Constellation

TS 6.9.1.7

LG-26-052

April 30, 2026

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

Limerick Generating Station, Units 1 and 2
Renewed Facility Operating License Nos. NPF-39 and NPF-85
NRC Docket Nos. 50-352 and 50-353

Subject: 2025 Annual Radiological Environmental Operating Report

In accordance with the requirements of Section 6.9.1.7 of Limerick Generating Station (LGS) Units 1 and 2 Technical Specifications (TS) and Section 6.1 of the LGS Units 1 and 2 Offsite Dose Calculation Manual (ODCM), this letter submits the 2025 Annual Radiological Environmental Operating Report. This report provides the 2025 results for the Radiological Environmental Monitoring Program (REMP), as called for in the ODCM.

In assessing the data collected for the REMP, it has been concluded that the operation of LGS Units 1 and 2 had no adverse impact on the environment. No plant-produced fission or activation products were found in any pathway modeled by the REMP. The results of the groundwater protection program are also included in this report.

There are no commitments contained in this letter.

If you have any questions or require additional information, please contact Andrew Kelliher at 267-533-5181.

Respectfully,

Martin A. Bonifanti
Site Vice President – Limerick Generating Station
Constellation Energy Generation, LLC

Attachment: 2025 Annual Radiological Environmental Operating Report

cc: Administrator, Region I, USNRC (w/attachment)
LGS USNRC Senior Resident Inspector (w/attachment)
B. Edwards, Inspector Region I, USNRC (w/attachment)
LGS Senior Project Manager-NRR, USNRC (w/attachment)

Constellation

Limerick Generating Station

Annual Radiological Environmental Operating Report 2025

Document Number: 50-352,50-353

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1.0 LIST OF ACRONYMS AND DEFINITIONS

1. Airborne Activity Sampling: Continuous sampling of air through the collection of particulates and radionuclides on filter media.

2. ARERR: Annual Radioactive Effluent Release Report

3. AREOR: Annual Radiological Environmental Operating Report

4. BWR: Boiling Water Reactor

5. Composite Sample: A series of single collected portions (aliquots) analyzed as one sample. The aliquots making up the sample are collected at time intervals that are very short compared to the composite period.

6. Control: A sampling station in a location not likely to be affected by plant effluents due to its distance and/or direction from the station.

7. Curie (Ci): A measure of radioactivity; equal to 3.7×10^{10} disintegrations per second, or 2.22×10^{12} disintegrations per minute.

8. Direct Radiation Monitoring: The measurement of radiation dose at various distances from the plant is assessed using Thermoluminescent Dosimeters (TLD), Optically Stimulated Luminescence Dosimeters (OSLD) and pressurized ionization chambers.

9. EPA: Environmental Protection Agency

10. GPI: Groundwater Protection Initiative

11. Grab Sample: A single discrete sample drawn at one point in time.

12. Indicator: A sampling location that is likely to be affected by plant effluents due to its proximity and/or direction from the plant.

13. Ingestion Pathway: The ingestion pathway includes milk, fish, drinking water and garden produce. Also sampled (under special circumstances) are other media such as vegetation or animal products when additional information about particular radionuclides is needed.

14. ISFSI: Independent Spent Fuel Storage Installation

15. Lower Limit of Detection (LLD): An *a priori* measure of the detection capability of a radiochemistry measurement based on instrument setup, calibration, background, decay time, and sample volume. An LLD is expressed as an activity concentration. The MDA is used for reporting results. LLD are specified by a regulator, such as the NRC and are typically listed in the ODCM.

16. MDA: Minimum Detectable Activity. For radiochemistry instruments, the MDA is the *a posteriori* minimum concentration that a counting system detects. The smallest concentration or activity of radioactive material in a sample that will yield a net count above instrument background and that is detected with 95% probability, with only five % probability of falsely concluding that a blank observation represents a true signal.

17. MDC: Minimum Detectable Concentration. Essentially synonymous with MDA for the purposes of radiological monitoring.

18. Mean: The sum of all of the values in a distribution divided by the number of values in the distribution, synonymous with average.

19. Microcurie: 3.7×10^4 disintegrations per second, or 2.22×10^6 disintegrations per minute.

20. N/A: Not Applicable

21. NEI: Nuclear Energy Institute

22. NIST: National Institute of Standards and Technology.

23. NRC: Nuclear Regulatory Commission

24. ODCM: Offsite Dose Calculation Manual

25. OSLD: Optically Stimulated Luminescence Dosimeter

26. pCi/L: picocuries / Liter

27. PWR: Pressurized Water Reactor

28. REMP: Radiological Environmental Monitoring Program

29. TLD: Thermoluminescent Dosimeter

2.0 EXECUTIVE SUMMARY

Limerick Generating Station Radiological Environmental Monitoring Program (REMP) was established prior to the station becoming operational to provide information on background radiation present in the area. The goal of LGS REMP is to evaluate the impact of the station on the environment. Environmental samples from different media are monitored as part of the program in accordance with specifications detailed in the Offsite Dose Calculation Manual (ODCM) and other site specific requirements The program compares data from Indicator locations near the plant, to Control locations farther away from the site to assess operation impacts.

The Annual Radiological Environmental Operating Report (AREOR) provides data obtained through analyses of environmental samples collected at LGS for the reporting period of January 1st through December 31st, 2025. During that time period 1648 analyses were performed on 1375 samples. In assessing all the data gathered for this report and comparing these results with preoperational data and/or 10-year average values, it was concluded that the operation of LGS, did not result in detection of plant related radionuclides in the environment.

2.1 Summary of Conclusions:

No measurable activities above background levels were detected. All values were consistent with historical results which indicate no adverse radiological environmental impacts associated with the operation of LGS. Naturally occurring radionuclides are present in the Earth's crust and atmosphere and exists in detectable quantities throughout the world. It is common to detect naturally occurring radionuclides in many of the samples collected for REMP. Some examples of naturally occurring radionuclides that are frequently seen in samples are potassium-40, beryllium-7, actinium-228 (present as a decay product of radium-228), and radium-226. Additionally, some relatively long-lived anthropogenic radioisotopes, such as strontium-90 and cesium-137, are also seen in some REMP samples; these radionuclides exist in measurable quantities throughout the world as a result of fallout from historic atmospheric nuclear weapons testing and other nuclear events worldwide such as Fukushima and Chernobyl.

Total Annual Offsite-Dose Comparison to 40 CFR 190 Limits for LGS[1]

	Whole Body	Thyroid	Max Other Organ
Limit	**25 mrem**	**75 mrem**	**25 mrem**
Gaseous - Noble Gas	2.28E-03	2.28E-03	3.79E-03
Gaseous - Particulates & Iodine	1.57E-03	1.55E-03	1.58E-03
Carbon-14	2.25E-01	2.25E-01	1.13E+00
Liquid	2.08E-02	8.61E-03	2.83E-02
Direct Shine[2]	12.2	12.2	12.2
Total Site Dose	**2.50E-01**	**2.37E-01**	**1.16**
Nearby Facility	2.32E-02	1.30E-03	3.21E-02
Total w/Other Nearby Facility[3]	**2.73E-01**	**2.39E-01**	**1.20**
% of Limit[4]	**1.09%**	**0.32**	**4.8%**

[1] This is a summation of Units to show compliance with 40 CFR Part 190 Limits.
[2] Dose from 13E1 (22,772 feet SE of site) monitoring location, due to distance from site and historical data trending, this data is believed to be anomalous, but it was included as a conservative effort and trending purposes. Not added to calculations.
[3] Other fuel cycle sources within 5 miles of the site are considered in this analysis.
[4] % of limit including dose from 13E1: Whole body: 49.88%, Thyroid: 16.59%, Max other organ: 53.56%

3.0 INTRODUCTION

The Radiological Environmental Monitoring Program (REMP) provides data on measurable levels of radiation and radioactive materials in the environment. This program also evaluates the relationship between quantities of radioactive materials released from the plant and resultant doses to individuals from principal pathways of exposure. In this capacity, REMP provides a check on the effluent release program and dispersion modeling to ensure that concentrations in the environment due to radioactive effluents conform to the "As Low as Is Reasonably Achievable" (ALARA) design objectives of 10 CFR 50, Appendix I [1], and implements the requirements of Section IV.B.2 and IV.B.3 of Appendix I. REMP is designed to conform to the Nuclear Regulatory Commission (NRC) Regulatory Guide 4.1 [2], NUREG 1302 [3] [4], and the 1979 NRC Branch Technical Position [5].

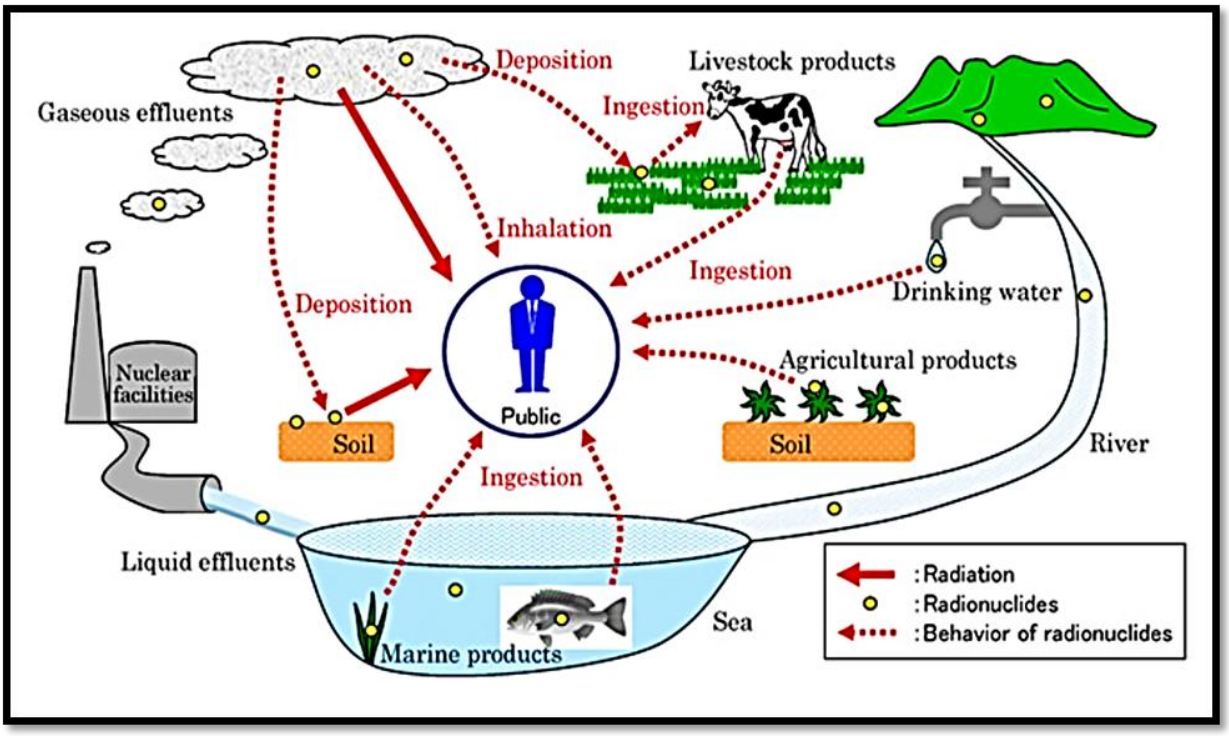

Figure 1: Potential exposure pathways to Members of the Public due to Plant Operations [6]

Quality assurance aspects of the sampling program and TLD/OSLD data collection are conducted in accordance with Regulatory Guides 4.15 [7] and 4.13 [8]. REMP also adheres to the requirements of Pennsylvania, LGS Technical Specifications, and Offsite Dose Calculation Manual (ODCM). These governing documents dictate the environmental sampling, sample analysis protocols, data reporting and quality assurance requirements for the environmental monitoring program.

The Annual Radiological Environmental Operating Report provides summaries of the environmental data from exposure pathways, interpretations of the data, and analyses of trends of the results. Routinely monitored pathways include ingestion, inhalation, and direct radiation. Routes of exposure are based on site specific information such as meteorology, receptor locations, and water usage around the plant.

4.0 SITE DESCRIPTION AND SAMPLE LOCATIONS

The Limerick Generating Station (LGS), consisting of two 3,515 MW boiling water reactors owned and operated by Constellation Corporation, is located adjacent to the Schuylkill River in Montgomery County, Pennsylvania. Unit No. 1 went critical on 22 December 1984. Unit No. 2 went critical on 11 August 1989. The site is located in Piedmont countryside, transversed by numerous valleys containing small tributaries that feed into the Schuylkill River. On the eastern riverbank, elevation rises from approximately 110 to 300 feet mean sea level (MSL). On the western riverbank elevation rises to approximately 50 feet MSL to the western site boundary.

A Radiological Environmental Monitoring Program (REMP) for LGS was initiated in 1971. Review of the 1971 through 1977 REMP data resulted in the modification of the program to comply with changes in the Environmental Report Operating License Stage (EROL) and the Branch Technical Position Paper (Rev. 1, 1979). The preoperational period for most media covers the periods 1 January 1982 through 21 December 1984 and was summarized in a separate report. This report covers those analyses performed by Constellation Generation Solutions (CGS), Landauer, and Teledyne Brown Engineering (TBE)/GEL Laboratories (GEL) on samples collected during the period of January 1, 2025 through December 31, 2025.

On 6 July 1996, a 10 CFR 20.2002 permit was issued to Limerick for storage of slightly contaminated soils, sediments and sludges obtained from the holding pond, cooling tower, and spray pond systems. These materials will decay to background while in storage. Final disposition will be determined at Station decommissioning.

On 21 July 2008, an ISFSI pad was put into service. The ISFSI is dry cask storage, where spent nuclear fuel is stored.

LGS sampling media are selected based on site specific information such as meteorology, receptor locations, and water usage around the plant. Sampling and analysis frequencies are documented in the Offsite Dose Calculation Manual and site procedures. Required sampling, analysis frequencies and location of sample collected are captured in the following tables and figures:

- Table 1: Radiological Environmental Monitoring Program – Direct Radiation
- Table 2: Radiological Environmental Monitoring Program – Airborne
- Table 3: Radiological Environmental Monitoring Program – Waterborne

- Table 4: Radiological Environmental Monitoring Program – Ingestion
- Table 5: REMP Sampling Locations – Direct Radiation
- Figure 2: REMP Sample Locations (at Distances Less than Five Miles from the Limerick Generating Station)
- Figure 3: REMP Sample Locations (at Distances Greater than Five Miles from the Limerick Generating Station)
- Figure 4: REMP Sample Locations (on Site or Near the Limerick Generating Station)
- Figure 5: REMP Milk Sample Location for 19F1

5.0 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM REQUIREMENTS

Table 1: Radiological Environmental Monitoring Program – Direct Radiation

Requirement	Sample Location Description, Distance, and Direction	Sampling Collection/ Frequency	Type and Frequency of Analyses
Direct Radiation 40 Routine monitoring stations either with two or more dosimeters or with one instrument for measuring and recording dose rate continuously placed as follows: (1) An inner ring of stations, one in each meteorological sector in the general area of the SITE BOUNDARY (2) An outer ring of stations, one in each meteorological sector, in the 3-9 mile range from the site (3) The balance of the stations placed in special interest areas, such as population centers, nearby residences, schools and in 1 or 2 areas to serve as control stations	See Table 5	Quarterly	Gamma dose quarterly.

Table 2: Radiological Environmental Monitoring Program – Airborne

Requirement	Sample Location Description, Distance, and Direction	Sampling Collection/ Frequency	Type and Frequency of Analyses
Airborne Radioiodine and Particulates Samples from 5 locations: 3 samples from close to the 3 SITE BOUNDARY locations (in different sectors) of the highest calculated annual average ground level D/Q. 1 sample from the vicinity community having one of the highest calculated annual ground level D/Q. 1 sample from a control Location, as for example 15-30km distant and in the least prevalent wind direction.	6C1 11,305 feet NE of site Limerick Airport 10S3 2,648 feet E of site Keen Road 11S1 2,017 feet ESE of site Information Center 11S2 QC 2,017 feet ESE of site Information Center 14S1 3,319 feet SSE of site Longview Road 13S4 1,186 feet SE of site Longview Road 15D1 16,877 feet SE of site Spring City Substation 22G1 C 93,619 feet SW of site Manor Substation	Sample collected from a continuous air sampler, weekly or more frequently if required by dust loading.	Radioiodine canisters: I-131 analysis following canister change Particulate Sampler: Gross beta radioactivity analysis following filter change Gamma isotopic analysis of composite (by location) at least quarterly

C Indicates a Control location

QC Indicates a Quality Control duplicate sample location

Table 3: Radiological Environmental Monitoring Program – Waterborne

Requirement	Sample Location Description, Distance, and Direction	Sampling Collection/ Frequency	Type and Frequency of Analyses
Water a. Surface 1 sample upstream 1 sample downstream	24S1 [C] 1,058 feet SW of site LGS Intake Building 13B1 9,225 feet SE of site Pennsylvania American Water Company River	Sample collected from a continuous water sampler, monthly. In event sampler is inoperable, weekly grab samples will be collected until sampler returned to service.	Gamma isotopic analysis monthly. Composite for tritium analysis quarterly.
b. Ground Samples from 1 or 2 sources only if likely to be affected	No Ground water is sampled and analyzed due to no wells to which groundwater beneath the plant discharges are present in the area. The site is hydrologically isolated from all public groundwater supplies and areas of extensive groundwater development (LGS USFAR Section 2.4.13.2)		
c. Drinking 1 sample of each on 1 to 3 of the nearest water supplies that could be affected by its discharge. 1 sample from a control location	15F7 33,400 feet SSE of site Phoenixville Water Treatment Plant 15F4 45,514 feet SE of site AQUA Water Company 16C2 14,034 feet SSE of site Pennsylvania American Water Company Reservoir 28F3 [C] 30,811 feet WNW of site Pottstown Water	Sample collected from a continuous water sampler, monthly. In event sampler is inoperable, weekly grab samples will be collected until sampler returned to service	I-131 analysis on each composite when the dose calculated for the consumption of the water is greater than 1 mrem per year. Composite for gross beta and gamma isotopic analysis monthly. Composite for tritium analysis quarterly.
d. Sediment from shoreline 1 sample from downstream area with existing or potential recreational value.	16B2 7,128 feet SSE of site Down River from Plant Discharge Area 16C4 11,510 feet SSE of site Down River from Plant Discharge Area 33A2 [C] 4,435 feet NNW of site	A sediment sample is taken down stream of discharge semi-annually	Gamma isotopic analysis semiannually.

[C] Indicates a Control location

Table 4: Radiological Environmental Monitoring Program – Ingestion

Requirement	Sample Location Description, Distance, and Direction	Sampling Collection/ Frequency	Type and Frequency of Analyses
Ingestion a. Milk Samples from milking animals in 3 locations within 5 km distance having the highest dose potential. If there are none, then 1 sample from milking animals in each of 3 areas between 5 to 8 km distance where dose are calculated to be greater than 1 mrem per year. 1 sample from milking animals at a control location (15-30km distance) and in the least prevalent wind direction.	18E1 22,704 feet S of site Miller Farm (discontinued 03/2025) 19B1 10,317 feet SSW of site Kolb's Farm 22B1 20,011 feet SW of site Pigeon Creek Farm 8G1 [C] 54,504 feet ENE of site Knechel Farm 19F1 30,548 feet S of site Kimberton Hills Dairy (not in ODCM)	Semimonthly when animals are on pasture (April 1-Oct 1), monthly at other times.	Gamma isotopic and I-131 analyses semimonthly when animals are on pasture; monthly at other times.
b. Fish and Invertebrates 1 sample of each commercially and recreationally important species in vicinity of plant discharge area. 1 sample of same species in area not influenced by plant discharge.	16C5 9,251 feet SE of site LGS Discharge Area 29C1 [C] 13,725 feet WNW of site Area not influenced by Plant Discharge	Sample in season, or semiannually if they are not seasonal.	Gamma isotopic analyses on edible portions

[C] Indicates a Control location

c. Food Products 1 sample of each principal class of food products from any area that is irrigated by water in which liquid plant wastes have been discharged Samples of 3 different kinds of broad leaf vegetation grown nearest each of 2 different offsite locations of highest predicted annual average ground level D/Q if milk sampling is not performed. 1 sample of each of the similar broad leaf vegetation grown 15-30 km distance in the least prevalent wind direction if milk sampling is not performed.	There are no downstream food products that are irrigated by water in which liquid plant wastes have been discharged. 11S3 1,848 feet ESE of site Retired LGS Information Center 13S3 1,267 feet SE of site Longview Rd at the 500kv substation 31G1 [C] 71,808 feet NW of site Jollyview Farm (1560 Memorial Highway, Oley) No broadleaf vegetation sampling is credited toward REMP because milk sampling is performed.	At time of harvest Monthly during the growing season	Gamma isotopic and I-131 analyses on each sample Gamma isotopic and I-131 analyses on each sample

[C] Indicates a Control location

Table 5: REMP Sampling Locations – Direct Radiation

Site #	Location Type	Sector	Distance (in feet)	Description
36S2	Inner Ring	N	3,183	Evergreen/Sanatoga Roads
3S1	Inner Ring	NNE	2,301	Field NNE Sector
5S1	Inner Ring	NE	2,350	Possum Hollow
7S1	Inner Ring	ENE	3,099	Training Center
10S3	Inner Ring	E	2,648	Keen Road
11S1	Inner Ring	ESE	2,017	Information Center
13S2	Inner Ring	SE	2,149	Longview Road
14S1	Inner Ring	SSE	3,319	Longview Road
18S2	Inner Ring	S	1,390	Intake Building Area
21S2	Inner Ring	SSW	977	Intake Building Area
23S2	Inner Ring	SW	2,793	Transmission Tower
25S2	Inner Ring	WSW	2,445	Taylor House
26S3	Inner Ring	W	2,088	Meteorological Tower #2
29S1	Inner Ring	WNW	2,886	Field WNW Sector
31S1	Inner Ring	NW	1,395	NW Sector
34S2	Inner Ring	NNW	3,071	Meteorological Tower #1

Table 5: REMP Sampling Locations – Direct Radiation

Site #	Location Type	Sector	Distance (in feet)	Description
36D1	Outer Ring	N	18,527	Romig Road
2E1	Outer Ring	NNE	25,112	Laughing Water
4E1	Outer Ring	NE	25,221	Neiffer Road
7E1	Outer Ring	ENE	22,489	Game Farm
10E1	Outer Ring	E	20,826	Royersford Road
10F3	Outer Ring	ESE	29,442	Trappe Substation
13E1	Outer Ring	SE	22,772	Vaughn Road
16F1	Outer Ring	SSE	26,608	Pikeland Substation
19D1	Outer Ring	S	18,439	Snowden Substation
20F1	Outer Ring	SSW	27,648	Sheeder Substation
24D1	Outer Ring	SW	20,972	Porters Mill Road
25D1	Outer Ring	WSW	21,044	Hoffecker Rd/Keim St
28D2	Outer Ring	W	20,231	West Cedarville Road
29E1	Outer Ring	WNW	26,110	High Substation
31D2	Outer Ring	NW	20,446	Poplar Substation
34E1	Outer Ring	NNW	24,243	Yarnell Road

Table 5: REMP Sampling Locations – Direct Radiation

Site #	Location Type	Sector	Distance (in feet)	Description
5H1	Control	NE	130,742	Birch Station
6C1	Special Interest	NE	11,305	Limerick Airport
9C1	Special Interest	E	11,377	Reed Road
13C1	Special Interest	SE	14,980	King Road
15D1	Special Interest	SE	16,877	Spring City Substation
17B1	Special Interest	S	8,462	Linfield Substation
20D1	Special Interest	SSW	16,157	Ellis Woods Road
31D1	Special Interest	WNW	15,853	Lincoln Substation

6.0 MAPS OF COLLECTION SITES

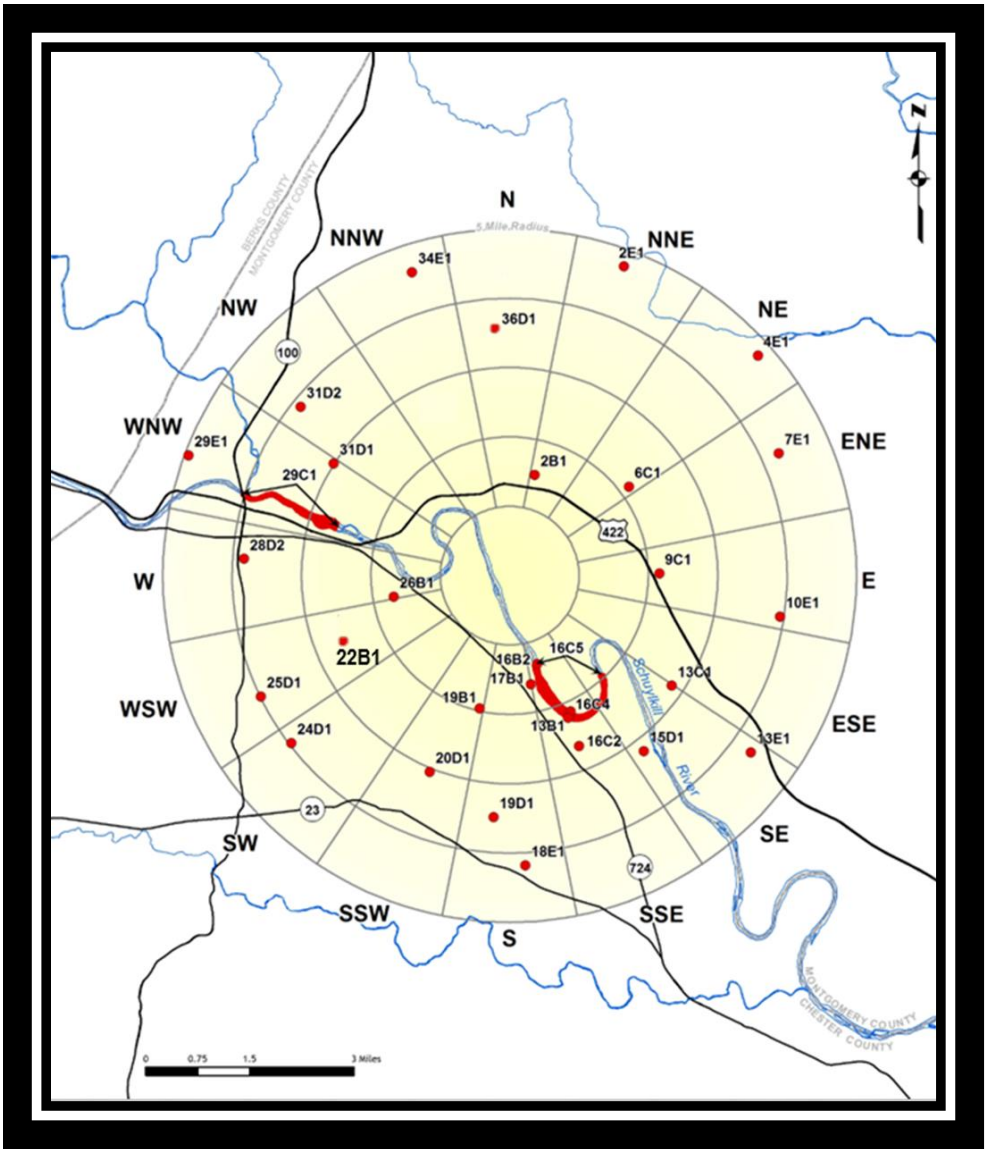

Figure 2: REMP Sample Locations at Distances Less than Five Miles from the Limerick Generating Station

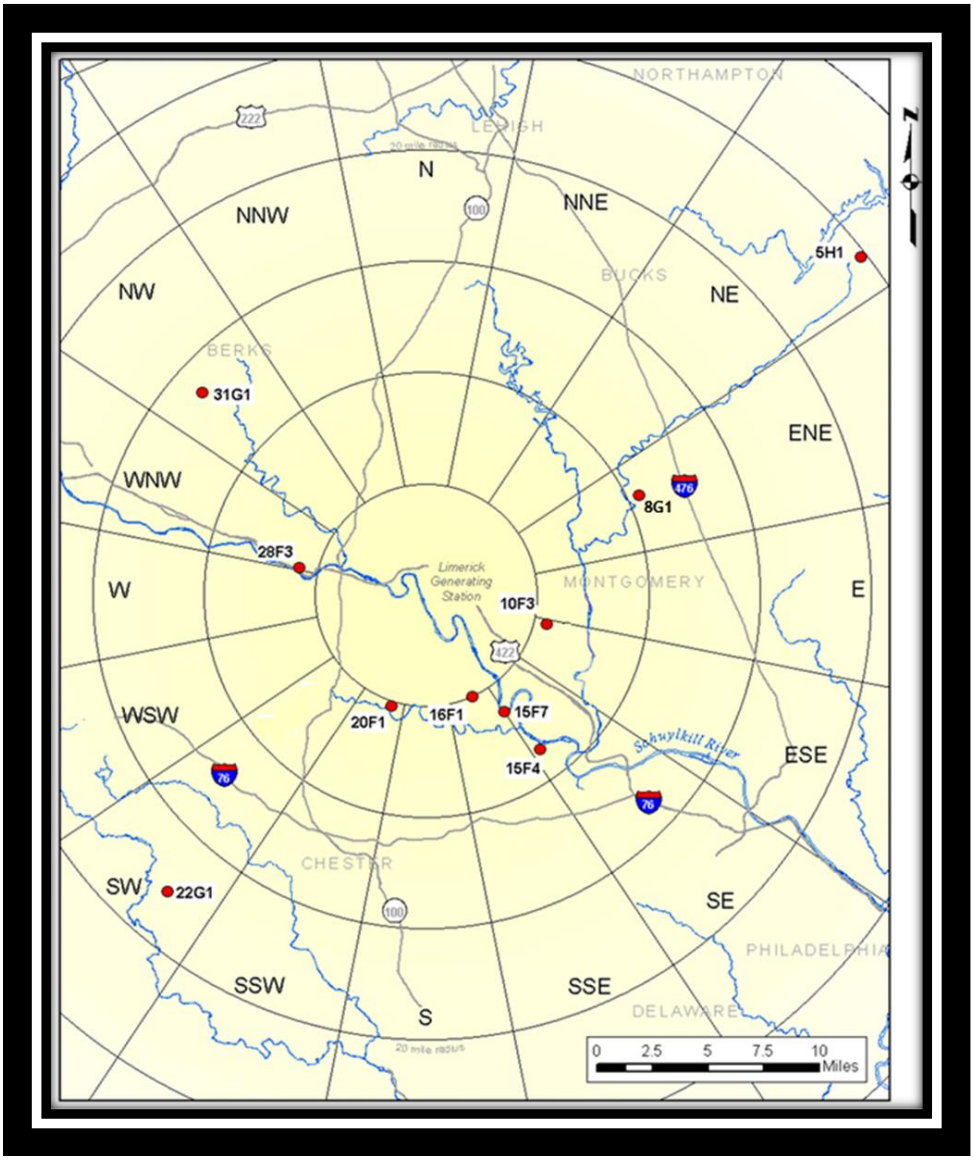

Figure 3: REMP Sample Locations at Distances Greater than Five Miles from the Limerick Generating Station

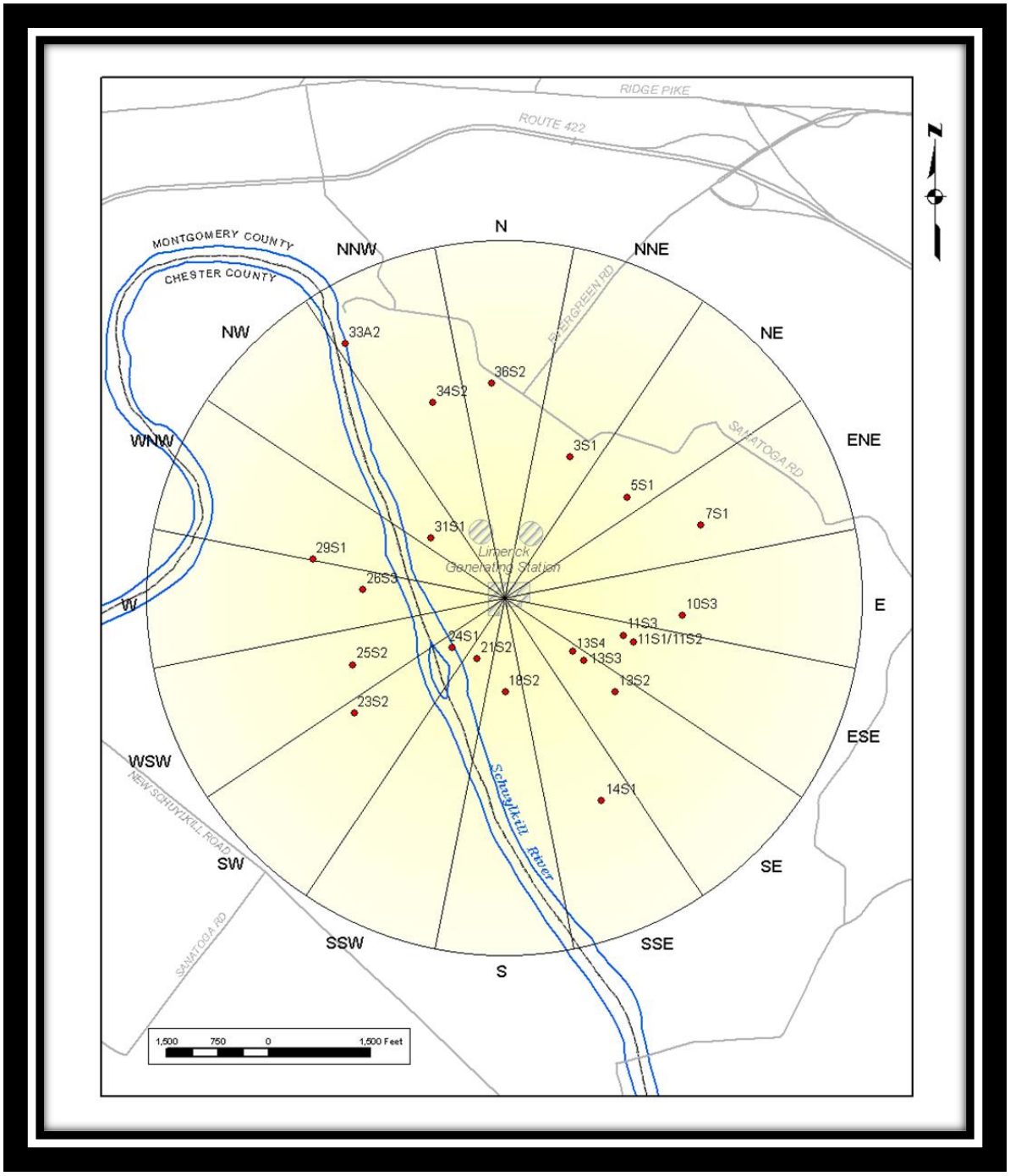

Figure 4: REMP Sample Locations on Site or Near the Limerick Generating Station

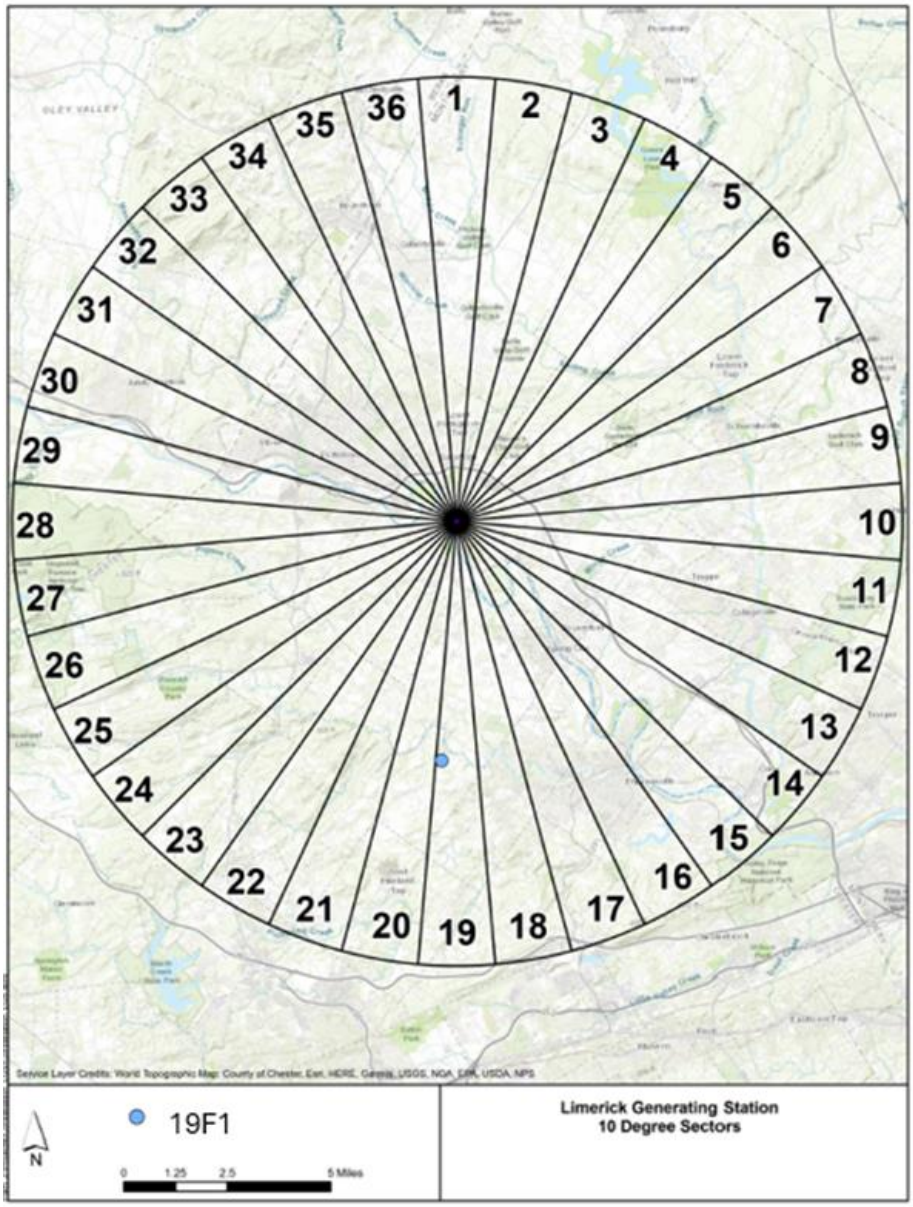

Figure 5: REMP Milk Sample Location for 19F1 (will be added to ODCM in next revision)

7.0 REPORTING LEVELS FOR RADIOACTIVITY CONCENTRATIONS IN ENVIRONMENTAL SAMPLES

Table 6: Reporting Levels for Radioactivity Concentrations in Environmental Samples

Radionuclide	Water (pCi/L)	Air Particulates or Gases (pCi/m^3)	Fish (pCi/Kg-wet)	Milk (pCi/L)	Food Products (pCi/Kg-wet)
H-3	20,000 [5]				
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 [6]	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	

Table 7: Lower Limits of Detection

Radionuclide	Water (pCi/L)	Air Particulates or Gases (pCi/m^3)	Fish (pCi/Kg-wet)	Milk (pCi/L)	Food Products (pCi/Kg-wet)	Sediment (pCi/Kg-dry)
Gross Beta	4.0	0.01				
H-3	2,000 [7]					
Mn-54	15		130			
Fe-59	30		260			
Co-58, Co-60	15		130			
Zn-65	30		260			
Zr-95, Nb-95	30, 15					
I-131	1 [8]	0.07		1	60	
Cs-134	15	0.05	130	15	60	150
Cs-137	18	0.06	150	18	80	180
Ba-140, La-140	60, 15			15		

[5] **For** drinking water samples: **If** no drinking water pathway exists, a value **of 30,000 pCi/L** may be used.
[6] **If** no drinking water pathway exists, a value of 20 pCi/l may be used
[7] **If** no drinking water pathway exists, a value **of 3,000 pCi/L** may be used. Some states may require a lower LLD for drinking water sources- per 40 CFR 141 Safe Drinking Water Act.
[8] **If** no drinking water pathway exists, a value of 15 pCi/l may be used

8.0 SAMPLING PROGRAM, PROGRAM MODIFICATION AND INTEPRETATION OF RESULTS

At most nuclear stations, data was collected prior to plant operation to determine background radioactivity levels in the environment. Annual data is routinely compared to preoperational and/or 10-year average values to determine if changes in the environment are present. Strict comparison is difficult to make due to fallout from historical nuclear weapon testing. Cesium-137 can be routinely found in environmental samples as a result of above ground nuclear weapons testing. Levels of Cs-137 in environment are observed to fluctuate, for example as silt distributions shift due to natural erosion and transport processes, Cs-137 may or may not be observed in sediment samples.

In the following sections, it will be discussed: results from direct radiation, air, water, and food products analyzed as part of REMP in 2025 and sampling program descriptions and deviations.

8.1 Environmental Direct Radiation Dosimetry Results

Dose is measured as net exposure (field reading less transit reading) normalized to 91-day quarters. Data is treated and analyzed consistent with ANSI/HPS N13.37-2014, which compares the measured dose for each location to the baseline background dose for that location. Environmental dose rates vary by location, depending on geological and land use considerations, and remain relatively constant for any given location (unless land use changes). Some facilities observe seasonal variation in environmental doses. Baseline Background Doses have been determined for both quarterly and annual measurements at each location using historical field measurements.

ANSI/HPS N13.37-2014 uses the concept of minimum differential dose (MDD), which is the minimum facility-related dose that can be detected above background. Due to natural background variations and measurement sensitivities and uncertainties, minimum differential dose is not zero. MDD is calculated based on statistical performance of the dosimetry system in the environment and is site specific.

Normalized doses that exceed the Minimum Differential Dose value above the Baseline Background Dose are considered to indicate Facility-Related Dose; a quality assurance review is performed to verify that any results indicating Facility-Related Dose are accurate.

During the 2025, a total of 40 locations were monitored and data analyzed in accordance with the requirements in Table 1: Radiological Environmental Monitoring Program – Direct Radiation. Attachment 4: Environmental Direct Radiation Dosimetry Results, provides the annual direct radiation dosimetry analysis.

Positive direct dose was calculated as 5.3 mrem for the quarter and 12.2 mrem for the year for location 13E1. Given the distance (22,772 feet SE from site) and no previous positive dose from this location, this data is believed to be anomalous, but it was kept for trending purposes and as a conservative effort.

The measured value for the OSLD was reconfirmed by the vendor to eliminate analysis error as the cause of the anomaly. All OSLD measurements were analyzed, and no other locations were found to have radiation levels that had increased over normal background radiation levels. This event was recorded in the company's corrective action program.

8.2 Air Particulate and Radioiodine Sample Results

Air particulate filters and charcoal canisters were collected from locations specified in Table 1: Radiological Environmental Monitoring Program – Direct Radiation. During the calendar year 2025, a total of 364 samples were collected and analyzed for gross beta, gamma emitters and iodine. Particulate samplers are used to continuously collect airborne particulates on a filter. The samples are analyzed for gross beta activity following filter changeout which occurs weekly. Gamma isotopic analysis is also performed on the samples collected at each location and is analyzed quarterly.

Air particulate samples were analyzed for concentrations of gross beta and gamma-emitting nuclides. Gross beta and cosmogenic naturally occurring beryllium-7 (Be-7) were detected at levels consistent with those detected in previous years. No fission or activation products were detected. High-sensitivity I-131 analyses were performed on weekly air samples. All I-131 results were less than minimum detectable activity. Gross Beta results are plotted in Figure 6, below.

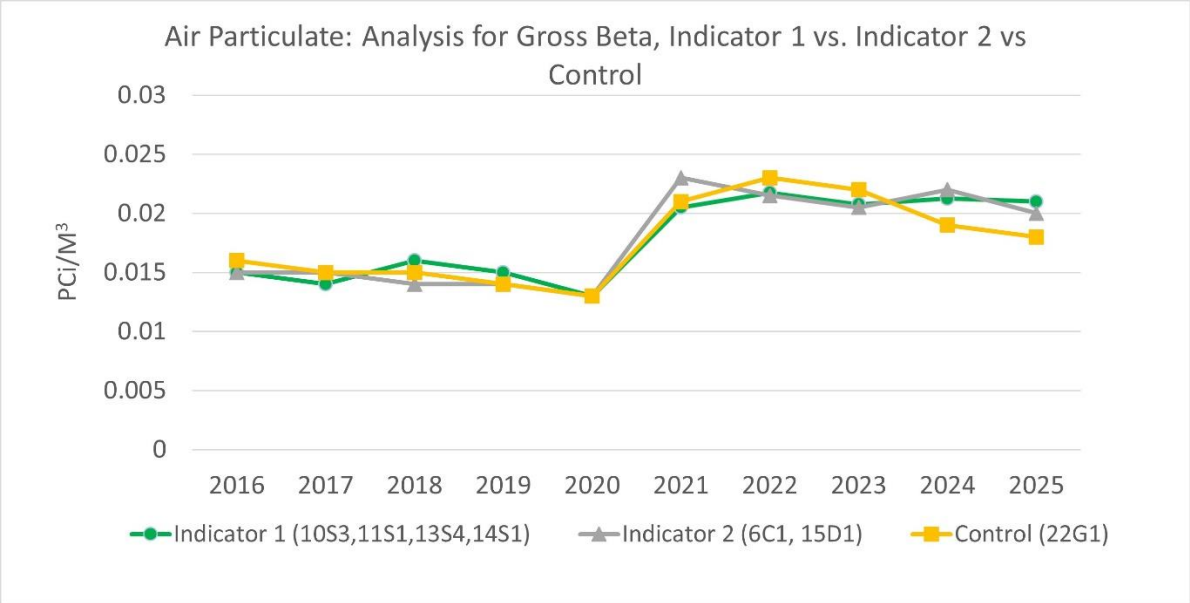

Figure 6: Air Particulate: Analysis for Gross Beta, Indicator 1 vs. Indicator 2 vs. Control

Air particulate and radioiodine results from this monitoring period, 2025, were compared to 10 year average as shown in Figure 6, and there were no significant changes.

8.3 Waterborne Sample Results

8.3.1 Surface Water (i.e., Bay, Lake etc.)

Composite water samples are collected monthly at the upstream control location and at the downstream indicator locations. Monthly composite samples are analyzed for gamma emitters. Aliquots from the monthly composites are combined to form a quarterly composite which is then analyzed for tritium. Tritium was not detected in any samples in 2025 as tritium concentrations were below minimum detectable activity. During the calendar year 2025, a total of 24 surface water samples were collected and analyzed in accordance with the requirements in the ODCM and shown in Table 3: Radiological Environmental Monitoring Program – Waterborne. Tritium concentrations in surface water were well below the EPA tritium drinking water limit of 20,000 pCi/L.

The ODCM does not require low level iodine analysis from locations 13B1 and 24S1. Figure 7 shows surface water tritium results for the last 10 years.

ODCM requires gamma isotopic analysis on monthly samples and tritium analysis quarterly on composited samples. ODCM Table 3.3-1 3.WATERBORNE, a. Surface, 4th column).

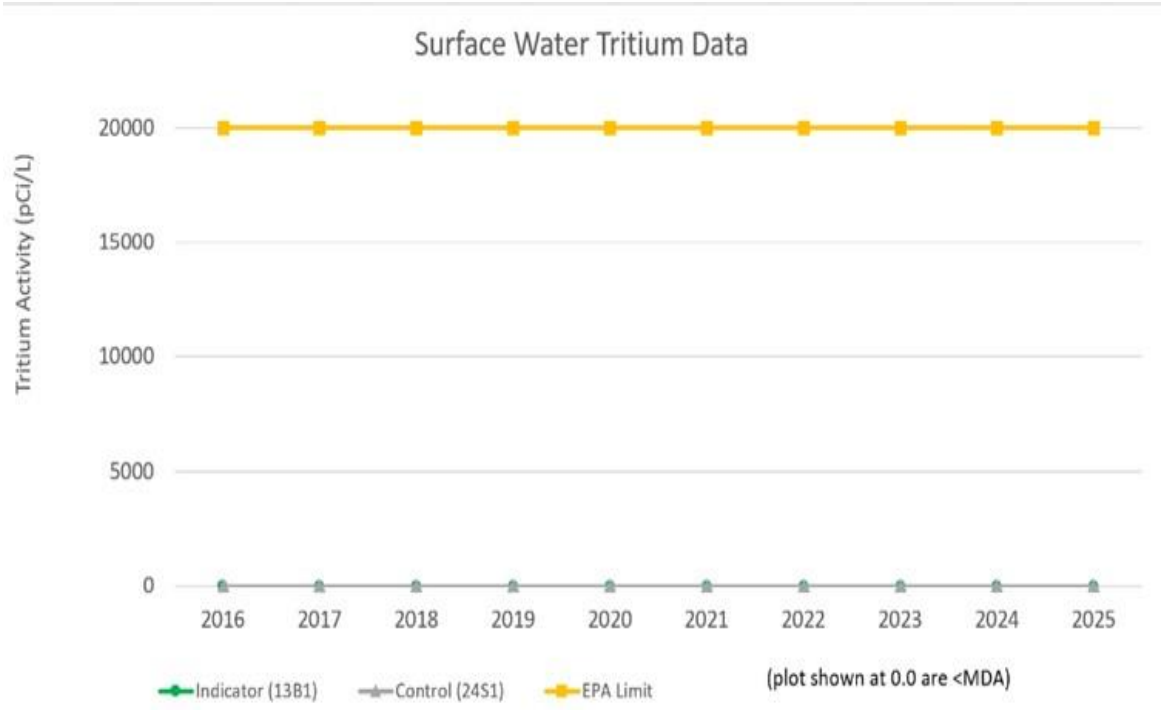

Figure 7: Surface Water Tritium Results

8.3.2 16C2 Beta Analysis Comparison; CGS vs. TBE 2025

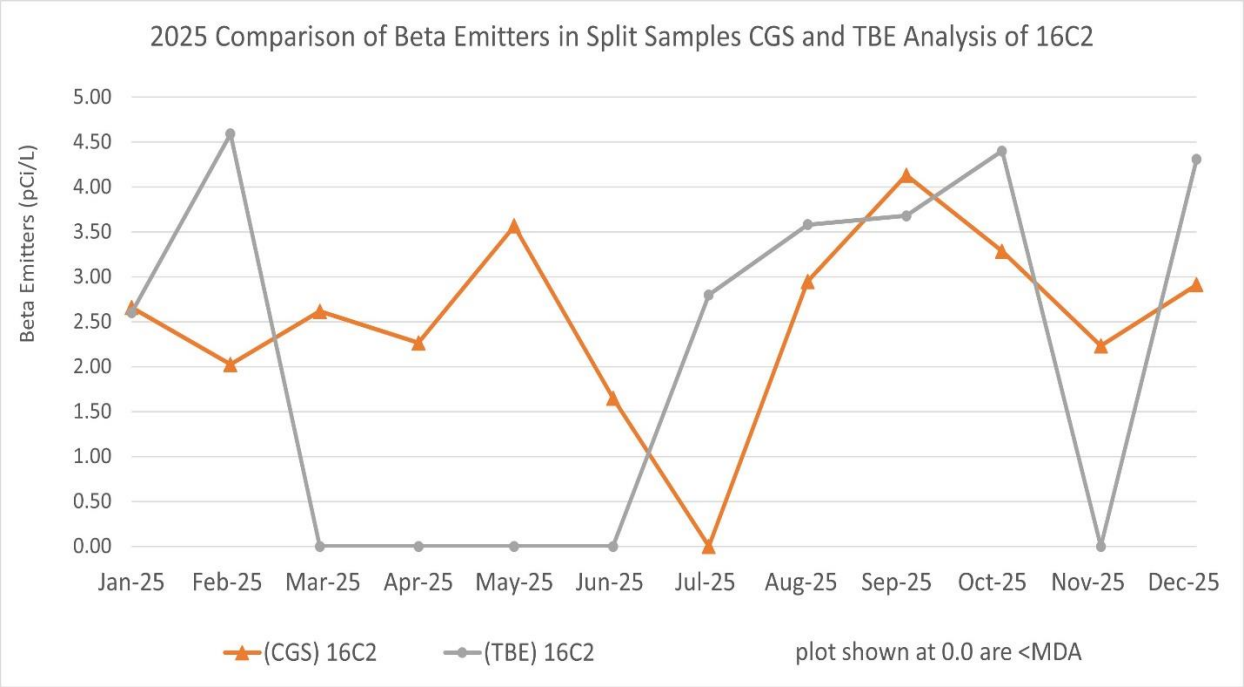

Figure 8: 2025 Comparison of Beta Emitters in Split Samples CGS and TBE Analysis of 16C2

8.3.3 Drinking Water

A total of 48 drinking water samples were obtained in 2025. These samples were analyzed for gross beta, low level iodine, and gamma analysis monthly. These samples were analyzed for tritium quarterly in accordance with requirements in the ODCM and shown in Table 3: Radiological Environmental Monitoring Program – Waterborne. Total gross beta activities detected were consistent with those detected in previous years. No other fission or activation products were detected. Tritium concentrations in drinking water were less than MDA, thus far below the EPA tritium drinking water limit of 20,000 pCi/L.

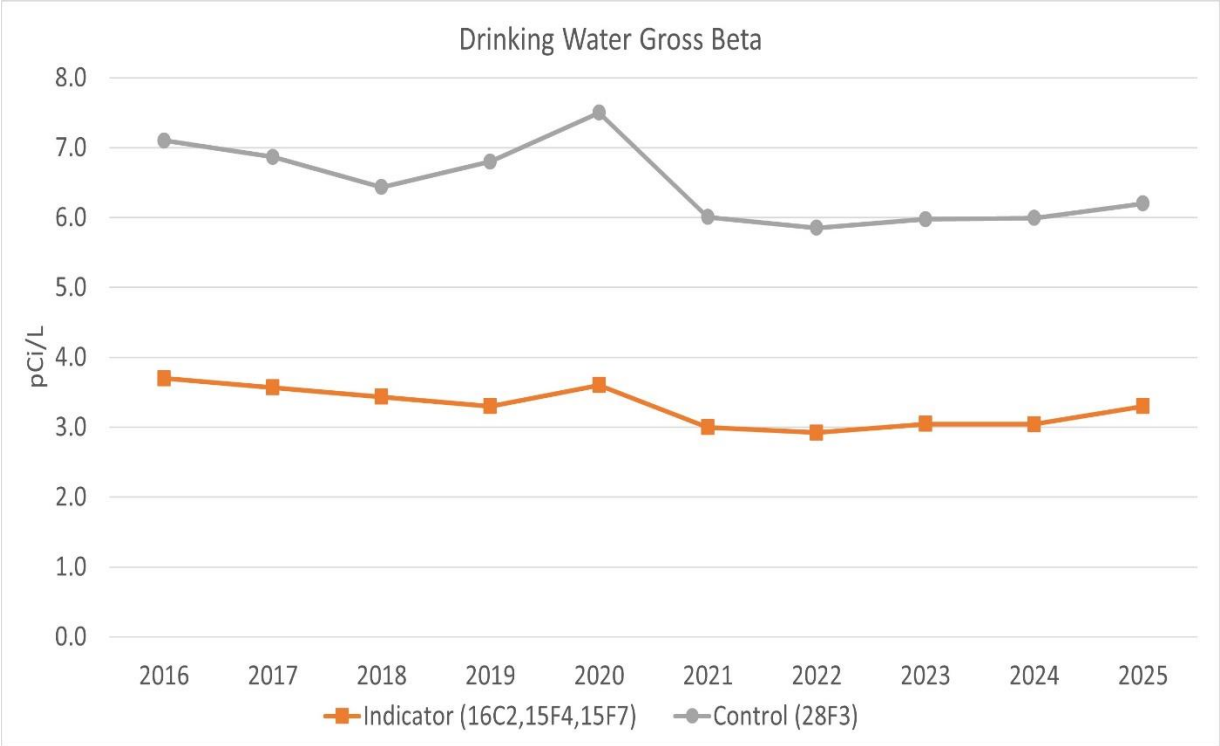

Figure 9: Drinking Water Gross Beta

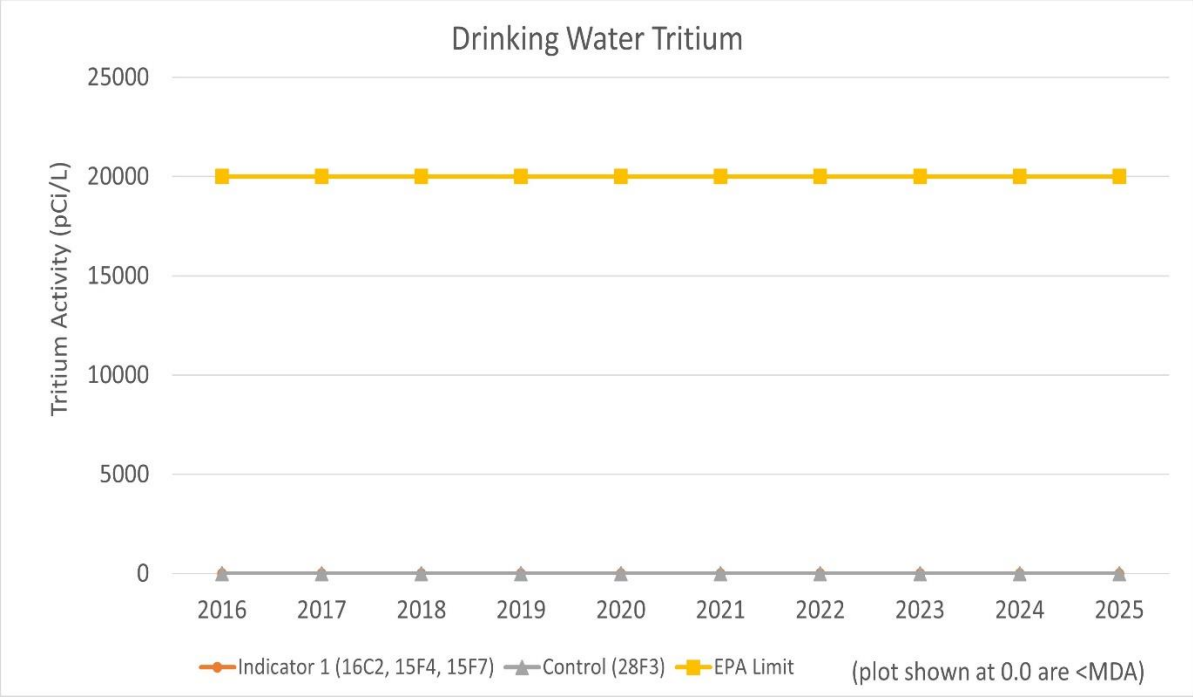

Figure 10: Drinking Water Tritium

8.3.4 Sediment from Shoreline

Shoreline sediment collections were made in May and November of 2025 and analyzed for gamma-emitting isotopes. Samples are collected at both indicator and control locations. A total of 6 shoreline samples were analyzed in accordance with requirements in the ODCM and shown in Table 3: Radiological Environmental Monitoring Program – Waterborne.

Sediment samples from all locations were analyzed for gamma-emitting nuclides. All analyses met minimum detectable activities. No fission or activation products were detected.

8.4 Ingestion Pathway Sample Results

8.4.1 Milk

Milk samples from milking animals were collected at 3 locations within 5 km having the highest dose potential, along with samples collected from a control location 15-30 km in the least prevalent wind direction. Samples were collected and analyzed monthly when cows were not on pasture and biweekly when cows were on pasture. Samples were analyzed for low level iodine and gamma-emitting nuclides. Concentrations of naturally occurring potasssium-40 were consistent with those detected in previous years. No fission or activation products were found.

8.4.2 Fish and Invertebrates

A total of 8 fish samples were collected in 2025. These samples were analyzed for gamma emitting radionuclides in edible portions, in accordance with requirements of the ODCM and summarized in Table 4: Radiological Environmental Monitoring Program – Ingestion. These samples are collected from the indicator and control areas as required by the ODCM (with a bottom feeder species and a predator species collected at each location). All non-natural gamma emitters were less than the minimal detectable activity. Concentrations of naturally occurring potassium-40 (K-40) were consistent with those detected in previous years.

8.4.3 Food Products

A total of 36 vegetation samples were analyzed in 2025 for gamma emitting radionuclides in accordance with requirements of the ODCM, as summarized in Table 4: Radiological Environmental Monitoring Program – Ingestion.

8.4.4 Leafy Vegetation

In accordance with the ODCM and as described in Table 4: Radiological Environmental Monitoring Program – Ingestion, 36 broad leaf vegetation samples were collected from growing locations nearest site boundary in areas of highest predicted annual average ground level D/Q. Samples are collected and analyzed for gamma isotopic activity from the indicator and control locations monthly during growing season. It is common to detect Cs-137 in broadleaf samples at both indicator and control locations. Cs-137 can be attributed to offsite sources such as weapons testing, Chernobyl, and Fukushima events. All non-natural gamma emitters were less than the minimal detectable activity.

9.0 LAND USE CENSUS

An annual land use census is required by the Offsite Dose Calculation Manual and is performed to ensure that changes in the use of areas at or beyond the site boundary are identified and modifications to REMP are made if required by changes in land use. The land use census satisfies the requirements of Section IV.B.3 of Appendix I to 10 CFR 50 [1]. NUREG-1302 Control 3.12.2 specifies that "a Land Use Census shall be conducted and shall identify within a distance of 8 km (5 mi.) the location in each of the 16 meteorological sectors of the nearest milk animal, the nearest residence and the nearest garden of greater than 50 m^2 (500 ft^2) producing broad leaf vegetation." Note, per NUREG-1302, broad leaf vegetation sampling of at least three different kinds of vegetation may be performed at the SITE BOUNDARY in each of two different direction sectors with the highest predicted D/Qs in lieu of the garden census.

A Land Use Census was conducted during the calendar year 2025, within the growing season, to identify changes in land use, receptor locations, and new exposure pathways. The results for the 2025 Land Use Census are listed in Table 8: Land Use Census – Nearest Receptors within 5 miles. The nearest gardens in all other sectors reported in the 2025 report are the same as the previous year's report. There was no observed water usage for agricultural irrigation of root vegetables drawn directly from the Schuylkill River downriver from Limerick Generating Station.

Table 8: Land Use Census – Nearest Receptors within 5 miles

Sector	Direction	Nearest Residence		Nearest Garden (1)		Nearest Dairy Animal	
		Feet	Miles	Feet	Miles	Feet	Miles
A	N	3,109	0.59	3,333	0.63	-	-
B	NNE	2,706	0.51	3,792	0.72	-	-
C	NE	3,469	0.66	13,917	2.64	-	-
D	ENE	3,231	0.61	7,451	1.41	-	-
E	E	2,864	0.54	4,117	0.78	-	-
F	ESE	3,434	0.65	3,434	0.65	-	-
G	SE	3,928	0.74	6,376	1.21	-	-
H	SSE	5,403	1.02	6,912	1.31	-	-
J	S	4,347	0.82	6,103	1.16	-	-
K	SSW	5,063	0.96	5,732	1.09	10,317*	1.95
L	SW	3,251	0.62	6,319	1.20	20,011*	3.79
M	WSW	3,799	0.72	4,459	0.84	-	-
N	W	3,627	0.69	3,636	0.69	-	-
P	WNW	3,685	0.70	4,461	0.84	-	-
Q	NW	3,619	0.69	8,200	1.55	-	-
R	NNW	5,050	0.96	7,186	1.36	-	-

(1) Larger than 500 square feet (as can best be determined from a distance)

* Denotes current REMP Dairy sample location

10.0 SAMPLE DEVIATIONS, ANOMALIES AND UNAVAILABILITY

Sampling and analysis are performed for media types addressed in the Offsite Dose Calculation Manual (ODCM). Sampling and analysis challenges may be experienced due to a multitude of reasons including environmental factors, loss of OSLDs, contamination of samples, etc. To aid classification of sampling and analysis challenges experienced in 2025, the following three terms are used to describe the issues: Sample Anomalies, Sample Deviation, and Unavailable Samples.

Media that experienced downtime (i.e., air samplers or water samplers) during a surveillance period are classified as “Sample Deviation”. “Sample Anomalies” are defined as errors that were introduced to a sample once it arrived in the laboratory, errors that prevent the sample from being analyzed as it normally would or may have altered the outcome of the analysis (i.e., cross contamination, human error).

“Sample Unavailability” is defined as sample collection with no available sample (i.e., food crop, TLD).

All required REMP samples were collected and analyzed as scheduled. There were no sample deviations or anomalies that required corrective action.

Table 9: Sample Deviation Summary

Sample Type and Analysis	Location	Collection Date or Period	Reason for not conducting REMP sampling as required by ODCM	Plans for preventing reoccurrence
Milk	18E1	3/18/25	Farmer sold their herd.	New location, 19F1, added to the REMP Program.
Air (Gamma and Beta)	11S1/11S2	9/30/25	11S1/11S2 found not running due to loss of power	Communicating with PECO during planned outages in the area.
Air (Gamma and Beta)	11S2 (QC)	10/6/25	The 11S2 air sampler was found not running due to PECO maintenance.	N/A; temporary power was routed to the air sampler and it was returned to service.
Direct Radiation	13E1	Q4 2025	N/A; had vendor lab confirm results	N/A; ensure dose stays below 40 CFR 190 limits.

11.0 OTHER SUPPLEMENTAL INFORMATION

11.1 Independent Spent Fuel Storage Installation (ISFSI) Monitoring Program

On July 21, 2008, an ISFSI pad was placed in service. The results from the dosimeter location 36S2 were used to determine the direct radiation exposure to the nearest residence from the ISFSI pad. For the 10 CFR 20.2002 permitted storage area, 0 cubic feet was placed on the pad.

11.2 Corrections to Previous Reports

11.2.1 The 2024 AREOR 40 CFR 190 Limits LGS table has a miscalculation on the "%Contribution of Carbon-14 to gaseous dose", where the value was calculated including the liquid dose. The recalculated number takes into account the gaseous dose only.

2024 Total Annual Offsite-Dose Comparison to 40 CFR 190 Limits for LGS

	Whole Body	Thyroid	Max Other Organ
Limit	**25 mrem**	**75 mrem**	**25 mrem**
Gaseous - Noble Gas	5.00E-03	5.00E-03	8.29E-03
Gaseous - Particulates & Iodine	1.50E-03	1.57E-03	1.50E-03
Carbon-14	2.43E-01	2.43E-01	1.21E+00
Liquid	7.32E-02	2.16E-02	1.05E-01
Direct Shine	0	0	0
Total Site Dose	3.23E-01	2.71E-01	1.32E+00
% Contribution of Carbon-14 to Gaseous Dose	~~75~~ 97	~~90~~ 97	~~92~~ 99

2024 Total Annual Offsite-Dose Comparison to 40 CFR 190 Limits for LGS

	Whole Body	Thyroid	Max Other Organ
Nearby Facility	1.79E-02	1.79E-02	1.79E-02
Total w/Other Nearby Facility	3.41E-01	2.89E-01	1.34+00
% of Limit	1.36	0.39	5.37

11.2.2 The 2024 AREOR was submitted to NRC with wrong data on the Land Use Census table. On Table 8, Land Use Census-Nearest Receptors within 5 miles, the column with the “Nearest Residence (miles)” has duplicate data from the “Nearest Garden (miles)” section. The error does not qualify as a significant error as stated by CY-NISP-401.

Table 8: Land Use Census – Nearest Receptors within 5 miles

Sector	Direction	Nearest Residence (Miles)	Nearest Garden [1] (Miles)	Nearest Dairy Animal (Miles)
A	N	~~0.63~~ **0.59**	0.63	Not Found in Sector
B	NNE	~~0.72~~ **0.51**	0.72	Not Found in Sector
C	NE	~~2.64~~ **0.66**	2.64	Not Found in Sector
D	ENE	~~1.41~~ **0.61**	1.41	10.32*
E	E	~~0.78~~ **0.54**	0.78	Not Found in Sector
F	ESE	~~0.65~~ **0.65**	0.65	Not Found in Sector
G	SE	~~1.21~~ **0.74**	1.21	Not Found in Sector
H	SSE	~~1.31~~ **1.02**	1.31	Not Found in Sector
J	S	~~1.16~~ **0.82**	1.16	4.19*
K	SSW	~~1.09~~ **0.96**	1.09	1.97*
L	SW	~~1.20~~ **0.62**	1.20	3.79*
M	WSW	~~0.84~~ **0.72**	0.84	Not Found in Sector
N	W	~~1.68~~ **0.69**	1.68	Not Found in Sector
P	WNW	~~0.84~~ **0.70**	0.84	Not Found in Sector
Q	NW	~~1.55~~ **0.69**	1.55	Not Found in Sector
R	NNW	~~1.36~~ **0.96**	1.36	Not Found in Sector

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- g. L312A-Receiving Inlight Dosimeters and Associated Components
- h. L313-Inlight Dosimeter Analysis
- i. L313A Analyzing Inlight Dosimeters
- j. L313C-Inlight Reader Preventive Maintenance
- k. L313E-Performing Calibration Processes on Inlight MFG. Automatic Reader
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Attachment 1: Data Table Summary

Medium or Pathway Sampled (Units)	Type, Total Number of Analyses performed (e.g., I-131, 400)	Lower Limit of Detection (LLD)	Indicator Mean[9]; (f[10]). Range[1]	Location with Highest Annual Mean		Control Mean[5] (f[6]) Range[5]	Number of Nonroutine Reported Measurements
				Name Distance and Direction	Mean[5] (f[6]) Range[5]		
Air Particulates (pCi/m^3)	Gross Beta, (364)	1.0	2.04E-02 (312/312) ($4.37E^{-3}$ - $3.95E^{-2}$)	14S1, 3,319 feet SSE	2.15E-02 (52/52) ($5.96E^{-3}$ - $3.95E^{-2}$)	1.80E-02 (52/52) ($4.61E^{-3}$ - $2.93E^{-2}$)	Air Particulates (pCi/m^3)
Direct Radiation (mrem/qtr.)	OSLD (320)	N/A	18.2(312/312) (12.2 - 30.3)	13S2, 2,149 feet SE	27.88 (8/8) (25.8 - 30.3)	21.95 (8/8) (20.2 - 23.3)	Direct Radiation (mrem/qtr.)
Surface Water (pCi/L)	Gross Beta (48)	4	3.34, (35/36) (1.65 - 5.54)	15F4, 45,514 feet SE	4.02, (12/12) (2.53 - 5.54)	2.92 (12/12) (2.20 - 3.74)	Surface Water (pCi/L)

[9] Mean and range are based on detectable measurements only.
[10] Fraction of detectable measurements at specified locations is indicated in parentheses.

Attachment 2: Complete Data Table for All Analysis Results Obtained In 2025

Table 10: Monthly Sample Results

Monthly Radionuclides in Surface Water (pCi/L)

	24S1 (Control)				13B1			
Date	**Gamma Emitters**	**Tritium**	**Gross Beta Activity**	**Uncertainty (2-σ)**	**Gamma Emitters**	**Tritium**	**Gross Beta Activity**	**Uncertainty (2-σ)**
2/3/2025	*		ND	ND	*		ND	ND
3/3/2025	*		ND	ND	*		ND	ND
3/31/2025	*	*	ND	ND	*	*	ND	ND
4/28/2025	*		ND	ND	*		ND	ND
6/2/2025	*		ND	ND	*		ND	ND
6/30/2025	*	*	ND	ND	*	*	ND	ND
7/29/2025	*		ND	ND	*		ND	ND
9/2/2025	*		ND	ND	*		ND	ND
9/30/2025	*	*	ND	ND	*	*	ND	ND
11/3/2025	*		ND	ND	*		ND	ND
12/1/2025	*		ND	ND	*		ND	ND
12/29/2025	*	*	ND	ND	*	*	ND	ND

ND No Data, Samples not analyzed for this parameter

* All Non-Natural Radionuclides <MDA

Table 10: Monthly Sample Results (cont.)

Monthly Radionuclides in Drinking Water (pCi/L)

	28F3 (Control)			16C2			15F4			15F7		
Date	**Gamma Emitters**	**Gross Beta Activity**	**Uncertainty (2-σ)**	**Gamma Emitters**	**Gross Beta Activity**	**Uncertainty (2-σ)**	**Gamma Emitters**	**Gross Beta Activity**	**Uncertainty (2-σ)**	**Gamma Emitters**	**Gross Beta Activity**	**Uncertainty (2-σ)**
2/3/25	*	3.58E+00	8.49E-01	*	2.66E+00	9.73E-01	*	5.01E+00	9.46E-01	*	4.26E+00	8.96E-01
3/3/25	*	2.93E+00	8.81E-01	*	2.03E+00	1.03E+00	*	3.23E+00	1.55E+00	*	2.97E+00	1.10E+00
3/31/25	*	2.97E+00	1.07E+00	*	2.62E+00	1.05E+00	*	2.53E+00	1.45E+00	*	3.09E+00	1.08E+00
4/28/25	*	2.21E+00	1.04E+00	*	2.27E+00	9.49E-01	*	2.89E+00	1.51E+00	*	2.50E+00	1.05E+00
6/2/25	*	2.20E+00	9.90E-01	*	3.57E+00	1.10E+00	*	2.61E+00	1.43E+00	*	2.78E+00	1.03E+00
6/30/25	*	3.06E+00	1.02E+00	*	1.65E+00	9.19E-01	*	3.94E+00	1.48E+00	*	2.87E+00	1.01E+00
7/29/25	*	2.44E+00	1.09E+00	*	<MDA	N/A	*	3.30E+00	1.61E+00	*	1.95E+00	1.06E+00
9/2/25	*	3.06E+00	1.02E+00	*	2.95E+00	1.01E+00	*	5.19E+00	1.56E+00	*	3.48E+00	1.05E+00
9/30/25	*	3.74E+00	1.11E+00	*	4.13E+00	1.14E+00	*	5.54E+00	1.64E+00	*	3.33E+00	1.08E+00
11/3/25	*	3.12E+00	1.07E+00	*	3.28E+00	1.09E+00	*	5.37E+00	1.64E+00	*	3.70E+00	1.11E+00
12/1/25	*	2.87E+00	1.06E+00	*	2.23E+00	1.01E+00	*	4.02E+00	1.55E+00	*	3.89E+00	1.13E+00
12/29/25	*	2.90E+00	1.03E+00	*	2.91E+00	1.03E+00	*	4.65E+00	1.55E+00	*	3.47E+00	1.07E+00

* All Non-Natural Radionuclides <MDA

Table 10 Monthly Sample Results (cont.)

Monthly Radionuclides in Milk (pCi/L)

Date	18E1	19B1	22B1	8G1 (Control)	19F1
1/14/2025	*	*	*	*	ND
2/18/2025	*	*	*	*	ND
3/18/2025	ND	*	*	*	*
4/1/2025	ND	*	*	*	*
4/14/2025	ND	*	*	*	*
4/28/2025	ND	*	*	*	*
5/13/2025	ND	*	*	*	*
5/27/2025	ND	*	*	*	*
6/9/2025	ND	*	*	*	*
6/24/2025	ND	*	*	*	*
7/8/2025	ND	*	*	*	*
7/22/2025	ND	*	*	*	*
8/4/2025	ND	*	*	*	*
8/19/2025	ND	*	*	*	*
9/2/2025	ND	*	*	*	*
9/16/2025	ND	*	*	*	*
9/30/2025	ND	*	*	*	*

Table 10: Monthly Sample Results (cont.)

Monthly Radionuclides in Milk (pCi/L)

Date	18E1	19B1	22B1	8G1 (Control)	19F1
10/13/2025	ND	*	*	*	*
10/27/2025	ND	*	*	*	*
11/10/2025	ND	*	*	*	*
12/9/2025	ND	*	*	*	*

* All Non-Natural Radionuclides <MDA

ND – No data, no sample collected, 18E1 was not available starting 3/18/25 due to the farmer selling the herd. This location was replaced by 19F1 starting on 3/18/25.

Table 10: Monthly Sample Results (cont.)

Monthly Radionuclides in Vegetation (pCi/kg wet)

Sample Date	Sample Code	Sample Type	Gamma Emitters
6/16/2025	11S3 ESE Sector at retired LGS Information Center	Horseradish	*
6/16/2025		Cucumber	*
6/16/2025		Cabbage	*
7/15/2025		Horseradish	*
7/15/2025		Yellow Squash Leaves	*
7/15/2025		Cabbage	*
8/11/2025		Horseradish	*
8/11/2025		Yellow Squash Leaves	*
8/11/2025		Cabbage	*
9/8/2025		Horseradish	*
9/8/2025		Yellow Squash Leaves	*
9/8/2025		Collards	*

Table 10: Monthly Sample Results (cont.)

Monthly Radionuclides in Vegetation (pCi/kg wet)

Sample Date	Sample Code	Sample Type	Gamma Emitters
6/16/2025	13S3 SE Sector along Longview Road at the 500Kv substation	Horseradish	*
6/16/2025		Collards	*
6/16/2025		Cabbage	*
7/15/2025		Horseradish	*
7/15/2025		Collards	*
7/15/2025		Cabbage	*
8/11/2025		Horseradish	*
8/11/2025		Collards	*
8/11/2025		Cabbage	*
9/8/2025		Horseradish	*
9/8/2025		Collards	*
9/8/2025		Kale	*

Table 10: Monthly Sample Results (cont.)

Monthly Radionuclides in Vegetation (pCi/kg wet)			
Sample Date	**Sample Code**	**Sample Type**	**Gamma Emitters**
6/16/2025	31G1 (Control) NW sector, Jollyview Farm	Cauliflower	*
6/16/2025		Rhubarb	*
6/16/2025		Broccoli	*
7/15/2025		Squash Leaves	*
7/15/2025		Zucchini	*
7/15/2025		Squash Leaves	*
8/11/2025		Squash Leaves	*
8/11/2025		Zucchini	*
8/11/2025		Eggplant Leaves	*
9/8/2025		Pepper Leaves	*
9/8/2025		Sunflower Leaves	*
9/8/2025		Eggplant Leaves	*

* All Non-Natural Radionuclides <MDA

Table 11: Weekly Airborne Samples

Weekly Airborne Samples for I-131 (pCi/m3)

Date	6C1	10S3	11S1	14S1	13S4	15D1	22G1 (Control)
1/6/2025	*	*	*	*	*	*	*
1/13/2025	*	*	*	*	*	*	*
1/21/2025	*	*	*	*	*	*	*
1/27/2025	*	*	*	*	*	*	*
2/3/2025	*	*	*	*	*	*	*
2/11/2025	*	*	*	*	*	*	*
2/17/2025	*	*	*	*	*	*	*
2/24/2025	*	*	*	*	*	*	*
3/3/2025	*	*	*	*	*	*	*
3/10/2025	*	*	*	*	*	*	*
3/17/2025	*	*	*	*	*	*	*
3/24/2025	*	*	*	*	*	*	*
3/31/2025	*	*	*	*	*	*	*
4/7/2025	*	*	*	*	*	*	*
4/14/2025	*	*	*	*	*	*	*
4/21/2025	*	*	*	*	*	*	*
4/28/2025	*	*	*	*	*	*	*
5/5/2025	*	*	*	*	*	*	*
5/12/2025	*	*	*	*	*	*	*
5/19/2025	*	*	*	*	*	*	*
5/27/2025	*	*	*	*	*	*	*

Table 11: Weekly Airborne Samples (cont.)

Weekly Airborne Samples for I-131 (pCi/m3)

Date	6C1	10S3	11S1	14S1	13S4	15D1	22G1 (Control)
6/2/2025	*	*	*	*	*	*	*
6/10/2025	*	*	*	*	*	*	*
6/16/2025	*	*	*	*	*	*	*
6/24/2025	*	*	*	*	*	*	*
6/30/2025	*	*	*	*	*	*	*
7/7/2025	*	*	*	*	*	*	*
7/14/2025	*	*	*	*	*	*	*
7/22/2025	*	*	*	*	*	*	*
7/29/2025	*	*	*	*	*	*	*
8/4/2025	*	*	*	*	*	*	*
8/11/2025	*	*	*	*	*	*	*
8/19/2025	*	*	*	*	*	*	*
8/25/2025	*	*	*	*	*	*	*
9/2/2025	*	*	*	*	*	*	*
9/8/2025	*	*	*	*	*	*	*
9/16/2025	*	*	*	*	*	*	*
9/22/2025	*	*	*	*	*	*	*
9/30/2025	*	*	*	*	*	*	*
10/6/2025	*	*	*	*	*	*	*
10/13/2025	*	*	*	*	*	*	*

Table 11: Weekly Airborne Samples (cont.)

Weekly Airborne Samples for I-131 (pCi/m3)

	6C1	10S3	11S1	14S1	13S4	15D1	22G1 (Control)
10/20/2025	*	*	*	*	*	*	*
10/27/2025	*	*	*	*	*	*	*
11/3/2025	*	*	*	*	*	*	*
11/10/2025	*	*	*	*	*	*	*
11/17/2025	*	*	*	*	*	*	*
11/24/2025	*	*	*	*	*	*	*
12/1/2025	*	*	*	*	*	*	*
12/8/2025	*	*	*	*	*	*	*
12/15/2025	*	*	*	*	*	*	*
12/22/2025	*	*	*	*	*	*	*
12/29/2025	*	*	*	*	*	*	*

*<MDA, Minimum Detectable Activity

Table 11: Weekly Airborne Samples (cont.)

Weekly Airborne Samples for Gross Beta activity in Air Particulates (pCi/m^3)

	6C1		10S3		11S1		14S1		13S4		15D1		22G1 (Control)	
Date	Gross Beta Activity	(2-σ)	Gross Beta Activity	(2-σ)	Gross Beta Activity	(2-σ)	Gross Beta Activity	(2-σ)	Gross Beta Activity	(2-σ)	Gross Beta Activity	(2-σ)	Gross Beta Activity	(2-σ)
1/6/2025	1.69E-02	1.90E-03	1.72E-02	1.90E-03	1.85E-02	1.95E-03	1.37E-02	1.76E-03	1.92E-02	1.97E-03	1.85E-02	1.95E-03	1.68E-02	1.89E-03
1/13/2025	2.07E-02	2.07E-03	1.80E-02	1.97E-03	1.68E-02	1.92E-03	1.98E-02	2.03E-03	1.83E-02	1.98E-03	1.89E-02	2.00E-03	1.84E-02	1.99E-03
1/21/2025	2.68E-02	2.17E-03	2.11E-02	2.00E-03	2.40E-02	2.09E-03	2.78E-02	2.20E-03	2.98E-02	2.26E-03	2.46E-02	2.10E-03	2.38E-02	2.08E-03
1/27/2025	3.34E-02	2.79E-03	2.80E-02	2.62E-03	3.53E-02	2.85E-03	3.95E-02	2.97E-03	3.52E-02	2.79E-03	3.72E-02	2.90E-03	2.91E-02	2.65E-03
2/3/2025	1.81E-02	1.99E-03	1.59E-02	1.91E-03	1.87E-02	2.02E-03	2.07E-02	2.09E-03	1.94E-02	2.04E-03	1.80E-02	1.99E-03	1.65E-02	1.94E-03
2/11/2025	2.23E-02	2.03E-03	2.15E-02	2.04E-03	2.09E-02	1.99E-03	2.21E-02	2.02E-03	2.35E-02	2.07E-03	2.16E-02	1.99E-03	2.01E-02	1.91E-03
2/17/2025	1.65E-02	2.16E-03	1.70E-02	2.18E-03	1.67E-02	2.35E-03	1.52E-02	2.11E-03	2.01E-02	2.29E-03	1.73E-02	2.21E-03	1.24E-02	2.06E-03
2/24/2025	1.94E-02	2.06E-03	1.69E-02	1.97E-03	1.49E-02	2.56E-03	1.74E-02	1.98E-03	1.85E-02	2.02E-03	1.77E-02	2.00E-03	1.56E-02	1.95E-03
3/3/2025	2.28E-02	2.15E-03	2.30E-02	2.16E-03	2.38E-02	2.19E-03	2.39E-02	2.19E-03	2.67E-02	2.28E-03	2.28E-02	2.16E-03	2.09E-02	2.09E-03
3/10/2025	1.61E-02	1.89E-03	1.59E-02	1.89E-03	1.56E-02	1.88E-03	1.71E-02	1.93E-03	1.81E-02	1.97E-03	1.50E-02	1.85E-03	1.47E-02	1.84E-03
3/17/2025	2.11E-02	2.06E-03	2.18E-02	2.08E-03	1.91E-02	1.99E-03	2.05E-02	2.04E-03	2.15E-02	2.08E-03	2.07E-02	2.05E-03	1.78E-02	1.94E-03
3/24/2025	1.63E-02	1.91E-03	1.77E-02	1.96E-03	1.71E-02	1.94E-03	1.79E-02	1.97E-03	2.16E-02	2.10E-03	1.76E-02	1.96E-03	1.57E-02	1.88E-03
3/31/2025	1.90E-02	2.01E-03	1.82E-02	1.99E-03	1.87E-02	2.00E-03	2.15E-02	2.10E-03	2.09E-02	2.08E-03	1.96E-02	2.03E-03	1.74E-02	1.96E-03
4/7/2025	1.60E-02	1.96E-03	1.37E-02	1.87E-03	1.43E-02	1.89E-03	1.68E-02	1.99E-03	1.49E-02	1.92E-03	1.58E-02	1.95E-03	1.35E-02	1.87E-03
4/14/2025	1.70E-02	2.00E-03	1.50E-02	1.91E-03	1.55E-02	1.93E-03	1.78E-02	2.01E-03	1.90E-02	2.06E-03	1.49E-02	1.88E-03	1.63E-02	1.91E-03

Table 11: Weekly Airborne Samples (cont.)

Weekly Airborne Samples for Gross Beta activity in Air Particulates (pCi/m^3)

	6C1		10S3		11S1		14S1		13S4		15D1		22G1 (Control)	
Date	Gross Beta Activity	(2-σ)	Gross Beta Activity	(2-σ)	Gross Beta Activity	(2-σ)	Gross Beta Activity	(2-σ)	Gross Beta Activity	(2-σ)	Gross Beta Activity	(2-σ)	Gross Beta Activity	(2-σ)
4/21/2025	2.01E-02	2.01E-03	1.88E-02	1.97E-03	1.96E-02	2.00E-03	2.28E-02	2.11E-03	2.27E-02	2.11E-03	1.77E-02	1.95E-03	1.83E-02	2.00E-03
4/28/2025	2.12E-02	2.07E-03	1.72E-02	1.93E-03	1.93E-02	2.01E-03	2.05E-02	2.05E-03	2.21E-02	2.11E-03	1.98E-02	2.03E-03	1.65E-02	1.92E-03
5/5/2025	1.97E-02	2.04E-03	1.97E-02	2.04E-03	1.81E-02	1.98E-03	1.95E-02	2.03E-03	2.18E-02	2.11E-03	1.85E-02	2.00E-03	1.74E-02	1.95E-03
5/12/2025	1.46E-02	1.89E-03	1.03E-02	1.72E-03	1.34E-02	1.85E-03	1.10E-02	1.75E-03	1.20E-02	1.79E-03	1.20E-02	1.79E-03	1.21E-02	1.79E-03
5/19/2025	1.38E-02	1.88E-03	1.32E-02	1.86E-03	1.29E-02	1.84E-03	1.34E-02	1.87E-03	1.43E-02	1.90E-03	1.34E-02	1.86E-03	1.27E-02	1.80E-03
5/27/2025	5.59E-03	1.37E-03	4.37E-03	1.32E-03	5.28E-03	1.36E-03	5.96E-03	1.39E-03	5.63E-03	1.38E-03	4.39E-03	1.32E-03	4.61E-03	1.35E-03
6/2/2025	1.38E-02	1.99E-03	1.15E-02	1.89E-03	1.37E-02	1.98E-03	1.43E-02	2.01E-03	1.39E-02	1.99E-03	1.04E-02	1.84E-03	1.13E-02	1.89E-03
6/10/2025	1.78E-02	1.83E-03	1.50E-02	1.74E-03	1.70E-02	1.80E-03	1.85E-02	1.86E-03	1.89E-02	1.87E-03	1.76E-02	1.82E-03	1.42E-02	1.68E-03
6/16/2025	1.76E-02	2.30E-03	1.56E-02	2.22E-03	1.51E-02	2.20E-03	1.55E-02	2.20E-03	1.79E-02	2.29E-03	1.67E-02	2.27E-03	1.53E-02	2.24E-03
6/24/2025	2.12E-02	1.93E-03	1.82E-02	1.83E-03	1.89E-02	1.86E-03	2.28E-02	1.99E-03	2.17E-02	1.95E-03	1.92E-02	1.85E-03	2.04E-02	2.10E-03
6/30/2025	2.40E-02	2.40E-03	2.20E-02	2.33E-03	2.54E-02	2.46E-03	2.63E-02	2.47E-03	2.35E-02	2.38E-03	2.23E-02	2.39E-03	2.09E-02	2.31E-03
7/7/2025	1.87E-02	1.99E-03	1.67E-02	1.92E-03	1.64E-02	1.91E-03	2.21E-02	2.13E-03	2.04E-02	2.06E-03	1.93E-02	1.99E-03	1.74E-02	1.93E-03
7/14/2025	1.77E-02	1.95E-03	2.09E-02	2.06E-03	1.68E-02	1.91E-03	1.93E-02	2.00E-03	1.80E-02	1.96E-03	1.82E-02	1.98E-03	1.61E-02	1.88E-03
7/22/2025	1.62E-02	1.81E-03	1.75E-02	2.16E-03	1.51E-02	1.76E-03	1.71E-02	1.83E-03	1.88E-02	1.89E-03	1.73E-02	1.83E-03	1.49E-02	1.76E-03
7/29/2025	2.03E-02	2.04E-03	2.21E-02	2.11E-03	1.76E-02	1.96E-03	2.17E-02	2.10E-03	2.19E-02	2.11E-03	2.07E-02	2.09E-03	1.77E-02	2.00E-03

Table 11: Weekly Airborne Samples (cont.)

Weekly Airborne Samples for Gross Beta activity in Air Particulates (pCi/m^3)

	6C1		10S3		11S1		14S1		13S4		15D1		22G1 (Control)	
Date	Gross Beta Activity	(2-σ)	Gross Beta Activity	(2-σ)	Gross Beta Activity	(2-σ)	Gross Beta Activity	(2-σ)	Gross Beta Activity	(2-σ)	Gross Beta Activity	(2-σ)	Gross Beta Activity	(2-σ)
8/4/2025	2.18E-02	2.38E-03	2.33E-02	2.44E-03	2.25E-02	2.41E-03	2.57E-02	2.52E-03	2.31E-02	2.43E-03	2.58E-02	2.53E-03	2.29E-02	2.37E-03
8/11/2025	2.57E-02	2.25E-03	2.60E-02	2.26E-03	2.27E-02	2.15E-03	2.41E-02	2.20E-03	2.50E-02	2.23E-03	2.60E-02	2.25E-03	1.89E-02	2.01E-03
8/19/2025	2.03E-02	1.92E-03	2.16E-02	1.96E-03	2.10E-02	1.94E-03	2.28E-02	2.00E-03	2.32E-02	2.01E-03	2.16E-02	1.96E-03	2.05E-02	1.92E-03
8/25/2025	1.67E-02	2.10E-03	1.53E-02	2.04E-03	1.29E-02	1.95E-03	1.52E-02	2.04E-03	1.55E-02	2.06E-03	1.53E-02	2.07E-03	1.35E-02	1.99E-03
9/2/2025	1.96E-02	1.88E-03	1.88E-02	1.85E-03	1.83E-02	1.84E-03	2.14E-02	1.94E-03	2.04E-02	1.90E-03	2.06E-02	1.89E-03	1.52E-02	1.71E-03
9/8/2025	2.42E-02	2.43E-03	2.50E-02	2.46E-03	2.30E-02	2.39E-03	2.53E-02	2.47E-03	2.38E-02	2.42E-03	2.67E-02	2.54E-03	2.42E-02	2.46E-03
9/16/2025	2.98E-02	2.22E-03	3.19E-02	2.28E-03	3.41E-02	2.34E-03	3.41E-02	2.34E-03	3.37E-02	2.33E-03	3.10E-02	2.24E-03	2.70E-02	2.14E-03
9/22/2025	2.55E-02	2.52E-03	2.47E-02	2.43E-03	2.82E-02	2.56E-03	2.90E-02	2.63E-03	2.82E-02	2.67E-03	2.55E-02	2.47E-03	2.14E-02	2.26E-03
9/30/2025	3.18E-02	2.26E-03	3.41E-02	2.33E-03	3.09E-02	7.56E-03	3.72E-02	2.41E-03	3.38E-02	2.31E-03	3.34E-02	2.32E-03	2.71E-02	2.17E-03
10/6/2025	2.84E-02	2.58E-03	2.70E-02	2.53E-03	3.17E-02	2.81E-03	3.22E-02	2.69E-03	2.98E-02	2.62E-03	2.91E-02	2.60E-03	2.93E-02	2.61E-03
10/13/2025	1.78E-02	1.95E-03	1.79E-02	1.96E-03	1.78E-02	1.95E-03	2.00E-02	2.03E-03	2.03E-02	2.04E-03	1.88E-02	1.97E-03	1.37E-02	1.78E-03
10/20/2025	1.66E-02	1.99E-03	1.63E-02	1.98E-03	1.78E-02	2.03E-03	1.82E-02	2.04E-03	1.92E-02	2.08E-03	1.70E-02	2.00E-03	1.40E-02	1.85E-03
10/27/2025	1.65E-02	1.94E-03	1.54E-02	1.90E-03	1.67E-02	1.95E-03	1.86E-02	2.02E-03	1.68E-02	1.96E-03	1.87E-02	2.02E-03	1.30E-02	1.85E-03
11/3/2025	1.45E-02	1.87E-03	1.58E-02	1.92E-03	1.70E-02	1.96E-03	1.99E-02	2.06E-03	1.75E-02	1.98E-03	1.65E-02	1.95E-03	1.28E-02	1.78E-03
11/10/2025	2.69E-02	2.36E-03	2.28E-02	2.22E-03	2.57E-02	2.32E-03	2.78E-02	2.38E-03	2.67E-02	2.35E-03	2.56E-02	2.31E-03	2.01E-02	2.17E-03

Table 11: Weekly Airborne Samples (cont.)

Weekly Airborne Samples for Gross Beta activity in Air Particulates (pCi/m^3)

	6C1		10S3		11S1		14S1		13S4		15D1		22G1 (Control)	
Date	Gross Beta Activity	(2-σ)	Gross Beta Activity	(2-σ)	Gross Beta Activity	(2-σ)	Gross Beta Activity	(2-σ)	Gross Beta Activity	(2-σ)	Gross Beta Activity	(2-σ)	Gross Beta Activity	(2-σ)
11/17/2025	1.56E-02	1.89E-03	1.66E-02	1.94E-03	1.76E-02	2.05E-03	1.88E-02	2.02E-03	1.69E-02	1.95E-03	2.02E-02	2.08E-03	1.78E-02	1.98E-03
11/24/2025	2.71E-02	2.37E-03	2.55E-02	2.31E-03	3.14E-02	2.53E-03	3.09E-02	2.48E-03	2.90E-02	2.43E-03	2.70E-02	2.36E-03	2.60E-02	2.30E-03
12/1/2025	2.19E-02	2.13E-03	1.88E-02	2.02E-03	2.10E-02	2.10E-03	2.19E-02	2.13E-03	1.98E-02	2.06E-03	2.21E-02	2.14E-03	2.10E-02	2.14E-03
12/8/2025	2.11E-02	2.10E-03	2.20E-02	2.13E-03	2.26E-02	2.16E-03	2.48E-02	2.23E-03	2.28E-02	2.16E-03	2.45E-02	2.22E-03	2.26E-02	2.16E-03
12/15/2025	1.33E-02	1.87E-03	1.54E-02	1.95E-03	1.49E-02	1.93E-03	1.59E-02	2.01E-03	1.57E-02	1.96E-03	1.66E-02	1.99E-03	1.40E-02	1.90E-03
12/22/2025	2.55E-02	2.26E-03	3.29E-02	2.49E-03	3.21E-02	2.46E-03	3.26E-02	2.47E-03	2.91E-02	2.37E-03	3.13E-02	2.44E-03	2.66E-02	2.30E-03
12/29/2025	1.70E-02	2.01E-03	1.92E-02	2.08E-03	1.79E-02	2.04E-03	1.96E-02	2.10E-03	1.64E-02	1.98E-03	2.04E-02	2.12E-03	1.53E-02	1.94E-03

Table 12: Quarterly isotopic data – Air (pCi/m^3), Water (pCi/L)					
Location	**Nuclide**	**Q1**	**Q2**	**Q3**	**Q4**
Quarterly Air Filter Composite for Gamma Emitters (pCi/m^3)					
6C1	Cs134, Cs137	<MDAs	<MDAs	<MDAs	<MDAs
10S3	Cs134, Cs137	<MDAs	<MDAs	<MDAs	<MDAs
11S1	Cs134, Cs137	<MDAs	<MDAs	<MDAs	<MDAs
14S1	Cs134, Cs137	<MDAs	<MDAs	<MDAs	<MDAs
15D1	Cs134, Cs137	<MDAs	<MDAs	<MDAs	<MDAs
22G1 (Control)	Cs134, Cs137	<MDAs	<MDAs	<MDAs	<MDAs
13S4	Cs134, Cs137	<MDAs	<MDAs	<MDAs	<MDAs
Quarterly Tritium in Water (pCi/L)					
24S1	H-3	<MDA	<MDA	<MDA	<MDA
13B1	H-3	<MDA	<MDA	<MDA	<MDA
28F3 [C]	H-3	<MDA	<MDA	<MDA	<MDA
16C2	H-3	<MDA	<MDA	<MDA	<MDA
15F4	H-3	<MDA	<MDA	<MDA	<MDA
15F7	H-3	<MDA	<MDA	<MDA	<MDA

[C] Control Location

<MDA, All Non-Natural Gamma Emitters below Minimum Detectable Activity

Table 13: Complete REMP Results

Radionuclides in Fish (pCi/kg wet)

Sample Code	Sample Date	Sample Type	Gamma Emitters
29C1 BKG (Control) Area not influenced by Plant Discharge	5/29/2025	Predator Fish	*
	5/29/2025	Bottom Feeder	*
	10/21/2025	Predator Fish	*
	10/21/2025	Bottom Feeder	*
16C5 IND LGS Discharge Area	5/27/2025	Predator Fish	*
	5/27/2025	Bottom Feeder	*
	12/22/2025	Predator Fish	*
	12/22/2025	Bottom Feeder	*

Radionuclides in Sediment (pCi/kg dry)

Sample Code	Sample Date	Gamma Emitters
16C4 SSE Sector, Down River from Plant Discharge Area	5/30/2025	*
	11/26/2025	*
16B2 SSE Sector, Down River from Plant Discharge Area	5/30/2025	*
	11/26/2025	*
33A2 (Control) NNW Sector, Upstream from Plant Discharge Area	5/30/2025	*
	11/26/2025	*

* All Non-Natural Gamma Emitters <MDA

Attachment 3: Cross Check Intercomparison Program

Participation in cross check intercomparison studies is mandatory for laboratories performing analyses of REMP samples satisfying the requirements in the Offsite Site Dose Calculation Manual. Intercomparison studies provide a consistent and effective means to evaluate the accuracy and precision of analyses performed by a laboratory. Study results should fall within specified control limits and results that fall outside the control limits are investigated and corrected.

Constellation Generation Solutions Laboratory participated in the following proficiency testing studies provided by Environmental Resource Associates (ERA) and Eckert Ziegler Analytics (EZA) in 2025. The Laboratory's intercomparison program results for 2025 are summarized below.

Attachment 3 is a summary of Constellation Generation Solutions (CGS) laboratory's quality assurance program. It consists of Table 14 which is a compilation of the results of the CGS laboratory's participation in an interlaboratory comparison program with Environmental Resource Associates (ERA) located in Arvada, Colorado and Eckert and Ziegler Analytics, Inc. (EZA) located in Atlanta, Georgia.

It also includes Table 15, a compilation of the results of the Constellation Generation Solutions (CGS) Laboratory's participation in a split sample program with Teledyne Brown Engineering located in Knoxville, Tennessee.

The CGS laboratory's intercomparison crosscheck results are in full agreement when they were evaluated using designated acceptance ranges and the Resolution Test Criteria in accordance with the Constellation Radiochemistry Quality Control procedure. The CGS laboratory's split sample results are provided with their analytical uncertainties of 2 sigma. When evaluating with the Resolution Test a one sigma uncertainty is used to determine Pass or Fail and noted accordingly.

Co-located air samplers provide the opportunity to perform interlaboratory comparisons of beta particulate and radioiodine filters that due to the nature of the sample precludes them from splitting for analysis. Results of 11S1 analyzed by CGS and 11S2 analyzed by TBE for beta particulates and radioiodine are provided at the end of this table for review and are generally in good agreement.

All samples split between CGS and TBE passed acceptance criteria with the single exception of 16C2 collected on 03/03/2025. Upon review of the data, it was observed that the CGS laboratory counts samples to a lower uncertainty than TBE which results in a very tight calculated acceptance ratio 0.5 – 2.0. CGS reported 2.03 ± 1.03 pCi/L compared to TBE 's reported 4.59 ± 2.31pCi/L. The Gross beta analysis for CGS and TBE failed resolution test criteria with a ratio of 0.44 due to the different analytical parameters of the laboratories.

The vendor laboratories used by CGS for subcontracting and interlaboratory comparison samples, GEL Laboratories and Teledyne Brown Engineering (TBE), also participate in the ERA and EZA interlaboratory comparison program. A presentation of their full data report is provided in their Annual Environmental Quality Assurance Program Reports, (Ref 41,42). In summary TBE reported results met vendor and laboratory acceptance ranges for relevant media types. In summary Gel reported results met vendor and laboratory acceptance ranges with the following exceptions described here.

For the GEL Laboratory, the following study reported data that did not meet the specified acceptance criteria and was addressed through GEL's internal nonconformance system. A summary is found below:

GEL crosscheck MRAD-42 failed low for Tritium in water, 2nd quarter 2025. The laboratory reviewed the data and counting process for this sample and no errors were noted. It was noted that the duplicate met acceptance criteria in the original preparation. The sample was prepared again in duplicate, and the results were within the acceptance criteria of the PT. The laboratory will scrutinize dilutions to determine the most appropriate level to lessen the impact on the detection limits and non-detected results. The lab will continue to monitor the recoveries of these parameters to ensure that there are no continued issues. During the analysis time period for MRAD-42, the laboratory successfully completed the analysis of other uranium isotopes in water and filters as well as Tritium in water in PT study MAPEP-52. The samples were prepared and analyzed by the same processes and procedures.

Table 14: Cross Check Intercomparison Results

Study Date	Study ID	Units	Radionuclide	Reported Value	Assigned Value	Acceptance		Performance Evaluation
						Lower Limit	Upper Limit	
03/13/2025	E14262 Milk	pCi/L	Ce-141	80.8	75.8	53.1	98.5	Pass
		pCi/L	Co-58	114	105	73.5	137	Pass
		pCi/L	Co-60	197	193	135	251	Pass
		pCi/L	Cr-51	264	291	204	378	Pass
		pCi/L	Cs-134	140	142	99.4	185	Pass
		pCi/L	Cs-137	173	168	118	218	Pass
		pCi/L	Fe-59	138	135	94.5	176	Pass
		pCi/L	I-131	84.0	94.7	66.3	123	Pass
		pCi/L	Mn-54	198	189	132	246	Pass
		pCi/L	Zn-65	231	251	176	326	Pass
03/13/2025	E14262 Milk	pCi/L	Ce-141	74.3	75.8	53.1	98.5	Pass
		pCi/L	Co-58	97.9	105	73.5	137	Pass
		pCi/L	Co-60	197	193	135	251	Pass
		pCi/L	Cr-51	286	291	204	378	Pass
		pCi/L	Cs-134	146	142	99.4	185	Pass
		pCi/L	Cs-137	181	168	118	218	Pass
		pCi/L	Fe-59	141	135	94.5	176	Pass
		pCi/L	I-131	96.3	94.7	66.3	123	Pass
		pCi/L	Mn-54	192	189	132	246	Pass
		pCi/L	Zn-65	225	251	176	326	Pass
03/13/2025	E14262 Milk	pCi/L	Ce-141	86.2	75.8	53.1	98.5	Pass
		pCi/L	Co-58	117	105	73.5	137	Pass
		pCi/L	Co-60	193	193	135	251	Pass

Table 14 Continued: Cross Check Intercomparison Results

Study Date	Study ID	Units	Radionuclide	Reported Value	Assigned Value	Acceptance		Performance Evaluation
						Lower Limit	Upper Limit	
03/13/2025	E14262 Milk	pCi/L	Cs-134	141	142	99.4	185	Pass
		pCi/L	Cs-137	176	168	118	218	Pass
		pCi/L	Fe-59	124	135	94.5	176	Pass
		pCi/L	I-131	89.3	94.7	66.3	123	Pass
		pCi/L	Mn-54	201	189	132	246	Pass
		pCi/L	Zn-65	236	251	176	326	Pass
03/13/2025	E14263 Water	pCi/L	Beta Cs-137	247	243	170	316	Pass
03/13/2025	E14264 Cartridge	pCi	I-131	61.4	66.1	46.3	85.9	Pass
03/13/2025	E14264 Cartridge	pCi	I-131	63.7	66.1	46.3	85.9	Pass
03/13/2025	E14264 Cartridge	pCi	I-131	61.5	66.1	46.3	85.9	Pass
03/13/2025	E14264 Cartridge	pCi	I-131	59.0	66.1	46.3	85.9	Pass
04/07/2025	RAD-141	pCi/L	Cs-134	17.3	16.5	5.65	27.4	Pass
	Water		Cs-137	49.1	50.8	27.3	74.3	Pass
			Co-60	109	104	84.4	124	Pass
			Zn-65	338	341	279	403	Pass
04/07/2025	RAD-141	pCi/L	Cs-134	18.3	16.5	5.65	27.4	Pass
	Water		Cs-137	54.0	50.8	27.3	74.3	Pass
			Co-60	116	104	84.4	124	Pass
			Zn-65	330	341	279	403	Pass

Table 14 Continued: Cross Check Intercomparison Results

Study Date	Study ID	Units	Radionuclide	Reported Value	Assigned Value	Acceptance		Performance Evaluation
						Lower Limit	Upper Limit	
04/07/2025	RAD-141 Water	pCi/L	Beta Cs-137	20.2	22.9	15.0	30.8	Pass
04/07/2025	RAD-141 Water	pCi/L	I-131	28.0	26.8	23.2	30.4	Pass
04/07/2025	RAD-141 Water	pCi/L	I-131	27.5	26.8	23.2	30.4	Pass
04/07/2025	RAD-141 Water	pCi/L	I-131	27.2	26.8	23.2	30.4	Pass
06/12/2025	E14258 Soil	pCi/g	Cs-134	0.322	0.347	0.243	0.451	Pass
			Cs-137	0.314	0.319	0.223	0.415	Pass
06/12/2025	E14258 Soil	pCi/g	Cs-134	0.318	0.347	0.243	0.451	Pass
			Cs-137	0.333	0.319	0.223	0.415	Pass
06/12/2025	E14258 Soil	pCi/g	Cs-134	0.301	0.347	0.243	0.451	Pass
			Cs-137	0.282	0.319	0.223	0.415	Pass
06/12/2025	E14258 Soil	pCi/g	Cs-134	0.312	0.347	0.243	0.451	Pass
			Cs-137	0.309	0.319	0.223	0.415	Pass
06/12/2025	E14265 Water	pCi/L	Beta Cs-137	201	204	143	265	Pass

Table 14 Continued: Cross Check Intercomparison Results

Study Date	Study ID	Units	Radionuclide	Reported Value	Assigned Value	Acceptance		Performance Evaluation
						Lower Limit	Upper Limit	
06/12/2025	E14266 Water	pCi/L	Ce-141	140	138	96.6	179	Pass
			Co-58	155	160	112	208	Pass
			Co-60	229	211	148	274	Pass
06/12/2025	E14266 Water	pCi/L	Cr-51	320	283	198	368	Pass
			Cs-134	194	204	143	265	Pass
			Cs-137	152	149	104	194	Pass
			Fe-59	159	135	94.5	176	Pass
			I-131	73.8	62.5	43.8	81.3	Pass
			Mn-54	157	150	105	195	Pass
			Zn-65	286	282	197	367	Pass
06/12/2025	E14266 Water	pCi/L	Ce-141	128	138	96.6	179	Pass
			Co-58	156	160	112	208	Pass
			Co-60	211	211	148	274	Pass
			Cr-51	261	283	198	368	Pass
			Cs-134	203	204	143	265	Pass
			Cs-137	147	149	104	194	Pass
			Fe-59	151	135	94.5	176	Pass
			I-131	60.8	62.5	43.8	81.3	Pass
			Mn-54	164	150	105	195	Pass
			Zn-65	285	282	197	367	Pass
06/12/2025	E14267 Filter	pCi	Ce-141	88.4	89.9	62.9	117	Pass
			Co-58	105	104	72.8	135	Pass
			Co-60	139	137	95.9	178	Pass

Table 14 Continued: Cross Check Intercomparison Results

Study Date	Study ID	Units	Radionuclide	Reported Value	Assigned Value	Acceptance		Performance Evaluation
						Lower Limit	Upper Limit	
06/12/2025	E14267 Filter	pCi	Cr-51	198	184	128.80	239	Pass
			Cs-134	108	133	93.1	173	Pass
			Cs-137	100	96.8	67.8	126	Pass
			Fe-59	101	87.5	61.3	114	Pass
			Mn-54	102	97.4	68.2	127	Pass
			Zn-65	195	183	128.1	238	Pass
06/12/2025	E14267 Filter	pCi	Ce-141	87.5	89.9	62.9	117	Pass
			Co-58	103	104	72.8	135	Pass
			Co-60	138	137	95.9	178.1	Pass
			Cr-51	174	184	129	239.2	Pass
			Cs-134	114	133	93.1	172.9	Pass
			Cs-137	95.3	96.8	67.8	125.84	Pass
			Fe-59	97.2	87.5	61.3	113.75	Pass
			Mn-54	110	97.4	68.2	126.62	Pass
			Zn-65	180	183	128	237.9	Pass
06/12/2025	E14268 Filter	pCi	Beta Cs-137	243	196	137	254.8	Pass
06/12/2025	E14268 Filter	pCi	Beta Cs-137	239	196	137	254.8	Pass
09/11/2025	E14269 Filter	pCi	Beta Cs-137	135	119	83	155	Pass
09/11/2025	E14259 Soil	pCi/g	Cs-134	0.216	0.236	0.165	0.307	Pass
			Cs-137	0.301	0.276	0.193	0.359	Pass

Table 14 Continued: Cross Check Intercomparison Results

Study Date	Study ID	Units	Radionuclide	Reported Value	Assigned Value	Acceptance		Performance Evaluation
						Lower Limit	Upper Limit	
09/11/2025	E14259 Soil	pCi/g	Cs-134	0.213	0.236	0.165	0.307	Pass
			Cs-137	0.276	0.276	0.193	0.359	Pass
09/22/2025	MRAD43	pCi	Cs-134	293	341	221	418	Pass
	Filter		Cs-137	376	379	311	497	Pass
			Co-60	307	322	274	409	Pass
			Zn-65	194	193	158	295	Pass
09/22/2025	MRAD43	pCi	Cs-134	282	341	221	418	Pass
	Filter		Cs-137	356	379	311	497	Pass
			Co-60	322	322	274	409	Pass
			Zn-65	197	193	158	295	Pass
09/22/2025	MRAD43	pCi	Cs-134	296	341	221	418	Pass
	Filter		Cs-137	357	379	311	497	Pass
			Co-60	342	322	274	409	Pass
			Zn-65	225	193	158	295	Pass
10/03/2025	RAD143	pCi/L	Cs-134	59.8	58.0	43.0	73.0	Pass
	Water		Cs-137	182	178	142	214	Pass
			Co-60	55.4	55.0	40.3	69.7	Pass
			Zn-65	34.4	36.8	5.51	68.1	Pass
10/03/2025	RAD143 Water	pCi/L	Cs-134	57.7	58.0	43.0	73.0	Pass
			Cs-137	181	178	142	214	Pass
10/03/2025	RAD143	pCi/L	Co-60	58.5	55.0	40.3	69.7	Pass

Table 14 Continued: Cross Check Intercomparison Results

Study Date	Study ID	Units	Radionuclide	Reported Value	Assigned Value	Acceptance		Performance Evaluation
						Lower Limit	Upper Limit	
10/03/2025	RAD143 Water	pCi/L	Zn-65	34.3	36.8	5.51	68.1	Pass
10/03/2025	RAD143 Water	pCi/L	I-131	23.2	24.3	20.9	27.7	Pass
10/03/2025	RAD143 Water	pCi/L	I-131	24.8	24.3	20.9	27.7	Pass
12/04/2025	E14271 Water	pCi/L	Beta Cs-137	278	257	180	334	Pass
12/04/2025	E14272 Charcoal	pCi	I-131	78.2	88.8	62.2	115	Pass
12/04/2025	E14272 Charcoal	pCi	I-131	77.8	88.8	62.2	115	Pass
12/04/2025	E14273	pCi/L	Ce-141	155	143	100	186	Pass
			Co-58	171	169	118	220	Pass
			Co-60	236	217	152	282	Pass
			Cr-51	298	299	209	389	Pass
			Cs-134	142	139	97.3	181	Pass
			Cs-137	177	168	118	218	Pass
			Fe-59	161	134	93.8	174	Pass
			I-131	80.6	86	60.2	112	Pass
			Mn-54	212	187	131	243	Pass
			Zn-65	259	244	171	317	Pass

See discussion at the beginning of Attachment 3 describes the interlaboratory split program.

Table 15: Split Sample Intercomparison Results

Sample Type	Location	Sample Date	Analysis	Result Units	CGS Analysis w 2σ		Split Analysis w 2σ	Pass/Fail (Split)
Water	16C2	2/3/25	Gross Beta	pCi/L	2.66	0.97	2.60±1.56	Pass
Water	16C2	2/3/25	LLI	pCi/L	<MDA		<MDA	Pass
Water	16C2	2/3/25	Gamma	pCi/L	<MDA		<MDA	Pass
Water	16C2	3/3/25	Gross Beta	pCi/L	2.03	1.03	4.59±2.31	Fail[1]
Water	16C2	3/3/25	LLI	pCi/L	<MDA		<MDA	Pass
Water	16C2	3/3/25	Gamma	pCi/L	<MDA		<MDA	Pass
Water	16C2	3/31/25	Gross Beta	pCi/L	2.62	1.05	<MDA	Pass
Water	16C2	3/31/25	LLI	pCi/L	<MDA		<MDA	Pass
Water	16C2	3/31/25	Gamma	pCi/L	<MDA		<MDA	Pass
Water	16C2	3/31/25	Tritium	pCi/L	<MDA		<MDA	Pass
Water	16C2	4/28/25	Gross Beta	pCi/L	2.27	0.95	<MDA	Pass
Water	16C2	4/28/25	LLI	pCi/L	<MDA		<MDA	Pass
Water	16C2	4/28/25	Gamma	pCi/L	<MDA		<MDA	Pass
Water	16C2	6/2/2025	Gross Beta	pCi/L	3.57	1.10	<MDA	Pass
Water	16C2	6/2/2025	LLI	pCi/L	<MDA		<MDA	Pass
Water	16C2	6/2/2025	Gamma	pCi/L	<MDA		<MDA	Pass
Water	16C2	6/30/2025	Gross Beta	pCi/L	1.65	0.92	<MDA	Pass
Water	16C2	6/30/2025	LLI	pCi/L	<MDA		<MDA	Pass
Water	16C2	6/30/2025	Gamma	pCi/L	<MDA		<MDA	Pass

[1] CGS's lab MDA for gross beta is significantly lower than TBE's MDA, leading to the comparison failure

Table 15 continued: Split Sample Intercomparison Results								
Sample Type	**Location**	**Sample Date**	**Analysis**	**Result Units**	**CGS Analysis w 2σ**		**Split Analysis w 2σ**	**Pass/Fail (Split)**
Water	16C2	6/30/2025	Tritium	pCi/L	<MDA		<MDA	Pass
Water	16C2	7/29/2025	Gross Beta	pCi/L	<MDA		<MDA	Pass
Water	16C2	7/29/2025	LLI	pCi/L	<MDA		<MDA	Pass
Water	16C2	7/29/2025	Gamma	pCi/L	<MDA		<MDA	Pass
Water	16C2	9/2/2025	Gross Beta	pCi/L	2.95	1.01	3.58±1.98	Pass
Water	16C2	9/2/2025	LLI	pCi/L	<MDA		<MDA	Pass
Water	16C2	9/2/2025	Gamma	pCi/L	<MDA		<MDA	Pass
Water	16C2	9/30/2025	Gross Beta	pCi/L	4.13	1.14	3.68±2.48	Pass
Water	16C2	9/30/2025	LLI	pCi/L	<MDA		<MDA	Pass
Water	16C2	9/30/2025	Gamma	pCi/L	<MDA		<MDA	Pass
Water	16C2	9/30/2025	Tritium	pCi/L	<MDA		<MDA	Pass
Water	16C2	11/3/2025	Gross Beta	pCi/L	3.28	1.09	4.40±2.49	Pass
Water	16C2	11/3/2025	LLI	pCi/L	<MDA		<MDA	Pass
Water	16C2	11/3/2025	Gamma	pCi/L	<MDA		<MDA	Pass
Water	16C2	12/1/2025	Gross Beta	pCi/L	2.23	1.01	<MDA	Pass
Water	16C2	12/1/2025	LLI	pCi/L	<MDA		<MDA	Pass
Water	16C2	12/1/2025	Gamma	pCi/L	<MDA		<MDA	Pass
Water	16C2	12/29/2025	Gross Beta	pCi/L	2.91	1.03	4.31±2.39	Pass

Table 15 continued: Split Sample Intercomparison Results

Sample Type	Location	Sample Date	Analysis	Result Units	CGS Analysis w 2σ		Split Analysis w 2σ	Pass/Fail (Split)
Water	16C2	12/29/2025	LLI	pCi/L	<MDA		<MDA	Pass
Water	16C2	12/29/2025	Gamma	pCi/L	<MDA		<MDA	Pass
Water	16C2	12/29/2025	Tritium	pCi/L	<MDA		<MDA	Pass
Milk	19B1	2/18/2025	Gamma	pCi/L	<MDA		<MDA	Pass
Milk	19B1	2/18/2025	LLI	pCi/L	<MDA		<MDA	Pass
Milk	22B1	2/18/2025	Gamma	pCi/L	<MDA		<MDA	Pass
Milk	22B1	2/18/2025	LLI	pCi/L	<MDA		<MDA	Pass
Milk	19B1	4/1/2025	Gamma	pCi/L	<MDA		<MDA	Pass
Milk	19B1	4/1/2025	LLI	pCi/L	<MDA		<MDA	Pass
Milk	22B1	4/1/2025	Gamma	pCi/L	<MDA		<MDA	Pass
Milk	22B1	4/1/2025	LLI	pCi/L	<MDA		<MDA	Pass
Milk	19B1	7/8/2025	Gamma	pCi/L	<MDA		<MDA	Pass
Milk	19B1	7/8/2025	LLI	pCi/L	<MDA		<MDA	Pass
Milk	22B1	7/8/2025	Gamma	pCi/L	<MDA		<MDA	Pass
Milk	22B1	78/2025	LLI	pCi/L	<MDA		<MDA	Pass
Milk	19B1	10/13/2025	Gamma	pCi/L	<MDA		<MDA	Pass
Milk	19B1	10/13/2025	LLI	pCi/L	<MDA		<MDA	Pass
Milk	22B1	10/13/2025	Gamma	pCi/L	<MDA		<MDA	Pass

Table 15 continued: Split Sample Intercomparison Results

Sample Type	Location	Sample Date	Analysis	Result Units	CGS Analysis w 2σ		Split Analysis w 2σ	Pass/Fail (Split)
Milk	22B1	10/13/2025	LLI	pCi/L	<MDA		<MDA	Pass
Filter Composite	11S1/11S2	3/31/2025	Gamma	pCi/m^3	<MDA		<MDA	Pass
Filter Composite	11S1/11S2	6/30/2025	Gamma	pCi/m^3	<MDA		<MDA	Pass
Filter Composite	11S1/11S2	9/30/2025	Gamma	pCi/m^3	<MDA		<MDA	Pass
Filter Composite	11S1/11S2	12/29/2025	Gamma	pCi/m^3	<MDA		<MDA	Pass
Vegetation	H1-2	6/23/2025	Gamma	pCi/Kg	<MDA		<MDA	Pass
Vegetation	H1-2	7/21/2025	Gamma	pCi/Kg	<MDA		<MDA	Pass
Vegetation	H1-2	8/18/2025	Gamma	pCi/Kg	<MDA		<MDA	Pass
Vegetation	H1-2	9/15/2025	Gamma	pCi/Kg	<MDA		<MDA	Pass
Vegetation	H1-2	6/23/2025	Gamma	pCi/Kg	<MDA		<MDA	Pass
Vegetation	B10-2	8/18/2025	Gamma	pCi/Kg	<MDA		<MDA	Pass
Fish	INDP	10/6/2025	Gamma	pCi/Kg	<MDA		<MDA	Pass
Fish	INDP	10/6/2025	Strontium-90	pCi/Kg	<MDA		<MDA	Pass
Sediment	J2-1	10/28/25	Gamma	pCi/Kg	<MDA		<MDA	Pass
Water	WA1	1/02/2026	Gamma	pCi/L	<MDA		<MDA	Pass
Water	WA2	1/02/2026	Gamma	pCi/L	<MDA		<MDA	Pass
Oysters	IA3	8/12/2025	Gamma	pCi/Kg	<MDA		<MDA	Pass

Table 15 continued: Split Sample Intercomparison Results

Sample Type	Location	Sample Date	Analysis	Result Units	CGS Analysis w 2σ		Split Analysis w 2σ	Pass/Fail (Split)
Bottom Sediment	WBS4	6/18/2025	Gamma	pCi/Kg	<MDA		<MDA	Pass
Bottom Sediment	WBS2	6/18/2025	Gamma	pCi/Kg	<MDA		<MDA	Pass
Vegetation	IB10	8/11/2025	Gamma	pCi/Kg	<MDA		<MDA	Pass
Vegetation	IB11	8/11/2025	Gamma	pCi/Kg	<MDA		<MDA	Pass
Vegetation	IB12	8/11/2025	Gamma	pCi/Kg	<MDA		<MDA	Pass
Fish (Striped Bass)	IA1	7/8/2025	Gamma	pCi/kg	<MDA		<MDA	Pass
Fish (Spot)	IA2	7/8/2025	Gamma	pCi/kg	<MDA		<MDA	Pass
Filter Composite	CC-A1*	06/30/2025	Gamma	pCi/m3	<MDA		<MDA	Pass
Filter Composite	CC-A2*	06/30/2025	Gamma	pCi/m3	<MDA		<MDA	Pass
Filter Composite	CC-A3*	06/30/2025	Gamma	pCi/m3	<MDA		<MDA	Pass
Filter Composite	CC-A4*	06/30/2025	Gamma	pCi/m3	<MDA		<MDA	Pass
Filter Composite	CC-A5*	06/30/2025	Gamma	pCi/m3	<MDA		<MDA	Pass
Filter Composite	CC-SFA1*	06/30/2025	Gamma	pCi/m3	<MDA		<MDA	Pass
Filter Composite	CC-SFA2*	06/30/2025	Gamma	pCi/m3	<MDA		<MDA	Pass
Filter Composite	CC-SFA3*	06/30/2025	Gamma	pCi/m3	<MDA		<MDA	Pass
Filter Composite	CC-SFA4*	06/30/2025	Gamma	pCi/m3	<MDA		<MDA	Pass

LLI=Low Level Iodine

<MDA All non-natural gamma emitters below Minimum Detectable Activity.

* Samples cannot be split and are analyzed first by CGS and then by TBE for comparison.

[1] CGS's lab MDA for gross beta is significantly lower than TBE's MDA, leading to the comparison failure

Table 16: Split Sample Intercomparison Results 11S1 and 11S2								
Air Particulate Beta and Air Iodine Co-Located								
Sample Type	**Location**	**Sample Date**	**Analysis**	**Result Units**	**11S1 CGS Result ± 2σ**		**11S2 (Q) TBE Split Result ± 2σ**	
Filter	11S1 / 11S2 (Q)	1/6/2025	Beta	pCi/M^3	1.85E-02	1.95E-03	1.05E-02	3.66E-03
Filter	11S1 / 11S2 (Q)	1/13/2025	Beta	pCi/M^3	1.68E-02	1.92E-03	1.54E-02	3.77E-03
Filter	11S1 / 11S2 (Q)	1/21/2025	Beta	pCi/M^3	2.40E-02	2.09E-03	2.05E-02	3.75E-03
Filter	11S1 / 11S2 (Q)	1/27/2025	Beta	pCi/M^3	3.53E-02	2.85E-03	2.27E-02	4.64E-03
Filter	11S1 / 11S2 (Q)	2/3/2025	Beta	pCi/M^3	1.87E-02	2.02E-03	1.59E-02	3.57E-03
Filter	11S1 / 11S2 (Q)	2/11/2025	Beta	pCi/M^3	2.09E-02	1.99E-03	1.68E-02	3.76E-03
Filter	11S1 / 11S2 (Q)	2/17/2025	Beta	pCi/M^3	1.67E-02	2.35E-03	1.38E-02	4.25E-03
Filter	11S1 / 11S2 (Q)	2/24/2025	Beta	pCi/M^3	1.49E-02	2.56E-03	1.70E-02	5.11E-03
Filter	11S1 / 11S2 (Q)	3/3/2025	Beta	pCi/M^3	2.38E-02	2.19E-03	1.91E-02	3.92E-03
Filter	11S1 / 11S2 (Q)	3/10/2025	Beta	pCi/M^3	1.56E-02	1.88E-03	1.35E-02	3.57E-03
Filter	11S1 / 11S2 (Q)	3/17/2025	Beta	pCi/M^3	1.91E-02	1.99E-03	1.61E-02	3.77E-03
Filter	11S1 / 11S2 (Q)	3/24/2025	Beta	pCi/M^3	1.71E-02	1.94E-03	1.09E-02	3.54E-03
Filter	11S1 / 11S2 (Q)	3/31/2025	Beta	pCi/M^3	1.87E-02	2.00E-03	1.50E-02	3.76E-03
Filter	11S1 / 11S2 (Q)	4/7/2025	Beta	pCi/M^3	1.43E-02	1.89E-03	8.34E-03	3.45E-03
Filter	11S1 / 11S2 (Q)	4/14/2025	Beta	pCi/M^3	1.55E-02	1.93E-03	1.39E-02	3.72E-03
Filter	11S1 / 11S2 (Q)	4/21/2025	Beta	pCi/M^3	1.96E-02	2.00E-03	1.25E-02	3.68E-03
Filter	11S1 / 11S2 (Q)	4/28/2025	Beta	pCi/M^3	1.93E-02	2.01E-03	1.76E-02	3.77E-03
Filter	11S1 / 11S2 (Q)	5/5/2025	Beta	pCi/M^3	1.81E-02	1.98E-03	1.54E-02	3.94E-03
Filter	11S1 / 11S2 (Q)	5/12/2025	Beta	pCi/M^3	1.34E-02	1.85E-03	9.05E-03	3.36E-03
Filter	11S1 / 11S2 (Q)	5/19/2025	Beta	pCi/M^3	1.29E-02	1.84E-03	1.28E-02	3.76E-03
Filter	11S1 / 11S2 (Q)	5/27/2025	Beta	pCi/M^3	5.28E-03	1.36E-03	<MDA	

Table 16 continued: Split Sample Intercomparison Results 11S1 and 11S2

Air Particulate Beta and Air Iodine Co-Located

Sample Type	Location	Sample Date	Analysis	Result Units	11S1 CGS Result ± 2σ		11S2 (Q) TBE Split Result ± 2σ	
Filter	11S1 / 11S2 (Q)	6/2/2025	Beta	pCi/M^3	1.37E-02	1.98E-03	7.88E-03	3.65E-03
Filter	11S1 / 11S2 (Q)	6/10/2025	Beta	pCi/M^3	1.70E-02	1.80E-03	1.01E-02	3.07E-03
Filter	11S1 / 11S2 (Q)	6/16/2025	Beta	pCi/M^3	1.51E-02	2.20E-03	1.04E-02	4.05E-03
Filter	11S1 / 11S2 (Q)	6/24/2025	Beta	pCi/M^3	1.89E-02	1.86E-03	1.66E-02	3.73E-03
Filter	11S1 / 11S2 (Q)	6/30/2025	Beta	pCi/M^3	1.64E-02	1.91E-03	1.28E-02	4.33E-03
Filter	11S1 / 11S2 (Q)	7/7/2025	Beta	pCi/M^3	1.68E-02	1.91E-03	1.30E-02	3.51E-03
Filter	11S1 / 11S2 (Q)	7/14/2025	Beta	pCi/M^3	1.51E-02	1.76E-03	1.27E-02	3.81E-03
Filter	11S1 / 11S2 (Q)	7/22/2025	Beta	pCi/M^3	1.76E-02	1.96E-03	1.26E-02	3.09E-03
Filter	11S1 / 11S2 (Q)	7/29/2025	Beta	pCi/M^3	2.25E-02	2.41E-03	1.66E-02	4.54E-03
Filter	11S1 / 11S2 (Q)	8/4/2025	Beta	pCi/M^3	2.27E-02	2.15E-03	2.15E-02	5.17E-03
Filter	11S1 / 11S2 (Q)	8/11/2025	Beta	pCi/M^3	2.10E-02	1.94E-03	1.61E-02	3.76E-03
Filter	11S1 / 11S2 (Q)	8/19/2025	Beta	pCi/M^3	1.29E-02	1.95E-03	1.41E-02	3.55E-03
Filter	11S1 / 11S2 (Q)	8/26/2025	Beta	pCi/M^3	1.83E-02	1.84E-03	1.23E-02	4.01E-03
Filter	11S1 / 11S2 (Q)	9/2/2025	Beta	pCi/M^3	2.30E-02	2.39E-03	1.12E-02	3.32E-03
Filter	11S1 / 11S2 (Q)	9/8/2025	Beta	pCi/M^3	3.41E-02	2.34E-03	1.98E-02	4.87E-03
Filter	11S1 / 11S2 (Q)	9/16/2025	Beta	pCi/M^3	2.82E-02	2.56E-03	1.62E-02	3.95E-03
Filter	11S1 / 11S2 (Q)	9/22/2025	Beta	pCi/M^3	1.64E-02	1.91E-03	2.20E-02	4.91E-03
Filter	11S1 / 11S2 (Q)	9/30/2025	Beta	pCi/M^3	3.09E-02	7.56E-03	^	
Filter	11S1 / 11S2 (Q)	10/6/2025	Beta	pCi/M^3	3.17E-02	2.81E-03	^	
Filter	11S1 / 11S2 (Q)	10/13/2025	Beta	pCi/M^3	1.78E-02	1.95E-03	9.41E-03	3.71E-03
Filter	11S1 / 11S2 (Q)	10/20/2025	Beta	pCi/M^3	1.78E-02	2.03E-03	1.19E-02	3.53E-03
Filter	11S1 / 11S2 (Q)	10/27/2025	Beta	pCi/M^3	1.67E-02	1.95E-03	1.40E-02	3.87E-03
Filter	11S1 / 11S2 (Q)	11/3/2025	Beta	pCi/M^3	1.70E-02	1.96E-03	1.09E-02	3.72E-03
Filter	11S1 / 11S2 (Q)	11/10/2025	Beta	pCi/M^3	2.57E-02	2.32E-03	1.35E-02	4.06E-03
Filter	11S1 / 11S2 (Q)	11/17/2025	Beta	pCi/M^3	1.76E-02	2.05E-03	1.23E-02	3.78E-03

Table 16 continued: Split Sample Intercomparison Results 11S1 and 11S2

Air Particulate Beta and Air Iodine Co-Located

Sample Type	Location	Sample Date	Analysis	Result Units	11S1 CGS Result ± 2σ		11S2 (Q) TBE Split Result ± 2σ	
Filter	11S1 / 11S2 (Q)	11/24/2025	Beta	pCi/M^3	3.14E-02	2.53E-03	2.03E-02	4.45E-03
Filter	11S1 / 11S2 (Q)	12/1/2025	Beta	pCi/M^3	2.10E-02	2.10E-03	1.49E-02	4.00E-03
Filter	11S1 / 11S2 (Q)	12/8/2025	Beta	pCi/M^3	2.26E-02	2.16E-03	1.07E-02	3.63E-03
Filter	11S1 / 11S2 (Q)	12/15/2025	Beta	pCi/M^3	1.49E-02	1.93E-03	1.35E-02	3.80E-03
Filter	11S1 / 11S2 (Q)	12/22/2025	Beta	pCi/M^3	3.21E-02	2.46E-03	2.45E-02	4.08E-03
Filter	11S1 / 11S2 (Q)	12/29/2025	Beta	pCi/M^3	1.79E-02	2.04E-03	1.38E-02	3.91E-03
Charcoal	11S1 / 11S2 (Q)	1/6/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	1/13/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	1/21/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	1/27/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	2/3/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	2/11/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	2/17/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	2/24/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	3/3/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	3/10/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	3/17/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	3/24/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	3/31/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	4/7/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	4/14/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	4/21/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	4/28/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	5/5/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	5/12/2025	I-131	pCi/M^3	<MDA		<MDA	

Table 16 continued: Split Sample Intercomparison Results 11S1 and 11S2

Air Particulate Beta and Air Iodine Co-Located

Sample Type	Location	Sample Date	Analysis	Result Units	11S1 CGS Result ± 2σ		11S2 (Q) TBE Split Result ± 2σ	
Charcoal	11S1 / 11S2 (Q)	5/19/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	5/27/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	6/2/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	6/10/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	6/16/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	6/24/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	6/30/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	7/7/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	7/14/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	7/22/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	7/29/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	8/4/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	8/11/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	8/19/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	8/25/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	9/2/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	9/8/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	9/16/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	9/22/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	9/30/2025	I-131	pCi/M^3	<MDA		^	
Charcoal	11S1 / 11S2 (Q)	10/6/2025	I-131	pCi/M^3	<MDA		^	
Charcoal	11S1 / 11S2 (Q)	10/13/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	10/20/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	10/27/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	11/3/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	11/10/2025	I-131	pCi/M^3	<MDA		<MDA	

Table 16 continued: Split Sample Intercomparison Results 11S1 and 11S2

Air Particulate Beta and Air Iodine Co-Located

Sample Type	Location	Sample Date	Analysis	Result Units	11S1 CGS Result ± 2σ		11S2 (Q) TBE Split Result ± 2σ	
Charcoal	11S1 / 11S2 (Q)	11/17/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	11/24/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	12/1/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	12/8/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	12/15/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	12/22/2025	I-131	pCi/M^3	<MDA		<MDA	
Charcoal	11S1 / 11S2 (Q)	12/29/2025	I-131	pCi/M^3	<MDA		<MDA	

<MDA, Minimum Detectable Activity

^ Sample was unavailable due to PECO maintenance

Attachment 4: Environmental Direct Radiation Dosimetry Results

Monitoring Location	Quarterly Baseline, B_Q (mrem)	B_Q + MDD_Q (mrem)	Normalized Quarterly Monitoring Data, M_Q (mrem)				Quarterly Facility Dose, $F_Q=M_Q-B_Q$ (mrem, or "ND" if $F_Q \leq MDD_Q$)				Annual Baseline, B_A (mrem)	B_A + MDD_A (mrem)	Annual Monitoring Data, M_A (mrem)	Annual Facility Dose, $F_A=M_A-B_A$ (mrem, or "ND" if $F_A \leq MDD_A$)
			1	2	3	4	1	2	3	4				
10E1	17.7	22.5	18.3	17.0	19.1	18.8	ND	ND	ND	ND	71.0	82.7	73.2	ND
10F3	17.4	22.2	18.3	19.5	19.6	19.7	ND	ND	ND	ND	69.7	81.4	77.1	ND
10S3	17.7	22.4	20.1	17.0	20.1	18.0	ND	ND	ND	ND	70.9	82.6	75.2	ND
11S1	20.8	25.5	23.2	20.5	23.3	22.9	ND	ND	ND	ND	83.1	94.8	89.9	ND
13C1	12.5	17.2	14.9	12.2	13.8	13.6	ND	ND	ND	ND	49.8	61.5	54.5	ND
13E1	17.5	22.2	20.9	19.3	19.3	22.8	ND	ND	ND	5.3	70.1	81.8	82.3	12.2[A]
13S2	28.0	32.8	28.4	27.0	25.8	30.3	ND	ND	ND	ND	112.1	123.8	111.5	ND
14S1	15.8	20.5	18.1	14.8	18.0	16.9	ND	ND	ND	ND	63.2	74.9	67.8	ND
15D1	18.1	22.9	19.1	19.4	20.8	19.6	ND	ND	ND	ND	72.5	84.2	78.8	ND
16F1	18.4	23.1	18.4	18.0	18.5	20.1	ND	ND	ND	ND	73.4	85.1	75.0	ND
17B1	16.7	21.4	19.1	17.0	18.9	16.7	ND	ND	ND	ND	66.8	78.5	71.7	ND
18S2	19.6	24.3	22.0	18.8	20.1	19.7	ND	ND	ND	ND	78.4	90.1	80.5	ND
19D1	16.6	21.3	17.2	16.1	17.4	17.8	ND	ND	ND	ND	66.3	78.0	68.5	ND
20D1	15.7	20.5	17.3	16.1	16.2	16.8	ND	ND	ND	ND	63.0	74.7	66.4	ND
20F1	16.9	21.6	17.8	17.7	16.2	18.2	ND	ND	ND	ND	67.5	79.2	70.0	ND
21S2	16.0	20.7	20.3	14.5	16.5	18.0	ND	ND	ND	ND	64.1	75.8	69.2	ND
23S2	16.0	20.7	18.8	15.5	17.9	16.4	ND	ND	ND	ND	63.9	75.6	68.6	ND
24D1	14.9	19.6	16.6	15.2	15.0	14.5	ND	ND	ND	ND	59.7	71.4	61.4	ND
25D1	14.1	18.8	15.5	18.7	14.3	14.8	ND	ND	ND	ND	56.5	68.2	63.3	ND
25S2	14.5	19.3	17.7	15.5	15.6	16.2	ND	ND	ND	ND	58.1	69.8	65.0	ND
26S3	15.1	19.8	16.8	14.7	17.9	16.2	ND	ND	ND	ND	60.4	72.1	65.6	ND
28D2	15.9	20.6	17.3	16.2	16.8	17.4	ND	ND	ND	ND	63.5	75.2	67.7	ND
29E1	15.6	20.3	16.8	17.1	16.0	18.0	ND	ND	ND	ND	62.3	74.0	67.9	ND
29S1	15.3	20.1	16.4	15.4	17.8	16.3	ND	ND	ND	ND	61.4	73.1	65.9	ND

Monitoring Location	Quarterly Baseline, B_Q (mrem)	B_Q + MDD_Q (mrem)	Normalized Quarterly Monitoring Data, M_Q (mrem)				Quarterly Facility Dose, $F_Q=M_Q-B_Q$ (mrem, or "ND" if $F_Q \le MDD_Q$)				Annual Baseline, B_A (mrem)	B_A + MDD_A (mrem)	Annual Monitoring Data, M_A (mrem)	Annual Facility Dose, $F_A=M_A-B_A$ (mrem, or "ND" if $F_A \le MDD_A$)
			1	2	3	4	1	2	3	4				
2E1	18.0	22.7	17.5	17.9	17.4	19.9	ND	ND	ND	ND	71.9	83.6	72.8	ND
31D1	20.7	25.5	22.8	19.4	19.6	20.9	ND	ND	ND	ND	83.0	94.7	82.6	ND
31D2	17.8	22.5	20.0	20.1	18.8	19.4	ND	ND	ND	ND	71.2	82.9	78.4	ND
31S1	17.9	22.6	21.6	19.4	17.6	20.3	ND	ND	ND	ND	71.6	83.3	78.8	ND
34E1	16.8	21.5	17.4	15.8	16.5	18.2	ND	ND	ND	ND	67.0	78.7	68.0	ND
34S2	17.9	22.6	18.4	18.5	18.2	18.1	ND	ND	ND	ND	71.6	83.3	73.2	ND
36D1	15.5	20.3	15.0	13.9	15.5	14.9	ND	ND	ND	ND	62.1	73.8	59.2	ND
36S2	18.3	23.1	21.7	19.4	20.6	19.1	ND	ND	ND	ND	73.4	85.1	80.8	ND
3S1	17.5	22.3	19.0	16.4	19.7	17.3	ND	ND	ND	ND	70.1	81.8	72.4	ND
4E1	12.9	17.6	15.2	12.9	13.2	14.1	ND	ND	ND	ND	51.4	63.1	55.3	ND
5H1	21.6	26.3	21.9	22.4	20.2	23.3	ND	ND	ND	ND	86.3	98.0	87.8	ND
5S1	20.0	24.7	21.9	21.2	22.5	19.9	ND	ND	ND	ND	80.0	91.7	85.6	ND
6C1	17.4	22.1	18.0	17.3	19.6	20.7	ND	ND	ND	ND	69.5	81.2	75.6	ND
7E1	18.6	23.4	19.1	17.7	20.0	19.6	ND	ND	ND	ND	74.6	86.3	76.5	ND
7S1	18.3	23.0	20.4	18.0	17.7	17.1	ND	ND	ND	ND	73.1	84.8	73.1	ND
9C1	17.0	21.7	18.4	17.4	18.8	18.9	ND	ND	ND	ND	68.1	79.8	73.6	ND

MDD_Q = Quarterly Minimum Differential Dose = 4.73 mrem
MDD_A = Annual Minimum Differential Dose = 11.7 mrem
ND = Not Detected, where $M_Q \le (B_Q+MDD_Q)$ or $M_A \le (B_A+MDD_A)$
[A]= Facility dose above background discussed in Table 9, Sample Deviation Summary