



ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

**DUKE ENERGY CORPORATION
CATAWBA NUCLEAR STATION
Units 1 and 2**

2015



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LIST OF ACRONYMS USED IN THIS TEXT *(in alphabetical order)*

BW	BiWeekly
C	Control
CNS	Catawba Nuclear Station
ERA	Environmental Resource Associates
GEL	General Engineering Laboratory
GI-LLI	Gastrointestinal – Lower Large Intestine
GPS	Global Positioning System
ISFSI	Independent Spent Fuel Storage Installation
LLD	Lower Limit of Detection
M	Monthly
MDA	Minimum Detectable Activity
mrem	Millirem
NIST	National Institute of Standards and Technology
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
pCi/kg	picocurie per kilogram
pCi/l	picocurie per liter
pCi/m3	picocurie per cubic meter
Q	Quarterly
REMP	Radiological Environmental Monitoring Program
SA	Semiannually
SLCs	Selected Licensee Commitments
SM	Semimonthly
TECH SPECS	Technical Specifications
TLD	Thermoluminescent Dosimeter
μCi/ml	microcurie per milliliter
UFSAR	Updated Final Safety Analysis Report
W	Weekly

1.0 EXECUTIVE SUMMARY

This Annual Radiological Environmental Operating Report describes the Catawba Nuclear Station Radiological Environmental Monitoring Program (REMP), and the program results for the calendar year 2015.

Included are the identification of sampling locations, descriptions of environmental sampling and analysis procedures, comparisons of present environmental radioactivity levels and pre-operational environmental data, comparisons of doses calculated from environmental measurements and effluent data, analysis of trends in environmental radiological data as potentially affected by station operations, and a summary of environmental radiological sampling results. Quality assurance practices, sampling deviations, unavailable samples, and program changes are also discussed.

Sampling activities were conducted as prescribed by Selected Licensee Commitments (SLCs). One-thousand thirty-four samples were analyzed comprising 1,060 test results in order to compile data for the 2015 report. Based on the annual land use census, the current number of sampling sites for Catawba Nuclear Station is sufficient.

Concentrations observed in the environment in 2015 for station related radionuclides were generally within the ranges of concentrations observed in the past. Inspection of data showed that radioactivity concentrations in surface water, broadleaf vegetation, fish, and shoreline sediment are higher than the activities reported for samples collected prior to the operation of the station. Measured concentrations were not higher than expected and all positively identified measurements attributable to station operation were within limits as specified in SLCs.

Additionally, environmental radiological monitoring data is consistent with effluents introduced into the environment by plant operations. The total body dose estimated to the maximum exposed member of the public as calculated by environmental sampling data, excluding TLD results, was 2.05E-1 mrem for 2015. Background radiation dose in the United States is approximately 620 mrem per year (approximately half from naturally occurring sources such as radon and half from man-made sources such as medical processes).¹ It is therefore concluded that station operations has had no significant radiological impact on the health and safety of the public or the environment.

¹NCRP (2009). National Council on Radiation Protection and Measurements. *Ionizing Radiation Exposure of the Population of the United States*, NCRP Report No. 160 (National Council on Radiation Protection and Measurements, Bethesda, Maryland).

2.0 INTRODUCTION

2.1 SITE DESCRIPTION AND SAMPLE LOCATIONS

Duke Energy Corporation's Catawba Nuclear Station is a two-unit facility located on the shore of Lake Wylie in York County, South Carolina. Each of the two essentially identical units employs a pressurized water reactor nuclear steam supply system furnished by Westinghouse Electric Corporation. Each generating unit is designed to produce a net electrical output of approximately 1145 MWe. Units 1 and 2 achieved initial criticality on January 7, 1985, and May 8, 1986, respectively.

Condenser cooling is accomplished utilizing a closed system incorporating cooling towers, instead of using lake water directly. Liquid effluents are released into Lake Wylie via the station discharge canal and are not accompanied by the large additional dilution water flow associated with "once-through" condenser cooling. This design results in greater radionuclide concentrations in the discharge canal given comparable liquid effluent source terms.

Figures 2.1-1 and 2.1-2 are maps depicting the Thermoluminescent Dosimeter (TLD) monitoring locations and the sampling locations. The location numbers shown on these maps correspond to those listed in Tables 2.1-A and 2.1-B. Figure 2.1-1 comprises all sample locations within a one mile radius of CNS. Figure 2.1-2 comprises all sample locations within a 10 mile radius of CNS.

2.2 SCOPE AND REQUIREMENTS OF THE REMP

An environmental monitoring program has been in effect at Catawba Nuclear Station since 1981, four years prior to operation of Unit 1 in 1985. The preoperational program provides data on the existing environmental radioactivity levels for the site and vicinity which may be used to determine whether increases in environmental levels are attributable to the station. The operational program provides surveillance and backup support of detailed effluent monitoring which is necessary to evaluate the significance, if any, of the contributions to the existing environmental radioactivity levels that result from station operation.

This monitoring program is based on NRC guidance as reflected in the Selected Licensee Commitments Manual, with regard to sample media, sampling locations, sampling frequency and analytical sensitivity requirements. Indicator and control locations were established for comparison purposes to distinguish radioactivity of station origin from natural or other "man-made" environmental radioactivity. The environmental monitoring program also verifies projected and anticipated radionuclide concentrations in the environment and related exposures from releases of radionuclides from Catawba Nuclear Station. This program satisfies the requirements of Section IV.B.2 of Appendix I to 10CFR50 and provides surveillance of all appropriate critical exposure pathways to man and protects vital interests of the company, public and state and federal agencies concerned with the environment. Reporting levels for activity found in environmental samples are listed in Table 2.2-A. Table 2.2-B lists the REMP analysis and frequency schedule.

The Annual Land Use Census, required by Selected Licensee Commitments, is performed to ensure that changes in the use of areas at or beyond the site boundary are identified and that modifications to the REMP are made if required by changes in land use. This census satisfies the requirements of Section IV.B.3 of Appendix I to 10CFR50. Results are shown in Table 3.10.

Participation in an interlaboratory comparison program as required by Selected Licensee Commitments provides for independent checks on the precision and accuracy of measurements of radioactive material in REMP sample matrices. Such checks are performed as part of the quality assurance program for environmental monitoring in order to demonstrate that the results are valid for the purposes of Section IV.B.2 of Appendix I to 10CFR50. A summary of the results obtained as part of this comparison program are in Section 5 of this annual report.

2.3 STATISTICAL AND CALCULATIONAL METHODOLOGY

2.3.1 ESTIMATION OF THE MEAN VALUE

There was one (1) basic statistical calculation performed on the raw data resulting from the environmental sample analysis program. The calculation involved the determination of the mean value for the indicator and the control samples for each sample medium. The mean is a widely used statistic. This value was used in the reduction of the data generated by the sampling and analysis of the various media in the Radiological Environmental Monitoring Program. "Net activity (or concentration)" is the activity (or concentration) determined to be present in the sample. No "Minimum Detectable Activity", "Lower Limit of Detection", "Less Than Level", or negative activities or concentrations are included in the calculation of the mean. The following equation was used to estimate the mean:

$$\bar{x} = \frac{\sum_{i=1}^N x_i}{N}$$

Where:

\bar{x} = estimate of the mean,

i = individual sample,

N = total number of samples with a net activity (or concentration),

x_i = net activity (or concentration) for sample i.

2.3.2 LOWER LEVEL OF DETECTION AND MINIMUM DETECTABLE ACTIVITY

The Lower Level of Detection (LLD), and Minimum Detectable Activity (MDA) are used throughout the REMP.

LLD - The LLD, as defined in the Selected Licensee Commitments Manual is the smallest concentration of radioactive material in a sample that will yield a net count, above the system background, that will be detected with 95% probability with only 5% probability of falsely concluding that a blank observation represents a "real" signal. The LLD is an *a priori* lower limit of detection. The actual LLD is dependent upon the standard deviation of the background counting rate, the counting efficiency, the sample size (mass or volume), the radiochemical yield and the radioactive decay of the sample between sample collection and counting. The "required" LLDs for each sample medium and selected radionuclides are given in the Selected Licensee Commitments and are listed in Table 2.2-C.

MDA - The MDA is the net counting rate (sample after subtraction of background) that must be surpassed before a sample is considered to contain a scientifically measurable amount of a radioactive material exceeding background amounts. The MDA is calculated using a sample background and may be thought of as an "actual" LLD for a particular sample measurement. Certain gross counting measurements display a calculated negative value, indicating background is greater than sample activity.

2.3.3 TREND IDENTIFICATION

One of the purposes of an environmental monitoring program is to determine if there is a buildup of radionuclides in the environment due to the operation of the nuclear station. Visual inspection of tabular or graphical presentations of data (including preoperational) is used to determine if a trend exists. A decrease in a particular radionuclide's concentration in an environmental medium does not indicate that reactor operations are removing radioactivity from the environment but that reactor operations are not adding that radionuclide to the environment in quantities exceeding the preoperational level and that the normal removal processes (radioactive decay, deposition, resuspension, etc.) are influencing the concentration.

Substantial increases or decreases in the amount of a particular radionuclide's release from the nuclear plant will greatly affect the resulting environmental levels; therefore, a knowledge of the release of a radionuclide from the nuclear plant is necessary to completely interpret the trends, or lack of trends, determined from the environmental data. Factors that may affect environmental levels of radionuclides include prevailing weather conditions (periods of drought, solar cycles or heavier than normal precipitation), construction in or around either the nuclear plant or the sampling location, and addition or deletion of other sources of radioactive materials (such as the Chernobyl accident). Some of these factors may be obvious while others are sometimes unknown. Therefore, how trends are identified will include some judgment by plant personnel.

Figure 2.1-1

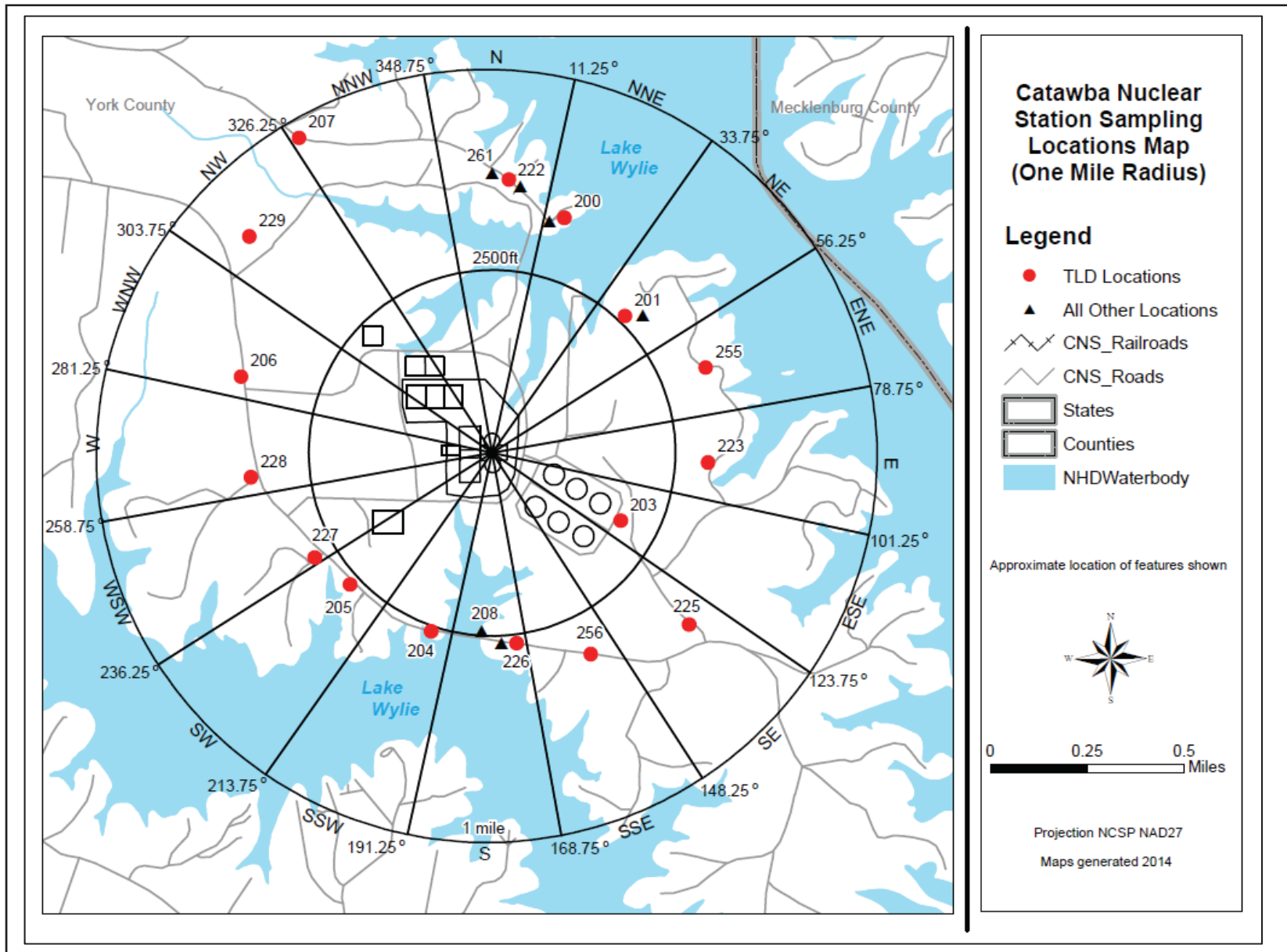


Figure 2.1-2

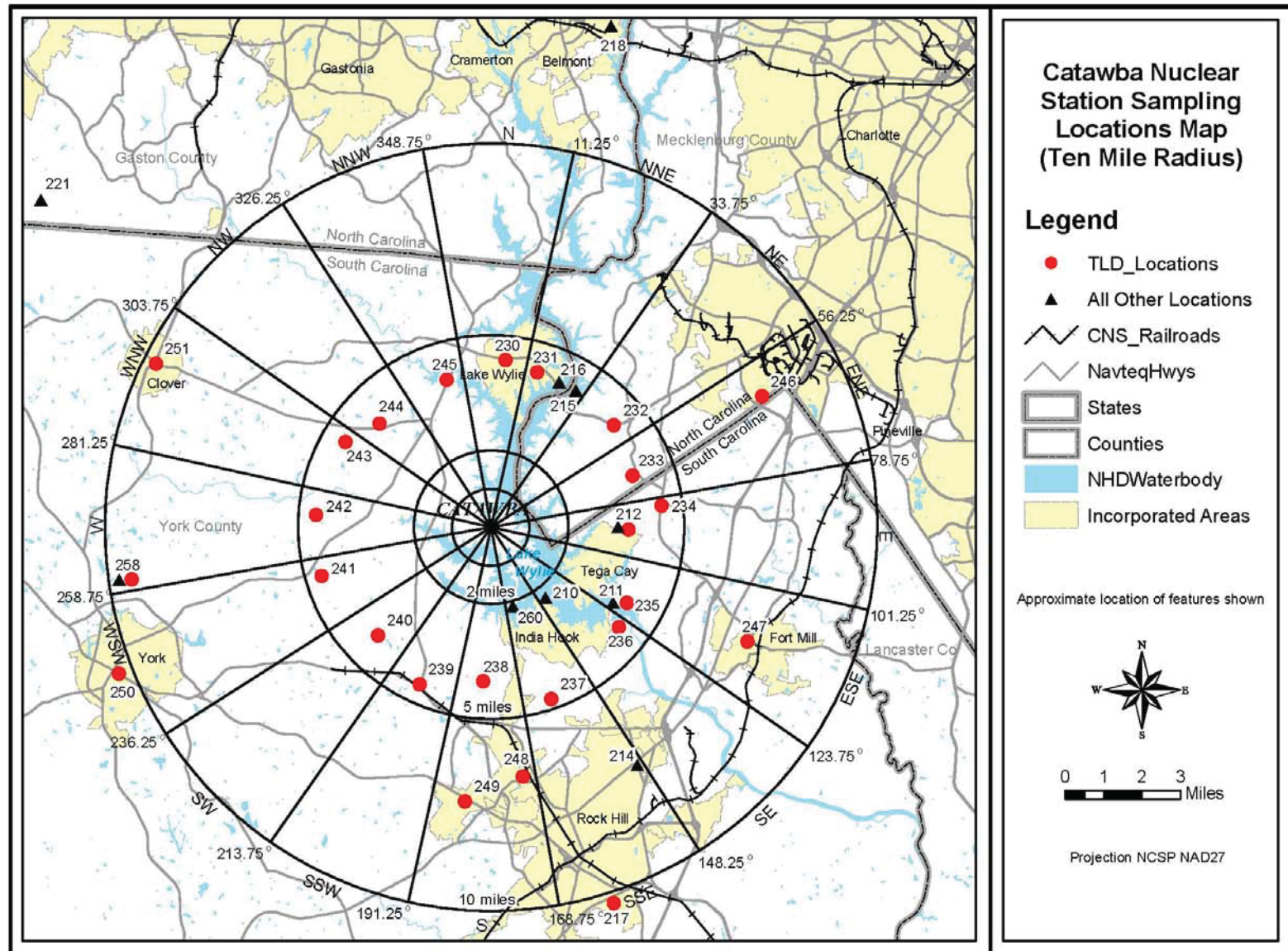


TABLE 2.1-A

CATAWBA RADIOLOGICAL MONITORING PROGRAM

SAMPLING LOCATIONS

Table 2.1-A Codes			
W	Weekly	SM	Semimonthly
BW	BiWeekly	Q	Quarterly
M	Monthly	SA	Semiannually
C	Control	I	Indicator

Site #	Measure Type	Location Description*	Air Rad. & Part.	Surface Water	Drinking Water	Shoreline Sediment	Food Products (a)	Fish	Milk	Broad Leaf Veg. (b)
200	I	Site Boundary (0.63 mi NNE)	W							M
201	I	Site Boundary (0.53 mi NE)	W							M
208	I	Discharge Canal (0.45 mi S)	W	M		SA		SA		
210	I	Ebenezer Access (2.31 mi SE)				SA				
211	I	Wylie Dam (4.06 mi ESE)		M						
212	I	Tega Cay (3.32 mi E)	W							
214	I	Rock Hill Water Supply (7.30 mi SSE)			M					
215	C	River Pointe - Hwy 49 (4.21 mi NNE)		M		SA				
216	C	Hwy 49 Bridge (4.19 mi NNE)						SA		
218	C	Belmont Water Supply (13.5 mi NNE)			M					
221	C	Dairy (14.5 mi NW)							SM	
222	I	Site Boundary (0.70 mi N)								M
226	I	Site Boundary (0.48 mi S)								M
258	C	Fairhope Road (9.84 mi W)	W							M
260	I	Irrigated Gardens (2.00 mi SSE)					M(a)			
261	I	Firing Range-Site Boundary (0.72 mi N)	W							

(a) During Harvest Season

(b) When Available

* GPS data reflect approximate accuracy to within 2-5 meters. GPS field measurements were taken as close as possible to the item of interest.

TABLE 2.1-B

**CATAWBA RADIOLOGICAL MONITORING PROGRAM
SAMPLING LOCATIONS (TLD SITES)**

Table 2.1-B Codes			
IR	Inner Ring	OR	Outer Ring
C	Control	SI	Special Interest

Site #	Measure Type	Location*	Distance (miles)	Sector	Site #	Measure Type	Location*	Distance (miles)	Sector
200	IR	SITE BOUNDARY	0.63	NNE	234	OR	WELLS FARGO BANK	4.50	E
201	IR	SITE BOUNDARY	0.53	NE	235	OR	LAKE WYLIE DAM	4.07	ESE
203	IR	SITE BOUNDARY	0.38	ESE	236	OR	SC WILDLIFE FEDERATION OFFICE	4.25	SE
204	IR	SITE BOUNDARY	0.48	SSW	237	OR	TWIN LAKES ROAD AND HOMESTEAD ROAD	4.75	SSE
205	IR	SITE BOUNDARY	0.25	SW	238	OR	PENNINGTON ROAD AND WEST OAK ROAD	4.02	S
206	IR	SITE BOUNDARY	0.67	WNW	239	OR	CARTER LUMBER COMPANY	4.49	SSW
207	IR	SITE BOUNDARY	0.95	NNW	240	OR	PARAHAM ROAD	4.07	SW
212	SI	TEGA CAY AIR SITE	3.32	E	241	OR	CAMPBELL ROAD	4.58	WSW
217	C	BLACKMON ROAD	10.3	SSE	242	OR	TRANSMISSION TOWER ON PARAHAM ROAD	4.56	W
222	IR	SITE BOUNDARY	0.71	N	243	OR	KINGSBURY ROAD	4.39	WNW
223	IR	SITE BOUNDARY	0.57	E	244	OR	BETHEL ELEMENTARY SCHOOL	4.02	NW
225	IR	SITE BOUNDARY	0.68	SE	245	OR	CROWDERS CREEK BOAT LANDING	4.01	NNW
226	IR	SITE BOUNDARY	0.48	S	246	SI	CAROWINDS GUARD HOUSE	7.87	ENE
227	IR	SITE BOUNDARY	0.52	WSW	247	C	FORT MILL	7.33	ESE
228	IR	SITE BOUNDARY	0.61	W	248	SI	PIEDMONT MEDICAL CENTER	6.54	S
229	IR	SITE BOUNDARY	0.84	NW	249	SI	YORK COUNTY OPERATIONS CENTER	7.17	S
230	OR	RIVER HILLS CHURCH	4.37	N	250	SI	YORK DUKE ENERGY OFFICE	10.4	WSW
231	OR	RIVER HILLS FRONT ENTRANCE	4.21	NNE	251	C	CLOVER	9.72	WNW
232	OR	PLEASANT HILL ROAD	4.18	NE	255	IR	SITE BOUNDARY	0.61	ENE
233	OR	ZOAR ROAD AND THOMAS DRIVE	3.95	ENE	256	IR	SITE BOUNDARY	0.58	SSE
					258	SI	FAIRHOPE ROAD	9.84	W

* GPS data reflect approximate accuracy to within 2-5 meters. GPS field measurements were taken as close as possible to the item of interest.

TABLE 2.2-A

**REPORTING LEVELS FOR RADIOACTIVITY
CONCENTRATIONS IN ENVIRONMENTAL SAMPLES**

Analysis	Water (pCi/liter)	Air Particulates or Gases (pCi/m ³)	Fish (pCi/kg-wet)	Milk (pCi/liter)	Food Products (pCi/kg-wet)
H-3	20,000 ^{(a),(b)}	---	---	---	---
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-Nb-95	400	---	---	---	---
I-131	2	0.9	---	3	100
Cs-134	30	10	1,000	60	1,000
Cs-137	50	20	2,000	70	2,000
Ba-La-140	200	---	---	300	---

- (a) If no drinking water pathway exists, a value of 30,000 pCi/liter may be used.
(b) H-3 Reporting level not applicable to surface water

TABLE 2.2-B

REMP ANALYSIS FREQUENCY

Sample Medium	Analysis Schedule	Gamma Isotopic	Tritium	Low Level I-131	Gross Beta	TLD
Air Radioiodine	Weekly	X	---	---	---	---
Air Particulate	Weekly	X	---	---	X	---
	Quarterly Composite	X	---	---	---	---
Direct Radiation	Quarterly	---	---	---	---	X
Surface Water	Monthly Composite	X	---	---	---	---
	Quarterly Composite	---	X	---	---	---
Drinking Water	Monthly Composite	X	---	(a)	X	---
	Quarterly Composite	---	X	---	---	---
Ground Water	Quarterly	X	X	---	---	---
Shoreline Sediment	Semiannually	X	---	---	---	---
Milk	Semimonthly	X	---	X	---	---
Fish	Semiannually	X	---	---	---	---
Broadleaf Vegetation	Monthly ^(b)	X	---	---	---	---
Food Products	Monthly ^(b)	X	---	---	---	---

- (a) Low-level I-131 analysis will be performed if the dose calculated for the consumption of drinking water is > 1 mrem per year. An LLD of 1 pCi/liter will be required for this analysis.
(b) When Available

TABLE 2.2-C**MAXIMUM VALUES FOR THE LOWER LIMIT OF DETECTION**

Analysis	Water (pCi/liter)	Air Particulates or Gases (pCi/m ³)	Fish (pCi/kg-wet)	Milk (pCi/liter)	Food Products (pCi/kg-wet)	Sediment (pCi/kg-dry)
Gross Beta	4	0.01	---	---	---	---
H-3	2000 ^(a)	---	---	---	---	---
Mn-54	15	---	130	---	---	---
Fe-59	30	---	260	---	---	---
Co-58, 60	15	---	130	---	---	---
Zn-65	30	---	260	---	---	---
Zr-Nb-95	15	---	---	---	---	---
I-131	1 ^(b)	0.07	---	1	60	
Cs-134	15	0.05	130	15	60	150
Cs-137	18	0.06	150	18	80	180
Ba-La-140	15	---	---	15	---	---

(a) If no drinking water pathway exists, a value of 3,000 pCi/liter may be used.

(b) If no drinking water pathway exists, the LLD of gamma isotopic analysis may be used.

3.0 INTERPRETATION OF RESULTS

Review of all 2015 REMP analysis results was performed to identify changes in environmental levels as a result of station operations. The following section depicts and explains the review of these results. Sample data for 2015 was compared to preoperational and historical data. Over the years of operation, analysis and collection changes have taken place that do not allow direct comparisons for some data collected from 1984 (preoperational) through 2015. Summary tables containing 2015 information required by Technical Specification Administrative Control 5.6.2 are located in Appendix B. REMP results for 2015 are located in Appendix E.

Evaluation for significant trends was performed for radionuclides that are listed as required within Selected Licensee Commitments 16.11-13. The radionuclides include: H-3, Mn-54, Fe-59, Co-58, Co-60, Zn-65, Zr-95, Nb-95, I-131, Cs-134, Cs-137, Ba-140 and La-140. Gross beta analysis results were trended for drinking water and gross beta trending for air particulates was initiated in 1996. Other radionuclides detected that are the result of plant operation, but not required for reporting, are trended.

A comparison of annual mean concentrations of effluent-based detected radionuclides to historical results provided trending bases. Frequency of detection and concentrations related to SLC reporting levels (Table 2.2-A) were used as criteria for trending conclusions. All 2015 maximum percentages of reporting levels attributed to CNS operation were well below the 100% action level.

Selected Licensee Commitment section 16.11-13 addresses actions to be taken if radionuclides other than those required are detected in samples collected. The occurrences of these radionuclides are the result of CNS liquid effluents which contained the radionuclides.

During 1984-1986, all net activity results (sample minus background), both positive and negative were included in calculation of sample mean. A change in the EnRad gamma spectroscopy system on September 1, 1987, decreased the number of measurements yielding detectable low-level activity for indicator and control location samples. It was thought that the method used by the previous system was vulnerable to false-positive results.

All 2015 sample analysis results were reviewed to detect and identify any significant trends. Tables and graphs are used throughout this section to display data from effluent-based radionuclides identified since the system change in late 1987. All negative concentration values were replaced with zero for calculation purposes. Any zero concentrations used in tables or graphs represent activity measurements less than detectable levels.

Review of all 2015 data presented in this section supports the conclusion that there were no significant changes in environmental sample radionuclide concentrations of samples collected and analyzed from CNS site and surrounding areas that were attributable to plant operations.

3.1 AIRBORNE RADIOIODINE AND PARTICULATES

In 2015, 312 radioiodine and particulate samples were analyzed, 260 from five indicator locations and 52 at the control location. Particulate samples were analyzed weekly for gross beta. A quarterly gamma analysis was performed on the quarterly filter composite (by location). Radioiodine samples received a weekly gamma analysis.

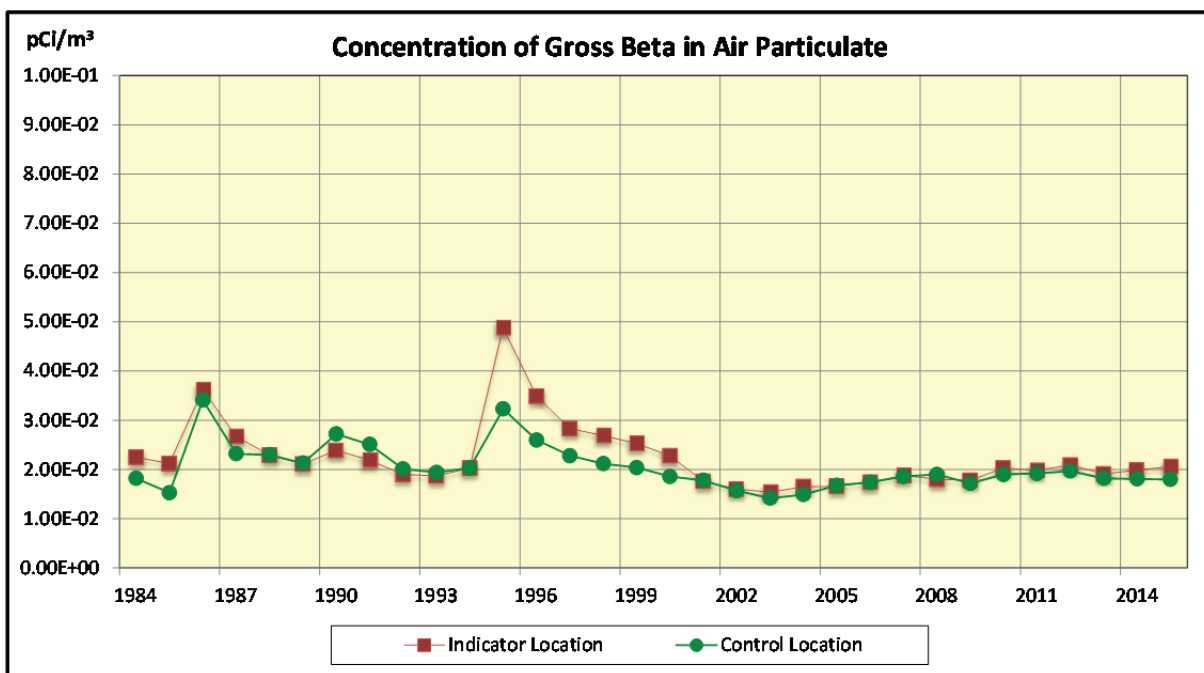
Figure 3.1 shows individual sample gross beta results for the indicator location with highest annual mean and the control location samples during 2015. The two sample locations' results are similar in concentration and have varied negligibly since preoperational periods.

There were no detectable gamma emitters identified for particulate filters analyzed during 2015. Table 3.1-A shows the highest indicator annual mean and control location annual mean for gross beta in air particulate.

There was no detectable I-131 in air radioiodine samples analyzed in 2015. Table 3.1-B shows the highest indicator annual mean and control location annual mean for I-131 since 1984 (preoperational period). The table shows similar concentrations for both the indicator and control locations and the activities decreasing from early in the operational history of the plant. No I-131 activity due to CNS plant operations has been detected since 1987.

K-40 and Be-7 that occur naturally were routinely detected in charcoal cartridges collected during the year.

Figure 3.1



There is no reporting level for gross beta in air particulate

Table 3.1-A Mean Concentration of Gross Beta in Air Particulate

Year	Indicator Location (pCi/m ³)	Control Location (pCi/m ³)
1984	2.25E-2	1.82E-2
1985	2.12E-2	1.53E-2
1986	3.62E-2	3.41E-2
1987	2.67E-2	2.32E-2
1988	2.29E-2	2.30E-2
1989	2.11E-2	2.13E-2
1990	2.39E-2	2.72E-2
1991	2.19E-2	2.51E-2
1992	1.90E-2	2.01E-2
1993	1.87E-2	1.94E-2
1994	2.03E-2	2.03E-2
1995	4.88E-2	3.23E-2
1996	3.49E-2	2.60E-2
1997	2.83E-2	2.28E-2
1998	2.69E-2	2.12E-2
1999	2.53E-2	2.04E-2
2000	2.28E-2	1.86E-2
2001	1.76E-2	1.78E-2
2002	1.60E-2	1.57E-2
2003	1.54E-2	1.42E-2
2004	1.65E-2	1.49E-2
2005	1.66E-2	1.68E-2
2006	1.74E-2	1.74E-2
2007	1.88E-2	1.86E-2
2008	1.80E-2	1.90E-2
2009	1.78E-2	1.72E-2
2010	2.03E-2	1.90E-2
2011	1.98E-2	1.92E-2
2012	2.09E-2	1.97E-2
2013	1.92E-2	1.82E-2
2014	1.99E-2	1.81E-2
Average (2005 - 2014)	1.89E-2	1.83E-2
2015	2.06E-2	1.80E-2

Table 3.1-B Mean Concentration of Air Radioiodine (I-131)

Year	Indicator Location (pCi/m³)	Control Location (pCi/m³)
1984	1.30E-3	1.46E-2
1985	4.75E-3	2.38E-2
1986	1.43E-2	1.02E-2
1987	1.38E-2	0.00E0
1988	0.00E0	0.00E0
1989	0.00E0	0.00E0
1990	0.00E0	0.00E0
1991	0.00E0	0.00E0
1992	0.00E0	0.00E0
1993	0.00E0	0.00E0
1994	0.00E0	0.00E0
1995	0.00E0	0.00E0
1996	0.00E0	0.00E0
1997	0.00E0	0.00E0
1998	0.00E0	0.00E0
1999	0.00E0	0.00E0
2000	0.00E0	0.00E0
2001	0.00E0	0.00E0
2002	0.00E0	0.00E0
2003	0.00E0	0.00E0
2004	0.00E0	0.00E0
2005	0.00E0	0.00E0
2006	0.00E0	0.00E0
2007	0.00E0	0.00E0
2008	0.00E0	0.00E0
2009	0.00E0	0.00E0
2010	0.00E0	0.00E0
2011 ⁽¹⁾	5.53E-2	5.65E-2
2012	0.00E0	0.00E0
2013	0.00E0	0.00E0
2014 ⁽²⁾	0.00E0	0.00E0
2015	0.00E0	0.00E0

0.00E0 indicates no detectable measurements

(1) 2011 concentration affected by Fukushima Daiichi

(2) 2014 – Gamma spectroscopy system change

3.2 DRINKING WATER

Gross beta and gamma spectroscopy were performed on 26 drinking water samples. The samples were composited to create 8 quarterly samples that were analyzed for tritium. One indicator location was sampled, along with one control location.

No gamma emitting radionuclides attributable to plant operations were identified in 2015 drinking water samples. There have been no gamma emitting radionuclides identified in drinking water samples since 1988.

Table 3.2 shows highest annual mean gross beta concentrations for the indicator location and control location since preoperation. The indicator location (downstream of the plant effluent release point) average concentration was 2.48 pCi/l in 2015 and the control location concentration was 2.07 pCi/l. The table shows that current gross beta levels are not statistically different from preoperational concentrations.

Tritium was detected in the four indicator samples and in three of the four control samples during 2015. The mean indicator tritium concentration for 2015 was 570 pCi/l, 2.85% of reporting level. The mean control tritium concentration for 2015 was also 570 pCi/l, 2.85% of reporting level. Figure 3.2 and Table 3.2 display the highest indicator and control location annual mean concentrations for tritium since 1984.

The concentration of tritium in drinking water is affected by releases from the Catawba plant and the McGuire Nuclear Station, located approximately 40 miles upstream of the Catawba plant on the Catawba River.

The dose for consumption of water was less than one mrem per year, historically and for 2015; therefore low-level iodine analysis is not required.

Figure 3.2

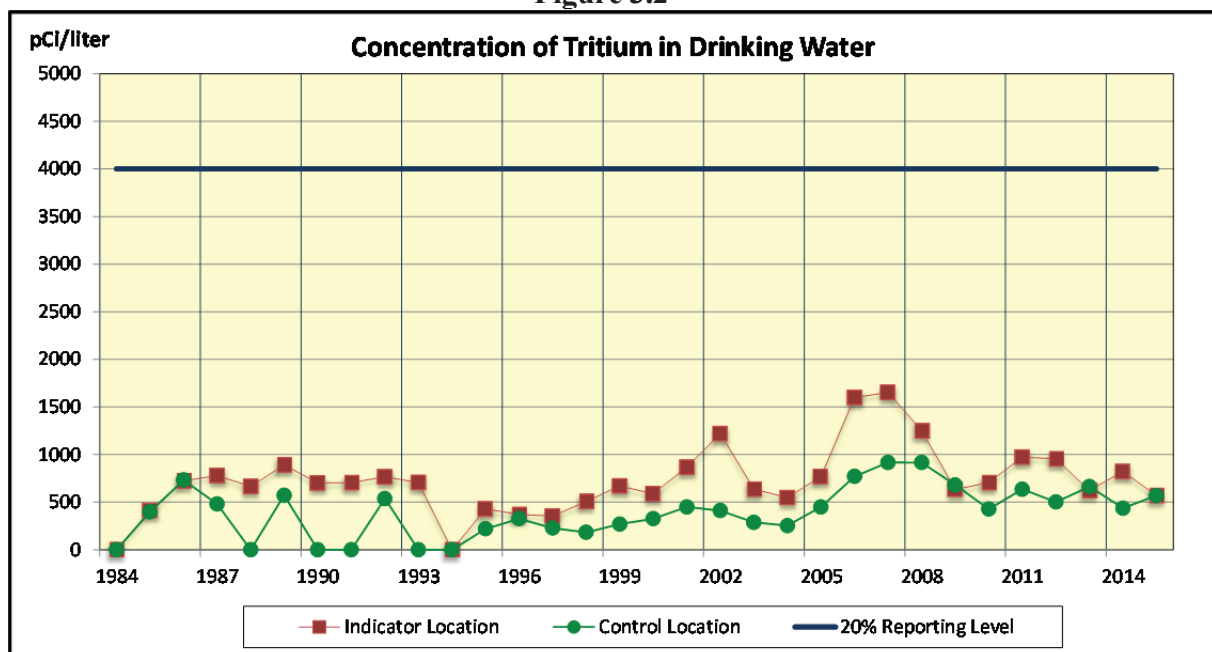


Table 3.2 Mean Concentration of Radionuclides in Drinking Water

YEAR	Gross Beta (pCi/l)		Tritium (pCi/l)	
	Indicator Location	Control Location	Indicator Location	Control Location
1984	4.72	1.83	3.10E-2	3.10E-2
1985	2.70	2.24	4.13E2	4.00E2
1986	3.11	2.26	7.23E2	7.33E2
1987	3.10	2.40	7.80E2	4.80E2
1988	3.60	2.60	6.64E2	0.00E0
1989	3.60	2.90	8.91E2	5.72E2
1990	4.50	3.20	7.03E2	0.00E0
1991	3.70	2.20	7.04E2	0.00E0
1992	3.20	2.40	7.65E2	5.38E2
1993	3.50	2.50	7.06E2	0.00E0
1994	3.30	2.70	0.00E0	0.00E0
1995	4.80	4.50	4.28E2	2.21E2
1996	3.08	3.14	3.71E2	3.27E2
1997	3.74	3.15	3.54E2	2.28E2
1998	2.51	2.44	5.07E2	1.83E2
1999	3.55	2.48	6.71E2	2.70E2
2000	3.04	2.27	5.87E2	3.26E2
2001	3.49	2.30	8.66E2	4.50E2
2002	3.44	2.36	1.22E3	4.11E2
2003	2.27	2.02	6.36E2	2.88E2
2004	1.88	1.69	5.47E2	2.54E2
2005	2.05	1.84	7.69E2	4.50E2
2006	2.30	2.17	1.59E3	7.70E2
2007	2.34	2.21	1.65E3	9.18E2
2008	2.81	2.16	1.25E3	9.16E2
2009	2.07	1.99	6.34E2	6.81E2
2010	1.84	1.80	7.05E2	4.27E2
2011	2.01	1.71	9.73E2	6.36E2
2012	1.89	1.84	9.54E2	5.02E2
2013	1.79	1.59	6.22E2	6.64E2
2014	1.96	1.79	8.21E2	4.37E2
2015	2.48	2.07	5.70E2	5.70E2

0.00E0 indicates detectable measurements

1984 - 1986 mean based on all net activity

3.3 SURFACE WATER

A total of 39 monthly surface water samples were analyzed for gamma emitting radionuclides. The samples were composited to create 12 quarterly samples for tritium analysis. Two indicator locations and one control location were sampled. One indicator location (208) is located near the liquid effluent discharge point.

All 2015 indicator location samples contained tritium with an average concentration of 2,570 pCi/l. Indicator Location 208 (Discharge Canal) showed a range of activities from 3,430 to 6,160 pCi/l which had the highest mean concentration of 4,608 pCi/l. Tritium was detected in all four control samples during 2015 with an average concentration of 414 pCi/l.

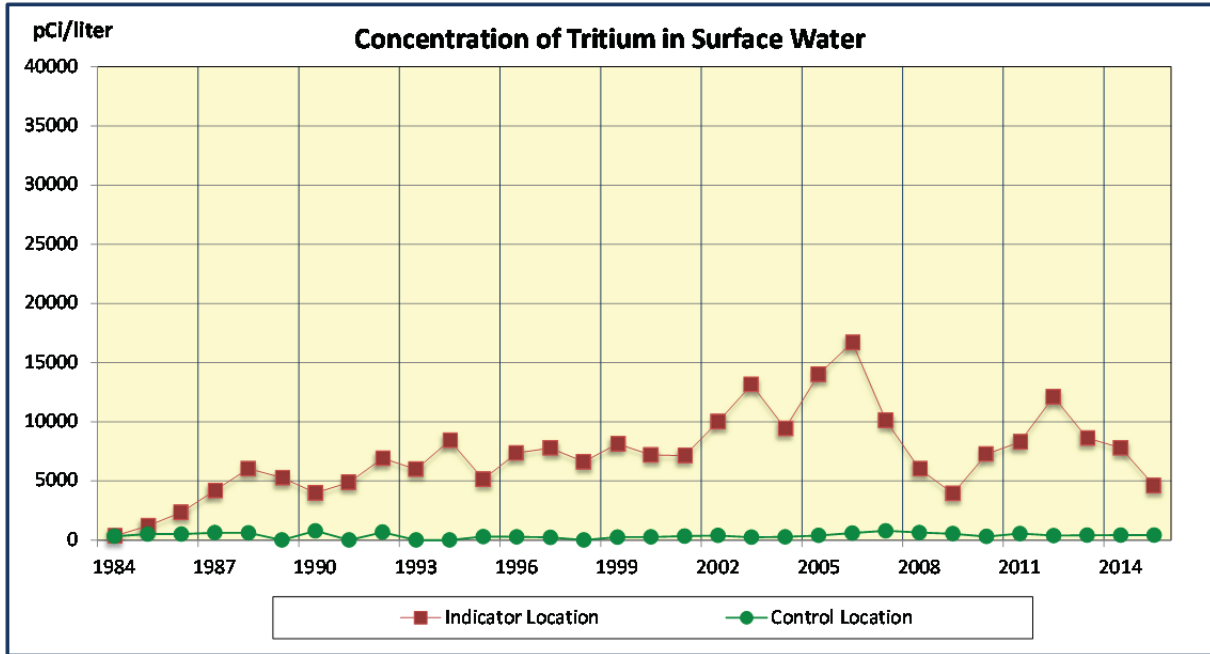
Gamma spectroscopy analysis detected Co-58 and Co-60 in one indicator surface water sample during 2015 (NCR # 01934713). Co-58 was detected at location 208 with a mean concentration of 11.5 pCi/l which represents 1.15% of the reporting level and Co-60 was detected at location 208 with a mean concentration of 1.07 pCi/l which represents 0.36% of the reporting level. Table 3.3 summarizes the indicator annual means of radionuclides detected since 1984. Visual inspection of the tabular data did not reveal any increasing trends.

During the third quarter of 2014, Catawba experienced higher than normal levels of mixed fission and activation products in the liquid radioactive waste processing system due to process influent stream chemical changes and larger than normal volumes of non-contaminated water introduced into the system. As system tanks reached storage capacity, liquid radioactive waste was discharged with higher than normal concentrations of mixed fission and activation products. Other radionuclides, such as tritium, were not impacted by this operational occurrence (NCR # 01897053).

Figure 3.3 displays the highest indicator and control annual means for tritium since 1984. Table 3.3 lists the highest indicator annual means.

The concentration of tritium in surface water is affected by releases from the Catawba plant and the McGuire Nuclear Station, located approximately 40 miles upstream of the Catawba plant on the Catawba River.

Figure 3.3



There is no reporting level for tritium in surface water, however, if no drinking water pathway exists, a value of 30,000 pCi/l may be used. A drinking water pathway exists for Catawba Nuclear Station, so this limit does not apply for surface water. See section 3.2 for drinking water results.

Table 3.3 Mean Concentrations of Radionuclides in Surface Water (pCi/l)

YEAR	Co-58	Co-60	Nb-95	Cs-137	H-3 Indicator	H-3 Control
1984	4.59E-1	5.71E-1	6.48E-1	9.08E-1	3.35E2	3.18E2
1985	3.46E0	4.83E-2	2.70E0	8.19E-1	1.19E3	5.05E2
1986	3.10E-1	-4.12E-2	2.05E0	4.85E-1	2.34E3	5.05E2
1987 ⁽¹⁾	0.00E0	3.10E0	4.30E0	9.90E0	4.17E3	6.20E2
1988	9.20E0	0.00E0	0.00E0	0.00E0	6.03E3	6.07E2
1989	0.00E0	0.00E0	0.00E0	0.00E0	5.27E3	0.00E0
1990	6.50E0	0.00E0	0.00E0	0.00E0	3.98E3	7.73E2
1991	0.00E0	0.00E0	0.00E0	0.00E0	4.87E3	0.00E0
1992	0.00E0	0.00E0	0.00E0	0.00E0	6.91E3	6.64E2
1993	4.70E0	1.80E0	0.00E0	0.00E0	5.98E3	0.00E0
1994	0.00E0	0.00E0	0.00E0	0.00E0	8.42E3	0.00E0
1995	0.00E0	0.00E0	0.00E0	0.00E0	5.13E3	2.89E2
1996	0.00E0	0.00E0	0.00E0	0.00E0	7.36E3	2.61E2
1997	0.00E0	0.00E0	0.00E0	0.00E0	7.77E3	2.20E2
1998	0.00E0	0.00E0	0.00E0	0.00E0	6.61E3	0.00E0
1999	0.00E0	0.00E0	0.00E0	0.00E0	8.13E3	2.41E2
2000	0.00E0	0.00E0	0.00E0	0.00E0	7.19E3	2.56E2
2001	0.00E0	0.00E0	0.00E0	0.00E0	7.13E3	3.28E2
2002	0.00E0	0.00E0	0.00E0	0.00E0	1.00E4	3.80E2
2003	0.00E0	0.00E0	0.00E0	0.00E0	1.31E4	2.37E2
2004	0.00E0	0.00E0	0.00E0	0.00E0	9.43E3	2.60E2
2005	0.00E0	0.00E0	0.00E0	0.00E0	1.40E4	3.78E2
2006	0.00E0	0.00E0	0.00E0	0.00E0	1.67E4	5.83E2
2007	0.00E0	0.00E0	0.00E0	0.00E0	1.01E4	7.82E2
2008	6.80E0	1.16E1	0.00E0	0.00E0	6.02E3	6.31E2
2009	9.40E0	1.06E1	0.00E0	0.00E0	3.93E3	5.29E2
2010	0.00E0	0.00E0	0.00E0	0.00E0	7.26E3	2.94E2
2011	8.75E0	1.96E1	0.00E0	0.00E0	8.29E3	5.41E2
2012	0.00E0	0.00E0	0.00E0	0.00E0	1.21E4	3.71E2
2013	0.00E0	0.00E0	0.00E0	0.00E0	8.62E3	4.02E2
2014 ⁽²⁾	7.23E0	4.69E0	0.00E0	0.00E0	7.79E3	4.18E2
2015	1.15E1	1.07E0	0.00E0	0.00E0	4.61E3	4.14E2

0.00E0 indicates no detectable measurements

1984 - 1986 mean based on all net activity

(1) 1987 – Gamma spectroscopy system change

(2) 2014 – Gamma spectroscopy system change

3.4 MILK

A total of 26 milk samples was analyzed by gamma spectroscopy and low level iodine during 2015. There was one control location sampled. No indicator dairies were identified by the 2015 land use census.

There were no gamma emitting radionuclides attributable to plant operations identified in milk samples in 2015. Cs-137 is the only radionuclide, other than naturally occurring, reported in milk samples since 1996. Cs-137 in milk is not unusual. It is a constituent of nuclear weapons test fallout and nuclear plant accidents and has been observed periodically in samples from indicator and control locations since the preoperational period. Airborne Cs-137 has not been released from the plant since 1992.

Table 3.4 lists highest indicator location annual mean and control location annual mean for Cs-137 since the preoperational period. K-40 is a naturally occurring radionuclide observed in milk samples in 2015.

Table 3.4 Mean Concentration of Radionuclides in Milk

YEAR	Cs-137 Indicator (pCi/l)	Cs-137 Control (pCi/l)
1984	2.95E0	2.98E0
1985	2.11E0	2.12E0
1986	3.76E0	4.54E0
1987 ⁽¹⁾	5.00E0	5.50E0
1988	3.20E0	3.80E0
1989	0.00E0	0.00E0
1990	8.00E0	6.70E0
1991	0.00E0	0.00E0
1992	3.40E0	5.00E0
1993	5.00E0	0.00E0
1994	2.80E0	0.00E0
1995	8.60E0	0.00E0
1996	6.05E0	0.00E0
1997	0.00E0	0.00E0
1998	0.00E0	0.00E0
1999	0.00E0	0.00E0
2000	0.00E0	0.00E0
2001	0.00E0	0.00E0
2002	0.00E0	0.00E0
2003	0.00E0	0.00E0
2004	No Indicator Location	0.00E0
2005	No Indicator Location	0.00E0
2006	No Indicator Location	0.00E0
2007	No Indicator Location	0.00E0
2008	No Indicator Location	0.00E0
2009	No Indicator Location	0.00E0
2010	No Indicator Location	0.00E0
2011	No Indicator Location	0.00E0
2012	No Indicator Location	0.00E0
2013	No Indicator Location	0.00E0
2014 ⁽²⁾	No Indicator Location	0.00E0
2015	No Indicator Location	0.00E0

0.00E0 indicates no detectable measurements

1984 - 1986 mean based on all net activity

(1) 1987 – Gamma spectroscopy system change

(2) 2014 – Gamma spectroscopy system change

3.5 BROADLEAF VEGETATION

Gamma spectroscopy was performed on 60 broadleaf vegetation samples during 2015. Four indicator locations and one control location were sampled.

Two of the forty-eight samples collected at indicator locations contained detectable Cs-137 activity. The two indicator samples with detectable Cs-137 were collected at location 201. The highest Cs-137 concentration detected at location 201 was 48.3 pCi/kg which is 2.42% of the reporting level. Cs-137 was not detected in the control location samples.

Cs-137 is the only gamma emitting radionuclide, other than naturally occurring, reported in vegetation samples. It is not unusual for Cs-137 to be present in vegetation. It is a constituent of nuclear weapons test fallout and nuclear plant accidents and has been observed in samples from indicator and control locations since the preoperational period. Table 3.6 lists the highest indicator location annual mean and control location annual mean for Cs-137 since early in the station's operational history. Visual inspection of the tabular data did not reveal any increasing trends.

Figure 3.5 shows indicator and control annual means for Cs-137 in vegetation since 1984. Values shown from 1984 to 2015 show a stable trend for Cs-137 in vegetation. No airborne Cs-137 has been released from the plant since 1992.

K-40 and Be-7 are naturally occurring radionuclides that were observed in broadleaf vegetation samples in 2015.

Figure 3.5

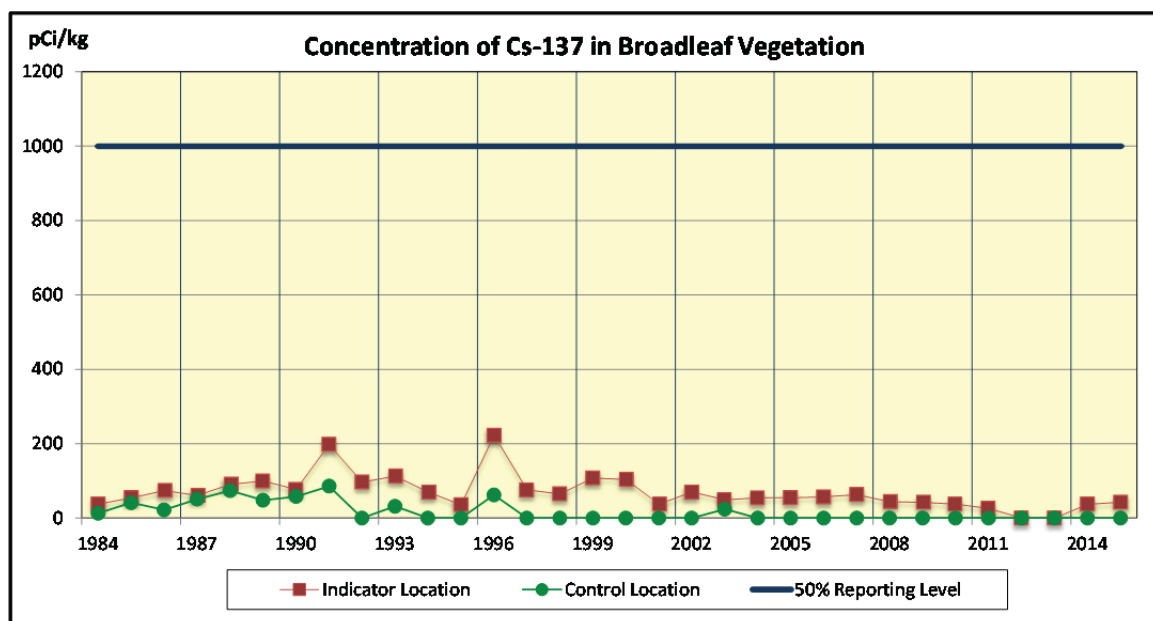


Table 3.5 Mean Concentration of Radionuclides in Broadleaf Vegetation

YEAR	Cs-137 Indicator (pCi/kg)	Cs-137 Control (pCi/kg)
1984	3.76E1	1.30E1
1985	5.48E1	4.16E1
1986	7.42E1	2.22E1
1987 ⁽¹⁾	6.10E1	5.10E1
1988	9.10E1	7.40E1
1989	1.00E2	4.80E1
1990	7.70E1	5.80E1
1991	1.98E2	8.60E1
1992	9.70E1	0.00E0
1993	1.13E2	3.20E1
1994	7.00E1	0.00E0
1995	3.60E1	0.00E0
1996	2.23E2	6.22E1
1997	7.57E1	0.00E0
1998	6.53E1	0.00E0
1999	1.08E2	0.00E0
2000	1.04E2	0.00E0
2001	3.76E1	0.00E0
2002	7.02E1	0.00E0
2003	4.96E1	2.40E1
2004	5.45E1	0.00E0
2005	5.48E1	0.00E0
2006	5.79E1	0.00E0
2007	6.31E1	0.00E0
2008	4.44E1	0.00E0
2009	4.25E1	0.00E0
2010	3.77E1	0.00E0
2011	2.62E1	0.00E0
2012	0.00E0	0.00E0
2013	0.00E0	0.00E0
2014 ⁽²⁾	3.72E1	0.00E0
2015	4.29E1	0.00E0

0.00E0 indicates no detectable measurements

1984 - 1986 mean based on all net activity

2011 concentration affected by Fukushima Daiichi

(1) 1987 – Gamma spectroscopy system change

(2) 2014 – Gamma spectroscopy system change

3.6 FOOD PRODUCTS

Collection of food product samples (crops) from an irrigated garden began in 1989. The irrigated garden is located on Lake Wylie downstream from CNS, Location 260. During the 2015 growing season eleven samples were collected and analyzed for gamma radionuclides. There were no gamma emitting radionuclides attributable to plant operations identified in food product samples in 2015. There is no control location for this media type.

Table 3.7 shows Cs-137 indicator location highest annual mean concentrations since 1989.

K-40 and Be-7 are naturally occurring radionuclides that were observed in food product samples in 2015.

Table 3.6 Mean Concentration of Radionuclides in Food Products

YEAR	Cs-137 Indicator (pCi/kg)
1989	0.00E0
1990	0.00E0
1991	0.00E0
1992	0.00E0
1993	2.50E1
1994	0.00E0
1995	0.00E0
1996	0.00E0
1997	0.00E0
1998	0.00E0
1999	0.00E0
2000	0.00E0
2001	0.00E0
2002	0.00E0
2003	0.00E0
2004	0.00E0
2005	0.00E0
2006	0.00E0
2007	0.00E0
2008	0.00E0
2009	0.00E0
2010	0.00E0
2011	0.00E0
2012	0.00E0
2013	0.00E0
2014 ⁽¹⁾	0.00E0
2015	0.00E0

0.00E0 indicates no detectable measurements

There is no control location for Food Products.

(1) 2014 – Gamma spectroscopy system change

3.7 FISH

Gamma spectroscopy was performed on 12 fish samples collected during 2015. One downstream indicator location and one control location were sampled.

Co-58, Co-60, and Cs-137 are normally the predominant radionuclides identified in fish samples. There were no gamma emitting radionuclides attributable to plant operations identified in any fish samples in 2015.

Figures 3.7-1, 3.7-2, and 3.7-3 are graphs displaying annual mean concentrations for Co-58, Co-60, and Cs-137. Table 3.7 depicts the highest indicator location annual mean for radionuclides detected. In addition, radionuclides identified in fish samples since 1988 have been included in the table. Overall, radionuclides have not shown a significant trend or accumulation.

K-40 was observed in some fish samples collected during 2015.

Figure 3.7-1

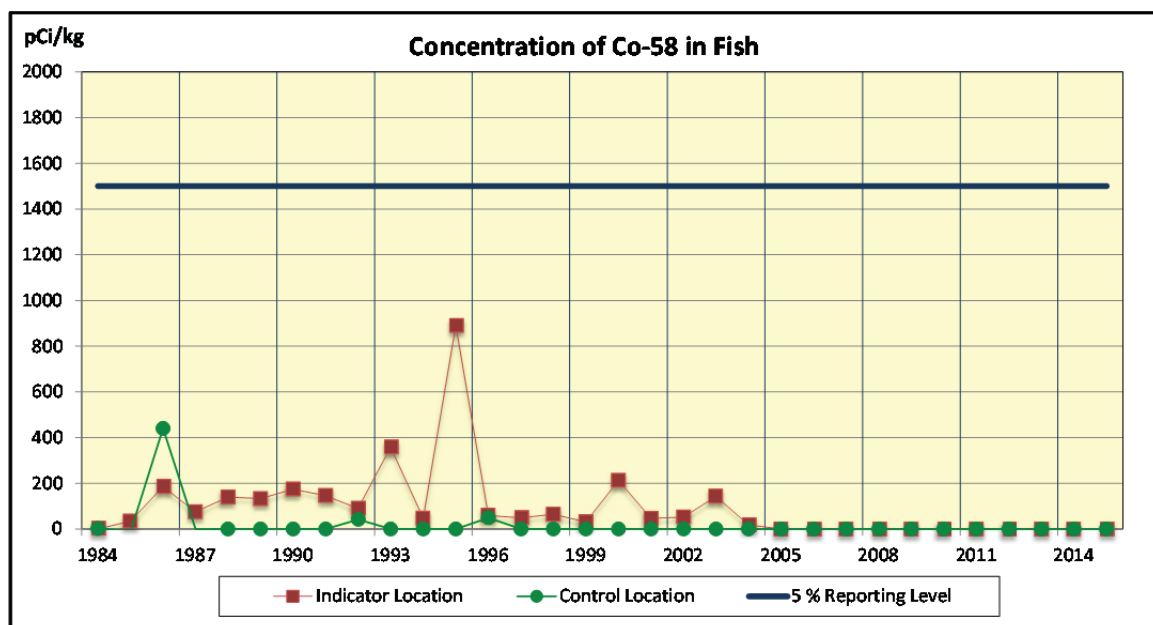


Figure 3.7-2

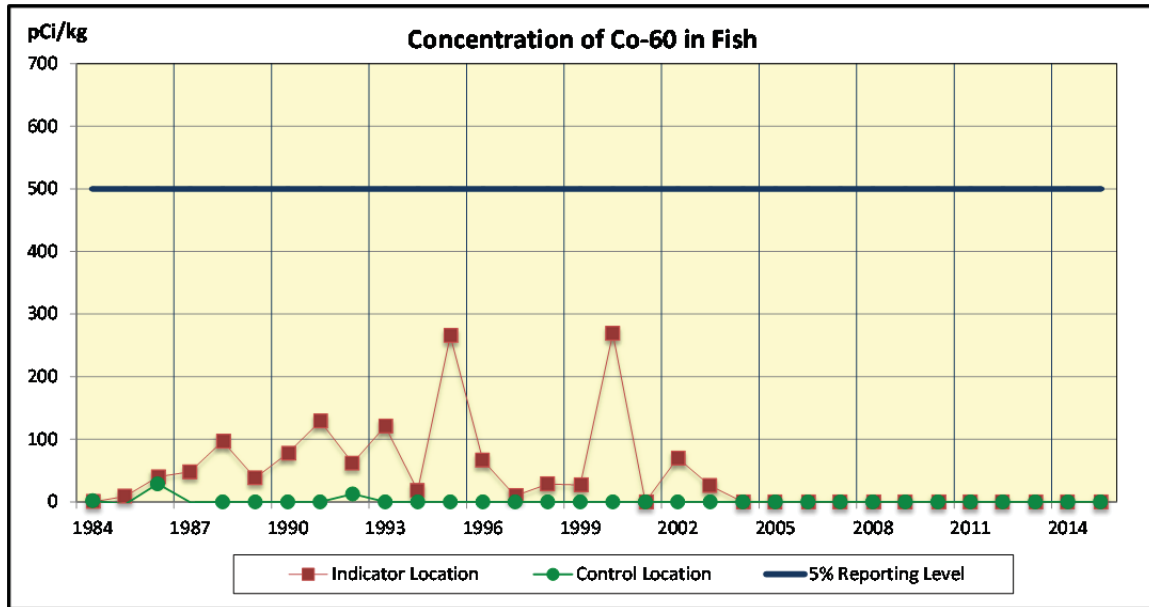


Figure 3.7-3

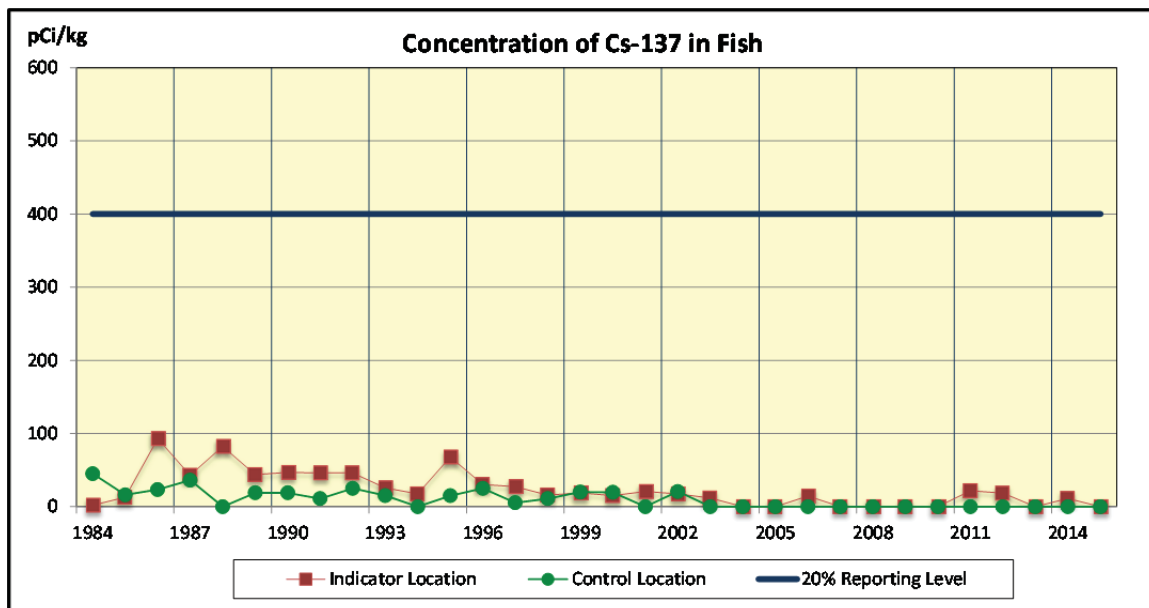


Table 3.7 Mean Concentrations of Radionuclides in Fish (pCi/kg)

Year	Mn-54	Co-58	Co-60	Cs-134	Cs-137	Nb-95	Fe-59	Sb-122	Sb-125
1984	3.07E0	3.00E0	6.11E-1	-5.32E0	1.83E0	0.00E0	0.00E0	0.00E0	0.00E0
1985	7.68E-1	3.40E1	9.11E0	3.22E0	1.28E1	5.07E0	0.00E0	0.00E0	0.00E0
1986	2.01E1	1.86E2	4.01E1	3.51E1	9.29E1	0.00E0	7.30E0	0.00E0	0.00E0
1987 ⁽¹⁾	7.24E0	7.57E1	4.81E1	3.83E0	4.27E1	5.40E0	0.00E0	0.00E0	0.00E0
1988	2.85E1	1.40E2	9.70E1	1.67E1	8.24E1	0.00E0	0.00E0	0.00E0	0.00E0
1989	8.28E0	1.33E2	3.83E1	1.47E1	4.37E1	8.58E-1	0.00E0	0.00E0	0.00E0
1990	2.51E1	1.75E2	7.77E1	1.32E1	4.66E1	3.33E0	0.00E0	7.00E0	9.25E0
1991	3.15E1	1.46E2	1.29E2	1.03E1	4.60E1	7.90E-1	2.30E0	0.00E0	7.45E0
1992	1.34E1	9.02E1	6.20E1	1.27E1	4.61E1	0.00E0	0.00E0	0.00E0	0.00E0
1993	2.14E1	3.58E2	1.21E2	2.73E0	2.56E1	0.00E0	0.00E0	0.00E0	0.00E0
1994	1.91E0	4.75E1	1.81E1	0.00E0	1.75E1	0.00E0	0.00E0	0.00E0	1.45E1
1995	5.65E1	8.90E2	2.66E2	0.00E0	6.77E1	1.38E1	0.00E0	0.00E0	0.00E0
1996	0.00E0	5.95E1	6.68E1	0.00E0	3.02E1	0.00E0	0.00E0	0.00E0	0.00E0
1997	0.00E0	4.93E1	9.88E0	0.00E0	2.74E1	0.00E0	0.00E0	0.00E0	0.00E0
1998	0.00E0	6.44E1	2.86E1	0.00E0	1.58E1	0.00E0	0.00E0	0.00E0	0.00E0
1999	0.00E0	3.12E1	2.71E1	0.00E0	1.87E1	0.00E0	0.00E0	0.00E0	0.00E0
2000	0.00E0	2.13E2	2.69E2	0.00E0	1.52E1	0.00E0	0.00E0	0.00E0	0.00E0
2001	0.00E0	4.66E1	0.00E0	0.00E0	2.08E1	0.00E0	0.00E0	0.00E0	0.00E0
2002	0.00E0	5.23E1	7.00E1	0.00E0	1.73E1	0.00E0	0.00E0	0.00E0	0.00E0
2003	0.00E0	1.43E2	2.61E1	0.00E0	1.19E1	0.00E0	0.00E0	0.00E0	0.00E0
2004	4.92E1	1.81E1	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0
2005	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0
2006	0.00E0	0.00E0	0.00E0	0.00E0	1.44E1	0.00E0	0.00E0	0.00E0	0.00E0
2007	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0
2008	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0
2009	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0
2010	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0
2011	0.00E0	0.00E0	0.00E0	0.00E0	2.16E1	0.00E0	0.00E0	0.00E0	0.00E0
2012	0.00E0	0.00E0	0.00E0	0.00E0	1.84E1	0.00E0	0.00E0	0.00E0	0.00E0
2013	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0
2014 ⁽²⁾	0.00E0	0.00E0	0.00E0	0.00E0	1.10E1	0.00E0	0.00E0	0.00E0	0.00E0
2015	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0

0.00E0 indicates no detectable measurements

1984 - 1986 mean based on all net activity

(1) 1987 – Gamma spectroscopy system change

(2) 2014 – Gamma spectroscopy system change

3.8 SHORELINE SEDIMENT

During 2015, a total of 6 shoreline sediment samples was analyzed, four from two indicator locations and two from the control location.

Co-58, Co-60, and Cs-137 are normally the predominant radionuclides identified in shoreline sediment samples. Co-58, Co-60, and Cs-137 were identified in indicator samples collected from location 208 (Discharge Canal), which is the closest location to the plant's liquid effluent release point. Co-58 was identified with an annual mean concentration of 67.3 pCi/kg, Co-60 was identified with an annual mean concentration of 161 pCi/kg, and Cs-137 was identified with an annual mean concentration of 8.75 pCi/kg. There were no gamma emitting radionuclides attributable to plant operations identified in samples from the other indicator location (210). Cs-137 was identified in one control location sample.

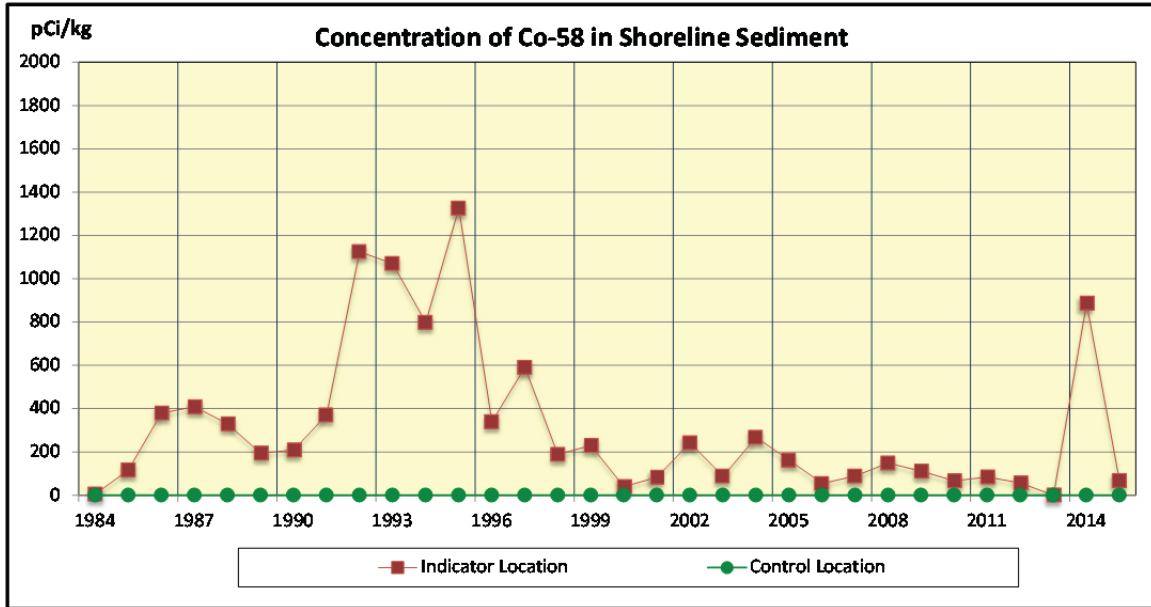
During the third quarter of 2014, Catawba experienced higher than normal levels of mixed fission and activation products in the liquid radioactive waste processing system due to process influent stream chemical changes and larger than normal volumes of non-contaminated water introduced into the system. As system tanks reached storage capacity, liquid radioactive waste was discharged with higher than normal concentrations of mixed fission and activation products. Other radionuclides, such as tritium, were not impacted by this operational occurrence (NCR # 01897053).

Table 3.9 lists highest indicator location annual mean since 1984. Included in the table are radionuclides that have been identified in shoreline sediment samples since 1988.

Figures 3.8-1, 3.8-2, and 3.8-3 are graphs displaying annual mean concentrations for Co-58, Co-60, and Cs-137.

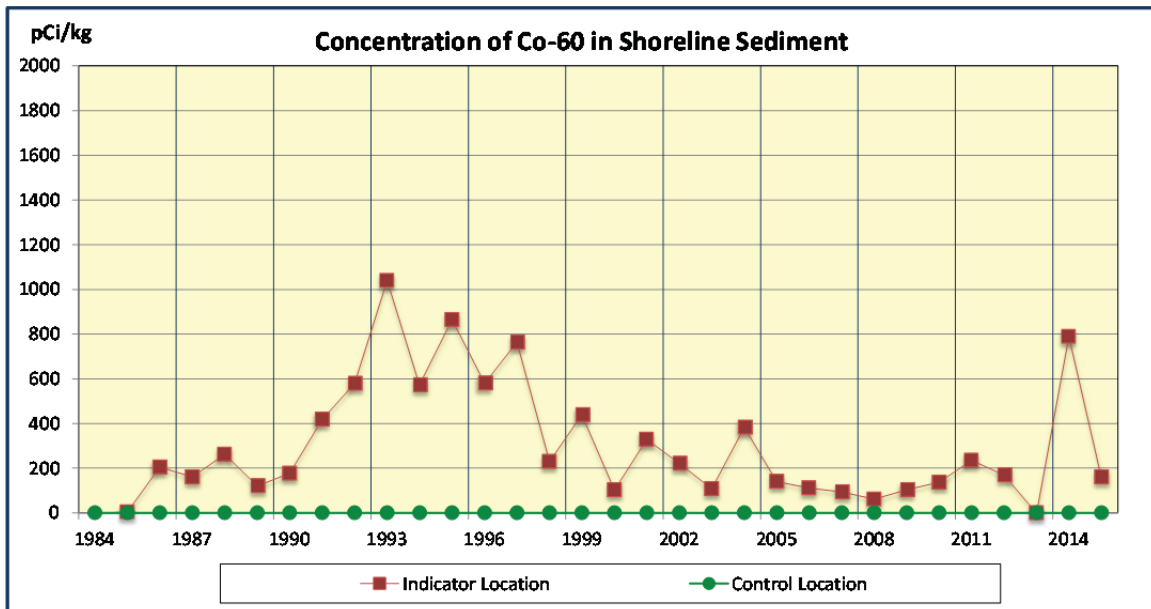
Naturally occurring K-40 was observed in some shoreline sediment samples collected during 2015.

Figure 3.8-1



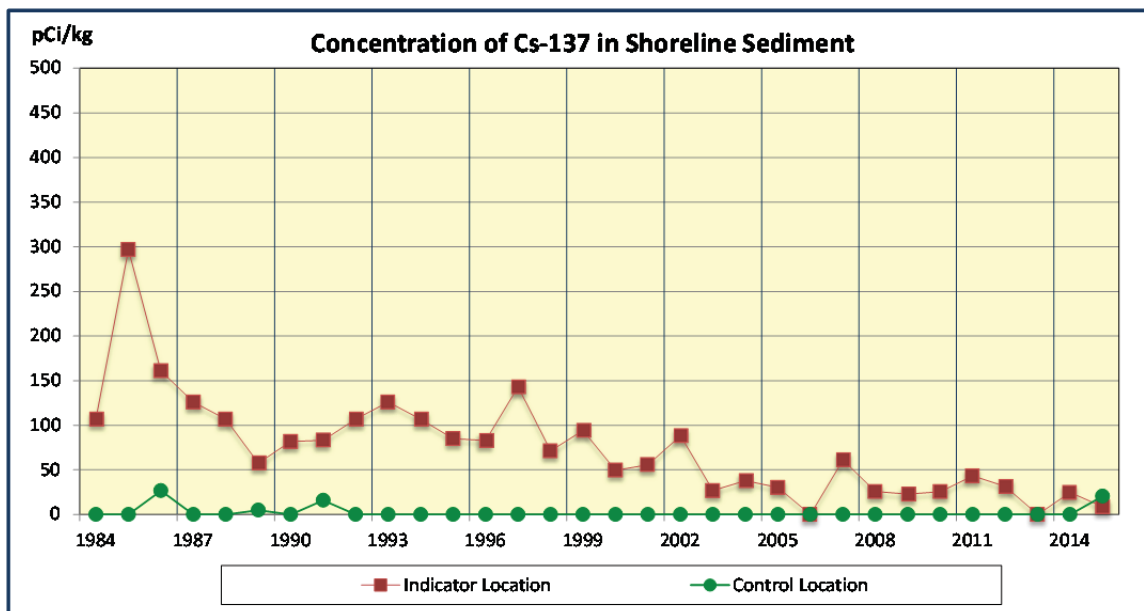
There is no reporting level for Co-58 in Shoreline Sediment

Figure 3.8-2



There is no reporting level for Co-60 in Shoreline Sediment

Figure 3.8-3



There is no reporting level for Cs-137 in Shoreline Sediment

Table 3.8 Mean Concentrations of Radionuclides in Shoreline Sediment (pCi/kg)

Year	Mn-54	Co-58	Co-60	Nb-95	Zr-95	Cs-134	Cs-137	Co-57	Sb-125
1984	1.03E0	4.40E0	-2.34E0	0.00E0	0.00E0	3.19E1	1.07E2	0.00E0	0.00E0
1985	-3.12E0	1.16E2	5.18E0	0.00E0	0.00E0	2.11E2	2.97E2	0.00E0	0.00E0
1986	1.09E2	3.79E2	2.05E2	0.00E0	3.96E1	6.50E1	1.61E2	0.00E0	0.00E0
1987 ⁽¹⁾	8.83E1	4.08E2	1.61E2	4.22E1	0.00E0	6.08E1	1.26E2	0.00E0	0.00E0
1988	1.07E2	3.29E2	2.63E2	2.28E1	7.54E0	2.59E1	1.07E2	7.65E-1	3.68E0
1989	4.58E1	1.94E2	1.21E2	5.02E0	0.00E0	1.65E1	5.77E1	0.00E0	1.57E1
1990	5.39E1	2.08E2	1.77E2	0.00E0	0.00E0	1.66E1	8.18E1	0.00E0	7.15E0
1991	8.50E1	3.70E2	4.19E2	5.30E0	0.00E0	1.82E1	8.33E1	1.20E0	1.50E1
1992	1.17E2	1.13E3	5.80E2	3.50E0	0.00E0	1.69E1	1.07E2	3.00E0	2.70E1
1993	1.33E2	1.07E3	1.04E3	0.00E0	0.00E0	2.80E1	1.26E2	2.47E1	2.16E2
1994	4.93E1	7.98E2	5.73E2	0.00E0	0.00E0	5.67E0	1.07E2	4.38E0	4.60E1
1995	1.02E2	1.33E3	8.65E2	1.13E2	0.00E0	0.00E0	8.50E1	3.69E1	1.49E2
1996	8.73E1	3.39E2	5.81E2	0.00E0	0.00E0	0.00E0	8.30E1	0.00E0	1.96E2
1997	6.96E1	5.90E2	7.64E2	0.00E0	0.00E0	0.00E0	1.43E2	0.00E0	1.76E2
1998	3.07E1	1.88E2	2.30E2	0.00E0	0.00E0	0.00E0	7.11E1	0.00E0	0.00E0
1999	7.28E1	2.29E2	4.39E2	0.00E0	0.00E0	0.00E0	9.42E1	0.00E0	1.40E2
2000	0.00E0	3.90E1	1.03E2	0.00E0	0.00E0	0.00E0	4.96E1	0.00E0	0.00E0
2001	3.86E1	8.27E1	3.29E2	0.00E0	0.00E0	0.00E0	5.58E1	0.00E0	0.00E0
2002	3.51E1	2.41E2	2.22E2	0.00E0	0.00E0	0.00E0	8.83E1	0.00E0	0.00E0
2003	2.17E1	8.75E1	1.08E2	0.00E0	0.00E0	0.00E0	2.69E1	0.00E0	0.00E0
2004	6.60E1	2.67E2	3.83E2	0.00E0	0.00E0	0.00E0	3.79E1	0.00E0	0.00E0
2005	0.00E0	1.61E2	1.41E2	0.00E0	0.00E0	0.00E0	3.04E1	0.00E0	0.00E0
2006	0.00E0	5.40E1	1.11E2	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0
2007	0.00E0	8.77E1	9.46E1	0.00E0	0.00E0	0.00E0	6.13E1	0.00E0	0.00E0
2008	0.00E0	1.48E2	6.24E1	0.00E0	0.00E0	0.00E0	2.57E1	0.00E0	0.00E0
2009	0.00E0	1.10E2	1.04E2	0.00E0	0.00E0	0.00E0	2.27E1	0.00E0	0.00E0
2010	0.00E0	6.56E1	1.37E2	0.00E0	0.00E0	0.00E0	2.56E1	0.00E0	0.00E0
2011	0.00E0	8.36E1	2.36E2	0.00E0	0.00E0	3.62E1	4.33E1	1.05E1	0.00E0
2012	0.00E0	5.59E1	1.70E2	0.00E0	0.00E0	0.00E0	3.15E1	0.00E0	0.00E0
2013	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0
2014 ⁽²⁾	6.84E1	8.87E2	7.90E2	0.00E0	0.00E0	0.00E0	2.46E1	0.00E0	0.00E0
2015	0.00E0	6.73E1	1.61E2	0.00E0	0.00E0	0.00E0	8.75E0	0.00E0	0.00E0

0.00E0 indicates no detectable measurements

1984 - 1986 mean based on all net activity

(1) 1987 – Gamma spectroscopy system change

(2) 2014 – Gamma spectroscopy system change

3.9 DIRECT GAMMA RADIATION

3.9.1 ENVIRONMENTAL TLD

Catawba is licensed with an exclusion area boundary defined by UFSAR Section 2.1.1.2 as a 2500 foot radius from station center. This is the same boundary established for determining radioactive effluent release limits. No permanent public access is permitted within the exclusion area. TLD locations designated as "inner ring" are within a 1 mile radius from station center and all are used as indicators. TLD locations designated as "outer ring" are outside the 1 mile "inner ring" but within a 5 mile radius of station center. All outer ring TLD locations are used as indicators. A subset of TLD locations within a 7 to 11 mile radius from station center are designated as "special interest." The three "control" locations are greater than 7 miles from station center. These locations were chosen to reduce the probability of influence from Catawba operation on data. The control locations are not used as background subtraction in the TLD analysis. Their purpose is to provide a comparison to indicator locations.

In 2015, 160 total TLDs were analyzed, 149 at indicator locations and 11 at control locations. TLDs are collected and analyzed quarterly. Transit and laboratory background dose is determined and subtracted from gross field readings as required by ANSI N545-1975. Based on Appendix B TLD data, the highest annual total dose was 93.4 mrem at indicator location 237, 4.75 miles SSE of station center. Figure 3.9 and Table 3.9-A show TLD inner ring, outer ring, and control location annual averages in mrem per year. Data is provided from 1984 when TLD locations were added and arranged in an inner ring and outer ring configuration. Preoperational data is also provided in the table. As shown in the graph, doses measured by environmental TLDs show little or no change since the current TLD system was implemented. Comparing data from the 2015 Catawba Annual Radiological Effluent Release Report (ARERR), dose to a member of the public resulting from gaseous effluent releases at Catawba is a small fraction of measured TLD dose. Therefore, it can be concluded that gaseous effluents from Catawba had negligible impact on measured TLD values.

Starting in 2014, enhanced analytical methods were implemented. Quarterly and annual baseline dose was determined using appropriate statistical methods considering data from 2000 through 2012. Quarterly and annual dose for 2015 was compared to baseline values to determine if an Investigation Level had been exceeded for evaluation of potential dose to a member of the public. No TLD location exceeded the Quarterly or Annual Investigation Level in 2015, therefore no evaluation of dose to a member of the public from direct or scattered radiation was performed. Table 3.9-B summarizes the data.

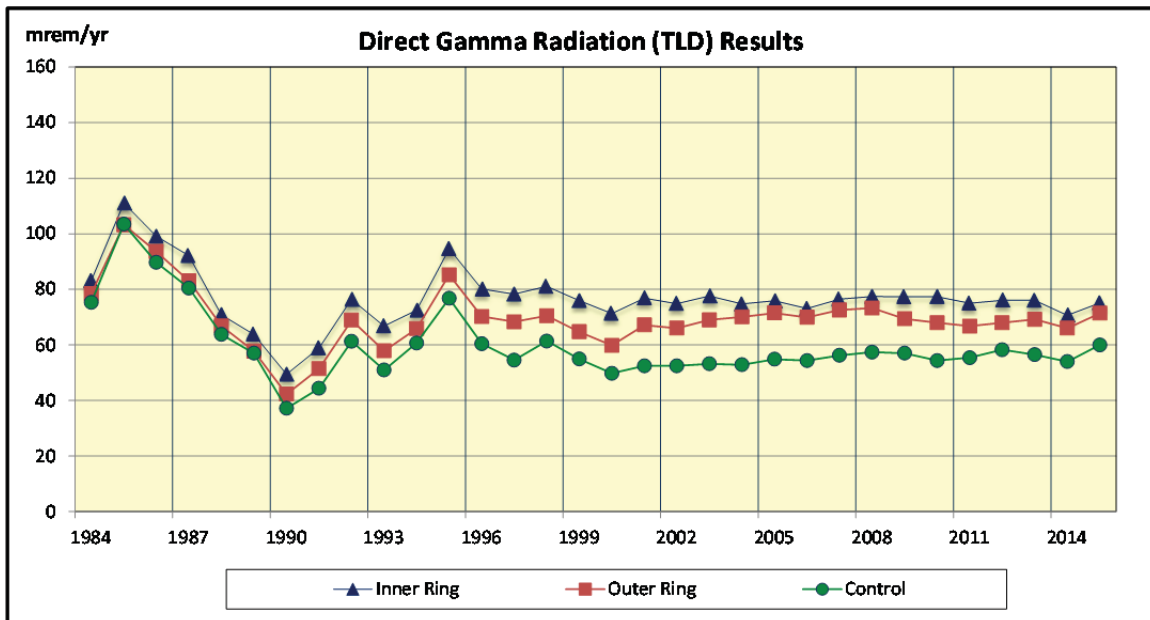
A TLD intercomparison program is conducted as part of the quality assurance program. Results of this program are included in section 5.7.

3.9.2 ISFSI

The Catawba ISFSI began operation in 2007. It is located approximately 0.2 miles north of station center in a secured area specifically constructed to provide dry storage for spent nuclear fuel. The ISFSI employs the NAC-UMS® and MAGNASTOR® vertical storage designs. Irradiated fuel assemblies are confined, protected, and shielded by a reinforced concrete modules. Both systems are completely passive and designed to provide radiation shielding and safe confinement for a range of accident conditions and natural events. Both systems use a passive natural circulation ventilation system to remove decay heat from the modules. No radiological liquid or gaseous effluents are expected from the passive storage provided by the ISFSI. Therefore any dose to offsite locations would be from direct and scattered gamma radiation.

Environmental TLD results described in 3.9.1 above are reviewed quarterly to identify trends and demonstrate compliance with dose and dose rate limits at the 2500 foot exclusion area boundary. Additional TLD locations not associated with REMP are presently located on the Catawba protected area fence near the ISFSI and on the ISFSI boundary. These are used to demonstrate compliance with occupational exposure controls and augment REMP TLD results. Doses measured by environmental TLDs show little or no change since the ISFSI began operation.

Figure 3.9



There is no reporting level for Direct Radiation (TLD)

Table 3.9-A Direct Gamma Radiation (TLD) Results⁽¹⁾

Year	Inner Ring Average (mrem/yr)	Outer Ring Average (mrem/yr)	Control Average (mrem/yr)
1984*	8.31E1	7.85E1	7.53E1
1985	1.11E2	1.03E2	1.03E2
1986	9.91E1	9.36E1	8.97E1
1987	9.22E1	8.30E1	8.05E1
1988	7.09E1	6.68E1	6.37E1
1989	6.37E1	5.78E1	5.70E1
1990	4.94E1	4.23E1	3.71E1
1991	5.89E1	5.14E1	4.44E1
1992	7.64E1	6.89E1	6.13E1
1993	6.68E1	5.79E1	5.09E1
1994	7.25E1	6.58E1	6.07E1
1995	9.46E1	8.52E1	7.68E1
1996	8.01E1	7.02E1	6.04E1
1997	7.83E1	6.83E1	5.45E1
1998	8.10E1	7.05E1	6.14E1
1999	7.60E1	6.47E1	5.49E1
2000	7.13E1	5.98E1	4.98E1
2001	7.69E1	6.72E1	5.24E1
2002	7.49E1	6.60E1	5.24E1
2003	7.76E1	6.90E1	5.32E1
2004	7.47E1	7.01E1	5.28E1
2005	7.58E1	7.15E1	5.48E1
2006	7.31E1	6.99E1	5.43E1
2007	7.65E1	7.26E1	5.62E1
2008	7.74E1	7.32E1	5.74E1
2009	7.73E1	6.94E1	5.70E1
2010	7.74E1	6.80E1	5.43E1
2011	7.50E1	6.67E1	5.54E1
2012	7.61E1	6.80E1	5.83E1
2013	7.60E1	6.92E1	5.65E1
2014	7.07E1	6.60E1	5.40E1
2015	7.51E1	7.14E1	6.00E1

* Preoperational Data

(1) 2014 AREOR, tabular results converted from mR/yr to mrem/yr (n * 0.95)

Table 3.9-B Direct Gamma Radiation (TLD) Catawba 2015 Investigation Level

Catawba 2015 MDD _Q : 6						Catawba 2015 MDD _A : 11						
Location	Quarterly (mrem)									Annual(mrem)		
	B _Q	M _Q Q1	M _Q Q2	M _Q Q3	M _Q Q4	L _Q Q1	L _Q Q2	L _Q Q3	L _Q Q4	B _A	M _A [*]	L _A
200	17.1	21.7	15.2	15.7	15.6	ND	ND	ND	ND	69.6	68.1	ND
201	17.2	22.3	15.6	15.5	---	ND	ND	ND	ND	69.0	71.2	ND
203	20.1	23.5	16.2	17.9	19.1	ND	ND	ND	ND	78.7	76.6	ND
204-P	17.0	19.6	---	---	15.9	ND	ND	ND	ND	70.3	70.9	ND
204-S	19.2	21.1	16.1	16.2	17.4	ND	ND	ND	ND	76.8	70.7	ND
205-P	20.4	21.5	17.4	16.5	17.5	ND	ND	ND	ND	81.4	72.9	ND
205-S	14.6	17.8	14.4	15.0	15.9	ND	ND	ND	ND	55.4	63.1	ND**
206	21.1	24.2	20.2	19.7	19.4	ND	ND	ND	ND	85.2	83.5	ND
207	20.9	21.9	20.4	18.2	18.4	ND	ND	ND	ND	84.7	78.9	ND
212	15.9	---	14.6	14.5	14.8	ND	ND	ND	ND	64.0	58.6	ND
217	11.3	---	9.8	11.1	---	ND	ND	ND	ND	46.1	41.8	ND
222	16.8	18.4	15.3	16.2	15.9	ND	ND	ND	ND	67.3	65.8	ND
223	19.6	20.9	18.0	18.4	19.2	ND	ND	ND	ND	78.6	76.5	ND
225-P	18.7	20.3	17.1	17.5	18.1	ND	ND	ND	ND	74.8	73.1	ND
225-S	17.8	21.3	17.9	15.9	18.7	ND	ND	ND	ND	71.8	73.7	ND
226	17.0	18.6	17.4	15.9	15.1	ND	ND	ND	ND	70.6	67.0	ND
227	17.9	20.8	17.4	16.3	15.3	ND	ND	ND	ND	72.2	69.8	ND
228	17.5	20.0	16.2	15.8	16.7	ND	ND	ND	ND	70.0	68.6	ND
229	22.0	26.3	22.8	20.2	22.8	ND	ND	ND	ND	88.6	92.2	ND
230	12.4	17.2	11.7	11.1	12.4	ND	ND	ND	ND	50.5	52.4	ND
231-P	19.3	23.8	18.0	16.2	16.7	ND	ND	ND	ND	77.1	74.8	ND
231-S	20.3	23.3	20.6	18.7	16.9	ND	ND	ND	ND	81.7	79.5	ND
232-P	21.3	25.6	20.6	21.6	23.0	ND	ND	ND	ND	86.2	90.7	ND
232-S	20.1	---	19.3	18.2	20.2	ND	ND	ND	ND	80.5	77.0	ND
233	14.5	18.8	14.3	15.4	14.7	ND	ND	ND	ND	58.3	63.2	ND
234-P	17.0	19.7	16.7	17.2	17.5	ND	ND	ND	ND	67.9	71.1	ND
234-S	18.3	23.9	15.8	15.9	18.6	ND	ND	ND	ND	73.1	74.2	ND
235	16.2	19.6	14.8	15.1	17.4	ND	ND	ND	ND	64.8	66.9	ND
236	21.2	24.0	19.5	20.2	22.7	ND	ND	ND	ND	85.5	86.5	ND
237	21.0	---	22.0	20.0	22.7	ND	ND	ND	ND	90.1	86.4	ND
238-P	16.2	18.8	---	16.0	16.9	ND	ND	ND	ND	64.5	68.9	ND
238-S	18.3	---	17.6	15.5	20.1	ND	ND	ND	ND	73.7	70.9	ND
239	17.9	---	21.6	18.4	21.3	ND	ND	ND	ND	72.2	81.7	ND
240-P	12.3	14.8	10.2	10.5	13.1	ND	ND	ND	ND	50.1	48.5	ND
240-S	12.3	14.2	10.9	11.1	14.0	ND	ND	ND	ND	50.1	50.2	ND
241-P	13.1	15.0	12.2	11.8	12.9	ND	ND	ND	ND	52.6	51.9	ND
241-S	13.1	14.3	11.4	12.3	12.4	ND	ND	ND	ND	53.3	50.4	ND
242	16.2	20.7	14.9	15.6	16.7	ND	ND	ND	ND	65.0	67.9	ND
243	16.2	21.9	14.8	16.2	16.7	ND	ND	ND	ND	65.1	69.7	ND
244-P	16.7	---	19.9	19.1	20.9	ND	ND	ND	ND	68.9	79.8	ND
244-S	15.5	---	15.7	15.3	15.5	ND	ND	ND	ND	62.2	61.9	ND
245	16.3	---	16.8	13.4	16.7	ND	ND	ND	ND	66.4	62.6	ND
246-P	14.6	18.6	12.3	13.4	16.1	ND	ND	ND	ND	59.4	60.3	ND
246-S	14.0	---	13.6	12.2	16.4	ND	ND	ND	ND	57.8	56.2	ND
247	12.9	16.2	12.6	12.0	13.0	ND	ND	ND	ND	51.9	53.8	ND
248	14.2	19.7	13.0	14.4	14.9	ND	ND	ND	ND	56.9	62.0	ND
249	17.1	21.8	15.6	---	15.9	ND	ND	ND	ND	68.2	70.9	ND
250	16.2	---	14.7	14.9	17.9	ND	ND	ND	ND	65.0	63.3	ND
251	16.6	21.5	15.8	14.6	17.1	ND	ND	ND	ND	66.0	69.0	ND
255	20.0	25.2	18.9	19.5	20.9	ND	ND	ND	ND	80.1	84.5	ND
256	19.9	21.9	18.4	21.1	21.0	ND	ND	ND	ND	79.7	82.4	ND
258	18.9	---	18.2	19.0	21.4	ND	ND	ND	ND	76.9	78.2	ND

* M_A determined by normalizing available quarterly data to 4 full quarters** Location 205-S implemented 13Q3. Baseline determination ongoing. Data displayed here for information only.
' --- ' indicates no data resulting from missing TLD, erroneous TLD reading, or omitted after investigation (note – see next page)

Note: Data may be omitted after investigation considering the following:

- Other TLD locations' data from upwind, downwind, and adjacent sectors
- Review of documentation on location's characteristics, geography, topography, etc.
- Comparison with other radiological data (i.e. gaseous effluent releases, direct radiation reports, surveys, dose calculations, Area TLDs, etc.)

Table 3.9-B definition of terms

- MDD_Q = minimum differential dose, quarterly, 3 times 90th percentile s_Q determined from analysis in mrem
- MDD_A = minimum differential dose, annual, 3 times 90th percentile s_A determined from analysis in mrem
- B_Q = Quarterly baseline (mrem)
- M_Q = location's 91 day standard quarter normalized dose (mrem per standard quarter)
- L_Q = quarterly investigation level dose (mrem)
- B_A = baseline background dose (mrem) (annual)
- M_A = annual monitoring data - M_a determined by normalizing available quarterly data to 4 full quarters
- L_A = annual investigation level dose (mrem)
- ND = not detected

3.10 LAND USE CENSUS

The 2015 Annual Land Use Census was conducted July 8, and July 9, 2015 as required by SLC 16.11-14. Table 3.10 summarizes census results. A map indicating identified locations is shown in Figure 3.10.

During the 2015 census no irrigated gardens (superior to existing gardens) or milk locations were identified. The nearest residence is located in the NE sector at 0.56 miles. No environmental program changes were required as a result of the 2015 land use census.

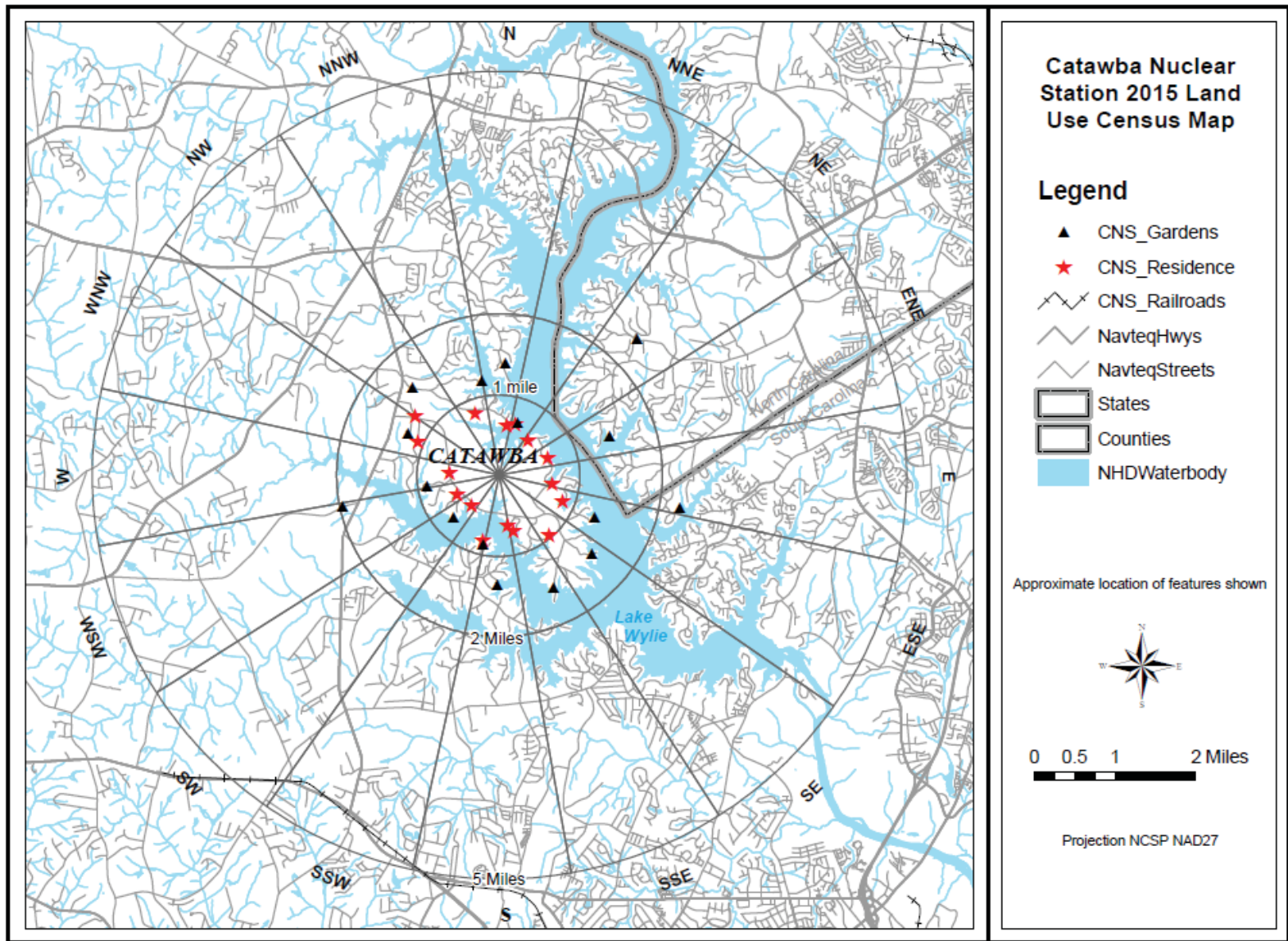
Table 3.10 Catawba 2015 Land Use Census Results

Sector			Distance (Miles)	Sector			Distance (Miles)
N	Nearest Residence		0.63	S	Nearest Residence		0.63
	Nearest Garden		1.38		Nearest Garden		1.25
	Nearest Milk Animal		-		Nearest Milk Animal		-
NNE	Nearest Residence		0.66	SSW	Nearest Residence		0.83
	Nearest Garden		0.69		Nearest Garden		0.89
	Nearest Milk Animal		-		Nearest Milk Animal		-
NE	Nearest Residence		0.56	SW	Nearest Residence		0.63
	Nearest Garden (Irr.)		2.39		Nearest Garden (Irr.)		0.78
	Nearest Milk Animal		-		Nearest Milk Animal		-
ENE	Nearest Residence		0.61	WSW	Nearest Residence		0.57
	Nearest Garden (Irr.)		1.44		Nearest Garden		1.98
	Nearest Milk Animal		-		Nearest Milk Animal		-
E	Nearest Residence		0.65	W	Nearest Residence		0.68
	Nearest Garden (Irr.)		2.26		Nearest Garden		0.96
	Nearest Milk Animal		-		Nearest Milk Animal		-
ESE	Nearest Residence		0.84	WNW	Nearest Residence		1.10
	Nearest Garden		1.29		Nearest Garden		1.18
	Nearest Milk Animal		-		Nearest Milk Animal		-
SE	Nearest Residence		0.97	NW	Nearest Residence		1.27
	Nearest Garden (Irr.)		1.50		Nearest Garden		1.54
	Nearest Milk Animal		-		Nearest Milk Animal		-
SSE	Nearest Residence		0.74	NNW	Nearest Residence		0.86
	Nearest Garden		1.64		Nearest Garden		1.19
	Nearest Milk Animal		-		Nearest Milk Animal		-

“-” indicates no occurrences within the 5 mile radius

“(Irr.)” indicates irrigated garden

Figure 3.10



4.0 EVALUATION OF DOSE

4.1 DOSE FROM ENVIRONMENTAL MEASUREMENTS

Annual doses to maximum exposed individuals were estimated based on measured concentrations of radionuclides in 2015 CNS REMP samples. The primary purpose of estimating doses based on sample results is to allow comparison to effluent program dose estimates.

Doses based on REMP sample results were calculated using the methodology and data presented in NRC Regulatory Guide 1.109. Measured radionuclide concentrations, averaged over the entire year for a specific radionuclide, indicator location, and sample type, were used to calculate REMP-based doses, after subtracting the applicable average background concentration (as measured at the corresponding control location). Regulatory Guide 1.109 consumption rates for the maximum exposed individual were used in the calculations. A dose factor of zero was assumed when the guide listed “NO DATA” as the dose factor for a given radionuclide and organ.

Maximum dose estimates (Highest Annual Mean Concentration) based on fish and shoreline sediment sample results are reported in Table 4.1-A. The individual critical population and pathway dose calculations are reported in Table 4.1-B.

REMP-based dose estimates are not reported for airborne radioiodine, airborne particulate, milk, or ground water sample types because no radionuclides attributable to CNS operations were detected. Naturally occurring K-40 and Be-7 were detected in some samples but were not included in any REMP-based dose estimates. Dose estimates are not reported for surface water because sampled surface water is not considered to be a potable drinking water source although surface water tritium concentrations are used in calculating doses from fish. Exposure estimates based upon REMP TLD results are discussed in Section 3.9.

The maximum environmental organ dose estimate for any single sample type (excluding TLD results) collected during 2015 was 3.65E-1 mrem to the child bone from consuming vegetation.

4.2 ESTIMATED DOSE FROM RELEASES

Throughout the year, dose estimates were calculated based on actual 2015 liquid and gaseous effluent release data. Effluent-based dose estimates were calculated using the RETDAS computer program which employs methodology and data presented in NRC Regulatory Guide 1.109. These doses are shown in Table 4.1-A along with the corresponding REMP-based dose estimates. Summaries of RETDAS dose calculations are reported in the Annual Radioactive Effluent Release Report.

The effluent-based liquid release doses are summations of the dose contributions from the drinking water, fish, and shoreline pathways. For iodine, particulate, and tritium exposure the effluent-based gaseous release doses are summations of the dose contributors from ground/plane, inhalation, milk and vegetation pathways.

4.3 COMPARISON OF DOSES

The environmental and effluent dose estimates given in Table 4.1-A agree reasonably well. The similarity of the doses indicate that the radioactivity levels in the environment do not differ significantly from those expected based on effluent measurements and modeling of the environmental exposure pathways. This indicates that effluent program dose estimates are both valid and reasonably conservative.

There are some differences in how effluent and environmental doses are calculated that affect the comparison. Doses calculated from environmental data are conservative because they are based on a mean that includes only samples with a net positive activity versus a mean that includes all sample results (i.e. zero results are not included in the mean). Also, airborne tritium is not measured in environmental samples but is used to calculate effluent doses.

Additionally, in 2010 Catawba began reporting estimated dose from effluent Carbon 14 (C-14). This change came about with the issuing of Regulatory Guide 1.21, Revision 2, Measuring, Evaluating and Reporting Radioactive Material in Liquid and Gaseous Effluents and Solid Waste. A description of this change is found in the 2010 Annual Radiological Effluent Release Report. C-14 is not easily measured in the environment and therefore, environmental and effluent doses from C-14 cannot be compared directly.

In calculations based on environmental data, the liquid release pathways of fish and shoreline sediment were the predominant dose pathways. Liquid effluent release data indicated drinking water, fish, and shoreline sediment as the predominant dose pathways. The maximum total organ dose based on 2015 environmental sample results was 8.63E-3 mrem to the child total body. The maximum total organ dose of 6.61E-2 mrem for liquid effluent-based estimates was to the child liver.

In calculations based on gaseous release pathways, vegetation was the predominant dose pathway based on environmental and effluent data. The maximum total organ dose based on 2015 environmental sample results was 3.65E-1 mrem to the child bone. The maximum total organ dose for gaseous effluent estimates was 5.55E0 mrem to the child bone, with C-14 being the primary dose contributor.

The doses calculated do not exceed 40CFR190 or 10CFR50 dose commitment limits for members of the public. Doses to members of the public attributable to the operation of CNS are being maintained well within regulatory limits and are described in the Annual Radiological Effluent Release Report (ARERR).

TABLE 4.1-A

**CATAWBA NUCLEAR STATION
2015 ENVIRONMENTAL AND EFFLUENT DOSE COMPARISON**

LIQUID RELEASE PATHWAY

Organ	Environmental or Effluent Data	Critical Age ⁽¹⁾	Critical Pathway ⁽²⁾	Location	Maximum Dose ⁽³⁾ (mrem)
Skin	Environmental	Teen	Shoreline Sediment	208 (0.45 mi S)	2.04E-03
Skin	Effluent	Teen	Shoreline Sediment	Discharge Pt.	3.56E-03
Bone	Environmental	-	-	-	0.00E+00
Bone	Effluent	Child	Fresh Water Fish	Discharge Pt.	2.25E-02
Liver	Environmental	Adult	Fish	208 (0.45 mi S)	8.32E-03
Liver	Effluent	Child	Drinking Water	7.30 mi SSE	6.61E-02
T. Body	Environmental	Adult	Fish	208 (0.45 mi S)	8.63E-03
T. Body	Effluent	Child	Drinking Water	7.30 mi SSE	6.47E-02
Thyroid	Environmental	Adult	Fish	208 (0.45 mi S)	8.32E-03
Thyroid	Effluent	Child	Drinking Water	7.30 mi SSE	6.32E-02
Kidney	Environmental	Adult	Fish	208 (0.45 mi S)	8.32E-03
Kidney	Effluent	Child	Drinking Water	7.30 mi SSE	6.37E-02
Lung	Environmental	Adult	Fish	208 (0.45 mi S)	8.32E-03
Lung	Effluent	Child	Drinking Water	7.30 mi SSE	6.35E-02
GI-LLI	Environmental	Adult	Fish	208 (0.45 mi S)	8.32E-03
GI-LLI	Effluent	Child	Drinking Water	7.30 mi SSE	6.43E-02

(1) Critical Age is the highest total dose (all pathways) to an age group.

(2) Critical Pathway is the highest individual dose within the identified Critical Age group.

(3) Maximum dose is a summation of the fish, drinking water and shoreline sediment pathways.

GASEOUS RELEASE PATHWAY**IODINE, PARTICULATE, and TRITIUM**

Organ	Environmental or Effluent Data	Critical Age ⁽¹⁾	Critical Pathway ⁽²⁾	Location	Maximum Dose ⁽³⁾ (mrem)
Skin	Environmental	-	-	-	0.00E+00
Skin	Effluent	All	Ground Plane	0.5 mi NNE	4.43E-06
Bone	Environmental	Child	Vegetation	201 (0.53 mi NE)	3.65E-01
Bone	Effluent	Child	Vegetation	0.5 mi NNE	5.55E+00
Liver	Environmental	Child	Vegetation	201 (0.53 mi NE)	3.49E-01
Liver	Effluent	Child	Vegetation	0.5 mi NNE	2.34E+00
T. Body	Environmental	Adult	Vegetation	201 (0.53 mi NE)	1.96E-01
T. Body	Effluent	Child	Vegetation	0.5 mi NNE	2.34E+00
Thyroid	Environmental	-	-	-	0.00E+00
Thyroid	Effluent	Child	Vegetation	0.5 mi NNE	2.35E+00
Kidney	Environmental	Child	Vegetation	201 (0.53 mi NE)	1.14E-01
Kidney	Effluent	Child	Vegetation	0.5 mi NNE	2.34E+00
Lung	Environmental	Child	Vegetation	201 (0.53 mi NE)	4.09E-02
Lung	Effluent	Child	Vegetation	0.5 mi NNE	2.34E+00
GI-LLI	Environmental	Adult	Vegetation	201 (0.53 mi NE)	5.79E-03
GI-LLI	Effluent	Child	Vegetation	0.5 mi NNE	2.34E+00

(1) Critical Age is the highest total dose (all pathways) to an age group.

(2) Critical Pathway is the highest individual dose within the identified Critical Age group.

(3) Maximum dose is a summation of the ground/plane, inhalation, milk and vegetation pathways.

TABLE 4.1-B*Maximum Individual Dose for 2015 based on Environmental Measurements (mrem) for Catawba Nuclear Station*

Age	Sample Medium	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI	Skin
Infant	Airborne	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Drinking Water	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Milk	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	TOTAL	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Child	Airborne	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Drinking Water	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Milk	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Broadleaf Vegetation	3.65E-01	3.49E-01	5.15E-02	0.00E+00	1.14E-01	4.09E-02	2.19E-03	0.00E+00
	Fish	0.00E+00	5.29E-03	5.29E-03	5.29E-03	5.29E-03	5.29E-03	5.29E-03	0.00E+00
	Shoreline Sediment	0.00E+00	0.00E+00	3.63E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.27E-04
	TOTAL	3.65E-01	3.54E-01	5.72E-02	5.29E-03	1.19E-01	4.62E-02	7.48E-03	4.27E-04
Teen	Airborne	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Drinking Water	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Milk	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Broadleaf Vegetation	2.02E-01	2.68E-01	9.35E-02	0.00E+00	9.14E-02	3.55E-02	3.82E-03	0.00E+00
	Fish	0.00E+00	6.40E-03	6.40E-03	6.40E-03	6.40E-03	6.40E-03	6.40E-03	0.00E+00
	Shoreline Sediment	0.00E+00	0.00E+00	1.74E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.04E-03
	TOTAL	2.02E-01	2.74E-01	1.02E-01	6.40E-03	9.78E-02	4.19E-02	1.02E-02	2.04E-03
Adult	Airborne	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Drinking Water	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Milk	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Broadleaf Vegetation	2.19E-01	2.99E-01	1.96E-01	0.00E+00	1.02E-01	3.38E-02	5.79E-03	0.00E+00
	Fish	0.00E+00	8.32E-03	8.32E-03	8.32E-03	8.32E-03	8.32E-03	8.32E-03	0.00E+00
	Shoreline Sediment	0.00E+00	0.00E+00	3.12E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.66E-04
	TOTAL	2.19E-01	3.07E-01	2.05E-01	8.32E-03	1.10E-01	4.21E-02	1.41E-02	3.66E-04

Note: Dose tables are provided for sample media displaying positive nuclide occurrence.

***Catawba Nuclear Station
Dose from Broadleaf Vegetation Pathway for 2015 Data
Maximum Exposed Child***

Child Dose from Vegetation Pathway (mrem) = Usage (kg) x Dose Factor (mrem/pCi ingested) x Concentration (pCi/kg)

Usage (intake in one year)= 26 kg

Radionuclide	<u>Ingestion Dose Factor</u>							<u>Highest Annual Net Mean Concentration</u>		<u>Dose (mrem)</u>						
	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI	Indicator Location	Food (pCi/kg)	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI
I-131	1.72E-05	1.73E-05	9.83E-06	5.72E-03	2.84E-05	NO DATA	1.54E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-134	2.34E-04	3.84E-04	8.10E-05	NO DATA	1.19E-04	4.27E-05	2.07E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-137	3.27E-04	3.13E-04	4.62E-05	NO DATA	1.02E-04	3.67E-05	1.96E-06	201	42.9	3.65E-01	3.49E-01	5.15E-02	0.00E+00	1.14E-01	4.09E-02	2.19E-03
Dose Commitment (mrem) =										3.65E-01	3.49E-01	5.15E-02	0.00E+00	1.14E-01	4.09E-02	2.19E-03

***Catawba Nuclear Station
Dose from Fish Pathway for 2015 Data
Maximum Exposed Child***

Child Dose from Fish Pathway (mrem) = Usage (kg) x Dose Factor (mrem/pCi ingested) x Concentration (pCi/kg)

H-3 Concentration in Fish = Surface Water pCi/l x Bioaccumulation Factor 0.9 pCi/kg per pCi/l = 4194 pCi/l x 0.9 = 3775 pCi/kg

Usage (intake in one year)= 6.9 kg

Radionuclide	<u>Ingestion Dose Factor</u>							Highest Annual Net Mean Concentration		<u>Dose (mrem)</u>						
	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI	Indicator	Fish	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI
								Location	(pCi/kg)							
Mn-54	NO DATA	1.07E-05	2.85E-06	NO DATA	3.00E-06	NO DATA	8.98E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-58	NO DATA	1.80E-06	5.51E-06	NO DATA	NO DATA	NO DATA	1.05E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fe-59	1.65E-05	2.67E-05	1.33E-05	NO DATA	NO DATA	7.74E-06	2.78E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C0-60	NO DATA	5.29E-06	1.56E-05	NO DATA	NO DATA	NO DATA	2.93E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zn-65	1.37E-05	3.65E-05	2.27E-05	NO DATA	2.30E-05	NO DATA	6.41E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-134	2.34E-04	3.84E-04	8.10E-05	NO DATA	1.19E-04	4.27E-05	2.07E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-137	3.27E-04	3.13E-04	4.62E-05	NO DATA	1.02E-04	3.67E-05	1.96E-06	ALL	0.0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3	NO DATA	2.03E-07	2.03E-07	2.03E-07	2.03E-07	2.03E-07	2.03E-07	208	3775	0.00E+00	5.29E-03	5.29E-03	5.29E-03	5.29E-03	5.29E-03	5.29E-03
Dose Commitment (mrem) =										0.00E+00	5.29E-03	5.29E-03	5.29E-03	5.29E-03	5.29E-03	5.29E-03

Catawba Nuclear Station
Dose from Shoreline Sediment Pathway for 2015 Data
Maximum Exposed Child

Shoreline Recreation = 14 hr (in one year)
Shore Width Factor = 0.2
Sediment Surface Mass = 40 kg/m²

Child Dose from Shoreline Sediment Pathway (mrem) = Shoreline Recreation (hr) x External Dose Factor (mrem/hr per pCi/m²) x Shore Width Factor x Sediment Surface Mass (kg/m²) x Sediment Concentration (pCi/kg)

External Dose Factor Standing on Contaminated Ground			Highest Annual Net Mean Concentration		Dose	
Radionuclide	(mrem/hr per pCi/m ²)		Indicator Location	Sediment (pCi/kg)	(mrem)	
	T. Body	Skin			T. Body	Skin
Mn-54	5.80E-09	6.80E-09	ALL	0.0	0.00E+00	0.00E+00
Co-58	7.00E-09	8.20E-09	208	67.3	5.28E-05	6.18E-05
Co-60	1.70E-08	2.00E-08	208	161	3.07E-04	3.61E-04
Cs-134	1.20E-08	1.40E-08	ALL	0.00	0.00E+00	0.00E+00
Cs-137	4.20E-09	4.90E-09	208	8.75	4.12E-06	4.80E-06
Dose Commitment (mrem) =					3.63E-04	4.27E-04

Catawba Nuclear Station
Dose from Broadleaf Vegetation Pathway for 2015 Data
Maximum Exposed Teen

Teen Dose from Vegetation Pathway (mrem) = Usage (kg) x Dose Factor (mrem/pCi ingested) x Concentration (pCi/kg)

Usage (intake in one year) = 42 kg

Radionuclide	<u>Ingestion Dose Factor</u>							Highest Annual Net Mean Concentration		<u>Dose (mrem)</u>						
	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI	Indicator	Food	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI
								Location	(pCi/kg)							
I-131	5.85E-06	8.19E-06	4.40E-06	2.39E-03	1.41E-05	NO DATA	1.62E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-134	8.37E-05	1.97E-04	9.14E-05	NO DATA	6.26E-05	2.39E-05	2.45E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-137	1.12E-04	1.49E-04	5.19E-05	NO DATA	5.07E-05	1.97E-05	2.12E-06	201	42.9	2.02E-01	2.68E-01	9.35E-02	0.00E+00	9.14E-02	3.55E-02	3.82E-03
Dose Commitment (mrem) =										2.02E-01	2.68E-01	9.35E-02	0.00E+00	9.14E-02	3.55E-02	3.82E-03

Catawba Nuclear Station
Dose from Fish Pathway for 2015 Data
Maximum Exposed Teen

Teen Dose from Fish Pathway (mrem) = Usage (kg) x Dose Factor (mrem/pCi ingested) x Concentration (pCi/kg)

H-3 Concentration in Fish = Surface Water pCi/l x Bioaccumulation Factor 0.9 pCi/kg per pCi/l = 4194 pCi/l x 0.9 = 3775 pCi/kg

Usage (intake in one year) = 16 kg

Radionuclide	<u>Ingestion Dose Factor</u>							<u>Highest Annual Net Mean Concentration</u>		<u>Dose (mrem)</u>						
	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI	Location	(pCi/kg)	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI
Mn-54	NO DATA	5.90E-06	1.17E-06	NO DATA	1.76E-06	NO DATA	1.21E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-58	NO DATA	9.72E-07	2.24E-06	NO DATA	NO DATA	NO DATA	1.34E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fe-59	5.87E-06	1.37E-05	5.29E-06	NO DATA	NO DATA	4.32E-06	3.24E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-60	NO DATA	2.81E-06	6.33E-06	NO DATA	NO DATA	NO DATA	3.66E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zn-65	5.76E-06	2.00E-05	9.33E-06	NO DATA	1.28E-05	NO DATA	8.47E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-134	8.37E-05	1.97E-04	9.14E-05	NO DATA	6.26E-05	2.39E-05	2.45E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-137	1.12E-04	1.49E-04	5.19E-05	NO DATA	5.07E-05	1.97E-05	2.12E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3	NO DATA	1.06E-07	1.06E-07	1.06E-07	1.06E-07	1.06E-07	1.06E-07	208	3775	0.00E+00	6.40E-03	6.40E-03	6.40E-03	6.40E-03	6.40E-03	6.40E-03
Dose Commitment (mrem) =										0.00E+00	6.40E-03	6.40E-03	6.40E-03	6.40E-03	6.40E-03	6.40E-03

Catawba Nuclear Station
Dose from Shoreline Sediment Pathway for 2015 Data
Maximum Exposed Teen

Shoreline Recreation = 67 hr (in one year)
 Shore Width Factor = 0.2
 Sediment Surface Mass = 40 kg/m²

Teen Dose from Shoreline Sediment Pathway (mrem) = Shoreline Recreation (hr) x External
 Dose Factor (mrem/hr per pCi/m²) x Shore Width Factor x Sediment Surface Mass (kg/m²) x
 Sediment Concentration (pCi/kg)

External Dose Factor Standing on Contaminated Ground			Highest Annual Net Mean Concentration		Dose	
Radionuclide	(mrem/hr per pCi/m ²)		Indicator Location	Sediment (pCi/kg)	(mrem)	
	T. Body	Skin			T. Body	Skin
Mn-54	5.80E-09	6.80E-09	ALL	0.00	0.00E+00	0.00E+00
Co-58	7.00E-09	8.20E-09	208	67.3	2.53E-04	2.96E-04
Co-60	1.70E-08	2.00E-08	208	161	1.47E-03	1.73E-03
Cs-134	1.20E-08	1.40E-08	ALL	0.00	0.00E+00	0.00E+00
Cs-137	4.20E-09	4.90E-09	208	8.75	1.97E-05	2.30E-05
Dose Commitment (mrem) =					1.74E-03	2.04E-03

Catawba Nuclear Station
Dose from Broadleaf Vegetation Pathway for 2015 Data
Maximum Exposed Adult

Adult Dose from Vegetation (mrem) = Usage (kg) x Dose Factor (mrem/pCi ingested) x Concentration (pCi/kg)

Usage (intake in one year) = 64 kg

Radionuclide	<u>Ingestion Dose Factor</u>							Highest Annual Net Mean Concentration		<u>Dose (mrem)</u>						
	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI	Indicator	Food	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI
								Location	(pCi/kg)							
I-131	4.16E-06	5.95E-06	3.41E-06	1.95E-03	1.02E-05	NO DATA	1.57E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-134	6.22E-05	1.48E-04	1.21E-04	NO DATA	4.79E-05	1.59E-05	2.59E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-137	7.97E-05	1.09E-04	7.14E-05	NO DATA	3.70E-05	1.23E-05	2.11E-06	201	42.9	2.19E-01	2.99E-01	1.96E-01	0.00E+00	1.02E-01	3.38E-02	5.79E-03
Dose Commitment (mrem) =										2.19E-01	2.99E-01	1.96E-01	0.00E+00	1.02E-01	3.38E-02	5.79E-03

Catawba Nuclear Station
Dose from Fish Pathway for 2015 Data
Maximum Exposed Adult

Adult Dose from Fish Pathway (mrem) = Usage (kg) x Dose Factor (mrem/pCi ingested) x Concentration (pCi/kg)

H-3 Concentration in Fish = Surface Water pCi/l x Bioaccumulation Factor 0.9 pCi/kg per pCi/l = 4194 pCi/l x 0.9 = 3775 pCi/kg

Usage (intake in one year) = 21 kg

Radionuclide	<u>Ingestion Dose Factor</u>							<u>Highest Annual Net Mean Concentration</u>		<u>Dose (mrem)</u>						
	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI	Location	(pCi/kg)	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI
Mn-54	NO DATA	4.57E-06	8.72E-07	NO DATA	1.36E-06	NO DATA	1.40E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-58	NO DATA	7.45E-07	1.67E-06	NO DATA	NO DATA	NO DATA	1.51E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fe-59	4.34E-06	1.02E-05	3.91E-06	NO DATA	NO DATA	2.85E-06	3.40E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-60	NO DATA	2.14E-06	4.72E-06	NO DATA	NO DATA	NO DATA	4.02E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zn-65	4.84E-06	1.54E-05	6.96E-06	NO DATA	1.03E-05	NO DATA	9.70E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-134	6.22E-05	1.48E-04	1.21E-04	NO DATA	4.79E-05	1.59E-05	2.59E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-137	7.97E-05	1.09E-04	7.14E-05	NO DATA	3.70E-05	1.23E-05	2.11E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3	NO DATA	1.05E-07	1.05E-07	1.05E-07	1.05E-07	1.05E-07	1.05E-07	208	3775	0.00E+00	8.32E-03	8.32E-03	8.32E-03	8.32E-03	8.32E-03	8.32E-03
Dose Commitment (mrem) =										0.00E+00	8.32E-03	8.32E-03	8.32E-03	8.32E-03	8.32E-03	8.32E-03

Catawba Nuclear Station
Dose from Shoreline Sediment Pathway for 2015 Data
Maximum Exposed Adult

Shoreline Recreation = 12 hr (in one year)
 Shore Width Factor = 0.2
 Sediment Surface Mass = 40 kg/m²

Adult Dose from Shoreline Sediment Pathway (mrem) = Shoreline Recreation (hr) x External Dose Factor (mrem/hr per pCi/m²) x Shore Width Factor x Sediment Surface Mass (kg/m²) x Sediment Concentration (pCi/kg)

<u>External Dose Factor Standing on Contaminated Ground</u>			<u>Highest Annual Net Mean Concentration</u>		<u>Dose</u>	
Radionuclide	(mrem/hr per pCi/m²)		Indicator Location	Sediment (pCi/kg)	(mrem)	
	T. Body	Skin			T. Body	Skin
Mn-54	5.80E-09	6.80E-09	ALL	0.00	0.00E+00	0.00E+00
Co-58	7.00E-09	8.20E-09	208	67.3	4.52E-05	5.30E-05
Co-60	1.70E-08	2.00E-08	208	161	2.63E-04	3.09E-04
Cs-134	1.20E-08	1.40E-08	ALL	0.00	0.00E+00	0.00E+00
Cs-137	4.20E-09	4.90E-09	208	8.75	3.53E-06	4.12E-06
Dose Commitment (mrem) =					3.12E-04	3.66E-04

5.0 QUALITY ASSURANCE

5.1 SAMPLE COLLECTION

EnRad Laboratories, Fisheries and Aquatic Ecology performed the environmental sample collections as specified by approved sample collection procedures.

5.2 SAMPLE ANALYSIS

EnRad Laboratories performed the environmental sample analyses as specified by approved analysis procedures. EnRad Laboratories is located in Huntersville, North Carolina, at Duke Energy's Environmental Center. During 2015, a vendor laboratory, General Engineering Laboratory, LLC (GEL), performed some environmental sample analyses as specified by approved analysis procedures.

5.3 DOSIMETRY ANALYSIS

The Radiation Dosimetry and Records group performed the environmental dosimetry measurements as specified by approved dosimetry analysis procedures.

5.4 LABORATORY EQUIPMENT QUALITY ASSURANCE

5.4.1 DAILY QUALITY CONTROL

EnRad Laboratories has an internal quality assurance program which monitors each type of instrumentation for reliability and accuracy. Daily quality control checks ensure that instruments are in proper working order and these checks are used to monitor instrument performance.

5.4.2 CALIBRATION VERIFICATION

National Institute of Standards and Technology (NIST) standards that represent counting geometries are analyzed as unknowns at various frequencies ranging from weekly to annually to verify that efficiency calibrations are valid. The frequency is dependent upon instrument use and performance. Investigations are performed and documented should calibration verification data fall outside of the acceptable limits.

5.4.3 BATCH PROCESSING

Method quality control samples are analyzed with sample analyses that are processed in batches. These include tritium analyses in drinking water, surface water, and ground water samples.

5.5 DUKE ENERGY INTERLABORATORY COMPARISON PROGRAM

In 2015 Duke Energy Environmental Laboratory (EnRad) participated in interlaboratory programs to satisfy Radiological Environmental Monitoring Program requirements in Duke Energy nuclear plant Offsite Dose Calculation Manuals and Selected Licensee Commitments Manuals, as applicable. In addition, EnRad Laboratory participated in the Environmental Resource Associates (ERA) RadChem™ Proficiency Testing program to satisfy the North Carolina state drinking water radiochemistry certification requirements.

EnRad Laboratory participated in three interlaboratory programs: Eckert & Ziegler Analytics (EZA), ERA, and Fleet Scientific Services (FSS). EZA results were evaluated against IP 84750 acceptance criteria stated in EnRad procedure 515, Cross Check Program Administration. ERA evaluated the results reported by EnRad based on the National Environmental Laboratory Accreditation Conference (NELAC) Field of Proficiency Testing criteria. FSS results were evaluated as prescribed in the Duke Energy Nuclear Generation Procedure SRPMP 9-2.

Low-level Iodine-131 analysis of drinking water was not required during 2015 since the dose calculated for the consumption of the water was not greater than 1 mrem per year in any supported program. This dose was calculated monthly during 2015 to ensure that low-level Iodine-131 analysis of drinking water samples was not required.

5.5.1 DUKE ENERGY INTERLABORATORY PROGRAM

EnRad Laboratories participated in the Duke Energy Fleet Scientific Services (FSS) Interlaboratory Program during 2015. Interlaboratory cross check samples including mixed gamma in water (Marinelli beakers), low-level I-131 in water, gross beta in water, and tritium in water samples were analyzed during 2015. A summary of the EnRad Laboratory program results for 2015 is documented in Table 5.0-A.

5.5.2 ECKERT & ZIEGLER ANALYTICS CROSS CHECK PROGRAM

EnRad Laboratories participated in the Eckert & Ziegler Analytics Cross Check Program during 2015. Cross check samples including air filters (single and composites), air cartridges, gross beta in water, various mixed gamma samples in Marinelli beakers (soil, vegetation, milk, and water), tritium in water, and Iodine in milk and water samples were analyzed at various times of the year. A summary of the EnRad Laboratory program results for 2015 is documented in Table 5.0-B.

Interlaboratory cross check samples from EZA were received and analyzed in all four quarters of 2015. During 2015, there were three EZA Cross Check results in non-agreement. The first non-agreement result was in the second quarter mixed gamma in vegetation sample (E11250). Agreement was achieved in seven of eight identified nuclides, with Cs-137 being the nuclide that was found in non-agreement (NCR # 01939292). Due to the non-agreement, an evaluation was conducted to track actions and resolve how to prevent recurrence. The evaluation identified a slight negative bias for all nuclides which could be attributed to three

factors: (1) mismatch between cross check geometry and calibration geometry fill-depth, (2) insufficient training of laboratory personnel regarding the importance of geometry effects, and (3) EnRad procedure # 52 when revised the procedural guidance on sample preparation to agree with calibration geometries' fill-depth was removed. How to prevent recurrence: (1) laboratory personnel were provided training to ensure an understanding of the importance of reproducing the proper geometry in all sample analyses, (2) ensure cross checks are ordered that correctly reflect calibration geometries, (3) revise EnRad procedure # 52 to address proper sample preparation to ensure proper geometry agreement, and (4) request from EZA a third quarter mixed gamma in vegetation (E11335) sample (all nuclides were in agreement and no bias was present).

The next two non-agreement results were second quarter LLI-131 in Water (E11248) and third quarter LLI-131 in Water (E11337); NCR # 01937710 and NCR # 01967544 respectively. After the second failure, the LLI-131 in Water analysis was immediately suspended at EnRad Analytical Laboratory (October 2015) and samples requiring this analysis were sent to a vendor lab (GEL). During the fourth quarter of 2015, EnRad requested and analyzed six LLI-131 in Water samples prepared by FSS and all samples were in agreement. Second quarter LLI-131 in Water (E11248) - NCR # 01937710 non-agreement was determined to have been caused by an incomplete chemical separation as the source of the cross check failure. The exact cause of the incomplete separation could not be established and given that the accompanying QC samples were acceptable, no precise cause could be attributed to the failure. In accordance with standard practice, another cross check was obtained for third quarter 2015 to validate the LLI-131 in Water methodology. The third quarter LLI-131 in Water (E11337) also yielded unacceptable results (NCR # 01967544) with result similar to the second quarter results. Immediate corrective actions included reviewing analysis package, EnRad Analytical Laboratory immediately suspended the LLI-131 in Water analysis and samples requiring this analysis were sent to a vendor lab (GEL) for analysis. Due to the second non-agreement, another evaluation was conducted to determine the cause and how to prevent recurrence. The evaluation identified the following items to help prevent recurrence: (1) revise EnRad procedure # 54 to specify method (pH) limitations of steps and to apply dechlorination steps only when needed; (2) revise EnRad procedure # 515 to address specific activity ranges, chemical matrix types, physical matrix types, or specific geometry requirements - such as I-131 cross check samples be ordered at a lower pH; (3) analyze a final set of test samples in appropriate pH to validate cause had been resolved. All FSS LLI-131 samples analyzed during fourth quarter 2015 were in agreement.

Low-Level Iodine 131 (LLI-131) activity has not been observed in water analyses at EnRad Analytical Laboratory in 2015; therefore, there is no possibility that I-131 results may have been underreported in 2015. During first quarter of 2015, EnRad Analytical Laboratory analyzed a LLI-131 in Milk (E11171) with acceptable results (Ratio: 99%). LLI-131 in Milk methodology is essentially the same as that of water and they have similar densities.

5.5.3 ERA PROFICIENCY TESTING

EnRad Laboratories performed method proficiency testing through a program administered by Environmental Resource Associates (ERA) of Arvada, CO. ERA supplied requested method proficiency samples for analysis and nuclide concentration determination. ERA reported proficiency test results to the North Carolina Department of Health and Human Services, North Carolina Public Health Drinking Water Laboratory Certification Program. A summary of these proficiency test data for 2015 is documented in Table 5.0-C.

5.6 INTERCOMPARISON PROGRAM

Catawba Nuclear Station routinely participates in an environmental sample intercomparison program. Program elements include sampling frequency and analysis parameters for drinking water, surface water, milk, fish, broadleaf vegetation, and shoreline sediment samples that have been collected. Samples are routinely split with a vendor laboratory for intercomparison analysis.

5.7 TLD INTERCOMPARISON PROGRAM

5.7.1 NUCLEAR TECHNOLOGY SERVICES INTERCOMPARISON PROGRAM

Radiation Dosimetry and Records participates in a quarterly TLD intercomparison program administered by Nuclear Technology Services, Inc. of Roswell, GA. Nuclear Technology Services irradiates environmental dosimeters quarterly and sends them to the Radiation Dosimetry and Records group for analysis of the unknown estimated delivered exposure. A summary of the 2015 Nuclear Technology Services Intercomparison Report is documented in Table 5.0-D. The individual measurements were evaluated and results falling outside the acceptable ratio criteria had an evaluation performed to identify any recommended remedial actions and to reduce anomalous errors. During third quarter of 2015 an environmental external TLD cross check failed and NCR # 02012855 was written to document this failure. To prevent recurrence, the TLD was pulled and visually inspected for cracks in the elements and overall integrity of the TLD - no abnormalities were found. A dose response check was performed and one of the elements fell outside the acceptable limits; therefore, the TLD was removed from service by separating it from the usable TLD population and writing OOS (out of service) over the barcode with a permanent marker to prevent future use. Fourth quarter 2015 results were all acceptable. Complete documentation of any evaluation will be available and provided to the NRC upon request.

5.7.2 INTERNAL CROSS CHECK (DUKE ENERGY)

Radiation Dosimetry and Records participates in a quarterly TLD intracomparison program administered internally by the Dosimetry Lab. The Dosimetry Lab Staff irradiates environmental dosimeters quarterly and submits them for analysis of the unknown estimated delivered exposure. A summary of the 2015 Internal Cross Check (Duke Energy) Program is documented in Table 5.0-D.

5.8 GENERAL ENGINEERING LABORATORY, LLC (GEL)

General Engineering Laboratory, LLC (GEL) participated in various Quality Assurance Programs for Inter-laboratory, Intra-laboratory, Third Party Cross Check programs, and a number of proficiency testing programs during 2015. A summary of the GEL quality assurance program results for the sample media types sent to GEL during 2015 is documented in Table 5.0-E. GEL Quality Assurance Program results not appearing in Table 5.0-E will be supplied upon request.

TABLE 5.0-A

DUKE ENERGY

INTERLABORATORY COMPARISON PROGRAM

2015 EnRad Fleet Scientific Services Cross Check Performance Summary

Cross check samples were distributed by Fleet Scientific Services (FSS) in accordance with Duke Energy Nuclear Generation Procedure SRPMP 9-2. Thirteen water samples were analyzed for tritium, gross beta, and mixed gamma emitters, while two water samples were analyzed for low-level I-131. The below table lists results for specific analyses. One hundred and twenty results were reported and evaluated as prescribed in procedure SRPMP 9-2. The acceptance criteria for the program was based on the NRC Inspection Manual Procedure 84750 (IP 84750). These results passed the acceptance criteria for the program with 100% agreement.

Sample	Sample ID	Nuclide	Quarter	Units	EnRad Value	GO Value	EnRad/GO Ratio	Evaluation
Water			4	pCi/L	1.13E+02	1.17E+02	0.96	Agreement
LLI-131	Q154L1W1	I-131	4	pCi/L	1.19E+02	1.17E+02	1.01	Agreement
			4	pCi/L	1.19E+02	1.17E+02	1.01	Agreement
			4	pCi/L	5.57E+01	5.71E+01	0.97	Agreement
	Q154L1W2	I-131	4	pCi/L	5.51E+01	5.71E+01	0.96	Agreement
			4	pCi/L	5.41E+01	5.71E+01	0.95	Agreement
Tritium in Water	Q151TWR1	H-3	1	pCi/L	2.22E+03	2.08E+03	1.07	Agreement
			1	pCi/L	2.14E+03	2.08E+03	1.03	Agreement
	Q151TWR2	H-3	1	pCi/L	4.74E+02	4.42E+02	1.07	Agreement
			1	pCi/L	5.20E+02	4.42E+02	1.18	Agreement
	Q151TWR3	H-3	1	pCi/L	8.35E+03	8.45E+03	0.99	Agreement
			1	pCi/L	8.44E+03	8.45E+03	1.00	Agreement
Tritium in Water			3	pCi/L	1.45E+05	1.49E+05	0.97	Agreement
	Q153TWR1	H-3	3	pCi/L	1.47E+05	1.49E+05	0.99	Agreement
			3	pCi/L	1.49E+05	1.49E+05	1.00	Agreement
			3	pCi/L	2.82E+03	2.77E+03	1.02	Agreement
	Q153TWR2	H-3	3	pCi/L	2.79E+03	2.77E+03	1.01	Agreement
			3	pCi/L	2.69E+03	2.77E+03	0.97	Agreement
			3	pCi/L	3.70E+02	3.35E+02	1.11	Agreement
	Q153TWR3	H-3	3	pCi/L	3.34E+02	3.35E+02	1.00	Agreement
			3	pCi/L	3.20E+02	3.35E+02	0.96	Agreement
Beta in Water	Q153ABW1	Cs-137	3	pCi/L	1.31E+02	1.27E+02	1.03	Agreement
			3	pCi/L	1.29E+02	1.27E+02	1.02	Agreement
			3	pCi/L	1.28E+02	1.27E+02	1.01	Agreement
			3	pCi/L	3.24E+02	3.26E+02	0.99	Agreement
	Q153ABW2	Cs-137	3	pCi/L	3.32E+02	3.26E+02	1.02	Agreement
			3	pCi/L	3.24E+02	3.26E+02	0.99	Agreement
			3	pCi/L	2.04E+02	1.97E+02	1.04	Agreement
	Q153ABW3	Cs-137	3	pCi/L	2.05E+02	1.97E+02	1.04	Agreement
			3	pCi/L	2.03E+02	1.97E+02	1.03	Agreement

TABLE 5.0-A (Cont.)

Sample	Sample ID	Nuclide	Quarter	Units	EnRad Value	GO Value	EnRad/GO Ratio	Evaluation
Gamma in Water	Q151GWR1 1.0 L	Mn-54	1	pCi/L	7.06E+03	6.65E+03	1.06	Agreement
			1	pCi/L	7.18E+03	6.65E+03	1.08	Agreement
			1	pCi/L	7.16E+03	6.65E+03	1.08	Agreement
		Co-57	1	pCi/L	4.84E+03	4.87E+03	0.99	Agreement
			1	pCi/L	4.93E+03	4.87E+03	1.01	Agreement
			1	pCi/L	4.88E+03	4.87E+03	1.00	Agreement
		Fe-59	1	pCi/L	7.92E+03	7.41E+03	1.07	Agreement
			1	pCi/L	8.06E+03	7.41E+03	1.09	Agreement
			1	pCi/L	8.10E+03	7.41E+03	1.09	Agreement
		Co-60	1	pCi/L	6.13E+03	6.14E+03	1.00	Agreement
			1	pCi/L	6.25E+03	6.14E+03	1.02	Agreement
			1	pCi/L	6.21E+03	6.14E+03	1.01	Agreement
		Cs-134	1	pCi/L	7.53E+03	8.53E+03	0.88	Agreement
			1	pCi/L	7.59E+03	8.53E+03	0.89	Agreement
			1	pCi/L	7.59E+03	8.53E+03	0.89	Agreement
		Cs-137	1	pCi/L	1.34E+04	1.32E+04	1.02	Agreement
			1	pCi/L	1.37E+04	1.32E+04	1.04	Agreement
			1	pCi/L	1.37E+04	1.32E+04	1.04	Agreement
	Q151GWR1 3.5 L	Mn-54	1	pCi/L	7.38E+03	6.65E+03	1.11	Agreement
			1	pCi/L	7.32E+03	6.65E+03	1.10	Agreement
			1	pCi/L	7.40E+03	6.65E+03	1.11	Agreement
		Co-57	1	pCi/L	5.14E+03	4.87E+03	1.05	Agreement
			1	pCi/L	5.01E+03	4.87E+03	1.03	Agreement
			1	pCi/L	5.17E+03	4.87E+03	1.06	Agreement
		Fe-59	1	pCi/L	8.12E+03	7.41E+03	1.10	Agreement
			1	pCi/L	8.15E+03	7.41E+03	1.10	Agreement
			1	pCi/L	8.12E+03	7.41E+03	1.10	Agreement
		Co-60	1	pCi/L	6.41E+03	6.14E+03	1.04	Agreement
			1	pCi/L	6.42E+03	6.14E+03	1.05	Agreement
			1	pCi/L	6.41E+03	6.14E+03	1.04	Agreement
		Cs-134	1	pCi/L	8.09E+03	8.53E+03	0.95	Agreement
			1	pCi/L	8.01E+03	8.53E+03	0.94	Agreement
			1	pCi/L	8.15E+03	8.53E+03	0.96	Agreement
		Cs-137	1	pCi/L	1.42E+04	1.32E+04	1.08	Agreement
			1	pCi/L	1.41E+04	1.32E+04	1.07	Agreement
			1	pCi/L	1.42E+04	1.32E+04	1.08	Agreement

TABLE 5.0-A (Cont.)

Sample	Sample ID	Nuclide	Quarter	Units	EnRad Value	GO Value	EnRad/GO Ratio	Evaluation
Gamma in Water	Q153GWR	Mn-54	3	pCi/L	8.38E+03	7.79E+03	1.08	Agreement
	1.0 L		3	pCi/L	8.43E+03	7.79E+03	1.08	Agreement
			3	pCi/L	8.48E+03	7.79E+03	1.09	Agreement
		Co-57	3	pCi/L	1.05E+04	1.05E+04	1.00	Agreement
			3	pCi/L	1.06E+04	1.05E+04	1.01	Agreement
			3	pCi/L	1.06E+04	1.05E+04	1.01	Agreement
		Fe-59	3	pCi/L	2.65E+04	2.40E+04	1.10	Agreement
			3	pCi/L	2.69E+04	2.40E+04	1.12	Agreement
			3	pCi/L	2.69E+04	2.40E+04	1.12	Agreement
		Co-60	3	pCi/L	1.24E+04	1.22E+04	1.02	Agreement
			3	pCi/L	1.25E+04	1.22E+04	1.02	Agreement
			3	pCi/L	1.26E+04	1.22E+04	1.03	Agreement
		Zn-65	3	pCi/L	1.89E+04	1.74E+04	1.09	Agreement
			3	pCi/L	1.91E+04	1.74E+04	1.10	Agreement
			3	pCi/L	1.92E+04	1.74E+04	1.10	Agreement
		Y-88	3	pCi/L	8.62E+03	8.86E+03	0.97	Agreement
			3	pCi/L	8.81E+03	8.86E+03	0.99	Agreement
			3	pCi/L	8.89E+03	8.86E+03	1.00	Agreement
		Sn-113	3	pCi/L	1.35E+04	1.31E+04	1.03	Agreement
			3	pCi/L	1.36E+04	1.31E+04	1.04	Agreement
			3	pCi/L	1.34E+04	1.31E+04	1.03	Agreement
		Cs-134	3	pCi/L	6.29E+03	6.91E+03	0.91	Agreement
			3	pCi/L	6.29E+03	6.91E+03	0.91	Agreement
			3	pCi/L	6.37E+03	6.91E+03	0.92	Agreement
		Cs-137	3	pCi/L	1.22E+04	1.17E+04	1.05	Agreement
			3	pCi/L	1.22E+04	1.17E+04	1.05	Agreement
			3	pCi/L	1.22E+04	1.17E+04	1.05	Agreement

TABLE 5.0-A (Cont.)

Sample	Sample ID	Nuclide	Quarter	Units	EnRad Value	GO Value	EnRad/GO Ratio	Evaluation
Gamma in Water	Q153GWR 3.5 L	Mn-54	3	pCi/L	8.47E+03	7.79E+03	1.09	Agreement
			3	pCi/L	8.56E+03	7.79E+03	1.10	Agreement
			3	pCi/L	8.47E+03	7.79E+03	1.09	Agreement
		Co-57	3	pCi/L	1.07E+04	1.05E+04	1.02	Agreement
			3	pCi/L	1.09E+04	1.05E+04	1.04	Agreement
			3	pCi/L	1.07E+04	1.05E+04	1.02	Agreement
		Fe-59	3	pCi/L	2.66E+04	2.40E+04	1.11	Agreement
			3	pCi/L	2.67E+04	2.40E+04	1.11	Agreement
			3	pCi/L	2.66E+04	2.40E+04	1.11	Agreement
		Co-60	3	pCi/L	1.27E+04	1.22E+04	1.04	Agreement
			3	pCi/L	1.28E+04	1.22E+04	1.05	Agreement
			3	pCi/L	1.27E+04	1.22E+04	1.04	Agreement
		Zn-65	3	pCi/L	1.90E+04	1.74E+04	1.09	Agreement
			3	pCi/L	1.92E+04	1.74E+04	1.10	Agreement
			3	pCi/L	1.90E+04	1.74E+04	1.09	Agreement
		Y-88	3	pCi/L	8.93E+03	8.86E+03	1.01	Agreement
			3	pCi/L	8.96E+03	8.86E+03	1.01	Agreement
			3	pCi/L	9.00E+03	8.86E+03	1.02	Agreement
		Sn-113	3	pCi/L	1.38E+04	1.31E+04	1.06	Agreement
			3	pCi/L	1.40E+04	1.31E+04	1.07	Agreement
			3	pCi/L	1.38E+04	1.31E+04	1.06	Agreement
		Cs-134	3	pCi/L	6.53E+03	6.91E+03	0.94	Agreement
			3	pCi/L	6.58E+03	6.91E+03	0.95	Agreement
			3	pCi/L	6.55E+03	6.91E+03	0.95	Agreement
		Cs-137	3	pCi/L	1.23E+04	1.17E+04	1.05	Agreement
			3	pCi/L	1.24E+04	1.17E+04	1.06	Agreement
			3	pCi/L	1.23E+04	1.17E+04	1.05	Agreement

TABLE 5.0-B

ECKERT & ZIEGLER ANALYTICS

CROSS CHECK PROGRAM

2015 Cross Check Results for EnRad Laboratories

Interlaboratory Cross check samples are received, prepared, and analyzed in all four quarters of 2015. Results are reported directly to Eckert & Ziegler Analytics. Environmental cross check samples were analyzed in replicate, and the result closest to the mean is reported to Eckert & Ziegler Analytics. The acceptance criteria for the program was based on the NRC Inspection Manual Procedure 84750 (IP 84750). Seventy-three environmental results were reported, of which 70 (95.9%) met the acceptance criteria based on IP 84750.

Sample	Sample ID	Nuclide	Quarter	Units	EnRad Value	EZA Value	EnRad/EZA Ratio	Evaluation
Gamma in Filter	E11279	Ce-141	3	pCi	87.6	84.9	1.03	Agreement
		Cr-51	3	pCi	218	215	1.02	Agreement
		Cs-134	3	pCi	83.6	84.4	0.99	Agreement
		Cs-137	3	pCi	102	102	1.00	Agreement
		Co-58	3	pCi	108	105	1.03	Agreement
		Mn-54	3	pCi	113	116	0.98	Agreement
		Fe-59	3	pCi	93	89.9	1.03	Agreement
		Zn-65	3	pCi	141	141	1.00	Agreement
		Co-60	3	pCi	133	132	1.01	Agreement

TABLE 5.0-B (Cont.)

Sample	Sample ID	Nuclide	Quarter	Units	EnRad Value	EZA Value	EnRad/ EZA Ratio	Evaluation
Gross Beta	E11281	Gross Beta	3	pCi	205	216	0.95	Agreement
Filter	E11411	Gross Beta	4	pCi	256	240	1.07	Agreement
Gross Beta	E11249	Cs-137	2	pCi/L	259	248	1.04	Agreement
in Water	E11407	Cs-137	4	pCi/L	242	247	0.98	Agreement
I-131 Charcoal	E11172	I-131	1	pCi	82.0	78.4	1.05	Agreement
Cartridge	E11278	I-131	3	pCi	81.5	81.4	1.00	Agreement
LLI-131 in	E11248	I-131	2	pCi/L	67.8	98.4	0.69	Non-Agreement*
Water	E11337	I-131	3	pCi/L	58.5	96.5	0.61	Non-Agreement**
LLI-131 in Milk	E11171	I-131	1	pCi/L	98.3	99.0	0.99	Agreement
Tritium in Water	E11252	H-3	2	pCi/L	13,100	13,000	1.01	Agreement
Gamma in Vegetation (Coffee Grounds)	E11250	Cr-51	2	pCi/g	0.430	0.474	0.91	Agreement
		Cs-134	2	pCi/g	0.230	0.279	0.82	Agreement
		Cs-137	2	pCi/g	0.170	0.215	0.79	Non-Agreement***
		Co-58	2	pCi/g	0.100	0.117	0.85	Agreement
		Mn-54	2	pCi/g	0.150	0.173	0.87	Agreement
		Fe-59	2	pCi/g	0.260	0.260	1.00	Agreement
		Zn-65	2	pCi/g	0.400	0.427	0.94	Agreement
		Co-60	2	pCi/g	0.300	0.331	0.91	Agreement
Gamma in Vegetation (Coffee Grounds)	E11335	Ce-141	3	pCi/g	0.307	0.312	0.98	Agreement
		Cr-51	3	pCi/g	0.819	0.788	1.04	Agreement
		Cs-134	3	pCi/g	0.272	0.310	0.88	Agreement
		Cs-137	3	pCi/g	0.383	0.373	1.03	Agreement
		Co-58	3	pCi/g	0.389	0.385	1.01	Agreement
		Mn-54	3	pCi/g	0.449	0.425	1.06	Agreement
		Fe-59	3	pCi/g	0.361	0.331	1.09	Agreement
		Zn-65	3	pCi/g	0.561	0.517	1.08	Agreement
		Co-60	3	pCi/g	0.493	0.483	1.02	Agreement

* NCR # 01937710

** NCR # 01967544

*** NCR # 01939292

TABLE 5.0-B (Cont.)

Sample	Sample ID	Nuclide	Quarter	Units	EnRad Value	EZA Value	EnRad/ EZA Ratio	Evaluation
Gamma in Composite Filter	E11280	Ce-141	3	pCi	141	140	1.01	Agreement
		Cr-51	3	pCi	370	353	1.05	Agreement
		Cs-134	3	pCi	136	139	0.98	Agreement
		Cs-137	3	pCi	164	167	0.98	Agreement
		Co-58	3	pCi	167	172	0.97	Agreement
		Mn-54	3	pCi	195	190	1.03	Agreement
		Fe-59	3	pCi	179	148	1.21	Agreement
		Zn-65	3	pCi	224	232	0.97	Agreement
		Co-60	3	pCi	213	216	0.99	Agreement
Gamma in Water	E11282	I-131	3	pCi/L	94.6	96.7	0.98	Agreement
		Ce-141	3	pCi/L	196	199	0.99	Agreement
		Cr-51	3	pCi/L	508	502	1.01	Agreement
		Cs-134	3	pCi/L	176	198	0.89	Agreement
		Cs-137	3	pCi/L	237	238	1.00	Agreement
		Co-58	3	pCi/L	240	246	0.98	Agreement
		Mn-54	3	pCi/L	286	271	1.06	Agreement
		Fe-59	3	pCi/L	229	211	1.09	Agreement
		Zn-65	3	pCi/L	353	330	1.07	Agreement
Gamma in Milk	E11170	Co-60	3	pCi/L	314	308	1.02	Agreement
		I-131	1	pCi/L	97.9	97.5	1.00	Agreement
		Ce-141	1	pCi/L	221	211	1.05	Agreement
		Cr-51	1	pCi/L	607	555	1.09	Agreement
		Cs-134	1	pCi/L	181	191	0.95	Agreement
		Cs-137	1	pCi/L	266	253	1.05	Agreement
		Co-58	1	pCi/L	285	272	1.05	Agreement
		Mn-54	1	pCi/L	262	240	1.09	Agreement
		Fe-59	1	pCi/L	334	295	1.13	Agreement
Gamma in Soil	E11251	Zn-65	1	pCi/L	509	453	1.12	Agreement
		Co-60	1	pCi/L	527	498	1.06	Agreement
		Cr-51	2	pCi/g	0.460	0.482	0.95	Agreement
		Cs-134	2	pCi/g	0.260	0.284	0.91	Agreement
		Cs-137	2	pCi/g	0.270	0.298	0.91	Agreement
		Co-58	2	pCi/g	0.110	0.119	0.92	Agreement
		Mn-54	2	pCi/g	0.170	0.176	0.97	Agreement
		Fe-59	2	pCi/g	0.260	0.264	0.98	Agreement
		Zn-65	2	pCi/g	0.430	0.434	0.99	Agreement
Gamma in Soil		Co-60	2	pCi/g	0.300	0.336	0.89	Agreement

TABLE 5.0-C

ENVIRONMENTAL RESOURCE ASSOCIATES (ERA)

PROFICIENCY TESTING

2015 Proficiency Test Results for EnRad Laboratories

North Carolina Department of Health and Human Services Laboratory Certification

EnRad Laboratories

Proficiency test samples are received, prepared, and analyzed in second and fourth quarters of 2015. Results are reported directly to Environmental Resource Associates as described in the instruction package within the study period. Proficiency test data are reported to ERA for evaluation. The acceptance criteria for the program was based on the National Environmental Laboratory Accreditation Conference (NELAC) Field of Proficiency Testing criteria. Fourteen results were reported of which 14 (100 %) met the acceptance criteria. ERA reports proficiency test results to the North Carolina Department of Health and Human Services, North Carolina Public Drinking Water Laboratory Certification Program. This testing is to satisfy the North Carolina state drinking water radiochemistry certification requirements.

Sample	Sample ID	Nuclide	Quarter	Units	EnRad Value	ERA Value	Acceptance Limits	Evaluation
Gamma Emitters in Water	Rad-101	Ba-133	2	pCi/L	75.5	82.5	69.3 - 90.8	Agreement
		Cs-134	2	pCi/L	69.0	75.7	61.8-83.3	Agreement
		Cs-137	2	pCi/L	188.0	189.0	170 - 210	Agreement
		Co-60	2	pCi/L	81.1	84.5	76.0 - 95.3	Agreement
		Zn-65	2	pCi/L	219.0	203.0	183 - 238	Agreement
Gamma Emitters in Water	Rad -103	Ba-133	4	pCi/L	29.6	32.5	25.9 - 36.7	Agreement
		Cs-134	4	pCi/L	54.0	62.3	50.6 - 68.5	Agreement
		Cs-137	4	pCi/L	160	157	141 -175	Agreement
		Co-60	4	pCi/L	71.2	71.1	64.0 - 80.7	Agreement
		Zn-65	4	pCi/L	141	126	113 -149	Agreement
Tritium in Water	Rad -101	H-3	2	pCi/L	3180	3280	2770-3620	Agreement
	Rad -103	H-3	4	pCi/L	20600	21300	18700-23400	Agreement
Iodine-131 in Water	Rad -101	I-131	2	pCi/L	23.3	23.8	19.7 - 28.3	Agreement
	Rad -103	I-131	4	pCi/L	25.4	26.3	21.9 - 31.0	Agreement

TABLE 5.0-D

2015 ENVIRONMENTAL DOSIMETER

CROSS-CHECK RESULTS

Nuclear Technology Services

Radiation Dosimetry and Records participates in a quarterly TLD intercomparison program administered by Nuclear Technology Services, Inc. of Roswell, GA. Nuclear Technology Services irradiates environmental dosimeters quarterly and sends them to the Radiation Dosimetry and Records group for analysis of the unknown estimated delivered exposure. The individual measurements were evaluated and results falling outside the acceptable ratio criteria had an evaluation performed to identify any recommended remedial actions and to reduce anomalous errors. Complete documentation of any evaluation will be available and provided to the NRC upon request.

1st Quarter 2015						2nd Quarter 2015					
TLD	Reported	Delivered	Bias	Pass/Fail		TLD	Reported	Delivered	Bias	Pass/Fail	
Number	(mR)	(mR)	(% diff)	Criteria	Pass/Fail	Number	(mR)	(mR)	(% diff)	Criteria	Pass/Fail
102480	75.35	70.21	7.32	<+/-15%	Pass	102723	18.37	21.52	-14.64	<+/-15%	Pass
102376	72.44	70.21	3.18	<+/-15%	Pass	103394	19.49	21.52	-9.43	<+/-15%	Pass
102444	73.21	70.21	4.27	<+/-15%	Pass	103058	19.49	21.52	-9.43	<+/-15%	Pass
103070	78.11	70.21	11.25	<+/-15%	Pass	103120	19.83	21.52	-7.85	<+/-15%	Pass
102008	77.96	70.21	11.04	<+/-15%	Pass	103419	19.34	21.52	-10.13	<+/-15%	Pass
Average Bias (B)			7.41			Average Bias (B)			-10.30		
Standard Deviation (S)			3.73			Standard Deviation (S)			2.57		
Measure Performance B +S			11.14	<15%	Pass	Measure Performance B +S			12.86	<15%	Pass
3rd Quarter 2015						4th Quarter 2015					
TLD	Reported	Delivered	Bias	Pass/Fail		TLD	Reported	Delivered	Bias	Pass/Fail	
Number	(mR)	(mR)	(% diff)	Criteria	Pass/Fail	Number	(mR)	(mR)	(% diff)	Criteria	Pass/Fail
103243	20.29	18.7	8.68	<+/-15%	Pass	102869	72.88	66.9	8.91	<+/-15%	Pass
103294	20.64	18.7	10.55	<+/-15%	Pass	102239	71.35	66.9	6.62	<+/-15%	Pass
100502	19.30	18.7	3.37	<+/-15%	Pass	101338	72.24	66.9	7.95	<+/-15%	Pass
100025	19.51	18.7	4.50	<+/-15%	Pass	100372	69.80	66.9	4.30	<+/-15%	Pass
102816	21.91	18.7	17.35	<+/-15%	Fail	100357	70.90	66.9	5.95	<+/-15%	Pass
Average Bias (B)			8.89			Average Bias (B)			6.75		
Standard Deviation (S)			5.57			Standard Deviation (S)			1.78		
Measure Performance B +S			14.46	<15%	Pass	Measure Performance B +S			8.53	<15%	Pass

Fail - refer to NCR # 02012855

TABLE 5.0-D (Cont.)

Internal Crosscheck (Duke Energy)

Radiation Dosimetry and Records participates in a quarterly TLD intracomparison program administered internally by the Dosimetry Lab. The Dosimetry Lab Staff irradiates environmental dosimeters quarterly and submits them for analysis of the unknown estimated delivered exposure.

1st Quarter 2015						2nd Quarter 2015					
TLD	Reported	Delivered	Bias	Pass/Fail		TLD	Reported	Delivered	Bias	Pass/Fail	
Number	(mR)	(mR)	(% diff)	Criteria	Pass/Fail	Number	(mR)	(mR)	(% diff)	Criteria	Pass/Fail
103012	30.82	30.0	2.73	<+/-15%	Pass	100193	22.07	21.8	1.24	<+/-15%	Pass
103524	31.64	30.0	5.47	<+/-15%	Pass	101191	21.06	21.8	-3.39	<+/-15%	Pass
102769	32.31	30.0	7.70	<+/-15%	Pass	101201	21.74	21.8	-0.28	<+/-15%	Pass
103754	31.29	30.0	4.30	<+/-15%	Pass	100158	21.94	21.8	0.64	<+/-15%	Pass
102798	30.86	30.0	2.87	<+/-15%	Pass	101319	21.99	21.8	0.87	<+/-15%	Pass
103737	31.50	30.0	5.00	<+/-15%	Pass	101183	22.46	21.8	3.03	<+/-15%	Pass
102985	32.05	30.0	6.83	<+/-15%	Pass	101330	21.40	21.8	-1.83	<+/-15%	Pass
102108	29.99	30.0	-0.03	<+/-15%	Pass	100351	22.36	21.8	2.57	<+/-15%	Pass
102867	31.00	30.0	3.33	<+/-15%	Pass	101038	22.36	21.8	2.57	<+/-15%	Pass
103500	31.61	30.0	5.37	<+/-15%	Pass		22.49	21.8	3.17	<+/-15%	Pass
Average Bias (B)			4.36			Average Bias (B)			0.86		
Standard Deviation (S)			2.24			Standard Deviation (S)			2.18		
Measure Performance B +S			6.60	<15%	Pass	Measure Performance B +S			3.04	<15%	Pass
3rd Quarter 2015						4th Quarter 2015					
TLD	Reported	Delivered	Bias	Pass/Fail		TLD	Reported	Delivered	Bias	Pass/Fail	
Number	(mR)	(mR)	(% diff)	Criteria	Pass/Fail	Number	(mR)	(mR)	(% diff)	Criteria	Pass/Fail
103703	48.64	43.6	11.56	<+/-15%	Pass	100057	55.76	54.5	2.31	<+/-15%	Pass
102917	46.91	43.6	7.59	<+/-15%	Pass	103022	62.04	54.5	13.83	<+/-15%	Pass
100170	44.30	43.6	1.61	<+/-15%	Pass	103254	55.74	54.5	2.28	<+/-15%	Pass
102841	46.18	43.6	5.92	<+/-15%	Pass	100154	60.56	54.5	11.12	<+/-15%	Pass
101149	43.63	43.6	0.07	<+/-15%	Pass	103256	55.71	54.5	2.22	<+/-15%	Pass
102474	44.87	43.6	2.91	<+/-15%	Pass	101225	58.10	54.5	6.61	<+/-15%	Pass
100522	46.11	43.6	5.76	<+/-15%	Pass	100799	59.79	54.5	9.71	<+/-15%	Pass
103016	48.70	43.6	11.70	<+/-15%	Pass	100417	61.06	54.5	12.04	<+/-15%	Pass
100095	46.11	43.6	5.76	<+/-15%	Pass	103683	57.37	54.5	5.27	<+/-15%	Pass
100381	42.87	43.6	-1.67	<+/-15%	Pass	102114	55.74	54.5	2.28	<+/-15%	Pass
Average Bias (B)			5.12			Average Bias (B)			6.77		
Standard Deviation (S)			4.49			Standard Deviation (S)			4.58		
Measure Performance B +S			9.61	<15%	Pass	Measure Performance B +S			11.34	<15%	Pass

TABLE 5.0-E

2015 ANNUAL QUALITY ASSURANCE REPORT

for the RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

for GEL Laboratories, LLC (GEL)

Sample	Nuclide	Quarter	Units	GEL Value	Known Value	Acceptance Range/Ratio	Evaluation
HDT in Soil	Fe-55	2 nd	Bq/Kg	330	205	Sens. Eval.	Agreement
MAPEP-15-MaS32							Agreement
(2Q 2015)		4 th	Bq/kg	557	555	389 - 722	Agreement
MAPEP-15-MaS33	Sr-90	2 nd	Bq/Kg	601.00	653	457 - 849	Agreement
(4Q 2015)							
		4 th	Bq/kg	403	425	298 - 553	Agreement
Gamma in Soil	Am-241	2 nd	Bq/Kg	97.0	68.0	68 - 126	Agreement
		4 th	Bq/Kg	61.7	49.5	34.7 - 64.4	Warning
	Co-57	2 nd	Bq/Kg	0.369	---	False Pos Test	Agreement
		4 th	Bq/Kg	1240.0	1180	826 - 1534	Agreement
MAPEP-15-MaS32	Cs-134	2 nd	Bq/Kg	639	678	475 - 881	Agreement
(2Q 2015)		4 th	Bq/Kg	933	1010	707 - 1313	Agreement
	Cs-137	2 nd	Bq/Kg	-0.279	---	False Pos Test	Agreement
		4 th	Bq/Kg	861.00	809	566 - 1052	Agreement
	Mn-54	2 nd	Bq/Kg	1280	1198	839 - 1557	Agreement
MAPEP-15-MaS33		4 th	Bq/Kg	1450	1340	938 - 1742	Agreement
(4Q 2015)	Zn-65	2 nd	Bq/Kg	1190.0	1064	745 - 1383	Agreement
		4 th	Bq/Kg	761.0	662	463 - 861	Agreement
	Co-60	2 nd	Bq/Kg	852	817	572 - 1062	Agreement
		4 th	Bq/Kg	2.45	1.30	Sens. Eval.	Agreement
	K-40	2 nd	Bq/Kg	684	622	435 - 809	Agreement
		4 th	Bq/Kg	687	599	419 - 779	Agreement

Note: * HTD refers to Hard-to-detect radionuclides

TABLE 5.0-E (Cont.)

Sample	Nuclide	Quarter	Units	GEL Value	Known Value	Acceptance Range/Ratio	Evaluation
Gamma in Water	Ce-141	4 th	pCi/L	302	284	1.06	Agreement
		1 st	pCi/L	140	139	1.01	Agreement
EZA 4Q 2014		2 nd	pCi/L	1.24E-01	Not Pres.	---	Agreement
E11060		3 rd	pCi/L	205	199	1.03	Agreement
		4 th	pCi/L	127	112	1.14	Agreement
	Cr-51	4 th	pCi/L	543	526	1.03	Agreement
		1 st	pCi/L	395	366	1.08	Agreement
		2 nd	pCi/L	347	293	1.18	Agreement
		3 rd	pCi/L	542	502	1.08	Agreement
		4 th	pCi/L	260	244	1.07	Agreement
EZA 1Q 2015	Cs-134	4 th	pCi/L	190	213	0.89	Agreement
E11177		1 st	pCi/L	112	126	0.89	Agreement
		2 nd	pCi/L	163	173	0.94	Agreement
		3 rd	pCi/L	175	198	0.89	Agreement
		4 th	pCi/L	125	139	0.90	Agreement
	Cs-137	4 th	pCi/L	258	257	1.01	Agreement
		1 st	pCi/L	169	167	1.01	Agreement
EZA 2Q 2015		2 nd	pCi/L	134	133	1.01	Agreement
E11219		3 rd	pCi/L	240	238	1.01	Agreement
		4 th	pCi/L	112	99.5	1.13	Agreement
	Co-58	4 th	pCi/L	173	168	1.03	Agreement
		1 st	pCi/L	178	180	0.99	Agreement
		2 nd	pCi/L	72.1	72.6	0.99	Agreement
		3 rd	pCi/L	245	246	1.00	Agreement
		4 th	pCi/L	97.3	95.6	1.02	Agreement
EZA 3Q 2015	Mn-54	4 th	pCi/L	306	292	1.05	Agreement
E11313		1 st	pCi/L	166	159	1.05	Agreement
		2 nd	pCi/L	117	107	1.10	Agreement
		3 rd	pCi/L	288	271	1.06	Agreement
		4 th	pCi/L	141	126	1.12	Agreement
	Fe-59	4 th	pCi/L	251	226	1.11	Agreement
		1 st	pCi/L	214	195	1.10	Agreement
		2 nd	pCi/L	176	161	1.09	Agreement
		3 rd	pCi/L	231	211	1.10	Agreement
		4 th	pCi/L	111	93.4	1.19	Agreement
EZA 4Q 2015	Zn-65	4 th	pCi/L	420	384	1.09	Agreement
E11415		1 st	pCi/L	325	299	1.09	Agreement
		2 nd	pCi/L	285	264	1.08	Agreement
		3 rd	pCi/L	375	330	1.14	Agreement
		4 th	pCi/L	243	215	1.13	Agreement
	Co-60	4 th	pCi/L	324	304	1.06	Agreement
		1 st	pCi/L	323	328	0.98	Agreement
		2 nd	pCi/L	210	205	1.03	Agreement
		3 rd	pCi/L	311	308	1.01	Agreement
		4 th	pCi/L	192	185	1.04	Agreement

TABLE 5.0-E (Cont.)

Sample	Nuclide	Quarter	Units	GEL Value	Known Value	Acceptance Range/Ratio	Evaluation
Tritium in Water							
MAPEP-15-GrW32 (2Q 2015)	H-3	2 nd	Bq/L	633	563	394 - 732	Agreement
MAPEP-15-M aW33 (4Q 2015)	H-3	4 th	Bq/L	212	216	151 - 281	Agreement
I-131 in Water with EZA							
4Q 2014 E11060	I-131	4 th	pCi/L	111	95.3	1.16	Agreement
1Q 2015 E11177	I-131	1 st	pCi/L	99.2	96.7	1.03	Agreement
2Q 2015 E11219	I-131	2 nd	pCi/L	95.3	93.4	1.02	Agreement
3Q 2015 E11313	I-131	3 rd	pCi/L	100	96.7	1.03	Agreement
4Q 2015 E11415	I-131	4 th	pCi/L	105	92.6	1.13	Agreement

Other GEL 2015 Annual Environmental Quality Assurance Report results will be supplied upon request.

APPENDIX A

**ENVIRONMENTAL SAMPLING
&
ANALYSIS PROCEDURES**

APPENDIX A

ENVIRONMENTAL SAMPLING AND ANALYSIS PROCEDURES

Adherence to established procedures for sampling and analysis of all environmental media at Catawba Nuclear Station was required to ensure compliance with Station Selected Licensee Commitments. Analytical procedures were employed to ensure that Selected Licensee Commitments detection capabilities were achieved.

Environmental sampling and analyses were performed by EnRad Laboratories, Dosimetry and Records, Fisheries and Aquatic Ecology.

This appendix describes the environmental sampling frequencies and analysis procedures by media type.

I. CHANGE OF SAMPLING PROCEDURES

No changes were made to the sampling procedure during 2015.

II. DESCRIPTION OF ANALYSIS PROCEDURES

Gamma spectroscopy analyses are performed using high purity germanium gamma detectors and Canberra analytical software. Designated sample volumes are transferred to appropriate counting geometries and analyzed by gamma spectroscopy. Perishable samples such as fish and broadleaf vegetation are ground to achieve a homogeneous mixture. Soils and sediments are dried, sifted to remove foreign objects (rocks, clams, glass, etc.) then transferred to appropriate counting geometry.

Low-level iodine analyses are performed by passing a designated sample aliquot through a pre-weighed amount of ion exchange resin to remove and concentrate any iodine in the aqueous sample (milk). The resin is then dried, mixed thoroughly, and a net resin weight determined before being transferred to appropriate counting geometry and analyzed by gamma spectroscopy.

Tritium analyses are performed quarterly by using low-level environmental liquid scintillation analysis technique on a Perkin-Elmer 2900TR liquid scintillation system or Perkin-Elmer 3100TR liquid scintillation system. Tritium samples are distilled and batch processed with a laboratory fortified blank, matrix spike, matrix spike duplicate, and blank to verify instrument performance and sample preparation technique are acceptable.

Gross beta analysis is performed by concentrating a designated aliquot of sample precipitate and analyzing by Tennelec XLB Series 5 gas-flow proportional counters. Samples are batch processed with a blank to ensure sample contamination has not occurred.

III. CHANGE OF ANALYSIS PROCEDURES

Gross beta analysis of air particulate filters using an un-attenuated (single point) filter specific calibration in a flat bottom planchet was implemented from second quarter 2015 forward (NCR # 01938255).

REMP air sampling heads and air particulate media were changed to standardize the vendors, sampling head, and filter size across the REMP nuclear fleet (NCR # 00726335).

IV. SAMPLING AND ANALYSIS PROCEDURES

A.1 AIRBORNE PARTICULATE AND RADIOIODINE

Airborne particulate and radioiodine samples at each of six locations were composited continuously by means of continuous air samplers. Air particulates were collected on a particulate filter and radioiodines were collected in a charcoal cartridge positioned behind the filter in the sampler. The samplers are designed to operate at a constant flow rate (in order to compensate for any filter loading) and are set to sample approximately 2 cubic feet per minute. Filters and cartridges were collected weekly. A separate weekly gamma analysis was performed on each charcoal cartridge. A weekly gross beta analysis was performed on each filter. A quarterly gamma analysis was performed on the quarterly filter composite (by location). The continuous composite samples were collected from the locations listed below.

Location 200 = Site Boundary (0.63 mi. NNE)
Location 201 = Site Boundary (0.53 mi. NE)
Location 208 = Discharge Canal (0.45 mi. S)
Location 212 = Tega Cay (3.32 mi. E)
Location 258 = Fairhope Road (9.84 mi. W)(Control)
Location 261 = Site Boundary (0.72 mi. N)

A.2 DRINKING WATER

Monthly composite drinking water samples were collected at each of two locations. A gross beta and gamma analysis was performed on monthly composites. Tritium analysis was performed on the quarterly composites. The composites were collected monthly from the locations listed below.

Location 214 = Rock Hill Water Supply (7.30 mi. SSE)

Location 218 = Belmont Water Supply (13.5 mi. NNE)(Control)

A.3 SURFACE WATER

Monthly composite samples were collected at each of three locations. A gamma analysis was performed on the monthly composites. Tritium analysis was performed on the quarterly composites. The composites were collected monthly from the locations listed below.

Location 208 = Discharge Canal (0.45 mi. S)

Location 211 = Wylie Dam (4.06 mi. ESE)

Location 215 = River Pointe - Hwy 49 (4.21 mi. NNE)(Control)

A.4 MILK

Biweekly grab samples were collected at one location. A gamma and low-level Iodine-131 analysis was performed on each sample. The biweekly grab samples were collected from the location listed below.

Location 221 = Dairy (14.5 mi. NW)(Control)

A.5 BROADLEAF VEGETATION

Monthly samples were collected at each of five locations. A gamma analysis was performed on each sample. The samples were collected from the locations listed below.

Location 200 = Site Boundary (0.63 mi. NNE)

Location 201 = Site Boundary (0.53 mi. NE)

Location 222 = Site Boundary (0.70 mi. N)

Location 226 = Site Boundary (0.48 mi. S)

Location 258 = Fairhope Road (9.84 mi. W)(Control)

A.6 FOOD PRODUCTS

Monthly samples were collected when available during the harvest season at one location. A gamma analysis was performed on each sample. The samples were collected from the location listed below.

Location 260 = Irrigated Gardens (2.00 mi. SSE)

A.7 FISH

Semiannual samples were collected at each of two locations. A gamma analysis was performed on the edible portions of each sample. Boney fish (i.e. Sunfish)

were prepared whole minus the head and tail portions. The samples were collected from the locations listed below.

Location 208 = Discharge Canal (0.45 mi. S)

Location 216 = Hwy 49 Bridge (4.19 mi. NNE)(Control)

A.8 SHORELINE SEDIMENT

Semiannual samples were collected at each of three locations. A gamma analysis was performed on each sample following the drying and removal of rocks and clams. The samples were collected from the locations listed below.

Location 208 = Discharge Canal (0.45 mi. S)

Location 210 = Ebenezer Access (2.31 mi. SE)

Location 215 = River Pointe - Hwy 49 (4.21 mi. NNE)(Control)

A.9 DIRECT GAMMA RADIATION (TLD)

Thermoluminescent dosimeters (TLD) were collected quarterly at forty-one locations. A gamma exposure rate was determined for each TLD. TLD locations are listed in Table 2.1-B. The TLDs were placed as indicated below.

- * An inner ring of 16 TLDs, one in each meteorological sector in the general area of the site boundary.
- * An outer ring of 16 TLDs, one in each meteorological sector in the 6 to 8 kilometer range.
- * The remaining TLDs were placed in special interest areas such as population centers, residential areas, schools, and at three control locations.

A.10 ANNUAL LAND USE CENSUS

An Annual Land Use Census was conducted to identify within a distance of 8 kilometers (5.0 miles) from the station, the nearest location from the site boundary in each of the sixteen meteorological sectors, the following:

- * The Nearest Residence
- * The Nearest Garden greater than 50 square meters or 500 square feet
- * The Nearest Milk-giving Animal (cow, goat, etc.)

The census was conducted during the growing season from 7/8 – 7/9/2015. Results are shown in Table 3.11. No changes were made to the sampling procedures during 2015 as a result of the 2015 census.

V. GLOBAL POSITIONING SYSTEM (GPS) ANALYSIS

The Catawba site centerline used for GPS measurements was referenced from the Catawba Nuclear Station Updated Final Safety Analysis Report (UFSAR), section 2.1.1.1, Specification of Location. Waypoint coordinates used for CNS GPS measurements were latitude 35°-3'-5"N and longitude 81°-4'-10"W. Maps and tables were generated using North American Datum (NAD) 27. Data normally reflect accuracy to within 2 to 5 meters from point of measurement. All GPS field measurements were taken as close as possible to the item of interest. Distances for the locations are displayed using three significant figures.

APPENDIX B

**RADIOLOGICAL
ENVIRONMENTAL MONITORING
PROGRAM**

SUMMARY OF RESULTS

**CATAWBA NUCLEAR STATION
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM DATA SUMMARY**

Catawba Nuclear Station
York County, South Carolina

Docket Numbers 50-413, 414
Calendar Year 2015

Medium or Pathway Sampled or Measured (Unit of Measurement)	Type and Total No. of Measurements Performed	Lower Limit of Detection (LLD) ⁽¹⁾	All Indicator Locations ^{(2) (3)} Mean Range	Location w/Highest Annual Mean		Control Locations Mean Range ^{(2) (3)}	No. of Non-Routine Report Meas.
				Name, Distance, and Direction	Mean Range ^{(2) (3)}		
Air Particulate (pCi/m ³)	Gross Beta 312	See Table 2.2-C	1.97E-2 (260/260) 3.86E-3 – 4.64E-2	208 (0.45 mi S)	2.06E-2 (52/52) 3.91E-3 – 4.64E-2	258 (9.84 mi W) 1.80E-2 (52/52) 4.86E-3 – 3.16E-2	0
	Gamma 24	See Table 2.2-C	All less than LLD	-----	-----	All less than LLD	0
Air Radioiodine (pCi/m ³)	Gamma 312	See Table 2.2-C	All less than LLD	-----	-----	All less than LLD	0
Drinking Water (pCi/l)	Gross Beta 26	4	2.48 (12/13) 1.18 – 4.65	214 (7.30 mi SSE)	2.48 (12/13) 1.18 – 4.65	218 (13.5 mi NNE) 2.07 (12/13) 1.34 – 2.85	0
	Gamma 26	See Table 2.2-C	All less than LLD	-----	-----	All less than LLD	0
	Tritium 8	2000	570 (4/4) 499 - 672	214 (7.30 mi SSE)	570 (4/4) 499 - 672	218 (13.5 mi NNE) 570 (3/4) 432 – 754	0
Surface Water (pCi/l)	Gamma 39 Co-58	See Table 2.2-C	11.5 (1/26) 11.5 – 11.5	208 (0.45 mi S)	11.5 (1/13) 11.5 – 11.5	All less than LLD	0
	Co-60	See Table 2.2-C	1.07 (1/26) 1.07 – 1.07	208 (0.45 mi S)	1.07 (1/13) 1.07 – 1.07	All less than LLD	0
	Tritium 12	2000	2570 (8/8) 440 - 6160	208 (0.45 mi S)	4608 (4/4) 3430 - 6160	215 (4.21 mi NNE) 414 (4/4) 247 – 499	0

**CATAWBA NUCLEAR STATION
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM DATA SUMMARY**

Catawba Nuclear Station
York County, South Carolina

Docket Numbers 50-413, 414
Calendar Year 2015

Medium or Pathway Sampled or Measured (Unit of Measurement)	Type and Total No. of Measurements Performed	Lower Limit of Detection (LLD) ⁽¹⁾	All Indicator Locations ^{(2) (3)} Mean Range	Location w/Highest Annual Mean		Control Locations Mean Range ^{(2) (3)}	No. of Non-Routine Report Meas.
				Name, Distance, and Direction	Mean Range ^{(2) (3)}		
Milk (pCi/l)	Gamma 26	See Table 2.2-C	No Indicator Location	-----	-----	All less than LLD	0
	I-131 26	See Table 2.2-C	No Indicator Location	-----	-----	All less than LLD	0
Broadleaf Vegetation (pCi/kg, wet)	Gamma 60 Cs-137	See Table 2.2-C	42.9 (2/48) 37.4 – 48.3	201 (0.53 mi NE)	42.9 (2/12) 37.4 – 48.3	All less than LLD	0
Food Products (pCi/kg, wet)	Gamma 11	See Table 2.2-C	All less than LLD	-----	-----	No Control Location	0
Fish (pCi/kg, wet)	Gamma 12	See Table 2.2-C	All less than LLD	-----	-----	All less than LLD	0
Sediments--Shoreline (pCi/kg, dry)	Gamma 6 Co-58	See Table 2.2-C	67.3 (1/4) 67.3 – 67.3	208 (0.45 mi S)	67.3 (1/2) 67.3 – 67.3	All less than LLD	0
	Co-60	See Table 2.2-C	161 (2/4) 86.5 – 236	208 (0.45 mi S)	161 (2/2) 86.5 - 236	All less than LLD	0
	Cs-137	See Table 2.2-C	8.75 (1/4) 8.75 – 8.75	208 (0.45 mi S)	8.75 (1/2) 8.75 – 8.75	215 (4.21 mi NNE) 20.5 (1/2) 20.5 – 20.5	0

**CATAWBA NUCLEAR STATION
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM DATA SUMMARY**

Catawba Nuclear Station
York County, South Carolina

Docket Numbers 50-413, 414
Calendar Year 2015

Medium or Pathway Sampled or Measured (Unit of Measurement)	Type and Total No. of Measurements Performed	Lower Limit of Detection (LLD) ⁽¹⁾	All Indicator Locations ^{(2) (3)} Mean Range	Location w/Highest Annual Mean		Control Locations Mean Range ^{(2) (3)}	No. of Non-Routine Report Meas.
				Name, Distance, and Direction	Mean Range ^{(2) (3)}		
TLD (mR per quarter) ⁽⁵⁾	TLD Readout 160 ⁽⁴⁾	-----	19.1 (149/149) 10.7 – 30.1	237 (4.75 mi SSE)	24.6 (4/4) 21.1 – 30.1	217 (10.3 mi SSE) 247 (7.33 mi ESE) 251 (9.72 mi WNW) 15.8 (11/11) 10.3 – 22.6	0

Footnotes to Appendix B

1. The Lower Limit of Detection (LLD) is the smallest concentration of radioactive material in a sample that will yield a net count above system background which will be detected with 95 percent probability and with only 5 percent probability of falsely concluding that a blank observation represents a "real" signal. Due to counting statistics and varying volumes, occasionally lower LLDs are achieved. Refer to Section 2.3.2 for an explanation of how LLD values were derived.
2. Mean and range are based on detectable measurements only.
3. The fractions of all samples with detectable activities at specific locations are indicated in parentheses.
4. Missing samples or surveillances are discussed in Appendix C or Appendix D.
5. TLD exposure is reported in milliroentgen (mR) per standard quarter (91 days). TLD data indicated in section 3.10 (Direct Gamma Radiation) are reported in mrem /yr ($n * 0.95$).

APPENDIX C

**SAMPLING DEVIATIONS
&
UNAVAILABLE ANALYSES**

APPENDIX C

CATAWBA NUCLEAR STATION SAMPLING DEVIATIONS & UNAVAILABLE ANALYSES

DEVIATION & UNAVAILABLE REASON CODES			
BF	Blown Fuse	PS	Pump out of service / Undergoing Repair
FZ	Sample Frozen	SL	Sample Loss/Lost due to Lab Accident
IW	Inclement Weather	SM	Motor / Rotor Seized
LC	Line Clog to Sampler	SU	Seasonally Unavailable
OT	Other	TF	Torn Filter
PI	Power Interrupt	VN	Vandalism
PM	Preventive Maintenance	CN	Construction
PO	Power Outage		

C.1 SAMPLING DEVIATIONS

Air Particulate and Air Radioiodine

REMP weekly air samples (Air Particulate (AP) or Air Radioiodine (AR)) that experience any downtime during a surveillance period are reported as a Deviation and classified as a “Sampling Deviation.” However, the sample is counted and the data reported, whereas a Deviation with no available sample is classified as an “Unavailable Analyses” and does not have any data reported. The air samplers operated for a total of 99.9% availability in 2015.

Location	Scheduled Collection Dates	Code	Description & Action to Prevent Recurrence	Corrective Action
201	7/7/15 – 7/14/15	PI	3.22 hours downtime due to severe thunderstorm.	NCR # 01936502
208	7/7/15 – 7/14/15	PI	0.52 hours downtime due to severe thunderstorm.	NCR # 01936887
200	7/28/15 – 8/4/15	PI	1.07 hours downtime due to severe thunderstorm.	NCR # 01941746
201	7/28/15 – 8/4/15	PI	1.09 hours downtime due to severe thunderstorm.	NCR # 01941757
208	7/28/15 – 8/4/15	PO	22.3 hours downtime due to severe thunderstorm.	NCR # 01941766
261	7/28/15 – 8/4/15	PI	1.10 hours downtime due to severe thunderstorm.	NCR # 01941768

Drinking Water

REMP monthly drinking water samples (Drinking Water (DW)) that experience any downtime during a surveillance period are reported as a Deviation and classified as a “Sampling Deviation.” However, the sample is counted and the data reported, whereas a Deviation with no available sample is classified as an “Unavailable Analyses” and does not have any data reported. The water samplers operated for a total of 99.7% availability in 2015.

Location	Scheduled Collection Dates	Code	Description & Action to Prevent Recurrence	Corrective Action
214	8/18/15 – 9/15/15	OT	120 hours downtime due to ISCO sampling program interruption during preventive maintenance task. Site services preventive maintenance instructions were updated to indicate ISCO sampling programs are not to be interrupted during normal operation to prevent recurrence.	NCR # 01959421 NCR # 01960301

C.2 UNAVAILABLE ANALYSES

Food Products / Crops

Location	Scheduled Collection Dates	Code	Description & Action to Prevent Recurrence	Corrective Action
260	4/7/15	SU	Seasonally unavailable – field plowed in preparation for planting. No sample available at time of collection.	NCR # 01903351

TLD

Location	Scheduled Collection Dates	Code	Description & Action to Prevent Recurrence	Corrective Action
245	12/18/14 – 3/19/15	CN	TLD missing due to construction.	NCR # 01903223
249	6/18/15 – 9/17/15	OT	TLD found on ground damaged/unusable.	NCR # 01956349
201	9/17/15 – 12/17/15	VN	TLD found on ground damaged/unusable.	NCR # 01969275
217	9/17/15 – 12/17/15	CN	TLD missing due to construction.	NCR # 01985660

APPENDIX D

ANALYTICAL DEVIATIONS

No Analytical deviations were incurred for the
2015 Radiological Environmental Monitoring Program

APPENDIX E

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM RESULTS

2015

This appendix includes sample analysis report summaries and supportive data generated from each sample medium for 2015.

CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 200 [INDICATOR - NNE @ 0.63 miles]

Sample ID:	364886	Sample Dates:	12/30/2014 - 1/6/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.33E-02	2.86E-03	2.72E-03
Sample ID:	365066	Sample Dates:	1/6/2015 - 1/13/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.27E-02	2.92E-03	2.92E-03
Sample ID:	365298	Sample Dates:	1/13/2015 - 1/20/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.77E-02	2.50E-03	2.38E-03
Sample ID:	366654	Sample Dates:	1/20/2015 - 1/27/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.40E-02	2.35E-03	2.55E-03
Sample ID:	367060	Sample Dates:	1/27/2015 - 2/3/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.20E-02	2.29E-03	2.67E-03
Sample ID:	367545	Sample Dates:	2/3/2015 - 2/10/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.98E-02	2.74E-03	2.79E-03
Sample ID:	368972	Sample Dates:	2/10/2015 - 2/16/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.67E-02	2.88E-03	3.26E-03
Sample ID:	369695	Sample Dates:	2/16/2015 - 2/23/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	3.11E-02	3.14E-03	2.60E-03
Sample ID:	370601	Sample Dates:	2/23/2015 - 3/3/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.51E-02	2.65E-03	2.14E-03
Sample ID:	371540	Sample Dates:	3/3/2015 - 3/10/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.00E-02	2.73E-03	2.72E-03
Sample ID:	371912	Sample Dates:	3/10/2015 - 3/17/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.50E-02	2.37E-03	2.40E-03
Sample ID:	372406	Sample Dates:	3/17/2015 - 3/24/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.67E-02	2.51E-03	2.58E-03
Sample ID:	373828	Sample Dates:	3/24/2015 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.76E-02	2.63E-03	2.82E-03
Sample ID:	373834	Sample Dates:	12/30/2014 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
				Cs-134	<5.63E-04	0.00E+00	5.63E-04
				Cs-137	<6.17E-04	0.00E+00	6.17E-04
				Be-7	1.42E-01	2.17E-02	1.07E-02
				K-40	<1.11E-02	0.00E+00	1.11E-02
Sample ID:	374557	Sample Dates:	3/31/2015 - 4/7/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.58E-02	2.61E-03	2.94E-03
Sample ID:	374934	Sample Dates:	4/7/2015 - 4/14/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.74E-02	2.63E-03	2.80E-03
Sample ID:	375625	Sample Dates:	4/14/2015 - 4/21/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	7.05E-03	2.13E-03	2.94E-03
Sample ID:	376829	Sample Dates:	4/21/2015 - 4/28/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.59E-02	2.60E-03	2.95E-03
Sample ID:	377491	Sample Dates:	4/28/2015 - 5/5/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.50E-02	2.44E-03	2.63E-03
Sample ID:	378055	Sample Dates:	5/5/2015 - 5/12/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.08E-02	2.85E-03	2.94E-03
Sample ID:	378455	Sample Dates:	5/12/2015 - 5/19/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.02E-02	2.79E-03	2.86E-03
Sample ID:	378951	Sample Dates:	5/19/2015 - 5/27/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.73E-02	2.41E-03	2.47E-03
Sample ID:	379457	Sample Dates:	5/27/2015 - 6/2/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.17E-02	2.67E-03	3.37E-03

CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 200 [INDICATOR - NNE @ 0.63 miles]

Sample ID:	380181	Sample Dates:	6/2/2015 - 6/9/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.13E-02	2.34E-03	2.85E-03
Sample ID:	380469	Sample Dates:	6/9/2015 - 6/16/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.00E-02	2.75E-03	2.84E-03
Sample ID:	380801	Sample Dates:	6/16/2015 - 6/23/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.09E-02	2.89E-03	3.06E-03
Sample ID:	381243	Sample Dates:	6/23/2015 - 6/30/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.09E-02	2.81E-03	2.82E-03
Sample ID:	381249	Sample Dates:	3/31/2015 - 6/30/2015	Nuclide	Activity	2 Sigma Error	LLD
				Cs-134	<7.03E-04	0.00E+00	7.03E-04
				Cs-137	<4.74E-04	0.00E+00	4.75E-04
				Be-7	1.40E-01	2.28E-02	1.17E-02
				K-40	<1.29E-02	0.00E+00	1.29E-02
Sample ID:	381598	Sample Dates:	6/30/2015 - 7/7/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.90E-02	2.71E-03	2.79E-03
Sample ID:	382161	Sample Dates:	7/7/2015 - 7/14/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.68E-02	3.06E-03	2.81E-03
Sample ID:	382587	Sample Dates:	7/14/2015 - 7/21/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.68E-02	2.59E-03	2.77E-03
Sample ID:	383517	Sample Dates:	7/21/2015 - 7/28/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.96E-02	2.64E-03	2.52E-03
Sample ID:	384092	Sample Dates:	7/28/2015 - 8/4/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.16E-02	2.87E-03	2.90E-03
Sample ID:	384639	Sample Dates:	8/4/2015 - 8/11/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.90E-02	2.71E-03	2.78E-03
Sample ID:	385407	Sample Dates:	8/11/2015 - 8/18/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.26E-02	2.82E-03	2.66E-03
Sample ID:	385926	Sample Dates:	8/18/2015 - 8/25/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.36E-02	2.48E-03	2.89E-03
Sample ID:	386824	Sample Dates:	8/25/2015 - 9/1/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.63E-02	2.93E-03	2.62E-03
Sample ID:	387413	Sample Dates:	9/1/2015 - 9/9/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.84E-02	2.90E-03	2.50E-03
Sample ID:	388741	Sample Dates:	9/9/2015 - 9/15/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.68E-02	2.82E-03	3.10E-03
Sample ID:	389406	Sample Dates:	9/15/2015 - 9/22/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.59E-02	3.01E-03	2.75E-03
Sample ID:	390010	Sample Dates:	9/22/2015 - 9/29/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.02E-02	2.20E-03	2.66E-03
Sample ID:	390625	Sample Dates:	6/30/2015 - 9/29/2015	Nuclide	Activity	2 Sigma Error	LLD
				Cs-134	<3.46E-04	0.00E+00	3.46E-04
				Cs-137	<4.85E-04	0.00E+00	4.85E-04
				Be-7	1.27E-01	2.08E-02	1.09E-02
				K-40	7.09E-03	5.03E-03	5.84E-03
Sample ID:	390619	Sample Dates:	9/29/2015 - 10/6/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	3.91E-03	1.83E-03	2.75E-03
Sample ID:	391928	Sample Dates:	10/6/2015 - 10/13/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.87E-02	2.64E-03	2.62E-03
Sample ID:	392228	Sample Dates:	10/13/2015 - 10/20/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.20E-02	2.83E-03	2.75E-03



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 200 [INDICATOR - NNE @ 0.63 miles]

Sample ID:	393430	Sample Dates:	10/20/2015 - 10/27/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.62E-02	3.12E-03	3.05E-03
Sample ID:	393833	Sample Dates:	10/27/2015 - 11/3/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.84E-02	2.60E-03	2.57E-03
Sample ID:	394833	Sample Dates:	11/3/2015 - 11/10/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.23E-02	2.36E-03	2.78E-03
Sample ID:	395301	Sample Dates:	11/10/2015 - 11/17/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.18E-02	2.82E-03	2.71E-03
Sample ID:	395629	Sample Dates:	11/17/2015 - 11/24/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.99E-02	2.78E-03	2.89E-03
Sample ID:	396127	Sample Dates:	11/24/2015 - 12/1/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.63E-02	2.62E-03	2.93E-03
Sample ID:	396635	Sample Dates:	12/1/2015 - 12/8/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	3.32E-02	3.28E-03	2.65E-03
Sample ID:	397172	Sample Dates:	12/8/2015 - 12/15/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.86E-02	3.13E-03	2.77E-03
Sample ID:	397894	Sample Dates:	12/15/2015 - 12/22/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.93E-02	2.72E-03	2.77E-03
Sample ID:	398288	Sample Dates:	12/22/2015 - 12/29/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	5.27E-03	1.88E-03	2.67E-03
Sample ID:	398672	Sample Dates:	9/29/2015 - 12/29/2015	Nuclide	Activity	2 Sigma Error	LLD
				Cs-134	<6.32E-04	0.00E+00	6.32E-04
				Cs-137	<5.82E-04	0.00E+00	5.82E-04
				Be-7	1.15E-01	2.11E-02	1.16E-02
				K-40	1.04E-02	7.20E-03	9.48E-03

Sample Point 201 [INDICATOR - NE @ 0.53 miles]

Sample ID:	364887	Sample Dates:	12/30/2014 - 1/6/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.71E-02	3.03E-03	2.74E-03
Sample ID:	365067	Sample Dates:	1/6/2015 - 1/13/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.56E-02	3.04E-03	2.91E-03
Sample ID:	365299	Sample Dates:	1/13/2015 - 1/20/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.12E-02	2.68E-03	2.38E-03
Sample ID:	366655	Sample Dates:	1/20/2015 - 1/27/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.64E-02	2.48E-03	2.56E-03
Sample ID:	367061	Sample Dates:	1/27/2015 - 2/3/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.51E-02	2.46E-03	2.67E-03
Sample ID:	367546	Sample Dates:	2/3/2015 - 2/10/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.09E-02	2.79E-03	2.78E-03
Sample ID:	368973	Sample Dates:	2/10/2015 - 2/16/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.78E-02	2.93E-03	3.26E-03
Sample ID:	369696	Sample Dates:	2/16/2015 - 2/23/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	3.36E-02	3.23E-03	2.60E-03
Sample ID:	370602	Sample Dates:	2/23/2015 - 3/3/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.43E-02	2.61E-03	2.14E-03
Sample ID:	371541	Sample Dates:	3/3/2015 - 3/10/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.04E-02	2.75E-03	2.72E-03
Sample ID:	371913	Sample Dates:	3/10/2015 - 3/17/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.42E-02	2.33E-03	2.40E-03

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Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 201 [INDICATOR - NE @ 0.53 miles]

Sample ID:	372407	Sample Dates:	3/17/2015 - 3/24/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.90E-02	2.62E-03	2.58E-03
Sample ID:	373829	Sample Dates:	3/24/2015 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.73E-02	2.63E-03	2.84E-03
Sample ID:	373835	Sample Dates:	12/30/2014 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
				Cs-134	<5.22E-04	0.00E+00	5.22E-04
				Cs-137	<4.60E-04	0.00E+00	4.60E-04
				Be-7	1.66E-01	2.44E-02	1.04E-02
				K-40	<1.14E-02	0.00E+00	1.14E-02
Sample ID:	374558	Sample Dates:	3/31/2015 - 4/7/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.75E-02	2.69E-03	2.92E-03
Sample ID:	374935	Sample Dates:	4/7/2015 - 4/14/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.91E-02	2.71E-03	2.79E-03
Sample ID:	375626	Sample Dates:	4/14/2015 - 4/21/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	7.22E-03	2.14E-03	2.95E-03
Sample ID:	376830	Sample Dates:	4/21/2015 - 4/28/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.58E-02	2.60E-03	2.95E-03
Sample ID:	377492	Sample Dates:	4/28/2015 - 5/5/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.45E-02	2.42E-03	2.65E-03
Sample ID:	378056	Sample Dates:	5/5/2015 - 5/12/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.40E-02	2.98E-03	2.92E-03
Sample ID:	378456	Sample Dates:	5/12/2015 - 5/19/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.30E-02	2.92E-03	2.86E-03
Sample ID:	378952	Sample Dates:	5/19/2015 - 5/27/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.80E-02	2.45E-03	2.48E-03
Sample ID:	379458	Sample Dates:	5/27/2015 - 6/2/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.30E-02	2.73E-03	3.35E-03
Sample ID:	380182	Sample Dates:	6/2/2015 - 6/9/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.39E-02	2.47E-03	2.84E-03
Sample ID:	380470	Sample Dates:	6/9/2015 - 6/16/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.44E-02	2.96E-03	2.86E-03
Sample ID:	380802	Sample Dates:	6/16/2015 - 6/23/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.64E-02	2.68E-03	3.05E-03
Sample ID:	381244	Sample Dates:	6/23/2015 - 6/30/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.07E-02	2.78E-03	2.81E-03
Sample ID:	381250	Sample Dates:	3/31/2015 - 6/30/2015	Nuclide	Activity	2 Sigma Error	LLD
				Cs-134	<5.22E-04	0.00E+00	5.22E-04
				Cs-137	<4.60E-04	0.00E+00	4.60E-04
				Be-7	1.61E-01	2.38E-02	9.57E-03
				K-40	<1.42E-02	0.00E+00	1.42E-02
Sample ID:	381599	Sample Dates:	6/30/2015 - 7/7/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.83E-02	2.68E-03	2.79E-03
Sample ID:	382162	Sample Dates:	7/7/2015 - 7/14/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.26E-02	2.91E-03	2.87E-03
Sample ID:	382588	Sample Dates:	7/14/2015 - 7/21/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.60E-02	2.56E-03	2.78E-03
Sample ID:	383518	Sample Dates:	7/21/2015 - 7/28/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.32E-02	2.81E-03	2.52E-03
Sample ID:	384093	Sample Dates:	7/28/2015 - 8/4/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.46E-02	3.00E-03	2.90E-03



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 201 [INDICATOR - NE @ 0.53 miles]

Sample ID:	384640	Sample Dates:	8/4/2015 - 8/11/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.13E-02	2.81E-03	2.77E-03
Sample ID:	385408	Sample Dates:	8/11/2015 - 8/18/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.57E-02	2.96E-03	2.67E-03
Sample ID:	385927	Sample Dates:	8/18/2015 - 8/25/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.58E-02	2.58E-03	2.88E-03
Sample ID:	386825	Sample Dates:	8/25/2015 - 9/1/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.75E-02	3.08E-03	2.76E-03
Sample ID:	387414	Sample Dates:	9/1/2015 - 9/9/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	3.33E-02	3.09E-03	2.50E-03
Sample ID:	388742	Sample Dates:	9/9/2015 - 9/15/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.95E-02	2.97E-03	3.11E-03
Sample ID:	389407	Sample Dates:	9/15/2015 - 9/22/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.73E-02	3.06E-03	2.75E-03
Sample ID:	390011	Sample Dates:	9/22/2015 - 9/29/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.03E-02	2.20E-03	2.65E-03
Sample ID:	390626	Sample Dates:	6/30/2015 - 9/29/2015	Nuclide	Activity	2 Sigma Error	LLD
				Cs-134	<4.88E-04	0.00E+00	4.88E-04
				Cs-137	<5.42E-04	0.00E+00	5.42E-04
				Be-7	1.49E-01	2.46E-02	1.38E-02
				K-40	<1.20E-02	0.00E+00	1.20E-02
Sample ID:	390620	Sample Dates:	9/29/2015 - 10/6/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	5.53E-03	1.94E-03	2.75E-03
Sample ID:	391929	Sample Dates:	10/6/2015 - 10/13/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.98E-02	2.69E-03	2.63E-03
Sample ID:	392229	Sample Dates:	10/13/2015 - 10/20/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.73E-02	3.06E-03	2.75E-03
Sample ID:	393431	Sample Dates:	10/20/2015 - 10/27/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.89E-02	3.23E-03	3.05E-03
Sample ID:	393834	Sample Dates:	10/27/2015 - 11/3/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.98E-02	2.67E-03	2.57E-03
Sample ID:	394834	Sample Dates:	11/3/2015 - 11/10/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.48E-02	2.59E-03	2.93E-03
Sample ID:	395302	Sample Dates:	11/10/2015 - 11/17/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.23E-02	2.85E-03	2.71E-03
Sample ID:	395630	Sample Dates:	11/17/2015 - 11/24/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.82E-02	2.70E-03	2.89E-03
Sample ID:	396128	Sample Dates:	11/24/2015 - 12/1/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.92E-02	2.77E-03	2.93E-03
Sample ID:	396636	Sample Dates:	12/1/2015 - 12/8/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.99E-02	3.11E-03	2.61E-03
Sample ID:	397173	Sample Dates:	12/8/2015 - 12/15/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	3.04E-02	3.19E-03	2.75E-03
Sample ID:	397895	Sample Dates:	12/15/2015 - 12/22/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.03E-02	2.77E-03	2.77E-03
Sample ID:	398289	Sample Dates:	12/22/2015 - 12/29/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	6.31E-03	1.95E-03	2.67E-03
Sample ID:	398673	Sample Dates:	9/29/2015 - 12/29/2015	Nuclide	Activity	2 Sigma Error	LLD
				Cs-134	<5.73E-04	0.00E+00	5.73E-04
				Cs-137	<2.75E-04	0.00E+00	2.75E-04



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 201 [INDICATOR - NE @ 0.53 miles]

Sample ID:	398673	Sample Dates:	9/29/2015 - 12/29/2015	Nuclide	Activity	2 Sigma Error	LLD
				Be-7	1.17E-01	2.07E-02	1.18E-02
				K-40	<1.05E-02	0.00E+00	1.05E-02

Sample Point 208 [INDICATOR - S @ 0.45 miles]

Sample ID:	364888	Sample Dates:	12/30/2014 - 1/6/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.56E-02	2.96E-03	2.73E-03
Sample ID:	365068	Sample Dates:	1/6/2015 - 1/13/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.49E-02	3.01E-03	2.91E-03
Sample ID:	365300	Sample Dates:	1/13/2015 - 1/20/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.91E-02	2.57E-03	2.38E-03
Sample ID:	366656	Sample Dates:	1/20/2015 - 1/27/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.71E-02	2.52E-03	2.56E-03
Sample ID:	367062	Sample Dates:	1/27/2015 - 2/3/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.29E-02	2.35E-03	2.67E-03
Sample ID:	367547	Sample Dates:	2/3/2015 - 2/10/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.33E-02	2.91E-03	2.78E-03
Sample ID:	368974	Sample Dates:	2/10/2015 - 2/16/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.91E-02	3.00E-03	3.26E-03
Sample ID:	369697	Sample Dates:	2/16/2015 - 2/23/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	3.31E-02	3.21E-03	2.60E-03
Sample ID:	370603	Sample Dates:	2/23/2015 - 3/3/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.69E-02	2.73E-03	2.14E-03
Sample ID:	371542	Sample Dates:	3/3/2015 - 3/10/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.09E-02	2.77E-03	2.71E-03
Sample ID:	371914	Sample Dates:	3/10/2015 - 3/17/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.54E-02	2.39E-03	2.40E-03
Sample ID:	372408	Sample Dates:	3/17/2015 - 3/24/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.83E-02	2.59E-03	2.58E-03
Sample ID:	373830	Sample Dates:	3/24/2015 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.78E-02	2.65E-03	2.84E-03
Sample ID:	373836	Sample Dates:	12/30/2014 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
				Cs-134	<3.57E-04	0.00E+00	3.57E-04
				Cs-137	<6.07E-04	0.00E+00	6.07E-04
				Be-7	1.50E-01	2.29E-02	1.08E-02
				K-40	9.96E-03	5.93E-03	6.23E-03
Sample ID:	374559	Sample Dates:	3/31/2015 - 4/7/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.39E-02	2.51E-03	2.92E-03
Sample ID:	374936	Sample Dates:	4/7/2015 - 4/14/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.49E-02	2.49E-03	2.79E-03
Sample ID:	375627	Sample Dates:	4/14/2015 - 4/21/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	9.57E-03	2.27E-03	2.94E-03
Sample ID:	376831	Sample Dates:	4/21/2015 - 4/28/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.57E-02	2.60E-03	2.95E-03
Sample ID:	377493	Sample Dates:	4/28/2015 - 5/5/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.47E-02	2.43E-03	2.64E-03
Sample ID:	378057	Sample Dates:	5/5/2015 - 5/12/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.90E-02	2.75E-03	2.93E-03
Sample ID:	378457	Sample Dates:	5/12/2015 - 5/19/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.97E-02	2.77E-03	2.86E-03



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Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 208 [INDICATOR - S @ 0.45 miles]

Sample ID:	378953	Sample Dates:	5/19/2015 - 5/27/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.71E-02	2.41E-03	2.48E-03
Sample ID:	379459	Sample Dates:	5/27/2015 - 6/2/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.15E-02	2.65E-03	3.35E-03
Sample ID:	380183	Sample Dates:	6/2/2015 - 6/9/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.20E-02	2.37E-03	2.85E-03
Sample ID:	380471	Sample Dates:	6/9/2015 - 6/16/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.33E-02	2.91E-03	2.86E-03
Sample ID:	380803	Sample Dates:	6/16/2015 - 6/23/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.06E-02	2.88E-03	3.05E-03
Sample ID:	381245	Sample Dates:	6/23/2015 - 6/30/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.26E-02	2.87E-03	2.81E-03
Sample ID:	381251	Sample Dates:	3/31/2015 - 6/30/2015	Nuclide	Activity	2 Sigma Error	LLD
				Cs-134	<6.26E-04	0.00E+00	6.26E-04
				Cs-137	<5.41E-04	0.00E+00	5.41E-04
				Be-7	1.40E-01	2.33E-02	1.44E-02
				K-40	<1.14E-02	0.00E+00	1.14E-02
Sample ID:	381600	Sample Dates:	6/30/2015 - 7/7/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.95E-02	2.74E-03	2.79E-03
Sample ID:	382163	Sample Dates:	7/7/2015 - 7/14/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.66E-02	3.05E-03	2.81E-03
Sample ID:	382589	Sample Dates:	7/14/2015 - 7/21/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.97E-02	2.74E-03	2.78E-03
Sample ID:	383519	Sample Dates:	7/21/2015 - 7/28/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.57E-02	2.92E-03	2.52E-03
Sample ID:	384094	Sample Dates:	7/28/2015 - 8/3/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	4.64E-02	6.43E-03	6.64E-03
Sample ID:	384641	Sample Dates:	8/4/2015 - 8/11/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.20E-02	2.85E-03	2.77E-03
Sample ID:	385409	Sample Dates:	8/11/2015 - 8/18/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.23E-02	2.81E-03	2.67E-03
Sample ID:	385928	Sample Dates:	8/18/2015 - 8/25/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.45E-02	2.51E-03	2.88E-03
Sample ID:	386826	Sample Dates:	8/25/2015 - 9/1/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.72E-02	3.06E-03	2.76E-03
Sample ID:	387415	Sample Dates:	9/1/2015 - 9/9/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	3.06E-02	2.99E-03	2.50E-03
Sample ID:	388743	Sample Dates:	9/9/2015 - 9/15/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.90E-02	2.94E-03	3.11E-03
Sample ID:	389408	Sample Dates:	9/15/2015 - 9/22/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.83E-02	3.11E-03	2.75E-03
Sample ID:	390012	Sample Dates:	9/22/2015 - 9/29/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.02E-02	2.20E-03	2.65E-03
Sample ID:	390627	Sample Dates:	6/30/2015 - 9/29/2015	Nuclide	Activity	2 Sigma Error	LLD
				Cs-134	<5.94E-04	0.00E+00	5.94E-04
				Cs-137	<5.09E-04	0.00E+00	5.09E-04
				Be-7	1.60E-01	2.42E-02	9.57E-03
				K-40	1.06E-02	6.43E-03	7.27E-03
Sample ID:	390621	Sample Dates:	9/29/2015 - 10/6/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	3.91E-03	1.83E-03	2.75E-03



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 208 [INDICATOR - S @ 0.45 miles]

Sample ID:	391930	Sample Dates:	10/6/2015 - 10/13/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.24E-02	2.82E-03	2.63E-03
Sample ID:	392230	Sample Dates:	10/13/2015 - 10/20/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.88E-02	3.12E-03	2.75E-03
Sample ID:	393432	Sample Dates:	10/20/2015 - 10/27/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	3.08E-02	3.25E-03	2.97E-03
Sample ID:	393835	Sample Dates:	10/27/2015 - 11/3/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.04E-02	2.66E-03	2.51E-03
Sample ID:	394835	Sample Dates:	11/3/2015 - 11/10/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.28E-02	2.40E-03	2.79E-03
Sample ID:	395303	Sample Dates:	11/10/2015 - 11/17/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.09E-02	2.78E-03	2.70E-03
Sample ID:	395631	Sample Dates:	11/17/2015 - 11/24/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.10E-02	2.83E-03	2.89E-03
Sample ID:	396129	Sample Dates:	11/24/2015 - 12/1/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.65E-02	2.64E-03	2.93E-03
Sample ID:	396637	Sample Dates:	12/1/2015 - 12/8/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	3.35E-02	3.30E-03	2.68E-03
Sample ID:	397174	Sample Dates:	12/8/2015 - 12/15/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	3.34E-02	3.31E-03	2.75E-03
Sample ID:	397896	Sample Dates:	12/15/2015 - 12/22/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.01E-02	2.76E-03	2.77E-03
Sample ID:	398290	Sample Dates:	12/22/2015 - 12/29/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	6.37E-03	1.95E-03	2.67E-03
Sample ID:	398674	Sample Dates:	9/29/2015 - 12/29/2015	Nuclide	Activity	2 Sigma Error	LLD
				Cs-134	<4.63E-04	0.00E+00	4.63E-04
				Cs-137	<4.69E-04	0.00E+00	4.69E-04
				Be-7	1.45E-01	2.36E-02	1.06E-02
				K-40	<1.30E-02	0.00E+00	1.30E-02

Sample Point 212 [INDICATOR - E @ 3.32 miles]

Sample ID:	364889	Sample Dates:	12/30/2014 - 1/6/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.65E-02	2.98E-03	2.70E-03
Sample ID:	365069	Sample Dates:	1/6/2015 - 1/13/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.24E-02	2.92E-03	2.94E-03
Sample ID:	365301	Sample Dates:	1/13/2015 - 1/20/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.80E-02	2.52E-03	2.38E-03
Sample ID:	366657	Sample Dates:	1/20/2015 - 1/27/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.65E-02	2.48E-03	2.55E-03
Sample ID:	367063	Sample Dates:	1/27/2015 - 2/3/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.40E-02	2.35E-03	2.58E-03
Sample ID:	367548	Sample Dates:	2/3/2015 - 2/10/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.10E-02	2.82E-03	2.81E-03
Sample ID:	368975	Sample Dates:	2/10/2015 - 2/16/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.92E-02	3.00E-03	3.26E-03
Sample ID:	369698	Sample Dates:	2/16/2015 - 2/23/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.82E-02	3.02E-03	2.60E-03
Sample ID:	370604	Sample Dates:	2/23/2015 - 3/3/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.47E-02	2.62E-03	2.12E-03



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 212 [INDICATOR - E @ 3.32 miles]

Sample ID:	371543	Sample Dates:	3/3/2015 - 3/10/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.87E-02	2.69E-03	2.75E-03
Sample ID:	371915	Sample Dates:	3/10/2015 - 3/17/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.24E-02	2.23E-03	2.40E-03
Sample ID:	372409	Sample Dates:	3/17/2015 - 3/24/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.72E-02	2.54E-03	2.58E-03
Sample ID:	373831	Sample Dates:	3/24/2015 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.55E-02	2.52E-03	2.80E-03
Sample ID:	373837	Sample Dates:	12/30/2014 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
				Cs-134	<5.79E-04	0.00E+00	5.79E-04
				Cs-137	<5.38E-04	0.00E+00	5.38E-04
				Be-7	1.14E-01	2.04E-02	1.62E-02
				K-40	<1.38E-02	0.00E+00	1.38E-02
Sample ID:	374560	Sample Dates:	3/31/2015 - 4/7/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.60E-02	2.62E-03	2.94E-03
Sample ID:	374937	Sample Dates:	4/7/2015 - 4/14/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.90E-02	2.71E-03	2.82E-03
Sample ID:	375628	Sample Dates:	4/14/2015 - 4/21/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	8.59E-03	2.22E-03	2.94E-03
Sample ID:	376832	Sample Dates:	4/21/2015 - 4/28/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.28E-02	2.43E-03	2.92E-03
Sample ID:	377494	Sample Dates:	4/28/2015 - 5/5/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.40E-02	2.39E-03	2.64E-03
Sample ID:	378058	Sample Dates:	5/5/2015 - 5/12/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.24E-02	2.93E-03	2.96E-03
Sample ID:	378458	Sample Dates:	5/12/2015 - 5/19/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.02E-02	2.79E-03	2.86E-03
Sample ID:	378954	Sample Dates:	5/19/2015 - 5/27/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.96E-02	2.50E-03	2.45E-03
Sample ID:	379460	Sample Dates:	5/27/2015 - 6/2/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.36E-02	2.78E-03	3.38E-03
Sample ID:	380184	Sample Dates:	6/2/2015 - 6/9/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.38E-02	2.47E-03	2.87E-03
Sample ID:	380472	Sample Dates:	6/9/2015 - 6/16/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.27E-02	2.86E-03	2.83E-03
Sample ID:	380804	Sample Dates:	6/16/2015 - 6/23/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.19E-02	2.94E-03	3.05E-03
Sample ID:	381246	Sample Dates:	6/23/2015 - 6/30/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.15E-02	2.84E-03	2.84E-03
Sample ID:	381252	Sample Dates:	3/31/2015 - 6/30/2015	Nuclide	Activity	2 Sigma Error	LLD
				Cs-134	<6.86E-04	0.00E+00	6.86E-04
				Cs-137	<2.80E-04	0.00E+00	2.80E-04
				Be-7	1.71E-01	2.59E-02	1.07E-02
				K-40	<1.08E-02	0.00E+00	1.08E-02
Sample ID:	381601	Sample Dates:	6/30/2015 - 7/7/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.70E-02	2.61E-03	2.79E-03
Sample ID:	382164	Sample Dates:	7/7/2015 - 7/14/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.45E-02	2.96E-03	2.82E-03
Sample ID:	382590	Sample Dates:	7/14/2015 - 7/21/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.81E-02	2.64E-03	2.74E-03



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 212 [INDICATOR - E @ 3.32 miles]

Sample ID:	383520	Sample Dates:	7/21/2015 - 7/28/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.41E-02	2.87E-03	2.54E-03
Sample ID:	384095	Sample Dates:	7/28/2015 - 8/4/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.13E-02	2.84E-03	2.88E-03
Sample ID:	384642	Sample Dates:	8/4/2015 - 8/11/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.09E-02	2.81E-03	2.78E-03
Sample ID:	385410	Sample Dates:	8/11/2015 - 8/18/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.63E-02	2.97E-03	2.64E-03
Sample ID:	385929	Sample Dates:	8/18/2015 - 8/25/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.55E-02	2.59E-03	2.92E-03
Sample ID:	386827	Sample Dates:	8/25/2015 - 9/1/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.46E-02	2.95E-03	2.75E-03
Sample ID:	387416	Sample Dates:	9/1/2015 - 9/9/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.72E-02	2.86E-03	2.51E-03
Sample ID:	388744	Sample Dates:	9/9/2015 - 9/15/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.67E-02	2.80E-03	3.09E-03
Sample ID:	389409	Sample Dates:	9/15/2015 - 9/22/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.60E-02	3.01E-03	2.75E-03
Sample ID:	390013	Sample Dates:	9/22/2015 - 9/29/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	9.93E-03	2.19E-03	2.67E-03
Sample ID:	390628	Sample Dates:	6/30/2015 - 9/29/2015	Nuclide	Activity	2 Sigma Error	LLD
				Cs-134	<7.74E-04	0.00E+00	7.74E-04
				Cs-137	<4.60E-04	0.00E+00	4.60E-04
				Be-7	1.44E-01	2.31E-02	1.24E-02
				K-40	<1.29E-02	0.00E+00	1.29E-02
Sample ID:	390622	Sample Dates:	9/29/2015 - 10/6/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	3.86E-03	1.82E-03	2.75E-03
Sample ID:	391931	Sample Dates:	10/6/2015 - 10/13/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.84E-02	2.61E-03	2.60E-03
Sample ID:	392231	Sample Dates:	10/13/2015 - 10/20/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.47E-02	2.97E-03	2.78E-03
Sample ID:	393433	Sample Dates:	10/20/2015 - 10/27/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.59E-02	3.10E-03	3.04E-03
Sample ID:	393836	Sample Dates:	10/27/2015 - 11/3/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.96E-02	2.66E-03	2.56E-03
Sample ID:	394836	Sample Dates:	11/3/2015 - 11/10/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.24E-02	2.37E-03	2.78E-03
Sample ID:	395304	Sample Dates:	11/10/2015 - 11/17/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.28E-02	2.88E-03	2.72E-03
Sample ID:	395632	Sample Dates:	11/17/2015 - 11/24/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.81E-02	2.69E-03	2.89E-03
Sample ID:	396130	Sample Dates:	11/24/2015 - 12/1/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.84E-02	2.72E-03	2.92E-03
Sample ID:	396638	Sample Dates:	12/1/2015 - 12/8/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.99E-02	3.12E-03	2.62E-03
Sample ID:	397175	Sample Dates:	12/8/2015 - 12/15/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.75E-02	3.11E-03	2.81E-03
Sample ID:	397897	Sample Dates:	12/15/2015 - 12/22/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.01E-02	2.76E-03	2.76E-03



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 212 [INDICATOR - E @ 3.32 miles]

Sample ID:	398291	Sample Dates:	12/22/2015 - 12/29/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	5.37E-03	1.89E-03	2.67E-03
Sample ID:	398675	Sample Dates:	9/29/2015 - 12/29/2015	Nuclide	Activity	2 Sigma Error	LLD
				Cs-134	<6.90E-04	0.00E+00	6.90E-04
				Cs-137	<5.41E-04	0.00E+00	5.41E-04
				Be-7	1.02E-01	2.05E-02	1.52E-02
				K-40	1.22E-02	6.02E-03	1.94E-03
Sample Point 258 [CONTROL - W @ 9.84 miles]							
Sample ID:	364890	Sample Dates:	12/30/2014 - 1/6/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.29E-02	2.86E-03	2.74E-03
Sample ID:	365070	Sample Dates:	1/6/2015 - 1/13/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.54E-02	3.02E-03	2.89E-03
Sample ID:	365302	Sample Dates:	1/13/2015 - 1/20/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.71E-02	2.47E-03	2.38E-03
Sample ID:	366658	Sample Dates:	1/20/2015 - 1/27/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.37E-02	2.34E-03	2.56E-03
Sample ID:	367064	Sample Dates:	1/27/2015 - 2/3/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.52E-02	2.47E-03	2.67E-03
Sample ID:	367549	Sample Dates:	2/3/2015 - 2/10/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.91E-02	2.70E-03	2.77E-03
Sample ID:	368976	Sample Dates:	2/10/2015 - 2/16/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.06E-02	3.07E-03	3.26E-03
Sample ID:	369699	Sample Dates:	2/16/2015 - 2/23/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.84E-02	3.04E-03	2.61E-03
Sample ID:	370605	Sample Dates:	2/23/2015 - 3/3/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.19E-02	2.53E-03	2.15E-03
Sample ID:	371544	Sample Dates:	3/3/2015 - 3/10/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.74E-02	2.58E-03	2.68E-03
Sample ID:	371916	Sample Dates:	3/10/2015 - 3/17/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.24E-02	2.23E-03	2.40E-03
Sample ID:	372410	Sample Dates:	3/17/2015 - 3/24/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.49E-02	2.42E-03	2.58E-03
Sample ID:	373832	Sample Dates:	3/24/2015 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.71E-02	2.62E-03	2.85E-03
Sample ID:	373838	Sample Dates:	12/30/2014 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
				Cs-134	<6.16E-04	0.00E+00	6.16E-04
				Cs-137	<4.45E-04	0.00E+00	4.45E-04
				Be-7	1.31E-01	2.07E-02	1.02E-02
				K-40	<1.34E-02	0.00E+00	1.34E-02
Sample ID:	374561	Sample Dates:	3/31/2015 - 4/7/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.28E-02	2.45E-03	2.92E-03
Sample ID:	374938	Sample Dates:	4/7/2015 - 4/14/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.75E-02	2.62E-03	2.78E-03
Sample ID:	375629	Sample Dates:	4/14/2015 - 4/21/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	7.20E-03	2.13E-03	2.94E-03
Sample ID:	376833	Sample Dates:	4/21/2015 - 4/28/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.41E-02	2.51E-03	2.95E-03
Sample ID:	377495	Sample Dates:	4/28/2015 - 5/5/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.17E-02	2.28E-03	2.65E-03



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Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 258 [CONTROL - W @ 9.84 miles]

Sample ID:	378059	Sample Dates:	5/5/2015 - 5/12/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.84E-02	2.72E-03	2.92E-03
Sample ID:	378459	Sample Dates:	5/12/2015 - 5/19/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.01E-02	2.78E-03	2.85E-03
Sample ID:	378955	Sample Dates:	5/19/2015 - 5/27/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.60E-02	2.35E-03	2.48E-03
Sample ID:	379461	Sample Dates:	5/27/2015 - 6/2/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.16E-02	2.66E-03	3.36E-03
Sample ID:	380185	Sample Dates:	6/2/2015 - 6/9/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.14E-02	2.33E-03	2.84E-03
Sample ID:	380473	Sample Dates:	6/9/2015 - 6/16/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.92E-02	2.73E-03	2.86E-03
Sample ID:	380805	Sample Dates:	6/16/2015 - 6/23/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.14E-02	2.97E-03	3.14E-03
Sample ID:	381247	Sample Dates:	6/23/2015 - 6/30/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.00E-02	2.75E-03	2.80E-03
Sample ID:	381253	Sample Dates:	3/31/2015 - 6/30/2015	Nuclide	Activity	2 Sigma Error	LLD
				Cs-134	<5.38E-04	0.00E+00	5.38E-04
				Cs-137	<2.91E-04	0.00E+00	2.91E-04
				Be-7	1.35E-01	2.26E-02	1.33E-02
				K-40	<1.09E-02	0.00E+00	1.09E-02
Sample ID:	381602	Sample Dates:	6/30/2015 - 7/7/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.74E-02	2.64E-03	2.80E-03
Sample ID:	382165	Sample Dates:	7/7/2015 - 7/14/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.32E-02	2.90E-03	2.80E-03
Sample ID:	382591	Sample Dates:	7/14/2015 - 7/21/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.51E-02	2.51E-03	2.78E-03
Sample ID:	383521	Sample Dates:	7/21/2015 - 7/28/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.33E-02	2.81E-03	2.51E-03
Sample ID:	384096	Sample Dates:	7/28/2015 - 8/4/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.06E-02	2.82E-03	2.90E-03
Sample ID:	384643	Sample Dates:	8/4/2015 - 8/11/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.93E-02	2.72E-03	2.76E-03
Sample ID:	385411	Sample Dates:	8/11/2015 - 8/18/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.84E-02	2.63E-03	2.67E-03
Sample ID:	385930	Sample Dates:	8/18/2015 - 8/25/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.24E-02	2.40E-03	2.88E-03
Sample ID:	386828	Sample Dates:	8/25/2015 - 9/1/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.36E-02	2.92E-03	2.77E-03
Sample ID:	387417	Sample Dates:	9/1/2015 - 9/9/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.55E-02	2.78E-03	2.49E-03
Sample ID:	388745	Sample Dates:	9/9/2015 - 9/15/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.65E-02	2.81E-03	3.11E-03
Sample ID:	389410	Sample Dates:	9/15/2015 - 9/22/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.51E-02	2.98E-03	2.76E-03
Sample ID:	390014	Sample Dates:	9/22/2015 - 9/29/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	9.34E-03	2.14E-03	2.64E-03
Sample ID:	390629	Sample Dates:	6/30/2015 - 9/29/2015	Nuclide	Activity	2 Sigma Error	LLD
				Cs-134	<6.30E-04	0.00E+00	6.30E-04
				Cs-137	<5.41E-04	0.00E+00	5.41E-04



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Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 258 [CONTROL - W @ 9.84 miles]

Sample ID:	390629	Sample Dates:	6/30/2015 - 9/29/2015	Nuclide	Activity	2 Sigma Error	LLD
				Be-7	1.16E-01	2.07E-02	1.09E-02
				K-40	<1.31E-02	0.00E+00	1.31E-02
Sample ID:	390623	Sample Dates:	9/29/2015 - 10/6/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	4.86E-03	1.90E-03	2.76E-03
Sample ID:	391932	Sample Dates:	10/6/2015 - 10/13/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.73E-02	2.57E-03	2.62E-03
Sample ID:	392232	Sample Dates:	10/13/2015 - 10/20/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.19E-02	2.82E-03	2.75E-03
Sample ID:	393434	Sample Dates:	10/20/2015 - 10/27/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.72E-02	3.17E-03	3.05E-03
Sample ID:	393837	Sample Dates:	10/27/2015 - 11/3/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.75E-02	2.53E-03	2.52E-03
Sample ID:	394837	Sample Dates:	11/3/2015 - 11/10/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.11E-02	2.29E-03	2.77E-03
Sample ID:	395305	Sample Dates:	11/10/2015 - 11/17/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.12E-02	2.79E-03	2.70E-03
Sample ID:	395633	Sample Dates:	11/17/2015 - 11/24/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.05E-02	2.80E-03	2.89E-03
Sample ID:	396131	Sample Dates:	11/24/2015 - 12/1/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.53E-02	2.58E-03	2.94E-03
Sample ID:	396639	Sample Dates:	12/1/2015 - 12/8/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.87E-02	3.10E-03	2.67E-03
Sample ID:	397176	Sample Dates:	12/8/2015 - 12/15/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	3.16E-02	3.23E-03	2.74E-03
Sample ID:	397898	Sample Dates:	12/15/2015 - 12/22/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.99E-02	2.75E-03	2.77E-03
Sample ID:	398292	Sample Dates:	12/22/2015 - 12/29/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	6.53E-03	1.96E-03	2.67E-03
Sample ID:	398676	Sample Dates:	9/29/2015 - 12/29/2015	Nuclide	Activity	2 Sigma Error	LLD
				Cs-134	<5.12E-04	0.00E+00	5.12E-04
				Cs-137	<5.25E-04	0.00E+00	5.25E-04
				Be-7	1.15E-01	2.05E-02	1.19E-02
				K-40	<1.05E-02	0.00E+00	1.05E-02

Sample Point 261 [INDICATOR - N @ 0.72 miles]

Sample ID:	364891	Sample Dates:	12/30/2014 - 1/6/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.73E-02	3.03E-03	2.72E-03
Sample ID:	365071	Sample Dates:	1/6/2015 - 1/13/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.42E-02	2.98E-03	2.91E-03
Sample ID:	365303	Sample Dates:	1/13/2015 - 1/20/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.94E-02	2.59E-03	2.38E-03
Sample ID:	366659	Sample Dates:	1/20/2015 - 1/27/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.63E-02	2.48E-03	2.56E-03
Sample ID:	367065	Sample Dates:	1/27/2015 - 2/3/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.31E-02	2.35E-03	2.66E-03
Sample ID:	367550	Sample Dates:	2/3/2015 - 2/10/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.97E-02	2.74E-03	2.79E-03
Sample ID:	368977	Sample Dates:	2/10/2015 - 2/16/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.91E-02	3.00E-03	3.26E-03



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Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 261 [INDICATOR - N @ 0.72 miles]

Sample ID:	369700	Sample Dates:	2/16/2015 - 2/23/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	3.08E-02	3.13E-03	2.59E-03
Sample ID:	370606	Sample Dates:	2/23/2015 - 3/3/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.62E-02	2.71E-03	2.16E-03
Sample ID:	371545	Sample Dates:	3/3/2015 - 3/10/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.05E-02	2.73E-03	2.69E-03
Sample ID:	371917	Sample Dates:	3/10/2015 - 3/17/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.42E-02	2.33E-03	2.40E-03
Sample ID:	372411	Sample Dates:	3/17/2015 - 3/24/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.77E-02	2.57E-03	2.58E-03
Sample ID:	373833	Sample Dates:	3/24/2015 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.54E-02	2.52E-03	2.82E-03
Sample ID:	373839	Sample Dates:	12/30/2014 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
				Cs-134	<6.82E-04	0.00E+00	6.82E-04
				Cs-137	<5.01E-04	0.00E+00	5.01E-04
				Be-7	1.35E-01	2.14E-02	1.11E-02
				K-40	<1.24E-02	0.00E+00	1.24E-02
Sample ID:	374562	Sample Dates:	3/31/2015 - 4/7/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.46E-02	2.56E-03	2.94E-03
Sample ID:	374939	Sample Dates:	4/7/2015 - 4/14/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.71E-02	2.61E-03	2.80E-03
Sample ID:	375630	Sample Dates:	4/14/2015 - 4/21/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	8.39E-03	2.20E-03	2.94E-03
Sample ID:	376834	Sample Dates:	4/21/2015 - 4/28/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.39E-02	2.51E-03	2.95E-03
Sample ID:	377496	Sample Dates:	4/28/2015 - 5/5/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.36E-02	2.36E-03	2.63E-03
Sample ID:	378060	Sample Dates:	5/5/2015 - 5/12/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.25E-02	2.92E-03	2.94E-03
Sample ID:	378460	Sample Dates:	5/12/2015 - 5/19/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.11E-02	2.83E-03	2.86E-03
Sample ID:	378956	Sample Dates:	5/19/2015 - 5/27/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.81E-02	2.45E-03	2.47E-03
Sample ID:	379462	Sample Dates:	5/27/2015 - 6/2/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.16E-02	2.66E-03	3.37E-03
Sample ID:	380186	Sample Dates:	6/2/2015 - 6/9/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.27E-02	2.41E-03	2.85E-03
Sample ID:	380474	Sample Dates:	6/9/2015 - 6/16/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.94E-02	2.72E-03	2.84E-03
Sample ID:	380806	Sample Dates:	6/16/2015 - 6/23/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.03E-02	2.87E-03	3.06E-03
Sample ID:	381248	Sample Dates:	6/23/2015 - 6/30/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.84E-02	2.69E-03	2.82E-03
Sample ID:	381254	Sample Dates:	3/31/2015 - 6/30/2015	Nuclide	Activity	2 Sigma Error	LLD
				Cs-134	<5.23E-04	0.00E+00	5.23E-04
				Cs-137	<3.56E-04	0.00E+00	3.56E-04
				Be-7	1.42E-01	2.25E-02	1.23E-02
				K-40	6.55E-03	5.05E-03	6.28E-03
Sample ID:	381603	Sample Dates:	6/30/2015 - 7/7/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.64E-02	2.59E-03	2.79E-03

CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 261 [INDICATOR - N @ 0.72 miles]

Sample ID:	382166	Sample Dates:	7/7/2015 - 7/14/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.82E-02	3.12E-03	2.81E-03
Sample ID:	382592	Sample Dates:	7/14/2015 - 7/21/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.96E-02	2.73E-03	2.77E-03
Sample ID:	383522	Sample Dates:	7/21/2015 - 7/28/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.44E-02	2.86E-03	2.52E-03
Sample ID:	384097	Sample Dates:	7/28/2015 - 8/4/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.88E-02	2.73E-03	2.90E-03
Sample ID:	384644	Sample Dates:	8/4/2015 - 8/11/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.33E-02	2.91E-03	2.78E-03
Sample ID:	385412	Sample Dates:	8/11/2015 - 8/18/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.68E-02	3.00E-03	2.66E-03
Sample ID:	385931	Sample Dates:	8/18/2015 - 8/25/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.62E-02	2.61E-03	2.89E-03
Sample ID:	386829	Sample Dates:	8/25/2015 - 9/1/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.61E-02	3.02E-03	2.75E-03
Sample ID:	387418	Sample Dates:	9/1/2015 - 9/9/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.94E-02	2.94E-03	2.50E-03
Sample ID:	388746	Sample Dates:	9/9/2015 - 9/15/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.86E-02	2.91E-03	3.10E-03
Sample ID:	389411	Sample Dates:	9/15/2015 - 9/22/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.57E-02	3.00E-03	2.75E-03
Sample ID:	390015	Sample Dates:	9/22/2015 - 9/29/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	9.24E-03	2.14E-03	2.66E-03
Sample ID:	390630	Sample Dates:	6/30/2015 - 9/29/2015	Nuclide	Activity	2 Sigma Error	LLD
				Cs-134	<5.98E-04	0.00E+00	5.98E-04
				Cs-137	<4.22E-04	0.00E+00	4.22E-04
				Be-7	1.27E-01	2.12E-02	1.01E-02
				K-40	<1.21E-02	0.00E+00	1.21E-02
Sample ID:	390624	Sample Dates:	9/29/2015 - 10/6/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	4.57E-03	1.88E-03	2.75E-03
Sample ID:	391933	Sample Dates:	10/6/2015 - 10/13/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.01E-02	2.71E-03	2.63E-03
Sample ID:	392233	Sample Dates:	10/13/2015 - 10/20/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.13E-02	2.80E-03	2.75E-03
Sample ID:	393435	Sample Dates:	10/20/2015 - 10/27/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	3.04E-02	3.29E-03	3.05E-03
Sample ID:	393838	Sample Dates:	10/27/2015 - 11/3/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.02E-02	2.69E-03	2.57E-03
Sample ID:	394838	Sample Dates:	11/3/2015 - 11/10/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.50E-02	2.51E-03	2.78E-03
Sample ID:	395306	Sample Dates:	11/10/2015 - 11/17/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.33E-02	2.89E-03	2.71E-03
Sample ID:	395634	Sample Dates:	11/17/2015 - 11/24/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.92E-02	2.74E-03	2.89E-03
Sample ID:	396132	Sample Dates:	11/24/2015 - 12/1/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.63E-02	2.62E-03	2.93E-03
Sample ID:	396640	Sample Dates:	12/1/2015 - 12/8/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	3.06E-02	3.17E-03	2.66E-03



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Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 261 [INDICATOR - N @ 0.72 miles]

Sample ID:	397177	Sample Dates:	12/8/2015 - 12/15/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.87E-02	3.13E-03	2.77E-03
Sample ID:	397899	Sample Dates:	12/15/2015 - 12/22/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.86E-02	2.68E-03	2.76E-03
Sample ID:	398293	Sample Dates:	12/22/2015 - 12/29/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	7.92E-03	2.05E-03	2.67E-03
Sample ID:	398677	Sample Dates:	9/29/2015 - 12/29/2015	Nuclide	Activity	2 Sigma Error	LLD
				Cs-134	<4.65E-04	0.00E+00	4.65E-04
				Cs-137	<5.89E-04	0.00E+00	5.89E-04
				Be-7	1.28E-01	2.23E-02	1.31E-02
				K-40	<1.10E-02	0.00E+00	1.10E-02

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 200 [INDICATOR - NNE @ 0.63 miles]

Sample ID:	364892	Sample Dates:	12/30/2014 - 1/6/2015	Nuclide	Activity	2 Sigma Error	LLD
				I-131	<1.21E-02	0.00E+00	1.21E-02
				Cs-134	<1.39E-02	0.00E+00	1.39E-02
				Cs-137	<1.53E-02	0.00E+00	1.53E-02
				Be-7	<9.97E-02	0.00E+00	9.97E-02
				K-40	5.55E-01	2.25E-01	2.09E-01
Sample ID:	365072	Sample Dates:	1/6/2015 - 1/13/2015	Nuclide	Activity	2 Sigma Error	LLD
				I-131	<1.36E-02	0.00E+00	1.36E-02
				Cs-134	<1.17E-02	0.00E+00	1.17E-02
				Cs-137	<1.33E-02	0.00E+00	1.33E-02
				Be-7	<8.59E-02	0.00E+00	8.59E-02
				K-40	7.23E-01	2.47E-01	1.71E-01
Sample ID:	365304	Sample Dates:	1/13/2015 - 1/20/2015	Nuclide	Activity	2 Sigma Error	LLD
				I-131	<8.83E-03	0.00E+00	8.83E-03
				Cs-134	<4.67E-03	0.00E+00	4.67E-03
				Cs-137	<4.61E-03	0.00E+00	4.61E-03
				Be-7	<4.76E-02	0.00E+00	4.76E-02
				K-40	4.07E-01	1.57E-01	1.60E-01
Sample ID:	366660	Sample Dates:	1/20/2015 - 1/27/2015	Nuclide	Activity	2 Sigma Error	LLD
				I-131	<1.75E-02	0.00E+00	1.75E-02
				Cs-134	<1.15E-02	0.00E+00	1.15E-02
				Cs-137	<1.63E-02	0.00E+00	1.63E-02
				Be-7	<1.06E-01	0.00E+00	1.06E-01
				K-40	5.05E-01	2.31E-01	2.58E-01
Sample ID:	367066	Sample Dates:	1/27/2015 - 2/3/2015	Nuclide	Activity	2 Sigma Error	LLD
				I-131	<1.76E-02	0.00E+00	1.76E-02
				Cs-134	<1.06E-02	0.00E+00	1.06E-02
				Cs-137	<1.73E-02	0.00E+00	1.73E-02
				Be-7	<7.66E-02	0.00E+00	7.66E-02
				K-40	4.59E-01	1.84E-01	4.78E-02
Sample ID:	367551	Sample Dates:	2/3/2015 - 2/10/2015	Nuclide	Activity	2 Sigma Error	LLD
				I-131	<2.02E-02	0.00E+00	2.02E-02
				Cs-134	<9.25E-03	0.00E+00	9.25E-03
				Cs-137	<1.69E-02	0.00E+00	1.69E-02
				Be-7	<1.18E-01	0.00E+00	1.18E-01
				K-40	<6.42E-01	0.00E+00	6.42E-01
Sample ID:	368978	Sample Dates:	2/10/2015 - 2/16/2015	Nuclide	Activity	2 Sigma Error	LLD
				I-131	<2.65E-02	0.00E+00	2.65E-02
				Cs-134	<1.56E-02	0.00E+00	1.56E-02
				Cs-137	<1.96E-02	0.00E+00	1.96E-02
				Be-7	<1.04E-01	0.00E+00	1.04E-01
				K-40	7.03E-01	3.32E-01	3.09E-01
Sample ID:	369701	Sample Dates:	2/16/2015 - 2/23/2015	Nuclide	Activity	2 Sigma Error	LLD
				I-131	<9.05E-03	0.00E+00	9.05E-03

CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 200 [INDICATOR - NNE @ 0.63 miles]

Sample ID: 369701	Sample Dates: 2/16/2015 - 2/23/2015	Nuclide	Activity	2 Sigma Error	LLD
		Cs-134	<3.59E-03	0.00E+00	3.59E-03
		Cs-137	<5.65E-03	0.00E+00	5.65E-03
		Be-7	<3.60E-02	0.00E+00	3.60E-02
		K-40	4.80E-01	1.53E-01	1.06E-01
Sample ID: 370607	Sample Dates: 2/23/2015 - 3/3/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<8.75E-03	0.00E+00	8.75E-03
		Cs-134	<6.71E-03	0.00E+00	6.71E-03
		Cs-137	<7.89E-03	0.00E+00	7.89E-03
		Be-7	<5.12E-02	0.00E+00	5.12E-02
Sample ID: 371546	Sample Dates: 3/3/2015 - 3/10/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.36E-02	0.00E+00	1.36E-02
		Cs-134	<9.66E-03	0.00E+00	9.66E-03
		Cs-137	<1.57E-02	0.00E+00	1.57E-02
		Be-7	<1.19E-01	0.00E+00	1.19E-01
Sample ID: 371918	Sample Dates: 3/10/2015 - 3/17/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.01E-02	0.00E+00	1.01E-02
		Cs-134	<5.44E-03	0.00E+00	5.44E-03
		Cs-137	<7.56E-03	0.00E+00	7.56E-03
		Be-7	<3.72E-02	0.00E+00	3.72E-02
Sample ID: 372412	Sample Dates: 3/17/2015 - 3/24/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<8.69E-03	0.00E+00	8.69E-03
		Cs-134	<7.05E-03	0.00E+00	7.05E-03
		Cs-137	<6.70E-03	0.00E+00	6.70E-03
		Be-7	<3.65E-02	0.00E+00	3.65E-02
Sample ID: 373840	Sample Dates: 3/24/2015 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.50E-02	0.00E+00	1.50E-02
		Cs-134	<1.32E-02	0.00E+00	1.32E-02
		Cs-137	<1.01E-02	0.00E+00	1.01E-02
		Be-7	<1.06E-01	0.00E+00	1.06E-01
Sample ID: 374563	Sample Dates: 3/31/2015 - 4/7/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.05E-02	0.00E+00	1.05E-02
		Cs-134	<1.07E-02	0.00E+00	1.07E-02
		Cs-137	<1.03E-02	0.00E+00	1.03E-02
		Be-7	<8.77E-02	0.00E+00	8.77E-02
Sample ID: 374940	Sample Dates: 4/7/2015 - 4/14/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.53E-02	0.00E+00	1.53E-02
		Cs-134	<1.62E-02	0.00E+00	1.62E-02
		Cs-137	<1.32E-02	0.00E+00	1.32E-02
		Be-7	<9.40E-02	0.00E+00	9.40E-02
Sample ID: 375631	Sample Dates: 4/14/2015 - 4/21/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<6.75E-03	0.00E+00	6.75E-03
		Cs-134	<7.59E-03	0.00E+00	7.59E-03
		Cs-137	<7.79E-03	0.00E+00	7.79E-03
		Be-7	<4.58E-02	0.00E+00	4.58E-02
Sample ID: 376835	Sample Dates: 4/21/2015 - 4/28/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<6.66E-03	0.00E+00	6.66E-03
		Cs-134	<6.28E-03	0.00E+00	6.28E-03
		Cs-137	<8.93E-03	0.00E+00	8.93E-03
		Be-7	<5.44E-02	0.00E+00	5.44E-02
		Nuclide	Activity	2 Sigma Error	LLD
		I-131	<6.66E-03	0.00E+00	6.66E-03
		Cs-134	<6.28E-03	0.00E+00	6.28E-03
		Cs-137	<8.93E-03	0.00E+00	8.93E-03
		Be-7	<5.44E-02	0.00E+00	5.44E-02



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 200 [INDICATOR - NNE @ 0.63 miles]

Sample ID: 377497	Sample Dates: 4/28/2015 - 5/5/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.64E-02	0.00E+00	1.64E-02
		Cs-134	<1.06E-02	0.00E+00	1.06E-02
		Cs-137	<1.31E-02	0.00E+00	1.31E-02
		Be-7	<1.00E-01	0.00E+00	1.00E-01
		K-40	5.21E-01	2.36E-01	2.62E-01
Sample ID: 378061	Sample Dates: 5/5/2015 - 5/12/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<6.02E-03	0.00E+00	6.02E-03
		Cs-134	<7.12E-03	0.00E+00	7.12E-03
		Cs-137	<4.62E-03	0.00E+00	4.62E-03
		Be-7	<6.03E-02	0.00E+00	6.03E-02
		K-40	4.66E-01	1.64E-01	1.51E-01
Sample ID: 378461	Sample Dates: 5/12/2015 - 5/19/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.52E-02	0.00E+00	1.52E-02
		Cs-134	<1.33E-02	0.00E+00	1.33E-02
		Cs-137	<1.54E-02	0.00E+00	1.54E-02
		Be-7	<8.50E-02	0.00E+00	8.50E-02
		K-40	<4.76E-01	0.00E+00	4.76E-01
Sample ID: 378957	Sample Dates: 5/19/2015 - 5/27/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.62E-02	0.00E+00	1.62E-02
		Cs-134	<1.09E-02	0.00E+00	1.09E-02
		Cs-137	<1.34E-02	0.00E+00	1.34E-02
		Be-7	<9.91E-02	0.00E+00	9.91E-02
		K-40	4.61E-01	1.89E-01	1.69E-01
Sample ID: 379463	Sample Dates: 5/27/2015 - 6/2/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<9.39E-03	0.00E+00	9.39E-03
		Cs-134	<8.32E-03	0.00E+00	8.32E-03
		Cs-137	<1.04E-02	0.00E+00	1.04E-02
		Be-7	<6.98E-02	0.00E+00	6.98E-02
		K-40	4.96E-01	1.71E-01	1.23E-01
Sample ID: 380187	Sample Dates: 6/2/2015 - 6/9/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<8.44E-03	0.00E+00	8.44E-03
		Cs-134	<8.00E-03	0.00E+00	8.00E-03
		Cs-137	<8.22E-03	0.00E+00	8.22E-03
		Be-7	<6.69E-02	0.00E+00	6.69E-02
		K-40	3.76E-01	1.47E-01	1.40E-01
Sample ID: 380475	Sample Dates: 6/9/2015 - 6/16/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<6.54E-03	0.00E+00	6.54E-03
		Cs-134	<8.62E-03	0.00E+00	8.62E-03
		Cs-137	<4.35E-03	0.00E+00	4.35E-03
		Be-7	<6.91E-02	0.00E+00	6.91E-02
		K-40	3.76E-01	1.37E-01	1.08E-01
Sample ID: 380807	Sample Dates: 6/16/2015 - 6/23/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.95E-02	0.00E+00	1.95E-02
		Cs-134	<1.48E-02	0.00E+00	1.48E-02
		Cs-137	<1.32E-02	0.00E+00	1.32E-02
		Be-7	<1.07E-01	0.00E+00	1.07E-01
		K-40	3.84E-01	1.99E-01	2.25E-01
Sample ID: 381255	Sample Dates: 6/23/2015 - 6/30/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<7.82E-03	0.00E+00	7.82E-03
		Cs-134	<5.78E-03	0.00E+00	5.78E-03
		Cs-137	<6.44E-03	0.00E+00	6.44E-03
		Be-7	<5.41E-02	0.00E+00	5.41E-02
		K-40	3.02E-01	1.22E-01	9.66E-02
Sample ID: 381604	Sample Dates: 6/30/2015 - 7/7/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<6.31E-03	0.00E+00	6.31E-03
		Cs-134	<7.96E-03	0.00E+00	7.96E-03
		Cs-137	<5.80E-03	0.00E+00	5.80E-03
		Be-7	<5.93E-02	0.00E+00	5.93E-02
		K-40	<2.82E-01	0.00E+00	2.82E-01



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 200 [INDICATOR - NNE @ 0.63 miles]

Sample ID: 382167	Sample Dates: 7/7/2015 - 7/14/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.45E-02	0.00E+00	1.45E-02
		Cs-134	<1.41E-02	0.00E+00	1.41E-02
		Cs-137	<1.44E-02	0.00E+00	1.44E-02
		Be-7	<7.66E-02	0.00E+00	7.66E-02
		K-40	<4.94E-01	0.00E+00	4.94E-01
Sample ID: 382593	Sample Dates: 7/14/2015 - 7/21/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.44E-02	0.00E+00	1.44E-02
		Cs-134	<1.06E-02	0.00E+00	1.06E-02
		Cs-137	<1.73E-02	0.00E+00	1.73E-02
		Be-7	<5.24E-02	0.00E+00	5.24E-02
		K-40	3.87E-01	1.68E-01	4.77E-02
Sample ID: 383523	Sample Dates: 7/21/2015 - 7/28/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<8.99E-03	0.00E+00	8.99E-03
		Cs-134	<6.44E-03	0.00E+00	6.44E-03
		Cs-137	<7.17E-03	0.00E+00	7.17E-03
		Be-7	<4.60E-02	0.00E+00	4.60E-02
		K-40	4.71E-01	1.51E-01	3.04E-02
Sample ID: 384098	Sample Dates: 7/28/2015 - 8/4/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.28E-02	0.00E+00	1.28E-02
		Cs-134	<7.35E-03	0.00E+00	7.35E-03
		Cs-137	<6.52E-03	0.00E+00	6.52E-03
		Be-7	<6.94E-02	0.00E+00	6.94E-02
		K-40	4.15E-01	1.58E-01	1.60E-01
Sample ID: 384645	Sample Dates: 8/4/2015 - 8/11/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.26E-02	0.00E+00	1.26E-02
		Cs-134	<1.07E-02	0.00E+00	1.07E-02
		Cs-137	<1.45E-02	0.00E+00	1.45E-02
		Be-7	<6.63E-02	0.00E+00	6.63E-02
		K-40	4.89E-01	2.23E-01	2.38E-01
Sample ID: 385413	Sample Dates: 8/11/2015 - 8/18/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.73E-02	0.00E+00	1.73E-02
		Cs-134	<1.66E-02	0.00E+00	1.66E-02
		Cs-137	<8.04E-03	0.00E+00	8.04E-03
		Be-7	<9.36E-02	0.00E+00	9.36E-02
		K-40	3.29E-01	1.87E-01	2.21E-01
Sample ID: 385932	Sample Dates: 8/18/2015 - 8/25/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.58E-02	0.00E+00	1.58E-02
		Cs-134	<1.07E-02	0.00E+00	1.07E-02
		Cs-137	<1.03E-02	0.00E+00	1.03E-02
		Be-7	<1.00E-01	0.00E+00	1.00E-01
		K-40	4.46E-01	1.82E-01	4.83E-02
Sample ID: 386830	Sample Dates: 8/25/2015 - 9/1/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<9.77E-03	0.00E+00	9.77E-03
		Cs-134	<1.26E-02	0.00E+00	1.26E-02
		Cs-137	<1.12E-02	0.00E+00	1.12E-02
		Be-7	<7.22E-02	0.00E+00	7.22E-02
		K-40	4.38E-01	1.92E-01	1.75E-01
Sample ID: 387419	Sample Dates: 9/1/2015 - 9/9/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<7.13E-03	0.00E+00	7.13E-03
		Cs-134	<5.06E-03	0.00E+00	5.06E-03
		Cs-137	<1.02E-02	0.00E+00	1.02E-02
		Be-7	<6.13E-02	0.00E+00	6.13E-02
		K-40	3.56E-01	1.27E-01	1.05E-01
Sample ID: 388747	Sample Dates: 9/9/2015 - 9/15/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.08E-02	0.00E+00	1.08E-02
		Cs-134	<5.38E-03	0.00E+00	5.38E-03
		Cs-137	<1.08E-02	0.00E+00	1.08E-02
		Be-7	<6.56E-02	0.00E+00	6.56E-02
		K-40	4.63E-01	1.67E-01	1.30E-01



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 200 [INDICATOR - NNE @ 0.63 miles]

Sample ID: 389412	Sample Dates: 9/15/2015 - 9/22/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<7.72E-03	0.00E+00	7.72E-03
		Cs-134	<1.30E-03	0.00E+00	1.30E-03
		Cs-137	<6.40E-03	0.00E+00	6.40E-03
		Be-7	<4.62E-02	0.00E+00	4.62E-02
		K-40	3.46E-01	1.33E-01	1.10E-01
Sample ID: 390016	Sample Dates: 9/22/2015 - 9/29/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.27E-02	0.00E+00	1.27E-02
		Cs-134	<1.42E-02	0.00E+00	1.42E-02
		Cs-137	<1.76E-02	0.00E+00	1.76E-02
		Be-7	<1.07E-01	0.00E+00	1.07E-01
		K-40	6.19E-01	2.39E-01	2.14E-01
Sample ID: 390631	Sample Dates: 9/29/2015 - 10/6/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.32E-02	0.00E+00	1.32E-02
		Cs-134	<1.53E-02	0.00E+00	1.53E-02
		Cs-137	<1.64E-02	0.00E+00	1.64E-02
		Be-7	<1.00E-01	0.00E+00	1.00E-01
		K-40	3.89E-01	1.88E-01	1.84E-01
Sample ID: 391934	Sample Dates: 10/6/2015 - 10/13/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.25E-02	0.00E+00	1.25E-02
		Cs-134	<1.88E-02	0.00E+00	1.88E-02
		Cs-137	<1.82E-02	0.00E+00	1.82E-02
		Be-7	<8.59E-02	0.00E+00	8.59E-02
		K-40	7.36E-01	2.56E-01	2.10E-01
Sample ID: 392234	Sample Dates: 10/13/2015 - 10/20/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.62E-02	0.00E+00	1.62E-02
		Cs-134	<1.34E-02	0.00E+00	1.34E-02
		Cs-137	<2.99E-03	0.00E+00	2.99E-03
		Be-7	<1.13E-01	0.00E+00	1.13E-01
		K-40	3.99E-01	1.95E-01	1.99E-01
Sample ID: 393436	Sample Dates: 10/20/2015 - 10/27/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.99E-02	0.00E+00	1.99E-02
		Cs-134	<1.07E-02	0.00E+00	1.07E-02
		Cs-137	<1.18E-02	0.00E+00	1.18E-02
		Be-7	<6.59E-02	0.00E+00	6.59E-02
		K-40	5.35E-01	2.16E-01	1.83E-01
Sample ID: 393839	Sample Dates: 10/27/2015 - 11/3/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<6.62E-03	0.00E+00	6.62E-03
		Cs-134	<6.97E-03	0.00E+00	6.97E-03
		Cs-137	<7.38E-03	0.00E+00	7.38E-03
		Be-7	<7.40E-02	0.00E+00	7.40E-02
		K-40	3.49E-01	1.40E-01	1.36E-01
Sample ID: 394839	Sample Dates: 11/3/2015 - 11/10/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.74E-02	0.00E+00	1.74E-02
		Cs-134	<1.55E-02	0.00E+00	1.55E-02
		Cs-137	<1.32E-02	0.00E+00	1.32E-02
		Be-7	<8.65E-02	0.00E+00	8.65E-02
		K-40	5.64E-01	2.45E-01	2.67E-01
Sample ID: 395307	Sample Dates: 11/10/2015 - 11/17/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.69E-02	0.00E+00	1.69E-02
		Cs-134	<1.26E-02	0.00E+00	1.26E-02
		Cs-137	<1.33E-02	0.00E+00	1.33E-02
		Be-7	<7.68E-02	0.00E+00	7.68E-02
		K-40	4.98E-01	2.13E-01	1.97E-01
Sample ID: 395635	Sample Dates: 11/17/2015 - 11/24/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.40E-02	0.00E+00	1.40E-02
		Cs-134	<1.48E-02	0.00E+00	1.48E-02
		Cs-137	<1.55E-02	0.00E+00	1.55E-02
		Be-7	<1.07E-01	0.00E+00	1.07E-01
		K-40	5.39E-01	2.13E-01	1.66E-01

CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 200 [INDICATOR - NNE @ 0.63 miles]

Sample ID: 396133	Sample Dates: 11/24/2015 - 12/1/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<8.71E-03	0.00E+00	8.71E-03
		Cs-134	<6.26E-03	0.00E+00	6.26E-03
		Cs-137	<9.40E-03	0.00E+00	9.40E-03
		Be-7	<5.76E-02	0.00E+00	5.76E-02
		K-40	4.97E-01	1.49E-01	2.75E-02
Sample ID: 396641	Sample Dates: 12/1/2015 - 12/8/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.86E-02	0.00E+00	1.86E-02
		Cs-134	<1.53E-02	0.00E+00	1.53E-02
		Cs-137	<1.73E-02	0.00E+00	1.73E-02
		Be-7	<1.00E-01	0.00E+00	1.00E-01
		K-40	5.17E-01	2.08E-01	1.67E-01
Sample ID: 397178	Sample Dates: 12/8/2015 - 12/15/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.74E-02	0.00E+00	1.74E-02
		Cs-134	<1.27E-02	0.00E+00	1.27E-02
		Cs-137	<1.46E-02	0.00E+00	1.46E-02
		Be-7	<1.08E-01	0.00E+00	1.08E-01
		K-40	4.37E-01	2.15E-01	2.41E-01
Sample ID: 397900	Sample Dates: 12/15/2015 - 12/22/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<6.38E-03	0.00E+00	6.38E-03
		Cs-134	<6.58E-03	0.00E+00	6.58E-03
		Cs-137	<9.90E-03	0.00E+00	9.90E-03
		Be-7	<7.19E-02	0.00E+00	7.19E-02
		K-40	3.58E-01	1.41E-01	1.28E-01
Sample ID: 398294	Sample Dates: 12/22/2015 - 12/29/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<8.93E-03	0.00E+00	8.93E-03
		Cs-134	<5.70E-03	0.00E+00	5.70E-03
		Cs-137	<9.89E-03	0.00E+00	9.89E-03
		Be-7	<5.91E-02	0.00E+00	5.91E-02
		K-40	5.76E-01	1.68E-01	3.00E-02
Sample Point 201 [INDICATOR - NE @ 0.53 miles]					
Sample ID: 364893	Sample Dates: 12/30/2014 - 1/6/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.51E-02	0.00E+00	1.51E-02
		Cs-134	<1.47E-02	0.00E+00	1.47E-02
		Cs-137	<1.43E-02	0.00E+00	1.43E-02
		Be-7	4.76E-02	5.76E-02	9.19E-02
		K-40	5.01E-01	2.68E-01	3.56E-01
Sample ID: 365073	Sample Dates: 1/6/2015 - 1/13/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.34E-02	0.00E+00	1.34E-02
		Cs-134	<1.55E-02	0.00E+00	1.55E-02
		Cs-137	<1.45E-02	0.00E+00	1.45E-02
		Be-7	<7.66E-02	0.00E+00	7.66E-02
		K-40	5.45E-01	2.75E-01	3.55E-01
Sample ID: 365305	Sample Dates: 1/13/2015 - 1/20/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<2.22E-02	0.00E+00	2.22E-02
		Cs-134	<1.16E-02	0.00E+00	1.16E-02
		Cs-137	<1.15E-02	0.00E+00	1.15E-02
		Be-7	<1.03E-01	0.00E+00	1.03E-01
		K-40	6.82E-01	3.02E-01	2.70E-01
Sample ID: 366661	Sample Dates: 1/20/2015 - 1/27/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.51E-02	0.00E+00	1.51E-02
		Cs-134	<1.60E-02	0.00E+00	1.60E-02
		Cs-137	<1.17E-02	0.00E+00	1.17E-02
		Be-7	<9.99E-02	0.00E+00	9.99E-02
		K-40	8.26E-01	2.65E-01	1.89E-01
Sample ID: 367067	Sample Dates: 1/27/2015 - 2/3/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.90E-02	0.00E+00	1.90E-02
		Cs-134	<1.16E-02	0.00E+00	1.16E-02
		Cs-137	<1.02E-02	0.00E+00	1.02E-02



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 201 [INDICATOR - NE @ 0.53 miles]

Sample ID: 367067	Sample Dates: 1/27/2015 - 2/3/2015	Nuclide	Activity	2 Sigma Error	LLD
		Be-7	<1.13E-01	0.00E+00	1.13E-01
		K-40	6.87E-01	2.88E-01	3.39E-01
Sample ID: 367552	Sample Dates: 2/3/2015 - 2/10/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<9.88E-03	0.00E+00	9.88E-03
		Cs-134	<6.08E-03	0.00E+00	6.08E-03
		Cs-137	<4.63E-03	0.00E+00	4.63E-03
		Be-7	<5.75E-02	0.00E+00	5.75E-02
		K-40	2.94E-01	1.19E-01	8.31E-02
Sample ID: 368979	Sample Dates: 2/10/2015 - 2/16/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.77E-02	0.00E+00	1.77E-02
		Cs-134	<1.56E-02	0.00E+00	1.56E-02
		Cs-137	<1.96E-02	0.00E+00	1.96E-02
		Be-7	<1.68E-01	0.00E+00	1.68E-01
		K-40	<7.25E-01	0.00E+00	7.25E-01
Sample ID: 369702	Sample Dates: 2/16/2015 - 2/23/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.89E-02	0.00E+00	1.89E-02
		Cs-134	<1.45E-02	0.00E+00	1.45E-02
		Cs-137	<1.12E-02	0.00E+00	1.12E-02
		Be-7	<1.12E-01	0.00E+00	1.12E-01
		K-40	<5.60E-01	0.00E+00	5.60E-01
Sample ID: 370608	Sample Dates: 2/23/2015 - 3/3/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<8.52E-03	0.00E+00	8.52E-03
		Cs-134	<7.64E-03	0.00E+00	7.64E-03
		Cs-137	<7.69E-03	0.00E+00	7.69E-03
		Be-7	<3.78E-02	0.00E+00	3.78E-02
		K-40	3.92E-01	1.36E-01	1.13E-01
Sample ID: 371547	Sample Dates: 3/3/2015 - 3/10/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.74E-02	0.00E+00	1.74E-02
		Cs-134	<1.35E-02	0.00E+00	1.35E-02
		Cs-137	<1.57E-02	0.00E+00	1.57E-02
		Be-7	<5.27E-02	0.00E+00	5.27E-02
		K-40	4.38E-01	1.95E-01	1.69E-01
Sample ID: 371919	Sample Dates: 3/10/2015 - 3/17/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<9.73E-03	0.00E+00	9.73E-03
		Cs-134	<8.56E-03	0.00E+00	8.56E-03
		Cs-137	<7.33E-03	0.00E+00	7.33E-03
		Be-7	<3.66E-02	0.00E+00	3.66E-02
		K-40	4.37E-01	1.56E-01	1.37E-01
Sample ID: 372413	Sample Dates: 3/17/2015 - 3/24/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<7.82E-03	0.00E+00	7.82E-03
		Cs-134	<6.85E-03	0.00E+00	6.85E-03
		Cs-137	<7.25E-03	0.00E+00	7.25E-03
		Be-7	<4.64E-02	0.00E+00	4.64E-02
		K-40	3.24E-01	1.33E-01	1.23E-01
Sample ID: 373841	Sample Dates: 3/24/2015 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.75E-02	0.00E+00	1.75E-02
		Cs-134	<1.33E-02	0.00E+00	1.33E-02
		Cs-137	<1.18E-02	0.00E+00	1.18E-02
		Be-7	<1.24E-01	0.00E+00	1.24E-01
		K-40	4.51E-01	2.29E-01	2.76E-01
Sample ID: 374564	Sample Dates: 3/31/2015 - 4/7/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.58E-02	0.00E+00	1.58E-02
		Cs-134	<1.25E-02	0.00E+00	1.25E-02
		Cs-137	<1.44E-02	0.00E+00	1.44E-02
		Be-7	<8.73E-02	0.00E+00	8.73E-02
		K-40	5.86E-01	2.10E-01	4.81E-02
Sample ID: 374941	Sample Dates: 4/7/2015 - 4/14/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.76E-02	0.00E+00	1.76E-02



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 201 [INDICATOR - NE @ 0.53 miles]

Sample ID: 374941	Sample Dates: 4/7/2015 - 4/14/2015	Nuclide	Activity	2 Sigma Error	LLD
		Cs-134	<6.53E-03	0.00E+00	6.53E-03
		Cs-137	<1.55E-02	0.00E+00	1.55E-02
		Be-7	<1.13E-01	0.00E+00	1.13E-01
		K-40	5.09E-01	2.22E-01	2.24E-01
Sample ID: 375632	Sample Dates: 4/14/2015 - 4/21/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<6.30E-03	0.00E+00	6.30E-03
		Cs-134	<7.07E-03	0.00E+00	7.07E-03
		Cs-137	<5.80E-03	0.00E+00	5.80E-03
		Be-7	<4.25E-02	0.00E+00	4.25E-02
Sample ID: 376836	Sample Dates: 4/21/2015 - 4/28/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.08E-02	0.00E+00	1.08E-02
		Cs-134	<1.41E-02	0.00E+00	1.41E-02
		Cs-137	<1.55E-02	0.00E+00	1.55E-02
		Be-7	<1.07E-01	0.00E+00	1.07E-01
Sample ID: 377498	Sample Dates: 4/28/2015 - 5/5/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.80E-02	0.00E+00	1.80E-02
		Cs-134	<1.06E-02	0.00E+00	1.06E-02
		Cs-137	<1.18E-02	0.00E+00	1.18E-02
		Be-7	<6.64E-02	0.00E+00	6.64E-02
Sample ID: 378062	Sample Dates: 5/5/2015 - 5/12/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<7.31E-03	0.00E+00	7.31E-03
		Cs-134	<8.16E-03	0.00E+00	8.16E-03
		Cs-137	<9.13E-03	0.00E+00	9.13E-03
		Be-7	<6.22E-02	0.00E+00	6.22E-02
Sample ID: 378462	Sample Dates: 5/12/2015 - 5/19/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<7.43E-03	0.00E+00	7.43E-03
		Cs-134	<5.36E-03	0.00E+00	5.36E-03
		Cs-137	<8.12E-03	0.00E+00	8.12E-03
		Be-7	<6.24E-02	0.00E+00	6.24E-02
Sample ID: 378958	Sample Dates: 5/19/2015 - 5/27/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.55E-02	0.00E+00	1.55E-02
		Cs-134	<1.23E-02	0.00E+00	1.23E-02
		Cs-137	<1.26E-02	0.00E+00	1.26E-02
		Be-7	<1.05E-01	0.00E+00	1.05E-01
Sample ID: 379464	Sample Dates: 5/27/2015 - 6/2/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<9.35E-03	0.00E+00	9.35E-03
		Cs-134	<8.03E-03	0.00E+00	8.03E-03
		Cs-137	<8.51E-03	0.00E+00	8.51E-03
		Be-7	<4.89E-02	0.00E+00	4.89E-02
Sample ID: 380188	Sample Dates: 6/2/2015 - 6/9/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<7.83E-03	0.00E+00	7.83E-03
		Cs-134	<8.05E-03	0.00E+00	8.05E-03
		Cs-137	<6.45E-03	0.00E+00	6.45E-03
		Be-7	<4.66E-02	0.00E+00	4.66E-02
Sample ID: 380476	Sample Dates: 6/9/2015 - 6/16/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<6.64E-03	0.00E+00	6.64E-03
		Cs-134	<6.28E-03	0.00E+00	6.28E-03
		Cs-137	<4.38E-03	0.00E+00	4.38E-03
		Be-7	<6.10E-02	0.00E+00	6.10E-02
		Nuclide	Activity	2 Sigma Error	LLD
		I-131	<6.64E-03	0.00E+00	6.64E-03
		Cs-134	<6.28E-03	0.00E+00	6.28E-03
		Cs-137	<4.38E-03	0.00E+00	4.38E-03
		Be-7	<6.10E-02	0.00E+00	6.10E-02



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 201 [INDICATOR - NE @ 0.53 miles]

Sample ID: 380808	Sample Dates: 6/16/2015 - 6/23/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.96E-02	0.00E+00	1.96E-02
		Cs-134	<1.54E-02	0.00E+00	1.54E-02
		Cs-137	<1.44E-02	0.00E+00	1.44E-02
		Be-7	<1.01E-01	0.00E+00	1.01E-01
		K-40	5.17E-01	2.11E-01	1.79E-01
Sample ID: 381256	Sample Dates: 6/23/2015 - 6/30/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<8.00E-03	0.00E+00	8.00E-03
		Cs-134	<3.94E-03	0.00E+00	3.94E-03
		Cs-137	<9.99E-03	0.00E+00	9.99E-03
		Be-7	<6.35E-02	0.00E+00	6.35E-02
		K-40	3.72E-01	1.42E-01	1.12E-01
Sample ID: 381605	Sample Dates: 6/30/2015 - 7/7/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<7.46E-03	0.00E+00	7.46E-03
		Cs-134	<8.36E-03	0.00E+00	8.36E-03
		Cs-137	<7.51E-03	0.00E+00	7.51E-03
		Be-7	<4.26E-02	0.00E+00	4.26E-02
		K-40	<2.57E-01	0.00E+00	2.57E-01
Sample ID: 382168	Sample Dates: 7/7/2015 - 7/14/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.70E-02	0.00E+00	1.70E-02
		Cs-134	<1.58E-02	0.00E+00	1.58E-02
		Cs-137	<1.69E-02	0.00E+00	1.69E-02
		Be-7	<8.70E-02	0.00E+00	8.70E-02
		K-40	4.89E-01	1.93E-01	4.91E-02
Sample ID: 382594	Sample Dates: 7/14/2015 - 7/21/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.34E-02	0.00E+00	1.34E-02
		Cs-134	<1.40E-02	0.00E+00	1.40E-02
		Cs-137	<1.18E-02	0.00E+00	1.18E-02
		Be-7	<1.19E-01	0.00E+00	1.19E-01
		K-40	5.83E-01	2.09E-01	4.79E-02
Sample ID: 383524	Sample Dates: 7/21/2015 - 7/28/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<7.84E-03	0.00E+00	7.84E-03
		Cs-134	<5.25E-03	0.00E+00	5.25E-03
		Cs-137	<6.53E-03	0.00E+00	6.53E-03
		Be-7	<4.21E-02	0.00E+00	4.21E-02
		K-40	2.37E-01	1.39E-01	1.85E-01
Sample ID: 384099	Sample Dates: 7/28/2015 - 8/4/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.20E-02	0.00E+00	1.20E-02
		Cs-134	<5.21E-03	0.00E+00	5.21E-03
		Cs-137	<8.99E-03	0.00E+00	8.99E-03
		Be-7	<7.18E-02	0.00E+00	7.18E-02
		K-40	2.84E-01	1.27E-01	1.29E-01
Sample ID: 384646	Sample Dates: 8/4/2015 - 8/11/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<5.38E-03	0.00E+00	5.38E-03
		Cs-134	<4.55E-03	0.00E+00	4.55E-03
		Cs-137	<6.23E-03	0.00E+00	6.23E-03
		Be-7	<3.51E-02	0.00E+00	3.51E-02
		K-40	3.54E-01	9.93E-02	7.79E-02
Sample ID: 385414	Sample Dates: 8/11/2015 - 8/18/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.64E-02	0.00E+00	1.64E-02
		Cs-134	<1.33E-02	0.00E+00	1.33E-02
		Cs-137	<8.07E-03	0.00E+00	8.07E-03
		Be-7	<6.65E-02	0.00E+00	6.65E-02
		K-40	5.20E-01	2.10E-01	1.70E-01
Sample ID: 385933	Sample Dates: 8/18/2015 - 8/25/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.51E-02	0.00E+00	1.51E-02
		Cs-134	<1.16E-02	0.00E+00	1.16E-02
		Cs-137	<1.99E-02	0.00E+00	1.99E-02
		Be-7	<1.12E-01	0.00E+00	1.12E-01
		K-40	5.27E-01	2.26E-01	2.26E-01



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 201 [INDICATOR - NE @ 0.53 miles]

Sample ID: 386831	Sample Dates: 8/25/2015 - 9/1/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<8.82E-03	0.00E+00	8.82E-03
		Cs-134	<1.47E-02	0.00E+00	1.47E-02
		Cs-137	<1.01E-02	0.00E+00	1.01E-02
		Be-7	<1.23E-01	0.00E+00	1.23E-01
		K-40	4.64E-01	2.18E-01	2.36E-01
Sample ID: 387420	Sample Dates: 9/1/2015 - 9/9/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<6.22E-03	0.00E+00	6.22E-03
		Cs-134	<6.15E-03	0.00E+00	6.15E-03
		Cs-137	<6.28E-03	0.00E+00	6.28E-03
		Be-7	<6.23E-02	0.00E+00	6.23E-02
		K-40	3.86E-01	1.35E-01	9.55E-02
Sample ID: 388748	Sample Dates: 9/9/2015 - 9/15/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.13E-02	0.00E+00	1.13E-02
		Cs-134	<8.38E-03	0.00E+00	8.38E-03
		Cs-137	<9.08E-03	0.00E+00	9.08E-03
		Be-7	<4.87E-02	0.00E+00	4.87E-02
		K-40	4.35E-01	1.63E-01	1.42E-01
Sample ID: 389413	Sample Dates: 9/15/2015 - 9/22/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<9.50E-03	0.00E+00	9.50E-03
		Cs-134	<6.41E-03	0.00E+00	6.41E-03
		Cs-137	<7.97E-03	0.00E+00	7.97E-03
		Be-7	<4.58E-02	0.00E+00	4.58E-02
		K-40	4.12E-01	1.51E-01	1.23E-01
Sample ID: 390017	Sample Dates: 9/22/2015 - 9/29/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.45E-02	0.00E+00	1.45E-02
		Cs-134	<1.42E-02	0.00E+00	1.42E-02
		Cs-137	<1.66E-02	0.00E+00	1.66E-02
		Be-7	<1.13E-01	0.00E+00	1.13E-01
		K-40	<5.11E-01	0.00E+00	5.11E-01
Sample ID: 390632	Sample Dates: 9/29/2015 - 10/6/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.74E-02	0.00E+00	1.74E-02
		Cs-134	<1.32E-02	0.00E+00	1.32E-02
		Cs-137	<1.01E-02	0.00E+00	1.01E-02
		Be-7	<1.06E-01	0.00E+00	1.06E-01
		K-40	<3.20E-01	0.00E+00	3.20E-01
Sample ID: 391935	Sample Dates: 10/6/2015 - 10/13/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.56E-02	0.00E+00	1.56E-02
		Cs-134	<1.06E-02	0.00E+00	1.06E-02
		Cs-137	<1.02E-02	0.00E+00	1.02E-02
		Be-7	<1.14E-01	0.00E+00	1.14E-01
		K-40	<5.28E-01	0.00E+00	5.28E-01
Sample ID: 392235	Sample Dates: 10/13/2015 - 10/20/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.61E-02	0.00E+00	1.61E-02
		Cs-134	<1.41E-02	0.00E+00	1.41E-02
		Cs-137	<1.19E-02	0.00E+00	1.19E-02
		Be-7	<1.00E-01	0.00E+00	1.00E-01
		K-40	4.16E-01	2.12E-01	2.44E-01
Sample ID: 393437	Sample Dates: 10/20/2015 - 10/27/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.35E-02	0.00E+00	1.35E-02
		Cs-134	<1.16E-02	0.00E+00	1.16E-02
		Cs-137	<1.65E-02	0.00E+00	1.65E-02
		Be-7	<8.52E-02	0.00E+00	8.52E-02
		K-40	5.35E-01	2.16E-01	1.85E-01
Sample ID: 393840	Sample Dates: 10/27/2015 - 11/3/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.64E-02	0.00E+00	1.64E-02
		Cs-134	<1.32E-02	0.00E+00	1.32E-02
		Cs-137	<1.53E-02	0.00E+00	1.53E-02
		Be-7	<1.22E-01	0.00E+00	1.22E-01
		K-40	6.14E-01	2.14E-01	4.76E-02



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 201 [INDICATOR - NE @ 0.53 miles]

Sample ID: 394840	Sample Dates: 11/3/2015 - 11/10/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.31E-02	0.00E+00	1.31E-02
		Cs-134	<1.56E-02	0.00E+00	1.56E-02
		Cs-137	<1.25E-02	0.00E+00	1.25E-02
		Be-7	<9.92E-02	0.00E+00	9.92E-02
		K-40	6.36E-01	2.24E-01	5.07E-02
Sample ID: 395308	Sample Dates: 11/10/2015 - 11/17/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.88E-02	0.00E+00	1.88E-02
		Cs-134	<1.55E-02	0.00E+00	1.55E-02
		Cs-137	<1.32E-02	0.00E+00	1.32E-02
		Be-7	<1.13E-01	0.00E+00	1.13E-01
		K-40	4.64E-01	2.23E-01	2.52E-01
Sample ID: 395636	Sample Dates: 11/17/2015 - 11/24/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<8.10E-03	0.00E+00	8.10E-03
		Cs-134	<5.90E-03	0.00E+00	5.90E-03
		Cs-137	<4.72E-03	0.00E+00	4.72E-03
		Be-7	<3.88E-02	0.00E+00	3.88E-02
		K-40	4.58E-01	1.05E-01	1.38E-02
Sample ID: 396134	Sample Dates: 11/24/2015 - 12/1/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.09E-02	0.00E+00	1.09E-02
		Cs-134	<4.95E-03	0.00E+00	4.95E-03
		Cs-137	<7.96E-03	0.00E+00	7.96E-03
		Be-7	<5.58E-02	0.00E+00	5.58E-02
		K-40	4.13E-01	1.41E-01	3.02E-02
Sample ID: 396642	Sample Dates: 12/1/2015 - 12/8/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.75E-02	0.00E+00	1.75E-02
		Cs-134	<6.37E-03	0.00E+00	6.37E-03
		Cs-137	<1.40E-02	0.00E+00	1.40E-02
		Be-7	<1.05E-01	0.00E+00	1.05E-01
		K-40	5.17E-01	2.18E-01	2.13E-01
Sample ID: 397179	Sample Dates: 12/8/2015 - 12/15/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.52E-02	0.00E+00	1.52E-02
		Cs-134	<1.49E-02	0.00E+00	1.49E-02
		Cs-137	<1.56E-02	0.00E+00	1.56E-02
		Be-7	<8.55E-02	0.00E+00	8.55E-02
		K-40	8.73E-01	2.60E-01	4.83E-02
Sample ID: 397901	Sample Dates: 12/15/2015 - 12/22/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<6.89E-03	0.00E+00	6.89E-03
		Cs-134	<7.23E-03	0.00E+00	7.23E-03
		Cs-137	<8.43E-03	0.00E+00	8.43E-03
		Be-7	<6.69E-02	0.00E+00	6.69E-02
		K-40	4.40E-01	1.40E-01	2.78E-02
Sample ID: 398295	Sample Dates: 12/22/2015 - 12/29/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.50E-02	0.00E+00	1.50E-02
		Cs-134	<1.39E-02	0.00E+00	1.39E-02
		Cs-137	<1.01E-02	0.00E+00	1.01E-02
		Be-7	<9.20E-02	0.00E+00	9.20E-02
		K-40	5.10E-01	2.48E-01	3.03E-01

Sample Point 208 [INDICATOR - S @ 0.45 miles]

Sample ID: 364894	Sample Dates: 12/30/2014 - 1/6/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.83E-02	0.00E+00	1.83E-02
		Cs-134	<1.53E-02	0.00E+00	1.53E-02
		Cs-137	<1.63E-02	0.00E+00	1.63E-02
		Be-7	<5.22E-02	0.00E+00	5.22E-02
		K-40	5.53E-01	2.21E-01	1.92E-01
Sample ID: 365074	Sample Dates: 1/6/2015 - 1/13/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.51E-02	0.00E+00	1.51E-02
		Cs-134	<1.42E-02	0.00E+00	1.42E-02
		Cs-137	<1.84E-02	0.00E+00	1.84E-02



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 208 [INDICATOR - S @ 0.45 miles]

Sample ID: 365074	Sample Dates: 1/6/2015 - 1/13/2015	Nuclide	Activity	2 Sigma Error	LLD
		Be-7	<1.19E-01	0.00E+00	1.19E-01
		K-40	3.24E-01	2.09E-01	2.81E-01
Sample ID: 365306	Sample Dates: 1/13/2015 - 1/20/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.71E-02	0.00E+00	1.71E-02
		Cs-134	<1.19E-02	0.00E+00	1.19E-02
		Cs-137	<1.29E-02	0.00E+00	1.29E-02
		Be-7	<1.11E-01	0.00E+00	1.11E-01
		K-40	4.87E-01	2.22E-01	6.60E-02
Sample ID: 366662	Sample Dates: 1/20/2015 - 1/27/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.82E-02	0.00E+00	1.82E-02
		Cs-134	<1.40E-02	0.00E+00	1.40E-02
		Cs-137	<1.73E-02	0.00E+00	1.73E-02
		Be-7	<1.06E-01	0.00E+00	1.06E-01
		K-40	4.39E-01	1.79E-01	4.76E-02
Sample ID: 367068	Sample Dates: 1/27/2015 - 2/3/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<2.15E-02	0.00E+00	2.15E-02
		Cs-134	<1.16E-02	0.00E+00	1.16E-02
		Cs-137	<1.43E-02	0.00E+00	1.43E-02
		Be-7	<8.54E-02	0.00E+00	8.54E-02
		K-40	5.11E-01	1.95E-01	4.78E-02
Sample ID: 367553	Sample Dates: 2/3/2015 - 2/10/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<2.39E-02	0.00E+00	2.39E-02
		Cs-134	<1.16E-02	0.00E+00	1.16E-02
		Cs-137	<1.46E-02	0.00E+00	1.46E-02
		Be-7	<1.18E-01	0.00E+00	1.18E-01
		K-40	9.71E-01	3.66E-01	3.19E-01
Sample ID: 368980	Sample Dates: 2/10/2015 - 2/16/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.03E-02	0.00E+00	1.03E-02
		Cs-134	<8.82E-03	0.00E+00	8.82E-03
		Cs-137	<1.23E-02	0.00E+00	1.23E-02
		Be-7	<7.89E-02	0.00E+00	7.89E-02
		K-40	5.76E-01	1.81E-01	3.55E-02
Sample ID: 369703	Sample Dates: 2/16/2015 - 2/23/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<9.50E-03	0.00E+00	9.50E-03
		Cs-134	<7.34E-03	0.00E+00	7.34E-03
		Cs-137	<4.48E-03	0.00E+00	4.48E-03
		Be-7	<6.16E-02	0.00E+00	6.16E-02
		K-40	4.01E-01	1.48E-01	1.36E-01
Sample ID: 370609	Sample Dates: 2/23/2015 - 3/3/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<6.08E-03	0.00E+00	6.08E-03
		Cs-134	<7.04E-03	0.00E+00	7.04E-03
		Cs-137	<8.32E-03	0.00E+00	8.32E-03
		Be-7	<4.82E-02	0.00E+00	4.82E-02
		K-40	3.25E-01	1.42E-01	1.69E-01
Sample ID: 371548	Sample Dates: 3/3/2015 - 3/10/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.03E-02	0.00E+00	1.03E-02
		Cs-134	<1.49E-02	0.00E+00	1.49E-02
		Cs-137	<2.01E-02	0.00E+00	2.01E-02
		Be-7	<8.57E-02	0.00E+00	8.57E-02
		K-40	5.95E-01	2.41E-01	2.39E-01
Sample ID: 371920	Sample Dates: 3/10/2015 - 3/17/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<5.93E-03	0.00E+00	5.93E-03
		Cs-134	<5.83E-03	0.00E+00	5.83E-03
		Cs-137	<4.44E-03	0.00E+00	4.44E-03
		Be-7	<7.31E-02	0.00E+00	7.31E-02
		K-40	4.03E-01	1.45E-01	1.16E-01
Sample ID: 372414	Sample Dates: 3/17/2015 - 3/24/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<7.39E-03	0.00E+00	7.39E-03



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 208 [INDICATOR - S @ 0.45 miles]

Sample ID: 372414	Sample Dates: 3/17/2015 - 3/24/2015	Nuclide	Activity	2 Sigma Error	LLD
		Cs-134	<3.92E-03	0.00E+00	3.92E-03
		Cs-137	<7.96E-03	0.00E+00	7.96E-03
		Be-7	<4.54E-02	0.00E+00	4.54E-02
		K-40	3.50E-01	1.47E-01	1.49E-01
Sample ID: 373842	Sample Dates: 3/24/2015 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.42E-02	0.00E+00	1.42E-02
		Cs-134	<1.47E-02	0.00E+00	1.47E-02
		Cs-137	<1.54E-02	0.00E+00	1.54E-02
		Be-7	<1.00E-01	0.00E+00	1.00E-01
Sample ID: 374565	Sample Dates: 3/31/2015 - 4/7/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<2.04E-02	0.00E+00	2.04E-02
		Cs-134	<1.25E-02	0.00E+00	1.25E-02
		Cs-137	<1.65E-02	0.00E+00	1.65E-02
		Be-7	<8.72E-02	0.00E+00	8.72E-02
Sample ID: 374942	Sample Dates: 4/7/2015 - 4/14/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.09E-02	0.00E+00	1.09E-02
		Cs-134	<1.25E-02	0.00E+00	1.25E-02
		Cs-137	<1.55E-02	0.00E+00	1.55E-02
		Be-7	<9.38E-02	0.00E+00	9.38E-02
Sample ID: 375633	Sample Dates: 4/14/2015 - 4/21/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<6.83E-03	0.00E+00	6.83E-03
		Cs-134	<5.84E-03	0.00E+00	5.84E-03
		Cs-137	<9.08E-03	0.00E+00	9.08E-03
		Be-7	<5.07E-02	0.00E+00	5.07E-02
Sample ID: 376837	Sample Dates: 4/21/2015 - 4/28/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.90E-02	0.00E+00	1.90E-02
		Cs-134	<1.48E-02	0.00E+00	1.48E-02
		Cs-137	<1.55E-02	0.00E+00	1.55E-02
		Be-7	<8.59E-02	0.00E+00	8.59E-02
Sample ID: 377499	Sample Dates: 4/28/2015 - 5/5/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.11E-02	0.00E+00	1.11E-02
		Cs-134	<1.40E-02	0.00E+00	1.40E-02
		Cs-137	<1.64E-02	0.00E+00	1.64E-02
		Be-7	<1.19E-01	0.00E+00	1.19E-01
Sample ID: 378063	Sample Dates: 5/5/2015 - 5/12/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<5.93E-03	0.00E+00	5.93E-03
		Cs-134	<6.31E-03	0.00E+00	6.31E-03
		Cs-137	<8.43E-03	0.00E+00	8.43E-03
		Be-7	<6.74E-02	0.00E+00	6.74E-02
Sample ID: 378463	Sample Dates: 5/12/2015 - 5/19/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<7.32E-03	0.00E+00	7.32E-03
		Cs-134	<8.99E-03	0.00E+00	8.99E-03
		Cs-137	<6.39E-03	0.00E+00	6.39E-03
		Be-7	<6.64E-02	0.00E+00	6.64E-02
Sample ID: 378959	Sample Dates: 5/19/2015 - 5/27/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.55E-02	0.00E+00	1.55E-02
		Cs-134	<1.29E-02	0.00E+00	1.29E-02
		Cs-137	<1.15E-02	0.00E+00	1.15E-02
		Be-7	<6.76E-02	0.00E+00	6.76E-02



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 208 [INDICATOR - S @ 0.45 miles]

Sample ID: 379465	Sample Dates: 5/27/2015 - 6/2/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<8.20E-03	0.00E+00	8.20E-03
		Cs-134	<7.65E-03	0.00E+00	7.65E-03
		Cs-137	<1.96E-03	0.00E+00	1.96E-03
		Be-7	<6.52E-02	0.00E+00	6.52E-02
		K-40	5.27E-01	1.68E-01	3.32E-02
Sample ID: 380189	Sample Dates: 6/2/2015 - 6/9/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<7.93E-03	0.00E+00	7.93E-03
		Cs-134	<8.10E-03	0.00E+00	8.10E-03
		Cs-137	<7.22E-03	0.00E+00	7.22E-03
		Be-7	<3.17E-02	0.00E+00	3.17E-02
		K-40	4.40E-01	1.46E-01	3.06E-02
Sample ID: 380477	Sample Dates: 6/9/2015 - 6/16/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<8.80E-03	0.00E+00	8.80E-03
		Cs-134	<8.65E-03	0.00E+00	8.65E-03
		Cs-137	<9.39E-03	0.00E+00	9.39E-03
		Be-7	<2.83E-02	0.00E+00	2.83E-02
		K-40	3.38E-01	1.38E-01	1.36E-01
Sample ID: 380809	Sample Dates: 6/16/2015 - 6/23/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.60E-02	0.00E+00	1.60E-02
		Cs-134	<1.40E-02	0.00E+00	1.40E-02
		Cs-137	<1.31E-02	0.00E+00	1.31E-02
		Be-7	<9.33E-02	0.00E+00	9.33E-02
		K-40	6.36E-01	2.18E-01	4.79E-02
Sample ID: 381257	Sample Dates: 6/23/2015 - 6/30/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<3.88E-03	0.00E+00	3.88E-03
		Cs-134	<6.03E-03	0.00E+00	6.03E-03
		Cs-137	<7.51E-03	0.00E+00	7.51E-03
		Be-7	<5.19E-02	0.00E+00	5.19E-02
		K-40	3.35E-01	1.33E-01	1.15E-01
Sample ID: 381606	Sample Dates: 6/30/2015 - 7/7/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<9.89E-03	0.00E+00	9.89E-03
		Cs-134	<7.73E-03	0.00E+00	7.73E-03
		Cs-137	<4.46E-03	0.00E+00	4.46E-03
		Be-7	<5.08E-02	0.00E+00	5.08E-02
		K-40	3.31E-01	1.34E-01	1.23E-01
Sample ID: 382169	Sample Dates: 7/7/2015 - 7/14/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.36E-02	0.00E+00	1.36E-02
		Cs-134	<5.82E-03	0.00E+00	5.82E-03
		Cs-137	<8.99E-03	0.00E+00	8.99E-03
		Be-7	<7.51E-02	0.00E+00	7.51E-02
		K-40	3.98E-01	1.52E-01	1.50E-01
Sample ID: 382595	Sample Dates: 7/14/2015 - 7/21/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.99E-02	0.00E+00	1.99E-02
		Cs-134	<1.40E-02	0.00E+00	1.40E-02
		Cs-137	<1.74E-02	0.00E+00	1.74E-02
		Be-7	<1.19E-01	0.00E+00	1.19E-01
		K-40	6.54E-01	2.38E-01	1.89E-01
Sample ID: 383525	Sample Dates: 7/21/2015 - 7/28/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<8.88E-03	0.00E+00	8.88E-03
		Cs-134	<7.94E-03	0.00E+00	7.94E-03
		Cs-137	<8.15E-03	0.00E+00	8.15E-03
		Be-7	<6.32E-02	0.00E+00	6.32E-02
		K-40	4.33E-01	1.48E-01	1.06E-01
Sample ID: 384100	Sample Dates: 7/28/2015 - 8/3/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<2.47E-02	0.00E+00	2.47E-02
		Cs-134	<1.62E-02	0.00E+00	1.62E-02
		Cs-137	<1.71E-02	0.00E+00	1.71E-02
		Be-7	<1.18E-01	0.00E+00	1.18E-01
		K-40	8.65E-01	2.99E-01	6.51E-02



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 208 [INDICATOR - S @ 0.45 miles]

Sample ID: 384647	Sample Dates: 8/4/2015 - 8/11/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.73E-02	0.00E+00	1.73E-02
		Cs-134	<1.55E-02	0.00E+00	1.55E-02
		Cs-137	<1.66E-02	0.00E+00	1.66E-02
		Be-7	<1.34E-01	0.00E+00	1.34E-01
		K-40	6.78E-01	2.27E-01	4.83E-02
Sample ID: 385415	Sample Dates: 8/11/2015 - 8/18/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.46E-02	0.00E+00	1.46E-02
		Cs-134	<1.33E-02	0.00E+00	1.33E-02
		Cs-137	<1.32E-02	0.00E+00	1.32E-02
		Be-7	<8.60E-02	0.00E+00	8.60E-02
		K-40	4.60E-01	1.85E-01	4.80E-02
Sample ID: 385934	Sample Dates: 8/18/2015 - 8/25/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<8.62E-03	0.00E+00	8.62E-03
		Cs-134	<5.19E-03	0.00E+00	5.19E-03
		Cs-137	<4.41E-03	0.00E+00	4.41E-03
		Be-7	<5.75E-02	0.00E+00	5.75E-02
		K-40	4.01E-01	1.34E-01	2.79E-02
Sample ID: 386832	Sample Dates: 8/25/2015 - 9/1/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.51E-02	0.00E+00	1.51E-02
		Cs-134	<1.60E-02	0.00E+00	1.60E-02
		Cs-137	<1.31E-02	0.00E+00	1.31E-02
		Be-7	<1.17E-01	0.00E+00	1.17E-01
		K-40	6.88E-01	2.43E-01	1.88E-01
Sample ID: 387421	Sample Dates: 9/1/2015 - 9/9/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<6.69E-03	0.00E+00	6.69E-03
		Cs-134	<4.55E-03	0.00E+00	4.55E-03
		Cs-137	<6.31E-03	0.00E+00	6.31E-03
		Be-7	<4.77E-02	0.00E+00	4.77E-02
		K-40	4.06E-01	1.27E-01	2.44E-02
Sample ID: 388749	Sample Dates: 9/9/2015 - 9/15/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.17E-02	0.00E+00	1.17E-02
		Cs-134	<5.78E-03	0.00E+00	5.78E-03
		Cs-137	<8.33E-03	0.00E+00	8.33E-03
		Be-7	<6.01E-02	0.00E+00	6.01E-02
		K-40	2.70E-01	1.57E-01	2.01E-01
Sample ID: 389414	Sample Dates: 9/15/2015 - 9/22/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<4.08E-03	0.00E+00	4.08E-03
		Cs-134	<5.23E-03	0.00E+00	5.23E-03
		Cs-137	<7.92E-03	0.00E+00	7.92E-03
		Be-7	<6.79E-02	0.00E+00	6.79E-02
		K-40	3.63E-01	1.38E-01	1.18E-01
Sample ID: 390018	Sample Dates: 9/22/2015 - 9/29/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.45E-02	0.00E+00	1.45E-02
		Cs-134	<1.26E-02	0.00E+00	1.26E-02
		Cs-137	<1.33E-02	0.00E+00	1.33E-02
		Be-7	<8.56E-02	0.00E+00	8.56E-02
		K-40	<4.88E-01	0.00E+00	4.88E-01
Sample ID: 390633	Sample Dates: 9/29/2015 - 10/6/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.95E-02	0.00E+00	1.95E-02
		Cs-134	<1.24E-02	0.00E+00	1.24E-02
		Cs-137	<1.73E-02	0.00E+00	1.73E-02
		Be-7	<9.30E-02	0.00E+00	9.30E-02
		K-40	5.45E-01	2.37E-01	2.55E-01
Sample ID: 391936	Sample Dates: 10/6/2015 - 10/13/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.36E-02	0.00E+00	1.36E-02
		Cs-134	<1.16E-02	0.00E+00	1.16E-02
		Cs-137	<1.54E-02	0.00E+00	1.54E-02
		Be-7	<1.01E-01	0.00E+00	1.01E-01
		K-40	6.39E-01	2.34E-01	1.83E-01

CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 208 [INDICATOR - S @ 0.45 miles]

Sample ID: 392236	Sample Dates: 10/13/2015 - 10/20/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.75E-02	0.00E+00	1.75E-02
		Cs-134	<1.34E-02	0.00E+00	1.34E-02
		Cs-137	<1.33E-02	0.00E+00	1.33E-02
		Be-7	<7.67E-02	0.00E+00	7.67E-02
		K-40	6.23E-01	2.50E-01	2.52E-01
Sample ID: 393438	Sample Dates: 10/20/2015 - 10/27/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.48E-02	0.00E+00	1.48E-02
		Cs-134	<1.04E-02	0.00E+00	1.04E-02
		Cs-137	<1.70E-02	0.00E+00	1.70E-02
		Be-7	<1.04E-01	0.00E+00	1.04E-01
		K-40	4.49E-01	2.00E-01	1.91E-01
Sample ID: 393841	Sample Dates: 10/27/2015 - 11/3/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.46E-02	0.00E+00	1.46E-02
		Cs-134	<1.43E-02	0.00E+00	1.43E-02
		Cs-137	<1.39E-02	0.00E+00	1.39E-02
		Be-7	<1.14E-01	0.00E+00	1.14E-01
		K-40	6.50E-01	2.18E-01	4.64E-02
Sample ID: 394841	Sample Dates: 11/3/2015 - 11/10/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.73E-02	0.00E+00	1.73E-02
		Cs-134	<1.42E-02	0.00E+00	1.42E-02
		Cs-137	<1.33E-02	0.00E+00	1.33E-02
		Be-7	<1.02E-01	0.00E+00	1.02E-01
		K-40	4.71E-01	2.00E-01	1.66E-01
Sample ID: 395309	Sample Dates: 11/10/2015 - 11/17/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.16E-02	0.00E+00	1.16E-02
		Cs-134	<1.25E-02	0.00E+00	1.25E-02
		Cs-137	<1.55E-02	0.00E+00	1.55E-02
		Be-7	<1.07E-01	0.00E+00	1.07E-01
		K-40	<5.02E-01	0.00E+00	5.02E-01
Sample ID: 395637	Sample Dates: 11/17/2015 - 11/24/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.64E-02	0.00E+00	1.64E-02
		Cs-134	<1.16E-02	0.00E+00	1.16E-02
		Cs-137	<1.55E-02	0.00E+00	1.55E-02
		Be-7	<1.00E-01	0.00E+00	1.00E-01
		K-40	7.18E-01	2.55E-01	2.17E-01
Sample ID: 396135	Sample Dates: 11/24/2015 - 12/1/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<7.29E-03	0.00E+00	7.29E-03
		Cs-134	<5.23E-03	0.00E+00	5.23E-03
		Cs-137	<7.91E-03	0.00E+00	7.91E-03
		Be-7	<6.78E-02	0.00E+00	6.78E-02
		K-40	3.22E-01	1.39E-01	1.47E-01
Sample ID: 396643	Sample Dates: 12/1/2015 - 12/8/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.87E-02	0.00E+00	1.87E-02
		Cs-134	<1.25E-02	0.00E+00	1.25E-02
		Cs-137	<1.44E-02	0.00E+00	1.44E-02
		Be-7	<1.19E-01	0.00E+00	1.19E-01
		K-40	4.55E-01	2.48E-01	3.23E-01
Sample ID: 397180	Sample Dates: 12/8/2015 - 12/15/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.26E-02	0.00E+00	1.26E-02
		Cs-134	<1.49E-02	0.00E+00	1.49E-02
		Cs-137	<1.66E-02	0.00E+00	1.66E-02
		Be-7	<1.07E-01	0.00E+00	1.07E-01
		K-40	5.88E-01	2.10E-01	4.83E-02
Sample ID: 397902	Sample Dates: 12/15/2015 - 12/22/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<8.08E-03	0.00E+00	8.08E-03
		Cs-134	<7.57E-03	0.00E+00	7.57E-03
		Cs-137	<8.76E-03	0.00E+00	8.76E-03
		Be-7	<5.58E-02	0.00E+00	5.58E-02
		K-40	<2.87E-01	0.00E+00	2.87E-01

CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 208 [INDICATOR - S @ 0.45 miles]

Sample ID:	398296	Sample Dates:	12/22/2015 - 12/29/2015	Nuclide	Activity	2 Sigma Error	LLD
				I-131	<1.42E-02	0.00E+00	1.42E-02
				Cs-134	<9.45E-03	0.00E+00	9.45E-03
				Cs-137	<1.63E-02	0.00E+00	1.63E-02
				Be-7	<1.05E-01	0.00E+00	1.05E-01
				K-40	4.51E-01	2.59E-01	3.52E-01

Sample Point 212 [INDICATOR - E @ 3.32 miles]

Sample ID:	364895	Sample Dates:	12/30/2014 - 1/6/2015	Nuclide	Activity	2 Sigma Error	LLD
				I-131	<1.73E-02	0.00E+00	1.73E-02
				Cs-134	<1.31E-02	0.00E+00	1.31E-02
				Cs-137	<1.41E-02	0.00E+00	1.41E-02
				Be-7	<9.19E-02	0.00E+00	9.19E-02
				K-40	5.91E-01	2.09E-01	4.71E-02

Sample ID:	365075	Sample Dates:	1/6/2015 - 1/13/2015	Nuclide	Activity	2 Sigma Error	LLD
				I-131	<1.44E-02	0.00E+00	1.44E-02
				Cs-134	<1.50E-02	0.00E+00	1.50E-02
				Cs-137	<1.68E-02	0.00E+00	1.68E-02
				Be-7	<8.64E-02	0.00E+00	8.64E-02
				K-40	8.43E-01	2.74E-01	2.08E-01

Sample ID:	365307	Sample Dates:	1/13/2015 - 1/20/2015	Nuclide	Activity	2 Sigma Error	LLD
				I-131	<1.12E-02	0.00E+00	1.12E-02
				Cs-134	<7.50E-03	0.00E+00	7.50E-03
				Cs-137	<1.13E-02	0.00E+00	1.13E-02
				Be-7	<8.74E-02	0.00E+00	8.74E-02
				K-40	5.08E-01	1.75E-01	1.32E-01

Sample ID:	366663	Sample Dates:	1/20/2015 - 1/27/2015	Nuclide	Activity	2 Sigma Error	LLD
				I-131	<1.20E-02	0.00E+00	1.20E-02
				Cs-134	<1.15E-02	0.00E+00	1.15E-02
				Cs-137	<1.53E-02	0.00E+00	1.53E-02
				Be-7	<8.46E-02	0.00E+00	8.46E-02
				K-40	4.71E-01	2.06E-01	1.93E-01

Sample ID:	367069	Sample Dates:	1/27/2015 - 2/3/2015	Nuclide	Activity	2 Sigma Error	LLD
				I-131	<1.17E-02	0.00E+00	1.17E-02
				Cs-134	<1.29E-02	0.00E+00	1.29E-02
				Cs-137	<1.59E-02	0.00E+00	1.59E-02
				Be-7	<1.03E-01	0.00E+00	1.03E-01
				K-40	5.33E-01	2.11E-01	1.75E-01

Sample ID:	367554	Sample Dates:	2/3/2015 - 2/10/2015	Nuclide	Activity	2 Sigma Error	LLD
				I-131	<9.94E-03	0.00E+00	9.94E-03
				Cs-134	<6.72E-03	0.00E+00	6.72E-03
				Cs-137	<4.69E-03	0.00E+00	4.69E-03
				Be-7	<3.83E-02	0.00E+00	3.83E-02
				K-40	4.27E-01	1.40E-01	2.89E-02

Sample ID:	368981	Sample Dates:	2/10/2015 - 2/16/2015	Nuclide	Activity	2 Sigma Error	LLD
				I-131	<2.44E-02	0.00E+00	2.44E-02
				Cs-134	<1.35E-02	0.00E+00	1.35E-02
				Cs-137	<1.34E-02	0.00E+00	1.34E-02
				Be-7	<1.47E-01	0.00E+00	1.47E-01
				K-40	<6.34E-01	0.00E+00	6.34E-01

Sample ID:	369704	Sample Dates:	2/16/2015 - 2/23/2015	Nuclide	Activity	2 Sigma Error	LLD
				I-131	<1.64E-02	0.00E+00	1.64E-02
				Cs-134	<1.30E-02	0.00E+00	1.30E-02
				Cs-137	<1.63E-02	0.00E+00	1.63E-02
				Be-7	<1.01E-01	0.00E+00	1.01E-01
				K-40	<5.89E-01	0.00E+00	5.89E-01

Sample ID:	370610	Sample Dates:	2/23/2015 - 3/3/2015	Nuclide	Activity	2 Sigma Error	LLD
				I-131	<9.02E-03	0.00E+00	9.02E-03
				Cs-134	<6.11E-03	0.00E+00	6.11E-03
				Cs-137	<8.17E-03	0.00E+00	8.17E-03



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 212 [INDICATOR - E @ 3.32 miles]

Sample ID: 370610	Sample Dates: 2/23/2015 - 3/3/2015	Nuclide	Activity	2 Sigma Error	LLD
		Be-7	<2.75E-02	0.00E+00	2.75E-02
		K-40	3.61E-01	1.23E-01	2.64E-02
Sample ID: 371549	Sample Dates: 3/3/2015 - 3/10/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.88E-02	0.00E+00	1.88E-02
		Cs-134	<1.36E-02	0.00E+00	1.36E-02
		Cs-137	<1.58E-02	0.00E+00	1.58E-02
		Be-7	<1.09E-01	0.00E+00	1.09E-01
Sample ID: 371921	Sample Dates: 3/10/2015 - 3/17/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<8.38E-03	0.00E+00	8.38E-03
		Cs-134	<5.41E-03	0.00E+00	5.41E-03
		Cs-137	<7.51E-03	0.00E+00	7.51E-03
		Be-7	<5.25E-02	0.00E+00	5.25E-02
Sample ID: 372415	Sample Dates: 3/17/2015 - 3/24/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.41E-03	0.00E+00	1.41E-03
		Cs-134	<7.48E-03	0.00E+00	7.48E-03
		Cs-137	<8.12E-03	0.00E+00	8.12E-03
		Be-7	<5.15E-02	0.00E+00	5.15E-02
Sample ID: 373843	Sample Dates: 3/24/2015 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.56E-02	0.00E+00	1.56E-02
		Cs-134	<1.31E-02	0.00E+00	1.31E-02
		Cs-137	<1.16E-02	0.00E+00	1.16E-02
		Be-7	<7.53E-02	0.00E+00	7.53E-02
Sample ID: 374566	Sample Dates: 3/31/2015 - 4/7/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<2.03E-02	0.00E+00	2.03E-02
		Cs-134	<1.42E-02	0.00E+00	1.42E-02
		Cs-137	<1.56E-02	0.00E+00	1.56E-02
		Be-7	<1.03E-01	0.00E+00	1.03E-01
Sample ID: 374943	Sample Dates: 4/7/2015 - 4/14/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.77E-02	0.00E+00	1.77E-02
		Cs-134	<9.65E-03	0.00E+00	9.65E-03
		Cs-137	<1.76E-02	0.00E+00	1.76E-02
		Be-7	<9.45E-02	0.00E+00	9.45E-02
Sample ID: 375634	Sample Dates: 4/14/2015 - 4/21/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.13E-02	0.00E+00	1.13E-02
		Cs-134	<1.48E-02	0.00E+00	1.48E-02
		Cs-137	<1.91E-02	0.00E+00	1.91E-02
		Be-7	<7.60E-02	0.00E+00	7.60E-02
Sample ID: 376838	Sample Dates: 4/21/2015 - 4/28/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.66E-02	0.00E+00	1.66E-02
		Cs-134	<1.24E-02	0.00E+00	1.24E-02
		Cs-137	<1.43E-02	0.00E+00	1.43E-02
		Be-7	<9.97E-02	0.00E+00	9.97E-02
Sample ID: 377500	Sample Dates: 4/28/2015 - 5/5/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.23E-02	0.00E+00	1.23E-02
		Cs-134	<1.25E-02	0.00E+00	1.25E-02
		Cs-137	<1.31E-02	0.00E+00	1.31E-02
		Be-7	<1.07E-01	0.00E+00	1.07E-01
Sample ID: 378064	Sample Dates: 5/5/2015 - 5/12/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<9.56E-03	0.00E+00	9.56E-03



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 212 [INDICATOR - E @ 3.32 miles]

Sample ID: 378064	Sample Dates: 5/5/2015 - 5/12/2015	Nuclide	Activity	2 Sigma Error	LLD
		Cs-134	<7.13E-03	0.00E+00	7.13E-03
		Cs-137	<7.27E-03	0.00E+00	7.27E-03
		Be-7	<4.66E-02	0.00E+00	4.66E-02
		K-40	3.64E-01	1.44E-01	1.23E-01
Sample ID: 378464	Sample Dates: 5/12/2015 - 5/19/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<7.40E-03	0.00E+00	7.40E-03
		Cs-134	<8.46E-03	0.00E+00	8.46E-03
		Cs-137	<1.15E-02	0.00E+00	1.16E-02
		Be-7	<5.07E-02	0.00E+00	5.07E-02
Sample ID: 378960	Sample Dates: 5/19/2015 - 5/27/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.45E-02	0.00E+00	1.45E-02
		Cs-134	<9.18E-03	0.00E+00	9.18E-03
		Cs-137	<1.33E-02	0.00E+00	1.33E-02
		Be-7	<5.75E-02	0.00E+00	5.75E-02
Sample ID: 379466	Sample Dates: 5/27/2015 - 6/2/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<9.39E-03	0.00E+00	9.39E-03
		Cs-134	<8.35E-03	0.00E+00	8.35E-03
		Cs-137	<8.85E-03	0.00E+00	8.85E-03
		Be-7	<8.13E-02	0.00E+00	8.13E-02
Sample ID: 380190	Sample Dates: 6/2/2015 - 6/9/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<7.38E-03	0.00E+00	7.38E-03
		Cs-134	<7.18E-03	0.00E+00	7.18E-03
		Cs-137	<8.31E-03	0.00E+00	8.31E-03
		Be-7	<6.07E-02	0.00E+00	6.07E-02
Sample ID: 380478	Sample Dates: 6/9/2015 - 6/16/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<8.14E-03	0.00E+00	8.14E-03
		Cs-134	<7.10E-03	0.00E+00	7.10E-03
		Cs-137	<6.32E-03	0.00E+00	6.32E-03
		Be-7	<6.01E-02	0.00E+00	6.01E-02
Sample ID: 380810	Sample Dates: 6/16/2015 - 6/23/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.41E-02	0.00E+00	1.41E-02
		Cs-134	<1.67E-02	0.00E+00	1.67E-02
		Cs-137	<1.74E-02	0.00E+00	1.74E-02
		Be-7	<1.00E-01	0.00E+00	1.00E-01
Sample ID: 381258	Sample Dates: 6/23/2015 - 6/30/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.60E-02	0.00E+00	1.60E-02
		Cs-134	<9.68E-03	0.00E+00	9.68E-03
		Cs-137	<1.20E-02	0.00E+00	1.20E-02
		Be-7	<1.14E-01	0.00E+00	1.14E-01
Sample ID: 381607	Sample Dates: 6/30/2015 - 7/7/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<6.21E-03	0.00E+00	6.21E-03
		Cs-134	<6.30E-03	0.00E+00	6.30E-03
		Cs-137	<8.43E-03	0.00E+00	8.43E-03
		Be-7	<5.38E-02	0.00E+00	5.38E-02
Sample ID: 382170	Sample Dates: 7/7/2015 - 7/14/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.67E-02	0.00E+00	1.67E-02
		Cs-134	<1.07E-02	0.00E+00	1.07E-02
		Cs-137	<1.75E-02	0.00E+00	1.75E-02
		Be-7	<1.13E-01	0.00E+00	1.13E-01
		Nuclide	Activity	2 Sigma Error	LLD
		K-40	3.94E-01	1.90E-01	1.87E-01



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 212 [INDICATOR - E @ 3.32 miles]

Sample ID: 382596	Sample Dates: 7/14/2015 - 7/21/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.75E-02	0.00E+00	1.75E-02
		Cs-134	<1.58E-02	0.00E+00	1.58E-02
		Cs-137	<1.96E-02	0.00E+00	1.96E-02
		Be-7	<1.28E-01	0.00E+00	1.28E-01
		K-40	5.34E-01	2.24E-01	2.21E-01
Sample ID: 383526	Sample Dates: 7/21/2015 - 7/28/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<7.79E-03	0.00E+00	7.79E-03
		Cs-134	<8.08E-03	0.00E+00	8.08E-03
		Cs-137	<1.17E-02	0.00E+00	1.17E-02
		Be-7	<5.85E-02	0.00E+00	5.85E-02
		K-40	4.06E-01	1.41E-01	1.00E-01
Sample ID: 384101	Sample Dates: 7/28/2015 - 8/4/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<6.16E-03	0.00E+00	6.16E-03
		Cs-134	<7.95E-03	0.00E+00	7.95E-03
		Cs-137	<8.32E-03	0.00E+00	8.32E-03
		Be-7	<5.34E-02	0.00E+00	5.34E-02
		K-40	3.75E-01	1.36E-01	1.05E-01
Sample ID: 384648	Sample Dates: 8/4/2015 - 8/11/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.59E-02	0.00E+00	1.59E-02
		Cs-134	<1.26E-02	0.00E+00	1.26E-02
		Cs-137	<1.57E-02	0.00E+00	1.57E-02
		Be-7	<6.64E-02	0.00E+00	6.64E-02
		K-40	5.25E-01	2.48E-01	2.92E-01
Sample ID: 385416	Sample Dates: 8/11/2015 - 8/18/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.98E-02	0.00E+00	1.98E-02
		Cs-134	<1.24E-02	0.00E+00	1.24E-02
		Cs-137	<1.72E-02	0.00E+00	1.72E-02
		Be-7	<9.27E-02	0.00E+00	9.27E-02
		K-40	5.91E-01	2.29E-01	2.03E-01
Sample ID: 385935	Sample Dates: 8/18/2015 - 8/25/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<6.93E-03	0.00E+00	6.93E-03
		Cs-134	<7.14E-03	0.00E+00	7.14E-03
		Cs-137	<5.85E-03	0.00E+00	5.85E-03
		Be-7	<4.30E-02	0.00E+00	4.30E-02
		K-40	3.17E-01	1.36E-01	1.34E-01
Sample ID: 386833	Sample Dates: 8/25/2015 - 9/1/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.90E-02	0.00E+00	1.90E-02
		Cs-134	<1.46E-02	0.00E+00	1.46E-02
		Cs-137	<1.31E-02	0.00E+00	1.31E-02
		Be-7	<9.20E-02	0.00E+00	9.20E-02
		K-40	5.84E-01	2.22E-01	1.75E-01
Sample ID: 387422	Sample Dates: 9/1/2015 - 9/9/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<7.98E-03	0.00E+00	7.98E-03
		Cs-134	<8.36E-03	0.00E+00	8.36E-03
		Cs-137	<4.95E-03	0.00E+00	4.95E-03
		Be-7	<3.18E-02	0.00E+00	3.18E-02
		K-40	3.40E-01	1.16E-01	2.49E-02
Sample ID: 388750	Sample Dates: 9/9/2015 - 9/15/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.07E-02	0.00E+00	1.07E-02
		Cs-134	<8.92E-03	0.00E+00	8.92E-03
		Cs-137	<8.39E-03	0.00E+00	8.39E-03
		Be-7	<5.45E-02	0.00E+00	5.45E-02
		K-40	4.45E-01	1.63E-01	1.32E-01
Sample ID: 389415	Sample Dates: 9/15/2015 - 9/22/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<6.53E-03	0.00E+00	6.53E-03
		Cs-134	<8.36E-03	0.00E+00	8.36E-03
		Cs-137	<7.17E-03	0.00E+00	7.17E-03
		Be-7	<7.97E-02	0.00E+00	7.97E-02
		K-40	3.58E-01	1.36E-01	1.15E-01



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 212 [INDICATOR - E @ 3.32 miles]

Sample ID: 390019	Sample Dates: 9/22/2015 - 9/29/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.69E-02	0.00E+00	1.69E-02
		Cs-134	<1.35E-02	0.00E+00	1.35E-02
		Cs-137	<1.86E-02	0.00E+00	1.86E-02
		Be-7	<1.01E-01	0.00E+00	1.01E-01
		K-40	5.93E-01	2.12E-01	4.87E-02
Sample ID: 390634	Sample Dates: 9/29/2015 - 10/6/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.73E-02	0.00E+00	1.73E-02
		Cs-134	<8.17E-03	0.00E+00	8.17E-03
		Cs-137	<1.17E-02	0.00E+00	1.17E-02
		Be-7	<9.28E-02	0.00E+00	9.28E-02
		K-40	3.72E-01	2.26E-01	3.03E-01
Sample ID: 391937	Sample Dates: 10/6/2015 - 10/13/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.70E-02	0.00E+00	1.70E-02
		Cs-134	<1.23E-02	0.00E+00	1.23E-02
		Cs-137	<1.42E-02	0.00E+00	1.42E-02
		Be-7	<7.60E-02	0.00E+00	7.60E-02
		K-40	6.11E-01	2.45E-01	2.47E-01
Sample ID: 392237	Sample Dates: 10/13/2015 - 10/20/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.46E-02	0.00E+00	1.46E-02
		Cs-134	<1.36E-02	0.00E+00	1.36E-02
		Cs-137	<1.68E-02	0.00E+00	1.68E-02
		Be-7	<1.20E-01	0.00E+00	1.20E-01
		K-40	4.52E-01	2.26E-01	2.64E-01
Sample ID: 393439	Sample Dates: 10/20/2015 - 10/27/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.02E-02	0.00E+00	1.02E-02
		Cs-134	<1.48E-02	0.00E+00	1.48E-02
		Cs-137	<1.55E-02	0.00E+00	1.55E-02
		Be-7	<9.96E-02	0.00E+00	9.96E-02
		K-40	7.43E-01	2.67E-01	2.51E-01
Sample ID: 393842	Sample Dates: 10/27/2015 - 11/3/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.49E-02	0.00E+00	1.49E-02
		Cs-134	<1.39E-02	0.00E+00	1.39E-02
		Cs-137	<1.63E-02	0.00E+00	1.63E-02
		Be-7	<9.86E-02	0.00E+00	9.86E-02
		K-40	5.09E-01	2.29E-01	2.48E-01
Sample ID: 394842	Sample Dates: 11/3/2015 - 11/10/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.46E-02	0.00E+00	1.46E-02
		Cs-134	<1.34E-02	0.00E+00	1.34E-02
		Cs-137	<1.66E-02	0.00E+00	1.66E-02
		Be-7	<9.43E-02	0.00E+00	9.43E-02
		K-40	<4.79E-01	0.00E+00	4.79E-01
Sample ID: 395310	Sample Dates: 11/10/2015 - 11/17/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.53E-02	0.00E+00	1.53E-02
		Cs-134	<1.17E-02	0.00E+00	1.17E-02
		Cs-137	<1.56E-02	0.00E+00	1.56E-02
		Be-7	<1.25E-01	0.00E+00	1.25E-01
		K-40	4.35E-01	2.31E-01	2.87E-01
Sample ID: 395638	Sample Dates: 11/17/2015 - 11/24/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<2.15E-02	0.00E+00	2.15E-02
		Cs-134	<1.25E-02	0.00E+00	1.25E-02
		Cs-137	<1.32E-02	0.00E+00	1.32E-02
		Be-7	<7.66E-02	0.00E+00	7.66E-02
		K-40	<4.69E-01	0.00E+00	4.69E-01
Sample ID: 396136	Sample Dates: 11/24/2015 - 12/1/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.65E-03	0.00E+00	1.65E-03
		Cs-134	<8.16E-03	0.00E+00	8.16E-03
		Cs-137	<8.10E-03	0.00E+00	8.10E-03
		Be-7	<5.69E-02	0.00E+00	5.69E-02
		K-40	5.11E-01	1.78E-01	1.67E-01



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 212 [INDICATOR - E @ 3.32 miles]

Sample ID: 396644	Sample Dates: 12/1/2015 - 12/8/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.59E-02	0.00E+00	1.59E-02
		Cs-134	<1.05E-02	0.00E+00	1.05E-02
		Cs-137	<1.79E-02	0.00E+00	1.79E-02
		Be-7	<1.17E-01	0.00E+00	1.17E-01
		K-40	3.58E-01	1.94E-01	2.25E-01
Sample ID: 397181	Sample Dates: 12/8/2015 - 12/15/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.76E-02	0.00E+00	1.76E-02
		Cs-134	<1.45E-02	0.00E+00	1.45E-02
		Cs-137	<1.35E-02	0.00E+00	1.35E-02
		Be-7	<7.82E-02	0.00E+00	7.82E-02
		K-40	3.30E-01	1.87E-01	2.17E-01
Sample ID: 397903	Sample Dates: 12/15/2015 - 12/22/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<5.68E-03	0.00E+00	5.68E-03
		Cs-134	<4.54E-03	0.00E+00	4.54E-03
		Cs-137	<7.30E-03	0.00E+00	7.30E-03
		Be-7	<6.77E-02	0.00E+00	6.77E-02
		K-40	<3.17E-01	0.00E+00	3.17E-01
Sample ID: 398297	Sample Dates: 12/22/2015 - 12/29/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.58E-02	0.00E+00	1.58E-02
		Cs-134	<1.32E-02	0.00E+00	1.32E-02
		Cs-137	<1.01E-02	0.00E+00	1.01E-02
		Be-7	<1.06E-01	0.00E+00	1.06E-01
		K-40	5.10E-01	1.94E-01	4.76E-02

Sample Point 258 [CONTROL - W @ 9.84 miles]

Sample ID: 364896	Sample Dates: 12/30/2014 - 1/6/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.70E-02	0.00E+00	1.70E-02
		Cs-134	<1.25E-02	0.00E+00	1.25E-02
		Cs-137	<1.43E-02	0.00E+00	1.43E-02
		Be-7	<1.07E-01	0.00E+00	1.07E-01
		K-40	4.89E-01	2.00E-01	1.52E-01
Sample ID: 365076	Sample Dates: 1/6/2015 - 1/13/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.80E-02	0.00E+00	1.80E-02
		Cs-134	<1.33E-02	0.00E+00	1.33E-02
		Cs-137	<1.83E-02	0.00E+00	1.83E-02
		Be-7	<1.00E-01	0.00E+00	1.00E-01
		K-40	7.10E-01	2.32E-01	4.81E-02
Sample ID: 365308	Sample Dates: 1/13/2015 - 1/20/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.20E-02	0.00E+00	1.20E-02
		Cs-134	<1.15E-02	0.00E+00	1.15E-02
		Cs-137	<1.21E-02	0.00E+00	1.21E-02
		Be-7	<8.14E-02	0.00E+00	8.14E-02
		K-40	4.55E-01	1.82E-01	1.61E-01
Sample ID: 366664	Sample Dates: 1/20/2015 - 1/27/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.52E-02	0.00E+00	1.52E-02
		Cs-134	<1.32E-02	0.00E+00	1.32E-02
		Cs-137	<1.31E-02	0.00E+00	1.31E-02
		Be-7	<1.13E-01	0.00E+00	1.13E-01
		K-40	6.97E-01	2.38E-01	1.54E-01
Sample ID: 367070	Sample Dates: 1/27/2015 - 2/3/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.44E-02	0.00E+00	1.44E-02
		Cs-134	<9.54E-03	0.00E+00	9.54E-03
		Cs-137	<1.65E-02	0.00E+00	1.65E-02
		Be-7	<1.13E-01	0.00E+00	1.13E-01
		K-40	5.61E-01	2.46E-01	2.72E-01
Sample ID: 367555	Sample Dates: 2/3/2015 - 2/10/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<2.16E-02	0.00E+00	2.16E-02
		Cs-134	<1.64E-02	0.00E+00	1.64E-02
		Cs-137	<2.05E-02	0.00E+00	2.05E-02



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 258 [CONTROL - W @ 9.84 miles]

Sample ID: 367555	Sample Dates: 2/3/2015 - 2/10/2015	Nuclide	Activity	2 Sigma Error	LLD
		Be-7	<1.18E-01	0.00E+00	1.18E-01
		K-40	5.68E-01	2.52E-01	7.32E-02
Sample ID: 368982	Sample Dates: 2/10/2015 - 2/16/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.09E-02	0.00E+00	1.09E-02
		Cs-134	<1.18E-02	0.00E+00	1.18E-02
		Cs-137	<1.10E-02	0.00E+00	1.10E-02
		Be-7	<7.89E-02	0.00E+00	7.89E-02
		K-40	4.87E-01	1.75E-01	1.32E-01
Sample ID: 369705	Sample Dates: 2/16/2015 - 2/23/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<8.62E-03	0.00E+00	8.62E-03
		Cs-134	<9.13E-03	0.00E+00	9.13E-03
		Cs-137	<8.74E-03	0.00E+00	8.74E-03
		Be-7	<4.95E-02	0.00E+00	4.95E-02
		K-40	3.49E-01	1.32E-01	1.10E-01
Sample ID: 370611	Sample Dates: 2/23/2015 - 3/3/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<7.22E-03	0.00E+00	7.22E-03
		Cs-134	<5.12E-03	0.00E+00	5.12E-03
		Cs-137	<7.95E-03	0.00E+00	7.95E-03
		Be-7	<6.24E-02	0.00E+00	6.24E-02
		K-40	3.36E-01	1.15E-01	2.46E-02
Sample ID: 371550	Sample Dates: 3/3/2015 - 3/10/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.43E-02	0.00E+00	1.43E-02
		Cs-134	<1.67E-02	0.00E+00	1.67E-02
		Cs-137	<1.55E-02	0.00E+00	1.55E-02
		Be-7	<9.97E-02	0.00E+00	9.97E-02
		K-40	5.30E-01	1.99E-01	4.79E-02
Sample ID: 371922	Sample Dates: 3/10/2015 - 3/17/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<6.67E-03	0.00E+00	6.67E-03
		Cs-134	<5.81E-03	0.00E+00	5.81E-03
		Cs-137	<8.47E-03	0.00E+00	8.47E-03
		Be-7	<5.84E-02	0.00E+00	5.84E-02
		K-40	3.60E-01	1.36E-01	1.14E-01
Sample ID: 372416	Sample Dates: 3/17/2015 - 3/24/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<6.85E-03	0.00E+00	6.85E-03
		Cs-134	<6.36E-03	0.00E+00	6.36E-03
		Cs-137	<8.51E-03	0.00E+00	8.51E-03
		Be-7	<5.44E-02	0.00E+00	5.44E-02
		K-40	4.16E-01	1.37E-01	2.82E-02
Sample ID: 373844	Sample Dates: 3/24/2015 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.92E-02	0.00E+00	1.92E-02
		Cs-134	<1.25E-02	0.00E+00	1.25E-02
		Cs-137	<1.44E-02	0.00E+00	1.44E-02
		Be-7	<6.65E-02	0.00E+00	6.65E-02
		K-40	5.37E-01	2.15E-01	1.76E-01
Sample ID: 374567	Sample Dates: 3/31/2015 - 4/7/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<2.28E-02	0.00E+00	2.28E-02
		Cs-134	<1.41E-02	0.00E+00	1.41E-02
		Cs-137	<1.02E-02	0.00E+00	1.02E-02
		Be-7	<9.52E-02	0.00E+00	9.52E-02
		K-40	<4.52E-01	0.00E+00	4.52E-01
Sample ID: 374944	Sample Dates: 4/7/2015 - 4/14/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.61E-02	0.00E+00	1.61E-02
		Cs-134	<1.48E-02	0.00E+00	1.48E-02
		Cs-137	<1.91E-02	0.00E+00	1.91E-02
		Be-7	<8.58E-02	0.00E+00	8.58E-02
		K-40	<4.77E-01	0.00E+00	4.77E-01
Sample ID: 375635	Sample Dates: 4/14/2015 - 4/21/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.34E-02	0.00E+00	1.34E-02



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 258 [CONTROL - W @ 9.84 miles]

Sample ID: 375635	Sample Dates: 4/14/2015 - 4/21/2015	Nuclide	Activity	2 Sigma Error	LLD
		Cs-134	<1.40E-02	0.00E+00	1.40E-02
		Cs-137	<1.44E-02	0.00E+00	1.44E-02
		Be-7	<1.23E-01	0.00E+00	1.23E-01
		K-40	<4.60E-01	0.00E+00	4.60E-01
Sample ID: 376839	Sample Dates: 4/21/2015 - 4/28/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.52E-02	0.00E+00	1.52E-02
		Cs-134	<1.78E-02	0.00E+00	1.78E-02
		Cs-137	<1.74E-02	0.00E+00	1.74E-02
		Be-7	<1.01E-01	0.00E+00	1.01E-01
Sample ID: 377501	Sample Dates: 4/28/2015 - 5/5/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.82E-02	0.00E+00	1.82E-02
		Cs-134	<1.25E-02	0.00E+00	1.25E-02
		Cs-137	<1.91E-02	0.00E+00	1.91E-02
		Be-7	<1.01E-01	0.00E+00	1.01E-01
Sample ID: 378065	Sample Dates: 5/5/2015 - 5/12/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<6.02E-03	0.00E+00	6.02E-03
		Cs-134	<5.42E-03	0.00E+00	5.42E-03
		Cs-137	<4.61E-03	0.00E+00	4.61E-03
		Be-7	<6.00E-02	0.00E+00	6.00E-02
Sample ID: 378465	Sample Dates: 5/12/2015 - 5/19/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<6.33E-03	0.00E+00	6.33E-03
		Cs-134	<4.64E-03	0.00E+00	4.64E-03
		Cs-137	<9.34E-03	0.00E+00	9.34E-03
		Be-7	<4.24E-02	0.00E+00	4.24E-02
Sample ID: 378961	Sample Dates: 5/19/2015 - 5/27/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.63E-02	0.00E+00	1.63E-02
		Cs-134	<1.09E-02	0.00E+00	1.09E-02
		Cs-137	<1.15E-02	0.00E+00	1.15E-02
		Be-7	<8.86E-02	0.00E+00	8.86E-02
Sample ID: 379467	Sample Dates: 5/27/2015 - 6/2/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<8.85E-03	0.00E+00	8.85E-03
		Cs-134	<9.07E-03	0.00E+00	9.07E-03
		Cs-137	<1.00E-02	0.00E+00	1.00E-02
		Be-7	<7.23E-02	0.00E+00	7.23E-02
Sample ID: 380191	Sample Dates: 6/2/2015 - 6/9/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<7.47E-03	0.00E+00	7.47E-03
		Cs-134	<7.09E-03	0.00E+00	7.09E-03
		Cs-137	<8.19E-03	0.00E+00	8.19E-03
		Be-7	<6.02E-02	0.00E+00	6.02E-02
Sample ID: 380479	Sample Dates: 6/9/2015 - 6/16/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<8.43E-03	0.00E+00	8.43E-03
		Cs-134	<1.00E-02	0.00E+00	1.00E-02
		Cs-137	<5.59E-03	0.00E+00	5.59E-03
		Be-7	<6.18E-02	0.00E+00	6.18E-02
Sample ID: 380811	Sample Dates: 6/16/2015 - 6/23/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<2.16E-02	0.00E+00	2.16E-02
		Cs-134	<8.45E-03	0.00E+00	8.45E-03
		Cs-137	<1.05E-02	0.00E+00	1.05E-02
		Be-7	<9.61E-02	0.00E+00	9.61E-02
		Nuclide	Activity	2 Sigma Error	LLD
		K-40	6.72E-01	2.61E-01	2.59E-01



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 258 [CONTROL - W @ 9.84 miles]

Sample ID: 381259	Sample Dates: 6/23/2015 - 6/30/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.52E-02	0.00E+00	1.52E-02
		Cs-134	<1.41E-02	0.00E+00	1.41E-02
		Cs-137	<1.65E-02	0.00E+00	1.65E-02
		Be-7	<1.18E-01	0.00E+00	1.18E-01
		K-40	5.31E-01	2.34E-01	2.50E-01
Sample ID: 381608	Sample Dates: 6/30/2015 - 7/7/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<8.45E-03	0.00E+00	8.45E-03
		Cs-134	<6.58E-03	0.00E+00	6.58E-03
		Cs-137	<7.49E-03	0.00E+00	7.49E-03
		Be-7	<6.29E-02	0.00E+00	6.29E-02
		K-40	3.14E-01	1.31E-01	1.21E-01
Sample ID: 382171	Sample Dates: 7/7/2015 - 7/14/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.99E-02	0.00E+00	1.99E-02
		Cs-134	<1.48E-02	0.00E+00	1.48E-02
		Cs-137	<1.55E-02	0.00E+00	1.55E-02
		Be-7	<9.29E-02	0.00E+00	9.29E-02
		K-40	5.08E-01	2.22E-01	2.23E-01
Sample ID: 382597	Sample Dates: 7/14/2015 - 7/21/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.55E-02	0.00E+00	1.55E-02
		Cs-134	<1.16E-02	0.00E+00	1.16E-02
		Cs-137	<1.65E-02	0.00E+00	1.65E-02
		Be-7	<8.60E-02	0.00E+00	8.60E-02
		K-40	6.59E-01	2.37E-01	1.79E-01
Sample ID: 383527	Sample Dates: 7/21/2015 - 7/28/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<7.22E-03	0.00E+00	7.22E-03
		Cs-134	<8.46E-03	0.00E+00	8.46E-03
		Cs-137	<8.69E-03	0.00E+00	8.69E-03
		Be-7	<6.76E-02	0.00E+00	6.76E-02
		K-40	5.09E-01	1.80E-01	1.74E-01
Sample ID: 384102	Sample Dates: 7/28/2015 - 8/4/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.31E-02	0.00E+00	1.31E-02
		Cs-134	<6.44E-03	0.00E+00	6.44E-03
		Cs-137	<9.36E-03	0.00E+00	9.36E-03
		Be-7	<5.46E-02	0.00E+00	5.46E-02
		K-40	4.69E-01	1.51E-01	3.03E-02
Sample ID: 384649	Sample Dates: 8/4/2015 - 8/11/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.25E-02	0.00E+00	1.25E-02
		Cs-134	<1.73E-02	0.00E+00	1.73E-02
		Cs-137	<1.44E-02	0.00E+00	1.44E-02
		Be-7	<8.52E-02	0.00E+00	8.52E-02
		K-40	6.39E-01	2.52E-01	2.51E-01
Sample ID: 385417	Sample Dates: 8/11/2015 - 8/18/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.37E-02	0.00E+00	1.37E-02
		Cs-134	<1.16E-02	0.00E+00	1.16E-02
		Cs-137	<8.08E-03	0.00E+00	8.08E-03
		Be-7	<1.08E-01	0.00E+00	1.08E-01
		K-40	7.03E-01	2.51E-01	2.12E-01
Sample ID: 385936	Sample Dates: 8/18/2015 - 8/25/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<6.24E-03	0.00E+00	6.24E-03
		Cs-134	<6.28E-03	0.00E+00	6.28E-03
		Cs-137	<8.40E-03	0.00E+00	8.40E-03
		Be-7	<2.81E-02	0.00E+00	2.81E-02
		K-40	3.67E-01	1.27E-01	2.77E-02
Sample ID: 386834	Sample Dates: 8/25/2015 - 9/1/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.60E-02	0.00E+00	1.60E-02
		Cs-134	<1.54E-02	0.00E+00	1.54E-02
		Cs-137	<1.74E-02	0.00E+00	1.74E-02
		Be-7	<1.12E-01	0.00E+00	1.12E-01
		K-40	6.55E-01	2.54E-01	2.51E-01



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Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 258 [CONTROL - W @ 9.84 miles]

Sample ID: 387423	Sample Dates: 9/1/2015 - 9/9/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<7.56E-03	0.00E+00	7.56E-03
		Cs-134	<7.31E-03	0.00E+00	7.31E-03
		Cs-137	<6.83E-03	0.00E+00	6.83E-03
		Be-7	<4.75E-02	0.00E+00	4.75E-02
		K-40	2.93E-01	1.16E-01	1.02E-01
Sample ID: 388751	Sample Dates: 9/9/2015 - 9/15/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<2.07E-02	0.00E+00	2.07E-02
		Cs-134	<1.72E-02	0.00E+00	1.72E-02
		Cs-137	<1.80E-02	0.00E+00	1.80E-02
		Be-7	<1.18E-01	0.00E+00	1.18E-01
		K-40	8.24E-01	2.69E-01	5.58E-02
Sample ID: 389416	Sample Dates: 9/15/2015 - 9/22/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<9.78E-03	0.00E+00	9.78E-03
		Cs-134	<7.06E-03	0.00E+00	7.06E-03
		Cs-137	<8.77E-03	0.00E+00	8.77E-03
		Be-7	<6.94E-02	0.00E+00	6.94E-02
		K-40	3.92E-01	1.49E-01	1.40E-01
Sample ID: 390020	Sample Dates: 9/22/2015 - 9/29/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.61E-02	0.00E+00	1.61E-02
		Cs-134	<1.34E-02	0.00E+00	1.34E-02
		Cs-137	<1.32E-02	0.00E+00	1.32E-02
		Be-7	<7.66E-02	0.00E+00	7.66E-02
		K-40	4.67E-01	2.22E-01	2.46E-01
Sample ID: 390635	Sample Dates: 9/29/2015 - 10/6/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.68E-02	0.00E+00	1.68E-02
		Cs-134	<9.50E-03	0.00E+00	9.50E-03
		Cs-137	<1.54E-02	0.00E+00	1.54E-02
		Be-7	<1.07E-01	0.00E+00	1.07E-01
		K-40	5.81E-01	2.08E-01	4.78E-02
Sample ID: 391938	Sample Dates: 10/6/2015 - 10/13/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.47E-02	0.00E+00	1.47E-02
		Cs-134	<1.06E-02	0.00E+00	1.06E-02
		Cs-137	<1.43E-02	0.00E+00	1.43E-02
		Be-7	<1.13E-01	0.00E+00	1.13E-01
		K-40	5.29E-01	2.33E-01	2.50E-01
Sample ID: 392238	Sample Dates: 10/13/2015 - 10/20/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.46E-02	0.00E+00	1.46E-02
		Cs-134	<1.34E-02	0.00E+00	1.34E-02
		Cs-137	<1.45E-02	0.00E+00	1.45E-02
		Be-7	<1.24E-01	0.00E+00	1.24E-01
		K-40	5.22E-01	2.29E-01	2.38E-01
Sample ID: 393440	Sample Dates: 10/20/2015 - 10/27/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.16E-02	0.00E+00	1.16E-02
		Cs-134	<1.07E-02	0.00E+00	1.07E-02
		Cs-137	<1.75E-02	0.00E+00	1.75E-02
		Be-7	<1.00E-01	0.00E+00	1.00E-01
		K-40	6.82E-01	2.39E-01	1.71E-01
Sample ID: 393843	Sample Dates: 10/27/2015 - 11/3/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.22E-02	0.00E+00	1.22E-02
		Cs-134	<1.03E-02	0.00E+00	1.03E-02
		Cs-137	<1.69E-02	0.00E+00	1.69E-02
		Be-7	<1.03E-01	0.00E+00	1.03E-01
		K-40	4.99E-01	1.90E-01	4.66E-02
Sample ID: 394843	Sample Dates: 11/3/2015 - 11/10/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.81E-02	0.00E+00	1.81E-02
		Cs-134	<1.25E-02	0.00E+00	1.25E-02
		Cs-137	<1.32E-02	0.00E+00	1.32E-02
		Be-7	<1.01E-01	0.00E+00	1.01E-01
		K-40	5.36E-01	2.31E-01	2.40E-01

CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 258 [CONTROL - W @ 9.84 miles]

Sample ID:	395311	Sample Dates:	11/10/2015 - 11/17/2015	Nuclide	Activity	2 Sigma Error	LLD
				I-131	<1.76E-02	0.00E+00	1.76E-02
				Cs-134	<1.26E-02	0.00E+00	1.26E-02
				Cs-137	<1.19E-02	0.00E+00	1.19E-02
				Be-7	<6.61E-02	0.00E+00	6.61E-02
				K-40	4.97E-01	2.48E-01	3.07E-01

Sample ID:	395639	Sample Dates:	11/17/2015 - 11/24/2015	Nuclide	Activity	2 Sigma Error	LLD
				I-131	<1.87E-02	0.00E+00	1.87E-02
				Cs-134	<1.25E-02	0.00E+00	1.25E-02
				Cs-137	<1.44E-02	0.00E+00	1.44E-02
				Be-7	<1.00E-01	0.00E+00	1.00E-01
				K-40	5.54E-01	2.17E-01	1.74E-01

Sample ID:	396137	Sample Dates:	11/24/2015 - 12/1/2015	Nuclide	Activity	2 Sigma Error	LLD
				I-131	<7.94E-03	0.00E+00	7.94E-03
				Cs-134	<7.51E-03	0.00E+00	7.51E-03
				Cs-137	<9.33E-03	0.00E+00	9.33E-03
				Be-7	<5.62E-02	0.00E+00	5.62E-02
				K-40	3.31E-01	1.28E-01	9.39E-02

Sample ID:	396645	Sample Dates:	12/1/2015 - 12/8/2015	Nuclide	Activity	2 Sigma Error	LLD
				I-131	<1.73E-02	0.00E+00	1.73E-02
				Cs-134	<1.16E-02	0.00E+00	1.16E-02
				Cs-137	<1.44E-02	0.00E+00	1.44E-02
				Be-7	<5.27E-02	0.00E+00	5.27E-02
				K-40	<4.43E-01	0.00E+00	4.43E-01

Sample ID:	397182	Sample Dates:	12/8/2015 - 12/15/2015	Nuclide	Activity	2 Sigma Error	LLD
				I-131	<1.68E-02	0.00E+00	1.68E-02
				Cs-134	<1.26E-02	0.00E+00	1.26E-02
				Cs-137	<1.65E-02	0.00E+00	1.65E-02
				Be-7	<8.55E-02	0.00E+00	8.55E-02
				K-40	5.08E-01	2.38E-01	2.75E-01

Sample ID:	397904	Sample Dates:	12/15/2015 - 12/22/2015	Nuclide	Activity	2 Sigma Error	LLD
				I-131	<1.03E-02	0.00E+00	1.03E-02
				Cs-134	<7.19E-03	0.00E+00	7.19E-03
				Cs-137	<1.14E-02	0.00E+00	1.14E-02
				Be-7	<5.71E-02	0.00E+00	5.71E-02
				K-40	4.37E-01	1.46E-01	3.12E-02

Sample ID:	398298	Sample Dates:	12/22/2015 - 12/29/2015	Nuclide	Activity	2 Sigma Error	LLD
				I-131	<1.35E-02	0.00E+00	1.35E-02
				Cs-134	<1.46E-02	0.00E+00	1.46E-02
				Cs-137	<1.53E-02	0.00E+00	1.53E-02
				Be-7	<6.52E-02	0.00E+00	6.52E-02
				K-40	4.19E-01	2.19E-01	2.63E-01

Sample Point 261 [INDICATOR - N @ 0.72 miles]

Sample ID:	364897	Sample Dates:	12/30/2014 - 1/6/2015	Nuclide	Activity	2 Sigma Error	LLD
				I-131	<1.68E-02	0.00E+00	1.68E-02
				Cs-134	<1.32E-02	0.00E+00	1.32E-02
				Cs-137	<1.30E-02	0.00E+00	1.30E-02
				Be-7	<7.61E-02	0.00E+00	7.61E-02
				K-40	4.09E-01	2.06E-01	2.34E-01

Sample ID:	365077	Sample Dates:	1/6/2015 - 1/13/2015	Nuclide	Activity	2 Sigma Error	LLD
				I-131	<1.67E-02	0.00E+00	1.67E-02
				Cs-134	<1.69E-02	0.00E+00	1.69E-02
				Cs-137	<1.93E-02	0.00E+00	1.93E-02
				Be-7	<1.13E-01	0.00E+00	1.13E-01
				K-40	5.46E-01	2.14E-01	1.64E-01

Sample ID:	365309	Sample Dates:	1/13/2015 - 1/20/2015	Nuclide	Activity	2 Sigma Error	LLD
				I-131	<6.86E-03	0.00E+00	6.86E-03
				Cs-134	<1.45E-03	0.00E+00	1.45E-03
				Cs-137	<8.02E-03	0.00E+00	8.02E-03



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 261 [INDICATOR - N @ 0.72 miles]

Sample ID: 365309	Sample Dates: 1/13/2015 - 1/20/2015	Nuclide	Activity	2 Sigma Error	LLD
		Be-7	<5.10E-02	0.00E+00	5.10E-02
		K-40	2.87E-01	1.37E-01	1.49E-01
Sample ID: 366665	Sample Dates: 1/20/2015 - 1/27/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.21E-02	0.00E+00	1.21E-02
		Cs-134	<1.53E-02	0.00E+00	1.53E-02
		Cs-137	<1.01E-02	0.00E+00	1.01E-02
		Be-7	<9.28E-02	0.00E+00	9.28E-02
		K-40	3.57E-01	1.98E-01	2.37E-01
Sample ID: 367071	Sample Dates: 1/27/2015 - 2/3/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<2.03E-02	0.00E+00	2.03E-02
		Cs-134	<1.16E-02	0.00E+00	1.16E-02
		Cs-137	<1.73E-02	0.00E+00	1.73E-02
		Be-7	<8.54E-02	0.00E+00	8.54E-02
		K-40	<5.33E-01	0.00E+00	5.33E-01
Sample ID: 367556	Sample Dates: 2/3/2015 - 2/10/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.01E-02	0.00E+00	1.01E-02
		Cs-134	<5.03E-03	0.00E+00	5.03E-03
		Cs-137	<8.08E-03	0.00E+00	8.08E-03
		Be-7	<5.27E-02	0.00E+00	5.27E-02
		K-40	4.98E-01	1.56E-01	3.07E-02
Sample ID: 368983	Sample Dates: 2/10/2015 - 2/16/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<2.34E-02	0.00E+00	2.34E-02
		Cs-134	<1.90E-02	0.00E+00	1.90E-02
		Cs-137	<2.57E-02	0.00E+00	2.57E-02
		Be-7	<1.21E-01	0.00E+00	1.21E-01
		K-40	7.87E-01	3.58E-01	3.46E-01
Sample ID: 369706	Sample Dates: 2/16/2015 - 2/23/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<8.09E-03	0.00E+00	8.09E-03
		Cs-134	<6.12E-03	0.00E+00	6.12E-03
		Cs-137	<8.17E-03	0.00E+00	8.17E-03
		Be-7	<5.96E-02	0.00E+00	5.96E-02
		K-40	3.96E-01	1.40E-01	1.12E-01
Sample ID: 370612	Sample Dates: 2/23/2015 - 3/3/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<7.33E-03	0.00E+00	7.33E-03
		Cs-134	<7.40E-03	0.00E+00	7.40E-03
		Cs-137	<7.78E-03	0.00E+00	7.78E-03
		Be-7	<5.93E-02	0.00E+00	5.93E-02
		K-40	3.78E-01	1.35E-01	1.17E-01
Sample ID: 371551	Sample Dates: 3/3/2015 - 3/10/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.80E-02	0.00E+00	1.80E-02
		Cs-134	<1.41E-02	0.00E+00	1.41E-02
		Cs-137	<1.83E-02	0.00E+00	1.83E-02
		Be-7	<1.06E-01	0.00E+00	1.06E-01
		K-40	4.67E-01	2.00E-01	1.69E-01
Sample ID: 371923	Sample Dates: 3/10/2015 - 3/17/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<9.04E-03	0.00E+00	9.04E-03
		Cs-134	<9.77E-03	0.00E+00	9.77E-03
		Cs-137	<6.22E-03	0.00E+00	6.22E-03
		Be-7	<6.06E-02	0.00E+00	6.06E-02
		K-40	3.62E-01	1.56E-01	1.67E-01
Sample ID: 372417	Sample Dates: 3/17/2015 - 3/24/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<9.85E-03	0.00E+00	9.85E-03
		Cs-134	<6.56E-03	0.00E+00	6.56E-03
		Cs-137	<8.16E-03	0.00E+00	8.16E-03
		Be-7	<5.16E-02	0.00E+00	5.16E-02
		K-40	4.00E-01	1.41E-01	1.03E-01
Sample ID: 373845	Sample Dates: 3/24/2015 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.88E-02	0.00E+00	1.88E-02



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 261 [INDICATOR - N @ 0.72 miles]

Sample ID: 373845	Sample Dates: 3/24/2015 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
		Cs-134	<1.05E-02	0.00E+00	1.05E-02
		Cs-137	<1.53E-02	0.00E+00	1.53E-02
		Be-7	<9.26E-02	0.00E+00	9.26E-02
		K-40	<4.72E-01	0.00E+00	4.72E-01
Sample ID: 374568	Sample Dates: 3/31/2015 - 4/7/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.89E-02	0.00E+00	1.89E-02
		Cs-134	<1.17E-02	0.00E+00	1.17E-02
		Cs-137	<1.19E-02	0.00E+00	1.19E-02
		Be-7	<1.10E-01	0.00E+00	1.10E-01
Sample ID: 374945	Sample Dates: 4/7/2015 - 4/14/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.84E-02	0.00E+00	1.84E-02
		Cs-134	<1.48E-02	0.00E+00	1.48E-02
		Cs-137	<1.75E-02	0.00E+00	1.75E-02
		Be-7	<1.01E-01	0.00E+00	1.01E-01
Sample ID: 375636	Sample Dates: 4/14/2015 - 4/21/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.65E-02	0.00E+00	1.65E-02
		Cs-134	<1.25E-02	0.00E+00	1.25E-02
		Cs-137	<1.55E-02	0.00E+00	1.55E-02
		Be-7	<1.06E-01	0.00E+00	1.06E-01
Sample ID: 376840	Sample Dates: 4/21/2015 - 4/28/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<9.39E-03	0.00E+00	9.39E-03
		Cs-134	<6.53E-03	0.00E+00	6.53E-03
		Cs-137	<1.55E-02	0.00E+00	1.55E-02
		Be-7	<9.36E-02	0.00E+00	9.36E-02
Sample ID: 377502	Sample Dates: 4/28/2015 - 5/5/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.55E-02	0.00E+00	1.55E-02
		Cs-134	<1.53E-02	0.00E+00	1.53E-02
		Cs-137	<1.54E-02	0.00E+00	1.54E-02
		Be-7	<6.61E-02	0.00E+00	6.61E-02
Sample ID: 378066	Sample Dates: 5/5/2015 - 5/12/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<4.10E-03	0.00E+00	4.10E-03
		Cs-134	<6.95E-03	0.00E+00	6.95E-03
		Cs-137	<4.50E-03	0.00E+00	4.50E-03
		Be-7	<5.56E-02	0.00E+00	5.56E-02
Sample ID: 378466	Sample Dates: 5/12/2015 - 5/19/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<7.87E-03	0.00E+00	7.87E-03
		Cs-134	<6.37E-03	0.00E+00	6.37E-03
		Cs-137	<5.61E-03	0.00E+00	5.61E-03
		Be-7	<4.16E-02	0.00E+00	4.16E-02
Sample ID: 378962	Sample Dates: 5/19/2015 - 5/27/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.31E-02	0.00E+00	1.31E-02
		Cs-134	<1.22E-02	0.00E+00	1.22E-02
		Cs-137	<1.51E-02	0.00E+00	1.51E-02
		Be-7	<1.04E-01	0.00E+00	1.04E-01
Sample ID: 379468	Sample Dates: 5/27/2015 - 6/2/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.13E-02	0.00E+00	1.13E-02
		Cs-134	<6.77E-03	0.00E+00	6.77E-03
		Cs-137	<1.24E-02	0.00E+00	1.24E-02
		Be-7	<8.68E-02	0.00E+00	8.68E-02
Sample ID: 379468	Sample Dates: 5/27/2015 - 6/2/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.13E-02	0.00E+00	1.13E-02
		Cs-134	<6.77E-03	0.00E+00	6.77E-03
		Cs-137	<1.24E-02	0.00E+00	1.24E-02
		Be-7	<8.68E-02	0.00E+00	8.68E-02

CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 261 [INDICATOR - N @ 0.72 miles]

Sample ID: 380192	Sample Dates: 6/2/2015 - 6/9/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<8.42E-03	0.00E+00	8.42E-03
		Cs-134	<7.27E-03	0.00E+00	7.27E-03
		Cs-137	<8.47E-03	0.00E+00	8.47E-03
		Be-7	<5.85E-02	0.00E+00	5.85E-02
		K-40	4.13E-01	1.44E-01	1.06E-01
Sample ID: 380480	Sample Dates: 6/9/2015 - 6/16/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<6.69E-03	0.00E+00	6.69E-03
		Cs-134	<6.47E-03	0.00E+00	6.47E-03
		Cs-137	<8.04E-03	0.00E+00	8.04E-03
		Be-7	<4.23E-02	0.00E+00	4.23E-02
		K-40	3.93E-01	1.52E-01	1.51E-01
Sample ID: 380812	Sample Dates: 6/16/2015 - 6/23/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.84E-02	0.00E+00	1.84E-02
		Cs-134	<1.55E-02	0.00E+00	1.55E-02
		Cs-137	<1.65E-02	0.00E+00	1.65E-02
		Be-7	<9.38E-02	0.00E+00	9.38E-02
		K-40	4.83E-01	2.12E-01	2.05E-01
Sample ID: 381260	Sample Dates: 6/23/2015 - 6/30/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.26E-02	0.00E+00	1.26E-02
		Cs-134	<1.17E-02	0.00E+00	1.17E-02
		Cs-137	<1.75E-02	0.00E+00	1.75E-02
		Be-7	<1.07E-01	0.00E+00	1.07E-01
		K-40	3.52E-01	2.17E-01	2.89E-01
Sample ID: 381609	Sample Dates: 6/30/2015 - 7/7/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<7.34E-03	0.00E+00	7.34E-03
		Cs-134	<6.28E-03	0.00E+00	6.28E-03
		Cs-137	<5.52E-03	0.00E+00	5.52E-03
		Be-7	<6.93E-02	0.00E+00	6.93E-02
		K-40	4.00E-01	1.40E-01	1.01E-01
Sample ID: 382172	Sample Dates: 7/7/2015 - 7/14/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.26E-02	0.00E+00	1.26E-02
		Cs-134	<1.48E-02	0.00E+00	1.48E-02
		Cs-137	<1.44E-02	0.00E+00	1.44E-02
		Be-7	<1.24E-01	0.00E+00	1.24E-01
		K-40	6.93E-01	2.29E-01	4.82E-02
Sample ID: 382598	Sample Dates: 7/14/2015 - 7/21/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<9.50E-03	0.00E+00	9.50E-03
		Cs-134	<1.54E-02	0.00E+00	1.54E-02
		Cs-137	<1.73E-02	0.00E+00	1.73E-02
		Be-7	<8.55E-02	0.00E+00	8.55E-02
		K-40	5.29E-01	2.57E-01	3.16E-01
Sample ID: 383528	Sample Dates: 7/21/2015 - 7/28/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<7.30E-03	0.00E+00	7.30E-03
		Cs-134	<6.41E-03	0.00E+00	6.41E-03
		Cs-137	<1.01E-02	0.00E+00	1.01E-02
		Be-7	<4.22E-02	0.00E+00	4.22E-02
		K-40	4.71E-01	1.47E-01	2.84E-02
Sample ID: 384103	Sample Dates: 7/28/2015 - 8/4/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.61E-02	0.00E+00	1.61E-02
		Cs-134	<6.89E-03	0.00E+00	6.89E-03
		Cs-137	<9.08E-03	0.00E+00	9.08E-03
		Be-7	<6.25E-02	0.00E+00	6.25E-02
		K-40	3.88E-01	1.48E-01	1.39E-01
Sample ID: 384650	Sample Dates: 8/4/2015 - 8/11/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.87E-02	0.00E+00	1.87E-02
		Cs-134	<1.42E-02	0.00E+00	1.42E-02
		Cs-137	<1.45E-02	0.00E+00	1.45E-02
		Be-7	<1.13E-01	0.00E+00	1.13E-01
		K-40	6.19E-01	2.70E-01	3.14E-01



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 261 [INDICATOR - N @ 0.72 miles]

Sample ID: 385418	Sample Dates: 8/11/2015 - 8/18/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.46E-02	0.00E+00	1.46E-02
		Cs-134	<1.60E-02	0.00E+00	1.60E-02
		Cs-137	<1.64E-02	0.00E+00	1.64E-02
		Be-7	<8.58E-02	0.00E+00	8.58E-02
		K-40	5.29E-01	1.98E-01	4.78E-02
Sample ID: 385937	Sample Dates: 8/18/2015 - 8/25/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<6.09E-03	0.00E+00	6.09E-03
		Cs-134	<7.58E-03	0.00E+00	7.58E-03
		Cs-137	<7.20E-03	0.00E+00	7.20E-03
		Be-7	<4.57E-02	0.00E+00	4.57E-02
		K-40	3.67E-01	1.39E-01	9.80E-02
Sample ID: 386835	Sample Dates: 8/25/2015 - 9/1/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.34E-02	0.00E+00	1.34E-02
		Cs-134	<1.40E-02	0.00E+00	1.40E-02
		Cs-137	<1.64E-02	0.00E+00	1.64E-02
		Be-7	<8.45E-02	0.00E+00	8.45E-02
		K-40	<4.23E-01	0.00E+00	4.23E-01
Sample ID: 387424	Sample Dates: 9/1/2015 - 9/9/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<8.23E-03	0.00E+00	8.23E-03
		Cs-134	<5.06E-03	0.00E+00	5.06E-03
		Cs-137	<6.29E-03	0.00E+00	6.29E-03
		Be-7	<4.49E-02	0.00E+00	4.49E-02
		K-40	4.58E-01	1.45E-01	8.77E-02
Sample ID: 388752	Sample Dates: 9/9/2015 - 9/15/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<2.24E-02	0.00E+00	2.24E-02
		Cs-134	<1.11E-02	0.00E+00	1.11E-02
		Cs-137	<1.67E-02	0.00E+00	1.67E-02
		Be-7	<6.14E-02	0.00E+00	6.14E-02
		K-40	<5.44E-01	0.00E+00	5.44E-01
Sample ID: 389417	Sample Dates: 9/15/2015 - 9/22/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<9.16E-03	0.00E+00	9.16E-03
		Cs-134	<6.75E-03	0.00E+00	6.75E-03
		Cs-137	<5.52E-03	0.00E+00	5.52E-03
		Be-7	<5.43E-02	0.00E+00	5.43E-02
		K-40	4.58E-01	1.43E-01	2.76E-02
Sample ID: 390021	Sample Dates: 9/22/2015 - 9/29/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.46E-02	0.00E+00	1.46E-02
		Cs-134	<6.58E-03	0.00E+00	6.58E-03
		Cs-137	<1.33E-02	0.00E+00	1.33E-02
		Be-7	<1.30E-01	0.00E+00	1.30E-01
		K-40	5.37E-01	2.44E-01	2.76E-01
Sample ID: 390636	Sample Dates: 9/29/2015 - 10/6/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.20E-02	0.00E+00	1.20E-02
		Cs-134	<1.06E-02	0.00E+00	1.06E-02
		Cs-137	<1.43E-02	0.00E+00	1.43E-02
		Be-7	<1.18E-01	0.00E+00	1.18E-01
		K-40	5.25E-01	2.50E-01	3.00E-01
Sample ID: 391939	Sample Dates: 10/6/2015 - 10/13/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.65E-02	0.00E+00	1.65E-02
		Cs-134	<1.54E-02	0.00E+00	1.54E-02
		Cs-137	<1.64E-02	0.00E+00	1.64E-02
		Be-7	<1.19E-01	0.00E+00	1.19E-01
		K-40	5.12E-01	2.30E-01	2.50E-01
Sample ID: 392239	Sample Dates: 10/13/2015 - 10/20/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.54E-02	0.00E+00	1.54E-02
		Cs-134	<9.61E-03	0.00E+00	9.61E-03
		Cs-137	<1.45E-02	0.00E+00	1.45E-02
		Be-7	<9.36E-02	0.00E+00	9.36E-02
		K-40	6.09E-01	2.47E-01	2.48E-01



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 261 [INDICATOR - N @ 0.72 miles]

Sample ID: 393441	Sample Dates: 10/20/2015 - 10/27/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.60E-02	0.00E+00	1.60E-02
		Cs-134	<1.48E-02	0.00E+00	1.48E-02
		Cs-137	<1.65E-02	0.00E+00	1.65E-02
		Be-7	<9.30E-02	0.00E+00	9.30E-02
		K-40	3.80E-01	1.91E-01	1.99E-01
Sample ID: 393844	Sample Dates: 10/27/2015 - 11/3/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.50E-02	0.00E+00	1.50E-02
		Cs-134	<1.32E-02	0.00E+00	1.32E-02
		Cs-137	<1.30E-02	0.00E+00	1.30E-02
		Be-7	<9.19E-02	0.00E+00	9.19E-02
		K-40	6.66E-01	2.39E-01	1.88E-01
Sample ID: 394844	Sample Dates: 11/3/2015 - 11/10/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.65E-02	0.00E+00	1.65E-02
		Cs-134	<1.26E-02	0.00E+00	1.26E-02
		Cs-137	<1.19E-02	0.00E+00	1.19E-02
		Be-7	<6.68E-02	0.00E+00	6.68E-02
		K-40	6.02E-01	2.49E-01	2.60E-01
Sample ID: 395312	Sample Dates: 11/10/2015 - 11/17/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.89E-02	0.00E+00	1.89E-02
		Cs-134	<1.55E-02	0.00E+00	1.55E-02
		Cs-137	<1.75E-02	0.00E+00	1.75E-02
		Be-7	<1.19E-01	0.00E+00	1.19E-01
		K-40	5.09E-01	2.39E-01	2.75E-01
Sample ID: 395640	Sample Dates: 11/17/2015 - 11/24/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.49E-02	0.00E+00	1.49E-02
		Cs-134	<1.06E-02	0.00E+00	1.06E-02
		Cs-137	<1.55E-02	0.00E+00	1.55E-02
		Be-7	<1.13E-01	0.00E+00	1.13E-01
		K-40	6.73E-01	2.25E-01	4.80E-02
Sample ID: 396138	Sample Dates: 11/24/2015 - 12/1/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<7.33E-03	0.00E+00	7.33E-03
		Cs-134	<7.02E-03	0.00E+00	7.02E-03
		Cs-137	<5.74E-03	0.00E+00	5.74E-03
		Be-7	<6.91E-02	0.00E+00	6.91E-02
		K-40	4.22E-01	1.62E-01	1.69E-01
Sample ID: 396646	Sample Dates: 12/1/2015 - 12/8/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.54E-02	0.00E+00	1.54E-02
		Cs-134	<1.24E-02	0.00E+00	1.24E-02
		Cs-137	<1.64E-02	0.00E+00	1.64E-02
		Be-7	<9.33E-02	0.00E+00	9.33E-02
		K-40	6.15E-01	2.14E-01	4.76E-02
Sample ID: 397183	Sample Dates: 12/8/2015 - 12/15/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.54E-02	0.00E+00	1.54E-02
		Cs-134	<1.50E-02	0.00E+00	1.50E-02
		Cs-137	<1.20E-02	0.00E+00	1.20E-02
		Be-7	<9.42E-02	0.00E+00	9.42E-02
		K-40	5.80E-01	2.24E-01	1.77E-01
Sample ID: 397905	Sample Dates: 12/15/2015 - 12/22/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<8.45E-03	0.00E+00	8.45E-03
		Cs-134	<9.09E-03	0.00E+00	9.09E-03
		Cs-137	<9.36E-03	0.00E+00	9.36E-03
		Be-7	<4.76E-02	0.00E+00	4.76E-02
		K-40	3.89E-01	1.44E-01	1.19E-01
Sample ID: 398299	Sample Dates: 12/22/2015 - 12/29/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.01E-02	0.00E+00	1.01E-02
		Cs-134	<7.09E-03	0.00E+00	7.09E-03
		Cs-137	<7.23E-03	0.00E+00	7.23E-03
		Be-7	<4.65E-02	0.00E+00	4.65E-02
		K-40	4.53E-01	1.48E-01	3.07E-02



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: CROPS Concentration (Activity): pCi/kg

Sample Point 260 [INDICATOR - SSE @ 2 miles]

Sample ID: 365083	Sample Dates: 1/6/2015 - 1/6/2015	MIXEDCROPS	Nuclide	Activity	2 Sigma Error	LLD
			I-131	<1.64E+01	0.00E+00	1.64E+01
			Cs-134	<2.15E+01	0.00E+00	2.15E+01
			Cs-137	<1.97E+01	0.00E+00	1.97E+01
			Be-7	1.70E+02	1.28E+02	1.98E+02
			K-40	3.62E+03	5.55E+02	3.45E+02
Sample ID: 367562	Sample Dates: 2/3/2015 - 2/3/2015	MIXEDCROPS	Nuclide	Activity	2 Sigma Error	LLD
			I-131	<4.11E+01	0.00E+00	4.11E+01
			Cs-134	<1.03E+01	0.00E+00	1.03E+01
			Cs-137	<1.09E+01	0.00E+00	1.09E+01
			Be-7	3.86E+02	1.03E+02	1.22E+02
			K-40	4.88E+03	5.15E+02	1.17E+02
Sample ID: 371557	Sample Dates: 3/3/2015 - 3/3/2015	MIXEDCROPS	Nuclide	Activity	2 Sigma Error	LLD
			I-131	<1.07E+01	0.00E+00	1.07E+01
			Cs-134	<1.93E+01	0.00E+00	1.93E+01
			Cs-137	<1.40E+01	0.00E+00	1.40E+01
			Be-7	3.09E+02	1.14E+02	1.41E+02
			K-40	3.88E+03	5.28E+02	1.91E+02
Sample ID: 378072	Sample Dates: 5/5/2015 - 5/5/2015	MIXEDCROPS	Nuclide	Activity	2 Sigma Error	LLD
			I-131	<1.63E+01	0.00E+00	1.63E+01
			Cs-134	<2.71E+01	0.00E+00	2.71E+01
			Cs-137	<2.09E+01	0.00E+00	2.09E+01
			Be-7	<2.46E+02	0.00E+00	2.46E+02
			K-40	5.23E+03	7.72E+02	3.09E+02
Sample ID: 380198	Sample Dates: 6/2/2015 - 6/2/2015	MIXEDCROPS	Nuclide	Activity	2 Sigma Error	LLD
			I-131	<7.72E+00	0.00E+00	7.72E+00
			Cs-134	<1.34E+01	0.00E+00	1.34E+01
			Cs-137	<1.22E+01	0.00E+00	1.22E+01
			Be-7	<5.49E+01	0.00E+00	5.49E+01
			K-40	2.37E+03	3.56E+02	1.42E+02
Sample ID: 382178	Sample Dates: 7/7/2015 - 7/7/2015	MIXEDCROPS	Nuclide	Activity	2 Sigma Error	LLD
			I-131	<3.77E+00	0.00E+00	3.77E+00
			Cs-134	<6.06E+00	0.00E+00	6.06E+00
			Cs-137	<4.16E+00	0.00E+00	4.16E+00
			Be-7	<3.15E+01	0.00E+00	3.15E+01
			K-40	1.81E+03	2.03E+02	6.34E+01
Sample ID: 384656	Sample Dates: 8/4/2015 - 8/4/2015	MIXEDCROPS	Nuclide	Activity	2 Sigma Error	LLD
			I-131	<8.52E+00	0.00E+00	8.52E+00
			Cs-134	<5.31E+00	0.00E+00	5.31E+00
			Cs-137	<7.07E+00	0.00E+00	7.07E+00
			Be-7	<5.45E+01	0.00E+00	5.45E+01
			K-40	1.98E+03	2.65E+02	9.61E+01
Sample ID: 388289	Sample Dates: 9/1/2015 - 9/1/2015	MIXEDCROPS	Nuclide	Activity	2 Sigma Error	LLD
			I-131	<4.97E+00	0.00E+00	4.97E+00
			Cs-134	<8.03E+00	0.00E+00	8.03E+00
			Cs-137	<8.00E+00	0.00E+00	8.00E+00
			Be-7	<6.51E+01	0.00E+00	6.51E+01
			K-40	2.36E+03	3.08E+02	1.16E+02
Sample ID: 391249	Sample Dates: 10/6/2015 - 10/6/2015	MIXEDCROPS	Nuclide	Activity	2 Sigma Error	LLD
			I-131	<8.20E+00	0.00E+00	8.20E+00
			Cs-134	<1.03E+01	0.00E+00	1.03E+01
			Cs-137	<1.09E+01	0.00E+00	1.09E+01
			Be-7	7.58E+01	6.72E+01	1.06E+02
			K-40	2.15E+03	3.20E+02	1.46E+02
Sample ID: 394637	Sample Dates: 11/3/2015 - 11/3/2015	MIXEDCROPS	Nuclide	Activity	2 Sigma Error	LLD
			I-131	<6.43E+00	0.00E+00	6.43E+00
			Cs-134	<1.05E+01	0.00E+00	1.05E+01
			Cs-137	<8.78E+00	0.00E+00	8.78E+00
			Be-7	1.30E+02	7.91E+01	1.19E+02
			K-40	2.86E+03	3.74E+02	9.19E+01



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: CROPS Concentration (Activity): pCi/kg

Sample Point 260 [INDICATOR - SSE @ 2 miles]

Sample ID:	396592	Sample Dates:	12/1/2015 - 12/1/2015	MIXEDCROPS	Nuclide	Activity	2 Sigma Error	LLD
					I-131	<1.28E+01	0.00E+00	1.28E+01
					Cs-134	<1.49E+01	0.00E+00	1.49E+01
					Cs-137	<1.54E+01	0.00E+00	1.54E+01
					Be-7	4.01E+02	1.30E+02	1.56E+02
					K-40	3.29E+03	5.05E+02	2.87E+02

Media Type: DRINKING WATER Concentration (Activity): pCi/l

Sample Point 214 [INDICATOR - SSE @ 7.3 miles]

Sample ID:	364780	Sample Dates:	12/9/2014 - 1/6/2015		Nuclide	Activity	2 Sigma Error	LLD
					Beta	2.49E+00	8.10E-01	1.22E+00
					Mn-54	<3.42E+00	0.00E+00	3.42E+00
					Co-58	<2.75E+00	0.00E+00	2.75E+00
					Fe-59	<6.98E+00	0.00E+00	6.98E+00
					Co-60	<3.32E+00	0.00E+00	3.32E+00
					Zn-65	<3.19E+00	0.00E+00	3.19E+00
					Zr-95	<6.27E+00	0.00E+00	6.27E+00
					Nb-95	<3.47E+00	0.00E+00	3.47E+00
					I-131	<1.20E+01	0.00E+00	1.20E+01
					Cs-134	<2.75E+00	0.00E+00	2.75E+00
					Cs-137	<3.31E+00	0.00E+00	3.31E+00
					BaLa-140	<6.08E+00	0.00E+00	6.08E+00
					Be-7	<3.06E+01	0.00E+00	3.06E+01
					K-40	4.42E+01	2.68E+01	3.44E+01

Sample ID:	366877	Sample Dates:	1/6/2015 - 2/3/2015		Nuclide	Activity	2 Sigma Error	LLD
					Beta	1.25E+00	7.71E-01	1.24E+00
					Mn-54	<3.45E+00	0.00E+00	3.45E+00
					Co-58	<4.33E+00	0.00E+00	4.33E+00
					Fe-59	<6.58E+00	0.00E+00	6.58E+00
					Co-60	<4.63E+00	0.00E+00	4.63E+00
					Zn-65	<7.20E+00	0.00E+00	7.20E+00
					Zr-95	<7.94E+00	0.00E+00	7.94E+00
					Nb-95	<4.86E+00	0.00E+00	4.86E+00
					I-131	<1.19E+01	0.00E+00	1.19E+01
					Cs-134	<3.82E+00	0.00E+00	3.82E+00
					Cs-137	<3.63E+00	0.00E+00	3.63E+00
					BaLa-140	<1.02E+01	0.00E+00	1.02E+01
					Be-7	<3.87E+01	0.00E+00	3.87E+01
					K-40	<5.54E+01	0.00E+00	5.54E+01

Sample ID:	369978	Sample Dates:	2/3/2015 - 3/3/2015		Nuclide	Activity	2 Sigma Error	LLD
					Beta	2.49E+00	7.70E-01	1.12E+00
					Mn-54	<3.66E+00	0.00E+00	3.66E+00
					Co-58	<3.04E+00	0.00E+00	3.04E+00
					Fe-59	<7.76E+00	0.00E+00	7.76E+00
					Co-60	<3.04E+00	0.00E+00	3.04E+00
					Zn-65	<6.23E+00	0.00E+00	6.23E+00
					Zr-95	<8.51E+00	0.00E+00	8.51E+00
					Nb-95	<4.30E+00	0.00E+00	4.30E+00
					I-131	<1.19E+01	0.00E+00	1.19E+01
					Cs-134	<3.89E+00	0.00E+00	3.89E+00
					Cs-137	<3.23E+00	0.00E+00	3.23E+00
					BaLa-140	<5.49E+00	0.00E+00	5.49E+00
					Be-7	<3.47E+01	0.00E+00	3.47E+01
					K-40	<6.29E+01	0.00E+00	6.29E+01

Sample ID:	372361	Sample Dates:	12/9/2014 - 3/3/2015		Nuclide	Activity	2 Sigma Error	LLD
					H3DW	5.74E+02	1.23E+02	1.85E+02

Sample ID:	372743	Sample Dates:	3/3/2015 - 3/31/2015		Nuclide	Activity	2 Sigma Error	LLD
					Beta	2.62E+00	8.06E-01	1.19E+00
					Mn-54	<3.16E+00	0.00E+00	3.16E+00
					Co-58	<3.24E+00	0.00E+00	3.24E+00
					Fe-59	<7.68E+00	0.00E+00	7.68E+00
					Co-60	<3.24E+00	0.00E+00	3.24E+00
					Zn-65	<6.64E+00	0.00E+00	6.64E+00

CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: DRINKING WATER Concentration (Activity): pCi/l

Sample Point 214 [INDICATOR - SSE @ 7.3 miles]

Sample ID: 372743	Sample Dates: 3/3/2015 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
		Zr-95	<7.28E+00	0.00E+00	7.28E+00
		Nb-95	<3.60E+00	0.00E+00	3.60E+00
		I-131	<1.20E+01	0.00E+00	1.20E+01
		Cs-134	<2.98E+00	0.00E+00	2.98E+00
		Cs-137	<3.94E+00	0.00E+00	3.94E+00
		BaLa-140	<7.36E+00	0.00E+00	7.36E+00
		Be-7	<3.59E+01	0.00E+00	3.59E+01
		K-40	4.28E+01	3.86E+01	5.94E+01
Sample ID: 375836	Sample Dates: 3/31/2015 - 4/28/2015	Nuclide	Activity	2 Sigma Error	LLD
		Beta	1.86E+00	7.82E-01	1.21E+00
		Mn-54	<4.59E+00	0.00E+00	4.59E+00
		Co-58	<4.42E+00	0.00E+00	4.42E+00
		Fe-59	<9.93E+00	0.00E+00	9.93E+00
		Co-60	<3.16E+00	0.00E+00	3.16E+00
		Zn-65	<8.18E+00	0.00E+00	8.18E+00
		Zr-95	<8.23E+00	0.00E+00	8.23E+00
		Nb-95	<5.40E+00	0.00E+00	5.40E+00
		I-131	<1.13E+01	0.00E+00	1.13E+01
		Cs-134	<3.96E+00	0.00E+00	3.96E+00
		Cs-137	<3.68E+00	0.00E+00	3.68E+00
		BaLa-140	<6.60E+00	0.00E+00	6.60E+00
		Be-7	<4.04E+01	0.00E+00	4.04E+01
		K-40	<6.79E+01	0.00E+00	6.79E+01
Sample ID: 378807	Sample Dates: 4/28/2015 - 5/27/2015	Nuclide	Activity	2 Sigma Error	LLD
		Beta	2.38E+00	8.10E-01	1.22E+00
		Mn-54	<1.96E+00	0.00E+00	1.96E+00
		Co-58	<2.25E+00	0.00E+00	2.25E+00
		Fe-59	<5.50E+00	0.00E+00	5.50E+00
		Co-60	<2.16E+00	0.00E+00	2.16E+00
		Zn-65	<4.31E+00	0.00E+00	4.31E+00
		Zr-95	<4.00E+00	0.00E+00	4.00E+00
		Nb-95	<3.29E+00	0.00E+00	3.29E+00
		I-131	<1.19E+01	0.00E+00	1.19E+01
		Cs-134	<2.65E+00	0.00E+00	2.65E+00
		Cs-137	<2.38E+00	0.00E+00	2.38E+00
		BaLa-140	<7.00E+00	0.00E+00	7.00E+00
		Be-7	<2.12E+01	0.00E+00	2.12E+01
		K-40	2.84E+01	2.09E+01	3.16E+01
Sample ID: 380199	Sample Dates: 3/3/2015 - 5/27/2015	Nuclide	Activity	2 Sigma Error	LLD
		H3DW	5.36E+02	1.32E+02	1.98E+02
Sample ID: 380684	Sample Dates: 5/27/2015 - 6/23/2015	Nuclide	Activity	2 Sigma Error	LLD
		Beta	1.18E+00	7.81E-01	1.27E+00
		Mn-54	<2.84E+00	0.00E+00	2.84E+00
		Co-58	<2.34E+00	0.00E+00	2.34E+00
		Fe-59	<5.90E+00	0.00E+00	5.90E+00
		Co-60	<1.89E+00	0.00E+00	1.89E+00
		Zn-65	<5.60E+00	0.00E+00	5.60E+00
		Zr-95	<5.33E+00	0.00E+00	5.33E+00
		Nb-95	<3.81E+00	0.00E+00	3.81E+00
		I-131	<1.12E+01	0.00E+00	1.12E+01
		Cs-134	<3.04E+00	0.00E+00	3.04E+00
		Cs-137	<3.21E+00	0.00E+00	3.21E+00
		BaLa-140	<5.63E+00	0.00E+00	5.63E+00
		Be-7	<2.79E+01	0.00E+00	2.79E+01
		K-40	1.94E+01	2.84E+01	4.74E+01
Sample ID: 382375	Sample Dates: 6/23/2015 - 7/21/2015	Nuclide	Activity	2 Sigma Error	LLD
		Beta	4.65E+00	8.75E-01	1.16E+00
		Mn-54	<3.38E+00	0.00E+00	3.38E+00
		Co-58	<4.22E+00	0.00E+00	4.22E+00
		Fe-59	<8.32E+00	0.00E+00	8.32E+00
		Co-60	<2.99E+00	0.00E+00	2.99E+00
		Zn-65	<7.11E+00	0.00E+00	7.11E+00



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: DRINKING WATER Concentration (Activity): pCi/l

Sample Point 214 [INDICATOR - SSE @ 7.3 miles]

Sample ID: 382375	Sample Dates: 6/23/2015 - 7/21/2015	Nuclide	Activity	2 Sigma Error	LLD
		Zr-95	<5.67E+00	0.00E+00	5.67E+00
		Nb-95	<4.98E+00	0.00E+00	4.98E+00
		I-131	<1.07E+01	0.00E+00	1.07E+01
		Cs-134	<4.22E+00	0.00E+00	4.22E+00
		Cs-137	<3.87E+00	0.00E+00	3.87E+00
		BaLa-140	<1.07E+01	0.00E+00	1.07E+01
		Be-7	<4.40E+01	0.00E+00	4.40E+01
		K-40	<6.80E+01	0.00E+00	6.80E+01
Sample ID: 384910	Sample Dates: 7/21/2015 - 8/18/2015	Nuclide	Activity	2 Sigma Error	LLD
		Beta	2.47E+00	7.56E-01	1.11E+00
		Mn-54	<3.13E+00	0.00E+00	3.13E+00
		Co-58	<3.75E+00	0.00E+00	3.75E+00
		Fe-59	<5.90E+00	0.00E+00	5.90E+00
		Co-60	<2.34E+00	0.00E+00	2.34E+00
		Zn-65	<5.56E+00	0.00E+00	5.56E+00
		Zr-95	<7.82E+00	0.00E+00	7.82E+00
		Nb-95	<3.66E+00	0.00E+00	3.66E+00
		I-131	<1.08E+01	0.00E+00	1.08E+01
		Cs-134	<3.78E+00	0.00E+00	3.78E+00
		Cs-137	<3.66E+00	0.00E+00	3.66E+00
		BaLa-140	<1.12E+01	0.00E+00	1.12E+01
		Be-7	<3.26E+01	0.00E+00	3.26E+01
		K-40	3.18E+01	3.30E+01	5.24E+01
Sample ID: 388112	Sample Dates: 5/27/2015 - 8/18/2015	Nuclide	Activity	2 Sigma Error	LLD
		H3DW	4.99E+02	1.30E+02	1.97E+02
Sample ID: 388168	Sample Dates: 8/18/2015 - 9/10/2015	Nuclide	Activity	2 Sigma Error	LLD
		Beta	3.05E+00	8.16E-01	1.17E+00
		Mn-54	<1.87E+00	0.00E+00	1.87E+00
		Co-58	<1.77E+00	0.00E+00	1.77E+00
		Fe-59	<4.17E+00	0.00E+00	4.17E+00
		Co-60	<1.94E+00	0.00E+00	1.94E+00
		Zn-65	<3.74E+00	0.00E+00	3.74E+00
		Zr-95	<3.17E+00	0.00E+00	3.17E+00
		Nb-95	<2.75E+00	0.00E+00	2.75E+00
		I-131	<1.14E+01	0.00E+00	1.14E+01
		Cs-134	<2.32E+00	0.00E+00	2.32E+00
		Cs-137	<1.93E+00	0.00E+00	1.93E+00
		BaLa-140	<6.76E+00	0.00E+00	6.76E+00
		Be-7	<2.01E+01	0.00E+00	2.01E+01
		K-40	3.78E+01	1.70E+01	2.19E+01
Sample ID: 391250	Sample Dates: 9/15/2015 - 10/13/2015	Nuclide	Activity	2 Sigma Error	LLD
		Beta	2.74E+00	8.25E-01	1.22E+00
		Mn-54	<3.58E+00	0.00E+00	3.58E+00
		Co-58	<4.60E+00	0.00E+00	4.60E+00
		Fe-59	<6.78E+00	0.00E+00	6.78E+00
		Co-60	<4.20E+00	0.00E+00	4.20E+00
		Zn-65	<8.30E+00	0.00E+00	8.30E+00
		Zr-95	<6.60E+00	0.00E+00	6.60E+00
		Nb-95	<4.18E+00	0.00E+00	4.18E+00
		I-131	<1.20E+01	0.00E+00	1.20E+01
		Cs-134	<3.46E+00	0.00E+00	3.46E+00
		Cs-137	<3.84E+00	0.00E+00	3.84E+00
		BaLa-140	<1.15E+01	0.00E+00	1.15E+01
		Be-7	<3.24E+01	0.00E+00	3.24E+01
		K-40	2.30E+01	3.95E+01	6.73E+01
Sample ID: 394433	Sample Dates: 10/13/2015 - 11/10/2015	Nuclide	Activity	2 Sigma Error	LLD
		Beta	<6.84E-01	0.00E+00	1.50E+00
		Mn-54	<4.65E+00	0.00E+00	4.65E+00
		Co-58	<4.15E+00	0.00E+00	4.15E+00
		Fe-59	<9.16E+00	0.00E+00	9.16E+00
		Co-60	<4.30E+00	0.00E+00	4.30E+00
		Zn-65	<7.90E+00	0.00E+00	7.90E+00



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: DRINKING WATER Concentration (Activity): pCi/l

Sample Point 214 [INDICATOR - SSE @ 7.3 miles]

Sample ID:	394433	Sample Dates:	10/13/2015 - 11/10/2015	Nuclide	Activity	2 Sigma Error	LLD
				Zr-95	<7.84E+00	0.00E+00	7.84E+00
				Nb-95	<4.63E+00	0.00E+00	4.63E+00
				I-131	<1.01E+01	0.00E+00	1.01E+01
				Cs-134	<6.14E+00	0.00E+00	6.14E+00
				Cs-137	<4.51E+00	0.00E+00	4.51E+00
				BaLa-140	<1.02E+01	0.00E+00	1.02E+01
				Be-7	<4.16E+01	0.00E+00	4.16E+01
				K-40	<5.64E+01	0.00E+00	5.64E+01

Sample ID:	396349	Sample Dates:	11/10/2015 - 12/8/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.55E+00	8.32E-01	1.24E+00
				Mn-54	<2.59E+00	0.00E+00	2.59E+00
				Co-58	<3.53E+00	0.00E+00	3.53E+00
				Fe-59	<9.04E+00	0.00E+00	9.04E+00
				Co-60	<2.29E+00	0.00E+00	2.29E+00
				Zn-65	<6.81E+00	0.00E+00	6.81E+00
				Zr-95	<5.70E+00	0.00E+00	5.70E+00
				Nb-95	<3.93E+00	0.00E+00	3.93E+00
				I-131	<1.07E+01	0.00E+00	1.07E+01
				Cs-134	<3.40E+00	0.00E+00	3.40E+00
				Cs-137	<2.97E+00	0.00E+00	2.97E+00
				BaLa-140	<6.02E+00	0.00E+00	6.02E+00
				Be-7	<2.47E+01	0.00E+00	2.47E+01
				K-40	3.41E+01	2.44E+01	3.29E+01

Sample ID:	397087	Sample Dates:	8/18/2015 - 12/8/2015	Nuclide	Activity	2 Sigma Error	LLD
				H3DW	6.72E+02	1.36E+02	2.04E+02

Sample Point 218 [CONTROL - NNE @ 13.5 miles]

Sample ID:	364781	Sample Dates:	12/9/2014 - 1/6/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.83E+00	7.76E-01	1.21E+00
				Mn-54	<3.16E+00	0.00E+00	3.16E+00
				Co-58	<1.83E+00	0.00E+00	1.83E+00
				Fe-59	<6.38E+00	0.00E+00	6.38E+00
				Co-60	<3.04E+00	0.00E+00	3.04E+00
				Zn-65	<6.23E+00	0.00E+00	6.23E+00
				Zr-95	<4.52E+00	0.00E+00	4.52E+00
				Nb-95	<3.33E+00	0.00E+00	3.33E+00
				I-131	<1.11E+01	0.00E+00	1.11E+01
				Cs-134	<3.29E+00	0.00E+00	3.29E+00
				Cs-137	<2.47E+00	0.00E+00	2.47E+00
				BaLa-140	<5.28E+00	0.00E+00	5.28E+00
				Be-7	<2.94E+01	0.00E+00	2.94E+01
				K-40	<3.91E+01	0.00E+00	3.91E+01

Sample ID:	366878	Sample Dates:	1/6/2015 - 2/3/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.44E+00	7.80E-01	1.25E+00
				Mn-54	<2.34E+00	0.00E+00	2.34E+00
				Co-58	<2.50E+00	0.00E+00	2.50E+00
				Fe-59	<5.45E+00	0.00E+00	5.45E+00
				Co-60	<2.75E+00	0.00E+00	2.75E+00
				Zn-65	<5.55E+00	0.00E+00	5.55E+00
				Zr-95	<5.85E+00	0.00E+00	5.85E+00
				Nb-95	<3.05E+00	0.00E+00	3.05E+00
				I-131	<1.14E+01	0.00E+00	1.14E+01
				Cs-134	<2.96E+00	0.00E+00	2.96E+00
				Cs-137	<2.87E+00	0.00E+00	2.87E+00
				BaLa-140	<4.53E+00	0.00E+00	4.53E+00
				Be-7	<2.72E+01	0.00E+00	2.72E+01
				K-40	5.48E+01	7.67E+00	3.16E+01

Sample ID:	369979	Sample Dates:	2/3/2015 - 3/3/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	2.29E+00	7.57E-01	1.12E+00
				Mn-54	<4.56E+00	0.00E+00	4.56E+00
				Co-58	<4.23E+00	0.00E+00	4.23E+00
				Fe-59	<7.00E+00	0.00E+00	7.00E+00



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: DRINKING WATER Concentration (Activity): pCi/l

Sample Point 218 [CONTROL - NNE @ 13.5 miles]

Sample ID: 369979	Sample Dates: 2/3/2015 - 3/3/2015	Nuclide	Activity	2 Sigma Error	LLD
		Co-60	<3.28E+00	0.00E+00	3.28E+00
		Zn-65	<6.57E+00	0.00E+00	6.57E+00
		Zr-95	<6.93E+00	0.00E+00	6.93E+00
		Nb-95	<3.54E+00	0.00E+00	3.54E+00
		I-131	<1.16E+01	0.00E+00	1.16E+01
		Cs-134	<3.75E+00	0.00E+00	3.75E+00
		Cs-137	<4.19E+00	0.00E+00	4.19E+00
		BaLa-140	<8.85E+00	0.00E+00	8.85E+00
		Be-7	<3.06E+01	0.00E+00	3.06E+01
		K-40	<6.78E+01	0.00E+00	6.78E+01
Sample ID: 372362	Sample Dates: 12/9/2014 - 3/3/2015	Nuclide	Activity	2 Sigma Error	LLD
		H3DW	5.24E+02	1.22E+02	1.85E+02
Sample ID: 372744	Sample Dates: 3/3/2015 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
		Beta	2.85E+00	8.13E-01	1.18E+00
		Mn-54	<4.21E+00	0.00E+00	4.21E+00
		Co-58	<3.62E+00	0.00E+00	3.62E+00
		Fe-59	<7.99E+00	0.00E+00	7.99E+00
		Co-60	<4.09E+00	0.00E+00	4.09E+00
		Zn-65	<7.50E+00	0.00E+00	7.50E+00
		Zr-95	<5.96E+00	0.00E+00	5.96E+00
		Nb-95	<4.04E+00	0.00E+00	4.04E+00
		I-131	<1.08E+01	0.00E+00	1.08E+01
		Cs-134	<3.86E+00	0.00E+00	3.86E+00
		Cs-137	<3.92E+00	0.00E+00	3.92E+00
		BaLa-140	<1.18E+01	0.00E+00	1.18E+01
		Be-7	<3.83E+01	0.00E+00	3.83E+01
		K-40	<4.05E+01	0.00E+00	4.05E+01
Sample ID: 375837	Sample Dates: 3/31/2015 - 4/28/2015	Nuclide	Activity	2 Sigma Error	LLD
		Beta	2.26E+00	7.98E-01	1.20E+00
		Mn-54	<4.07E+00	0.00E+00	4.07E+00
		Co-58	<3.80E+00	0.00E+00	3.80E+00
		Fe-59	<8.41E+00	0.00E+00	8.41E+00
		Co-60	<3.53E+00	0.00E+00	3.53E+00
		Zn-65	<9.05E+00	0.00E+00	9.05E+00
		Zr-95	<7.58E+00	0.00E+00	7.58E+00
		Nb-95	<4.52E+00	0.00E+00	4.52E+00
		I-131	<1.17E+01	0.00E+00	1.17E+01
		Cs-134	<3.82E+00	0.00E+00	3.82E+00
		Cs-137	<4.28E+00	0.00E+00	4.28E+00
		BaLa-140	<6.51E+00	0.00E+00	6.51E+00
		Be-7	<3.14E+01	0.00E+00	3.14E+01
		K-40	<5.17E+01	0.00E+00	5.17E+01
Sample ID: 378808	Sample Dates: 4/28/2015 - 5/27/2015	Nuclide	Activity	2 Sigma Error	LLD
		Beta	1.53E+00	7.62E-01	1.21E+00
		Mn-54	<1.76E+00	0.00E+00	1.76E+00
		Co-58	<3.16E+00	0.00E+00	3.16E+00
		Fe-59	<5.95E+00	0.00E+00	5.95E+00
		Co-60	<2.35E+00	0.00E+00	2.35E+00
		Zn-65	<5.84E+00	0.00E+00	5.84E+00
		Zr-95	<5.62E+00	0.00E+00	5.62E+00
		Nb-95	<3.06E+00	0.00E+00	3.06E+00
		I-131	<1.14E+01	0.00E+00	1.14E+01
		Cs-134	<2.60E+00	0.00E+00	2.60E+00
		Cs-137	<2.76E+00	0.00E+00	2.76E+00
		BaLa-140	<9.75E+00	0.00E+00	9.75E+00
		Be-7	<2.20E+01	0.00E+00	2.20E+01
		K-40	<3.64E+01	0.00E+00	3.64E+01
Sample ID: 380200	Sample Dates: 3/3/2015 - 5/27/2015	Nuclide	Activity	2 Sigma Error	LLD
		H3DW	4.32E+02	1.27E+02	1.96E+02
Sample ID: 380685	Sample Dates: 5/27/2015 - 6/23/2015	Nuclide	Activity	2 Sigma Error	LLD
		Beta	1.34E+00	7.79E-01	1.25E+00



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: DRINKING WATER Concentration (Activity): pCi/l

Sample Point 218 [CONTROL - NNE @ 13.5 miles]

Sample ID: 380685	Sample Dates: 5/27/2015 - 6/23/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<4.16E+00	0.00E+00	4.16E+00
		Co-58	<4.17E+00	0.00E+00	4.17E+00
		Fe-59	<6.70E+00	0.00E+00	6.70E+00
		Co-60	<4.53E+00	0.00E+00	4.53E+00
		Zn-65	<7.72E+00	0.00E+00	7.72E+00
		Zr-95	<7.38E+00	0.00E+00	7.38E+00
		Nb-95	<4.62E+00	0.00E+00	4.62E+00
		I-131	<1.10E+01	0.00E+00	1.10E+01
		Cs-134	<5.16E+00	0.00E+00	5.16E+00
		Cs-137	<3.67E+00	0.00E+00	3.67E+00
		BaLa-140	<1.18E+01	0.00E+00	1.18E+01
		Be-7	<3.59E+01	0.00E+00	3.59E+01
		K-40	<5.77E+01	0.00E+00	5.77E+01
Sample ID: 382376	Sample Dates: 6/23/2015 - 7/21/2015	Nuclide	Activity	2 Sigma Error	LLD
		Beta	2.62E+00	7.82E-01	1.15E+00
		Mn-54	<4.05E+00	0.00E+00	4.05E+00
		Co-58	<4.88E+00	0.00E+00	4.88E+00
		Fe-59	<9.60E+00	0.00E+00	9.60E+00
		Co-60	<4.62E+00	0.00E+00	4.62E+00
		Zn-65	<9.54E+00	0.00E+00	9.54E+00
		Zr-95	<7.55E+00	0.00E+00	7.55E+00
		Nb-95	<4.50E+00	0.00E+00	4.50E+00
		I-131	<1.20E+01	0.00E+00	1.20E+01
		Cs-134	<3.24E+00	0.00E+00	3.24E+00
		Cs-137	<3.32E+00	0.00E+00	3.32E+00
		BaLa-140	<1.05E+01	0.00E+00	1.05E+01
		Be-7	<2.82E+01	0.00E+00	2.82E+01
		K-40	2.14E+01	3.49E+01	5.91E+01
Sample ID: 384911	Sample Dates: 7/21/2015 - 8/18/2015	Nuclide	Activity	2 Sigma Error	LLD
		Beta	1.87E+00	7.23E-01	1.09E+00
		Mn-54	<2.98E+00	0.00E+00	2.98E+00
		Co-58	<2.88E+00	0.00E+00	2.88E+00
		Fe-59	<6.84E+00	0.00E+00	6.84E+00
		Co-60	<3.51E+00	0.00E+00	3.51E+00
		Zn-65	<6.91E+00	0.00E+00	6.91E+00
		Zr-95	<5.85E+00	0.00E+00	5.85E+00
		Nb-95	<4.45E+00	0.00E+00	4.45E+00
		I-131	<1.12E+01	0.00E+00	1.12E+01
		Cs-134	<3.50E+00	0.00E+00	3.50E+00
		Cs-137	<3.75E+00	0.00E+00	3.75E+00
		BaLa-140	<6.75E+00	0.00E+00	6.75E+00
		Be-7	<3.85E+01	0.00E+00	3.85E+01
		K-40	<5.51E+01	0.00E+00	5.51E+01
Sample ID: 388113	Sample Dates: 5/27/2015 - 8/18/2015	Nuclide	Activity	2 Sigma Error	LLD
		H3DW	<1.60E+02	0.00E+00	1.95E+02
Sample ID: 388169	Sample Dates: 8/18/2015 - 9/15/2015	Nuclide	Activity	2 Sigma Error	LLD
		Beta	2.28E+00	7.75E-01	1.16E+00
		Mn-54	<3.29E+00	0.00E+00	3.29E+00
		Co-58	<3.85E+00	0.00E+00	3.85E+00
		Fe-59	<6.62E+00	0.00E+00	6.62E+00
		Co-60	<3.34E+00	0.00E+00	3.34E+00
		Zn-65	<5.51E+00	0.00E+00	5.51E+00
		Zr-95	<6.82E+00	0.00E+00	6.82E+00
		Nb-95	<4.33E+00	0.00E+00	4.33E+00
		I-131	<1.19E+01	0.00E+00	1.19E+01
		Cs-134	<3.65E+00	0.00E+00	3.65E+00
		Cs-137	<3.64E+00	0.00E+00	3.64E+00
		BaLa-140	<8.45E+00	0.00E+00	8.45E+00
		Be-7	<3.56E+01	0.00E+00	3.56E+01
		K-40	2.59E+01	2.69E+01	4.18E+01
Sample ID: 391251	Sample Dates: 9/15/2015 - 10/13/2015	Nuclide	Activity	2 Sigma Error	LLD
		Beta	2.68E+00	8.19E-01	1.22E+00



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: DRINKING WATER Concentration (Activity): pCi/l

Sample Point 218 [CONTROL - NNE @ 13.5 miles]

Sample ID:	391251	Sample Dates:	9/15/2015 - 10/13/2015	Nuclide	Activity	2 Sigma Error	LLD
				Mn-54	<3.77E+00	0.00E+00	3.77E+00
				Co-58	<4.42E+00	0.00E+00	4.42E+00
				Fe-59	<5.79E+00	0.00E+00	5.79E+00
				Co-60	<3.20E+00	0.00E+00	3.20E+00
				Zn-65	<6.74E+00	0.00E+00	6.74E+00
				Zr-95	<5.97E+00	0.00E+00	5.97E+00
				Nb-95	<4.57E+00	0.00E+00	4.57E+00
				I-131	<1.15E+01	0.00E+00	1.15E+01
				Cs-134	<3.82E+00	0.00E+00	3.82E+00
				Cs-137	<3.06E+00	0.00E+00	3.06E+00
				BaLa-140	<8.20E+00	0.00E+00	8.20E+00
				Be-7	<3.02E+01	0.00E+00	3.02E+01
				K-40	8.01E+01	3.68E+01	4.48E+01

Sample ID:	394434	Sample Dates:	10/13/2015 - 11/10/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	<6.58E-01	0.00E+00	1.49E+00
				Mn-54	<2.84E+00	0.00E+00	2.84E+00
				Co-58	<3.67E+00	0.00E+00	3.67E+00
				Fe-59	<6.32E+00	0.00E+00	6.32E+00
				Co-60	<3.00E+00	0.00E+00	3.00E+00
				Zn-65	<5.93E+00	0.00E+00	5.93E+00
				Zr-95	<5.30E+00	0.00E+00	5.30E+00
				Nb-95	<2.86E+00	0.00E+00	2.86E+00
				I-131	<1.17E+01	0.00E+00	1.17E+01
				Cs-134	<4.14E+00	0.00E+00	4.14E+00
				Cs-137	<4.21E+00	0.00E+00	4.21E+00
				BaLa-140	<9.83E+00	0.00E+00	9.83E+00
				Be-7	<2.39E+01	0.00E+00	2.39E+01
				K-40	<5.80E+01	0.00E+00	5.80E+01

Sample ID:	396350	Sample Dates:	11/10/2015 - 12/8/2015	Nuclide	Activity	2 Sigma Error	LLD
				Beta	1.86E+00	7.96E-01	1.24E+00
				Mn-54	<4.29E+00	0.00E+00	4.29E+00
				Co-58	<3.30E+00	0.00E+00	3.30E+00
				Fe-59	<7.85E+00	0.00E+00	7.85E+00
				Co-60	<4.02E+00	0.00E+00	4.02E+00
				Zn-65	<6.06E+00	0.00E+00	6.06E+00
				Zr-95	<8.09E+00	0.00E+00	8.09E+00
				Nb-95	<4.22E+00	0.00E+00	4.22E+00
				I-131	<1.16E+01	0.00E+00	1.16E+01
				Cs-134	<4.59E+00	0.00E+00	4.59E+00
				Cs-137	<3.68E+00	0.00E+00	3.68E+00
				BaLa-140	<7.64E+00	0.00E+00	7.64E+00
				Be-7	<4.73E+01	0.00E+00	4.73E+01
				K-40	<5.07E+01	0.00E+00	5.07E+01

Sample ID:	397088	Sample Dates:	8/18/2015 - 12/8/2015	Nuclide	Activity	2 Sigma Error	LLD
				H3DW	7.54E+02	1.39E+02	2.07E+02

Media Type: FISH Concentration (Activity): pCi/kg

Sample Point 208 [INDICATOR - S @ 0.45 miles]

Sample ID:	374839	Sample Dates:	4/6/2015 - 4/6/2015	PREDATOR	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<1.42E+01	0.00E+00	1.42E+01
					Co-58	<1.31E+01	0.00E+00	1.31E+01
					Fe-59	<2.99E+01	0.00E+00	2.99E+01
					Co-60	<1.57E+01	0.00E+00	1.57E+01
					Zn-65	<3.33E+01	0.00E+00	3.33E+01
					Nb-95	<1.37E+01	0.00E+00	1.37E+01
					I-131	<9.94E+00	0.00E+00	9.94E+00
					Cs-134	<1.48E+01	0.00E+00	1.48E+01
					Cs-137	<1.17E+01	0.00E+00	1.17E+01
					Be-7	<9.47E+01	0.00E+00	9.47E+01
					K-40	2.65E+03	4.68E+02	2.65E+02
					Ag-110M	<1.14E+01	0.00E+00	1.14E+01
					Sb-122	<1.78E+01	0.00E+00	1.78E+01

CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: FISH Concentration (Activity): pCi/kg

Sample Point 208 [INDICATOR - S @ 0.45 miles]

Sample ID:	374839	Sample Dates:	4/6/2015 - 4/6/2015	PREDATOR	Nuclide	Activity	2 Sigma Error	LLD
					Sb-125	<3.01E+01	0.00E+00	3.01E+01
Sample ID:	374840	Sample Dates:	4/6/2015 - 4/6/2015	FORAGER	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<2.15E+01	0.00E+00	2.15E+01
					Co-58	<1.53E+01	0.00E+00	1.53E+01
					Fe-59	<3.51E+01	0.00E+00	3.51E+01
					Co-60	<2.25E+01	0.00E+00	2.25E+01
					Zn-65	<5.13E+01	0.00E+00	5.13E+01
					Nb-95	<1.95E+01	0.00E+00	1.95E+01
					I-131	<1.98E+01	0.00E+00	1.98E+01
					Cs-134	<2.26E+01	0.00E+00	2.26E+01
					Cs-137	<2.08E+01	0.00E+00	2.08E+01
					Be-7	<8.35E+01	0.00E+00	8.35E+01
					K-40	2.67E+03	5.85E+02	4.94E+02
					Ag-110M	<1.85E+01	0.00E+00	1.85E+01
					Sb-122	<2.21E+01	0.00E+00	2.21E+01
					Sb-125	<4.53E+01	0.00E+00	4.53E+01
Sample ID:	374841	Sample Dates:	4/6/2015 - 4/6/2015	BOTMFEEDER	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<1.24E+01	0.00E+00	1.24E+01
					Co-58	<1.07E+01	0.00E+00	1.07E+01
					Fe-59	<3.45E+01	0.00E+00	3.45E+01
					Co-60	<2.38E+01	0.00E+00	2.38E+01
					Zn-65	<3.16E+01	0.00E+00	3.16E+01
					Nb-95	<1.46E+01	0.00E+00	1.46E+01
					I-131	<1.05E+01	0.00E+00	1.05E+01
					Cs-134	<1.95E+01	0.00E+00	1.95E+01
					Cs-137	<1.77E+01	0.00E+00	1.77E+01
					Be-7	<1.02E+02	0.00E+00	1.02E+02
					K-40	2.93E+03	5.07E+02	4.59E+01
					Ag-110M	<1.58E+01	0.00E+00	1.58E+01
					Sb-122	<2.67E+01	0.00E+00	2.67E+01
					Sb-125	<3.02E+01	0.00E+00	3.02E+01
Sample ID:	391463	Sample Dates:	10/6/2015 - 10/6/2015	PREDATOR	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<1.54E+01	0.00E+00	1.54E+01
					Co-58	<1.04E+01	0.00E+00	1.04E+01
					Fe-59	<3.71E+01	0.00E+00	3.71E+01
					Co-60	<1.71E+01	0.00E+00	1.71E+01
					Zn-65	<3.00E+01	0.00E+00	3.00E+01
					Nb-95	<1.70E+01	0.00E+00	1.70E+01
					I-131	<1.53E+01	0.00E+00	1.53E+01
					Cs-134	<2.30E+01	0.00E+00	2.30E+01
					Cs-137	<1.38E+01	0.00E+00	1.38E+01
					Be-7	<1.14E+02	0.00E+00	1.14E+02
					K-40	3.08E+03	5.36E+02	3.20E+02
					Ag-110M	<1.24E+01	0.00E+00	1.24E+01
					Sb-122	<9.45E+01	0.00E+00	9.45E+01
					Sb-125	<2.61E+01	0.00E+00	2.61E+01
Sample ID:	391464	Sample Dates:	10/6/2015 - 10/6/2015	FORAGER	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<1.62E+01	0.00E+00	1.62E+01
					Co-58	<2.31E+01	0.00E+00	2.31E+01
					Fe-59	<4.26E+01	0.00E+00	4.26E+01
					Co-60	<2.57E+01	0.00E+00	2.57E+01
					Zn-65	<3.71E+01	0.00E+00	3.71E+01
					Nb-95	<1.83E+01	0.00E+00	1.83E+01
					I-131	<2.51E+01	0.00E+00	2.51E+01
					Cs-134	<1.81E+01	0.00E+00	1.81E+01
					Cs-137	<2.26E+01	0.00E+00	2.26E+01
					Be-7	<8.23E+01	0.00E+00	8.23E+01
					K-40	2.79E+03	5.21E+02	5.32E+01
					Ag-110M	<1.53E+01	0.00E+00	1.53E+01
					Sb-122	<9.30E+01	0.00E+00	9.30E+01
					Sb-125	<3.78E+01	0.00E+00	3.78E+01



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: FISH Concentration (Activity): pCi/kg

Sample Point 208 [INDICATOR - S @ 0.45 miles]

Sample ID:	391465	Sample Dates:	10/6/2015 - 10/6/2015	BOTMFEEDER	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<2.52E+01	0.00E+00	2.52E+01
					Co-58	<1.27E+01	0.00E+00	1.27E+01
					Fe-59	<6.39E+01	0.00E+00	6.39E+01
					Co-60	<2.60E+01	0.00E+00	2.60E+01
					Zn-65	<4.59E+01	0.00E+00	4.59E+01
					Nb-95	<2.76E+01	0.00E+00	2.76E+01
					I-131	<3.23E+01	0.00E+00	3.23E+01
					Cs-134	<3.27E+01	0.00E+00	3.27E+01
					Cs-137	<2.27E+01	0.00E+00	2.27E+01
					Be-7	<1.18E+02	0.00E+00	1.18E+02
					K-40	3.40E+03	6.63E+02	3.80E+02
					Ag-110M	<2.18E+01	0.00E+00	2.18E+01
					Sb-122	<9.34E+01	0.00E+00	9.34E+01
					Sb-125	<5.26E+01	0.00E+00	5.26E+01

Sample Point 216 [CONTROL - NNE @ 4.19 miles]

Sample ID:	374842	Sample Dates:	4/6/2015 - 4/6/2015	PREDATOR	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<1.02E+01	0.00E+00	1.02E+01
					Co-58	<7.70E+00	0.00E+00	7.70E+00
					Fe-59	<1.34E+01	0.00E+00	1.34E+01
					Co-60	<1.10E+01	0.00E+00	1.10E+01
					Zn-65	<2.67E+01	0.00E+00	2.67E+01
					Nb-95	<6.70E+00	0.00E+00	6.70E+00
					I-131	<9.80E+00	0.00E+00	9.80E+00
					Cs-134	<1.09E+01	0.00E+00	1.09E+01
					Cs-137	<1.23E+01	0.00E+00	1.23E+01
					Be-7	<6.89E+01	0.00E+00	6.89E+01
					K-40	3.25E+03	4.37E+02	1.44E+02
					Ag-110M	<6.04E+00	0.00E+00	6.04E+00
					Sb-122	<2.05E+01	0.00E+00	2.05E+01
					Sb-125	<1.58E+01	0.00E+00	1.58E+01

Sample ID:	374843	Sample Dates:	4/6/2015 - 4/6/2015	FORAGER	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<1.02E+01	0.00E+00	1.02E+01
					Co-58	<1.27E+01	0.00E+00	1.27E+01
					Fe-59	<2.86E+01	0.00E+00	2.86E+01
					Co-60	<8.93E+00	0.00E+00	8.93E+00
					Zn-65	<3.37E+01	0.00E+00	3.37E+01
					Nb-95	<1.30E+01	0.00E+00	1.30E+01
					I-131	<9.92E+00	0.00E+00	9.92E+00
					Cs-134	<1.51E+01	0.00E+00	1.51E+01
					Cs-137	<1.09E+01	0.00E+00	1.09E+01
					Be-7	<8.16E+01	0.00E+00	8.16E+01
					K-40	2.79E+03	4.44E+02	1.75E+02
					Ag-110M	<7.95E+00	0.00E+00	7.95E+00
					Sb-122	<1.33E+01	0.00E+00	1.33E+01
					Sb-125	<2.60E+01	0.00E+00	2.60E+01

Sample ID:	374844	Sample Dates:	4/6/2015 - 4/6/2015	BOTMFEEDER	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<9.23E+00	0.00E+00	9.23E+00
					Co-58	<1.15E+01	0.00E+00	1.15E+01
					Fe-59	<2.07E+01	0.00E+00	2.07E+01
					Co-60	<1.54E+01	0.00E+00	1.54E+01
					Zn-65	<2.71E+01	0.00E+00	2.71E+01
					Nb-95	<8.95E+00	0.00E+00	8.95E+00
					I-131	<9.49E+00	0.00E+00	9.49E+00
					Cs-134	<1.13E+01	0.00E+00	1.13E+01
					Cs-137	<1.06E+01	0.00E+00	1.06E+01
					Be-7	<8.21E+01	0.00E+00	8.21E+01
					K-40	2.90E+03	4.38E+02	1.88E+02
					Ag-110M	<7.21E+00	0.00E+00	7.21E+00
					Sb-122	<2.35E+01	0.00E+00	2.35E+01
					Sb-125	<2.21E+01	0.00E+00	2.21E+01

Sample ID:	391466	Sample Dates:	10/6/2015 - 10/6/2015	PREDATOR	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<9.80E+00	0.00E+00	9.80E+00



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Media Type: FISH Concentration (Activity): pCi/kg

Sample Point 216 [CONTROL - NNE @ 4.19 miles]

Sample ID:	391466	Sample Dates:	10/6/2015 - 10/6/2015	PREDATOR	Nuclide	Activity	2 Sigma Error	LLD
					Co-58	<1.33E+01	0.00E+00	1.33E+01
					Fe-59	<2.74E+01	0.00E+00	2.74E+01
					Co-60	<1.63E+01	0.00E+00	1.63E+01
					Zn-65	<3.57E+01	0.00E+00	3.57E+01
					Nb-95	<1.20E+01	0.00E+00	1.20E+01
					I-131	<1.35E+01	0.00E+00	1.35E+01
					Cs-134	<1.10E+01	0.00E+00	1.10E+01
					Cs-137	<1.43E+01	0.00E+00	1.43E+01
					Be-7	<8.68E+01	0.00E+00	8.68E+01
					K-40	2.94E+03	4.54E+02	1.94E+02
					Ag-110M	<9.34E+00	0.00E+00	9.34E+00
					Sb-122	<5.16E+01	0.00E+00	5.16E+01
					Sb-125	<2.62E+01	0.00E+00	2.62E+01

Sample ID:	391467	Sample Dates:	10/6/2015 - 10/6/2015	FORAGER	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<1.44E+01	0.00E+00	1.44E+01
					Co-58	<1.26E+01	0.00E+00	1.26E+01
					Fe-59	<2.61E+01	0.00E+00	2.61E+01
					Co-60	<1.55E+01	0.00E+00	1.55E+01
					Zn-65	<3.85E+01	0.00E+00	3.85E+01
					Nb-95	<1.69E+01	0.00E+00	1.69E+01
					I-131	<1.79E+01	0.00E+00	1.79E+01
					Cs-134	<1.61E+01	0.00E+00	1.61E+01
					Cs-137	<1.30E+01	0.00E+00	1.30E+01
					Be-7	<1.34E+02	0.00E+00	1.34E+02
					K-40	3.00E+03	4.83E+02	3.90E+01
					Ag-110M	<8.30E+00	0.00E+00	8.30E+00
					Sb-122	<7.42E+01	0.00E+00	7.42E+01
					Sb-125	<2.92E+01	0.00E+00	2.92E+01

Sample ID:	391468	Sample Dates:	10/6/2015 - 10/6/2015	BOTMFEEDER	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<1.42E+01	0.00E+00	1.42E+01
					Co-58	<8.19E+00	0.00E+00	8.19E+00
					Fe-59	<3.61E+01	0.00E+00	3.61E+01
					Co-60	<2.00E+01	0.00E+00	2.00E+01
					Zn-65	<1.99E+01	0.00E+00	1.99E+01
					Nb-95	<1.96E+01	0.00E+00	1.97E+01
					I-131	<2.08E+01	0.00E+00	2.08E+01
					Cs-134	<1.92E+01	0.00E+00	1.92E+01
					Cs-137	<1.83E+01	0.00E+00	1.83E+01
					Be-7	<1.21E+02	0.00E+00	1.21E+02
					K-40	2.84E+03	4.93E+02	2.51E+02
					Ag-110M	<1.24E+01	0.00E+00	1.24E+01
					Sb-122	<7.89E+01	0.00E+00	7.89E+01
					Sb-125	<3.29E+01	0.00E+00	3.29E+01

Media Type: MILK Concentration (Activity): pCi/l

Sample Point 221 [CONTROL - NW @ 14.5 miles]

Sample ID:	365310	Sample Dates:	1/13/2015 - 1/13/2015		Nuclide	Activity	2 Sigma Error	LLD
					LLI-131	<6.42E-01	0.00E+00	6.42E-01
					I-131	<8.98E+00	0.00E+00	8.98E+00
					Cs-134	<9.34E+00	0.00E+00	9.34E+00
					Cs-137	<1.18E+01	0.00E+00	1.18E+01
					BaLa-140	<8.96E+00	0.00E+00	8.96E+00
					Be-7	<8.28E+01	0.00E+00	8.28E+01
					K-40	1.27E+03	2.76E+02	2.29E+02

Sample ID:	367072	Sample Dates:	1/27/2015 - 1/27/2015		Nuclide	Activity	2 Sigma Error	LLD
					LLI-131	<4.97E-01	0.00E+00	4.97E-01
					I-131	<5.54E+00	0.00E+00	5.54E+00
					Cs-134	<7.44E+00	0.00E+00	7.44E+00
					Cs-137	<8.57E+00	0.00E+00	8.57E+00
					BaLa-140	<5.93E+00	0.00E+00	5.93E+00
					Be-7	<4.31E+01	0.00E+00	4.31E+01
					K-40	1.43E+03	2.08E+02	1.29E+02

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Media Type: MILK Concentration (Activity): pCi/l

Sample Point 221 [CONTROL - NW @ 14.5 miles]

Sample ID: 368984	Sample Dates: 2/10/2015 - 2/10/2015	Nuclide	Activity	2 Sigma Error	LLD
		LLI-131	<6.39E-01	0.00E+00	6.39E-01
		I-131	<7.87E+00	0.00E+00	7.87E+00
		Cs-134	<6.48E+00	0.00E+00	6.48E+00
		Cs-137	<6.74E+00	0.00E+00	6.74E+00
		BaLa-140	<1.03E+01	0.00E+00	1.03E+01
		Be-7	<5.86E+01	0.00E+00	5.86E+01
		K-40	1.62E+03	2.48E+02	1.07E+02
Sample ID: 370613	Sample Dates: 2/23/2015 - 2/23/2015	Nuclide	Activity	2 Sigma Error	LLD
		LLI-131	<5.97E-01	0.00E+00	5.97E-01
		I-131	<9.57E+00	0.00E+00	9.57E+00
		Cs-134	<1.13E+01	0.00E+00	1.13E+01
		Cs-137	<1.08E+01	0.00E+00	1.08E+01
		BaLa-140	<1.06E+01	0.00E+00	1.06E+01
		Be-7	<8.13E+01	0.00E+00	8.13E+01
		K-40	1.72E+03	2.90E+02	1.11E+02
Sample ID: 371924	Sample Dates: 3/10/2015 - 3/10/2015	Nuclide	Activity	2 Sigma Error	LLD
		LLI-131	<4.99E-01	0.00E+00	4.99E-01
		I-131	<4.29E+00	0.00E+00	4.29E+00
		Cs-134	<4.76E+00	0.00E+00	4.76E+00
		Cs-137	<4.52E+00	0.00E+00	4.52E+00
		BaLa-140	<4.28E+00	0.00E+00	4.28E+00
		Be-7	<3.62E+01	0.00E+00	3.62E+01
		K-40	1.56E+03	1.92E+02	6.18E+01
Sample ID: 373846	Sample Dates: 3/24/2015 - 3/24/2015	Nuclide	Activity	2 Sigma Error	LLD
		LLI-131	<5.98E-01	0.00E+00	5.98E-01
		I-131	<7.31E+00	0.00E+00	7.31E+00
		Cs-134	<8.79E+00	0.00E+00	8.79E+00
		Cs-137	<9.86E+00	0.00E+00	9.86E+00
		BaLa-140	<7.53E+00	0.00E+00	7.53E+00
		Be-7	<2.99E+01	0.00E+00	2.99E+01
		K-40	1.67E+03	2.52E+02	1.83E+01
Sample ID: 374952	Sample Dates: 4/7/2015 - 4/7/2015	Nuclide	Activity	2 Sigma Error	LLD
		LLI-131	<6.40E-01	0.00E+00	6.40E-01
		I-131	<7.04E+00	0.00E+00	7.04E+00
		Cs-134	<7.54E+00	0.00E+00	7.54E+00
		Cs-137	<7.08E+00	0.00E+00	7.08E+00
		BaLa-140	<2.20E+00	0.00E+00	2.20E+00
		Be-7	<4.96E+01	0.00E+00	4.96E+01
		K-40	1.49E+03	2.32E+02	6.73E+01
Sample ID: 376841	Sample Dates: 4/21/2015 - 4/21/2015	Nuclide	Activity	2 Sigma Error	LLD
		LLI-131	<4.73E-01	0.00E+00	4.73E-01
		I-131	<3.79E+00	0.00E+00	3.79E+00
		Cs-134	<4.36E+00	0.00E+00	4.36E+00
		Cs-137	<4.65E+00	0.00E+00	4.65E+00
		BaLa-140	<3.54E+00	0.00E+00	3.54E+00
		Be-7	<3.75E+01	0.00E+00	3.75E+01
		K-40	1.56E+03	1.92E+02	6.80E+01
Sample ID: 378073	Sample Dates: 5/5/2015 - 5/5/2015	Nuclide	Activity	2 Sigma Error	LLD
		LLI-131	<6.46E-01	0.00E+00	6.46E-01
		I-131	<6.42E+00	0.00E+00	6.42E+00
		Cs-134	<6.29E+00	0.00E+00	6.29E+00
		Cs-137	<5.56E+00	0.00E+00	5.56E+00
		BaLa-140	<8.68E+00	0.00E+00	8.68E+00
		Be-7	<5.61E+01	0.00E+00	5.61E+01
		K-40	1.82E+03	2.63E+02	7.50E+01
Sample ID: 378963	Sample Dates: 5/19/2015 - 5/19/2015	Nuclide	Activity	2 Sigma Error	LLD
		LLI-131	<5.13E-01	0.00E+00	5.13E-01
		I-131	<5.96E+00	0.00E+00	5.96E+00
		Cs-134	<7.38E+00	0.00E+00	7.38E+00
		Cs-137	<7.71E+00	0.00E+00	7.71E+00
		BaLa-140	<5.82E+00	0.00E+00	5.82E+00



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Media Type: MILK Concentration (Activity): pCi/l

Sample Point 221 [CONTROL - NW @ 14.5 miles]

Sample ID: 378963	Sample Dates: 5/19/2015 - 5/19/2015	Nuclide	Activity	2 Sigma Error	LLD
		Be-7	<4.04E+01	0.00E+00	4.04E+01
		K-40	1.55E+03	2.40E+02	1.05E+02
Sample ID: 380201	Sample Dates: 6/2/2015 - 6/2/2015	Nuclide	Activity	2 Sigma Error	LLD
		LLI-131	<5.01E-01	0.00E+00	5.01E-01
		I-131	<6.48E+00	0.00E+00	6.48E+00
		Cs-134	<8.30E+00	0.00E+00	8.30E+00
		Cs-137	<6.07E+00	0.00E+00	6.07E+00
		BaLa-140	<5.82E+00	0.00E+00	5.82E+00
		Be-7	<4.63E+01	0.00E+00	4.63E+01
Sample ID: 380813	Sample Dates: 6/16/2015 - 6/16/2015	Nuclide	Activity	2 Sigma Error	LLD
		LLI-131	<6.47E-01	0.00E+00	6.47E-01
		I-131	<6.94E+00	0.00E+00	6.94E+00
		Cs-134	<8.98E+00	0.00E+00	8.98E+00
		Cs-137	<7.96E+00	0.00E+00	7.96E+00
		BaLa-140	<1.06E+01	0.00E+00	1.06E+01
		Be-7	<3.83E+01	0.00E+00	3.83E+01
Sample ID: 381610	Sample Dates: 6/30/2015 - 6/30/2015	Nuclide	Activity	2 Sigma Error	LLD
		LLI-131	<6.03E-01	0.00E+00	6.03E-01
		I-131	<6.12E+00	0.00E+00	6.12E+00
		Cs-134	<8.73E+00	0.00E+00	8.73E+00
		Cs-137	<7.73E+00	0.00E+00	7.73E+00
		BaLa-140	<5.65E+00	0.00E+00	5.65E+00
		Be-7	<5.54E+01	0.00E+00	5.54E+01
Sample ID: 382599	Sample Dates: 7/14/2015 - 7/14/2015	Nuclide	Activity	2 Sigma Error	LLD
		LLI-131	<6.04E-01	0.00E+00	6.04E-01
		I-131	<6.23E+00	0.00E+00	6.23E+00
		Cs-134	<7.87E+00	0.00E+00	7.87E+00
		Cs-137	<8.73E+00	0.00E+00	8.73E+00
		BaLa-140	<7.39E+00	0.00E+00	7.39E+00
		Be-7	<5.81E+01	0.00E+00	5.81E+01
Sample ID: 384104	Sample Dates: 7/28/2015 - 7/28/2015	Nuclide	Activity	2 Sigma Error	LLD
		LLI-131	<4.52E-01	0.00E+00	4.52E-01
		I-131	<5.41E+00	0.00E+00	5.41E+00
		Cs-134	<6.95E+00	0.00E+00	6.95E+00
		Cs-137	<8.51E+00	0.00E+00	8.51E+00
		BaLa-140	<5.98E+00	0.00E+00	5.98E+00
		Be-7	<2.89E+01	0.00E+00	2.89E+01
Sample ID: 385419	Sample Dates: 8/11/2015 - 8/11/2015	Nuclide	Activity	2 Sigma Error	LLD
		LLI-131	<5.76E-01	0.00E+00	5.76E-01
		I-131	<5.62E+00	0.00E+00	5.62E+00
		Cs-134	<6.28E+00	0.00E+00	6.28E+00
		Cs-137	<7.71E+00	0.00E+00	7.71E+00
		BaLa-140	<2.06E+00	0.00E+00	2.06E+00
		Be-7	<3.67E+01	0.00E+00	3.67E+01
Sample ID: 386836	Sample Dates: 8/25/2015 - 8/25/2015	Nuclide	Activity	2 Sigma Error	LLD
		LLI-131	<4.79E-01	0.00E+00	4.79E-01
		I-131	<5.92E+00	0.00E+00	5.92E+00
		Cs-134	<6.41E+00	0.00E+00	6.41E+00
		Cs-137	<6.18E+00	0.00E+00	6.18E+00
		BaLa-140	<8.42E+00	0.00E+00	8.42E+00
		Be-7	<4.91E+01	0.00E+00	4.91E+01
Sample ID: 388753	Sample Dates: 9/9/2015 - 9/9/2015	Nuclide	Activity	2 Sigma Error	LLD
		LLI-131	<5.02E-01	0.00E+00	5.02E-01



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: MILK Concentration (Activity): pCi/l

Sample Point 221 [CONTROL - NW @ 14.5 miles]

Sample ID: 388753	Sample Dates: 9/9/2015 - 9/9/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<6.34E+00	0.00E+00	6.34E+00
		Cs-134	<7.37E+00	0.00E+00	7.37E+00
		Cs-137	<8.39E+00	0.00E+00	8.39E+00
		BaLa-140	<5.61E+00	0.00E+00	5.61E+00
		Be-7	<5.09E+01	0.00E+00	5.09E+01
Sample ID: 390022	Sample Dates: 9/22/2015 - 9/22/2015	K-40	1.67E+03	2.45E+02	1.72E+01
		Nuclide	Activity	2 Sigma Error	LLD
		LLI-131	<5.72E-01	0.00E+00	5.72E-01
		I-131	<6.23E+00	0.00E+00	6.23E+00
		Cs-134	<5.65E+00	0.00E+00	5.65E+00
		Cs-137	<7.73E+00	0.00E+00	7.73E+00
Sample ID: 391940	Sample Dates: 10/6/2015 - 10/6/2015	BaLa-140	<7.39E+00	0.00E+00	7.39E+00
		Be-7	<6.01E+01	0.00E+00	6.01E+01
		K-40	1.42E+03	2.29E+02	1.05E+02
		Nuclide	Activity	2 Sigma Error	LLD
		LLI-131	<6.25E-01	0.00E+00	6.25E-01
		I-131	<7.96E+00	0.00E+00	7.96E+00
Sample ID: 393442	Sample Dates: 10/20/2015 - 10/20/2015	Cs-134	<8.80E+00	0.00E+00	8.80E+00
		Cs-137	<8.54E+00	0.00E+00	8.54E+00
		BaLa-140	<6.18E+00	0.00E+00	6.18E+00
		Be-7	<5.41E+01	0.00E+00	5.41E+01
		K-40	1.65E+03	2.56E+02	1.01E+02
		Nuclide	Activity	2 Sigma Error	LLD
Sample ID: 394845	Sample Dates: 11/3/2015 - 11/3/2015	LLI-131	<3.94E-01	0.00E+00	3.94E-01
		I-131	<5.37E+00	0.00E+00	5.37E+00
		Cs-134	<6.85E+00	0.00E+00	6.85E+00
		Cs-137	<8.71E+00	0.00E+00	8.71E+00
		BaLa-140	<2.07E+00	0.00E+00	2.07E+00
		Be-7	<3.67E+01	0.00E+00	3.67E+01
Sample ID: 395641	Sample Dates: 11/17/2015 - 11/17/2015	K-40	1.62E+03	2.45E+02	8.58E+01
		Nuclide	Activity	2 Sigma Error	LLD
		LLI-131	<5.70E-01	0.00E+00	5.70E-01
		I-131	<6.84E+00	0.00E+00	6.84E+00
		Cs-134	<7.48E+00	0.00E+00	7.48E+00
		Cs-137	<7.04E+00	0.00E+00	7.04E+00
Sample ID: 396647	Sample Dates: 12/1/2015 - 12/1/2015	BaLa-140	<5.77E+00	0.00E+00	5.77E+00
		Be-7	<4.05E+01	0.00E+00	4.05E+01
		K-40	1.62E+03	2.63E+02	1.80E+02
		Nuclide	Activity	2 Sigma Error	LLD
		LLI-131	<4.64E-01	0.00E+00	4.64E-01
		I-131	<3.66E+00	0.00E+00	3.66E+00
Sample ID: 397906	Sample Dates: 12/15/2015 - 12/15/2015	Cs-134	<5.71E+00	0.00E+00	5.71E+00
		Cs-137	<8.17E+00	0.00E+00	8.17E+00
		BaLa-140	<9.41E+00	0.00E+00	9.41E+00
		Be-7	<5.38E+01	0.00E+00	5.38E+01
		K-40	1.63E+03	2.44E+02	1.76E+01
		Nuclide	Activity	2 Sigma Error	LLD
Sample ID: 396647	Sample Dates: 12/1/2015 - 12/1/2015	LLI-131	<4.47E-01	0.00E+00	4.47E-01
		I-131	<6.30E+00	0.00E+00	6.30E+00
		Cs-134	<6.95E+00	0.00E+00	6.95E+00
		Cs-137	<8.17E+00	0.00E+00	8.17E+00
		BaLa-140	<6.00E+00	0.00E+00	6.00E+00
		Be-7	<5.19E+01	0.00E+00	5.19E+01
Sample ID: 397906	Sample Dates: 12/15/2015 - 12/15/2015	K-40	1.49E+03	2.31E+02	1.76E+01
		Nuclide	Activity	2 Sigma Error	LLD
		LLI-131	<6.39E-01	0.00E+00	6.39E-01
		I-131	<5.66E+00	0.00E+00	5.66E+00
		Cs-134	<1.06E+01	0.00E+00	1.06E+01
		Cs-137	<9.39E+00	0.00E+00	9.39E+00
Sample ID: 397906	Sample Dates: 12/15/2015 - 12/15/2015	BaLa-140	<7.93E+00	0.00E+00	7.93E+00
		Be-7	<3.67E+01	0.00E+00	3.67E+01



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Media Type: MILK Concentration (Activity): pCi/l

Sample Point 221 [CONTROL - NW @ 14.5 miles]

Sample ID:	397906	Sample Dates:	12/15/2015 - 12/15/2015	Nuclide	Activity	2 Sigma Error	LLD
				K-40	1.57E+03	2.48E+02	8.56E+01
Sample ID:	398684	Sample Dates:	12/29/2015 - 12/29/2015	Nuclide	Activity	2 Sigma Error	LLD
				LLI-131	<5.93E-01	0.00E+00	5.93E-01
				I-131	<5.37E+00	0.00E+00	5.37E+00
				Cs-134	<6.85E+00	0.00E+00	6.85E+00
				Cs-137	<7.34E+00	0.00E+00	7.34E+00
				BaLa-140	<2.07E+00	0.00E+00	2.07E+00
				Be-7	<4.85E+01	0.00E+00	4.85E+01
				K-40	1.45E+03	2.38E+02	1.45E+02

Media Type: SEDIMENT_SHORE Concentration (Activity): pCi/kg

Sample Point 208 [INDICATOR - S @ 0.45 miles]

Sample ID:	374854	Sample Dates:	3/31/2015 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
				Mn-54	<2.37E+01	0.00E+00	2.37E+01
				Co-58	<2.35E+01	0.00E+00	2.35E+01
				Fe-59	<4.52E+01	0.00E+00	4.52E+01
				Co-60	8.65E+01	2.23E+01	2.04E+01
				Zn-65	<4.90E+01	0.00E+00	4.90E+01
				Zr-95	<3.17E+01	0.00E+00	3.17E+01
				Nb-95	<1.77E+01	0.00E+00	1.77E+01
				I-131	<2.72E+01	0.00E+00	2.72E+01
				Cs-134	<2.74E+01	0.00E+00	2.74E+01
				Cs-137	<1.97E+01	0.00E+00	1.97E+01
				Be-7	1.10E+02	1.55E+02	2.57E+02
				K-40	1.58E+04	1.50E+03	2.15E+02
				Co-57	<1.53E+01	0.00E+00	1.53E+01
				Mo-99	<8.37E+02	0.00E+00	8.37E+02
				Ag-110M	<1.43E+01	0.00E+00	1.43E+01
				Sb-122	<1.34E+02	0.00E+00	1.34E+02
				Sb-125	<3.64E+01	0.00E+00	3.64E+01
Sample ID:	390122	Sample Dates:	9/22/2015 - 9/22/2015	Nuclide	Activity	2 Sigma Error	LLD
				Mn-54	<1.68E+01	0.00E+00	1.68E+01
				Co-58	6.73E+01	1.53E+01	1.97E+01
				Fe-59	<3.22E+01	0.00E+00	3.22E+01
				Co-60	2.36E+02	2.92E+01	2.37E+01
				Zn-65	<3.15E+01	0.00E+00	3.15E+01
				Zr-95	<2.45E+01	0.00E+00	2.45E+01
				Nb-95	<1.51E+01	0.00E+00	1.51E+01
				I-131	<3.65E+01	0.00E+00	3.65E+01
				Cs-134	<1.91E+01	0.00E+00	1.91E+01
				Cs-137	8.75E+00	1.12E+01	1.84E+01
				Be-7	2.39E+02	1.12E+02	1.75E+02
				K-40	1.79E+04	1.54E+03	1.86E+02
				Co-57	<9.48E+00	0.00E+00	9.48E+00
				Mo-99	<4.51E+03	0.00E+00	4.51E+03
				Ag-110M	<1.12E+01	0.00E+00	1.12E+01
				Sb-122	<7.84E+02	0.00E+00	7.84E+02
				Sb-125	<2.57E+01	0.00E+00	2.57E+01

Sample Point 210 [INDICATOR - SE @ 2.31 miles]

Sample ID:	374855	Sample Dates:	3/31/2015 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
				Mn-54	<1.43E+01	0.00E+00	1.43E+01
				Co-58	<1.55E+01	0.00E+00	1.55E+01
				Fe-59	<3.69E+01	0.00E+00	3.69E+01
				Co-60	<1.65E+01	0.00E+00	1.65E+01
				Zn-65	<4.45E+01	0.00E+00	4.45E+01
				Zr-95	<2.54E+01	0.00E+00	2.54E+01
				Nb-95	<2.02E+01	0.00E+00	2.02E+01
				I-131	<2.13E+01	0.00E+00	2.13E+01
				Cs-134	<2.05E+01	0.00E+00	2.05E+01
				Cs-137	<1.51E+01	0.00E+00	1.51E+01
				Be-7	<1.48E+02	0.00E+00	1.48E+02
				K-40	9.04E+03	9.44E+02	2.34E+02



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Media Type: SEDIMENT_SHORE Concentration (Activity): pCi/kg

Sample Point 210 [INDICATOR - SE @ 2.31 miles]

Sample ID:	374855	Sample Dates:	3/31/2015 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
				Co-57	<1.21E+01	0.00E+00	1.21E+01
				Mo-99	<7.28E+02	0.00E+00	7.28E+02
				Ag-110M	<1.39E+01	0.00E+00	1.39E+01
				Sb-122	<1.30E+02	0.00E+00	1.30E+02
				Sb-125	<3.29E+01	0.00E+00	3.29E+01

Sample ID:	390123	Sample Dates:	9/22/2015 - 9/22/2015	Nuclide	Activity	2 Sigma Error	LLD
				Mn-54	<2.57E+01	0.00E+00	2.57E+01
				Co-58	<2.70E+01	0.00E+00	2.70E+01
				Fe-59	<6.65E+01	0.00E+00	6.65E+01
				Co-60	<3.12E+01	0.00E+00	3.12E+01
				Zn-65	<4.68E+01	0.00E+00	4.68E+01
				Zr-95	<4.63E+01	0.00E+00	4.63E+01
				Nb-95	<2.85E+01	0.00E+00	2.85E+01
				I-131	<3.82E+01	0.00E+00	3.82E+01
				Cs-134	<4.22E+01	0.00E+00	4.22E+01
				Cs-137	<2.78E+01	0.00E+00	2.78E+01
				Be-7	<2.43E+02	0.00E+00	2.43E+02
				K-40	1.70E+04	1.71E+03	3.45E+02
				Co-57	<1.85E+01	0.00E+00	1.85E+01
				Mo-99	<1.58E+03	0.00E+00	1.58E+03
				Ag-110M	<2.22E+01	0.00E+00	2.22E+01
				Sb-122	<2.68E+02	0.00E+00	2.68E+02
				Sb-125	<4.99E+01	0.00E+00	4.99E+01

Sample Point 215 [CONTROL - NNE @ 4.21 miles]

Sample ID:	374856	Sample Dates:	3/31/2015 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
				Mn-54	<1.21E+01	0.00E+00	1.21E+01
				Co-58	<1.60E+01	0.00E+00	1.60E+01
				Fe-59	<3.50E+01	0.00E+00	3.50E+01
				Co-60	<1.65E+01	0.00E+00	1.65E+01
				Zn-65	<3.72E+01	0.00E+00	3.72E+01
				Zr-95	<2.57E+01	0.00E+00	2.57E+01
				Nb-95	<1.69E+01	0.00E+00	1.69E+01
				I-131	<2.03E+01	0.00E+00	2.03E+01
				Cs-134	<1.99E+01	0.00E+00	1.99E+01
				Cs-137	<1.33E+01	0.00E+00	1.33E+01
				Be-7	4.19E+01	7.45E+01	1.26E+02
				K-40	1.11E+04	1.08E+03	1.78E+02
				Co-57	<1.10E+01	0.00E+00	1.10E+01
				Mo-99	<4.24E+02	0.00E+00	4.24E+02
				Ag-110M	<1.18E+01	0.00E+00	1.18E+01
				Sb-122	<5.76E+01	0.00E+00	5.76E+01
				Sb-125	<3.28E+01	0.00E+00	3.28E+01

Sample ID:	390124	Sample Dates:	9/22/2015 - 9/22/2015	Nuclide	Activity	2 Sigma Error	LLD
				Mn-54	<2.46E+01	0.00E+00	2.46E+01
				Co-58	<1.66E+01	0.00E+00	1.66E+01
				Fe-59	<3.95E+01	0.00E+00	3.95E+01
				Co-60	<1.92E+01	0.00E+00	1.92E+01
				Zn-65	<4.71E+01	0.00E+00	4.71E+01
				Zr-95	<3.53E+01	0.00E+00	3.53E+01
				Nb-95	<2.28E+01	0.00E+00	2.28E+01
				I-131	<3.24E+01	0.00E+00	3.24E+01
				Cs-134	<3.49E+01	0.00E+00	3.49E+01
				Cs-137	2.05E+01	1.73E+01	2.79E+01
				Be-7	1.16E+03	2.15E+02	2.63E+02
				K-40	2.07E+04	1.85E+03	3.30E+02
				Co-57	<1.52E+01	0.00E+00	1.52E+01
				Mo-99	<1.19E+03	0.00E+00	1.19E+03
				Ag-110M	<1.73E+01	0.00E+00	1.73E+01
				Sb-122	<2.34E+02	0.00E+00	2.34E+02
				Sb-125	<4.53E+01	0.00E+00	4.53E+01



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 208 [INDICATOR - S @ 0.45 miles]

Sample ID: 365084	Sample Dates: 12/9/2014 - 1/6/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<1.99E+00	0.00E+00	1.99E+00
		Co-58	<3.22E+00	0.00E+00	3.22E+00
		Fe-59	<7.15E+00	0.00E+00	7.15E+00
		Co-60	<2.41E+00	0.00E+00	2.41E+00
		Zn-65	<5.58E+00	0.00E+00	5.58E+00
		Zr-95	<4.57E+00	0.00E+00	4.57E+00
		Nb-95	<3.57E+00	0.00E+00	3.57E+00
		I-131	<1.19E+01	0.00E+00	1.19E+01
		Cs-134	<3.47E+00	0.00E+00	3.47E+00
		Cs-137	<2.07E+00	0.00E+00	2.07E+00
		BaLa-140	<6.75E+00	0.00E+00	6.75E+00
		Be-7	<2.60E+01	0.00E+00	2.60E+01
		K-40	<4.67E+01	0.00E+00	4.67E+01
Sample ID: 367563	Sample Dates: 1/6/2015 - 2/3/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<2.87E+00	0.00E+00	2.87E+00
		Co-58	<3.35E+00	0.00E+00	3.35E+00
		Fe-59	<5.13E+00	0.00E+00	5.13E+00
		Co-60	<2.89E+00	0.00E+00	2.89E+00
		Zn-65	<6.25E+00	0.00E+00	6.25E+00
		Zr-95	<6.22E+00	0.00E+00	6.22E+00
		Nb-95	<3.77E+00	0.00E+00	3.77E+00
		I-131	<1.11E+01	0.00E+00	1.11E+01
		Cs-134	<3.34E+00	0.00E+00	3.34E+00
		Cs-137	<2.93E+00	0.00E+00	2.93E+00
		BaLa-140	<8.81E+00	0.00E+00	8.81E+00
		Be-7	<3.03E+01	0.00E+00	3.03E+01
		K-40	1.09E+01	2.76E+01	4.86E+01
Sample ID: 371558	Sample Dates: 2/3/2015 - 3/3/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<3.40E+00	0.00E+00	3.40E+00
		Co-58	<4.17E+00	0.00E+00	4.17E+00
		Fe-59	<9.42E+00	0.00E+00	9.42E+00
		Co-60	<4.30E+00	0.00E+00	4.30E+00
		Zn-65	<5.18E+00	0.00E+00	5.18E+00
		Zr-95	<7.72E+00	0.00E+00	7.72E+00
		Nb-95	<4.19E+00	0.00E+00	4.19E+00
		I-131	<1.12E+01	0.00E+00	1.12E+01
		Cs-134	<2.70E+00	0.00E+00	2.70E+00
		Cs-137	<3.29E+00	0.00E+00	3.29E+00
		BaLa-140	<1.16E+01	0.00E+00	1.16E+01
		Be-7	<3.05E+01	0.00E+00	3.05E+01
		K-40	<6.28E+01	0.00E+00	6.28E+01
Sample ID: 372363	Sample Dates: 12/9/2014 - 3/3/2015	Nuclide	Activity	2 Sigma Error	LLD
		H3SW	3.43E+03	1.81E+02	1.85E+02
Sample ID: 374569	Sample Dates: 3/3/2015 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<3.22E+00	0.00E+00	3.22E+00
		Co-58	<3.83E+00	0.00E+00	3.83E+00
		Fe-59	<8.40E+00	0.00E+00	8.40E+00
		Co-60	<4.29E+00	0.00E+00	4.29E+00
		Zn-65	<6.48E+00	0.00E+00	6.48E+00
		Zr-95	<5.79E+00	0.00E+00	5.79E+00
		Nb-95	<4.55E+00	0.00E+00	4.55E+00
		I-131	<1.14E+01	0.00E+00	1.14E+01
		Cs-134	<4.95E+00	0.00E+00	4.95E+00
		Cs-137	<3.79E+00	0.00E+00	3.79E+00
		BaLa-140	<8.12E+00	0.00E+00	8.12E+00
		Be-7	<3.34E+01	0.00E+00	3.34E+01
		K-40	<6.31E+01	0.00E+00	6.31E+01
Sample ID: 377503	Sample Dates: 3/31/2015 - 4/28/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<3.80E+00	0.00E+00	3.80E+00
		Co-58	<4.19E+00	0.00E+00	4.19E+00
		Fe-59	<7.96E+00	0.00E+00	7.96E+00
		Co-60	<5.40E+00	0.00E+00	5.40E+00



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 208 [INDICATOR - S @ 0.45 miles]

Sample ID: 377503	Sample Dates: 3/31/2015 - 4/28/2015	Nuclide	Activity	2 Sigma Error	LLD
		Zn-65	<9.37E+00	0.00E+00	9.37E+00
		Zr-95	<7.43E+00	0.00E+00	7.43E+00
		Nb-95	<4.07E+00	0.00E+00	4.07E+00
		I-131	<1.05E+01	0.00E+00	1.05E+01
		Cs-134	<4.46E+00	0.00E+00	4.46E+00
		Cs-137	<5.77E+00	0.00E+00	5.77E+00
		BaLa-140	<8.39E+00	0.00E+00	8.39E+00
		Be-7	<4.27E+01	0.00E+00	4.27E+01
		K-40	5.96E+01	3.52E+01	4.24E+01
Sample ID: 379469	Sample Dates: 4/28/2015 - 5/27/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<2.19E+00	0.00E+00	2.19E+00
		Co-58	<2.28E+00	0.00E+00	2.28E+00
		Fe-59	<5.40E+00	0.00E+00	5.40E+00
		Co-60	<2.11E+00	0.00E+00	2.11E+00
		Zn-65	<3.55E+00	0.00E+00	3.55E+00
		Zr-95	<3.50E+00	0.00E+00	3.50E+00
		Nb-95	<2.66E+00	0.00E+00	2.66E+00
		I-131	<1.17E+01	0.00E+00	1.17E+01
		Cs-134	<2.54E+00	0.00E+00	2.54E+00
		Cs-137	<1.39E+00	0.00E+00	1.39E+00
		BaLa-140	<6.22E+00	0.00E+00	6.22E+00
		Be-7	<1.94E+01	0.00E+00	1.94E+01
		K-40	<3.00E+01	0.00E+00	3.00E+01
Sample ID: 380202	Sample Dates: 3/3/2015 - 5/27/2015	Nuclide	Activity	2 Sigma Error	LLD
		H3SW	5.05E+03	2.29E+02	1.97E+02
Sample ID: 381261	Sample Dates: 5/27/2015 - 6/23/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<8.51E-01	0.00E+00	8.51E-01
		Co-58	1.15E+01	1.63E+00	1.70E+00
		Fe-59	<1.86E+00	0.00E+00	1.86E+00
		Co-60	1.07E+00	6.92E-01	1.08E+00
		Zn-65	<1.73E+00	0.00E+00	1.73E+00
		Zr-95	<1.67E+00	0.00E+00	1.67E+00
		Nb-95	<1.34E+00	0.00E+00	1.34E+00
		I-131	<5.05E+00	0.00E+00	5.05E+00
		Cs-134	<9.98E-01	0.00E+00	9.98E-01
		Cs-137	<9.11E-01	0.00E+00	9.11E-01
		BaLa-140	<2.89E+00	0.00E+00	2.89E+00
		Be-7	1.22E+01	4.71E+00	1.15E+01
		K-40	4.04E+01	1.07E+01	1.44E+01
Sample ID: 383529	Sample Dates: 6/23/2015 - 7/21/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<2.17E+00	0.00E+00	2.17E+00
		Co-58	<3.56E+00	0.00E+00	3.56E+00
		Fe-59	<8.50E+00	0.00E+00	8.50E+00
		Co-60	<2.92E+00	0.00E+00	2.92E+00
		Zn-65	<5.37E+00	0.00E+00	5.37E+00
		Zr-95	<5.61E+00	0.00E+00	5.61E+00
		Nb-95	<3.30E+00	0.00E+00	3.30E+00
		I-131	<1.12E+01	0.00E+00	1.12E+01
		Cs-134	<3.16E+00	0.00E+00	3.16E+00
		Cs-137	<3.80E+00	0.00E+00	3.80E+00
		BaLa-140	<7.02E+00	0.00E+00	7.02E+00
		Be-7	<3.77E+01	0.00E+00	3.77E+01
		K-40	<5.74E+01	0.00E+00	5.74E+01
Sample ID: 385938	Sample Dates: 7/21/2015 - 8/18/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<3.36E+00	0.00E+00	3.36E+00
		Co-58	<4.55E+00	0.00E+00	4.55E+00
		Fe-59	<1.02E+01	0.00E+00	1.02E+01
		Co-60	<4.50E+00	0.00E+00	4.50E+00
		Zn-65	<7.01E+00	0.00E+00	7.01E+00
		Zr-95	<5.19E+00	0.00E+00	5.19E+00
		Nb-95	<3.77E+00	0.00E+00	3.77E+00
		I-131	<1.15E+01	0.00E+00	1.15E+01



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 208 [INDICATOR - S @ 0.45 miles]

Sample ID: 385938	Sample Dates: 7/21/2015 - 8/18/2015	Nuclide	Activity	2 Sigma Error	LLD
		Cs-134	<4.24E+00	0.00E+00	4.24E+00
		Cs-137	<3.19E+00	0.00E+00	3.19E+00
		BaLa-140	<9.30E+00	0.00E+00	9.30E+00
		Be-7	<3.14E+01	0.00E+00	3.14E+01
		K-40	6.22E+01	4.00E+01	5.84E+01
Sample ID: 388114	Sample Dates: 5/27/2015 - 8/18/2015	Nuclide	Activity	2 Sigma Error	LLD
		H3SW	3.79E+03	2.03E+02	1.94E+02
Sample ID: 389418	Sample Dates: 8/18/2015 - 9/15/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<1.90E+00	0.00E+00	1.90E+00
		Co-58	<2.85E+00	0.00E+00	2.85E+00
		Fe-59	<6.42E+00	0.00E+00	6.42E+00
		Co-60	<3.70E+00	0.00E+00	3.70E+00
		Zn-65	<4.94E+00	0.00E+00	4.94E+00
		Zr-95	<4.62E+00	0.00E+00	4.62E+00
		Nb-95	<3.69E+00	0.00E+00	3.69E+00
		I-131	<9.24E+00	0.00E+00	9.24E+00
		Cs-134	<2.91E+00	0.00E+00	2.91E+00
		Cs-137	<3.07E+00	0.00E+00	3.07E+00
		BaLa-140	<6.42E+00	0.00E+00	6.42E+00
		Be-7	<2.77E+01	0.00E+00	2.77E+01
		K-40	4.04E+01	2.42E+01	3.36E+01
Sample ID: 392240	Sample Dates: 9/15/2015 - 10/13/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<2.89E+00	0.00E+00	2.89E+00
		Co-58	<3.40E+00	0.00E+00	3.40E+00
		Fe-59	<7.21E+00	0.00E+00	7.21E+00
		Co-60	<2.79E+00	0.00E+00	2.79E+00
		Zn-65	<6.24E+00	0.00E+00	6.24E+00
		Zr-95	<6.88E+00	0.00E+00	6.88E+00
		Nb-95	<4.36E+00	0.00E+00	4.36E+00
		I-131	<1.08E+01	0.00E+00	1.08E+01
		Cs-134	<3.21E+00	0.00E+00	3.21E+00
		Cs-137	<3.38E+00	0.00E+00	3.38E+00
		BaLa-140	<1.08E+01	0.00E+00	1.08E+01
		Be-7	<2.94E+01	0.00E+00	2.94E+01
		K-40	<5.89E+01	0.00E+00	5.89E+01
Sample ID: 395313	Sample Dates: 10/13/2015 - 11/10/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<3.89E+00	0.00E+00	3.89E+00
		Co-58	<3.56E+00	0.00E+00	3.56E+00
		Fe-59	<5.23E+00	0.00E+00	5.23E+00
		Co-60	<3.47E+00	0.00E+00	3.47E+00
		Zn-65	<6.36E+00	0.00E+00	6.36E+00
		Zr-95	<7.62E+00	0.00E+00	7.62E+00
		Nb-95	<4.41E+00	0.00E+00	4.41E+00
		I-131	<1.16E+01	0.00E+00	1.16E+01
		Cs-134	<2.86E+00	0.00E+00	2.86E+00
		Cs-137	<2.93E+00	0.00E+00	2.93E+00
		BaLa-140	<1.02E+01	0.00E+00	1.02E+01
		Be-7	<2.89E+01	0.00E+00	2.89E+01
		K-40	<5.96E+01	0.00E+00	5.96E+01
Sample ID: 397089	Sample Dates: 8/18/2015 - 12/8/2015	Nuclide	Activity	2 Sigma Error	LLD
		H3SW	6.16E+03	2.32E+02	2.06E+02
Sample ID: 397184	Sample Dates: 11/10/2015 - 12/8/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<2.97E+00	0.00E+00	2.97E+00
		Co-58	<3.89E+00	0.00E+00	3.89E+00
		Fe-59	<7.79E+00	0.00E+00	7.79E+00
		Co-60	<4.19E+00	0.00E+00	4.19E+00
		Zn-65	<6.94E+00	0.00E+00	6.94E+00
		Zr-95	<5.81E+00	0.00E+00	5.81E+00
		Nb-95	<5.76E+00	0.00E+00	5.76E+00
		I-131	<1.16E+01	0.00E+00	1.16E+01
		Cs-134	<4.18E+00	0.00E+00	4.18E+00



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 208 [INDICATOR - S @ 0.45 miles]

Sample ID:	397184	Sample Dates:	11/10/2015 - 12/8/2015	Nuclide	Activity	2 Sigma Error	LLD
				Cs-137	<3.65E+00	0.00E+00	3.65E+00
				BaLa-140	<6.20E+00	0.00E+00	6.20E+00
				Be-7	<3.70E+01	0.00E+00	3.70E+01
				K-40	<3.75E+01	0.00E+00	3.75E+01

Sample Point 211 [INDICATOR - ESE @ 4.06 miles]

Sample ID:	365085	Sample Dates:	12/9/2014 - 1/6/2015	Nuclide	Activity	2 Sigma Error	LLD
				Mn-54	<1.83E+00	0.00E+00	1.83E+00
				Co-58	<2.23E+00	0.00E+00	2.23E+00
				Fe-59	<4.91E+00	0.00E+00	4.91E+00
				Co-60	<1.82E+00	0.00E+00	1.82E+00
				Zn-65	<4.07E+00	0.00E+00	4.07E+00
				Zr-95	<4.29E+00	0.00E+00	4.29E+00
				Nb-95	<2.89E+00	0.00E+00	2.89E+00
				I-131	<9.95E+00	0.00E+00	9.95E+00
				Cs-134	<2.24E+00	0.00E+00	2.24E+00
				Cs-137	<1.91E+00	0.00E+00	1.91E+00
				BaLa-140	<4.81E+00	0.00E+00	4.81E+00
				Be-7	<1.85E+01	0.00E+00	1.85E+01
				K-40	1.93E+02	3.25E+01	3.37E+01

Sample ID:	367564	Sample Dates:	1/6/2015 - 2/3/2015	Nuclide	Activity	2 Sigma Error	LLD
				Mn-54	<4.19E+00	0.00E+00	4.19E+00
				Co-58	<3.52E+00	0.00E+00	3.52E+00
				Fe-59	<7.09E+00	0.00E+00	7.09E+00
				Co-60	<3.22E+00	0.00E+00	3.22E+00
				Zn-65	<8.72E+00	0.00E+00	8.72E+00
				Zr-95	<8.54E+00	0.00E+00	8.54E+00
				Nb-95	<6.24E+00	0.00E+00	6.24E+00
				I-131	<1.16E+01	0.00E+00	1.16E+01
				Cs-134	<4.30E+00	0.00E+00	4.30E+00
				Cs-137	<4.06E+00	0.00E+00	4.06E+00
				BaLa-140	<1.09E+01	0.00E+00	1.09E+01
				Be-7	<3.38E+01	0.00E+00	3.38E+01
				K-40	2.37E+01	2.86E+01	4.61E+01

Sample ID:	371559	Sample Dates:	2/3/2015 - 3/3/2015	Nuclide	Activity	2 Sigma Error	LLD
				Mn-54	<4.34E+00	0.00E+00	4.34E+00
				Co-58	<4.19E+00	0.00E+00	4.19E+00
				Fe-59	<8.22E+00	0.00E+00	8.22E+00
				Co-60	<3.86E+00	0.00E+00	3.86E+00
				Zn-65	<7.74E+00	0.00E+00	7.74E+00
				Zr-95	<7.42E+00	0.00E+00	7.42E+00
				Nb-95	<4.15E+00	0.00E+00	4.15E+00
				I-131	<1.00E+01	0.00E+00	1.00E+01
				Cs-134	<3.19E+00	0.00E+00	3.19E+00
				Cs-137	<4.37E+00	0.00E+00	4.37E+00
				BaLa-140	<1.03E+01	0.00E+00	1.03E+01
				Be-7	<3.61E+01	0.00E+00	3.61E+01
				K-40	<7.16E+01	0.00E+00	7.16E+01

Sample ID:	372364	Sample Dates:	12/9/2014 - 3/3/2015	Nuclide	Activity	2 Sigma Error	LLD
				H3SW	4.71E+02	1.24E+02	1.92E+02

Sample ID:	374570	Sample Dates:	3/3/2015 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
				Mn-54	<3.44E+00	0.00E+00	3.44E+00
				Co-58	<2.90E+00	0.00E+00	2.90E+00
				Fe-59	<7.62E+00	0.00E+00	7.62E+00
				Co-60	<2.39E+00	0.00E+00	2.39E+00
				Zn-65	<6.44E+00	0.00E+00	6.44E+00
				Zr-95	<5.74E+00	0.00E+00	5.74E+00
				Nb-95	<5.23E+00	0.00E+00	5.23E+00
				I-131	<1.20E+01	0.00E+00	1.20E+01
				Cs-134	<4.30E+00	0.00E+00	4.30E+00
				Cs-137	<3.77E+00	0.00E+00	3.77E+00
				BaLa-140	<7.98E+00	0.00E+00	7.98E+00



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 211 [INDICATOR - ESE @ 4.06 miles]

Sample ID: 374570	Sample Dates: 3/3/2015 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
		Be-7	<3.82E+01	0.00E+00	3.82E+01
		K-40	<5.84E+01	0.00E+00	5.84E+01
Sample ID: 377504	Sample Dates: 3/31/2015 - 4/28/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<3.11E+00	0.00E+00	3.11E+00
		Co-58	<3.29E+00	0.00E+00	3.29E+00
		Fe-59	<5.58E+00	0.00E+00	5.58E+00
		Co-60	<3.78E+00	0.00E+00	3.78E+00
		Zn-65	<3.22E+00	0.00E+00	3.22E+00
		Zr-95	<6.09E+00	0.00E+00	6.09E+00
		Nb-95	<4.13E+00	0.00E+00	4.13E+00
		I-131	<1.18E+01	0.00E+00	1.18E+01
		Cs-134	<3.31E+00	0.00E+00	3.31E+00
		Cs-137	<3.61E+00	0.00E+00	3.61E+00
		BaLa-140	<7.52E+00	0.00E+00	7.52E+00
		Be-7	<2.80E+01	0.00E+00	2.80E+01
		K-40	<4.75E+01	0.00E+00	4.75E+01
Sample ID: 379470	Sample Dates: 4/28/2015 - 5/27/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<2.45E+00	0.00E+00	2.45E+00
		Co-58	<2.73E+00	0.00E+00	2.73E+00
		Fe-59	<5.43E+00	0.00E+00	5.43E+00
		Co-60	<2.71E+00	0.00E+00	2.71E+00
		Zn-65	<4.83E+00	0.00E+00	4.83E+00
		Zr-95	<5.35E+00	0.00E+00	5.35E+00
		Nb-95	<3.58E+00	0.00E+00	3.58E+00
		I-131	<1.17E+01	0.00E+00	1.17E+01
		Cs-134	<2.97E+00	0.00E+00	2.97E+00
		Cs-137	<2.10E+00	0.00E+00	2.10E+00
		BaLa-140	<5.45E+00	0.00E+00	5.45E+00
		Be-7	<2.56E+01	0.00E+00	2.56E+01
		K-40	6.00E+01	2.80E+01	3.73E+01
Sample ID: 380203	Sample Dates: 3/3/2015 - 5/27/2015	Nuclide	Activity	2 Sigma Error	LLD
		H3SW	5.07E+02	1.30E+02	1.96E+02
Sample ID: 381262	Sample Dates: 5/27/2015 - 6/23/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<4.58E+00	0.00E+00	4.58E+00
		Co-58	<3.64E+00	0.00E+00	3.64E+00
		Fe-59	<8.61E+00	0.00E+00	8.61E+00
		Co-60	<2.50E+00	0.00E+00	2.50E+00
		Zn-65	<9.89E+00	0.00E+00	9.89E+00
		Zr-95	<6.93E+00	0.00E+00	6.93E+00
		Nb-95	<4.88E+00	0.00E+00	4.88E+00
		I-131	<1.17E+01	0.00E+00	1.17E+01
		Cs-134	<4.89E+00	0.00E+00	4.89E+00
		Cs-137	<3.68E+00	0.00E+00	3.68E+00
		BaLa-140	<1.05E+01	0.00E+00	1.05E+01
		Be-7	<3.37E+01	0.00E+00	3.37E+01
		K-40	<6.36E+01	0.00E+00	6.36E+01
Sample ID: 383530	Sample Dates: 6/23/2015 - 7/21/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<2.88E+00	0.00E+00	2.88E+00
		Co-58	<4.00E+00	0.00E+00	4.00E+00
		Fe-59	<9.53E+00	0.00E+00	9.53E+00
		Co-60	<2.99E+00	0.00E+00	2.99E+00
		Zn-65	<7.76E+00	0.00E+00	7.76E+00
		Zr-95	<7.09E+00	0.00E+00	7.09E+00
		Nb-95	<5.62E+00	0.00E+00	5.62E+00
		I-131	<1.07E+01	0.00E+00	1.07E+01
		Cs-134	<4.22E+00	0.00E+00	4.22E+00
		Cs-137	<3.68E+00	0.00E+00	3.68E+00
		BaLa-140	<9.60E+00	0.00E+00	9.60E+00
		Be-7	<3.76E+01	0.00E+00	3.76E+01
		K-40	<6.61E+01	0.00E+00	6.61E+01



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 211 [INDICATOR - ESE @ 4.06 miles]

Sample ID: 385939	Sample Dates: 7/21/2015 - 8/18/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<3.64E+00	0.00E+00	3.64E+00
		Co-58	<3.23E+00	0.00E+00	3.23E+00
		Fe-59	<1.07E+01	0.00E+00	1.07E+01
		Co-60	<3.92E+00	0.00E+00	3.92E+00
		Zn-65	<8.99E+00	0.00E+00	8.99E+00
		Zr-95	<6.73E+00	0.00E+00	6.73E+00
		Nb-95	<5.27E+00	0.00E+00	5.27E+00
		I-131	<1.18E+01	0.00E+00	1.18E+01
		Cs-134	<4.04E+00	0.00E+00	4.04E+00
		Cs-137	<4.09E+00	0.00E+00	4.09E+00
		BaLa-140	<9.82E+00	0.00E+00	9.82E+00
		Be-7	<3.68E+01	0.00E+00	3.68E+01
		K-40	<8.12E+01	0.00E+00	8.12E+01
Sample ID: 388115	Sample Dates: 5/27/2015 - 8/18/2015	Nuclide	Activity	2 Sigma Error	LLD
		H3SW	4.40E+02	1.27E+02	1.95E+02
Sample ID: 389419	Sample Dates: 8/18/2015 - 9/15/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<2.92E+00	0.00E+00	2.92E+00
		Co-58	<3.48E+00	0.00E+00	3.48E+00
		Fe-59	<5.12E+00	0.00E+00	5.12E+00
		Co-60	<2.84E+00	0.00E+00	2.84E+00
		Zn-65	<5.21E+00	0.00E+00	5.21E+00
		Zr-95	<5.03E+00	0.00E+00	5.03E+00
		Nb-95	<3.78E+00	0.00E+00	3.78E+00
		I-131	<1.09E+01	0.00E+00	1.09E+01
		Cs-134	<3.23E+00	0.00E+00	3.23E+00
		Cs-137	<3.41E+00	0.00E+00	3.41E+00
		BaLa-140	<9.66E+00	0.00E+00	9.66E+00
		Be-7	<3.20E+01	0.00E+00	3.20E+01
		K-40	2.50E+01	2.32E+01	3.53E+01
Sample ID: 392241	Sample Dates: 9/15/2015 - 10/13/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<2.80E+00	0.00E+00	2.80E+00
		Co-58	<2.90E+00	0.00E+00	2.90E+00
		Fe-59	<5.49E+00	0.00E+00	5.49E+00
		Co-60	<2.40E+00	0.00E+00	2.40E+00
		Zn-65	<4.42E+00	0.00E+00	4.42E+00
		Zr-95	<5.75E+00	0.00E+00	5.75E+00
		Nb-95	<3.57E+00	0.00E+00	3.57E+00
		I-131	<1.08E+01	0.00E+00	1.08E+01
		Cs-134	<3.04E+00	0.00E+00	3.04E+00
		Cs-137	<2.52E+00	0.00E+00	2.52E+00
		BaLa-140	<6.26E+00	0.00E+00	6.26E+00
		Be-7	<2.61E+01	0.00E+00	2.61E+01
		K-40	5.18E+01	2.39E+01	2.89E+01
Sample ID: 395314	Sample Dates: 10/13/2015 - 11/10/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<2.82E+00	0.00E+00	2.82E+00
		Co-58	<2.92E+00	0.00E+00	2.92E+00
		Fe-59	<6.93E+00	0.00E+00	6.93E+00
		Co-60	<3.56E+00	0.00E+00	3.56E+00
		Zn-65	<6.53E+00	0.00E+00	6.53E+00
		Zr-95	<5.50E+00	0.00E+00	5.50E+00
		Nb-95	<4.01E+00	0.00E+00	4.01E+00
		I-131	<1.15E+01	0.00E+00	1.15E+01
		Cs-134	<4.18E+00	0.00E+00	4.18E+00
		Cs-137	<3.29E+00	0.00E+00	3.29E+00
		BaLa-140	<1.07E+01	0.00E+00	1.07E+01
		Be-7	<2.99E+01	0.00E+00	2.99E+01
		K-40	<4.54E+01	0.00E+00	4.54E+01
Sample ID: 397090	Sample Dates: 8/18/2015 - 12/8/2015	Nuclide	Activity	2 Sigma Error	LLD
		H3SW	7.10E+02	1.37E+02	2.05E+02
Sample ID: 397185	Sample Dates: 11/10/2015 - 12/8/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<3.37E+00	0.00E+00	3.37E+00



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 211 [INDICATOR - ESE @ 4.06 miles]

Sample ID: 397185	Sample Dates: 11/10/2015 - 12/8/2015	Nuclide	Activity	2 Sigma Error	LLD
		Co-58	<3.35E+00	0.00E+00	3.35E+00
		Fe-59	<7.94E+00	0.00E+00	7.94E+00
		Co-60	<2.93E+00	0.00E+00	2.93E+00
		Zn-65	<6.55E+00	0.00E+00	6.55E+00
		Zr-95	<6.87E+00	0.00E+00	6.87E+00
		Nb-95	<5.42E+00	0.00E+00	5.42E+00
		I-131	<1.20E+01	0.00E+00	1.20E+01
		Cs-134	<3.74E+00	0.00E+00	3.74E+00
		Cs-137	<3.41E+00	0.00E+00	3.41E+00
		BaLa-140	<8.62E+00	0.00E+00	8.62E+00
		Be-7	<3.31E+01	0.00E+00	3.31E+01
		K-40	<5.26E+01	0.00E+00	5.26E+01

Sample Point 215 [CONTROL - NNE @ 4.21 miles]

Sample ID: 365086	Sample Dates: 12/9/2014 - 1/6/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<2.60E+00	0.00E+00	2.60E+00
		Co-58	<3.07E+00	0.00E+00	3.07E+00
		Fe-59	<5.85E+00	0.00E+00	5.85E+00
		Co-60	<2.78E+00	0.00E+00	2.78E+00
		Zn-65	<4.82E+00	0.00E+00	4.82E+00
		Zr-95	<5.56E+00	0.00E+00	5.56E+00
		Nb-95	<3.93E+00	0.00E+00	3.93E+00
		I-131	<1.19E+01	0.00E+00	1.19E+01
		Cs-134	<2.55E+00	0.00E+00	2.55E+00
		Cs-137	<2.59E+00	0.00E+00	2.59E+00
		BaLa-140	<6.99E+00	0.00E+00	6.99E+00
		Be-7	<2.45E+01	0.00E+00	2.45E+01
		K-40	1.98E+02	3.96E+01	3.98E+01

Sample ID: 367565	Sample Dates: 1/6/2015 - 2/3/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<2.76E+00	0.00E+00	2.76E+00
		Co-58	<2.06E+00	0.00E+00	2.06E+00
		Fe-59	<6.33E+00	0.00E+00	6.33E+00
		Co-60	<2.14E+00	0.00E+00	2.14E+00
		Zn-65	<4.79E+00	0.00E+00	4.79E+00
		Zr-95	<4.89E+00	0.00E+00	4.89E+00
		Nb-95	<2.69E+00	0.00E+00	2.69E+00
		I-131	<8.82E+00	0.00E+00	8.82E+00
		Cs-134	<2.75E+00	0.00E+00	2.75E+00
		Cs-137	<2.55E+00	0.00E+00	2.55E+00
		BaLa-140	<4.26E+00	0.00E+00	4.26E+00
		Be-7	<2.28E+01	0.00E+00	2.28E+01
		K-40	3.77E+01	1.96E+01	2.32E+01

Sample ID: 371560	Sample Dates: 2/3/2015 - 3/3/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<3.47E+00	0.00E+00	3.47E+00
		Co-58	<4.44E+00	0.00E+00	4.44E+00
		Fe-59	<8.54E+00	0.00E+00	8.54E+00
		Co-60	<4.38E+00	0.00E+00	4.38E+00
		Zn-65	<8.04E+00	0.00E+00	8.04E+00
		Zr-95	<6.36E+00	0.00E+00	6.36E+00
		Nb-95	<5.15E+00	0.00E+00	5.15E+00
		I-131	<1.20E+01	0.00E+00	1.20E+01
		Cs-134	<4.06E+00	0.00E+00	4.06E+00
		Cs-137	<3.72E+00	0.00E+00	3.72E+00
		BaLa-140	<1.17E+01	0.00E+00	1.17E+01
		Be-7	<4.09E+01	0.00E+00	4.09E+01
		K-40	<5.80E+01	0.00E+00	5.80E+01

Sample ID: 372365	Sample Dates: 12/9/2014 - 3/3/2015	Nuclide	Activity	2 Sigma Error	LLD
		H3SW	4.97E+02	1.22E+02	1.86E+02

Sample ID: 374571	Sample Dates: 3/3/2015 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<2.63E+00	0.00E+00	2.63E+00
		Co-58	<4.03E+00	0.00E+00	4.03E+00
		Fe-59	<6.19E+00	0.00E+00	6.19E+00



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 215 [CONTROL - NNE @ 4.21 miles]

Sample ID: 374571	Sample Dates: 3/3/2015 - 3/31/2015	Nuclide	Activity	2 Sigma Error	LLD
		Co-60	<3.87E+00	0.00E+00	3.87E+00
		Zn-65	<7.10E+00	0.00E+00	7.10E+00
		Zr-95	<9.14E+00	0.00E+00	9.14E+00
		Nb-95	<4.49E+00	0.00E+00	4.49E+00
		I-131	<1.18E+01	0.00E+00	1.18E+01
		Cs-134	<3.86E+00	0.00E+00	3.86E+00
		Cs-137	<3.70E+00	0.00E+00	3.70E+00
		BaLa-140	<9.39E+00	0.00E+00	9.39E+00
		Be-7	<3.82E+01	0.00E+00	3.82E+01
		K-40	<4.39E+01	0.00E+00	4.39E+01
Sample ID: 377505	Sample Dates: 3/31/2015 - 4/28/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<4.42E+00	0.00E+00	4.42E+00
		Co-58	<4.04E+00	0.00E+00	4.04E+00
		Fe-59	<9.00E+00	0.00E+00	9.00E+00
		Co-60	<2.42E+00	0.00E+00	2.42E+00
		Zn-65	<9.56E+00	0.00E+00	9.56E+00
		Zr-95	<8.29E+00	0.00E+00	8.29E+00
		Nb-95	<5.21E+00	0.00E+00	5.21E+00
		I-131	<1.05E+01	0.00E+00	1.05E+01
		Cs-134	<4.51E+00	0.00E+00	4.51E+00
		Cs-137	<3.55E+00	0.00E+00	3.55E+00
Sample ID: 379471	Sample Dates: 4/28/2015 - 5/27/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<1.82E+00	0.00E+00	1.82E+00
		Co-58	<2.56E+00	0.00E+00	2.56E+00
		Fe-59	<4.92E+00	0.00E+00	4.92E+00
		Co-60	<2.81E+00	0.00E+00	2.81E+00
		Zn-65	<5.64E+00	0.00E+00	5.64E+00
		Zr-95	<5.11E+00	0.00E+00	5.11E+00
		Nb-95	<3.35E+00	0.00E+00	3.35E+00
		I-131	<1.18E+01	0.00E+00	1.18E+01
		Cs-134	<2.01E+00	0.00E+00	2.01E+00
		Cs-137	<2.48E+00	0.00E+00	2.48E+00
Sample ID: 380204	Sample Dates: 3/3/2015 - 5/27/2015	Nuclide	Activity	2 Sigma Error	LLD
		H3SW	4.13E+02	1.28E+02	1.98E+02
Sample ID: 381263	Sample Dates: 5/27/2015 - 6/23/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<3.68E+00	0.00E+00	3.68E+00
		Co-58	<4.50E+00	0.00E+00	4.50E+00
		Fe-59	<1.01E+01	0.00E+00	1.01E+01
		Co-60	<3.52E+00	0.00E+00	3.52E+00
		Zn-65	<9.03E+00	0.00E+00	9.03E+00
		Zr-95	<4.44E+00	0.00E+00	4.44E+00
		Nb-95	<4.75E+00	0.00E+00	4.75E+00
		I-131	<9.42E+00	0.00E+00	9.42E+00
		Cs-134	<4.75E+00	0.00E+00	4.75E+00
		Cs-137	<3.59E+00	0.00E+00	3.59E+00
Sample ID: 383531	Sample Dates: 6/23/2015 - 7/21/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<3.88E+00	0.00E+00	3.88E+00
		Co-58	<4.08E+00	0.00E+00	4.08E+00
		Fe-59	<7.78E+00	0.00E+00	7.78E+00
		Co-60	<3.54E+00	0.00E+00	3.54E+00
		Zn-65	<5.61E+00	0.00E+00	5.61E+00
		Zr-95	<7.22E+00	0.00E+00	7.22E+00
		Nb-95	<3.99E+00	0.00E+00	3.99E+00



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 215 [CONTROL - NNE @ 4.21 miles]

Sample ID: 383531	Sample Dates: 6/23/2015 - 7/21/2015	Nuclide	Activity	2 Sigma Error	LLD
		I-131	<1.04E+01	0.00E+00	1.04E+01
		Cs-134	<3.82E+00	0.00E+00	3.82E+00
		Cs-137	<4.28E+00	0.00E+00	4.28E+00
		BaLa-140	<1.10E+01	0.00E+00	1.10E+01
		Be-7	<4.15E+01	0.00E+00	4.15E+01
		K-40	<5.43E+01	0.00E+00	5.43E+01
Sample ID: 385940	Sample Dates: 7/21/2015 - 8/18/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<1.98E+00	0.00E+00	1.98E+00
		Co-58	<2.83E+00	0.00E+00	2.83E+00
		Fe-59	<5.25E+00	0.00E+00	5.25E+00
		Co-60	<2.99E+00	0.00E+00	2.99E+00
		Zn-65	<5.21E+00	0.00E+00	5.21E+00
		Zr-95	<5.56E+00	0.00E+00	5.56E+00
		Nb-95	<4.12E+00	0.00E+00	4.12E+00
		I-131	<1.11E+01	0.00E+00	1.11E+01
		Cs-134	<2.82E+00	0.00E+00	2.82E+00
		Cs-137	<2.97E+00	0.00E+00	2.97E+00
		BaLa-140	<5.65E+00	0.00E+00	5.65E+00
		Be-7	<2.41E+01	0.00E+00	2.41E+01
		K-40	4.38E+01	2.36E+01	2.94E+01
Sample ID: 388116	Sample Dates: 5/27/2015 - 8/18/2015	Nuclide	Activity	2 Sigma Error	LLD
		H3SW	2.47E+02	1.21E+02	1.95E+02
Sample ID: 389420	Sample Dates: 8/18/2015 - 9/15/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<3.51E+00	0.00E+00	3.51E+00
		Co-58	<3.63E+00	0.00E+00	3.63E+00
		Fe-59	<6.75E+00	0.00E+00	6.75E+00
		Co-60	<3.17E+00	0.00E+00	3.17E+00
		Zn-65	<5.84E+00	0.00E+00	5.84E+00
		Zr-95	<6.19E+00	0.00E+00	6.19E+00
		Nb-95	<4.09E+00	0.00E+00	4.09E+00
		I-131	<1.16E+01	0.00E+00	1.16E+01
		Cs-134	<3.48E+00	0.00E+00	3.48E+00
		Cs-137	<3.61E+00	0.00E+00	3.61E+00
		BaLa-140	<7.27E+00	0.00E+00	7.27E+00
		Be-7	<3.09E+01	0.00E+00	3.09E+01
		K-40	6.89E+01	3.20E+01	3.67E+01
Sample ID: 392242	Sample Dates: 9/15/2015 - 10/13/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<3.45E+00	0.00E+00	3.45E+00
		Co-58	<5.11E+00	0.00E+00	5.11E+00
		Fe-59	<6.01E+00	0.00E+00	6.01E+00
		Co-60	<2.42E+00	0.00E+00	2.42E+00
		Zn-65	<6.50E+00	0.00E+00	6.50E+00
		Zr-95	<6.78E+00	0.00E+00	6.78E+00
		Nb-95	<5.30E+00	0.00E+00	5.30E+00
		I-131	<1.18E+01	0.00E+00	1.18E+01
		Cs-134	<3.25E+00	0.00E+00	3.25E+00
		Cs-137	<3.75E+00	0.00E+00	3.75E+00
		BaLa-140	<1.09E+01	0.00E+00	1.09E+01
		Be-7	<3.30E+01	0.00E+00	3.30E+01
		K-40	<5.68E+01	0.00E+00	5.68E+01
Sample ID: 395315	Sample Dates: 10/13/2015 - 11/10/2015	Nuclide	Activity	2 Sigma Error	LLD
		Mn-54	<3.68E+00	0.00E+00	3.68E+00
		Co-58	<2.59E+00	0.00E+00	2.59E+00
		Fe-59	<8.94E+00	0.00E+00	8.94E+00
		Co-60	<2.83E+00	0.00E+00	2.83E+00
		Zn-65	<7.25E+00	0.00E+00	7.25E+00
		Zr-95	<6.93E+00	0.00E+00	6.93E+00
		Nb-95	<3.39E+00	0.00E+00	3.39E+00
		I-131	<1.20E+01	0.00E+00	1.20E+01
		Cs-134	<3.26E+00	0.00E+00	3.26E+00
		Cs-137	<3.69E+00	0.00E+00	3.69E+00
		BaLa-140	<5.15E+00	0.00E+00	5.15E+00



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 215 [CONTROL - NNE @ 4.21 miles]

Sample ID:	395315	Sample Dates:	10/13/2015 - 11/10/2015	Nuclide	Activity	2 Sigma Error	LLD
				Be-7	<3.57E+01	0.00E+00	3.57E+01
				K-40	<5.40E+01	0.00E+00	5.40E+01
Sample ID:	397091	Sample Dates:	8/18/2015 - 12/8/2015	Nuclide	Activity	2 Sigma Error	LLD
				H3SW	4.99E+02	1.32E+02	2.04E+02
Sample ID:	397186	Sample Dates:	11/10/2015 - 12/8/2015	Nuclide	Activity	2 Sigma Error	LLD
				Mn-54	<3.41E+00	0.00E+00	3.41E+00
				Co-58	<3.77E+00	0.00E+00	3.77E+00
				Fe-59	<1.00E+01	0.00E+00	1.00E+01
				Co-60	<2.40E+00	0.00E+00	2.40E+00
				Zn-65	<7.83E+00	0.00E+00	7.83E+00
				Zr-95	<6.67E+00	0.00E+00	6.67E+00
				Nb-95	<5.79E+00	0.00E+00	5.79E+00
				I-131	<1.13E+01	0.00E+00	1.13E+01
				Cs-134	<3.52E+00	0.00E+00	3.52E+00
				Cs-137	<3.91E+00	0.00E+00	3.91E+00
				BaLa-140	<1.04E+01	0.00E+00	1.04E+01
				Be-7	<4.29E+01	0.00E+00	4.29E+01
				K-40	<6.32E+01	0.00E+00	6.32E+01

Media Type: TLD Concentration (Activity): mR/Standard Quarter

Sample Point 200 [INDICATOR - NNE @ 0.63 miles]

TLD RING TLD_INNER

Sample ID:	371235	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	22.82
Sample ID:	379882	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	16.01
Sample ID:	387830	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	16.49
Sample ID:	396805	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	16.39

Sample Point 201 [INDICATOR - NE @ 0.53 miles]

TLD RING TLD_INNER

Sample ID:	371236	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	23.50
Sample ID:	379883	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	16.45
Sample ID:	387831	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	16.35

Sample Point 203 [INDICATOR - ESE @ 0.38 miles]

TLD RING TLD_INNER

Sample ID:	371237	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	24.69
Sample ID:	379884	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	17.01
Sample ID:	387832	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	18.82
Sample ID:	396807	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	20.09

Sample Point 204 [INDICATOR - SSW @ 0.48 miles]

TLD RING TLD_INNER

Sample ID:	371238	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	20.59
Sample ID:	379885	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	16.90



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: TLD Concentration (Activity): mR/Standard Quarter

Sample Point 204 [INDICATOR - SSW @ 0.48 miles]

TLD RING TLD_INNER

Sample ID:	387833	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	16.95
Sample ID:	396808	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	16.75

Sample Point 205 [INDICATOR - SW @ 0.5 miles]

TLD RING TLD_INNER

Sample ID:	371239	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	22.59
Sample ID:	379886	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	18.33
Sample ID:	387834	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	17.41
Sample ID:	396809	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	18.42

Sample Point 206 [INDICATOR - WNW @ 0.67 miles]

TLD RING TLD_INNER

Sample ID:	371240	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	25.54
Sample ID:	379887	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	21.26
Sample ID:	387835	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	20.74
Sample ID:	396810	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	20.38

Sample Point 207 [INDICATOR - NNW @ 0.95 miles]

TLD RING TLD_INNER

Sample ID:	371241	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	23.00
Sample ID:	379888	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	21.49
Sample ID:	387836	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	19.18
Sample ID:	396811	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	19.40

Sample Point 212 [INDICATOR - E @ 3.32 miles]

TLD RING TLD_SPEC

Sample ID:	371242	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	23.32
Sample ID:	379889	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	15.43
Sample ID:	387837	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	15.32
Sample ID:	396812	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	15.55

Sample Point 217 [CONTROL - SSE @ 10.3 miles]

TLD RING TLD_CTRL

Sample ID:	371243	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	22.44
Sample ID:	379890	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	10.26
Sample ID:	387838	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	11.65

CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: TLD Concentration (Activity): mR/Standard Quarter

Sample Point 222 [INDICATOR - N @ 0.71 miles]

TLD RING TLD_INNER

Sample ID:	371244	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	19.43
Sample ID:	379891	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	16.07
Sample ID:	387839	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	17.13
Sample ID:	396814	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	16.74

Sample Point 223 [INDICATOR - E @ 0.57 miles]

TLD RING TLD_INNER

Sample ID:	371245	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	22.01
Sample ID:	379892	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	18.93
Sample ID:	387840	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	19.38
Sample ID:	396815	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	20.23

Sample Point 225 [INDICATOR - SE @ 0.68 miles]

TLD RING TLD_INNER

Sample ID:	371246	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	21.40
Sample ID:	379893	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	17.97
Sample ID:	387841	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	18.36
Sample ID:	396816	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	19.12

Sample Point 226 [INDICATOR - S @ 0.48 miles]

TLD RING TLD_INNER

Sample ID:	371247	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	19.59
Sample ID:	379894	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	18.34
Sample ID:	387842	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	16.74
Sample ID:	396817	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	15.92

Sample Point 227 [INDICATOR - WSW @ 0.52 miles]

TLD RING TLD_INNER

Sample ID:	371248	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	21.88
Sample ID:	379895	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	18.31
Sample ID:	387843	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	17.24
Sample ID:	396818	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	16.07

Sample Point 228 [INDICATOR - W @ 0.61 miles]

TLD RING TLD_INNER

Sample ID:	371249	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	21.03

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Media Type: TLD Concentration (Activity): mR/Standard Quarter

Sample Point 228 [INDICATOR - W @ 0.61 miles]

TLD RING TLD_INNER

Sample ID:	379896	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	17.04
Sample ID:	387844	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	16.62
Sample ID:	396819	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	17.61

Sample Point 229 [INDICATOR - NW @ 0.84 miles]

TLD RING TLD_INNER

Sample ID:	371250	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	27.69
Sample ID:	379897	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	24.04
Sample ID:	387845	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	21.32
Sample ID:	396820	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	24.02

Sample Point 230 [INDICATOR - N @ 4.37 miles]

TLD RING TLD_OUTER

Sample ID:	371251	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	18.14
Sample ID:	379898	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	12.33
Sample ID:	387846	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	11.75
Sample ID:	396821	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	13.13

Sample Point 231 [INDICATOR - NNE @ 4.21 miles]

TLD RING TLD_OUTER

Sample ID:	371252	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	25.11
Sample ID:	379899	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	18.94
Sample ID:	387847	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	17.07
Sample ID:	396822	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	17.57

Sample Point 232 [INDICATOR - NE @ 4.18 miles]

TLD RING TLD_OUTER

Sample ID:	371253	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	26.86
Sample ID:	379900	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	21.70
Sample ID:	387848	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	22.65
Sample ID:	396823	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	24.23

Sample Point 233 [INDICATOR - ENE @ 3.95 miles]

TLD RING TLD_OUTER

Sample ID:	371254	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	19.76
Sample ID:	379901	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	15.02



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Media Type: TLD Concentration (Activity): mR/Standard Quarter

Sample Point 233 [INDICATOR - ENE @ 3.95 miles]

TLD RING TLD_OUTER

Sample ID:	387849	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	16.17
Sample ID:	396824	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	15.52

Sample Point 234 [INDICATOR - E @ 4.5 miles]

TLD RING TLD_OUTER

Sample ID:	371255	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	20.67
Sample ID:	379902	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	17.61
Sample ID:	387850	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	18.11
Sample ID:	396825	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	18.39

Sample Point 235 [INDICATOR - ESE @ 4.07 miles]

TLD RING TLD_OUTER

Sample ID:	371256	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	20.57
Sample ID:	379903	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	15.58
Sample ID:	387851	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	15.89
Sample ID:	396826	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	18.29

Sample Point 236 [INDICATOR - SE @ 4.25 miles]

TLD RING TLD_OUTER

Sample ID:	371257	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	25.26
Sample ID:	379904	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	20.49
Sample ID:	387852	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	21.26
Sample ID:	396827	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	23.91

Sample Point 237 [INDICATOR - SSE @ 4.75 miles]

TLD RING TLD_OUTER

Sample ID:	371258	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	30.14
Sample ID:	379905	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	23.22
Sample ID:	387853	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	21.06
Sample ID:	396828	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	23.92

Sample Point 238 [INDICATOR - S @ 4.02 miles]

TLD RING TLD_OUTER

Sample ID:	371259	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	19.77
Sample ID:	379906	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	18.47
Sample ID:	387854	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	16.77



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Media Type: TLD Concentration (Activity): mR/Standard Quarter

Sample Point 238 [INDICATOR - S @ 4.02 miles]

TLD RING TLD_OUTER

Sample ID:	396829	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	17.79

Sample Point 239 [INDICATOR - SSW @ 4.49 miles]

TLD RING TLD_OUTER

Sample ID:	371260	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	28.02
Sample ID:	379907	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	22.66
Sample ID:	387855	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	19.45
Sample ID:	396830	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	22.41

Sample Point 240 [INDICATOR - SW @ 4.07 miles]

TLD RING TLD_OUTER

Sample ID:	371261	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	15.56
Sample ID:	379908	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	10.71
Sample ID:	387856	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	11.00
Sample ID:	396831	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	13.81

Sample Point 241 [INDICATOR - WSW @ 4.58 miles]

TLD RING TLD_OUTER

Sample ID:	371262	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	15.76
Sample ID:	379909	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	12.81
Sample ID:	387857	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	12.36
Sample ID:	396832	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	13.64

Sample Point 242 [INDICATOR - W @ 4.56 miles]

TLD RING TLD_OUTER

Sample ID:	371263	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	21.77
Sample ID:	379910	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	15.75
Sample ID:	387858	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	16.39
Sample ID:	396833	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	17.64

Sample Point 243 [INDICATOR - WNW @ 4.39 miles]

TLD RING TLD_OUTER

Sample ID:	371264	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	23.14
Sample ID:	379911	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	15.57
Sample ID:	387859	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	17.05
Sample ID:	396834	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	17.55



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Media Type: TLD Concentration (Activity): mR/Standard Quarter

Sample Point 244 [INDICATOR - NW @ 4.02 miles]

TLD RING TLD_OUTER

Sample ID:	371265	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	25.57
Sample ID:	379912	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	20.94
Sample ID:	387860	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	20.09
Sample ID:	396835	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	22.00

Sample Point 245 [INDICATOR - NNW @ 4.01 miles]

TLD RING TLD_OUTER

Sample ID:	379913	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	17.67
Sample ID:	387861	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	14.12
Sample ID:	396836	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	17.56

Sample Point 246 [INDICATOR - ENE @ 7.87 miles]

TLD RING TLD_SPEC

Sample ID:	371267	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	22.05
Sample ID:	379914	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	12.91
Sample ID:	387862	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	14.13
Sample ID:	396837	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	16.86

Sample Point 247 [CONTROL - ESE @ 7.33 miles]

TLD RING TLD_CTRL

Sample ID:	371268	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	16.98
Sample ID:	379915	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	13.31
Sample ID:	387863	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	12.61
Sample ID:	396838	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	13.70

Sample Point 248 [INDICATOR - S @ 6.54 miles]

TLD RING TLD_SPEC

Sample ID:	371269	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	20.68
Sample ID:	379916	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	13.66
Sample ID:	387864	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	15.24
Sample ID:	396839	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	15.66

Sample Point 249 [INDICATOR - S @ 7.17 miles]

TLD RING TLD_SPEC

Sample ID:	371270	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	22.88
Sample ID:	379917	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	16.41

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Media Type: TLD Concentration (Activity): mR/Standard Quarter

Sample Point 249 [INDICATOR - S @ 7.17 miles]

TLD RING TLD_SPEC

Sample ID:	396840	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	16.72

Sample Point 250 [INDICATOR - WSW @ 10.4 miles]

TLD RING TLD_SPEC

Sample ID:	371271	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	24.21

Sample ID:	379918	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	18.72

Sample ID:	387866	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	15.68

Sample ID:	396841	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	18.83

Sample Point 251 [CONTROL - WNW @ 9.72 miles]

TLD RING TLD_CTRL

Sample ID:	371272	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	22.58

Sample ID:	379919	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	16.60

Sample ID:	387867	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	15.44

Sample ID:	396842	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	18.01

Sample Point 255 [INDICATOR - ENE @ 0.61 miles]

TLD RING TLD_INNER

Sample ID:	371273	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	27.61

Sample ID:	379920	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	19.95

Sample ID:	387868	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	20.48

Sample ID:	396843	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	21.98

Sample Point 256 [INDICATOR - SSE @ 0.58 miles]

TLD RING TLD_INNER

Sample ID:	371274	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	23.02

Sample ID:	379921	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	19.42

Sample ID:	387869	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	22.17

Sample ID:	396844	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	22.06

Sample Point 258 [INDICATOR TLD / CONTROL - W @ 9.84 miles]

TLD RING TLD_SPEC

Sample ID:	371275	Sample Dates:	12/18/2014 - 3/19/2015	Nuclide	Activity
				mR/Std Qtr	27.31

Sample ID:	379922	Sample Dates:	3/19/2015 - 6/18/2015	Nuclide	Activity
				mR/Std Qtr	19.25

Sample ID:	387870	Sample Dates:	6/18/2015 - 9/17/2015	Nuclide	Activity
				mR/Std Qtr	19.99

Sample ID:	396845	Sample Dates:	9/17/2015 - 12/17/2015	Nuclide	Activity
				mR/Std Qtr	22.45

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Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 200 [INDICATOR - NNE @ 0.63 miles]

Sample ID: 365078	Sample Dates: 1/6/2015 - 1/6/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<3.39E+01	0.00E+00	3.39E+01
			Co-58	<2.38E+01	0.00E+00	2.38E+01
			Fe-59	<6.04E+01	0.00E+00	6.04E+01
			Co-60	<3.48E+01	0.00E+00	3.48E+01
			Zn-65	<8.84E+01	0.00E+00	8.84E+01
			Zr-95	<5.86E+01	0.00E+00	5.86E+01
			Nb-95	<3.00E+01	0.00E+00	3.00E+01
			I-131	<2.92E+01	0.00E+00	2.92E+01
			Cs-134	<3.70E+01	0.00E+00	3.70E+01
			Cs-137	<3.20E+01	0.00E+00	3.20E+01
			BaLa-140	<4.05E+01	0.00E+00	4.05E+01
			Be-7	5.23E+02	3.09E+02	4.71E+02
			K-40	4.45E+03	7.65E+02	3.76E+02
Sample ID: 367557	Sample Dates: 2/3/2015 - 2/3/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<3.44E+01	0.00E+00	3.44E+01
			Co-58	<2.82E+01	0.00E+00	2.82E+01
			Fe-59	<7.37E+01	0.00E+00	7.37E+01
			Co-60	<3.21E+01	0.00E+00	3.21E+01
			Zn-65	<5.65E+01	0.00E+00	5.65E+01
			Zr-95	<4.22E+01	0.00E+00	4.22E+01
			Nb-95	<3.67E+01	0.00E+00	3.67E+01
			I-131	<3.86E+01	0.00E+00	3.86E+01
			Cs-134	<3.53E+01	0.00E+00	3.53E+01
			Cs-137	<3.39E+01	0.00E+00	3.39E+01
			BaLa-140	<4.99E+01	0.00E+00	4.99E+01
			Be-7	5.48E+02	2.48E+02	3.43E+02
			K-40	4.29E+03	7.40E+02	3.39E+02
Sample ID: 371552	Sample Dates: 3/3/2015 - 3/3/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<1.89E+01	0.00E+00	1.89E+01
			Co-58	<1.86E+01	0.00E+00	1.86E+01
			Fe-59	<3.44E+01	0.00E+00	3.44E+01
			Co-60	<1.47E+01	0.00E+00	1.47E+01
			Zn-65	<3.61E+01	0.00E+00	3.61E+01
			Zr-95	<3.48E+01	0.00E+00	3.48E+01
			Nb-95	<1.86E+01	0.00E+00	1.86E+01
			I-131	<1.43E+01	0.00E+00	1.43E+01
			Cs-134	<2.12E+01	0.00E+00	2.12E+01
			Cs-137	<1.48E+01	0.00E+00	1.48E+01
			BaLa-140	<5.40E+00	0.00E+00	5.40E+00
			Be-7	7.24E+02	1.87E+02	1.96E+02
			K-40	2.65E+03	4.79E+02	2.38E+02
Sample ID: 374946	Sample Dates: 4/7/2015 - 4/7/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<1.21E+01	0.00E+00	1.21E+01
			Co-58	<1.50E+01	0.00E+00	1.50E+01
			Fe-59	<2.18E+01	0.00E+00	2.18E+01
			Co-60	<1.96E+01	0.00E+00	1.96E+01
			Zn-65	<3.41E+01	0.00E+00	3.41E+01
			Zr-95	<2.86E+01	0.00E+00	2.86E+01
			Nb-95	<1.44E+01	0.00E+00	1.44E+01
			I-131	<1.09E+01	0.00E+00	1.09E+01
			Cs-134	<2.17E+01	0.00E+00	2.17E+01
			Cs-137	<1.75E+01	0.00E+00	1.75E+01
			BaLa-140	<1.81E+01	0.00E+00	1.81E+01
			Be-7	4.06E+02	1.30E+02	1.57E+02
			K-40	4.03E+03	5.73E+02	3.11E+02
Sample ID: 378067	Sample Dates: 5/5/2015 - 5/5/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<1.36E+01	0.00E+00	1.36E+01
			Co-58	<1.35E+01	0.00E+00	1.35E+01
			Fe-59	<3.19E+01	0.00E+00	3.19E+01
			Co-60	<1.37E+01	0.00E+00	1.37E+01
			Zn-65	<3.31E+01	0.00E+00	3.31E+01
			Zr-95	<2.65E+01	0.00E+00	2.65E+01
			Nb-95	<1.40E+01	0.00E+00	1.40E+01



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 200 [INDICATOR - NNE @ 0.63 miles]

Sample ID: 378067	Sample Dates: 5/5/2015 - 5/5/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			I-131	<1.25E+01	0.00E+00	1.25E+01
			Cs-134	<1.72E+01	0.00E+00	1.72E+01
			Cs-137	<1.68E+01	0.00E+00	1.68E+01
			BaLa-140	<1.29E+01	0.00E+00	1.29E+01
			Be-7	4.76E+02	1.40E+02	1.71E+02
			K-40	3.83E+03	5.20E+02	1.56E+02
Sample ID: 380193	Sample Dates: 6/2/2015 - 6/2/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<1.28E+01	0.00E+00	1.28E+01
			Co-58	<1.43E+01	0.00E+00	1.43E+01
			Fe-59	<3.07E+01	0.00E+00	3.07E+01
			Co-60	<9.81E+00	0.00E+00	9.81E+00
			Zn-65	<3.26E+01	0.00E+00	3.26E+01
			Zr-95	<3.13E+01	0.00E+00	3.13E+01
			Nb-95	<1.68E+01	0.00E+00	1.68E+01
			I-131	<1.36E+01	0.00E+00	1.36E+01
			Cs-134	<1.34E+01	0.00E+00	1.34E+01
			Cs-137	<1.66E+01	0.00E+00	1.66E+01
			BaLa-140	<1.81E+01	0.00E+00	1.81E+01
			Be-7	3.68E+02	1.28E+02	1.52E+02
			K-40	2.99E+03	4.92E+02	2.74E+02
Sample ID: 382173	Sample Dates: 7/7/2015 - 7/7/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<1.84E+01	0.00E+00	1.84E+01
			Co-58	<1.42E+01	0.00E+00	1.42E+01
			Fe-59	<2.78E+01	0.00E+00	2.78E+01
			Co-60	<1.44E+01	0.00E+00	1.44E+01
			Zn-65	<2.95E+01	0.00E+00	2.95E+01
			Zr-95	<1.84E+01	0.00E+00	1.84E+01
			Nb-95	<1.42E+01	0.00E+00	1.42E+01
			I-131	<1.46E+01	0.00E+00	1.46E+01
			Cs-134	<2.17E+01	0.00E+00	2.17E+01
			Cs-137	<1.75E+01	0.00E+00	1.75E+01
			BaLa-140	<1.12E+01	0.00E+00	1.12E+01
			Be-7	7.72E+02	1.83E+02	2.03E+02
			K-40	3.58E+03	5.27E+02	2.57E+02
Sample ID: 384651	Sample Dates: 8/4/2015 - 8/4/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<1.69E+01	0.00E+00	1.69E+01
			Co-58	<1.67E+01	0.00E+00	1.67E+01
			Fe-59	<3.62E+01	0.00E+00	3.62E+01
			Co-60	<1.64E+01	0.00E+00	1.64E+01
			Zn-65	<4.56E+01	0.00E+00	4.56E+01
			Zr-95	<2.80E+01	0.00E+00	2.80E+01
			Nb-95	<1.50E+01	0.00E+00	1.50E+01
			I-131	<2.14E+01	0.00E+00	2.14E+01
			Cs-134	<2.17E+01	0.00E+00	2.17E+01
			Cs-137	<1.57E+01	0.00E+00	1.57E+01
			BaLa-140	<2.49E+01	0.00E+00	2.49E+01
			Be-7	7.63E+02	1.89E+02	2.09E+02
			K-40	3.38E+03	5.07E+02	2.17E+02
Sample ID: 388284	Sample Dates: 9/1/2015 - 9/1/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<1.59E+01	0.00E+00	1.59E+01
			Co-58	<2.18E+01	0.00E+00	2.18E+01
			Fe-59	<3.58E+01	0.00E+00	3.58E+01
			Co-60	<2.75E+01	0.00E+00	2.75E+01
			Zn-65	<4.77E+01	0.00E+00	4.77E+01
			Zr-95	<3.07E+01	0.00E+00	3.07E+01
			Nb-95	<1.70E+01	0.00E+00	1.70E+01
			I-131	<1.96E+01	0.00E+00	1.96E+01
			Cs-134	<2.98E+01	0.00E+00	2.98E+01
			Cs-137	<2.07E+01	0.00E+00	2.07E+01
			BaLa-140	<2.50E+01	0.00E+00	2.50E+01
			Be-7	9.15E+02	2.10E+02	1.99E+02
			K-40	4.33E+03	6.64E+02	3.33E+02



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 200 [INDICATOR - NNE @ 0.63 miles]

Sample ID:	391027	Sample Dates:	10/6/2015 - 10/6/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<1.91E+01	0.00E+00	1.91E+01
					Co-58	<1.65E+01	0.00E+00	1.65E+01
					Fe-59	<3.12E+01	0.00E+00	3.12E+01
					Co-60	<2.57E+01	0.00E+00	2.57E+01
					Zn-65	<4.02E+01	0.00E+00	4.02E+01
					Zr-95	<2.55E+01	0.00E+00	2.55E+01
					Nb-95	<2.20E+01	0.00E+00	2.20E+01
					I-131	<1.72E+01	0.00E+00	1.72E+01
					Cs-134	<2.84E+01	0.00E+00	2.84E+01
					Cs-137	<1.78E+01	0.00E+00	1.78E+01
					BaLa-140	<2.36E+01	0.00E+00	2.36E+01
					Be-7	1.44E+03	2.56E+02	1.90E+02
					K-40	2.44E+03	4.74E+02	3.39E+02

Sample ID:	394428	Sample Dates:	11/3/2015 - 11/3/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<1.63E+01	0.00E+00	1.63E+01
					Co-58	<1.79E+01	0.00E+00	1.79E+01
					Fe-59	<3.68E+01	0.00E+00	3.68E+01
					Co-60	<2.25E+01	0.00E+00	2.25E+01
					Zn-65	<4.82E+01	0.00E+00	4.82E+01
					Zr-95	<3.75E+01	0.00E+00	3.75E+01
					Nb-95	<1.88E+01	0.00E+00	1.88E+01
					I-131	<1.28E+01	0.00E+00	1.28E+01
					Cs-134	<3.00E+01	0.00E+00	3.00E+01
					Cs-137	<1.76E+01	0.00E+00	1.76E+01
					BaLa-140	<2.66E+01	0.00E+00	2.66E+01
					Be-7	9.27E+02	2.25E+02	2.43E+02
					K-40	3.37E+03	6.09E+02	5.03E+02

Sample ID:	396492	Sample Dates:	12/1/2015 - 12/1/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<1.87E+01	0.00E+00	1.87E+01
					Co-58	<1.68E+01	0.00E+00	1.68E+01
					Fe-59	<3.17E+01	0.00E+00	3.17E+01
					Co-60	<2.73E+01	0.00E+00	2.73E+01
					Zn-65	<5.13E+01	0.00E+00	5.13E+01
					Zr-95	<3.69E+01	0.00E+00	3.69E+01
					Nb-95	<1.98E+01	0.00E+00	1.98E+01
					I-131	<1.57E+01	0.00E+00	1.57E+01
					Cs-134	<2.95E+01	0.00E+00	2.95E+01
					Cs-137	<2.33E+01	0.00E+00	2.33E+01
					BaLa-140	<1.84E+01	0.00E+00	1.84E+01
					Be-7	9.04E+02	1.56E+02	1.73E+02
					K-40	3.99E+03	6.16E+02	2.86E+02

Sample Point 201 [INDICATOR - NE @ 0.53 miles]

Sample ID:	365079	Sample Dates:	1/6/2015 - 1/6/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<2.70E+01	0.00E+00	2.70E+01
					Co-58	<2.22E+01	0.00E+00	2.22E+01
					Fe-59	<4.84E+01	0.00E+00	4.84E+01
					Co-60	<3.16E+01	0.00E+00	3.16E+01
					Zn-65	<5.99E+01	0.00E+00	5.99E+01
					Zr-95	<4.09E+01	0.00E+00	4.09E+01
					Nb-95	<2.54E+01	0.00E+00	2.54E+01
					I-131	<2.67E+01	0.00E+00	2.67E+01
					Cs-134	<2.70E+01	0.00E+00	2.70E+01
					Cs-137	<2.77E+01	0.00E+00	2.77E+01
					BaLa-140	<2.79E+01	0.00E+00	2.79E+01
					Be-7	1.43E+03	2.93E+02	3.30E+02
					K-40	4.14E+03	6.21E+02	3.67E+02

Sample ID:	367558	Sample Dates:	2/3/2015 - 2/3/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<1.31E+01	0.00E+00	1.31E+01
					Co-58	<1.24E+01	0.00E+00	1.24E+01
					Fe-59	<3.14E+01	0.00E+00	3.14E+01
					Co-60	<1.46E+01	0.00E+00	1.46E+01
					Zn-65	<2.78E+01	0.00E+00	2.78E+01

CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 201 [INDICATOR - NE @ 0.53 miles]

Sample ID: 367558	Sample Dates: 2/3/2015 - 2/3/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Zr-95	<2.66E+01	0.00E+00	2.66E+01
			Nb-95	<1.42E+01	0.00E+00	1.42E+01
			I-131	<2.02E+01	0.00E+00	2.02E+01
			Cs-134	<1.80E+01	0.00E+00	1.80E+01
			Cs-137	<1.65E+01	0.00E+00	1.65E+01
			BaLa-140	<2.22E+01	0.00E+00	2.22E+01
			Be-7	5.52E+02	1.30E+02	1.39E+02
			K-40	3.15E+03	4.38E+02	2.65E+02
Sample ID: 371553	Sample Dates: 3/3/2015 - 3/3/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<2.08E+01	0.00E+00	2.08E+01
			Co-58	<1.70E+01	0.00E+00	1.70E+01
			Fe-59	<4.14E+01	0.00E+00	4.14E+01
			Co-60	<1.77E+01	0.00E+00	1.77E+01
			Zn-65	<5.77E+01	0.00E+00	5.77E+01
			Zr-95	<3.73E+01	0.00E+00	3.73E+01
			Nb-95	<2.34E+01	0.00E+00	2.34E+01
			I-131	<2.32E+01	0.00E+00	2.32E+01
			Cs-134	<2.33E+01	0.00E+00	2.33E+01
			Cs-137	<3.05E+01	0.00E+00	3.05E+01
			BaLa-140	<2.23E+01	0.00E+00	2.23E+01
			Be-7	1.35E+03	2.93E+02	2.99E+02
			K-40	2.00E+03	4.49E+02	2.90E+02
Sample ID: 374947	Sample Dates: 4/7/2015 - 4/7/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<7.63E+00	0.00E+00	7.63E+00
			Co-58	<9.98E+00	0.00E+00	9.98E+00
			Fe-59	<2.38E+01	0.00E+00	2.38E+01
			Co-60	<1.54E+01	0.00E+00	1.54E+01
			Zn-65	<2.80E+01	0.00E+00	2.80E+01
			Zr-95	<1.73E+01	0.00E+00	1.73E+01
			Nb-95	<1.18E+01	0.00E+00	1.18E+01
			I-131	<9.16E+00	0.00E+00	9.16E+00
			Cs-134	<1.39E+01	0.00E+00	1.39E+01
			Cs-137	<6.64E+00	0.00E+00	6.64E+00
			BaLa-140	<1.27E+01	0.00E+00	1.27E+01
			Be-7	2.16E+02	9.62E+01	1.33E+02
			K-40	3.23E+03	4.39E+02	1.50E+02
Sample ID: 378068	Sample Dates: 5/5/2015 - 5/5/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<1.04E+01	0.00E+00	1.04E+01
			Co-58	<1.21E+01	0.00E+00	1.21E+01
			Fe-59	<2.58E+01	0.00E+00	2.58E+01
			Co-60	<9.55E+00	0.00E+00	9.55E+00
			Zn-65	<2.41E+01	0.00E+00	2.41E+01
			Zr-95	<2.20E+01	0.00E+00	2.20E+01
			Nb-95	<1.08E+01	0.00E+00	1.08E+01
			I-131	<1.42E+01	0.00E+00	1.42E+01
			Cs-134	<1.40E+01	0.00E+00	1.40E+01
			Cs-137	<1.55E+01	0.00E+00	1.55E+01
			BaLa-140	<2.09E+01	0.00E+00	2.09E+01
			Be-7	3.89E+02	1.16E+02	1.48E+02
			K-40	2.99E+03	4.02E+02	2.07E+02
Sample ID: 380194	Sample Dates: 6/2/2015 - 6/2/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<1.82E+01	0.00E+00	1.82E+01
			Co-58	<1.49E+01	0.00E+00	1.49E+01
			Fe-59	<3.17E+01	0.00E+00	3.17E+01
			Co-60	<1.91E+01	0.00E+00	1.91E+01
			Zn-65	<4.23E+01	0.00E+00	4.23E+01
			Zr-95	<2.58E+01	0.00E+00	2.58E+01
			Nb-95	<1.51E+01	0.00E+00	1.51E+01
			I-131	<1.33E+01	0.00E+00	1.33E+01
			Cs-134	<2.34E+01	0.00E+00	2.34E+01
			Cs-137	<1.70E+01	0.00E+00	1.70E+01
			BaLa-140	<2.41E+01	0.00E+00	2.41E+01
			Be-7	2.20E+02	1.27E+02	1.84E+02



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 201 [INDICATOR - NE @ 0.53 miles]

Sample ID:	380194	Sample Dates:	6/2/2015 - 6/2/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
					K-40	2.05E+03	4.09E+02	2.71E+02
Sample ID:	382174	Sample Dates:	7/7/2015 - 7/7/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<1.25E+01	0.00E+00	1.25E+01
					Co-58	<1.71E+01	0.00E+00	1.71E+01
					Fe-59	<2.16E+01	0.00E+00	2.16E+01
					Co-60	<1.21E+01	0.00E+00	1.21E+01
					Zn-65	<2.96E+01	0.00E+00	2.96E+01
					Zr-95	<2.86E+01	0.00E+00	2.86E+01
					Nb-95	<1.41E+01	0.00E+00	1.41E+01
					I-131	<1.31E+01	0.00E+00	1.31E+01
					Cs-134	<2.01E+01	0.00E+00	2.01E+01
					Cs-137	<2.16E+01	0.00E+00	2.16E+01
					BaLa-140	<1.21E+01	0.00E+00	1.21E+01
					Be-7	8.78E+02	1.84E+02	1.67E+02
					K-40	1.91E+03	3.66E+02	1.95E+02
Sample ID:	384652	Sample Dates:	8/4/2015 - 8/4/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<1.40E+01	0.00E+00	1.40E+01
					Co-58	<1.16E+01	0.00E+00	1.16E+01
					Fe-59	<2.92E+01	0.00E+00	2.92E+01
					Co-60	<1.03E+01	0.00E+00	1.03E+01
					Zn-65	<2.85E+01	0.00E+00	2.85E+01
					Zr-95	<2.40E+01	0.00E+00	2.40E+01
					Nb-95	<1.22E+01	0.00E+00	1.22E+01
					I-131	<1.95E+01	0.00E+00	1.95E+01
					Cs-134	<1.15E+01	0.00E+00	1.15E+01
					Cs-137	4.83E+01	1.44E+01	1.59E+01
					BaLa-140	<2.40E+01	0.00E+00	2.40E+01
					Be-7	1.54E+03	2.21E+02	1.46E+02
					K-40	2.12E+03	3.37E+02	1.91E+02
Sample ID:	388285	Sample Dates:	9/1/2015 - 9/1/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<2.08E+01	0.00E+00	2.08E+01
					Co-58	<1.74E+01	0.00E+00	1.74E+01
					Fe-59	<3.96E+01	0.00E+00	3.96E+01
					Co-60	<2.74E+01	0.00E+00	2.74E+01
					Zn-65	<5.02E+01	0.00E+00	5.02E+01
					Zr-95	<3.55E+01	0.00E+00	3.55E+01
					Nb-95	<2.06E+01	0.00E+00	2.06E+01
					I-131	<1.82E+01	0.00E+00	1.82E+01
					Cs-134	<2.63E+01	0.00E+00	2.63E+01
					Cs-137	<3.30E+01	0.00E+00	3.30E+01
					BaLa-140	<2.15E+01	0.00E+00	2.15E+01
					Be-7	7.39E+02	2.49E+02	3.28E+02
					K-40	2.87E+03	5.41E+02	3.16E+02
Sample ID:	391028	Sample Dates:	10/6/2015 - 10/6/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<2.78E+01	0.00E+00	2.78E+01
					Co-58	<2.24E+01	0.00E+00	2.24E+01
					Fe-59	<4.54E+01	0.00E+00	4.54E+01
					Co-60	<2.25E+01	0.00E+00	2.25E+01
					Zn-65	<4.75E+01	0.00E+00	4.75E+01
					Zr-95	<3.67E+01	0.00E+00	3.67E+01
					Nb-95	<2.27E+01	0.00E+00	2.27E+01
					I-131	<2.30E+01	0.00E+00	2.30E+01
					Cs-134	<3.50E+01	0.00E+00	3.50E+01
					Cs-137	<3.39E+01	0.00E+00	3.39E+01
					BaLa-140	<2.49E+01	0.00E+00	2.49E+01
					Be-7	3.12E+03	4.69E+02	3.07E+02
					K-40	2.01E+03	5.08E+02	4.67E+02
Sample ID:	394429	Sample Dates:	11/3/2015 - 11/3/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<1.71E+01	0.00E+00	1.71E+01
					Co-58	<1.22E+01	0.00E+00	1.22E+01
					Fe-59	<3.85E+01	0.00E+00	3.85E+01
					Co-60	<1.65E+01	0.00E+00	1.65E+01



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 201 [INDICATOR - NE @ 0.53 miles]

Sample ID:	394429	Sample Dates:	11/3/2015 - 11/3/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
					Zn-65	<3.79E+01	0.00E+00	3.79E+01
					Zr-95	<2.80E+01	0.00E+00	2.80E+01
					Nb-95	<1.42E+01	0.00E+00	1.42E+01
					I-131	<1.71E+01	0.00E+00	1.71E+01
					Cs-134	<2.12E+01	0.00E+00	2.12E+01
					Cs-137	3.74E+01	1.58E+01	1.88E+01
					BaLa-140	<2.10E+01	0.00E+00	2.10E+01
					Be-7	2.32E+03	3.27E+02	1.98E+02
					K-40	3.26E+03	5.10E+02	1.89E+02

Sample ID:	396493	Sample Dates:	12/1/2015 - 12/1/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<2.40E+01	0.00E+00	2.40E+01
					Co-58	<1.83E+01	0.00E+00	1.83E+01
					Fe-59	<4.39E+01	0.00E+00	4.39E+01
					Co-60	<2.35E+01	0.00E+00	2.35E+01
					Zn-65	<4.95E+01	0.00E+00	4.95E+01
					Zr-95	<3.68E+01	0.00E+00	3.68E+01
					Nb-95	<2.43E+01	0.00E+00	2.43E+01
					I-131	<1.85E+01	0.00E+00	1.85E+01
					Cs-134	<2.79E+01	0.00E+00	2.79E+01
					Cs-137	<2.75E+01	0.00E+00	2.75E+01
					BaLa-140	<2.44E+01	0.00E+00	2.44E+01
					Be-7	2.15E+03	3.48E+02	2.55E+02
					K-40	3.53E+03	6.01E+02	3.25E+02

Sample Point 222 [INDICATOR - N @ 0.71 miles]

Sample ID:	365080	Sample Dates:	1/6/2015 - 1/6/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<3.85E+01	0.00E+00	3.85E+01
					Co-58	<3.35E+01	0.00E+00	3.35E+01
					Fe-59	<8.75E+01	0.00E+00	8.75E+01
					Co-60	<5.39E+01	0.00E+00	5.39E+01
					Zn-65	<8.55E+01	0.00E+00	8.55E+01
					Zr-95	<6.64E+01	0.00E+00	6.64E+01
					Nb-95	<3.41E+01	0.00E+00	3.41E+01
					I-131	<3.77E+01	0.00E+00	3.77E+01
					Cs-134	<3.36E+01	0.00E+00	3.36E+01
					Cs-137	<4.01E+01	0.00E+00	4.01E+01
					BaLa-140	<4.92E+01	0.00E+00	4.92E+01
					Be-7	5.37E+02	2.46E+02	3.20E+02
					K-40	3.76E+03	7.51E+02	8.42E+01

Sample ID:	367559	Sample Dates:	2/3/2015 - 2/3/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<3.04E+01	0.00E+00	3.04E+01
					Co-58	<4.04E+01	0.00E+00	4.04E+01
					Fe-59	<5.90E+01	0.00E+00	5.90E+01
					Co-60	<4.43E+01	0.00E+00	4.43E+01
					Zn-65	<6.56E+01	0.00E+00	6.56E+01
					Zr-95	<7.25E+01	0.00E+00	7.25E+01
					Nb-95	<3.13E+01	0.00E+00	3.13E+01
					I-131	<3.52E+01	0.00E+00	3.52E+01
					Cs-134	<3.41E+01	0.00E+00	3.41E+01
					Cs-137	<4.19E+01	0.00E+00	4.19E+01
					BaLa-140	<3.93E+01	0.00E+00	3.93E+01
					Be-7	3.47E+02	1.57E+02	2.88E+02
					K-40	1.58E+03	5.79E+02	6.51E+02

Sample ID:	371554	Sample Dates:	3/3/2015 - 3/3/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<1.99E+01	0.00E+00	1.99E+01
					Co-58	<2.29E+01	0.00E+00	2.29E+01
					Fe-59	<3.92E+01	0.00E+00	3.92E+01
					Co-60	<2.09E+01	0.00E+00	2.09E+01
					Zn-65	<5.07E+01	0.00E+00	5.07E+01
					Zr-95	<2.97E+01	0.00E+00	2.97E+01
					Nb-95	<2.10E+01	0.00E+00	2.10E+01
					I-131	<1.81E+01	0.00E+00	1.81E+01
					Cs-134	<2.70E+01	0.00E+00	2.70E+01



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 222 [INDICATOR - N @ 0.71 miles]

Sample ID: 371554	Sample Dates: 3/3/2015 - 3/3/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Cs-137	<1.93E+01	0.00E+00	1.93E+01
			BaLa-140	<2.63E+01	0.00E+00	2.63E+01
			Be-7	1.04E+03	2.42E+02	2.33E+02
			K-40	2.81E+03	5.38E+02	2.68E+02
Sample ID: 374948	Sample Dates: 4/7/2015 - 4/7/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<2.55E+01	0.00E+00	2.55E+01
			Co-58	<2.77E+01	0.00E+00	2.77E+01
			Fe-59	<5.76E+01	0.00E+00	5.76E+01
			Co-60	<2.53E+01	0.00E+00	2.53E+01
			Zn-65	<5.36E+01	0.00E+00	5.36E+01
			Zr-95	<5.00E+01	0.00E+00	5.00E+01
			Nb-95	<2.67E+01	0.00E+00	2.67E+01
			I-131	<2.24E+01	0.00E+00	2.24E+01
			Cs-134	<1.68E+01	0.00E+00	1.68E+01
			Cs-137	<2.60E+01	0.00E+00	2.60E+01
			BaLa-140	<2.20E+01	0.00E+00	2.20E+01
			Be-7	2.50E+02	1.78E+02	2.67E+02
			K-40	2.70E+03	5.72E+02	3.10E+02
Sample ID: 378069	Sample Dates: 5/5/2015 - 5/5/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<1.77E+01	0.00E+00	1.77E+01
			Co-58	<1.61E+01	0.00E+00	1.61E+01
			Fe-59	<3.26E+01	0.00E+00	3.26E+01
			Co-60	<2.08E+01	0.00E+00	2.08E+01
			Zn-65	<3.10E+01	0.00E+00	3.10E+01
			Zr-95	<2.93E+01	0.00E+00	2.93E+01
			Nb-95	<1.64E+01	0.00E+00	1.64E+01
			I-131	<1.51E+01	0.00E+00	1.51E+01
			Cs-134	<2.30E+01	0.00E+00	2.30E+01
			Cs-137	<1.92E+01	0.00E+00	1.92E+01
			BaLa-140	<1.45E+01	0.00E+00	1.45E+01
			Be-7	2.87E+02	1.42E+02	1.99E+02
			K-40	3.31E+03	5.31E+02	1.84E+02
Sample ID: 380195	Sample Dates: 6/2/2015 - 6/2/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<1.03E+01	0.00E+00	1.03E+01
			Co-58	<1.20E+01	0.00E+00	1.20E+01
			Fe-59	<2.32E+01	0.00E+00	2.32E+01
			Co-60	<1.51E+01	0.00E+00	1.51E+01
			Zn-65	<2.79E+01	0.00E+00	2.79E+01
			Zr-95	<2.26E+01	0.00E+00	2.26E+01
			Nb-95	<1.04E+01	0.00E+00	1.04E+01
			I-131	<1.09E+01	0.00E+00	1.09E+01
			Cs-134	<1.49E+01	0.00E+00	1.49E+01
			Cs-137	<1.18E+01	0.00E+00	1.18E+01
			BaLa-140	<3.63E+00	0.00E+00	3.63E+00
			Be-7	2.92E+02	1.08E+02	1.37E+02
			K-40	2.09E+03	3.54E+02	1.59E+02
Sample ID: 382175	Sample Dates: 7/7/2015 - 7/7/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<1.39E+01	0.00E+00	1.39E+01
			Co-58	<1.59E+01	0.00E+00	1.59E+01
			Fe-59	<3.12E+01	0.00E+00	3.12E+01
			Co-60	<2.03E+01	0.00E+00	2.03E+01
			Zn-65	<4.09E+01	0.00E+00	4.09E+01
			Zr-95	<2.75E+01	0.00E+00	2.75E+01
			Nb-95	<1.53E+01	0.00E+00	1.53E+01
			I-131	<1.53E+01	0.00E+00	1.53E+01
			Cs-134	<1.64E+01	0.00E+00	1.64E+01
			Cs-137	<1.62E+01	0.00E+00	1.62E+01
			BaLa-140	<1.60E+01	0.00E+00	1.60E+01
			Be-7	<2.47E+02	0.00E+00	2.47E+02
			K-40	<2.16E+02	0.00E+00	2.16E+02
Sample ID: 384653	Sample Dates: 8/4/2015 - 8/4/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<1.78E+01	0.00E+00	1.78E+01



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 222 [INDICATOR - N @ 0.71 miles]

Sample ID: 384653	Sample Dates: 8/4/2015 - 8/4/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Co-58	<1.77E+01	0.00E+00	1.77E+01
			Fe-59	<4.59E+01	0.00E+00	4.59E+01
			Co-60	<1.80E+01	0.00E+00	1.80E+01
			Zn-65	<4.21E+01	0.00E+00	4.21E+01
			Zr-95	<2.39E+01	0.00E+00	2.39E+01
			Nb-95	<1.98E+01	0.00E+00	1.98E+01
			I-131	<2.23E+01	0.00E+00	2.23E+01
			Cs-134	<1.99E+01	0.00E+00	1.99E+01
			Cs-137	<1.88E+01	0.00E+00	1.88E+01
			BaLa-140	<2.11E+01	0.00E+00	2.11E+01
			Be-7	5.72E+02	1.80E+02	2.24E+02
			K-40	2.19E+03	4.09E+02	2.38E+02
Sample ID: 388286	Sample Dates: 9/1/2015 - 9/1/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<1.71E+01	0.00E+00	1.71E+01
			Co-58	<1.80E+01	0.00E+00	1.80E+01
			Fe-59	<3.57E+01	0.00E+00	3.57E+01
			Co-60	<2.13E+01	0.00E+00	2.13E+01
			Zn-65	<4.88E+01	0.00E+00	4.88E+01
			Zr-95	<4.29E+01	0.00E+00	4.29E+01
			Nb-95	<2.00E+01	0.00E+00	2.00E+01
			I-131	<1.60E+01	0.00E+00	1.60E+01
			Cs-134	<2.37E+01	0.00E+00	2.37E+01
			Cs-137	<2.50E+01	0.00E+00	2.50E+01
			BaLa-140	<2.68E+01	0.00E+00	2.68E+01
			Be-7	6.25E+02	2.06E+02	2.58E+02
			K-40	1.85E+03	4.57E+02	4.31E+02
Sample ID: 391029	Sample Dates: 10/6/2015 - 10/6/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<2.04E+01	0.00E+00	2.04E+01
			Co-58	<1.70E+01	0.00E+00	1.70E+01
			Fe-59	<3.45E+01	0.00E+00	3.45E+01
			Co-60	<2.24E+01	0.00E+00	2.24E+01
			Zn-65	<4.14E+01	0.00E+00	4.14E+01
			Zr-95	<2.44E+01	0.00E+00	2.44E+01
			Nb-95	<2.01E+01	0.00E+00	2.01E+01
			I-131	<1.74E+01	0.00E+00	1.74E+01
			Cs-134	<2.21E+01	0.00E+00	2.21E+01
			Cs-137	<1.83E+01	0.00E+00	1.83E+01
			BaLa-140	<1.89E+01	0.00E+00	1.89E+01
			Be-7	8.59E+02	2.17E+02	2.39E+02
			K-40	1.88E+03	4.28E+02	3.72E+02
Sample ID: 394430	Sample Dates: 11/3/2015 - 11/3/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<2.12E+01	0.00E+00	2.12E+01
			Co-58	<1.71E+01	0.00E+00	1.71E+01
			Fe-59	<3.45E+01	0.00E+00	3.45E+01
			Co-60	<2.23E+01	0.00E+00	2.23E+01
			Zn-65	<3.88E+01	0.00E+00	3.88E+01
			Zr-95	<2.96E+01	0.00E+00	2.96E+01
			Nb-95	<1.80E+01	0.00E+00	1.80E+01
			I-131	<1.80E+01	0.00E+00	1.80E+01
			Cs-134	<2.30E+01	0.00E+00	2.30E+01
			Cs-137	<2.69E+01	0.00E+00	2.69E+01
			BaLa-140	<2.62E+01	0.00E+00	2.62E+01
			Be-7	8.94E+02	2.02E+02	1.89E+02
			K-40	2.91E+03	5.04E+02	2.45E+02
Sample ID: 396494	Sample Dates: 12/1/2015 - 12/1/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<2.63E+01	0.00E+00	2.63E+01
			Co-58	<2.34E+01	0.00E+00	2.34E+01
			Fe-59	<3.83E+01	0.00E+00	3.83E+01
			Co-60	<3.03E+01	0.00E+00	3.03E+01
			Zn-65	<4.32E+01	0.00E+00	4.32E+01
			Zr-95	<3.54E+01	0.00E+00	3.54E+01
			Nb-95	<1.39E+01	0.00E+00	1.39E+01
			I-131	<2.17E+01	0.00E+00	2.17E+01



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 222 [INDICATOR - N @ 0.71 miles]

Sample ID:	396494	Sample Dates:	12/1/2015 - 12/1/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
					Cs-134	<2.81E+01	0.00E+00	2.81E+01
					Cs-137	<3.17E+01	0.00E+00	3.17E+01
					BaLa-140	<3.50E+01	0.00E+00	3.50E+01
					Be-7	<2.68E+02	0.00E+00	2.68E+02
					K-40	1.55E+03	4.17E+02	2.55E+02

Sample Point 226 [INDICATOR - S @ 0.48 miles]

Sample ID:	365081	Sample Dates:	1/6/2015 - 1/6/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<4.04E+01	0.00E+00	4.04E+01
					Co-58	<3.25E+01	0.00E+00	3.25E+01
					Fe-59	<6.55E+01	0.00E+00	6.55E+01
					Co-60	<3.54E+01	0.00E+00	3.54E+01
					Zn-65	<8.71E+01	0.00E+00	8.71E+01
					Zr-95	<5.63E+01	0.00E+00	5.63E+01
					Nb-95	<3.07E+01	0.00E+00	3.07E+01
					I-131	<2.92E+01	0.00E+00	2.92E+01
					Cs-134	<3.23E+01	0.00E+00	3.23E+01
					Cs-137	<2.89E+01	0.00E+00	2.89E+01
					BaLa-140	<3.90E+01	0.00E+00	3.90E+01
					Be-7	8.50E+02	3.70E+02	5.44E+02
					K-40	4.63E+03	7.81E+02	4.22E+02

Sample ID:	367560	Sample Dates:	2/3/2015 - 2/3/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<3.50E+01	0.00E+00	3.50E+01
					Co-58	<2.67E+01	0.00E+00	2.67E+01
					Fe-59	<7.88E+01	0.00E+00	7.88E+01
					Co-60	<4.75E+01	0.00E+00	4.75E+01
					Zn-65	<9.43E+01	0.00E+00	9.43E+01
					Zr-95	<5.58E+01	0.00E+00	5.58E+01
					Nb-95	<3.65E+01	0.00E+00	3.65E+01
					I-131	<3.69E+01	0.00E+00	3.69E+01
					Cs-134	<4.05E+01	0.00E+00	4.05E+01
					Cs-137	<3.39E+01	0.00E+00	3.39E+01
					BaLa-140	<2.48E+01	0.00E+00	2.48E+01
					Be-7	1.07E+03	3.40E+02	4.33E+02
					K-40	<1.46E+03	0.00E+00	1.46E+03

Sample ID:	371555	Sample Dates:	3/3/2015 - 3/3/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<1.92E+01	0.00E+00	1.92E+01
					Co-58	<1.14E+01	0.00E+00	1.14E+01
					Fe-59	<3.79E+01	0.00E+00	3.79E+01
					Co-60	<1.83E+01	0.00E+00	1.83E+01
					Zn-65	<3.65E+01	0.00E+00	3.65E+01
					Zr-95	<3.52E+01	0.00E+00	3.52E+01
					Nb-95	<1.80E+01	0.00E+00	1.80E+01
					I-131	<1.42E+01	0.00E+00	1.42E+01
					Cs-134	<2.23E+01	0.00E+00	2.23E+01
					Cs-137	<2.08E+01	0.00E+00	2.08E+01
					BaLa-140	<2.60E+01	0.00E+00	2.60E+01
					Be-7	7.10E+02	1.84E+02	2.02E+02
					K-40	3.45E+03	5.46E+02	3.06E+02

Sample ID:	374949	Sample Dates:	4/7/2015 - 4/7/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<1.50E+01	0.00E+00	1.50E+01
					Co-58	<8.95E+00	0.00E+00	8.95E+00
					Fe-59	<2.63E+01	0.00E+00	2.63E+01
					Co-60	<8.59E+00	0.00E+00	8.59E+00
					Zn-65	<3.04E+01	0.00E+00	3.04E+01
					Zr-95	<1.44E+01	0.00E+00	1.44E+01
					Nb-95	<1.03E+01	0.00E+00	1.03E+01
					I-131	<1.04E+01	0.00E+00	1.04E+01
					Cs-134	<1.64E+01	0.00E+00	1.64E+01
					Cs-137	<1.28E+01	0.00E+00	1.28E+01
					BaLa-140	<1.14E+01	0.00E+00	1.14E+01
					Be-7	3.53E+02	9.93E+01	1.05E+02
					K-40	3.23E+03	4.44E+02	1.88E+02



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 226 [INDICATOR - S @ 0.48 miles]

Sample ID: 378070	Sample Dates: 5/5/2015 - 5/5/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<1.96E+01	0.00E+00	1.96E+01
			Co-58	<1.86E+01	0.00E+00	1.86E+01
			Fe-59	<4.47E+01	0.00E+00	4.47E+01
			Co-60	<2.05E+01	0.00E+00	2.05E+01
			Zn-65	<2.77E+01	0.00E+00	2.77E+01
			Zr-95	<3.23E+01	0.00E+00	3.23E+01
			Nb-95	<1.90E+01	0.00E+00	1.90E+01
			I-131	<2.19E+01	0.00E+00	2.19E+01
			Cs-134	<2.20E+01	0.00E+00	2.20E+01
			Cs-137	<1.99E+01	0.00E+00	1.99E+01
			BaLa-140	<2.13E+01	0.00E+00	2.13E+01
			Be-7	4.45E+02	1.73E+02	2.22E+02
			K-40	4.34E+03	6.53E+02	1.85E+02
Sample ID: 380196	Sample Dates: 6/2/2015 - 6/2/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<2.00E+01	0.00E+00	2.00E+01
			Co-58	<1.84E+01	0.00E+00	1.84E+01
			Fe-59	<3.46E+01	0.00E+00	3.46E+01
			Co-60	<2.37E+01	0.00E+00	2.37E+01
			Zn-65	<3.41E+01	0.00E+00	3.41E+01
			Zr-95	<3.53E+01	0.00E+00	3.53E+01
			Nb-95	<1.96E+01	0.00E+00	1.96E+01
			I-131	<1.35E+01	0.00E+00	1.35E+01
			Cs-134	<1.73E+01	0.00E+00	1.73E+01
			Cs-137	<2.49E+01	0.00E+00	2.49E+01
			BaLa-140	<2.26E+01	0.00E+00	2.26E+01
			Be-7	5.57E+02	1.50E+02	1.43E+02
			K-40	3.72E+03	5.84E+02	2.74E+02
Sample ID: 382176	Sample Dates: 7/7/2015 - 7/7/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<2.55E+01	0.00E+00	2.55E+01
			Co-58	<2.03E+01	0.00E+00	2.03E+01
			Fe-59	<3.63E+01	0.00E+00	3.63E+01
			Co-60	<2.16E+01	0.00E+00	2.16E+01
			Zn-65	<5.66E+01	0.00E+00	5.66E+01
			Zr-95	<2.53E+01	0.00E+00	2.53E+01
			Nb-95	<2.20E+01	0.00E+00	2.20E+01
			I-131	<1.81E+01	0.00E+00	1.81E+01
			Cs-134	<2.19E+01	0.00E+00	2.19E+01
			Cs-137	<2.16E+01	0.00E+00	2.16E+01
			BaLa-140	<1.68E+01	0.00E+00	1.68E+01
			Be-7	8.61E+02	2.10E+02	2.04E+02
			K-40	3.36E+03	5.64E+02	4.89E+01
Sample ID: 384654	Sample Dates: 8/4/2015 - 8/4/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<1.18E+01	0.00E+00	1.18E+01
			Co-58	<1.07E+01	0.00E+00	1.07E+01
			Fe-59	<2.58E+01	0.00E+00	2.58E+01
			Co-60	<1.33E+01	0.00E+00	1.33E+01
			Zn-65	<2.63E+01	0.00E+00	2.63E+01
			Zr-95	<2.20E+01	0.00E+00	2.20E+01
			Nb-95	<1.29E+01	0.00E+00	1.29E+01
			I-131	<1.84E+01	0.00E+00	1.84E+01
			Cs-134	<1.21E+01	0.00E+00	1.21E+01
			Cs-137	<1.27E+01	0.00E+00	1.27E+01
			BaLa-140	<1.58E+01	0.00E+00	1.58E+01
			Be-7	7.75E+02	1.50E+02	1.55E+02
			K-40	4.70E+03	5.38E+02	1.88E+02
Sample ID: 388287	Sample Dates: 9/1/2015 - 9/1/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<2.68E+01	0.00E+00	2.68E+01
			Co-58	<1.80E+01	0.00E+00	1.80E+01
			Fe-59	<4.62E+01	0.00E+00	4.62E+01
			Co-60	<2.48E+01	0.00E+00	2.48E+01
			Zn-65	<5.21E+01	0.00E+00	5.21E+01
			Zr-95	<4.30E+01	0.00E+00	4.30E+01
			Nb-95	<2.22E+01	0.00E+00	2.22E+01



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 226 [INDICATOR - S @ 0.48 miles]

Sample ID: 388287	Sample Dates: 9/1/2015 - 9/1/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			I-131	<1.78E+01	0.00E+00	1.78E+01
			Cs-134	<2.42E+01	0.00E+00	2.42E+01
			Cs-137	<2.60E+01	0.00E+00	2.60E+01
			BaLa-140	<2.56E+01	0.00E+00	2.56E+01
			Be-7	1.09E+03	2.46E+02	2.35E+02
			K-40	3.72E+03	6.39E+02	3.43E+02
Sample ID: 391030	Sample Dates: 10/6/2015 - 10/6/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<2.56E+01	0.00E+00	2.56E+01
			Co-58	<2.07E+01	0.00E+00	2.07E+01
			Fe-59	<3.35E+01	0.00E+00	3.35E+01
			Co-60	<2.17E+01	0.00E+00	2.17E+01
			Zn-65	<4.11E+01	0.00E+00	4.11E+01
			Zr-95	<3.68E+01	0.00E+00	3.68E+01
			Nb-95	<1.66E+01	0.00E+00	1.66E+01
			I-131	<2.09E+01	0.00E+00	2.09E+01
			Cs-134	<2.70E+01	0.00E+00	2.70E+01
			Cs-137	<2.40E+01	0.00E+00	2.40E+01
			BaLa-140	<2.14E+01	0.00E+00	2.14E+01
			Be-7	1.18E+03	2.52E+02	2.33E+02
			K-40	3.43E+03	5.82E+02	2.13E+02
Sample ID: 394431	Sample Dates: 11/3/2015 - 11/3/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<2.53E+01	0.00E+00	2.53E+01
			Co-58	<2.04E+01	0.00E+00	2.04E+01
			Fe-59	<4.13E+01	0.00E+00	4.13E+01
			Co-60	<2.49E+01	0.00E+00	2.49E+01
			Zn-65	<5.75E+01	0.00E+00	5.75E+01
			Zr-95	<4.18E+01	0.00E+00	4.18E+01
			Nb-95	<2.15E+01	0.00E+00	2.15E+01
			I-131	<1.46E+01	0.00E+00	1.46E+01
			Cs-134	<2.43E+01	0.00E+00	2.43E+01
			Cs-137	<1.89E+01	0.00E+00	1.89E+01
			BaLa-140	<2.59E+01	0.00E+00	2.59E+01
			Be-7	1.27E+03	2.50E+02	1.80E+02
			K-40	3.68E+03	6.28E+02	2.92E+02
Sample ID: 396495	Sample Dates: 12/1/2015 - 12/1/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<2.31E+01	0.00E+00	2.31E+01
			Co-58	<1.71E+01	0.00E+00	1.71E+01
			Fe-59	<2.78E+01	0.00E+00	2.78E+01
			Co-60	<2.19E+01	0.00E+00	2.19E+01
			Zn-65	<5.47E+01	0.00E+00	5.47E+01
			Zr-95	<3.28E+01	0.00E+00	3.28E+01
			Nb-95	<2.06E+01	0.00E+00	2.06E+01
			I-131	<1.79E+01	0.00E+00	1.79E+01
			Cs-134	<2.51E+01	0.00E+00	2.51E+01
			Cs-137	<2.51E+01	0.00E+00	2.51E+01
			BaLa-140	<1.56E+01	0.00E+00	1.56E+01
			Be-7	1.26E+03	2.45E+02	1.93E+02
			K-40	3.92E+03	6.21E+02	2.93E+02
Sample Point 258 [CONTROL - W @ 9.84 miles]						
Sample ID: 365082	Sample Dates: 1/6/2015 - 1/6/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<3.16E+01	0.00E+00	3.16E+01
			Co-58	<2.78E+01	0.00E+00	2.78E+01
			Fe-59	<7.68E+01	0.00E+00	7.68E+01
			Co-60	<3.67E+01	0.00E+00	3.67E+01
			Zn-65	<6.75E+01	0.00E+00	6.75E+01
			Zr-95	<5.45E+01	0.00E+00	5.45E+01
			Nb-95	<3.46E+01	0.00E+00	3.46E+01
			I-131	<3.33E+01	0.00E+00	3.33E+01
			Cs-134	<4.01E+01	0.00E+00	4.01E+01
			Cs-137	<3.37E+01	0.00E+00	3.37E+01
			BaLa-140	<5.18E+01	0.00E+00	5.18E+01
			Be-7	1.11E+03	3.17E+02	3.75E+02



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 258 [CONTROL - W @ 9.84 miles]

Sample ID:	365082	Sample Dates:	1/6/2015 - 1/6/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
					K-40	4.77E+03	8.22E+02	4.45E+02
Sample ID:	367561	Sample Dates:	2/3/2015 - 2/3/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<2.41E+01	0.00E+00	2.41E+01
					Co-58	<3.30E+01	0.00E+00	3.30E+01
					Fe-59	<7.52E+01	0.00E+00	7.52E+01
					Co-60	<3.97E+01	0.00E+00	3.97E+01
					Zn-65	<7.56E+01	0.00E+00	7.56E+01
					Zr-95	<5.90E+01	0.00E+00	5.90E+01
					Nb-95	<3.75E+01	0.00E+00	3.75E+01
					I-131	<3.48E+01	0.00E+00	3.48E+01
					Cs-134	<2.89E+01	0.00E+00	2.89E+01
					Cs-137	<3.73E+01	0.00E+00	3.73E+01
					BaLa-140	<2.37E+01	0.00E+00	2.37E+01
					Be-7	8.53E+02	2.83E+02	3.51E+02
					K-40	4.73E+03	8.20E+02	4.12E+02
Sample ID:	371556	Sample Dates:	3/3/2015 - 3/3/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<2.02E+01	0.00E+00	2.02E+01
					Co-58	<1.72E+01	0.00E+00	1.72E+01
					Fe-59	<3.13E+01	0.00E+00	3.13E+01
					Co-60	<2.38E+01	0.00E+00	2.38E+01
					Zn-65	<4.66E+01	0.00E+00	4.66E+01
					Zr-95	<3.31E+01	0.00E+00	3.31E+01
					Nb-95	<1.84E+01	0.00E+00	1.84E+01
					I-131	<1.66E+01	0.00E+00	1.66E+01
					Cs-134	<2.85E+01	0.00E+00	2.85E+01
					Cs-137	<2.46E+01	0.00E+00	2.46E+01
					BaLa-140	<2.82E+01	0.00E+00	2.82E+01
					Be-7	2.28E+03	3.46E+02	2.12E+02
					K-40	2.37E+03	4.93E+02	3.96E+02
Sample ID:	374950	Sample Dates:	4/7/2015 - 4/7/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<1.02E+01	0.00E+00	1.02E+01
					Co-58	<6.91E+00	0.00E+00	6.91E+00
					Fe-59	<2.21E+01	0.00E+00	2.21E+01
					Co-60	<1.23E+01	0.00E+00	1.23E+01
					Zn-65	<2.73E+01	0.00E+00	2.73E+01
					Zr-95	<2.30E+01	0.00E+00	2.30E+01
					Nb-95	<9.88E+00	0.00E+00	9.88E+00
					I-131	<1.03E+01	0.00E+00	1.03E+01
					Cs-134	<1.88E+01	0.00E+00	1.88E+01
					Cs-137	<1.33E+01	0.00E+00	1.33E+01
					BaLa-140	<9.22E+00	0.00E+00	9.22E+00
					Be-7	5.07E+02	1.23E+02	1.28E+02
					K-40	4.18E+03	5.31E+02	1.48E+02
Sample ID:	378071	Sample Dates:	5/5/2015 - 5/5/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<1.81E+01	0.00E+00	1.81E+01
					Co-58	<1.75E+01	0.00E+00	1.75E+01
					Fe-59	<3.69E+01	0.00E+00	3.69E+01
					Co-60	<1.77E+01	0.00E+00	1.77E+01
					Zn-65	<3.92E+01	0.00E+00	3.92E+01
					Zr-95	<3.13E+01	0.00E+00	3.13E+01
					Nb-95	<1.87E+01	0.00E+00	1.87E+01
					I-131	<1.65E+01	0.00E+00	1.65E+01
					Cs-134	<2.03E+01	0.00E+00	2.03E+01
					Cs-137	<1.35E+01	0.00E+00	1.35E+01
					BaLa-140	<1.69E+01	0.00E+00	1.69E+01
					Be-7	5.22E+02	1.70E+02	2.16E+02
					K-40	3.81E+03	5.69E+02	2.34E+02
Sample ID:	380197	Sample Dates:	6/2/2015 - 6/2/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
					Mn-54	<1.71E+01	0.00E+00	1.71E+01
					Co-58	<1.38E+01	0.00E+00	1.38E+01
					Fe-59	<2.97E+01	0.00E+00	2.97E+01
					Co-60	<1.54E+01	0.00E+00	1.54E+01



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 258 [CONTROL - W @ 9.84 miles]

Sample ID: 380197	Sample Dates: 6/2/2015 - 6/2/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Zn-65	<3.35E+01	0.00E+00	3.35E+01
			Zr-95	<2.50E+01	0.00E+00	2.50E+01
			Nb-95	<1.73E+01	0.00E+00	1.73E+01
			I-131	<1.62E+01	0.00E+00	1.62E+01
			Cs-134	<2.21E+01	0.00E+00	2.21E+01
			Cs-137	<1.48E+01	0.00E+00	1.48E+01
			BaLa-140	<1.51E+01	0.00E+00	1.51E+01
			Be-7	1.93E+02	1.18E+02	1.74E+02
			K-40	3.69E+03	5.36E+02	1.59E+02
Sample ID: 382177	Sample Dates: 7/7/2015 - 7/7/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<1.38E+01	0.00E+00	1.38E+01
			Co-58	<1.31E+01	0.00E+00	1.31E+01
			Fe-59	<3.23E+01	0.00E+00	3.23E+01
			Co-60	<1.33E+01	0.00E+00	1.33E+01
			Zn-65	<3.36E+01	0.00E+00	3.36E+01
			Zr-95	<1.95E+01	0.00E+00	1.95E+01
			Nb-95	<1.58E+01	0.00E+00	1.58E+01
			I-131	<1.36E+01	0.00E+00	1.36E+01
			Cs-134	<1.60E+01	0.00E+00	1.60E+01
			Cs-137	<1.33E+01	0.00E+00	1.33E+01
			BaLa-140	<2.26E+01	0.00E+00	2.26E+01
			Be-7	<2.19E+02	0.00E+00	2.19E+02
			K-40	<1.86E+02	0.00E+00	1.86E+02
Sample ID: 384655	Sample Dates: 8/4/2015 - 8/4/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<2.37E+01	0.00E+00	2.37E+01
			Co-58	<2.53E+01	0.00E+00	2.53E+01
			Fe-59	<3.04E+01	0.00E+00	3.04E+01
			Co-60	<2.37E+01	0.00E+00	2.37E+01
			Zn-65	<4.54E+01	0.00E+00	4.54E+01
			Zr-95	<4.57E+01	0.00E+00	4.57E+01
			Nb-95	<2.66E+01	0.00E+00	2.66E+01
			I-131	<2.34E+01	0.00E+00	2.34E+01
			Cs-134	<3.05E+01	0.00E+00	3.05E+01
			Cs-137	<2.17E+01	0.00E+00	2.17E+01
			BaLa-140	<3.56E+01	0.00E+00	3.56E+01
			Be-7	5.08E+02	2.08E+02	2.74E+02
			K-40	4.53E+03	7.05E+02	5.36E+01
Sample ID: 388288	Sample Dates: 9/1/2015 - 9/1/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<2.16E+01	0.00E+00	2.16E+01
			Co-58	<2.23E+01	0.00E+00	2.23E+01
			Fe-59	<4.45E+01	0.00E+00	4.45E+01
			Co-60	<1.34E+01	0.00E+00	1.34E+01
			Zn-65	<4.14E+01	0.00E+00	4.14E+01
			Zr-95	<4.28E+01	0.00E+00	4.28E+01
			Nb-95	<2.78E+01	0.00E+00	2.78E+01
			I-131	<2.30E+01	0.00E+00	2.30E+01
			Cs-134	<2.89E+01	0.00E+00	2.89E+01
			Cs-137	<2.27E+01	0.00E+00	2.27E+01
			BaLa-140	<2.77E+01	0.00E+00	2.77E+01
			Be-7	5.12E+02	2.24E+02	3.18E+02
			K-40	4.60E+03	7.20E+02	3.74E+02
Sample ID: 391031	Sample Dates: 10/6/2015 - 10/6/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<2.65E+01	0.00E+00	2.65E+01
			Co-58	<2.01E+01	0.00E+00	2.01E+01
			Fe-59	<3.34E+01	0.00E+00	3.34E+01
			Co-60	<1.82E+01	0.00E+00	1.82E+01
			Zn-65	<4.19E+01	0.00E+00	4.19E+01
			Zr-95	<3.12E+01	0.00E+00	3.12E+01
			Nb-95	<2.02E+01	0.00E+00	2.02E+01
			I-131	<1.93E+01	0.00E+00	1.93E+01
			Cs-134	<2.68E+01	0.00E+00	2.68E+01
			Cs-137	<2.57E+01	0.00E+00	2.57E+01
			BaLa-140	<2.17E+01	0.00E+00	2.17E+01



CATAWBA Radiological Environmental Monitoring Analysis Report - 2015 (Appendix E)

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 258 [CONTROL - W @ 9.84 miles]

Sample ID: 391031	Sample Dates: 10/6/2015 - 10/6/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Be-7	2.17E+03	3.35E+02	2.32E+02
			K-40	2.24E+03	4.59E+02	3.71E+02
Sample ID: 394432	Sample Dates: 11/3/2015 - 11/3/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<2.52E+01	0.00E+00	2.52E+01
			Co-58	<1.89E+01	0.00E+00	1.89E+01
			Fe-59	<3.70E+01	0.00E+00	3.70E+01
			Co-60	<2.09E+01	0.00E+00	2.09E+01
			Zn-65	<4.17E+01	0.00E+00	4.17E+01
			Zr-95	<4.80E+01	0.00E+00	4.80E+01
			Nb-95	<2.04E+01	0.00E+00	2.04E+01
			I-131	<1.89E+01	0.00E+00	1.89E+01
			Cs-134	<2.77E+01	0.00E+00	2.77E+01
			Cs-137	<2.01E+01	0.00E+00	2.01E+01
			BaLa-140	<1.50E+01	0.00E+00	1.50E+01
			Be-7	1.15E+03	2.32E+02	1.99E+02
			K-40	3.29E+03	5.55E+02	3.16E+02
Sample ID: 396496	Sample Dates: 12/1/2015 - 12/1/2015	MIXEDBLV	Nuclide	Activity	2 Sigma Error	LLD
			Mn-54	<1.96E+01	0.00E+00	1.96E+01
			Co-58	<1.53E+01	0.00E+00	1.53E+01
			Fe-59	<3.48E+01	0.00E+00	3.48E+01
			Co-60	<1.87E+01	0.00E+00	1.87E+01
			Zn-65	<4.12E+01	0.00E+00	4.12E+01
			Zr-95	<2.90E+01	0.00E+00	2.90E+01
			Nb-95	<1.68E+01	0.00E+00	1.68E+01
			I-131	<1.74E+01	0.00E+00	1.74E+01
			Cs-134	<1.98E+01	0.00E+00	1.98E+01
			Cs-137	<1.84E+01	0.00E+00	1.84E+01
			BaLa-140	<2.57E+01	0.00E+00	2.57E+01
			Be-7	1.55E+03	2.55E+02	1.65E+02
			K-40	3.76E+03	5.80E+02	2.98E+02

APPENDIX F

**ERRATA TO
PREVIOUS REPORTS**

APPENDIX F

ERRATA TO THE 2015 AREOR

There are no errata to be appended to the 2015 AREOR.