Jason Jennings
Director, Site Regulatory Compliance, PSEG Nuclear LLC

PO Box 236
Hancocks Bridge, New Jersey 08038-0221

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Technical Specification 6.9.1.7 (Salem)
Technical Specification 6.9.1.6 (Hope Creek)

LR-N25-0045

April 24, 2025

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

Salem Generating Station, Unit Nos. 1 and 2
Renewed Facility Operating License Nos. DPR-70 and DPR-75
NRC Docket Nos. 50-272 and 50-311

Hope Creek Generating Station
Renewed Facility Operating License No. NPF-57
Docket No. 50-354

Subject: 2024 Annual Radiological Environmental Operating Report (AREOR)

PSEG Nuclear LLC hereby submits the 2024 Annual Radiological Environmental Operating Report (Enclosure) for the period January 1, 2024 to December 31, 2024.

There are no regulatory commitments contained in this letter.

Please contact Rick Heathwaite at Rick.Heathwaite@PSEG.com with questions or comments.

Sincerely,

Jennings, Jason

Digitally signed by Jennings, Jason
Date: 2025.04.24 15:51:00 -04'00'

Jason Jennings
Director, Site Regulatory Compliance

Enclosure: 2024 Annual Radiological Environmental Operating Report for Salem and Hope Creek Generating Stations

cc: USNRC Regional Administrator − Region 1
USNRC NRR Project Manager – Salem
USNRC Senior Resident Inspector – Salem
USNRC NRR Project Manager – Hope Creek
USNRC Senior Resident Inspector – Hope Creek
NJ Department of Environmental Protection, Bureau of Nuclear Engineering

LR-N25-0045

Enclosure

2024 Annual Radiological Environmental Operating Report

for

Salem and Hope Creek Generating Stations

(Total Pages 101)

PSEG Nuclear LLC

Salem and Hope Creek Generating Stations

Annual Radiological Environmental Operating Report

2024

Document Number: SGS-AREOR-73/ HCGS-AREOR-47

Unit 1	Unit 2	Unit 1
Docket No. 50-272	Docket No. 50-311	Docket No. 50-354
Operating License No. DPR-070	Operating License No. DPR-075	Operating License No. NPF-057

AREOR (REMP) Review and Approval Confirmation in SAP (I.A.W. AD-AA-1006 SIGNATURE AUTHORITY)

SAP Order 80136643

Operation		Date
0021	Stephen Gattuso, Salem Chemistry Manager	04/23/2025
0022	Jason Nordin, Hope Creek Chemistry Manager	04/15/2025
0023	William Gropp, Salem Radiation Protection Manager	04/13/2025
0024	Robert Ronan, Hope Creek Radiation Protection Manager	04/21/2025
0025	Matthew Mog, Salem Senior Director of Operations	04/22/2025
0026	Joshua Moss, Hope Creek Senior Director of Operations	04/20/2025
0027	Richard DeSanctis, Salem Plant Manager	04/10/2025
0028	Robert McLaughlin, Hope Creek Plant Manager	04/23/2025

Report Prepared By: 

Rick M. Heathwaite (REMP / REC Program Manager)

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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

Salem and Hope Creek Generating Stations 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 SGS/HCGS 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 Common REMP (ODCM). 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 SGS/HCGS for the reporting period of January 1st through December 31st, 2024. During that time period 1636 analyses were performed on 1280 samples and there was no instance of radioactivity from plant effluents observed in the environment that exceeded any Reporting Levels identified in Salem and Hope Creek Common ODCM Table 3.12-2 [23]. Also, in assessing all the data gathered for this report and comparing these results with preoperational data it was concluded that the operation of SGS/HCGS, had no significant radiological impact on the health and safety of the public or on the environment.

2.1 Summary of Conclusions:

There was one instance of plant related radionuclides above baseline during the reporting period January 1 through December 31, 2024. Tritium was detected in Surface Water but was below reporting levels (see Figure 6, Surface Water Tritium Results). 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. Detailed information on the exposure of the U.S. population to ionizing radiation can be found in NCRP Report No. 160 [1].

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 [2], 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 [3], NUREG 1301/1302 [4] [5], and the 1979 NRC Branch Technical Position [6].

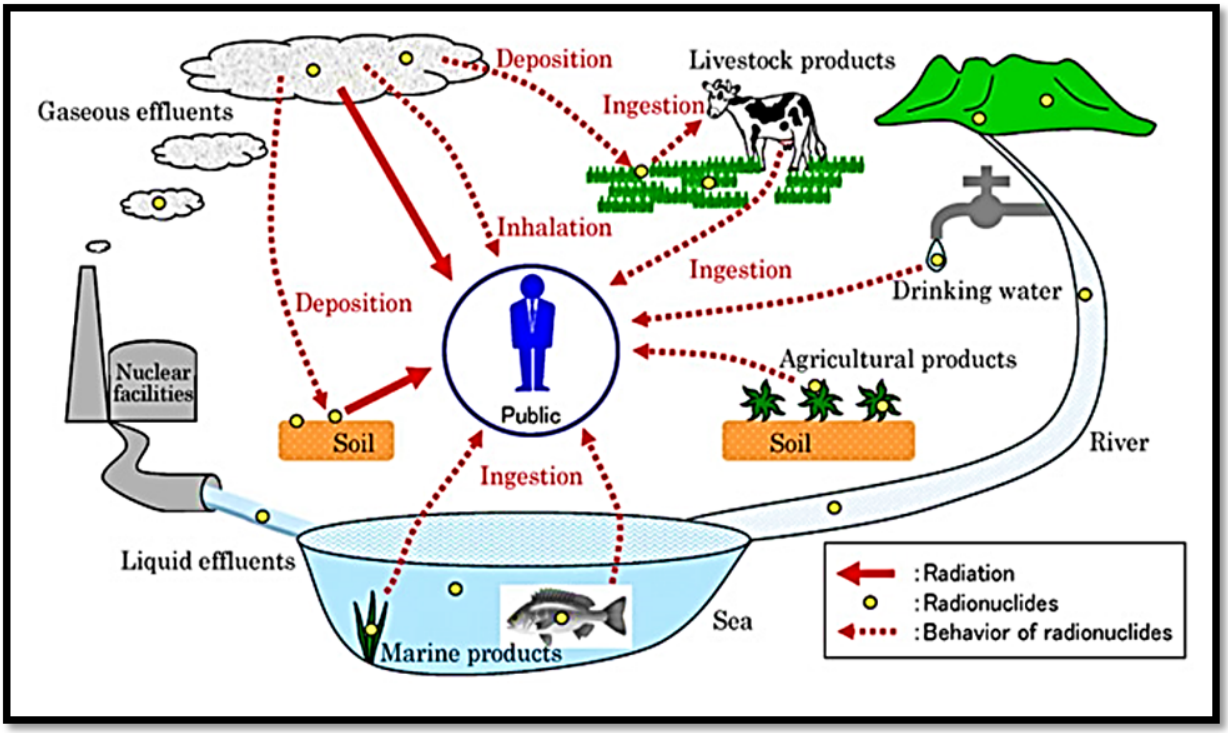

Figure 1, Potential exposure pathways to Members of the Public due to Plant Operations [7]

Quality assurance aspects of the sampling program and TLD/OSLD data collection are conducted in accordance with Regulatory Guides 4.15 [8] and 4.13 [9]. REMP also adheres to the requirements of New Jersey, SGS/HCGS Technical Specifications, and Common REMP 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 Site is located in Lower Alloway's Creek Township, Salem County, New Jersey. SGS consists of two operating pressurized water nuclear power reactors. SGS Unit 1 has an approximate net electrical rating of 1,180 megawatts electric (MWe) and SGS Unit 2 has an approximate net electrical rating of 1,178 MWe. The licensed core thermal power rating for both Units is 3,459 megawatts thermal (MWth). HCGS consists of an operating boiling water nuclear power reactor, which has an approximate net electrical rating of 1,212 MWe. The licensed core thermal power rating is 3,902 MWth.

The Site is located on a man-made peninsula on the east bank of the Delaware River called Artificial Island. The peninsula was created by the deposition of hydraulic fill from dredging operations. The surrounding environment is characterized mainly by the Delaware River Estuary, extensive tidal marshlands, and low-lying meadowlands. These land types make up a vast majority of the land area within five miles of the Site, with most of the remaining land used for agriculture.

Since 1968, a Radiological Environmental Monitoring Program (REMP) has been conducted at the Site. Starting in December 1972, a more extensive radiological monitoring program was initiated in preparation for the operation of SGS Unit 1. The operational REMP was initiated in December 1976 when SGS Unit 1 achieved criticality.

SGS/HCGS 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 Sampling Program – Exposure Pathway – Direct Radiation
- Table 2, Radiological Environmental Sampling Program – Exposure Pathway - Airborne
- Table 3, Radiological Environmental Sampling Program – Exposure Pathway - Waterborne
- Table 4, Radiological Environmental Sampling Program – Exposure Pathway - Ingestion

- Table 5, Radiological Environmental Sampling Program – Exposure Pathway - Terrestrial
- Table 6, REMP Sampling Locations – Direct Radiation
- Figure 2, REMP Sample Locations (On-Site Sampling Locations To 1 Mile)
- Figure 3, REMP Sample Locations (Off-Site Sampling Locations 1 to 10 Miles)
- Figure 4, REMP Sample Locations (Off-Site Sampling Locations Greater Than 10 Miles).

5.0 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM REQUIREMENTS

Table 1, Radiological Environmental Sampling Program – Exposure Pathway – Direct Radiation

Requirement	Sample Location Description, Distance, and Direction	Sampling Collection/ Frequency	Type of Analyses
DIRECT RADIATION a. Dosimeters (IDM) Fifty-nine routine monitoring locations with two or more dosimeters placed as follows: An inner ring of locations, one in each of the land based meteorological sectors in the general area of the SITE BOUNDARY; and An outer ring of locations, one in each of the land based meteorological sector in the 5 to 11 km (3.1 - 6.8 miles) range from the site; and The balance of the locations placed in areas of special interest such as population centers, nearby residences, and schools and in one or two areas to serve as control locations.	See Table 6, REMP Sampling Locations – Direct Radiation	Quarterly	Gamma dose

Table 2, Radiological Environmental Sampling Program – Exposure Pathway - Airborne

Requirement	Sample Location Description, Distance, and Direction		Sampling Collection/ Frequency	Type and Frequency of Analyses
ATMOSPHERIC a. Air Particulate (APT) b. Air Iodine (AIO) 3 samples close to the Site Boundary: 05X1, 06S1, 15S2. One duplicate sample from close to the site boundary: 05S2. 3 samples from different land-based sectors: 01F1, 02F6, 05D1. One sample from the vicinity of a community having a highest annual average ground level D/Q: 16E1. One sample from a control location; for example, 15 - 30 km distant (9.3 - 18.6 miles) and in the least prevalent wind direction: 14G1	05X1 05S2 06S1 15S1 15S2 05D1 16E1 01F1 02F6 14G1	0.86 mi. E; site access road 0.86 mi. E; site access road 0.19 mi. ESE; station personnel gate 0.57 mi. NW; near river and HCGS barge slip 0.59 mi. NW; near river and HCGS barge slip 3.5 mi. E; local farm along SGS/HCGS access road. 4.1 mi. NNW; Port Penn, DE 5.7 mi. N; Fort Elfsborg, NJ 7.3 mi. NNE; Energy & Envmt Resource Center, Salem NJ 13.4 mi. WNW; Route 286, Bethel Church Road, DE	Particulate: Continuous sampler operation with sample collection weekly or more frequently if required by dust loading	Gross Beta / weekly Gamma isotopic analysis / quarterly composite
			Iodine: Continuous sampler operation with sample collection weekly or more frequently if required by dust loading	Iodine-131

Table 3, Radiological Environmental Sampling Program – Exposure Pathway - Waterborne

Requirement	Sample Location Description, Distance, and Direction	Sampling Collection/ Frequency	Type of Analyses
Surface Water (SWA) One sample upstream: 01F2. One sample downstream: 07E1. One sample outfall: 11A1. One sample cross-stream (mouth of Appoquinimink River): 12B1. And an additional location in the Chesapeake & Delaware Canal: 16F1.	11A1 0.22 mi. SW; SGS outfall area 11A1A 0.15 mi. SE; Located in the plant barge slip area 12B1 1.8 mi. WSW; West bank of Delaware River 12B1A 3.7 mi. NW; Tip of Augustine Beach Boat Ramp 07E1 4.4 mi. SE; riverbank 1 mi. W of Mad Horse Creek 07E1A 9.2 mi. SE; Located at the end of Bayside Road, NJ 01F2 7.1 mi. N; midpoint of Delaware River 16F1 6.9 mi. NNW; C&D Canal, DE 16F1A 6.5 mi. NNW; Located at the C&D Canal Tip, DE	Semi-Monthly (composited)	Gamma scan Tritium
Potable Water (Drinking Water) (PWR, PWT) Although no potable water samples are required as liquid effluents discharged from SGS/HCGS do not directly affect this pathway and it is not required by SGS/HCGS ODCM, one raw and one treated water sample from a public water supply (City of Salem Water and Sewer Department) are collected: 02F3 as management audit samples.	02F3 8.0 mi. NNE; Salem Water Company	Monthly (composited weekly)	Gross alpha Gross beta Tritium Gamma scan Iodine-131
Well Water (Ground) (WWA) Although wells in the vicinity of SGS/HCGS are not directly affected by plant operations so sampling is not required by SGS/HCGS ODCM, samples of 03E1 farm's well are collected as management audit samples.	03E1 4.2 mi. NE; local farm	Monthly	Gamma scan Gross alpha Gross beta Tritium

Table 3, Radiological Environmental Sampling Program – Exposure Pathway - Waterborne

Requirement	Sample Location Description, Distance, and Direction		Sampling Collection/ Frequency	Type of Analyses
Sediment (ESS) One sample from downstream area: 07E1. One sample from cross-stream area and control location: 12B1. One sample from outfall area: 11A1. One sample from upstream, the C & D Canal: 16F1. One sample from shoreline area: 05A1. One sample from Cooling Tower Blowdown discharge: 15A1. One sample south storm drain discharge line: 15A2.	05A1 07E1 11A1 12B1 15A1 15A2 16F1	0.89 mi. E, shoreline 4.4 mi. SE; riverbank 1 mi. W of Mad Horse Creek 0.22 mi. SW; SGS outfall area 1.8 mi. WSW; West bank of Delaware River 0.69 mi. NW; HCGS outfall area 0.66 mi. NW; South Storm Drain outfall 6.9 mi. NNW; C&D Canal, DE	Semi-Annually	Gamma scan

Table 4, Radiological Environmental Sampling Program – Exposure Pathway - Ingestion

Requirement	Sample Location Description, Distance, and Direction		Sampling Collection/ Frequency	Type of Analyses
Milk (MLK) Samples from milking animals in 3 locations within 5 km distance (3.1 miles) having the highest dose potential. If there are none, then 1 sample from milking animals in each of 3 areas between 5 - 8 km distant (3.1 - 5.0 miles) where doses are calculated to be greater than 1 mrem per yr: 13E3. 1 Sample from milking animals at a control location 15 30 km distant (9.3 - 18.6 miles): 02G3.* NOTE: *Milk animals are not prevalent in the vicinity of the plant. Only one farm met the requiem for milk. In lieu of samples, broad-leaf vegetation sampling is being conducted*.	13E3 02G3 14F4	5.0 mi. W; local farm, DE 11.8 mi. NNE; Local Milk Farm, Corner of Routes 540 & 45, Mannington, NJ 7.6 mi. WNW; local farm	Semi-monthly (when animals are on pasture)	Gamma scan Iodine-131
			Monthly (when animals are not on pasture)	Gamma scan Iodine-131
Edible Fish (ESF) One sample of each commercially and recreationally important species in vicinity of plant discharge area: 11A1. One sample of same species in area not influenced by plant discharge: 12B1, and an additional location downstream: 07E1.	07E1 11A1 12B1	4.4 mi. SE; riverbank 1 mi. W of Mad Horse Creek 0.22 mi. SW; SGS outfall area 1.8 mi. WSW; West bank of Delaware River	Semi-Annually	Gamma scan (flesh)

* Listed as 03G1 in ODCM, see Section 11.0 **PROGRAM CHANGES**.

Table 4, Radiological Environmental Sampling Program – Exposure Pathway - Ingestion

Requirement	Sample Location Description, Distance, and Direction		Sampling Collection/ Frequency	Type of Analyses
Blue Crabs (ECH) One sample of each commercially and recreationally important species in vicinity of plant discharge area 11A1. One sample of same species in area not influenced by plant discharge 12B1.	11A1 12B1	0.22 mi. SW; SGS outfall area 1.8 mi. WSW; West bank of Delaware River	Semi-Annually	Gamma scan (on edible portions)
Vegetables (FPL, FPV) Although the Delaware River at the location of SGS/HCGS is a brackish water source and is not used for irrigation of food products and so sampling is not required by SGS/HCGS ODCM, samples of vegetables are collected as management audit samples from various locations during harvest. In addition, broad leaf vegetation is collected from various offsite locations as well as being planted & collected onsite (06S1, 16S1, 10D1). This is in lieu of having a milk farm within 5 km (3.1 miles) of the Site. * Samples were not taken from these locations in 2024. They are Management Audit samples that are not required by the ODCM and may not be sampled every year due to crop rotation.	06S1 16S1 10D1 01G1 03H5 02F9 02G2* 01S3* 15S2* 02F10* 03F6* 03F7* 03F8* 14F4* 15F4 02G4* 09G1* 09G2*	0.17 mi. SE 0.57 mi. NNW 3.9 mi. SSW; Taylor's Bridge Spur 10.9 mi. NNE; Rte. 49, South Broadway 25 mi. NE; Farm Market, Rt 77 7.5 mi. NNE; Local Farm, Tilbury Rd, Salem 13.5 mi. NNE; Local Farm; Pointers Auburn Road 0.58 mi. N; Garden 0.57 mi. NNW 9.2 mi. NNE; Local Farm, South Broadway, Pennsville 6.5 mi. NE; Local Farm, Salem/Hancocks Bridge Road 7.2 mi. NE; Local Farm, Beasley Neck Road, RD#3 9.28 mi. NNE Circle "M" Orchard 7.6 mi. WNW; local farm 7.0 mi. NW; local farm; Port Penn Road; DE 11.3 mi. NNE; Rt 45 & Welchville Rd, Mannington, NJ 10.3 mi. S; Woodland Beach Rd., Smyrna, DE 10.7 mi. S; Woodland Beach Rd, Smyrna, DE	Monthly (during growing season)	Gamma scan

Table 4, Radiological Environmental Sampling Program – Exposure Pathway - Ingestion

Requirement	Sample Location Description, Distance, and Direction		Sampling Collection/ Frequency	Type of Analyses
Fodder Crops (VGT) Although not required by SGS/HCGS ODCM, samples of crops normally used as cattle feed (silage) were collected from milk farms as management audit samples: 14F4, 02G3, 13E3.	13E3 14F4 02G3	5.0 mi. W; Local Farm, Odessa, DE 7.6 mi. WNW; local farm 11.8 mi. NNE; Local Milk Farm	Annually (at harvest)	Gamma scan
Game (GAM) Although not required by SGS/HCGS ODCM, game samples were collected as management audit samples from two indicator locations: 03E1 and 13E3 * Sample was not taken at this location in 2024	03E1* 13E3	4.2 mi. NE; Local Farm 5.0 mi. W; Local Farm, Odessa, DE	Annually	Gamma scan

Table 5, Radiological Environmental Sampling Program – Exposure Pathway - Terrestrial

Requirement	Number of Representative Samples and Sample Locations		Sampling Collection/ Frequency	Type of Analyses
Soil (SOL) Although not required by SGS/HCGS ODCM, samples of soil are collected as management audit samples.	10D1 13E3 14F4 16E1 02F9 02G3 03G1 05F1 06S1	3.9 mi. SSW; Taylor's Bridge Spur 5.0 mi. W; Local Farm, Odessa, DE 7.6 mi. WNW; Local Farm 4.1 mi. NNW; Port Penn 7.5 mi. NNE; Local Farm, Tilbury Rd, Salem 11.8 mi. NNE; Local Milk Farm 16.5 mi. NE; Milk Farm, Woodstown 6.5 mi. E; Canton 0.23 mi. ESE	Every 3 years (2016-2019-2022)	Gamma scan

Table 6, REMP Sampling Locations – Direct Radiation

Site #	Location Type	Sector	Distance (miles)	Description
01Q1	Special Interest	N	0.58	N side of road near ISFSI pad
02S2a	Inner Ring	NNE	0.41	Lamp pole 65 near HC switch yard
07S1	Inner Ring	SE	0.12	Station personnel gate
08S1	Inner Ring	SSE	0.14	Fuel oil storage
08S2	Inner Ring	SSE	0.17	Fuel oil storage
10S1	Inner Ring	SSW	0.11	Circulating water building
11S1	Inner Ring	SW	0.12	Circulating water building
12S1	Inner Ring	WSW	0.09	Outside security fence
14S2	Inner Ring	WNW	0.12	Outside security fence
15S1	Inner Ring	NW	0.57	Near river and HCGS barge slip
15S2	Inner Ring	NW	0.59	Near river and HCGS barge slip
15S3	Inner Ring	NW	0.17	Outside security fence
16S1	Inner Ring	NNW	0.57	On road near fuel oil storage tank
16Q2	Special Interest	NNW	0.6	Near security firing range
01X2	Inner Ring (SB)	N	0.6	382 feet from TLD 01Q1
02X4	Inner Ring (SB)	NNE	0.59	In the equipment laydown area
03X1	Inner Ring (SB)	NE	0.58	Behind refrigeration building
04X1	Inner Ring (SB)	ENE	0.6	Access road near intersection to LDC
05X1	Inner Ring (SB)	E	0.86	Site access road
06X2	Inner Ring (SB)	ESE	0.23	Area around helicopter pad
16X3	Inner Ring (SB)	NNW	0.88	Consolidated spoils facility
04D2	Outer Ring	ENE	3.9	Alloway Creek Neck Road
05D1	Outer Ring	ENE	3.5	Local farm along SGS/HCGS access road.
10D1	Outer Ring	SSW	3.9	Taylor's Bridge Spur, DE
14D1	Outer Ring	WNW	3.3	Bay View, DE

Table 6, REMP Sampling Locations – Direct Radiation

Site #	Location Type	Sector	Distance (miles)	Description
15D1	Outer Ring	NW	3.7	Route 9, Augustine Beach, DE
02E1	Outer Ring	NNE	4.4	Local farm, NJ
03E1	Outer Ring	NE	4.1	Local farm, NJ
12E1	Outer Ring	WSW	4.4	Thomas Landing, DE
13E1	Outer Ring	W	4.1	Diehl House Lab, DE
16E1	Outer Ring	NNW	4.1	Port Penn, DE
11E2	Outer Ring	SW	5	Route 9, DE
01F1	Outer Ring	N	5.7	Fort Elfsborg, NJ
02F2	Outer Ring	NNE	8.5	Salem Substation, Salem, NJ
02F5	Special Interest	NNE	7.3	Salem High School, Salem, NJ
02F6	Outer Ring	NNE	7.3	Energy & Envmt Resource Center, Salem, NJ
03F2	Outer Ring	NE	5.1	Hancocks Bridge, NJ, Munc Bldg
03F3	Special Interest	NE	8.6	Quinton Township Elem. School, NJ
04F2	Outer Ring	ENE	6	Mays Lane, Harmersville, NJ
05F1	Outer Ring	E	6.4	Canton, NJ
06F1	Outer Ring	ESE	6.4	Stow Neck Road, NJ
07F2	Outer Ring	SE	9.3	Bayside, NJ
09F1	Outer Ring	S	5.3	Off Route #9, DE
09F2	Outer Ring	S	5.2	Collins Beach boat ramp.
10F2	Outer Ring	SSW	5.7	Route #9, DE
11F1	Outer Ring	SW	6	Taylor's Bridge, DE
12F1	Outer Ring	WSW	9.4	Townsend Elementary School, DE
13F2	Outer Ring	W	6.5	Odessa, DE
13F3	Special Interest	W	9.3	Redding Middle School, Middletown, DE
13F4	Special Interest	W	9.8	Middletown, DE

Table 6, REMP Sampling Locations – Direct Radiation

Site #	Location Type	Sector	Distance (miles)	Description
14F2	Outer Ring	WNW	6.7	Route 13 and Boyds Corner Rd, DE
15F3	Outer Ring	NW	5.4	Port Penn Rd. At Pole Bridge Rd., DE
16F2	Special Interest	NNW	8.1	Delaware City Public School, DE
01G3	Control	N	19	N. Church Street Wilmington, DE
03G1	Outer Ring	NE	16.5	Local farm, NJ
10G1	Control	SSW	11.6	Smyrna, DE
14G1	Outer Ring	WNW	13.4	Route 286, Bethel Church Road, DE
16G1	Outer Ring	NNW	15.1	Wilmington Airport, DE
03H1	Control	NE	33.1	National Park, NJ

6.0 MAPS OF COLLECTION SITES

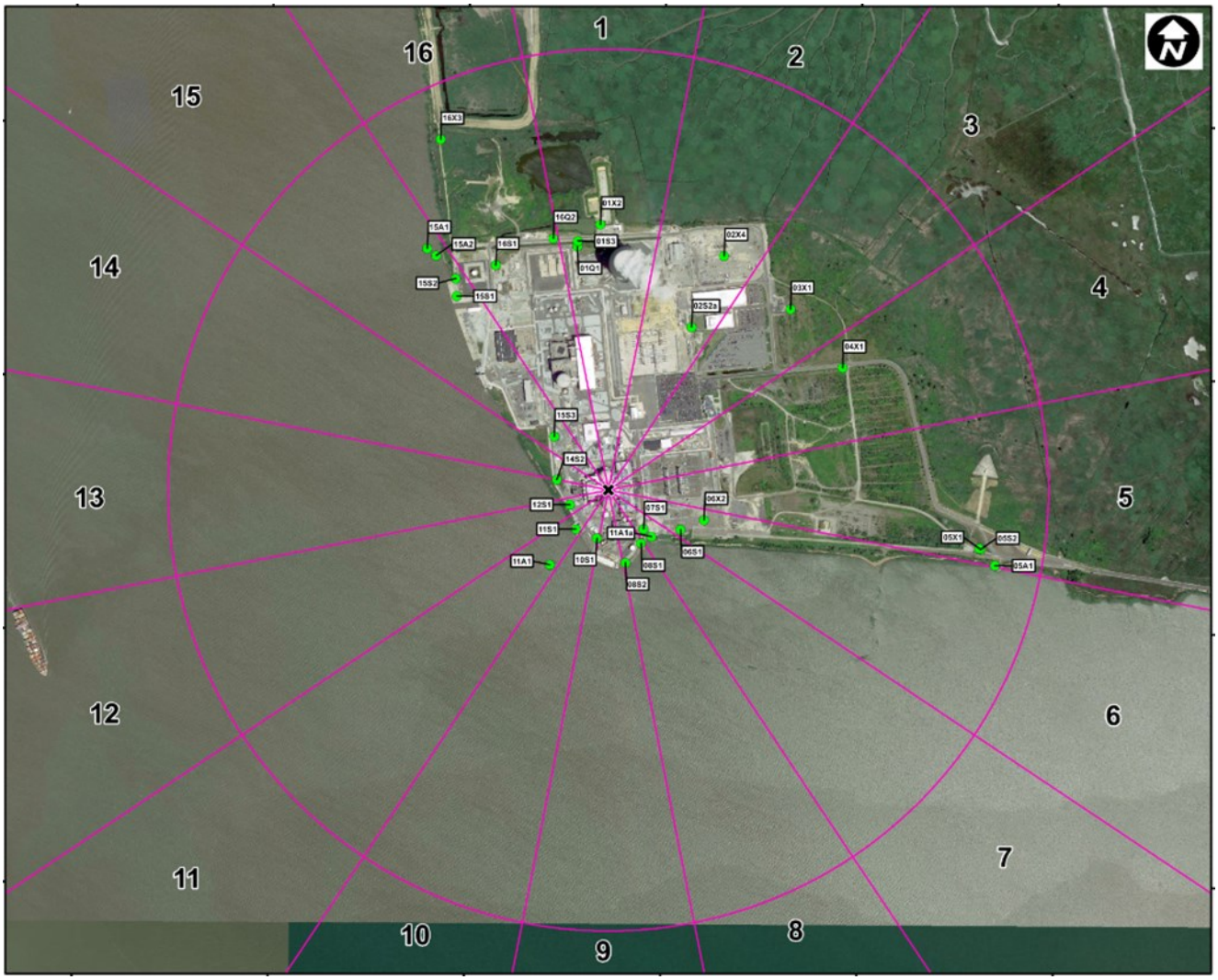

Figure 2, REMP Sample Locations (On-Site Sampling Locations To 1 Mile)

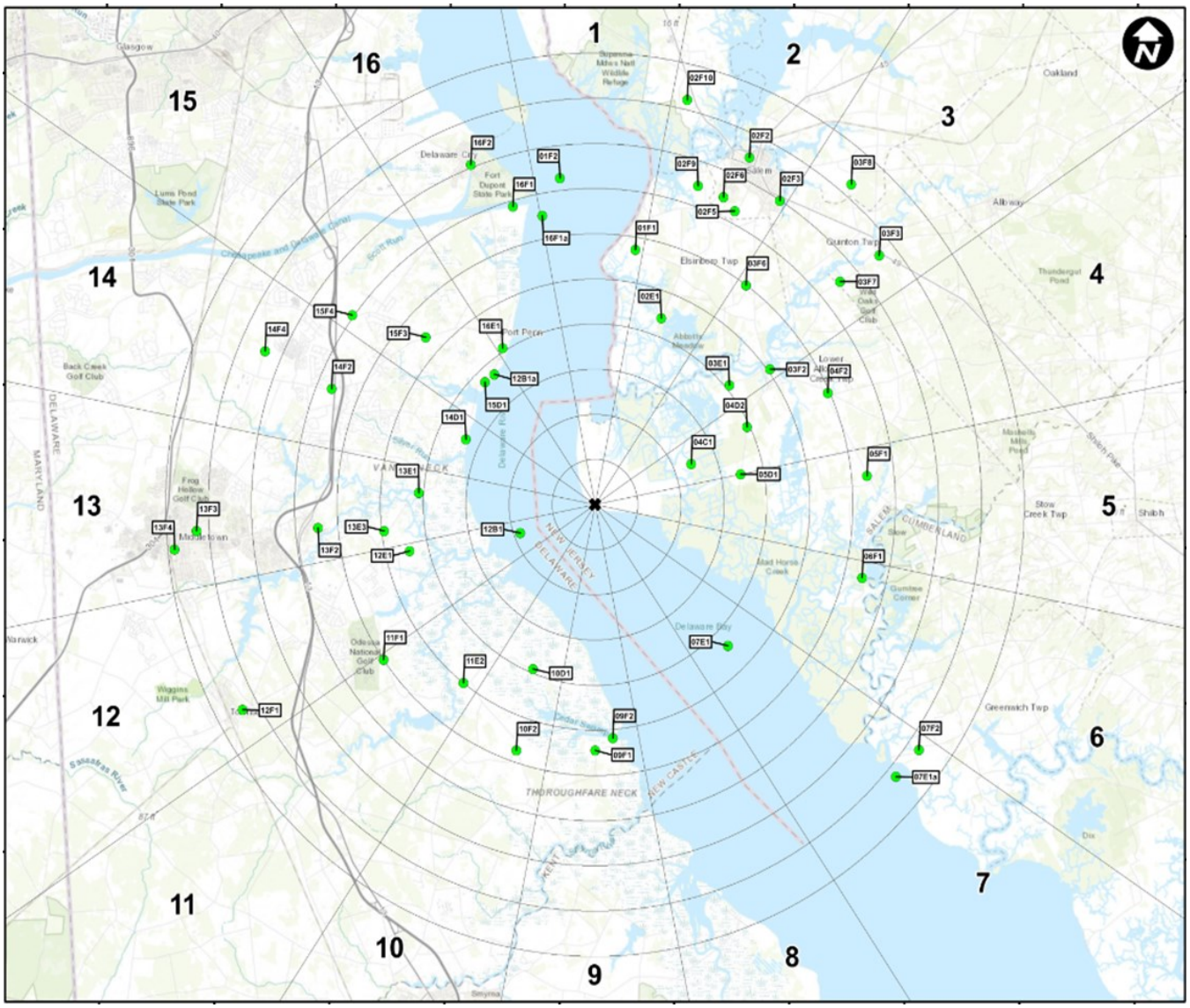

Figure 3, REMP Sample Locations (Off-Site Sampling Locations 1 to 10 Miles)

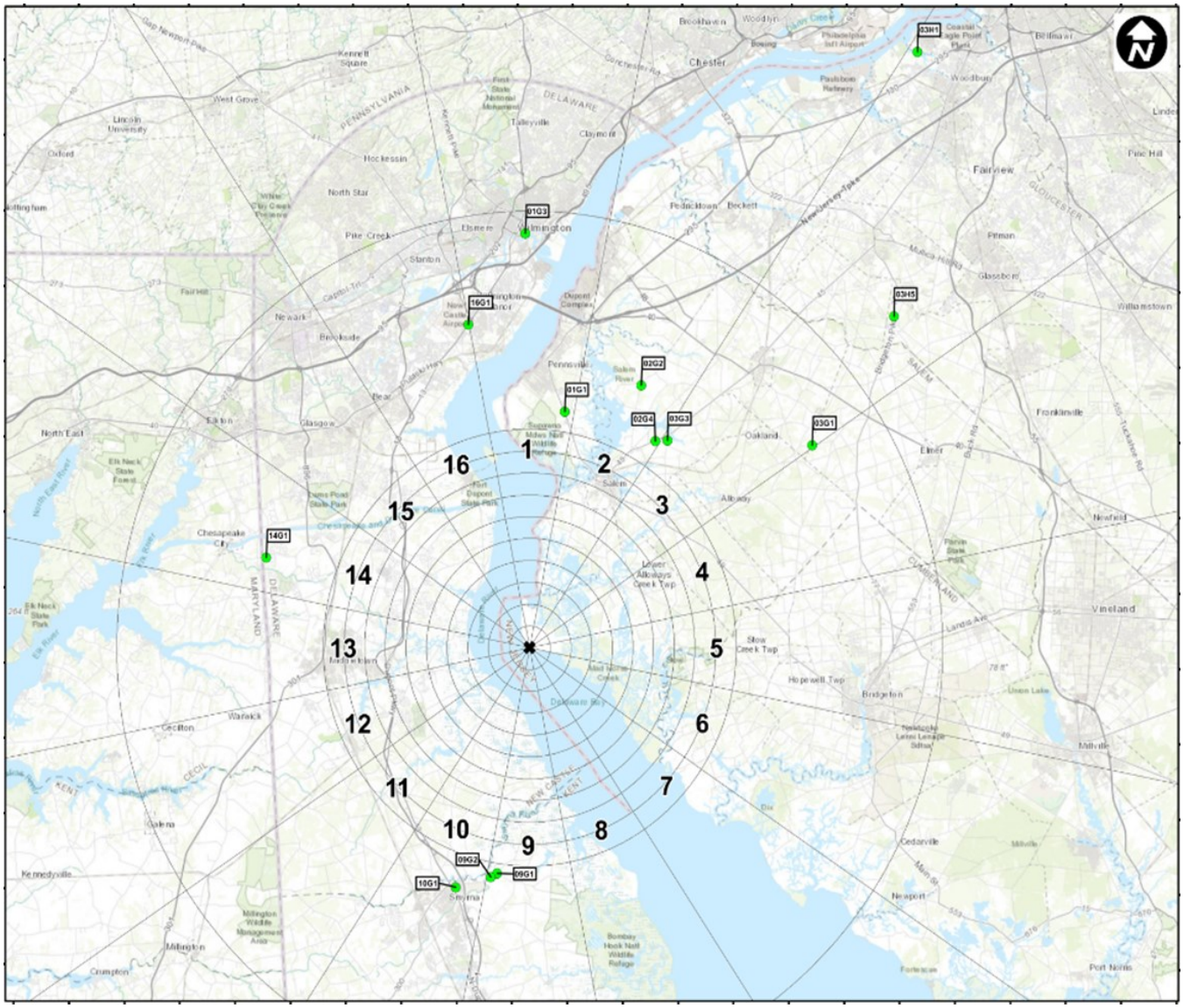

Figure 4, REMP Sample Locations (Off-Site Sampling Locations Greater Than 10 Miles)

7.0 REPORTING LEVELS FOR RADIOACTIVITY CONCENTRATIONS IN ENVIRONMENTAL SAMPLES

Table 7, 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	30,000[1]	NA	NA	NA	NA
Mn-54	1,000	NA	30,000	NA	NA
Fe-59	400	NA	10,000	NA	NA
Co-58	1,000	NA	30,000	NA	NA
Co-60	300	NA	10,000	NA	NA
Zn-65	300	NA	20,000	NA	NA
Zr-Nb-95	400	NA	NA	NA	NA
I-131	20[2]	0.9	NA	3	100
Cs-134	30	10	1,000	60	1,000
Cs-137	50	20	2,000	70	2,000
Ba-La-140	200	NA	NA	300	NA

Table 8, Maximum Values for the Lower Limit of Detection (LLD)

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	0.01	NA	NA	NA	NA
H-3	3,000[3]	NA	NA	NA	NA	NA
Mn-54	15	NA	130	NA	NA	NA
Fe-59	30	NA	260	NA	NA	NA
Co-58, Co-60	15	NA	130	NA	NA	NA
Zn-65	30	NA	260	NA	NA	NA
Zr-Nb-95	15	NA	NA	NA	NA	NA
I-131	15[4]	0.07	NA	1	60	NA
Cs-134	15	0.05	130	15	60	150
Cs-137	18	0.06	150	18	80	180
Ba-La-140	15	NA	NA	15	NA	NA

[1] For surface water samples: If a drinking water pathway exists, a value of 20,000 pCi/L shall be used.
[2] For surface water samples: If a drinking water pathway exists, a value of 2 pCi/L shall be used.
[3] For surface water samples: If a drinking water pathway exists, a value of 2,000 pCi/L shall be used.
[4] For surface water samples: If a drinking water pathway exists, a value of 1 pCi/L shall be used.

8.0 SAMPLING PROGRAM, PROGRAM MODIFICATION AND INTERPRETATION 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 environs 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 results of above ground nuclear weapons testing. It is important to note, 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. Results from samples collected and analyzed during the year, 2024, are described below.

In the following sections, results from direct radiation, air, water, and food products analyzed as part of REMP in 2024 will be discussed. Sampling program descriptions and deviations will also be discussed.

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. Minimum Differential Doses for Annual and Quarterly periods have been determined based on 3-times the 90th percentile standard deviation for monitoring locations. 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.

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 the baseline background. Due to natural background variations and measurement sensitivities and uncertainties, minimum differential dose is not zero. MDD is calculated based on performance of the dosimetry system in the environment and is about 5 mrem per quarter and 10 mrem per year. If a dosimeter indicates dose greater than background plus MDD, then the net dose (above background) is reported as Facility Related Dose.

Ambient radiation levels in the environment were monitored at locations on the Site and in the surrounding areas with pairs of passive dosimeters (PD) supplied and analyzed by Stamford Dosimetry/Environmental Dosimetry Co. Packets containing the PDs were placed in the owner-controlled area, around the Site at various distances, and in each land based meteorological sector, Table 6, REMP Sampling Locations – Direct Radiation.

The PDs at each location are changed and analyzed quarterly. The laboratory utilizes a Panasonic based system using UD-814 dosimeters that are constructed of three rectangular, lead-shielded (protects against low-energy gamma radiation) Teflon wafers, impregnated with 25% calcium sulfate phosphor ($CaSO_4$:Dy) to monitor gamma radiation. Additionally, each PD has one lithium borate (LiBO:Mn) element to monitor beta radiation (which is not used). Two PDs (Panasonic type UD-814) are placed at each location.

In 2019 PSEG implemented American National Standards Institute (ANSI) N13.37-2014 Environmental Dosimetry - Criteria for System Design and Implementation [10] for comparing each PD location dose result to its historical background dose. Per the standard a well-functioning dosimetry system should be able to detect a 5 mrem difference in the quarterly data and a 10 mrem difference in the yearly data above background.

8.1.1 Quarterly Facility Dose

During this calendar year 2024, a total of 236 samples were collected and analyzed in accordance with the requirements in Table 1, Radiological Environmental Sampling Program – Exposure Pathway – Direct Radiation.

All of the quarterly “inner ring” and “outer ring” indicator locations (Table 6, REMP Sampling Locations – Direct Radiation) resulted in non-detectable dose.

All of the quarterly offsite “special interest” locations resulted in non-detectable dose.

All of the quarterly control locations resulted in non-detectable dose.

The direct radiation sample results are in Table 12, Environmental Direct Radiation Dosimetry Sample Results.

8.1.2 Calculated Annual Facility Dose

All annual "inner ring" (Table 6, REMP Sampling Locations – Direct Radiation) resulted in non-detectable dose except for location 16X3 (13.6 mrem annual dose). See section 8.1.4 TLD anomalies.

All annual offsite "outer ring" locations resulted in non-detectable dose.

All annual offsite "special interest" locations resulted in non-detectable dose.

The direct radiation sample results are in Table 12, Environmental Direct Radiation Dosimetry Sample Results.

8.1.3 ISFSI Dose

Two on site ISFSI locations, in the controlled area, 01Q1 and 16Q2 showed measurable dose rates above background as seen in Table 12. The net dose radiation levels as measured by these special interest locations ranged from 12.4 to 19.0 mrem/Standard Quarter and annual doses of 73.2 and 54.7 mrem for Locations 01Q1 and 16Q2, respectively.

Dose to the nearest resident due to direct radiation from ISFSI was calculated to be 0.006 mrem/yr, which is a very small fraction (0.024%) of the 25 mrem/yr limit per 40 CFR 190 and 10 CFR 72.104. Both regulations limit the dose to a real member of the public to 25 mrem in a year to the total body. The calculation was performed using the formula provided in ANSI/HPS N13.37-2014 as follows:

Where: $$D_2 = OF * \left(\left(D_1 * R_1^{\,2} \right) / R_2^{\,2} \right)$$

D1 = Dose that was measured from TLD Location 16Q2 (1Q1 was also calculated and had a slightly lower dose)

D2 = Dose that will be extrapolated to Nearest Resident

R1 = Distance from the source to the location where D1 was obtained. (Distance from ISFSI to TLD at 16Q2)

R2 = Distance from ISFSI to the location that dose will be extrapolated (Nearest Resident)

OF = Occupancy Factor (1 = full time)

Location	R_1 (ft)	D_1 Annual Net Dose (mrem)	R_2 (ft)	OF	D_2 Annual Net Dose (mrem)
Nearest Resident	203	54.7	19,536	1.0	5.91E-03

8.1.4 TLD anomalies

TLD 16X3 had a net positive annual dose of 13.6 mrem for 2024. The location of 16X3 is near the water in the Windport parcel 1,324 feet from the ISFSI pad. The data is anomalous because other TLDs closer to the source, i.e., ISFSI pad, do not have net positive results. An additional dosimeter will be added to this location to determine if the dose is accurate.

8.2 Air Particulate and Radioiodine Sample Results

Air particulate filters and charcoal canisters were collected from locations specified in Table 2, Radiological Environmental Sampling Program – Exposure Pathway - Airborne. During this calendar year 2024, a total of 832 samples (416 particulate filters and 416 iodine cartridges) were collected and analyzed for gross beta, gamma emitters and Iodine-131. Particulate samplers are used to analyze gross beta activity following filter change out which occurs weekly. Gamma isotopic analysis is performed on composite samples collected at each location and is analyzed quarterly. Radioiodine (I-131) analysis is performed weekly on radioiodine sample cartridges.

APT (Air Particulate) samples were collected on glass fiber filters with low-volume air samplers sampling at approximately 1.5 SCFM. Air sample volumes were measured with calibrated dry-gas meters.

AIO samples (Air Iodine) were collected from the air by adsorption on triethylene-diamine (TEDA) impregnated charcoal cartridges connected in series after the APT filters.

8.2.1 Air Particulates

APT samples were collected weekly at seven indicator locations (05X1, 06S1, 15S2, 05D1, 16E1, 01F1, and 02F6), one duplicate location (05S2) and one control location (14G1). Each weekly sample collected was analyzed for gross beta by TBE. Quarterly composites of the weekly samples from each location were analyzed for specific gamma emitters. The duplicate air location sample was shipped to GEL for analysis (Table 13, Table 14, and Table 15).

8.2.2 Gamma Spectroscopy

Gamma spectroscopy was performed on each of the 32 quarterly particulate composite samples. Naturally occurring Be-7 was detected, and no other gamma emitters were detected in any of the samples. RMC-TR-77-03 [11].

Naturally occurring Be-7, attributed to cosmic ray activity in the atmosphere, was detected in all 28 indicator location composites at concentrations ranging from 31E-03 pCi/m^3 to 71E-03 pCi/m^3 with an average concentration of 47E-03 pCi/m^3, and in the four control location composites ranging in concentration from 40E-03 pCi/m^3 to 63E-03 pCi/m^3 with an average concentration of 54E-03 pCi/m^3. The maximum preoperational level detected was 330E-03 pCi/m^3 with an average concentration of 109E-03 pCi/m^3 (Table 9, Table 13 and RMC-TR-77-03 [11]).

Gross beta activity was detected in 361 of 364 of indicator location samples at concentrations ranging from 4E-03 pCi/m^3 to 27E-03 pCi/m^3 with an average concentration of 13E-03 pCi/m^3, and in 51 of 52 of the control location samples at concentrations ranging from 5E-03 pCi/m^3 to 29E-03 pCi/m^3 with an average of 14E-03 pCi/m^3. Gross beta activity was less than ten times the yearly mean of control samples. Therefore, per the ODCM gamma isotopic analysis was not required to be performed on the individual samples. The maximum preoperational level detected was 920E-03 pCi/m^3 with an average concentration of 74E-03 pCi/m^3 (Table 9, Table 14, and RMC-TR-77-03 [11]. See Figure 5).

8.2.3 Air Iodine

AIO samples were collected weekly at seven indicator locations (05X1, 06S1, 15S2, 05D1, 16E1, 01F1, and 02F6), one duplicate location (05S2) and one control location (14G1). The duplicate air location sample was shipped to GEL for analysis. Each sample was analyzed by TBE for I-131, and all 416 samples were less than the MDC for both indicator and control samples during the Reporting Period. The maximum preoperational level detected was 42E-03 pCi/m^3 (Table 9, Table 15 and RMC-TR-77-03 [11]).

Air particulate and radioiodine results from this monitoring period, 2024, were compared to preoperational data as shown in Table 9, Air Particulate and Radioiodine Comparison of Current Year and Historic Data, and there were no significant changes.

Table 9, Air Particulate and Radioiodine Comparison of Current Year and Historic Data

Analysis	Preoperational Data (pCi/m^3)	2024 Sample Result Average (pCi/m^3)
Gamma	109E-03	47E-03
Beta	74E-03	13E-03
Iodine	42E-03	< MDC

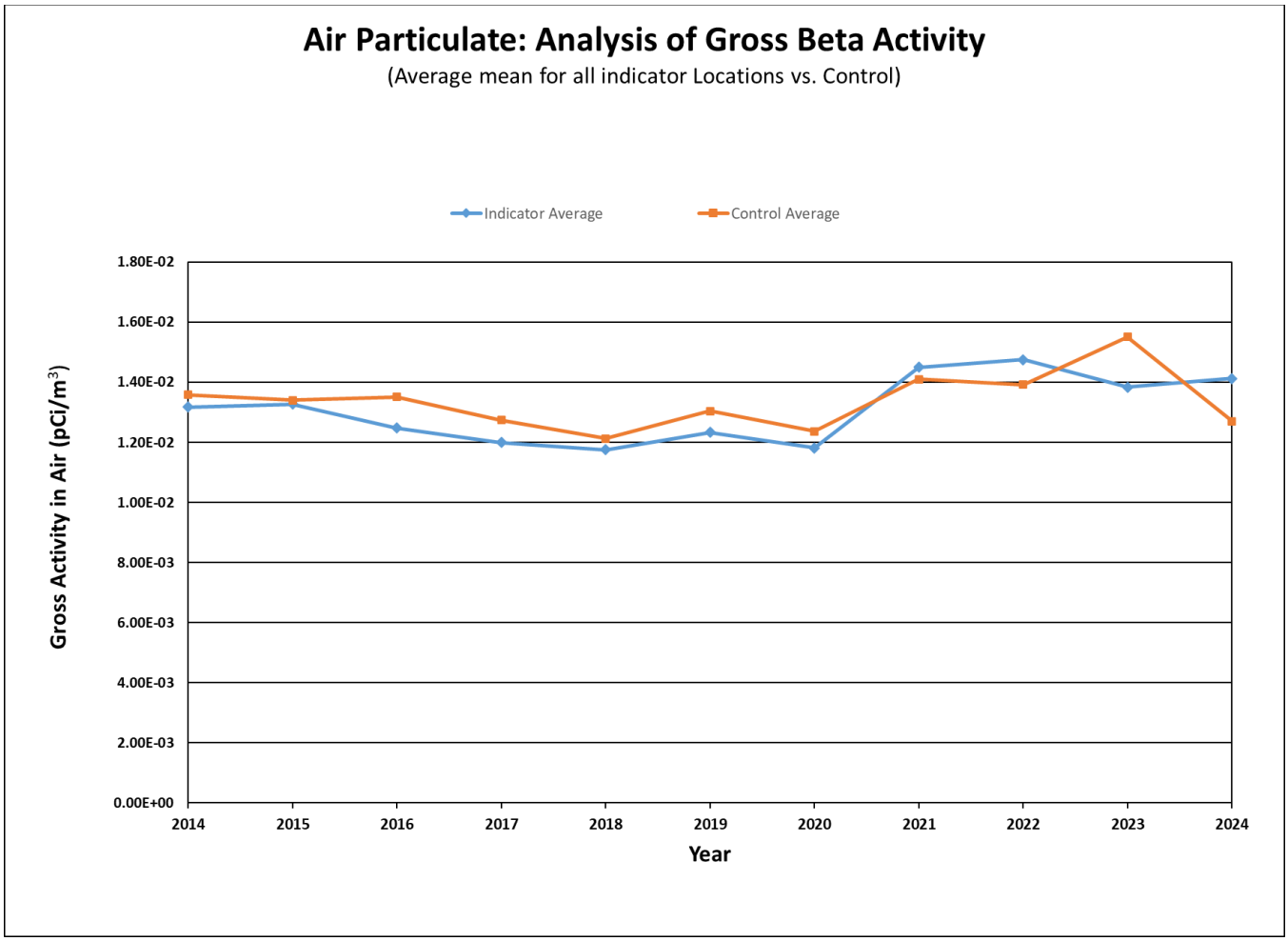

Figure 5, Air Particulate: Analysis for Gross Beta, Average Mean for All Indicator Vs. Control

8.3 Waterborne Sample Results

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

Surface water samples were collected twice a month at four indicator locations and one control location in the Delaware River Estuary. The two samples for the month were combined to create a single monthly composite sample that was then analyzed. One location (11A1) is at the outfall area (which is the area potentially impacted by effluents discharged from the Site into the Delaware River), one location is downstream from the outfall area (07E1), and one location is directly west of the outfall area at the mouth of the Appoquinimink River (12B1). Samples were collected upstream in the Delaware River (01F2) and at the mouth of the Chesapeake and Delaware Canal (16F1), the latter being sampled when the flow was from the Canal into the river.

Surface water samples were collected offshore in new polyethylene containers that were rinsed twice with the sample medium prior to collection. The surface water samples were transported to TBE for analysis.

Location 12B1, located directly west of the Site, at the mouth of the Appoquinimink River, serves as the control. 12B1 was chosen as the control location because the physical characteristics of this location more closely resemble those of the outfall area than those at the farther upstream location (01F2). As discussed in the preoperational summary report, due to its tidal nature, there were flow rate and salinity variations in the Delaware River Estuary. These variations accounted for the differences in K-40 concentrations.

During this calendar year 2024, a total of 60 surface water samples were collected and analyzed in accordance with the requirements of Table 3, Radiological Environmental Sampling Program – Exposure Pathway - Waterborne.

1. Tritium

   Tritium activity was detected in 1 (sample location 11A1) of the 48 indicator location samples at a concentration of 674 pCi/L (80135746-40). Location 11A1 is at the outfall area that is influenced by permitted plant liquid discharges (see Figure 2). A discharge was in progress at the time of sample. The resulting maximum organ and total body dose to an adult would be 1.84E-03 mrem or <0.01 percent of the 40 CFR 190 limit. Tritium was not detected in the control location samples. The maximum preoperational level detected was 600 pCi/L, with an average concentration of 210 pCi/L (Table 16 and RMC-TR-77-03 [11]). See Figure 6, Surface Water Tritium Results.

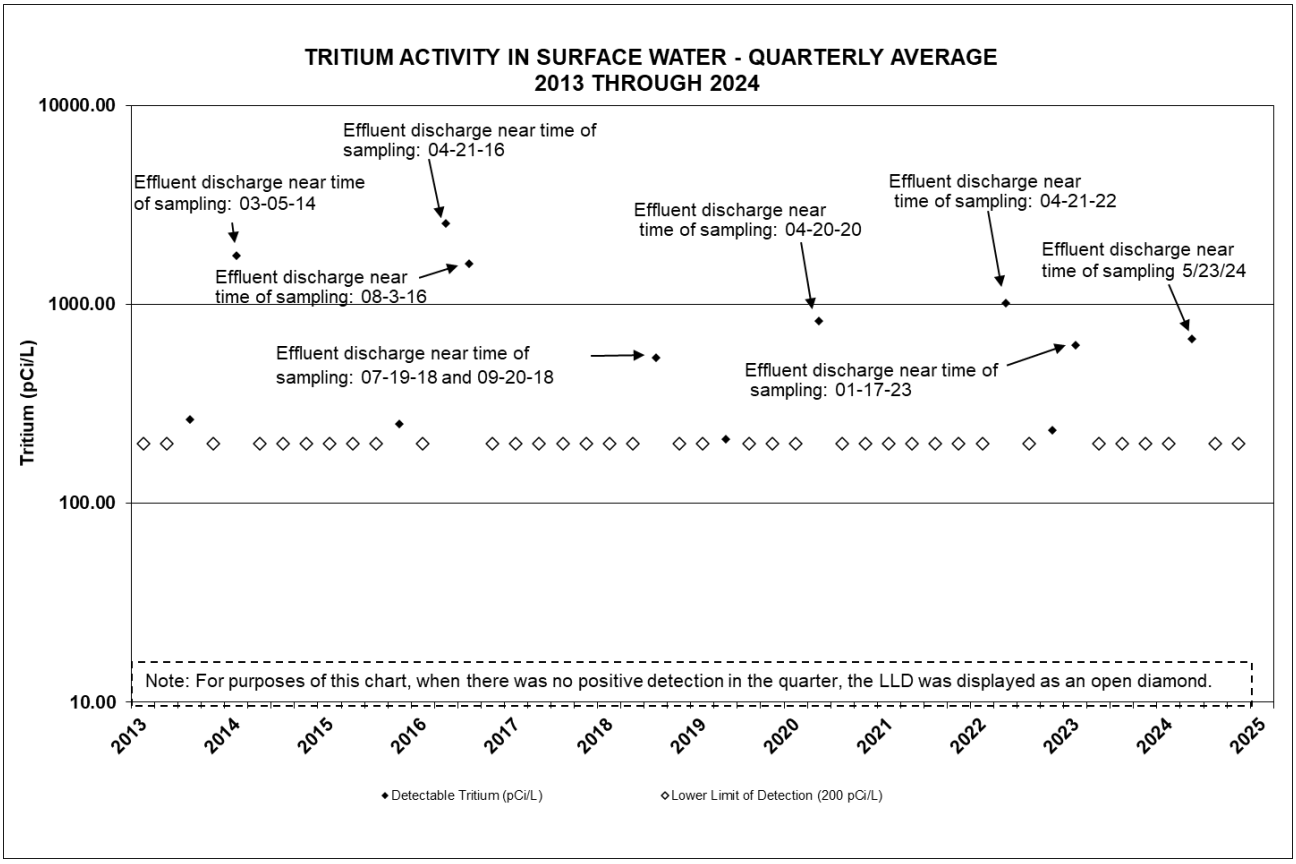

Figure 6, Surface Water Tritium Results

2. Gamma Spectroscopy

No plant related gamma emitters were detected above the MDC in any of the indicator or control surface water samples.

Naturally occurring K-40 was detected in 18 of the 48 indicator location samples at concentrations ranging from 53 pCi/L to 171 pCi/L, with an average of 100 pCi/L. K-40 was detected in 5 of the 12 control location samples at concentrations ranging from 49 pCi/L to 144 pCi/L, with an average concentration of 97 pCi/L. The maximum preoperational level detected for K-40 was 200 pCi/L with an average concentration of 48 pCi/L (Table 17 and RMC-TR-77-03 [11]).

3. I-131Low Level

I-131 was not detected above the MDC in any of the 48 indicator samples or in any of the control location samples (Table 17).

8.3.2 Potable Water (Drinking Water)

Both raw and treated potable water samples were collected and composited at the local water treatment facility. Each sample consisted of weekly aliquots composited into a monthly sample. The raw water source for this plant is a combination of surface water from Laurel Lake and groundwater from its adjacent wells. These are Management Audit samples as no liquid effluents discharged from the Site directly affect this pathway.

1. Gross Alpha

   No Gross alpha activity was detected above the MDC in any of the raw or treated water samples. The maximum preoperational level detected was 2.7 pCi/L (Table 18 and RMC-TR-77-03 [11]).

2. Gross Beta

   Gross beta activity was detected in 12 of 12 raw water samples and 12 of 12 treated water samples. The concentrations for the raw samples ranged from 5.7 pCi/L to 10.4 pCi/L, with an average concentration of 8.0 pCi/L. Concentrations for the treated water ranged from 6.2 pCi/L to 10.7 pCi/L, with an average concentration of 8.5 pCi/L. The maximum preoperational level detected was 9.0 pCi/L with an average concentration of 4.2 pCi/L (Table 18 and RMC-TR-77-03 [11].

3. Tritium

   Tritium activity was not detected above the MDC in any of the 12 raw or 12 treated water samples. The maximum preoperational level detected was 350 pCi/L with an average of 179 pCi/L (Table 18 and RMC-TR-77-03 [11]).

4. I-131

   I-131 activity was not detected above the MDC in any of the 12 raw or 12 treated water samples. No preoperational data were available for comparison, since I-131 was not analyzed as a specific radionuclide prior to 1989. However, I-131 analytical results to date have been below the MDC (Table 19 and RMC-TR-77-03 [11]).

5. Gamma Spectroscopy

   No plant related gamma emitters were detected above the MDC in any of the 12 raw potable water samples. Naturally occurring K-40 was not detected in any raw or treated water samples. No preoperational data was available for comparison. Naturally occurring Ra-226 was not detected in any raw or treated water samples. The maximum preoperational level detected for Ra-226 was 1.4 pCi/L (Table 19 and RMC-TR-77-03 [11]).

8.3.3 Well Water (Ground Water)

Although offsite wells in the vicinity of the Site are not directly affected by plant operations, well water samples were collected monthly from one farm (03E1). Samples from this well are considered Management Audit samples.

1. Gross Alpha

   Gross alpha activity was not detected above the MDC in any of the 12 well water samples. The maximum preoperational level detected was 9.6 pCi/L (Table 20 and RMC-TR-77-03 [11]).

2. Gross Beta

   Gross beta activity was detected in 1 of the 12 well water samples at a concentration of 3.7 pCi/L. The preoperational results ranged from <2.1 pCi/L to 38 pCi/L, with an average value of 9 pCi/L (Table 20 and RMC-TR-77-03 [11]).

3. Tritium

   Tritium activity was not detected above the MDC in any of the 12 well water samples. The maximum preoperational level detected was 380 pCi/L (Table 20 and RMC-TR-77-03 [11]).

4. I-131

   I-131 activity was not detected in any of the 12 well water samples. No preoperational data were available for comparison, since I-131 was not analyzed as a specific radionuclide prior to 1989. However, I-131 analytical results to date have been below the MDC (Table 21 and RMC-TR-77-03 [11]).

5. Gamma Spectroscopy

No plant related gamma emitters were detected above the MDC in any of the indicator or control location well water samples. Naturally occurring K-40 was not detected in any of the well water samples. The maximum preoperational levels detected were 30 pCi/L (Table 21 and RMC-TR-77-03 [11]).

8.3.4 Sediment

Sediment samples were collected semi-annually from five indicator locations and one control location. Location 05A1 was the only shoreline sediment sample location that was directly subjected to tidal fluctuations. The remaining locations were located offshore. Location 15A2, South Storm Drain outfall, was not sampled due to the Windport Project. Only one outfall location is required (obtained from 15A1) by ODCM table 3.12-1.

Sediment samples were taken with a bottom grab sampler and frozen in sealed polyethylene containers before being transported in ice chests to TBE. For the river bottom sediment, a marine GPS was used to locate the correct site and the sampling boat was maneuvered over the area until the correct amount of sample was obtained (grabbed) with the sediment dredge.

Location 05A1 shoreline sediment sample (an onsite location) was sampled as follows: A square area, measuring one meter on each side was staked out and then divided into a grid of nine smaller boxes, three per side. A one inch deep scoop from the center of each of the small grids was taken. All the aliquots were combined and the total sample transported in the ice chest to TBE and analyzed for gamma emitters.

Naturally occurring K-40 was detected in all 10 indicator location samples at concentrations ranging from 2,470 pCi/kg (dry) to 14,340 pCi/kg (dry), with an average concentration of 8,327 pCi/kg (dry). Both control locations samples had concentrations ranging from 14,780 pCi/kg (dry) to 16,000 pCi/kg (dry) with an average concentration of 15,390 pCi/kg (dry). The maximum preoperational level detected was 21,000 pCi/kg (dry) with an average concentration of 15,000 pCi/kg (dry) Table 22 and RMC-TR-77-03 [11]).

Cs-137 was not detected in any of the indicator or control samples. The maximum preoperational level detected was 400 pCi/kg (dry) with an average concentration of 150 pCi/kg (dry) (Table 22 and RMC-TR-77-03 [11]).

Naturally occurring Ra-226 was detected in 1 of 10 indicator location samples with a concentration of 1,531 pCi/kg (dry). Ra-226 was detected in 1 of the 2 control location samples with a concentration of 1,834 pCi/kg (dry).. The maximum preoperational level detected was 1,200 pCi/kg (dry) with an average concentration of 760 pCi/kg (dry) (Table 22 and RMC-TR-77-03 [11]).

Naturally occurring Th-232 was detected in 5 of the 10 indicator location samples at concentrations ranging from 210 pCi/kg (dry) to 780 pCi/kg (dry) with an average concentration of 499 pCi/kg (dry). Th-232 was detected 2 of 2 control location samples at concentrations ranging from 807 pCi/kg (dry) to 984 pCi/kg (dry) with an average concentration of 895 pCi/kg (dry). The maximum preoperational level detected was 1,300 pCi/kg (dry) with an average concentration of 840 pCi/kg (dry). All other gamma emitters were less than the MDC (Table 22 and RMC-TR-77-03 [11]).

8.4 Ingestion Pathway Sample Results

8.4.1 Milk

Milk samples (MLK) were taken semi-monthly when cows were on pasture and monthly when cows were not grazing on open pasture, from two indicator locations (13E3, and 14F4) and one control location (02G3). Animals were considered on pasture from April to November of each year. Samples were collected in new polyethylene containers, sodium bisulfite was added as a sample preservative, and then samples were frozen and transported in ice chests to TBE. Each sample was analyzed for I-131 and gamma emitters. Note: Location 03G1 was the previous control location, however, the dairy farm is no longer in business, see section 11.0.

There is no dairy farm within three miles of the Site, and there is only one dairy farm within five miles (13E3). Therefore, broadleaf vegetation is grown, maintained, and harvested monthly during the growing season.

1. I-131

   I-131 was not detected above MDC in any of the 60 samples analyzed. The maximum preoperational level detected was 65 pCi/L, which occurred following a period of atmospheric nuclear weapons (Table 23 and RMC-TR-77-03 [11]).

2. Gamma Spectroscopy

   No plant related gamma emitters were detected above the MDC in any of the indicator or control location milk samples.

   Naturally occurring K-40 was detected in all 40 indicator samples with concentrations ranging from 995 pCi/L to 1,846 pCi/L with an average concentration of 1,233 pCi/L, and the 20 control location sample concentrations ranging from 1,004 pCi/L to 1,677 pCi/L, with an average concentration of 1,247 pCi/L. The maximum preoperational level detected was 2,000 pCi/L with an average concentration of 1,437 pCi/L (Table 23 and RMC-TR-77-03 [11]).

8.4.2 Fish and Invertebrates

A total of 6 fish and invertebrate samples were analyzed in 2024, for gamma emitting radionuclides in accordance with requirements of Table 4, Radiological Environmental Sampling Program – Exposure Pathway - Ingestion. These samples are collected from the indicator and control areas as required by the ODCM.

1. Fish

Edible species of fish were collected semi-annually at two indicator locations and one control location and analyzed for gamma emitters in edible flesh. Sample species collected in 2024, were striped bass and catfish. Edible fish were collected using gill nets. These samples were processed by separating the flesh from the bone. The flesh was placed in sealed containers and frozen before being transported in ice chests to TBE for analysis.

No plant related gamma emitters were detected above the MDC in any of the indicator or control location fish samples. Naturally occurring K-40 was detected in all 4 indicator location samples at concentrations ranging from 2,872 pCi/kg (wet) to 3,876 pCi/kg (wet) with an average concentration of 3,473 pCi/kg (wet). The 2 control location samples had concentrations ranging from 2,918 pCi/kg (wet) to 4,062 pCi/kg (wet), with an average of 3,490 pCi/kg (wet). The maximum preoperational detection was 13,000 pCi/kg (wet) with an average concentration of 2,900 pCi/kg (wet) (Table 24 and RMC-TR-77-03 [11]).

2. Blue Crab

Blue crab samples were caught in commercial traps and collected twice during the season at one indicator and one control location. The edible portions were analyzed for gamma emitters. No plant related gamma emitters were detected above the MDC in any of the indicator or control location blue crab samples. Naturally occurring K-40 was detected in both indicator samples at concentrations of 2,291 pCi/kg (wet) and 2,389 pCi/kg (wet) with an average concentration of 2,340 pCi/kg (wet). The control location samples had concentrations ranging from 2,238 pCi/kg (wet) to 2,864 pCi/kg (wet), with an average concentration of 2,551 pCi/kg (wet). The maximum preoperational level for K-40 detected was 12,000 pCi/kg (wet) with an average concentration of 2,835 pCi/kg (wet). All other gamma emitters were less than the MDC (Table 25 and RMC-TR-77-03 [11]).

8.4.3 Vegetation

A total of 33 food samples were analyzed in 2024, for gamma emitting radionuclides in accordance with requirements of Table 4, Radiological Environmental Sampling Program – Exposure Pathway - Ingestion.

Locally grown vegetables (FPV) were collected at the time of harvest at four locations (02F9, 01G1, 15F4 and 03H5); fodder crops (VGT) were sampled at three locations (13E3, 14F4, and 02G3); and broad leaf vegetation (FPL) was sampled at six locations (06S1, 16S1, 10D1, 01G1, 03H5, and 15F4). The vegetables and fodder samples are additional samples (Management Audit) taken to enhance the radiological monitoring program.

1. Broadleaf Vegetation (FPL)

   Broadleaf vegetation samples were collected since there were no dairy farms operating within the five km (three mile) radius of the Site. The closest dairy farm (13E3) was located in Odessa, DE at 5.0 miles to the West.

   All samples were analyzed for gamma emitters and included cabbage and lambs ear. These samples were obtained from four indicator locations and one control locations. The results for these samples are discussed below.

   No plant related gamma emitters were detected above the MDC in any of the indicator or control location broadleaf vegetation samples.

   Naturally occurring Be-7, attributed to cosmic ray activity in the atmosphere, was detected above the MDC in 4 of the 12 indicator location samples with concentrations ranging from 1,288 pCi/kg (wet) to 2,032 pCi/kg (wet), with an average concentration of 1,534 pCi/kg (wet). Be-7 was detected in 2 of the 4 control location samples, with concentrations ranging from 1,474 pCi/kg (wet) to 2,837 pCi/kg (wet), and an average concentration of 2,156 pCi/kg (wet). No preoperational Be-7 data was available for comparison (Table 26).

   Naturally occurring K-40 was detected in all 12 indicator samples, with concentrations ranging from 1,587 pCi/kg (wet) to 11,770 pCi/kg (wet) with an average concentration of 5,299 pCi/kg (wet). K-40 was detected in all of the control location samples, with concentrations ranging from 2,923 pCi/kg (wet) to 7,651 pCi/kg (wet), and an average concentration of 5,289 pCi/kg (wet). The maximum preoperational level detected was 4,800 pCi/kg (wet) with an average concentration of 2,140 pCi/kg (wet) (Table 26 and RMC-TR-77-03 [11]).

   Naturally occurring Th-232 was not detected in any of the indicator location samples or control location samples (Table 26).

2. Vegetables

   There are no farm products that are irrigated with water in which plant effluents have been discharged. The Delaware River at the location of the Site is brackish and therefore is not used for irrigation.

   A variety of food products were sampled on and around the Site; however, the variety was dependent on the farmer's preference. These vegetables were collected as Management Audit samples.

   All samples were analyzed for gamma emitters and included asparagus, sweet corn, peppers, tomatoes, and peaches. These samples were obtained from five indicator locations (14 samples). The results for these samples are discussed below.

   No plant related gamma emitters were detected above the MDC in any of the indicator or control location vegetable samples.

Naturally occurring Be-7, attributed to cosmic ray activity in the atmosphere, was not detected above the MDC in any of the vegetable samples.

Naturally occurring K-40 was detected in all 14 indicator samples, with concentrations ranging from 1,147 pCi/kg (wet) to 3,197 pCi/kg (wet) with an average concentration of 1,966 pCi/kg (wet). The maximum preoperational level detected was 4,800 pCi/kg (wet) with an average concentration of 2,140 pCi/kg (wet) (Table 27 and RMC-TR-77-03 [11]).

3. Fodder Crops

Although not required by the Site ODCM, three samples of silage normally used as cattle feed were collected from three indicator locations. It was determined that these products could be an element in the food-chain pathway. These fodder crops were collected as Management Audit samples and analyzed for gamma emitters. All three locations from which samples were collected are milk sampling locations.

No plant related gamma emitters were detected above the MDC in any of the indicator or control location fodder crop samples. Naturally occurring Be-7, attributed to cosmic ray activity in the atmosphere, was detected in 2 of 3 indicator samples with concentrations ranging from 455 pCi/kg (wet) to 491 pCi/kg (wet) with an average concentration of 473 pCi/kg). The maximum preoperational level detected for fodder was 4,700 pCi/kg (wet) with an average concentration of 2,000 pCi/kg (wet) (Table 28 and RMC-TR-77-03 [11]).

Naturally occurring K-40 was detected in all three indicator samples at concentrations ranging from 2,990 pCi/kg (wet) to 6,814 pCi/kg (wet) with an average concentration of 4,499 pCi/kg (wet). Preoperational results averaged 7,000 pCi/kg (wet) (Table 28 and RMC-TR-77-03 [11]).

8.4.4 Game

Although not required by the Site ODCM, one muskrat sample was collected from one indicator location. The game sample was collected as a Management Audit sample and analyzed for gamma emitters.

No plant related gamma emitters were detected above the MDC in the indicator game sample. Naturally occurring K-40 was detected with a concentration of 2,167 pCi/kg (wet). No preoperational data was available for comparison (Table 29 and RMC-TR-77-03 [11]).

8.5 Terrestrial

8.5.1 Soil

Soil is sampled every three years and analyzed for gamma emitters. Nine locations were sampled in 2022 (next sample is due in 2025). These Management Audit samples were collected in areas that have been relatively undisturbed since the last collection to determine any change in the radionuclide inventory of the area.

The 2022 samples had naturally occurring K-40 was detected in all nine indicator samples at concentrations ranging from 5,448 to 13,690 pCi/kg (dry) with an average concentration of 9,315 pCi/kg (dry). The maximum preoperational level detected was 24,000 pCi/kg (dry) with an average of 10,000 pCi/kg (dry) (Table 30).

Cs-137 was detected in 5 of 9 indicator samples at concentrations ranging from 75 to 184 pCi/kg (dry) with an average concentration of 128 pCi/kg (dry). The maximum preoperational level detected was 2,800 pCi/kg (dry) with an average of 800 pCi/kg (dry). See Figure 7 for graphical presentation (Table 30 and RMC-TR-77-03 [11]).

Naturally occurring Ra-226 was detected in 8 of 9 indicator samples at concentrations ranging from 1,398 pCi/kg (dry) to 2,836 pCi/kg (dry) with an average concentration of 1,989 pCi/kg (dry) (Table 30).

Naturally occurring Th-232 was detected in 8 of 9 indicator samples at concentrations ranging from 436 pCi/kg (dry) to 975 pCi/kg (dry) with an average concentration of 742 pCi/kg (dry), Th-232 was not detected in control location. All the other gamma emitters were less than the MDC (Table 30).

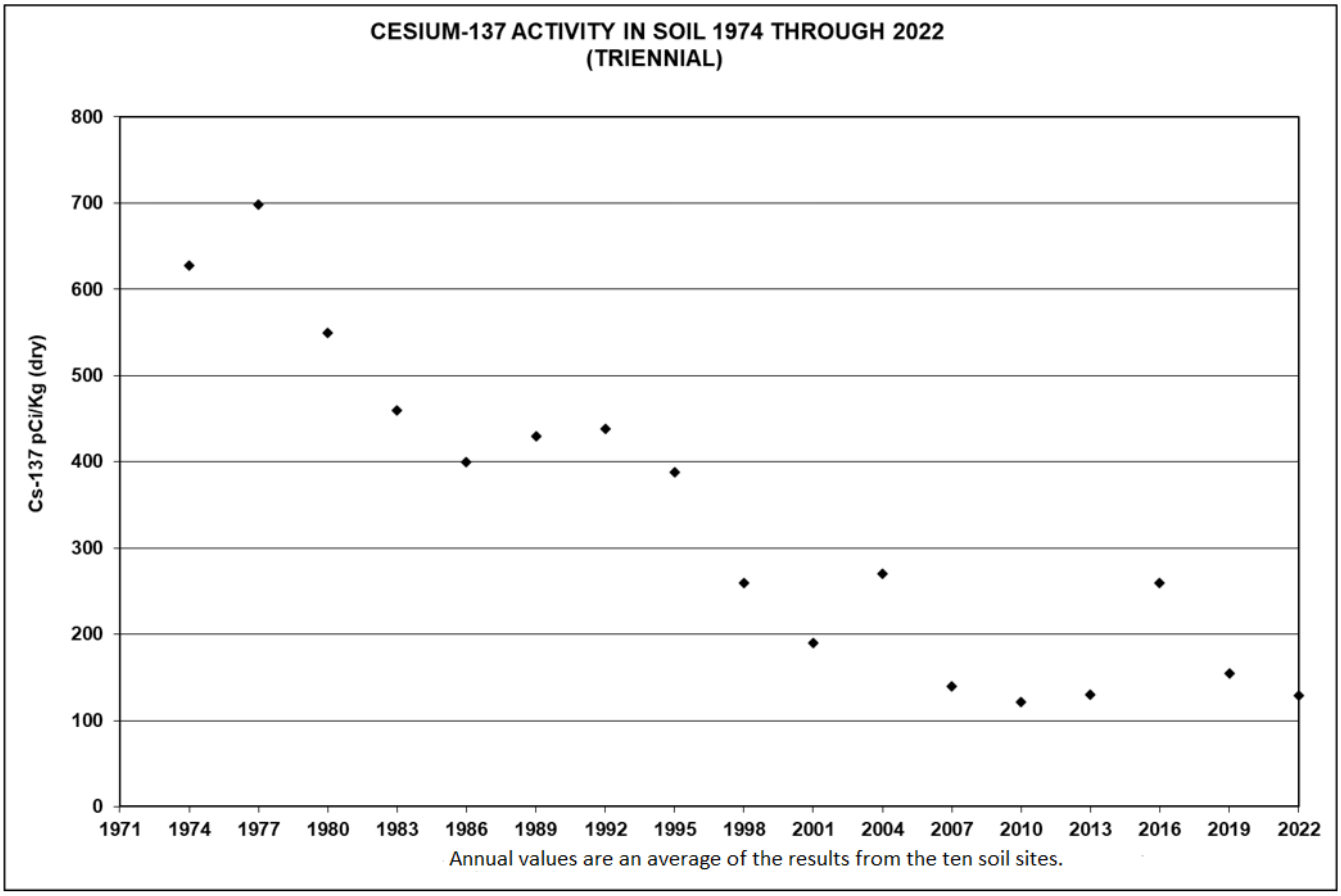

Figure 7, Cesium-137 Activity in Soil 1974 Through 2022

Historically, Cs-137 has been observed in REMP soil samples and attributed to weapons testing. The values observed in these samples are consistent with prior results and are below the NRC's predicted values of Cs-137 for the New Jersey area soils as a result of fallout from atmospheric weapons testing. Furthermore, the analyzed samples were at concentrations many orders of magnitude above the theoretical impact by plant operation given the Cs-137 concentrations in plant effluents back through 2005.

Additionally, soil is not a formal component of the REMP, nor is it required to be collected as part of the REMP in accordance with the ODCM; it is collected as a REMP Management Audit sample. As such, the ODCM specifies no reportability or LLD thresholds for soil samples. PSEG REMP Implementation procedure, Attachment 1 (Analytical Results Investigation Levels) provides an investigation threshold of 1,000 pCi/kg for Cs-137 in soil and sediment, which is based on the expected concentrations for our region from sources other than plant operation as recognized by the NRC in DOCKET NO.50-219, RFTA NO. 99-040.

This evaluation validated suppositions and will appropriately characterize positive sample results obtained in future sampling evolutions as related to atmospheric testing, provided that:

- Soil concentrations are less than 1,000 pCi/kg
- Annual gaseous Cs-137 effluents are reviewed and do not show a significant increase
- Cs-134 is not detected (Cs-134 is plant related and has a much shorter half-life than Cs-137)
- D/Q values continue to be routinely evaluated and are updated as necessary

For the above reasons, it can be concluded that the samples are primarily the result of atmospheric testing, with negligible contribution from site operations at PSEG Nuclear's three reactors.

Although it has been concluded the Cs-137 in the soil is due to fallout from atmospheric weapons testing, there is no radiological impact to the environment or a member of the public with respect to the annual dose. To demonstrate this, a skin dose calculation was performed for a theoretical person who stood on the soil at location 05F1 (184 pCi/kg) for 1,000 hours per year (arbitrary number). This calculation concluded the dose to a member of the public beyond the site boundary would be a mere 2.16E-1 mrem/yr (1.4% of the annual skin dose limit of 15 mrem/yr), which conforms to 10 CFR 50 Appendix I. Since this activity has been determined to be non-site related, a better comparison is the calculated skin dose against background radiation levels (or approximately 0.1% of the 300 mrem/yr background dose).

9.0 LAND USE CENSUS

The Land Use Census required by the Offsite Dose Calculation Manual 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. Land use census satisfies the requirements of Section IV.B.3 of Appendix I to 10 CFR 50 [2]. NUREG-1301/1302 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-1301/1302, 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.

The Land Use Census was conducted during the calendar year, 2024, within the growing season to identify changes in land use, receptor locations, and new exposure pathways. The results for the 2024 Land Use Census are listed in Table 10, Land Use Census – Nearest Pathway within 5 miles. In summary, the highest D/Q locations for nearest garden, nearest residence and nearest milk animal did not change following the 2024 census.

Table 10, Land Use Census – Nearest Pathway within 5 miles

Sector	Direction	Nearest Residence (Miles)	Nearest Milk Animal (Miles)	Garden (Miles)	Meat Animal Distance (Miles)
1	N	None	None	None	None
2	NNE	5.0	None	None	None
3	NE	3.9	None	None	None
4	ENE	3.9	None	None	None
5	E	None	None	None	None
6	ESE	None	None	None	None
7	SE	None	None	None	None
8	SSE	None	None	None	None
9	S	None	None	None	None
10	SSW	3.9	None	None	None
11	SW	4.3	None	None	None
12	WSW	4.4	None	None	None
13	W	4.0	5.0	None	None
14	WNW	3.4	None	None	None
15	NW	3.7	None	None	None
16	NNW	4.2	None	None	None

10.0 SAMPLE DEVIATIONS, ANOMALIES AND UNAVAILABILITY

Sampling and analysis are performed for media types addressed in the Offsite Dose Calculation Manual. Sampling and analysis challenges may be experienced due to a multitude of reasons including environmental factors, loss of TLDs/OSLDs, contamination of samples, etc. To aid classification of sampling and analysis challenges experienced in 2024, 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 prevents 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 samples were collected and analyzed as scheduled except for the following:

Table 11, Sample Deviation Summary

Sample Type and Analysis	Analysis	Location	Collection Date or Period	Reason for not conducting REMP sampling as required by ODCM	Plans for preventing reoccurrence
APT/AIO[1]	Gross β Iodine	14G1	1/16/24 - 1/22/24	GFCI Trip & Blown Fuse LLD not met	Installed new pump
APT/AIO[2]	Gross β Iodine	05D1	2/20//24 – 2/26/24	Power Outage	N/A
APT/AIO[3]	Gross β Iodine	15S2	7/1//24 – 7/8/24	Motor Failure	Installed new pump
APT/AIO[4]	Gross β Iodine	05X1/05S2	9/9/24 – 9/16/24	Power Outage	N/A
APT/AIO[5]	Gross β Iodine	06S1	11/4/24 - 11/12/24	GFCI Trip	Reset GFCI

1. Sample Deviation (Order 80135746/10)**:** Air sampler 14G1 lost power due to blown fuse and GFCI trip during the 1/16/24 to 1/22/24 collection period. The total time the sampler was in operation was 15.9 hours. The total outage duration was 133.6 hours. A total of volume 1,400 cubic feet was collected for the sample period. Adequate sample volume was not achieved during the sample collection period to meet the ODCM LLD requirements for Gross Beta and I-131.

2. Sample Deviation (Order 80135746/20): Air sampler 05D1 lost power during the 2/20/24 to 2/26/24 collection period. The total time the sampler was in operation was 143.9 hours. The total outage duration was 5.6 hours. A total of volume 12,000 cubic feet was collected for the sample period. Adequate sample volume was achieved during the sample collection period to meet the ODCM LLD requirements for Gross Beta and I-131.

3. Sample Deviation (Order 80135746/50): Air sampler 15S2 has a motor failure on the 7/1/24 to 7/8/24 collection period. The total time the sampler was in operation was 60.8 hours. The total outage duration was 110.6 hours. A total volume of 5,700 cubic feet was collected for the sample period. Adequate sample volume was achieved during the sample collection period to meet the ODCM LLD requirements for Gross Beta and I-131.

4. Sample Deviation (Order 80135746/60): Air samplers 05X1/05S2 power was lost during the 9/9/24 to 9/16/24 collection period. The total time the sampler was in operation was 128.8 hours. The total outage duration was 40.6 hours. A total volume 11,800 (05X1) and 11,530 (05S2) cubic feet were collected for the sample period. Adequate sample volume was achieved during the sample collection period to meet the ODCM LLD requirements for Gross Beta and I-131.

5. Sample Deviation (Order 80135746/100): Air sampler 06S1 power was lost due to GFCI trip on the 11/4/24 to 11/12/24 collection period. The total time the sampler was in operation was 112.7 hours. The total outage duration was 80.4 hours. A total volume of 10,100 cubic feet was collected for the sample period. Adequate sample volume was achieved during the sample collection period to meet the ODCM LLD requirements for Gross Beta and I-131.

6. Sample Anomaly (Order 80135746/70): Vendor informed station personnel that the gross beta results on air sample 02F6 during the 9/9/24 to 9/16/24 collection period were lower than the other results in the dataset. The reported result was 1.37E-02 pCi/m^3. The normal range in this report for the 02F6 sample location is 4.00E-03 to 1.7E-02 pCi/m^3. The sampler was inspected, and no anomalies were noted.

11.0 PROGRAM CHANGES

The milk farm used as the control (03G1, 16.5 miles, NE) went out of business. The farm located 11.8 miles, NNE, location 02G3 was used as an alternate for the control location within 30 days in accordance with ODCM, Part 1, 3.12.1.c. The location at 03G1 was not removed in the 2021 revision of the ODCM, because it was not determined if the location change was permanent. The next revision of the ODCM will replace location 03G1 with 02G3 (80130863 Operation 20).

12.0 OTHER SUPPLEMENTAL INFORMATION

12.1 NEI 07-07 Onsite Radiological Groundwater Monitoring Program

Salem and Hope Creek Generating Stations has developed a Groundwater Protection Initiative (GPI) program in accordance with NEI 07-07, Industry Ground Water Protection Initiative – Final Guidance Document. The purpose of the GPI is to ensure timely detection and an effective response to situations involving inadvertent radiological releases to groundwater in order to prevent migration of licensed radioactive material off-site and to quantify impacts on decommissioning. It is important to note, samples and results taken in support of NEI 07-07 on-site groundwater monitoring program are separate from the Radiological Environmental Monitoring Program (REMP). Results of the NEI 07-07 Radiological Groundwater Monitoring Program for onsite groundwater wells are provided in the ARERR.

12.2 Independent Spent Fuel Storage Installation (ISFSI) Monitoring Program

ISFSI information is reported in the Salem and Hope Creek Generating Stations ARERR.

12.3 Hope Creek Technical Specification Limit For Primary Water Iodine Concentration

The HCGS primary coolant results for Dose Equivalent Iodine-131, Total Gamma, and Total Beta were reviewed. The specific activity of the primary coolant did not exceed 0.2 micro curies per gram Dose Equivalent I-131 (DEI).

The Total Gamma and the Total Beta activity (microcuries per gram) did not exceed the 100/E-Bar limit.

Therefore, HCGS did not exceed the Technical Specifications limit specified in section 3.4.5.

12.4 Corrections to Previous Reports

In 2021 the Common REMP ODCM Revision 0 was created and changed the name of location 13S1 to 14S2 to better reflect what sector the sample location was in. However, in the AREOR for 2021, 2022, and 2023, location 14S2 was reported under the old location name (13S1). This errata corrects the location name from the old to new (Notification 20990610). See Attachment 4, Errata/Corrections to Previous Reports.

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Attachment 1, Data Table Summary

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SALEM GENERATING STATION — **DOCKET NO. 50-272/-311**
HOPE CREEK GENERATING STATION — **DOCKET NO. 50-354**
SALEM COUNTY, NEW JERSEY — **REPORTING PERIOD: January 1, 2024 to December 31, 2024**

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	ANALYSIS AND *TOTAL NUMBER* OF ANALYSIS PERFORMED	LOWER LIMIT OF DETECTION (LLD*)	ALL INDICATOR LOCATIONS	LOCATION WITH HIGHEST MEAN		CONTROL LOCATION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
			MEAN **(f)** ** *(RANGE)*	NAME DISTANCE AND DIRECTION	MEAN **(f)** ** *(RANGE)*	MEAN **(f)** ** *(RANGE)*	
I. DIRECT							
DIRECT RADIATION (mR/standard quarter)	**TLD-QUARTERLY** ***236***	N/A	14.5 (224/224) (10.5/32.6)	SA-IDM-01Q1 0.58 MILES N	32.0 (4/4) (31.5/32.6)	14.0 (12/12) (12.3/15.6)	0
II. AIRBORNE							
AIR PARTICULATE (E-3 pCi/m^3)	**Gr-B** **416**	10	13 (361/364) *(4/27)*	SA-APT-14G1 C 13.4 MILES WNW	14 (51/52) *(5/29)*	14 (51/52) *(5/29)*	0
	GAMMA **32**						
	Be-7	N/A	46.9 (28/28) *(30.9/70.9)*	SA-APT-14G1 C 13.4 MILES WNW	54 (4/4) *(40.3/62.5)*	54 (4/4) *(40.3/62.5)*	0
	K-40	N/A	<MDC	N/A	N/A	<MDC	0
	Cs-134	50	<MDC	N/A	N/A	<MDC	0
	Cs-137	60	<MDC	N/A	N/A	<MDC	0
AIR IODINE (E-3 pCi/m^3)	**GAMMA** **416** I-131	70	<MDC	N/A	N/A	<MDC	0
III. WATERBORNE							
SURFACE WATER (pCi/L)	**H-3** **60**	200	674 (1/48)	SA-SWA-11A1 0.22 MILES SW	674 (1/12)	<MDC	0
	I-131 (LOW LVL) **60**	1	<MDC	N/A	N/A	<MDC	0
	GAMMA ***60***						
	K-40	N/A	100 (18/48) *(53/171)*	SA-SWA-07E1 4.4 MILES SE	116 (7/12) *(75/171)*	97 (5/12) *(49/144)*	0

Attachment 1, Data Table Summary

SALEM GENERATING STATION **DOCKET NO. 50-272/-311**
HOPE CREEK GENERATING STATION **DOCKET NO. 50-354**
SALEM COUNTY, NEW JERSEY **REPORTING PERIOD: January 1, 2024 to December 31, 2024**

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	ANALYSIS AND *TOTAL NUMBER* OF ANALYSIS PERFORMED	LOWER LIMIT OF DETECTION (LLD*)	ALL INDICATOR LOCATIONS	LOCATION WITH HIGHEST MEAN		CONTROL LOCATION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
			MEAN **(f)** ** *(RANGE)*	NAME DISTANCE AND DIRECTION	MEAN **(f)** ** *(RANGE)*	MEAN **(f)** ** *(RANGE)*	
SURFACE WATER (CONT.) (pCi/L)	Mn-54	15	<MDC	N/A	N/A	<MDC	0
	Co-58	15	<MDC	N/A	N/A	<MDC	0
	Fe-59	30	<MDC	N/A	N/A	<MDC	0
	Co-60	15	<MDC	N/A	N/A	<MDC	0
	Zn-65	30	<MDC	N/A	N/A	<MDC	0
	ZrNb-95	15	<MDC	N/A	N/A	<MDC	0
	Cs-134	15	<MDC	N/A	N/A	<MDC	0
	Cs-137	18	<MDC	N/A	N/A	<MDC	0
	BaLa-140	15	<MDC	N/A	N/A	<MDC	0
POTABLE WATER (RAW) (pCi/L)	**Gr-A** ***12***	3	<MDC	N/A	N/A	N/A	0
	Gr-B ***12***	4	8 (12/12) *(5.7/10.4)*	SA-PWR-02F3 8.0 MILES NNE	8 (12/12) *(5.7/10.4)*	N/A	0
	H-3 ***12***	200	<MDC	N/A	N/A	N/A	0
	I-131 (LOW LVL) ***12***	1	<MDC	N/A	N/A	N/A	0
	GAMMA ***12***						
	K-40	N/A	<MDC	N/A	N/A	N/A	0
	Mn-54	15	<MDC	N/A	N/A	N/A	0
	Co-58	15	<MDC	N/A	N/A	N/A	0

Attachment 1, Data Table Summary

SALEM GENERATING STATION **DOCKET NO. 50-272/-311**
HOPE CREEK GENERATING STATION **DOCKET NO. 50-354**
SALEM COUNTY, NEW JERSEY **REPORTING PERIOD: January 1, 2024 to December 31, 2024**

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	ANALYSIS AND *TOTAL NUMBER* OF ANALYSIS PERFORMED	LOWER LIMIT OF DETECTION (LLD*)	ALL INDICATOR LOCATIONS	LOCATION WITH HIGHEST MEAN		CONTROL LOCATION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
			MEAN (f) ** (RANGE)	NAME DISTANCE AND DIRECTION	MEAN (f) ** (RANGE)	MEAN (f) ** (RANGE)	
POTABLE WATER (RAW) (cont.) (pCi/L)	Fe-59	30	<MDC	N/A	N/A	N/A	0
	Co-60	15	<MDC	N/A	N/A	N/A	0
	Zn-65	30	<MDC	N/A	N/A	N/A	0
	ZrNb-95	15	<MDC	N/A	N/A	N/A	0
	Cs-134	15	<MDC	N/A	N/A	N/A	0
	Cs-137	18	<MDC	N/A	N/A	N/A	0
	BaLa-140	15	<MDC	N/A	N/A	N/A	0
	Ra-226	N/A	<MDC	N/A	N/A	N/A	0
POTABLE WATER (TREATED) (pCi/L)	**Gr-A** ***12***	**3**	<MDC	N/A	N/A	N/A	0
	Gr-B ***12***	**4**	8.5 (12/12) (6.2/10.7)	SA-PWT-02F3 8.0 MILES NNE	8.5 (12/12) (6.2/10.7)	N/A	0
	H-3 ***12***	**200**	<MDC	N/A	N/A	N/A	0
	I-131 (LOW LVL) ***12***	**1**	<MDC	N/A	N/A	N/A	0
	GAMMA ***12***						
	K-40	N/A	<MDC	N/A	N/A	N/A	0
	Mn-54	15	<MDC	N/A	N/A	N/A	0
	Co-58	15	<MDC	N/A	N/A	N/A	0

Attachment 1, Data Table Summary

SALEM GENERATING STATION **DOCKET NO. 50-272/-311**
HOPE CREEK GENERATING STATION **DOCKET NO. 50-354**
SALEM COUNTY, NEW JERSEY **REPORTING PERIOD: January 1, 2024 to December 31, 2024**

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	ANALYSIS AND *TOTAL NUMBER* OF ANALYSIS PERFORMED	LOWER LIMIT OF DETECTION (LLD*)	ALL INDICATOR LOCATIONS	LOCATION WITH HIGHEST MEAN		CONTROL LOCATION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
			MEAN **(f)** ** *(RANGE)*	NAME DISTANCE AND DIRECTION	MEAN **(f)** ** *(RANGE)*	MEAN **(f)** ** *(RANGE)*	
POTABLE WATER (TREATED) (Cont) (pCi/L)	Fe-59	30	<MDC	N/A	N/A	N/A	0
	Co-60	15	<MDC	N/A	N/A	N/A	0
	Zn-65	30	<MDC	N/A	N/A	N/A	0
	ZrNb-95	15	<MDC	N/A	N/A	N/A	0
	Cs-134	15	<MDC	N/A	N/A	N/A	0
	Cs-137	18	<MDC	N/A	N/A	N/A	0
	BaLa-140	15	<MDC	N/A	N/A	N/A	0
	Ra-226	N/A	<MDC	N/A	N/A	N/A	0
WELL WATER (pCi/L)	**Gr-A** ***12***	3	<MDC	N/A	N/A	N/A	0
	Gr-B ***12***	4	3.7 (1/12)	SA-WWA-03E1 4.2 MILES NE	3.7 (1/12)	N/A	0
	H-3 ***12***	200	<MDC	N/A	N/A	N/A	0
	I-131 (LOW LVL) ***12***	1	<MDC	N/A	N/A	N/A	0
	GAMMA ***12***						
	K-40	N/A	<MDC	N/A	N/A	N/A	0
	Mn-54	15	<MDC	N/A	N/A	N/A	0
	Co-58	15	<MDC	N/A	N/A	N/A	0

Attachment 1, Data Table Summary

SALEM GENERATING STATION **DOCKET NO. 50-272/-311**
HOPE CREEK GENERATING STATION **DOCKET NO. 50-354**
SALEM COUNTY, NEW JERSEY **REPORTING PERIOD: January 1, 2024 to December 31, 2024**

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	ANALYSIS AND *TOTAL NUMBER* OF ANALYSIS PERFORMED	LOWER LIMIT OF DETECTION (LLD*)	ALL INDICATOR LOCATIONS	LOCATION WITH HIGHEST MEAN		CONTROL LOCATION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
			MEAN **(f)** ** *(RANGE)*	NAME DISTANCE AND DIRECTION	MEAN **(f)** ** *(RANGE)*	MEAN **(f)** ** *(RANGE)*	
WELL WATER (cont.) (pCi/L)	Fe-59	30	<MDC	N/A	N/A	N/A	0
	Co-60	15	<MDC	N/A	N/A	N/A	0
	Zn-65	30	<MDC	N/A	N/A	N/A	0
	ZrNb-95	15	<MDC	N/A	N/A	N/A	0
	Cs-134	15	<MDC	N/A	N/A	N/A	0
	Cs-137	18	<MDC	N/A	N/A	N/A	0
	BaLa-140	15	<MDC	N/A	N/A	N/A	0
	Ra-226	N/A	<MDC	N/A	N/A	N/A	0
SEDIMENT (pCi/kg dry)	**GAMMA** ***12***						
	Be-7	N/A	<MDC	N/A	N/A	<MDC	0
	K-40	N/A	8327 (10/10) (2470/14340)	SA-ESS-12B1 (C) 1.8 MILES WSW	15390 (2/2) (14780/16000)	15390 (2/2) (14780/16000)	0
	Cs-134	150	<MDC	N/A	N/A	<MDC	0
	Cs-137	180	<MDC	N/A	N/A	<MDC	0
	Ra-226	N/A	1531 (1/10)	SA-ESS-12B1 C 1.8 MILES WSW	1834 (1/2)	1834 (1/2)	0
	Th-232	N/A	499 (5/10) (210/780)	SA-ESS-12B1 C 1.8 MILES WSW	895 (2/2) (807/984)	895 (2/2) (807/984)	0

Attachment 1, Data Table Summary

SALEM GENERATING STATION **DOCKET NO. 50-272/-311**
HOPE CREEK GENERATING STATION **DOCKET NO. 50-354**
SALEM COUNTY, NEW JERSEY **REPORTING PERIOD: January 1, 2024 to December 31, 2024**

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	ANALYSIS AND *TOTAL NUMBER* OF ANALYSIS PERFORMED	LOWER LIMIT OF DETECTION (LLD*)	ALL INDICATOR LOCATIONS	LOCATION WITH HIGHEST MEAN		CONTROL LOCATION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
			MEAN (f) ** (RANGE)	NAME DISTANCE AND DIRECTION	MEAN (f) ** (RANGE)	MEAN (f) ** (RANGE)	
IV. INGESTION							
MILK (pCi/L)	**I-131 (LOW LVL)** ***60***	1	<MDC	N/A	N/A	<MDC	0
	GAMMA ***60***						
	K-40	N/A	1233 (40/40) (995/1846)	SA-MLK-02G3 C 11.8 MILES NNE	1247 (20/20) (1004/1677)	1247 (20/20) (1004/1677)	0
	Cs-134	15	<MDC	N/A	N/A	<MDC	0
	Cs-137	18	<MDC	N/A	N/A	<MDC	0
	BaLa-140	15	<MDC	N/A	N/A	<MDC	0
	Ra-226	N/A	<MDC	N/A	N/A	<MDC	0
FISH (pCi/kg wet)	**GAMMA** ***6***						
	K-40	N/A	3473 (4/4) (2872/3876)	SA-ESF-11A1 0.22 MILES SW	3572 (2/2) (3407/3736)	3490 (2/2) (2918/4062)	0
	Mn-54	130	<MDC	N/A	N/A	<MDC	0
	Co-58	130	<MDC	N/A	N/A	<MDC	0
	Fe-59	260	<MDC	N/A	N/A	<MDC	0
	Co-60	130	<MDC	N/A	N/A	<MDC	0
	Zn-65	260	<MDC	N/A	N/A	<MDC	0
	Cs-134	130	<MDC	N/A	N/A	<MDC	0
	Cs-137	150	<MDC	N/A	N/A	<MDC	0
	Ra-226	N/A	<MDC	N/A	N/A	<MDC	0

Attachment 1, Data Table Summary

SALEM GENERATING STATION **DOCKET NO. 50-272/-311**
HOPE CREEK GENERATING STATION **DOCKET NO. 50-354**
SALEM COUNTY, NEW JERSEY **REPORTING PERIOD: January 1, 2024 to December 31, 2024**

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	ANALYSIS AND *TOTAL NUMBER* OF ANALYSIS PERFORMED	LOWER LIMIT OF DETECTION (LLD*)	ALL INDICATOR LOCATIONS	LOCATION WITH HIGHEST MEAN		CONTROL LOCATION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
			MEAN **(f)** ** *(RANGE)*	NAME DISTANCE AND DIRECTION	MEAN **(f)** ** *(RANGE)*	MEAN **(f)** ** *(RANGE)*	
BLUE CRABS (pCi/kg wet)	**GAMMA** ***4***						
	K-40	N/A	2340 (2/2) (2291/2389)	SA-ECH-12B1 C 1.8 MILES WSW	2551 (2/2) (2238/2864)	2551 (2/2) (2238/2864)	0
	Mn-54	130	<MDC	N/A	N/A	<MDC	0
	Co-58	130	<MDC	N/A	N/A	<MDC	0
	Fe-59	260	<MDC	N/A	N/A	<MDC	0
	Co-60	130	<MDC	N/A	N/A	<MDC	0
	Zn-65	260	<MDC	N/A	N/A	<MDC	0
	Cs-134	130	<MDC	N/A	N/A	<MDC	0
	Cs-137	150	<MDC	N/A	N/A	<MDC	0
	Ra-226	N/A	<MDC	N/A	N/A	<MDC	0
BROAD-LEAF VEGETATION, FPL (pCi/kg wet)	**GAMMA** ***16***						
	Be-7	N/A	1534 (4/12) (1288/2032)	SA-FPL-10D1 C 3.9 MILES SSW	2156 (2/4) (1474/2837)	2156 (2/4) (1474/2837)	0
	K-40	N/A	5299 (12/12) (1587/11770)	SA-FPL-06S1 0.17 MILES SE	6734 (4/4) (3081/11770)	5289 (4/4) (2923/7651)	0
	I-131	60	<MDC	N/A	N/A	<MDC	0
	Cs-134	60	<MDC	N/A	N/A	<MDC	0
	Cs-137	80	<MDC	N/A	N/A	<MDC	0
	Ra-226	N/A	<MDC	N/A	N/A	<MDC	0
	Th-232	N/A	<MDC	N/A	N/A	N/A	0

Attachment 1, Data Table Summary

SALEM GENERATING STATION **DOCKET NO. 50-272/-311**
HOPE CREEK GENERATING STATION **DOCKET NO. 50-354**
SALEM COUNTY, NEW JERSEY **REPORTING PERIOD: January 1, 2024 to December 31, 2024**

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	ANALYSIS AND *TOTAL NUMBER* OF ANALYSIS PERFORMED	LOWER LIMIT OF DETECTION (LLD*)	ALL INDICATOR LOCATIONS	LOCATION WITH HIGHEST MEAN		CONTROL LOCATION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
			MEAN **(f)** ** *(RANGE)*	NAME DISTANCE AND DIRECTION	MEAN **(f)** ** *(RANGE)*	MEAN **(f)** ** *(RANGE)*	
VEGETABLES, FPV (pCi/kg wet)	**GAMMA** ***14***						
	Be-7	N/A	<MDC	N/A	N/A	N/A	0
	K-40	N/A	1966 (14/14) (1147/3197)	SA-FPV-15F4 7.0 MILES NW	2286 (3/3) (2152/2500)	N/A	0
	I-131	60	<MDC	N/A	N/A	N/A	0
	Cs-134	60	<MDC	N/A	N/A	N/A	0
	Cs-137	80	<MDC	N/A	N/A	N/A	0
	Ra-226	N/A	<MDC	N/A	N/A	N/A	0
	Th-232	N/A	<MDC	N/A	N/A	N/A	0
FODDER CROPS (pCi/kg wet)	**GAMMA** ***3***						
	Be-7	N/A	473 (2/3) (455/491)	SA-VGT-13E3 5.0 MILES W	491 (1/1)	N/A	0
	K-40	N/A	4499 (3/3) (2990/6814)	SA-VGT-14F4 7.6 MILES WNW	6814 (1/1)	N/A	0
	I-131	60	<MDC	N/A	N/A	N/A	0
FODDER CROPS (cont.) (pCi/kg wet)	Cs-134	60	<MDC	N/A	N/A	N/A	0
	Cs-137	80	<MDC	N/A	N/A	N/A	0
	Ra-226	N/A	<MDC	N/A	N/A	N/A	0
	Th-232	N/A	<MDC	N/A	N/A	N/A	0

Attachment 1, Data Table Summary

SALEM GENERATING STATION **DOCKET NO. 50-272/-311**
HOPE CREEK GENERATING STATION **DOCKET NO. 50-354**
SALEM COUNTY, NEW JERSEY **REPORTING PERIOD: January 1, 2024 to December 31, 2024**

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	ANALYSIS AND *TOTAL NUMBER* OF ANALYSIS PERFORMED	LOWER LIMIT OF DETECTION (LLD*)	ALL INDICATOR LOCATIONS MEAN (f) ** (RANGE)	LOCATION WITH HIGHEST MEAN NAME DISTANCE AND DIRECTION	LOCATION WITH HIGHEST MEAN MEAN (f) ** (RANGE)	CONTROL LOCATION MEAN (f) ** (RANGE)	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
GAME (pCi/kg wet)	**GAMMA** *1*						
	Be-7	N/A	<MDC	N/A	N/A	N/A	0
	K-40	N/A	2167 (1/1)	SA-GAM-13E3 5.0 MILES W	2167 (1/1)	N/A	0
	I-131	60	<MDC	N/A	N/A	N/A	0
	Cs-134	60	<MDC	N/A	N/A	N/A	0
	Cs-137	80	<MDC	N/A	N/A	N/A	0
V. TERRESTRIAL							
SOIL (pCi/kg dry)	**GAMMA** *0*						
	Be-7	N/A	N/A	N/A	N/A	N/A	0
	K-40	N/A	N/A	N/A	N/A	N/A	0
	Cs-134	150	N/A	N/A	N/A	N/A	0
	Cs-137	180	N/A	N/A	N/A	N/A	0
	Ra-226	N/A	N/A	N/A	N/A	N.A	0
	Th-232	N/A	N/A	N/A	N/A	N/A	0

* The LLD listed is the Lower Limit of Detection, which was requested by PSEG to be achieved.
** Mean was calculated using values above the MDC only. f = the fraction of measurements above the MDC.
(C) = Control Location
N/A = Not Applicable

Attachment 2, Complete Data Table for All Analysis Results Obtained In 2024

Attachment 2 - Data Table

Table 12, Environmental Direct Radiation Dosimetry Sample Results

Monitoring Location	Quarterly Baseline, B_Q (mrem)	Minimum Differential Dose B_Q + 5 (mrem)	Normalized Quarterly Monitoring Data, M_Q (mrem)				Quarterly Facility Dose, $F_Q=M_Q-B_Q$ (mrem)				Annual Baseline, B_A (mrem)	Minimum Differential Dose B_A + 13 (mrem)	Annual Monitoring Data, M_A (mrem)	Annual Facility Dose, $F_A=M_A-B_A$ (mrem)
			1	2	3	4	1	2	3	4				
01Q1	13.6	18.6	32.6	31.9	31.5	31.9	19.0	18.3	17.9	18.3	54.6	67.7	127.8	73.2
16Q2	13.6	18.6	28.4	27.5	25.9	27.5	14.9	13.9	12.4	13.9	54.6	67.7	109.3	54.7
01X2	13.0	18.0	14.2	14.6	14.6	15.6	ND	ND	ND	ND	52.1	65.1	59.0	ND
02X4	13.7	18.7	13.6	14.7	14.1	15.0	ND	ND	ND	ND	54.7	67.7	57.3	ND
03X1	12.3	17.3	12.4	12.5	12.6	13.1	ND	ND	ND	ND	49.0	62.1	50.6	ND
04X1	11.9	16.9	12.6	12.6	13.2	13.9	ND	ND	ND	ND	47.8	60.8	52.3	ND
05X1	10.7	15.7	12.7	11.8	12.1	12.8	ND	ND	ND	ND	42.8	55.8	49.4	ND
06X2	15.0	20.0	13.8	13.5	13.6	14.2	ND	ND	ND	ND	60.5	73.5	55.1	ND
16X3	12.2	17.2	14.1	15.7	15.7	16.9	ND	ND	ND	ND	48.8	61.8	62.4	13.6
2S2A	14.6	19.6	15.0	14.3	15.0	15.5	ND	ND	ND	ND	58.4	71.5	59.7	ND
04X1 Dup	11.9	16.9	12.7	12.7	12.9	14.4	ND	ND	ND	ND	47.8	60.8	52.7	ND
07S1	12.5	17.5	12.8	12.7	13.3	13.3	ND	ND	ND	ND	49.9	63.0	52.1	ND
08S1	11.0	16.0	10.9	10.7	11.1	11.8	ND	ND	ND	ND	44.1	57.2	44.5	ND
08S2	11.3	16.3	10.5	10.8	11.0	11.4	ND	ND	ND	ND	45.3	58.3	43.6	ND
10S1	11.6	16.6	12.5	12.2	12.3	13.0	ND	ND	ND	ND	47.3	60.3	49.9	ND
11S1	10.7	15.7	12.1	11.9	12.3	13.0	ND	ND	ND	ND	43.8	56.8	49.4	ND
12S1	14.4	19.4	16.9	15.4	15.6	16.4	ND	ND	ND	ND	57.7	70.7	64.2	ND
14S2	16.3	21.3	16.9	15.4	16.4	18.0	ND	ND	ND	ND	65.2	78.3	66.7	ND
15S1	10.8	15.8	12.3	12.0	12.7	13.0	ND	ND	ND	ND	43.3	56.3	49.9	ND
15S2	13.2	18.2	13.1	13.1	13.5	13.7	ND	ND	ND	ND	52.6	65.7	53.4	ND
15S3	16.0	21.0	16.3	15.3	16.6	17.7	ND	ND	ND	ND	63.9	77.0	65.9	ND
16S1	12.8	17.8	14.3	14.3	14.9	15.2	ND	ND	ND	ND	51.4	64.5	58.7	ND
04D2	13.0	18.0	13.9	14.3	14.7	15.3	ND	ND	ND	ND	52.3	65.3	58.2	ND
05D1	13.6	18.6	13.6	13.3	13.7	14.5	ND	ND	ND	ND	54.3	67.3	55.1	ND
10D1	13.7	18.7	14.3	15.3	15.6	16.1	ND	ND	ND	ND	55.2	68.2	61.3	ND
14D1	12.0	17.0	13.1	13.0	13.4	13.6	ND	ND	ND	ND	48.1	61.2	53.0	ND
15D1	13.6	18.6	13.9	14.6	14.4	14.7	ND	ND	ND	ND	54.7	67.7	57.5	ND
02E1	12.3	17.3	13.3	13.2	13.5	14.1	ND	ND	ND	ND	49.5	62.6	54.1	ND
03E1	10.4	15.4	11.8	12.2	12.3	12.6	ND	ND	ND	ND	42.0	55.0	48.9	ND
11E2	13.6	18.6	14.7	15.5	15.9	16.0	ND	ND	ND	ND	54.7	67.8	62.2	ND
12E1	13.7	18.7	14.4	15.0	15.8	16.4	ND	ND	ND	ND	55.4	68.4	61.5	ND
13E1	10.9	15.9	12.1	12.2	12.2	12.7	ND	ND	ND	ND	44.0	57.0	49.1	ND
16E1	12.8	17.8	13.9	13.4	14.0	14.5	ND	ND	ND	ND	51.7	64.7	55.9	ND

Attachment 2 - Data Table

Table 12, Environmental Direct Radiation Dosimetry Sample Results

Monitoring Location	Quarterly Baseline, B_Q (mrem)	Minimum Differential Dose B_Q + 5 (mrem)	Normalized Quarterly Monitoring Data, M_Q (mrem)				Quarterly Facility Dose, $F_Q=M_Q-B_Q$ (mrem)				Annual Baseline, B_A (mrem)	Minimum Differential Dose B_A + 13 (mrem)	Annual Monitoring Data, M_A (mrem)	Annual Facility Dose, $F_A=M_A-B_A$ (mrem)
			1	2	3	4	1	2	3	4				
01F1	17.8	22.8	17.7	18.1	18.2	18.9	ND	ND	ND	ND	68.3	81.3	72.8	ND
02F2	12.8	17.8	12.9	12.8	13.1	13.8	ND	ND	ND	ND	51.2	64.2	52.5	ND
02F5	12.8	17.8	14.1	14.0	14.4	14.7	ND	ND	ND	ND	51.4	64.4	57.2	ND
02F6	11.9	16.9	13.8	13.6	13.7	14.6	ND	ND	ND	ND	47.6	60.7	55.7	ND
03F2	11.0	16.0	12.7	12.4	12.9	12.9	ND	ND	ND	ND	44.4	57.5	50.8	ND
03F3	11.0	16.0	13.1	12.8	13.0	13.1	ND	ND	ND	ND	44.2	57.3	51.9	ND
04F2	10.7	15.7	12.3	12.5	12.7	13.0	ND	ND	ND	ND	43.1	56.2	50.4	ND
05F1	11.5	16.5	12.6	13.3	13.4	13.9	ND	ND	ND	ND	46.1	59.2	53.2	ND
06F1	11.0	16.0	10.6	11.0	11.3	11.5	ND	ND	ND	ND	45.1	58.2	44.4	ND
07F2	13.0	18.0	12.5	13.3	13.3	13.5	ND	ND	ND	ND	52.3	65.3	52.6	ND
09F1	14.2	19.2	14.2	15.5	16.1	16.3	ND	ND	ND	ND	59.9	72.9	62.1	ND
09F2	14.1	19.1	12.2	11.9	12.5	12.4	ND	ND	ND	ND	56.3	69.3	48.9	ND
10F2	13.2	18.2	14.1	14.3	14.9	15.4	ND	ND	ND	ND	52.9	66.0	58.7	ND
11F1	13.8	18.8	14.6	15.0	15.5	15.8	ND	ND	ND	ND	55.4	68.4	61.0	ND
12F1	12.9	17.9	14.4	14.6	14.6	15.1	ND	ND	ND	ND	51.7	64.7	58.7	ND
13F2	12.7	17.7	13.7	14.2	14.4	14.6	ND	ND	ND	ND	51.2	64.2	56.9	ND
13F3	14.7	19.7	14.3	14.5	14.8	15.6	ND	ND	ND	ND	58.0	71.0	59.2	ND
13F4	13.0	18.0	14.6	15.1	15.1	16.0	ND	ND	ND	ND	59.7	72.7	60.8	ND
14F2	14.0	19.0	15.3	15.8	15.8	16.4	ND	ND	ND	ND	56.2	69.2	63.3	ND
15F3	14.5	19.5	14.7	15.6	15.7	16.5	ND	ND	ND	ND	58.2	71.2	62.4	ND
16F2	11.7	16.7	13.5	13.4	13.8	14.1	ND	ND	ND	ND	47.1	60.2	54.7	ND
01G3	14.9	19.9	13.8	14.2	14.0	14.8	ND	ND	ND	ND	60.2	73.3	56.7	ND
03G1	13.3	18.3	14.5	15.0	15.4	15.8	ND	ND	ND	ND	53.4	66.5	60.7	ND
10G1	14.8	19.8	14.7	14.8	15.6	15.3	ND	ND	ND	ND	58.8	71.9	60.4	ND
14G1	13.4	18.4	14.6	15.0	14.9	15.2	ND	ND	ND	ND	54.1	67.1	59.6	ND
16G1	12.7	17.7	13.0	13.0	13.3	13.3	ND	ND	ND	ND	50.1	63.2	52.6	ND
03H1	12.6	17.6	12.3	12.6	12.8	13.2	ND	ND	ND	ND	50.6	63.6	51.0	ND

MDD_Q = Quarterly Minimum Differential Dose = 5 mrem
MDD_A = Annual Minimum Differential Dose = 13 mrem
ND = Not Detected, where $M_Q \leq (B_Q+MDD_Q)$ or $M_A \leq (B_A+MDD_A)$

Attachment 2 - Data Table

Table 13, Concentrations of Gamma Emitters in Quarterly Composites of Air Particulates, 2024

Results in Units of E-03 pCi/m^3 ± 2σ

STATION ID	COLLECTION PERIOD START		COLLECTION PERIOD STOP	<----------GAMMA EMITTERS----------> Be-7	K-40	Cs-134	Cs-137
SA-APT-14G1 (C)	01/02/24	-	04/01/24	**55** ± 13	< 31	< 2	< 2
	04/01/24	-	07/01/24	**58** ± 13	< 21	< 1	< 1
	07/01/24	-	09/30/24	**62** ± 13	< 29	< 2	< 1
	09/30/24	-	12/31/24	**40** ± 14	< 32	< 2	< 2
			AVERAGE*	**54** ± 19	-	-	-
SA-APT-05X1	01/02/24	-	04/01/24	**42** ± 13	< 30	< 2	< 2
	04/01/24	-	07/01/24	**45** ± 12	< 25	< 2	< 1
	07/01/24	-	09/30/24	**51** ± 14	< 22	< 2	< 2
	09/30/24	-	12/31/24	**35** ± 15	< 27	< 2	< 2
			AVERAGE*	**43** ± 14	-	-	-
SA-APT-06S1	01/02/24	-	04/01/24	**31** ± 12	< 24	< 2	< 1
	04/01/24	-	07/01/24	**52** ± 15	< 36	< 3	< 2
	07/01/24	-	09/30/24	**51** ± 13	< 24	< 1	< 1
	09/30/24	-	12/31/24	**44** ± 13	< 33	< 1	< 1
			AVERAGE*	**45** ± 20	-	-	-
SA-APT-15S2	01/02/24	-	04/01/24	**50** ± 10	< 21	< 1	< 1
	04/01/24	-	07/01/24	**64** ± 11	< 24	< 1	< 1
	07/01/24	-	09/30/24	**52** ± 15	< 28	< 1	< 1
	09/30/24	-	12/31/24	**43** ± 9	< 21	< 1	< 1
			AVERAGE*	**52** ± 18	-	-	-
SA-APT-05D1	01/02/24	-	04/01/24	**46** ± 9	< 26	< 1	< 1
	04/01/24	-	07/01/24	**53** ± 16	< 27	< 2	< 2
	07/01/24	-	09/30/24	**46** ± 17	< 31	< 2	< 2
	09/30/24	-	12/31/24	**41** ± 11	< 17	< 1	< 1
			AVERAGE*	**47** ± 10	-	-	-
SA-APT-16E1	01/02/24	-	04/01/24	**36** ± 13	< 20	< 2	< 1
	04/01/24	-	07/01/24	**55** ± 15	< 30	< 2	< 1
	07/01/24	-	09/30/24	**71** ± 22	< 39	< 3	< 3
	09/30/24	-	12/31/24	**39** ± 10	< 31	< 1	< 1
			AVERAGE*	**50** ± 32	-	-	-

Attachment 2 - Data Table

Table 13, Concentrations of Gamma Emitters in Quarterly Composites of Air Particulates, 2024

Results in Units of E-03 pCi/m^3 ± 2σ

STATION ID	COLLECTION PERIOD START		STOP	<----------GAMMA EMITTERS----------> Be-7	K-40	Cs-134	Cs-137
SA-APT-01F1	01/02/24	-	04/01/24	**42** ± 19	< 38	< 2	< 2
	04/01/24	-	07/01/24	**52** ± 13	< 21	< 1	< 1
	07/01/24	-	09/30/24	**52** ± 13	< 27	< 1	< 1
	09/30/24	-	12/31/24	**40** ± 10	< 22	< 2	< 1
			AVERAGE*	**47** ± 13	-	-	-
SA-APT-02F6	01/02/24	-	04/01/24	**48** ± 11	< 28	< 1	< 1
	04/01/24	-	07/01/24	**51** ± 12	< 26	< 1	< 1
	07/01/24	-	09/30/24	**38** ± 12	< 23	< 1	< 1
	09/30/24	-	12/31/24	**41** ± 11	< 36	< 2	< 2
			AVERAGE*	**45** ± 12	-	-	-
			ALL INDICATOR AVERAGE * .	**47** ± 17	-	-	-

(C) CONTROL LOCATION.
THE AVERAGE AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES. IF THERE IS ONLY ONE
* POSITIVE VALUE, THE AVERAGE AND THE ERROR ARE DISPLAYED.
- INDICATES AVERAGE WAS NOT CALCULATED DUE TO NO POSITIVE VALUES FOR THE REPORTING PERIOD.

Attachment 2 - Data Table

Table 14, Concentrations of Gross Beta Emitters in Air Particulates, 2024

Results in Units of E-03 pCi/m^3 ± 2σ

COLLECTION PERIOD		CONTROL	INDICATORS						
START	STOP	SA-APT-14G1	SA-APT-05X1	SA-APT-06S1	SA-APT-15S2	SA-APT-05D1	SA-APT-16E1	SA-APT-01F1	SA-APT-02F6
01/02/24 -	01/08/24	**9** ± 3	**9** ± 3	**13** ± 3	**10** ± 3	**9** ± 3	**6** ± 3	**9** ± 3	**6** ± 3
01/08/24 -	01/16/24	**18** ± 3	**15** ± 3	**16** ± 3	**16** ± 3	**17** ± 3	**17** ± 3	**14** ± 3	**12** ± 3
01/16/24 -	01/22/24	< **40** E	**18** ± 4	**17** ± 4	**18** ± 4	**16** ± 4	**18** ± 4	**16** ± 4	**14** ± 4
01/22/24 -	01/29/24	**9** ± 3	**5** ± 3	**5** ± 2	**9** ± 3	**7** ± 3	**9** ± 3	**9** ± 3	**4** ± 2
01/29/24 -	02/05/24	**10** ± 3	**9** ± 3	**6** ± 3	**8** ± 3	**8** ± 3	**8** ± 3	**7** ± 3	**6** ± 3
02/05/24 -	02/12/24	**17** ± 3	**10** ± 3	**11** ± 3	**11** ± 3	**11** ± 3	**10** ± 3	**9** ± 3	**8** ± 2
02/12/24 -	02/20/24	**12** ± 3	**13** ± 3	**13** ± 3	**13** ± 3	**16** ± 3	**15** ± 3	**14** ± 3	**12** ± 2
02/20/24 -	02/26/24	**10** ± 3	**16** ± 4	**18** ± 4	**17** ± 4	**13** ± 4	**13** ± 3	**14** ± 3	**10** ± 3
02/26/24 -	03/04/24	**17** ± 3	**15** ± 3	**11** ± 3	**15** ± 3	**15** ± 3	**10** ± 3	**12** ± 3	**10** ± 3
03/04/24 -	03/11/24	**6** ± 2	**7** ± 2	**6** ± 2	**7** ± 2	**5** ± 2	**7** ± 2	**5** ± 2	**6** ± 2
03/11/24 -	03/18/24	**19** ± 3	**16** ± 3	**17** ± 3	**16** ± 3	**20** ± 3	**19** ± 3	**17** ± 3	**12** ± 3
03/18/24 -	03/25/24	**10** ± 3	**10** ± 3	**10** ± 3	**7** ± 3	**10** ± 3	**9** ± 3	**7** ± 3	**8** ± 3
03/25/24 -	04/01/24	**11** ± 3	**13** ± 3	**11** ± 3	**14** ± 3	**13** ± 3	**12** ± 3	**9** ± 3	**11** ± 3
04/01/24 -	04/08/24	**6** ± 2	**4** ± 2	**7** ± 2	**6** ± 2	**5** ± 2	**5** ± 2	< 3	**5** ± 2
04/08/24 -	04/15/24	**12** ± 3	**9** ± 3	**8** ± 3	**12** ± 3	**9** ± 3	**11** ± 3	**11** ± 3	**8** ± 3
04/15/24 -	04/22/24	**13** ± 3	**14** ± 3	**14** ± 3	**14** ± 3	**13** ± 3	**11** ± 3	**13** ± 3	**8** ± 3
04/22/24 -	04/29/24	**16** ± 3	**4** ± 2	**14** ± 3	**16** ± 3	**14** ± 3	**12** ± 3	**13** ± 3	**12** ± 3
04/29/24 -	05/06/24	**12** ± 3	**11** ± 3	**10** ± 3	**12** ± 3	**14** ± 3	**14** ± 3	**13** ± 3	**8** ± 3
05/06/24 -	05/13/24	**6** ± 3	**5** ± 3	**7** ± 3	**4** ± 3	**8** ± 3	**6** ± 3	**6** ± 3	**5** ± 3
05/13/24 -	05/21/24	**7** ± 3	**5** ± 2	**6** ± 2	**6** ± 2	**7** ± 2	**8** ± 2	**6** ± 2	**5** ± 2
05/21/24 -	05/28/24	**16** ± 3	**10** ± 3	**13** ± 3	**12** ± 3	**11** ± 3	**14** ± 3	**13** ± 3	**11** ± 3
05/28/24 -	06/03/24	**15** ± 3	**13** ± 3	**14** ± 3	**18** ± 4	**14** ± 3	**15** ± 3	**13** ± 3	**13** ± 3
06/03/24 -	06/10/24	**12** ± 3	**14** ± 3	**11** ± 3	**14** ± 3	**14** ± 3	**12** ± 3	**11** ± 3	**5** ± 3
06/10/24 -	06/17/24	**9** ± 3	**9** ± 3	**10** ± 3	**11** ± 3	**9** ± 3	**11** ± 3	**10** ± 3	**6** ± 3
06/17/24 -	06/24/24	**16** ± 3	**13** ± 3	**11** ± 3	17 ± 3	**14** ± 3	**13** ± 3	**12** ± 3	**12** ± 3
06/24/24 -	07/01/24	**14** ± 3	**11** ± 3	**9** ± 3	**11** ± 3	**9** ± 3	**12** ± 3	**9** ± 3	**8** ± 3
07/01/24 -	07/08/24	**11** ± 3	**10** ± 3	**10** ± 3	**7** ± 3	**10** ± 3	**11** ± 3	**8** ± 3	**6** ± 3
07/08/24 -	07/16/24	**12** ± 3	**12** ± 3	**12** ± 3	**12** ± 3	**13** ± 3	**10** ± 3	**13** ± 3	**8** ± 3
07/16/24 -	07/22/24	**14** ± 4	**15** ± 3	**17** ± 4	**13** ± 3	**18** ± 3	**15** ± 4	**16** ± 4	**12** ± 3
07/22/24 -	07/29/24	**16** ± 3	**14** ± 3	**11** ± 3	**13** ± 3	**14** ± 3	**13** ± 3	**14** ± 3	**9** ± 3
07/29/24 -	08/05/24	**20** ± 4	**18** ± 3	**19** ± 3	**17** ± 3	**17** ± 3	**16** ± 3	**17** ± 3	**15** ± 3
08/05/24 -	08/12/24	**15** ± 3	**14** ± 3	**14** ± 3	**13** ± 3	**15** ± 3	**11** ± 3	**14** ± 3	**10** ± 3
08/12/24 -	08/19/24	**17** ± 3	**17** ± 3	**17** ± 3	**17** ± 3	**15** ± 3	**17** ± 3	**13** ± 3	**10** ± 3
08/19/24 -	08/26/24	**12** ± 3	**14** ± 3	**14** ± 3	**11** ± 3	**13** ± 3	**13** ± 3	**10** ± 3	**10** ± 3
08/26/24 -	09/03/24	**21** ± 3	**17** ± 3	**17** ± 3	**20** ± 3	**16** ± 3	**19** ± 3	**18** ± 3	**13** ± 3
09/03/24 -	09/09/24	**12** ± 3	**8** ± 3	**11** ± 3	**10** ± 3	**14** ± 3	**12** ± 3	**11** ± 3	**9** ± 3
09/09/24 -	09/16/24	**21** ± 3	**21** ± 4	**18** ± 3	**21** ± 3	**21** ± 3	**20** ± 3	**22** ± 4	**14** ± 3
09/16/24 -	09/23/24	**17** ± 3	**16** ± 3	**15** ± 3	**17** ± 3	**16** ± 3	**17** ± 3	**15** ± 3	**13** ± 3
09/23/24 -	09/30/24	**5** ± 3	**6** ± 3	**4** ± 3	**8** ± 3	< 4	**5** ± 3	**5** ± 2	< 4
09/30/24 -	10/07/24	**14** ± 3	**17** ± 3	**15** ± 3	**16** ± 3	**15** ± 3	**13** ± 3	**11** ± 3	**11** ± 3

Attachment 2 - Data Table

Table 14, Concentrations of Gross Beta Emitters in Air Particulates, 2024

Results in Units of E-03 pCi/m^3 ± 2σ

COLLECTION PERIOD		CONTROL	INDICATORS						
START	STOP	SA-APT-14G1	SA-APT-05X1	SA-APT-06S1	SA-APT-15S2	SA-APT-05D1	SA-APT-16E1	SA-APT-01F1	SA-APT-02F6
10/07/24 -	10/14/24	**23** ± 4	**19** ± 3	**24** ± 4	**18** ± 3	**21** ± 4	**20** ± 3	**17** ± 3	**15** ± 3
10/14/24 -	10/21/24	**13** ± 3	**14** ± 3	**12** ± 3	**11** ± 3	**11** ± 3	**12** ± 3	**12** ± 3	**9** ± 3
10/21/24 -	10/28/24	**29** ± 4	**25** ± 4	**22** ± 3	**23** ± 3	**25** ± 4	**27** ± 4	**23** ± 3	**17** ± 3
10/28/24 -	11/04/24	**16** ± 3	**15** ± 3	**13** ± 3	**17** ± 3	**16** ± 3	**17** ± 3	**13** ± 3	**9** ± 3
11/04/24 -	11/12/24	**14** ± 3	**10** ± 3	**15** ± 4	**11** ± 3	**13** ± 3	**15** ± 3	**11** ± 3	**9** ± 3
11/12/24 -	11/18/24	**13** ± 3	**13** ± 3	**12** ± 3	**11** ± 3	**13** ± 4	**10** ± 3	**13** ± 4	**12** ± 3
11/18/24 -	11/25/24	**21** ± 3	**19** ± 3	**20** ± 4	**20** ± 3	**20** ± 3	**18** ± 3	**13** ± 3	**13** ± 3
11/25/24 -	12/02/24	**21** ± 3	**23** ± 4	**20** ± 3	**22** ± 4	**21** ± 4	**20** ± 3	**19** ± 3	**15** ± 3
12/02/24 -	12/09/24	**17** ± 3	**15** ± 3	**20** ± 3	**16** ± 3	**17** ± 3	**18** ± 3	**17** ± 3	**13** ± 3
12/09/24 -	12/16/24	**17** ± 3	**17** ± 3	**16** ± 3	**17** ± 3	**16** ± 3	**17** ± 3	**19** ± 3	**14** ± 3
12/16/24 -	12/24/24	**12** ± 3	**12** ± 3	**10** ± 3	**11** ± 3	**13** ± 3	**11** ± 3	**8** ± 3	**11** ± 3
12/24/24 -	12/31/24	**15** ± 3	**18** ± 3	**15** ± 3	**17** ± 3	**13** ± 3	**12** ± 3	**12** ± 3	**15** ± 3
	AVERAGE*	**14** ± 10	**13** ± 9	**13** ± 9	**13** ± 9	**14** ± 8	**13** ± 9	**12** ± 8	**10** ± 6
							ALL INDICATOR AVERAGE*	**13** ± 9	

* THE AVERAGE AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING ONLY THE POSITIVE VALUES. IF THERE IS ONLY 1 POSITIVE VALUE, THE AVERAGE AND THE ERROR ARE DISPLAYED.

E SEE SAMPLE ANOMOLIES AND PROGRAM EXCEPTIONS SECTION OF THIS REPORT

Attachment 2 - Data Table

Table 15, Concentrations of Iodine-131 in Filtered Air, 2024

Results in Units of E-03 pCi/m^3 ± 2σ

COLLECTION PERIOD			CONTROL	INDICATORS						
START		STOP	SA-AIO-14G1	SA-AIO-05X1	SA-AIO-06S1	SA-AIO-15S2	SA-AIO-05D1	SA-AIO-16E1	SA-AIO-01F1	SA-AIO-02F6
01/02/24	-	01/08/24	< 23	< 30	< 24	< 23	< 31	< 24	< 28	< 29
01/08/24	-	01/16/24	< 31	< 39	< 31	< 30	< 42	< 33	< 39	< 41
01/16/24	-	01/22/24	**< 106** E	< 23	< 17	< 17	< 25	< 18	< 23	< 10
01/22/24	-	01/29/24	< 9	< 34	< 22	< 22	< 34	< 24	< 33	< 33
01/29/24	-	02/05/24	< 19	< 27	< 21	< 20	< 27	< 20	< 26	< 27
02/05/24	-	02/12/24	< 24	< 20	< 22	< 21	< 20	< 22	< 19	< 8
02/12/24	-	02/20/24	< 29	< 15	< 30	< 29	< 15	< 33	< 14	< 13
02/20/24	-	02/26/24	< 26	< 31	< 24	< 24	< 33	< 25	< 30	< 27
02/26/24	-	03/04/24	< 21	< 22	< 20	< 19	< 22	< 20	< 21	< 23
03/04/24	-	03/11/24	< 24	< 21	< 23	< 25	< 20	< 24	< 20	< 20
03/11/24	-	03/18/24	< 27	< 29	< 25	< 26	< 12	< 27	< 29	< 29
03/18/24	-	03/25/24	< 18	< 27	< 11	< 18	< 26	< 18	< 26	< 26
03/25/24	-	04/01/24	< 31	< 29	< 30	< 30	< 12	< 28	< 28	< 28
04/01/24	-	04/08/24	< 17	< 18	< 18	< 17	< 17	< 17	< 17	< 17
04/08/24	-	04/15/24	< 19	< 24	< 18	< 18	< 24	< 18	< 25	< 25
04/15/24	-	04/22/24	< 16	< 20	< 16	< 17	< 20	< 12	< 21	< 20
04/22/24	-	04/29/24	< 29	< 33	< 27	< 28	< 13	< 27	< 35	< 35
04/29/24	-	05/06/24	< 21	< 20	< 21	< 21	< 23	< 8	< 21	< 22
05/06/24	-	05/13/24	< 19	< 23	< 18	< 19	< 22	< 18	< 24	< 26
05/13/24	-	05/21/24	< 15	< 26	< 14	< 14	< 27	< 14	< 28	< 27
05/21/24	-	05/28/24	< 17	< 27	< 17	< 17	< 24	< 16	< 27	< 28
05/28/24	-	06/03/24	< 20	< 35	< 21	< 20	< 34	< 19	< 33	< 34
06/03/24	-	06/10/24	< 15	< 18	< 15	< 15	< 17	< 14	< 12	< 19
06/10/24	-	06/17/24	< 27	< 26	< 26	< 27	< 24	< 25	< 25	< 27
06/17/24	-	06/24/24	< 42	< 26	< 43	< 46	< 27	< 41	< 26	< 26
06/24/24	-	07/01/24	< 20	< 19	< 18	< 17	< 20	< 19	< 20	< 20
07/01/24	-	07/08/24	< 16	< 21	< 15	< 30	< 21	< 15	< 22	< 23
07/08/24	-	07/16/24	< 16	< 21	< 16	< 17	< 20	< 16	< 21	< 22
07/16/24	-	07/22/24	< 21	< 22	< 20	< 19	< 20	< 20	< 23	< 21
07/22/24	-	07/29/24	< 17	< 23	< 16	< 16	< 22	< 16	< 23	< 22
07/29/24	-	08/05/24	< 28	< 23	< 26	< 25	< 23	< 26	< 23	< 22
08/05/24	-	08/12/24	< 23	< 19	< 22	< 22	< 19	< 23	< 19	< 20

Attachment 2 - Data Table

Table 15, Concentrations of Iodine-131 in Filtered Air, 2024

Results in Units of E-03 pCi/m^3 ± 2σ

COLLECTION PERIOD			CONTROL	INDICATORS						
START		STOP	SA-AIO-14G1	SA-AIO-05X1	SA-AIO-06S1	SA-AIO-15S2	SA-AIO-05D1	SA-AIO-16E1	SA-AIO-01F1	SA-AIO-02F6
08/12/24	-	08/19/24	< 21	< 19	< 21	< 21	< 19	< 21	< 19	< 13
08/19/24	-	08/26/24	< 24	< 17	< 25	< 24	< 18	< 25	< 17	< 16
08/26/24	-	09/03/24	< 10	< 17	< 22	< 22	< 17	< 22	< 17	< 17
09/03/24	-	09/09/24	< 18	< 22	< 17	< 17	< 23	< 17	< 23	< 21
09/09/24	-	09/16/24	< 27	< 25	< 26	< 26	< 27	< 27	< 28	< 24
09/16/24	-	09/23/24	< 23	< 24	< 23	< 10	< 24	< 23	< 21	< 23
09/23/24	-	09/30/24	< 17	< 27	< 18	< 17	< 27	< 18	< 24	< 29
09/30/24	-	10/07/24	< 19	< 14	< 19	< 18	< 14	< 15	< 12	< 14
10/07/24	-	10/14/24	< 23	< 19	< 23	< 22	< 19	< 24	< 19	< 18
10/14/24	-	10/21/24	< 20	< 14	< 20	< 12	< 14	< 20	< 14	< 12
10/21/24	-	10/28/24	< 17	< 18	< 18	< 17	< 19	< 18	< 18	< 16
10/28/24	-	11/04/24	< 25	< 18	< 26	< 24	< 18	< 26	< 16	< 17
11/04/24	-	11/12/24	< 26	< 23	< 43	< 24	< 24	< 26	< 25	< 23
11/12/24	-	11/18/24	< 26	< 28	< 27	< 24	< 29	< 27	< 31	< 27
11/18/24	-	11/25/24	< 18	< 12	< 19	< 13	< 11	< 18	< 12	< 11
11/25/24	-	12/02/24	< 36	< 23	< 37	< 37	< 24	< 37	< 10	< 22
12/02/24	-	12/09/24	< 21	< 18	< 21	< 21	< 17	< 21	< 16	< 17
12/09/24	-	12/16/24	< 26	< 22	< 25	< 24	< 20	< 27	< 20	< 22
12/16/24	-	12/24/24	< 19	< 16	< 19	< 18	< 16	< 17	< 17	< 9
12/24/24	-	12/31/24	< 27	< 26	< 27	< 25	< 26	< 30	< 16	< 30
		AVERAGE*	-	-	-	-	-	-	-	-

* THE AVERAGE AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING ONLY THE POSITIVE VALUES. IF THERE IS ONLY ONE POSITIVE VALUE, THE AVERAGE AND THE ERROR ARE DISPLAYED.

\- INDICATES AVERAGE WAS NOT CALCULATED DUE TO NO POSITIVE VALUES FOR THE REPORTING PERIOD.

E See Section 10.0 for additional detail

Attachment 2 - Data Table

Table 16, Concentrations of Tritium in Surface Water, 2024

Results in Units of pCi/L ± 2σ

COLLECTION PERIOD			CONTROL	INDICATORS			
START		STOP	SA-SWA-12B1 (C)	SA-SWA-11A1	SA-SWA-07E1	SA-SWA-01F2	SA-SWA-016F1
01/08/24	-	01/23/24	< 184	< 185	< 187	< 185	< 185
02/05/24	-	02/21/24	< 188	< 183	< 186	< 183	< 184
03/04/24	-	03/26/24	< 189	< 192	< 186	< 188	< 189
04/01/24	-	04/17/24	< 193	< 185	< 185	< 182	< 188
05/07/24	-	05/23/24	< 197	**674** ± 154	< 195	< 196	< 194
06/03/24	-	06/20/24	< 189	< 196	< 194	< 195	< 190
07/10/24	-	07/26/24	< 193	< 191	< 184	< 188	< 187
08/08/24	-	08/22/24	< 191	< 193	< 193	< 195	< 200
09/10/24	-	09/24/24	< 188	< 187	< 186	< 181	< 185
10/10/24	-	10/25/24	< 189	< 189	< 198	< 189	< 190
11/08/24	-	11/20/24	< 199	< 195	< 193	< 190	< 190
12/04/24	-	12/16/24	< 180	< 182	< 178	< 177	< 179
		AVERAGE*	-	**674** ± 154	-	-	-

(C) CONTROL LOCATION.

***** THE AVERAGE AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES. IF THERE IS ONLY ONE POSITIVE VALUE, THE AVERAGE AND THE ERROR ARE DISPLAYED.

- INDICATES AVERAGE WAS NOT CALCULATED DUE TO NO POSITIVE VALUES FOR THE REPORTING PERIOD.

Attachment 2 - Data Table

Table 17, Concentrations of Iodine-131 and Gamma Emitters in Surface Water, 2024

Results in Units of pCi/L ± 2σ

		<----------GAMMA EMITTERS---------->										
STATION ID	**Collection Date**	**I-131 LL**	**K-40**	**Mn-54**	**Co-58**	**Fe-59**	**Co-60**	**Zn-65**	**ZrNb-95**	**Cs-134**	**Cs-137**	**BaLa-140**
SA-SWA-12B1 (C)	01/08/24	< 0.9	**49** ± 31	< 2	< 3	< 5	< 3	< 5	< 3	< 3	< 2	< 5
	02/05/24	< 0.8	< 82	< 4	< 6	< 13	< 5	< 9	< 6	< 7	< 5	< 10
	03/04/24	< 0.7	< 98	< 6	< 6	< 11	< 8	< 12	< 6	< 6	< 6	< 6
	04/01/24	< 0.8	< 93	< 5	< 5	< 11	< 5	< 10	< 5	< 6	< 5	< 7
	05/07/24	< 0.7	< 97	< 6	< 4	< 12	< 7	< 9	< 6	< 6	< 6	< 8
	06/03/24	< 0.9	< 47	< 4	< 5	< 11	< 3	< 12	< 5	< 5	< 5	< 7
	07/10/24	< 0.7	< 90	< 4	< 4	< 6	< 5	< 8	< 4	< 5	< 3	< 6
	08/08/24	< 0.8	**115** ± 38	< 3	< 3	< 7	< 4	< 7	< 3	< 4	< 3	< 5
	09/10/24	< 0.7	**72** ± 26	< 1	< 2	< 3	< 2	< 3	< 2	< 2	< 2	< 3
	10/10/24	< 0.7	< 92	< 4	< 5	< 9	< 5	< 10	< 6	< 5	< 6	< 8
	11/08/24	< 0.8	**144** ± 60	< 4	< 4	< 9	< 4	< 7	< 4	< 4	< 4	< 8
	12/04/24	< 0.8	**107** ± 40	< 3	< 3	< 7	< 3	< 7	< 3	< 3	< 3	< 5
	AVERAGE*	-	**97** ± 74	-	-	-	-	-	-	-	-	-
SA-SWA-11A1	01/08/24	< 0.8	**53** ± 35	< 2	< 2	< 5	< 3	< 5	< 3	< 3	< 2	< 5
	02/05/24	< 0.9	< 84	< 5	< 5	< 8	< 5	< 11	< 4	< 5	< 5	< 9
	03/04/24	< 0.5	< 134	< 6	< 7	< 14	< 7	< 16	< 7	< 8	< 7	< 11
	04/01/24	< 0.8	< 106	< 5	< 6	< 9	< 7	< 10	< 5	< 5	< 5	< 5
	05/07/24	< 0.8	< 122	< 5	< 3	< 11	< 6	< 14	< 5	< 6	< 5	< 8
	06/03/24	< 0.8	**98** ± 61	< 4	< 5	< 11	< 4	< 9	< 5	< 5	< 4	< 8
	07/10/24	< 0.8	< 152	< 7	< 5	< 16	< 4	< 16	< 6	< 6	< 7	< 13
	08/08/24	< 0.7	**101** ± 50	< 4	< 4	< 7	< 4	< 7	< 4	< 4	< 5	< 6
	09/10/24	< 0.6	**79** ± 47	< 3	< 4	< 8	< 4	< 7	< 3	< 4	< 4	< 9
	10/10/24	< 0.7	**109** ± 42	< 3	< 3	< 6	< 3	< 6	< 3	< 3	< 3	< 4
	11/08/24	< 0.9	**90** ± 49	< 3	< 3	< 8	< 4	< 7	< 4	< 4	< 4	< 7
	12/04/24	< 0.8	**87** ± 45	< 3	< 3	< 6	< 3	< 6	< 3	< 3	< 3	< 4
	AVERAGE*	-	**88 ± 37**	-	-	-	-	-	-	-	-	-

(C) CONTROL LOCATION.

***** THE AVERAGE AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES. IF THERE IS ONLY ONE POSITIVE VALUE, THE AVERAGE AND THE ERROR ARE DISPLAYED.

- INDICATES AVERAGE WAS NOT CALCULATED DUE TO NO POSITIVE VALUES FOR THE REPORTING PERIOD.

Attachment 2 - Data Table

Table 17, Concentrations of Iodine-131 and Gamma Emitters in Surface Water, 2024

Results in Units of pCi/L ± 2σ

		<----------GAMMA EMITTERS---------->										
STATION ID	**Collection Date**	**I-131 LL**	**K-40**	**Mn-54**	**Co-58**	**Fe-59**	**Co-60**	**Zn-65**	**ZrNb-95**	**Cs-134**	**Cs-137**	**BaLa-140**
SA-SWA-07E1	01/08/24	< 0.8	**75** ± 31	< 2	< 3	< 5	< 3	< 5	< 3	< 3	< 2	< 4
	02/05/24	< 0.9	**85** ± 57	< 6	< 6	< 10	< 6	< 10	< 6	< 4	< 6	< 10
	03/04/24	< 0.4	< 107	< 5	< 6	< 9	< 6	< 13	< 5	< 4	< 5	< 5
	04/01/24	< 0.7	< 100	< 5	< 5	< 12	< 6	< 9	< 5	< 5	< 4	< 8
	05/07/24	< 0.8	< 48	< 6	< 6	< 10	< 5	< 12	< 6	< 7	< 6	< 13
	06/03/24	< 0.9	< 55	< 4	< 5	< 9	< 5	< 11	< 5	< 5	< 6	< 6
	07/10/24	< 0.9	< 56	< 5	< 6	< 13	< 7	< 10	< 6	< 7	< 6	< 8
	08/08/24	< 0.9	**137** ± 48	< 4	< 4	< 8	< 4	< 8	< 4	< 4	< 4	< 6
	09/10/24	< 0.7	**122** ± 32	< 2	< 2	< 5	< 3	< 5	< 2	< 3	< 3	< 4
	10/10/24	< 0.7	**98** ± 40	< 3	< 3	< 7	< 3	< 7	< 3	< 3	< 3	< 5
	11/08/24	< 0.9	**171** ± 40	< 3	< 3	< 8	< 4	< 8	< 4	< 4	< 4	< 7
	12/04/24	< 0.8	**123** ± 43	< 3	< 2	< 5	< 3	< 5	< 2	< 3	< 3	< 4
	AVERAGE*	-	**116** ± 66	-	-	-	-	-	-	-	-	-
SA-SWA-01F2	01/08/24	< 0.9	< 18	< 2	< 2	< 4	< 2	< 4	< 2	< 2	< 2	< 4
	02/05/24	< 0.8	< 84	< 4	< 4	< 11	< 5	< 9	< 4	< 4	< 4	< 10
	03/04/24	< 0.6	< 128	< 2	< 5	< 13	< 7	< 18	< 6	< 8	< 6	< 10
	04/01/24	< 0.9	< 75	< 4	< 4	< 8	< 5	< 8	< 4	< 5	< 4	< 7
	05/07/24	< 0.9	< 135	< 8	< 7	< 13	< 7	< 12	< 7	< 7	< 7	< 11
	06/03/24	< 0.9	< 76	< 5	< 6	< 12	< 5	< 11	< 6	< 6	< 5	< 9
	07/10/24	< 0.9	< 120	< 5	< 5	< 10	< 7	< 11	< 5	< 6	< 5	< 7
	08/08/24	< 0.7	< 41	< 4	< 3	< 7	< 4	< 7	< 4	< 4	< 3	< 6
	09/10/24	< 0.5	< 15	< 2	< 2	< 4	< 2	< 4	< 2	< 2	< 2	< 3
	10/10/24	< 0.7	**90** ± 48	< 4	< 3	< 9	< 4	< 10	< 5	< 4	< 4	< 6
	11/08/24	< 0.9	**109** ± 43	< 4	< 4	< 11	< 5	< 8	< 4	< 4	< 4	< 9
	12/04/24	< 0.9	< 26	< 3	< 3	< 7	< 4	< 7	< 3	< 4	< 3	< 5
	AVERAGE*	-	**101** ± 23	-	-	-	-	-	-	-	-	-

(C) CONTROL LOCATION.

***** THE AVERAGE AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES. IF THERE IS ONLY ONE POSITIVE VALUE, THE AVERAGE AND THE ERROR ARE DISPLAYED.

- INDICATES AVERAGE WAS NOT CALCULATED DUE TO NO POSITIVE VALUES FOR THE REPORTING PERIOD.

Attachment 2 - Data Table

Table 17, Concentrations of Iodine-131 and Gamma Emitters in Surface Water, 2024

Results in Units of pCi/L ± 2σ

		<----------GAMMA EMITTERS---------->										
STATION ID	**Collection Date**	**I-131 LL**	**K-40**	**Mn-54**	**Co-58**	**Fe-59**	**Co-60**	**Zn-65**	**ZrNb-95**	**Cs-134**	**Cs-137**	**BaLa-140**
SA-SWA-16F1	01/08/24	< 0.8	< 21	< 2	< 2	< 5	< 2	< 4	< 3	< 3	< 2	< 4
	02/05/24	< 0.9	< 90	< 5	< 5	< 12	< 7	< 11	< 7	< 5	< 6	< 10
	03/04/24	< 0.5	< 122	< 6	< 6	< 11	< 6	< 14	< 7	< 6	< 7	< 8
	04/01/24	< 0.7	< 100	< 6	< 5	< 9	< 6	< 9	< 6	< 6	< 5	< 8
	05/07/24	< 0.7	< 74	< 5	< 5	< 11	< 6	< 8	< 5	< 6	< 5	< 7
	06/03/24	< 0.8	< 44	< 5	< 4	< 11	< 6	< 8	< 4	< 6	< 6	< 8
	07/10/24	< 0.7	< 94	< 5	< 5	< 11	< 5	< 8	< 5	< 6	< 5	< 7
	08/08/24	< 0.8	< 27	< 3	< 3	< 6	< 4	< 6	< 3	< 3	< 3	< 4
	09/10/24	< 0.6	**53** ± 27	< 2	< 2	< 4	< 2	< 3	< 2	< 2	< 2	< 3
	10/10/24	< 0.8	< 37	< 5	< 5	< 9	< 4	< 8	< 5	< 5	< 4	< 8
	11/08/24	< 0.9	**114** ± 48	< 3	< 3	< 8	< 4	< 8	< 4	< 4	< 4	< 8
	12/04/24	< 0.8	< 30	< 3	< 2	< 6	< 3	< 6	< 3	< 3	< 3	< 4
	AVERAGE*	-	**84 ±** 87	-	-	-	-	-	-	-	-	-
	ALL INDICATOR AVERAGE*		**100 ± 57**									

(C) CONTROL LOCATION.

***** THE AVERAGE AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES. IF THERE IS ONLY ONE POSITIVE VALUE, THE AVERAGE AND THE ERROR ARE DISPLAYED.

- INDICATES AVERAGE WAS NOT CALCULATED DUE TO NO POSITIVE VALUES FOR THE REPORTING PERIOD.

Attachment 2 - Data Table

Table 18, Concentrations of Gross Alpha and Gross Beta Emitters, and Tritium in Raw and Treated Potable Water, 2024

Results in Units of pCi/L ± 2σ

	COLLECTION PERIOD					
STATION ID	START		STOP	**Gross Alpha**	**Gross Beta**	**H-3**
SA-PWR-02F3**	12/26/23	-	01/29/24	< 0.9	**8.1** ± 1.6	< 179
	01/29/24	-	02/26/24	< 1.2	**5.7** ± 1.5	< 192
	02/26/24	-	03/25/24	< 1.8	**7.9** ± 1.7	< 184
	03/25/24	-	04/29/24	< 1.7	**7.1** ± 2.1	< 196
	04/29/24	-	05/28/24	< 2.3	**6.6** ± 2.3	< 180
	05/28/24	-	06/25/24	< 2.1	**10.4** ± 2.0	< 198
	06/25/24	-	07/29/24	< 2.1	**9.4** ± 2.1	< 187
	07/29/24	-	08/26/24	< 2.4	**7.1** ± 2.3	< 193
	08/26/24	-	09/30/24	< 2.9	**10.0** ± 2.2	< 174
	09/30/24	-	10/29/24	< 3.0	**8.1** ± 2.1	< 187
	10/29/24	-	11/25/24	< 1.5	**8.3** ± 1.4	< 199
	11/25/24	-	12/31/24	< 1.6	**7.6** ± 1.7	< 180
AVERAGE*				-	**8.0** ± 2.8	-
SA-PWT-02F3**	12/26/23	-	01/29/24	< 0.9	**6.2** ± 1.5	< 182
	01/29/24	-	02/26/24	< 1.3	**7.7** ± 1.7	< 187
	02/26/24	-	03/25/24	< 2.7	**9.6** ± 2.4	< 184
	03/25/24	-	04/29/24	< 3.0	**6.4** ± 2.0	< 197
	04/29/24	-	05/28/24	< 2.3	**8.4** ± 2.4	< 187
	05/28/24	-	06/25/24	< 1.9	**8.0** ± 1.8	< 193
	06/25/24	-	07/29/24	< 2.2	**8.4** ± 2.1	< 188
	07/29/24	-	08/26/24	< 2.5	**8.0** ± 2.4	< 189
	08/26/24	-	09/30/24	< 2.7	**10.7** ± 2.2	< 174
	09/30/24	-	10/29/24	< 2.4	**9.4** ± 1.5	< 182
	10/29/24	-	11/25/24	< 1.5	**9.9** ± 1.5	< 192
	11/25/24	-	12/31/24	< 1.6	**8.9** ± 1.7	< 180
AVERAGE*				-	**8.5** ± 2.7	-

***** THE AVERAGE AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES. IF THERE IS ONLY ONE POSITIVE VALUE THE AVERAGE AND THE ERROR ARE DISPLAYED.

****** MANAGEMENT AUDIT SAMPLE: NOT REQUIRED BY ODCM.

- INDICATES AVERAGE WAS NOT CALCULATED DUE TO NO POSITIVE VALUES FOR THE REPORTING PERIOD.

Attachment 2 - Data Table

Table 19, Concentrations of Iodine-131 and Gamma Emitters in Raw and Treated Potable Water, 2024

Results in Units of pCi/L ± 2σ

	COLLECTION PERIOD			< - - - - - - - - - - - - - - GAMMA EMITTERS - - - - - - - - - - - - - - >										
STATION ID	START		STOP	I-131 LL	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	ZrNb-95	Cs-134	Cs-137	BaLa-140	Ra-226
SA-PWR-02F3**	12/26/23	-	01/29/24	< 0.8	< 98	< 5	< 4	< 12	< 5	< 11	< 6	< 5	< 5	< 10	< 118
	01/29/24	-	02/26/24	< 0.7	< 113	< 6	< 6	< 15	< 6	< 13	< 6	< 7	< 6	< 9	< 176
	02/26/24	-	03/25/24	< 0.5	< 132	< 6	< 6	< 8	< 7	< 12	< 7	< 6	< 7	< 11	< 156
	03/25/24	-	04/29/24	< 0.6	< 114	< 8	< 6	< 14	< 8	< 16	< 9	< 7	< 7	< 8	< 182
	04/29/24	-	05/28/24	< 0.8	< 121	< 7	< 7	< 12	< 2	< 15	< 7	< 7	< 7	< 7	< 194
	05/28/24	-	06/25/24	< 0.8	< 111	< 5	< 5	< 13	< 5	< 11	< 6	< 7	< 7	< 6	< 145
	06/25/24	-	07/29/24	< 0.7	< 114	< 7	< 7	< 14	< 9	< 10	< 9	< 7	< 7	< 8	< 170
	07/29/24	-	08/26/24	< 0.8	< 98	< 4	< 5	< 11	< 5	< 9	< 5	< 6	< 5	< 7	< 135
	08/26/24	-	09/30/24	< 0.4	< 114	< 8	< 8	< 18	< 7	< 13	< 8	< 7	< 7	< 9	< 176
	09/30/24	-	10/29/24	< 0.6	< 109	< 6	< 5	< 11	< 7	< 12	< 6	< 5	< 6	< 8	< 163
	10/29/24	-	11/25/24	< 0.6	< 98	< 6	< 6	< 12	< 5	< 11	< 7	< 7	< 6	< 10	< 158
	11/25/24	-	12/31/24	< 0.8	< 49	< 3	< 3	< 6	< 3	< 6	< 3	< 4	< 3	< 6	< 66
AVERAGE*				-	-	-	-	-	-	-	-	-	-	-	-
SA-PWT-02F3**	12/26/23	-	01/29/24	< 0.6	< 73	< 5	< 5	< 10	< 5	< 11	< 6	< 6	< 5	< 10	< 144
	01/29/24	-	02/26/24	< 0.9	< 117	< 7	< 6	< 14	< 7	< 15	< 8	< 7	< 9	< 9	< 157
	02/26/24	-	03/25/24	< 0.6	< 92	< 6	< 5	< 10	< 8	< 12	< 5	< 7	< 6	< 7	< 169
	03/25/24	-	04/29/24	< 0.5	< 96	< 6	< 4	< 12	< 7	< 11	< 6	< 8	< 6	< 8	< 170
	04/29/24	-	05/28/24	< 0.8	< 109	< 6	< 8	< 14	< 7	< 16	< 6	< 7	< 7	< 9	< 164
	05/28/24	-	06/25/24	< 0.7	< 123	< 7	< 7	< 15	< 7	< 18	< 8	< 8	< 7	< 7	< 168
	06/25/24	-	07/29/24	< 0.7	< 71	< 6	< 5	< 11	< 6	< 14	< 6	< 7	< 6	< 8	< 130
	07/29/24	-	08/26/24	< 0.8	< 86	< 5	< 4	< 12	< 7	< 13	< 5	< 6	< 6	< 8	< 154
	08/26/24	-	09/30/24	< 0.7	< 140	< 7	< 6	< 12	< 8	< 10	< 7	< 8	< 6	< 11	< 156
	09/30/24	-	10/29/24	< 0.6	< 83	< 4	< 5	< 8	< 5	< 10	< 5	< 5	< 5	< 6	< 116
	10/29/24	-	11/25/24	< 0.6	< 101	< 5	< 5	< 11	< 6	< 14	< 6	< 7	< 7	< 9	< 139
	11/25/24	-	12/31/24	< 0.9	< 26	< 2	< 2	< 5	< 2	< 5	< 2	< 3	< 2	< 3	< 62
AVERAGE*				-	-	-	-	-	-	-	-	-	-	-	-

* THE AVERAGE AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES. IF THERE IS ONLY ONE POSITIVE VALUE THE AVERAGE AND THE ERROR ARE DISPLAYED.

** MANAGEMENT AUDIT SAMPLE: NOT REQUIRED BY ODCM.

\- INDICATES AVERAGE WAS NOT CALCULATED DUE TO NO POSITIVE VALUES FOR THE REPORTING PERIOD.

Attachment 2 - Data Table

Table 20, Concentration of Gross Alpha and Beta Emitters, and Tritium in Well Water, 2024

Results in Units of pCi/L ± 2σ

STATION ID	COLLECTION DATE	Gross Alpha	Gross Beta	H-3
SA-WWA-03E1**	01/25/24	< 2.4	< 1.6	< 190
	02/21/24	< 1.3	< 2.1	< 192
	03/25/24	< 1.5	< 2.0	< 188
	04/22/24	< 1.5	< 2.6	< 186
	05/22/24	< 1.7	< 2.3	< 189
	06/24/24	< 1.5	**3.7** ± 1.4	< 196
	07/23/24	< 1.3	< 2.1	< 193
	08/19/24	< 1.8	< 2.6	< 194
	09/25/24	< 1.8	< 2.6	< 187
	10/21/24	< 1.3	< 2.7	< 180
	11/18/24	< 1.8	< 2.5	< 192
	12/16/24	< 2.1	< 1.6	< 183
	AVERAGE*	-	**3.7** ± 1.4	-

***** THE AVERAGE AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES. IF THERE IS ONLY ONE POSITIVE VALUE THE AVERAGE AND THE ERROR ARE DISPLAYED.

****** MANAGEMENT AUDIT SAMPLE: NOT REQUIRED BY ODCM.

- INDICATES AVERAGE WAS NOT CALCULATED DUE TO NO POSITIVE VALUES FOR THE REPORTING PERIOD.

Attachment 2 - Data Table

Table 21, Concentrations of Iodine-131 and Gamma Emitters in Well Water, 2024

Results in Units of pCi/L ± 2σ

STATION ID	COLLECTION DATE	< - - - - - - - - - - - - - - GAMMA EMITTERS - - - - - - - - - - - - - - >											
		I-131 LL	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	ZrNb-95	Cs-134	Cs-137	BaLa-140	Ra-226
SA-WWA-03E1**	01/25/24	< 0.7	< 138	< 6	< 5	< 14	< 8	< 13	< 9	< 9	< 5	< 9	< 187
	02/21/24	< 0.8	< 83	< 6	< 6	< 12	< 7	< 13	< 7	< 6	< 6	< 9	< 162
	03/25/24	< 0.5	< 91	< 6	< 5	< 11	< 6	< 10	< 7	< 6	< 5	< 7	< 139
	04/22/24	< 0.7	< 95	< 6	< 5	< 11	< 6	< 11	< 7	< 7	< 6	< 9	< 151
	05/22/24	< 0.9	< 106	< 6	< 5	< 12	< 7	< 13	< 6	< 7	< 6	< 10	< 183
	06/24/24	< 0.8	< 82	< 5	< 5	< 7	< 5	< 10	< 5	< 5	< 5	< 7	< 135
	07/23/24	< 0.8	< 73	< 7	< 6	< 16	< 10	< 10	< 9	< 7	< 7	< 10	< 154
	08/19/24	< 0.9	< 106	< 9	< 8	< 15	< 7	< 15	< 9	< 7	< 8	< 10	< 187
	09/25/24	< 0.7	< 76	< 4	< 4	< 8	< 4	< 10	< 5	< 4	< 4	< 8	< 114
	10/21/24	< 0.8	< 107	< 6	< 6	< 13	< 8	< 17	< 8	< 8	< 7	< 9	< 173
	11/18/24	< 0.9	< 112	< 7	< 9	< 15	< 8	< 17	<9	< 7	< 8	< 12	< 180
	12/16/24	< 0.8	< 79	< 6	< 5	< 12	< 9	< 11	< 8	< 6	< 8	< 8	< 168
	AVERAGE*	-	-	-	-	-	-	-	-	-	-	-	-

* THE AVERAGE AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES. IF THERE IS ONLY ONE POSITIVE VALUE THE AVERAGE AND THE ERROR ARE DISPLAYED.

** MANAGEMENT AUDIT SAMPLE: NOT REQUIRED BY ODCM.

\- INDICATES AVERAGE WAS NOT CALCULATED DUE TO NO POSITIVE VALUES FOR THE REPORTING PERIOD.

Attachment 2 - Data Table

Table 22, Concentrations of Gamma Emitters in Sediment, 2024

Results in Units of pCi/kg (dry) ± 2σ

STATION ID	Collection Date	<----------GAMMA EMITTERS----------> Be-7	K-40	Cs-134	Cs-137	Ra-226	Th-232
SA-ESS-12B1 (C)	07/02/24	< 751	**14,780** ± 1,865	< 120	< 89	< 2,113	**807** ± 241
	12/04/24	< 351	**16,000** ± 1,160	< 62	< 44	**1,834** ± 820	**984** ± 112
	AVERAGE*	-	**15,390** ± 1,725	-	-	**1,834** ± 820	**895** ± 252
SA-ESS-05A1	07/09/24	< 311	**4,182** ± 880	< 57	< 42	< 1,262	< 257
	12/05/24	< 406	**9,486** ± 899	< 60	< 55	< 1,090	**542** ± 115
	AVERAGE*	-	**6,834** ± 7,501	-	-	-	**542** ± 115
SA-ESS-11A1	07/02/24	< 295	**2,470** ± 768	< 62	< 55	< 1,149	**246** ± 118
	12/04/24	< 350	**4,729** ± 637	< 45	< 37	< 702	**210** ± 90
	AVERAGE*	-	**3,600** ± 3,195	-	-	-	**228** ± 51
SA-ESS-15A1	07/02/24	< 611	**3,603** ± 966	< 76	< 60	< 1,457	< 341
	12/04/24	< 458	**12,640** ± 1,082	< 59	< 52	**1,531** ± 963	**780** ± 159
	AVERAGE*	-	**8,122** ± 12,780	-	-	**1,531** ± 963	**780** ± 159
SA-ESS-15A2	(a)						
	(a)						
	AVERAGE*	-	-	-	-	-	-
SA-ESS-07E1	07/02/24	< 523	**9,119** ± 1,361	< 78	< 69	< 1,377	**718** ± 176
	12/04/24	< 316	**9,692** ± 937	< 55	< 40	< 696	< 275
	AVERAGE*	-	**9,406** ± 810	-	-	-	**718** ± 176
SA-ESS-16F1	07/02/24	< 866	**14,340** ± 2,250	< 139	< 112	< 2,104	< 661
	12/04/24	< 680	**13,010** ± 1,635	< 98	< 102	< 1,664	< 483
	AVERAGE*	-	**13,675** ± 1,881	-	-		
ALL INDICATOR AVERAGE		-	**8,327** ± 8,622	-	-	**1,531** ± 963	**499** ± 526

(C) CONTROL LOCATION.

* THE AVERAGE AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES. IF THERE IS ONLY ONE POSITIVE VALUE, THE AVERAGE AND THE ERROR ARE DISPLAYED.

\- INDICATES AVERAGE WAS NOT CALCULATED DUE TO NO POSITIVE VALUES FOR THE REPORTING PERIOD.

(a) STATION 15A2 COULD NOT BE COLLECTED DUE TO A WIND PORT PROJECT (TABLE 11).

Attachment 2 - Data Table

Table 23, Concentrations of Iodine-131 and Gamma Emitters in Milk, 2024

Results in Units of pCi/L ± 2σ<

STATION ID	COLLECTION PERIOD START		STOP	GAMMA EMITTERS					
				I-131 LL	K-40	Cs-134	Cs-137	BaLa-140	Ra-226
SA-MLK-02G3 (C)	01/01/24	-	01/02/24	< 0.9	**1,125** ± 190	< 8	< 8	< 13	< 162
	02/04/24	-	02/05/24	< 0.8	**1,506** ± 158	< 6	< 6	< 10	< 153
	03/03/24	-	03/04/24	< 0.8	**1,224** ± 192	< 8	< 7	< 10	< 163
	04/01/24	-	04/02/24	< 0.9	**1,050** ± 134	< 6	< 5	< 10	< 130
	04/14/24	-	04/15/24	< 0.7	**1,163** ± 136	< 6	< 6	< 8	< 143
	05/05/24	-	05/06/24	< 0.7	**1,160** ± 162	< 8	< 9	< 12	< 177
	05/20/24	-	05/21/24	< 0.8	**1,141** ± 167	< 6	< 5	< 9	< 121
	06/02/24	-	06/03/24	< 0.7	**1,405** ± 190	< 8	< 9	< 12	< 163
	06/16/24	-	06/17/24	< 0.7	**1,410** ± 173	< 8	< 8	< 10	< 174
	07/15/24	-	07/16/24	< 0.9	**1,018** ± 152	< 7	< 8	< 13	< 217
	07/21/24	-	07/22/24	< 0.9	**1,448** ± 169	< 8	< 8	< 9	< 190
	08/04/24	-	08/05/24	< 0.9	**1,494** ± 174	< 8	< 8	< 11	< 135
	08/18/24	-	08/19/24	< 1.0	**1,677** ± 175	< 7	< 7	< 9	< 132
	09/02/24	-	09/03/24	< 0.9	**1,205** ± 121	< 7	< 7	< 8	< 131
	09/15/24	-	09/16/24	< 0.9	**1,281** ± 152	< 8	< 7	< 5	< 176
	10/13/24	-	10/14/24	< 0.8	**1,004** ± 106	< 5	< 4	< 8	< 99
	10/20/24	-	10/21/24	< 0.8	**1,188** ± 116	< 5	< 5	< 7	< 115
	11/03/24	-	11/04/24	< 0.8	**1,282** ± 184	< 9	< 7	< 14	< 186
	11/17/24	-	11/18/24	< 0.9	**1,027** ± 162	< 9	< 8	< 6	< 215
	12/02/24	-	12/03/24	< 0.9	**1,141** ± 162	< 9	< 8	< 10	< 158
	AVERAGE*			-	**1,247** ± 374	-	-	-	-

Attachment 2 - Data Table

Table 23, Concentrations of Iodine-131 and Gamma Emitters in Milk, 2024

Results in Units of pCi/L ± 2σ<

STATION ID	COLLECTION PERIOD START		STOP	GAMMA EMITTERS					
				I-131 LL	K-40	Cs-134	Cs-137	BaLa-140	Ra-226
SA-MLK-13E3	01/01/24	-	01/02/24	< 0.9	**1,182** ± 173	< 8	< 6	< 13	< 162
	02/04/24	-	02/05/24	< 0.9	**1,070** ± 172	< 8	< 8	< 14	< 162
	03/03/24	-	03/04/24	< 0.9	**1,454** ± 179	< 8	< 8	< 12	< 167
	04/01/24	-	04/02/24	< 0.8	**1,277** ± 151	< 7	< 7	< 10	< 138
	04/14/24	-	04/15/24	< 0.8	**1,316** ± 176	< 9	< 7	< 12	< 171
	05/05/24	-	05/06/24	< 0.8	**1,069** ± 175	< 7	< 7	< 14	< 167
	05/20/24	-	05/21/24	< 0.8	**1,144** ± 136	< 7	< 7	< 10	< 168
	06/02/24	-	06/03/24	< 0.8	**1,045** ± 192	< 7	< 6	< 5	< 107
	06/16/24	-	06/17/24	< 0.9	**1,285** ± 163	< 8	< 7	< 8	< 170
	07/15/24	-	07/16/24	< 0.6	**1,300** ± 165	< 10	< 7	< 12	< 165
	07/21/24	-	07/22/24	< 0.6	**1,234** ± 170	< 9	< 7	< 12	< 201
	08/04/24	-	08/05/24	< 0.9	**1,093** ± 148	< 9	< 7	< 10	< 190
	08/18/24	-	08/19/24	< 1.0	**1,846** ± 161	< 7	< 6	< 7	< 173
	09/02/24	-	09/03/24	< 0.8	**1,306** ± 150	< 9	< 7	< 11	< 137
	09/15/24	-	09/16/24	< 0.8	**1,372** ± 142	< 8	< 7	< 8	< 140
	10/13/24	-	10/14/24	< 0.8	**1,079** ± 160	< 9	< 7	< 13	< 187
	10/20/24	-	10/21/24	< 0.9	**1,092** ± 126	< 6	< 6	< 8	< 134
	11/03/24	-	11/04/24	< 0.9	**1,119** ± 168	< 9	< 7	< 10	< 196
	11/17/24	-	11/18/24	< 0.8	**1,334** ± 153	< 8	< 7	< 15	< 164
	12/02/24	-	12/03/24	< 0.8	**1,231** ± 181	< 9	< 8	< 12	< 166
	AVERAGE*			-	**1,242** ± 370	-	-	-	-

Attachment 2 - Data Table

Table 23, Concentrations of Iodine-131 and Gamma Emitters in Milk, 2024

Results in Units of pCi/L ± 2σ<

STATION ID	COLLECTION PERIOD START		STOP	GAMMA EMITTERS					
				I-131 LL	K-40	Cs-134	Cs-137	BaLa-140	Ra-226
SA-MLK-14F4	01/01/24	-	01/02/24	< 0.9	**1,037** ± 139	< 9	< 8	< 11	< 179
	02/05/24	-	02/06/24	< 0.9	**1,392** ± 171	< 6	< 8	< 11	< 169
	03/03/24	-	03/04/24	< 0.9	**1,183** ± 172	< 9	< 6	< 9	< 158
	04/01/24	-	04/02/24	< 0.7	**1,214** ± 177	< 7	< 6	< 11	< 139
	04/14/24	-	04/15/24	< 0.7	**1,356** ± 159	< 8	< 7	< 8	< 166
	05/05/24	-	05/06/24	< 0.8	**995** ± 180	< 9	< 8	< 10	< 205
	05/20/24	-	05/21/24	< 0.7	**1,299** ± 150	< 5	< 6	< 9	< 130
	06/02/24	-	06/03/24	< 0.8	**1,433** ± 172	< 7	< 7	< 8	< 133
	06/16/24	-	06/17/24	< 0.9	**1,090** ± 186	< 8	< 9	< 10	< 145
	07/15/24	-	07/16/24	< 0.8	**1,259** ± 177	< 8	< 7	< 6	< 171
	07/21/24	-	07/22/24	< 0.8	**1,098** ± 193	< 9	< 7	< 12	< 162
	08/04/24	-	08/05/24	< 0.8	**1,119** ± 163	< 8	< 7	< 13	< 190
	08/18/24	-	08/19/24	< 1.0	**1,405** ± 152	< 9	< 7	< 11	< 170
	09/02/24	-	09/03/24	< 0.9	**1,119** ± 156	< 6	< 5	< 8	< 160
	09/15/24	-	09/16/24	< 0.6	**1,382** ± 152	< 6	< 6	< 7	< 140
	10/13/24	-	10/14/24	< 0.8	**1,266** ± 175	< 8	< 9	< 14	< 201
	10/20/24	-	10/21/24	< 1.0	**1,209** ± 131	< 6	< 6	< 7	< 121
	11/03/24	-	11/04/24	< 0.9	**1,134** ± 169	< 9	< 9	< 14	< 204
	11/17/24	-	11/18/24	< 0.8	**1,268** ± 185	< 8	< 8	< 7	< 199
	12/02/24	-	12/03/24	< 0.9	**1,214** ± 167	< 10	< 9	< 9	< 195
	AVERAGE*			-	**1,224** ± 256	-	-	-	-
ALL INDICATOR AVERAGE*				-	**1,233** ± 314	-	-	-	-

(C) CONTROL LOCATION.

* THE AVERAGE AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES. IF THERE IS ONLY ONE POSITIVE VALUE, THE AVERAGE AND THE ERROR ARE DISPLAYED.

\- INDICATES AVERAGE WAS NOT CALCULATED DUE TO NO POSITIVE VALUES FOR THE REPORTING PERIOD.

Attachment 2 - Data Table

Table 24, Concentrations of Gamma Emitters in Edible Fish, 2024

Results in Units of pCi/kg (wet) ± 2σ

		<----------GAMMA EMITTERS---------->									
STATION ID	Collection Date	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Cs-134	Cs-137	Ra-226
SA-ESF-12B1 (C)	04/29/24	**2,918** ± 900	< 43	< 50	< 120	< 41	< 129	< 58	< 52	< 1,005
	11/18/24	**4,062** ± 928	< 70	< 64	< 129	< 54	< 157	< 67	< 61	< 1,111
	AVERAGE*	**3,490** ± 1,618	-	-	-	-	-	-	-	-
SA-ESF-11A1	04/29/24	**3,736** ± 964	< 69	< 63	< 128	< 76	< 150	< 55	< 62	< 1,714
	11/13/24	**3,407** ± 836	< 66	< 65	< 149	< 74	< 129	< 66	< 63	< 1,310
	AVERAGE*	**3,572** ± 465	-	-	-	-	-	-	-	-
SA-ESF-07E1	04/29/24	**3,876** ± 809	< 47	< 44	< 105	< 70	< 107	< 52	< 51	< 1,175
	11/13/24	**2,872** ± 844	< 43	< 56	< 111	< 71	< 108	< 56	< 50	< 1,162
	AVERAGE*	**3,374** ± 1,420	-	-	-	-	-	-	-	-
ALL INDICATOR AVERAGE*		**3,473 ± 892**								

(C) CONTROL LOCATION.

* THE AVERAGE AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES. IF THERE IS ONLY ONE POSITIVE VALUE, THE AVERAGE AND THE ERROR ARE DISPLAYED.

- INDICATES AVERAGE WAS NOT CALCULATED DUE TO NO POSITIVE VALUES FOR THE REPORTING PERIOD.

Attachment 2 - Data Table

Table 25, Concentrations of Gamma Emitters in Blue Crabs, 2024

Results in Units of pCi/kg (wet) ± 2σ

STATION ID	Collection Date	<----------GAMMA EMITTERS----------> K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Cs-134	Cs-137	Ra-226
SA-ECH-12B1 (C)	07/03/24	**2,864** ± 886	< 43	< 65	< 107	< 62	< 134	< 57	< 54	< 1,531
	09/24/24	**2,238** ± 687	< 43	< 38	< 89	< 36	< 83	< 44	< 43	< 712
	AVERAGE*	**2,551** ± 885	-	-	-	-	-	-	-	-
STATION ID	**Collection Date**	**K-40**	**Mn-54**	**Co-58**	**Fe-59**	**Co-60**	**Zn-65**	**Cs-134**	**Cs-137**	**Ra-226**
SA-ECH-11A1	07/03/24	**2,389** ± 933	< 77	< 68	< 108	< 87	< 138	< 63	< 49	< 1,076
	09/24/24	**2,291** ± 551	< 44	< 40	< 92	< 40	< 90	< 43	< 43	< 808
	AVERAGE*	**2,340** ± 139	-	-	-	-	-	-	-	-

(C) CONTROL LOCATION.

* THE AVERAGE AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES. IF THERE IS ONLY ONE POSITIVE VALUE, THE AVERAGE AND THE ERROR ARE DISPLAYED.

- INDICATES AVERAGE WAS NOT CALCULATED DUE TO NO POSITIVE VALUES FOR THE REPORTING PERIOD.

Attachment 2 - Data Table

Table 26, Concentrations of Gamma Emitters in Broadleaf Vegetation (FPL), 2024

Results in Units of pCi/kg (wet) ± 2σ

STATION ID	COLLECTION DATE	SAMPLE TYPE	< - - - - - - - - - - - - - - GAMMA EMITTERS - - - - - - - - - - - - - - >						
			Be-7	K-40	I-131	Cs-134	Cs-137	Ra-226	Th-232
SA-FPL-01G1	06/28/24	Cabbage	< 110	**2,565** ± 362	< 21	< 12	< 13	< 273	< 60
SA-FPL-01G1	11/25/24	Collards	< 247	**3,268** ± 515	< 42	< 31	< 27	< 590	< 116
SA-FPL-03H5	06/28/24	Cabbage	< 160	**2,690** ± 481	< 42	< 29	< 25	< 485	< 99
SA-FPL-06S1	06/28/24	Cabbage	< 317	**5,078** ± 774	< 36	< 40	< 28	< 708	< 147
SA-FPL-06S1	06/28/24	Lamb's Ear	**1,315** ± 421	**11,770** ± 1,197	< 54	< 44	< 43	< 800	< 183
SA-FPL-06S1	09/04/24	Lamb's Ear	**1,288** ± 191	**7,005** ± 488	< 20	< 20	< 19	< 353	< 71
SA-FPL-06S1	12/03/24	Kale	< 246	**3,081** ± 463	< 55	< 32	< 31	< 683	< 109
SA-FPL-15F4**	07/17/24	Cabbage	< 62	**1,587** ± 150	< 11	< 8	< 7	< 151	< 32
SA-FPL-16S1	06/28/24	Cabbage	< 364	**4,903** ± 742	< 46	< 37	< 42	< 830	< 146
SA-FPL-16S1	06/28/24	Lamb's Ear	**1,499** ± 324	**9,421** ± 888	< 49	< 36	< 35	< 766	< 137
SA-FPL-16S1	09/04/24	Lamb's Ear	**2,032** ± 241	**8,871** ± 575	< 20	< 22	< 21	< 439	< 80
SA-FPL-16S1	12/03/24	Kale	< 250	**3,349** ± 726	< 52	< 46	< 35	< 809	< 132
SA-FPL-10D1 (C)	06/28/24	Cabbage	< 310	**2,923** ± 540	< 45	< 38	< 34	< 722	< 131
SA-FPL-10D1 (C)	06/28/24	Lamb's Ear	**2,837** ± 404	**7,651** ± 838	< 35	< 31	< 31	< 799	< 138
SA-FPL-10D1 (C)	09/04/24	Lamb's Ear	**1,474** ± 221	**7,149** ± 498	< 25	< 24	< 21	< 498	< 92
SA-FPL-10D1 (C)	12/03/24	Kale	< 278	**3,432** ± 517	< 52	< 37	< 34	< 638	< 113
CONTROL AVERAGE*			**2,156 ± 1,928**	**5,289 ± 4,911**	-	-	-	-	-
ALL INDICATOR AVERAGE*			**1,534 ± 691**	**5,299 ± 6,485**	-	-	-	-	-

(C) CONTROL LOCATION.

***** THE AVERAGE AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES. IF THERE IS ONLY ONE POSITIVE VALUE THE AVERAGE AND THE ERROR ARE DISPLAYED.

- INDICATES AVERAGE WAS NOT CALCULATED DUE TO NO POSITIVE VALUES FOR THE REPORTING PERIOD.

Attachment 2 - Data Table

Table 27, Concentrations of Gamma Emitters in Vegetables (FPV), 2024

Results in Units of pCi/kg (wet) ± 2σ

STATION ID	COLLECTION DATE	SAMPLE TYPE	< - - - - - - - - - - - - - - GAMMA EMITTERS - - - - - - - - - - - - - - >						
			Be-7	K-40	I-131	Cs-134	Cs-137	Ra-226	Th-232
SA-FPV-02F9**	04/30/24	Asparagus	< 119	**1,567** ± 258	< 19	< 16	< 14	< 331	< 53
SA-FPV-15F4**	07/17/24	Corn	< 58	**2,152** ± 171	< 11	< 8	< 7	< 179	< 30
SA-FPV-15F4**	07/17/24	Peppers	< 117	**2,205** ± 239	< 21	< 15	< 13	< 356	< 53
SA-FPV-15F4**	07/17/24	Tomatoes	< 67	**2,500** ± 205	< 11	< 9	< 8	< 153	< 33
SA-FPV-01G1	04/30/24	Asparagus	< 120	**1,913** ± 340	< 18	< 19	< 17	< 335	< 58
SA-FPV-01G1	06/28/24	Tomatoes	< 121	**1,147** ± 234	< 24	< 16	< 15	< 357	< 50
SA-FPV-01G1	07/17/24	Corn	< 87	**3,197** ± 240	< 14	< 12	< 11	< 254	< 42
SA-FPV-01G1	07/17/24	Peaches	< 54	**1,606** ± 157	< 9	< 8	< 6	< 141	< 28
SA-FPV-01G1	07/17/24	Peppers	< 72	**1,576** ± 207	< 12	< 10	< 11	< 198	< 41
SA-FPV-03H5	04/30/24	Asparagus	< 125	**1,902** ± 366	< 21	< 21	< 16	< 317	< 51
SA-FPV-03H5	06/28/24	Corn	< 138	**2,377** ± 378	< 30	< 19	< 16	< 415	< 71
SA-FPV-03H5	06/28/24	Peaches	< 176	**2,285** ± 412	< 34	< 22	< 18	< 435	< 67
SA-FPV-03H5	06/28/24	Tomatoes	< 88	**1,576** ± 223	< 23	< 15	< 11	< 291	< 47
SA-FPV-03H5	07/17/24	Peppers	< 85	**1,514** ± 206	< 14	< 12	< 10	< 239	< 41
AVERAGE*			-	**1,966** ± 1,058	-	-	-	-	-

***** THE AVERAGE AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES.
IF THERE IS ONLY ONE POSITIVE VALUE THE AVERAGE AND THE ERROR ARE DISPLAYED.

****** MANAGEMENT AUDIT SAMPLE: NOT REQUIRED BY ODCM.

- INDICATES AVERAGE WAS NOT CALCULATED DUE TO NO POSITIVE VALUES FOR THE REPORTING PERIOD.

Attachment 2 - Data Table

Table 28, Concentrations of Gamma Emitters in Fodder Crops, 2024

Results in Units of pCi/kg (wet) ± 2σ

STATION ID	COLLECTION DATE	SAMPLE TYPE	< - - - - - - - - - - - - - - GAMMA EMITTERS - - - - - - - - - - - - - - >						
			Be-7	K-40	I-131	Cs-134	Cs-137	Ra-226	Th-232
SA-VGT-13E3**	11/04/24	Silage	**491** ± 168	**2,990** ± 565	< 31	< 27	< 27	< 584	< 72
SA-VGT-14F4**	11/04/24	Silage	< 249	**6,814** ± 732	< 38	< 35	< 35	< 919	< 137
SA-VGT-02G3**	11/04/24	Silage	**455** ± 183	**3,693** ± 465	< 20	< 21	< 21	< 398	< 61
AVERAGE*			**473** ± 50	**4,499** ± 4,071	-	-	-	-	-

***** THE AVERAGE AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES.
IF THERE IS ONLY ONE POSITIVE VALUE THE AVERAGE AND THE ERROR ARE DISPLAYED.

****** MANAGEMENT AUDIT SAMPLE: NOT REQUIRED BY ODCM.

- INDICATES AVERAGE WAS NOT CALCULATED DUE TO NO POSITIVE VALUES FOR THE REPORTING PERIOD.

Attachment 2 - Data Table

Table 29, Concentrations of Gamma Emitters in Game, 2024

Results in Units of pCi/kg (wet) ± 2σ

STATION ID	COLLECTION DATE	SAMPLE TYPE	<----------GAMMA EMITTERS---------->				
			Be-7	K-40	I-131	Cs-134	Cs-137
SA-GAM-13E3**	02/21/24	Muskrat	< 87	**2,167** ± 325	< 12	< 16	< 14
ALL INDICATOR AVERAGE*			-	**2,167 ± 325**	-	-	-

***** THE AVERAGE AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES. IF THERE IS ONLY ONE POSITIVE VALUE, THE AVERAGE AND THE ERROR ARE DISPLAYED.

** MANAGEMENT AUDIT SAMPLE: NOT REQUIRED BY ODCM.

- INDICATES AVERAGE WAS NOT CALCULATED DUE TO NO POSITIVE VALUES FOR THE REPORTING PERIOD.

Attachment 2 - Data Table

Table 30, Concentrations of Gamma Emitters in Soil, 2022**

Results in Units of pCi/kg (dry) ± 2σ

STATION ID	COLLECTION DATE	< - - - - - - - - - - - - - - GAMMA EMITTERS - - - - - - - - - - - - - - >					
		Be-7	K-40	Cs-134	Cs-137	Ra-226	Th-232
SA-SOL-10D1**	3/22/2022	< 344	**10,330** ± 919	< 53	**121** ± 49	**1398** ± 832	**608** ± 121
SA-SOL-13E3**	3/22/2022	< 326	**13,690** ± 996	< 52	**<** 51	**1,799** ± 817	**843** ± 127
SA-SOL-16E1**	3/22/2022	< 349	**9,936** ± 917	< 49	**<** 44	**1,775** ± 839	**741** ± 102
SA-SOL-02F9**	3/22/2022	< 421	**5,448** ± 897	< 57	**153** ± 64	**1,621** ± 970	**436** ± 131
SA-SOL-05F1**	3/22/2022	< 394	**7,476** ± 1,193	< 69	**184** ± 58	**2,836** ± 1,359	**884** ± 156
SA-SOL-14F4**	3/22/2022	< 450	**11,460** ± 1,147	< 69	< 71	**1,916** ± 1,126	**975** ± 150
SA-SOL-02G3**	3/22/2022	< 464	**7,511** ± 1,031	< 70	**108** ± 69	**2,793** ± 1,250	< 358
SA-SOL-03G1**	3/22/2022	< 316	**8,217** ± 796	< 46	**75** ± 33	**1,774** ± 909	**855** ± 92
SA-SOL-06S1**	3/22/2022	< 438	**9,765** ± 1,091	< 66	< 71	< 1,262	**593** ± 140
	AVERAGE*	-	**9,315** ± 4,907	-	**128** ± 84	**1,989** ± 1,064	**742** ± 364

* THE AVERAGE AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES, IF THERE IS ONLY 1 POSITIVE VALUE THE AVERAGE AND THE ERROR ARE DISPLAYED.

** MANAGEMENT AUDIT SAMPLES TAKEN EVERY 3 YEARS, NEXT SAMPLE DUE 2025: NOT REQUIRED BY ODCM.

\- INDICATES AVERAGE WAS NOT CALCULATED DUE TO NO POSITIVE VALUES FOR THE REPORTING PERIOD.

Attachment 3, Cross check Intercomparison Program

Attachment 3 – Cross Check Program

Summary of Cross Check 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.

Teledyne Brown Engineering (TBE) and GEL Analytical Services (GEL) participated in the following proficiency testing studies provided by Environmental Resource Associates (ERA), Eckert Ziegler Analytics and DOE Mixed Analyte Performance Evaluation in 2024. The Laboratory's intercomparison program results for 2024 are summarized below.

Teledyne Brown Engineering Summary of Results

The Teledyne Brown Engineering Environmental Services (TBE-ES) laboratory analyzed Performance Evaluation (PE) samples of air particulate (AP), milk, soil, vegetation, and water matrices that represent test and matrix combinations available for REMP programs. The PE samples supplied by Eckert & Ziegler (E&Z) Analytics Inc., Environmental Resource Associates (ERA), and Department of Energy (DOE) Mixed Analyte Performance Evaluation Program (MAPEP), were evaluated against the following pre-set acceptance criteria:

A. E&Z Analytics Evaluation Criteria

Analytics' evaluation report provides a ratio of TBE's result and E&Z Analytics' known value. Since flag values are not assigned by E&Z Analytics, TBE evaluates the reported ratios based on internal QC requirements based on the DOE MAPEP criteria.

1. A = Acceptable - reported result falls within ratio limits of 0.80-1.20
2. W = Acceptable with warning - reported result falls within 0.70-0.80 or 1.20-1.30
3. N = Not Acceptable - reported result falls outside the ratio limits of < 0.70 and > 1.30

B. ERA Evaluation Criteria

ERA's evaluation report provides an acceptance range for control and warning limits with associated flag values. ERA's acceptance limits are established per the US EPA, National Environmental Laboratory Accreditation Conference (NELAC), state-specific Performance Testing (PT) program requirements or ERA's SOP for the Generation of Performance Acceptance Limits, as applicable. The acceptance limits are either determined by a regression equation specific to each analyte or a fixed percentage limit promulgated under the appropriate regulatory document.

1. A = Acceptable - Reported value falls within the Acceptance Limits
2. N = Not Acceptable - Reported value falls outside of the Acceptance Limits

C. DOE Evaluation Criteria

Attachment 3 – Cross Check Program

MAPEP's evaluation report provides an acceptance range with associated flag values. MAPEP defines three levels of performance:

1. Acceptable (flag = "A") - result within ± 20% of the reference value
2. Acceptable with Warning (flag = "W") - result falls in the ± 20% to ± 30% of the reference value
3. Not Acceptable (flag = "N") - bias is greater than 30% of the reference value

Note: The Department of Energy (DOE) Mixed Analyte Performance Evaluation Program (MAPEP) samples are created to mimic conditions found at DOE sites which do not always resemble typical environmental samples obtained at commercial nuclear power facilities.

The Inter-Laboratory Comparison Program provides evidence of "in control" counting systems and methods, and that the laboratories are producing accurate and reliable data. For the TBE laboratory, 152 out of 167 analyses performed met the specified acceptance criteria. Fifteen analyses did not meet the specified acceptance criteria and were addressed through the TBE Corrective Action Program. A summary is found below:

A. NCR 24-02: ERA March MRAD-40 study with Air Particulate AM-241 evaluated as "Not Acceptable." TBE reported 38.8 pCi/filter and the known value returned at 55.0 pCi/filter (range 39.3-73.3). The root cause investigation determined that the sample was not logged into the system correctly and therefore not prepared with the required tracer. To correct and prevent recurrence, personnel involved are to utilize a template to ensure all analyses are logged as required and the QA Manager will perform sample log review as a back up to ensure accuracy. Acceptable results returned in a later sample study, supporting effectiveness of corrective action.

B. NCR 24-03: ERA March MRAD-40 air particulate study GR-B evaluated as "Not Acceptable." TBE reported 42.1 pCi/filter and the known value returned at 22.2 pCi/filter (range 13.5-33.5). The root cause investigation determined that alpha-to-beta crosstalk was more significant than normal which caused the beta activity to report falsely high data. To correct and prevent recurrence, personnel involved are to adjust the alpha-to-beta crosstalk via correction calculation measures when high alpha activities are observed. Acceptable results returned in a later sample study, supporting effectiveness of corrective action.

C. NCR 24-05: ERA April RAD-137 water study GR-A evaluated as "Not Acceptable." TBE reported 35.2 pCi/L and the known value returned at 52.6 pCi/L (range 39.6-65.6). The root cause investigation determined that the provided samples contained a solids content that was significantly higher than the typical client samples tested by the laboratory. A set aliquot volume for prior ERA samples was used and not adjusted to account for the sudden increase in solid content. To correct and prevent recurrence, new sample types were ordered from ERA that used Am-231 to better reflect client sample testing and acceptable results were achieved. Acceptable results returned in a later sample study, supporting effectiveness of corrective action.

Attachment 3 – Cross Check Program

D. NCR 24-06: E&Z Analytics March E14092 air particulate study Co-60 evaluated as “Not Acceptable.” TBE reported 168 pCi and the known value returned at 126 pCi. Additionally, March E14093 soil Ce-141 evaluated as “Not Acceptable.” TBE reported 0.106 pCi/g and the known value returned at 0.071 pCi/g. The root cause investigation was unable to determine any anomaly thus no proposed corrective action. No recurrence has occurred.

E. CAR 24-02 (CAR 23-31): MAPEP February 24-MaS50 soil study Fe-55 evaluated as “Not Acceptable.” TBE reported 297 Bq/Kg and the known value returned at 650 Bq/Kb (range 455-845). The root cause investigation suspects that the current analytical procedure is not sufficient to add the interferences added to the sample by MAPEP. This investigation is still ongoing (See NCR 24-16) as the suggested corrective action did not provide desired results.

F. NCR 24-08: MAPEP February 24-MaS50 soil study Ni-63 evaluated as “Not Acceptable.” TBE reported 1070 Bq/Kg and the known value returned at 1530 Bq/Kb (range 1071-1989). The root cause investigation suspected that the sample contained added interferences that are not typically seen in client samples. All QC efforts associated with the sample were acceptable and no anomalies found, even after reanalysis. To correct and prevent recurrence, samples suspected of additional interferences will include the addition of Ni-59 tracer to determine yield results when calculating results. TBE analytical procedure TBE-2013 was updated to include this change.

G. NCR 24-09: MAPEP February 24-MaSU50 urine study Zn-65 evaluated as “Not Acceptable.” The root cause investigation determined that the sample was spiked lower than TBE’s typical detection limit and client requirements. The report was revised by MAPEP indicating “Not Evaluated,” resulting in this nuclide to not be considered a failure.

H. NCR 24-10: MAPEP February 24-MaW50 water study Tc-99 evaluated as “Not Acceptable.” TBE reported 9.95 Bq/L and the known value returned 7.47 Bq/L (range 5.23-9.71). The root cause investigation suspects Thorium interference that was not removed during the column separation process of the analytical procedure; however, it cannot be confirmed as all QC efforts associated with the sample were acceptable and with no anomalies found. To potentially correct and prevent recurrence, an additional rinse step was added to the procedure. Acceptable results returned in a later sample study, supporting effectiveness of corrective action.

I. NCR 24-11: MAPEP February 24-RdV50 vegetation study Sr-90 evaluated as “Not Acceptable.” TBE reported 0.276 Bq/sample and the known value returned 0.529 Bq/sample (range 0.370-0.688). The root cause investigation determined a laboratory accident resulting in a spilled (loss) of sample. No corrective action was performed as the cause was an unintentional sample spill.

J. NCR 24-14: ERA September MRAD-41 air particulate study U-234/238 evaluated as "Not Acceptable." TBE reported 14.0/14.2 pCi/filter and the known value returned at 31.1/30.9 pCi/filter (range 23.1-36.9). The root cause investigation determined that the laboratory technician placed double the amount of tracer in the sample by error. To correct and prevent recurrence, samples that have been digested/leached with carrier/tracer added will have a label placed over the cap indicating it has already been added. Additionally, the beaker that aliquot is put in should have markings to indicate carrier/tracer has already been added to the sample.

K. NCR 24-15: ERA September MRAD-41 water study Fe-55 evaluated as "Not Acceptable." TBE reported 615 pCi/L and the known value returned at 1230 pCi/L (range 723-1790). The root cause is still under investigation.

L. NCR 24-16: MAPEP August 24-MaS51 soil study Fe-55 evaluated as "Not Acceptable." TBE did not report a value and the known value returned 780 Bq/Kg (range 546-1014). The root cause is still under investigation.

M. NCR 24-17: MAPEP August 24-RdV51 vegetation study Sr-90 evaluated as "Not Acceptable." TBE reported 0.95 Bq/sample and the known value returned 2.39 Bq/sample (range 1.67-3.11). The root cause is still under investigation.

Additional details can be found in the report, "4th Quarter 2024 Quality Assurance Report," Teledyne Brown Engineering Environmental Services, 2024 [12]

GEL Laboratories Summary of Results

During 2024, forty-one (41) radioisotopes associated with six (6) matrix types were analyzed under GEL's Performance Evaluation program in participation with ERA, MAPEP, and Eckert & Ziegler Analytics. Matrix types were representative of client analyses performed during 2024. Of the four hundred sixty-three (463) total results, 96.1% (445 of 463) were found to be acceptable within the PT providers three sigma or other statistical criteria. The list below contains the type of matrix evaluated by GEL.

- Air Filter
- Cartridge
- Water
- Milk
- Soil
- Vegetation

Summary of Participation in the Eckert & Ziegler Analytics Environmental Cross-Check Program

Eckert & Ziegler Analytics provided samples for sixty-nine (69) individual environmental analyses. The accuracy of each result reported to Eckert & Ziegler Analytics, Inc. is measured by the ratio of GEL's result to the known value. Of the 69 analyses reported, 97% (67 out of 69) fell within the acceptance criteria.

Attachment 3 – Cross Check Program

Summary of Participation in the ERA MRaD PT Program

The ERA MRad program provided samples (MRAD-40 and MRAD-41) for one hundred forty-eight (148) individual environmental analyses reported. Of the 148 analyses reported, 97.3% (144 of the 148) fell within the PT provider's acceptance criteria.

Summary of Participation in the MAPEP Monitoring Program

MAPEP Series 49, Series 50 and Series 51 were analyzed by the laboratory. Of the two hundred five (205) analyses reported, 97.1% (199 out of 205) fell within the PT provider's acceptance criteria.

Summary of Participation in the ERA PT Program

The ERA program provided samples (RAD-136, RAD-137, RAD-138 and RAD-139) forforty-one (41) individual environmental analyses. Of the 41 analyses reported, 80.5% (33 of 41) fell within the PT provider's acceptance criteria.

Corrective Action Request and Report (CARR)

There are two categories of corrective action at GEL. One is corrective action implemented at the analytical and data review level in accordance with the analytical SOP. The other is formal corrective action documented by the Quality Systems Team in accordance with GL-QS-E-002. A formal corrective action is initiated when a nonconformance reoccurs or is so significant that permanent elimination or prevention of the problem is required. Formal corrective action investigations include root cause analysis.

GEL includes quality requirements in most analytical standard operating procedures to ensure that data are reported only if the quality control criteria are met or the quality control measures that did not meet the acceptance criteria are documented. A formal corrective action is implemented according to GL-QS-E-002 for Conducting Corrective/Preventive Action and Identifying Opportunities for Improvement. Recording and documentation is performed following guidelines stated in GL-QS-E-012 for Client NCR Database Operation.

Any employee at GEL can identify and report a nonconformance and request that corrective action be taken. Any GEL employee can participate on a corrective action team as requested by the QS team or Group Leaders. The steps for conducting corrective action are detailed in GL-QS-E-002. In the event that correctness or validity of the laboratory's test results in doubt, the laboratory will take corrective action. If investigations show that the results have been impacted, affected clients will be informed of the issue in writing within five (5) calendar days of the discovery.

Additional details can be found in the GEL Laboratories, 2024 Annual Quality Assurance Report [13].

Attachment 3 – Cross Check Program

Summary of Results: Split Sample Comparison Program

To meet the requirement of ODCM 3/4.12.3, INTERLABORATORY COMPARISON PROGRAM, several duplicate environmental samples each year are sent to a second independent laboratory to compare results. The laboratory chosen for these Quality Control Analyses is General Engineering Laboratories (GEL).

Duplicate samples were obtained for some samples of weekly air iodine and particulates, quarterly air particulate, sediment, broad leaf vegetation, milk, and surface water. These samples were analyzed by GEL as comparison and quality assurance of TBE results. The GEL duplicate analysis results are shown in Figure 8 below.

Agreement between TBE and GEL is based on criteria for accepting measurements in NRC Inspection Procedure 84525.

Air Iodine

I-131 was not detected (less than MDC) by both TBE and GEL for all 52 air samples.

Air Particulates

Gross beta was detected by GEL and TBE in 52 of the duplicate weekly APT samples. GEL detects significantly higher gross beta results. The variance between the lab results is due to different calibration energy sources used by each lab.

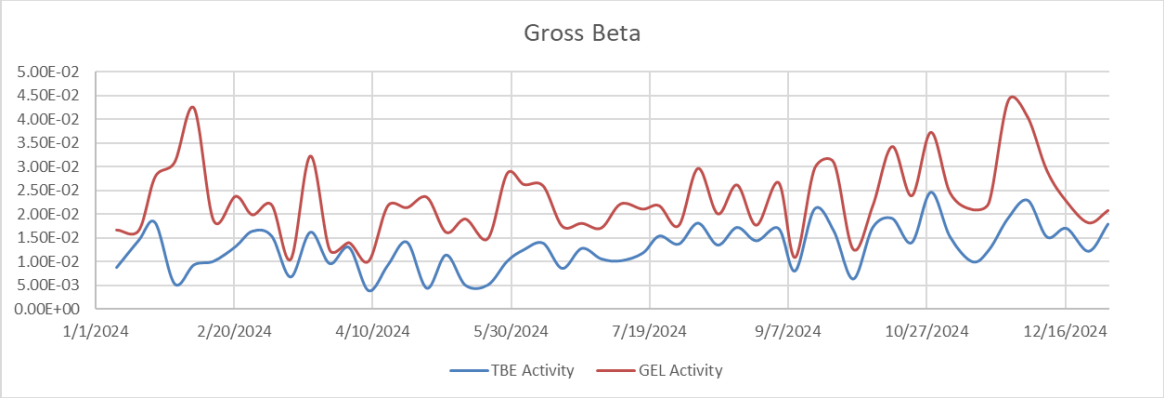

Figure 8, TBE vs GEL Gross Beta

Attachment 3 – Cross Check Program

All duplicate quarterly composite samples analyzed had positive results for Be-7.

AIR PARTICULATE COMPOSITES												
TBE						GEL			TBE / GEL Comparison			
CRS #	Collection Date	Nuclide	Decay Corrected Activity	1 Sigma Error	Resolution	CRS #	Nuclide	Decay Corrected Activity	Ratio	Acceptance Criteria		Agreement
L105027-1	4/1/2024	Be-7	4.18E-02	6.58E-03	6	665698	Be-7	4.75E-02	1.14	0.50	2.00	YES
L106116-1	7/1/2024	Be-7	4.48E-02	6.03E-03	7	679368	Be-7	6.35E-02	1.42	0.50	2.00	YES
L107591-1	9/30/2024	Be-7	5.14E-02	6.89E-03	7	694534	Be-7	5.35E-02	1.04	0.50	2.00	YES
L108423-1	1231/2024	Be-7	3.45E-02	7.46E-03	5	705163	Be-7	4.65E-02	1.35	0.50	2.00	YES

Surface Water

Naturally occurring K-40 was detected in 3 of the 4 TBE samples. K-40 was detected in all the GEL samples.

SURFACE WATER												
TBE						GEL			TBE / GEL Comparison			
CRS #	Collection Date	Nuclide	Decay Corrected Activity	1 Sigma Error	Resolution	CRS #	Nuclide	Decay Corrected Activity	Ratio	Acceptance Criteria		Agreement
L104783-2	3/26/24	K-40	<DL	N/A	N/A	660534	K-40	5.70E+01	No comparison result <MDL			
L105979-2	6/20/24	K-40	9.75E+01	3.07E+01	3	660534	K-40	5.81E+01	1.68	0.40	2.25	YES
L107261-2	9/10/24	K-40	7.85E+01	2.36E+01	3	688718	K-40	8.59E+01	0.91	0.40	2.25	YES
L108293-2	12/16/24	K-40	8.70E+01	2.25E+01	4	701797	K-40	1.23E+02	0.71	0.40	2.25	YES

Milk

Naturally occurring K-40 was detected in all duplicate samples. One of the duplicate samples was not in agreement. Because of the variability in environmental samples, i.e. time of year, food source, etc., one non-agreement does not constitute an issue with the primary laboratory.

MILK												
TBE						GEL			TBE / GEL Comparison			
CRS #	Collection Date	Nuclide	Decay Corrected Activity	1 Sigma Error	Resolution	CRS #	Nuclide	Decay Corrected Activity	Ratio	Acceptance Criteria		Agreement
L103783-3	1/2/2024	K-40	1.04E+03	6.96E+01	15	650724	K-40	1.69E+03	0.61	0.60	1.66	YES
L104258-3	2/6/2024	K-40	1.39E+03	8.54E+01	16	654784	K-40	1.16E+03	1.20	0.75	1.33	YES
L104554-3	3/4/2024	K-40	1.18E+03	8.59E+01	14	658049	K-40	2.88E+03	0.41	0.60	1.66	NO
L104924-3	4/2/2024	K-40	1.21E+03	8.85E+01	14	661871	K-40	1.33E+03	0.91	0.60	1.66	YES
L105417-3	5/6/2024	K-40	9.95E+02	9.00E+01	11	667076	K-40	7.12E+02	1.40	0.60	1.66	YES
L105734-3	6/3/2024	K-40	1.43E+03	8.60E+01	17	670549	K-40	1.45E+03	0.99	0.75	1.33	YES
L106306-3	7/16/2024	K-40	1.26E+03	8.86E+01	14	676712	K-40	1.05E+03	1.20	0.60	1.66	YES
L-106578-3	8/5/2024	K-40	1.12E+03	8.14E+01	14	679899	K-40	1.05E+03	1.07	0.60	1.66	YES
L-106916-3	9/2/2024	K-40	1.12E+03	7.80E+01	14	684421	K-40	7.11E+02	1.57	0.60	1.66	YES
L107493-3	10/13/2024	K-40	1.27E+03	8.70E+01	15	690798	K-40	1.13E+03	1.12	0.60	1.66	YES
L107807-3	11/4/2024	K-40	1.13E+03	8.47E+01	13	694373	K-40	8.41E+02	1.35	0.60	1.66	YES
L108132-3	12/3/2024	K-40	1.21E+03	8.33E+01	15	699396	K-40	1.07E+03	1.13	0.60	1.66	YES

Attachment 3 – Cross Check Program

Broad Leaf Vegetation

Naturally occurring K-40 was detected by GEL and TBE in all duplicate samples analyzed. Two of the seven duplicates did not agree. Sampling variability in the field is not accounted for when taking vegetation samples and some non-agreements are occasionally expected.

VEGETATION												
TBE						GEL			TBE / GEL Comparison			
CRS #	Collection Date	Nuclide	Decay Corrected Activity	1 Sigma Error	Resolution	CRS #	Nuclide	Decay Corrected Activity	Ratio	Acceptance Critera		Agreement
L106053-2	6/28/24	K-40	2.57E+03	1.81E+02	14	674053	K-40	4.70E+03	0.55	0.60	1.66	NO
L106053-5	6/28/24	K-40	2.69E+03	2.40E+02	11	674053	K-40	3.24E+03	0.83	0.60	1.66	YES
L106305-7	7/17/24	K-40	1.59E+03	7.48E+01	21	676698	K-40	1.69E+03	0.94	0.75	1.33	YES
L106921-1	9/4/24	K-40	7.01E+03	2.44E+02	29	684459	K-40	9.99E+03	0.70	0.75	1.33	NO
L106921-2	9/4/24	K-40	7.15E+03	2.49E+02	29	684459	K-40	8.86E+03	0.81	0.75	1.33	YES
L106921-3	9/4/24	K-40	8.87E+03	2.87E+02	31	684459	K-40	1.01E+04	0.88	0.75	1.33	YES
L108033-1	11/25/24	K-40	3.27E+03	2.57E+02	13	698117	K-40	5.17E+03	0.63	0.60	1.66	YES

Attachment 3 – Cross Check Program

TLD Annual QA Status Report

EXECUTIVE SUMMARY

Routine quality control (QC) testing was performed for dosimeters issued by the Environmental Dosimetry Company (EDC).

During this annual period 100% (72/72) of the individual dosimeters, evaluated against the EDC internal performance acceptance criteria (high-energy photons only), met the criterion for accuracy and 100% (72/72) met the criterion for precision. In addition, 100% (12/12) of the dosimeter sets evaluated against the internal tolerance limits met EDC acceptance criteria and 100% of independent testing passed the performance criteria.

One internal assessment was performed in 2024. There were no findings. Additional detail can be found in the Environmental Dosimetry Company, 2024 Annual Quality Assurance Status Report. [14]

Attachment 4, Errata/Corrections to Previous Reports

Attachment 4 – Errata/Corrections to Previous Reports

1.0 2021 Errata/Corrections

In 2021 the Common REMP ODCM Revision 0 was created and changed the name of location 13S1 to 14S2 to better reflect what sector the sample location was in. However, in the AREOR for 2021, 2022, and 2023, location 14S2 was reported under the old location name (13S1). This errata corrects the location name from the old to new (Notification 20990610).

Table 15, Direct and Immersion Radiation Measurements, 2021

(REMP DOSIMETRY RESULTS*)

STATION ID	ANNUAL NET DOSE (mrem)	GROSS ANNUAL DOSE (mrem)	QUARTERLY NET DOSE AND GROSS DOSE (mrem/StandardQuarter)							
			JAN - MAR		APR - JUN		JUL - SEP		OCT - DEC	
			Net	Gross	Net	Gross	Net	Gross	Net	Gross
SA-IDM-01G3 (C)	ND	60.5	ND	16.0	ND	14.1	ND	15.0	ND	15.4
SA-IDM-03G1 (C)	ND	64.6	ND	17.2	ND	14.8	ND	15.6	ND	17.0
SA-IDM-10G1 (C)	ND	63.8	ND	16.9	ND	14.9	ND	15.2	ND	16.8
SA-IDM-14G1 (C)	ND	63.6	ND	17.0	ND	14.6	ND	15.4	ND	16.5
SA-IDM-16G1 (C)	ND	56.9	ND	15.1	ND	13.1	ND	13.9	ND	14.7
SA-IDM-03H1 (C)	ND	54.7	ND	14.9	ND	12.8	ND	13.0	ND	14.0
SA-IDM-01Q1 **	85.9	140.1	**22.6**	36.2	**19.5**	33.1	**21.0**	34.5	**22.7**	36.3
SA-IDM-01X2	ND	54.9	ND	14.7	ND	12.8	ND	13.1	ND	14.3
SA-IDM-02S2A	ND	61.5	ND	16.5	ND	14.2	ND	14.8	ND	16.0
SA-IDM-02X4	ND	58.6	ND	15.3	ND	13.8	ND	14.4	ND	15.0
SA-IDM-03X1	ND	54.1	ND	14.3	ND	12.6	ND	13.3	ND	13.8
SA-IDM-04X1	ND	54.9	ND	14.7	ND	12.8	ND	13.5	ND	14.0
SA-IDM-05X1	ND	52.5	ND	13.9	ND	12.5	ND	12.8	ND	13.3
SA-IDM-06X2	ND	60.4	ND	17.4	ND	14.9	ND	15.9	ND	12.2
SA-IDM-07S1	ND	54.0	ND	14.6	ND	12.4	ND	13.3	ND	13.6
SA-IDM-08S1	ND	47.4	ND	12.8	ND	10.7	ND	11.5	ND	12.4
SA-IDM-08S2	ND	47.0	ND	12.9	ND	10.7	ND	11.2	ND	12.1
SA-IDM-10S1	ND	51.8	ND	14.1	ND	11.9	ND	12.7	ND	13.0
SA-IDM-11S1	ND	49.3	ND	13.2	ND	11.3	ND	11.9	ND	12.8
SA-IDM-12S1	ND	60.9	ND	16.3	ND	13.3	ND	15.2	ND	16.1
SA-IDM-~~13S1~~ 14S2	ND	69.5	ND	17.8	ND	15.2	ND	17.2	ND	19.3
SA-IDM-15S3	ND	70.0	ND	18.3	ND	15.7	ND	17.3	ND	18.8

Attachment 4 – Errata/Corrections to Previous Reports

2.0 2022 Errata/Corrections

In 2021 the Common REMP ODCM Revision 0 was created and changed the name of location 13S1 to 14S2 to better reflect what sector the sample location was in. However, in the AREOR for 2021, 2022, and 2023, location 14S2 was reported under the old location name (13S1). This errata corrects the location name from the old to new (Notification 20990610).

Table 12, Environmental Direct Radiation Dosimetry Sample Results

Monitoring Location	Quarterly Baseline, B_Q (mrem)	Normalized Quarterly Monitoring Data, M_Q (mrem)				Quarterly Facility Dose, $F_Q=M_Q-B_Q$ (mrem)				Annual Baseline, B_A (mrem)	Annual Monitoring Data, M_A (mrem)	Annual Facility Dose, $F_A=M_A-B_A$ (mrem)
		1	2	3	4	1	2	3	4			
01Q1	13.6	33.5	32.5	33.9	32.2	20.0	18.9	20.3	18.6	54.6	132.1	77.4
16Q2	13.6	29.3	28.4	29.6	28.9	15.8	14.9	16.1	15.3	54.6	116.3	61.6
01X2	13.6	14.0	13.1	13.9	13.6	ND	ND	ND	ND	54.6	54.6	ND
02X4	11.4	15.3	13.9	14.3	14.5	ND	ND	ND	ND	45.7	58.0	12.2
03X1	10.0	13.4	13.0	12.9	13.2	ND	ND	ND	ND	40.2	52.5	12.4
04X1	11.9	13.9	12.7	13.2	13.2	ND	ND	ND	ND	47.8	52.9	ND
05X1	10.7	13.3	12.6	12.8	12.6	ND	ND	ND	ND	42.8	51.3	ND
06X2	15.0	14.4	13.9	13.8	13.6	ND	ND	ND	ND	60.5	55.7	ND
16X3	11.8	13.3	14.3	13.4	12.8	ND	ND	ND	ND	47.6	53.8	ND
2S2A	16.6	15.7	14.8	15.1	14.6	ND	ND	ND	ND	68.0	60.2	ND
04X1 Dup	11.9	14.0	12.7	13.3	13.1	ND	ND	ND	ND	47.8	53.1	ND
07S1	16.6	13.7	13.1	13.0	12.9	ND	ND	ND	ND	66.9	52.7	ND
08S1	10.5	12.0	11.3	11.4	11.4	ND	ND	ND	ND	43.2	46.2	ND
08S2	10.8	12.1	12.4	12.6	11.3	ND	ND	ND	ND	44.3	48.4	ND
10S1	11.6	12.8	11.3	11.7	12.3	ND	ND	ND	ND	47.3	48.1	ND
11S1	10.7	12.8	12.2	12.8	12.7	ND	ND	ND	ND	43.8	50.5	ND
12S1	13.4	15.5	14.9	15.3	14.7	ND	ND	ND	ND	53.8	60.4	ND
~~13S1~~ 14S2	15.9	TNR	17.2	17.3	18.9	TNR	ND	ND	ND	61.7	71.2	ND
15S1	10.8	12.9	12.6	12.4	NR	ND	ND	ND	NR	43.3	50.6	ND
15S2	11.8	14.7	13.7	13.6	13.6	ND	ND	ND	ND	53.3	55.6	ND
15S3	15.9	17.8	17.9	17.4	16.7	ND	ND	ND	ND	62.8	69.9	ND
16S1	12.8	14.9	15.0	15.3	14.6	ND	ND	ND	ND	51.4	59.9	ND
04D2	13.0	15.7	15.4	15.3	14.8	ND	ND	ND	ND	52.3	61.1	ND
05D1	11.7	14.9	14.5	13.9	13.9	ND	ND	ND	ND	46.9	57.3	10.4

Attachment 4 – Errata/Corrections to Previous Reports

3.0 2023 Errata/Corrections

In 2021 the Common REMP ODCM Revision 0 was created and changed the name of location 13S1 to 14S2 to better reflect what sector the sample location was in. However, in the AREOR for 2021, 2022, and 2023, location 14S2 was reported under the old location name (13S1). This errata corrects the location name from the old to new (Notification 20990610).

Attachment 2 - Data Table

Table 12, Environmental Direct Radiation Dosimetry Sample Results

Monitoring Location	Quarterly Baseline, B_Q (mrem)	Normalized Quarterly Monitoring Data, M_Q (mrem)				Quarterly Facility Dose, $F_Q=M_Q-B_Q$ (mrem)				Annual Baseline, B_A (mrem)	Annual Monitoring Data, M_A (mrem)	Annual Facility Dose, $F_A=M_A-B_A$ (mrem)
		1	2	3	4	1	2	3	4			
01Q1	13.6	33.3	34.1	33.0	32.5	19.7	20.5	19.5	18.9	54.6	132.9	78.3
16Q2	13.6	28.9	30.4	29.6	30.4	15.3	16.8	16.1	16.9	54.6	119.3	64.7
01X2	13.0	13.6	13.8	13.7	14.7	ND	ND	ND	ND	52.1	55.8	ND
02X4	13.7	15.0	14.3	14.5	14.7	ND	ND	ND	ND	54.7	58.5	ND
03X1	12.3	12.9	12.9	12.6	13.1	ND	ND	ND	ND	49.0	51.5	ND
04X1	11.9	12.9	12.9	13.2	13.7	ND	ND	ND	ND	47.8	52.7	ND
05X1	10.7	12.3	12.3	12.4	12.7	ND	ND	ND	ND	42.8	49.7	ND
06X2	15.0	14.0	14.3	13.9	14.9	ND	ND	ND	ND	60.5	57.1	ND
16X3	12.2	13.1	12.6	12.8	13.5	ND	ND	ND	ND	48.8	52.1	ND
2S2A	14.6	15.1	14.9	15.0	15.3	ND	ND	ND	ND	58.4	60.3	ND
04X1 Dup	11.9	13.1	12.9	13.0	13.6	ND	ND	ND	ND	47.8	52.6	ND
07S1	12.5	13.4	13.0	12.9	13.6	ND	ND	ND	ND	49.9	52.9	ND
08S1	11.0	11.2	11.4	11.3	11.5	ND	ND	ND	ND	44.1	45.4	ND
08S2	11.3	11.4	11.1	10.9	11.6	ND	ND	ND	ND	45.3	45.0	ND
10S1	11.6	12.4	12.3	12.0	13.2	ND	ND	ND	ND	47.3	49.9	ND
11S1	10.7	12.2	11.8	11.3	12.9	ND	ND	ND	ND	43.8	48.3	ND
12S1	14.4	15.1	14.9	14.3	18.4	ND	ND	ND	ND	57.7	62.6	ND
~~13S1~~ 14S2	16.3	17.3	17.1	16.3	17.9	ND	ND	ND	ND	65.2	68.6	ND
15S1	10.8	13.0	12.9	13.4	12.7	ND	ND	ND	ND	43.3	52.0	ND
15S2	13.2	13.9	14.1	13.6	13.8	ND	ND	ND	ND	52.6	55.4	ND
15S3	16.0	18.2	17.4	18.2	17.3	ND	ND	ND	ND	63.9	71.1	ND
16S1	12.8	14.8	14.9	15.5	15.0	ND	ND	ND	ND	51.4	60.2	ND
04D2	13.0	15.2	15.4	15.4	15.6	ND	ND	ND	ND	52.3	61.7	ND
05D1	13.6	14.3	14.9	14.6	14.3	ND	ND	ND	ND	54.3	58.1	ND
10D1	13.7	14.8	15.6	15.6	15.2	ND	ND	ND	ND	55.2	61.2	ND
14D1	12.0	13.5	13.8	14.1	13.4	ND	ND	ND	ND	48.1	54.8	ND
15D1	13.6	14.5	15.0	15.0	15.0	ND	ND	ND	ND	54.7	59.5	ND
02E1	12.3	13.8	14.3	14.2	14.2	ND	ND	ND	ND	49.5	56.5	ND
03E1	10.4	12.8	12.7	12.4	12.8	ND	ND	ND	ND	42.0	50.7	ND
11E2	13.6	15.5	15.8	15.7	15.8	ND	ND	ND	ND	54.7	62.8	ND
12E1	13.7	15.5	15.7	15.7	16.2	ND	ND	ND	ND	55.4	63.1	ND
13E1	10.9	12.6	12.6	12.0	13.0	ND	ND	ND	ND	44.0	50.2	ND
16E1	12.8	14.3	14.7	14.0	14.4	ND	ND	ND	ND	51.7	57.4	ND
01F1	17.1	18.6	18.8	18.7	18.8	ND	ND	ND	ND	68.3	74.8	ND
02F2	12.8	13.3	13.5	13.3	13.6	ND	ND	ND	ND	51.2	53.7	ND
02F5	12.8	15.1	14.8	15.3	14.6	ND	ND	ND	ND	51.4	59.7	ND
02F6	11.9	13.6	14.0	13.3	13.9	ND	ND	ND	ND	47.6	54.8	ND
03F2	11.0	13.3	13.2	12.9	13.5	ND	ND	ND	ND	44.4	52.9	ND
03F3	11.0	13.3	13.1	13.3	13.6	ND	ND	ND	ND	44.2	53.3	ND
04F2	10.7	12.4	13.1	12.6	12.8	ND	ND	ND	ND	43.1	51.0	ND
05F1	11.5	13.7	13.3	13.4	13.7	ND	ND	ND	ND	46.1	54.1	ND
06F1	11.3	11.5	11.3	10.9	11.4	ND	ND	ND	ND	45.1	45.1	ND
07F2	13.1	13.8	13.4	13.7	14.0	ND	ND	ND	ND	52.3	54.9	ND
09F1	15.0	12.8	12.7	16.2	13.0	ND	ND	ND	ND	59.9	54.7	ND
09F2	14.0	15.6	16.6	12.4	16.3	ND	ND	ND	ND	56.3	60.9	ND
10F2	13.2	14.6	15.3	15.1	15.4	ND	ND	ND	ND	52.9	60.5	ND
11F1	13.8	15.7	16.2	16.1	16.1	ND	ND	ND	ND	55.4	64.1	ND
12F1	12.9	14.8	15.4	15.2	15.3	ND	ND	ND	ND	51.7	60.7	ND