST-1 (outside CW tunnel boundary)

¹Added to the Groundwater Protection Program

Table 3-9. Groundwater Protection Program Tritium Results (pCi/L)

Well	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
R1	NS	166	NS	168
R2	NS	NDM	NS	NDM
R3	NS	2,850	NS	1,390
R4	NDM	NDM	NDM	NDM
R5	475	1,590	1,700	547
R6	233	NDM	NDM	NDM
NW2A	NS	382	NS	220
NW2B	NS	NDM	NS	NDM
NW3A	NS	NDM	NS	NDM
NW4A	NS	197	NS	NDM
NW5A	NS	NDM	NS	NDM
NW5B	NS	NS	NS	NDM
NW6	NS	NS	NS	NS
NW8	NS	NS	NS	NS
NW9	NS	NDM	NS	244
NW10	1,160,000	1,600,000	1,360,000	803,000
T3	NS	1,820	NS	2,130
T7	NS	320	NS	NDM
T10	11,420	2,243	9,640	3,871
T12	15,260	3,808	7,115	5,730
T15	2,601	2,368	7,259	1,264
P15A	NS	NDM	NS	NS



Table 3-9. Groundwater Protection Program Tritium Results (pCi/L)

Well	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
P15B	NS	1,220	NS	1,560
P17A	NS	NDM	NS	NDM
Deep Well 1	NS-OOS	NS-OOS	NS-OOS	NS-OOS
Deep Well 2	NS	0	NS	NDM
Deep Well 3	NS	0	NS	NDM
NU-2	81,200	58,400	36,200	71,100
GW-1	NDM	NDM	152	376
GW-2	NS	NDM	156	NDM
GW-3	NDM	NDM	NDM	NDM

NS – No Sample, either due to sample schedule, field conditions (i.e. dry well) or pump OOS (out of service).
 NDM – No Detectable Measurement

Plant Hatch has had historic tritium leaks into the perched aquifer from around the Unit 1 Condensate Storage Tank (CST), documented on 10 CFR 50.75(g) records. The tritium values in the wells that were found to be elevated above MDC were from previous CST and related piping leaks and were not considered present issues. In accordance with NEI 07-07 2.2.a, voluntary communication was made with State/local stakeholders on December 4, 2018 with regards to an identified release around the CST-2 area. This event is reflected in the tritium value of NW-10. The source of the leak has been repaired and tritium values have turned asymptotic. Historic leaks and spills were reported in accordance with NEI 07-07.



4 SURVEY SUMMARIES

4.1 Land Use Census

In accordance with ODCM 4.1.2, a land use census was conducted on November 7, 2019 that circumscribed each of the 16 compass sectors within a five mile radius in order to verify the locations of the nearest radiological receptor. The land use census results are tabulated in Table 4-1. The 2019 land use census did not indicate any major changes from 2018, therefore, a revision to the ODCM will not be required. Residents were located in each sector as identified below; no resident was identified closer than the current closest resident.

Table 4-1. Land Use Census Results

Sector	Residence	Milk Animal	Beef Cattle	Garden
Distance in Miles to the Nearest Location in Each Sector				
N	2.0	None	None	3.8
NNE	2.9	None	None	None
NE	3.3	None	4.7	3.1
ENE	4.2	None	4.1	None
E	3.0	None	None	None
ESE	3.8	None	None	None
SE	1.8	None	2.4	None
SSE	2.0	None	3.6	2.2
S	1.0	None	2.5	1.0
SSW	1.3	None	2.1	2.5
SW	1.1	None	2.6	1.6
WSW	1.0	None	3.6	2.0
W	1.1	None	2.7	None
WNW	1.1	None	None	None
NW	3.6	None	4.5	None
NNW	1.8	None	2.8	2.9

4.2 Altamaha River Survey

A survey of the Altamaha River downstream of the plant for approximately 50 miles (approximately river miles 66.5 to 117.0) was conducted on November 7, 2019 to identify any new withdrawal of water from the river for drinking, irrigation, or construction purposes.



Correspondence from the Georgia Environmental Protection Division (EPD) on October 29, 2019, indicated that no new agricultural or drinking water withdrawal permits had been issued at that time.

4.3 Meteorological Report Summary

The meteorological tower data collected throughout the year is analyzed and compared to previous results by a third-party consultant. For 2019, the meteorological tower data were comparable to previous years, as related to precipitation amounts (53.22”) and wind direction (from south-southwest at 10m, from the northeast at 60m and 100m). Therefore, no changes to REMP monitoring locations are warranted.



5 CONCLUSIONS

This report has confirmed SNCs conformance with the requirements of Chapter 4 of the ODCM and the objectives were to:

- 1) Determine the levels of radiation and the concentrations of radioactivity in the environs and;
- 2) Assess the radiological impact (if any) to the environment due to the operation of the HNP.

Based on the 2019 activities associated with the REMP, SNC offers the following conclusions:

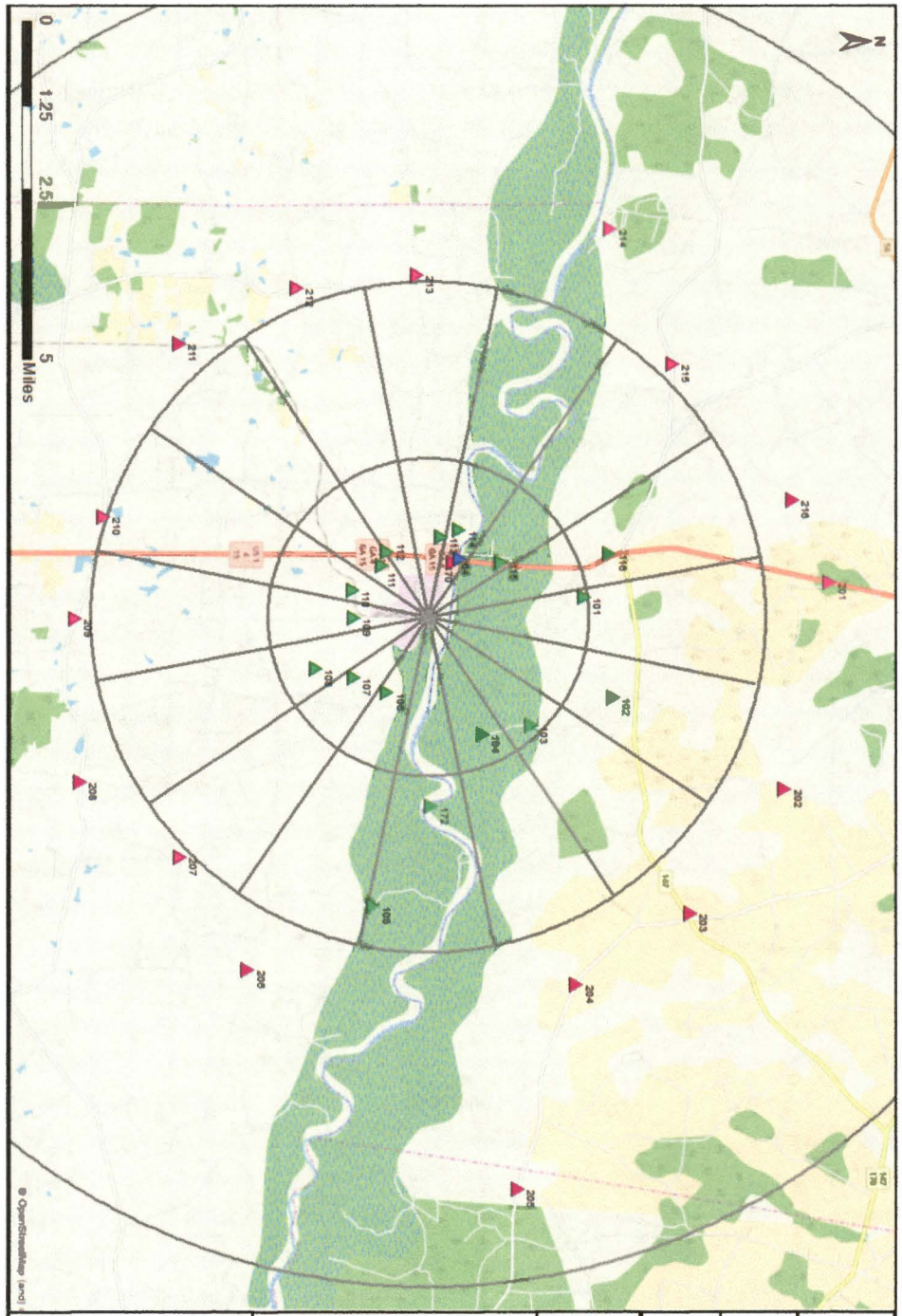
- Samples were collected and there were no deviations or anomalies that negatively affected the quality of the REMP
- Land use census and river survey did not reveal any changes
- Analytical results were below reporting levels
- These values were consistent with historical results which indicate no adverse radiological environmental impacts associated with the operation of HNP



APPENDIX A

Maps





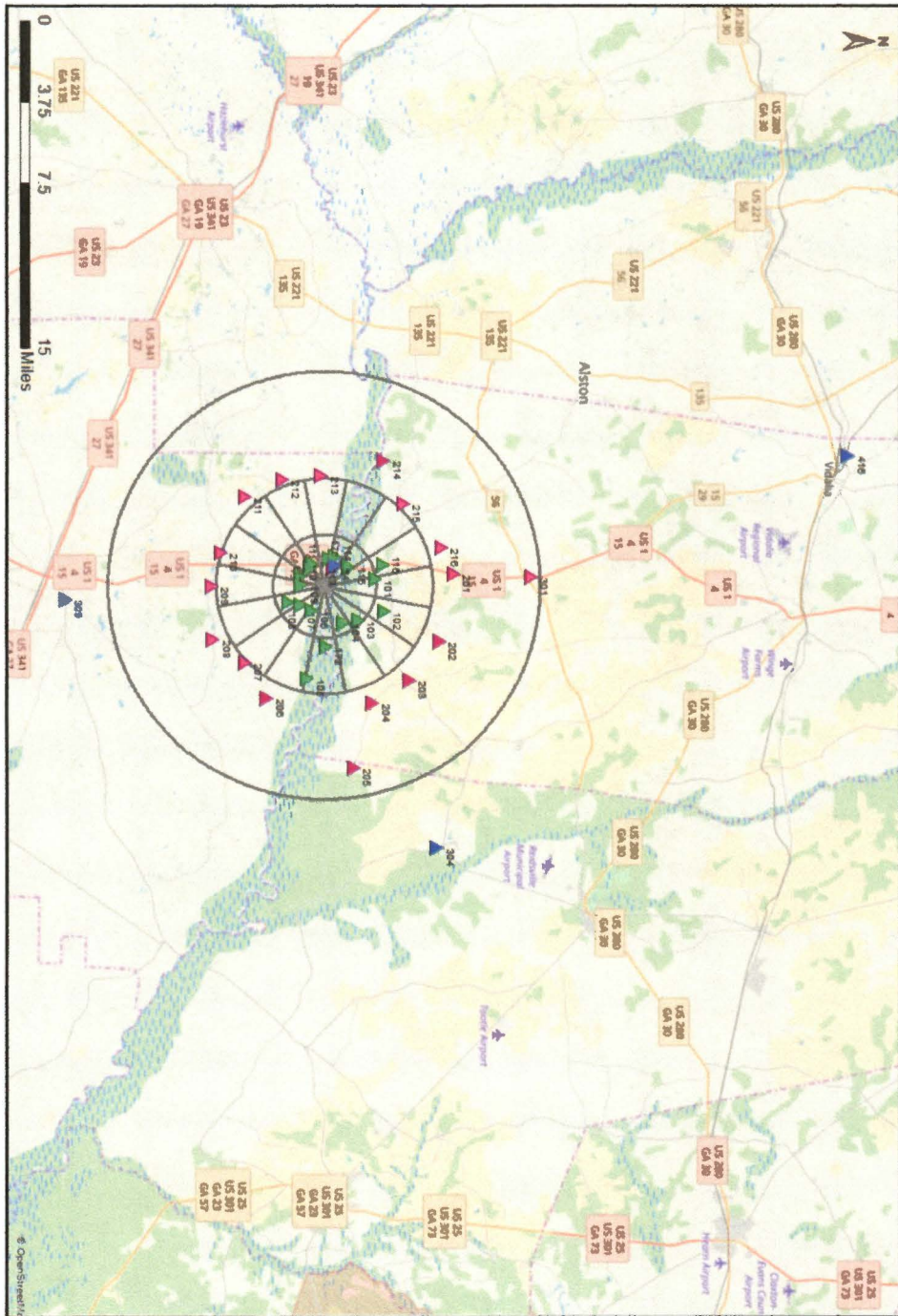
Legend:
 Indicator Stations - ▲
 Control Stations - ▲
 Other Stations - ▲





Edwin I. Hatch Nuclear Plant
 2019 Annual Radiological Environmental Report
 REMP Stations in Plant Vicinity

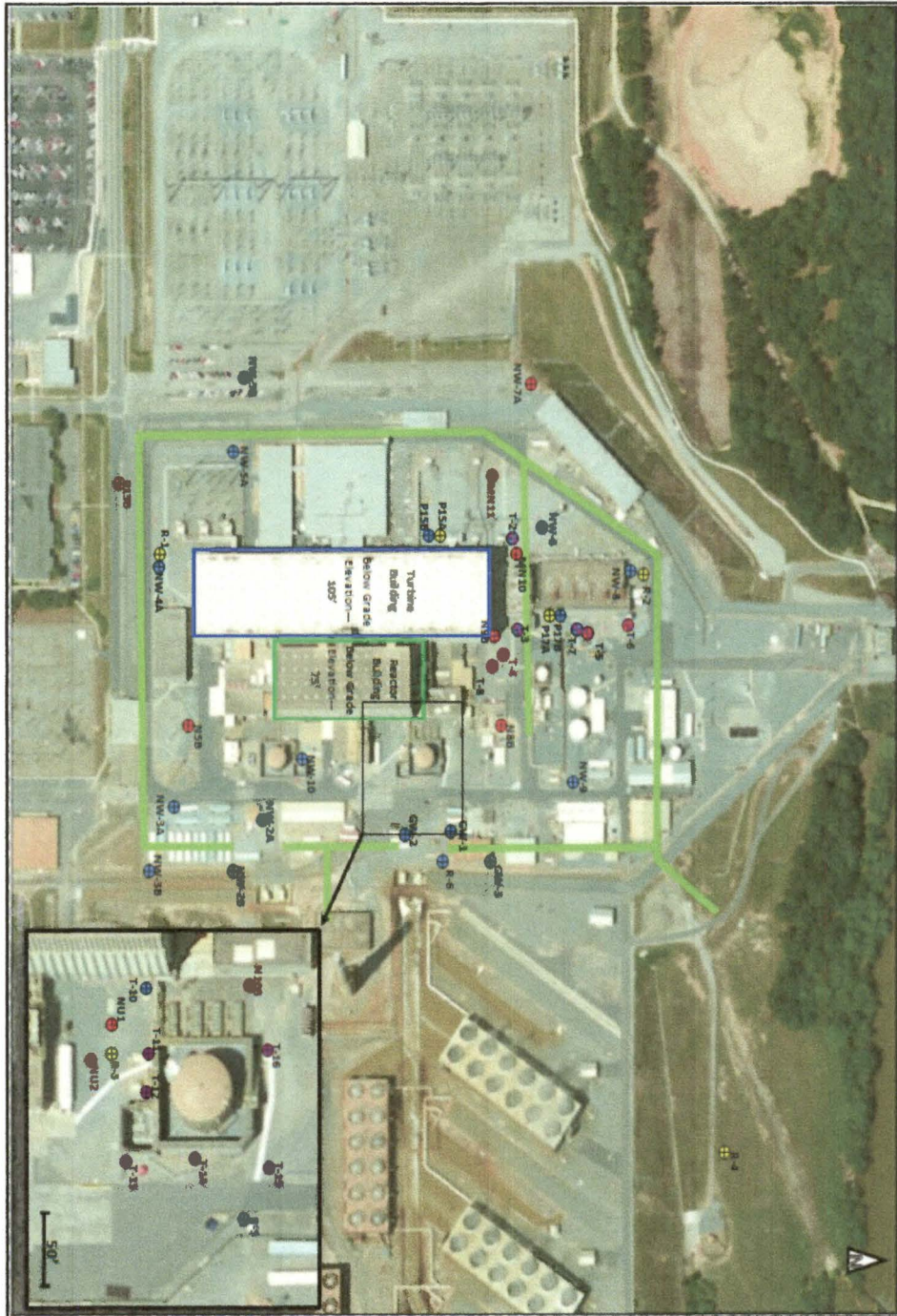


Drawn by: C. Groce
 April 15, 2020

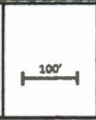
Appendix A
 Map A-1



Legend: Indicator Stations -  Control Stations -  Other Stations - 	Edwin I. Hatch Nuclear Plant 2015 Annual Radiological Environmental Report REMP Stations within 10 miles		Drawn by: C. Groce April 30, 2016 <small>April 15, 2020</small>	Appendix A Map A-2
	<small>© OpenStreetMap</small>			



- Legend
- Surficial Aquifer GWPP Well
 - Confined Aquifer GWPP Well
 - Non-G WPP Well
 - Leak Detection Well
 - Drain Approximation



Edwin I. Hatch Nuclear Plant
 2015 Annual Radiological Environmental Report
 Facility Groundwater Wells



Drawn by: C. Groce
 April 30, 2016

Appendix A
 Map A-3

APPENDIX B

Errata



There were no errata for the 2019 report.



APPENDIX C

Data

The following pages contain the individual data points from the 2019 reporting year. The units for the data points varies by media, as follows:

- Airborne Radioiodine and Particulates/Water/Milk – picocuries/liter (pCi/l)
- Sediment/Vegetation/Fish – picocuries/kilogram (pCi/kg)
- Direct Radiation – millirem (mR)



Matrix	Nuclide	Location ID	Collect Date	Result	Lab Sample ID
Charcoal Ct	I-131	103	1/2/2019	0	118784001
Air Filters	Gross Beta	103	1/2/2019	.01253	118783001
Charcoal Ct	I-131	103	1/8/2019	0	118836001
Air Filters	Gross Beta	103	1/8/2019	.01538	118835001
Air Filters	Gross Beta	103	1/15/2019	.02057	118979001
Charcoal Ct	I-131	103	1/15/2019	0	118980001
Air Filters	Gross Beta	103	1/22/2019	.0195	119005001
Charcoal Ct	I-131	103	1/22/2019	0	119006001
Charcoal Ct	I-131	103	1/29/2019	0	119068001
Air Filters	Gross Beta	103	1/29/2019	.02163	119067001
Air Filters	Gross Beta	103	2/5/2019	.01992	119214001
Charcoal Ct	I-131	103	2/5/2019	0	119215001
Air Filters	Gross Beta	103	2/12/2019	.03217	119332001
Charcoal Ct	I-131	103	2/12/2019	0	119333001
Air Filters	Gross Beta	103	2/19/2019	.01814	119420001
Charcoal Ct	I-131	103	2/19/2019	0	119421001
Charcoal Ct	I-131	103	2/26/2019	0	119506001
Air Filters	Gross Beta	103	2/26/2019	.01535	119505001
Air Filters	Gross Beta	103	3/5/2019	.01627	119579001
Charcoal Ct	I-131	103	3/5/2019	0	119580001
Charcoal Ct	I-131	103	3/12/2019	0	119662001
Air Filters	Gross Beta	103	3/12/2019	.02501	119659001
Charcoal Ct	I-131	103	3/19/2019	0	119794001
Air Filters	Gross Beta	103	3/19/2019	.02386	119793001
Air Filters	Gross Beta	103	3/26/2019	.02411	119847001
Air Qtr Comp	Cs-137	103	3/26/2019	0	120031001
Air Qtr Comp	Cs-134	103	3/26/2019	0	120031001
Air Qtr Comp	I-131	103	3/26/2019	0	120031001
Charcoal Ct	I-131	103	3/26/2019	0	119848001
Air Qtr Comp	Be-7	103	3/26/2019	.09329	120031001
Air Filters	Gross Beta	103	4/2/2019	.02041	119907001
Charcoal Ct	I-131	103	4/2/2019	0	119908001
Air Filters	Gross Beta	103	4/9/2019	.0179	119972001
Charcoal Ct	I-131	103	4/9/2019	0	119973001
Charcoal Ct	I-131	103	4/23/2019	0	120159001
Air Filters	Gross Beta	103	4/23/2019	.01613	120158001
Charcoal Ct	I-131	103	4/30/2019	0	120226001
Air Filters	Gross Beta	103	4/30/2019	.02618	120225001
Air Filters	Gross Beta	103	5/7/2019	.01627	120339001
Charcoal Ct	I-131	103	5/7/2019	0	120340001
Charcoal Ct	I-131	103	5/14/2019	0	120395001
Air Filters	Gross Beta	103	5/14/2019	.01706	120394001
Air Filters	Gross Beta	103	5/21/2019	.02613	120544001
Charcoal Ct	I-131	103	5/21/2019	0	120545001
Air Filters	Gross Beta	103	5/28/2019	.02747	120662001
Charcoal Ct	I-131	103	5/28/2019	0	120605001
Charcoal Ct	I-131	103	6/4/2019	0	120732001
Air Filters	Gross Beta	103	6/4/2019	.02967	120731001
Charcoal Ct	I-131	103	6/11/2019	0	120868001
Air Filters	Gross Beta	103	6/11/2019	.0175	120867001
Air Filters	Gross Beta	103	6/18/2019	.01726	120970001
Charcoal Ct	I-131	103	6/18/2019	0	120971001
Air Qtr Comp	Be-7	103	6/25/2019	.1088	121198001
Air Qtr Comp	Cs-137	103	6/25/2019	0	121198001
Air Qtr Comp	Cs-134	103	6/25/2019	0	121198001
Air Qtr Comp	I-131	103	6/25/2019	0	121198001
Air Filters	Gross Beta	103	6/25/2019	.0165	121035001
Charcoal Ct	I-131	103	6/25/2019	0	121036001

Air Filters	Gross Beta	103	7/1/2019	.02018	121193001
Charcoal Ct	I-131	103	7/1/2019	0	121194001
Charcoal Ct	I-131	103	7/9/2019	0	121244001
Air Filters	Gross Beta	103	7/9/2019	.02142	121243001
Charcoal Ct	I-131	103	7/16/2019	0	121380001
Air Filters	Gross Beta	103	7/16/2019	.02413	121379001
Air Filters	Gross Beta	103	7/23/2019	.02073	121487001
Charcoal Ct	I-131	103	7/23/2019	0	121488001
Air Filters	Gross Beta	103	7/30/2019	.01651	121639001
Charcoal Ct	I-131	103	7/30/2019	0	121640001
Charcoal Ct	I-131	103	8/6/2019	0	121723001
Air Filters	Gross Beta	103	8/6/2019	.0166	121722001
Air Filters	Gross Beta	103	8/13/2019	.0323	121814001
Charcoal Ct	I-131	103	8/13/2019	0	121815001
Charcoal Ct	I-131	103	8/20/2019	0	121991001
Air Filters	Gross Beta	103	8/20/2019	.02204	121990001
Air Filters	Gross Beta	103	8/27/2019	.01578	122102001
Charcoal Ct	I-131	103	8/27/2019	0	122103001
Charcoal Ct	I-131	103	9/3/2019	0	122235001
Air Filters	Gross Beta	103	9/3/2019	.02003	122234001
Charcoal Ct	I-131	103	9/10/2019	0	122357001
Air Filters	Gross Beta	103	9/10/2019	.03211	122356001
Air Filters	Gross Beta	103	9/17/2019	.0361	122487001
Charcoal Ct	I-131	103	9/17/2019	0	122488001
Charcoal Ct	I-131	103	9/24/2019	0	122639001
Air Qtr Comp	I-131	103	9/24/2019	0	122827001
Air Filters	Gross Beta	103	9/24/2019	.02651	122638001
Air Qtr Comp	Be-7	103	9/24/2019	.09989	122827001
Air Qtr Comp	Cs-137	103	9/24/2019	0	122827001
Air Qtr Comp	Cs-134	103	9/24/2019	0	122827001
Air Filters	Gross Beta	103	10/1/2019	.03709	122786001
Charcoal Ct	I-131	103	10/1/2019	0	122787001
Air Filters	Gross Beta	103	10/8/2019	.03281	122853001
Charcoal Ct	I-131	103	10/8/2019	0	122863001
Air Filters	Gross Beta	103	10/15/2019	.01821	122965001
Charcoal Ct	I-131	103	10/15/2019	0	122966001
Charcoal Ct	I-131	103	10/22/2019	0	123061001
Air Filters	Gross Beta	103	10/22/2019	.01673	123060001
Charcoal Ct	I-131	103	10/29/2019	0	123136001
Air Filters	Gross Beta	103	10/29/2019	.01752	123134001
Charcoal Ct	I-131	103	11/5/2019	0	123252001
Air Filters	Gross Beta	103	11/5/2019	.02366	123251001
Air Filters	Gross Beta	103	11/12/2019	.03292	123320001
Charcoal Ct	I-131	103	11/12/2019	0	123321001
Air Filters	Gross Beta	103	11/19/2019	.01779	123416001
Charcoal Ct	I-131	103	11/19/2019	0	123417001
Air Filters	Gross Beta	103	11/26/2019	.02583	123539001
Charcoal Ct	I-131	103	11/26/2019	0	123540001
Air Filters	Gross Beta	103	12/3/2019	.01956	123572001
Charcoal Ct	I-131	103	12/3/2019	0	123573001
Air Filters	Gross Beta	103	12/10/2019	.02417	123663001
Charcoal Ct	I-131	103	12/10/2019	0	123664001
Air Filters	Gross Beta	103	12/17/2019	.01914	123806001
Charcoal Ct	I-131	103	12/17/2019	0	123807001
Air Filters	Gross Beta	103	12/24/2019	.01739	123870001
Charcoal Ct	I-131	103	12/24/2019	0	123871001
Charcoal Ct	I-131	103	12/31/2019	0	123957001
Air Filters	Gross Beta	103	12/31/2019	.01681	123956001
Air Qtr Comp	I-131	103	12/31/2019	0	124082001

Air Qtr Comp	Cs-134	103	12/31/2019	0	124082001
Air Qtr Comp	Cs-137	103	12/31/2019	0	124082001
Air Qtr Comp	Be-7	103	12/31/2019	.06611	124082001
Vegetation	K-40	106	1/29/2019	4531.4	119069003
Vegetation	Be-7	106	1/29/2019	1050.5	119069003
Vegetation	Cs-137	106	1/29/2019	0	119069003
Vegetation	Cs-134	106	1/29/2019	0	119069003
Vegetation	I-131	106	1/29/2019	0	119069003
Vegetation	Cs-134	106	2/26/2019	0	119507003
Vegetation	K-40	106	2/26/2019	2427.8	119507003
Vegetation	Be-7	106	2/26/2019	7369.7	119507003
Vegetation	Cs-137	106	2/26/2019	46.728	119507003
Vegetation	I-131	106	2/26/2019	0	119507003
Vegetation	K-40	106	3/26/2019	2393.9	119849003
Vegetation	Be-7	106	3/26/2019	3359.6	119849003
Vegetation	Cs-137	106	3/26/2019	25.832	119849003
Vegetation	Cs-134	106	3/26/2019	0	119849003
Vegetation	I-131	106	3/26/2019	0	119849003
Vegetation	I-131	106	4/23/2019	0	120160003
Vegetation	K-40	106	4/23/2019	4394.2	120160003
Vegetation	Cs-137	106	4/23/2019	49.401	120160003
Vegetation	Be-7	106	4/23/2019	1298.2	120160003
Vegetation	Cs-134	106	4/23/2019	0	120160003
Vegetation	I-131	106	5/28/2019	0	120606003
Vegetation	Cs-134	106	5/28/2019	0	120606003
Vegetation	Cs-137	106	5/28/2019	66.853	120606003
Vegetation	Be-7	106	5/28/2019	946.16	120606003
Vegetation	K-40	106	5/28/2019	3607.3	120606003
Vegetation	Cs-134	106	6/24/2019	0	121038003
Vegetation	Cs-137	106	6/24/2019	89.026	121038003
Vegetation	Be-7	106	6/24/2019	2252.4	121038003
Vegetation	K-40	106	6/24/2019	3205.7	121038003
Vegetation	I-131	106	6/24/2019	0	121038003
Vegetation	K-40	106	7/30/2019	3697	121641003
Vegetation	I-131	106	7/30/2019	0	121641003
Vegetation	Cs-134	106	7/30/2019	0	121641003
Vegetation	Cs-137	106	7/30/2019	117.64	121641003
Vegetation	Be-7	106	7/30/2019	1800.5	121641003
Vegetation	I-131	106	8/27/2019	0	122104003
Vegetation	Cs-134	106	8/27/2019	0	122104003
Vegetation	Cs-137	106	8/27/2019	102.43	122104003
Vegetation	Be-7	106	8/27/2019	2087.9	122104003
Vegetation	K-40	106	8/27/2019	2651.8	122104003
Vegetation	Cs-134	106	9/24/2019	0	122612003
Vegetation	Cs-137	106	9/24/2019	140.95	122612003
Vegetation	Be-7	106	9/24/2019	3448.3	122612003
Vegetation	K-40	106	9/24/2019	4098.9	122612003
Vegetation	I-131	106	9/24/2019	0	122612003
Vegetation	Cs-137	106	10/29/2019	76.794	123137003
Vegetation	Be-7	106	10/29/2019	3292.3	123137003
Vegetation	K-40	106	10/29/2019	1457.9	123137003
Vegetation	I-131	106	10/29/2019	0	123137003
Vegetation	Cs-134	106	10/29/2019	0	123137003
Vegetation	Cs-134	106	12/3/2019	0	123571003
Vegetation	I-131	106	12/3/2019	0	123571003
Vegetation	K-40	106	12/3/2019	2559.2	123571003
Vegetation	Be-7	106	12/3/2019	8176.5	123571003
Vegetation	Cs-137	106	12/3/2019	86.387	123571003
Vegetation	I-131	106	12/24/2019	0	123868003

Vegetation	K-40	106	12/24/2019	1969.5	123868003
Vegetation	Be-7	106	12/24/2019	7989.5	123868003
Vegetation	Cs-137	106	12/24/2019	42.806	123868003
Vegetation	Cs-134	106	12/24/2019	0	123868003
Charcoal Ct	I-131	107	1/2/2019	0	118784002
Air Filters	Gross Beta	107	1/2/2019	.0118	118783002
Charcoal Ct	I-131	107	1/8/2019	0	118836002
Air Filters	Gross Beta	107	1/8/2019	.01518	118835002
Air Filters	Gross Beta	107	1/15/2019	.02031	118979002
Charcoal Ct	I-131	107	1/15/2019	0	118980002
Charcoal Ct	I-131	107	1/22/2019	0	119006002
Air Filters	Gross Beta	107	1/22/2019	.02265	119005002
Charcoal Ct	I-131	107	1/29/2019	0	119068002
Air Filters	Gross Beta	107	1/29/2019	.02178	119067002
Air Filters	Gross Beta	107	2/5/2019	.02317	119214002
Charcoal Ct	I-131	107	2/5/2019	0	119215002
Charcoal Ct	I-131	107	2/12/2019	0	119333002
Air Filters	Gross Beta	107	2/12/2019	.02322	119332002
Charcoal Ct	I-131	107	2/19/2019	0	119421002
Air Filters	Gross Beta	107	2/19/2019	.01768	119420002
Charcoal Ct	I-131	107	2/26/2019	0	119506002
Air Filters	Gross Beta	107	2/26/2019	.0169	119505002
Air Filters	Gross Beta	107	3/5/2019	.01517	119579002
Charcoal Ct	I-131	107	3/5/2019	0	119580002
Air Filters	Gross Beta	107	3/12/2019	.02447	119659002
Charcoal Ct	I-131	107	3/12/2019	0	119662002
Charcoal Ct	I-131	107	3/19/2019	0	119794002
Air Filters	Gross Beta	107	3/19/2019	.02706	119793002
Air Qtr Comp	Cs-137	107	3/26/2019	0	120031002
Air Filters	Gross Beta	107	3/26/2019	.02425	119847002
Air Qtr Comp	Cs-134	107	3/26/2019	0	120031002
Charcoal Ct	I-131	107	3/26/2019	0	119848002
Air Qtr Comp	Be-7	107	3/26/2019	.1126	120031002
Air Qtr Comp	I-131	107	3/26/2019	0	120031002
Charcoal Ct	I-131	107	4/2/2019	0	119908002
Air Filters	Gross Beta	107	4/2/2019	.02083	119907002
Charcoal Ct	I-131	107	4/9/2019	0	119973002
Air Filters	Gross Beta	107	4/9/2019	.01719	119972002
Air Filters	Gross Beta	107	4/16/2019	.01773	120070001
Charcoal Ct	I-131	107	4/16/2019	0	120071001
Charcoal Ct	I-131	107	4/23/2019	0	120159002
Air Filters	Gross Beta	107	4/23/2019	.01909	120158002
Charcoal Ct	I-131	107	4/30/2019	0	120226002
Air Filters	Gross Beta	107	4/30/2019	.02721	120225002
Air Filters	Gross Beta	107	5/7/2019	.01809	120339002
Charcoal Ct	I-131	107	5/7/2019	0	120340002
Air Filters	Gross Beta	107	5/14/2019	.01704	120394002
Charcoal Ct	I-131	107	5/14/2019	0	120395002
Charcoal Ct	I-131	107	5/21/2019	0	120545002
Air Filters	Gross Beta	107	5/21/2019	.02959	120544002
Air Filters	Gross Beta	107	5/28/2019	.03302	120662002
Charcoal Ct	I-131	107	5/28/2019	0	120605002
Charcoal Ct	I-131	107	6/4/2019	0	120732002
Air Filters	Gross Beta	107	6/4/2019	.03277	120731002
Air Filters	Gross Beta	107	6/11/2019	.02052	120867002
Charcoal Ct	I-131	107	6/11/2019	0	120868002
Charcoal Ct	I-131	107	6/18/2019	0	120971002
Air Filters	Gross Beta	107	6/18/2019	.02352	120970002
Air Filters	Gross Beta	107	6/25/2019	.02003	121035002

Charcoal Ct	I-131	107	6/25/2019	0	121036002
Air Qtr Comp	Be-7	107	6/25/2019	.08387	121198002
Air Qtr Comp	Cs-137	107	6/25/2019	0	121198002
Air Qtr Comp	Cs-134	107	6/25/2019	0	121198002
Air Qtr Comp	I-131	107	6/25/2019	0	121198002
Air Filters	Gross Beta	107	7/1/2019	.02688	121193002
Charcoal Ct	I-131	107	7/1/2019	0	121194002
Air Filters	Gross Beta	107	7/9/2019	.02196	121243002
Charcoal Ct	I-131	107	7/9/2019	0	121244002
Charcoal Ct	I-131	107	7/16/2019	0	121380002
Air Filters	Gross Beta	107	7/16/2019	.02179	121379002
Air Filters	Gross Beta	107	7/23/2019	.01859	121487002
Charcoal Ct	I-131	107	7/23/2019	0	121488002
Air Filters	Gross Beta	107	7/30/2019	.01989	121639002
Charcoal Ct	I-131	107	7/30/2019	0	121640002
Air Filters	Gross Beta	107	8/6/2019	.02061	121722002
Charcoal Ct	I-131	107	8/6/2019	0	121723002
Air Filters	Gross Beta	107	8/13/2019	.03086	121814002
Charcoal Ct	I-131	107	8/13/2019	0	121815002
Charcoal Ct	I-131	107	8/20/2019	0	121991002
Air Filters	Gross Beta	107	8/20/2019	.026	121990002
Charcoal Ct	I-131	107	8/27/2019	0	122103002
Air Filters	Gross Beta	107	8/27/2019	.01528	122102002
Air Filters	Gross Beta	107	9/3/2019	.02006	122234002
Charcoal Ct	I-131	107	9/3/2019	0	122235002
Charcoal Ct	I-131	107	9/10/2019	0	122357002
Air Filters	Gross Beta	107	9/10/2019	.04259	122356002
Charcoal Ct	I-131	107	9/17/2019	0	122488002
Air Filters	Gross Beta	107	9/17/2019	.04029	122487002
Air Qtr Comp	Cs-134	107	9/24/2019	0	122827002
Air Qtr Comp	Cs-137	107	9/24/2019	0	122827002
Air Filters	Gross Beta	107	9/24/2019	.02738	122638002
Charcoal Ct	I-131	107	9/24/2019	0	122639002
Air Qtr Comp	Be-7	107	9/24/2019	.07361	122827002
Air Qtr Comp	I-131	107	9/24/2019	0	122827002
Air Filters	Gross Beta	107	10/1/2019	.0358	122786002
Charcoal Ct	I-131	107	10/1/2019	0	122787002
Charcoal Ct	I-131	107	10/8/2019	0	122863002
Air Filters	Gross Beta	107	10/8/2019	.03116	122853002
Air Filters	Gross Beta	107	10/15/2019	.01746	122965002
Charcoal Ct	I-131	107	10/15/2019	0	122966002
Air Filters	Gross Beta	107	10/22/2019	.01763	123060002
Charcoal Ct	I-131	107	10/22/2019	0	123061002
Air Filters	Gross Beta	107	10/29/2019	.0189	123134002
Charcoal Ct	I-131	107	10/29/2019	0	123136002
Air Filters	Gross Beta	107	11/5/2019	.02469	123251002
Charcoal Ct	I-131	107	11/5/2019	0	123252002
Charcoal Ct	I-131	107	11/12/2019	0	123321002
Air Filters	Gross Beta	107	11/12/2019	.03442	123320002
Charcoal Ct	I-131	107	11/19/2019	0	123417002
Air Filters	Gross Beta	107	11/19/2019	.02074	123416002
Air Filters	Gross Beta	107	11/26/2019	.02332	123539002
Charcoal Ct	I-131	107	11/26/2019	0	123540002
Charcoal Ct	I-131	107	12/3/2019	0	123573002
Air Filters	Gross Beta	107	12/3/2019	.02298	123572002
Air Filters	Gross Beta	107	12/10/2019	.02389	123663002
Charcoal Ct	I-131	107	12/10/2019	0	123664002
Air Filters	Gross Beta	107	12/17/2019	.01927	123806002
Charcoal Ct	I-131	107	12/17/2019	0	123807002

Air Filters	Gross Beta	107	12/24/2019	.01776	123870002
Charcoal Ct	I-131	107	12/24/2019	0	123871002
Charcoal Ct	I-131	107	12/31/2019	0	123957002
Air Qtr Comp	Be-7	107	12/31/2019	.0655	124082002
Air Qtr Comp	Cs-137	107	12/31/2019	0	124082002
Air Filters	Gross Beta	107	12/31/2019	.01878	123956002
Air Qtr Comp	Cs-134	107	12/31/2019	0	124082002
Air Qtr Comp	I-131	107	12/31/2019	0	124082002
Charcoal Ct	I-131	112	1/2/2019	0	118784003
Air Filters	Gross Beta	112	1/2/2019	.01397	118783003
Air Filters	Gross Beta	112	1/8/2019	.01544	118835003
Charcoal Ct	I-131	112	1/8/2019	0	118836003
Charcoal Ct	I-131	112	1/15/2019	0	118980003
Air Filters	Gross Beta	112	1/15/2019	.01958	118979003
Charcoal Ct	I-131	112	1/22/2019	0	119006003
Air Filters	Gross Beta	112	1/22/2019	.01728	119005003
Air Filters	Gross Beta	112	1/29/2019	.02069	119067003
Charcoal Ct	I-131	112	1/29/2019	0	119068003
Vegetation	Cs-134	112	1/29/2019	0	119069002
Vegetation	Cs-137	112	1/29/2019	0	119069002
Vegetation	Be-7	112	1/29/2019	1726.2	119069002
Vegetation	K-40	112	1/29/2019	4149.3	119069002
Vegetation	I-131	112	1/29/2019	0	119069002
Air Filters	Gross Beta	112	2/5/2019	.01881	119214003
Charcoal Ct	I-131	112	2/5/2019	0	119215003
Charcoal Ct	I-131	112	2/12/2019	0	119333003
Air Filters	Gross Beta	112	2/12/2019	.02296	119332003
Air Filters	Gross Beta	112	2/19/2019	.01542	119420003
Charcoal Ct	I-131	112	2/19/2019	0	119421003
Charcoal Ct	I-131	112	2/26/2019	0	119506003
Air Filters	Gross Beta	112	2/26/2019	.01605	119505003
Vegetation	Be-7	112	2/26/2019	1500.3	119507002
Vegetation	K-40	112	2/26/2019	4551.1	119507002
Vegetation	Cs-137	112	2/26/2019	0	119507002
Vegetation	Cs-134	112	2/26/2019	0	119507002
Vegetation	I-131	112	2/26/2019	0	119507002
Air Filters	Gross Beta	112	3/5/2019	.01607	119579003
Charcoal Ct	I-131	112	3/5/2019	0	119580003
Charcoal Ct	I-131	112	3/12/2019	0	119662003
Air Filters	Gross Beta	112	3/12/2019	.0219	119659003
Charcoal Ct	I-131	112	3/19/2019	0	119794003
Air Filters	Gross Beta	112	3/19/2019	.0288	119793003
Air Filters	Gross Beta	112	3/26/2019	.02261	119847003
Charcoal Ct	I-131	112	3/26/2019	0	119848003
Air Qtr Comp	Be-7	112	3/26/2019	.1008	120031003
Air Qtr Comp	Cs-134	112	3/26/2019	0	120031003
Air Qtr Comp	Cs-137	112	3/26/2019	0	120031003
Air Qtr Comp	I-131	112	3/26/2019	0	120031003
Vegetation	Cs-134	112	3/26/2019	0	119849002
Vegetation	Cs-137	112	3/26/2019	0	119849002
Vegetation	K-40	112	3/26/2019	4349.1	119849002
Vegetation	Be-7	112	3/26/2019	513.38	119849002
Vegetation	I-131	112	3/26/2019	0	119849002
Air Filters	Gross Beta	112	4/2/2019	.0188	119907003
Charcoal Ct	I-131	112	4/2/2019	0	119908003
Charcoal Ct	I-131	112	4/9/2019	0	119973003
Air Filters	Gross Beta	112	4/9/2019	.01767	119972003
Charcoal Ct	I-131	112	4/16/2019	0	120071002
Air Filters	Gross Beta	112	4/16/2019	.01467	120070002

Charcoal Ct	I-131	112	4/23/2019	0	120159003
Air Filters	Gross Beta	112	4/23/2019	.01617	120158003
Vegetation	K-40	112	4/23/2019	5707.9	120160002
Vegetation	Be-7	112	4/23/2019	1076.3	120160002
Vegetation	Cs-137	112	4/23/2019	0	120160002
Vegetation	Cs-134	112	4/23/2019	0	120160002
Vegetation	I-131	112	4/23/2019	0	120160002
Air Filters	Gross Beta	112	4/30/2019	.02723	120225003
Charcoal Ct	I-131	112	4/30/2019	0	120226003
Air Filters	Gross Beta	112	5/7/2019	.01734	120339003
Charcoal Ct	I-131	112	5/7/2019	0	120340003
Air Filters	Gross Beta	112	5/14/2019	.01573	120394003
Charcoal Ct	I-131	112	5/14/2019	0	120395003
Air Filters	Gross Beta	112	5/21/2019	.02719	120544003
Charcoal Ct	I-131	112	5/21/2019	0	120545003
Air Filters	Gross Beta	112	5/28/2019	.02719	120662003
Charcoal Ct	I-131	112	5/28/2019	0	120605003
Vegetation	Cs-137	112	5/28/2019	29.826	120606002
Vegetation	Cs-134	112	5/28/2019	0	120606002
Vegetation	I-131	112	5/28/2019	0	120606002
Vegetation	K-40	112	5/28/2019	5259	120606002
Vegetation	Be-7	112	5/28/2019	1310.8	120606002
Charcoal Ct	I-131	112	6/4/2019	0	120732003
Air Filters	Gross Beta	112	6/4/2019	.02992	120731003
Air Filters	Gross Beta	112	6/11/2019	.01488	120867003
Charcoal Ct	I-131	112	6/11/2019	0	120868003
Charcoal Ct	I-131	112	6/18/2019	0	120971003
Air Filters	Gross Beta	112	6/18/2019	.01936	120970003
Vegetation	K-40	112	6/24/2019	3754.8	121038002
Vegetation	Be-7	112	6/24/2019	1226.8	121038002
Vegetation	Cs-137	112	6/24/2019	0	121038002
Vegetation	Cs-134	112	6/24/2019	0	121038002
Vegetation	I-131	112	6/24/2019	0	121038002
Air Qtr Comp	Cs-137	112	6/25/2019	0	121198003
Air Qtr Comp	I-131	112	6/25/2019	0	121198003
Air Qtr Comp	Cs-134	112	6/25/2019	0	121198003
Air Filters	Gross Beta	112	6/25/2019	.01617	121035003
Air Qtr Comp	Be-7	112	6/25/2019	.08241	121198003
Charcoal Ct	I-131	112	6/25/2019	0	121036003
Charcoal Ct	I-131	112	7/1/2019	0	121194003
Air Filters	Gross Beta	112	7/1/2019	.02428	121193003
Charcoal Ct	I-131	112	7/9/2019	0	121244003
Air Filters	Gross Beta	112	7/9/2019	.0225	121243003
Charcoal Ct	I-131	112	7/16/2019	0	121380003
Air Filters	Gross Beta	112	7/16/2019	.02093	121379003
Air Filters	Gross Beta	112	7/23/2019	.01779	121487003
Charcoal Ct	I-131	112	7/23/2019	0	121488003
Charcoal Ct	I-131	112	7/30/2019	0	121640003
Air Filters	Gross Beta	112	7/30/2019	.02032	121639003
Vegetation	Cs-137	112	7/30/2019	0	121641002
Vegetation	Be-7	112	7/30/2019	1990.8	121641002
Vegetation	K-40	112	7/30/2019	3928.6	121641002
Vegetation	Cs-134	112	7/30/2019	0	121641002
Vegetation	I-131	112	7/30/2019	0	121641002
Charcoal Ct	I-131	112	8/6/2019	0	121723003
Air Filters	Gross Beta	112	8/6/2019	.01779	121722003
Air Filters	Gross Beta	112	8/13/2019	.02932	121814003
Charcoal Ct	I-131	112	8/13/2019	0	121815003
Charcoal Ct	I-131	112	8/20/2019	0	121991003

Air Filters	Gross Beta	112	8/20/2019	.01962	121990003
Air Filters	Gross Beta	112	8/27/2019	.01427	122102003
Charcoal Ct	I-131	112	8/27/2019	0	122103003
Vegetation	Cs-137	112	8/27/2019	0	122104002
Vegetation	Be-7	112	8/27/2019	1610.8	122104002
Vegetation	K-40	112	8/27/2019	3539.5	122104002
Vegetation	Cs-134	112	8/27/2019	0	122104002
Vegetation	I-131	112	8/27/2019	0	122104002
Charcoal Ct	I-131	112	9/3/2019	0	122235003
Air Filters	Gross Beta	112	9/3/2019	.01919	122234003
Air Filters	Gross Beta	112	9/10/2019	.03503	122356003
Charcoal Ct	I-131	112	9/10/2019	0	122357003
Air Filters	Gross Beta	112	9/17/2019	.03664	122487003
Charcoal Ct	I-131	112	9/17/2019	0	122488003
Air Qtr Comp	Be-7	112	9/24/2019	.09733	122827003
Air Qtr Comp	Cs-137	112	9/24/2019	0	122827003
Air Qtr Comp	Cs-134	112	9/24/2019	0	122827003
Air Qtr Comp	I-131	112	9/24/2019	0	122827003
Air Filters	Gross Beta	112	9/24/2019	.02548	122638003
Charcoal Ct	I-131	112	9/24/2019	0	122639003
Vegetation	Cs-134	112	9/24/2019	0	122612002
Vegetation	Cs-137	112	9/24/2019	0	122612002
Vegetation	I-131	112	9/24/2019	0	122612002
Vegetation	Be-7	112	9/24/2019	3579.2	122612002
Vegetation	K-40	112	9/24/2019	5206.5	122612002
Charcoal Ct	I-131	112	10/1/2019	0	122787003
Air Filters	Gross Beta	112	10/1/2019	.03355	122786003
Air Filters	Gross Beta	112	10/8/2019	.03313	122853003
Charcoal Ct	I-131	112	10/8/2019	0	122863003
Charcoal Ct	I-131	112	10/15/2019	0	122966003
Air Filters	Gross Beta	112	10/15/2019	.01476	122965003
Air Filters	Gross Beta	112	10/22/2019	.01681	123060003
Charcoal Ct	I-131	112	10/22/2019	0	123061003
Charcoal Ct	I-131	112	10/29/2019	0	123136003
Air Filters	Gross Beta	112	10/29/2019	.02044	123134003
Vegetation	Cs-134	112	10/29/2019	0	123137002
Vegetation	Cs-137	112	10/29/2019	9.6785	123137002
Vegetation	Be-7	112	10/29/2019	1281.2	123137002
Vegetation	K-40	112	10/29/2019	2173.7	123137002
Vegetation	I-131	112	10/29/2019	0	123137002
Air Filters	Gross Beta	112	11/5/2019	.02408	123251003
Charcoal Ct	I-131	112	11/5/2019	0	123252003
Charcoal Ct	I-131	112	11/12/2019	0	123321003
Air Filters	Gross Beta	112	11/12/2019	.03662	123320003
Charcoal Ct	I-131	112	11/19/2019	0	123417003
Air Filters	Gross Beta	112	11/19/2019	.02026	123416003
Air Filters	Gross Beta	112	11/26/2019	.02541	123539003
Charcoal Ct	I-131	112	11/26/2019	0	123540003
Air Filters	Gross Beta	112	12/3/2019	.01538	123572003
Charcoal Ct	I-131	112	12/3/2019	0	123573003
Vegetation	Cs-137	112	12/3/2019	0	123571002
Vegetation	Be-7	112	12/3/2019	2968.6	123571002
Vegetation	K-40	112	12/3/2019	3525.9	123571002
Vegetation	I-131	112	12/3/2019	0	123571002
Vegetation	Cs-134	112	12/3/2019	0	123571002
Air Filters	Gross Beta	112	12/10/2019	.01987	123663003
Charcoal Ct	I-131	112	12/10/2019	0	123664003
Air Filters	Gross Beta	112	12/17/2019	.01952	123806003
Charcoal Ct	I-131	112	12/17/2019	0	123807003

Charcoal Ct	I-131	112	12/24/2019	0	123871003
Air Filters	Gross Beta	112	12/24/2019	.01794	123870003
Vegetation	K-40	112	12/24/2019	1886.3	123868002
Vegetation	Be-7	112	12/24/2019	2983.1	123868002
Vegetation	Cs-137	112	12/24/2019	0	123868002
Vegetation	Cs-134	112	12/24/2019	0	123868002
Vegetation	I-131	112	12/24/2019	0	123868002
Air Qtr Comp	Cs-137	112	12/31/2019	0	124082003
Charcoal Ct	I-131	112	12/31/2019	0	123957003
Air Qtr Comp	Be-7	112	12/31/2019	.08056	124082003
Air Qtr Comp	I-131	112	12/31/2019	0	124082003
Air Filters	Gross Beta	112	12/31/2019	.01722	123956003
Air Qtr Comp	Cs-134	112	12/31/2019	0	124082003
Charcoal Ct	I-131	116	1/2/2019	0	118784004
Air Filters	Gross Beta	116	1/2/2019	.01182	118783004
Charcoal Ct	I-131	116	1/8/2019	0	118836004
Air Filters	Gross Beta	116	1/8/2019	.01654	118835004
Charcoal Ct	I-131	116	1/15/2019	0	118980004
Air Filters	Gross Beta	116	1/15/2019	.01753	118979004
Air Filters	Gross Beta	116	1/22/2019	.01174	119005004
Charcoal Ct	I-131	116	1/22/2019	0	119006004
Charcoal Ct	I-131	116	1/29/2019	0	119068004
Air Filters	Gross Beta	116	1/29/2019	.01988	119067004
Charcoal Ct	I-131	116	2/5/2019	0	119215004
Air Filters	Gross Beta	116	2/5/2019	.02182	119214004
Air Filters	Gross Beta	116	2/12/2019	.02171	119332004
Charcoal Ct	I-131	116	2/12/2019	0	119333004
Charcoal Ct	I-131	116	2/19/2019	0	119421004
Air Filters	Gross Beta	116	2/19/2019	.02156	119420004
Air Filters	Gross Beta	116	2/26/2019	.01591	119505004
Charcoal Ct	I-131	116	2/26/2019	0	119506004
Air Filters	Gross Beta	116	3/5/2019	.01553	119579004
Charcoal Ct	I-131	116	3/5/2019	0	119580004
Charcoal Ct	I-131	116	3/12/2019	0	119662004
Air Filters	Gross Beta	116	3/12/2019	.02195	119659004
Charcoal Ct	I-131	116	3/19/2019	0	119794004
Air Filters	Gross Beta	116	3/19/2019	.02559	119793004
Air Filters	Gross Beta	116	3/26/2019	.02262	119847004
Charcoal Ct	I-131	116	3/26/2019	0	119848004
Air Qtr Comp	I-131	116	3/26/2019	0	120031004
Air Qtr Comp	Be-7	116	3/26/2019	.1216	120031004
Air Qtr Comp	Cs-137	116	3/26/2019	0	120031004
Air Qtr Comp	Cs-134	116	3/26/2019	0	120031004
Air Filters	Gross Beta	116	4/2/2019	.02119	119907004
Charcoal Ct	I-131	116	4/2/2019	0	119908004
Charcoal Ct	I-131	116	4/9/2019	0	119973004
Air Filters	Gross Beta	116	4/9/2019	.01546	119972004
Charcoal Ct	I-131	116	4/16/2019	0	120071003
Air Filters	Gross Beta	116	4/16/2019	.01537	120070003
Air Filters	Gross Beta	116	4/23/2019	.01777	120158004
Charcoal Ct	I-131	116	4/23/2019	0	120159004
Charcoal Ct	I-131	116	4/30/2019	0	120226004
Air Filters	Gross Beta	116	4/30/2019	.02627	120225004
Charcoal Ct	I-131	116	5/7/2019	0	120340004
Air Filters	Gross Beta	116	5/7/2019	.01749	120339004
Charcoal Ct	I-131	116	5/14/2019	0	120395004
Air Filters	Gross Beta	116	5/14/2019	.01508	120394004
Charcoal Ct	I-131	116	5/21/2019	0	120545004
Air Filters	Gross Beta	116	5/21/2019	.02443	120544004

Air Filters	Gross Beta	116	5/28/2019	.03135	120662004
Charcoal Ct	I-131	116	5/28/2019	0	120605004
Charcoal Ct	I-131	116	6/4/2019	0	120732004
Air Filters	Gross Beta	116	6/4/2019	.02874	120731004
Air Filters	Gross Beta	116	6/11/2019	.01721	120867004
Charcoal Ct	I-131	116	6/11/2019	0	120868004
Charcoal Ct	I-131	116	6/18/2019	0	120971004
Air Filters	Gross Beta	116	6/18/2019	.01883	120970004
Charcoal Ct	I-131	116	6/25/2019	0	121036004
Air Qtr Comp	Cs-137	116	6/25/2019	0	121198004
Air Qtr Comp	Cs-134	116	6/25/2019	0	121198004
Air Qtr Comp	I-131	116	6/25/2019	0	121198004
Air Filters	Gross Beta	116	6/25/2019	.01667	121035004
Air Qtr Comp	Be-7	116	6/25/2019	.09158	121198004
Air Filters	Gross Beta	116	7/1/2019	.02776	121193004
Charcoal Ct	I-131	116	7/1/2019	0	121194004
Air Filters	Gross Beta	116	7/9/2019	.02444	121243004
Charcoal Ct	I-131	116	7/9/2019	0	121244004
Charcoal Ct	I-131	116	7/16/2019	0	121380004
Air Filters	Gross Beta	116	7/16/2019	.0259	121379004
Air Filters	Gross Beta	116	7/23/2019	.02161	121487004
Charcoal Ct	I-131	116	7/23/2019	0	121488004
Air Filters	Gross Beta	116	7/30/2019	.02392	121639004
Charcoal Ct	I-131	116	7/30/2019	0	121640004
Air Filters	Gross Beta	116	8/6/2019	.01764	121722004
Charcoal Ct	I-131	116	8/6/2019	0	121723004
Charcoal Ct	I-131	116	8/13/2019	0	121815004
Air Filters	Gross Beta	116	8/13/2019	.02738	121814004
Air Filters	Gross Beta	116	8/20/2019	.02153	121990004
Charcoal Ct	I-131	116	8/20/2019	0	121991004
Air Filters	Gross Beta	116	8/27/2019	.01694	122102004
Charcoal Ct	I-131	116	8/27/2019	0	122103004
Air Filters	Gross Beta	116	9/3/2019	.01857	122234004
Charcoal Ct	I-131	116	9/3/2019	0	122235004
Air Filters	Gross Beta	116	9/10/2019	.03988	122356004
Charcoal Ct	I-131	116	9/10/2019	0	122357004
Charcoal Ct	I-131	116	9/17/2019	0	122488004
Air Filters	Gross Beta	116	9/17/2019	.03493	122487004
Air Filters	Gross Beta	116	9/24/2019	.02999	122638004
Charcoal Ct	I-131	116	9/24/2019	0	122639004
Air Qtr Comp	Cs-134	116	9/24/2019	0	122827004
Air Qtr Comp	I-131	116	9/24/2019	0	122827004
Air Qtr Comp	Be-7	116	9/24/2019	.0737	122827004
Air Qtr Comp	Cs-137	116	9/24/2019	0	122827004
Charcoal Ct	I-131	116	10/1/2019	0	122787004
Air Filters	Gross Beta	116	10/1/2019	.03663	122786004
Air Filters	Gross Beta	116	10/8/2019	.0322	122853004
Charcoal Ct	I-131	116	10/8/2019	0	122863004
Charcoal Ct	I-131	116	10/15/2019	0	122966004
Air Filters	Gross Beta	116	10/15/2019	.01683	122965004
Charcoal Ct	I-131	116	10/22/2019	0	123061004
Air Filters	Gross Beta	116	10/22/2019	.01626	123060004
Air Filters	Gross Beta	116	10/29/2019	.0188	123134004
Charcoal Ct	I-131	116	10/29/2019	0	123136004
Air Filters	Gross Beta	116	11/5/2019	.02566	123251004
Charcoal Ct	I-131	116	11/5/2019	0	123252004
Charcoal Ct	I-131	116	11/12/2019	0	123321004
Air Filters	Gross Beta	116	11/12/2019	.03154	123320004
Air Filters	Gross Beta	116	11/19/2019	.02011	123416004

Charcoal Ct	I-131	116	11/19/2019	0	123417004
Air Filters	Gross Beta	116	11/26/2019	.02434	123539004
Charcoal Ct	I-131	116	11/26/2019	0	123540004
Charcoal Ct	I-131	116	12/3/2019	0	123573004
Air Filters	Gross Beta	116	12/3/2019	.02244	123572004
Air Filters	Gross Beta	116	12/10/2019	.02309	123663004
Charcoal Ct	I-131	116	12/10/2019	0	123664004
Air Filters	Gross Beta	116	12/17/2019	.02044	123806004
Charcoal Ct	I-131	116	12/17/2019	0	123807004
Air Filters	Gross Beta	116	12/24/2019	.0213	123870004
Charcoal Ct	I-131	116	12/24/2019	0	123871004
Air Qtr Comp	Be-7	116	12/31/2019	.07093	124082004
Air Qtr Comp	Cs-137	116	12/31/2019	0	124082004
Air Qtr Comp	Cs-134	116	12/31/2019	0	124082004
Air Qtr Comp	I-131	116	12/31/2019	0	124082004
Charcoal Ct	I-131	116	12/31/2019	0	123957004
Air Filters	Gross Beta	116	12/31/2019	.0218	123956004
River Water	La-140	170	1/2/2019	0	118785001
River Water	Be-7	170	1/2/2019	0	118785001
River Water	K-40	170	1/2/2019	0	118785001
River Water	Mn-54	170	1/2/2019	0	118785001
River Water	Fe-59	170	1/2/2019	0	118785001
River Water	Co-58	170	1/2/2019	0	118785001
River Water	Co-60	170	1/2/2019	0	118785001
River Water	Zn-65	170	1/2/2019	0	118785001
River Water	Zr-95	170	1/2/2019	0	118785001
River Water	Nb-95	170	1/2/2019	0	118785001
River Water	I-131	170	1/2/2019	0	118785001
River Water	Cs-134	170	1/2/2019	0	118785001
River Water	Cs-137	170	1/2/2019	0	118785001
River Water	Ba-140	170	1/2/2019	0	118785001
H-3 Water	Tritium	170	1/2/2019	-77.5	119056001
River Water	Be-7	170	2/5/2019	0	119208001
River Water	K-40	170	2/5/2019	0	119208001
River Water	Mn-54	170	2/5/2019	0	119208001
River Water	Fe-59	170	2/5/2019	0	119208001
River Water	Co-58	170	2/5/2019	0	119208001
River Water	La-140	170	2/5/2019	0	119208001
River Water	Co-60	170	2/5/2019	0	119208001
River Water	Zn-65	170	2/5/2019	0	119208001
River Water	Zr-95	170	2/5/2019	0	119208001
River Water	Nb-95	170	2/5/2019	0	119208001
River Water	I-131	170	2/5/2019	0	119208001
River Water	Cs-134	170	2/5/2019	0	119208001
River Water	Cs-137	170	2/5/2019	0	119208001
River Water	Ba-140	170	2/5/2019	0	119208001
River Water	Nb-95	170	3/5/2019	0	119581001
River Water	I-131	170	3/5/2019	0	119581001
River Water	Cs-134	170	3/5/2019	0	119581001
River Water	Cs-137	170	3/5/2019	0	119581001
River Water	Ba-140	170	3/5/2019	0	119581001
River Water	La-140	170	3/5/2019	0	119581001
River Water	Be-7	170	3/5/2019	0	119581001
River Water	K-40	170	3/5/2019	0	119581001
River Water	Mn-54	170	3/5/2019	0	119581001
River Water	Fe-59	170	3/5/2019	0	119581001
River Water	Co-58	170	3/5/2019	0	119581001
River Water	Co-60	170	3/5/2019	0	119581001
River Water	Zn-65	170	3/5/2019	0	119581001

River Water	Zr-95	170	3/5/2019	0	119581001
River Water	La-140	170	4/2/2019	0	119909001
River Water	Be-7	170	4/2/2019	0	119909001
River Water	K-40	170	4/2/2019	0	119909001
River Water	Mn-54	170	4/2/2019	0	119909001
River Water	Fe-59	170	4/2/2019	0	119909001
River Water	Co-58	170	4/2/2019	0	119909001
River Water	Co-60	170	4/2/2019	0	119909001
River Water	Zn-65	170	4/2/2019	0	119909001
River Water	Zr-95	170	4/2/2019	0	119909001
River Water	Nb-95	170	4/2/2019	0	119909001
River Water	I-131	170	4/2/2019	0	119909001
River Water	Cs-134	170	4/2/2019	0	119909001
River Water	Cs-137	170	4/2/2019	0	119909001
River Water	Ba-140	170	4/2/2019	0	119909001
H-3 Water	Tritium	170	4/2/2019	-31.4	120033001
River Water	Ba-140	170	5/7/2019	0	120341001
River Water	La-140	170	5/7/2019	0	120341001
River Water	Be-7	170	5/7/2019	0	120341001
River Water	K-40	170	5/7/2019	0	120341001
River Water	Cs-137	170	5/7/2019	0	120341001
River Water	Cs-134	170	5/7/2019	0	120341001
River Water	I-131	170	5/7/2019	0	120341001
River Water	Nb-95	170	5/7/2019	0	120341001
River Water	Zr-95	170	5/7/2019	0	120341001
River Water	Zn-65	170	5/7/2019	0	120341001
River Water	Co-60	170	5/7/2019	0	120341001
River Water	Mn-54	170	5/7/2019	0	120341001
River Water	Fe-59	170	5/7/2019	0	120341001
River Water	Co-58	170	5/7/2019	0	120341001
Sediment	K-40	170	5/7/2019	8984.9	120342001
Sediment	Be-7	170	5/7/2019	151.35	120342001
Sediment	Cs-137	170	5/7/2019	0	120342001
Sediment	Cs-134	170	5/7/2019	0	120342001
Sediment	Co-60	170	5/7/2019	0	120342001
Sediment	Co-58	170	5/7/2019	0	120342001
River Water	K-40	170	6/4/2019	0	120730001
River Water	Mn-54	170	6/4/2019	0	120730001
River Water	Fe-59	170	6/4/2019	0	120730001
River Water	Co-58	170	6/4/2019	0	120730001
River Water	Co-60	170	6/4/2019	0	120730001
River Water	Zn-65	170	6/4/2019	0	120730001
River Water	Zr-95	170	6/4/2019	0	120730001
River Water	Nb-95	170	6/4/2019	0	120730001
River Water	I-131	170	6/4/2019	0	120730001
River Water	Cs-134	170	6/4/2019	0	120730001
River Water	Cs-137	170	6/4/2019	0	120730001
River Water	Ba-140	170	6/4/2019	0	120730001
River Water	La-140	170	6/4/2019	0	120730001
River Water	Be-7	170	6/4/2019	0	120730001
River Water	Be-7	170	7/2/2019	0	121195001
River Water	K-40	170	7/2/2019	0	121195001
River Water	Mn-54	170	7/2/2019	0	121195001
River Water	Fe-59	170	7/2/2019	0	121195001
River Water	Co-58	170	7/2/2019	0	121195001
River Water	Co-60	170	7/2/2019	0	121195001
River Water	Zn-65	170	7/2/2019	0	121195001
River Water	Zr-95	170	7/2/2019	0	121195001
River Water	Nb-95	170	7/2/2019	0	121195001

River Water	I-131	170	7/2/2019	0	121195001
River Water	Cs-134	170	7/2/2019	0	121195001
River Water	Cs-137	170	7/2/2019	0	121195001
River Water	Ba-140	170	7/2/2019	0	121195001
River Water	La-140	170	7/2/2019	0	121195001
H-3 Water	Tritium	170	7/2/2019	-161	121373001
River Water	Fe-59	170	8/6/2019	0	121721001
River Water	Co-58	170	8/6/2019	0	121721001
River Water	Co-60	170	8/6/2019	0	121721001
River Water	Zn-65	170	8/6/2019	0	121721001
River Water	Zr-95	170	8/6/2019	0	121721001
River Water	Nb-95	170	8/6/2019	0	121721001
River Water	I-131	170	8/6/2019	0	121721001
River Water	Cs-134	170	8/6/2019	0	121721001
River Water	Cs-137	170	8/6/2019	0	121721001
River Water	Ba-140	170	8/6/2019	0	121721001
River Water	La-140	170	8/6/2019	0	121721001
River Water	Be-7	170	8/6/2019	0	121721001
River Water	K-40	170	8/6/2019	0	121721001
River Water	Mn-54	170	8/6/2019	0	121721001
River Water	Cs-134	170	9/3/2019	0	122233001
River Water	Cs-137	170	9/3/2019	0	122233001
River Water	Ba-140	170	9/3/2019	0	122233001
River Water	La-140	170	9/3/2019	0	122233001
River Water	Be-7	170	9/3/2019	0	122233001
River Water	K-40	170	9/3/2019	0	122233001
River Water	Mn-54	170	9/3/2019	0	122233001
River Water	Fe-59	170	9/3/2019	0	122233001
River Water	Co-58	170	9/3/2019	0	122233001
River Water	Co-60	170	9/3/2019	0	122233001
River Water	Zn-65	170	9/3/2019	0	122233001
River Water	Zr-95	170	9/3/2019	0	122233001
River Water	Nb-95	170	9/3/2019	0	122233001
River Water	I-131	170	9/3/2019	0	122233001
River Water	Zr-95	170	10/1/2019	0	122788001
River Water	Nb-95	170	10/1/2019	0	122788001
River Water	I-131	170	10/1/2019	0	122788001
River Water	Cs-134	170	10/1/2019	0	122788001
River Water	Cs-137	170	10/1/2019	0	122788001
River Water	Ba-140	170	10/1/2019	0	122788001
River Water	La-140	170	10/1/2019	0	122788001
River Water	Be-7	170	10/1/2019	0	122788001
River Water	K-40	170	10/1/2019	0	122788001
River Water	Mn-54	170	10/1/2019	0	122788001
River Water	Fe-59	170	10/1/2019	0	122788001
River Water	Co-58	170	10/1/2019	0	122788001
River Water	Co-60	170	10/1/2019	0	122788001
River Water	Zn-65	170	10/1/2019	0	122788001
H-3 Water	Tritium	170	10/1/2019	-23.2	123043001
River Water	K-40	170	11/5/2019	0	123248001
River Water	Mn-54	170	11/5/2019	0	123248001
River Water	Fe-59	170	11/5/2019	0	123248001
River Water	Co-58	170	11/5/2019	0	123248001
River Water	Co-60	170	11/5/2019	0	123248001
River Water	Zn-65	170	11/5/2019	0	123248001
River Water	Zr-95	170	11/5/2019	0	123248001
River Water	Nb-95	170	11/5/2019	0	123248001
River Water	I-131	170	11/5/2019	0	123248001
River Water	Cs-134	170	11/5/2019	0	123248001

River Water	Cs-137	170	11/5/2019	0	123248001
River Water	Ba-140	170	11/5/2019	0	123248001
River Water	La-140	170	11/5/2019	0	123248001
River Water	Be-7	170	11/5/2019	0	123248001
Sediment	Cs-134	170	11/5/2019	0	123247001
Sediment	Cs-137	170	11/5/2019	30.566	123247001
Sediment	Be-7	170	11/5/2019	0	123247001
Sediment	K-40	170	11/5/2019	9284.5	123247001
Sediment	Co-60	170	11/5/2019	0	123247001
Sediment	Co-58	170	11/5/2019	0	123247001
River Water	Co-60	170	12/3/2019	0	123570001
River Water	Zn-65	170	12/3/2019	0	123570001
River Water	Zr-95	170	12/3/2019	0	123570001
River Water	Nb-95	170	12/3/2019	0	123570001
River Water	I-131	170	12/3/2019	0	123570001
River Water	Cs-134	170	12/3/2019	0	123570001
River Water	Cs-137	170	12/3/2019	0	123570001
River Water	Ba-140	170	12/3/2019	0	123570001
River Water	La-140	170	12/3/2019	0	123570001
River Water	Be-7	170	12/3/2019	0	123570001
River Water	K-40	170	12/3/2019	0	123570001
River Water	Co-58	170	12/3/2019	0	123570001
River Water	Fe-59	170	12/3/2019	0	123570001
River Water	Mn-54	170	12/3/2019	0	123570001
Fish	Mn-54	170 Bass	4/14/2019	0	120065003
Fish	Fe-59	170 Bass	4/14/2019	0	120065003
Fish	Co-58	170 Bass	4/14/2019	0	120065003
Fish	Co-60	170 Bass	4/14/2019	0	120065003
Fish	Zn-65	170 Bass	4/14/2019	0	120065003
Fish	Cs-134	170 Bass	4/14/2019	0	120065003
Fish	Cs-137	170 Bass	4/14/2019	0	120065003
Fish	Be-7	170 Bass	4/14/2019	0	120065003
Fish	K-40	170 Bass	4/14/2019	3434.2	120065003
Fish	Mn-54	170 Bass	10/22/2019	0	123070001
Fish	Fe-59	170 Bass	10/22/2019	0	123070001
Fish	Co-58	170 Bass	10/22/2019	0	123070001
Fish	Co-60	170 Bass	10/22/2019	0	123070001
Fish	Zn-65	170 Bass	10/22/2019	0	123070001
Fish	Cs-134	170 Bass	10/22/2019	0	123070001
Fish	Cs-137	170 Bass	10/22/2019	0	123070001
Fish	Be-7	170 Bass	10/22/2019	0	123070001
Fish	K-40	170 Bass	10/22/2019	2992.5	123070001
Fish	Mn-54	170 Carp	10/22/2019	0	123070002
Fish	Fe-59	170 Carp	10/22/2019	0	123070002
Fish	Co-58	170 Carp	10/22/2019	0	123070002
Fish	Co-60	170 Carp	10/22/2019	0	123070002
Fish	Zn-65	170 Carp	10/22/2019	0	123070002
Fish	Cs-134	170 Carp	10/22/2019	0	123070002
Fish	Cs-137	170 Carp	10/22/2019	0	123070002
Fish	Be-7	170 Carp	10/22/2019	0	123070002
Fish	K-40	170 Carp	10/22/2019	2914.9	123070002
Fish	Co-60	170 Mullet	4/14/2019	0	120065004
Fish	Zn-65	170 Mullet	4/14/2019	0	120065004
Fish	Cs-134	170 Mullet	4/14/2019	0	120065004
Fish	Cs-137	170 Mullet	4/14/2019	0	120065004
Fish	Be-7	170 Mullet	4/14/2019	0	120065004
Fish	K-40	170 Mullet	4/14/2019	3012.8	120065004
Fish	Mn-54	170 Mullet	4/14/2019	0	120065004
Fish	Fe-59	170 Mullet	4/14/2019	0	120065004

Fish	Co-58	170 Mullet	4/14/2019	0	120065004
River Water	Cs-134	172	1/2/2019	0	118785002
River Water	Cs-137	172	1/2/2019	0	118785002
River Water	Ba-140	172	1/2/2019	0	118785002
River Water	La-140	172	1/2/2019	0	118785002
River Water	Be-7	172	1/2/2019	0	118785002
River Water	K-40	172	1/2/2019	0	118785002
River Water	Mn-54	172	1/2/2019	0	118785002
River Water	Fe-59	172	1/2/2019	0	118785002
H-3 Water	Tritium	172	1/2/2019	-64	119056002
River Water	Zn-65	172	1/2/2019	0	118785002
River Water	Zr-95	172	1/2/2019	0	118785002
River Water	Nb-95	172	1/2/2019	0	118785002
River Water	Co-58	172	1/2/2019	0	118785002
River Water	Co-60	172	1/2/2019	0	118785002
River Water	I-131	172	1/2/2019	0	118785002
River Water	Ba-140	172	2/5/2019	0	119208002
River Water	Be-7	172	2/5/2019	0	119208002
River Water	K-40	172	2/5/2019	0	119208002
River Water	Mn-54	172	2/5/2019	0	119208002
River Water	Fe-59	172	2/5/2019	0	119208002
River Water	Co-58	172	2/5/2019	0	119208002
River Water	Co-60	172	2/5/2019	0	119208002
River Water	Cs-137	172	2/5/2019	0	119208002
River Water	Zn-65	172	2/5/2019	0	119208002
River Water	Zr-95	172	2/5/2019	0	119208002
River Water	Nb-95	172	2/5/2019	0	119208002
River Water	I-131	172	2/5/2019	0	119208002
River Water	Cs-134	172	2/5/2019	0	119208002
River Water	La-140	172	2/5/2019	0	119208002
River Water	Fe-59	172	3/5/2019	0	119581002
River Water	Co-58	172	3/5/2019	0	119581002
River Water	Co-60	172	3/5/2019	0	119581002
River Water	Zn-65	172	3/5/2019	0	119581002
River Water	Zr-95	172	3/5/2019	0	119581002
River Water	Nb-95	172	3/5/2019	0	119581002
River Water	I-131	172	3/5/2019	0	119581002
River Water	Cs-134	172	3/5/2019	0	119581002
River Water	Cs-137	172	3/5/2019	0	119581002
River Water	Ba-140	172	3/5/2019	0	119581002
River Water	La-140	172	3/5/2019	0	119581002
River Water	Be-7	172	3/5/2019	0	119581002
River Water	K-40	172	3/5/2019	0	119581002
River Water	Mn-54	172	3/5/2019	0	119581002
River Water	Co-58	172	4/2/2019	0	119909002
River Water	Co-60	172	4/2/2019	0	119909002
River Water	Zn-65	172	4/2/2019	0	119909002
River Water	Zr-95	172	4/2/2019	0	119909002
River Water	Nb-95	172	4/2/2019	0	119909002
River Water	I-131	172	4/2/2019	0	119909002
River Water	Cs-134	172	4/2/2019	0	119909002
River Water	Cs-137	172	4/2/2019	0	119909002
River Water	Ba-140	172	4/2/2019	0	119909002
River Water	La-140	172	4/2/2019	0	119909002
River Water	Be-7	172	4/2/2019	0	119909002
River Water	K-40	172	4/2/2019	0	119909002
River Water	Mn-54	172	4/2/2019	0	119909002
River Water	Fe-59	172	4/2/2019	0	119909002
H-3 Water	Tritium	172	4/2/2019	-244	120033002

River Water	K-40	172	5/7/2019	0	120341002
River Water	Be-7	172	5/7/2019	0	120341002
River Water	La-140	172	5/7/2019	0	120341002
River Water	Ba-140	172	5/7/2019	0	120341002
River Water	Cs-137	172	5/7/2019	0	120341002
River Water	Cs-134	172	5/7/2019	0	120341002
River Water	I-131	172	5/7/2019	0	120341002
River Water	Mn-54	172	5/7/2019	0	120341002
River Water	Fe-59	172	5/7/2019	0	120341002
River Water	Co-58	172	5/7/2019	0	120341002
River Water	Co-60	172	5/7/2019	0	120341002
River Water	Zn-65	172	5/7/2019	0	120341002
River Water	Zr-95	172	5/7/2019	0	120341002
River Water	Nb-95	172	5/7/2019	0	120341002
Sediment	Cs-134	172	5/7/2019	0	120342002
Sediment	Co-58	172	5/7/2019	0	120342002
Sediment	Co-60	172	5/7/2019	0	120342002
Sediment	K-40	172	5/7/2019	7773.4	120342002
Sediment	Be-7	172	5/7/2019	0	120342002
Sediment	Cs-137	172	5/7/2019	0	120342002
River Water	Cs-137	172	6/4/2019	0	120730002
River Water	Ba-140	172	6/4/2019	0	120730002
River Water	La-140	172	6/4/2019	0	120730002
River Water	Be-7	172	6/4/2019	0	120730002
River Water	K-40	172	6/4/2019	0	120730002
River Water	Mn-54	172	6/4/2019	0	120730002
River Water	Fe-59	172	6/4/2019	0	120730002
River Water	Co-58	172	6/4/2019	0	120730002
River Water	Co-60	172	6/4/2019	0	120730002
River Water	Zn-65	172	6/4/2019	0	120730002
River Water	Zr-95	172	6/4/2019	0	120730002
River Water	Nb-95	172	6/4/2019	0	120730002
River Water	I-131	172	6/4/2019	0	120730002
River Water	Cs-134	172	6/4/2019	0	120730002
River Water	Ba-140	172	7/2/2019	0	121195002
River Water	La-140	172	7/2/2019	0	121195002
River Water	Be-7	172	7/2/2019	0	121195002
River Water	K-40	172	7/2/2019	0	121195002
River Water	Mn-54	172	7/2/2019	0	121195002
River Water	Fe-59	172	7/2/2019	0	121195002
River Water	Co-58	172	7/2/2019	0	121195002
River Water	Co-60	172	7/2/2019	0	121195002
River Water	Zn-65	172	7/2/2019	0	121195002
River Water	Zr-95	172	7/2/2019	0	121195002
River Water	Nb-95	172	7/2/2019	0	121195002
River Water	I-131	172	7/2/2019	0	121195002
River Water	Cs-134	172	7/2/2019	0	121195002
River Water	Cs-137	172	7/2/2019	0	121195002
H-3 Water	Tritium	172	7/2/2019	-2.57	121373002
River Water	Co-58	172	8/6/2019	0	121721002
River Water	Co-60	172	8/6/2019	0	121721002
River Water	Zn-65	172	8/6/2019	0	121721002
River Water	Zr-95	172	8/6/2019	0	121721002
River Water	Nb-95	172	8/6/2019	0	121721002
River Water	I-131	172	8/6/2019	0	121721002
River Water	Cs-134	172	8/6/2019	0	121721002
River Water	Cs-137	172	8/6/2019	0	121721002
River Water	Ba-140	172	8/6/2019	0	121721002
River Water	La-140	172	8/6/2019	0	121721002

River Water	Be-7	172	8/6/2019	0	121721002
River Water	K-40	172	8/6/2019	0	121721002
River Water	Mn-54	172	8/6/2019	0	121721002
River Water	Fe-59	172	8/6/2019	0	121721002
River Water	K-40	172	9/3/2019	0	122233002
River Water	Mn-54	172	9/3/2019	0	122233002
River Water	Fe-59	172	9/3/2019	0	122233002
River Water	Co-58	172	9/3/2019	0	122233002
River Water	Co-60	172	9/3/2019	0	122233002
River Water	Zn-65	172	9/3/2019	0	122233002
River Water	Zr-95	172	9/3/2019	0	122233002
River Water	Nb-95	172	9/3/2019	0	122233002
River Water	I-131	172	9/3/2019	0	122233002
River Water	Cs-134	172	9/3/2019	0	122233002
River Water	Cs-137	172	9/3/2019	0	122233002
River Water	Ba-140	172	9/3/2019	0	122233002
River Water	La-140	172	9/3/2019	0	122233002
River Water	Be-7	172	9/3/2019	0	122233002
River Water	Fe-59	172	10/1/2019	0	122788002
River Water	Co-58	172	10/1/2019	0	122788002
River Water	Co-60	172	10/1/2019	0	122788002
River Water	Zn-65	172	10/1/2019	0	122788002
River Water	Zr-95	172	10/1/2019	0	122788002
River Water	Nb-95	172	10/1/2019	0	122788002
River Water	I-131	172	10/1/2019	0	122788002
River Water	Cs-134	172	10/1/2019	0	122788002
H-3 Water	Tritium	172	10/1/2019	-10.4	123043002
River Water	Cs-137	172	10/1/2019	0	122788002
River Water	Ba-140	172	10/1/2019	0	122788002
River Water	La-140	172	10/1/2019	0	122788002
River Water	Be-7	172	10/1/2019	0	122788002
River Water	K-40	172	10/1/2019	0	122788002
River Water	Mn-54	172	10/1/2019	0	122788002
River Water	Fe-59	172	11/5/2019	0	123248002
River Water	Co-58	172	11/5/2019	0	123248002
River Water	Nb-95	172	11/5/2019	0	123248002
River Water	Co-60	172	11/5/2019	0	123248002
River Water	I-131	172	11/5/2019	0	123248002
River Water	Zn-65	172	11/5/2019	0	123248002
River Water	Cs-134	172	11/5/2019	0	123248002
River Water	Zr-95	172	11/5/2019	0	123248002
River Water	Cs-137	172	11/5/2019	0	123248002
River Water	Ba-140	172	11/5/2019	0	123248002
River Water	La-140	172	11/5/2019	0	123248002
River Water	Be-7	172	11/5/2019	0	123248002
River Water	K-40	172	11/5/2019	0	123248002
River Water	Mn-54	172	11/5/2019	0	123248002
Sediment	Cs-134	172	11/5/2019	0	123247002
Sediment	Cs-137	172	11/5/2019	43.567	123247002
Sediment	Be-7	172	11/5/2019	586.17	123247002
Sediment	K-40	172	11/5/2019	10867	123247002
Sediment	Co-58	172	11/5/2019	0	123247002
Sediment	Co-60	172	11/5/2019	0	123247002
River Water	Fe-59	172	12/3/2019	0	123570002
River Water	Co-58	172	12/3/2019	0	123570002
River Water	Co-60	172	12/3/2019	0	123570002
River Water	Zn-65	172	12/3/2019	0	123570002
River Water	Zr-95	172	12/3/2019	0	123570002
River Water	Nb-95	172	12/3/2019	0	123570002

River Water	I-131	172	12/3/2019	0	123570002
River Water	Cs-134	172	12/3/2019	0	123570002
River Water	Cs-137	172	12/3/2019	0	123570002
River Water	Ba-140	172	12/3/2019	0	123570002
River Water	La-140	172	12/3/2019	0	123570002
River Water	Be-7	172	12/3/2019	0	123570002
River Water	K-40	172	12/3/2019	0	123570002
River Water	Mn-54	172	12/3/2019	0	123570002
Fish	Be-7	172 Bass	4/14/2019	0	120065001
Fish	Cs-137	172 Bass	4/14/2019	0	120065001
Fish	Cs-134	172 Bass	4/14/2019	0	120065001
Fish	Zn-65	172 Bass	4/14/2019	0	120065001
Fish	Co-60	172 Bass	4/14/2019	0	120065001
Fish	Co-58	172 Bass	4/14/2019	0	120065001
Fish	Fe-59	172 Bass	4/14/2019	0	120065001
Fish	Mn-54	172 Bass	4/14/2019	0	120065001
Fish	K-40	172 Bass	4/14/2019	2976.4	120065001
Fish	K-40	172 Bass	10/22/2019	3811	123070003
Fish	Be-7	172 Bass	10/22/2019	0	123070003
Fish	Cs-137	172 Bass	10/22/2019	0	123070003
Fish	Cs-134	172 Bass	10/22/2019	0	123070003
Fish	Zn-65	172 Bass	10/22/2019	0	123070003
Fish	Co-60	172 Bass	10/22/2019	0	123070003
Fish	Co-58	172 Bass	10/22/2019	0	123070003
Fish	Fe-59	172 Bass	10/22/2019	0	123070003
Fish	Mn-54	172 Bass	10/22/2019	0	123070003
Fish	Co-60	172 Catfish	10/22/2019	0	123070004
Fish	Zn-65	172 Catfish	10/22/2019	0	123070004
Fish	Cs-134	172 Catfish	10/22/2019	0	123070004
Fish	Cs-137	172 Catfish	10/22/2019	0	123070004
Fish	Be-7	172 Catfish	10/22/2019	0	123070004
Fish	K-40	172 Catfish	10/22/2019	3254.5	123070004
Fish	Mn-54	172 Catfish	10/22/2019	0	123070004
Fish	Fe-59	172 Catfish	10/22/2019	0	123070004
Fish	Co-58	172 Catfish	10/22/2019	0	123070004
Fish	Mn-54	172 Mullet	4/14/2019	0	120065002
Fish	Fe-59	172 Mullet	4/14/2019	0	120065002
Fish	Co-58	172 Mullet	4/14/2019	0	120065002
Fish	Co-60	172 Mullet	4/14/2019	0	120065002
Fish	Zn-65	172 Mullet	4/14/2019	0	120065002
Fish	Cs-134	172 Mullet	4/14/2019	0	120065002
Fish	Cs-137	172 Mullet	4/14/2019	0	120065002
Fish	Be-7	172 Mullet	4/14/2019	0	120065002
Fish	K-40	172 Mullet	4/14/2019	3047.4	120065002
Air Filters	Gross Beta	304	1/2/2019	.0121	118783005
Charcoal Ct	I-131	304	1/2/2019	0	118784005
Air Filters	Gross Beta	304	1/8/2019	.01265	118835005
Charcoal Ct	I-131	304	1/8/2019	0	118836005
Charcoal Ct	I-131	304	1/15/2019	0	118980005
Air Filters	Gross Beta	304	1/15/2019	.01799	118979005
Air Filters	Gross Beta	304	1/22/2019	.01902	119005005
Charcoal Ct	I-131	304	1/22/2019	0	119006005
Air Filters	Gross Beta	304	1/29/2019	.01933	119067005
Charcoal Ct	I-131	304	1/29/2019	0	119068005
Air Filters	Gross Beta	304	2/5/2019	.02133	119214005
Charcoal Ct	I-131	304	2/5/2019	0	119215005
Charcoal Ct	I-131	304	2/12/2019	0	119333005
Air Filters	Gross Beta	304	2/12/2019	.02212	119332005
Charcoal Ct	I-131	304	2/19/2019	0	119421005

Air Filters	Gross Beta	304	2/19/2019	.01613	119420005
Air Filters	Gross Beta	304	2/26/2019	.0129	119505005
Charcoal Ct	I-131	304	2/26/2019	0	119506005
Charcoal Ct	I-131	304	3/5/2019	0	119580005
Air Filters	Gross Beta	304	3/5/2019	.01562	119579005
Charcoal Ct	I-131	304	3/12/2019	0	119662005
Air Filters	Gross Beta	304	3/12/2019	.02323	119659005
Air Filters	Gross Beta	304	3/19/2019	.02317	119793005
Charcoal Ct	I-131	304	3/19/2019	0	119794005
Air Qtr Comp	Cs-134	304	3/26/2019	0	120031005
Air Qtr Comp	Be-7	304	3/26/2019	.1062	120031005
Air Filters	Gross Beta	304	3/26/2019	.02717	119847005
Air Qtr Comp	Cs-137	304	3/26/2019	0	120031005
Charcoal Ct	I-131	304	3/26/2019	0	119848005
Air Qtr Comp	I-131	304	3/26/2019	0	120031005
Charcoal Ct	I-131	304	4/2/2019	0	119908005
Air Filters	Gross Beta	304	4/2/2019	.01933	119907005
Air Filters	Gross Beta	304	4/9/2019	.01452	119972005
Charcoal Ct	I-131	304	4/9/2019	0	119973005
Charcoal Ct	I-131	304	4/16/2019	0	120071004
Air Filters	Gross Beta	304	4/16/2019	.01652	120070004
Air Filters	Gross Beta	304	4/23/2019	.0141	120158005
Charcoal Ct	I-131	304	4/23/2019	0	120159005
Charcoal Ct	I-131	304	4/30/2019	0	120226005
Air Filters	Gross Beta	304	4/30/2019	.02709	120225005
Charcoal Ct	I-131	304	5/7/2019	0	120340005
Air Filters	Gross Beta	304	5/7/2019	.01483	120339005
Air Filters	Gross Beta	304	5/14/2019	.01687	120394005
Charcoal Ct	I-131	304	5/14/2019	0	120395005
Charcoal Ct	I-131	304	5/21/2019	0	120545005
Air Filters	Gross Beta	304	5/21/2019	.02715	120544005
Air Filters	Gross Beta	304	5/28/2019	.02993	120662005
Charcoal Ct	I-131	304	5/28/2019	0	120605005
Air Filters	Gross Beta	304	6/4/2019	.02693	120731005
Charcoal Ct	I-131	304	6/4/2019	0	120732005
Air Filters	Gross Beta	304	6/11/2019	.01468	120867005
Charcoal Ct	I-131	304	6/11/2019	0	120868005
Air Filters	Gross Beta	304	6/18/2019	.01601	120970005
Charcoal Ct	I-131	304	6/18/2019	0	120971005
Air Qtr Comp	Be-7	304	6/25/2019	.1124	121198005
Air Qtr Comp	Cs-137	304	6/25/2019	0	121198005
Air Qtr Comp	Cs-134	304	6/25/2019	0	121198005
Charcoal Ct	I-131	304	6/25/2019	0	121036005
Air Qtr Comp	I-131	304	6/25/2019	0	121198005
Air Filters	Gross Beta	304	6/25/2019	.01686	121035005
Charcoal Ct	I-131	304	7/1/2019	0	121194005
Air Filters	Gross Beta	304	7/1/2019	.02442	121193005
Charcoal Ct	I-131	304	7/9/2019	0	121244005
Air Filters	Gross Beta	304	7/9/2019	.02159	121243005
Air Filters	Gross Beta	304	7/16/2019	.02186	121379005
Charcoal Ct	I-131	304	7/16/2019	0	121380005
Air Filters	Gross Beta	304	7/23/2019	.01791	121487005
Charcoal Ct	I-131	304	7/23/2019	0	121488005
Air Filters	Gross Beta	304	7/30/2019	.02153	121639005
Charcoal Ct	I-131	304	7/30/2019	0	121640005
Air Filters	Gross Beta	304	8/6/2019	.01786	121722005
Charcoal Ct	I-131	304	8/6/2019	0	121723005
Charcoal Ct	I-131	304	8/13/2019	0	121815005
Air Filters	Gross Beta	304	8/13/2019	.02643	121814005

Charcoal Ct	I-131	304	8/20/2019	0	121991005
Air Filters	Gross Beta	304	8/20/2019	.02127	121990005
Air Filters	Gross Beta	304	8/27/2019	.01585	122102005
Charcoal Ct	I-131	304	8/27/2019	0	122103005
Air Filters	Gross Beta	304	9/3/2019	.01876	122234005
Charcoal Ct	I-131	304	9/3/2019	0	122235005
Air Filters	Gross Beta	304	9/10/2019	.03725	122356005
Charcoal Ct	I-131	304	9/10/2019	0	122357005
Air Filters	Gross Beta	304	9/17/2019	.03254	122487005
Charcoal Ct	I-131	304	9/17/2019	0	122488005
Air Filters	Gross Beta	304	9/24/2019	.02422	122638005
Charcoal Ct	I-131	304	9/24/2019	0	122639005
Air Qtr Comp	Be-7	304	9/24/2019	.06959	122827005
Air Qtr Comp	Cs-137	304	9/24/2019	0	122827005
Air Qtr Comp	Cs-134	304	9/24/2019	0	122827005
Air Qtr Comp	I-131	304	9/24/2019	0	122827005
Charcoal Ct	I-131	304	10/1/2019	0	122787005
Air Filters	Gross Beta	304	10/1/2019	.03679	122786005
Charcoal Ct	I-131	304	10/8/2019	0	122863005
Air Filters	Gross Beta	304	10/8/2019	.02815	122853005
Air Filters	Gross Beta	304	10/15/2019	.01733	122965005
Charcoal Ct	I-131	304	10/15/2019	0	122966005
Charcoal Ct	I-131	304	10/22/2019	0	123061005
Air Filters	Gross Beta	304	10/22/2019	.01799	123060005
Charcoal Ct	I-131	304	10/29/2019	0	123136005
Air Filters	Gross Beta	304	10/29/2019	.0207	123134005
Charcoal Ct	I-131	304	11/5/2019	0	123252005
Air Filters	Gross Beta	304	11/5/2019	.02468	123251005
Air Filters	Gross Beta	304	11/12/2019	.03469	123320005
Charcoal Ct	I-131	304	11/12/2019	0	123321005
Charcoal Ct	I-131	304	11/19/2019	0	123417005
Air Filters	Gross Beta	304	11/19/2019	.01997	123416005
Air Filters	Gross Beta	304	11/26/2019	.02455	123539005
Charcoal Ct	I-131	304	11/26/2019	0	123540005
Air Filters	Gross Beta	304	12/3/2019	.01875	123572005
Charcoal Ct	I-131	304	12/3/2019	0	123573005
Charcoal Ct	I-131	304	12/10/2019	0	123664005
Air Filters	Gross Beta	304	12/10/2019	.02084	123663005
Air Filters	Gross Beta	304	12/17/2019	.01798	123806005
Charcoal Ct	I-131	304	12/17/2019	0	123807005
Charcoal Ct	I-131	304	12/24/2019	0	123871005
Air Filters	Gross Beta	304	12/24/2019	.0173	123870005
Air Filters	Gross Beta	304	12/31/2019	.0207	123956005
Air Qtr Comp	I-131	304	12/31/2019	0	124082005
Air Qtr Comp	Cs-134	304	12/31/2019	0	124082005
Air Qtr Comp	Cs-137	304	12/31/2019	0	124082005
Air Qtr Comp	Be-7	304	12/31/2019	.0815	124082005
Charcoal Ct	I-131	304	12/31/2019	0	123957005
Charcoal Ct	I-131	309	1/2/2019	0	118784006
Air Filters	Gross Beta	309	1/2/2019	.01728	118783006
Charcoal Ct	I-131	309	1/8/2019	0	118836006
Air Filters	Gross Beta	309	1/8/2019	.01546	118835006
Air Filters	Gross Beta	309	1/15/2019	.01921	118979006
Charcoal Ct	I-131	309	1/15/2019	0	118980006
Air Filters	Gross Beta	309	1/22/2019	.01974	119005006
Charcoal Ct	I-131	309	1/22/2019	0	119006006
Air Filters	Gross Beta	309	1/29/2019	.02303	119067006
Charcoal Ct	I-131	309	1/29/2019	0	119068006
Air Filters	Gross Beta	309	2/5/2019	.02045	119214006

Charcoal Ct	I-131	309	2/5/2019	0	119215006
Charcoal Ct	I-131	309	2/12/2019	0	119333006
Air Filters	Gross Beta	309	2/12/2019	.02385	119332006
Air Filters	Gross Beta	309	2/19/2019	.01834	119420006
Charcoal Ct	I-131	309	2/19/2019	0	119421006
Air Filters	Gross Beta	309	2/26/2019	.0163	119505006
Charcoal Ct	I-131	309	2/26/2019	0	119506006
Air Filters	Gross Beta	309	3/5/2019	.01705	119579006
Charcoal Ct	I-131	309	3/5/2019	0	119580006
Charcoal Ct	I-131	309	3/12/2019	0	119662006
Air Filters	Gross Beta	309	3/12/2019	.02391	119659006
Charcoal Ct	I-131	309	3/19/2019	0	119794006
Air Filters	Gross Beta	309	3/19/2019	.02971	119793006
Air Qtr Comp	Be-7	309	3/26/2019	.1025	120031006
Air Qtr Comp	Cs-137	309	3/26/2019	0	120031006
Air Qtr Comp	Cs-134	309	3/26/2019	0	120031006
Air Qtr Comp	I-131	309	3/26/2019	0	120031006
Air Filters	Gross Beta	309	3/26/2019	.02323	119847006
Charcoal Ct	I-131	309	3/26/2019	0	119848006
Charcoal Ct	I-131	309	4/2/2019	0	119908006
Air Filters	Gross Beta	309	4/2/2019	.0169	119907006
Air Filters	Gross Beta	309	4/9/2019	.0152	119972006
Charcoal Ct	I-131	309	4/9/2019	0	119973006
Charcoal Ct	I-131	309	4/16/2019	0	120071005
Air Filters	Gross Beta	309	4/16/2019	.01523	120070005
Charcoal Ct	I-131	309	4/23/2019	0	120159006
Air Filters	Gross Beta	309	4/23/2019	.01647	120158006
Air Filters	Gross Beta	309	4/30/2019	.02584	120225006
Charcoal Ct	I-131	309	4/30/2019	0	120226006
Air Filters	Gross Beta	309	5/7/2019	.01646	120339006
Charcoal Ct	I-131	309	5/7/2019	0	120340006
Charcoal Ct	I-131	309	5/14/2019	0	120395006
Air Filters	Gross Beta	309	5/14/2019	.01605	120394006
Charcoal Ct	I-131	309	5/21/2019	0	120545006
Air Filters	Gross Beta	309	5/21/2019	.02838	120544006
Charcoal Ct	I-131	309	5/28/2019	0	120605006
Air Filters	Gross Beta	309	5/28/2019	.03079	120662006
Charcoal Ct	I-131	309	6/4/2019	0	120732006
Air Filters	Gross Beta	309	6/4/2019	.03104	120731006
Air Filters	Gross Beta	309	6/11/2019	.01635	120867006
Charcoal Ct	I-131	309	6/11/2019	0	120868006
Air Filters	Gross Beta	309	6/18/2019	.01977	120970006
Charcoal Ct	I-131	309	6/18/2019	0	120971006
Charcoal Ct	I-131	309	6/25/2019	0	121036006
Air Qtr Comp	I-131	309	6/25/2019	0	121198006
Air Qtr Comp	Cs-134	309	6/25/2019	0	121198006
Air Qtr Comp	Cs-137	309	6/25/2019	0	121198006
Air Qtr Comp	Be-7	309	6/25/2019	.1267	121198006
Air Filters	Gross Beta	309	6/25/2019	.01799	121035006
Air Filters	Gross Beta	309	7/1/2019	.02233	121193006
Charcoal Ct	I-131	309	7/1/2019	0	121194006
Charcoal Ct	I-131	309	7/9/2019	0	121244006
Air Filters	Gross Beta	309	7/9/2019	.02474	121243006
Charcoal Ct	I-131	309	7/16/2019	0	121380006
Air Filters	Gross Beta	309	7/16/2019	.0244	121379006
Charcoal Ct	I-131	309	7/23/2019	0	121488006
Air Filters	Gross Beta	309	7/23/2019	.02215	121487006
Charcoal Ct	I-131	309	7/30/2019	0	121640006
Air Filters	Gross Beta	309	7/30/2019	.02067	121639006

Air Filters	Gross Beta	309	8/6/2019	.01497	121722006
Charcoal Ct	I-131	309	8/6/2019	0	121723006
Air Filters	Gross Beta	309	8/13/2019	.02862	121814006
Charcoal Ct	I-131	309	8/13/2019	0	121815006
Charcoal Ct	I-131	309	8/20/2019	0	121991006
Air Filters	Gross Beta	309	8/20/2019	.0139	121990006
Charcoal Ct	I-131	309	8/27/2019	0	122103006
Air Filters	Gross Beta	309	8/27/2019	.01412	122102006
Air Filters	Gross Beta	309	9/3/2019	.01837	122234006
Charcoal Ct	I-131	309	9/3/2019	0	122235006
Air Filters	Gross Beta	309	9/10/2019	.03466	122356006
Charcoal Ct	I-131	309	9/10/2019	0	122357006
Charcoal Ct	I-131	309	9/17/2019	0	122488006
Air Filters	Gross Beta	309	9/17/2019	.02968	122487006
Air Qtr Comp	Cs-137	309	9/24/2019	0	122827006
Air Qtr Comp	Be-7	309	9/24/2019	.07848	122827006
Charcoal Ct	I-131	309	9/24/2019	0	122639006
Air Qtr Comp	Cs-134	309	9/24/2019	0	122827006
Air Filters	Gross Beta	309	9/24/2019	.02527	122638006
Air Qtr Comp	I-131	309	9/24/2019	0	122827006
Air Filters	Gross Beta	309	10/1/2019	.03363	122786006
Charcoal Ct	I-131	309	10/1/2019	0	122787006
Charcoal Ct	I-131	309	10/8/2019	0	122863006
Air Filters	Gross Beta	309	10/8/2019	.02944	122853006
Charcoal Ct	I-131	309	10/15/2019	0	122966006
Air Filters	Gross Beta	309	10/15/2019	.01395	122965006
Charcoal Ct	I-131	309	10/22/2019	0	123061006
Air Filters	Gross Beta	309	10/22/2019	.01673	123060006
Air Filters	Gross Beta	309	10/29/2019	.0216	123134006
Charcoal Ct	I-131	309	10/29/2019	0	123136006
Charcoal Ct	I-131	309	11/5/2019	0	123252006
Air Filters	Gross Beta	309	11/5/2019	.02036	123251006
Charcoal Ct	I-131	309	11/12/2019	0	123321006
Air Filters	Gross Beta	309	11/12/2019	.03302	123320006
Air Filters	Gross Beta	309	11/19/2019	.01702	123416006
Charcoal Ct	I-131	309	11/19/2019	0	123417006
Air Filters	Gross Beta	309	11/26/2019	.02598	123539006
Charcoal Ct	I-131	309	11/26/2019	0	123540006
Air Filters	Gross Beta	309	12/3/2019	.02091	123572006
Charcoal Ct	I-131	309	12/3/2019	0	123573006
Air Filters	Gross Beta	309	12/10/2019	.02163	123663006
Charcoal Ct	I-131	309	12/10/2019	0	123664006
Air Filters	Gross Beta	309	12/17/2019	.02108	123806006
Charcoal Ct	I-131	309	12/17/2019	0	123807006
Charcoal Ct	I-131	309	12/24/2019	0	123871006
Air Filters	Gross Beta	309	12/24/2019	.01618	123870006
Air Qtr Comp	I-131	309	12/31/2019	0	124082006
Charcoal Ct	I-131	309	12/31/2019	0	123957006
Air Qtr Comp	Be-7	309	12/31/2019	.08119	124082006
Air Qtr Comp	Cs-137	309	12/31/2019	0	124082006
Air Filters	Gross Beta	309	12/31/2019	.01942	123956006
Air Qtr Comp	Cs-134	309	12/31/2019	0	124082006
Vegetation	I-131	416	1/29/2019	0	119069001
Vegetation	Cs-134	416	1/29/2019	0	119069001
Vegetation	Cs-137	416	1/29/2019	0	119069001
Vegetation	Be-7	416	1/29/2019	1704.9	119069001
Vegetation	K-40	416	1/29/2019	4556.8	119069001
Vegetation	K-40	416	2/26/2019	6013.4	119507001
Vegetation	Be-7	416	2/26/2019	2167.2	119507001

Vegetation	Cs-137	416	2/26/2019	0	119507001
Vegetation	Cs-134	416	2/26/2019	0	119507001
Vegetation	I-131	416	2/26/2019	0	119507001
Vegetation	I-131	416	3/26/2019	0	119849001
Vegetation	Cs-134	416	3/26/2019	0	119849001
Vegetation	Cs-137	416	3/26/2019	0	119849001
Vegetation	Be-7	416	3/26/2019	3707.542	119849001
Vegetation	K-40	416	3/26/2019	7207.155	119849001
Vegetation	K-40	416	4/24/2019	3701	120160001
Vegetation	Be-7	416	4/24/2019	1236.3	120160001
Vegetation	Cs-137	416	4/24/2019	9.9485	120160001
Vegetation	Cs-134	416	4/24/2019	0	120160001
Vegetation	I-131	416	4/24/2019	0	120160001
Vegetation	I-131	416	5/28/2019	0	120606001
Vegetation	Cs-134	416	5/28/2019	0	120606001
Vegetation	Cs-137	416	5/28/2019	40.856	120606001
Vegetation	Be-7	416	5/28/2019	3083.6	120606001
Vegetation	K-40	416	5/28/2019	2800.9	120606001
Vegetation	Cs-134	416	6/24/2019	0	121038001
Vegetation	Cs-137	416	6/24/2019	0	121038001
Vegetation	Be-7	416	6/24/2019	1720.5	121038001
Vegetation	K-40	416	6/24/2019	4111.5	121038001
Vegetation	I-131	416	6/24/2019	0	121038001
Vegetation	Cs-134	416	7/29/2019	0	121641001
Vegetation	Cs-137	416	7/29/2019	0	121641001
Vegetation	Be-7	416	7/29/2019	1724.2	121641001
Vegetation	K-40	416	7/29/2019	4345.6	121641001
Vegetation	I-131	416	7/29/2019	0	121641001
Vegetation	Cs-137	416	8/26/2019	39.695	122104001
Vegetation	Be-7	416	8/26/2019	2260.9	122104001
Vegetation	K-40	416	8/26/2019	3718.9	122104001
Vegetation	I-131	416	8/26/2019	0	122104001
Vegetation	Cs-134	416	8/26/2019	0	122104001
Vegetation	I-131	416	9/23/2019	0	122612001
Vegetation	Cs-134	416	9/23/2019	0	122612001
Vegetation	Cs-137	416	9/23/2019	0	122612001
Vegetation	Be-7	416	9/23/2019	821.52	122612001
Vegetation	K-40	416	9/23/2019	3813.6	122612001
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Vegetation	Cs-137	416	10/29/2019	0	123137001
Vegetation	Be-7	416	10/29/2019	1616.9	123137001
Vegetation	K-40	416	10/29/2019	2415.4	123137001
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Vegetation	Cs-137	416	12/2/2019	0	123571001
Vegetation	Cs-134	416	12/2/2019	0	123571001
Vegetation	I-131	416	12/2/2019	0	123571001
Vegetation	K-40	416	12/2/2019	5912.3	123571001
Vegetation	K-40	416	12/24/2019	2113.6	123868001
Vegetation	Be-7	416	12/24/2019	3153.5	123868001
Vegetation	Cs-137	416	12/24/2019	0	123868001
Vegetation	Cs-134	416	12/24/2019	0	123868001
Vegetation	I-131	416	12/24/2019	0	123868001
Milk Gamma	Be-7	GSP	1/8/2019	0	118837001
Milk Gamma	La-140	GSP	1/8/2019	0	118837001
Milk Gamma	Ba-140	GSP	1/8/2019	0	118837001
Milk Gamma	Cs-137	GSP	1/8/2019	0	118837001
Milk Gamma	Cs-134	GSP	1/8/2019	0	118837001
Milk Gamma	K-40	GSP	1/8/2019	1531.3	118837001

Milk Gamma	I-131	GSP	1/8/2019	0	118837001
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Milk Gamma	Be-7	GSP	5/14/2019	0	120393001
Milk Gamma	K-40	GSP	5/14/2019	1588.2	120393001
Milk Gamma	I-131	GSP	5/14/2019	0	120393001
Milk Gamma	Be-7	GSP	6/4/2019	0	120729001
Milk Gamma	La-140	GSP	6/4/2019	0	120729001

Milk Gamma	Ba-140	GSP	6/4/2019	0	120729001
Milk Gamma	Cs-137	GSP	6/4/2019	0	120729001
Milk Gamma	Cs-134	GSP	6/4/2019	0	120729001
Milk Gamma	I-131	GSP	6/4/2019	0	120729001
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Milk Gamma	Ba-140	GSP	6/25/2019	0	121033001
Milk Gamma	La-140	GSP	6/25/2019	0	121033001
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Milk Gamma	I-131	GSP	7/9/2019	0	121242001
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Milk Gamma	Cs-137	GSP	7/9/2019	0	121242001
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Milk Gamma	Be-7	GSP	8/13/2019	0	121813001
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Milk Gamma	Cs-137	GSP	8/13/2019	0	121813001
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Milk Gamma	Cs-134	GSP	8/27/2019	0	122105001
Milk Gamma	I-131	GSP	8/27/2019	0	122105001
Milk Gamma	K-40	GSP	8/27/2019	1527.6	122105001
Milk Gamma	Be-7	GSP	8/27/2019	0	122105001
Milk Gamma	La-140	GSP	8/27/2019	0	122105001
Milk Gamma	Ba-140	GSP	8/27/2019	0	122105001
Milk Gamma	Be-7	GSP	9/10/2019	0	122349001
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Milk Gamma	Ba-140	GSP	9/10/2019	0	122349001
Milk Gamma	Cs-137	GSP	9/10/2019	0	122349001
Milk Gamma	Cs-134	GSP	9/10/2019	0	122349001
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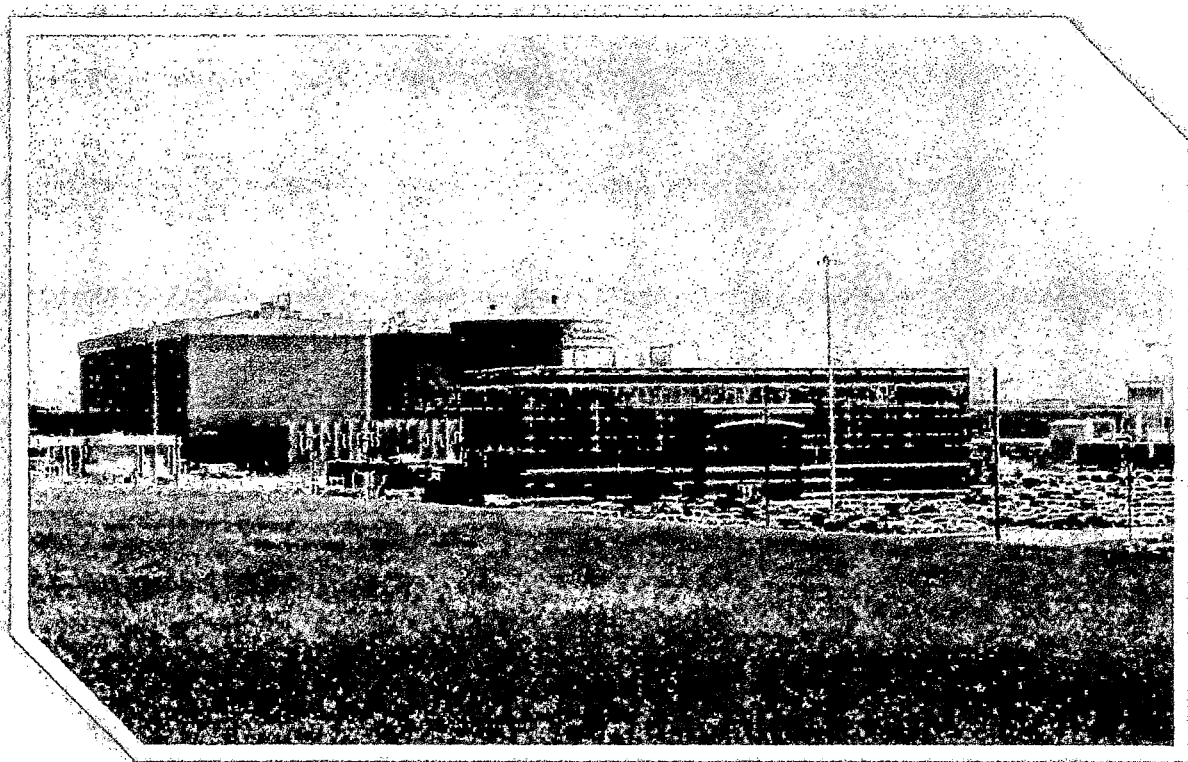
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Milk Gamma	La-140	GSP	10/8/2019	0	122866001
Milk Gamma	Ba-140	GSP	10/8/2019	0	122866001
Milk Gamma	Cs-137	GSP	10/8/2019	0	122866001
Milk Gamma	K-40	GSP	10/8/2019	1551.8	122866001
Milk Gamma	Cs-134	GSP	10/8/2019	0	122866001
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Milk Gamma	Be-7	GSP	10/22/2019	0	123057001
Milk Gamma	La-140	GSP	10/22/2019	0	123057001
Milk Gamma	Ba-140	GSP	10/22/2019	0	123057001
Milk Gamma	Cs-137	GSP	10/22/2019	0	123057001
Milk Gamma	Cs-134	GSP	10/22/2019	0	123057001
Milk Gamma	I-131	GSP	10/22/2019	0	123057001
Milk Gamma	I-131	GSP	11/12/2019	0	123319001
Milk Gamma	K-40	GSP	11/12/2019	1537.1	123319001
Milk Gamma	Be-7	GSP	11/12/2019	0	123319001
Milk Gamma	La-140	GSP	11/12/2019	0	123319001
Milk Gamma	Ba-140	GSP	11/12/2019	0	123319001
Milk Gamma	Cs-137	GSP	11/12/2019	0	123319001
Milk Gamma	Cs-134	GSP	11/12/2019	0	123319001
Milk Gamma	K-40	GSP	11/26/2019	1454.9	123534001
Milk Gamma	Be-7	GSP	11/26/2019	0	123534001
Milk Gamma	La-140	GSP	11/26/2019	0	123534001
Milk Gamma	Ba-140	GSP	11/26/2019	0	123534001
Milk Gamma	Cs-137	GSP	11/26/2019	0	123534001
Milk Gamma	Cs-134	GSP	11/26/2019	0	123534001
Milk Gamma	I-131	GSP	11/26/2019	0	123534001
Milk Gamma	I-131	GSP	12/10/2019	0	123665001
Milk Gamma	K-40	GSP	12/10/2019	1542.4	123665001
Milk Gamma	Be-7	GSP	12/10/2019	0	123665001
Milk Gamma	La-140	GSP	12/10/2019	0	123665001
Milk Gamma	Ba-140	GSP	12/10/2019	0	123665001
Milk Gamma	Cs-137	GSP	12/10/2019	0	123665001
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Milk Gamma	I-131	GSP	12/26/2019	0	123867001
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Milk Gamma	Be-7	GSP	12/26/2019	0	123867001
Milk Gamma	La-140	GSP	12/26/2019	0	123867001
Milk Gamma	Ba-140	GSP	12/26/2019	0	123867001
Milk Gamma	Cs-137	GSP	12/26/2019	0	123867001

**Edwin I. Hatch Nuclear Plant – Units 1 & 2
Joseph M. Farley Nuclear Plant– Units 1 & 2
Vogtle Electric Generating Plant– Units 1 & 2
Annual Radiological Environmental Operating Reports for 2019**

Enclosure 2

Farley Annual Radiological Environmental Operating Report for 2019

**JOSEPH M. FARLEY NUCLEAR PLANT
2019 ANNUAL RADIOLOGICAL ENVIRONMENTAL
OPERATING REPORT**



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- A-3 – Extended REMP Stations
- A-4 – Facility Groundwater Wells

Appendix B – Errata



LIST OF ACRONYMS

ADEM	Alabama Department of Environmental Management
APC	Alabama Power Company
GA EPD	State of Georgia Environmental Protection Division
FNP	Joseph M. Farley Nuclear Plant
GPCEL	Georgia Power Company Environmental Laboratory
ICP	Interlaboratory Comparison Program
MDC	Minimum Detectable Concentration
MDD	Minimum Detectable Difference
MWe	MegaWatts Thermal
NA	Not Applicable
NDM	No Detectable Measurement(s)
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
OSL	Optically Stimulated Luminescence
PWR	Pressurized Water Reactor
REMP	Radiological Environmental Monitoring Program
RL	Reporting Level
RM	River Mile
SNC	Southern Nuclear Operating Company
TLD	Thermoluminescent Dosimeter
TS	Technical Specification



1 INTRODUCTION

The Radiological Environmental Monitoring Program (REMP) was conducted in accordance with Chapter 4 of the Offsite Dose Calculation Manual (ODCM). The REMP activities for 2019 were reported herein in accordance with Technical Specification (TS) 5.6.2 and ODCM 7.1.

The objectives of the REMP were to:

- 1) Determine the levels of radiation and the concentrations of radioactivity in the environs and;
- 2) Assess the radiological impact (if any) to the environment due to the operation of the Joseph M. Farley Nuclear Plant (FNP).

The assessments included comparisons between results of analyses of samples obtained at locations where radiological levels were not expected to be affected by plant operation (control stations), areas of higher population (community stations), and at locations where radiological levels were more likely to be affected by plant operation (indicator stations), as well as comparisons between preoperational and operational sample results.

FNP is owned by Alabama Power Company (APC) and operated by Southern Nuclear Operating Company (SNC). The plant is located in Houston County, Alabama approximately fifteen miles east of Dothan, Alabama on the west bank of the Chattahoochee River. Unit 1, a Westinghouse Electric Corporation Pressurized Water Reactor (PWR) with a licensed core thermal power output of 2775 MegaWatts thermal (MWt), achieved initial criticality on August 9, 1977 and was declared "commercial" on December 1, 1977. Unit 2, also a 2775 MWt Westinghouse PWR, achieved initial criticality on May 8, 1981 and was declared "commercial" on July 30, 1981.

The preoperational stage of the REMP began with initial sample collections in January of 1975. The transition from the preoperational to the operational stage of the REMP was marked by Unit 1 initial criticality.

- A description of the REMP is provided in Section 2 of this report
- Section 3 provides a summary of the results, an assessment of any radiological impacts to the environment, and the results from the Interlaboratory Comparison
- A summary of the land use census and the river survey are included in Section 4
- Conclusions are included in Section 5



2 REMP DESCRIPTION

The following section provides a description of the sampling and laboratory protocols associated with the REMP. Table 2-1 provides a summary of the sample types to be collected and the analyses to be performed in order to monitor the airborne, direct radiation, waterborne and ingestion pathways, and also summarizes the collection and analysis frequencies (in accordance with ODCM Section 4.2). Table 2-2 provides specific information regarding the station locations, their proximity to the plant, and exposure pathways. Additionally, Appendix A of this report provides Maps A-1 through A-4 that depict the georeferenced location of sampling stations. Any Errata from previous reports are provided in Appendix B.

Plant personnel collected most samples, while others were collected by Alabama Power Company Environmental Affairs field team. The Georgia Power Environmental Laboratory (GPCEL) analyzed all REMP samples.



Table 2-1. Summary Description of Radiological Environmental Monitoring Program

Exposure Pathway and/or	Number of Representative Samples and Sample Locations	Sampling/Collection Frequency	Type/Frequency of Analysis
Direct Radiation	40 routine monitoring stations with two or more dosimeters placed as follows: An inner ring of stations, one in each compass sector in the general area of the site boundary; An outer ring of stations, one in each compass sector at approximately 5 miles from the site; and Special interest areas, such as population centers, nearby recreation areas, and control stations	Quarterly	Gamma dose/Quarterly
Airborne Radioiodine and Particulates	Samples from eight locations: Three locations close to the site boundary in different sectors; Three community stations; within 8 miles Two control locations near population centers, approximately 15 and 18 miles away	Continuous sampler operation with sample collection weekly	Particulate sampler: Analyze for gross beta radioactivity \geq 24 hours following filter change / Weekly. Perform gamma isotopic analysis on each sample when gross beta activity is > 10 times the yearly mean of control samples. Perform gamma isotopic analysis on composite sample (by location)/Quarterly. Radioiodine canister: I-131 analysis/Weekly
Waterborne			
Surface ³	One sample upriver One sample downriver	Composite sample over one month period ⁴	Gamma isotopic analysis ² /Monthly Composite for tritium analysis/Quarterly



Table 2-1. Summary Description of Radiological Environmental Monitoring Program

Exposure Pathway and/or	Number of Representative Samples and Sample Locations	Sampling/Collection Frequency	Type/Frequency of Analysis
Groundwater	Off-site monitoring includes one indicator station and one control station See Table 3-8 and Map A-4 in Appendix A for on-site well locations. These are part of the GWPP (NEI 07-07).	Quarterly Frequency based on GWPP	Off-site wells are analyzed only for Gamma Isotopic, I-131, & tritium Tritium, gamma isotopic, and field parameters of each sample; hard-to-detects based on tritium and gamma results
Shoreline Sediment ⁷	One sample from downriver area with existing or potential recreational value One sample from upriver area with existing or potential recreational value	Semiannually	Gamma isotopic analysis ² /Semiannually
Ingestion			
Milk ⁵	Two samples from milking animals at control locations at a distance of about 10 miles or more	Bimonthly	Gamma isotopic analysis ^{2,6} /Bimonthly
Fish ⁸	One bottom feeding fish and one game fish both upstream and downstream	Semiannually During spring/fall spawning season	Gamma isotopic analysis ² on edible portions/Semiannually Gamma isotopic analysis ² on edible portions/Annually.
Grass or Leafy Vegetation	One sample from two onsite locations near the site boundary in different sectors One sample from a control location at an approximate distance of 18 miles	Monthly during growing season	Gamma isotopic analysis ^{2,6} /Monthly



Table 2-1. Summary Description of Radiological Environmental Monitoring Program

Exposure Pathway and/or	Number of Representative Samples and Sample Locations	Sampling/Collection Frequency	Type/Frequency of Analysis
<p>Notes:</p> <p>¹Airborne particulate sample filters were analyzed for gross beta radioactivity 24 hours or more after sampling to allow for radon and thoron daughter decay. If gross beta activity in air particulate samples was greater than 10 times the yearly mean of control samples, gamma isotopic analysis was performed on the individual samples.</p> <p>²Gamma isotopic analysis means the identification and quantification of gamma-emitting radionuclides that may be attributable to the effluents from the facility.</p> <p>³Upriver sample was taken at a distance beyond significant influence of the discharge. Downriver samples were taken beyond but near the mixing zone.</p> <p>⁴Composite sample aliquots were collected at time intervals that were very short (e.g., hourly) relative to the compositing period (e.g., monthly) to ensure obtaining a representative sample.</p> <p>⁵A milking animal is a cow or goat producing milk for human consumption, no milk animals were found within five miles of the plant, a control sample not collected since 2009.</p> <p>⁶If the gamma isotopic analysis is not sensitive enough to meet the Minimum Detectable Concentration (MDC) for I-131, a separate analysis for I-131 may be performed.</p> <p>⁷These collections were normally made at river mile 41.3 for the indicator station and river mile 47.8 for the control station; however, due to river bottom sediment shifting caused by high flows, dredging, etc., collections may be made from river mile 40 to 42 for the indicator station and from river mile 47 to 49 for the control station.</p> <p>⁸Since several miles of river water may be needed to obtain adequate fish samples, these river mile positions represent the approximate locations from which the fish are taken. Collections for the indicator station should be from river mile 37.5 to 42.5 and for the control station from river mile 47 to 52.</p>			



Table 2-2. Radiological Environmental Sampling Locations

Station Number	Station Type	Descriptive Location	Direction ¹	Distance (miles) ¹	Radiation Sample Type
0501	Indicator	River Intake Structure (Spare)	ESE	0.8	Airborne
0701	Indicator	South-southeast Perimeter	SSE	1.0	Airborne
1101	Indicator	Plant Entrance	WSW	0.9	Airborne
1601	Indicator	North Perimeter	N	0.8	Airborne
0215	Control	Blakely GA	NE	15	Airborne, Direct
0718 ²	Control	Neals Landing, FL	SSE	18	Airborne, Direct
1218	Control	Dothan, AL	W	18	Airborne, Direct, Vegetation
0703	Community	GA Pacific Paper Co.	SSE	3	Airborne, Direct
1108	Community	Ashford, AL	WSW	8	Airborne
1605	Community	Columbia, AL	N	5	Airborne, Direct
0101	Indicator	Plant Perimeter	NNE	0.9	Direct
0201	Indicator	Plant Perimeter	NE	1.0	Direct
0301	Indicator	Plant Perimeter	ENE	0.9	Direct
0401	Indicator	Plant Perimeter	E	0.8	Direct
0501	Indicator	Plant Perimeter	ESE	0.8	Direct
0601	Indicator	Plant Perimeter	SE	1.1	Direct
0701	Indicator	Plant Perimeter	SSE	1.0	Direct, Vegetation
0801	Indicator	Plant Perimeter	S	1.0	Direct
0901	Indicator	Plant Perimeter	SSW	1.0	Direct
1001	Indicator	Plant Perimeter	SW	0.9	Direct
1101	Indicator	Plant Perimeter	WSW	0.9	Direct
1201	Indicator	Plant Perimeter	W	0.8	Direct
1301	Indicator	Plant Perimeter	WNW	0.8	Direct
1401	Indicator	Plant Perimeter	NW	1.1	Direct
1501	Indicator	Plant Perimeter	NNW	0.9	Direct
1601	Indicator	Plant Perimeter	N	0.8	Direct, Vegetation
1215	Control	Dothan, AL	W	15	Direct
1311	Control	Webb, AL	W	11	Direct
1612	Control	Haleburg, AL	WNW	12	Direct
1001	Community	Whatley Residence	SW	12	Direct
1108	Community	Ashford, AL	WSW	8.0	Direct
WRI	Indicator	Downstream of plant discharge, approximately RM 40	S	3.0	River Water
WRB	Control	Upstream of plant intake, approximately RM 47	NNE	3.0	River Water
WGI-07	Indicator	Paper Mill Well	SSE	4.0	Groundwater
WGB-10	Control	Whatley Residence	SW	1.2	Groundwater



Table 2-2. Radiological Environmental Sampling Locations

Station Number	Station Type	Descriptive Location	Direction ¹	Distance (miles) ¹	Radiation Sample Type
RSI	Indicator	Downstream of plant discharge at Smith's Bend (RM 41)	S	4.0	Sediment
RSB	Control	Upstream of plant intake at Andrews Lock and Dam (RM 48)	N	4.0	Sediment
FGI & FGB	Indicator	Downstream of plant discharge at Smith's Bend (RM 41)	S	4.0	Fish
FGB & FBB	Control	Upstream of plant intake at Andrews Lock and Dam (RM 48)	N	4.0	Fish
0104	Community	Early Co., GA	NNE	4.0	Direct
0204	Community	Early Co., GA	NE	4.0	Direct
0304	Community	Early Co., GA	ENE	4.0	Direct
0405	Community	Early Co., GA	E	5.0	Direct
0505	Community	Early Co., GA	ESE	5.0	Direct
0605	Community	Early Co., GA	SE	5.0	Direct
0805	Community	Houston Co., AL	S	5.0	Direct
0904	Community	Houston Co., AL	SSW	4.0	Direct
1005	Community	Houston Co., AL	SW	5.0	Direct
1104	Community	Houston Co., AL	WSW	4.0	Direct
1204	Community	Houston Co., AL	W	4.0	Direct
1304	Community	Houston Co., AL	WNW	4.0	Direct
1404	Community	Houston Co., AL	NW	4.0	Direct
1504	Community	Houston Co., AL	NNW	4.0	Direct

Notes:
¹Direction and distance were determined as the mid-point between the Unit 1 and Unit 2 vent stacks.
²Spare, per the ODCM



3 RESULTS SUMMARY

Included in this section are statistical evaluations of the laboratory results, comparison of the results by media, and a summary of the anomalies and deviations. Overall, 1,019 analyses were performed across nine exposure pathways. Tables and figures are provided throughout this section to provide an enhanced presentation of the information.

In recent history, man-made nuclides have been released into the environment and have resulted in wide spread distribution of radionuclides across the globe. For example, atmospheric nuclear weapons tests from the mid-1940s through 1980 distributed man-made nuclides around the world. The most recent atmospheric tests in the 1970s and in 1980 have had a significant impact upon the radiological concentrations found in the environment prior to and during pre-operation, and through early operation. Some long-lived radionuclides, such as Cs-137, continue to be detected and a portion of these detections are believed to be attributed to the nuclear weapons tests.

Additionally, data associated with certain radiological effects created by off-site events have been removed from the historical evaluation, this includes: the nuclear atmospheric weapon test in the fall of 1980, the Chernobyl incident in the spring of 1986 and the Fukushima accident in the spring of 2011.

As indicated in ODCM 7.1.2.1, the results for naturally occurring radionuclides that are also found in plant effluents must be reported along with man-made radionuclides. Historically, the radionuclide Be-7, which occurs abundantly in nature, is often detected in REMP samples, and occasionally detected in the plant's liquid and gaseous effluents. When it is detected in effluents and REMP samples, it is also included in the REMP results. In 2019, Be-7 was not detected in any plant effluents and therefore it was not included in this report. The Be-7 detected in select REMP samples likely represents naturally occurring and/or background conditions.

As part of the data evaluation process, SNC considered the impact of the non-plant associated nuclides along with a statistical evaluation of the REMP data. The statistical evaluations included within this report include the Minimum Detectable Concentration (MDC), the Minimum Detectable Difference (MDD), and Chauvenet's Criterion as described below.

Minimum Detectable Concentration

The minimum detectable concentration is defined as an estimate of the true concentration of an analyte required to give a specified high probability that the measured response will be greater than the critical value.



Minimum Detectable Difference

The Minimum Detectable Difference (MDD) compares the lowest significant difference (between the means) of a control station versus an indicator or a community station, that can be determined statistically at the 99% Confidence Level (CL). A difference in mean values which was less than the MDD was considered statistically indiscernible. The MDD is used to evaluate the statistical proximity between the indicator/community and control sample results, but generally, any results that are less than the MDC and/or Reporting Levels (RL) are considered to have minimal impact on the surrounding environs.

Chauvenet's Criterion

All results were tested for conformance with Chauvenet's Criterion (G. D. Chase and J. L. Rabinowitz, Principles of Radioisotope Methodology, Burgess Publishing Company, 1962, pages 87-90) to identify values which differed from the mean of a set by a statistically significant amount. Identified outliers were investigated to determine the reason(s) for the difference. If equipment malfunction or other valid physical reasons were identified as causing the variation, the anomalous result was excluded from the data set as non-representative.

Table 3-1 summarizes and evaluates the annual results for the indicator stations against the control and community stations (where applicable) and as appropriate, results were evaluated against the MDCs (listed in Table 3-1) and RLs (listed in Table 3-2). The required MDCs were achieved during laboratory sample analysis. The 2019 results were compared with previous results, including those obtained during pre-operation. No data points were excluded for violating Chauvenet's Criterion.



Table 3-1. Radiological Environmental Monitoring Program Annual Summary

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Locations Mean (b), Range (Fraction)	Location with the Highest Annual Mean		Other Stations (f) Mean (b), Range (Fraction)	Control Locations Mean (b), Range (Fraction)
				Name Distance and Direction	Mean (b), Range (Fraction)		
Airborne Particulates (fCi/m3)	Gross Beta 417	10	17.5 4.8 to 36 (156/156)	Columbia, AL N 5 mi. Community	20.5 6.4 to 39.3 (52/52)	18.1 6.4 to 39.3 (157/157)	17.7 6.5 to 40.8 (104/104)
	Gamma Isotopic 32						
	Be-7	24	83.6 39.9 to 123.5 (12/12)	Columbia, AL N 5 mi. Community	79.9 61.8 to 126.8 (4/4)	85.4 60.6 to 126.8 (12/12)	85.5 64.3 to 98.1 (8/8)
	I-131	70	NDM(c)		NDM	NDM	NDM
	Cs-134	50	NDM		NDM	NDM	NDM
	Cs-137	60	NDM		NDM	NDM	NDM
Airborne Radioiodine(fCi/m3)	I-131 312	70	NDM		NDM	NDM	NDM
Direct Radiation (mR/91 days)	Gamma Dose 157		15.2 10.8 to 24.5 (63/64)	Plant Perimeter, E 0.8 mi Indicator	22.8 20.8 to 24.5 (4/4)	12.8 9 to 17.7 (70/72)	15.2 10.8 to 21.7 (24/24)
Milk (pCi/l)	Gamma Isotopic 0						
	I-131	1					
	Cs-134	15					
	Cs-137	18					
	Ba-140	60					
	La-140	15					
Vegetation (pCi/kg-wet)	Gamma Isotopic 36						



Table 3-1. Radiological Environmental Monitoring Program Annual Summary

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Locations Mean (b), Range (Fraction)	Location with the Highest Annual Mean		Other Stations (f) Mean (b), Range (Fraction)	Control Locations Mean (b), Range (Fraction)
				Name Distance and Direction	Mean (b), Range (Fraction)		
	Be-7	729	1738.9 316.6 to 4735.8 (24/24)	South Southeast Perimeter (SSE-1.0) Indicator	1857.1 316.6 to 3161.1 (12/12)		1360.2 308.5 to 4141.2 (12/12)
	I-131	60	NDM				NDM
	Cs-134	60	NDM				NDM
	Cs-137	80	NDM	Dothan, AL W 18 mi. Control	35.5 0-35.5 (1/12)		35.5 0-35.5 (1/12)
River Water (pCi/l)	Gamma Isotopic 26						
	Mn-54	15	NDM		NDM	NDM	NDM
	Fe-59	30	NDM		NDM	NDM	NDM
	Co-58	15	NDM		NDM	NDM	NDM
	Co-60	15	NDM		NDM	NDM	NDM
	Zn-65	30	NDM		NDM	NDM	NDM
	Zr-95	30	NDM		NDM	NDM	NDM
	Nb-95	15	NDM		NDM	NDM	NDM
	I-131	15	NDM		NDM	NDM	NDM
	Cs-134	15	NDM		NDM	NDM	NDM
	Cs-137	18	NDM		NDM	NDM	NDM
	Ba-140	60	NDM		NDM		
La-140	15	NDM		NDM			
Tritium 8	3000	141.7 47.1 to 268 (3/4)	Paper Mill (RM 40) Indicator	141.7 47.1 to 268 (3/4)		56.4 -91.6 to 157 (2/4)	
Off-site Groundwater	Gamma Isotopic 8						



Table 3-1. Radiological Environmental Monitoring Program Annual Summary

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Locations Mean (b), Range (Fraction)	Location with the Highest Annual Mean		Other Stations (f) Mean (b), Range (Fraction)	Control Locations Mean (b), Range (Fraction)
				Name Distance and Direction	Mean (b), Range (Fraction)		
	Mn-54	15	NDM		NDM		NDM
	Fe-59	30	NDM		NDM		NDM
	Co-58	15	NDM		NDM		NDM
	Co-60	15	NDM		NDM		NDM
	Zn-65	30	NDM		NDM		NDM
	Zr-95	30	NDM		NDM		NDM
	Nb-95	15	NDM		NDM		NDM
	I-131	15	NDM		NDM		NDM
	Cs-134	15	NDM		NDM		NDM
	Cs-137	18	NDM		NDM		NDM
	Ba-140	60	NDM		NDM		NDM
	La-140	15	NDM		NDM		NDM
Tritium 8	2000	-64.7 to 38.2 (4/4)	Whatley Residence Well (SW1.2) Control	-36.8 to 73.3 (4/4)		-36.8 to 3.3 (4/4)	
Bottom Feeding Fish (pCi/kg-wet)	Gamma Isotopic 4						
	Mn-54	130	NDM		NDM		NDM
	Fe-59	260	NDM		NDM		NDM
	Co-58	130	NDM		NDM		NDM
	Co-60	130	NDM		NDM		NDM
	Zn-65	260	NDM		NDM		NDM
	Cs-134	130	NDM		NDM		NDM
Cs-137	150	17.9 to 17.9 (1/2)	Downstream of plant discharge near Smith's Bend (RM 41) - Indicator	17.9 to 17.9 (1/2)		NDM	



Table 3-1. Radiological Environmental Monitoring Program Annual Summary

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Locations Mean (b), Range (Fraction)	Location with the Highest Annual Mean		Other Stations (f) Mean (b), Range (Fraction)	Control Locations Mean (b), Range (Fraction)
				Name Distance and Direction	Mean (b), Range (Fraction)		
Game Fish (pCi/kg-wet)	Gamma Isotopic 4						
	Mn-54	130	NDM		NDM		NDM
	Fe-59	260	NDM		NDM		NDM
	Co-58	130	NDM		NDM		NDM
	Co-60	130	NDM		NDM		NDM
	Zn-65	260	NDM		NDM		NDM
	Cs-134	130	NDM		NDM		NDM
	Cs-137	150	NDM	N/A	NDM		NDM
Sediment (pCi/kg-dry)	Gamma Isotopic 4						
	Co-60	70	NDM		NDM		NDM
	Cs-134	150	NDM		NDM		NDM
	Cs-137	180	NDM		NDM		NDM

Notes:

(a) The MDC is defined in ODCM 10.1. Except as noted otherwise, the values listed in this column are the detection capabilities required by ODCM Table 4-3. The values listed in this column are a priori (before the fact) MDCs. In practice, the a posteriori (after the fact) MDCs are generally lower than the values listed.

(b) Mean and range were based upon detectable measurements only. The fraction of all measurements at a specified location that are detectable is placed in parenthesis.

(c) No Detectable Measurement(s) (NDM).

(d) The Georgia Power Company Environmental Laboratory has determined that this value may be routinely attained under normal conditions. No value is provided in ODCM Table 4-3.

(e) Item 3 of ODCM Table 4-1 implies that an I-131 analysis is not required to be performed on water samples when the dose calculated from the consumption of water is less than 1 mrem per year. However, I-131 analyses have been performed on the finished drinking water samples.

(f) "Other" stations, as identified in the "Station Type" column of Table 2-2, are "Community" and/or "Special" stations.

Not Applicable (NA) (sample not required)



Table 3-2. Reporting Levels (RL)

Analysis	Water (pCi/l)	Airborne Particulate or Gases (fCi/m ³)	Fish (pCi/kg-wet)	Milk (pCi/l)	Grass or Leafy Vegetation (pCi/kg-wet)
H-3	20,000 ^a				
Mn-54	1,000		30,000		
Fe-59	400		10,000		
Co-58	1,000		30,000		
Co-60	300		10,000		
Zn-65	300		20,000		
Zr-95	400				
Nb-95	700				
I-131	2 ^b	900		3	100
Cs-134	30	10,000	1,000	60	1,000
Cs-137	50	20,000	2,000	70	2,000
Ba-140	200			300	
La-140	100			400	

^a This is the 40 CFR 141 value for drinking water samples. If no drinking water pathway exists, a value of 30,000 may be used.

^b If no drinking water pathway exists, a value of 20 pCi/l may be used.

In accordance with ODCM 4.1.1.2.1, deviations from the required sampling schedule were permitted, if samples were unobtainable due to hazardous conditions, unavailability, inclement weather, equipment malfunction or other just reasons. Deviations from conducting the REMP sampling (as described in Table 2-1) are summarized in Table 3-3 along with their causes and resolutions.



Table 3-3. Anomalies and Deviations from Radiological Environmental Monitoring Program

Collection Period	Affected Samples	Anomaly (A)* or Deviation (D)**	Cause	Resolution
01-10-19– 04-05-19	OSLD badges RC-0904 (T9- A/B) 4.5 miles -SSW	(D) Non-representative sample of direct radiation data.	In-service OSLD badge set missing and presumed lost from severe weather event.	New OSLD badge set installed at start of next quarterly sample period.
06-18-19 - 06-25-19	Air sample PI-0701/II-0701 1.0 mile - SSE	(A) Non-representative sample of airborne particulate and radioiodine	Lost 16.6 hours of sample collection due to storm damage to electrical transformer that supplies power to station	Station returned to normal operation after power was restored to sampling equipment
07-02-19 - 10-08-19	OSLD badges RC-0104 4 miles - NNE	(D) Non-representative sample of direct radiation data.	In-service OSLD badge set missing and presumed lost during construction related activities near station.	New OSLD badge set installed at start of next quarterly sample period.
07-03-19 - 10-06-19	OSLD badges RI-0501 0.8 mile - ENE	(D) Non-representative sample of direct radiation data.	In-service OSLD badge set missing and presumed lost from severe weather event	New OSLD badge set installed at start of next quarterly sample period.
11-25-19- 12-03-19	Air sample PI-1601/II-1601 0.8 mile - N	(A) Non-representative sample of airborne particulate and radioiodine	Lost 35 hours of sample collection due to wind damage to electrical transformer that supplies power to station	Station returned to normal operation after power was restored to sampling equipment

* An anomaly is considered a non-standard sample that still meets sampling criteria outlined in SNC and Georgia Power Labs procedures.
 ** A deviation is a sample result that is not recorded due to not meeting scheduling and/or procedural requirements as outlined by SNC and Georgia Power Labs



3.1 Airborne Particulates

As specified in Table 2-1, airborne particulate filters and charcoal canisters were collected weekly at three indicator stations (Stations 0701, 1101, and 1601) which encircle the plant at the site periphery, at three community station (0703, 1108, and 1605) approximately three to eight miles from the plant, and at two control stations (0215 and 1218) which range from approximately 15 to 18 miles from the plant. At each sampling location containing a filter and cartridge series, air was continuously drawn through a glass fiber filter to retain airborne particulate and an activated charcoal canister was also placed in series with the particulate filter in order to adsorb radioiodine at each indicator/control station and at community station 0703 in Cedar Springs, GA for comparison purposes with the Georgia Environmental Protection Division (EPD).

3.1.1 Gross Beta

As provided in Table 3-1, the 2019 annual average weekly gross beta activity was 17.5 fCi/m³ for the indicator stations. It was less than the control station average of 17.7 fCi/m³ for the year, therefore no MDD was calculated.

The 2019 annual average weekly gross beta activity at the community stations was 18.1 fCi/m³ which was 0.4 fCi/m³ more than the control station average. The difference was less than the calculated MDD of 1.9 fCi/L, so the difference was not statistically discernible.

Average Air Gross Beta historical data (Table 3-4) is graphed to show trends associated with a prevalent exposure pathway (Figure 3-1). In general, there was a close agreement between the results for the indicator, control and community stations. This close agreement supports the position that the plant was not contributing significantly to the gross beta concentrations in air.

Table 3-4. Average Weekly Gross Beta Air Concentration

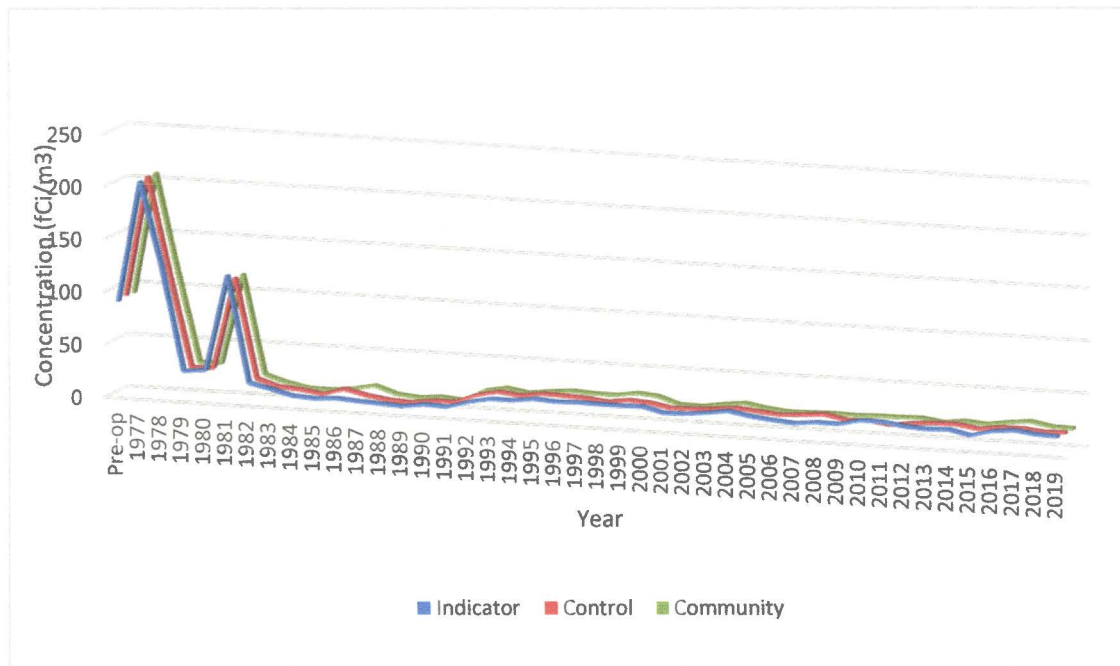
Period	Indicator (fCi/m ³)	Control (fCi/m ³)	Community (fCi/m ³)	Period	Indicator (fCi/m ³)	Control (fCi/m ³)	Community (fCi/m ³)
Pre-op	90	92	91	1998	20.6	19.3	22.0
1977	205	206	206	1999	20.5	22.1	25.2
1978	125	115	115	2000	20.9	20.8	23.6
1979	27.3	27.3	28.7	2001	16.3	17.2	17.3
1980	29.7	28.1	29.2	2002	16.8	18	16.8
1981	121	115	115	2003	19.1	19.3	19.9
1982	20.0	20.4	21.0	2004	22.0	21.3	22.4
1983	15.5	14.1	14.5	2005	18.4	19.3	19.0
1984	10.2	12.6	10.5	2006	16.1	17.5	16.8
1985	9.0	9.6	10.3	2007	14.5	18.9	17.3
1986	10.5	15.8	12.5	2008	16.7	20.6	18.0
1987	9.0	11.0	17.0	2009	16.2	16.3	17.3
1988	8	8	10	2010	21.2	17.5	18.2



Table 3-4. Average Weekly Gross Beta Air Concentration

Period	Indicator (fCi/m3)	Control (fCi/m3)	Community (fCi/m3)	Period	Indicator (fCi/m3)	Control (fCi/m3)	Community (fCi/m3)
1989	7	7	8	2011	20.9	14.5	18.2
1990	10	10	10	2012	18.0	17.3	18.9
1991	9	10	8	2013	16.7	18.7	16.1
1992	15	17.9	18.5	2014	17.7	19.1	18.5
1993	19.1	22.3	22.4	2015	13.4	15.9	16.8
1994	19.0	20.0	19.0	2016	18.7	18.8	19.9
1995	21.7	22.9	21.6	2017	20.7	18.9	22.1
1996	20.3	22.3	23.5	2018	18.1	16.9	18.3
1997	21.1	21.6	22.4	2019	17.5	17.7	18.1

Figure 3-1. Average Weekly Gross Beta Air Concentration



3.1.2 Gamma Particulates and Airborne Radioiodine

During 2019, no man-made radionuclides were detected from the gamma isotopic analysis of the quarterly composites of the air particulate filters other than Be-7, as discussed previously, Be-7 is a naturally occurring isotope and was not released from plant operations and is therefore not further evaluated here.



I-131 was not detected in the air cartridges at either the indicator or control stations in 2019. Historically, gamma isotopes have been detected as a result of offsite events. During pre-operation, Cs-137 was occasionally detected.

3.2 Direct Radiation

In 2019, direct (external) radiation was measured with Optically Stimulated Luminescent (OSL) dosimeters by placing two OSL badges at each station. The gamma dose at each station was reported as the average reading of the two badges. The badges were analyzed on a quarterly basis. An inspection was performed near mid-quarter for offsite badges to ensure that the badges were on-station and to replace any missing or damaged badges.

Two direct radiation stations were established in each of the 16 compass sectors, to form two concentric rings. The inner ring (Stations 0101 through 1601) was located near the plant perimeter as shown in Map A-1 in Appendix A and the outer ring (Stations 0104 through 1605) was located at approximately 5 miles (varying distances) from the plant as shown in Map A-2 in Appendix A. The 16 stations forming the inner ring were designated as the indicator stations. The two-ring configuration of stations was established in accordance with NRC Branch Technical Position "An Acceptable Radiological Environmental Monitoring Program", Revision 1, November 1979. The six control stations (Stations 0215, 0718, 1215, 1218, 1311 and 1612) were located at varying distances greater than 10 miles from the plant as shown in Map A-3 in Appendix A. Monitored special interest areas consist of the following: Station 1001 which was the nearest residence to the plant, and Station 1108 in the town of Ashford, Alabama. The mean and range values presented in the "Other" column in Table 3-1 includes the outer ring stations (stations 0104 through 1605) as well as stations 1001 and 1108.

As provided in Table 3-1, the 2019 average quarterly exposure at the indicator stations (inner ring) was 15.2 mR with a range of 10.8 to 24.5 mR. The indicator station average was identical to the control station average (15.2 mR; range 10.8 mR to 21.7mR). The MDD was not calculated because the control average was identical to the indicator average. These values are consistent with historical readings, where the indicator and control are closely correlated.

The quarterly exposures acquired at the community/other (outer ring) stations during 2019 ranged from 9.0 -17.7 mR with an average of 12.8 mR which was 2.4 mR less than that of the control stations (15.2 mR). The MDD does not apply since the average is less than that of the control average.

Average Direct Radiation historical data (Table 3-5) is graphed to show trends associated with a prevalent exposure pathway (Figure 3-2). The decrease between 1991 and 1992 values was attributed to a change in Thermoluminescent Dosimeters (TLDs) from Teledyne to Panasonic. It should be noted however that the differences between indicator and control and outer ring values did not change. The increase shown in 2010 reflected issues with the aging Panasonic TLD



reader. The close agreement between the station groups has supported the position that the plant was not contributing significantly to direct radiation in the environment.

Figure 3-3 provides a more detailed view of the 2019 values. The values for the indicator and special interest areas detailed below indicate that Plant Farley did not significantly contribute to direct radiation at those areas.

Table 3-5. Average Quarterly Exposure from Direct Radiation (Historical)

Period	Indicator (mR)	Control (mR)	Outer Ring (mR)	Period	Indicator (mR)	Control (mR)	Outer Ring (mR)
Pre-op	12.6	11.4	10.1	1998	16.2	14.6	13.9
1977	10.6	12.2	10.6	1999	14.7	13.4	12.6
1978	15	13.5	12	2000	15.5	14.1	13.5
1979	20.3	18.7	15.2	2001	14.9	13.4	12.7
1980	21.9	21.6	18.5	2002	14.1	12.6	11.9
1981	16.5	14.9	14.5	2003	15.2	13.6	12.9
1982	15.5	14.7	13	2004	14.3	12.9	12.1
1983	20.2	20.2	17.4	2005	14.7	13.4	12.5
1984	18.3	16.9	15.3	2006	15.2	13.6	12.9
1985	21.9	22	18	2007	14.6	13.3	12.5
1986	17.8	17.7	15.1	2008	15.0	13.7	12.9
1987	20.8	20.0	18.0	2009	15.2	13.6	12.8
1988	21.5	19.9	18.5	2010	17.8	16.7	15.5
1989	18.0	16.2	15.3	2011	21.0	19.9	18.4
1990	18.9	16.4	15.8	2012	17.4	15.8	14.7
1991	18.4	16.1	16.1	2013	16.5	15.1	13.8
1992	16.1	13.6	13.5	2014	16.7	15.7	14.1
1993	17.4	15.9	15.6	2015	17.1	15.6	14.4
1994	15.0	13.0	12.0	2016	16.3	15.2	13.9
1995	14.0	12.5	11.8	2017	16.9	16.9	14.2
1996	14.2	12.7	11.9	2018	16.3	16.7	13.7
1997	15.3	13.9	11.9	2019	15.2	15.2	12.8



Figure 3-2. Average Quarterly Exposure from Direct Radiation

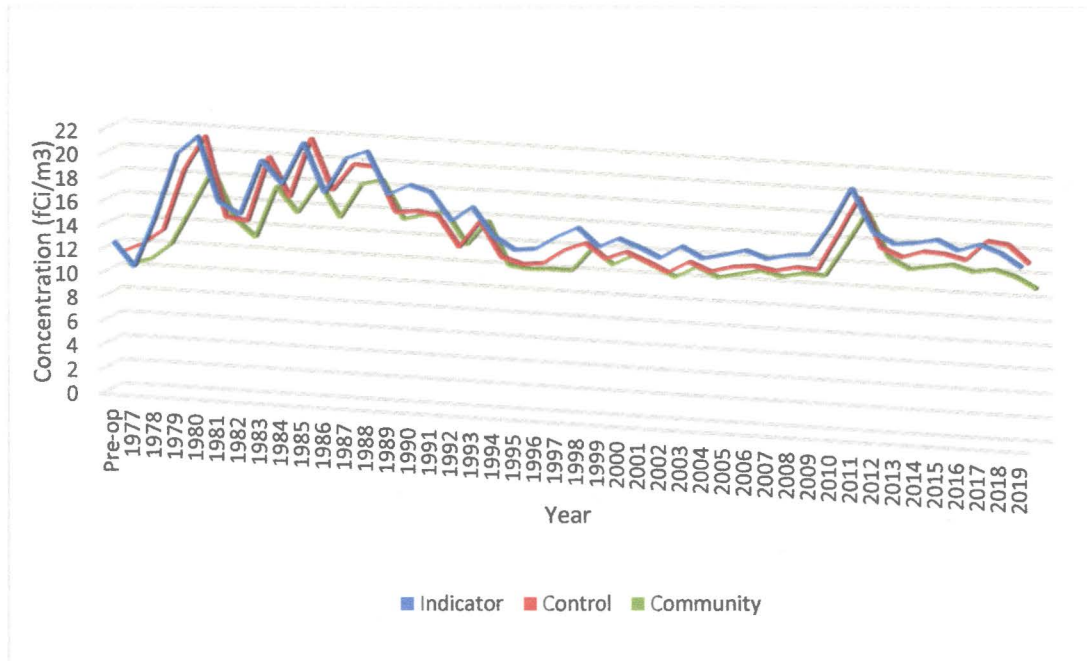
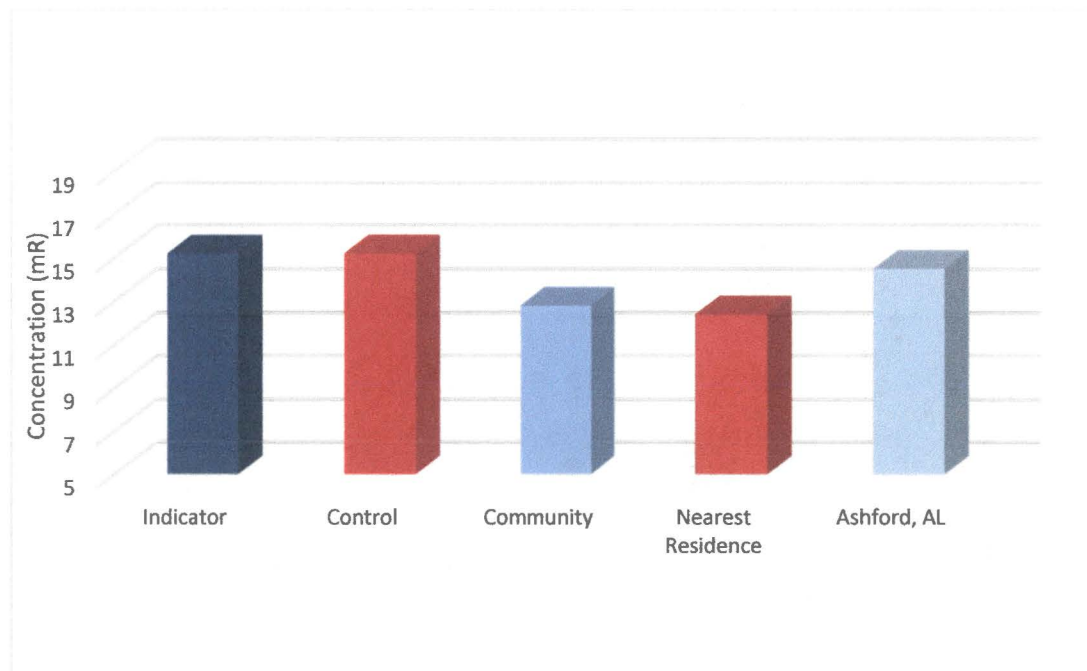


Figure 3-3. 2019 Average Exposure from Direct Radiation in Select Locations



3.3 Biological Media

Cs-137 was the only radionuclide detected in one of the three biological media. As indicated in Figure 3-4, the Cs-137 activity levels were below the respective MDCs and well below that of the respective RLs for each sample media for both the indicator and control stations.

3.3.1 Milk

Milk samples had been collected biweekly from a control location until the end of 2009 when the dairy would no longer provide samples. No indicator station (a location within five miles of the plant) has been available for milk sampling since 1987. As discussed in Section 4.0, no milk animals were found within five miles of the plant during the 2019 land use census and no milk sampling was performed during the reporting year (no available sources from control locations).

3.3.2 Vegetation

In accordance with Table 2-1 and 2-2, forage (vegetation) samples were collected every four weeks at two indicator stations on the plant perimeter, and at one control station located approximately 18 miles west of the plant in Dothan, Alabama. The man-made radionuclide Cs-137 were periodically identified in vegetation samples and was generally attributed to offsite sources (such as weapons testing, Chernobyl, and Fukushima).

During 2019, Cs-137 was identified in one sample at the control station, FB-1218-M1 (Dothan, Alabama). The control station average (and single value) was 35.5 pCi/L (no range, with only one positive). This average was based only on the detectable values; all other results were below detection limits. No environmental concerns were noted since the results were well below the RL of 2,000 pCi/L for Cs-137 in vegetation.

Be-7 was also detected in vegetation during 2019, but was not released in plant effluents throughout the year. This further illustrates the abundance of naturally-occurring Be-7 present in the surrounding environment.

3.3.3 Fish

In accordance with Table 2-1, two types of fish (bottom-feeding and game) were collected on a semiannually basis from the Chattahoochee River at a control station several miles upstream of the plant intake structure and at an indicator station a few miles downstream of the plant discharge structure. These locations are shown in Map A-3 in Appendix A.

3.3.3.1 Bottom Feeding Species

No radionuclides were identified from the control or indicator samples in 2019.



3.3.3.2 Game Species

No radionuclides were identified from the control or indicator samples in 2019.

3.3.4 Biological Media Summary

There were no statistical differences, trends, or anomalies associated with the 2019 biological media samples when compared to historical data. Cs-137 was occasionally present in biological media, as with previous sample results; however, the detections were consistently below both the MDC or RL. No other reportable radionuclides were found from the gamma isotopic analysis of biological media samples in 2019.

3.4 Off-site Groundwater

There were no true indicator sources of offsite ground water near Plant Farley. A well, located approximately four miles south-southeast of the plant on the east bank of the Chattahoochee River, serves Georgia Pacific Paper Company as a source of potable water. This well was designated as the indicator station. A deep well located about 1.2 miles southwest of the plant supplies water to the Whatley residence. This well was designated as the control station. Samples were collected quarterly and analyzed for gamma isotopic, I-131 and tritium as specified in Table 2-1. In 2019, there were no radionuclides detected in any of the ground water samples from either sample station, apart from tritium.

Since 2004, tritium has been identified at very low concentrations (near the instrument detection level) and close to environmental background levels in off-site groundwater. In 2019, tritium was detected in indicator station WGI-07 at an average of -64.7 pCi/L (range of -169 to 38.2 pCi/L). It was also detected in the control station at an average of -36.8 pCi/L (range of -174 to 77.3 pCi/L). These results were very close to the instrument detection limitations and were at concentrations well below the MDC and RL for tritium in drinking water (2,000 and 20,000 pCi/l, respectively). These values represent background conditions for tritium in drinking water and were not attributable to plant activity. Also, note that negative values in radionuclide activity represent contamination factors (e.g. laboratory equipment) subtracted from the laboratory result.

3.5 River (Surface) Water

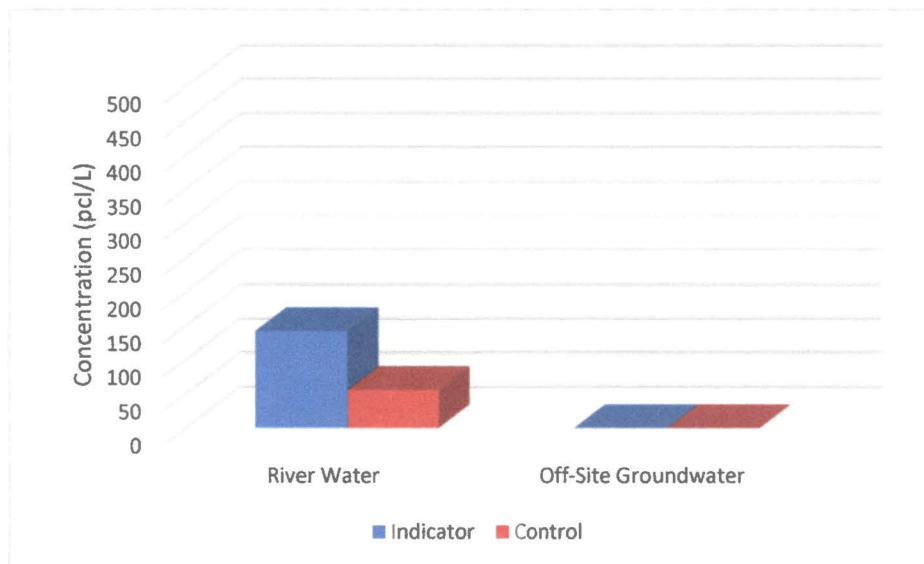
Composite river water samples were collected monthly at one upstream control location and one downstream indicator location (shown on Map A-2). The details of the sampling protocols are outlined in Tables 2-1 and Table 2-2. A gamma isotopic analysis was conducted on each monthly sample. The monthly aliquots were combined in the lab to form quarterly composite samples in order to be analyzed for tritium.



As provided in Table 3-1, there were no positive results during 2019 from the gamma isotopic analysis of the river water samples. Tritium was detected in each of the quarterly composites at the indicator station, with an average of 142 pCi/L (range of 47-268). Tritium in the control station in each of the composites had an average value of 56.4 pCi/L (range -92 to 157 pCi/L). The positive tritium results for both the indicator and control were all less than the MDC and RL limits (2,000 pCi/l and 20,000 pCi/l, respectively) for tritium in a drinking water supply source. No MDD was calculated because of the level of negative values. These values represent background conditions for tritium in drinking water and were not attributable to plant activity. Also, note that negative values in radionuclide activity represent contamination factors (e.g. laboratory equipment) subtracted from the laboratory result.

Figure 3-4 below details the 2019 average tritium concentrations across both water mediums.

Figure 3-4. 2019 Average Tritium Concentrations in River and Off-site Groundwater



3.6 Sediment

Sediment was collected along the shoreline of the Chattahoochee River in the spring and fall at a control station that was approximately four miles upstream of the intake structure and at an indicator station that was approximately two miles downstream of the discharge structure as shown in Map A-3. A gamma isotopic analysis was performed on each sample. There were no reportable radionuclides detected in sediment samples in 2019.

3.7 Interlaboratory Comparison Program

In accordance with ODCM 4.1.3, GPCEL participated in an Interlaboratory Comparison Program (ICP) which satisfied the requirements of Regulatory Guide 4.15, Revision 1, "Quality Assurance



for Radiological Monitoring Programs (Normal Operations) - Effluent Streams and the Environment", February 1979. The ICP included the required determinations (sample medium/radionuclide combinations) included in the REMP.

The ICP was conducted by Eckert & Ziegler Analytics, Inc. (EZA) of Atlanta, Georgia. EZA has a documented Quality Assurance (QA) program and the capability to prepare Quality Control (QC) materials traceable to the National Institute of Standards and Technology. The ICP is a third-party blind testing program which provided a means to ensure independent checks were performed on the accuracy and precision of the measurements of radioactive materials in environmental sample matrices. EZA supplied the crosscheck samples to GPCEL which performed routine laboratory analyses. Each of the specified analyses was performed three times.

The accuracy of each result was measured by the normalized deviation, which is the ratio of the reported average less the known value to the total error. An investigation was undertaken whenever the absolute value of the normalized deviation was greater than three or whenever the coefficient of variation was greater than 15% for all radionuclides other than Cr-51 and Fe-59. For Cr-51 and Fe-59, an investigation was undertaken when the coefficient of variation exceeded the values shown on Table 3-6 below:

Table 3-6. Interlaboratory Comparison Limits

Nuclide	Concentration *	Total Sample Activity (pCi)	Percent Coefficient of Variation
Cr-51	<300	NA	25
	NA	>1000	25
	>300	<1000	15
Fe-59	<80	NA	25
	>80	NA	15

* For air filters, concentration units are pCi/filter. For all other media, concentration units are pCi/liter (pCi/l).

As required by ODCM 4.1.3.3 and 7.1.2.3, a summary of the results of the GPCEL's participation in the ICP is provided in Table 3-7 for:

- gross beta and gamma isotopic analyses of an air filter
- gamma isotopic analyses of milk samples
- gross beta, tritium and gamma isotopic analyses of water samples

The 2019 analyses included tritium, gross beta and gamma emitting radio-nuclides in different matrices. The attached results for all analyses were within acceptable limits for accuracy (less than 15% coefficient of variation and less than 3.0 normalized deviations, except for Cr-51 and Fe-59, which are outlined in Table 3-6).



Table 3-7. Interlaboratory Comparison Summary

Analysis or Radionuclide	Date Prepared	Reported Average	Known Value	Standard Deviation EL	Uncertainty Analytics (3S)	Percent Coefficient of Variation	Normalized Deviation
I-131 ANALYSIS OF AN AIR CARTRIDGE (pCi/cartridge)							
I-131	9/12/2019	96.6	95.7	3.46	1.60	6.26	0.15
GAMMA ISOTOPIC ANALYSIS OF AN AIR FILTER (pCi/filter)							
Ce-141	9/12/2019	152	147	2.08	2.45	5.06	0.64
Co-58		165	154	2.83	2.57	4.98	1.38
Co-60		194	185	3.62	3.09	4.52	1.07
Cr-51		304	291	9.52	4.85	8.14	0.52
Cs-134		187	182	4.01	3.04	5.00	0.58
Cs-137		145	132	2.77	2.21	4.98	1.75
Fe-59		134	130	4.30	2.18	5.87	0.50
Mn-54		154	135	2.58	2.26	4.94	2.54
Zn-65		295	257	5.78	4.30	5.11	2.50
GROSS BETA ANALYSIS OF AN AIR FILTER (PCI/FILTER)							
Gross Beta	9/12/2019	181	221	7.07	3.69	5.07	-4.39
GAMMA ISOTOPIC ANALYSIS OF A MILK SAMPLE (PCI/LITER)							
Co-58	9/12/2019	177	175	3.46	2.92	5.88	0.17
Co-60		216	211	5.28	3.52	5.16	0.42
Cr-51		350	331	28.4	5.53	13.4	0.41
Cs-134		216	207	6.64	3.46	5.17	0.78
Cs-137		158	151	4.91	2.52	6.46	0.65
Fe-59		143	148	6.44	2.48	8.86	-0.37
I-131		97.3	92.1	5.11	1.54	9.99	0.54
Mn-54		166	154	8.00	2.58	7.34	1.01
Zn-65		315	293	8.23	4.90	6.55	1.07
Ce-141		173	167	6.19	2.79	7.10	0.46
GROSS BETA ANALYSIS OF WATER SAMPLE (PCI/LITER)							
Gross Beta	9/12/2019	268	252	4.38	4.22	5.88	1.04
GAMMA ISOTOPIC ANALYSIS OF WATER SAMPLES (PCI/LITER)							
Co-58	9/12/2019	140	133	5.11	1.55	6.76	0.74



Table 3-7. Interlaboratory Comparison Summary

Analysis or Radionuclide	Date Prepared	Reported Average	Known Value	Standard Deviation EL	Uncertainty Analytics (3S)	Percent Coefficient of Variation	Normalized Deviation
Co-60		168	160	5.17	1.98	5.69	0.82
Cr-51		294	251	26.3	4.16	14.65	1.00
Cs-134		163	157	8.53	1.98	7.00	0.54
Cs-137		123	114	1.72	1.72	6.15	1.17
Fe-59		117	112	5.46	1.50	9.14	0.48
I-131		94.7	89.9	2.44	1.24	8.88	0.57
Mn-54		129	117	3.80	2.26	6.55	1.39
Zn-65		245	222	7.51	2.74	6.90	1.33
Ce-141		138	127	7.87	1.43	8.80	0.87
TRITIUM ANALYSIS OF WATER SAMPLES (PCI/LITER)							
H-3	9/12/2019	13700	14000	455	234	4.30	-0.59
GAMMA ISOTOPIC ANALYSIS OF VEGETATION SAMPLES (PCI/LITER)							
Co-58	9/12/2019	290	286	7.39	4.78	7.26	0.21
Co-60		349	345	5.01	5.76	5.27	0.24
Cr-51		452	542	47.9	9.04	23.2	-0.86
Cs-134		362	339	8.00	5.66	5.02	1.29
Cs-137		248	247	14.9	4.12	7.03	0.08
Fe-59		252	243	9.73	4.05	10.5	0.33
Mn-54		260	252	7.25	4.22	7.38	0.43
Zn-65		513	480	29.2	8.01	8.79	0.73
Ce-141		261	273	8.84	4.56	8.57	-0.55



3.8 Groundwater

To ensure compliance with NEI 07-07 (Industry Ground Water Protection Initiative – Final Guidance Document), Southern Nuclear developed the Nuclear Management Procedure, Radiological Groundwater Protection Program. The procedure contains detailed site-specific monitoring plans, program technical bases, and communications protocol (to ensure that radioactive leaks and spills are addressed and communicated appropriately). In an effort to prevent future leaks of radioactive material to groundwater, SNC plants have established buried piping and tanks inspection programs. No changes were made to the Groundwater Protection Program in 2019.

Plant Farley maintained the following wells (Table 3-8), which were sampled at a frequency that satisfied the requirements of NEI 07-07. The analytical results for 2019 were all within regulatory limits specified within this report. Table 3-9 contains the results of the Groundwater Protection Program for tritium (in pCi/L). See Map A-4 in Appendix A for well locations

Table 3-8. Groundwater Protection Program Locations

Well	Aquifer	Monitoring Purpose
R1	Major Shallow aquifer	Dilution line
R2	Major Shallow aquifer	Dilution line
R3	Major Shallow aquifer	Unit 2 RWST
R4	Major Shallow aquifer	Unit 1 RWST
R5	Major Shallow aquifer	Dilution line
R6	Major Shallow aquifer	Dilution line
R7	Major Shallow aquifer	Dilution line
R8	Major Shallow aquifer	Dilution line
R9	Major Shallow aquifer	Dilution line
R10	Major Shallow aquifer	Dilution line
R11	Major Shallow aquifer	Background 1
R13	Major Shallow aquifer	Dilution line
R14	Major Shallow aquifer	Background 2
PW#2	Drinking water	Production Well #2 Supply
PW#3	Drinking water	Production Well #3 Supply
PW#4	Drinking water	Production Well #4 Supply
CW West	Drinking water	Construction Well West Supply
CW East	Drinking water	Construction Well East Supply
FRW	Drinking water	Firing Range Well Supply
SW-1	N/A	Background 3, Service Water Pond



Table 3-9. Groundwater Protection Program Results

Well	June 2019	November 2019
R1	NDM	NDM
R2	NDM	NDM
R3	827	764
R4	NDM	NDM
R5	NDM	NDM
R6	NDM	NDM
R7	NDM	NDM
R8	NDM	NDM
R9	NDM	180
R10	NDM	NDM
R11	NDM	NDM
R13	NDM	NDM
R14	202	NDM
SW-1	NS	NDM
E Yard	NS	248
WSW-FR	NS	NDM
WSW-CE	NS	257
WSW-4	NS	NDM
SE Yard	NS	NDM
WSW-2	NS	207

NDM – No Detectable Measurements

NS – Not Sampled



4 SURVEY SUMMARIES

4.1 Land Use Census

In accordance with ODCM 4.1.2, a land use census was conducted on December 21, 2019 that circumscribed each of the 16 compass sectors within a five mile radius in order to verify the locations of the nearest radiological receptor. A milk animal is a cow or goat producing milk for human consumption. The census results are tabulated in Table 4.1. The 2019 land use census indicated that there were no changes to the nearest location for any of the categories in any of the sectors when compared to the 2017 census, nor were any milk animals located within a five-mile radius.

Table 4-1. Land Use Census Results

Sector	Residence	Milk Animal
Distance in Miles to the Nearest Location in Each Sector		
N	2.6	None
NNE	2.5	None
NE	2.4	None
ENE	2.4	None
E	2.8	None
ESE	3.0	None
SE	3.4	None
SSE	None (>5.0)	None
S	4.3	None
SSW	2.9	None
SW	1.2	None
WSW	2.4	None
W	1.3	None
WNW	2.1	None
NW	1.5	None
NNW	3.4	None

4.2 Chattahoochee River Survey

A previous river survey performed for Plant Farley identified a potential use of water from the Chattahoochee River, downstream of the plant discharge at approximately 2 miles. In July 2013, the Georgia Department of Natural Resources issued a farm use permit to withdraw from the Chattahoochee River to the Nature Conservancy of Georgia. The Nature Conservancy of Georgia leases property along the river for agricultural and grazing purposes to a private farm family, and water from the river could potentially be used for crop irrigation. At the time of this report, no water has been withdrawn and used for crop irrigation by the landowners.



In the fall of 2019, the Georgia Environmental Protection Division (EPD), Alabama Department of Environmental Management (ADEM) and Alabama Department of Economic and Community Affairs (ADECA) was contacted to request any information about river use permits that had been issued in the area near the plant. No additional withdrawal permits or intake locations had been added at the time of the survey.

4.3 Meteorological Report Summary

The meteorological tower data collected throughout the year is analyzed and compared to previous results by a third-party consultant. For 2019, the meteorological tower data were comparable to previous years, as related to precipitation amounts (49.17") and wind direction (from northwest at 10m, from the southwest at 45m). Therefore, no changes to REMP monitoring locations are warranted.



5 CONCLUSIONS

This report has confirmed SNCs conformance with the requirements of Chapter 4 of the ODCM and the objectives were to:

- 1) Determine the levels of radiation and the concentrations of radioactivity in the environs; and
- 2) Assess the radiological impact (if any) to the environment due to the operation of the FNP.

Based on the 2019 activities associated with the REMP, SNC offers the following conclusions:

- Samples were collected and there were no deviations or anomalies that negatively affected the quality of the REMP
- Land use census and river survey did not reveal any changes
- Analytical results were below reporting levels
- These values were consistent with historical results which indicate no adverse radiological environmental impacts associated with the operation of FNP

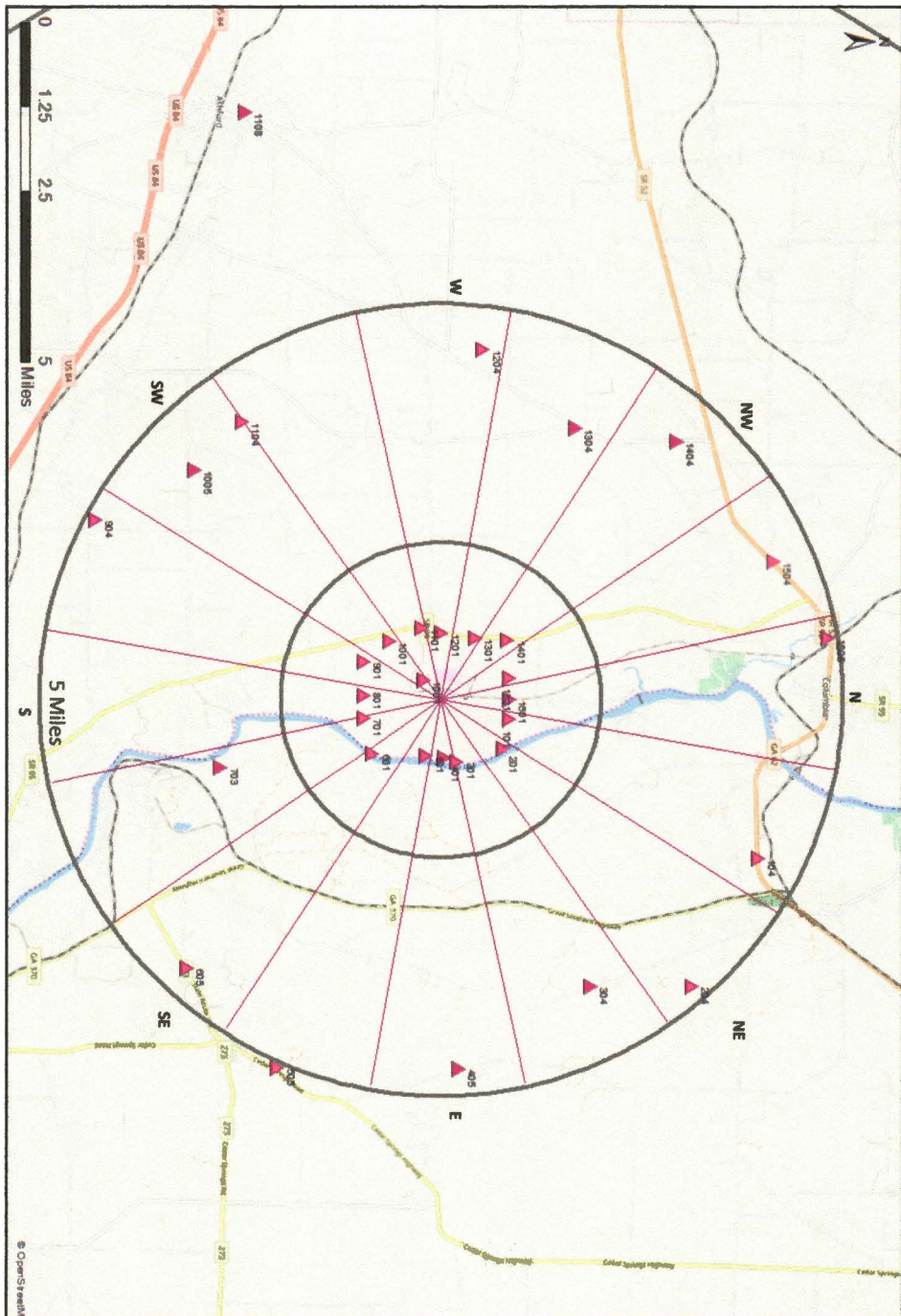




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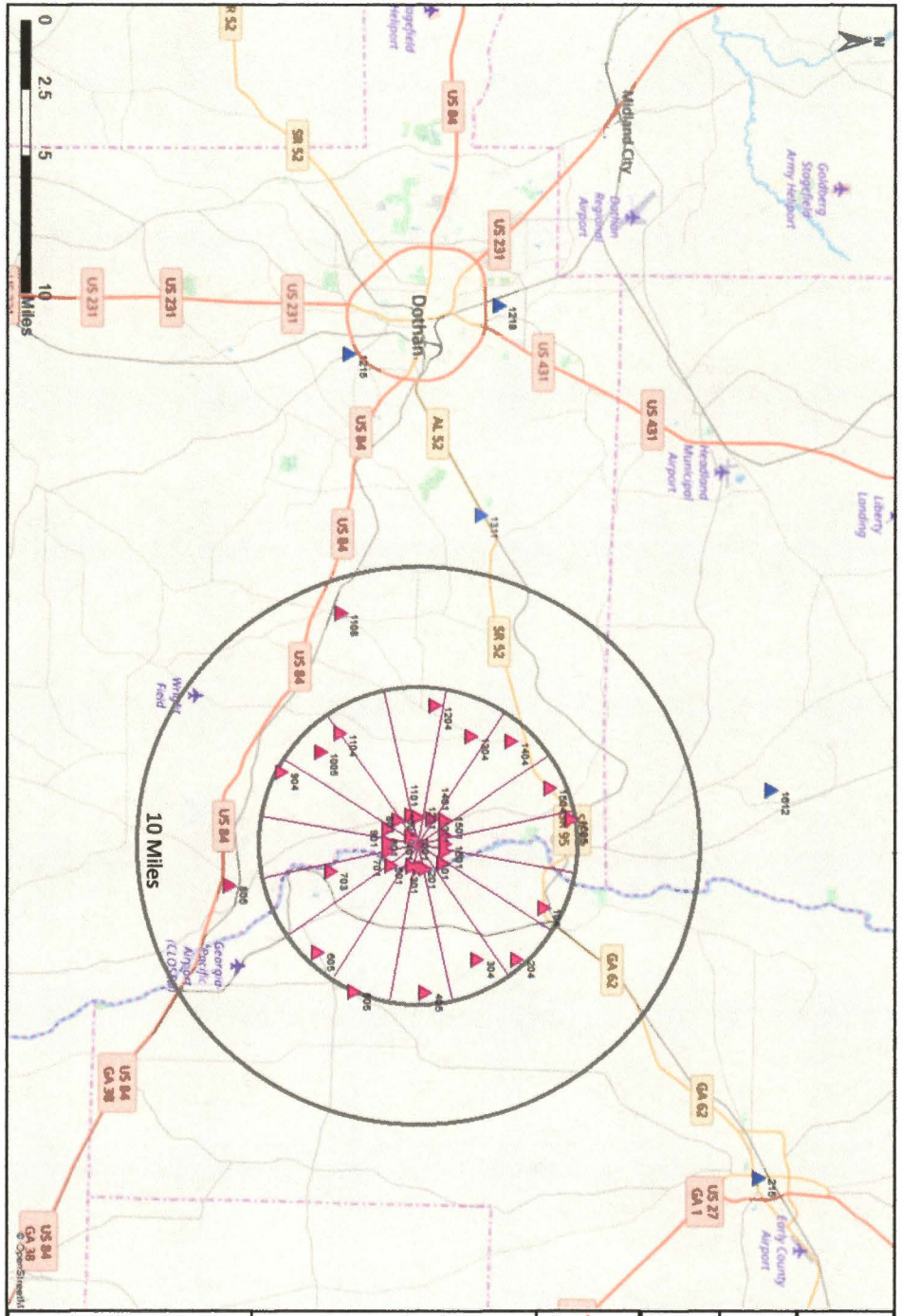
APPENDIX A

Maps





<p>Legend:</p> <p>Indicator Stations - </p>	<p>Joseph M. Farley Nuclear Plant 2019 Annual Radiological Environmental Report REMP Stations in Plant Vicinity</p>	 <p>Southern Nuclear</p>	<p>Drawn by: C. Groce Appendix A Map A-1 April 14, 2020</p>
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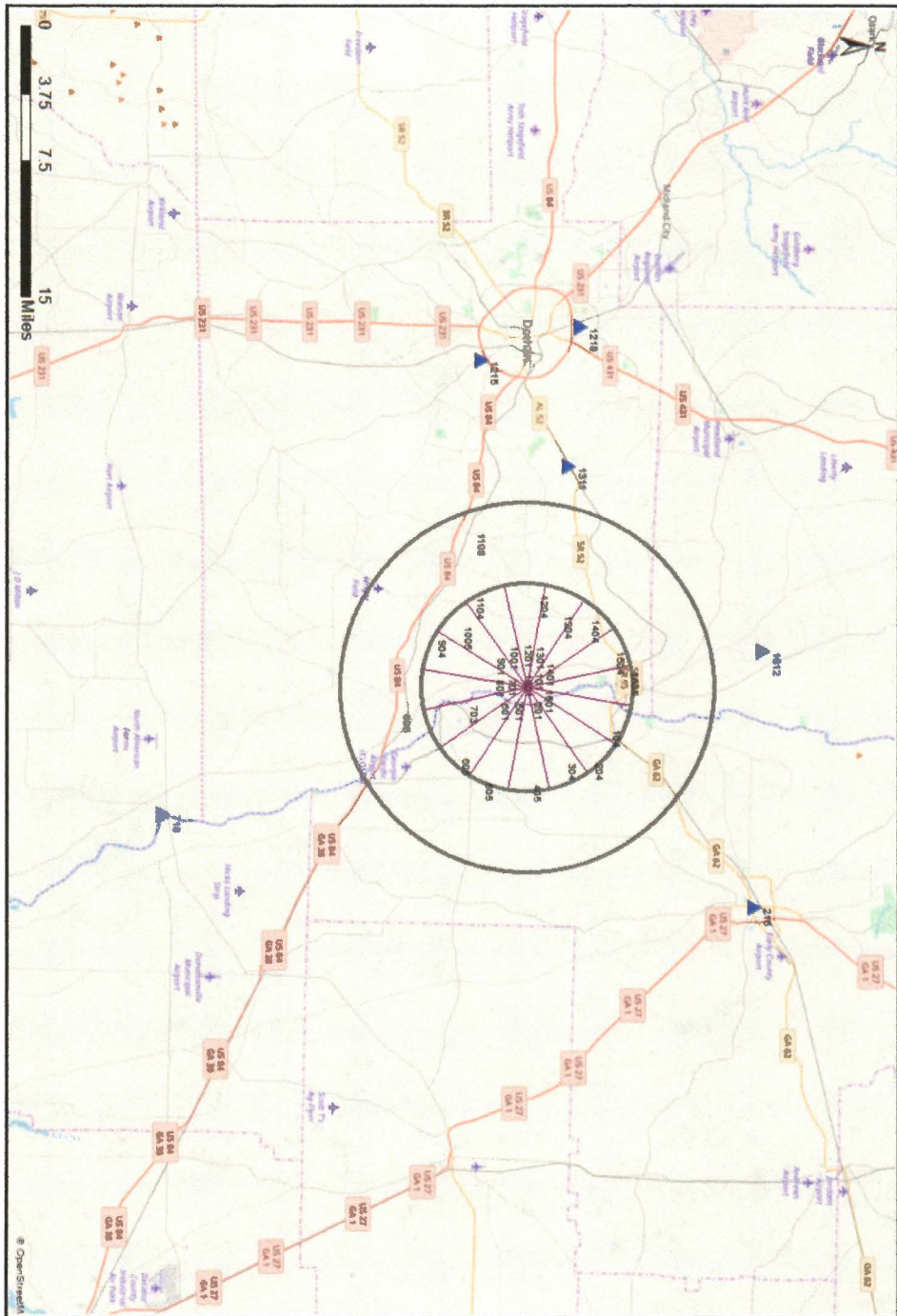
Legend:
 Indicator Stations - ▲
 Control Stations - ▲


Joseph M. Farley Nuclear Plant
 2019 Annual Radiological Environmental Report
 REMP Stations within 10 miles




Drawn by: C. Groce
 April 14, 2020

Appendix A
 Map A-2



<p>Legend:</p> <p>Control Stations - ▲</p>	<p>Joseph M. Farley Nuclear Plant</p> <p>2015 Annual Radiological Environmental Report</p> <p>Extended REMP Stations</p>	 <p>Southern Nuclear</p>	<p>Drawn by: C. Groce</p> <p>April 30, 2016</p>	<p>Appendix A</p> <p>Map A-3</p>
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<p>Legend:</p> <p>Groundwater Wells ●</p>	<p>Joseph M. Farley Nuclear Plant 2016 Annual Radiological Environmental Report Facility Groundwater Wells</p>	 <p>Southern Nuclear</p>	<p>Drawn by: C. Groce Appendix A Map A-4</p> <p>April 30, 2016 April 14, 2016</p>
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APPENDIX B

Errata



There are no errata for the 2019 reporting year.

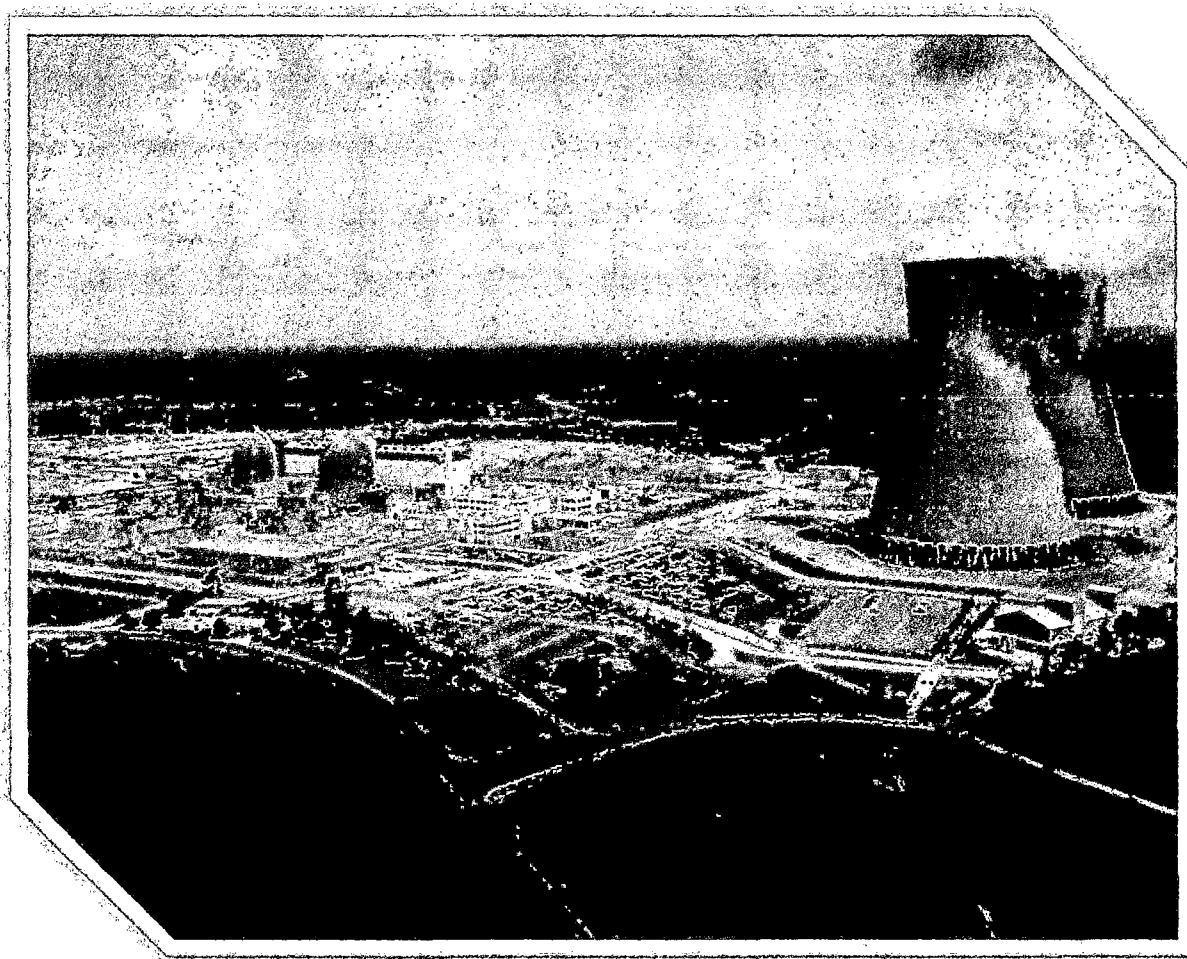


**Edwin I. Hatch Nuclear Plant – Units 1 & 2
Joseph M. Farley Nuclear Plant– Units 1 & 2
Vogtle Electric Generating Plant– Units 1 & 2
Annual Radiological Environmental Operating Reports for 2019**

Enclosure 3

Vogtle Annual Radiological Environmental Operating Report for 2019

**VOGTLE ELECTRIC GENERATING PLANT
2019 ANNUAL RADIOLOGICAL ENVIRONMENTAL
OPERATING REPORT**



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Appendix A – Maps

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- A-2 – REMP Stations within 10 Miles
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- A-4 – Facility Groundwater Wells

Appendix B – Errata

Appendix C – Data



LIST OF ACRONYMS

EPA	Environmental Protection Agency
GPC	Georgia Power Company
GPCEL	Georgia Power Company Environmental Laboratory
ICP	Interlaboratory Comparison Program
MDC	Minimum Detectable Concentration
MDD	Minimum Detectable Difference
MWt	MegaWatts Thermal
NA	Not Applicable
NDM	No Detectable Measurement(s)
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
OSL	Optically Stimulated Luminescence
PWR	Pressurized Water Reactor
REMP	Radiological Environmental Monitoring Program
RL	Reporting Level
RM	River Mile
SNC	Southern Nuclear Operating Company
SRS	Savannah River Site
TLD	Thermoluminescent Dosimeter
TS	Technical Specification
VEGP	Alvin W. Vogtle Electric Generating Plant



1 INTRODUCTION

The Radiological Environmental Monitoring Program (REMP) was conducted in accordance with Chapter 4 of the Offsite Dose Calculation Manual (ODCM). The REMP activities for 2019 were reported herein in accordance with Technical Specification (TS) 5.6.2 and ODCM 7.1.

The objectives of the REMP were to:

- 1) Determine the levels of radiation and the concentrations of radioactivity in the environs and;
- 2) Assess the radiological impact (if any) to the environment due to the operation of the Alvin W. Vogtle Electric Generating Plant (VEGP).

The assessments included comparisons between results of analyses of samples obtained at locations where radiological levels were not expected to be affected by plant operation (control stations), areas of higher population (community stations), and at locations where radiological levels were more likely to be affected by plant operation (indicator stations), as well as comparisons between preoperational and operational sample results.

VEGP is owned by Georgia Power Company (GPC), Oglethorpe Power Corporation, the Municipal Electric Authority of Georgia, and the City of Dalton, Georgia. It is located on the southwest side of the Savannah River approximately 23 river miles upstream from the intersection of the Savannah River and U.S. Highway 301. The site is in the eastern sector of Burke County, Georgia, across the river from Barnwell County, South Carolina. The VEGP site is directly across the Savannah River from the Department of Energy Savannah River Site (SRS). Unit 1, a Westinghouse Electric Corporation Pressurized Water Reactor (PWR), with a licensed core thermal power of 3,626 MegaWatts (MWt), received its operating license on January 16, 1987 and commercial operation started on May 31, 1987. Unit 2, also a Westinghouse PWR rated for 3,626 MWt, received its operating license on February 9, 1989 and began commercial operation on May 19, 1989. Both units were relicensed on June 3, 2009.

The pre-operational stage of the REMP began with initial sample collections in August of 1981. The transition from the pre-operational to the operational stage of the REMP occurred as Unit 1 reached initial criticality on March 9, 1987.

- A description of the REMP is provided in Section 2 of this report
- Section 3 provides a summary of the results, an assessment of any radiological impacts to the environment, and the results from the interlaboratory comparison
- A summary of the land use census and the river survey are included in Section 4
- Conclusions are included in Section 5



2 REMP DESCRIPTION

The following section provides a description of the sampling and laboratory protocols associated with the REMP. Table 2-1 provides a summary of the sample types to be collected and the analyses to be performed in order to monitor the airborne, direct radiation, waterborne and ingestion pathways, and also summarizes the collection and analysis frequencies (in accordance with ODCM Section 4.2). Table 2-2 provides specific information regarding the station locations, their proximity to the plant, and exposure pathways. Additionally, Appendix A of this report provides Maps A-1 through A-4 that depict the georeferenced location of sampling stations. Any Errata from previous reports are provided in Appendix B. All data points resulting from REMP sampling are provided in Appendix C.

During 2019 a contractor through Southern Nuclear Operating Company (SNC) provided services for the collection of all of the REMP samples. The Georgia Power Central Environmental Laboratory (GPCEL) analyzed all REMP samples.



Table 2-1. Summary Description of Radiological Environmental Monitoring Program

Exposure Pathway and/or Sample	Number of Representative Samples and Sample Locations	Sampling/Collection Frequency	Type/Frequency of Analysis
Direct Radiation	40 routine monitoring stations with two or more dosimeters placed as follows: An inner ring of stations, one in each compass sector in the general area of the site boundary; An outer ring of stations, one in each compass sector at approximately five miles from the site; and Special interest areas, such as population centers, nearby recreation areas, and control stations	Quarterly	Gamma dose/Quarterly
Airborne Radioiodine and Particulates	Samples from seven locations: Five locations close to the site boundary in different sectors; A community having the highest calculated annual average ground level D/Q; A control location near a population center at a distance of about 14 miles	Continuous sampler operation with sample collection weekly, or more frequently if required by dust loading	Radioiodine canister: I-131 analysis, weekly Particulate sampler: Gross beta analysis ¹ following filter change and gamma isotopic analysis ² of composite (by location) /Quarterly
Waterborne			
Surface ³	One sample upriver Two samples downriver	Composite sample over one month period ⁴	Gamma isotopic analysis ² , monthly Composite for tritium analysis/Quarterly



Table 2-1. Summary Description of Radiological Environmental Monitoring Program

Exposure Pathway and/or Sample	Number of Representative Samples and Sample Locations	Sampling/Collection Frequency	Type/Frequency of Analysis
Drinking	Two samples at each of the three nearest water treatment plants that could be affected by plant discharges Two samples at a control location	Composite sample of river water near the intake of each water treatment plant over two week period ⁴ when I-131 analysis is required for each sample; monthly composite otherwise; and grab sample of finished water at each water treatment plant every two weeks or monthly, as appropriate	I-131 analysis on each sample when the dose calculated for the consumption of the water is greater than 1 mrem per year ⁵ . Composite for gross beta and gamma isotopic analysis ² on raw water/Monthly. Gross beta, gamma isotopic and I-131 analyses on grab sample of finished water/Monthly. Composite for tritium analysis on raw and finished water/Quarterly
Groundwater	See Table 3-8 and Map A-4 for well locations. These are part of the GWPP (NEI 07-07).	Frequency based on GWPP.	Tritium, gamma isotopic, and field parameters of each sample; hard-to-detects based on tritium and gamma results
Shoreline Sediment	One sample from downriver area with existing or potential recreational value One sample from upriver area with existing or potential recreational value	Semiannually	Gamma isotopic analysis ² /Semiannually
Ingestion			
Milk	Two samples from milking animals ⁶ at control locations at a distance of about 10 miles or more	Bimonthly	Gamma isotopic analysis ^{2,7} /Bimonthly



Table 2-1. Summary Description of Radiological Environmental Monitoring Program

Exposure Pathway and/or Sample	Number of Representative Samples and Sample Locations	Sampling/Collection Frequency	Type/Frequency of Analysis
Fish	At least one sample of any commercially or recreationally important species near the plant discharge At least one sample of any commercially or recreationally important species in an area not influenced by plant discharges At least one sample of any anadromous species near the plant discharge	Semiannually During spring spawning season	Gamma isotopic analysis ² on edible portions/Semiannually Gamma isotopic analysis ² on edible portions/Annually.
Grass or Leafy Vegetation	One sample from two onsite locations near the site boundary in different sectors One sample from a control location at a distance of about 17 miles	Monthly during growing season	Gamma isotopic analysis ^{2,7} Monthly
<p>Notes:</p> <p>¹Airborne particulate sample filters were analyzed for gross beta radioactivity 24 hours or more after sampling to allow for radon and thoron daughter decay. If gross beta activity in air particulate samples was greater than 10 times the yearly mean of control samples, gamma isotopic analysis was performed on the individual samples.</p> <p>²Gamma isotopic analysis means the identification and quantification of gamma-emitting radionuclides that may be attributable to the effluents from the facility.</p> <p>³Upriver sample was taken at a distance beyond significant influence of the discharge. Downriver samples were taken beyond but near the mixing zone.</p> <p>⁴Composite sample aliquots were collected at time intervals that were very short (e.g., hourly) relative to the compositing period (e.g., monthly) to ensure obtaining a representative sample.</p> <p>⁵The dose was calculated for the maximum organ and age group, using the methodology and parameters in the ODCM.</p> <p>⁶A milking animal is a cow or goat producing milk for human consumption.</p> <p>⁷If the gamma isotopic analysis is not sensitive enough to meet the Minimum Detectable Concentration (MDC) for I-131, a separate analysis for I-131 may be performed.</p>			



Table 2-2. Radiological Environmental Sampling Locations

Station Number	Station Type	Descriptive Location	Direction ¹	Distance (miles) ¹	Radiation Sample Type
1	Indicator	River Bank	N	1.1	Direct
2	Indicator	River Bank	NNE	0.8	Direct
3	Indicator	Discharge Area	NE	0.6	Airborne
3	Indicator	River Bank	NE	0.7	Direct
4	Indicator	River Bank	ENE	0.8	Direct
5	Indicator	River Bank	E	1.0	Direct
6	Indicator	Plant Wilson	ESE	1.1	Direct
7	Indicator	Simulator Building	SE	1.7	Airborne, Direct, Vegetation
8	Indicator	River Road	SSE	1.1	Direct
9	Indicator	River Road	S	1.1	Direct
10	Indicator	Met Tower	SSW	0.9	Airborne
10	Indicator	River Road	SSW	1.1	Direct
11	Indicator	River Road	SW	1.2	Direct
12	Indicator	River Road	WSW	1.2	Airborne, Direct
13	Indicator	River Road	W	1.3	Direct
14	Indicator	River Road	WNW	1.8	Direct
15	Indicator	Hancock Landing Road	NW	1.5	Direct, Vegetation
16	Indicator	Hancock Landing Road	NNW	1.4	Airborne, Direct
17	Other	Sav. River Site (SRS), River Road	N	5.4	Direct
18	Other	SRS, D Area	NNE	5.0	Direct
19	Other	SRS, Road A.13	NE	4.6	Direct
20	Other	SRS, Road A.13.1	ENE	4.8	Direct
21	Other	SRS, Road A.17	E	5.3	Direct
22	Other	River Bank	ESE	5.2	Direct



Table 2-2. Radiological Environmental Sampling Locations

Station Number	Station Type	Descriptive Location	Direction ¹	Distance (miles) ¹	Radiation Sample Type
23	Other	River Road	SE	4.6	Direct
24	Other	Chance Road	SSE	4.9	Direct
25	Other	Chance Road near Highway 23	S	5.2	Direct
26	Other	Highway 23 and Ebenezer Church Road	SSW	4.6	Direct
27	Other	Highway 23 opposite Boll Weevil Road	SW	4.7	Direct
28	Other	Thomas Road	WSW	5.0	Direct
29	Other	Claxton-Lively Road	W	5.1	Direct
30	Other	Nathaniel Howard Road	WNW	5.0	Direct
31	Other	River Road at Allen's Chapel Fork	NW	5.0	Direct
32	Other	River Bank	NNW	4.7	Direct
35	Other	Girard	SSE	6.6	Airborne, Direct
36	Control	GPC Waynesboro Op. HQ	WSW	13.9	Airborne, Direct
37	Control	Substation, Waynesboro, GA	WSW	16.7	Direct, Vegetation
43	Other	Employee's Rec. Center	SW	2.2	Direct
47	Control	Oak Grove Church	SE	10.4	Direct
48	Control	McBean Cemetery	NW	10.2	Direct
51	Control	SGA School, Sardis, GA	S	11.0	Direct
52	Control	Oglethorpe Substation; Alexander, GA	SW	10.7	Direct
80	Control	Augusta Water Treatment Plant	NNW	29.0	Drinking Water ²
81	Control	Sav. River	N	2.5	Fish ³ Sediment ⁴
82	Control	Sav. River (RM 151.2)	NNE	0.8	River Water
83	Indicator	Sav. River (RM 150.4)	ENE	0.8	River Water Sediment ⁴
84	Other	Sav. River (RM 149.5)	ESE	1.6	River Water
85	Indicator	Sav. River	ESE	4.3	Fish ³
88	Indicator	Cherokee Hill Water Treatment Plant, Port Wentworth, GA	SSE	72	Drinking Water ⁵



Table 2-2. Radiological Environmental Sampling Locations

Station Number	Station Type	Descriptive Location	Direction ¹	Distance (miles) ¹	Radiation Sample Type
89	Indicator	Purrysburg Water Treatment Plant; Purrysburg, SC	SSE	76	Drinking Water ⁶
98	Control	W.C. Dixon Dairy	SE	9.8	Milk ⁷
101	Indicator	Girard Dairy	S	5.5	Milk ⁷
102	Control	Seven Oaks Dairy/Milky Way Dairy	W	7.5/16.0	Milk ⁷

Notes:

¹Direction and distance were determined from a point midway between the two reactors.

²The intake for the Augusta Water Treatment Plant was located on the Augusta Canal. The entrance to the canal was at River Mile (RM) 207 on the Savannah River. The canal effectively parallels the river. The intake to the pumping station was about 4 miles down the canal.

³A 5-mile stretch of the river was generally needed to obtain adequate fish samples. Samples were normally gathered between RM 153 and 158 for upriver collections and between RM 144 and 149.4 for downriver collections.

⁴Sediment was collected at locations with existing or potential recreational value. Because high water, shifting of the river bottom, or other reasons could cause a suitable location for sediment collections to become unavailable or unsuitable, a stretch of the river between RM 148.5 and 150.5 was designated for downriver collections while a stretch between RM 153 and 154 was designated for upriver collections. In practice, collections were normally made at RM 150.2 for downriver collections and RM 153.3 for upriver collections.

⁵The intake for the Cherokee Hill Water Treatment Plant was located on Abercorn Creek which is about one and a quarter creek miles from its mouth on the Savannah River at RM 29.

⁶The intake for the Purrysburg Water Treatment Plant was located on the same canal as the Beaufort-Jasper Water Treatment Plant. The Purrysburg intake was closer to the Savannah River at the beginning of the canal.

⁷Girard Dairy was considered an indicator station since it is the closest dairy to the plant (~5.5 miles). Dixon Dairy went out of business in June 2009 and Seven Oaks Dairy (~7.5 miles) was added as a replacement and was considered a control station even though a control station is typically 10 miles or greater. Milky Way Dairy was identified and added to the ODCM in 2015 to replace Seven Oaks since it is at 16.0 miles from the plant.



3 RESULTS SUMMARY

Included in this section are statistical evaluations of the laboratory results, comparison of the results by media, and a summary of the anomalies and deviations. Overall, 2,690 analyses were performed across nine exposure pathways. Tables and figures are provided throughout this section to provide an enhanced presentation of the information.

In recent history, man-made nuclides have been released into the environment and have resulted in wide spread distribution of radionuclides across the globe. For example, atmospheric nuclear weapons tests from the mid-1940s through 1980 distributed man-made nuclides around the world. The most recent atmospheric tests in the 1970s and in 1980 have had a significant impact upon the radiological concentrations found in the environment prior to and during pre-operation, and through early operation. Some long-lived radionuclides, such as Cs-137, continue to be detected and a portion of these detections are believed to be attributed to the nuclear weapons tests.

Additionally, data associated with certain radiological effects created by off-site events have been removed from the historical evaluation, this includes: the nuclear atmospheric weapon test in the fall of 1980; the Chernobyl incident in the spring of 1986; abnormal releases from the Savannah River Site (SRS) during 1987 and 1991; and the Fukushima event in the spring of 2011.

As indicated in ODCM 7.1.2.1, the results for naturally occurring radionuclides that are also found in plant effluents must be reported along with man-made radionuclides. Historically, the radionuclide Be-7, which occurs abundantly in nature, is often detected in REMP samples, and occasionally detected in the plant's liquid and gaseous effluents. When it is detected in effluents and REMP samples, it is also included in the REMP results. In 2019, Be-7 was not detected in any plant effluents and therefore it was not included in this report. The Be-7 detected in select REMP samples likely represents naturally occurring and/or background conditions.

As part of the data evaluation process, SNC considered the impact of the non-plant associated nuclides along with a statistical evaluation of the REMP data. The statistical evaluations included within this report include the Minimum Detectable Concentration (MDC), the Minimum Detectable Difference (MDD), and Chauvenet's Criterion as described below.

Minimum Detectable Concentration

The minimum detectable concentration is defined as an estimate of the true concentration of an analyte required to give a specified high probability that the measured response will be greater than the critical value.



Minimum Detectable Difference

The Minimum Detectable Difference (MDD) compares the lowest significant difference (between the means) of a control station, versus an indicator station or a community station, that can be determined statistically at the 99% Confidence Level. A difference in mean values which was less than the MDD was considered to be statistically indiscernible. The MDD is used to evaluate the statistical proximity between the indicator/community and control sample results, but generally, any results that are less than the MDC and/or Reporting Levels (RL) are considered to have minimal impact on the surrounding environs.

Chauvenet's Criterion

All results were tested for conformance with Chauvenet's Criterion (G. D. Chase and J. L. Rabinowitz, Principles of Radioisotope Methodology, Burgess Publishing Company, 1962, pages 87-90) to identify values which differed from the mean of a set by a statistically significant amount. Identified outliers were investigated to determine the reason(s) for the difference. If equipment malfunction or other valid physical reasons were identified as causing the variation, the anomalous result was excluded from the data set as non-representative.

Table 3-1 summarizes and evaluates the annual results for the indicator stations against the control and community stations (where applicable) and as appropriate, results were evaluated against the MDCs (listed in Table 3-1) and RLs (listed in Table 3-2). The required MDCs were achieved during laboratory sample analysis. The 2019 results were compared with previous results, including those obtained during pre-operation. No data points were excluded for violating Chauvenet's Criterion.



Table 3-1. Radiological Environmental Monitoring Program Annual Summary

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Location Mean (b), Range (Fraction)	Location with the Highest Annual Mean		Other Stations (f) Mean (b), Range (Fraction)	Control Locations Mean (b), Range (Fraction)
				Name Distance and Direction	Mean (b), Range (Fraction)		
Airborne Particulates (fCi/m3)	Gross Beta	10	24.3 7.2 to 44.3 (255/255)	River Road WSW 1.2 mi.	25.9 16.7 to 41.4 (51/51)	23.8 12.2 to 36 (51/51)	24 15.3 to 38.7 (51/51)
	Gamma Isotopic 28						
	I-131	70	NDM(c)		NDM	NDM	NDM
	Cs-134	50	NDM		NDM	NDM	NDM
	Cs-137	60	NDM		NDM	NDM	NDM
Airborne Radioiodine (fCi/m3)	I-131 363	70	NDM		NDM	NDM	NDM
Direct Radiation (mR/91 days)	Gamma Dose 159		10 6.1 to 16.8 (63/64)	SRS, Road A.13.1 ENE 4.8 mi.	16.0 14.2 to 17.7 (4/4)	10.4 6.2 to 17.7 (72/72)	10.3 8.6 to 13.9 (24/24)
Milk (pCi/l)	Gamma Isotopic 50						
	I-131	1	NDM		NDM		NDM
	Cs-134	15	NDM		NDM		NDM
	Cs-137	18	1.3 0.9 to 1.8 (16/20)	Girard Dairy S 5.5 mi	1.3 0.9 to 1.8 (16/20)		0.9 0.6 to 1.3 (9/21)
	Ba-140	60	NDM		NDM		NDM
	La-140	15	NDM		NDM		NDM



Table 3-1. Radiological Environmental Monitoring Program Annual Summary

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Location Mean (b), Range (Fraction)	Location with the Highest Annual Mean		Other Stations (f) Mean (b), Range (Fraction)	Control Locations Mean (b), Range (Fraction)
				Name Distance and Direction	Mean (b), Range (Fraction)		
Vegetation (pCi/kg-wet)	Gamma Isotopic 36						
	I-131	60	NDM		NDM		NDM
	Cs-134	60	NDM		NDM		NDM
	Cs-137	80	NDM		NDM		NDM
River Water (pCi/l)	Gamma Isotopic 36						
	Be-7	124(d)	NDM		NDM	NDM	NDM
	Mn-54	15	NDM		NDM	NDM	NDM
	Fe-59	30	NDM		NDM	NDM	NDM
	Co-58	15	NDM		NDM	NDM	NDM
	Co-60	15	NDM		NDM	NDM	NDM
	Zn-65	30	NDM		NDM	NDM	NDM
	Zr-95	30	NDM		NDM	NDM	NDM
	Nb-95	15	NDM		NDM	NDM	NDM
	I-131	1	NDM		NDM	NDM	NDM
	Cs-134	15	NDM		NDM	NDM	NDM
	Cs-137	18	NDM		NDM	NDM	NDM
	Ba-140	60	NDM		NDM	NDM	NDM
La-140	15	NDM		NDM	NDM	NDM	
Tritium 12	2000	711 396 to 1320 (4/4)	711 396 to 1320 (4/4)	Savannah River (RM 150.4) ENE 0.8 mi	711 396 to 1320 (4/4)	358 245 to 503 (4/4)	75 18.1 to 210 (4/4)
Raw Water Near Intakes to Water Treatment Plants (pCi/l)	Gross Beta 30	4	3.1 -0.8 to 12.1 (20/20)	Cherokee Hill Water Treatment Plant, Port Wentworth, GA SSE 72 mi.	4.1 -0.7 to 12.1 (10/10)		2.3 -1.9 to 3.1 (10/10)



Table 3-1. Radiological Environmental Monitoring Program Annual Summary

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Location Mean (b), Range (Fraction)	Location with the Highest Annual Mean		Other Stations (f) Mean (b), Range (Fraction)	Control Locations Mean (b), Range (Fraction)
				Name Distance and Direction	Mean (b), Range (Fraction)		
	Gamma Isotopic 36						
	Be-7	124(d)	NDM		NDM		NDM
	Mn-54	15	NDM		NDM		NDM
	Fe-59	30	NDM		NDM		NDM
	Co-58	15	NDM		NDM		NDM
	Co-60	15	NDM		NDM		NDM
	Zn-65	30	NDM		NDM		NDM
	Zr-95	30	NDM		NDM		NDM
	Nb-95	15	NDM		NDM		NDM
	I-131	1	NDM		NDM		NDM
	Cs-134	15	NDM		NDM		NDM
	Cs-137	18	NDM		NDM		NDM
	Ba-140	60	NDM		NDM		NDM
	La-140	15	NDM		NDM		NDM
	Tritium 12	2000	273 65.5 to 521 (8/8)	Cherokee Hill Water Treatment Plant, Port Wentworth, GA SSE 72 mi.	284 65.5 to 521 (4/4)		174 -78.7 to 292 (4/4)
Finished Water at Water Treatment Plants (pCi/l)	Gross Beta 30	4	1.9 0.2 to 3.4 (30/30)	Augusta Water Treatment Plant NNW 29 mi.	2.1 0.9 to 3.7 (10/10)		2.1 0.9 to 3.7 (10/10)
	Gamma Isotopic 36						
	Be-7	124(d)	NDM		NDM		NDM
	Mn-54	15	NDM		NDM		NDM
	Fe-59	30	NDM		NDM		NDM



Table 3-1. Radiological Environmental Monitoring Program Annual Summary

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Location Mean (b), Range (Fraction)	Location with the Highest Annual Mean		Other Stations (f) Mean (b), Range (Fraction)	Control Locations Mean (b), Range (Fraction)
				Name Distance and Direction	Mean (b), Range (Fraction)		
	Co-58	15	NDM		NDM		NDM
	Co-60	15	NDM		NDM		NDM
	Zn-65	30	NDM		NDM		NDM
	Zr-95	30	NDM		NDM		NDM
	Nb-95	15	NDM		NDM		NDM
	I-131	1	NDM		NDM		NDM
	Cs-134	15	NDM		NDM		NDM
	Cs-137	18	NDM		NDM		NDM
	Ba-140	60	NDM		NDM		NDM
La-140	15	NDM		NDM		NDM	
Tritium 12	2000	245 92 to 397 (8/8)	Purrysburg Water Treatment Plant; Purrysburg, SC SSE 76 mi.	278 91.6 to 307 (4/4)		95.4 -134 to 95 (4/4)	
Anadromous Fish (pCi/kg-wet)	Gamma Isotopic 2						
	Be-7	655(d)					NDM
	Mn-54	130					NDM
	Fe-59	260					NDM
	Co-58	130					NDM
	Co-60	130					NDM
	Zn-65	260					NDM
	Cs-134	130					NDM
Cs-137	150					NDM	
Fish (pCi/kg-wet)	Gamma Isotopic 4						
	Be-7	655(d)	NDM				NDM
	Mn-54	130	NDM				NDM
	Fe-59	260	NDM				NDM



Table 3-1. Radiological Environmental Monitoring Program Annual Summary

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Location Mean (b), Range (Fraction)	Location with the Highest Annual Mean		Other Stations (f) Mean (b), Range (Fraction)	Control Locations Mean (b), Range (Fraction)
				Name Distance and Direction	Mean (b), Range (Fraction)		
	Co-58	130	NDM				NDM
	Co-60	130	NDM				NDM
	Zn-65	260	NDM				NDM
	Cs-134	130	NDM				NDM
	Cs-137	150	77.4 39.9 to 114.8 1/2	Savannah River, ESE, 4.3 mi.	77.4 39.9 to 114.8 1/2		47.3 40.2 to 54.4 2/2
Sediment (pCi/kg-dry)	Gamma Isotopic 3						
	Co-58		NDM				NDM
	Co-60		NDM				NDM
	Cs-134	150	NDM				NDM
	Cs-137	180	NDM				NDM

Notes:

- (a) The MDC is defined in ODCM 10.1. Except as noted otherwise, the values listed in this column are the detection capabilities required by ODCM Table 4-3. The values listed in this column are a priori (before the fact) MDCs. In practice, the a posteriori (after the fact) MDCs are generally lower than the values listed.
 - (b) Mean and range were based upon detectable measurements only. The fraction of all measurements at a specified location that are detectable is placed in parenthesis.
 - (c) No Detectable Measurement(s) (NDM).
 - (d) The Georgia Power Company Environmental Laboratory has determined that this value may be routinely attained under normal conditions. No value is provided in ODCM Table 4-3.
 - (e) Item 3 of ODCM Table 4-1 implies that an I-131 analysis was not required to be performed on water samples when the dose calculated from the consumption of water was less than 1 mrem per year. However, I-131 analyses were performed on the finished drinking water samples.
 - (f) "Other" stations, as identified in the "Station Type" column of Table 2-2, are "Community" and/or "Special" stations.
- Not Applicable (NA) (sample or analysis not required)



Table 3-2. Reporting Levels (RL)

Analysis	Water (pCi/l)	Airborne Particulate or Gases (fCi/m3)	Fish (pCi/kg-wet)	Milk (pCi/l)	Grass or Leafy Vegetation (pCi/kg-wet)
H-3	20,000 ^a				
Mn-54	1,000		30,000		
Fe-59	400		10,000		
Co-58	1,000		30,000		
Co-60	300		10,000		
Zn-65	300		20,000		
Zr-95	400				
Nb-95	700				
I-131	2 ^b	900		3	100
Cs-134	30	10,000	1,000	60	1,000
Cs-137	50	20,000	2,000	70	2,000
Ba-140	200			300	
La-140	100			400	

^a This is the 40 CFR 141 value for drinking water samples. If no drinking water pathway exists, a value of 30,000 may be used.

^b If no drinking water pathway exists, a value of 20 pCi/l may be used.

In accordance with ODCM 4.1.1.2.1, deviations from the required sampling schedule were permitted, if samples were unobtainable due to hazardous conditions, unavailability, inclement weather, equipment malfunction or other just reasons. Deviations from conducting the REMP sampling (as described in Table 2-1) are summarized in Table 3-3 along with their causes and resolution.



PLANT VOGTLE

Table 3-3. Anomalies and Deviations from Radiological Environmental Monitoring Program

Collection Period	Affected Samples	Anomaly (A)* or Deviation (D)**	Cause	Resolution
1Q19	Air Sample (SIM)	(D) No sample collected	Pump failure.	Pump replaced, sampling station returned to service.
2/2019	151.2 River	(D) Insufficient sample collected	Sampling apparatus failure due to river height	Sampling apparatus returned to service.
2Q19	Air Sample (WAY)	(D) No sample collected	Pump failure.	Pump replaced, sampling station returned to service.
4Q19	Milk (GIR) (SEV)	(D) No sample collected	Indicator station had process upgrades and did not produce milk.	Samples will resume with operations at the dairy.
4Q19	OSLD V14	(D) No sample collected	Sampling apparatus destroyed by tree clearing in the area.	Sampling apparatus replaced and returned to service.
10/2019	Drinking Water (ALL)	(D) No sample collected	Shipping error.	Not applicable.
10/2019	OSLD V01-V04, V05, V22, V32. River 151.2, 150.4, 149.5	(D) No sample collected	River height caused unsafe conditions.	Regular sampling was resumed during the next collection period.
<p>* An anomaly is considered a non-standard sample that still meets sampling criteria outlined in SNC and Georgia Power Labs procedures. ** A deviation is a sample result that is not recorded due to not meeting scheduling and/or procedural requirements as outlined by SNC and Georgia Power Labs</p>				



3.1 Airborne Particulates

As specified in Table 2-1, airborne particulate filters and charcoal canisters were collected weekly at five indicator stations (Stations 3, 7, 10, 12 and 16) which encircle the plant at the site periphery, at a nearby community station (Station 35) approximately seven miles from the plant, and at a control station (Station 36) approximately 14 miles from the plant. At each sampling location containing a filter and cartridge series, air was continuously drawn through a glass fiber filter to retain airborne particulate and an activated charcoal canister was placed in series with the particulate filter to adsorb radioiodine.

3.1.1 Gross Beta

As provided in Table 3-1, the 2019 annual average weekly gross beta activity at the indicator stations was 24.3 fCi/m³. It was 0.5 fCi/m³ more than the control station average of 23.8 fCi/m³. The calculated MDD was 0.9 fCi/m³, which indicated that there was no discernible statistical difference between the two data sets.

The 2019 annual average weekly gross beta activity at the Girard community station was 24.0 fCi/m³ which was 0.2 fCi/m³ more than the control station average (23.8 fCi/m³). The calculated MDD was 1.5 fCi/m³, which indicated that there was no discernible statistical difference between the two data sets.

Average Air Gross Beta historical data (Table 3-4) is graphed to show trends associated with a prevalent exposure pathway (Figure 3-1). In general, there was close agreement between the results for the indicator, control and community stations. This close agreement supports the position that the plant was not contributing significantly to the gross beta concentrations in air.

Table 3-4. Average Weekly Gross Beta Air Concentration

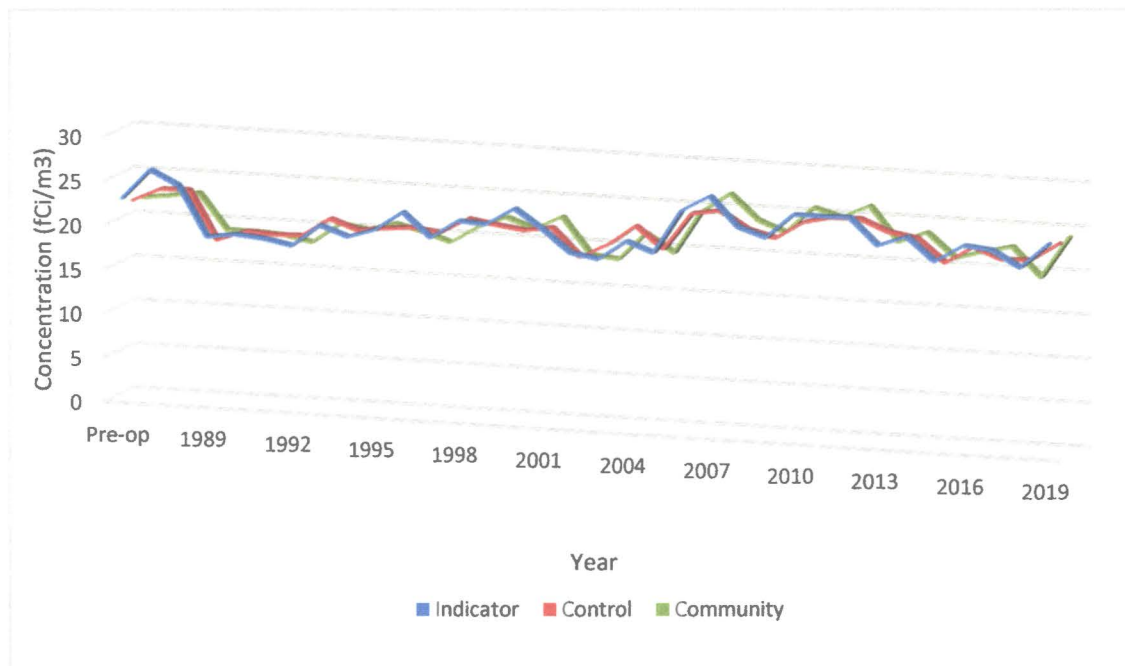
Period	Indicator (fCi/m ³)	Control (fCi/m ³)	Community (fCi/m ³)	Period	Indicator (fCi/m ³)	Control (fCi/m ³)	Community (fCi/m ³)
Pre-op	22.9	22.1	21.9	2003	19.4	20.5	18.3
1987	26.3	23.6	22.3	2004	21.6	22.8	21.4
1988	24.7	23.7	22.8	2005	20.5	20.4	19.4
1989	19.1	18.2	18.8	2006	25.5	24.6	24.3
1990	19.6	19.4	18.8	2007	27.3	25.1	26.5
1991	19.3	19.2	18.6	2008	24.0	23.2	23.7
1992	18.7	19.3	18.0	2009	23.0	22.4	22.5
1993	21.2	21.4	20.3	2010	25.8	24.4	25.5
1994	20.1	20.3	19.8	2011	25.8	25.1	24.6
1995	21.1	20.7	20.7	2012	25.9	25.2	26.1
1996	23.3	21.0	20.0	2013	22.9	23.9	22.2
1997	20.6	20.6	19.0	2014	24.1	23.4	23.5



Table 3-4. Average Weekly Gross Beta Air Concentration

Period	Indicator (fCi/m3)	Control (fCi/m3)	Community (fCi/m3)	Period	Indicator (fCi/m3)	Control (fCi/m3)	Community (fCi/m3)
1998	22.7	22.4	20.9	2015	21.5	20.8	20.8
1999	22.5	21.9	22.2	2016	23.5	22.8	21.7
2000	24.5	21.5	21.1	2017	23.2	21.6	22.5
2001	22.4	22.0	22.7	2018	21.4	21.7	19.2
2002	19.9	18.9	18.6	2019	24.3	23.8	24

Figure 3-1. Historic Average Weekly Gross Beta Air Concentration



3.1.2 Gamma Particulates and Airborne Radioiodine

During 2019, no man-made radionuclides were detected from the gamma isotopic analysis of the quarterly composites of the air particulate filters. Historically, gamma isotopes were detected as a result of offsite events. During pre-operation, Cs-134, Cs-137 and I-131 were occasionally detected. In 1987, Cs-137 was found in one indicator composite at a concentration of 1.7 fCi/m3.

Additionally, I-131 was also detected after the Fukushima incident in 2011, the highest I-131 result in 2011 was 93.8 fCi/m3, which was approximately 10% of the RL. During 2019, no I-131 was detected in the air cartridges at either the indicator or control stations.



3.2 Direct Radiation

In 2019, direct (external) radiation was measured with Optically Stimulated Luminescent dosimeters (OSLD) by placing two OSLD badges at each station. The gamma dose at each station was reported as the average reading of the two badges. The badges were analyzed on a quarterly basis. An inspection was performed near mid-quarter for offsite badges to ensure that the badges were on-station and to replace any missing or damaged badges.

Two direct radiation stations were established in each of the 16 compass sectors, to form two concentric rings. The inner ring (Stations 1 through 16) was located near the plant perimeter as shown in Map A-1 in Appendix A and the outer ring (Stations 17 through 32) was located at a distance of approximately five miles from the plant as shown in Map A-2 in Appendix A. The 16 stations forming the inner ring were designated as the indicator stations. The two ring configuration of stations was established in accordance with NRC Branch Technical Position "An Acceptable Radiological Environmental Monitoring Program", Revision 1, November 1979. The six control stations (Stations 36, 37, 47, 48, 51 and 52) were located at distances greater than 10 miles from the plant as shown in Map A-3 in Appendix A. Monitored special interest areas include Station 35 at the town of Girard and Station 43 at the employee recreational area (Rec Center). The mean and range values presented in the "Other" column in Table 3-1 includes the outer ring stations (stations 17 through 32) as well as stations 35 and 43.

As provided in Table 3-1, the 2019 average quarterly exposure at the indicator stations (inner ring) was 10.0 mR with a range of 6.1 to 16.8 mR. The indicator station average was 0.3 mR less than the control station average. No MDD was applied because the indicator was less than the control. Over the operational history, the annual average quarterly exposures have shown little variation between the indicator and control stations.

The quarterly exposures acquired at the community/other (outer ring) stations during 2019 ranged from 6.2 to 17.7 mR with an average of 10.4 mR which was 0.1 mR higher than the control station average. The calculated MDD was 0.6 mR, which indicated that there was no discernible statistical difference between the two data sets.

Average Direct Radiation historical data (Table 3-5) is graphed to show trends associated with this exposure pathway (Figure 3-2). The decrease between 1991 and 1992 values is attributed to a change in Thermoluminescent Dosimeters (TLDs) from Teledyne to Panasonic. It should be noted however that the differences between indicator and control and outer ring values did not change. The increase shown in 2010 reflected issues with the aging Panasonic TLD reader. The close agreement between the station groups has supported the position that the plant was not contributing significantly to direct radiation in the environment.



Figure 3-3 below provides a more detailed view of the 2019 values. The values for the special interest areas (Girard and the Rec Center) detailed below indicate that Plant Vogtle did not significantly contribute to direct radiation at those areas.

Table 3-5. Average Quarterly Exposure from Direct Radiation

Period	Indicator (mR)	Control (mR)	Outer Ring (mR)	Period	Indicator (mR)	Control (mR)	Outer Ring (mR)
Pre-op	15.3	16.5	14.7	2003	12.2	12.5	12.4
1987	17.6	17.9	16.7	2004	12.4	12.2	12.3
1988	16.8	16.1	16.0	2005	12.5	13.2	12.9
1989	17.9	18.4	17.2	2006	13.1	12.9	13.0
1990	16.9	16.6	16.3	2007	13.0	12.5	12.7
1991	16.9	17.1	16.7	2008	13.3	13.0	13.1
1992	12.3	12.5	12.1	2009	13.1	13.6	13.3
1993	12.4	12.4	12.1	2010	16.2	16.7	16.6
1994	12.3	12.1	11.9	2011	13.9	13.9	14.0
1995	12.0	12.5	12.3	2012	14.4	14.3	14.2
1996	12.3	12.2	12.3	2013	13.1	13.2	13.6
1997	13.0	13.0	13.1	2014	11.6	12.3	12.0
1998	12.3	12.7	12.4	2015	12.5	12.3	12.6
1999	13.6	13.5	13.4	2016	11.5	11.5	11.5
2000	13.5	13.6	13.5	2017	11.4	11.4	11.9
2001	12.9	13.0	12.9	2018	10.1	10.6	10.7
2002	12.8	12.9	12.6	2019	10.0	10.3	10.4

Figure 3-2. Average Quarterly Exposure from Direct Radiation

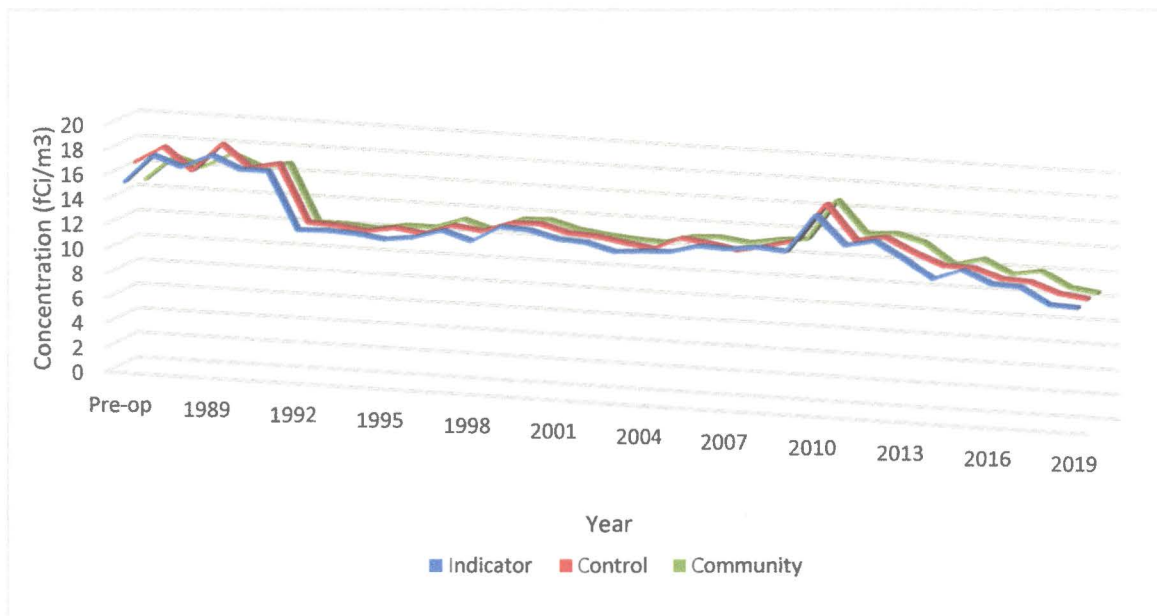
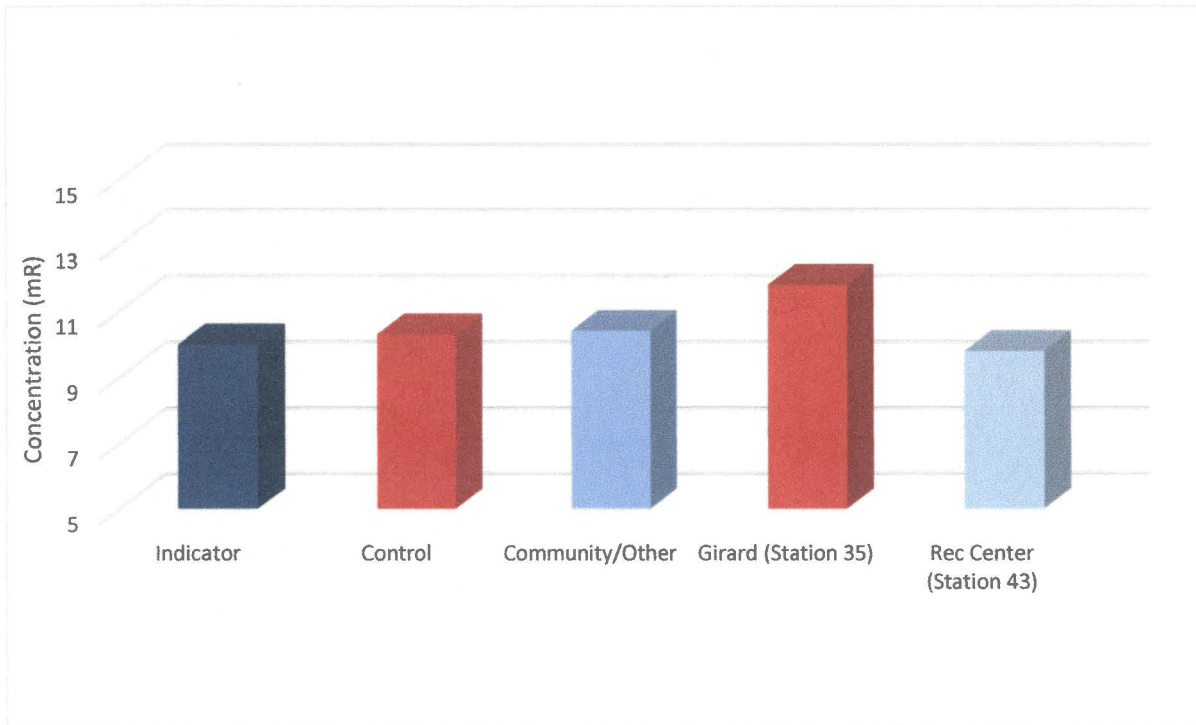


Figure 3-3. 2019 Average Exposure from Direct Radiation



3.3 Biological Media

Cs-137 was the only radionuclide detected in two of the three biological media. As indicated in Figure 3-4, the Cs-137 activity levels were below the respective MDCs and well below that of the respective RLs for each sample media for both the indicator and control stations.

3.3.1 Milk

In accordance with Tables 2-1 and 2-2, milk samples were collected semi-monthly from two locations (until Girard stopped milk production in the fourth quarter): the Girard Dairy (Station 101) which was considered an indicator station because it is approximately 5.5 miles from Vogtle (ideally, a milk indicator station would be less than 5 miles from the plant); and the Milky Way Dairy (Station 102, at 16.0 miles from the plant) is the control location. No milk animal was found within five miles of Plant Vogtle during the 2019 land use census.

Gamma isotopic (including I-131 and Cs-137) analyses were performed on each collected milk sample and there were no detectable results for gamma isotopes other than Cs-137, which was detected in 16 of 20 indicator samples (1.3 pCi/l average) and 9 of 21 control samples (0.9 pCi/l average). The difference was greater than the MDD of 0.34 pCi/l, therefore, there was a



statistically significant difference between the indicator and control. Both the indicator and control values were well under the MDC of 18 pCi/L, and these results were consistent with past milk samples, so no further investigation was conducted. Figure 3-4 provides the 2019 Cs-137 concentration in milk.

3.3.2 Vegetation

In accordance with Tables 2-1 and 2-2, vegetation samples were collected monthly for gamma isotopic analyses at two indicator locations near the site boundary (Stations 7 and 15) and at one control station located about 17 miles WSW from the plant (Station 37). The man-made radionuclide Cs-137 was periodically identified in vegetation samples, and was generally attributed to offsite sources (such as weapons testing, Chernobyl, and Fukushima). Cs-137 was not detected in any samples collected in 2019 (indicator or control).

While Cs-137 and I-131 were periodically found and Co-60 was discovered once in vegetation samples during pre-operation, the historical trends and the relationship between the indicator and control stations have demonstrated that plant operations were having no adverse impact to the environment. The sample results were consistently well below the MDC and the RL for Cs-137 (80 and 2000 pCi/kg-wet, respectively).

During 2019, there were also no other gamma isotopes detected in any Vogtle REMP vegetation samples.

3.3.3 Fish

Fish samples were collected in accordance with the ODCM (as indicated in Table 2-1). For the semiannual collections, the control location (Station 81) extends from approximately two to seven miles upriver of the plant intake structure, and the indicator location (Station 85) extends from about 1.4 to seven miles downriver of the plant discharge structure. Fish sample results in 2019 were consistent with historical values.

3.3.3.1 Anadromous Species

In accordance with Table 2-1, for anadromous species, all fish sampled were considered indicator stations. Anadromous fish were sampled once during 2019, on March 26. No radionuclides were detected in the 2019 anadromous fish sample.

3.3.3.2 Commercially or Recreationally Important Species

As provided in Table 3-1, Cs-137 was found in the semiannual collections of commercially or recreationally important species of fish (for both indicator and control). The indicator station averaged a Cs-137 concentration of 77.4 pCi/kg-wet (detected in each sample, with a range of 39.9 to 114.9 pCi/kg-wet), and 47.3 pCi/kg-wet at the control station (detected in each sample,

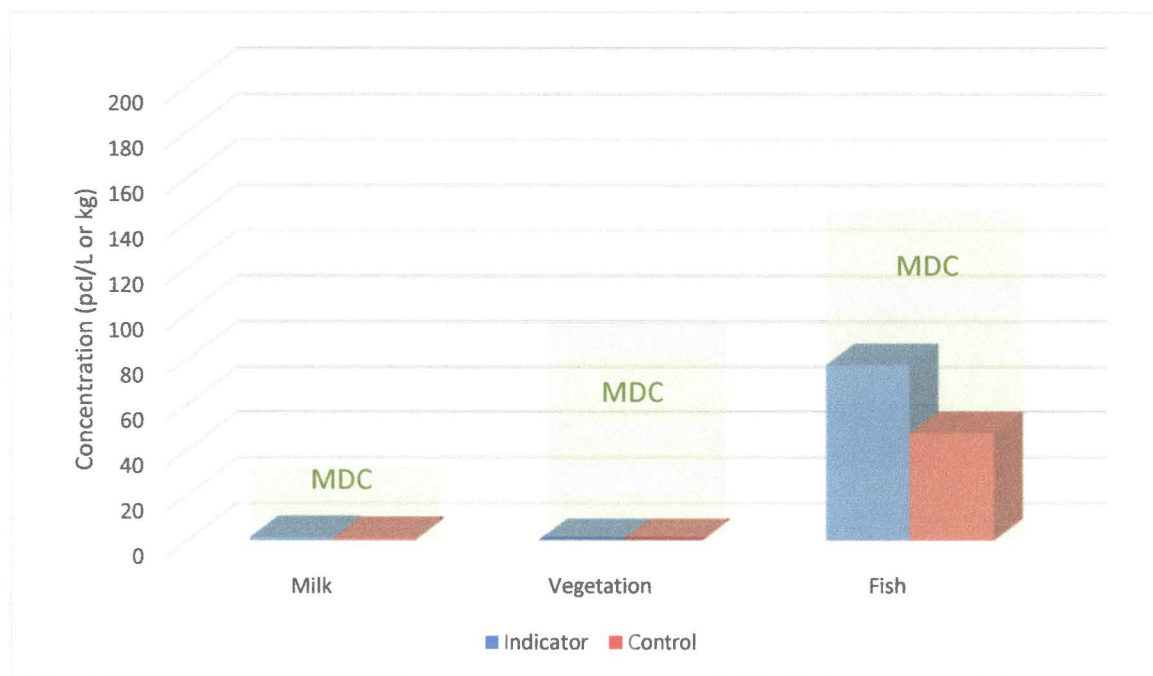


with a range of 40.2 to 54.4pCi/kg-wet). There was no statistically discernible difference between the two since the difference of 30.1 is less than the MDD of 114. All detected values were well below the MDC for Cs-137 in fish (150 pCi/kg-wet). No other gamma nuclides were discovered in 2019.

3.3.4 Biological Media Summary

There were no statistical differences, trends, or anomalies associated with the 2019 biological media samples when compared to historical data (below the MDC). Figure 3-4 below, details the 2019 Cs-137 concentrations in the three media types.

Figure 3-4. 2019 Biological Media Average Cs-137 Concentrations



3.4 Drinking Water

Samples were collected at an upstream control location and at three downstream indicator locations (shown on Map A-3) and further described in Table 2-2.

Monthly water samples were taken near the intake of each water treatment plant (raw drinking water) using automatic composite samplers. Additionally, monthly grab samples of the processed water effluent from the treatment plants (finished drinking water) were collected. Monthly aliquots from the raw and processed drinking water were analyzed for gross beta and gamma isotopic activity. The monthly aliquots were also combined to form quarterly composites in order to be analyzed for tritium.



For 2019, the indicator station average gross beta concentration in the *raw* drinking water was 3.1 pCi/L which was greater than the average gross beta concentration at the control station (2.3 pCi/L), but less than the MDD of 2.7 pCi/L, so there is no statistical difference between the locations. Historically, the close agreement between the gross beta values of the indicator stations and the control station has supported that there was no significant gross beta contribution from the plant effluents. The required MDC for gross beta in water was 4.0 pCi/L; there was no RL for gross beta in water.

For 2019, the indicator station average gross beta concentration in the *finished* drinking water was 1.9 pCi/L which less than the average at the control station (2.1 pCi/L). Figure 3-5 shows the relationship between the average indicator station and average control station for 2019 in comparison to the MDC.

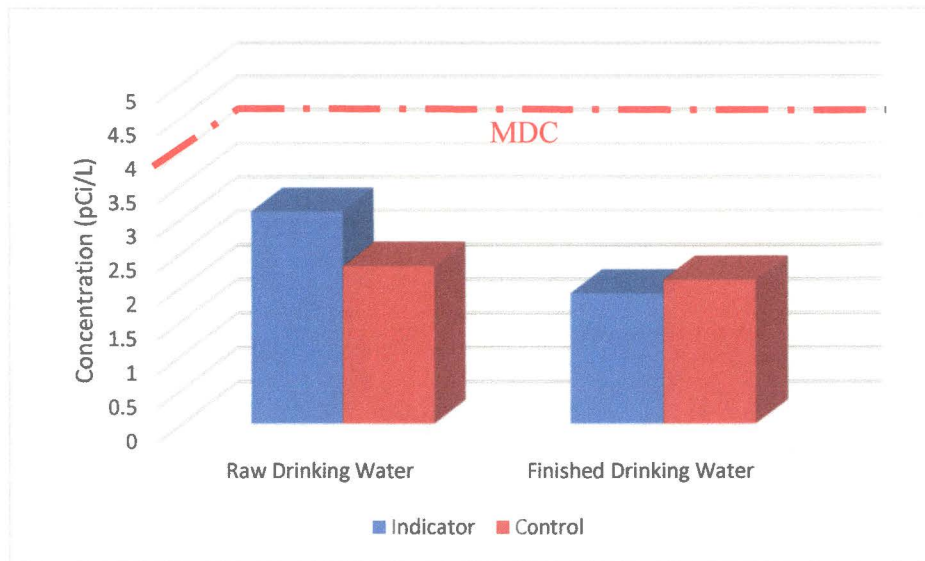
As provided in Table 3-1, there were no positive results during 2019 from the gamma isotopic analysis of the raw and finished drinking water samples.

Regarding tritium, the average raw drinking water indicator concentration was 273 pCi/L which was 99 pCi/L greater than the average concentration found at the control station (174 pCi/L). This difference does not exceed the MDD of 134 pCi/L, which would indicate a difference that is not statistically discernible, additionally all detected values were less than the MDC for drinking water of 2,000 pCi/L, and these values were consistent with past results.

The finished drinking water average tritium concentration at the indicator stations during 2019 was 245 pCi/L which was 149 pCi/L greater than the average concentration found at the control station (95 pCi/L). The MDD was calculated at 94.7 pCi/L between the indicator and control stations, indicating a statistical difference. However, the averages were below the MDC for drinking water and the values were consistent with past results, coupled with the raw sample results, there does not appear to be an impact from plant operations. Figure 3-6 shows the tritium values in the drinking water compared to river water.



Figure 3-5. 2019 Average Gross Beta Concentration in Raw and Finished Drinking Water



3.5 River Water

Composite river water samples were collected monthly at an upstream control location and at two downstream indicator locations (shown on Map A-3). The details of the sampling protocols are outlined in Tables 2-1 and Table 2-2. A gamma isotopic analysis was conducted on each monthly sample. The monthly aliquots were combined to form quarterly composite samples in order to be analyzed for tritium.

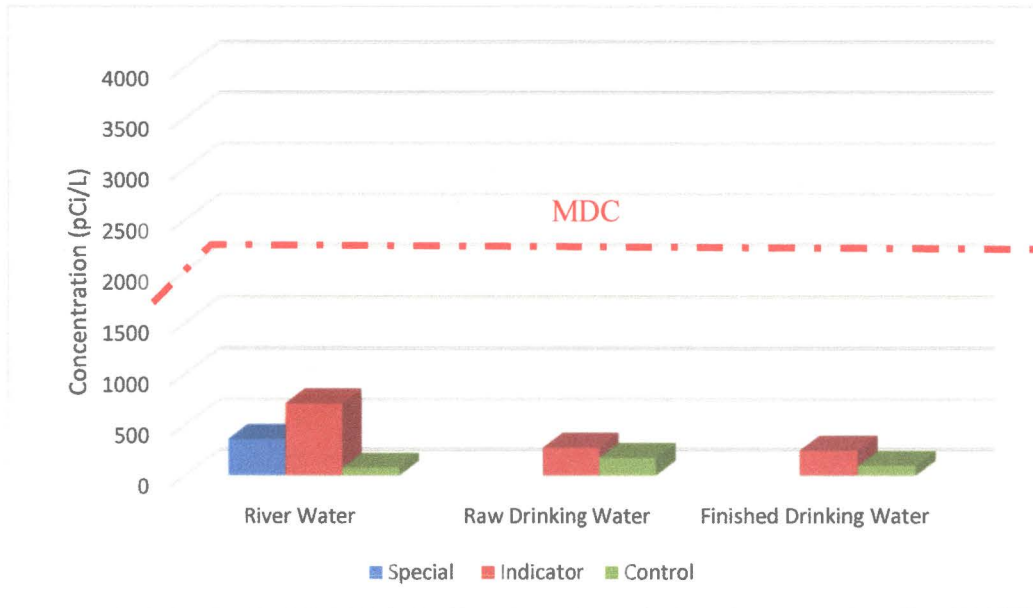
As provided in Table 3-1, there were no positive results during 2019 from the gamma isotopic analysis of the river water samples. Also indicated in Table 3-1, the average tritium concentration found at the indicator station was 711 pCi/L which was 636 pCi/L greater than the average at the control station (75 pCi/L). The river water tritium MDD was calculated to be 410 pCi/L, so the difference was statistically discernible. This increased tritium could likely be attributed to plant activity from Vogtle and other upstream dischargers (Plant Vogtle Unit 1 did have an abnormal tritium effluent value in 2019). Tritium was released regularly from the plant during normal operations, but always at levels that would not impact the MDC or RL.

At the "Other" river water sampling station (Station 84), the results ranged from 245 pCi/L to 503 pCi/L with an average of 358 pCi/L. The difference between the Station 84 and the control station was 283 pCi/L. The MDD was calculated to be 132 pCi/L, so the difference was statistically discernible. This increased tritium could likely be attributed to plant activity from Vogtle and other upstream dischargers. Tritium was released regularly from the plant during normal operations, but always at levels that would not impact the MDC or RL. Historically, the



relationship between the indicator/control stations and Station 84 has remained consistent. Figure 3-6 below details the 2019 average tritium concentrations across the three water sample types.

Figure 3-6. 2019 Average Tritium Concentrations in River, Raw Drinking, and Finished Drinking Water



3.6 Sediment

Sediment was collected along the shoreline of the Savannah River in the spring and fall at Stations 81 and 83. Station 81 was a control station located about 2.5 miles upriver of the plant intake structure while Station 83 was an indicator station located about 0.6 miles downriver of the plant discharge structure. A gamma isotopic analysis was performed on each sample. The only radionuclide detected in 2019 samples was Be-7. Though Be-7 was detected in sediment, it will not be discussed within this report, because it was not detected in plant effluents and likely represents naturally occurring and/or background conditions.

There were no other radionuclides detected in the 2019 sediment samples.

3.7 Interlaboratory Comparison Program

In accordance with ODCM 4.1.3, GPCEL participated in an Interlaboratory Comparison Program (ICP) which satisfied the requirements of Regulatory Guide 4.15, Revision 1, "Quality Assurance for Radiological Monitoring Programs (Normal Operations) - Effluent Streams and the



Environment", February 1979. The ICP included the required determinations (sample medium/radionuclide combinations) included in the REMP.

The ICP was conducted by Eckert & Ziegler Analytics, Inc. (EZA) of Atlanta, Georgia. EZA has a documented Quality Assurance (QA) program and the capability to prepare Quality Control (QC) materials traceable to the National Institute of Standards and Technology. The ICP is a third-party blind testing program which provided a means to ensure independent checks were performed on the accuracy and precision of the measurements of radioactive materials in environmental sample matrices. EZA supplied the crosscheck samples to GPCEL which performed routine laboratory analyses. Each of the specified analyses was performed three times.

The accuracy of each result was measured by the normalized deviation, which is the ratio of the reported average less the known value to the total error. An investigation was undertaken whenever the absolute value of the normalized deviation was greater than three or whenever the coefficient of variation was greater than 15% for all radionuclides other than Cr-51 and Fe-59. For Cr-51 and Fe-59, an investigation was undertaken when the coefficient of variation exceeded the values shown on Table 3-6 below:

Table 3-6. Interlaboratory Comparison Limit

Nuclide	Concentration *	Total Sample Activity (pCi)	Percent Coefficient of Variation
Cr-51	<300	NA	25
	NA	>1000	25
	>300	<1000	15
Fe-59	<80	NA	25
	>80	NA	15

* For air filters, concentration units are pCi/filter. For all other media, concentration units are pCi/liter (pCi/l).

As required by ODCM 4.1.3.3 and 7.1.2.3, a summary of the results of the GPCEL's participation in the ICP is provided in Table 3-7 for:

- gross beta and gamma isotopic analyses of an air filter
- gamma isotopic analyses of milk samples
- gross beta, tritium and gamma isotopic analyses of water samples

The 2019 analyses included tritium, gross beta and gamma emitting radio-nuclides in different matrices. The attached results for all analyses were within acceptable limits for accuracy (less than 15% coefficient of variation and less than 3.0 normalized deviations, except for Cr-51 and Fe-59, which are outlined in Table 3-6).



Table 3-7. Interlaboratory Comparison Summary

Analysis or Radionuclide	Date Prepared	Reported Average	Known Value	Standard Deviation EL	Uncertainty Analytics (3S)	Percent Coefficient of Variation	Normalized Deviation
I-131 ANALYSIS OF AN AIR CARTRIDGE (pCi/cartridge)							
I-131	9/12/2019	96.6	95.7	3.46	1.60	6.26	0.15
GAMMA ISOTOPIC ANALYSIS OF AN AIR FILTER (pCi/filter)							
Ce-141	9/12/2019	152	147	2.08	2.45	5.06	0.64
Co-58		165	154	2.83	2.57	4.98	1.38
Co-60		194	185	3.62	3.09	4.52	1.07
Cr-51		304	291	9.52	4.85	8.14	0.52
Cs-134		187	182	4.01	3.04	5.00	0.58
Cs-137		145	132	2.77	2.21	4.98	1.75
Fe-59		134	130	4.30	2.18	5.87	0.50
Mn-54		154	135	2.58	2.26	4.94	2.54
Zn-65		295	257	5.78	4.30	5.11	2.50
GROSS BETA ANALYSIS OF AN AIR FILTER (PCI/FILTER)							
Gross Beta	9/12/2019	181	221	7.07	3.69	5.07	-4.39
GAMMA ISOTOPIC ANALYSIS OF A MILK SAMPLE (PCI/LITER)							
Co-58	9/12/2019	177	175	3.46	2.92	5.88	0.17
Co-60		216	211	5.28	3.52	5.16	0.42
Cr-51		350	331	28.4	5.53	13.4	0.41
Cs-134		216	207	6.64	3.46	5.17	0.78
Cs-137		158	151	4.91	2.52	6.46	0.65
Fe-59		143	148	6.44	2.48	8.86	-0.37
I-131		97.3	92.1	5.11	1.54	9.99	0.54
Mn-54		166	154	8.00	2.58	7.34	1.01
Zn-65		315	293	8.23	4.90	6.55	1.07
Ce-141		173	167	6.19	2.79	7.10	0.46
GROSS BETA ANALYSIS OF WATER SAMPLE (PCI/LITER)							
Gross Beta	9/12/2019	268	252	4.38	4.22	5.88	1.04
GAMMA ISOTOPIC ANALYSIS OF WATER SAMPLES (PCI/LITER)							
Co-58	9/12/2019	140	133	5.11	1.55	6.76	0.74



Table 3-7. Interlaboratory Comparison Summary

Analysis or Radionuclide	Date Prepared	Reported Average	Known Value	Standard Deviation EL	Uncertainty Analytics (3S)	Percent Coefficient of Variation	Normalized Deviation
Co-60		168	160	5.17	1.98	5.69	0.82
Cr-51		294	251	26.3	4.16	14.65	1.00
Cs-134		163	157	8.53	1.98	7.00	0.54
Cs-137		123	114	1.72	1.72	6.15	1.17
Fe-59		117	112	5.46	1.50	9.14	0.48
I-131		94.7	89.9	2.44	1.24	8.88	0.57
Mn-54		129	117	3.80	2.26	6.55	1.39
Zn-65		245	222	7.51	2.74	6.90	1.33
Ce-141		138	127	7.87	1.43	8.80	0.87
TRITIUM ANALYSIS OF WATER SAMPLES (PCI/LITER)							
H-3	9/12/2019	13700	14000	455	234	4.30	-0.59
GAMMA ISOTOPIC ANALYSIS OF VEGETATION SAMPLES (PCI/LITER)							
Co-58	9/12/2019	290	286	7.39	4.78	7.26	0.21
Co-60		349	345	5.01	5.76	5.27	0.24
Cr-51		452	542	47.9	9.04	23.2	-0.86
Cs-134		362	339	8.00	5.66	5.02	1.29
Cs-137		248	247	14.9	4.12	7.03	0.08
Fe-59		252	243	9.73	4.05	10.5	0.33
Mn-54		260	252	7.25	4.22	7.38	0.43
Zn-65		513	480	29.2	8.01	8.79	0.73
Ce-141		261	273	8.84	4.56	8.57	-0.55



3.8 Groundwater

To ensure compliance with NEI 07-07 (Industry Ground Water Protection Initiative – Final Guidance Document), Southern Nuclear developed the Nuclear Management Procedure, Radiological Groundwater Protection Program. The procedure contains detailed site-specific monitoring plans, program technical bases, and communications protocol (to ensure that radioactive leaks and spills are addressed and communicated appropriately). In an effort to prevent future leaks of radioactive material to groundwater, SNC plants have established buried piping and tanks inspection programs. No changes were made to the Groundwater Protection Program in 2019.

Plant Vogtle maintained the following wells (Table 3-8), which were sampled at a frequency that satisfied the requirements of NEI 07-07. The analytical results for 2019 were all within regulatory limits specified within this report. Table 3-9 contains the results of the Groundwater Protection Program tritium results (in pCi/L).

Table 3-8. Groundwater Protection Program Locations

Well	Aquifer	Monitoring Purpose
LT-1B	Water Table	NSCW related tank
LT-7A	Water Table	NSCW related tank
LT-12	Water Table	NSCW related tank
LT-13	Water Table	NSCW related tank
802A	Water Table	Southeastern potential leakage
806B	Water Table	Dilution line
808	Water Table	Up gradient; along Pen Branch Fault
R1	Water Table	NSCW related tank; western potential leakage
R2	Water Table	Southern potential leakage
R3	Water Table	Eastern potential leakage
R4	Water Table	Dilution line
R5	Water Table	Dilution line
R6	Water Table	Dilution line
R7	Water Table	Dilution line
R8	Water Table within Sav. River sediments	Dilution line
1014	Tertiary	Up gradient
1015	Water Table	Up gradient
MU-1	Tertiary/Cretaceous	Facility water supply
River	N/A	Surface water
NSCW – Nuclear service cooling water		



Table 3-9. Groundwater Protection Program Tritium Results (pCi/L)

Well	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
LT-1B	NS	476	NS	283
LT-7A	NS	691	NS	543
LT-12	2240	2180	NS	2320
LT-13	NS	651	NS	376
802A	NS	NS	NS	NS
806B	NS	343	NS	206
808	NS	243	NS	203
R1	NS	NS	NS	NS
R2	NS	NDM	NS	288
R3	NS	199	NS	191
R4	NS	239	NS	190
R5	NS	261	NS	318
R6	NS	154	NS	NS
R7	NS	NDM	NS	NDM
R8	NS	NDM	NS	177
1014	NS	NDM	NS	NDM
1015	NS	437	NS	284
MU-1	NS	NDM	NS	NDM
River	NS	NDM	NS	155

NDM – No Detectable Measurement

NS – Not Sampled



4 SURVEY SUMMARIES

4.1 Land Use Census

In accordance with ODCM 4.1.2, a land use census was conducted in November and December 2019 to verify the locations of the nearest radiological receptor within five miles. The census results, shown in Table 4-1, indicated no major changes from 2018, therefore, a revision to the ODCM will not be required.

Table 4-1. Land Use Census Results

Sector	Residence	Milk Animal*	Beef Cattle	Garden**
Distance in Miles to the Nearest Location in Each Sector				
N	1.4	None	None	None
NNE	None	None	None	None
NE	None	None	None	None
ENE	None	None	None	None
E	None	None	None	None
ESE	4.2	None	None	None
SE	4.3	None	4.9	None
SSE	4.7	None	4.7	None
S	4.4	None	None	None
SSW	4.7	None	4.7	None
SW	3.1	None	4.4	None
WSW	2.6	None	2.7	None
W	3.4	None	4.7	4.1
WNW	1.9	None	None	None
NW	1.5	None	1.8	None
NNW	1.5	None	None	None
*A milk animal is a cow or goat producing milk for human consumption. **A garden of greater than 500 square feet producing broad leaf vegetation. Note: Land within SRS was excluded from the census.				

4.2 Savannah River Survey

A desktop survey of the Savannah River downstream of the plant for approximately 100 miles (approximately river miles 44.7 to 151.2) was conducted to identify any new withdrawal of water from the river for drinking, irrigation, or construction purposes. No new usage was identified in 2019 from databases maintained by Georgia or South Carolina. These results were verified with



both the Georgia Department of Natural Resources and the South Carolina Department of Health and Environmental Control (SC DEHEC). Each of these agencies confirmed that no water withdrawal permits for drinking, irrigation, or construction purposes had been issued for this stretch of the Savannah River.

4.3 Meteorological Report Summary

The meteorological tower data collected throughout the year is analyzed and compared to previous results by a third-party consultant. For 2019, the meteorological tower data were comparable to previous years, as related to precipitation amounts (44.95”) and wind direction (from west-southwest at 10m, from the west at 60m). Therefore, no changes to REMP monitoring locations are warranted.



5 CONCLUSIONS

This report has confirmed SNCs conformance with the requirements of Chapter 4 of the ODCM and the objectives were to:

- 1) Determine the levels of radiation and the concentrations of radioactivity in the environs and;
- 2) Assess the radiological impact (if any) to the environment due to the operation of the VEGP.

Based on the 2019 activities associated with the REMP, SNC offers the following conclusions:

- Samples were collected and there were no deviations or anomalies that negatively affected the quality of the REMP
- Land use census and river survey did not reveal any significant changes
- Analytical results were below reporting levels
- These values were consistent with historical results, which indicate no adverse radiological environmental impacts associated with the operation of VEGP

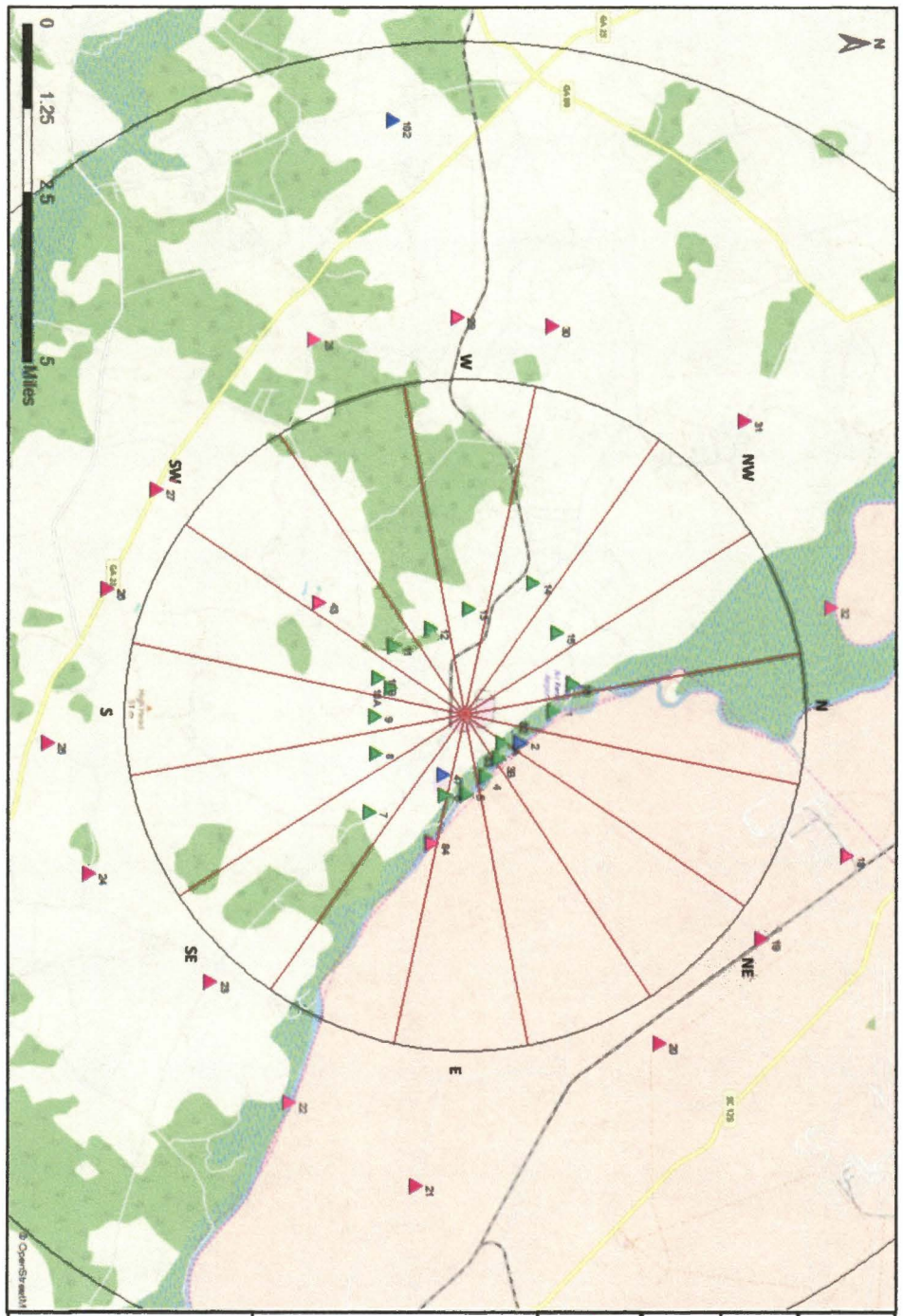


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APPENDIX A

Maps





Legend:

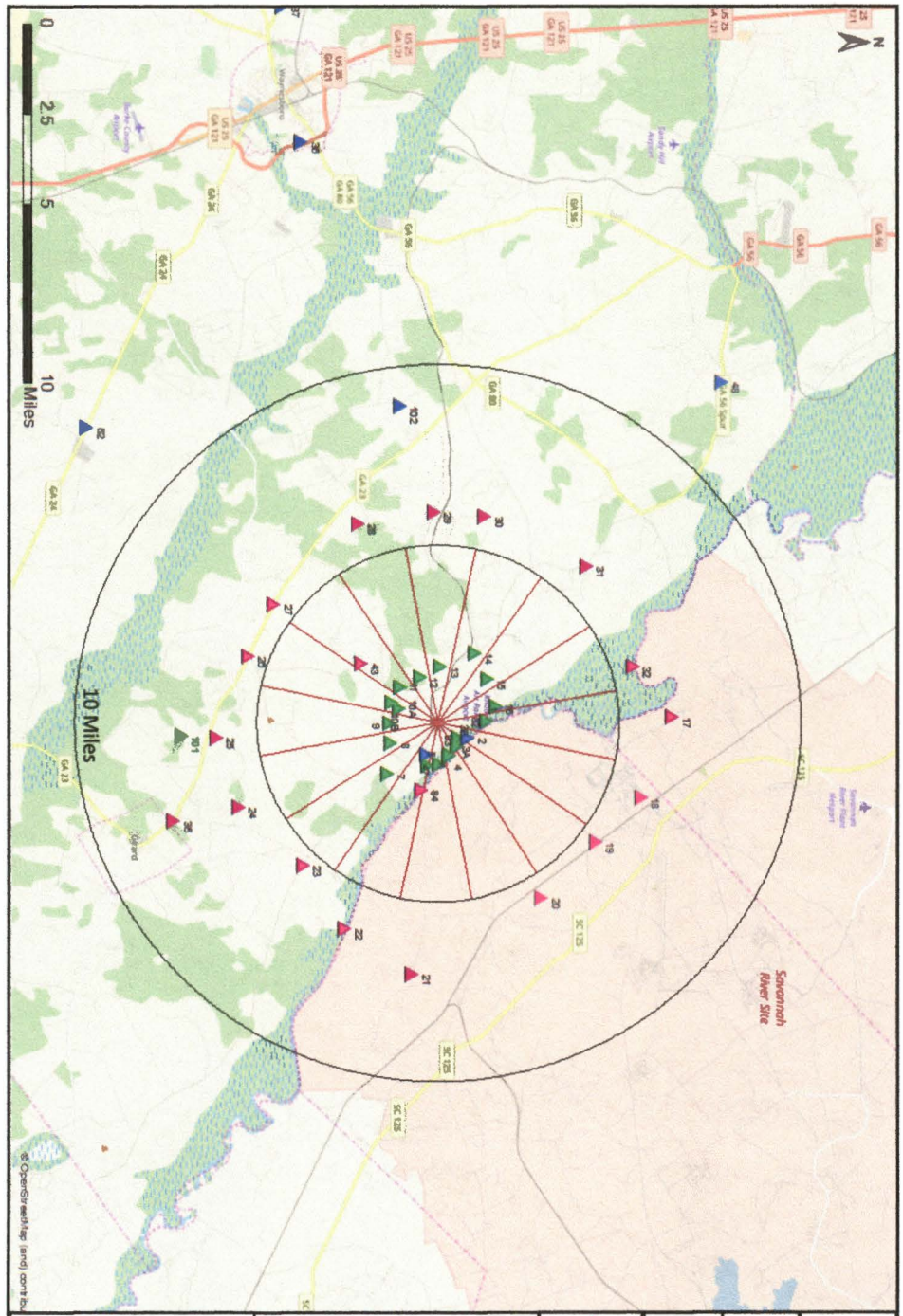
- Indicator Stations - ▲
- Control Stations - ▲
- Other Stations - ▲

Vogtle Electric Generating Plant
 2019 Annual Radiological Environmental Report
 REMP Stations in Plant Vicinity



Drawn by: C. Groce
 April 14, 2020

Appendix A
 Map A-1



Legend:

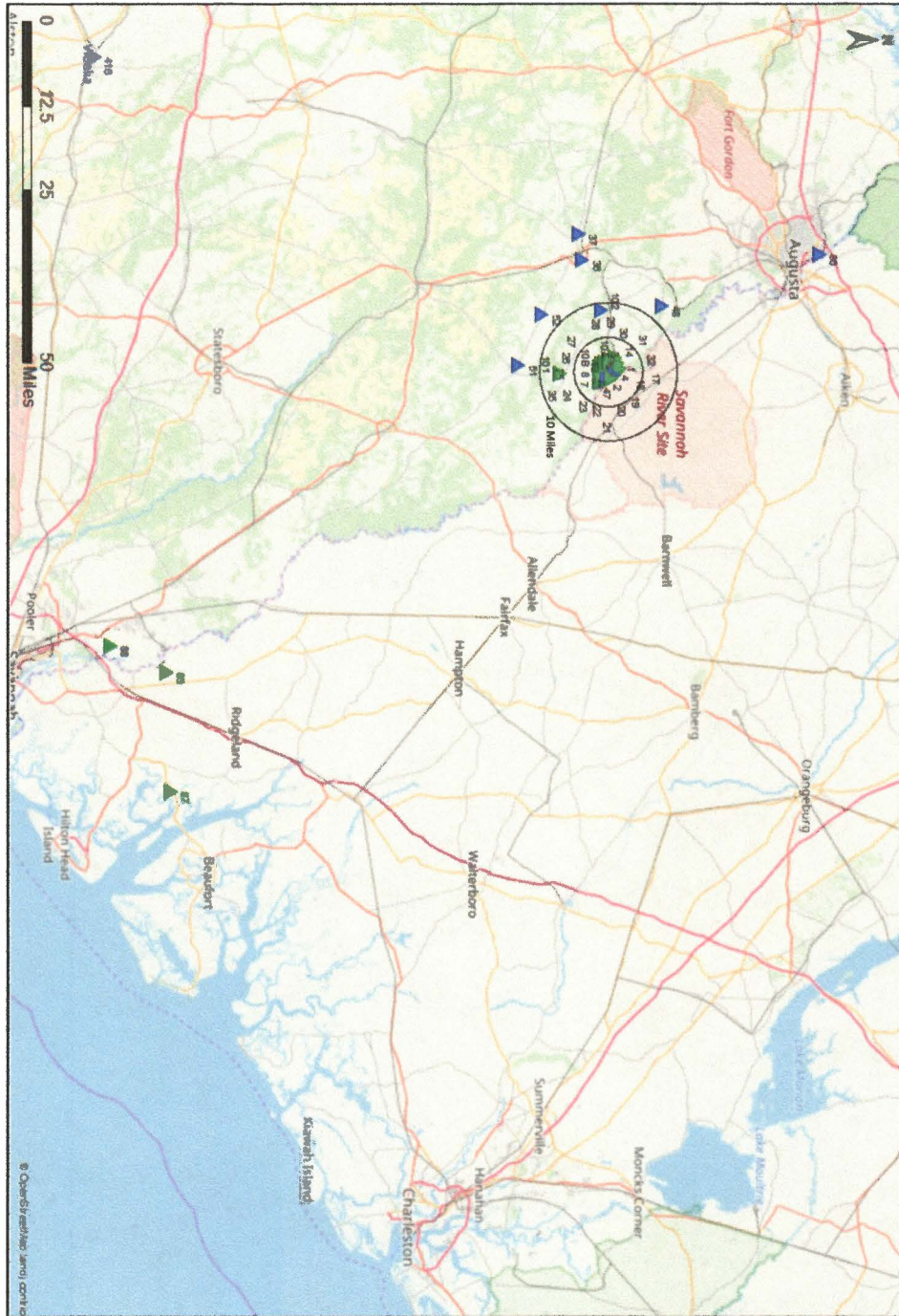
- Indicator Stations - ▲
- Control Stations - ▲
- Other Stations - ▲


Vogtle Electric Generating Plant
 2015 Annual Radiological Environmental Report
 REMP Stations within 10 miles



Drawn by: C. Groce
 April 30, 2016

Appendix A
 Map A-2



Legend: Indicator Stations - ▲ Control Stations - ▲ Other Stations - ▲	Vogtle Electric Generating Plant 2019 Annual Radiological Environmental Report Extended REMP Stations		 Southern Nuclear	Drawn by: C. Groce	Appendix A
				April 14, 2020	Map A-3



- Legend**
- Surface Aquifer GWPP Well
 - Tertiary Aquifer GWPP Well
 - Non-GWPP Well
 - GWPP other sample

Vogtle Electric Generating Plant
 2015 Annual Radiological Environmental Report
 Facility Groundwater Wells



Drawn by: C. Groce

Appendix A
 Map A-4

April 30, 2016

APPENDIX B

Errata



There are no errata for the 2019 reporting year.



APPENDIX C

Data

The following pages contain the individual data points from the 2019 reporting year. The units for the data points varies by media, as follows:

- Airborne Radioiodine and Particulates/Water/Milk – picocuries/liter (pCi/l)
- Sediment/Vegetation/Fish – picocuries/kilogram (pCi/kg)
- Direct Radiation – millirem (mR)



Matrix	Nuclide	Location ID	Collect Date	Result	lab_sample_id
Fish	Zn-65	1480 Bass	2/19/2019	0	119363003
Fish	Cs-134	1480 Bass	2/19/2019	0	119363003
Fish	Cs-137	1480 Bass	2/19/2019	38.359	119363003
Fish	Be-7	1480 Bass	2/19/2019	0	119363003
Fish	K-40	1480 Bass	2/19/2019	4698.3	119363003
Fish	Mn-54	1480 Bass	2/19/2019	0	119363003
Fish	Fe-59	1480 Bass	2/19/2019	0	119363003
Fish	Co-58	1480 Bass	2/19/2019	0	119363003
Fish	Co-60	1480 Bass	2/19/2019	0	119363003
Fish	Fe-59	1490 Bass	4/15/2019	0	120066002
Fish	Co-58	1490 Bass	4/15/2019	0	120066002
Fish	Mn-54	1490 Bass	4/15/2019	0	120066002
Fish	Co-60	1490 Bass	4/15/2019	0	120066002
Fish	Zn-65	1490 Bass	4/15/2019	0	120066002
Fish	Cs-134	1490 Bass	4/15/2019	0	120066002
Fish	Cs-137	1490 Bass	4/15/2019	39.919	120066002
Fish	Be-7	1490 Bass	4/15/2019	0	120066002
Fish	K-40	1490 Bass	4/15/2019	3512.5	120066002
Fish	Fe-59	1490 Catfish	4/15/2019	0	120066001
Fish	Co-58	1490 Catfish	4/15/2019	0	120066001
Fish	Co-60	1490 Catfish	4/15/2019	0	120066001
Fish	Zn-65	1490 Catfish	4/15/2019	0	120066001
Fish	Cs-134	1490 Catfish	4/15/2019	0	120066001
Fish	Cs-137	1490 Catfish	4/15/2019	20.5	120066001
Fish	Be-7	1490 Catfish	4/15/2019	0	120066001
Fish	K-40	1490 Catfish	4/15/2019	3219.7	120066001
Fish	Mn-54	1490 Catfish	4/15/2019	0	120066001
Fish	Fe-59	1490 Sucker	4/15/2019	0	120066003
Fish	Co-58	1490 Sucker	4/15/2019	0	120066003
Fish	Co-60	1490 Sucker	4/15/2019	0	120066003
Fish	Zn-65	1490 Sucker	4/15/2019	0	120066003
Fish	Cs-134	1490 Sucker	4/15/2019	0	120066003
Fish	Cs-137	1490 Sucker	4/15/2019	19.956	120066003
Fish	Be-7	1490 Sucker	4/15/2019	0	120066003
Fish	K-40	1490 Sucker	4/15/2019	3449	120066003
Fish	Mn-54	1490 Sucker	4/15/2019	0	120066003
Fish	Fe-59	1490-1470 Bass	10/23/2019	0	123071002
Fish	Co-58	1490-1470 Bass	10/23/2019	0	123071002
Fish	Co-60	1490-1470 Bass	10/23/2019	0	123071002
Fish	Zn-65	1490-1470 Bass	10/23/2019	0	123071002
Fish	Cs-134	1490-1470 Bass	10/23/2019	0	123071002
Fish	Cs-137	1490-1470 Bass	10/23/2019	114.84	123071002
Fish	Be-7	1490-1470 Bass	10/23/2019	0	123071002
Fish	K-40	1490-1470 Bass	10/23/2019	3228.5	123071002
Fish	Mn-54	1490-1470 Bass	10/23/2019	0	123071002
Fish	Mn-54	1490-1470 Carp	10/23/2019	0	123071001
Fish	Fe-59	1490-1470 Carp	10/23/2019	0	123071001
Fish	Co-58	1490-1470 Carp	10/23/2019	0	123071001
Fish	Co-60	1490-1470 Carp	10/23/2019	0	123071001
Fish	Zn-65	1490-1470 Carp	10/23/2019	0	123071001
Fish	Cs-134	1490-1470 Carp	10/23/2019	0	123071001

Fish	Cs-137	1490-1470 Carp	10/23/2019	17.449	123071001
Fish	Be-7	1490-1470 Carp	10/23/2019	0	123071001
Fish	K-40	1490-1470 Carp	10/23/2019	2997	123071001
Fish	Cs-137	1490-1470 Catfish	10/23/2019	0	123071003
Fish	Be-7	1490-1470 Catfish	10/23/2019	0	123071003
Fish	K-40	1490-1470 Catfish	10/23/2019	3658.2	123071003
Fish	Mn-54	1490-1470 Catfish	10/23/2019	0	123071003
Fish	Fe-59	1490-1470 Catfish	10/23/2019	0	123071003
Fish	Co-58	1490-1470 Catfish	10/23/2019	0	123071003
Fish	Co-60	1490-1470 Catfish	10/23/2019	0	123071003
Fish	Zn-65	1490-1470 Catfish	10/23/2019	0	123071003
Fish	Cs-134	1490-1470 Catfish	10/23/2019	0	123071003
River Water	Fe-59	1495	1/15/2019	0	118950003
River Water	Co-58	1495	1/15/2019	0	118950003
River Water	Co-60	1495	1/15/2019	0	118950003
River Water	Zn-65	1495	1/15/2019	0	118950003
River Water	Zr-95	1495	1/15/2019	0	118950003
River Water	Nb-95	1495	1/15/2019	0	118950003
River Water	I-131	1495	1/15/2019	0	118950003
River Water	Cs-134	1495	1/15/2019	0	118950003
River Water	Cs-137	1495	1/15/2019	0	118950003
River Water	Ba-140	1495	1/15/2019	0	118950003
River Water	La-140	1495	1/15/2019	0	118950003
River Water	Be-7	1495	1/15/2019	0	118950003
River Water	K-40	1495	1/15/2019	0	118950003
River Water	Mn-54	1495	1/15/2019	0	118950003
Water H-3	Tritium	1495	1/15/2019	503	119055003
River Water	Zr-95	1495	2/12/2019	0	119313003
River Water	Nb-95	1495	2/12/2019	0	119313003
River Water	I-131	1495	2/12/2019	0	119313003
River Water	Cs-134	1495	2/12/2019	0	119313003
River Water	Cs-137	1495	2/12/2019	0	119313003
River Water	Ba-140	1495	2/12/2019	0	119313003
River Water	La-140	1495	2/12/2019	0	119313003
River Water	Be-7	1495	2/12/2019	0	119313003
River Water	K-40	1495	2/12/2019	0	119313003
River Water	Mn-54	1495	2/12/2019	0	119313003
River Water	Fe-59	1495	2/12/2019	0	119313003
River Water	Co-58	1495	2/12/2019	0	119313003
River Water	Co-60	1495	2/12/2019	0	119313003
River Water	Zn-65	1495	2/12/2019	0	119313003
River Water	Be-7	1495	3/12/2019	0	119663003
River Water	K-40	1495	3/12/2019	0	119663003
River Water	Mn-54	1495	3/12/2019	0	119663003
River Water	Fe-59	1495	3/12/2019	0	119663003
River Water	Co-58	1495	3/12/2019	0	119663003
River Water	Co-60	1495	3/12/2019	0	119663003
River Water	Zn-65	1495	3/12/2019	0	119663003
River Water	Zr-95	1495	3/12/2019	0	119663003
River Water	Nb-95	1495	3/12/2019	0	119663003
River Water	I-131	1495	3/12/2019	0	119663003
River Water	Cs-134	1495	3/12/2019	0	119663003
River Water	Cs-137	1495	3/12/2019	0	119663003

River Water	Ba-140	1495	3/12/2019	0	119663003
River Water	La-140	1495	3/12/2019	0	119663003
River Water	Mn-54	1495	4/10/2019	0	119975003
River Water	Fe-59	1495	4/10/2019	0	119975003
River Water	Co-58	1495	4/10/2019	0	119975003
River Water	Co-60	1495	4/10/2019	0	119975003
River Water	Zn-65	1495	4/10/2019	0	119975003
River Water	Zr-95	1495	4/10/2019	0	119975003
River Water	Nb-95	1495	4/10/2019	0	119975003
River Water	I-131	1495	4/10/2019	0	119975003
River Water	Cs-134	1495	4/10/2019	0	119975003
River Water	Cs-137	1495	4/10/2019	0	119975003
River Water	Ba-140	1495	4/10/2019	0	119975003
River Water	La-140	1495	4/10/2019	0	119975003
River Water	Be-7	1495	4/10/2019	0	119975003
Water H-3	Tritium	1495	4/10/2019	374	120034003
River Water	K-40	1495	4/10/2019	0	119975003
River Water	Fe-59	1495	5/14/2019	0	120397003
River Water	Co-58	1495	5/14/2019	0	120397003
River Water	Co-60	1495	5/14/2019	0	120397003
River Water	Zn-65	1495	5/14/2019	0	120397003
River Water	Zr-95	1495	5/14/2019	0	120397003
River Water	Nb-95	1495	5/14/2019	0	120397003
River Water	I-131	1495	5/14/2019	0	120397003
River Water	Cs-134	1495	5/14/2019	0	120397003
River Water	Cs-137	1495	5/14/2019	0	120397003
River Water	Ba-140	1495	5/14/2019	0	120397003
River Water	La-140	1495	5/14/2019	0	120397003
River Water	Be-7	1495	5/14/2019	0	120397003
River Water	K-40	1495	5/14/2019	0	120397003
River Water	Mn-54	1495	5/14/2019	0	120397003
River Water	Cs-134	1495	6/11/2019	0	120818003
River Water	Cs-137	1495	6/11/2019	0	120818003
River Water	Ba-140	1495	6/11/2019	0	120818003
River Water	La-140	1495	6/11/2019	0	120818003
River Water	Be-7	1495	6/11/2019	0	120818003
River Water	K-40	1495	6/11/2019	0	120818003
River Water	Zr-95	1495	6/11/2019	0	120818003
River Water	Zn-65	1495	6/11/2019	0	120818003
River Water	Mn-54	1495	6/11/2019	0	120818003
River Water	Fe-59	1495	6/11/2019	0	120818003
River Water	Co-58	1495	6/11/2019	0	120818003
River Water	Co-60	1495	6/11/2019	0	120818003
River Water	Nb-95	1495	6/11/2019	0	120818003
River Water	I-131	1495	6/11/2019	0	120818003
Water H-3	Tritium	1495	7/9/2019	245	121374003
River Water	Nb-95	1495	7/9/2019	0	121241003
River Water	I-131	1495	7/9/2019	0	121241003
River Water	Cs-134	1495	7/9/2019	0	121241003
River Water	Cs-137	1495	7/9/2019	0	121241003
River Water	Ba-140	1495	7/9/2019	0	121241003
River Water	La-140	1495	7/9/2019	0	121241003
River Water	Be-7	1495	7/9/2019	0	121241003

River Water	K-40	1495	7/9/2019	0	121241003
River Water	Mn-54	1495	7/9/2019	0	121241003
River Water	Fe-59	1495	7/9/2019	0	121241003
River Water	Co-58	1495	7/9/2019	0	121241003
River Water	Co-60	1495	7/9/2019	0	121241003
River Water	Zn-65	1495	7/9/2019	0	121241003
River Water	Zr-95	1495	7/9/2019	0	121241003
River Water	Mn-54	1495	8/13/2019	0	121817003
River Water	Fe-59	1495	8/13/2019	0	121817003
River Water	Co-58	1495	8/13/2019	0	121817003
River Water	Co-60	1495	8/13/2019	0	121817003
River Water	Zn-65	1495	8/13/2019	0	121817003
River Water	Zr-95	1495	8/13/2019	0	121817003
River Water	Nb-95	1495	8/13/2019	0	121817003
River Water	I-131	1495	8/13/2019	0	121817003
River Water	Cs-134	1495	8/13/2019	0	121817003
River Water	Cs-137	1495	8/13/2019	0	121817003
River Water	Ba-140	1495	8/13/2019	0	121817003
River Water	La-140	1495	8/13/2019	0	121817003
River Water	Be-7	1495	8/13/2019	0	121817003
River Water	K-40	1495	8/13/2019	0	121817003
River Water	I-131	1495	9/10/2019	0	122350003
River Water	Cs-134	1495	9/10/2019	0	122350003
River Water	Cs-137	1495	9/10/2019	0	122350003
River Water	Ba-140	1495	9/10/2019	0	122350003
River Water	La-140	1495	9/10/2019	0	122350003
River Water	Be-7	1495	9/10/2019	0	122350003
River Water	K-40	1495	9/10/2019	0	122350003
River Water	Mn-54	1495	9/10/2019	0	122350003
River Water	Fe-59	1495	9/10/2019	0	122350003
River Water	Co-58	1495	9/10/2019	0	122350003
River Water	Co-60	1495	9/10/2019	0	122350003
River Water	Zn-65	1495	9/10/2019	0	122350003
River Water	Zr-95	1495	9/10/2019	0	122350003
River Water	Nb-95	1495	9/10/2019	0	122350003
River Water	Zr-95	1495	10/8/2019	0	122837003
River Water	Nb-95	1495	10/8/2019	0	122837003
River Water	I-131	1495	10/8/2019	0	122837003
River Water	Cs-134	1495	10/8/2019	0	122837003
River Water	Cs-137	1495	10/8/2019	0	122837003
River Water	Ba-140	1495	10/8/2019	0	122837003
River Water	La-140	1495	10/8/2019	0	122837003
River Water	Be-7	1495	10/8/2019	0	122837003
River Water	K-40	1495	10/8/2019	0	122837003
River Water	Mn-54	1495	10/8/2019	0	122837003
River Water	Fe-59	1495	10/8/2019	0	122837003
Water H-3	Tritium	1495	10/8/2019	310	123044003
River Water	Co-58	1495	10/8/2019	0	122837003
River Water	Co-60	1495	10/8/2019	0	122837003
River Water	Zn-65	1495	10/8/2019	0	122837003
River Water	Mn-54	1495	11/11/2019	0	123314003
River Water	Fe-59	1495	11/11/2019	0	123314003
River Water	Co-58	1495	11/11/2019	0	123314003

River Water	Co-60	1495	11/11/2019	0	123314003
River Water	La-140	1495	11/11/2019	0	123314003
River Water	Be-7	1495	11/11/2019	0	123314003
River Water	K-40	1495	11/11/2019	0	123314003
River Water	Zn-65	1495	11/11/2019	0	123314003
River Water	Zr-95	1495	11/11/2019	0	123314003
River Water	Nb-95	1495	11/11/2019	0	123314003
River Water	I-131	1495	11/11/2019	0	123314003
River Water	Cs-134	1495	11/11/2019	0	123314003
River Water	Cs-137	1495	11/11/2019	0	123314003
River Water	Ba-140	1495	11/11/2019	0	123314003
River Water	Fe-59	1495	12/10/2019	0	123668003
River Water	Co-58	1495	12/10/2019	0	123668003
River Water	Co-60	1495	12/10/2019	0	123668003
River Water	Zn-65	1495	12/10/2019	0	123668003
River Water	Zr-95	1495	12/10/2019	0	123668003
River Water	Nb-95	1495	12/10/2019	0	123668003
River Water	Cs-137	1495	12/10/2019	0	123668003
River Water	Ba-140	1495	12/10/2019	0	123668003
River Water	La-140	1495	12/10/2019	0	123668003
River Water	Be-7	1495	12/10/2019	0	123668003
River Water	K-40	1495	12/10/2019	0	123668003
River Water	I-131	1495	12/10/2019	0	123668003
River Water	Cs-134	1495	12/10/2019	0	123668003
River Water	Mn-54	1495	12/10/2019	0	123668003
Sediment	Co-60	1502	10/8/2019	0	122836001
Sediment	Cs-134	1502	10/8/2019	0	122836001
Sediment	Cs-137	1502	10/8/2019	0	122836001
Sediment	Be-7	1502	10/8/2019	0	122836001
Sediment	K-40	1502	10/8/2019	12487	122836001
Sediment	Co-58	1502	10/8/2019	0	122836001
River Water	Fe-59	1504	1/15/2019	0	118950002
River Water	Co-58	1504	1/15/2019	0	118950002
River Water	Co-60	1504	1/15/2019	0	118950002
River Water	Zn-65	1504	1/15/2019	0	118950002
River Water	Zr-95	1504	1/15/2019	0	118950002
Water H-3	Tritium	1504	1/15/2019	1320	119055002
River Water	Nb-95	1504	1/15/2019	0	118950002
River Water	I-131	1504	1/15/2019	0	118950002
River Water	Cs-134	1504	1/15/2019	0	118950002
River Water	Cs-137	1504	1/15/2019	0	118950002
River Water	Ba-140	1504	1/15/2019	0	118950002
River Water	La-140	1504	1/15/2019	0	118950002
River Water	Be-7	1504	1/15/2019	0	118950002
River Water	K-40	1504	1/15/2019	0	118950002
River Water	Mn-54	1504	1/15/2019	0	118950002
River Water	Ba-140	1504	2/12/2019	0	119313002
River Water	La-140	1504	2/12/2019	0	119313002
River Water	Be-7	1504	2/12/2019	0	119313002
River Water	K-40	1504	2/12/2019	0	119313002
River Water	Mn-54	1504	2/12/2019	0	119313002
River Water	Fe-59	1504	2/12/2019	0	119313002
River Water	Co-58	1504	2/12/2019	0	119313002

River Water	Co-60	1504	2/12/2019	0	119313002
River Water	Zn-65	1504	2/12/2019	0	119313002
River Water	Zr-95	1504	2/12/2019	0	119313002
River Water	Nb-95	1504	2/12/2019	0	119313002
River Water	I-131	1504	2/12/2019	0	119313002
River Water	Cs-134	1504	2/12/2019	0	119313002
River Water	Cs-137	1504	2/12/2019	0	119313002
River Water	Co-60	1504	3/12/2019	0	119663002
River Water	Zn-65	1504	3/12/2019	0	119663002
River Water	Zr-95	1504	3/12/2019	0	119663002
River Water	Nb-95	1504	3/12/2019	0	119663002
River Water	Cs-137	1504	3/12/2019	0	119663002
River Water	Ba-140	1504	3/12/2019	0	119663002
River Water	La-140	1504	3/12/2019	0	119663002
River Water	I-131	1504	3/12/2019	0	119663002
River Water	Be-7	1504	3/12/2019	0	119663002
River Water	K-40	1504	3/12/2019	0	119663002
River Water	Cs-134	1504	3/12/2019	0	119663002
River Water	Mn-54	1504	3/12/2019	0	119663002
River Water	Fe-59	1504	3/12/2019	0	119663002
River Water	Co-58	1504	3/12/2019	0	119663002
River Water	Fe-59	1504	4/10/2019	0	119975002
River Water	Co-58	1504	4/10/2019	0	119975002
River Water	Co-60	1504	4/10/2019	0	119975002
River Water	Zn-65	1504	4/10/2019	0	119975002
River Water	Zr-95	1504	4/10/2019	0	119975002
River Water	Nb-95	1504	4/10/2019	0	119975002
River Water	I-131	1504	4/10/2019	0	119975002
River Water	Cs-134	1504	4/10/2019	0	119975002
River Water	Cs-137	1504	4/10/2019	0	119975002
River Water	Ba-140	1504	4/10/2019	0	119975002
River Water	La-140	1504	4/10/2019	0	119975002
River Water	Be-7	1504	4/10/2019	0	119975002
River Water	K-40	1504	4/10/2019	0	119975002
Water H-3	Tritium	1504	4/10/2019	722	120034002
River Water	Mn-54	1504	4/10/2019	0	119975002
River Water	Fe-59	1504	5/14/2019	0	120397002
River Water	Co-58	1504	5/14/2019	0	120397002
River Water	Co-60	1504	5/14/2019	0	120397002
River Water	Zn-65	1504	5/14/2019	0	120397002
River Water	Zr-95	1504	5/14/2019	0	120397002
River Water	Nb-95	1504	5/14/2019	0	120397002
River Water	I-131	1504	5/14/2019	0	120397002
River Water	Cs-134	1504	5/14/2019	0	120397002
River Water	Cs-137	1504	5/14/2019	0	120397002
River Water	Ba-140	1504	5/14/2019	0	120397002
River Water	La-140	1504	5/14/2019	0	120397002
River Water	Be-7	1504	5/14/2019	0	120397002
River Water	K-40	1504	5/14/2019	0	120397002
River Water	Mn-54	1504	5/14/2019	0	120397002
River Water	Zn-65	1504	6/11/2019	0	120818002
River Water	Zr-95	1504	6/11/2019	0	120818002
River Water	Nb-95	1504	6/11/2019	0	120818002

River Water	I-131	1504	6/11/2019	0	120818002
River Water	Cs-134	1504	6/11/2019	0	120818002
River Water	Cs-137	1504	6/11/2019	0	120818002
River Water	Ba-140	1504	6/11/2019	0	120818002
River Water	La-140	1504	6/11/2019	0	120818002
River Water	Be-7	1504	6/11/2019	0	120818002
River Water	K-40	1504	6/11/2019	0	120818002
River Water	Mn-54	1504	6/11/2019	0	120818002
River Water	Fe-59	1504	6/11/2019	0	120818002
River Water	Co-58	1504	6/11/2019	0	120818002
River Water	Co-60	1504	6/11/2019	0	120818002
River Water	Mn-54	1504	7/9/2019	0	121241002
River Water	Fe-59	1504	7/9/2019	0	121241002
River Water	Co-58	1504	7/9/2019	0	121241002
River Water	Co-60	1504	7/9/2019	0	121241002
River Water	Zn-65	1504	7/9/2019	0	121241002
River Water	Zr-95	1504	7/9/2019	0	121241002
Water H-3	Tritium	1504	7/9/2019	396	121374002
River Water	Be-7	1504	7/9/2019	0	121241002
River Water	K-40	1504	7/9/2019	0	121241002
River Water	Nb-95	1504	7/9/2019	0	121241002
River Water	I-131	1504	7/9/2019	0	121241002
River Water	Cs-134	1504	7/9/2019	0	121241002
River Water	Cs-137	1504	7/9/2019	0	121241002
River Water	Ba-140	1504	7/9/2019	0	121241002
River Water	La-140	1504	7/9/2019	0	121241002
River Water	Cs-134	1504	8/13/2019	0	121817002
River Water	Cs-137	1504	8/13/2019	0	121817002
River Water	Ba-140	1504	8/13/2019	0	121817002
River Water	La-140	1504	8/13/2019	0	121817002
River Water	Be-7	1504	8/13/2019	0	121817002
River Water	K-40	1504	8/13/2019	0	121817002
River Water	Mn-54	1504	8/13/2019	0	121817002
River Water	Fe-59	1504	8/13/2019	0	121817002
River Water	Co-58	1504	8/13/2019	0	121817002
River Water	Co-60	1504	8/13/2019	0	121817002
River Water	Zn-65	1504	8/13/2019	0	121817002
River Water	Zr-95	1504	8/13/2019	0	121817002
River Water	Nb-95	1504	8/13/2019	0	121817002
River Water	I-131	1504	8/13/2019	0	121817002
River Water	Fe-59	1504	9/10/2019	0	122350002
River Water	Co-58	1504	9/10/2019	0	122350002
River Water	Co-60	1504	9/10/2019	0	122350002
River Water	Zn-65	1504	9/10/2019	0	122350002
River Water	Zr-95	1504	9/10/2019	0	122350002
River Water	Nb-95	1504	9/10/2019	0	122350002
River Water	I-131	1504	9/10/2019	0	122350002
River Water	Cs-134	1504	9/10/2019	0	122350002
River Water	Cs-137	1504	9/10/2019	0	122350002
River Water	Ba-140	1504	9/10/2019	0	122350002
River Water	La-140	1504	9/10/2019	0	122350002
River Water	Be-7	1504	9/10/2019	0	122350002
River Water	K-40	1504	9/10/2019	0	122350002

River Water	Mn-54	1504	9/10/2019	0	122350002
River Water	K-40	1504	10/8/2019	0	122837002
River Water	Fe-59	1504	10/8/2019	0	122837002
River Water	Co-58	1504	10/8/2019	0	122837002
River Water	Mn-54	1504	10/8/2019	0	122837002
River Water	Co-60	1504	10/8/2019	0	122837002
River Water	Zn-65	1504	10/8/2019	0	122837002
River Water	Zr-95	1504	10/8/2019	0	122837002
River Water	Nb-95	1504	10/8/2019	0	122837002
River Water	I-131	1504	10/8/2019	0	122837002
River Water	Cs-134	1504	10/8/2019	0	122837002
River Water	Cs-137	1504	10/8/2019	0	122837002
River Water	Ba-140	1504	10/8/2019	0	122837002
River Water	La-140	1504	10/8/2019	0	122837002
River Water	Be-7	1504	10/8/2019	0	122837002
Water H-3	Tritium	1504	10/8/2019	406	123044002
River Water	Mn-54	1504	11/11/2019	0	123314002
River Water	Fe-59	1504	11/11/2019	0	123314002
River Water	Co-58	1504	11/11/2019	0	123314002
River Water	Co-60	1504	11/11/2019	0	123314002
River Water	Zn-65	1504	11/11/2019	0	123314002
River Water	Zr-95	1504	11/11/2019	0	123314002
River Water	Nb-95	1504	11/11/2019	0	123314002
River Water	I-131	1504	11/11/2019	0	123314002
River Water	Cs-134	1504	11/11/2019	0	123314002
River Water	Cs-137	1504	11/11/2019	0	123314002
River Water	Ba-140	1504	11/11/2019	0	123314002
River Water	La-140	1504	11/11/2019	0	123314002
River Water	Be-7	1504	11/11/2019	0	123314002
River Water	K-40	1504	11/11/2019	0	123314002
River Water	Fe-59	1504	12/10/2019	0	123668002
River Water	Co-58	1504	12/10/2019	0	123668002
River Water	Co-60	1504	12/10/2019	0	123668002
River Water	Zn-65	1504	12/10/2019	0	123668002
River Water	Zr-95	1504	12/10/2019	0	123668002
River Water	Nb-95	1504	12/10/2019	0	123668002
River Water	I-131	1504	12/10/2019	0	123668002
River Water	Cs-134	1504	12/10/2019	0	123668002
River Water	Cs-137	1504	12/10/2019	0	123668002
River Water	Ba-140	1504	12/10/2019	0	123668002
River Water	La-140	1504	12/10/2019	0	123668002
River Water	Be-7	1504	12/10/2019	0	123668002
River Water	K-40	1504	12/10/2019	0	123668002
River Water	Mn-54	1504	12/10/2019	0	123668002
River Water	Ba-140	1512	1/15/2019	0	118950001
River Water	La-140	1512	1/15/2019	0	118950001
River Water	Be-7	1512	1/15/2019	0	118950001
River Water	K-40	1512	1/15/2019	0	118950001
River Water	Mn-54	1512	1/15/2019	0	118950001
River Water	Fe-59	1512	1/15/2019	0	118950001
River Water	Co-58	1512	1/15/2019	0	118950001
River Water	Co-60	1512	1/15/2019	0	118950001
River Water	Zn-65	1512	1/15/2019	0	118950001

River Water	Zr-95	1512	1/15/2019	0	118950001
River Water	Nb-95	1512	1/15/2019	0	118950001
River Water	I-131	1512	1/15/2019	0	118950001
River Water	Cs-134	1512	1/15/2019	0	118950001
River Water	Cs-137	1512	1/15/2019	0	118950001
Water H-3	Tritium	1512	1/15/2019	210	119055001
River Water	Nb-95	1512	2/12/2019	0	119313001
River Water	I-131	1512	2/12/2019	0	119313001
River Water	Cs-134	1512	2/12/2019	0	119313001
River Water	Cs-137	1512	2/12/2019	0	119313001
River Water	Ba-140	1512	2/12/2019	0	119313001
River Water	La-140	1512	2/12/2019	0	119313001
River Water	Be-7	1512	2/12/2019	0	119313001
River Water	K-40	1512	2/12/2019	0	119313001
River Water	Mn-54	1512	2/12/2019	0	119313001
River Water	Fe-59	1512	2/12/2019	0	119313001
River Water	Co-58	1512	2/12/2019	0	119313001
River Water	Co-60	1512	2/12/2019	0	119313001
River Water	Zn-65	1512	2/12/2019	0	119313001
River Water	Zr-95	1512	2/12/2019	0	119313001
River Water	Ba-140	1512	3/12/2019	0	119663001
River Water	La-140	1512	3/12/2019	0	119663001
River Water	Be-7	1512	3/12/2019	0	119663001
River Water	K-40	1512	3/12/2019	0	119663001
River Water	Mn-54	1512	3/12/2019	0	119663001
River Water	Fe-59	1512	3/12/2019	0	119663001
River Water	Co-58	1512	3/12/2019	0	119663001
River Water	Co-60	1512	3/12/2019	0	119663001
River Water	Zn-65	1512	3/12/2019	0	119663001
River Water	Zr-95	1512	3/12/2019	0	119663001
River Water	Nb-95	1512	3/12/2019	0	119663001
River Water	I-131	1512	3/12/2019	0	119663001
River Water	Cs-134	1512	3/12/2019	0	119663001
River Water	Cs-137	1512	3/12/2019	0	119663001
River Water	Co-60	1512	4/10/2019	0	119975001
River Water	Zn-65	1512	4/10/2019	0	119975001
River Water	Zr-95	1512	4/10/2019	0	119975001
River Water	Nb-95	1512	4/10/2019	0	119975001
Water H-3	Tritium	1512	4/10/2019	39.4	120034001
River Water	Cs-134	1512	4/10/2019	0	119975001
River Water	K-40	1512	4/10/2019	0	119975001
River Water	Mn-54	1512	4/10/2019	0	119975001
River Water	Fe-59	1512	4/10/2019	0	119975001
River Water	Co-58	1512	4/10/2019	0	119975001
River Water	I-131	1512	4/10/2019	0	119975001
River Water	Cs-137	1512	4/10/2019	0	119975001
River Water	Ba-140	1512	4/10/2019	0	119975001
River Water	La-140	1512	4/10/2019	0	119975001
River Water	Be-7	1512	4/10/2019	0	119975001
River Water	Cs-137	1512	5/14/2019	0	120397001
River Water	Ba-140	1512	5/14/2019	0	120397001
River Water	La-140	1512	5/14/2019	0	120397001
River Water	Be-7	1512	5/14/2019	0	120397001

River Water	Co-60	1512	5/14/2019	0	120397001
River Water	Zn-65	1512	5/14/2019	0	120397001
River Water	Zr-95	1512	5/14/2019	0	120397001
River Water	Nb-95	1512	5/14/2019	0	120397001
River Water	I-131	1512	5/14/2019	0	120397001
River Water	Cs-134	1512	5/14/2019	0	120397001
River Water	K-40	1512	5/14/2019	0	120397001
River Water	Mn-54	1512	5/14/2019	0	120397001
River Water	Fe-59	1512	5/14/2019	0	120397001
River Water	Co-58	1512	5/14/2019	0	120397001
River Water	Mn-54	1512	6/11/2019	0	120818001
River Water	Fe-59	1512	6/11/2019	0	120818001
River Water	Co-58	1512	6/11/2019	0	120818001
River Water	Co-60	1512	6/11/2019	0	120818001
River Water	Zn-65	1512	6/11/2019	0	120818001
River Water	Zr-95	1512	6/11/2019	0	120818001
River Water	Nb-95	1512	6/11/2019	0	120818001
River Water	I-131	1512	6/11/2019	0	120818001
River Water	Cs-134	1512	6/11/2019	0	120818001
River Water	Cs-137	1512	6/11/2019	0	120818001
River Water	Ba-140	1512	6/11/2019	0	120818001
River Water	La-140	1512	6/11/2019	0	120818001
River Water	Be-7	1512	6/11/2019	0	120818001
River Water	K-40	1512	6/11/2019	0	120818001
River Water	Nb-95	1512	7/9/2019	0	121241001
River Water	I-131	1512	7/9/2019	0	121241001
River Water	Cs-134	1512	7/9/2019	0	121241001
River Water	Cs-137	1512	7/9/2019	0	121241001
River Water	Ba-140	1512	7/9/2019	0	121241001
River Water	La-140	1512	7/9/2019	0	121241001
River Water	Be-7	1512	7/9/2019	0	121241001
River Water	K-40	1512	7/9/2019	0	121241001
Water H-3	Tritium	1512	7/9/2019	33.4	121374001
River Water	Mn-54	1512	7/9/2019	0	121241001
River Water	Fe-59	1512	7/9/2019	0	121241001
River Water	Co-58	1512	7/9/2019	0	121241001
River Water	Co-60	1512	7/9/2019	0	121241001
River Water	Zn-65	1512	7/9/2019	0	121241001
River Water	Zr-95	1512	7/9/2019	0	121241001
River Water	Fe-59	1512	8/13/2019	0	121817001
River Water	Co-58	1512	8/13/2019	0	121817001
River Water	Co-60	1512	8/13/2019	0	121817001
River Water	Zn-65	1512	8/13/2019	0	121817001
River Water	Zr-95	1512	8/13/2019	0	121817001
River Water	Nb-95	1512	8/13/2019	0	121817001
River Water	I-131	1512	8/13/2019	0	121817001
River Water	Cs-134	1512	8/13/2019	0	121817001
River Water	Cs-137	1512	8/13/2019	0	121817001
River Water	Ba-140	1512	8/13/2019	0	121817001
River Water	La-140	1512	8/13/2019	0	121817001
River Water	Be-7	1512	8/13/2019	0	121817001
River Water	K-40	1512	8/13/2019	0	121817001
River Water	Mn-54	1512	8/13/2019	0	121817001

River Water	Zr-95	1512	9/10/2019	0	122350001
River Water	Nb-95	1512	9/10/2019	0	122350001
River Water	I-131	1512	9/10/2019	0	122350001
River Water	Cs-134	1512	9/10/2019	0	122350001
River Water	Cs-137	1512	9/10/2019	0	122350001
River Water	Ba-140	1512	9/10/2019	0	122350001
River Water	La-140	1512	9/10/2019	0	122350001
River Water	Be-7	1512	9/10/2019	0	122350001
River Water	K-40	1512	9/10/2019	0	122350001
River Water	Mn-54	1512	9/10/2019	0	122350001
River Water	Fe-59	1512	9/10/2019	0	122350001
River Water	Co-58	1512	9/10/2019	0	122350001
River Water	Co-60	1512	9/10/2019	0	122350001
River Water	Zn-65	1512	9/10/2019	0	122350001
River Water	Co-58	1512	10/8/2019	0	122837001
River Water	Co-60	1512	10/8/2019	0	122837001
River Water	Zn-65	1512	10/8/2019	0	122837001
River Water	Zr-95	1512	10/8/2019	0	122837001
River Water	Nb-95	1512	10/8/2019	0	122837001
River Water	I-131	1512	10/8/2019	0	122837001
River Water	Cs-134	1512	10/8/2019	0	122837001
River Water	Cs-137	1512	10/8/2019	0	122837001
River Water	Ba-140	1512	10/8/2019	0	122837001
River Water	La-140	1512	10/8/2019	0	122837001
River Water	Be-7	1512	10/8/2019	0	122837001
River Water	K-40	1512	10/8/2019	0	122837001
Water H-3	Tritium	1512	10/8/2019	18.1	123044001
River Water	Mn-54	1512	10/8/2019	0	122837001
River Water	Fe-59	1512	10/8/2019	0	122837001
River Water	Mn-54	1512	11/11/2019	0	123314001
River Water	Fe-59	1512	11/11/2019	0	123314001
River Water	Co-58	1512	11/11/2019	0	123314001
River Water	Co-60	1512	11/11/2019	0	123314001
River Water	Zn-65	1512	11/11/2019	0	123314001
River Water	Zr-95	1512	11/11/2019	0	123314001
River Water	Nb-95	1512	11/11/2019	0	123314001
River Water	I-131	1512	11/11/2019	0	123314001
River Water	Cs-134	1512	11/11/2019	0	123314001
River Water	Cs-137	1512	11/11/2019	0	123314001
River Water	Ba-140	1512	11/11/2019	0	123314001
River Water	La-140	1512	11/11/2019	0	123314001
River Water	Be-7	1512	11/11/2019	0	123314001
River Water	K-40	1512	11/11/2019	0	123314001
River Water	Cs-137	1512	12/10/2019	0	123668001
River Water	Ba-140	1512	12/10/2019	0	123668001
River Water	La-140	1512	12/10/2019	0	123668001
River Water	Be-7	1512	12/10/2019	0	123668001
River Water	K-40	1512	12/10/2019	0	123668001
River Water	Mn-54	1512	12/10/2019	0	123668001
River Water	Fe-59	1512	12/10/2019	0	123668001
River Water	Co-58	1512	12/10/2019	0	123668001
River Water	Co-60	1512	12/10/2019	0	123668001
River Water	Zn-65	1512	12/10/2019	0	123668001

River Water	Zr-95	1512	12/10/2019	0	123668001
River Water	Nb-95	1512	12/10/2019	0	123668001
River Water	I-131	1512	12/10/2019	0	123668001
River Water	Cs-134	1512	12/10/2019	0	123668001
Fish	Mn-54	1532 Anadronmous	3/26/2019	0	119843001
Fish	K-40	1532 Anadronmous	3/26/2019	4144	119843001
Fish	Be-7	1532 Anadronmous	3/26/2019	0	119843001
Fish	Cs-137	1532 Anadronmous	3/26/2019	0	119843001
Fish	Cs-134	1532 Anadronmous	3/26/2019	0	119843001
Fish	Zn-65	1532 Anadronmous	3/26/2019	0	119843001
Fish	Co-60	1532 Anadronmous	3/26/2019	0	119843001
Fish	Co-58	1532 Anadronmous	3/26/2019	0	119843001
Fish	Fe-59	1532 Anadronmous	3/26/2019	0	119843001
Fish	K-40	1532 Bass	2/19/2019	3439	119363001
Fish	Be-7	1532 Bass	2/19/2019	0	119363001
Fish	Cs-137	1532 Bass	2/19/2019	32.89	119363001
Fish	Cs-134	1532 Bass	2/19/2019	0	119363001
Fish	Zn-65	1532 Bass	2/19/2019	0	119363001
Fish	Co-60	1532 Bass	2/19/2019	0	119363001
Fish	Co-58	1532 Bass	2/19/2019	0	119363001
Fish	Fe-59	1532 Bass	2/19/2019	0	119363001
Fish	Mn-54	1532 Bass	2/19/2019	0	119363001
Fish	Mn-54	1532 Catfish	2/19/2019	0	119363002
Fish	Fe-59	1532 Catfish	2/19/2019	0	119363002
Fish	Co-58	1532 Catfish	2/19/2019	0	119363002
Fish	Co-60	1532 Catfish	2/19/2019	0	119363002
Fish	Zn-65	1532 Catfish	2/19/2019	0	119363002
Fish	Cs-134	1532 Catfish	2/19/2019	0	119363002
Fish	Cs-137	1532 Catfish	2/19/2019	0	119363002
Fish	Be-7	1532 Catfish	2/19/2019	0	119363002
Fish	K-40	1532 Catfish	2/19/2019	3607.1	119363002
Sediment	Cs-137	1533	4/10/2019	0	119976001
Sediment	Cs-134	1533	4/10/2019	0	119976001
Sediment	Co-60	1533	4/10/2019	0	119976001
Sediment	Co-58	1533	4/10/2019	0	119976001
Sediment	K-40	1533	4/10/2019	14626	119976001
Sediment	Be-7	1533	4/10/2019	0	119976001
Sediment	Cs-137	1533	10/8/2019	0	122836002
Sediment	Cs-134	1533	10/8/2019	0	122836002
Sediment	Co-60	1533	10/8/2019	0	122836002
Sediment	Co-58	1533	10/8/2019	0	122836002
Sediment	K-40	1533	10/8/2019	15023	122836002
Sediment	Be-7	1533	10/8/2019	357.02	122836002
Fish	Co-58	1535 Bass	4/15/2019	0	120066004
Fish	Fe-59	1535 Bass	4/15/2019	0	120066004
Fish	Mn-54	1535 Bass	4/15/2019	0	120066004
Fish	K-40	1535 Bass	4/15/2019	3579.1	120066004
Fish	Be-7	1535 Bass	4/15/2019	0	120066004
Fish	Cs-137	1535 Bass	4/15/2019	54.406	120066004
Fish	Cs-134	1535 Bass	4/15/2019	0	120066004
Fish	Zn-65	1535 Bass	4/15/2019	0	120066004
Fish	Co-60	1535 Bass	4/15/2019	0	120066004
Fish	K-40	1535 Bass	10/23/2019	3434.6	123071004

Fish	Be-7	1535 Bass	10/23/2019	0	123071004
Fish	Cs-137	1535 Bass	10/23/2019	40.194	123071004
Fish	Cs-134	1535 Bass	10/23/2019	0	123071004
Fish	Zn-65	1535 Bass	10/23/2019	0	123071004
Fish	Co-60	1535 Bass	10/23/2019	0	123071004
Fish	Co-58	1535 Bass	10/23/2019	0	123071004
Fish	Fe-59	1535 Bass	10/23/2019	0	123071004
Fish	Mn-54	1535 Bass	10/23/2019	0	123071004
Fish	Cs-137	1535 Carp	10/23/2019	0	123071006
Fish	Be-7	1535 Carp	10/23/2019	0	123071006
Fish	K-40	1535 Carp	10/23/2019	3250.3	123071006
Fish	Mn-54	1535 Carp	10/23/2019	0	123071006
Fish	Fe-59	1535 Carp	10/23/2019	0	123071006
Fish	Co-58	1535 Carp	10/23/2019	0	123071006
Fish	Co-60	1535 Carp	10/23/2019	0	123071006
Fish	Zn-65	1535 Carp	10/23/2019	0	123071006
Fish	Cs-134	1535 Carp	10/23/2019	0	123071006
Fish	Fe-59	1535 Catfish	4/15/2019	0	120066005
Fish	Mn-54	1535 Catfish	4/15/2019	0	120066005
Fish	Cs-134	1535 Catfish	4/15/2019	0	120066005
Fish	Zn-65	1535 Catfish	4/15/2019	0	120066005
Fish	Co-60	1535 Catfish	4/15/2019	0	120066005
Fish	K-40	1535 Catfish	4/15/2019	2783.8	120066005
Fish	Be-7	1535 Catfish	4/15/2019	0	120066005
Fish	Cs-137	1535 Catfish	4/15/2019	0	120066005
Fish	Co-58	1535 Catfish	4/15/2019	0	120066005
Fish	Co-60	1535 Catfish	10/23/2019	0	123071005
Fish	K-40	1535 Catfish	10/23/2019	3211.4	123071005
Fish	Be-7	1535 Catfish	10/23/2019	0	123071005
Fish	Cs-137	1535 Catfish	10/23/2019	21.016	123071005
Fish	Cs-134	1535 Catfish	10/23/2019	0	123071005
Fish	Zn-65	1535 Catfish	10/23/2019	0	123071005
Fish	Co-58	1535 Catfish	10/23/2019	0	123071005
Fish	Fe-59	1535 Catfish	10/23/2019	0	123071005
Fish	Mn-54	1535 Catfish	10/23/2019	0	123071005
Fish	Fe-59	1535 Mullet	4/15/2019	0	120066007
Fish	Co-58	1535 Mullet	4/15/2019	0	120066007
Fish	Co-60	1535 Mullet	4/15/2019	0	120066007
Fish	Zn-65	1535 Mullet	4/15/2019	0	120066007
Fish	Cs-134	1535 Mullet	4/15/2019	0	120066007
Fish	Cs-137	1535 Mullet	4/15/2019	0	120066007
Fish	Be-7	1535 Mullet	4/15/2019	0	120066007
Fish	K-40	1535 Mullet	4/15/2019	3464.3	120066007
Fish	Mn-54	1535 Mullet	4/15/2019	0	120066007
Fish	Be-7	1535 Sucker	4/15/2019	0	120066006
Fish	K-40	1535 Sucker	4/15/2019	3820.4	120066006
Fish	Mn-54	1535 Sucker	4/15/2019	0	120066006
Fish	Fe-59	1535 Sucker	4/15/2019	0	120066006
Fish	Co-58	1535 Sucker	4/15/2019	0	120066006
Fish	Co-60	1535 Sucker	4/15/2019	0	120066006
Fish	Zn-65	1535 Sucker	4/15/2019	0	120066006
Fish	Cs-134	1535 Sucker	4/15/2019	0	120066006
Fish	Cs-137	1535 Sucker	4/15/2019	0	120066006

Charcoal Ct	I-131	DIS	1/8/2019	0	118834004
Air Filters	Gross Beta	DIS	1/15/2019	.01864	118981004
Charcoal Ct	I-131	DIS	1/15/2019	0	118982004
Air Filters	Gross Beta	DIS	1/22/2019	.02221	119002004
Charcoal Ct	I-131	DIS	1/22/2019	0	119003004
Air Filters	Gross Beta	DIS	1/29/2019	.02284	119058004
Charcoal Ct	I-131	DIS	1/29/2019	0	119059004
Charcoal Ct	I-131	DIS	2/5/2019	0	119189004
Air Filters	Gross Beta	DIS	2/5/2019	.02585	119178004
Charcoal Ct	I-131	DIS	2/12/2019	0	119328004
Air Filters	Gross Beta	DIS	2/12/2019	.02228	119327004
Air Filters	Gross Beta	DIS	2/19/2019	.02067	119364004
Charcoal Ct	I-131	DIS	2/19/2019	0	119365004
Charcoal Ct	I-131	DIS	2/26/2019	0	119474004
Air Filters	Gross Beta	DIS	2/26/2019	.01398	119473004
Air Filters	Gross Beta	DIS	3/5/2019	.01569	119572004
Charcoal Ct	I-131	DIS	3/5/2019	0	119573004
Air Filters	Gross Beta	DIS	3/12/2019	.02226	119664004
Charcoal Ct	I-131	DIS	3/12/2019	0	119665004
Air Filters	Gross Beta	DIS	3/19/2019	.0253	119766004
Charcoal Ct	I-131	DIS	3/19/2019	0	119767004
Air Filters	Gross Beta	DIS	3/26/2019	.02893	119840004
Air Qtr Comp	Be-7	DIS	3/26/2019	.0798	120030004
Air Qtr Comp	Cs-137	DIS	3/26/2019	0	120030004
Air Qtr Comp	Cs-134	DIS	3/26/2019	0	120030004
Air Qtr Comp	I-131	DIS	3/26/2019	0	120030004
Charcoal Ct	I-131	DIS	3/26/2019	0	119842004
Charcoal Ct	I-131	DIS	4/1/2019	0	119894004
Air Filters	Gross Beta	DIS	4/1/2019	.02238	119893004
Air Filters	Gross Beta	DIS	4/8/2019	.02037	119961004
Charcoal Ct	I-131	DIS	4/8/2019	0	119962004
Charcoal Ct	I-131	DIS	4/17/2019	0	120073004
Air Filters	Gross Beta	DIS	4/17/2019	.01304	120072004
Air Filters	Gross Beta	DIS	4/23/2019	.01507	120140004
Charcoal Ct	I-131	DIS	4/23/2019	0	120141004
Air Filters	Gross Beta	DIS	4/30/2019	.02906	120228004
Charcoal Ct	I-131	DIS	4/30/2019	0	120229004
Air Filters	Gross Beta	DIS	5/7/2019	.01727	120290004
Charcoal Ct	I-131	DIS	5/7/2019	0	120291004
Air Filters	Gross Beta	DIS	5/14/2019	.01888	120398004
Charcoal Ct	I-131	DIS	5/14/2019	0	120399004
Charcoal Ct	I-131	DIS	5/21/2019	0	120501004
Air Filters	Gross Beta	DIS	5/21/2019	.02859	120497004
Air Filters	Gross Beta	DIS	5/28/2019	.03318	120569004
Charcoal Ct	I-131	DIS	5/28/2019	0	120570004
Charcoal Ct	I-131	DIS	6/4/2019	0	120736004
Air Filters	Gross Beta	DIS	6/4/2019	.03633	120735004
Air Filters	Gross Beta	DIS	6/11/2019	.01597	120823003
Charcoal Ct	I-131	DIS	6/11/2019	0	120825003
Air Filters	Gross Beta	DIS	6/18/2019	.02502	120944004
Charcoal Ct	I-131	DIS	6/18/2019	0	120945004
Charcoal Ct	I-131	DIS	6/25/2019	0	121040004
Air Filters	Gross Beta	DIS	6/25/2019	.01869	121039004

Air Qtr Comp	Be-7	DIS	6/25/2019	.1038	121197004
Air Qtr Comp	Cs-137	DIS	6/25/2019	0	121197004
Air Qtr Comp	Cs-134	DIS	6/25/2019	0	121197004
Air Qtr Comp	I-131	DIS	6/25/2019	0	121197004
Air Filters	Gross Beta	DIS	7/2/2019	.03079	121164004
Charcoal Ct	I-131	DIS	7/2/2019	0	121165004
Air Filters	Gross Beta	DIS	7/9/2019	.02412	121248004
Charcoal Ct	I-131	DIS	7/9/2019	0	121249004
Air Filters	Gross Beta	DIS	7/16/2019	.02418	121368004
Charcoal Ct	I-131	DIS	7/16/2019	0	121369004
Charcoal Ct	I-131	DIS	7/23/2019	0	121486004
Air Filters	Gross Beta	DIS	7/23/2019	.023	121485004
Charcoal Ct	I-131	DIS	7/30/2019	0	121637004
Air Filters	Gross Beta	DIS	7/30/2019	.02616	121636004
Air Filters	Gross Beta	DIS	8/5/2019	.02202	121726004
Charcoal Ct	I-131	DIS	8/5/2019	0	121727004
Air Filters	Gross Beta	DIS	8/13/2019	.03321	121818004
Charcoal Ct	I-131	DIS	8/13/2019	0	121819004
Charcoal Ct	I-131	DIS	8/20/2019	0	121989004
Air Filters	Gross Beta	DIS	8/20/2019	.02352	121988004
Air Filters	Gross Beta	DIS	8/27/2019	.01324	122108004
Charcoal Ct	I-131	DIS	8/27/2019	0	122109004
Air Filters	Gross Beta	DIS	9/3/2019	.02364	122224004
Charcoal Ct	I-131	DIS	9/3/2019	0	122225004
Air Filters	Gross Beta	DIS	9/10/2019	.03482	122359004
Charcoal Ct	I-131	DIS	9/10/2019	0	122360004
Charcoal Ct	I-131	DIS	9/17/2019	0	122486004
Air Filters	Gross Beta	DIS	9/17/2019	.04427	122485004
Air Filters	Gross Beta	DIS	9/24/2019	.03098	122640004
Charcoal Ct	I-131	DIS	9/24/2019	0	122641004
Air Qtr Comp	I-131	DIS	9/24/2019	0	122829004
Air Qtr Comp	Cs-134	DIS	9/24/2019	0	122829004
Air Qtr Comp	Cs-137	DIS	9/24/2019	0	122829004
Air Qtr Comp	Be-7	DIS	9/24/2019	.08301	122829004
Charcoal Ct	I-131	DIS	10/1/2019	0	122730004
Air Filters	Gross Beta	DIS	10/1/2019	.03607	122729004
Charcoal Ct	I-131	DIS	10/8/2019	0	122873004
Air Filters	Gross Beta	DIS	10/8/2019	.03214	122872004
Air Filters	Gross Beta	DIS	10/15/2019	.0226	122962004
Charcoal Ct	I-131	DIS	10/15/2019	0	122963004
Air Filters	Gross Beta	DIS	10/22/2019	.02241	123062004
Charcoal Ct	I-131	DIS	10/22/2019	0	123063004
Air Filters	Gross Beta	DIS	10/29/2019	.02276	123139004
Charcoal Ct	I-131	DIS	10/29/2019	0	123140004
Air Filters	Gross Beta	DIS	11/5/2019	.02779	123240004
Charcoal Ct	I-131	DIS	11/5/2019	0	123241004
Charcoal Ct	I-131	DIS	11/12/2019	0	123323004
Air Filters	Gross Beta	DIS	11/12/2019	.03928	123322004
Air Filters	Gross Beta	DIS	11/19/2019	.02073	123418004
Charcoal Ct	I-131	DIS	11/19/2019	0	123419004
Air Filters	Gross Beta	DIS	11/26/2019	.02578	123542004
Charcoal Ct	I-131	DIS	11/26/2019	0	123543004
Air Filters	Gross Beta	DIS	12/3/2019	.02132	123574004

Charcoal Ct	I-131	DIS	12/3/2019	0	123575004
Charcoal Ct	I-131	DIS	12/10/2019	0	123667004
Air Filters	Gross Beta	DIS	12/10/2019	.02398	123666004
Charcoal Ct	I-131	DIS	12/17/2019	0	123805004
Air Filters	Gross Beta	DIS	12/17/2019	.02169	123804004
Charcoal Ct	I-131	DIS	12/23/2019	0	123857004
Air Filters	Gross Beta	DIS	12/23/2019	.02331	123856004
Charcoal Ct	I-131	DIS	12/30/2019	0	123924004
Air Qtr Comp	Be-7	DIS	12/30/2019	.109	124084004
Air Qtr Comp	I-131	DIS	12/30/2019	0	124084004
Air Qtr Comp	Cs-134	DIS	12/30/2019	0	124084004
Air Qtr Comp	Cs-137	DIS	12/30/2019	0	124084004
Air Filters	Gross Beta	DIS	12/30/2019	.02305	123923004
DW - Gamma	Co-60	FAUC	1/8/2019	0	118872002
DW - Gamma	Zn-65	FAUC	1/8/2019	0	118872002
DW - Gamma	Zr-95	FAUC	1/8/2019	0	118872002
DW - Gamma	Nb-95	FAUC	1/8/2019	0	118872002
DW - Gamma	I-131	FAUC	1/8/2019	0	118872002
DW - Gamma	Cs-134	FAUC	1/8/2019	0	118872002
DW - Gamma	Cs-137	FAUC	1/8/2019	0	118872002
DW - Gamma	Ba-140	FAUC	1/8/2019	0	118872002
DW - Gamma	La-140	FAUC	1/8/2019	0	118872002
DW - Gamma	Be-7	FAUC	1/8/2019	0	118872002
DW - Gamma	K-40	FAUC	1/8/2019	0	118872002
DW - Gamma	Mn-54	FAUC	1/8/2019	0	118872002
DW - Gamma	Fe-59	FAUC	1/8/2019	0	118872002
DW - Gamma	Co-58	FAUC	1/8/2019	0	118872002
Water H-3	Tritium	FAUC	1/8/2019	-15.4	119054002
DW - Gamma	I-131	FAUC	2/4/2019	0	119129002
DW - Gamma	Cs-134	FAUC	2/4/2019	0	119129002
DW - Gamma	Cs-137	FAUC	2/4/2019	0	119129002
DW - Gamma	Ba-140	FAUC	2/4/2019	0	119129002
DW - Gamma	La-140	FAUC	2/4/2019	0	119129002
DW - Gamma	Mn-54	FAUC	2/4/2019	0	119129002
DW - Gamma	Fe-59	FAUC	2/4/2019	0	119129002
DW - Gamma	Co-58	FAUC	2/4/2019	0	119129002
DW - Gamma	Co-60	FAUC	2/4/2019	0	119129002
DW - Gamma	Be-7	FAUC	2/4/2019	0	119129002
DW - Beta	Gross Beta	FAUC	2/4/2019	1.357	119259002
DW - Beta	Gross Alpha	FAUC	2/4/2019	0	119259002
DW - Gamma	K-40	FAUC	2/4/2019	0	119129002
DW - Gamma	Zn-65	FAUC	2/4/2019	0	119129002
DW - Gamma	Zr-95	FAUC	2/4/2019	0	119129002
DW - Gamma	Nb-95	FAUC	2/4/2019	0	119129002
DW - Gamma	Zr-95	FAUC	3/4/2019	0	119571002
DW - Gamma	Nb-95	FAUC	3/4/2019	0	119571002
DW - Gamma	I-131	FAUC	3/4/2019	0	119571002
DW - Gamma	Cs-134	FAUC	3/4/2019	0	119571002
DW - Gamma	Cs-137	FAUC	3/4/2019	0	119571002
DW - Gamma	Ba-140	FAUC	3/4/2019	0	119571002
DW - Gamma	La-140	FAUC	3/4/2019	0	119571002
DW - Gamma	Be-7	FAUC	3/4/2019	0	119571002
DW - Gamma	K-40	FAUC	3/4/2019	0	119571002

DW - Gamma	Mn-54	FAUC	3/4/2019	0	119571002
DW - Gamma	Fe-59	FAUC	3/4/2019	0	119571002
DW - Gamma	Co-58	FAUC	3/4/2019	0	119571002
DW - Gamma	Co-60	FAUC	3/4/2019	0	119571002
DW - Beta	Gross Alpha	FAUC	3/4/2019	0	119594002
DW - Beta	Gross Beta	FAUC	3/4/2019	3	119594002
DW - Gamma	Zn-65	FAUC	3/4/2019	0	119571002
DW - Gamma	Nb-95	FAUC	4/1/2019	0	119892002
DW - Gamma	I-131	FAUC	4/1/2019	0	119892002
DW - Gamma	Cs-134	FAUC	4/1/2019	0	119892002
DW - Gamma	Cs-137	FAUC	4/1/2019	0	119892002
DW - Gamma	Ba-140	FAUC	4/1/2019	0	119892002
DW - Gamma	La-140	FAUC	4/1/2019	0	119892002
DW - Gamma	Be-7	FAUC	4/1/2019	0	119892002
DW - Gamma	K-40	FAUC	4/1/2019	0	119892002
DW - Gamma	Fe-59	FAUC	4/1/2019	0	119892002
DW - Gamma	Co-58	FAUC	4/1/2019	0	119892002
DW - Gamma	Co-60	FAUC	4/1/2019	0	119892002
DW - Gamma	Mn-54	FAUC	4/1/2019	0	119892002
DW - Gamma	Zn-65	FAUC	4/1/2019	0	119892002
DW - Beta	Gross Alpha	FAUC	4/1/2019	0	119900002
DW - Beta	Gross Beta	FAUC	4/1/2019	1.895	119900002
Water H-3	Tritium	FAUC	4/1/2019	-134	120035002
DW - Gamma	Zr-95	FAUC	4/1/2019	0	119892002
DW - Gamma	Co-58	FAUC	5/7/2019	0	120289002
DW - Gamma	Co-60	FAUC	5/7/2019	0	120289002
DW - Gamma	Zn-65	FAUC	5/7/2019	0	120289002
DW - Gamma	Zr-95	FAUC	5/7/2019	0	120289002
DW - Gamma	Nb-95	FAUC	5/7/2019	0	120289002
DW - Gamma	I-131	FAUC	5/7/2019	0	120289002
DW - Gamma	Cs-134	FAUC	5/7/2019	0	120289002
DW - Gamma	Cs-137	FAUC	5/7/2019	0	120289002
DW - Gamma	Ba-140	FAUC	5/7/2019	0	120289002
DW - Gamma	La-140	FAUC	5/7/2019	0	120289002
DW - Gamma	Be-7	FAUC	5/7/2019	0	120289002
DW - Gamma	K-40	FAUC	5/7/2019	0	120289002
DW - Gamma	Mn-54	FAUC	5/7/2019	0	120289002
DW - Gamma	Fe-59	FAUC	5/7/2019	0	120289002
DW - Beta	Gross Alpha	FAUC	5/7/2019	0	120288002
DW - Beta	Gross Beta	FAUC	5/7/2019	.9452	120288002
DW - Gamma	Fe-59	FAUC	6/4/2019	0	120734002
DW - Gamma	Co-58	FAUC	6/4/2019	0	120734002
DW - Gamma	Co-60	FAUC	6/4/2019	0	120734002
DW - Gamma	Zn-65	FAUC	6/4/2019	0	120734002
DW - Gamma	I-131	FAUC	6/4/2019	0	120734002
DW - Gamma	Cs-134	FAUC	6/4/2019	0	120734002
DW - Gamma	Cs-137	FAUC	6/4/2019	0	120734002
DW - Gamma	Ba-140	FAUC	6/4/2019	0	120734002
DW - Gamma	La-140	FAUC	6/4/2019	0	120734002
DW - Gamma	Be-7	FAUC	6/4/2019	0	120734002
DW - Gamma	K-40	FAUC	6/4/2019	0	120734002
DW - Beta	Gross Alpha	FAUC	6/4/2019	0	120733002
DW - Beta	Gross Beta	FAUC	6/4/2019	1.877	120733002

DW - Gamma	Zr-95	FAUC	6/4/2019	0	120734002
DW - Gamma	Nb-95	FAUC	6/4/2019	0	120734002
DW - Gamma	Mn-54	FAUC	6/4/2019	0	120734002
Water H-3	Tritium	FAUC	7/2/2019	-55.7	121375002
DW - Gamma	Fe-59	FAUC	7/2/2019	0	121163002
DW - Gamma	Co-58	FAUC	7/2/2019	0	121163002
DW - Gamma	Co-60	FAUC	7/2/2019	0	121163002
DW - Gamma	Zn-65	FAUC	7/2/2019	0	121163002
DW - Gamma	Zr-95	FAUC	7/2/2019	0	121163002
DW - Gamma	Nb-95	FAUC	7/2/2019	0	121163002
DW - Gamma	I-131	FAUC	7/2/2019	0	121163002
DW - Gamma	Cs-134	FAUC	7/2/2019	0	121163002
DW - Gamma	Cs-137	FAUC	7/2/2019	0	121163002
DW - Gamma	Ba-140	FAUC	7/2/2019	0	121163002
DW - Gamma	La-140	FAUC	7/2/2019	0	121163002
DW - Gamma	Be-7	FAUC	7/2/2019	0	121163002
DW - Gamma	K-40	FAUC	7/2/2019	0	121163002
DW - Gamma	Mn-54	FAUC	7/2/2019	0	121163002
DW - Beta	Gross Alpha	FAUC	7/2/2019	0	121162002
DW - Beta	Gross Beta	FAUC	7/2/2019	2.191	121162002
DW - Gamma	Cs-137	FAUC	8/6/2019	0	121724002
DW - Gamma	Ba-140	FAUC	8/6/2019	0	121724002
DW - Gamma	La-140	FAUC	8/6/2019	0	121724002
DW - Gamma	Be-7	FAUC	8/6/2019	0	121724002
DW - Gamma	K-40	FAUC	8/6/2019	0	121724002
DW - Gamma	Mn-54	FAUC	8/6/2019	0	121724002
DW - Gamma	Fe-59	FAUC	8/6/2019	0	121724002
DW - Gamma	Co-58	FAUC	8/6/2019	0	121724002
DW - Gamma	Co-60	FAUC	8/6/2019	0	121724002
DW - Gamma	Zn-65	FAUC	8/6/2019	0	121724002
DW - Gamma	Zr-95	FAUC	8/6/2019	0	121724002
DW - Gamma	Nb-95	FAUC	8/6/2019	0	121724002
DW - Gamma	I-131	FAUC	8/6/2019	0	121724002
DW - Gamma	Cs-134	FAUC	8/6/2019	0	121724002
DW - Beta	Gross Alpha	FAUC	8/6/2019	0	121725002
DW - Beta	Gross Beta	FAUC	8/6/2019	3.658	121725002
DW - Gamma	Fe-59	FAUC	9/9/2019	0	122323002
DW - Gamma	Co-58	FAUC	9/9/2019	0	122323002
DW - Gamma	Co-60	FAUC	9/9/2019	0	122323002
DW - Gamma	Zn-65	FAUC	9/9/2019	0	122323002
DW - Gamma	Zr-95	FAUC	9/9/2019	0	122323002
DW - Gamma	Nb-95	FAUC	9/9/2019	0	122323002
DW - Gamma	I-131	FAUC	9/9/2019	0	122323002
DW - Gamma	Cs-134	FAUC	9/9/2019	0	122323002
DW - Gamma	Cs-137	FAUC	9/9/2019	0	122323002
DW - Gamma	Ba-140	FAUC	9/9/2019	0	122323002
Water H-3	Tritium	FAUC	9/9/2019	95.4	123045002
DW - Beta	Gross Alpha	FAUC	9/9/2019	0	122325002
DW - Beta	Gross Beta	FAUC	9/9/2019	2.316	122325002
DW - Gamma	La-140	FAUC	9/9/2019	0	122323002
DW - Gamma	Be-7	FAUC	9/9/2019	0	122323002
DW - Gamma	K-40	FAUC	9/9/2019	0	122323002
DW - Gamma	Mn-54	FAUC	9/9/2019	0	122323002

DW - Beta	Gross Alpha	FAUC	11/4/2019	0	123234002
DW - Beta	Gross Beta	FAUC	11/4/2019	2.597	123234002
DW - Gamma	Zn-65	FAUC	11/4/2019	0	123233002
DW - Gamma	Zr-95	FAUC	11/4/2019	0	123233002
DW - Gamma	Nb-95	FAUC	11/4/2019	0	123233002
DW - Gamma	I-131	FAUC	11/4/2019	0	123233002
DW - Gamma	Cs-134	FAUC	11/4/2019	0	123233002
DW - Gamma	Cs-137	FAUC	11/4/2019	0	123233002
DW - Gamma	Ba-140	FAUC	11/4/2019	0	123233002
DW - Gamma	La-140	FAUC	11/4/2019	0	123233002
DW - Gamma	Be-7	FAUC	11/4/2019	0	123233002
DW - Gamma	K-40	FAUC	11/4/2019	0	123233002
DW - Gamma	Mn-54	FAUC	11/4/2019	0	123233002
DW - Gamma	Fe-59	FAUC	11/4/2019	0	123233002
DW - Gamma	Co-58	FAUC	11/4/2019	0	123233002
DW - Gamma	Co-60	FAUC	11/4/2019	0	123233002
DW - Gamma	Mn-54	FAUC	12/3/2019	0	123569002
DW - Gamma	Fe-59	FAUC	12/3/2019	0	123569002
DW - Gamma	Co-58	FAUC	12/3/2019	0	123569002
DW - Gamma	Co-60	FAUC	12/3/2019	0	123569002
DW - Gamma	Zn-65	FAUC	12/3/2019	0	123569002
DW - Gamma	Zr-95	FAUC	12/3/2019	0	123569002
DW - Gamma	Nb-95	FAUC	12/3/2019	0	123569002
DW - Gamma	I-131	FAUC	12/3/2019	0	123569002
DW - Gamma	Cs-134	FAUC	12/3/2019	0	123569002
DW - Gamma	Cs-137	FAUC	12/3/2019	0	123569002
DW - Gamma	Ba-140	FAUC	12/3/2019	0	123569002
DW - Gamma	La-140	FAUC	12/3/2019	0	123569002
DW - Gamma	Be-7	FAUC	12/3/2019	0	123569002
DW - Beta	Gross Alpha	FAUC	12/3/2019	0	123620002
DW - Beta	Gross Beta	FAUC	12/3/2019	1.601	123620002
DW - Gamma	K-40	FAUC	12/3/2019	0	123569002
DW - Gamma	K-40	FPOR	1/9/2019	0	118872004
DW - Gamma	Mn-54	FPOR	1/9/2019	0	118872004
DW - Gamma	Fe-59	FPOR	1/9/2019	0	118872004
DW - Gamma	Co-58	FPOR	1/9/2019	0	118872004
DW - Gamma	Co-60	FPOR	1/9/2019	0	118872004
DW - Gamma	Zn-65	FPOR	1/9/2019	0	118872004
DW - Gamma	Zr-95	FPOR	1/9/2019	0	118872004
DW - Gamma	Nb-95	FPOR	1/9/2019	0	118872004
DW - Gamma	I-131	FPOR	1/9/2019	0	118872004
DW - Gamma	Cs-134	FPOR	1/9/2019	0	118872004
Water H-3	Tritium	FPOR	1/9/2019	203	119054004
DW - Gamma	Cs-137	FPOR	1/9/2019	0	118872004
DW - Gamma	Ba-140	FPOR	1/9/2019	0	118872004
DW - Gamma	La-140	FPOR	1/9/2019	0	118872004
DW - Gamma	Be-7	FPOR	1/9/2019	0	118872004
DW - Beta	Gross Alpha	FPOR	2/4/2019	0	119259004
DW - Gamma	Nb-95	FPOR	2/4/2019	0	119129004
DW - Gamma	I-131	FPOR	2/4/2019	0	119129004
DW - Gamma	Cs-134	FPOR	2/4/2019	0	119129004
DW - Gamma	Cs-137	FPOR	2/4/2019	0	119129004
DW - Gamma	Ba-140	FPOR	2/4/2019	0	119129004

DW - Gamma	La-140	FPOR	2/4/2019	0	119129004
DW - Gamma	Be-7	FPOR	2/4/2019	0	119129004
DW - Gamma	K-40	FPOR	2/4/2019	0	119129004
DW - Gamma	Mn-54	FPOR	2/4/2019	0	119129004
DW - Gamma	Fe-59	FPOR	2/4/2019	0	119129004
DW - Gamma	Co-58	FPOR	2/4/2019	0	119129004
DW - Gamma	Co-60	FPOR	2/4/2019	0	119129004
DW - Gamma	Zn-65	FPOR	2/4/2019	0	119129004
DW - Gamma	Zr-95	FPOR	2/4/2019	0	119129004
DW - Beta	Gross Beta	FPOR	2/4/2019	1.456	119259004
DW - Gamma	Cs-137	FPOR	3/4/2019	0	119571004
DW - Gamma	Ba-140	FPOR	3/4/2019	0	119571004
DW - Gamma	La-140	FPOR	3/4/2019	0	119571004
DW - Gamma	K-40	FPOR	3/4/2019	0	119571004
DW - Gamma	Fe-59	FPOR	3/4/2019	0	119571004
DW - Gamma	Mn-54	FPOR	3/4/2019	0	119571004
DW - Beta	Gross Alpha	FPOR	3/4/2019	0	119594004
DW - Beta	Gross Beta	FPOR	3/4/2019	1.2	119594004
DW - Gamma	Be-7	FPOR	3/4/2019	0	119571004
DW - Gamma	Co-58	FPOR	3/4/2019	0	119571004
DW - Gamma	Co-60	FPOR	3/4/2019	0	119571004
DW - Gamma	Zn-65	FPOR	3/4/2019	0	119571004
DW - Gamma	Zr-95	FPOR	3/4/2019	0	119571004
DW - Gamma	Nb-95	FPOR	3/4/2019	0	119571004
DW - Gamma	I-131	FPOR	3/4/2019	0	119571004
DW - Gamma	Cs-134	FPOR	3/4/2019	0	119571004
DW - Gamma	Be-7	FPOR	4/2/2019	0	119892004
DW - Gamma	K-40	FPOR	4/2/2019	0	119892004
DW - Gamma	Mn-54	FPOR	4/2/2019	0	119892004
DW - Gamma	Fe-59	FPOR	4/2/2019	0	119892004
DW - Gamma	Co-58	FPOR	4/2/2019	0	119892004
DW - Gamma	Co-60	FPOR	4/2/2019	0	119892004
DW - Gamma	Zn-65	FPOR	4/2/2019	0	119892004
DW - Gamma	Zr-95	FPOR	4/2/2019	0	119892004
DW - Gamma	Nb-95	FPOR	4/2/2019	0	119892004
DW - Gamma	I-131	FPOR	4/2/2019	0	119892004
DW - Gamma	Cs-134	FPOR	4/2/2019	0	119892004
DW - Gamma	Cs-137	FPOR	4/2/2019	0	119892004
DW - Gamma	Ba-140	FPOR	4/2/2019	0	119892004
DW - Gamma	La-140	FPOR	4/2/2019	0	119892004
DW - Beta	Gross Alpha	FPOR	4/2/2019	0	119900004
DW - Beta	Gross Beta	FPOR	4/2/2019	.4793	119900004
Water H-3	Tritium	FPOR	4/2/2019	249	120035004
DW - Gamma	Co-58	FPOR	5/7/2019	0	120289004
DW - Beta	Gross Beta	FPOR	5/7/2019	2.153	120288004
DW - Gamma	Co-60	FPOR	5/7/2019	0	120289004
DW - Gamma	Zn-65	FPOR	5/7/2019	0	120289004
DW - Gamma	Zr-95	FPOR	5/7/2019	0	120289004
DW - Gamma	Nb-95	FPOR	5/7/2019	0	120289004
DW - Gamma	I-131	FPOR	5/7/2019	0	120289004
DW - Gamma	Cs-134	FPOR	5/7/2019	0	120289004
DW - Gamma	Cs-137	FPOR	5/7/2019	0	120289004
DW - Gamma	Ba-140	FPOR	5/7/2019	0	120289004

DW - Gamma	La-140	FPOR	5/7/2019	0	120289004
DW - Gamma	Be-7	FPOR	5/7/2019	0	120289004
DW - Gamma	K-40	FPOR	5/7/2019	0	120289004
DW - Gamma	Mn-54	FPOR	5/7/2019	0	120289004
DW - Gamma	Fe-59	FPOR	5/7/2019	0	120289004
DW - Beta	Gross Alpha	FPOR	5/7/2019	0	120288004
DW - Gamma	Mn-54	FPOR	6/4/2019	0	120734004
DW - Gamma	Fe-59	FPOR	6/4/2019	0	120734004
DW - Gamma	Co-58	FPOR	6/4/2019	0	120734004
DW - Gamma	Co-60	FPOR	6/4/2019	0	120734004
DW - Gamma	Zn-65	FPOR	6/4/2019	0	120734004
DW - Gamma	Zr-95	FPOR	6/4/2019	0	120734004
DW - Gamma	Nb-95	FPOR	6/4/2019	0	120734004
DW - Gamma	I-131	FPOR	6/4/2019	0	120734004
DW - Gamma	Cs-134	FPOR	6/4/2019	0	120734004
DW - Gamma	Cs-137	FPOR	6/4/2019	0	120734004
DW - Gamma	Ba-140	FPOR	6/4/2019	0	120734004
DW - Gamma	La-140	FPOR	6/4/2019	0	120734004
DW - Gamma	Be-7	FPOR	6/4/2019	0	120734004
DW - Gamma	K-40	FPOR	6/4/2019	0	120734004
DW - Beta	Gross Alpha	FPOR	6/4/2019	0	120733004
DW - Beta	Gross Beta	FPOR	6/4/2019	2.623	120733004
Water H-3	Tritium	FPOR	7/2/2019	91.6	121375004
DW - Gamma	Co-60	FPOR	7/2/2019	0	121163004
DW - Gamma	Zn-65	FPOR	7/2/2019	0	121163004
DW - Gamma	Zr-95	FPOR	7/2/2019	0	121163004
DW - Gamma	Nb-95	FPOR	7/2/2019	0	121163004
DW - Gamma	I-131	FPOR	7/2/2019	0	121163004
DW - Gamma	Cs-134	FPOR	7/2/2019	0	121163004
DW - Gamma	Cs-137	FPOR	7/2/2019	0	121163004
DW - Gamma	Ba-140	FPOR	7/2/2019	0	121163004
DW - Gamma	La-140	FPOR	7/2/2019	0	121163004
DW - Gamma	Be-7	FPOR	7/2/2019	0	121163004
DW - Gamma	K-40	FPOR	7/2/2019	0	121163004
DW - Gamma	Mn-54	FPOR	7/2/2019	0	121163004
DW - Gamma	Fe-59	FPOR	7/2/2019	0	121163004
DW - Gamma	Co-58	FPOR	7/2/2019	0	121163004
DW - Beta	Gross Alpha	FPOR	7/2/2019	0	121162004
DW - Beta	Gross Beta	FPOR	7/2/2019	3.099	121162004
DW - Gamma	Co-60	FPOR	8/6/2019	0	121724004
DW - Gamma	Zn-65	FPOR	8/6/2019	0	121724004
DW - Gamma	Zr-95	FPOR	8/6/2019	0	121724004
DW - Gamma	Nb-95	FPOR	8/6/2019	0	121724004
DW - Gamma	I-131	FPOR	8/6/2019	0	121724004
DW - Gamma	Cs-134	FPOR	8/6/2019	0	121724004
DW - Gamma	Cs-137	FPOR	8/6/2019	0	121724004
DW - Gamma	Ba-140	FPOR	8/6/2019	0	121724004
DW - Gamma	La-140	FPOR	8/6/2019	0	121724004
DW - Gamma	Be-7	FPOR	8/6/2019	0	121724004
DW - Gamma	K-40	FPOR	8/6/2019	0	121724004
DW - Gamma	Mn-54	FPOR	8/6/2019	0	121724004
DW - Gamma	Fe-59	FPOR	8/6/2019	0	121724004
DW - Gamma	Co-58	FPOR	8/6/2019	0	121724004

DW - Beta	Gross Alpha	FPOR	8/6/2019	0	121725004
DW - Beta	Gross Beta	FPOR	8/6/2019	2.501	121725004
DW - Gamma	Zr-95	FPOR	9/9/2019	0	122323004
DW - Gamma	Nb-95	FPOR	9/9/2019	0	122323004
DW - Gamma	I-131	FPOR	9/9/2019	0	122323004
DW - Gamma	Cs-134	FPOR	9/9/2019	0	122323004
DW - Gamma	Cs-137	FPOR	9/9/2019	0	122323004
DW - Gamma	Ba-140	FPOR	9/9/2019	0	122323004
DW - Beta	Gross Beta	FPOR	9/9/2019	1.866	122325004
Water H-3	Tritium	FPOR	9/9/2019	307	123045004
DW - Gamma	La-140	FPOR	9/9/2019	0	122323004
DW - Gamma	Be-7	FPOR	9/9/2019	0	122323004
DW - Gamma	K-40	FPOR	9/9/2019	0	122323004
DW - Gamma	Mn-54	FPOR	9/9/2019	0	122323004
DW - Gamma	Fe-59	FPOR	9/9/2019	0	122323004
DW - Gamma	Co-58	FPOR	9/9/2019	0	122323004
DW - Gamma	Co-60	FPOR	9/9/2019	0	122323004
DW - Gamma	Zn-65	FPOR	9/9/2019	0	122323004
DW - Beta	Gross Alpha	FPOR	9/9/2019	0	122325004
DW - Beta	Gross Alpha	FPOR	11/4/2019	0	123234004
DW - Beta	Gross Beta	FPOR	11/4/2019	2.541	123234004
DW - Gamma	Cs-137	FPOR	11/4/2019	0	123233004
DW - Gamma	Ba-140	FPOR	11/4/2019	0	123233004
DW - Gamma	La-140	FPOR	11/4/2019	0	123233004
DW - Gamma	Be-7	FPOR	11/4/2019	0	123233004
DW - Gamma	K-40	FPOR	11/4/2019	0	123233004
DW - Gamma	Mn-54	FPOR	11/4/2019	0	123233004
DW - Gamma	Fe-59	FPOR	11/4/2019	0	123233004
DW - Gamma	Co-58	FPOR	11/4/2019	0	123233004
DW - Gamma	Co-60	FPOR	11/4/2019	0	123233004
DW - Gamma	Zn-65	FPOR	11/4/2019	0	123233004
DW - Gamma	Zr-95	FPOR	11/4/2019	0	123233004
DW - Gamma	Nb-95	FPOR	11/4/2019	0	123233004
DW - Gamma	I-131	FPOR	11/4/2019	0	123233004
DW - Gamma	Cs-134	FPOR	11/4/2019	0	123233004
DW - Beta	Gross Alpha	FPOR	12/3/2019	0	123620004
DW - Beta	Gross Beta	FPOR	12/3/2019	1.168	123620004
DW - Gamma	I-131	FPOR	12/3/2019	0	123569004
DW - Gamma	Cs-134	FPOR	12/3/2019	0	123569004
DW - Gamma	Cs-137	FPOR	12/3/2019	0	123569004
DW - Gamma	Ba-140	FPOR	12/3/2019	0	123569004
DW - Gamma	La-140	FPOR	12/3/2019	0	123569004
DW - Gamma	Be-7	FPOR	12/3/2019	0	123569004
DW - Gamma	K-40	FPOR	12/3/2019	0	123569004
DW - Gamma	Mn-54	FPOR	12/3/2019	0	123569004
DW - Gamma	Fe-59	FPOR	12/3/2019	0	123569004
DW - Gamma	Co-58	FPOR	12/3/2019	0	123569004
DW - Gamma	Co-60	FPOR	12/3/2019	0	123569004
DW - Gamma	Zn-65	FPOR	12/3/2019	0	123569004
DW - Gamma	Zr-95	FPOR	12/3/2019	0	123569004
DW - Gamma	Nb-95	FPOR	12/3/2019	0	123569004
DW - Gamma	Be-7	FPUR	1/9/2019	0	118872006
DW - Gamma	Fe-59	FPUR	1/9/2019	0	118872006

DW - Gamma	Co-58	FPUR	1/9/2019	0	118872006
DW - Gamma	Co-60	FPUR	1/9/2019	0	118872006
DW - Gamma	Zn-65	FPUR	1/9/2019	0	118872006
DW - Gamma	Zr-95	FPUR	1/9/2019	0	118872006
DW - Gamma	Nb-95	FPUR	1/9/2019	0	118872006
DW - Gamma	I-131	FPUR	1/9/2019	0	118872006
DW - Gamma	Cs-134	FPUR	1/9/2019	0	118872006
Water H-3	Tritium	FPUR	1/9/2019	364	119054006
DW - Gamma	Cs-137	FPUR	1/9/2019	0	118872006
DW - Gamma	Ba-140	FPUR	1/9/2019	0	118872006
DW - Gamma	K-40	FPUR	1/9/2019	0	118872006
DW - Gamma	Mn-54	FPUR	1/9/2019	0	118872006
DW - Gamma	La-140	FPUR	1/9/2019	0	118872006
DW - Beta	Gross Beta	FPUR	2/4/2019	2.38	119259006
DW - Beta	Gross Alpha	FPUR	2/4/2019	0	119259006
DW - Gamma	Mn-54	FPUR	2/4/2019	0	119129006
DW - Gamma	Fe-59	FPUR	2/4/2019	0	119129006
DW - Gamma	Co-58	FPUR	2/4/2019	0	119129006
DW - Gamma	Co-60	FPUR	2/4/2019	0	119129006
DW - Gamma	Zn-65	FPUR	2/4/2019	0	119129006
DW - Gamma	Zr-95	FPUR	2/4/2019	0	119129006
DW - Gamma	Nb-95	FPUR	2/4/2019	0	119129006
DW - Gamma	I-131	FPUR	2/4/2019	0	119129006
DW - Gamma	Cs-134	FPUR	2/4/2019	0	119129006
DW - Gamma	Cs-137	FPUR	2/4/2019	0	119129006
DW - Gamma	Ba-140	FPUR	2/4/2019	0	119129006
DW - Gamma	La-140	FPUR	2/4/2019	0	119129006
DW - Gamma	Be-7	FPUR	2/4/2019	0	119129006
DW - Gamma	K-40	FPUR	2/4/2019	0	119129006
DW - Gamma	Ba-140	FPUR	3/4/2019	0	119571006
DW - Gamma	La-140	FPUR	3/4/2019	0	119571006
DW - Gamma	Be-7	FPUR	3/4/2019	0	119571006
DW - Gamma	K-40	FPUR	3/4/2019	0	119571006
DW - Gamma	Mn-54	FPUR	3/4/2019	0	119571006
DW - Gamma	Fe-59	FPUR	3/4/2019	0	119571006
DW - Gamma	Co-58	FPUR	3/4/2019	0	119571006
DW - Beta	Gross Alpha	FPUR	3/4/2019	0	119594006
DW - Beta	Gross Beta	FPUR	3/4/2019	1.9	119594006
DW - Gamma	Co-60	FPUR	3/4/2019	0	119571006
DW - Gamma	Zn-65	FPUR	3/4/2019	0	119571006
DW - Gamma	Zr-95	FPUR	3/4/2019	0	119571006
DW - Gamma	Nb-95	FPUR	3/4/2019	0	119571006
DW - Gamma	I-131	FPUR	3/4/2019	0	119571006
DW - Gamma	Cs-134	FPUR	3/4/2019	0	119571006
DW - Gamma	Cs-137	FPUR	3/4/2019	0	119571006
DW - Beta	Gross Alpha	FPUR	4/2/2019	0	119900006
DW - Beta	Gross Beta	FPUR	4/2/2019	.724	119900006
Water H-3	Tritium	FPUR	4/2/2019	397	120035006
DW - Gamma	Mn-54	FPUR	4/2/2019	0	119892006
DW - Gamma	Fe-59	FPUR	4/2/2019	0	119892006
DW - Gamma	Co-58	FPUR	4/2/2019	0	119892006
DW - Gamma	Co-60	FPUR	4/2/2019	0	119892006
DW - Gamma	Zn-65	FPUR	4/2/2019	0	119892006

DW - Gamma	Zr-95	FPUR	4/2/2019	0	119892006
DW - Gamma	Nb-95	FPUR	4/2/2019	0	119892006
DW - Gamma	I-131	FPUR	4/2/2019	0	119892006
DW - Gamma	Cs-134	FPUR	4/2/2019	0	119892006
DW - Gamma	Cs-137	FPUR	4/2/2019	0	119892006
DW - Gamma	Ba-140	FPUR	4/2/2019	0	119892006
DW - Gamma	La-140	FPUR	4/2/2019	0	119892006
DW - Gamma	Be-7	FPUR	4/2/2019	0	119892006
DW - Gamma	K-40	FPUR	4/2/2019	0	119892006
DW - Beta	Gross Beta	FPUR	5/7/2019	.7787	120288006
DW - Gamma	Mn-54	FPUR	5/7/2019	0	120289006
DW - Gamma	Fe-59	FPUR	5/7/2019	0	120289006
DW - Gamma	Co-58	FPUR	5/7/2019	0	120289006
DW - Gamma	Co-60	FPUR	5/7/2019	0	120289006
DW - Gamma	Zn-65	FPUR	5/7/2019	0	120289006
DW - Gamma	Zr-95	FPUR	5/7/2019	0	120289006
DW - Gamma	Nb-95	FPUR	5/7/2019	0	120289006
DW - Gamma	I-131	FPUR	5/7/2019	0	120289006
DW - Gamma	Cs-134	FPUR	5/7/2019	0	120289006
DW - Gamma	Cs-137	FPUR	5/7/2019	0	120289006
DW - Gamma	Ba-140	FPUR	5/7/2019	0	120289006
DW - Gamma	La-140	FPUR	5/7/2019	0	120289006
DW - Gamma	Be-7	FPUR	5/7/2019	0	120289006
DW - Gamma	K-40	FPUR	5/7/2019	0	120289006
DW - Beta	Gross Alpha	FPUR	5/7/2019	0	120288006
DW - Gamma	Cs-137	FPUR	6/4/2019	0	120734006
DW - Beta	Gross Alpha	FPUR	6/4/2019	0	120733006
DW - Beta	Gross Beta	FPUR	6/4/2019	2.799	120733006
DW - Gamma	Ba-140	FPUR	6/4/2019	0	120734006
DW - Gamma	La-140	FPUR	6/4/2019	0	120734006
DW - Gamma	Be-7	FPUR	6/4/2019	0	120734006
DW - Gamma	K-40	FPUR	6/4/2019	0	120734006
DW - Gamma	Mn-54	FPUR	6/4/2019	0	120734006
DW - Gamma	Fe-59	FPUR	6/4/2019	0	120734006
DW - Gamma	Co-58	FPUR	6/4/2019	0	120734006
DW - Gamma	Co-60	FPUR	6/4/2019	0	120734006
DW - Gamma	Zn-65	FPUR	6/4/2019	0	120734006
DW - Gamma	Zr-95	FPUR	6/4/2019	0	120734006
DW - Gamma	Nb-95	FPUR	6/4/2019	0	120734006
DW - Gamma	I-131	FPUR	6/4/2019	0	120734006
DW - Gamma	Cs-134	FPUR	6/4/2019	0	120734006
DW - Beta	Gross Beta	FPUR	7/2/2019	1.975	121162006
DW - Gamma	Co-58	FPUR	7/2/2019	0	121163006
DW - Gamma	Co-60	FPUR	7/2/2019	0	121163006
DW - Gamma	Zn-65	FPUR	7/2/2019	0	121163006
DW - Gamma	Zr-95	FPUR	7/2/2019	0	121163006
DW - Gamma	Nb-95	FPUR	7/2/2019	0	121163006
DW - Gamma	I-131	FPUR	7/2/2019	0	121163006
DW - Gamma	Cs-134	FPUR	7/2/2019	0	121163006
DW - Gamma	Cs-137	FPUR	7/2/2019	0	121163006
DW - Gamma	Ba-140	FPUR	7/2/2019	0	121163006
DW - Gamma	La-140	FPUR	7/2/2019	0	121163006
DW - Gamma	Be-7	FPUR	7/2/2019	0	121163006

DW - Gamma	K-40	FPUR	7/2/2019	0	121163006
DW - Gamma	Mn-54	FPUR	7/2/2019	0	121163006
DW - Gamma	Fe-59	FPUR	7/2/2019	0	121163006
Water H-3	Tritium	FPUR	7/2/2019	133	121375006
DW - Beta	Gross Alpha	FPUR	7/2/2019	0	121162006
DW - Gamma	Mn-54	FPUR	8/6/2019	0	121724006
DW - Gamma	Fe-59	FPUR	8/6/2019	0	121724006
DW - Gamma	Co-58	FPUR	8/6/2019	0	121724006
DW - Beta	Gross Alpha	FPUR	8/6/2019	0	121725006
DW - Beta	Gross Beta	FPUR	8/6/2019	3.449	121725006
DW - Gamma	Co-60	FPUR	8/6/2019	0	121724006
DW - Gamma	Zn-65	FPUR	8/6/2019	0	121724006
DW - Gamma	Zr-95	FPUR	8/6/2019	0	121724006
DW - Gamma	Nb-95	FPUR	8/6/2019	0	121724006
DW - Gamma	I-131	FPUR	8/6/2019	0	121724006
DW - Gamma	Cs-134	FPUR	8/6/2019	0	121724006
DW - Gamma	Cs-137	FPUR	8/6/2019	0	121724006
DW - Gamma	Ba-140	FPUR	8/6/2019	0	121724006
DW - Gamma	La-140	FPUR	8/6/2019	0	121724006
DW - Gamma	Be-7	FPUR	8/6/2019	0	121724006
DW - Gamma	K-40	FPUR	8/6/2019	0	121724006
DW - Beta	Gross Alpha	FPUR	9/9/2019	0	122325006
Water H-3	Tritium	FPUR	9/9/2019	216	123045006
DW - Gamma	Co-58	FPUR	9/9/2019	0	122323006
DW - Gamma	Co-60	FPUR	9/9/2019	0	122323006
DW - Gamma	Zn-65	FPUR	9/9/2019	0	122323006
DW - Gamma	Zr-95	FPUR	9/9/2019	0	122323006
DW - Gamma	Nb-95	FPUR	9/9/2019	0	122323006
DW - Gamma	I-131	FPUR	9/9/2019	0	122323006
DW - Gamma	Cs-134	FPUR	9/9/2019	0	122323006
DW - Gamma	Cs-137	FPUR	9/9/2019	0	122323006
DW - Gamma	Ba-140	FPUR	9/9/2019	0	122323006
DW - Gamma	La-140	FPUR	9/9/2019	0	122323006
DW - Gamma	Be-7	FPUR	9/9/2019	0	122323006
DW - Gamma	K-40	FPUR	9/9/2019	0	122323006
DW - Gamma	Mn-54	FPUR	9/9/2019	0	122323006
DW - Gamma	Fe-59	FPUR	9/9/2019	0	122323006
DW - Beta	Gross Beta	FPUR	9/9/2019	.2424	122325006
DW - Gamma	Mn-54	FPUR	11/4/2019	0	123233006
DW - Gamma	Fe-59	FPUR	11/4/2019	0	123233006
DW - Gamma	Co-58	FPUR	11/4/2019	0	123233006
DW - Gamma	Co-60	FPUR	11/4/2019	0	123233006
DW - Gamma	Zn-65	FPUR	11/4/2019	0	123233006
DW - Gamma	Zr-95	FPUR	11/4/2019	0	123233006
DW - Gamma	Nb-95	FPUR	11/4/2019	0	123233006
DW - Gamma	I-131	FPUR	11/4/2019	0	123233006
DW - Gamma	Cs-134	FPUR	11/4/2019	0	123233006
DW - Gamma	Cs-137	FPUR	11/4/2019	0	123233006
DW - Gamma	Ba-140	FPUR	11/4/2019	0	123233006
DW - Gamma	La-140	FPUR	11/4/2019	0	123233006
DW - Gamma	Be-7	FPUR	11/4/2019	0	123233006
DW - Gamma	K-40	FPUR	11/4/2019	0	123233006
DW - Beta	Gross Alpha	FPUR	11/4/2019	0	123234006

DW - Beta	Gross Beta	FPUR	11/4/2019	2.576	123234006
DW - Gamma	Fe-59	FPUR	12/3/2019	0	123569006
DW - Gamma	Co-58	FPUR	12/3/2019	0	123569006
DW - Gamma	Co-60	FPUR	12/3/2019	0	123569006
DW - Gamma	Zn-65	FPUR	12/3/2019	0	123569006
DW - Gamma	Zr-95	FPUR	12/3/2019	0	123569006
DW - Gamma	Nb-95	FPUR	12/3/2019	0	123569006
DW - Gamma	I-131	FPUR	12/3/2019	0	123569006
DW - Gamma	Cs-134	FPUR	12/3/2019	0	123569006
DW - Gamma	Cs-137	FPUR	12/3/2019	0	123569006
DW - Gamma	Ba-140	FPUR	12/3/2019	0	123569006
DW - Gamma	La-140	FPUR	12/3/2019	0	123569006
DW - Gamma	Be-7	FPUR	12/3/2019	0	123569006
DW - Gamma	K-40	FPUR	12/3/2019	0	123569006
DW - Beta	Gross Alpha	FPUR	12/3/2019	0	123620006
DW - Beta	Gross Beta	FPUR	12/3/2019	2.448	123620006
DW - Gamma	Mn-54	FPUR	12/3/2019	0	123569006
Milk Gamma	K-40	GIR	1/8/2019	1365.7	118838001
Milk Gamma	I-131	GIR	1/8/2019	0	118838001
Milk Gamma	Cs-134	GIR	1/8/2019	0	118838001
Milk Gamma	Cs-137	GIR	1/8/2019	0	118838001
Milk Gamma	Ba-140	GIR	1/8/2019	0	118838001
Milk Gamma	La-140	GIR	1/8/2019	0	118838001
Milk Gamma	Be-7	GIR	1/8/2019	0	118838001
Charcoal Ct	I-131	GIR	1/8/2019	0	118834002
Air Filters	Gross Beta	GIR	1/15/2019	.01977	118981002
Charcoal Ct	I-131	GIR	1/15/2019	0	118982002
Milk Gamma	Be-7	GIR	1/22/2019	0	118995001
Milk Gamma	K-40	GIR	1/22/2019	1495.2	118995001
Milk Gamma	I-131	GIR	1/22/2019	0	118995001
Milk Gamma	La-140	GIR	1/22/2019	0	118995001
Milk Gamma	Ba-140	GIR	1/22/2019	0	118995001
Milk Gamma	Cs-137	GIR	1/22/2019	0	118995001
Milk Gamma	Cs-134	GIR	1/22/2019	0	118995001
Charcoal Ct	I-131	GIR	1/22/2019	0	119003002
Air Filters	Gross Beta	GIR	1/22/2019	.01794	119002002
Charcoal Ct	I-131	GIR	1/29/2019	0	119059002
Air Filters	Gross Beta	GIR	1/29/2019	.02165	119058002
Charcoal Ct	I-131	GIR	2/5/2019	0	119189002
Air Filters	Gross Beta	GIR	2/5/2019	.02583	119178002
Milk Gamma	Ba-140	GIR	2/12/2019	0	119301001
Milk Gamma	Cs-137	GIR	2/12/2019	.87154	119301001
Milk Gamma	La-140	GIR	2/12/2019	0	119301001
Milk Gamma	Be-7	GIR	2/12/2019	0	119301001
Milk Gamma	K-40	GIR	2/12/2019	1420.6	119301001
Milk Gamma	I-131	GIR	2/12/2019	0	119301001
Milk Gamma	Cs-134	GIR	2/12/2019	0	119301001
Charcoal Ct	I-131	GIR	2/12/2019	0	119328002
Air Filters	Gross Beta	GIR	2/12/2019	.02122	119327002
Air Filters	Gross Beta	GIR	2/19/2019	.0185	119364002
Charcoal Ct	I-131	GIR	2/19/2019	0	119365002
Milk Gamma	Be-7	GIR	2/26/2019	0	119470001
Milk Gamma	K-40	GIR	2/26/2019	1419.2	119470001

Milk Gamma	I-131	GIR	2/26/2019	0	119470001
Milk Gamma	Cs-134	GIR	2/26/2019	0	119470001
Milk Gamma	Cs-137	GIR	2/26/2019	1.2619	119470001
Milk Gamma	Ba-140	GIR	2/26/2019	0	119470001
Milk Gamma	La-140	GIR	2/26/2019	0	119470001
Air Filters	Gross Beta	GIR	2/26/2019	.01216	119473002
Charcoal Ct	I-131	GIR	2/26/2019	0	119474002
Air Filters	Gross Beta	GIR	3/5/2019	.0165	119572002
Charcoal Ct	I-131	GIR	3/5/2019	0	119573002
Milk Gamma	Be-7	GIR	3/12/2019	0	119661002
Milk Gamma	K-40	GIR	3/12/2019	1396.9	119661002
Milk Gamma	I-131	GIR	3/12/2019	0	119661002
Milk Gamma	Cs-134	GIR	3/12/2019	0	119661002
Milk Gamma	Cs-137	GIR	3/12/2019	1.2827	119661002
Milk Gamma	Ba-140	GIR	3/12/2019	0	119661002
Milk Gamma	La-140	GIR	3/12/2019	0	119661002
Charcoal Ct	I-131	GIR	3/12/2019	0	119665002
Air Filters	Gross Beta	GIR	3/12/2019	.02071	119664002
Milk Gamma	Be-7	GIR	3/19/2019	0	119764002
Milk Gamma	La-140	GIR	3/19/2019	0	119764002
Milk Gamma	Ba-140	GIR	3/19/2019	0	119764002
Milk Gamma	Cs-137	GIR	3/19/2019	1.2387	119764002
Milk Gamma	Cs-134	GIR	3/19/2019	0	119764002
Milk Gamma	I-131	GIR	3/19/2019	0	119764002
Milk Gamma	K-40	GIR	3/19/2019	1456.5	119764002
Air Filters	Gross Beta	GIR	3/19/2019	.02567	119766002
Charcoal Ct	I-131	GIR	3/19/2019	0	119767002
Charcoal Ct	I-131	GIR	3/26/2019	0	119842002
Air Filters	Gross Beta	GIR	3/26/2019	.02785	119840002
Air Qtr Comp	Be-7	GIR	3/26/2019	.08743	120030002
Air Qtr Comp	Cs-137	GIR	3/26/2019	0	120030002
Air Qtr Comp	I-131	GIR	3/26/2019	0	120030002
Air Qtr Comp	Cs-134	GIR	3/26/2019	0	120030002
Air Filters	Gross Beta	GIR	4/1/2019	.02	119893002
Charcoal Ct	I-131	GIR	4/1/2019	0	119894002
Air Filters	Gross Beta	GIR	4/8/2019	.01822	119961002
Charcoal Ct	I-131	GIR	4/8/2019	0	119962002
Milk Gamma	La-140	GIR	4/9/2019	0	119958002
Milk Gamma	Be-7	GIR	4/9/2019	0	119958002
Milk Gamma	K-40	GIR	4/9/2019	1466	119958002
Milk Gamma	I-131	GIR	4/9/2019	0	119958002
Milk Gamma	Cs-134	GIR	4/9/2019	0	119958002
Milk Gamma	Cs-137	GIR	4/9/2019	1.3534	119958002
Milk Gamma	Ba-140	GIR	4/9/2019	0	119958002
Air Filters	Gross Beta	GIR	4/17/2019	.01408	120072002
Charcoal Ct	I-131	GIR	4/17/2019	0	120073002
Milk Gamma	K-40	GIR	4/23/2019	1447.6	120139002
Milk Gamma	I-131	GIR	4/23/2019	0	120139002
Milk Gamma	Cs-134	GIR	4/23/2019	0	120139002
Milk Gamma	Cs-137	GIR	4/23/2019	1.2846	120139002
Milk Gamma	Be-7	GIR	4/23/2019	0	120139002
Milk Gamma	Ba-140	GIR	4/23/2019	0	120139002
Milk Gamma	La-140	GIR	4/23/2019	0	120139002

Charcoal Ct	I-131	GIR	4/23/2019	0	120141002
Air Filters	Gross Beta	GIR	4/23/2019	.01679	120140002
Air Filters	Gross Beta	GIR	4/30/2019	.01922	120228002
Charcoal Ct	I-131	GIR	4/30/2019	0	120229002
Charcoal Ct	I-131	GIR	5/7/2019	0	120291002
Air Filters	Gross Beta	GIR	5/7/2019	.03467	120290002
Charcoal Ct	I-131	GIR	5/14/2019	0	120399002
Air Filters	Gross Beta	GIR	5/14/2019	.01826	120398002
Milk Gamma	I-131	GIR	5/14/2019	0	120396002
Milk Gamma	K-40	GIR	5/14/2019	1421.1	120396002
Milk Gamma	Be-7	GIR	5/14/2019	0	120396002
Milk Gamma	La-140	GIR	5/14/2019	0	120396002
Milk Gamma	Ba-140	GIR	5/14/2019	0	120396002
Milk Gamma	Cs-137	GIR	5/14/2019	1.1618	120396002
Milk Gamma	Cs-134	GIR	5/14/2019	0	120396002
Air Filters	Gross Beta	GIR	5/21/2019	.03162	120497002
Charcoal Ct	I-131	GIR	5/21/2019	0	120501002
Charcoal Ct	I-131	GIR	5/28/2019	0	120570002
Air Filters	Gross Beta	GIR	5/28/2019	.03201	120569002
Milk Gamma	K-40	GIR	5/28/2019	1401	120568002
Milk Gamma	La-140	GIR	5/28/2019	0	120568002
Milk Gamma	Ba-140	GIR	5/28/2019	0	120568002
Milk Gamma	Cs-137	GIR	5/28/2019	1.6698	120568002
Milk Gamma	Cs-134	GIR	5/28/2019	0	120568002
Milk Gamma	Be-7	GIR	5/28/2019	0	120568002
Milk Gamma	I-131	GIR	5/28/2019	0	120568002
Charcoal Ct	I-131	GIR	6/4/2019	0	120736002
Air Filters	Gross Beta	GIR	6/4/2019	.0332	120735002
Air Filters	Gross Beta	GIR	6/11/2019	.02125	120823001
Charcoal Ct	I-131	GIR	6/11/2019	0	120825001
Milk Gamma	Ba-140	GIR	6/11/2019	0	120817002
Milk Gamma	La-140	GIR	6/11/2019	0	120817002
Milk Gamma	Be-7	GIR	6/11/2019	0	120817002
Milk Gamma	K-40	GIR	6/11/2019	1367.4	120817002
Milk Gamma	Cs-137	GIR	6/11/2019	1.1769	120817002
Milk Gamma	Cs-134	GIR	6/11/2019	0	120817002
Milk Gamma	I-131	GIR	6/11/2019	0	120817002
Charcoal Ct	I-131	GIR	6/18/2019	0	120945002
Air Filters	Gross Beta	GIR	6/18/2019	.0213	120944002
Air Qtr Comp	I-131	GIR	6/25/2019	0	121197002
Air Qtr Comp	Cs-134	GIR	6/25/2019	0	121197002
Air Qtr Comp	Cs-137	GIR	6/25/2019	0	121197002
Air Qtr Comp	Be-7	GIR	6/25/2019	.1028	121197002
Air Filters	Gross Beta	GIR	6/25/2019	.01753	121039002
Charcoal Ct	I-131	GIR	6/25/2019	0	121040002
Milk Gamma	I-131	GIR	6/25/2019	0	121034002
Milk Gamma	Cs-134	GIR	6/25/2019	0	121034002
Milk Gamma	Cs-137	GIR	6/25/2019	1.4571	121034002
Milk Gamma	Ba-140	GIR	6/25/2019	0	121034002
Milk Gamma	La-140	GIR	6/25/2019	0	121034002
Milk Gamma	Be-7	GIR	6/25/2019	0	121034002
Milk Gamma	K-40	GIR	6/25/2019	1403.9	121034002
Charcoal Ct	I-131	GIR	7/2/2019	0	121165002

Air Filters	Gross Beta	GIR	7/2/2019	.02871	121164002
Milk Gamma	Ba-140	GIR	7/9/2019	0	121240002
Milk Gamma	La-140	GIR	7/9/2019	0	121240002
Milk Gamma	Cs-137	GIR	7/9/2019	1.1809	121240002
Milk Gamma	Cs-134	GIR	7/9/2019	0	121240002
Milk Gamma	K-40	GIR	7/9/2019	1359.9	121240002
Milk Gamma	Be-7	GIR	7/9/2019	0	121240002
Milk Gamma	I-131	GIR	7/9/2019	0	121240002
Air Filters	Gross Beta	GIR	7/9/2019	.03031	121248002
Charcoal Ct	I-131	GIR	7/9/2019	0	121249002
Air Filters	Gross Beta	GIR	7/16/2019	.02053	121368002
Charcoal Ct	I-131	GIR	7/16/2019	0	121369002
Charcoal Ct	I-131	GIR	7/23/2019	0	121486002
Air Filters	Gross Beta	GIR	7/23/2019	.02367	121485002
Milk Gamma	Cs-137	GIR	7/23/2019	1.0719	121484002
Milk Gamma	Ba-140	GIR	7/23/2019	0	121484002
Milk Gamma	La-140	GIR	7/23/2019	0	121484002
Milk Gamma	K-40	GIR	7/23/2019	1390.4	121484002
Milk Gamma	I-131	GIR	7/23/2019	0	121484002
Milk Gamma	Cs-134	GIR	7/23/2019	0	121484002
Milk Gamma	Be-7	GIR	7/23/2019	0	121484002
Air Filters	Gross Beta	GIR	7/30/2019	.02352	121636002
Charcoal Ct	I-131	GIR	7/30/2019	0	121637002
Air Filters	Gross Beta	GIR	8/5/2019	.02305	121726002
Charcoal Ct	I-131	GIR	8/5/2019	0	121727002
Charcoal Ct	I-131	GIR	8/13/2019	0	121819002
Air Filters	Gross Beta	GIR	8/13/2019	.03589	121818002
Milk Gamma	I-131	GIR	8/13/2019	0	121816002
Milk Gamma	Cs-134	GIR	8/13/2019	0	121816002
Milk Gamma	La-140	GIR	8/13/2019	0	121816002
Milk Gamma	Be-7	GIR	8/13/2019	0	121816002
Milk Gamma	K-40	GIR	8/13/2019	1336.3	121816002
Milk Gamma	Ba-140	GIR	8/13/2019	0	121816002
Milk Gamma	Cs-137	GIR	8/13/2019	1.2715	121816002
Charcoal Ct	I-131	GIR	8/20/2019	0	121989002
Air Filters	Gross Beta	GIR	8/20/2019	.02958	121988002
Air Filters	Gross Beta	GIR	8/27/2019	.01572	122108002
Charcoal Ct	I-131	GIR	8/27/2019	0	122109002
Milk Gamma	Cs-134	GIR	8/27/2019	0	122106002
Milk Gamma	Cs-137	GIR	8/27/2019	1.7524	122106002
Milk Gamma	Ba-140	GIR	8/27/2019	0	122106002
Milk Gamma	La-140	GIR	8/27/2019	0	122106002
Milk Gamma	Be-7	GIR	8/27/2019	0	122106002
Milk Gamma	K-40	GIR	8/27/2019	1336.8	122106002
Milk Gamma	I-131	GIR	8/27/2019	0	122106002
Charcoal Ct	I-131	GIR	9/3/2019	0	122225002
Air Filters	Gross Beta	GIR	9/3/2019	.02623	122224002
Charcoal Ct	I-131	GIR	9/10/2019	0	122360002
Air Filters	Gross Beta	GIR	9/10/2019	.03048	122359002
Milk Gamma	Cs-134	GIR	9/12/2019	0	122397002
Milk Gamma	Cs-137	GIR	9/12/2019	1.0014	122397002
Milk Gamma	Ba-140	GIR	9/12/2019	0	122397002
Milk Gamma	La-140	GIR	9/12/2019	0	122397002

Milk Gamma	Be-7	GIR	9/12/2019	0	122397002
Milk Gamma	K-40	GIR	9/12/2019	1298.7	122397002
Milk Gamma	I-131	GIR	9/12/2019	0	122397002
Air Filters	Gross Beta	GIR	9/17/2019	.03595	122485002
Charcoal Ct	I-131	GIR	9/17/2019	0	122486002
Milk Gamma	Be-7	GIR	9/24/2019	0	122609002
Milk Gamma	Ba-140	GIR	9/24/2019	0	122609002
Milk Gamma	La-140	GIR	9/24/2019	0	122609002
Milk Gamma	K-40	GIR	9/24/2019	1291.4	122609002
Milk Gamma	Cs-137	GIR	9/24/2019	0	122609002
Milk Gamma	I-131	GIR	9/24/2019	0	122609002
Milk Gamma	Cs-134	GIR	9/24/2019	0	122609002
Air Qtr Comp	I-131	GIR	9/24/2019	0	122829002
Air Qtr Comp	Cs-134	GIR	9/24/2019	0	122829002
Air Filters	Gross Beta	GIR	9/24/2019	.02499	122640002
Charcoal Ct	I-131	GIR	9/24/2019	0	122641002
Air Qtr Comp	Cs-137	GIR	9/24/2019	0	122829002
Air Qtr Comp	Be-7	GIR	9/24/2019	.0948	122829002
Air Filters	Gross Beta	GIR	10/1/2019	.0313	122729002
Charcoal Ct	I-131	GIR	10/1/2019	0	122730002
Air Filters	Gross Beta	GIR	10/8/2019	.03567	122872002
Charcoal Ct	I-131	GIR	10/8/2019	0	122873002
Milk Gamma	Cs-134	GIR	10/8/2019	0	122835002
Milk Gamma	Cs-137	GIR	10/8/2019	0	122835002
Milk Gamma	Ba-140	GIR	10/8/2019	0	122835002
Milk Gamma	La-140	GIR	10/8/2019	0	122835002
Milk Gamma	Be-7	GIR	10/8/2019	0	122835002
Milk Gamma	K-40	GIR	10/8/2019	1254.3	122835002
Milk Gamma	I-131	GIR	10/8/2019	0	122835002
Air Filters	Gross Beta	GIR	10/15/2019	.02183	122962002
Charcoal Ct	I-131	GIR	10/15/2019	0	122963002
Milk Gamma	Cs-134	GIR	10/22/2019	0	123056002
Milk Gamma	Cs-137	GIR	10/22/2019	1.2888	123056002
Milk Gamma	Ba-140	GIR	10/22/2019	0	123056002
Milk Gamma	La-140	GIR	10/22/2019	0	123056002
Milk Gamma	Be-7	GIR	10/22/2019	0	123056002
Milk Gamma	K-40	GIR	10/22/2019	1221.7	123056002
Milk Gamma	I-131	GIR	10/22/2019	0	123056002
Charcoal Ct	I-131	GIR	10/22/2019	0	123063002
Air Filters	Gross Beta	GIR	10/22/2019	.02157	123062002
Air Filters	Gross Beta	GIR	10/29/2019	.02204	123139002
Charcoal Ct	I-131	GIR	10/29/2019	0	123140002
Charcoal Ct	I-131	GIR	11/5/2019	0	123241002
Air Filters	Gross Beta	GIR	11/5/2019	.02615	123240002
Air Filters	Gross Beta	GIR	11/12/2019	.03151	123322002
Charcoal Ct	I-131	GIR	11/12/2019	0	123323002
Air Filters	Gross Beta	GIR	11/19/2019	.01844	123418002
Charcoal Ct	I-131	GIR	11/19/2019	0	123419002
Charcoal Ct	I-131	GIR	11/26/2019	0	123543002
Air Filters	Gross Beta	GIR	11/26/2019	.02303	123542002
Charcoal Ct	I-131	GIR	12/3/2019	0	123575002
Air Filters	Gross Beta	GIR	12/3/2019	.02085	123574002
Air Filters	Gross Beta	GIR	12/10/2019	.02426	123666002

Charcoal Ct	I-131	GIR	12/10/2019	0	123667002
Charcoal Ct	I-131	GIR	12/17/2019	0	123805002
Air Filters	Gross Beta	GIR	12/17/2019	.0187	123804002
Charcoal Ct	I-131	GIR	12/23/2019	0	123857002
Air Filters	Gross Beta	GIR	12/23/2019	.02249	123856002
Charcoal Ct	I-131	GIR	12/30/2019	0	123924002
Air Qtr Comp	Be-7	GIR	12/30/2019	.06914	124084002
Air Qtr Comp	Cs-137	GIR	12/30/2019	0	124084002
Air Qtr Comp	I-131	GIR	12/30/2019	0	124084002
Air Filters	Gross Beta	GIR	12/30/2019	.01958	123923002
Air Qtr Comp	Cs-134	GIR	12/30/2019	0	124084002
Charcoal Ct	I-131	HAN	1/8/2019	0	118834007
Air Filters	Gross Beta	HAN	1/15/2019	.0185	118981007
Charcoal Ct	I-131	HAN	1/15/2019	0	118982007
Air Filters	Gross Beta	HAN	1/22/2019	.02829	119002007
Charcoal Ct	I-131	HAN	1/22/2019	0	119003007
Air Filters	Gross Beta	HAN	1/29/2019	.02217	119058007
Charcoal Ct	I-131	HAN	1/29/2019	0	119059007
Charcoal Ct	I-131	HAN	2/5/2019	0	119189007
Air Filters	Gross Beta	HAN	2/5/2019	.02229	119178007
Air Filters	Gross Beta	HAN	2/12/2019	.02911	119327007
Charcoal Ct	I-131	HAN	2/12/2019	0	119328007
Air Filters	Gross Beta	HAN	2/19/2019	.01928	119364007
Charcoal Ct	I-131	HAN	2/19/2019	0	119365007
Charcoal Ct	I-131	HAN	2/26/2019	0	119474007
Air Filters	Gross Beta	HAN	2/26/2019	.01753	119473007
Air Filters	Gross Beta	HAN	3/5/2019	.01678	119572007
Charcoal Ct	I-131	HAN	3/5/2019	0	119573007
Air Filters	Gross Beta	HAN	3/12/2019	.02681	119664007
Charcoal Ct	I-131	HAN	3/12/2019	0	119665007
Air Filters	Gross Beta	HAN	3/19/2019	.02799	119766007
Charcoal Ct	I-131	HAN	3/19/2019	0	119767007
Air Qtr Comp	Be-7	HAN	3/26/2019	.106	120030007
Charcoal Ct	I-131	HAN	3/26/2019	0	119842007
Air Qtr Comp	Cs-137	HAN	3/26/2019	0	120030007
Air Qtr Comp	Cs-134	HAN	3/26/2019	0	120030007
Air Filters	Gross Beta	HAN	3/26/2019	.02831	119840007
Air Qtr Comp	I-131	HAN	3/26/2019	0	120030007
Charcoal Ct	I-131	HAN	4/1/2019	0	119894007
Air Filters	Gross Beta	HAN	4/1/2019	.02439	119893007
Charcoal Ct	I-131	HAN	4/8/2019	0	119962007
Air Filters	Gross Beta	HAN	4/8/2019	.0201	119961007
Air Filters	Gross Beta	HAN	4/17/2019	.01774	120072007
Charcoal Ct	I-131	HAN	4/17/2019	0	120073007
Air Filters	Gross Beta	HAN	4/23/2019	.01697	120140007
Charcoal Ct	I-131	HAN	4/23/2019	0	120141007
Charcoal Ct	I-131	HAN	4/30/2019	0	120229007
Air Filters	Gross Beta	HAN	4/30/2019	.03187	120228007
Air Filters	Gross Beta	HAN	5/7/2019	.01676	120290007
Charcoal Ct	I-131	HAN	5/7/2019	0	120291007
Charcoal Ct	I-131	HAN	5/14/2019	0	120399007
Air Filters	Gross Beta	HAN	5/14/2019	.02048	120398007
Air Filters	Gross Beta	HAN	5/21/2019	.03685	120497007

Charcoal Ct	I-131	HAN	5/21/2019	0	120501007
Charcoal Ct	I-131	HAN	5/28/2019	0	120570007
Air Filters	Gross Beta	HAN	5/28/2019	.03461	120569007
Charcoal Ct	I-131	HAN	6/4/2019	0	120736007
Air Filters	Gross Beta	HAN	6/4/2019	.03597	120735007
Air Filters	Gross Beta	HAN	6/11/2019	.01459	120823006
Charcoal Ct	I-131	HAN	6/18/2019	0	120945007
Air Filters	Gross Beta	HAN	6/18/2019	.02456	120944007
Air Filters	Gross Beta	HAN	6/25/2019	.01938	121039007
Air Qtr Comp	I-131	HAN	6/25/2019	0	121197007
Air Qtr Comp	Cs-134	HAN	6/25/2019	0	121197007
Air Qtr Comp	Cs-137	HAN	6/25/2019	0	121197007
Air Qtr Comp	Be-7	HAN	6/25/2019	.09573	121197007
Charcoal Ct	I-131	HAN	6/25/2019	0	121040007
Charcoal Ct	I-131	HAN	7/2/2019	0	121165007
Air Filters	Gross Beta	HAN	7/2/2019	.0312	121164007
Air Filters	Gross Beta	HAN	7/8/2019	.02481	121248007
Charcoal Ct	I-131	HAN	7/8/2019	0	121249007
Air Filters	Gross Beta	HAN	7/16/2019	.02265	121368007
Charcoal Ct	I-131	HAN	7/16/2019	0	121369007
Air Filters	Gross Beta	HAN	7/23/2019	.02483	121485007
Charcoal Ct	I-131	HAN	7/23/2019	0	121486007
Air Filters	Gross Beta	HAN	7/30/2019	.0232	121636007
Charcoal Ct	I-131	HAN	7/30/2019	0	121637007
Charcoal Ct	I-131	HAN	8/5/2019	0	121727007
Air Filters	Gross Beta	HAN	8/5/2019	.02628	121726007
Air Filters	Gross Beta	HAN	8/13/2019	.03448	121818007
Charcoal Ct	I-131	HAN	8/13/2019	0	121819007
Air Filters	Gross Beta	HAN	8/20/2019	.0221	121988007
Charcoal Ct	I-131	HAN	8/20/2019	0	121989007
Charcoal Ct	I-131	HAN	8/27/2019	0	122109007
Air Filters	Gross Beta	HAN	8/27/2019	.01397	122108007
Air Filters	Gross Beta	HAN	9/3/2019	.02449	122224007
Charcoal Ct	I-131	HAN	9/3/2019	0	122225007
Charcoal Ct	I-131	HAN	9/10/2019	0	122360007
Air Filters	Gross Beta	HAN	9/10/2019	.03916	122359007
Air Filters	Gross Beta	HAN	9/17/2019	.03981	122485007
Charcoal Ct	I-131	HAN	9/17/2019	0	122486007
Air Filters	Gross Beta	HAN	9/24/2019	.02775	122640007
Air Qtr Comp	Be-7	HAN	9/24/2019	.08039	122829007
Air Qtr Comp	Cs-137	HAN	9/24/2019	0	122829007
Air Qtr Comp	Cs-134	HAN	9/24/2019	0	122829007
Air Qtr Comp	I-131	HAN	9/24/2019	0	122829007
Charcoal Ct	I-131	HAN	9/24/2019	0	122641007
Air Filters	Gross Beta	HAN	10/1/2019	.03265	122729007
Charcoal Ct	I-131	HAN	10/1/2019	0	122730007
Charcoal Ct	I-131	HAN	10/8/2019	0	122873007
Air Filters	Gross Beta	HAN	10/8/2019	.03065	122872007
Charcoal Ct	I-131	HAN	10/15/2019	0	122963007
Air Filters	Gross Beta	HAN	10/15/2019	.02479	122962007
Air Filters	Gross Beta	HAN	10/22/2019	.01968	123062007
Charcoal Ct	I-131	HAN	10/22/2019	0	123063007
Charcoal Ct	I-131	HAN	10/29/2019	0	123140007

Air Filters	Gross Beta	HAN	10/29/2019	.02312	123139007
Air Filters	Gross Beta	HAN	11/5/2019	.02455	123240007
Charcoal Ct	I-131	HAN	11/5/2019	0	123241007
Air Filters	Gross Beta	HAN	11/12/2019	.03755	123322007
Charcoal Ct	I-131	HAN	11/12/2019	0	123323007
Air Filters	Gross Beta	HAN	11/19/2019	.01892	123418007
Charcoal Ct	I-131	HAN	11/19/2019	0	123419007
Charcoal Ct	I-131	HAN	11/26/2019	0	123543007
Air Filters	Gross Beta	HAN	11/26/2019	.02916	123542007
Air Filters	Gross Beta	HAN	12/3/2019	.02187	123574007
Charcoal Ct	I-131	HAN	12/3/2019	0	123575007
Air Filters	Gross Beta	HAN	12/10/2019	.02172	123666007
Charcoal Ct	I-131	HAN	12/10/2019	0	123667007
Air Filters	Gross Beta	HAN	12/17/2019	.01908	123804007
Charcoal Ct	I-131	HAN	12/17/2019	0	123805007
Air Filters	Gross Beta	HAN	12/23/2019	.02254	123856007
Charcoal Ct	I-131	HAN	12/23/2019	0	123857007
Air Qtr Comp	Be-7	HAN	12/30/2019	.07068	124084007
Charcoal Ct	I-131	HAN	12/30/2019	0	123924007
Air Filters	Gross Beta	HAN	12/30/2019	.02121	123923007
Air Qtr Comp	Cs-137	HAN	12/30/2019	0	124084007
Air Qtr Comp	Cs-134	HAN	12/30/2019	0	124084007
Air Qtr Comp	I-131	HAN	12/30/2019	0	124084007
Vegetation	Cs-134	Hancock Landing Rc	1/29/2019	0	119060003
Vegetation	Cs-137	Hancock Landing Rc	1/29/2019	0	119060003
Vegetation	Be-7	Hancock Landing Rc	1/29/2019	2481	119060003
Vegetation	K-40	Hancock Landing Rc	1/29/2019	6302.9	119060003
Vegetation	I-131	Hancock Landing Rc	1/29/2019	0	119060003
Vegetation	Cs-134	Hancock Landing Rc	2/26/2019	0	119471003
Vegetation	Cs-137	Hancock Landing Rc	2/26/2019	0	119471003
Vegetation	Be-7	Hancock Landing Rc	2/26/2019	978.53	119471003
Vegetation	K-40	Hancock Landing Rc	2/26/2019	5214.8	119471003
Vegetation	I-131	Hancock Landing Rc	2/26/2019	0	119471003
Vegetation	Cs-134	Hancock Landing Rc	3/19/2019	0	119768003
Vegetation	Cs-137	Hancock Landing Rc	3/19/2019	0	119768003
Vegetation	Be-7	Hancock Landing Rc	3/19/2019	3196.5	119768003
Vegetation	K-40	Hancock Landing Rc	3/19/2019	5712.6	119768003
Vegetation	I-131	Hancock Landing Rc	3/19/2019	0	119768003
Vegetation	Cs-137	Hancock Landing Rc	4/30/2019	0	120223003
Vegetation	Be-7	Hancock Landing Rc	4/30/2019	2457.3	120223003
Vegetation	K-40	Hancock Landing Rc	4/30/2019	5156.2	120223003
Vegetation	I-131	Hancock Landing Rc	4/30/2019	0	120223003
Vegetation	Cs-134	Hancock Landing Rc	4/30/2019	0	120223003
Vegetation	Cs-137	Hancock Landing Rc	5/28/2019	0	120571003
Vegetation	Be-7	Hancock Landing Rc	5/28/2019	1227.7	120571003
Vegetation	K-40	Hancock Landing Rc	5/28/2019	4869.5	120571003
Vegetation	I-131	Hancock Landing Rc	5/28/2019	0	120571003
Vegetation	Cs-134	Hancock Landing Rc	5/28/2019	0	120571003
Vegetation	Cs-134	Hancock Landing Rc	6/25/2019	0	121037003
Vegetation	Cs-137	Hancock Landing Rc	6/25/2019	0	121037003
Vegetation	Be-7	Hancock Landing Rc	6/25/2019	811.46	121037003
Vegetation	K-40	Hancock Landing Rc	6/25/2019	5472.6	121037003
Vegetation	I-131	Hancock Landing Rc	6/25/2019	0	121037003

Vegetation	Cs-134	Hancock Landing Rc	7/30/2019	0	121638003
Vegetation	Cs-137	Hancock Landing Rc	7/30/2019	0	121638003
Vegetation	Be-7	Hancock Landing Rc	7/30/2019	1103.2	121638003
Vegetation	K-40	Hancock Landing Rc	7/30/2019	6883.8	121638003
Vegetation	I-131	Hancock Landing Rc	7/30/2019	0	121638003
Vegetation	I-131	Hancock Landing Rc	8/27/2019	0	122107003
Vegetation	Cs-134	Hancock Landing Rc	8/27/2019	0	122107003
Vegetation	Cs-137	Hancock Landing Rc	8/27/2019	0	122107003
Vegetation	Be-7	Hancock Landing Rc	8/27/2019	1279.6	122107003
Vegetation	K-40	Hancock Landing Rc	8/27/2019	4688.7	122107003
Vegetation	Be-7	Hancock Landing Rc	9/24/2019	2432.1	122610003
Vegetation	K-40	Hancock Landing Rc	9/24/2019	6161.7	122610003
Vegetation	I-131	Hancock Landing Rc	9/24/2019	0	122610003
Vegetation	Cs-134	Hancock Landing Rc	9/24/2019	0	122610003
Vegetation	Cs-137	Hancock Landing Rc	9/24/2019	0	122610003
Vegetation	I-131	Hancock Landing Rc	10/29/2019	0	123141003
Vegetation	Cs-134	Hancock Landing Rc	10/29/2019	0	123141003
Vegetation	Cs-137	Hancock Landing Rc	10/29/2019	0	123141003
Vegetation	Be-7	Hancock Landing Rc	10/29/2019	2253.2	123141003
Vegetation	K-40	Hancock Landing Rc	10/29/2019	2130.6	123141003
Vegetation	K-40	Hancock Landing Rc	11/26/2019	7447.5	123541003
Vegetation	Be-7	Hancock Landing Rc	11/26/2019	1613	123541003
Vegetation	Cs-137	Hancock Landing Rc	11/26/2019	0	123541003
Vegetation	Cs-134	Hancock Landing Rc	11/26/2019	0	123541003
Vegetation	I-131	Hancock Landing Rc	11/26/2019	0	123541003
Vegetation	Be-7	Hancock Landing Rc	12/30/2019	914.92	123925003
Vegetation	Cs-137	Hancock Landing Rc	12/30/2019	0	123925003
Vegetation	Cs-134	Hancock Landing Rc	12/30/2019	0	123925003
Vegetation	I-131	Hancock Landing Rc	12/30/2019	0	123925003
Vegetation	K-40	Hancock Landing Rc	12/30/2019	5634.2	123925003
Charcoal Ct	I-131	MET	1/8/2019	0	118834005
Air Filters	Gross Beta	MET	1/15/2019	.01597	118981005
Charcoal Ct	I-131	MET	1/15/2019	0	118982005
Air Filters	Gross Beta	MET	1/22/2019	.02306	119002005
Charcoal Ct	I-131	MET	1/22/2019	0	119003005
Air Filters	Gross Beta	MET	1/29/2019	.02443	119058005
Charcoal Ct	I-131	MET	1/29/2019	0	119059005
Air Filters	Gross Beta	MET	2/5/2019	.0244	119178005
Charcoal Ct	I-131	MET	2/5/2019	0	119189005
Charcoal Ct	I-131	MET	2/12/2019	0	119328005
Air Filters	Gross Beta	MET	2/12/2019	.02607	119327005
Air Filters	Gross Beta	MET	2/19/2019	.02005	119364005
Charcoal Ct	I-131	MET	2/19/2019	0	119365005
Air Filters	Gross Beta	MET	2/26/2019	.015	119473005
Charcoal Ct	I-131	MET	2/26/2019	0	119474005
Air Filters	Gross Beta	MET	3/5/2019	.01711	119572005
Charcoal Ct	I-131	MET	3/5/2019	0	119573005
Air Filters	Gross Beta	MET	3/12/2019	.0235	119664005
Charcoal Ct	I-131	MET	3/12/2019	0	119665005
Air Filters	Gross Beta	MET	3/19/2019	.02753	119766005
Charcoal Ct	I-131	MET	3/19/2019	0	119767005
Charcoal Ct	I-131	MET	3/26/2019	0	119842005
Air Filters	Gross Beta	MET	3/26/2019	.02671	119840005

Air Qtr Comp	Be-7	MET	3/26/2019	.09442	120030005
Air Qtr Comp	Cs-137	MET	3/26/2019	0	120030005
Air Qtr Comp	Cs-134	MET	3/26/2019	0	120030005
Air Qtr Comp	I-131	MET	3/26/2019	0	120030005
Air Filters	Gross Beta	MET	4/1/2019	.01901	119893005
Charcoal Ct	I-131	MET	4/1/2019	0	119894005
Air Filters	Gross Beta	MET	4/8/2019	.01744	119961005
Charcoal Ct	I-131	MET	4/8/2019	0	119962005
Air Filters	Gross Beta	MET	4/17/2019	.01618	120072005
Charcoal Ct	I-131	MET	4/17/2019	0	120073005
Charcoal Ct	I-131	MET	4/23/2019	0	120141005
Air Filters	Gross Beta	MET	4/23/2019	.01505	120140005
Air Filters	Gross Beta	MET	4/30/2019	.02705	120228005
Charcoal Ct	I-131	MET	4/30/2019	0	120229005
Air Filters	Gross Beta	MET	5/7/2019	.01445	120290005
Charcoal Ct	I-131	MET	5/7/2019	0	120291005
Air Filters	Gross Beta	MET	5/14/2019	.01706	120398005
Charcoal Ct	I-131	MET	5/14/2019	0	120399005
Charcoal Ct	I-131	MET	5/21/2019	0	120501005
Air Filters	Gross Beta	MET	5/21/2019	.03324	120497005
Charcoal Ct	I-131	MET	5/28/2019	0	120570005
Air Filters	Gross Beta	MET	5/28/2019	.03455	120569005
Air Filters	Gross Beta	MET	6/4/2019	.03439	120735005
Charcoal Ct	I-131	MET	6/4/2019	0	120736005
Charcoal Ct	I-131	MET	6/11/2019	0	120825004
Air Filters	Gross Beta	MET	6/11/2019	.01856	120823004
Charcoal Ct	I-131	MET	6/18/2019	0	120945005
Air Filters	Gross Beta	MET	6/18/2019	.02068	120944005
Air Qtr Comp	Be-7	MET	6/25/2019	.1054	121197005
Air Qtr Comp	Cs-137	MET	6/25/2019	0	121197005
Air Qtr Comp	Cs-134	MET	6/25/2019	0	121197005
Air Qtr Comp	I-131	MET	6/25/2019	0	121197005
Air Filters	Gross Beta	MET	6/25/2019	.01922	121039005
Charcoal Ct	I-131	MET	6/25/2019	0	121040005
Air Filters	Gross Beta	MET	7/2/2019	.0307	121164005
Charcoal Ct	I-131	MET	7/2/2019	0	121165005
Air Filters	Gross Beta	MET	7/9/2019	.02727	121248005
Charcoal Ct	I-131	MET	7/9/2019	0	121249005
Air Filters	Gross Beta	MET	7/16/2019	.01847	121368005
Charcoal Ct	I-131	MET	7/16/2019	0	121369005
Charcoal Ct	I-131	MET	7/23/2019	0	121486005
Air Filters	Gross Beta	MET	7/23/2019	.02474	121485005
Charcoal Ct	I-131	MET	7/30/2019	0	121637005
Air Filters	Gross Beta	MET	7/30/2019	.02414	121636005
Charcoal Ct	I-131	MET	8/5/2019	0	121727005
Air Filters	Gross Beta	MET	8/5/2019	.02469	121726005
Air Filters	Gross Beta	MET	8/13/2019	.03209	121818005
Charcoal Ct	I-131	MET	8/13/2019	0	121819005
Air Filters	Gross Beta	MET	8/20/2019	.02248	121988005
Charcoal Ct	I-131	MET	8/20/2019	0	121989005
Charcoal Ct	I-131	MET	8/27/2019	0	122109005
Air Filters	Gross Beta	MET	8/27/2019	.01547	122108005
Charcoal Ct	I-131	MET	9/3/2019	0	122225005

Air Filters	Gross Beta	MET	9/3/2019	.02758	122224005
Air Filters	Gross Beta	MET	9/10/2019	.03519	122359005
Charcoal Ct	I-131	MET	9/10/2019	0	122360005
Charcoal Ct	I-131	MET	9/17/2019	0	122486005
Air Filters	Gross Beta	MET	9/17/2019	.04381	122485005
Charcoal Ct	I-131	MET	9/24/2019	0	122641005
Air Filters	Gross Beta	MET	9/24/2019	.02679	122640005
Air Qtr Comp	Be-7	MET	9/24/2019	.08434	122829005
Air Qtr Comp	Cs-137	MET	9/24/2019	0	122829005
Air Qtr Comp	Cs-134	MET	9/24/2019	0	122829005
Air Qtr Comp	I-131	MET	9/24/2019	0	122829005
Air Filters	Gross Beta	MET	10/1/2019	.03515	122729005
Charcoal Ct	I-131	MET	10/1/2019	0	122730005
Charcoal Ct	I-131	MET	10/8/2019	0	122873005
Air Filters	Gross Beta	MET	10/8/2019	.02865	122872005
Charcoal Ct	I-131	MET	10/15/2019	0	122963005
Air Filters	Gross Beta	MET	10/15/2019	.02189	122962005
Air Filters	Gross Beta	MET	10/22/2019	.02247	123062005
Charcoal Ct	I-131	MET	10/22/2019	0	123063005
Charcoal Ct	I-131	MET	10/29/2019	0	123140005
Air Filters	Gross Beta	MET	10/29/2019	.01987	123139005
Charcoal Ct	I-131	MET	11/5/2019	0	123241005
Air Filters	Gross Beta	MET	11/5/2019	.02777	123240005
Charcoal Ct	I-131	MET	11/12/2019	0	123323005
Air Filters	Gross Beta	MET	11/12/2019	.03294	123322005
Air Filters	Gross Beta	MET	11/19/2019	.01501	123418005
Charcoal Ct	I-131	MET	11/19/2019	0	123419005
Charcoal Ct	I-131	MET	11/26/2019	0	123543005
Air Filters	Gross Beta	MET	11/26/2019	.02383	123542005
Charcoal Ct	I-131	MET	12/3/2019	0	123575005
Air Filters	Gross Beta	MET	12/3/2019	.01913	123574005
Charcoal Ct	I-131	MET	12/10/2019	0	123667005
Air Filters	Gross Beta	MET	12/10/2019	.0215	123666005
Air Filters	Gross Beta	MET	12/17/2019	.01913	123804005
Charcoal Ct	I-131	MET	12/17/2019	0	123805005
Air Filters	Gross Beta	MET	12/23/2019	.02446	123856005
Charcoal Ct	I-131	MET	12/23/2019	0	123857005
Air Qtr Comp	Be-7	MET	12/30/2019	.0661	124084005
Air Qtr Comp	Cs-137	MET	12/30/2019	0	124084005
Air Filters	Gross Beta	MET	12/30/2019	.01472	123923005
Air Qtr Comp	I-131	MET	12/30/2019	0	124084005
Charcoal Ct	I-131	MET	12/30/2019	0	123924005
Air Qtr Comp	Cs-134	MET	12/30/2019	0	124084005
Milk Gamma	Be-7	Milky Way	1/8/2019	0	118838002
Milk Gamma	K-40	Milky Way	1/8/2019	1525.3	118838002
Milk Gamma	La-140	Milky Way	1/8/2019	0	118838002
Milk Gamma	Ba-140	Milky Way	1/8/2019	0	118838002
Milk Gamma	Cs-137	Milky Way	1/8/2019	.85764	118838002
Milk Gamma	Cs-134	Milky Way	1/8/2019	0	118838002
Milk Gamma	I-131	Milky Way	1/8/2019	0	118838002
Milk Gamma	La-140	Milky Way	1/22/2019	0	118995002
Milk Gamma	Ba-140	Milky Way	1/22/2019	0	118995002
Milk Gamma	Cs-137	Milky Way	1/22/2019	0	118995002

Milk Gamma	Cs-134	Milky Way	1/22/2019	0	118995002
Milk Gamma	I-131	Milky Way	1/22/2019	0	118995002
Milk Gamma	K-40	Milky Way	1/22/2019	1462.4	118995002
Milk Gamma	Be-7	Milky Way	1/22/2019	0	118995002
Milk Gamma	Be-7	Milky Way	2/12/2019	0	119301002
Milk Gamma	La-140	Milky Way	2/12/2019	0	119301002
Milk Gamma	Ba-140	Milky Way	2/12/2019	0	119301002
Milk Gamma	Cs-137	Milky Way	2/12/2019	0	119301002
Milk Gamma	Cs-134	Milky Way	2/12/2019	0	119301002
Milk Gamma	I-131	Milky Way	2/12/2019	0	119301002
Milk Gamma	K-40	Milky Way	2/12/2019	1487.7	119301002
Milk Gamma	La-140	Milky Way	2/26/2019	0	119470002
Milk Gamma	Ba-140	Milky Way	2/26/2019	0	119470002
Milk Gamma	Cs-137	Milky Way	2/26/2019	0	119470002
Milk Gamma	Cs-134	Milky Way	2/26/2019	0	119470002
Milk Gamma	I-131	Milky Way	2/26/2019	0	119470002
Milk Gamma	K-40	Milky Way	2/26/2019	1474.5	119470002
Milk Gamma	Be-7	Milky Way	2/26/2019	0	119470002
Milk Gamma	I-131	Milky Way	3/12/2019	0	119661001
Milk Gamma	K-40	Milky Way	3/12/2019	1463.8	119661001
Milk Gamma	Be-7	Milky Way	3/12/2019	0	119661001
Milk Gamma	La-140	Milky Way	3/12/2019	0	119661001
Milk Gamma	Ba-140	Milky Way	3/12/2019	0	119661001
Milk Gamma	Cs-137	Milky Way	3/12/2019	0	119661001
Milk Gamma	Cs-134	Milky Way	3/12/2019	0	119661001
Milk Gamma	K-40	Milky Way	3/19/2019	1486.1	119764001
Milk Gamma	Be-7	Milky Way	3/19/2019	0	119764001
Milk Gamma	La-140	Milky Way	3/19/2019	0	119764001
Milk Gamma	Ba-140	Milky Way	3/19/2019	0	119764001
Milk Gamma	Cs-137	Milky Way	3/19/2019	1.3166	119764001
Milk Gamma	Cs-134	Milky Way	3/19/2019	0	119764001
Milk Gamma	I-131	Milky Way	3/19/2019	0	119764001
Milk Gamma	La-140	Milky Way	4/9/2019	0	119958001
Milk Gamma	Ba-140	Milky Way	4/9/2019	0	119958001
Milk Gamma	Cs-137	Milky Way	4/9/2019	.56678	119958001
Milk Gamma	K-40	Milky Way	4/9/2019	1422.6	119958001
Milk Gamma	Cs-134	Milky Way	4/9/2019	0	119958001
Milk Gamma	I-131	Milky Way	4/9/2019	0	119958001
Milk Gamma	Be-7	Milky Way	4/9/2019	0	119958001
Milk Gamma	K-40	Milky Way	4/23/2019	1477.9	120139001
Milk Gamma	Be-7	Milky Way	4/23/2019	0	120139001
Milk Gamma	La-140	Milky Way	4/23/2019	0	120139001
Milk Gamma	Ba-140	Milky Way	4/23/2019	0	120139001
Milk Gamma	Cs-137	Milky Way	4/23/2019	.71549	120139001
Milk Gamma	Cs-134	Milky Way	4/23/2019	0	120139001
Milk Gamma	I-131	Milky Way	4/23/2019	0	120139001
Milk Gamma	Be-7	Milky Way	5/14/2019	0	120396001
Milk Gamma	La-140	Milky Way	5/14/2019	0	120396001
Milk Gamma	Ba-140	Milky Way	5/14/2019	0	120396001
Milk Gamma	Cs-137	Milky Way	5/14/2019	0	120396001
Milk Gamma	Cs-134	Milky Way	5/14/2019	0	120396001
Milk Gamma	I-131	Milky Way	5/14/2019	0	120396001
Milk Gamma	K-40	Milky Way	5/14/2019	1449.5	120396001

Milk Gamma	I-131	Milky Way	5/28/2019	0	120568001
Milk Gamma	K-40	Milky Way	5/28/2019	1472.396	120568001
Milk Gamma	Be-7	Milky Way	5/28/2019	0	120568001
Milk Gamma	La-140	Milky Way	5/28/2019	0	120568001
Milk Gamma	Ba-140	Milky Way	5/28/2019	0	120568001
Milk Gamma	Cs-137	Milky Way	5/28/2019	0	120568001
Milk Gamma	Cs-134	Milky Way	5/28/2019	0	120568001
Milk Gamma	I-131	Milky Way	6/11/2019	0	120817001
Milk Gamma	Cs-134	Milky Way	6/11/2019	0	120817001
Milk Gamma	Cs-137	Milky Way	6/11/2019	0	120817001
Milk Gamma	Ba-140	Milky Way	6/11/2019	0	120817001
Milk Gamma	La-140	Milky Way	6/11/2019	0	120817001
Milk Gamma	Be-7	Milky Way	6/11/2019	0	120817001
Milk Gamma	K-40	Milky Way	6/11/2019	1408.1	120817001
Milk Gamma	Cs-134	Milky Way	6/25/2019	0	121034001
Milk Gamma	Cs-137	Milky Way	6/25/2019	0	121034001
Milk Gamma	Ba-140	Milky Way	6/25/2019	0	121034001
Milk Gamma	La-140	Milky Way	6/25/2019	0	121034001
Milk Gamma	Be-7	Milky Way	6/25/2019	0	121034001
Milk Gamma	K-40	Milky Way	6/25/2019	1377.2	121034001
Milk Gamma	I-131	Milky Way	6/25/2019	0	121034001
Milk Gamma	La-140	Milky Way	7/9/2019	0	121240001
Milk Gamma	Ba-140	Milky Way	7/9/2019	0	121240001
Milk Gamma	Cs-137	Milky Way	7/9/2019	0	121240001
Milk Gamma	Cs-134	Milky Way	7/9/2019	0	121240001
Milk Gamma	I-131	Milky Way	7/9/2019	0	121240001
Milk Gamma	K-40	Milky Way	7/9/2019	1304.5	121240001
Milk Gamma	Be-7	Milky Way	7/9/2019	0	121240001
Milk Gamma	K-40	Milky Way	7/23/2019	1296.6	121484001
Milk Gamma	Be-7	Milky Way	7/23/2019	0	121484001
Milk Gamma	La-140	Milky Way	7/23/2019	0	121484001
Milk Gamma	Ba-140	Milky Way	7/23/2019	0	121484001
Milk Gamma	Cs-137	Milky Way	7/23/2019	0	121484001
Milk Gamma	Cs-134	Milky Way	7/23/2019	0	121484001
Milk Gamma	I-131	Milky Way	7/23/2019	0	121484001
Milk Gamma	Ba-140	Milky Way	8/13/2019	0	121816001
Milk Gamma	Cs-137	Milky Way	8/13/2019	0	121816001
Milk Gamma	Cs-134	Milky Way	8/13/2019	0	121816001
Milk Gamma	I-131	Milky Way	8/13/2019	0	121816001
Milk Gamma	K-40	Milky Way	8/13/2019	1292.3	121816001
Milk Gamma	Be-7	Milky Way	8/13/2019	0	121816001
Milk Gamma	La-140	Milky Way	8/13/2019	0	121816001
Milk Gamma	K-40	Milky Way	8/27/2019	1345	122106001
Milk Gamma	Be-7	Milky Way	8/27/2019	0	122106001
Milk Gamma	La-140	Milky Way	8/27/2019	0	122106001
Milk Gamma	Ba-140	Milky Way	8/27/2019	0	122106001
Milk Gamma	Cs-137	Milky Way	8/27/2019	0	122106001
Milk Gamma	Cs-134	Milky Way	8/27/2019	0	122106001
Milk Gamma	I-131	Milky Way	8/27/2019	0	122106001
Milk Gamma	Cs-137	Milky Way	9/12/2019	1.1575	122397001
Milk Gamma	Cs-134	Milky Way	9/12/2019	0	122397001
Milk Gamma	I-131	Milky Way	9/12/2019	0	122397001
Milk Gamma	K-40	Milky Way	9/12/2019	1282.5	122397001

Milk Gamma	Be-7	Milky Way	9/12/2019	0	122397001
Milk Gamma	La-140	Milky Way	9/12/2019	0	122397001
Milk Gamma	Ba-140	Milky Way	9/12/2019	0	122397001
Milk Gamma	K-40	Milky Way	9/24/2019	1249.7	122609001
Milk Gamma	Be-7	Milky Way	9/24/2019	0	122609001
Milk Gamma	La-140	Milky Way	9/24/2019	0	122609001
Milk Gamma	Ba-140	Milky Way	9/24/2019	0	122609001
Milk Gamma	Cs-137	Milky Way	9/24/2019	0	122609001
Milk Gamma	Cs-134	Milky Way	9/24/2019	0	122609001
Milk Gamma	I-131	Milky Way	9/24/2019	0	122609001
Milk Gamma	I-131	Milky Way	10/8/2019	0	122835001
Milk Gamma	K-40	Milky Way	10/8/2019	1280.4	122835001
Milk Gamma	Be-7	Milky Way	10/8/2019	0	122835001
Milk Gamma	La-140	Milky Way	10/8/2019	0	122835001
Milk Gamma	Ba-140	Milky Way	10/8/2019	0	122835001
Milk Gamma	Cs-137	Milky Way	10/8/2019	0	122835001
Milk Gamma	Cs-134	Milky Way	10/8/2019	0	122835001
Milk Gamma	K-40	Milky Way	10/22/2019	1347	123056001
Milk Gamma	Be-7	Milky Way	10/22/2019	0	123056001
Milk Gamma	La-140	Milky Way	10/22/2019	0	123056001
Milk Gamma	Ba-140	Milky Way	10/22/2019	0	123056001
Milk Gamma	Cs-137	Milky Way	10/22/2019	0	123056001
Milk Gamma	Cs-134	Milky Way	10/22/2019	0	123056001
Milk Gamma	I-131	Milky Way	10/22/2019	0	123056001
Milk Gamma	Be-7	Milky Way	11/12/2019	0	123356001
Milk Gamma	K-40	Milky Way	11/12/2019	1450.1	123356001
Milk Gamma	I-131	Milky Way	11/12/2019	0	123356001
Milk Gamma	Cs-134	Milky Way	11/12/2019	0	123356001
Milk Gamma	Cs-137	Milky Way	11/12/2019	0	123356001
Milk Gamma	Ba-140	Milky Way	11/12/2019	0	123356001
Milk Gamma	La-140	Milky Way	11/12/2019	0	123356001
DW - Gamma	Fe-59	RAUC	1/8/2019	0	118872001
DW - Gamma	Co-58	RAUC	1/8/2019	0	118872001
DW - Gamma	Co-60	RAUC	1/8/2019	0	118872001
DW - Gamma	Zn-65	RAUC	1/8/2019	0	118872001
DW - Gamma	Zr-95	RAUC	1/8/2019	0	118872001
DW - Gamma	Nb-95	RAUC	1/8/2019	0	118872001
DW - Gamma	I-131	RAUC	1/8/2019	0	118872001
DW - Gamma	Cs-134	RAUC	1/8/2019	0	118872001
DW - Gamma	Cs-137	RAUC	1/8/2019	0	118872001
DW - Gamma	Ba-140	RAUC	1/8/2019	0	118872001
DW - Gamma	La-140	RAUC	1/8/2019	0	118872001
DW - Gamma	Be-7	RAUC	1/8/2019	0	118872001
DW - Gamma	K-40	RAUC	1/8/2019	0	118872001
Water H-3	Tritium	RAUC	1/8/2019	292	119054001
DW - Gamma	Mn-54	RAUC	1/8/2019	0	118872001
DW - Beta	Gross Beta	RAUC	2/4/2019	2.045	119259001
DW - Gamma	Co-58	RAUC	2/4/2019	0	119129001
DW - Gamma	K-40	RAUC	2/4/2019	0	119129001
DW - Gamma	Co-60	RAUC	2/4/2019	0	119129001
DW - Gamma	Zn-65	RAUC	2/4/2019	0	119129001
DW - Gamma	Zr-95	RAUC	2/4/2019	0	119129001
DW - Gamma	Nb-95	RAUC	2/4/2019	0	119129001

DW - Gamma	I-131	RAUC	2/4/2019	0	119129001
DW - Gamma	Cs-134	RAUC	2/4/2019	0	119129001
DW - Gamma	Cs-137	RAUC	2/4/2019	0	119129001
DW - Gamma	Ba-140	RAUC	2/4/2019	0	119129001
DW - Gamma	La-140	RAUC	2/4/2019	0	119129001
DW - Gamma	Be-7	RAUC	2/4/2019	0	119129001
DW - Gamma	Mn-54	RAUC	2/4/2019	0	119129001
DW - Gamma	Fe-59	RAUC	2/4/2019	0	119129001
DW - Beta	Gross Alpha	RAUC	2/4/2019	0	119259001
DW - Beta	Gross Beta	RAUC	3/4/2019	1.7	119594001
DW - Gamma	Be-7	RAUC	3/4/2019	0	119571001
DW - Gamma	K-40	RAUC	3/4/2019	0	119571001
DW - Gamma	Mn-54	RAUC	3/4/2019	0	119571001
DW - Gamma	Fe-59	RAUC	3/4/2019	0	119571001
DW - Gamma	Co-58	RAUC	3/4/2019	0	119571001
DW - Gamma	Co-60	RAUC	3/4/2019	0	119571001
DW - Gamma	Zn-65	RAUC	3/4/2019	0	119571001
DW - Gamma	Zr-95	RAUC	3/4/2019	0	119571001
DW - Gamma	Nb-95	RAUC	3/4/2019	0	119571001
DW - Gamma	I-131	RAUC	3/4/2019	0	119571001
DW - Gamma	Cs-134	RAUC	3/4/2019	0	119571001
DW - Gamma	Cs-137	RAUC	3/4/2019	0	119571001
DW - Gamma	Ba-140	RAUC	3/4/2019	0	119571001
DW - Gamma	La-140	RAUC	3/4/2019	0	119571001
DW - Beta	Gross Alpha	RAUC	3/4/2019	0	119594001
DW - Gamma	Zr-95	RAUC	4/1/2019	0	119892001
Water H-3	Tritium	RAUC	4/1/2019	-78.7	120035001
DW - Beta	Gross Alpha	RAUC	4/1/2019	0	119900001
DW - Gamma	Nb-95	RAUC	4/1/2019	0	119892001
DW - Gamma	I-131	RAUC	4/1/2019	0	119892001
DW - Gamma	Cs-134	RAUC	4/1/2019	0	119892001
DW - Gamma	Cs-137	RAUC	4/1/2019	0	119892001
DW - Gamma	Ba-140	RAUC	4/1/2019	0	119892001
DW - Gamma	La-140	RAUC	4/1/2019	0	119892001
DW - Gamma	Be-7	RAUC	4/1/2019	0	119892001
DW - Gamma	K-40	RAUC	4/1/2019	0	119892001
DW - Gamma	Co-60	RAUC	4/1/2019	0	119892001
DW - Gamma	Zn-65	RAUC	4/1/2019	0	119892001
DW - Gamma	Mn-54	RAUC	4/1/2019	0	119892001
DW - Gamma	Fe-59	RAUC	4/1/2019	0	119892001
DW - Gamma	Co-58	RAUC	4/1/2019	0	119892001
DW - Beta	Gross Beta	RAUC	4/1/2019	-1.934	119900001
DW - Beta	Gross Beta	RAUC	5/7/2019	1.819	120288001
DW - Gamma	Cs-134	RAUC	5/7/2019	0	120289001
DW - Gamma	Cs-137	RAUC	5/7/2019	0	120289001
DW - Gamma	Ba-140	RAUC	5/7/2019	0	120289001
DW - Gamma	La-140	RAUC	5/7/2019	0	120289001
DW - Gamma	Be-7	RAUC	5/7/2019	0	120289001
DW - Gamma	K-40	RAUC	5/7/2019	0	120289001
DW - Gamma	Mn-54	RAUC	5/7/2019	0	120289001
DW - Gamma	Fe-59	RAUC	5/7/2019	0	120289001
DW - Gamma	Co-58	RAUC	5/7/2019	0	120289001
DW - Gamma	Co-60	RAUC	5/7/2019	0	120289001

DW - Gamma	Zn-65	RAUC	5/7/2019	0	120289001
DW - Gamma	Zr-95	RAUC	5/7/2019	0	120289001
DW - Gamma	Nb-95	RAUC	5/7/2019	0	120289001
DW - Gamma	I-131	RAUC	5/7/2019	0	120289001
DW - Beta	Gross Alpha	RAUC	5/7/2019	0	120288001
DW - Beta	Gross Beta	RAUC	6/4/2019	2.556	120733001
DW - Gamma	Mn-54	RAUC	6/4/2019	0	120734001
DW - Gamma	Fe-59	RAUC	6/4/2019	0	120734001
DW - Gamma	Co-58	RAUC	6/4/2019	0	120734001
DW - Gamma	Co-60	RAUC	6/4/2019	0	120734001
DW - Gamma	Zn-65	RAUC	6/4/2019	0	120734001
DW - Gamma	Zr-95	RAUC	6/4/2019	0	120734001
DW - Gamma	Nb-95	RAUC	6/4/2019	0	120734001
DW - Gamma	I-131	RAUC	6/4/2019	0	120734001
DW - Gamma	Cs-134	RAUC	6/4/2019	0	120734001
DW - Gamma	Cs-137	RAUC	6/4/2019	0	120734001
DW - Gamma	Ba-140	RAUC	6/4/2019	0	120734001
DW - Gamma	La-140	RAUC	6/4/2019	0	120734001
DW - Gamma	Be-7	RAUC	6/4/2019	0	120734001
DW - Gamma	K-40	RAUC	6/4/2019	0	120734001
DW - Beta	Gross Alpha	RAUC	6/4/2019	0	120733001
DW - Beta	Gross Beta	RAUC	7/2/2019	3.014	121162001
DW - Gamma	Mn-54	RAUC	7/2/2019	0	121163001
DW - Gamma	Fe-59	RAUC	7/2/2019	0	121163001
DW - Gamma	Co-58	RAUC	7/2/2019	0	121163001
DW - Gamma	Co-60	RAUC	7/2/2019	0	121163001
DW - Gamma	Zn-65	RAUC	7/2/2019	0	121163001
DW - Gamma	Zr-95	RAUC	7/2/2019	0	121163001
DW - Gamma	Nb-95	RAUC	7/2/2019	0	121163001
DW - Gamma	I-131	RAUC	7/2/2019	0	121163001
DW - Gamma	Cs-134	RAUC	7/2/2019	0	121163001
DW - Gamma	Cs-137	RAUC	7/2/2019	0	121163001
DW - Gamma	Ba-140	RAUC	7/2/2019	0	121163001
DW - Gamma	La-140	RAUC	7/2/2019	0	121163001
DW - Gamma	Be-7	RAUC	7/2/2019	0	121163001
DW - Gamma	K-40	RAUC	7/2/2019	0	121163001
Water H-3	Tritium	RAUC	7/2/2019	106	121375001
DW - Beta	Gross Alpha	RAUC	7/2/2019	0	121162001
DW - Beta	Gross Beta	RAUC	8/6/2019	2.787	121725001
DW - Gamma	Mn-54	RAUC	8/6/2019	0	121724001
DW - Gamma	Fe-59	RAUC	8/6/2019	0	121724001
DW - Gamma	Co-58	RAUC	8/6/2019	0	121724001
DW - Gamma	Co-60	RAUC	8/6/2019	0	121724001
DW - Gamma	Zn-65	RAUC	8/6/2019	0	121724001
DW - Gamma	Zr-95	RAUC	8/6/2019	0	121724001
DW - Gamma	Nb-95	RAUC	8/6/2019	0	121724001
DW - Gamma	I-131	RAUC	8/6/2019	0	121724001
DW - Gamma	Cs-134	RAUC	8/6/2019	0	121724001
DW - Gamma	Cs-137	RAUC	8/6/2019	0	121724001
DW - Gamma	Ba-140	RAUC	8/6/2019	0	121724001
DW - Gamma	La-140	RAUC	8/6/2019	0	121724001
DW - Gamma	Be-7	RAUC	8/6/2019	0	121724001
DW - Gamma	K-40	RAUC	8/6/2019	0	121724001

DW - Beta	Gross Alpha	RAUC	8/6/2019	0	121725001
Water H-3	Tritium	RAUC	9/9/2019	122	123045001
DW - Beta	Gross Alpha	RAUC	9/9/2019	0	122325001
DW - Beta	Gross Beta	RAUC	9/9/2019	1.304	122325001
DW - Gamma	Cs-137	RAUC	9/9/2019	0	122323001
DW - Gamma	Ba-140	RAUC	9/9/2019	0	122323001
DW - Gamma	La-140	RAUC	9/9/2019	0	122323001
DW - Gamma	Be-7	RAUC	9/9/2019	0	122323001
DW - Gamma	K-40	RAUC	9/9/2019	0	122323001
DW - Gamma	Mn-54	RAUC	9/9/2019	0	122323001
DW - Gamma	Fe-59	RAUC	9/9/2019	0	122323001
DW - Gamma	Co-58	RAUC	9/9/2019	0	122323001
DW - Gamma	Co-60	RAUC	9/9/2019	0	122323001
DW - Gamma	Zn-65	RAUC	9/9/2019	0	122323001
DW - Gamma	Zr-95	RAUC	9/9/2019	0	122323001
DW - Gamma	Nb-95	RAUC	9/9/2019	0	122323001
DW - Gamma	I-131	RAUC	9/9/2019	0	122323001
DW - Gamma	Cs-134	RAUC	9/9/2019	0	122323001
DW - Beta	Gross Alpha	RAUC	11/4/2019	0	123234001
DW - Gamma	Fe-59	RAUC	11/4/2019	0	123233001
DW - Gamma	Co-58	RAUC	11/4/2019	0	123233001
DW - Gamma	Co-60	RAUC	11/4/2019	0	123233001
DW - Gamma	Zn-65	RAUC	11/4/2019	0	123233001
DW - Gamma	Zr-95	RAUC	11/4/2019	0	123233001
DW - Gamma	Nb-95	RAUC	11/4/2019	0	123233001
DW - Gamma	I-131	RAUC	11/4/2019	0	123233001
DW - Gamma	Cs-134	RAUC	11/4/2019	0	123233001
DW - Gamma	Cs-137	RAUC	11/4/2019	0	123233001
DW - Gamma	Ba-140	RAUC	11/4/2019	0	123233001
DW - Gamma	La-140	RAUC	11/4/2019	0	123233001
DW - Gamma	Be-7	RAUC	11/4/2019	0	123233001
DW - Gamma	K-40	RAUC	11/4/2019	0	123233001
DW - Gamma	Mn-54	RAUC	11/4/2019	0	123233001
DW - Beta	Gross Beta	RAUC	11/4/2019	2.039	123234001
DW - Gamma	Cs-137	RAUC	12/3/2019	0	123569001
DW - Gamma	Ba-140	RAUC	12/3/2019	0	123569001
DW - Gamma	La-140	RAUC	12/3/2019	0	123569001
DW - Gamma	Be-7	RAUC	12/3/2019	0	123569001
DW - Gamma	K-40	RAUC	12/3/2019	0	123569001
DW - Gamma	Mn-54	RAUC	12/3/2019	0	123569001
DW - Gamma	Fe-59	RAUC	12/3/2019	0	123569001
DW - Gamma	Co-58	RAUC	12/3/2019	0	123569001
DW - Gamma	Co-60	RAUC	12/3/2019	0	123569001
DW - Gamma	Zn-65	RAUC	12/3/2019	0	123569001
DW - Gamma	Zr-95	RAUC	12/3/2019	0	123569001
DW - Gamma	Nb-95	RAUC	12/3/2019	0	123569001
DW - Beta	Gross Alpha	RAUC	12/3/2019	0	123620001
DW - Beta	Gross Beta	RAUC	12/3/2019	3.082	123620001
DW - Gamma	I-131	RAUC	12/3/2019	0	123569001
DW - Gamma	Cs-134	RAUC	12/3/2019	0	123569001
DW - Gamma	Be-7	RPOR	1/9/2019	0	118872003
Water H-3	Tritium	RPOR	1/9/2019	521	119054003
DW - Gamma	K-40	RPOR	1/9/2019	0	118872003

DW - Gamma	Mn-54	RPOR	1/9/2019	0	118872003
DW - Gamma	Fe-59	RPOR	1/9/2019	0	118872003
DW - Gamma	Co-58	RPOR	1/9/2019	0	118872003
DW - Gamma	Co-60	RPOR	1/9/2019	0	118872003
DW - Gamma	Zn-65	RPOR	1/9/2019	0	118872003
DW - Gamma	Zr-95	RPOR	1/9/2019	0	118872003
DW - Gamma	Nb-95	RPOR	1/9/2019	0	118872003
DW - Gamma	I-131	RPOR	1/9/2019	0	118872003
DW - Gamma	Cs-134	RPOR	1/9/2019	0	118872003
DW - Gamma	Cs-137	RPOR	1/9/2019	0	118872003
DW - Gamma	Ba-140	RPOR	1/9/2019	0	118872003
DW - Gamma	La-140	RPOR	1/9/2019	0	118872003
DW - Gamma	Nb-95	RPOR	2/4/2019	0	119129003
DW - Gamma	Mn-54	RPOR	2/4/2019	0	119129003
DW - Gamma	Fe-59	RPOR	2/4/2019	0	119129003
DW - Gamma	Cs-137	RPOR	2/4/2019	0	119129003
DW - Gamma	Ba-140	RPOR	2/4/2019	0	119129003
DW - Gamma	La-140	RPOR	2/4/2019	0	119129003
DW - Gamma	Be-7	RPOR	2/4/2019	0	119129003
DW - Gamma	K-40	RPOR	2/4/2019	0	119129003
DW - Gamma	Co-60	RPOR	2/4/2019	0	119129003
DW - Gamma	Zn-65	RPOR	2/4/2019	0	119129003
DW - Gamma	Zr-95	RPOR	2/4/2019	0	119129003
DW - Gamma	Co-58	RPOR	2/4/2019	0	119129003
DW - Gamma	I-131	RPOR	2/4/2019	0	119129003
DW - Gamma	Cs-134	RPOR	2/4/2019	0	119129003
DW - Beta	Gross Beta	RPOR	2/4/2019	1.899	119259003
DW - Beta	Gross Alpha	RPOR	2/4/2019	0	119259003
DW - Beta	Gross Beta	RPOR	3/4/2019	2.9	119594003
DW - Gamma	Cs-137	RPOR	3/4/2019	0	119571003
DW - Gamma	Ba-140	RPOR	3/4/2019	0	119571003
DW - Gamma	La-140	RPOR	3/4/2019	0	119571003
DW - Gamma	Be-7	RPOR	3/4/2019	0	119571003
DW - Gamma	K-40	RPOR	3/4/2019	0	119571003
DW - Gamma	Mn-54	RPOR	3/4/2019	0	119571003
DW - Gamma	Fe-59	RPOR	3/4/2019	0	119571003
DW - Gamma	Co-58	RPOR	3/4/2019	0	119571003
DW - Gamma	Co-60	RPOR	3/4/2019	0	119571003
DW - Gamma	Zn-65	RPOR	3/4/2019	0	119571003
DW - Gamma	Zr-95	RPOR	3/4/2019	0	119571003
DW - Gamma	Nb-95	RPOR	3/4/2019	0	119571003
DW - Gamma	I-131	RPOR	3/4/2019	0	119571003
DW - Gamma	Cs-134	RPOR	3/4/2019	0	119571003
DW - Beta	Gross Alpha	RPOR	3/4/2019	0	119594003
DW - Gamma	Zn-65	RPOR	4/2/2019	0	119892003
DW - Gamma	Zr-95	RPOR	4/2/2019	0	119892003
DW - Gamma	Nb-95	RPOR	4/2/2019	0	119892003
DW - Gamma	I-131	RPOR	4/2/2019	0	119892003
DW - Gamma	Cs-134	RPOR	4/2/2019	0	119892003
DW - Gamma	Cs-137	RPOR	4/2/2019	0	119892003
DW - Gamma	Ba-140	RPOR	4/2/2019	0	119892003
DW - Gamma	La-140	RPOR	4/2/2019	0	119892003
DW - Gamma	Be-7	RPOR	4/2/2019	0	119892003

DW - Gamma	K-40	RPOR	4/2/2019	0	119892003
DW - Gamma	Mn-54	RPOR	4/2/2019	0	119892003
DW - Gamma	Fe-59	RPOR	4/2/2019	0	119892003
DW - Gamma	Co-58	RPOR	4/2/2019	0	119892003
DW - Gamma	Co-60	RPOR	4/2/2019	0	119892003
DW - Beta	Gross Alpha	RPOR	4/2/2019	0	119900003
DW - Beta	Gross Beta	RPOR	4/2/2019	-.7092	119900003
Water H-3	Tritium	RPOR	4/2/2019	356	120035003
DW - Gamma	Be-7	RPOR	5/7/2019	0	120289003
DW - Gamma	K-40	RPOR	5/7/2019	0	120289003
DW - Gamma	Mn-54	RPOR	5/7/2019	0	120289003
DW - Gamma	Fe-59	RPOR	5/7/2019	0	120289003
DW - Gamma	Co-58	RPOR	5/7/2019	0	120289003
DW - Gamma	Co-60	RPOR	5/7/2019	0	120289003
DW - Beta	Gross Alpha	RPOR	5/7/2019	0	120288003
DW - Beta	Gross Beta	RPOR	5/7/2019	1.336	120288003
DW - Gamma	Zn-65	RPOR	5/7/2019	0	120289003
DW - Gamma	Zr-95	RPOR	5/7/2019	0	120289003
DW - Gamma	Nb-95	RPOR	5/7/2019	0	120289003
DW - Gamma	I-131	RPOR	5/7/2019	0	120289003
DW - Gamma	Cs-134	RPOR	5/7/2019	0	120289003
DW - Gamma	Cs-137	RPOR	5/7/2019	0	120289003
DW - Gamma	Ba-140	RPOR	5/7/2019	0	120289003
DW - Gamma	La-140	RPOR	5/7/2019	0	120289003
DW - Gamma	Cs-134	RPOR	6/4/2019	0	120734003
DW - Gamma	Cs-137	RPOR	6/4/2019	0	120734003
DW - Gamma	Ba-140	RPOR	6/4/2019	0	120734003
DW - Gamma	La-140	RPOR	6/4/2019	0	120734003
DW - Gamma	Be-7	RPOR	6/4/2019	0	120734003
DW - Gamma	K-40	RPOR	6/4/2019	0	120734003
DW - Gamma	Fe-59	RPOR	6/4/2019	0	120734003
DW - Gamma	Co-58	RPOR	6/4/2019	0	120734003
DW - Gamma	Co-60	RPOR	6/4/2019	0	120734003
DW - Gamma	Zn-65	RPOR	6/4/2019	0	120734003
DW - Gamma	Zr-95	RPOR	6/4/2019	0	120734003
DW - Gamma	Nb-95	RPOR	6/4/2019	0	120734003
DW - Gamma	I-131	RPOR	6/4/2019	0	120734003
DW - Gamma	Mn-54	RPOR	6/4/2019	0	120734003
DW - Beta	Gross Alpha	RPOR	6/4/2019	0	120733003
DW - Beta	Gross Beta	RPOR	6/4/2019	1.505	120733003
DW - Gamma	I-131	RPOR	7/2/2019	0	121163003
DW - Gamma	Cs-134	RPOR	7/2/2019	0	121163003
DW - Gamma	Cs-137	RPOR	7/2/2019	0	121163003
DW - Gamma	Ba-140	RPOR	7/2/2019	0	121163003
DW - Gamma	La-140	RPOR	7/2/2019	0	121163003
DW - Gamma	Be-7	RPOR	7/2/2019	0	121163003
DW - Gamma	K-40	RPOR	7/2/2019	0	121163003
DW - Gamma	Mn-54	RPOR	7/2/2019	0	121163003
DW - Gamma	Fe-59	RPOR	7/2/2019	0	121163003
DW - Gamma	Co-58	RPOR	7/2/2019	0	121163003
DW - Gamma	Co-60	RPOR	7/2/2019	0	121163003
DW - Gamma	Zn-65	RPOR	7/2/2019	0	121163003
DW - Gamma	Zr-95	RPOR	7/2/2019	0	121163003

DW - Gamma	Nb-95	RPOR	7/2/2019	0	121163003
DW - Beta	Gross Alpha	RPOR	7/2/2019	0	121162003
DW - Beta	Gross Beta	RPOR	7/2/2019	4.196	121162003
Water H-3	Tritium	RPOR	7/2/2019	65.5	121375003
DW - Gamma	Co-58	RPOR	8/6/2019	0	121724003
DW - Gamma	Co-60	RPOR	8/6/2019	0	121724003
DW - Gamma	Zn-65	RPOR	8/6/2019	0	121724003
DW - Gamma	Zr-95	RPOR	8/6/2019	0	121724003
DW - Gamma	Nb-95	RPOR	8/6/2019	0	121724003
DW - Gamma	I-131	RPOR	8/6/2019	0	121724003
DW - Gamma	Cs-134	RPOR	8/6/2019	0	121724003
DW - Gamma	Cs-137	RPOR	8/6/2019	0	121724003
DW - Beta	Gross Alpha	RPOR	8/6/2019	0	121725003
DW - Beta	Gross Beta	RPOR	8/6/2019	5.336	121725003
DW - Gamma	Ba-140	RPOR	8/6/2019	0	121724003
DW - Gamma	La-140	RPOR	8/6/2019	0	121724003
DW - Gamma	Be-7	RPOR	8/6/2019	0	121724003
DW - Gamma	K-40	RPOR	8/6/2019	0	121724003
DW - Gamma	Mn-54	RPOR	8/6/2019	0	121724003
DW - Gamma	Fe-59	RPOR	8/6/2019	0	121724003
DW - Gamma	Ba-140	RPOR	9/9/2019	0	122323003
DW - Gamma	La-140	RPOR	9/9/2019	0	122323003
DW - Gamma	Be-7	RPOR	9/9/2019	0	122323003
DW - Gamma	K-40	RPOR	9/9/2019	0	122323003
DW - Gamma	Mn-54	RPOR	9/9/2019	0	122323003
DW - Gamma	Fe-59	RPOR	9/9/2019	0	122323003
DW - Gamma	Co-58	RPOR	9/9/2019	0	122323003
DW - Gamma	Co-60	RPOR	9/9/2019	0	122323003
DW - Gamma	Zn-65	RPOR	9/9/2019	0	122323003
DW - Gamma	Zr-95	RPOR	9/9/2019	0	122323003
DW - Gamma	Nb-95	RPOR	9/9/2019	0	122323003
DW - Gamma	I-131	RPOR	9/9/2019	0	122323003
Water H-3	Tritium	RPOR	9/9/2019	193	123045003
DW - Beta	Gross Beta	RPOR	9/9/2019	-.3434	122325003
DW - Beta	Gross Alpha	RPOR	9/9/2019	0	122325003
DW - Gamma	Cs-134	RPOR	9/9/2019	0	122323003
DW - Gamma	Cs-137	RPOR	9/9/2019	0	122323003
DW - Gamma	Co-58	RPOR	11/4/2019	0	123233003
DW - Gamma	Co-60	RPOR	11/4/2019	0	123233003
DW - Gamma	Zn-65	RPOR	11/4/2019	0	123233003
DW - Gamma	Zr-95	RPOR	11/4/2019	0	123233003
DW - Gamma	Nb-95	RPOR	11/4/2019	0	123233003
DW - Gamma	I-131	RPOR	11/4/2019	0	123233003
DW - Gamma	Cs-134	RPOR	11/4/2019	0	123233003
DW - Gamma	Cs-137	RPOR	11/4/2019	0	123233003
DW - Gamma	Ba-140	RPOR	11/4/2019	0	123233003
DW - Gamma	La-140	RPOR	11/4/2019	0	123233003
DW - Gamma	Be-7	RPOR	11/4/2019	0	123233003
DW - Gamma	K-40	RPOR	11/4/2019	0	123233003
DW - Beta	Gross Alpha	RPOR	11/4/2019	0	123234003
DW - Beta	Gross Beta	RPOR	11/4/2019	3.483	123234003
DW - Gamma	Mn-54	RPOR	11/4/2019	0	123233003
DW - Gamma	Fe-59	RPOR	11/4/2019	0	123233003

DW - Beta	Gross Beta	RPOR	12/3/2019	12.06	123620003
DW - Gamma	Mn-54	RPOR	12/3/2019	0	123569003
DW - Gamma	Fe-59	RPOR	12/3/2019	0	123569003
DW - Gamma	Co-58	RPOR	12/3/2019	0	123569003
DW - Gamma	Co-60	RPOR	12/3/2019	0	123569003
DW - Gamma	Zn-65	RPOR	12/3/2019	0	123569003
DW - Gamma	Zr-95	RPOR	12/3/2019	0	123569003
DW - Gamma	Nb-95	RPOR	12/3/2019	0	123569003
DW - Gamma	I-131	RPOR	12/3/2019	0	123569003
DW - Gamma	Cs-134	RPOR	12/3/2019	0	123569003
DW - Gamma	Cs-137	RPOR	12/3/2019	0	123569003
DW - Gamma	Ba-140	RPOR	12/3/2019	0	123569003
DW - Gamma	La-140	RPOR	12/3/2019	0	123569003
DW - Gamma	Be-7	RPOR	12/3/2019	0	123569003
DW - Gamma	K-40	RPOR	12/3/2019	0	123569003
DW - Beta	Gross Alpha	RPOR	12/3/2019	0	123620003
Water H-3	Tritium	RPUR	1/9/2019	456	119054005
DW - Gamma	Mn-54	RPUR	1/9/2019	0	118872005
DW - Gamma	Fe-59	RPUR	1/9/2019	0	118872005
DW - Gamma	Co-58	RPUR	1/9/2019	0	118872005
DW - Gamma	Co-60	RPUR	1/9/2019	0	118872005
DW - Gamma	Zn-65	RPUR	1/9/2019	0	118872005
DW - Gamma	Zr-95	RPUR	1/9/2019	0	118872005
DW - Gamma	Nb-95	RPUR	1/9/2019	0	118872005
DW - Gamma	I-131	RPUR	1/9/2019	0	118872005
DW - Gamma	Cs-134	RPUR	1/9/2019	0	118872005
DW - Gamma	Cs-137	RPUR	1/9/2019	0	118872005
DW - Gamma	Ba-140	RPUR	1/9/2019	0	118872005
DW - Gamma	La-140	RPUR	1/9/2019	0	118872005
DW - Gamma	Be-7	RPUR	1/9/2019	0	118872005
DW - Gamma	K-40	RPUR	1/9/2019	0	118872005
DW - Gamma	Zn-65	RPUR	2/4/2019	0	119129005
DW - Gamma	Zr-95	RPUR	2/4/2019	0	119129005
DW - Beta	Gross Beta	RPUR	2/4/2019	2.155	119259005
DW - Beta	Gross Alpha	RPUR	2/4/2019	0	119259005
DW - Gamma	Nb-95	RPUR	2/4/2019	0	119129005
DW - Gamma	I-131	RPUR	2/4/2019	0	119129005
DW - Gamma	Cs-134	RPUR	2/4/2019	0	119129005
DW - Gamma	Cs-137	RPUR	2/4/2019	0	119129005
DW - Gamma	Ba-140	RPUR	2/4/2019	0	119129005
DW - Gamma	La-140	RPUR	2/4/2019	0	119129005
DW - Gamma	Be-7	RPUR	2/4/2019	0	119129005
DW - Gamma	K-40	RPUR	2/4/2019	0	119129005
DW - Gamma	Mn-54	RPUR	2/4/2019	0	119129005
DW - Gamma	Fe-59	RPUR	2/4/2019	0	119129005
DW - Gamma	Co-58	RPUR	2/4/2019	0	119129005
DW - Gamma	Co-60	RPUR	2/4/2019	0	119129005
DW - Gamma	La-140	RPUR	3/4/2019	0	119571005
DW - Beta	Gross Beta	RPUR	3/4/2019	.9	119594005
DW - Gamma	Be-7	RPUR	3/4/2019	0	119571005
DW - Gamma	K-40	RPUR	3/4/2019	0	119571005
DW - Gamma	Mn-54	RPUR	3/4/2019	0	119571005
DW - Gamma	Fe-59	RPUR	3/4/2019	0	119571005

DW - Gamma	Co-58	RPUR	3/4/2019	0	119571005
DW - Gamma	Co-60	RPUR	3/4/2019	0	119571005
DW - Gamma	Zn-65	RPUR	3/4/2019	0	119571005
DW - Gamma	Zr-95	RPUR	3/4/2019	0	119571005
DW - Gamma	Nb-95	RPUR	3/4/2019	0	119571005
DW - Gamma	I-131	RPUR	3/4/2019	0	119571005
DW - Gamma	Cs-134	RPUR	3/4/2019	0	119571005
DW - Gamma	Cs-137	RPUR	3/4/2019	0	119571005
DW - Gamma	Ba-140	RPUR	3/4/2019	0	119571005
DW - Beta	Gross Alpha	RPUR	3/4/2019	0	119594005
DW - Gamma	Zr-95	RPUR	4/2/2019	0	119892005
DW - Gamma	Co-60	RPUR	4/2/2019	0	119892005
DW - Gamma	Zn-65	RPUR	4/2/2019	0	119892005
DW - Beta	Gross Alpha	RPUR	4/2/2019	0	119900005
DW - Beta	Gross Beta	RPUR	4/2/2019	-.09412	119900005
Water H-3	Tritium	RPUR	4/2/2019	156	120035005
DW - Gamma	Nb-95	RPUR	4/2/2019	0	119892005
DW - Gamma	I-131	RPUR	4/2/2019	0	119892005
DW - Gamma	Cs-134	RPUR	4/2/2019	0	119892005
DW - Gamma	Cs-137	RPUR	4/2/2019	0	119892005
DW - Gamma	Ba-140	RPUR	4/2/2019	0	119892005
DW - Gamma	La-140	RPUR	4/2/2019	0	119892005
DW - Gamma	Be-7	RPUR	4/2/2019	0	119892005
DW - Gamma	K-40	RPUR	4/2/2019	0	119892005
DW - Gamma	Mn-54	RPUR	4/2/2019	0	119892005
DW - Gamma	Fe-59	RPUR	4/2/2019	0	119892005
DW - Gamma	Co-58	RPUR	4/2/2019	0	119892005
DW - Gamma	I-131	RPUR	5/7/2019	0	120289005
DW - Gamma	Cs-134	RPUR	5/7/2019	0	120289005
DW - Gamma	Cs-137	RPUR	5/7/2019	0	120289005
DW - Gamma	Ba-140	RPUR	5/7/2019	0	120289005
DW - Gamma	La-140	RPUR	5/7/2019	0	120289005
DW - Gamma	Be-7	RPUR	5/7/2019	0	120289005
DW - Gamma	K-40	RPUR	5/7/2019	0	120289005
DW - Gamma	Mn-54	RPUR	5/7/2019	0	120289005
DW - Gamma	Fe-59	RPUR	5/7/2019	0	120289005
DW - Gamma	Co-58	RPUR	5/7/2019	0	120289005
DW - Beta	Gross Alpha	RPUR	5/7/2019	0	120288005
DW - Beta	Gross Beta	RPUR	5/7/2019	3.015	120288005
DW - Gamma	Co-60	RPUR	5/7/2019	0	120289005
DW - Gamma	Zn-65	RPUR	5/7/2019	0	120289005
DW - Gamma	Zr-95	RPUR	5/7/2019	0	120289005
DW - Gamma	Nb-95	RPUR	5/7/2019	0	120289005
DW - Gamma	Cs-134	RPUR	6/4/2019	0	120734005
DW - Gamma	Cs-137	RPUR	6/4/2019	0	120734005
DW - Gamma	Ba-140	RPUR	6/4/2019	0	120734005
DW - Gamma	La-140	RPUR	6/4/2019	0	120734005
DW - Gamma	Be-7	RPUR	6/4/2019	0	120734005
DW - Gamma	K-40	RPUR	6/4/2019	0	120734005
DW - Beta	Gross Alpha	RPUR	6/4/2019	0	120733005
DW - Beta	Gross Beta	RPUR	6/4/2019	2.56	120733005
DW - Gamma	Mn-54	RPUR	6/4/2019	0	120734005
DW - Gamma	Fe-59	RPUR	6/4/2019	0	120734005

DW - Gamma	Co-58	RPUR	6/4/2019	0	120734005
DW - Gamma	Co-60	RPUR	6/4/2019	0	120734005
DW - Gamma	Zn-65	RPUR	6/4/2019	0	120734005
DW - Gamma	Zr-95	RPUR	6/4/2019	0	120734005
DW - Gamma	Nb-95	RPUR	6/4/2019	0	120734005
DW - Gamma	I-131	RPUR	6/4/2019	0	120734005
DW - Beta	Gross Beta	RPUR	7/2/2019	1.465	121162005
DW - Beta	Gross Alpha	RPUR	7/2/2019	0	121162005
DW - Gamma	K-40	RPUR	7/2/2019	0	121163005
DW - Gamma	Be-7	RPUR	7/2/2019	0	121163005
DW - Gamma	Mn-54	RPUR	7/2/2019	0	121163005
DW - Gamma	Fe-59	RPUR	7/2/2019	0	121163005
DW - Gamma	Co-58	RPUR	7/2/2019	0	121163005
DW - Gamma	Co-60	RPUR	7/2/2019	0	121163005
DW - Gamma	Zn-65	RPUR	7/2/2019	0	121163005
DW - Gamma	Zr-95	RPUR	7/2/2019	0	121163005
DW - Gamma	Nb-95	RPUR	7/2/2019	0	121163005
DW - Gamma	I-131	RPUR	7/2/2019	0	121163005
Water H-3	Tritium	RPUR	7/2/2019	185	121375005
DW - Gamma	Cs-134	RPUR	7/2/2019	0	121163005
DW - Gamma	Cs-137	RPUR	7/2/2019	0	121163005
DW - Gamma	Ba-140	RPUR	7/2/2019	0	121163005
DW - Gamma	La-140	RPUR	7/2/2019	0	121163005
DW - Gamma	Cs-137	RPUR	8/6/2019	0	121724005
DW - Gamma	Ba-140	RPUR	8/6/2019	0	121724005
DW - Gamma	La-140	RPUR	8/6/2019	0	121724005
DW - Gamma	Be-7	RPUR	8/6/2019	0	121724005
DW - Gamma	K-40	RPUR	8/6/2019	0	121724005
DW - Gamma	Mn-54	RPUR	8/6/2019	0	121724005
DW - Gamma	Fe-59	RPUR	8/6/2019	0	121724005
DW - Gamma	Co-58	RPUR	8/6/2019	0	121724005
DW - Gamma	Co-60	RPUR	8/6/2019	0	121724005
DW - Beta	Gross Alpha	RPUR	8/6/2019	0	121725005
DW - Beta	Gross Beta	RPUR	8/6/2019	2.289	121725005
DW - Gamma	Zn-65	RPUR	8/6/2019	0	121724005
DW - Gamma	Zr-95	RPUR	8/6/2019	0	121724005
DW - Gamma	Nb-95	RPUR	8/6/2019	0	121724005
DW - Gamma	I-131	RPUR	8/6/2019	0	121724005
DW - Gamma	Cs-134	RPUR	8/6/2019	0	121724005
DW - Gamma	Co-60	RPUR	9/9/2019	0	122323005
DW - Gamma	Zn-65	RPUR	9/9/2019	0	122323005
DW - Gamma	Zr-95	RPUR	9/9/2019	0	122323005
DW - Gamma	Nb-95	RPUR	9/9/2019	0	122323005
DW - Gamma	I-131	RPUR	9/9/2019	0	122323005
DW - Gamma	Cs-134	RPUR	9/9/2019	0	122323005
DW - Gamma	Cs-137	RPUR	9/9/2019	0	122323005
DW - Gamma	Ba-140	RPUR	9/9/2019	0	122323005
DW - Gamma	La-140	RPUR	9/9/2019	0	122323005
DW - Gamma	Be-7	RPUR	9/9/2019	0	122323005
DW - Gamma	K-40	RPUR	9/9/2019	0	122323005
Water H-3	Tritium	RPUR	9/9/2019	255	123045005
DW - Beta	Gross Alpha	RPUR	9/9/2019	0	122325005
DW - Beta	Gross Beta	RPUR	9/9/2019	-.7993	122325005

DW - Gamma	Mn-54	RPUR	9/9/2019	0	122323005
DW - Gamma	Fe-59	RPUR	9/9/2019	0	122323005
DW - Gamma	Co-58	RPUR	9/9/2019	0	122323005
DW - Gamma	Zr-95	RPUR	11/4/2019	0	123233005
DW - Gamma	Nb-95	RPUR	11/4/2019	0	123233005
DW - Gamma	I-131	RPUR	11/4/2019	0	123233005
DW - Gamma	Cs-134	RPUR	11/4/2019	0	123233005
DW - Gamma	Cs-137	RPUR	11/4/2019	0	123233005
DW - Gamma	Ba-140	RPUR	11/4/2019	0	123233005
DW - Gamma	La-140	RPUR	11/4/2019	0	123233005
DW - Gamma	Be-7	RPUR	11/4/2019	0	123233005
DW - Gamma	K-40	RPUR	11/4/2019	0	123233005
DW - Gamma	Mn-54	RPUR	11/4/2019	0	123233005
DW - Gamma	Fe-59	RPUR	11/4/2019	0	123233005
DW - Gamma	Co-58	RPUR	11/4/2019	0	123233005
DW - Gamma	Co-60	RPUR	11/4/2019	0	123233005
DW - Gamma	Zn-65	RPUR	11/4/2019	0	123233005
DW - Beta	Gross Alpha	RPUR	11/4/2019	0	123234005
DW - Beta	Gross Beta	RPUR	11/4/2019	2.471	123234005
DW - Gamma	Fe-59	RPUR	12/3/2019	0	123569005
DW - Gamma	Co-58	RPUR	12/3/2019	0	123569005
DW - Beta	Gross Alpha	RPUR	12/3/2019	0	123620005
DW - Beta	Gross Beta	RPUR	12/3/2019	1.856	123620005
DW - Gamma	Co-60	RPUR	12/3/2019	0	123569005
DW - Gamma	Zn-65	RPUR	12/3/2019	0	123569005
DW - Gamma	Zr-95	RPUR	12/3/2019	0	123569005
DW - Gamma	Nb-95	RPUR	12/3/2019	0	123569005
DW - Gamma	I-131	RPUR	12/3/2019	0	123569005
DW - Gamma	Cs-134	RPUR	12/3/2019	0	123569005
DW - Gamma	Cs-137	RPUR	12/3/2019	0	123569005
DW - Gamma	Ba-140	RPUR	12/3/2019	0	123569005
DW - Gamma	La-140	RPUR	12/3/2019	0	123569005
DW - Gamma	Be-7	RPUR	12/3/2019	0	123569005
DW - Gamma	K-40	RPUR	12/3/2019	0	123569005
DW - Gamma	Mn-54	RPUR	12/3/2019	0	123569005
Charcoal Ct	I-131	RRD	1/8/2019	0	118834006
Air Filters	Gross Beta	RRD	1/15/2019	.01666	118981006
Charcoal Ct	I-131	RRD	1/15/2019	0	118982006
Charcoal Ct	I-131	RRD	1/22/2019	0	119003006
Air Filters	Gross Beta	RRD	1/22/2019	.0224	119002006
Air Filters	Gross Beta	RRD	1/29/2019	.02117	119058006
Charcoal Ct	I-131	RRD	1/29/2019	0	119059006
Charcoal Ct	I-131	RRD	2/5/2019	0	119189006
Air Filters	Gross Beta	RRD	2/5/2019	.02313	119178006
Charcoal Ct	I-131	RRD	2/12/2019	0	119328006
Air Filters	Gross Beta	RRD	2/12/2019	.02443	119327006
Charcoal Ct	I-131	RRD	2/19/2019	0	119365006
Air Filters	Gross Beta	RRD	2/19/2019	.01866	119364006
Air Filters	Gross Beta	RRD	2/26/2019	.01775	119473006
Charcoal Ct	I-131	RRD	2/26/2019	0	119474006
Air Filters	Gross Beta	RRD	3/5/2019	.01984	119572006
Charcoal Ct	I-131	RRD	3/5/2019	0	119573006
Air Filters	Gross Beta	RRD	3/12/2019	.02702	119664006

Charcoal Ct	I-131	RRD	3/12/2019	0	119665006
Air Filters	Gross Beta	RRD	3/19/2019	.02862	119766006
Charcoal Ct	I-131	RRD	3/19/2019	0	119767006
Air Qtr Comp	Be-7	RRD	3/26/2019	.105	120030006
Air Qtr Comp	Cs-137	RRD	3/26/2019	0	120030006
Air Qtr Comp	Cs-134	RRD	3/26/2019	0	120030006
Air Qtr Comp	I-131	RRD	3/26/2019	0	120030006
Air Filters	Gross Beta	RRD	3/26/2019	.02985	119840006
Charcoal Ct	I-131	RRD	3/26/2019	0	119842006
Air Filters	Gross Beta	RRD	4/1/2019	.02237	119893006
Charcoal Ct	I-131	RRD	4/1/2019	0	119894006
Charcoal Ct	I-131	RRD	4/8/2019	0	119962006
Air Filters	Gross Beta	RRD	4/8/2019	.02005	119961006
Air Filters	Gross Beta	RRD	4/17/2019	.01763	120072006
Charcoal Ct	I-131	RRD	4/17/2019	0	120073006
Air Filters	Gross Beta	RRD	4/23/2019	.02034	120140006
Charcoal Ct	I-131	RRD	4/23/2019	0	120141006
Charcoal Ct	I-131	RRD	4/30/2019	0	120229006
Air Filters	Gross Beta	RRD	4/30/2019	.03022	120228006
Charcoal Ct	I-131	RRD	5/7/2019	0	120291006
Air Filters	Gross Beta	RRD	5/7/2019	.01951	120290006
Charcoal Ct	I-131	RRD	5/14/2019	0	120399006
Air Filters	Gross Beta	RRD	5/14/2019	.02244	120398006
Charcoal Ct	I-131	RRD	5/21/2019	0	120501006
Air Filters	Gross Beta	RRD	5/21/2019	.03457	120497006
Air Filters	Gross Beta	RRD	5/28/2019	.03676	120569006
Charcoal Ct	I-131	RRD	5/28/2019	0	120570006
Charcoal Ct	I-131	RRD	6/4/2019	0	120736006
Air Filters	Gross Beta	RRD	6/4/2019	.04139	120735006
Charcoal Ct	I-131	RRD	6/11/2019	0	120825005
Air Filters	Gross Beta	RRD	6/11/2019	.02057	120823005
Charcoal Ct	I-131	RRD	6/18/2019	0	120945006
Air Filters	Gross Beta	RRD	6/18/2019	.02371	120944006
Charcoal Ct	I-131	RRD	6/25/2019	0	121040006
Air Filters	Gross Beta	RRD	6/25/2019	.02168	121039006
Air Qtr Comp	Be-7	RRD	6/25/2019	.1388	121197006
Air Qtr Comp	Cs-137	RRD	6/25/2019	0	121197006
Air Qtr Comp	Cs-134	RRD	6/25/2019	0	121197006
Air Qtr Comp	I-131	RRD	6/25/2019	0	121197006
Air Filters	Gross Beta	RRD	7/2/2019	.03648	121164006
Charcoal Ct	I-131	RRD	7/2/2019	0	121165006
Charcoal Ct	I-131	RRD	7/8/2019	0	121249006
Air Filters	Gross Beta	RRD	7/8/2019	.02626	121248006
Charcoal Ct	I-131	RRD	7/16/2019	0	121369006
Air Filters	Gross Beta	RRD	7/16/2019	.02369	121368006
Air Filters	Gross Beta	RRD	7/23/2019	.0264	121485006
Charcoal Ct	I-131	RRD	7/23/2019	0	121486006
Air Filters	Gross Beta	RRD	7/30/2019	.02632	121636006
Charcoal Ct	I-131	RRD	7/30/2019	0	121637006
Air Filters	Gross Beta	RRD	8/5/2019	.02704	121726006
Charcoal Ct	I-131	RRD	8/5/2019	0	121727006
Charcoal Ct	I-131	RRD	8/13/2019	0	121819006
Air Filters	Gross Beta	RRD	8/13/2019	.03422	121818006

Charcoal Ct	I-131	RRD	8/20/2019	0	121989006
Air Filters	Gross Beta	RRD	8/20/2019	.02417	121988006
Charcoal Ct	I-131	RRD	8/27/2019	0	122109006
Air Filters	Gross Beta	RRD	8/27/2019	.01694	122108006
Air Filters	Gross Beta	RRD	9/3/2019	.03013	122224006
Charcoal Ct	I-131	RRD	9/3/2019	0	122225006
Charcoal Ct	I-131	RRD	9/10/2019	0	122360006
Air Filters	Gross Beta	RRD	9/10/2019	.03893	122359006
Charcoal Ct	I-131	RRD	9/17/2019	0	122486006
Air Filters	Gross Beta	RRD	9/17/2019	.04092	122485006
Air Qtr Comp	Cs-137	RRD	9/24/2019	0	122829006
Air Qtr Comp	Be-7	RRD	9/24/2019	.09434	122829006
Air Qtr Comp	I-131	RRD	9/24/2019	0	122829006
Charcoal Ct	I-131	RRD	9/24/2019	0	122641006
Air Filters	Gross Beta	RRD	9/24/2019	.03013	122640006
Air Qtr Comp	Cs-134	RRD	9/24/2019	0	122829006
Air Filters	Gross Beta	RRD	10/1/2019	.03909	122729006
Charcoal Ct	I-131	RRD	10/1/2019	0	122730006
Charcoal Ct	I-131	RRD	10/8/2019	0	122873006
Air Filters	Gross Beta	RRD	10/8/2019	.03493	122872006
Air Filters	Gross Beta	RRD	10/15/2019	.02132	122962006
Charcoal Ct	I-131	RRD	10/15/2019	0	122963006
Charcoal Ct	I-131	RRD	10/22/2019	0	123063006
Air Filters	Gross Beta	RRD	10/22/2019	.02149	123062006
Charcoal Ct	I-131	RRD	10/29/2019	0	123140006
Air Filters	Gross Beta	RRD	10/29/2019	.02515	123139006
Charcoal Ct	I-131	RRD	11/5/2019	0	123241006
Air Filters	Gross Beta	RRD	11/5/2019	.02711	123240006
Charcoal Ct	I-131	RRD	11/12/2019	0	123323006
Air Filters	Gross Beta	RRD	11/12/2019	.0359	123322006
Charcoal Ct	I-131	RRD	11/19/2019	0	123419006
Air Filters	Gross Beta	RRD	11/19/2019	.01913	123418006
Air Filters	Gross Beta	RRD	11/26/2019	.02635	123542006
Charcoal Ct	I-131	RRD	11/26/2019	0	123543006
Charcoal Ct	I-131	RRD	12/3/2019	0	123575006
Air Filters	Gross Beta	RRD	12/3/2019	.02049	123574006
Charcoal Ct	I-131	RRD	12/10/2019	0	123667006
Air Filters	Gross Beta	RRD	12/10/2019	.0233	123666006
Charcoal Ct	I-131	RRD	12/17/2019	0	123805006
Air Filters	Gross Beta	RRD	12/17/2019	.01905	123804006
Charcoal Ct	I-131	RRD	12/23/2019	0	123857006
Air Filters	Gross Beta	RRD	12/23/2019	.02347	123856006
Air Qtr Comp	Be-7	RRD	12/30/2019	.09248	124084006
Air Qtr Comp	Cs-137	RRD	12/30/2019	0	124084006
Air Qtr Comp	Cs-134	RRD	12/30/2019	0	124084006
Air Qtr Comp	I-131	RRD	12/30/2019	0	124084006
Charcoal Ct	I-131	RRD	12/30/2019	0	123924006
Air Filters	Gross Beta	RRD	12/30/2019	.02039	123923006
Charcoal Ct	I-131	SIM	1/8/2019	0	118834003
Air Filters	Gross Beta	SIM	1/15/2019	.01675	118981003
Charcoal Ct	I-131	SIM	1/15/2019	0	118982003
Air Filters	Gross Beta	SIM	1/22/2019	.02369	119002003
Charcoal Ct	I-131	SIM	1/22/2019	0	119003003

Air Filters	Gross Beta	SIM	1/29/2019	.01668	119058003
Charcoal Ct	I-131	SIM	1/29/2019	0	119059003
Charcoal Ct	I-131	SIM	2/5/2019	0	119189003
Air Filters	Gross Beta	SIM	2/5/2019	.01617	119178003
Charcoal Ct	I-131	SIM	2/12/2019	0	119328003
Air Filters	Gross Beta	SIM	2/12/2019	.01493	119327003
Charcoal Ct	I-131	SIM	2/19/2019	0	119365003
Air Filters	Gross Beta	SIM	2/19/2019	.01223	119364003
Charcoal Ct	I-131	SIM	2/26/2019	0	119474003
Air Filters	Gross Beta	SIM	2/26/2019	.007205	119473003
Air Filters	Gross Beta	SIM	3/5/2019	.01021	119572003
Charcoal Ct	I-131	SIM	3/5/2019	0	119573003
Air Filters	Gross Beta	SIM	3/12/2019	.0105	119664003
Charcoal Ct	I-131	SIM	3/12/2019	0	119665003
Air Filters	Gross Beta	SIM	3/19/2019	.01346	119766003
Charcoal Ct	I-131	SIM	3/19/2019	0	119767003
Air Filters	Gross Beta	SIM	3/26/2019	.02745	119840003
Charcoal Ct	I-131	SIM	3/26/2019	0	119842003
Air Qtr Comp	Cs-137	SIM	3/26/2019	0	120030003
Air Qtr Comp	Cs-134	SIM	3/26/2019	0	120030003
Air Qtr Comp	I-131	SIM	3/26/2019	0	120030003
Air Qtr Comp	Be-7	SIM	3/26/2019	.06459	120030003
Charcoal Ct	I-131	SIM	4/1/2019	0	119894003
Air Filters	Gross Beta	SIM	4/1/2019	.02516	119893003
Air Filters	Gross Beta	SIM	4/8/2019	.01186	119961003
Charcoal Ct	I-131	SIM	4/8/2019	0	119962003
Charcoal Ct	I-131	SIM	4/17/2019	0	120073003
Air Filters	Gross Beta	SIM	4/17/2019	.007571	120072003
Charcoal Ct	I-131	SIM	4/23/2019	0	120141003
Air Filters	Gross Beta	SIM	4/23/2019	.02138	120140003
Air Filters	Gross Beta	SIM	4/30/2019	.03081	120228003
Charcoal Ct	I-131	SIM	4/30/2019	0	120229003
Air Filters	Gross Beta	SIM	5/7/2019	.01851	120290003
Charcoal Ct	I-131	SIM	5/7/2019	0	120291003
Air Filters	Gross Beta	SIM	5/14/2019	.01857	120398003
Charcoal Ct	I-131	SIM	5/14/2019	0	120399003
Air Filters	Gross Beta	SIM	5/21/2019	.03183	120497003
Charcoal Ct	I-131	SIM	5/21/2019	0	120501003
Charcoal Ct	I-131	SIM	5/28/2019	0	120570003
Air Filters	Gross Beta	SIM	5/28/2019	.03086	120569003
Air Filters	Gross Beta	SIM	6/4/2019	.03275	120735003
Charcoal Ct	I-131	SIM	6/4/2019	0	120736003
Charcoal Ct	I-131	SIM	6/11/2019	0	120825002
Air Filters	Gross Beta	SIM	6/11/2019	.01581	120823002
Charcoal Ct	I-131	SIM	6/18/2019	0	120945003
Air Filters	Gross Beta	SIM	6/18/2019	.02157	120944003
Air Qtr Comp	Be-7	SIM	6/25/2019	.1181	121197003
Air Qtr Comp	Cs-137	SIM	6/25/2019	0	121197003
Air Qtr Comp	Cs-134	SIM	6/25/2019	0	121197003
Air Qtr Comp	I-131	SIM	6/25/2019	0	121197003
Charcoal Ct	I-131	SIM	6/25/2019	0	121040003
Air Filters	Gross Beta	SIM	6/25/2019	.01768	121039003
Air Filters	Gross Beta	SIM	7/2/2019	.02735	121164003

Charcoal Ct	I-131	SIM	7/2/2019	0	121165003
Charcoal Ct	I-131	SIM	7/8/2019	0	121249003
Air Filters	Gross Beta	SIM	7/8/2019	.02477	121248003
Charcoal Ct	I-131	SIM	7/16/2019	0	121369003
Air Filters	Gross Beta	SIM	7/16/2019	.0227	121368003
Air Filters	Gross Beta	SIM	7/23/2019	.02249	121485003
Charcoal Ct	I-131	SIM	7/23/2019	0	121486003
Air Filters	Gross Beta	SIM	7/30/2019	.02817	121636003
Charcoal Ct	I-131	SIM	7/30/2019	0	121637003
Air Filters	Gross Beta	SIM	8/5/2019	.02341	121726003
Charcoal Ct	I-131	SIM	8/5/2019	0	121727003
Air Filters	Gross Beta	SIM	8/13/2019	.02982	121818003
Charcoal Ct	I-131	SIM	8/13/2019	0	121819003
Charcoal Ct	I-131	SIM	8/20/2019	0	121989003
Air Filters	Gross Beta	SIM	8/20/2019	.02243	121988003
Air Filters	Gross Beta	SIM	8/27/2019	.01707	122108003
Charcoal Ct	I-131	SIM	8/27/2019	0	122109003
Charcoal Ct	I-131	SIM	9/3/2019	0	122225003
Air Filters	Gross Beta	SIM	9/3/2019	.02186	122224003
Air Filters	Gross Beta	SIM	9/10/2019	.0368	122359003
Charcoal Ct	I-131	SIM	9/10/2019	0	122360003
Charcoal Ct	I-131	SIM	9/17/2019	0	122486003
Air Filters	Gross Beta	SIM	9/17/2019	.04154	122485003
Air Filters	Gross Beta	SIM	9/24/2019	.02712	122640003
Charcoal Ct	I-131	SIM	9/24/2019	0	122641003
Air Qtr Comp	I-131	SIM	9/24/2019	0	122829003
Air Qtr Comp	Cs-134	SIM	9/24/2019	0	122829003
Air Qtr Comp	Cs-137	SIM	9/24/2019	0	122829003
Air Qtr Comp	Be-7	SIM	9/24/2019	.1097	122829003
Air Filters	Gross Beta	SIM	10/1/2019	.03376	122729003
Charcoal Ct	I-131	SIM	10/1/2019	0	122730003
Charcoal Ct	I-131	SIM	10/8/2019	0	122873003
Air Filters	Gross Beta	SIM	10/8/2019	.03344	122872003
Air Filters	Gross Beta	SIM	10/15/2019	.02406	122962003
Charcoal Ct	I-131	SIM	10/15/2019	0	122963003
Charcoal Ct	I-131	SIM	10/22/2019	0	123063003
Air Filters	Gross Beta	SIM	10/22/2019	.02418	123062003
Air Filters	Gross Beta	SIM	10/29/2019	.0251	123139003
Charcoal Ct	I-131	SIM	10/29/2019	0	123140003
Charcoal Ct	I-131	SIM	11/5/2019	0	123241003
Air Filters	Gross Beta	SIM	11/5/2019	.02666	123240003
Charcoal Ct	I-131	SIM	11/12/2019	0	123323003
Air Filters	Gross Beta	SIM	11/12/2019	.0319	123322003
Charcoal Ct	I-131	SIM	11/19/2019	0	123419003
Air Filters	Gross Beta	SIM	11/19/2019	.02122	123418003
Charcoal Ct	I-131	SIM	11/26/2019	0	123543003
Air Filters	Gross Beta	SIM	11/26/2019	.02645	123542003
Charcoal Ct	I-131	SIM	12/3/2019	0	123575003
Air Filters	Gross Beta	SIM	12/3/2019	.02137	123574003
Charcoal Ct	I-131	SIM	12/10/2019	0	123667003
Air Filters	Gross Beta	SIM	12/10/2019	.02294	123666003
Air Filters	Gross Beta	SIM	12/17/2019	.01842	123804003
Charcoal Ct	I-131	SIM	12/17/2019	0	123805003

Air Filters	Gross Beta	SIM	12/23/2019	.02108	123856003
Charcoal Ct	I-131	SIM	12/23/2019	0	123857003
Charcoal Ct	I-131	SIM	12/30/2019	0	123924003
Air Qtr Comp	Be-7	SIM	12/30/2019	.07304	124084003
Air Qtr Comp	Cs-137	SIM	12/30/2019	0	124084003
Air Qtr Comp	Cs-134	SIM	12/30/2019	0	124084003
Air Qtr Comp	I-131	SIM	12/30/2019	0	124084003
Air Filters	Gross Beta	SIM	12/30/2019	.02063	123923003
Vegetation	K-40	Simulator	1/29/2019	3636.9	119060002
Vegetation	I-131	Simulator	1/29/2019	0	119060002
Vegetation	Cs-134	Simulator	1/29/2019	0	119060002
Vegetation	Cs-137	Simulator	1/29/2019	0	119060002
Vegetation	Be-7	Simulator	1/29/2019	3460.7	119060002
Vegetation	I-131	Simulator	2/26/2019	0	119471002
Vegetation	Cs-134	Simulator	2/26/2019	0	119471002
Vegetation	Cs-137	Simulator	2/26/2019	0	119471002
Vegetation	Be-7	Simulator	2/26/2019	1037.4	119471002
Vegetation	K-40	Simulator	2/26/2019	4386.7	119471002
Vegetation	Cs-134	Simulator	3/19/2019	0	119768002
Vegetation	Cs-137	Simulator	3/19/2019	0	119768002
Vegetation	Be-7	Simulator	3/19/2019	2586.7	119768002
Vegetation	K-40	Simulator	3/19/2019	5384.7	119768002
Vegetation	I-131	Simulator	3/19/2019	0	119768002
Vegetation	Cs-134	Simulator	4/30/2019	0	120223002
Vegetation	Cs-137	Simulator	4/30/2019	0	120223002
Vegetation	Be-7	Simulator	4/30/2019	1037	120223002
Vegetation	K-40	Simulator	4/30/2019	3599.9	120223002
Vegetation	I-131	Simulator	4/30/2019	0	120223002
Vegetation	Cs-134	Simulator	5/28/2019	0	120571002
Vegetation	Cs-137	Simulator	5/28/2019	0	120571002
Vegetation	Be-7	Simulator	5/28/2019	1682.4	120571002
Vegetation	K-40	Simulator	5/28/2019	4779.2	120571002
Vegetation	I-131	Simulator	5/28/2019	0	120571002
Vegetation	Cs-134	Simulator	6/25/2019	0	121037002
Vegetation	Cs-137	Simulator	6/25/2019	0	121037002
Vegetation	Be-7	Simulator	6/25/2019	3208.4	121037002
Vegetation	K-40	Simulator	6/25/2019	3768.2	121037002
Vegetation	I-131	Simulator	6/25/2019	0	121037002
Vegetation	Be-7	Simulator	7/30/2019	1075.7	121638002
Vegetation	K-40	Simulator	7/30/2019	3120.6	121638002
Vegetation	I-131	Simulator	7/30/2019	0	121638002
Vegetation	Cs-134	Simulator	7/30/2019	0	121638002
Vegetation	Cs-137	Simulator	7/30/2019	0	121638002
Vegetation	I-131	Simulator	8/27/2019	0	122107002
Vegetation	Cs-134	Simulator	8/27/2019	0	122107002
Vegetation	Cs-137	Simulator	8/27/2019	0	122107002
Vegetation	Be-7	Simulator	8/27/2019	1085.5	122107002
Vegetation	K-40	Simulator	8/27/2019	2883.6	122107002
Vegetation	I-131	Simulator	9/24/2019	0	122610002
Vegetation	Cs-134	Simulator	9/24/2019	0	122610002
Vegetation	Cs-137	Simulator	9/24/2019	0	122610002
Vegetation	Be-7	Simulator	9/24/2019	1968.8	122610002
Vegetation	K-40	Simulator	9/24/2019	3964.1	122610002

Vegetation	I-131	Simulator	10/29/2019	0	123141002
Vegetation	Cs-134	Simulator	10/29/2019	0	123141002
Vegetation	Cs-137	Simulator	10/29/2019	0	123141002
Vegetation	Be-7	Simulator	10/29/2019	1691.7	123141002
Vegetation	K-40	Simulator	10/29/2019	2889.6	123141002
Vegetation	K-40	Simulator	11/26/2019	4424.8	123541002
Vegetation	Be-7	Simulator	11/26/2019	7580	123541002
Vegetation	Cs-137	Simulator	11/26/2019	0	123541002
Vegetation	Cs-134	Simulator	11/26/2019	0	123541002
Vegetation	I-131	Simulator	11/26/2019	0	123541002
Vegetation	Be-7	Simulator	12/30/2019	1127.7	123925002
Vegetation	Cs-137	Simulator	12/30/2019	0	123925002
Vegetation	Cs-134	Simulator	12/30/2019	0	123925002
Vegetation	I-131	Simulator	12/30/2019	0	123925002
Vegetation	K-40	Simulator	12/30/2019	4711.8	123925002
Charcoal Ct	I-131	WAY	1/8/2019	0	118834001
Air Filters	Gross Beta	WAY	1/15/2019	.0196	118981001
Charcoal Ct	I-131	WAY	1/15/2019	0	118982001
Air Filters	Gross Beta	WAY	1/22/2019	.01914	119002001
Charcoal Ct	I-131	WAY	1/22/2019	0	119003001
Charcoal Ct	I-131	WAY	1/29/2019	0	119059001
Air Filters	Gross Beta	WAY	1/29/2019	.02304	119058001
Air Filters	Gross Beta	WAY	2/5/2019	.02266	119178001
Charcoal Ct	I-131	WAY	2/5/2019	0	119189001
Air Filters	Gross Beta	WAY	2/12/2019	.02665	119327001
Charcoal Ct	I-131	WAY	2/12/2019	0	119328001
Air Filters	Gross Beta	WAY	2/19/2019	.01648	119364001
Charcoal Ct	I-131	WAY	2/19/2019	0	119365001
Air Filters	Gross Beta	WAY	2/26/2019	.01615	119473001
Charcoal Ct	I-131	WAY	2/26/2019	0	119474001
Air Filters	Gross Beta	WAY	3/5/2019	.01565	119572001
Charcoal Ct	I-131	WAY	3/5/2019	0	119573001
Air Filters	Gross Beta	WAY	3/12/2019	.02315	119664001
Charcoal Ct	I-131	WAY	3/12/2019	0	119665001
Air Filters	Gross Beta	WAY	3/19/2019	.02571	119766001
Charcoal Ct	I-131	WAY	3/19/2019	0	119767001
Air Qtr Comp	Be-7	WAY	3/26/2019	.08582	120030001
Air Qtr Comp	Cs-137	WAY	3/26/2019	0	120030001
Air Qtr Comp	Cs-134	WAY	3/26/2019	0	120030001
Air Filters	Gross Beta	WAY	3/26/2019	.02599	119840001
Air Qtr Comp	I-131	WAY	3/26/2019	0	120030001
Charcoal Ct	I-131	WAY	3/26/2019	0	119842001
Air Filters	Gross Beta	WAY	4/1/2019	.0211	119893001
Charcoal Ct	I-131	WAY	4/1/2019	0	119894001
Air Filters	Gross Beta	WAY	4/8/2019	.0206	119961001
Charcoal Ct	I-131	WAY	4/8/2019	0	119962001
Charcoal Ct	I-131	WAY	4/17/2019	0	120073001
Air Filters	Gross Beta	WAY	4/17/2019	.01535	120072001
Charcoal Ct	I-131	WAY	4/23/2019	0	120141001
Air Filters	Gross Beta	WAY	4/23/2019	.0183	120140001
Air Filters	Gross Beta	WAY	4/30/2019	.02832	120228001
Charcoal Ct	I-131	WAY	4/30/2019	0	120229001
Air Filters	Gross Beta	WAY	5/7/2019	.016	120290001

Charcoal Ct	I-131	WAY	5/7/2019	0	120291001
Air Filters	Gross Beta	WAY	5/14/2019	.01529	120398001
Charcoal Ct	I-131	WAY	5/14/2019	0	120399001
Air Filters	Gross Beta	WAY	5/21/2019	.03277	120497001
Charcoal Ct	I-131	WAY	5/21/2019	0	120501001
Charcoal Ct	I-131	WAY	5/28/2019	0	120570001
Air Filters	Gross Beta	WAY	5/28/2019	.02884	120569001
Air Filters	Gross Beta	WAY	6/4/2019	.0325	120735001
Charcoal Ct	I-131	WAY	6/4/2019	0	120736001
Air Filters	Gross Beta	WAY	6/18/2019	.02377	120944001
Charcoal Ct	I-131	WAY	6/18/2019	0	120945001
Air Qtr Comp	Be-7	WAY	6/25/2019	.1096	121197001
Air Qtr Comp	Cs-137	WAY	6/25/2019	0	121197001
Air Qtr Comp	Cs-134	WAY	6/25/2019	0	121197001
Air Qtr Comp	I-131	WAY	6/25/2019	0	121197001
Air Filters	Gross Beta	WAY	6/25/2019	.01727	121039001
Charcoal Ct	I-131	WAY	6/25/2019	0	121040001
Air Filters	Gross Beta	WAY	7/2/2019	.02767	121164001
Charcoal Ct	I-131	WAY	7/2/2019	0	121165001
Air Filters	Gross Beta	WAY	7/8/2019	.03022	121248001
Charcoal Ct	I-131	WAY	7/8/2019	0	121249001
Air Filters	Gross Beta	WAY	7/16/2019	.02262	121368001
Charcoal Ct	I-131	WAY	7/16/2019	0	121369001
Charcoal Ct	I-131	WAY	7/23/2019	0	121486001
Air Filters	Gross Beta	WAY	7/23/2019	.02355	121485001
Charcoal Ct	I-131	WAY	7/30/2019	0	121637001
Air Filters	Gross Beta	WAY	7/30/2019	.02306	121636001
Charcoal Ct	I-131	WAY	8/5/2019	0	121727001
Air Filters	Gross Beta	WAY	8/5/2019	.02045	121726001
Air Filters	Gross Beta	WAY	8/13/2019	.03222	121818001
Charcoal Ct	I-131	WAY	8/13/2019	0	121819001
Air Filters	Gross Beta	WAY	8/20/2019	.02242	121988001
Charcoal Ct	I-131	WAY	8/20/2019	0	121989001
Charcoal Ct	I-131	WAY	8/27/2019	0	122109001
Air Filters	Gross Beta	WAY	8/27/2019	.01749	122108001
Charcoal Ct	I-131	WAY	9/3/2019	0	122225001
Air Filters	Gross Beta	WAY	9/3/2019	.024	122224001
Charcoal Ct	I-131	WAY	9/10/2019	0	122360001
Air Filters	Gross Beta	WAY	9/10/2019	.03871	122359001
Air Filters	Gross Beta	WAY	9/17/2019	.03816	122485001
Charcoal Ct	I-131	WAY	9/17/2019	0	122486001
Charcoal Ct	I-131	WAY	9/24/2019	0	122641001
Air Filters	Gross Beta	WAY	9/24/2019	.02635	122640001
Air Qtr Comp	Be-7	WAY	9/24/2019	.09738	122829001
Air Qtr Comp	Cs-137	WAY	9/24/2019	0	122829001
Air Qtr Comp	Cs-134	WAY	9/24/2019	0	122829001
Air Qtr Comp	I-131	WAY	9/24/2019	0	122829001
Air Filters	Gross Beta	WAY	10/1/2019	.0346	122729001
Charcoal Ct	I-131	WAY	10/1/2019	0	122730001
Air Filters	Gross Beta	WAY	10/8/2019	.03652	122872001
Charcoal Ct	I-131	WAY	10/8/2019	0	122873001
Charcoal Ct	I-131	WAY	10/15/2019	0	122963001
Air Filters	Gross Beta	WAY	10/15/2019	.02143	122962001

Charcoal Ct	I-131	WAY	10/22/2019	0	123063001
Air Filters	Gross Beta	WAY	10/22/2019	.01997	123062001
Charcoal Ct	I-131	WAY	10/29/2019	0	123140001
Air Filters	Gross Beta	WAY	10/29/2019	.02362	123139001
Charcoal Ct	I-131	WAY	11/5/2019	0	123241001
Air Filters	Gross Beta	WAY	11/5/2019	.02482	123240001
Charcoal Ct	I-131	WAY	11/12/2019	0	123323001
Air Filters	Gross Beta	WAY	11/12/2019	.03652	123322001
Charcoal Ct	I-131	WAY	11/19/2019	0	123419001
Air Filters	Gross Beta	WAY	11/19/2019	.02288	123418001
Air Filters	Gross Beta	WAY	11/26/2019	.02369	123542001
Charcoal Ct	I-131	WAY	11/26/2019	0	123543001
Charcoal Ct	I-131	WAY	12/3/2019	0	123575001
Air Filters	Gross Beta	WAY	12/3/2019	.02207	123574001
Air Filters	Gross Beta	WAY	12/10/2019	.02277	123666001
Charcoal Ct	I-131	WAY	12/10/2019	0	123667001
Air Filters	Gross Beta	WAY	12/17/2019	.01704	123804001
Charcoal Ct	I-131	WAY	12/17/2019	0	123805001
Air Filters	Gross Beta	WAY	12/23/2019	.02451	123856001
Charcoal Ct	I-131	WAY	12/23/2019	0	123857001
Charcoal Ct	I-131	WAY	12/30/2019	0	123924001
Air Filters	Gross Beta	WAY	12/30/2019	.01836	123923001
Air Qtr Comp	I-131	WAY	12/30/2019	0	124084001
Air Qtr Comp	Cs-134	WAY	12/30/2019	0	124084001
Air Qtr Comp	Cs-137	WAY	12/30/2019	0	124084001
Air Qtr Comp	Be-7	WAY	12/30/2019	.06439	124084001
Vegetation	K-40	Waynesboro	1/29/2019	5976.4	119060001
Vegetation	I-131	Waynesboro	1/29/2019	0	119060001
Vegetation	Cs-134	Waynesboro	1/29/2019	0	119060001
Vegetation	Cs-137	Waynesboro	1/29/2019	0	119060001
Vegetation	Be-7	Waynesboro	1/29/2019	1091.5	119060001
Vegetation	Cs-134	Waynesboro	2/26/2019	0	119471001
Vegetation	Cs-137	Waynesboro	2/26/2019	0	119471001
Vegetation	Be-7	Waynesboro	2/26/2019	809.21	119471001
Vegetation	K-40	Waynesboro	2/26/2019	4366	119471001
Vegetation	I-131	Waynesboro	2/26/2019	0	119471001
Vegetation	Cs-134	Waynesboro	3/19/2019	0	119768001
Vegetation	Cs-137	Waynesboro	3/19/2019	0	119768001
Vegetation	Be-7	Waynesboro	3/19/2019	963.32	119768001
Vegetation	K-40	Waynesboro	3/19/2019	4676.6	119768001
Vegetation	I-131	Waynesboro	3/19/2019	0	119768001
Vegetation	I-131	Waynesboro	4/30/2019	0	120223001
Vegetation	Cs-134	Waynesboro	4/30/2019	0	120223001
Vegetation	Cs-137	Waynesboro	4/30/2019	0	120223001
Vegetation	Be-7	Waynesboro	4/30/2019	979.049	120223001
Vegetation	K-40	Waynesboro	4/30/2019	3535.021	120223001
Vegetation	Cs-134	Waynesboro	5/28/2019	0	120571001
Vegetation	Cs-137	Waynesboro	5/28/2019	0	120571001
Vegetation	Be-7	Waynesboro	5/28/2019	1247.1	120571001
Vegetation	K-40	Waynesboro	5/28/2019	7832.5	120571001
Vegetation	I-131	Waynesboro	5/28/2019	0	120571001
Vegetation	Cs-134	Waynesboro	6/25/2019	0	121037001
Vegetation	Cs-137	Waynesboro	6/25/2019	0	121037001

Vegetation	Be-7	Waynesboro	6/25/2019	1066.9	121037001
Vegetation	K-40	Waynesboro	6/25/2019	3444.9	121037001
Vegetation	I-131	Waynesboro	6/25/2019	0	121037001
Vegetation	Be-7	Waynesboro	7/30/2019	488.53	121638001
Vegetation	K-40	Waynesboro	7/30/2019	4700.2	121638001
Vegetation	I-131	Waynesboro	7/30/2019	0	121638001
Vegetation	Cs-134	Waynesboro	7/30/2019	0	121638001
Vegetation	Cs-137	Waynesboro	7/30/2019	0	121638001
Vegetation	I-131	Waynesboro	8/27/2019	0	122107001
Vegetation	Cs-134	Waynesboro	8/27/2019	0	122107001
Vegetation	Cs-137	Waynesboro	8/27/2019	0	122107001
Vegetation	Be-7	Waynesboro	8/27/2019	1108.4	122107001
Vegetation	K-40	Waynesboro	8/27/2019	4003.8	122107001
Vegetation	I-131	Waynesboro	9/24/2019	0	122610001
Vegetation	Cs-134	Waynesboro	9/24/2019	0	122610001
Vegetation	Cs-137	Waynesboro	9/24/2019	0	122610001
Vegetation	Be-7	Waynesboro	9/24/2019	2353.7	122610001
Vegetation	K-40	Waynesboro	9/24/2019	6567.9	122610001
Vegetation	I-131	Waynesboro	10/29/2019	0	123141001
Vegetation	Cs-134	Waynesboro	10/29/2019	0	123141001
Vegetation	Cs-137	Waynesboro	10/29/2019	0	123141001
Vegetation	Be-7	Waynesboro	10/29/2019	373.41	123141001
Vegetation	K-40	Waynesboro	10/29/2019	4843.3	123141001
Vegetation	K-40	Waynesboro	11/26/2019	5830.4	123541001
Vegetation	Be-7	Waynesboro	11/26/2019	2186	123541001
Vegetation	Cs-137	Waynesboro	11/26/2019	0	123541001
Vegetation	Cs-134	Waynesboro	11/26/2019	0	123541001
Vegetation	I-131	Waynesboro	11/26/2019	0	123541001
Vegetation	I-131	Waynesboro	12/30/2019	0	123925001
Vegetation	K-40	Waynesboro	12/30/2019	4829.5	123925001
Vegetation	Be-7	Waynesboro	12/30/2019	1548.2	123925001
Vegetation	Cs-137	Waynesboro	12/30/2019	0	123925001
Vegetation	Cs-134	Waynesboro	12/30/2019	0	123925001