Beaver Valley Power Station
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L-26-096
May 1 , 2026

10 CFR 50.36a

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

SUBJECT:
Beaver Valley Power Station, Unit Nos. 1 and 2
Docket No. 50-334, License No. DPR-66
Docket No. 50-412, License No. NPF-73
Submittal of 2025 Annual Radioactive Effluent Release Report, 2025 Annual Radiological Environmental Operating Report, and 2025 Annual Environmental Operating Report (Non-Radiological)

Vistra Operations Company LLC (Vistra OpCo) hereby submits the Beaver Valley Power Station (BVPS) *2025 Annual Radioactive Effluent Release Report* and the *2025 Annual Radiological Environmental Operating Report*. These reports are provided in Enclosure A, in accordance with 10 CFR 50.36a and BVPS, Unit Nos. 1 and 2 Technical Specifications 5.5.1, 5.6.1, and 5.6.2.

Vistra OpCo also submits the *2025 Annual Environmental Operating Report (Non-Radiological)* in accordance with the BVPS, Unit No. 2 Operating License, Appendix B – Environmental Protection Plan. This report is provided in Enclosure B.

There are no regulatory commitments contained in this submittal. If there are any questions or if additional information is required, please contact Mr. Scott York, Manager - Radiation Protection/Chemistry, at (724) 682-7669.

Sincerely,

Barry N. Blair

Enclosures:
A. *2025 Annual Radioactive Effluent Release Report* and *2025 Annual Radiological Environmental Operating Report*
B. *2025 Annual Environmental Operating Report (Non-Radiological)*

cc: NRC Region I Administrator
NRC Resident Inspector
NRR Project Manager
Director BRP/DEP
Site BRP/DEP Representative
NRC Region I Health Physics Inspector

Enclosure A
L-26-096

2025 Annual Radioactive Effluent Release Report
and
2025 Annual Radiological Environmental Operating Report
(Reports follow)

2025

Annual Radioactive Effluent Release Report

Document Number: RTL# A9.690E

BEAVER VALLEY POWER STATION

ENVIRONMENTAL & CHEMISTRY SECTION

Technical Report Approval:

2025

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (ARERR)

BEAVER VALLEY POWER STATION

UNIT NOS. 1 AND 2

LICENSES DPR-66 AND NPF-73

Prepared by: Donald J Salera Donald J Salera 16182 Date: 4/30/26

Reviewed by: Michael Levy Michael Levy (300655) Date: 4/30/26

Approved by: Scott W. York Scott W. York Date: 4/30/26

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1.0 LIST OF ACRONYMS AND DEFINITIONS

1. Airborne Activity Sampling: Sampling of air through the collection of particulates and radionuclides on filter media, collection of noble gases in a container, and collection of water vapor containing tritium.

2. Alpha Particle (α): A charged particle emitted from the nucleus of an atom having a mass and charge equal in magnitude of a helium nucleus.

3. BWR: Boiling Water Reactor

4. 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.

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

6. Counting Error: An estimate of the two-sigma uncertainty associated with the sample results based on total counts accumulated.

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 (TLDs), optically stimulated luminescent dosimeters (OSLDs), and/or pressurized ionization chambers.

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

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

11. Ingestion Pathway: The ingestion pathway includes milk, fish, and garden produce. Meat or other food products may also be included.

12. ISFSI: Independent Spent Fuel Storage Installation

13. Lower Limit of Detection (LLD): The smallest concentration of radioactive material in a sample that will yield a net count (above system background) that will be detected with 95% probability with a 5% probability of a false conclusion that a blank observation represents "real" signal.

14. 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.

15. MDC: Minimum Detectable Concentration, essentially synonymous with MDA for the purposes of radiological monitoring.

16. Mean: The average, i.e., the sum of results divided by the number of results.

17. Microcurie (µCi): 3.7 x 10^4 disintegrations per second, or 2.22 x10^6 disintegrations per minute.

18. millirem (mrem): 1/1000 rem; a unit of radiation dose equivalent in tissue.

19. Milliroentgen (mR): 1/1000 Roentgen; a unit of exposure to X- or gamma radiation.

20. MWe: Megawatts Electric

21. MWTh: Megawatts Thermal

22. NA: Not Applicable

23. NEI: Nuclear Energy Institute

24. NRC: Nuclear Regulatory Commission

25. ODCM: Offsite Dose Calculation Manual

26. OSLD: Optically Stimulated Luminescence Dosimeter

27. Protected Area: The fenced area immediately surrounding the Plant. Access to the protected area requires a security badge or escort.

28. PWR: Pressurized Water Reactor

29. REC: Radiological Effluent Control

30. REMP: Radiological Environmental Monitoring Program

31. Restricted Area: Any area where access is controlled for the purpose of protecting individuals from exposure to radiation or radioactive materials.

32. SLCs: Selected Licensee Commitments

33. TEDE: Total Effective Dose Equivalent (TEDE) means the sum of the effective dose equivalent (for external exposures) and the committed effective dose equivalent (for internal exposures).

34. TLD: Thermoluminescent Dosimeter

35. TRM: Technical Requirements Manual

36. TS: Technical Specification

2.0 EXECUTIVE SUMMARY

Beaver Valley Power Station (BVPS) Radiological Effluent Control (REC) Program was established to limit the quantities of radioactive material that may be released based on calculated radiation doses or dose rates. Dose to Members of the Public due to radioactive materials released from the plant is limited by Appendix I of 10 CFR 50 and by 40 CFR 190. Operational doses to the public during 2025 were calculated to be very small compared to the limits required by regulation and compared to other sources of radiation dose and pose no health hazard. These doses are summarized and compared to the regulatory limits in Section 2.1, Comparison to Regulatory Limits, below.

The Annual Radioactive Effluent Release Report (ARERR) is published per REC requirements and provides data related to plant operation, including: quantities of radioactive materials released in liquid and gaseous effluents; radiation doses to members of the public; solid radioactive waste shipped offsite for disposal; and other information as required by site licensing documents.

In 2025 the Land Use Census dose assessments due to radioactive gaseous effluents showed that the critical receptor for Beaver Valley Power Station is child, due to inhalation, at 0.89 km NW. The maximum Annual Organ Dose calculated for this receptor was 2.44E-01 mrem, to the lung. This annual dose is a small fraction of the 10 CFR 50, Appendix I guideline of 15 mrem to the Maximum Organ per reactor unit.

Solid radioactive waste shipped offsite for disposal included 413 Curies and 479 m^3, shipped in 21 shipments.

In addition to monitoring radioactive effluents, BVPS has a Radiological Environmental Monitoring Program (REMP) that monitors for buildup of radioactivity in the offsite environment. Data from the REMP is published in the Annual Radiological Environmental Operating Report (AREOR).

2.1 Comparison to Regulatory Limits

During 2025 all solid, liquid, and gaseous radioactive effluents from Beaver Valley Power Station were well below regulatory limits, as summarized in Table 1, Table 2, Table 3.

Table 1, Beaver Valley Power Station Unit 1 - Dose Summary[1]

		Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual
Liquid Effluents						
Liquid Effluent Dose Limit, Total Body	**Limit**	**1.5 mrem**	**1.5 mrem**	**1.5 mrem**	**1.5 mrem**	**3 mrem**
	Total Body Dose	6.29E-03	3.16E-03	7.80E-03	3.23E-03	2.05E-02
	% of Limit	0.42	0.21	0.52	0.22	0.68
Liquid Effluent Dose Limit, Any Organ	**Limit**	**5 mrem**	**5 mrem**	**5 mrem**	**5 mrem**	**10 mrem**
	Max Organ Dose	7.14E-03	3.24E-03	8.62E-03	4.30E-03	2.33E-02
	% of Limit	0.14	0.06	0.17	0.09	0.23
Gaseous Effluents						
Gaseous Effluent Dose Limit, Gamma Air (Noble Gas)	**Limit**	**5 mrad**	**5 mrad**	**5 mrad**	**5 mrad**	**10 mrad**
	Gamma Air Dose	0.00E+00	0.00E+00	0.00E+00	5.10E-03	5.10E-03
	% of Limit	0.00	0.00	0.00	0.10	0.05
Gaseous Effluent Dose Limit, Beta Air (Noble Gas)	**Limit**	**10 mrad**	**10 mrad**	**10 mrad**	**10 mrad**	**20 mrad**
	Beta Air Dose	0.00E+00	0.00E+00	0.00E+00	7.76E-06	7.76E-06
	% of Limit	0.00	0.00	0.00	0.00	0.0
Gaseous Effluent Dose Limit, Total Body Dose (Noble Gas)	**Limit**	**2.5 mrem**	**2.5 mrem**	**2.5 mrem**	**2.5 mrem**	**5 mrem**
	Total Body Dose	0.00E+00	0.00E+00	0.00E+00	3.40E-03	3.40E-03
	% of Limit	0.00	0.00	0.00	0.14	0.07
Gaseous Effluent Dose Limit, Skin Dose (Noble Gas)	**Limit**	**7.5 mrem**	**7.5 mrem**	**7.5 mrem**	**7.5 mrem**	**15 mrem**
	Skin Dose	0.00E+00	0.00E+00	0.00E+00	5.62E-03	5.62E-03
	% of Limit	0.00	0.00	0.00	0.07	0.04
Gaseous Effluent Organ Dose Limit (Iodine, Tritium, Particulates with > 8-day half-life)	**Limit**	7.5 mrem	7.5 mrem	7.5 mrem	7.5 mrem	15 mrem
	Max Organ Dose	2.20E-02	1.89E-02	1.58E-02	2.13E-02	7.80E-02
	% of Limit	0.29	0.25	0.21	0.28	0.52

[1] Table 1 demonstrates compliance with 10 CFR Part 50, App. I Limits.

Table 2, Beaver Valley Power Station Unit 2 - Dose Summary[2]

		Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual
Liquid Effluents						
Liquid Effluent Dose Limit, Total Body	**Limit**	**1.5 mrem**	**1.5 mrem**	**1.5 mrem**	**1.5 mrem**	**3 mrem**
	Total Body Dose	2.20E-03	8.50E-03	8.50E-03	3.02E-03	2.22E-02
	% of Limit	0.15	0.57	0.57	0.20	0.74
Liquid Effluent Dose Limit, Any Organ	**Limit**	**5 mrem**	**5 mrem**	**5 mrem**	**5 mrem**	**10 mrem**
	Max Organ Dose	2.58E-03	8.85E-03	9.17E-03	7.68E-03	2.83E-02
	% of Limit	0.05	0.18	0.18	0.15	0.28
Gaseous Effluents						
Gaseous Effluent Dose Limit, Gamma Air (Noble Gas)	**Limit**	**5 mrad**	**5 mrad**	**5 mrad**	**5 mrad**	**10 mrad**
	Gamma Air Dose	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	% of Limit	0.00	0.00	0.00	0.00	0.00
Gaseous Effluent Dose Limit, Beta Air (Noble Gas)	**Limit**	**10 mrad**	**10 mrad**	**10 mrad**	**10 mrad**	**20 mrad**
	Beta Air Dose	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	% of Limit	0.00	0.00	0.00	0.00	0.00
Gaseous Effluent Dose Limit, Total Body Dose (Noble Gas)	**Limit**	**2.5 mrem**	**2.5 mrem**	**2.5 mrem**	**2.5 mrem**	**5 mrem**
	Total Body Dose	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	% of Limit	0.00	0.00	0.00	0.00	0.00
Gaseous Effluent Dose Limit, Skin Dose (Noble Gas)	**Limit**	**7.5 mrem**	**7.5 mrem**	**7.5 mrem**	**7.5 mrem**	**15 mrem**
	Skin Dose	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	% of Limit	0.00	0.00	0.00	0.00	0.00
Gaseous Effluent Organ Dose Limit (Iodine, Tritium, Particulates with > 8-day half-life)	Limit	**7.5 mrem**	**7.5 mrem**	**7.5 mrem**	**7.5 mrem**	**15 mrem**
	Max Organ Dose	4.32E-02	4.44E-02	1.06E-01	5.07E-02	2.44E-01
	% of Limit	0.58	0.59	1.41	0.68	1.63

[2] Table 2 demonstrates compliance with 10 CFR Part 50, App. I Limits.

Table 3, Total Annual Offsite-Dose Comparison to 40 CFR 190 Limits for BVPS[3]

	Whole Body	**Thyroid**	**Max Other Organ**
Gaseous[4]			
Unit 1 NG	5.11E-03	5.11E-03	5.11E-03
Unit 1 Particulates/Iodine	7.77E-02	7.77E-02	7.80E-02
Unit 2 NG	0.00E+00	0.00E+00	0.00E+00
Unit 2 Particulates/Iodine	2.44E-01	2.44E-01	2.44E-01
Total	3.27E-01	3.27E-01	3.27E-01
Carbon-14			
Unit 1	0.00E+00	0.00E+00	0.00E+00
Unit 2	0.00E+00	0.00E+00	0.00E+00
Total	0.00E+00	0.00E+00	0.00E+00
Liquid			
Unit 1	2.05E-02	1.59E-02	2.33E-02
Unit 2	2.22E-02	2.24E-02	2.83E-02
Total	4.27E-02	3.83E-02	5.16E-02
Direct Shine	0.00E+00	0.00E+00	0.00E+00
Total Site Dose	3.70E-01	3.65E-01	3.79E-01
Total w/Other Nearby Facility[5]	**-**	**-**	**-**
Limit	**25 mrem**	**75 mrem**	**25 mrem**
% of Limit	**1.48**	**0.49**	**1.52**

[3] Table 3 is a summation of Units to show compliance with 40 CFR Part 190 Limits.
[4] Gaseous dose values in Table 3 include organ dose from Noble Gas, Iodine, Tritium, and particulates.
[5] Other fuel cycle sources within 5 miles of the site are considered in this analysis.

3.0 INTRODUCTION

3.1 About Nuclear Power

Commercial nuclear power plants are generally classified as either Boiling Water Reactors (BWRs) or Pressurized Water Reactors (PWRs), based on their design. A BWR includes a single coolant system where water used as reactor coolant boils as it passes through the core and the steam generated is used to turn the turbine generator for power production. A PWR, in contrast, includes two separate water systems: radioactive reactor coolant and a secondary system. Reactor coolant is maintained under high pressure, preventing boiling. The high-pressure coolant is passed through a heat exchanger called a steam generator where the secondary system water is boiled, and the steam is used to turn the turbine generator for power production.

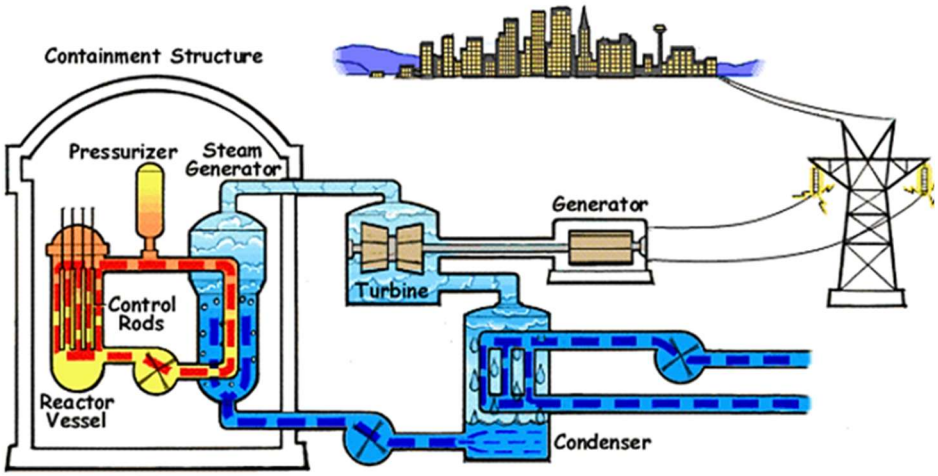

Figure 1, Pressurized Water Reactor (PWR) **[1]**

3.1 (Continued)

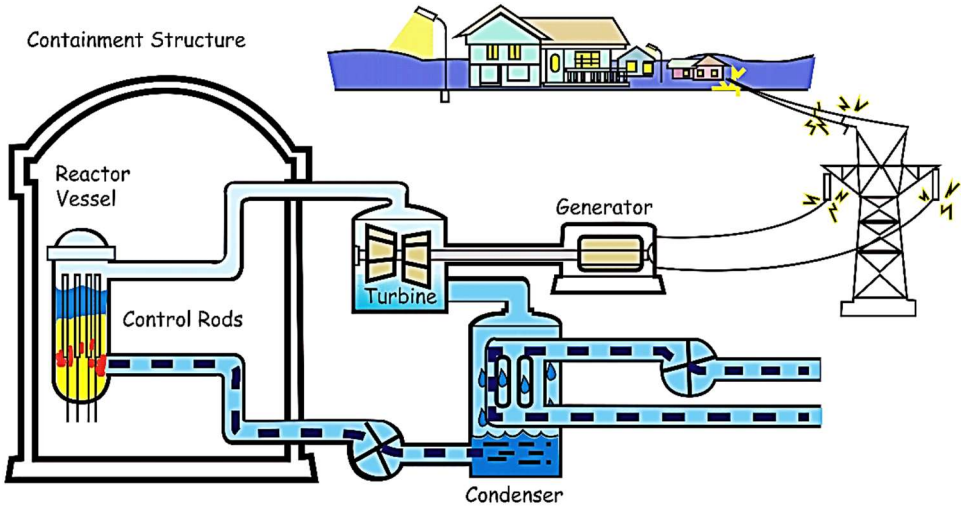

Figure 2, Boiling Water Reactor (BWR) **[2]**

Electricity is generated by a nuclear power plant similarly to the way that electricity is generated at other conventional types of power plants, such as those driven by coal or natural gas. Water is boiled to generate steam; the steam turns a turbine that is attached to a generator and the steam is condensed back into water to be returned to the boiler. What makes nuclear power different from these other types of power plants is that the heat is generated by fission and decay reactions occurring within and around the core containing fissionable uranium (U-235).

Nuclear fission occurs when certain nuclides (primarily U-233, U-235, or Pu-239) absorb a neutron and break into several smaller nuclides (called fission products) as well as some additional neutrons.

Fission results in production of radioactive materials including gases and solids that must be contained to prevent release or treated prior to release. These effluents are generally treated by filtration and/or hold-up prior to release. Releases are generally monitored by sampling and by continuously indicating radiation monitors. The effluent release data is used to calculate doses in order to ensure that dose to the public due to plant operation remains within required limits.

3.2 About Radiation Dose

Ionizing radiation, including alpha, beta, and gamma radiation from radioactive decay, has enough energy to break chemical bonds in tissues and result in damage to tissue or genetic material. The amount of ionization that will be generated by a given exposure to ionizing radiation is quantified as dose. Radiation dose is generally reported in units of millirem (mrem) in the US.

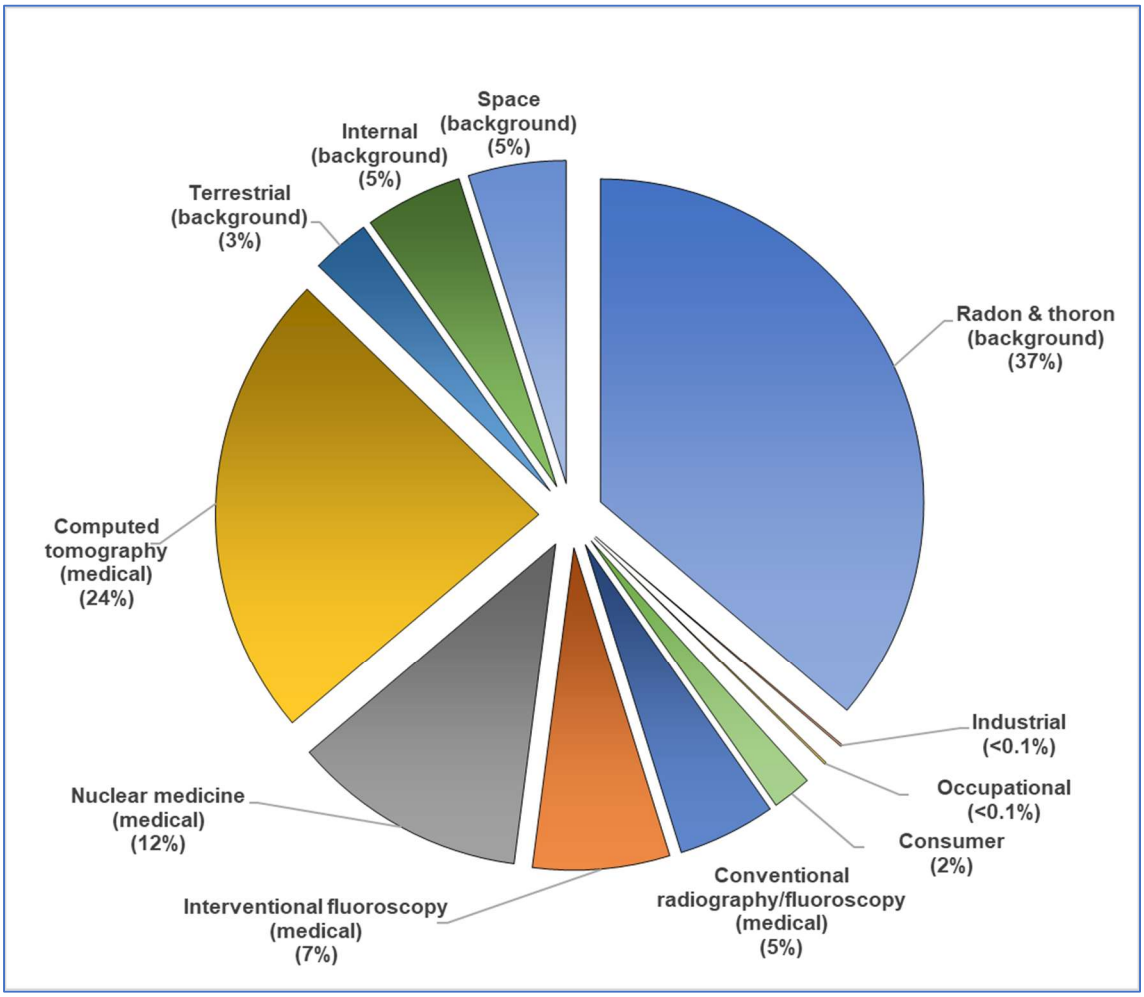

Figure 3, Sources of Radiation Exposure (NCRP Report No. 160) **[3]**

3.2 (Continued)

The National Council on Radiation Protection (NCRP) has evaluated the population dose for the US and determined that the average individual is exposed to approximately 620 mrem per year [3]. There are many sources for radiation dose, ranging from natural background sources to medical procedures, air travel, and industrial processes. Approximately half (310 mrem) of the average exposure is due to natural sources of radiation including exposure to Radon, cosmic radiation, and internal radiation and terrestrial due to naturally occurring radionuclides. The remaining 310 mrem of exposure is due to man-made sources of exposure, with the most significant contributors being medical (48%) due to radiation used in various types of medical scans and treatments. Of the remaining 2% of dose, most is due to consumer activities such as air travel, smoking cigarettes, and building materials. A small fraction of this 2% is due to industrial activities including generation of nuclear power.

Readers that are curious about common sources and effects of radiation dose that they may encounter can find excellent sources of information from the Health Physics Society, including the Radiation Fact Sheets [4], and from the US Nuclear Regulatory Commission website [5].

3.3 About Dose Calculation

Concentrations of radioactive material in the environment resulting from plant operations are very small and it is not possible to determine doses directly using measured activities of environmental samples. To overcome this, Dose Calculations based on measured activities of effluent streams are used to model the dose impact for Members of the Public due to plant operation and effluents. There are several mechanisms that can result in dose to Members of the Public, including: Ingestion of radionuclides in food or water; Inhalation of radionuclides in air; Immersion in a plume of noble gases; and Direct Radiation from the ground, the plant or from an elevated plume.

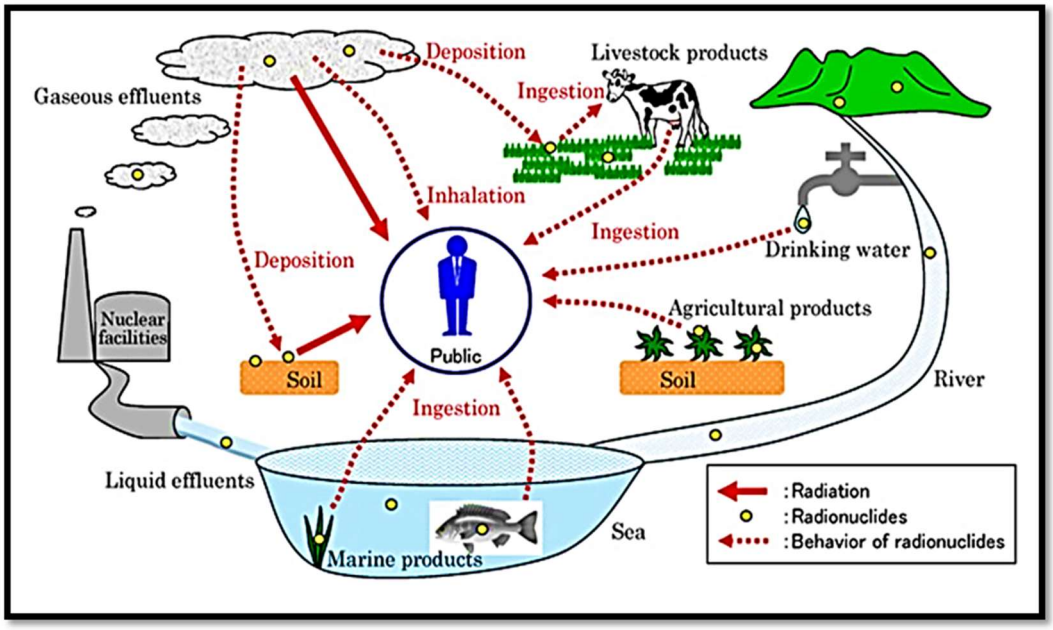

Figure 4, Potential exposure pathways to Members of the Public due to Plant Operations **[6]**

The Offsite Dose Calculation Manual (ODCM) specifies the methodology used to obtain the doses in the Dose Assessment section of this report. The methodology in the ODCM is based on NRC Regulatory Guide 1.109 [7] and NUREG-0133 [8]. Doses are calculated by determining what the nuclide concentration will be in air, water, on the ground, or in food products based on plant effluent releases. Release points are continuously monitored to quantify what concentrations of nuclides are being released. For gaseous releases meteorological data is used to determine how much of the released activity will be present at a given location outside of the plant either deposited onto the ground or in gaseous form. Intake patterns and nuclide bio-concentration factors are used to determine how much activity will be transferred into animal milk or meat. Finally, human ingestion factors and dose factors are used to determine how much activity will be consumed and how much dose the consumer will receive. Inhalation dose is calculated by determining the concentration of nuclides and how much air is breathed by the individual.

3.3 (Continued)

For liquid releases, dilution and mixing factors are used to model the environmental concentrations in water. Drinking water pathways are modeled by determining the concentration of nuclides in the water at the point where the drinking water is sourced. Fish and invertebrate pathways are determined by using concentration at the release point, bioaccumulation factors for the fish or invertebrate and an estimate of the quantity of fish consumed.

Each year a Land Use Census is performed to determine what potential dose pathways currently exist within a five-mile radius around the plant, the area most affected by plant operations. The Annual Land Use Census identifies the locations of vegetable gardens, nearest residences, milk animals and meat animals. The data from the census is used to determine who is the likely to be most exposed to radiation dose as a result of plant operation.

There is significant uncertainty in dose calculation results, due to modeling dispersion of material released and bioaccumulation factors, as well as assumptions associated with consumption and land-use patterns. Even with these sources of uncertainty, the calculations do provide a reasonable estimate of the order of magnitude of the exposure. Conservative assumptions are made in the calculation inputs such as the number of various foods and water consumed, the amount of air inhaled, and the amount of direct radiation exposure from the ground or plume, such that the actual dose received are likely lower than the calculated dose. Even with the built-in conservatism, doses calculated for the highest hypothetical exposed individual due to plant operation are a very small fraction of the annual dose that is received due to other sources. The low calculated doses due to plant effluents, along with REMP results, serve to provide assurance that the site is not having a negative impact on the environment or people living near the plant.

4.0 DOSE ASSESSMENT FOR PLANT OPERATIONS

4.1 Regulatory Limits

Regulatory limits are detailed in Station Licensing documents such as the Offsite Dose Calculation Manual (ODCM) and Licensing Commitments, and Technical Specifications. These documents contain the limits to which BVPS must adhere. BVPS drives to maintain the philosophy to keep dose "as low as reasonably achievable" (ALARA) and actions are taken to reduce the amount of radiation released to the environment. Liquid and gaseous release data show that the dose from BVPS is well below the ODCM limits. The concentration of liquid radioactive material released shall be limited to ten times the concentration specified in 10 CFR 20, Appendix B, Table 2, Column 2, for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the total concentration released shall be limited to 2.0×10^{-4} microcuries/ml. These data reveals that the radioactive effluents have an overall minimal dose contribution to the surrounding environment.

The annual whole body, skin and organ dose was computed using the 2025 source term using the dose calculation methodology provided in the ODCM. The calculated doses due to gaseous effluents to demonstrate compliance with offsite dose limits are presented in Table 1, Beaver Valley Power Station Unit 1 - Dose Summary, Table 2, Beaver Valley Power Station Unit 2 - Dose Summary, and Table 3, Total Annual Offsite-Dose Comparison to 40 CFR 190 Limits for BVPS.

4.2 Regulatory Limits for Gaseous Effluent Doses:

1. Fission and activation gases:

    a. Noble gases dose rate due to radioactive materials released in gaseous effluents from the site to areas at and beyond the site boundary shall be limited to the following:

        1) Less than or equal to 500 mrem/year to the total body

        2) Less than or equal to 3000 mrem/year to the skin

    b. Noble gas air dose due to noble gases released in gaseous effluents, from each reactor unit, to areas at and beyond the site boundary shall be limited to the following:

        1) Quarterly

            a) Less than or equal to 5 mrads gamma

            b) Less than or equal to 10 mrads beta

        2) Yearly

            a) Less than or equal to 10 mrads gamma

b) Less than or equal to 20 mrads beta

4.2 (Continued)

2. Iodine, tritium, and all radionuclides in particulate form with half-lives greater than 8 days.

   a. The dose rate for iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released from the site to areas at and beyond the site boundary shall be limited to the following:

      1) Less than or equal to 1500 mrem/yr to any organ

   b. The dose to a MEMBER OF THE PUBLIC from iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 DAYS in gaseous effluents released, from each reactor unit, to areas at and beyond the site boundary shall be limited to the following:

      1) Quarterly

         a) Less than or equal to 7.5 mrem to any organ

      2) Yearly

         a) Less than or equal to 15 mrem to any organ

4.3 <u>Regulatory Limits for Liquid Effluent Doses</u>

1. The dose or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released, from each reactor unit, to unrestricted areas shall be limited to the following:

   a. Quarterly

      1) Less than or equal to 1.5 mrem total body

      2) Less than or equal to 5 mrem critical organ

   b. Yearly

      1) Less than or equal to 3 mrem total body

      2) Less than or equal to 10 mrem critical organ

4.4 40 CFR 190 Regulatory Dose Limits for a Member of the Public

1. Total Dose (40 CFR 190)

    a. The annual (calendar year) dose or dose commitment to any MEMBER OF THE PUBLIC in the unrestricted area due to releases of radioactivity and to radiation from uranium fuel cycle sources shall be limited to the following:

        1) Less than or equal to 25 mrem, Total Body or any Organ except Thyroid.

        2) Less than or equal to 75 mrem, Thyroid.

4.5 Onsite Doses (Within Site Boundary)

This section evaluates dose to non-occupationally exposed workers and members of the public that may be onsite for various reasons. The report must include any other information as may be required by the Commission to estimate maximum potential annual radiation doses to the public resulting from effluent releases as required by 10 CFR 50.36a(a)(2). While within controlled or restricted areas, the limits from Sections 4.1 through 4.4 do not apply; however, 10 CFR 20.1301 dose limit of 100 mrem per year TEDE and dose rate limit of 2 mrem per hour from external sources continue to apply. Occupancy times within the controlled areas are generally sufficiently low to compensate for increase in the atmospheric dispersion factor above the site boundary. Groups of concern include plant personnel that are not RCA badged including Emergency Responders (e.g., National Guard, State Police, etc.) Use of a conservative assumption of 3000 hours/week spent inside the site boundary by these groups conservatively represents the most-exposed individual.

The radiation doses for MEMBER(S) OF THE PUBLIC due to their activities inside the site boundary are not greater than the doses listed in this table to show compliance with 40 CFR Part 190 or 10 CFR 20.1301. Evaluations have shown that exposure time for individuals not occupationally associated with the plant site is minimal in comparison to the exposure time considered for the dose calculation at or beyond the site boundary. Therefore, a separate assessment of radiation doses from radioactive effluents to MEMBER(S) OF THE PUBLIC, due to their activities inside the site boundary, is not necessary for this report period.

5.0 SUPPLEMENTAL INFORMATION

5.1 Gaseous Batch Releases

5.1.1 BVPS Unit 1

Table 4, BVPS Unit 1 Gaseous Batch Releases

	Units	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual
Number of Batch Releases		1	1	5	17	24
Total Duration of Batch Releases	Minutes	77.0	52.0	3528.0	23260.0	26917.0
Maximum Batch Release Duration	Minutes	77.0	52.0	918.0	8973.0	8973.0
Average Batch Release Duration	Minutes	77.0	52.0	705.6	1368.2	1121.5
Minimum Batch Release Duration	Minutes	77.0	52.0	97.0	36.0	36.0

5.1.2 BVPS Unit 2

Table 5, BVPS Unit 2 Gaseous Batch Releases

	Units	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual
Number of Batch Releases		1	1	2	2	6
Total Duration of Batch Releases	Minutes	186.0	167.0	5164.0	1511.0	7028.0
Maximum Batch Release Duration	Minutes	186.0	167.0	4949.0	1220.0	4949.0
Average Batch Release Duration	Minutes	186.0	167.0	2582.0	755.5	1171.3
Minimum Batch Release Duration	Minutes	186.0	167.0	215.0	291.0	167.0

5.2 Liquid Batch Releases

5.2.1 BVPS Unit 1

Table 6, BVPS Unit 1 Liquid Batch Releases

	Units	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual
Number of Batch Releases		2	2	6	2	12
Total Duration of Batch Releases	Minutes	7607.0	2611.9	8660.0	8063.0	26941.9
Maximum Batch Release Duration	Minutes	4597.0	2525.0	4657.0	4110.0	4657.0
Average Batch Release Duration	Minutes	3803.5	1305.9	1443.3	4031.5	2245.2
Minimum Batch Release Duration	Minutes	3010.0	86.9	53.0	3953.0	53.0

5.2.2 BVPS Unit 2

Table 7, BVPS Unit 2 Liquid Batch Releases

	Units	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual
Number of Batch Releases		11	18	40	13	82
Total Duration of Batch Releases	Minutes	2156.3	3520.9	7651.2	2481.0	15809.4
Maximum Batch Release Duration	Minutes	208.3	208.3	208.3	197.0	208.3
Average Batch Release Duration	Minutes	196.0	195.6	191.3	190.8	192.8
Minimum Batch Release Duration	Minutes	185.0	180.0	179.0	181.0	179.0

5.3 Abnormal Releases

5.3.1 Gaseous Abnormal Releases

Table 8, BVPS Unit 1 Gaseous Abnormal Releases

Number of releases	0
Total activity released	0.00E+00 Ci

There was no abnormal gaseous release.

Table 9, BVPS Unit 2 Gaseous Abnormal Releases

Number of releases	0
Total activity released	0.00E+00 Ci

5.3.2 Liquid Abnormal Releases

Table 10, BVPS Unit 1 Liquid Abnormal Releases

Number of releases	0
Total activity released	0.00E+00 Ci

Table 11, BVPS Unit 2 Liquid Abnormal Releases

Number of releases	0
Total activity released	0.00E+00 Ci

5.4 Land Use Census Changes

Results of the 2025 Land Use Census showed no changes in nearest residences and milk farms. The Land Use Census identified changes to gardens, greater than 500 ft^2, locations in the following sectors: ENE, NE, E, SE, SSE, S, and NW. None of the new locations yielded a calculated dose or dose commitment greater than values currently being calculated in ODCM surveillance. Therefore, there is no requirement to identify any location pursuant to Control 6.9.3.

The Land Use Census did identify locations that yield a calculated dose or dose commitment (via the same exposure pathway) 20% greater than at a location from which samples are currently being obtained in accordance with ODCM Control 3.12.1. These new locations were added to the REMP program and sampling locations with the lowest calculated dose or dose commitment via the same exposure pathway have been deleted from the monitoring program.

Change Description	Change Date	Changes to Receptor	Receptor Location	Sample Media Changes/Availability	Routes of Exposure
Sampling location	1/1/26	Added	ENE	Food Products (leafy vegetables)	Ingestion
Sampling location	1/1/26	Added	NE	Food Products (leafy vegetables)	Ingestion
Sampling location	1/1/26	Added	E	Food Products (leafy vegetables)	Ingestion
Sampling location	1/1/26	Added	SE	Food Products (leafy vegetables)	Ingestion
Sampling location	1/1/26	Added	SSE	Food Products (leafy vegetables)	Ingestion
Sampling location	1/1/26	Added	S	Food Products (leafy vegetables)	Ingestion
Sampling location	1/1/26	Added	NW	Food Products (leafy vegetables)	Ingestion

5.5 Meteorological Data

The Meteorological Data Recovery for the calendar year 2025 met the minimum requirements of at-least 90% (as specified in Section 5 of Revision 1 to Regulatory Guide 1.23, Meteorological Monitoring Program for Nuclear Power Plants). Percent recovery is shown in the following table below:

Parameter	Recovery (percent)
Wind Speed 35 ft.	100.0
Wind Speed 150 ft.	99.9
Wind Speed 500 ft.	99.9
Wind Direction 35 ft.	100.0
Wind Direction 150 ft.	100.0
Wind Direction 500 ft.	100.0
Delta Temperature (150-35) 1P	100.0
Delta Temperature (500-35) 2P	100.0
Temperature 35 ft.	100.0
Precipitation	95.1
Wind Speed and Wind Direction 35 ft, Delta Temperature 1P (Composite)	100
Wind Speed and Wind Direction 150 ft, Delta Temperature 1P (Composite)	99.9
Wind Speed and Wind Direction 500 ft, Delta Temperature 2P (Composite)	99.9

5.6 Effluent Radiation Monitors Out of Service Greater Than 30 Days

Effluent Radiation Monitor Name	Common Name	Out of Service Declaration	Reason Out of Service >30 Days	Additional Notes (ODCM or TS)
2RMQ-FIT301-1	Decon Building Ventilation (2RMQ-RQI301) Flow Indicating Sample	2/25/2025	Failed Sensor and Circuit Control Board	Parts issue availability and lead time from vendor March 2026
2HVS-RQI109C,D,E	SLCRS High Range Noble Gas	5/19/25	Loop Communication issue	Required loop to be calibrated by vendor
2HVS-RQ101	Ventilation Vent Radiation Monitor	10/3/2025	Incorrect calibration of Velocity Probe	Vendor recalibration
RM-1MS-100C	C Atmospheric Steam Dump & Main Steam Safety Valve Radiation Monitor	11/19/25	Repeated signal spiking causing high and high-high alarms	Preamplification card replacement delivery from vendor lead time May 2026

In accordance with the station TRM, ODCM, and/or SLCs, the information above is required when the minimum channels operability requirement is not achieved for the consecutive time period listed in the ODCM (30 days).

5.7 Offsite Dose Calculation Manual (ODCM) Changes

There were no revisions to the ODCM in 2025.

5.8 Process Control Program (PCP) Changes

There were no changes to the Process Control Program (PCP) in 2025.

5.9 Radioactive Waste Treatment System Changes

There were zero changes to the radioactive waste treatment systems for either liquid or gases.

5.10 Other Supplemental Information

5.10.1 Outside Tanks

No outside tanks exceeded ODCM or Technical Specification limits.

5.10.2 Independent Spent Fuel Storage Installation (ISFSI) Monitoring Program

There are minimal gaseous and liquid effluents from the Independent Spent Fuel Storage Installation (ISFSI), however, there is contribution from Direct Radiation. Total dose commitment includes Direct Radiation contribution from the ISFSI.

5.10.3 Carbon-14

Carbon-14 (C-14) is a naturally occurring radionuclide with a 5730-year half-life. Nuclear weapons testing in the 1950s and 1960s significantly increased the amount of C-14 in the atmosphere. Nuclear power plants also produce C-14, but the amount is infinitesimal compared to what has been distributed in the environment due to weapons testing and what is produced by natural cosmic ray interactions.

In accordance with Regulatory Guide 1.21, “Measuring, Evaluating, and Reporting Radioactive Material in Liquid and Gaseous Effluents and Solid Waste,” the NRC recommended re-evaluating “principal radionuclides” and reporting C-14 as appropriate. Carbon-14 production and release estimates were calculated using EPRI Report 1021106, “Estimation of Carbon-14 in Nuclear Plant Gaseous Effluents”. This calculation uses active core coolant mass, average neutron flux by energy and reactor coolant nitrogen concentrations to determine Carbon-14 generation based upon an effective full power year.

The estimated generation for Beaver Valley Power Station during 2025 was as follows:

Unit 1	8.69 Curies
Unit 2	9.69 Curies

Public dose estimates were performed using methodology from the ODCM which is based on Regulatory Guide 1.109 methodology. Carbon dioxide is assumed to make up 30% of the Carbon-14 gaseous emissions from the station based upon available references and on-site testing. C-14 dose is included in dose calculation results in Table 1, Beaver Valley Power Station Unit 1 - Dose Summary, Table 2, Beaver Valley Power Station Unit 2 - Dose Summary, and Table 3, Total Annual Offsite-Dose Comparison to 40 CFR 190 Limits for BVPS.

5.10.4 Errata/Corrections to Previous ARERRs

There were no Errata/Corrections to previous ARERRs in 2025.

6.0 NEI 07-07 ONSITE RADIOLOGICAL GROUNDWATER MONITORING PROGRAM

Beaver Valley Power Station has developed a Groundwater Protection Initiative (GPI) program in accordance with NEI 07-07, Industry Ground Water Protection Initiative – Final Guidance Document [9]. 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. During 2025, BVPS collected and analyzed groundwater samples in accordance with the requirements of NOP-OP-2012 – Groundwater Monitoring.

This section is included in this report to communicate results of NEI 07-07 Radiological Groundwater Monitoring Program. Monitoring wells installed as part of GPI program are sampled and analyzed Semiannually for H-3, Mn-54, Fe-59, Co-58, Co-60, Zn-65, Zr-95, Nb-95, I-131, Cs-134, Cs-137, Ba-140, and La-140 (i.e., principal gamma emitters). In addition to reporting results from NEI 07-07 monitoring wells, new voluntary communications made for onsite leaks or spills per NEI 07-07 Objective 2.2, are also reported as part of this report. It is important to note, samples and results taken in support of NEI 07-07 groundwater monitoring program are not part of the Radiological Environmental Monitoring Program (REMP) but should be reported as part of AREOR or ARERR.

BVPS has a total of 23 Non-REMP wells as part of the NEI-07-07 Ground Water Protection Program. There are 22 wells that are sampled on a semiannual basis and 1 well sampled monthly. This well has a higher potential for contamination due to proximity to the plant.

Table 12, Groundwater Protection Program Monitoring Well Results

Well Name	Type of Analysis	Number of Positive Detections	Number of Analyses	Average Concentration[6] (pCi/L)	Maximum Concentration (pCi/L)
P-2	Tritium	0	2	-	-
P-3	Tritium	0	2	-	-
P-4	Tritium	0	2	-	-
WW-8	Tritium	0	2	-	-
MW-2	Tritium	0	2	-	-
MW-3	Tritium	0	2	-	-
MW-10	Tritium	0	2	-	-
MW-11S	Tritium	1	2	161	161
MW-11D	Tritium	2	2	393	478
MW-12S	Tritium	0	2	-	-

[6] Results <MDA should not be included in the average concentration calculation.

Table 12, Groundwater Protection Program Monitoring Well Results

Well Name	Type of Analysis	Number of Positive Detections	Number of Analyses	Average Concentration[6] (pCi/L)	Maximum Concentration (pCi/L)
MW-12D	Tritium	0	2	-	-
MW-13S	Tritium	0	2	-	-
MW-13D	Tritium	0	2	-	-
MW-14S	Tritium	2	2	327	377
MW-14D	Tritium	1	2	259	259
MW-15	Tritium	2	2	335	426
MW-16	Tritium	10	10	1759	3287
MW-17	Tritium	0	2	-	-
MW-18	Tritium	1	2	209	209
MW-19	Tritium	0	2	-	-
MW-20S	Tritium	1	2	249	249
MW-20D	Tritium	0	2	-	-
MW-21	Tritium	0	2	-	-

6.1 Voluntary Notification

During 2025, Beaver Valley Power Station did not make a voluntary NEI 07-07 notification to State/Local officials, NRC, and to other stakeholders required by site procedures.

7.0 BIBLIOGRAPHY

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[16] "40 CFR Part 141, “National Primary Drinking Water Regulations,”," US Environmental Protection Agency, Washington, DC..

[17] "40 CFR 190 - Environmental Radiation Protection Standards for Nuclear Power Operation," US Environmental Protection Agency, Washington, DC.

[18] "10 CFR 20 - Standards for Protection Against Radiation," US Nuclear Regulatory Commission, Washington, DC.

Attachment 1, ARERR Release Summary Tables (RG-1.21 Tables)

1.0 GASEOUS EFFLUENTS

Table 13, Gaseous Effluents Summation of All Releases Units 1 & 2

A.	Fission & Activation Gases	Units	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Est. Total Error %
1.	Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	1.07E+02	26.5
2.	Average release rate for the period	μCi/sec	0.00E+00	0.00E+00	0.00E+00	1.02E-01	
B.	**Iodine**						
1.	Total Iodine – 131	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	28.3
2.	Average release rate for the period	μCi/sec	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
C.	**Particulates**						
1.	Particulates with half-lives > 8 days	Ci	2.34E-06	0.00E+00	3.84E-03	2.07E-04	30.0
2.	Average release rate for the period	μCi/sec	3.01E-07	0.00E+00	4.83E-04	2.61E-05	
D.	**Tritium**						
1.	Total Release	Ci	1.91E+01	1.88E+01	3.59E+01	1.85E+01	32.9
2.	Average release rate for the period	μCi/sec	2.46E+00	2.39E+00	4.52E+00	2.33E+00	
E.	**Gross Alpha**						
1.	Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	30.0
2.	Average release rate for the period	μCi/sec	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
F.	**Carbon-14**						
1.	Total Release	Ci	5.72E+00	5.84E+00	5.92E+00	4.60E+00	
2.	Average release rate for the period	μCi/sec	1.41E-06	1.44E-06	1.45E-06	1.13E-06	

% of limit is on Table 1, Beaver Valley Power Station Unit 1 - Dose Summary

Table 14, Gaseous Effluents – Ground Level Release Batch Mode Unit 1

Radionuclide Released	Units	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total for year
Fission Gases						
None	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for Period	**Ci**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**
Iodines						
None	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for Period	**Ci**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**
Particulates						
None	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for Period	**Ci**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**
Tritium						
H-3	Ci	1.11E-03	1.04E-03	7.64E-04	1.50E-04	3.054E-03
Gross Alpha						
Alpha	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Carbon-14						
C-14	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 15, Gaseous Effluents – Ground Level Release Continuous Mode Unit 1

Radionuclide Released	Units	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total for year
Fission Gases						
None	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for Period	**Ci**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**
Iodines						
None	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for Period	**Ci**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**
Particulates						
Co-58	Ci	1.17E-06	0.00E+00	0.00E+00	6.66E-05	6.78E-05
Co-60	Ci	0.00E+00	0.00E+00	0.00E+00	3.78E-05	3.78E-05
Cr-51	Ci	0.00E+00	0.00E+00	0.00E+00	7.51E-05	7.51E-05
Nb-95	Ci	0.00E+00	0.00E+00	0.00E+00	2.01E-05	2.01E-05
Se-75	Ci	0.00E+00	0.00E+00	0.00E+00	1.67E-07	1.67E-07
Zr-95	Ci	0.00E+00	0.00E+00	0.00E+00	7.70E-06	7.70E-06
Total for Period	**Ci**	**1.17E-06**	**0.00E+00**	**0.00E+00**	**2.07E-04**	**2.08E-04**
Tritium						
H-3	Ci	5.57E+00	4.98E+00	4.01E+00	3.46E+00	1.802E+01
Gross Alpha						
Alpha	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Carbon-14						
C-14	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 16, Gaseous Effluents – Ground Level Release Batch Mode Unit 2

Radionuclide Released	Units	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total for year
Fission Gases						
None	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for Period	**Ci**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**
Iodines						
None	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for Period	**Ci**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**
Particulates						
None	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for Period	**Ci**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**
Tritium						
H-3	Ci	1.99E-03	1.56E-02	3.14E-02	3.59E-02	8.49E-02
Gross Alpha						
Alpha	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Carbon-14						
C-14	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 17, Gaseous Effluents – Ground Release Continuous Mode Unit 2

Radionuclide Released	Units	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total for year
Fission Gases						
None	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for Period	**Ci**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**
Iodines						
None	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for Period	**Ci**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**
Particulates						
Co-58	Ci	1.17E-06	0.00E+00	0.00E+00	0.00E+00	1.17E-06
Total for Period	**Ci**	**1.17E-06**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**1.17E-06**
Tritium						
H-3	Ci	1.31E+01	1.29E+01	3.16E+01	1.34E+01	7.10E+01
Gross Alpha						
Alpha	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Carbon-14						
C-14	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 18, Gaseous Effluents – Elevated Level Release Batch Mode Units 1 & 2

Radionuclide Released	Units	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total for year
Fission Gasese						
Ar-41	Ci	0.00E+00	0.00E+00	0.00E+00	1.04E+02	1.04E+02
Kr-85m	Ci	0.00E+00	0.00E+00	0.00E+00	1.18E-01	1.18E-01
Kr-87	Ci	0.00E+00	0.00E+00	0.00E+00	2.91E-01	2.91E-01
Kr-88	Ci	0.00E+00	0.00E+00	0.00E+00	2.82E-01	2.82E-01
Xe-133	Ci	0.00E+00	0.00E+00	0.00E+00	7.08E-01	7.08E-01
Xe-135	Ci	0.00E+00	0.00E+00	0.00E+00	1.02E+00	1.02E+00
Xe-135m	Ci	0.00E+00	0.00E+00	0.00E+00	7.23E-01	7.23E-01
Total for Period	**Ci**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**1.07E+02**	**1.07E+02**
Iodines						
None	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for Period	**Ci**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**
Particulates						
Cr-51	Ci	0.00E+00	0.00E+00	3.84E-03	0.00E+00	3.84E-03
Total for Period	**Ci**	**0.00E+00**	**0.00E+00**	**3.84E-03**	**0.00E+00**	**3.84E-03**
Tritium						
H-3	Ci	0.00E+00	0.00E+00	1.74E-06	3.80E-4	3.82E-4
Gross Alpha						
Alpha	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Carbon-14						
C-14	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 19, Gaseous Effluents – Elevated Level Release Continuous Mode Units 1 & 2

Radionuclide Released	Units	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total for year
Fission Gases						
None	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for Period	**Ci**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**
Iodines						
None	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for Period	**Ci**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**
Particulates						
None	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for Period	**Ci**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**
Tritium						
H-3	Ci	3.85E-01	8.81E-01	3.04E-01	1.53E-01	1.72E+00
Gross Alpha						
Alpha	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Carbon-14						
C-14	Ci	5.72E+00	5.84E+00	5.92E+00	4.60E+00	2.21E+01

2.0 LIQUID EFFLUENTS

Table 20, Liquid Effluents – Summation of All Releases Units 1 & 2

A.	**Fission & Activation Products**	**Units**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	**Est. Total Error %**
1.	Total Release	Ci	4.87E-02	2.01E-02	4.34E-02	5.15E-02	26.1
2.	Average diluted concentration	μCi/mL	1.97E-08	7.61E-09	8.65E-09	1.19E-08	
B.	**Tritium**						
1.	Total Release	Ci	3.66E+02	4.27E+02	1.03E+03	3.22E+02	25.0
2.	Average diluted concentration	μCi/mL	1.45E-04	1.62E-04	2.05E-04	7.46E-05	
C.	**Dissolved & Entrained Gases**						
1.	Total Release	Ci	0.00E+00	0.00E+00	2.68E-05	0.00E+00	27.0
2.	Average diluted concentration	μCi/mL	0.00E+00	0.00E+00	5.33E-12	0.00E+00	
D.	**Gross Alpha Activity**						
1.	Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	28.9
E.	**Volume of Waste Released (prior to dilution)**	Liters	1.56E+06	3.64E+06	1.10E+07	1.11E+07	
F.	**Volume of Dilution Water Used During Period**	Liters	2.52E+09	2.63E+09	5.01E+9	4.30E+09	

% of limit is on the Table 1, Beaver Valley Power Station Unit 1 - Dose Summary

Table 21, Batch Mode Liquid Effluents Units 1 & 2

Radionuclide Released	Units	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total for year
Fission and Activation Products						
Cr-51	Ci	9.25E-04	3.47E-04	1.44E-04	4.26E-03	5.68E-03
Mn-54	Ci	3.28E-04	0.00E+00	8.24E-05	2.20E-04	6.30E-04
Fe-55	Ci	1.13E-03	5.23E-04	2.62E-03	5.57E-04	4.83E-03
Co-58	Ci	2.48E-03	6.80E-04	3.96E-03	8.77E-03	1.59E-02
Co-60	Ci	1.81E-03	6.87E-04	3.33E-03	4.14E-03	9.97E-03
Sr-92	Ci	1.93E-06	0.00E+00	0.00E+00	0.00E+00	1.93E-06
Nb-95	Ci	0.00E+00	0.00E+00	1.70E-04	1.21E-03	1.38E-03
Nb-97	Ci	1.06E-05	5.67E-05	6.83E-05	1.08E-04	2.44E-04
Zr-95	Ci	0.00E+00	0.00E+00	5.50E-05	5.76E-04	6.31E-04
Zn-65	Ci	0.00E+00	0.00E+00	0.00E+00	3.41E-05	3.41E-05
Ag-110m	Ci	3.25E-04	5.22E-05	7.09E-04	1.15E-04	1.20E-03
I-133	Ci	2.25E-05	4.82E-05	1.50E-04	2.62E-05	2.47E-04
I-131	Ci	2.27E-06	3.70E-05	3.66E-05	1.06E-05	8.65E-05
Cs-137	Ci	0.00E+00	1.19E-06	7.87E-07	0.00E+00	1.98E-06
Sb-125	Ci	4.29E-02	1.76E-02	3.30E-02	2.96E-02	1.23E-01
Sb-122	Ci	0.00E+00	0.00E+00	0.00E+00	5.17E-05	5.17E-05
Sb-124	Ci	1.38E-05	0.00E+00	2.32E-05	1.74E-03	1.78E-03
Se-75	Ci	8.06E-05	0.00E+00	0.00E+00	0.00E+00	8.06E-05
Sn-117m	Ci	0.00E+00	0.00E+00	0.00E+00	1.54E-05	1.54E-05
Tc-99m	Ci	1.35E-05	4.15E-05	1.14E-04	2.54E-05	1.94E-04
Te-132	Ci	0.00E+00	0.00E+00	0.00E+00	1.17E-05	1.17E-05
Total for Period	**Ci**	**4.89E-02**	**2.13E-02**	**4.18E-02**	**5.09E-02**	**1.63E-01**
Tritium						
H-3	Ci	3.66E+02	4.27E+02	1.02E+03	2.87E+02	2.10E+03
Gross Alpha						
Alpha	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Entrained Gases						
Xe-133	Ci	0.00E+00	0.00E+00	2.53E-05	0.00E+00	2.53E-05
Xe-135	Ci	0.00E+00	0.00E+00	1.53E-06	0.00E+00	1.53E-06
Total for Period	**Ci**	**0.00E+00**	**0.00E+00**	**2.68E-05**	**0.00+00**	**2.68E-05**

Table 22, Continuous Mode Liquid Effluents Units 1 & 2

Radionuclide Released	Units	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total for year
Fission and Activation Products						
None	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for Period	**Ci**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**
Tritium						
H-3	Ci	1.45E-07	1.55E-02	9.35E-02	5.51E-02	1.64E-01
Gross Alpha						
Alpha	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Entrained Gases						
None	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for Period	**Ci**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**

Attachment 2, Solid Waste Information

1.0 SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (NOT IRRADIATED FUEL)

Table 23, Resins, Filters, and Evaporator Bottoms Summary for BVPS

Waste Class	Volume ft^3	Volume m^3	Curies Shipped	% Error Activity
A	6.59E+01	1.87E+00	4.81E+00	±25%
B	4.15E+02	1.18E+01	3.38E+02	±25%
C	7.66E+01	2.17E+00	7.01E+01	±25%
Unclassified	0.00E+00	0.00E+00	0.00E+00	±25%
All	5.57E+02	1.58E+01	4.13E+02	±25%
Major Nuclides for Above Table: H-3, C-14, Mn-54, Fe-55, Co-58, Co-60, Ni-59, Ni-63, Sr-90, Zr-95, Nb-94, Tc-99, Sb-125, I-129, Cs-137, Pu-238				
Waste Class A				**Percent Abundance > 1.0%**
Nuclide Name	Percent Abundance		Curies	
C-14	11.73%		5.64E-01	
Fe-55	67.96%		3.27E+00	
Co-60	17.41%		8.37E-01	
Waste Class B				**Percent Abundance > 1.0%**
Nuclide Name	Percent Abundance		Curies	
Fe-55	3.13%		1.06E+01	
Co-60	13.54%		4.58E+01	
Ni-63	81.26%		2.75E+02	
Sb-125	1.22%		4.14E+00	
Waste Class C				**Percent Abundance > 1.0%**
Nuclide Name	Percent Abundance		Curies	
H-3	2.87%		2.01E+00	
C-14	10.85%		7.61E+00	
Fe-55	2.66%		1.86E+00	
Co-60	9.67%		6.78E+00	
Ni-63	6.66%		4.67E+00	
Sb-125	66.87%		4.69E+01	
Total Combined				
Nuclide Name	Percent Abundance		Curies	
C-14	2.14%		8.85E+00	
Fe-55	3.81%		1.57E+01	
Co-60	12.93%		5.34E+01	
Ni-63	67.67%		2.80E+02	
Sb-125	12.35%		5.10E+01	

Solid Waste Information

Table 24, Dry Active Waste (DAW) Summary for BVPS

Waste Class	**Volume** ft^3	**Volume** m^3	**Curies Shipped**	**% Error Activity**
A	1.63E+04	4.63E+02	1.86E-01	±25%
B	0.00E+00	0.00E+00	0.00E+00	±25%
C	0.00E+00	0.00E+00	0.00E+00	±25%
Unclassified	0.00E+00	0.00E+00	0.00E+00	±25%
All	1.63E+04	4.63E+02	1.86E-01	±25%

Major Nuclides for Above Table: H-3, C-14, Cr-51, Mn-54, Fe-55, Co-58, Co-60, Ni-63, Zr-95, Nb-94, Nb-95, Tc-99, Sb-125, I-129, Cs-137, Ce-144

Waste Class A		**Percent Abundance > 1.0%**
Nuclide Name	Percent Abundance	Curies
C-14	2.57%	4.73E-03
Mn-54	1.5%	2.79E-03
Fe-55	8.43%	1.57E-02
Co-58	45.3%	8.43E-02
Co-60	17.89%	3.33E-02
Ni-63	18.43%	3.43E-02
Nb-95	1.57%	2.93E-03
Sb-125	1.35%	2.51E-03

Waste Class B		**Percent Abundance > 1.0%**
Nuclide Name	Percent Abundance	Curies
None	n/a	n/a

Waste Class C		**Percent Abundance > 1.0%**
Nuclide Name	Percent Abundance	Curies
None	n/a	n/a

Total Combined		
Nuclide Name	Percent Abundance	Curies
C-14	2.57%	4.73E-03
Mn-54	1.5%	2.79E-03
Fe-55	8.43%	1.57E-02
Co-58	45.3%	8.43E-02
Co-60	17.89%	3.33E-02
Ni-63	18.43%	3.43E-02
Nb-95	1.57%	2.93E-03
Sb-125	1.35%	2.51E-03

Solid Waste Information

Table 25, Irradiated Components Summary for BVPS

Waste Class	**Volume** ft^3	m^3	**Curies Shipped**	**% Error Activity**
A	0.00E+00	0.00E+00	0.00E+00	±25%
B	0.00E+00	0.00E+00	0.00E+00	±25%
C	0.00E+00	0.00E+00	0.00E+00	±25%
Unclassified	0.00E+00	0.00E+00	0.00E+00	±25%
All	0.00E+00	0.00E+00	0.00E+00	±25%

Major Nuclides for Above Table:

Waste Class A		**Percent Abundance > 1.0%**
Nuclide Name	Percent Abundance	Curies
None	n/a	n/a

Waste Class B		**Percent Abundance > 1.0%**
Nuclide Name	Percent Abundance	Curies
None	n/a	n/a

Waste Class C		**Percent Abundance > 1.0%**
Nuclide Name	Percent Abundance	Curies
None	n/a	n/a

Total Combined		
Nuclide Name	Percent Abundance	Curies
None	n/a	n/a

Solid Waste Information

Table 26, Other Waste Summary for BVPS

Waste Class	**Volume** ft^3	**Volume** m^3	**Curies Shipped**	**% Error Activity**
A	0.00E+00	0.00E+00	0.00E+00	±25%
B	0.00E+00	0.00E+00	0.00E+00	±25%
C	0.00E+00	0.00E+00	0.00E+00	±25%
Unclassified	0.00E+00	0.00E+00	0.00E+00	±25%
All	0.00E+00	0.00E+00	0.00E+00	±25%

Major Nuclides for Above Table:

Waste Class A		**Percent Abundance > 1.0%**
Nuclide Name	Percent Abundance	Curies
None	n/a	n/a

Waste Class B		**Percent Abundance > 1.0%**
Nuclide Name	Percent Abundance	Curies
None	n/a	n/a

Waste Class C		**Percent Abundance > 1.0%**
Nuclide Name	Percent Abundance	Curies
None	n/a	n/a

Total Combined		
Nuclide Name	Percent Abundance	Curies
None	n/a	n/a

Solid Waste Information

Table 27, Sum of All Low-Level Waste Summary for BVPS

Waste Class	Volume ft^3	Volume m^3	Curies Shipped	% Error Activity
A	1.64E+04	4.65E+02	5.00E+00	±25%
B	4.15E+02	1.18E+01	3.38E+02	±25%
C	7.66E+01	2.17E+00	7.01E+01	±25%
Unclassified	0.00E+00	0.00E+00	0.00E+00	±25%
All	1.69E+04	4.79E+02	4.13E+02	±25%

Major Nuclides for Above Table: H-3, C-14, Cr-51, Mn-54, Fe-55, Co-58, Co-60, Ni-59, Ni-63, Sr-90, Zr-95, Nb-94, Nb-95, Tc-99, Sb-125, I-129, Cs-137, Ce-144, Pu-238

Waste Class A — **Percent Abundance > 1.0%**

Nuclide Name	Percent Abundance	Curies
C-14	11.38%	5.69E-01
Fe-55	65.74%	3.28E+00
Co-58	2.07%	1.03E-01
Co-60	17.43%	8.71E-01
Ni-63	1.57%	7.82E-02

Waste Class B — **Percent Abundance > 1.0%**

Nuclide Name	Percent Abundance	Curies
Fe-55	3.13%	1.06E+01
Co-60	13.54%	4.58E+01
Ni-63	81.26%	2.75E+02
Sb-125	1.22%	4.14E+00

Waste Class C — **Percent Abundance > 1.0%**

Nuclide Name	Percent Abundance	Curies
H-3	2.87%	2.01E+00
C-14	10.85%	7.61E+00
Fe-55	2.66%	1.86E+00
Co-60	9.67%	6.78E+00
Ni-63	6.66%	4.67E+00
Sb-125	66.87%	4.69E+01

Total Combined

Nuclide Name	Percent Abundance	Curies
C-14	2.14%	8.85E+00
Fe-55	3.81%	1.57E+01
Co-60	12.93%	5.34E+01
Ni-63	67.65%	2.80E+02
Sb-125	12.35%	5.10E+01

2.0 SOLID WASTE DISPOSITION

Table 28, Solid Waste Disposition – Beaver Valley Power Station

Number of Shipments	Mode of Transportation	Destination
12	Truck	Energy Solutions, Bear Creek Facility, Salt Lake City, UT
1	Truck	Energy Solutions, Memphis Facility, Memphis, TN
1	Truck	Erwin Resin Solutions, Erwin, TN
7	Truck	UniTech Services, Oak Ridge, TN

3.0 IRRADIATED FUEL DISPOSITION

Table 29, Irradiated Fuel Shipments Disposition – Beaver Valley Power Station

Number of Shipments	Mode of Transportation	Destination
0	-	-

Attachment 3, Meteorological Data

1.0 METEOROLOGICAL DATA SUMMARY

1.1 Joint Frequency Distributions – Stability Class A, Elevation 35 ft.

Joint Frequency Distribution

Hours at Each Wind Speed and Direction

Total Period **All Hours**
Period of Record = 1/1/2025 00:00 – 12/31/2025 23:00

Elevation: **Speed:** SP35P **Direction:** DI35P **Lapse:** DT150-35

Stability Class: A Delta Temperature Extremely Unstable

Wind Speed (mph)

Wind Direction	0.6-3.5	3.6-7.5	7.6-12.5	12.6-18.5	18.6-24.5	> 24.6	Total
N	38	34	0	0	0	0	72
NNE	27	12	0	0	0	0	39
NE	32	5	0	0	0	0	37
ENE	29	8	0	0	0	0	37
E	25	6	0	0	0	0	31
ESE	22	2	0	0	0	0	24
SE	12	0	0	0	0	0	12
SSE	23	7	0	0	0	0	30
S	16	22	2	0	0	0	40
SSW	16	30	5	0	0	0	51
SW	10	66	12	0	0	0	88
WSW	15	81	4	2	0	0	102
W	46	145	3	0	0	0	194
WNW	34	65	1	0	0	0	100
NW	15	31	0	0	0	0	46
NNW	20	16	0	0	0	0	36
Total	380	530	27	2	0	0	939

Calm Hours not Included above for:	**Total Period**	**All Hours**	256
Variable Direction Hours for:	**Total Period**	**All Hours**	0
Invalid Hours for:	**Total Period**	**All Hours**	0
Number of Valid Hours for this Table:	**Total Period**	**All Hours**	8504
Total Hours for the Period:			8760

1.2 Joint Frequency Distributions – Stability Class B, Elevation 35 ft.

Joint Frequency Distribution

Hours at Each Wind Speed and Direction

Total Period **All Hours**

Period of Record = 1/1/2025 00:00 – 12/31/2025 23:00

Elevation: **Speed:** SP35P **Direction:** DI35P **Lapse:** DT150-35

Stability Class: B Delta Temperature Extremely Unstable

Wind Speed (mph)

Wind Direction	0.6-3.5	3.6-7.5	7.6-12.5	12.6-18.5	18.6-24.5	> 24.6	Total
N	17	5	0	0	0	0	22
NNE	6	2	0	0	0	0	8
NE	13	0	0	0	0	0	13
ENE	9	1	0	0	0	0	10
E	3	0	0	0	0	0	3
ESE	2	0	0	0	0	0	2
SE	2	0	0	0	0	0	2
SSE	3	0	0	0	0	0	3
S	4	2	0	0	0	0	6
SSW	3	7	3	0	0	0	13
SW	6	26	15	0	0	0	47
WSW	13	21	3	0	0	0	37
W	19	28	4	0	0	0	51
WNW	17	22	0	0	0	0	39
NW	11	8	0	0	0	0	19
NNW	15	10	0	0	0	0	25
Total	143	132	25	0	0	0	300

Calm Hours not Included above for:	**Total Period**	**All Hours**	256
Variable Direction Hours for:	**Total Period**	**All Hours**	0
Invalid Hours for:	**Total Period**	**All Hours**	0
Number of Valid Hours for this Table:	**Total Period**	**All Hours**	8504
Total Hours for the Period:			8760

1.3 Joint Frequency Distributions – Stability Class C, Elevation 35 ft.

Joint Frequency Distribution

Hours at Each Wind Speed and Direction

Total Period **All Hours**
Period of Record = 1/1/2025 00:00 – 12/31/2025 23:00

Elevation: **Speed:** SP35P **Direction:** DI35P **Lapse:** DT150-35

Stability Class: C Delta Temperature Slightly Unstable

Wind Speed (mph)

Wind Direction	0.6-3.5	3.6-7.5	7.6-12.5	12.6-18.5	18.6-24.5	> 24.6	Total
N	25	9	0	0	0	0	34
NNE	15	3	0	0	0	0	18
NE	13	2	0	0	0	0	15
ENE	8	2	0	0	0	0	10
E	3	0	0	0	0	0	3
ESE	1	0	0	0	0	0	1
SE	2	0	0	0	0	0	2
SSE	1	0	0	0	0	0	1
S	7	7	1	0	0	0	15
SSW	5	9	9	0	0	0	21
SW	11	29	16	1	0	0	49
WSW	16	26	5	0	0	0	59
W	16	28	0	0	0	0	49
WNW	22	25	0	0	0	0	47
NW	18	11	0	0	0	0	29
NNW	26	9	0	0	0	0	35
Total	189	160	38	1	0	0	388

Calm Hours not Included above for:	**Total Period**	**All Hours**	256
Variable Direction Hours for:	**Total Period**	**All Hours**	0
Invalid Hours for:	**Total Period**	**All Hours**	0
Number of Valid Hours for this Table:	**Total Period**	**All Hours**	8504
Total Hours for the Period:			8760

1.4 Joint Frequency Distributions – Stability Class D, Elevation 35 ft.

Joint Frequency Distribution

Hours at Each Wind Speed and Direction

Total Period **All Hours**
Period of Record = 1/1/2025 00:00 – 12/31/2025 23:00

Elevation: **Speed:** SP35P **Direction:** DI35P **Lapse:** DT150-35

Stability Class: D Delta Temperature Neutral

Wind Speed (mph)

Wind Direction	0.6-3.5	3.6-7.5	7.6-12.5	12.6-18.5	18.6-24.5	> 24.6	Total
N	178	32	0	0	0	0	210
NNE	126	7	0	0	0	0	133
NE	162	5	0	0	0	0	167
ENE	134	7	0	0	0	0	141
E	53	0	0	0	0	0	53
ESE	26	1	0	0	0	0	27
SE	25	1	0	0	0	0	26
SSE	27	12	0	0	0	0	39
S	48	30	2	0	0	0	80
SSW	82	68	16	0	0	0	166
SW	81	167	97	0	0	0	476
WSW	101	268	123	3	0	0	495
W	123	370	76	1	0	0	569
WNW	99	133	4	0	0	0	236
NW	121	92	0	0	0	0	213
NNW	155	55	0	0	0	0	210
Total	1541	1379	318	3	0	0	3241

Calm Hours not Included above for:	**Total Period**	**All Hours**	256
Variable Direction Hours for:	**Total Period**	**All Hours**	0
Invalid Hours for:	**Total Period**	**All Hours**	0
Number of Valid Hours for this Table:	**Total Period**	**All Hours**	8504
Total Hours for the Period:			8760

1.5 Joint Frequency Distributions – Stability Class E, Elevation 35 ft.

Joint Frequency Distribution

Hours at Each Wind Speed and Direction

Total Period **All Hours**
Period of Record = 1/1/2025 00:00 – 12/31/2025 23:00

Elevation: **Speed:** SP35P **Direction:** DI35P **Lapse:** DT150-35

Stability Class: E Delta Temperature Slightly Stable

Wind Speed (mph)

Wind Direction	0.6-3.5	3.6-7.5	7.6-12.5	12.6-18.5	18.6-24.5	> 24.6	Total
N	81	1	0	0	0	0	82
NNE	108	0	0	0	0	0	108
NE	137	0	0	0	0	0	137
ENE	197	3	0	0	0	0	200
E	164	1	0	0	0	0	165
ESE	123	1	0	0	0	0	124
SE	76	7	0	0	0	0	83
SSE	92	7	0	0	0	0	99
S	111	13	0	0	0	0	124
SSW	103	51	4	0	0	0	158
SW	55	57	4	0	0	0	129
WSW	38	41	17	0	0	0	86
W	43	24	3	0	0	0	70
WNW	27	6	0	0	0	0	33
NW	55	3	0	0	0	0	58
NNW	62	1	0	0	0	0	63
Total	1472	216	31	0	0	0	1719

Calm Hours not Included above for:	**Total Period**	**All Hours**	256
Variable Direction Hours for:	**Total Period**	**All Hours**	0
Invalid Hours for:	**Total Period**	**All Hours**	0
Number of Valid Hours for this Table:	**Total Period**	**All Hours**	8504
Total Hours for the Period:			8760

1.6 Joint Frequency Distributions – Stability Class F, Elevation 35 ft.

Joint Frequency Distribution

Hours at Each Wind Speed and Direction

Total Period **All Hours**

Period of Record = 1/1/2025 00:00 – 12/31/2025 23:00 **Elevation:** **Speed:** SP35P

Direction: DI35P **Lapse:** DT150-35

Stability Class: F Delta Temperature Moderately Stable

Wind Speed (mph)

Wind Direction	0.6-3.5	3.6-7.5	7.6-12.5	12.6-18.5	18.6-24.5	> 24.6	Total
N	12	0	0	0	0	0	12
NNE	10	0	0	0	0	0	10
NE	41	0	0	0	0	0	41
ENE	93	0	0	0	0	0	93
E	170	0	0	0	0	0	170
ESE	346	0	0	0	0	0	346
SE	175	0	0	0	0	0	175
S	57	0	0	0	0	0	57
SSW	23	3	0	0	0	0	26
SW	10	4	0	0	0	0	14
WSW	6	1	0	0	0	0	7
W	13	0	0	0	0	0	13
WNW	5	0	0	0	0	0	5
NW	5	0	0	0	0	0	5
NNW	7	0	0	0	0	0	7
Total	1054	8	0	0	0	0	1062

Calm Hours not Included above for:	**Total Period**	**All Hours**	256
Variable Direction Hours for:	**Total Period**	**All Hours**	0
Invalid Hours for:	**Total Period**	**All Hours**	0
Number of Valid Hours for this Table:	**Total Period**	**All Hours**	8504
Total Hours for the Period:			8760

1.7 Joint Frequency Distributions – Stability Class G, Elevation 35 ft.

Joint Frequency Distribution

Hours at Each Wind Speed and Direction

Total Period **All Hours**
Period of Record = 1/1/2025 00:00 – 12/31/2025 23:00

Elevation: **Speed:** SP35P **Direction:** DI35P **Lapse:** DT150-35

Stability Class: G Delta Temperature Extremely Stable

Wind Speed (mph)

Wind Direction	0.6-3.5	3.6-7.5	7.6-12.5	12.6-18.5	18.6-24.5	> 24.6	Total
N	5	0	0	0	0	0	5
NNE	10	0	0	0	0	0	10
NE	21	0	0	0	0	0	21
ENE	39	0	0	0	0	0	39
E	133	0	0	0	0	0	133
ESE	364	0	0	0	0	0	364
SE	168	0	0	0	0	0	168
SSE	45	0	0	0	0	0	45
S	31	0	0	0	0	0	31
SSW	13	2	0	0	0	0	15
SW	5	1	0	0	0	0	6
WSW	5	0	0	0	0	0	5
W	3	0	0	0	0	0	3
WNW	2	1	0	0	0	0	3
NW	5	0	0	0	0	0	5
NNW	2	0	0	0	0	0	2
Total	851	4	0	0	0	0	855

Calm Hours not Included above for:	**Total Period**	**All Hours**	256
Variable Direction Hours for:	**Total Period**	**All Hours**	0
Invalid Hours for:	**Total Period**	**All Hours**	0
Number of Valid Hours for this Table:	**Total Period**	**All Hours**	8504
Total Hours for the Period:			8760

1.8 Joint Frequency Distributions, Stability Class All, Elevation 35 ft.

Joint Frequency Distribution

Hours at Each Wind Speed and Direction

Total Period **All Hours**

Period of Record = 01/01/2025 01:00 - 01/01/2024 00:00

Elevation: **Speed:** SP35P **Direction:** DI35P **Lapse:** DT150-35

Stability Class: ALL Delta Temperature

Wind Speed (mph)

Wind Direction	0.6-3.5	3.6-7.5	7.6-12.5	12.6-18.5	18.6-24.5	> 24.6	Total
N	356	81	0	0	0	0	437
NNE	302	24	0	0	0	0	326
NE	419	12	0	0	0	0	431
ENE	509	21	0	0	0	0	530
E	551	7	0	0	0	0	558
ESE	884	4	0	0	0	0	888
SE	460	8	0	0	0	0	468
SSE	248	26	0	0	0	0	274
S	240	77	5	0	0	0	322
SSW	232	177	37	0	0	0	440
SW	174	347	144	1	0	0	666
WSW	201	437	152	5	0	0	795
W	255	595	86	1	0	0	937
WNW	206	252	5	0	0	0	463
NW	232	145	0	0	0	0	377
NNW	280	91	0	0	0	0	371
Total	5549	2298	429	7	0	0	8283

Calm Hours not Included above for:	**Total Period**	**All Hours**	522
Variable Direction Hours for:	**Total Period**	**All Hours**	0
Invalid Hours for:	**Total Period**	**All Hours**	0
Number of Valid Hours for this Table:	**Total Period**	**All Hours**	8238
Total Hours for the Period:			8760

1.9 Joint Frequency Distributions, Stability Class A, Elevation 150 ft.

Joint Frequency Distribution

Hours at Each Wind Speed and Direction

Total Period **All Hours**
Period of Record = 1/1/2025 00:00 – 12/31/2025 23:00

Elevation: **Speed:** SP150P **Direction:** DI150P **Lapse:** DT150-35

Stability Class: A Delta Temperature Extremely Unstable

Wind Speed (mph)

Wind Direction	0.6-3.5	3.6-7.5	7.6-12.5	12.6-18.5	18.6-24.5	> 24.6	Total
N	2	27	16	0	0	0	45
NNE	0	42	18	0	0	0	60
NE	0	40	14	0	0	0	54
ENE	0	29	3	0	0	0	32
E	0	14	12	0	0	0	26
ESE	0	35	12	0	0	0	47
SE	0	18	8	0	0	0	26
SSE	0	32	16	0	0	0	48
S	1	19	20	3	0	0	43
SSW	1	14	20	5	0	0	40
SW	1	19	13	7	0	0	40
WSW	0	39	35	3	3	1	81
W	1	78	89	23	1	0	192
WNW	3	60	57	23	0	0	143
NW	3	14	14	0	0	0	31
NNW	0	17	14	0	0	0	32
Total	12	497	361	64	4	1	939

Calm Hours not Included above for:	**Total Period**	**All Hours**	2
Variable Direction Hours for:	**Total Period**	**All Hours**	0
Invalid Hours for:	**Total Period**	**All Hours**	0
Number of Valid Hours for this Table:	**Total Period**	**All Hours**	8758
Total Hours for the Period:			8760

1.10 Joint Frequency Distributions, Stability Class B, Elevation 150 ft.

Joint Frequency Distribution

Hours at Each Wind Speed and Direction

Total Period **All Hours**

Period of Record = 1/1/2025 00:00 – 12/31/2025 23:00

Elevation: **Speed:** SP150P **Direction:** DI150P **Lapse:** DT150-35

Stability Class: B Delta Temperature Moderately Unstable

Wind Speed (mph)

Wind Direction	0.6-3.5	3.6-7.5	7.6-12.5	12.6-18.5	18.6-24.5	> 24.6	Total
N	2	12	2	0	0	0	16
NNE	2	16	1	0	0	0	19
NE	2	13	3	0	0	0	17
ENE	1	9	0	0	0	0	9
E	0	0	3	0	0	0	3
ESE	0	3	1	0	0	0	4
SE	0	2	1	0	0	0	3
SSE	1	6	2	0	0	0	9
S	0	4	1	0	0	0	5
SSW	0	5	7	3	0	0	15
SW	1	14	13	12	0	0	40
WSW	5	12	9	6	0	0	32
W	8	10	19	11	0	0	48
WNW	3	13	25	5	0	0	46
NW	5	3	8	0	0	0	16
NNW	3	9	6	0	0	0	18
Total	31	131	101	37	0	0	300

Calm Hours not Included above for:	**Total Period**	**All Hours**	2
Variable Direction Hours for:	**Total Period**	**All Hours**	0
Invalid Hours for:	**Total Period**	**All Hours**	0
Number of Valid Hours for this Table:	**Total Period**	**All Hours**	8758
Total Hours for the Period:			8760

1.11 Joint Frequency Distributions – Stability Class C, Elevation 150 ft.

Joint Frequency Distribution

Hours at Each Wind Speed and Direction

Total Period **All Hours**
Period of Record = 1/1/2025 00:00 – 12/31/2025 23:00

Elevation: **Speed:** SP150P **Direction:** DI150P **Lapse:** DT150-35

Stability Class: C Delta Temperature Slightly Unstable

Wind Speed (mph)

Wind Direction	0.6-3.5	3.6-7.5	7.6-12.5	12.6-18.5	18.6-24.5	> 24.6	Total
N	3	20	3	0	0	0	26
NNE	1	23	7	1	0	0	32
NE	4	16	0	0	0	0	20
ENE	2	9	2	0	0	0	13
E	1	2	3	0	0	0	6
ESE	0	2	0	0	0	0	2
SE	0	3	0	0	0	0	3
SSE	0	5	4	0	0	0	9
S	0	5	3	4	0	0	12
SSW	2	5	11	7	0	0	25
SW	2	5	15	4	0	0	26
WSW	3	14	9	15	2	0	43
W	13	17	23	21	2	0	76
WNW	6	12	27	2	0	0	47
NW	9	8	8	0	0	0	25
NNW	10	9	4	0	0	0	23
Total	56	155	119	54	4	0	388

Calm Hours not Included above for:	**Total Period**	**All Hours**	2
Variable Direction Hours for:	**Total Period**	**All Hours**	0
Invalid Hours for:	**Total Period**	**All Hours**	0
Number of Valid Hours for this Table:	**Total Period**	**All Hours**	8758
Total Hours for the Period:			8760

1.12 Joint Frequency Distributions – Stability Class D, Elevation 150 ft.

Joint Frequency Distribution

Hours at Each Wind Speed and Direction

Total Period **All Hours**
Period of Record = 1/1/2025 00:00 – 12/31/2025 23:00

Elevation: **Speed:** SP150P **Direction:** DI150P **Lapse:** DT150-35

Stability Class: D Delta Temperature Neutral

Wind Speed (mph)

Wind Direction	0.6-3.5	3.6-7.5	7.6-12.5	12.6-18.5	18.6-24.5	> 24.6	Total
N	43	91	34	0	0	0	168
NNE	64	99	21	1	0	0	185
NE	91	115	15	0	0	0	221
ENE	40	77	2	0	0	0	119
E	12	33	8	0	0	0	53
ESE	14	11	4	0	0	0	29
SE	4	10	8	0	0	0	22
SSE	9	24	15	0	0	0	48
S	12	34	41	5	1	0	93
SSW	26	47	53	18	0	0	144
SW	30	77	168	36	0	0	311
WSW	50	78	174	107	24	2	435
W	35	124	320	314	11	0	804
WNW	35	91	147	33	0	0	306
NW	30	90	38	1	0	0	159
NNW	47	78	21	0	0	0	146
Total	542	1079	1069	515	36	2	3243

Calm Hours not Included above for:	**Total Period**	**All Hours**	2
Variable Direction Hours for:	**Total Period**	**All Hours**	0
Invalid Hours for:	**Total Period**	**All Hours**	0
Number of Valid Hours for this Table:	**Total Period**	**All Hours**	8758
Total Hours for the Period:			8760

1.13 Joint Frequency Distributions – Stability Class E, Elevation 150 ft.

Joint Frequency Distribution

Hours at Each Wind Speed and Direction

Total Period **All Hours**
Period of Record = 1/1/2025 00:00 – 12/31/2025 23:00

Elevation: **Speed:** SP150P **Direction:** DI150P **Lapse:** DT150-35

Stability Class: E Delta Temperature Slightly Stable

Wind Speed (mph)

Wind Direction	0.6-3.5	3.6-7.5	7.6-12.5	12.6-18.5	18.6-24.5	> 24.6	Total
N	36	33	1	0	0	0	70
NNE	81	39	5	0	0	0	125
NE	195	140	13	0	0	0	348
ENE	91	59	4	0	0	0	154
E	28	13	2	0	0	0	43
ESE	21	16	4	0	0	0	41
SE	26	11	1	0	0	0	38
SSE	18	15	15	0	0	0	55
S	33	32	30	1	0	0	96
SSW	77	61	22	8	0	0	168
SW	61	43	52	5	0	0	161
WSW	58	45	34	12	2	0	151
W	27	53	37	18	0	0	135
WNW	18	41	16	2	0	0	77
NW	19	25	1	0	0	0	45
NNW	30	26	1	0	0	0	57
Total	818	662	244	48	2	0	2461

Calm Hours not Included above for:	**Total Period**	**All Hours**	2
Variable Direction Hours for:	**Total Period**	**All Hours**	0
Invalid Hours for:	**Total Period**	**All Hours**	0
Number of Valid Hours for this Table:	**Total Period**	**All Hours**	8758
Total Hours for the Period:			8760

1.14 Joint Frequency Distributions – Stability Class F, Elevation 150 ft.

Joint Frequency Distribution

Hours at Each Wind Speed and Direction

Total Period **All Hours**
Period of Record = 1/1/2025 00:00 – 12/31/2025 23:00

Elevation: **Speed:** SP150P **Direction:** DI150P **Lapse:** DT150-35

Stability Class: F Delta Temperature Moderately Stable

Wind Speed (mph)

Wind Direction	0.6-3.5	3.6-7.5	7.6-12.5	12.6-18.5	18.6-24.5	> 24.6	Total
N	27	5	0	0	0	0	32
NNE	105	31	0	0	0	0	136
NE	255	144	1	0	0	0	400
ENE	83	18	0	0	0	0	101
E	37	6	0	0	0	0	43
ESE	16	5	0	0	0	0	21
SE	16	14	0	0	0	0	30
SSE	13	12	0	0	0	0	25
S	45	12	2	0	0	0	59
SSW	73	14	3	0	0	0	90
SW	76	13	5	0	0	0	94
WSW	26	17	2	0	0	0	45
W	17	16	4	0	0	0	37
WNW	12	10	0	0	0	0	22
NW	16	3	0	0	0	0	26
NNW	20	6	0	0	0	0	27
Total	837	326	17	0	0	0	1180

Calm Hours not Included above for:	**Total Period**	**All Hours**	2
Variable Direction Hours for:	**Total Period**	**All Hours**	0
Invalid Hours for:	**Total Period**	**All Hours**	0
Number of Valid Hours for this Table:	**Total Period**	**All Hours**	8758
Total Hours for the Period:			8760

1.15 Joint Frequency Distributions, Stability Class G, Elevation 150 ft.

Joint Frequency Distribution

Hours at Each Wind Speed and Direction

Total Period **All Hours**
Period of Record = 1/1/2025 00:00 – 12/31/2025 23:00

Elevation: **Speed:** SP150P **Direction:** DI150P **Lapse:** DT150-35

Stability Class: G Delta Temperature Extremely Stable

Wind Speed (mph)

Wind Direction	0.6-3.5	3.6-7.5	7.6-12.5	12.6-18.5	18.6-24.5	> 24.6	Total
N	36	3	0	0	0	0	39
NNE	103	19	0	0	0	0	122
NE	206	75	2	0	0	0	283
ENE	54	31	1	0	0	0	86
E	16	2	0	0	0	0	18
ESE	11	6	0	0	0	0	17
SE	9	6	0	0	0	0	15
SSE	8	7	0	0	0	0	15
S	22	13	2	0	0	0	37
SSW	81	17	1	0	0	0	99
SW	72	19	6	0	0	0	97
WSW	23	16	1	0	0	0	40
W	11	12	1	0	0	0	24
WNW	13	0	0	0	0	0	13
NW	11	1	0	0	0	0	12
NNW	14	3	0	0	0	0	17
Total	690	230	14	0	0	0	934

Calm Hours not Included above for:	**Total Period**	**All Hours**	2
Variable Direction Hours for:	**Total Period**	**All Hours**	0
Invalid Hours for:	**Total Period**	**All Hours**	0
Number of Valid Hours for this Table:	**Total Period**	**All Hours**	8758
Total Hours for the Period:			8760

1.16 Joint Frequency Distributions, Stability Class All, Elevation 150 ft.

Joint Frequency Distribution

Hours at Each Wind Speed and Direction

Total Period **All Hours**

Period of Record = 01/01/2025 01:00 - 01/01/2024 00:00

Elevation: **Speed:** SP150P **Direction:** DI150P **Lapse:** DT150-35

Stability Class: ALL Delta Temperature

Wind Speed (mph)

Wind Direction	0.6-3.5	3.6-7.5	7.6-12.5	12.6-18.5	18.6-24.5	> 24.6	Total
N	146	171	53	0	0	0	370
NNE	358	266	48	1	0	0	673
NE	750	550	55	1	0	0	1356
ENE	273	239	10	0	0	0	522
E	95	77	27	0	0	0	199
ESE	63	78	24	0	0	0	165
SE	55	63	18	0	0	0	136
SSE	49	99	48	0	0	0	196
S	113	119	100	9	1	0	342
SSW	258	163	109	38	0	0	568
SW	243	190	268	67	0	0	768
WSW	164	212	270	132	29	3	810
W	102	307	479	828	14	0	1283
WNW	97	232	268	84	2	0	683
NW	90	148	88	3	0	0	329
NNW	123	147	50	0	0	0	320
Total	2979	3061	1882	716	46	3	8720

Calm Hours not Included above for:	**Total Period**	**All Hours**	40
Variable Direction Hours for:	**Total Period**	**All Hours**	0
Invalid Hours for:	**Total Period**	**All Hours**	0
Number of Valid Hours for this Table:	**Total Period**	**All Hours**	8720
Total Hours for the Period:			8760

1.17 Joint Frequency Distributions, Stability Class A, Elevation 500 ft.

Joint Frequency Distribution

Hours at Each Wind Speed and Direction

Total Period **All Hours**
Period of Record = 1/1/2025 00:00 – 12/31/2025 23:00

Elevation: **Speed:** SP500P **Direction:** DI500P **Lapse:** DT500-35

Stability Class: A Delta Temperature Extremely Unstable

Wind Speed (mph)

Wind Direction	0.6-3.5	3.6-7.5	7.6-12.5	12.6-18.5	18.6-24.5	> 24.6	Total
N	0	0	2	0	0	0	2
NNE	0	0	3	0	0	0	3
NE	0	0	2	0	0	0	2
ENE	0	0	2	0	0	0	2
E	0	0	6	0	0	0	6
ESE	0	0	8	0	0	0	8
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	1
S	0	1	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
Total	0	1	23	0	0	0	24

Calm Hours not Included above for:	**Total Period**	**All Hours**	1
Variable Direction Hours for:	**Total Period**	**All Hours**	0
Invalid Hours for:	**Total Period**	**All Hours**	0
Number of Valid Hours for this Table:	**Total Period**	**All Hours**	8759
Total Hours for the Period:			8760

1.18 Joint Frequency Distributions, Stability Class B, Elevation 500 ft.

Joint Frequency Distribution

Hours at Each Wind Speed and Direction

Total Period **All Hours**

Period of Record = 1/1/2025 00:00 – 12/31/2025 23:00

Elevation: **Speed:** SP500P **Direction:** DI500P **Lapse:** DT500-35

Stability Class: B Delta Temperature Moderately Unstable

Wind Speed (mph)

Wind Direction	0.6-3.5	3.6-7.5	7.6-12.5	12.6-18.5	18.6-24.5	> 24.6	Total
N	0	0	1	0	0	0	1
NNE	0	1	7	0	0	0	8
NE	0	0	11	0	0	0	11
ENE	0	3	1	0	0	0	4
E	0	2	3	2	0	0	7
ESE	0	4	7	0	0	0	11
SE	0	2	6	1	0	0	9
SSE	0	4	5	0	0	0	9
S	0	2	3	0	0	0	5
SSW	0	0	0	0	0	0	0
SW	0	1	0	0	0	0	1
WSW	0	1	0	0	0	0	1
W	0	0	0	2	0	0	2
WNW	0	0	0	3	1	0	4
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	1
Total	0	21	44	8	1	0	74

Calm Hours not Included above for:	**Total Period**	**All Hours**	1
Variable Direction Hours for:	**Total Period**	**All Hours**	0
Invalid Hours for:	**Total Period**	**All Hours**	0
Number of Valid Hours for this Table:	**Total Period**	**All Hours**	8759
Total Hours for the Period:			8760

1.19 Joint Frequency Distributions, Stability Class C, Elevation 500 ft.

Joint Frequency Distribution

Hours at Each Wind Speed and Direction

Total Period **All Hours**
Period of Record = 1/1/2025 00:00 – 12/31/2025 23:00

Elevation: **Speed:** SP500P **Direction:** DI500P **Lapse:** DT500-35

Stability Class: C Delta Temperature Slightly Unstable

Wind Speed (mph)

Wind Direction	0.6-3.5	3.6-7.5	7.6-12.5	12.6-18.5	18.6-24.5	> 24.6	Total
N	0	12	13	4	0	0	29
NNE	0	14	4	1	0	0	19
NE	0	15	18	1	0	0	34
ENE	0	2	4	0	0	0	6
E	0	4	5	4	0	0	13
ESE	0	6	5	1	0	0	12
SE	0	2	10	0	0	0	12
SSE	0	9	17	0	0	0	26
S	0	7	15	2	1	0	25
SSW	0	8	9	2	0	0	19
SW	0	6	6	0	0	0	12
WSW	0	6	12	3	0	0	21
W	1	10	25	13	1	0	50
WNW	0	4	11	10	4	0	29
NW	2	1	10	0	0	0	13
NNW	0	2	5	1	0	0	8
Total	3	108	169	42	6	0	328

1

Variable Direction Hours for:	**Total Period**	**All Hours**	0
Invalid Hours for:	**Total Period**	**All Hours**	0
Number of Valid Hours for this Table:	**Total Period**	**All Hours**	8759
Total Hours for the Period:			8760

1.20 Joint Frequency Distributions, Stability Class D, Elevation 500 ft.

Joint Frequency Distribution

Hours at Each Wind Speed and Direction

Total Period **All Hours**
Period of Record = 1/1/2025 00:00 – 12/31/2025 23:00

Elevation: **Speed:** SP500P **Direction:** DI500P **Lapse:** DT500-35

Stability Class: D Delta Temperature Neutral

Wind Speed (mph)

Wind Direction	0.6-3.5	3.6-7.5	7.6-12.5	12.6-18.5	18.6-24.5	> 24.6	Total
N	22	89	116	33	0	0	260
NNE	37	78	46	15	0	0	176
NE	26	79	55	16	1	0	177
ENE	32	61	68	10	0	0	171
E	25	56	80	12	0	0	173
ESE	15	52	37	7	2	0	113
SE	11	19	18	16	6	0	70
SSE	16	22	46	18	9	1	112
S	10	27	67	66	14	1	185
SSW	16	41	130	92	23	2	304
SW	20	56	143	269	72	0	560
WSW	24	69	131	184	132	44	584
W	25	105	265	395	257	55	1102
WNW	32	63	175	154	32	1	457
NW	21	38	123	52	2	0	236
NNW	33	81	110	21	0	0	245
Total	365	936	1610	1360	550	104	3672

Calm Hours not Included above for:	**Total Period**	**All Hours**	1
Variable Direction Hours for:	**Total Period**	**All Hours**	0
Invalid Hours for:	**Total Period**	**All Hours**	0
Number of Valid Hours for this Table:	**Total Period**	**All Hours**	8759
Total Hours for the Period:			8760

1.21 Joint Frequency Distributions – Stability Class E, Elevation 500 ft.

Joint Frequency Distribution

Hours at Each Wind Speed and Direction

Total Period **All Hours**
Period of Record = 1/1/2025 00:00 – 12/31/2025 23:00

Elevation: **Speed:** SP500P **Direction:** DI500P **Lapse:** DT500-35

Stability Class: E Delta Temperature Slightly Stable

Wind Speed (mph)

Wind Direction	0.6-3.5	3.6-7.5	7.6-12.5	12.6-18.5	18.6-24.5	> 24.6	Total
N	24	32	28	3	0	0	87
NNE	37	69	23	2	0	0	131
NE	38	50	26	3	0	0	117
ENE	31	49	41	5	0	0	126
E	36	72	32	4	0	0	144
ESE	42	70	36	8	1	0	157
SE	50	34	20	12	6	0	122
SSE	38	37	37	19	1	0	132
S	39	23	25	34	8	0	129
SSW	42	27	43	25	2	0	139
SW	39	37	44	42	20	0	182
WSW	67	79	48	19	4	0	217
W	40	86	88	32	5	0	251
WNW	25	37	15	5	1	0	83
NW	20	22	10	1	0	0	53
NNW	29	26	18	0	0	0	73
Total	597	750	534	214	48	0	2143

Calm Hours not Included above for:	**Total Period**	**All Hours**	1
Variable Direction Hours for:	**Total Period**	**All Hours**	0
Invalid Hours for:	**Total Period**	**All Hours**	0
Number of Valid Hours for this Table:	**Total Period**	**All Hours**	8759
Total Hours for the Period:			8760

1.22 Joint Frequency Distributions – Stability Class F, Elevation 500 ft.

Joint Frequency Distribution

Hours at Each Wind Speed and Direction

Total Period **All Hours**
Period of Record = 1/1/2025 00:00 – 12/31/2025 23:00

Elevation: **Speed:** SP500P **Direction:** DI500P **Lapse:** DT500-35

Stability Class: F Delta Temperature Moderately Stable

Wind Speed (mph)

Wind Direction	0.6-3.5	3.6-7.5	7.6-12.5	12.6-18.5	18.6-24.5	> 24.6	Total
N	19	8	4	0	0	0	31
NNE	19	42	15	0	0	0	76
NE	31	28	15	0	0	0	74
ENE	34	71	16	2	0	0	121
E	29	49	13	1	0	0	92
ESE	24	51	14	2	0	0	91
SE	23	27	15	8	0	0	73
SSE	22	34	35	8	2	0	101
S	32	20	12	17	0	0	81
SSW	23	17	11	5	0	0	56
SW	23	26	13	24	8	0	94
WSW	30	36	11	2	0	0	79
W	24	24	27	1	1	0	77
WNW	19	18	1	0	0	0	38
NW	19	10	2	0	0	0	31
NNW	22	8	4	0	0	0	34
Total	393	469	208	68	11	0	1149

Calm Hours not Included above for:	**Total Period**	**All Hours**	1
Variable Direction Hours for:	**Total Period**	**All Hours**	0
Invalid Hours for:	**Total Period**	**All Hours**	0
Number of Valid Hours for this Table:	**Total Period**	**All Hours**	8759
Total Hours for the Period:			8760

1.23 Joint Frequency Distributions – Stability Class G, Elevation 500 ft.

Joint Frequency Distribution

Hours at Each Wind Speed and Direction

Total Period **All Hours**
Period of Record = 1/1/2025 00:00 – 12/31/2025 23:00

Elevation: **Speed:** SP500P **Direction:** DI500P **Lapse:** DT500-35

Stability Class: G Delta Temperature Extremely Stable

Wind Speed (mph)

Wind Direction	0.6-3.5	3.6-7.5	7.6-12.5	12.6-18.5	18.6-24.5	> 24.6	Total
N	0	0	0	0	0	0	4
NNE	0	2	0	0	0	0	2
NE	0	1	0	0	0	0	1
ENE	0	7	0	0	0	0	9
E	2	1	0	0	0	0	5
ESE	1	3	1	0	0	0	10
SE	1	1	3	0	0	0	7
SSE	1	8	15	0	1	0	14
S	2	6	8	7	0	0	15
SSW	1	3	5	8	0	0	11
SW	1	6	4	1	1	0	32
WSW	0	6	3	4	0	0	29
W	0	0	2	0	0	0	9
WNW	0	0	0	0	0	0	7
NW	0	0	0	0	0	0	5
NNW	0	0	0	0	0	0	1
Total	9	44	41	20	2	0	161

Calm Hours not Included above for:	**Total Period**	**All Hours**	1
Variable Direction Hours for:	**Total Period**	**All Hours**	0
Invalid Hours for:	**Total Period**	**All Hours**	0
Number of Valid Hours for this Table:	**Total Period**	**All Hours**	8759
Total Hours for the Period:			8760

1.24 Joint Frequency Distributions – Stability Class All, Elevation 500 ft.

Joint Frequency Distribution

Hours at Each Wind Speed and Direction

Total Period **All Hours**

Period of Record = 1/1/2025 00:00 – 12/31/2025 23:00

Elevation: **Speed:** SP500P **Direction:** DI500P **Lapse:** DT500-35

Stability Class: ALL Delta Temperature

Wind Speed (mph)

Wind Direction	0.6-3.5	3.6-7.5	7.6-12.5	12.6-18.5	18.6-24.5	> 24.6	Total
N	65	129	151	36	0	0	381
NNE	93	204	107	21	0	0	425
NE	95	172	113	20	1	0	401
ENE	97	206	146	18	0	0	467
E	92	182	138	19	0	0	431
ESE	82	184	108	21	3	0	398
SE	85	89	67	38	12	0	291
SSE	77	107	148	45	13	1	391
S	83	88	132	124	22	1	450
SSW	82	95	204	132	26	2	541
SW	83	134	213	338	101	0	869
WSW	121	197	199	209	136	44	905
W	89	221	394	433	263	55	1455
WNW	77	128	216	175	35	1	632
NW	60	74	146	63	6	0	349
NNW	86	116	142	21	0	0	465
Total	1367	2326	2624	1713	618	104	8752

Calm Hours not Included above for:	**Total Period**	**All Hours**	8
Variable Direction Hours for:	**Total Period**	**All Hours**	0
Invalid Hours for:	**Total Period**	**All Hours**	0
Number of Valid Hours for this Table:	**Total Period**	**All Hours**	8752
Total Hours for the Period:			8760

Annual Radiological Environmental Operating Report 2025

Document Number: RTL# A9.690E

BEAVER VALLEY POWER STATION

ENVIRONMENTAL & CHEMISTRY SECTION

Technical Report Approval:

2025

ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT (AREOR)

BEAVER VALLEY POWER STATION

UNIT NOS. 1 AND 2

LICENSES DPR-66 AND NPF-73

Prepared by: Michael Levy Michael Levy (300655) Date: 4/7/2026

Reviewed by: Donald J. Salera Donald J Salera Date: 4/7/2026

Approved by: Scott W. York Date: 04/29/2026

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ATTACHMENTS

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, Optical Stimulated Luminance dosimeters and pressurized ionization chambers.

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

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

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

12. ISFSI: Independent Spent Fuel Storage Installation

13. Lower Limit of Detection (LLD): The smallest concentration of radioactive material in a sample that will yield a net count (above system background) that will be detected with 95% probability with a 5% probability of a false conclusion that a blank observation represents "real" signal.

14. 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.

15. MDC: Minimum Detectable Concentration

16. Mean: The average, i.e., the sum of results divided by the number of results.

17. Microcurie: 3.7 x 10^4 disintegrations per second, or 2.22 x10^6 disintegrations per minute.

18. MWe: Megawatts Electric

19. NA: Not Applicable

20. NDA: No Detectable Activity

21. NEI: Nuclear Energy Institute

22. NIST: National Institute of Standards and Technology.

23. NPDES: National Pollutant Discharge Elimination System.

24. SPDES: State Pollution Discharge Elimination System

25. NRC: Nuclear Regulatory Commission

26. ODCM: Offsite Dose Calculation Manual

27. OSLD: Optical Stimulated Luminance Dosimeter

28. pCi/L: picocuries / Liter

29. Protected Area: An area encompassed by physical barriers and to which access is controlled.

30. PWR: Pressurized Water Reactor

31. REMP: Radiological Environmental Monitoring Program

32. Restricted Area: An area, access to which is limited by the licensee for the purpose of protecting individuals against undue risks from exposure to radiation and radioactive materials.

33. SLC: Selected Licensee Commitment

34. SA: Sample Anomalies

35. SD: Sample Deviation

36. SPDES: State Pollutant Discharge Elimination System.

37. SW: Surface Water

38. TLD: Thermoluminescent Dosimeter

39. TRM: Technical Requirement Manual

40. TS: Technical Specification

41. US: Unavailable Samples

2.0 EXECUTIVE SUMMARY

Beaver Valley Power Station Radiological Environmental Monitoring Program (REMP) was established prior to the station becoming operational to provide information on background radiation present in the area. The goal of BVPS REMP is to evaluate the impact of the station on the environment. Environmental samples from different media are monitored as part of the program in accordance with specifications detailed in the Offsite Dose Calculation Manual (ODCM) and site technical specifications. 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 BVPS for the reporting period of January 1st through December 31st, 2025. During that time period 1,223 analyses were performed. In assessing all the data gathered for this report and comparing these results with preoperational data and/or 10-year average values, it was concluded that the operation of BVPS did not result in detection of plant related radionuclides in the environment and had no significant radiological impacts on the health and safety of the public or environment.

2.1 Summary Of Conclusions:

No measurable activities above background levels were detected. All values were consistent with historical results which indicate no adverse radiological environmental impacts associated with the operation of BVPS. 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 natural 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].

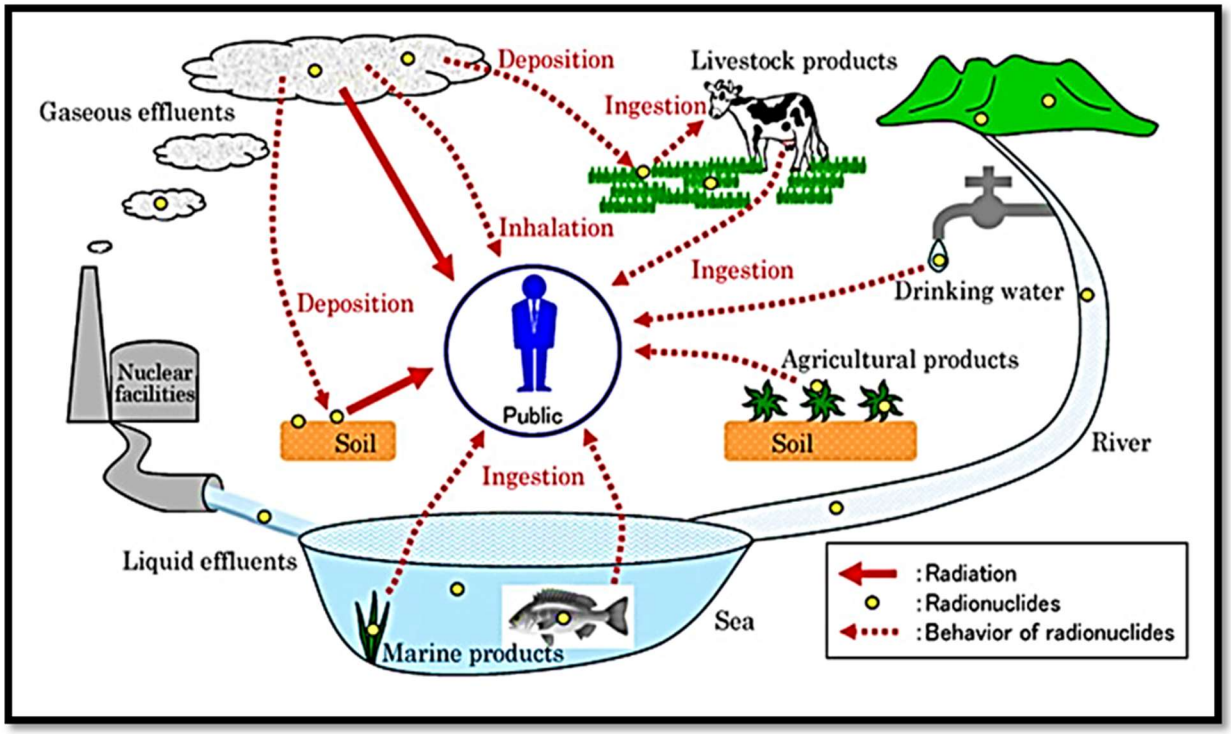


Figure 1, Potential exposure pathways to Members of the Public due to Plant Operations **[7]**

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 Pennsylvania Department of Environmental Protection, BVPS Technical Specifications, and Offsite Dose Calculation Manual (ODCM). These governing documents dictate the environmental sampling, sample analysis protocols, data reporting and quality assurance requirements for the environmental monitoring program.

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

4.0 SITE DESCRIPTION AND SAMPLE LOCATIONS

Beaver Valley Power Station is a commercial nuclear power plant located in Beaver County, Pennsylvania. BVPS consists of two operating pressurized water nuclear power reactors. Unit 1 has an approximate net electrical rating of 980 MWe and Unit 2 has an approximate net electrical rating of 960 MWe. The licensed core thermal power rating for both units is 2,900 megawatts thermal (MWth).

The site is located on a south bank of the Ohio River in the Borough of Shippingport, Beaver County, Pennsylvania on a 453-acre tract of land in a valley. It extends from the river (elevation 665 feet above sea level) to a ridge along the border south of the BVPS at a maximum elevation of 1,160 feet. Plant grade level is approximately 735 feet above sea level.

The site is approximately one mile from Midland, Pennsylvania, five miles from East Liverpool, Ohio, and twenty-five miles from Pittsburgh, Pennsylvania. Population density in the immediate vicinity of the site is relatively low. The climate of the area is classified as humid continental.

BVPS 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 –
- 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, REMP Sampling Locations – Direct Radiation
- Figure 2, REMP Air Sampling Locations
- Figure 3, REMP TLD Locations
-

- Figure 4, REMP Surface Water, Drinking Water, and Shoreline Sediment Locations
-

- Figure 5, REMP Milk Sampling Locations
- Figure 6, REMP Fish Sampling Locations
- Figure 7, REMP Food Products Sampling Locations

RADIOLOGICAL ENVIRONMENTAL SAMPLING PROGRAM REQUIREMENTS

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

Requirement	Sample Location Description, Distance, and Direction	Sampling Collection/ Frequency	Type and Frequency of Analyses
Direct Radiation (IDM) 43 Routine monitoring stations with two or more dosimeters placed as follows: An inner ring of stations, one in each compass sector in the general area of the site boundary. An outer ring of stations, one in each compass sector at approximately 5 miles from the site; and Special interest areas, such as population centers, nearby recreation areas, and control stations	See Table **5**	Quarterly	Gamma Dose/Quarterly

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

Requirement	Sample Location Description, Distance, and Direction	Sampling Collection/ Frequency	Type and Frequency of Analyses
Airborne Radioiodine (AIO) and Particulates (APT) Samples from 5 locations: 3 locations close to the site boundary in different sectors of the highest calculated annual average ground level D/Q. One sample from the vicinity of a community having the highest calculated annual average D/Q. One sample from a control location approximately 10 to 20 miles away in the least predominant wind direction.	1. Station 13: sector 11, 1.41 miles 2. Station 30: sector 4, 0.43 miles 3. Station 32: sector 15, 0.75 miles 4. Station 46.1: sector 2, 2.28 miles 5. Station 48: sector 10, 16.40 miles	Particulate: Continuous sampler operation with sample collection weekly	Gross beta/weekly Gamma isotopic analysis/quarterly composite
		Iodine: Continuous sampler operation with sample collection weekly	I-131/weekly

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

Requirement	Sample Location Description, Distance, and Direction	Sampling Collection/ Frequency	Type and Frequency of Analyses
Surface Water (SWA) 1 sample upstream (control) 1 sample downstream (indicator)	1. Station 49A: sector 3, 4.92 miles (upstream) 2. Station 2: sector 14, 1.43 miles	Composite samples over one-month period; samples from monthly composites are combined to form quarterly composite samples to be analyzed for H-3	I-131/Semi-monthly Gamma isotopic analysis/Monthly H-3/Quarterly
Drinking Water (DWA) 2 locations	1. Station 4: sector 15, 1.26 miles 2. Station 5: sector 14, 4.90 miles	Composite sample collected over a period not to exceed two weeks. Composite sample over one-month period; samples from monthly composites are combined to form quarterly composite samples to be analyzed for H-3	I-131/Semi-monthly Gamma isotopic analysis/Monthly H-3/Quarterly
Groundwater (WWA) No wells in lower elevations between plant and river. The hydraulic gradient or recharge properties are directed toward the river due to the high terrain in the river valley at BVPS. Therefore, station effluents do not affect local wells and ground water sources in the area.	n/a	n/a	n/a
Sediment from Shoreline (ESS) 1 location	1. Station 2A: sector 12, 0.31 miles	Semi-Annually	Gamma isotopic analysis/Semi-annually

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

Requirement	Sample Location Description, Distance, and Direction	Sampling Collection/ Frequency	Type and Frequency of Analyses
Milk (MLK) 3 samples from milking animals in three locations within 5km distance having the highest dose potential. If there are none, then one sample from milking animals in each of three areas between 5 to 8 km distant where doses are calculated to be greater than 1 mrem per yr. 1 sample from milking animals at a control location 15 to 30 km distant and in the least prevalent wind direction.	1. Station 27: sector 7, 6.16 miles 2. Station 114: sector 11, 1.9 miles 3. Station 96: sector 10, 10.48 miles	Semi-monthly when animals are on pasture; at least monthly at other times	Gamma isotopic analysis and I-131/each sample
Fish (ESF) 1 sample of each commercially and recreationally important species in vicinity of site discharge. 1 sample of same species in areas not influenced by plant discharge.	1. Station 2A: sector 12, 0.31 miles 2. Station 49A; sector 3, 4.92 miles	Semi-annually	Gamma isotopic analysis and I-131/each sample on edible portion
Fodder Crops (VGT) 1. Although not required by the ODCM, samples of crops normally used as cattle feed (silage) were collected from a milk farm	1. Station 27: sector 7, 6.16 miles	Monthly	Gamma isotopic analysis

Food Products (FPL) 3 samples of different kinds of broad leaf vegetation grown nearest each of two different offsite locations of highest predicted annual average ground level D/Q 3 broad leaf vegetation grown nearest each of two different offsite locations of highest predicated annual average ground level D/Q if milk sampling is not performed and ` 1 sample collected from the control location.	1. Station 10: Shippingport Boro 2. Station 15: Georgetown Boro 3. Station 46: Industry Boro 4. Station 48: Weirton Area ** Individual garden locations may change based upon availability**	Annually at time of harvest	Gamma isotopic analysis and I-131/each sample on edible portion

Table 5, REMP Sampling Locations – Direct Radiation

Site #	Location Type	Sector	Distance	Description
14	Outer Ring	11	2.53 miles	Hookstown Boro
30	Inner Ring	4	0.43 miles	Shippingport (Cook's Ferry S.S)
32	Inner Ring	15	0.75 miles	Midland (North S.S.)
45	Inner Ring	5	2.19 miles	Christian House Baptist Chapel – Rt. 18
46	Inner Ring	3	2.49 miles	Industry, Midway Drive
47	Outer Ring	14	4.88 miles	East Liverpool Water Dept.
48	Control	10	`16.40 miles	Weirton Water Tower, Collier Way
59	Inner Ring	6	0.99 miles	236 Green Hill Road
60	Outer Ring	13	2.51 miles	444 Hill Road
70	Outer Ring	1	3.36 miles	236 Engle Road
72	Special Interest	3	3.25 miles	Ohioview Lutheran Church
75	Outer Ring	5	4.08 miles	117 Holt Road
76	Special Interest	6	3.80 miles	Raccoon Elementary School
78	Outer Ring	7	2.72 miles	Raccoon Municipal Building
79	Outer Ring	8	4.46 miles	106 Rt. 151 – Ted McWilliams Auto Body
81	Inner Ring	9	3.69 miles	Millcreek United Presby. Church

Table 5, REMP Sampling Locations – Direct Radiation

Site #	Location Type	Sector	Distance	Description
83	Outer Ring	10	4.26 miles	735 Mill Creek Road
84	Special Interest	13	8.3 miles	Hancock Senior Center
89	Outer Ring	15	4.72 miles	488 Smith Ferry Rd., Ohioville
91	Outer Ring	2	3.89 miles	Pine Grove & Doyle Roads
92	Outer Ring	12	2.81 miles	Georgetown Rd. (Georgetown S.S.)
93	Inner Ring	16	1.10 miles	104 Linden – Sunset Hills
94	Inner Ring	10	2.37 miles	McCleary Rd. & Pole Cat Hollow Rd.
95	Inner Ring	8	2.25 miles	832 McCleary Road
231	Inner Ring	1	1.7 miles	1109 Wolfe Run Road – Industry
232	Inner Ring	2	1.9 miles	2432 Midland Beaver Road – Industry
233	Outer Ring	4	4.4 miles	400 Frankfurt Road – USX Federal Credit Union
234	Outer Ring	7	3.3 miles	124 Macves Road – Raccoon
235	Outer Ring	9	2.8 miles	537 McCleary Road – Hookstown
236	Outer Ring	11	2.6 miles	117 Mill St – Hookstown Post Office
237	Outer Ring	12	2.4 miles	692 Hill Road – Georgetown
238	Outer Ring	13	3.6 miles	257 Georgetown Road – Georgetown

Table 5, REMP Sampling Locations – Direct Radiation

Site #	Location Type	Sector	Distance	Description
239	Inner Ring	14	1 mile	12th & Beaver St – Midland
240	Inner Ring	16	1.4 miles	1200 Wolf Run & Brookwood – Industry
241	Special Interest	15	1.4 miles	Midland Elementary School
242	Special Interest	3	2.7 miles	Industry Community Park
243	Special Interest	3	4 miles	390 Fairview Road – State Game Lands
244	Special Interest	9	4 miles	South Side High School
245	Outer Ring	6	3.9 miles	230 Service Church Road – Aliquippa
246	Special Interest	11	3.2 miles	Greene Township Ballfields & Park

5.0 MAPS OF COLLECTION SITES

Figure 2, REMP Air Sampling Locations

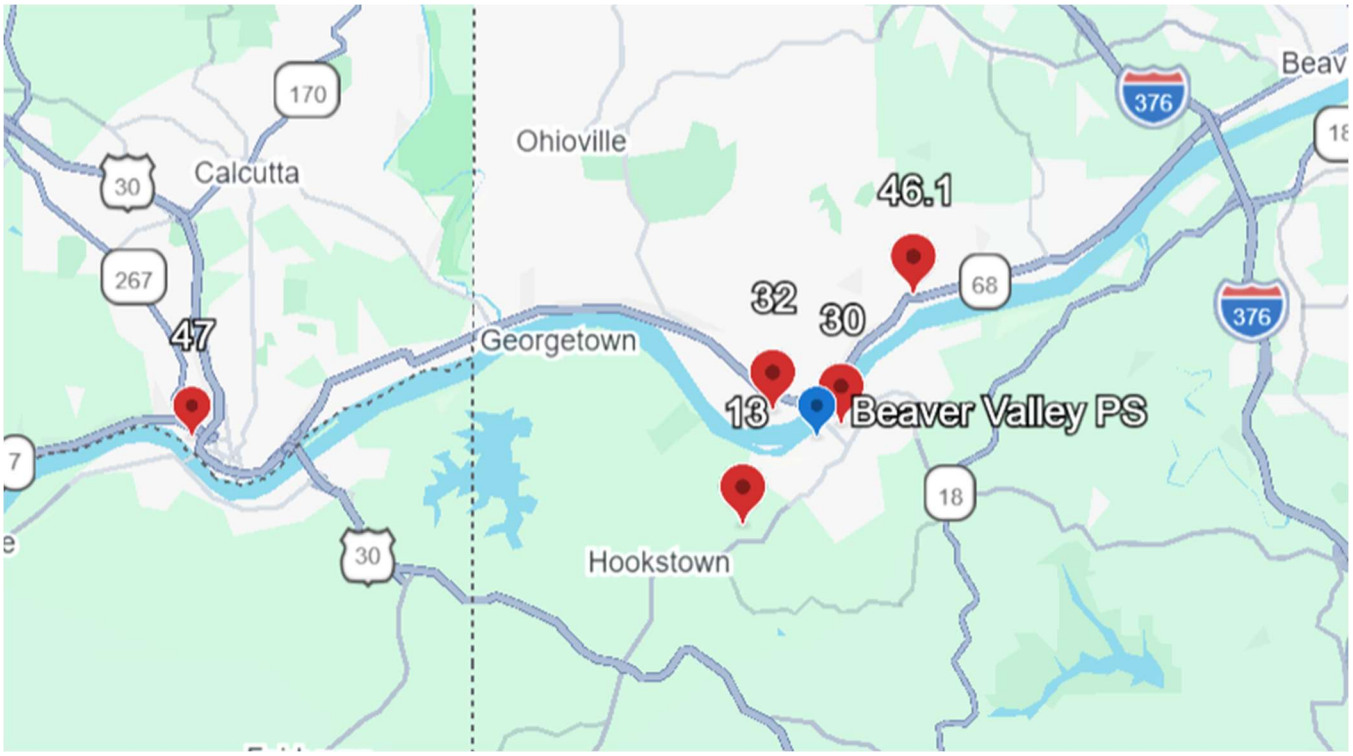


Figure 3, REMP TLD Locations

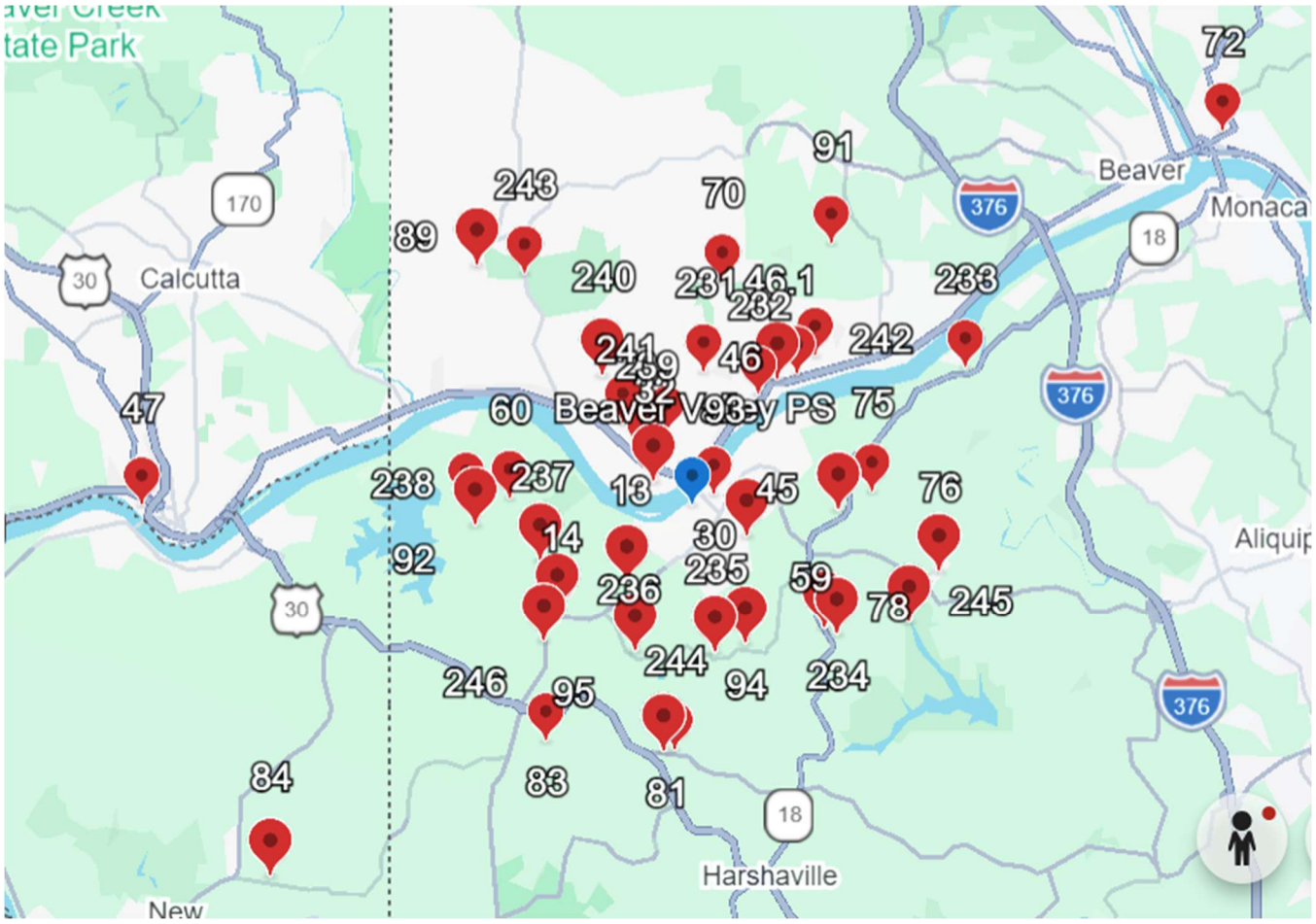


Figure 4, REMP Surface Water, Drinking Water, and Shoreline Sediment Locations

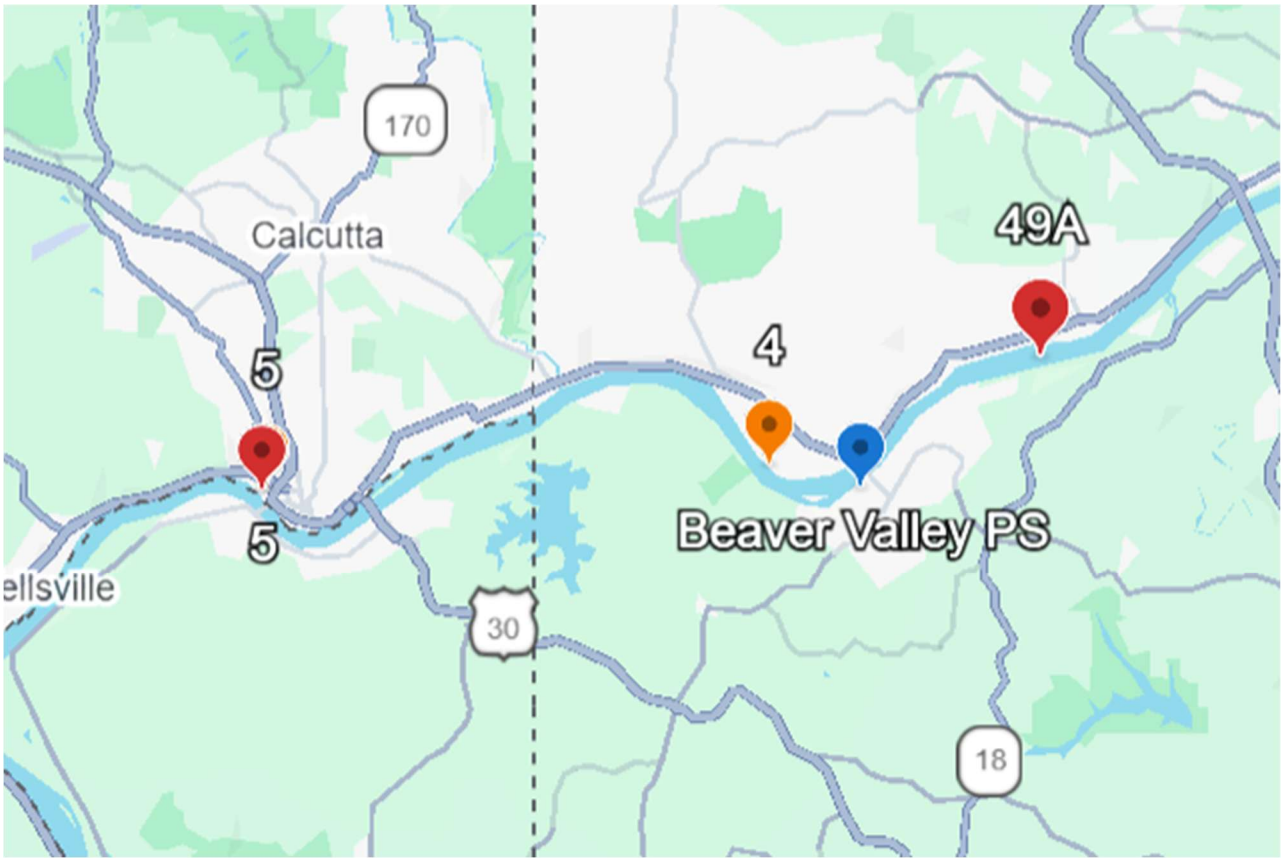


Figure 5, REMP Milk Sampling Locations

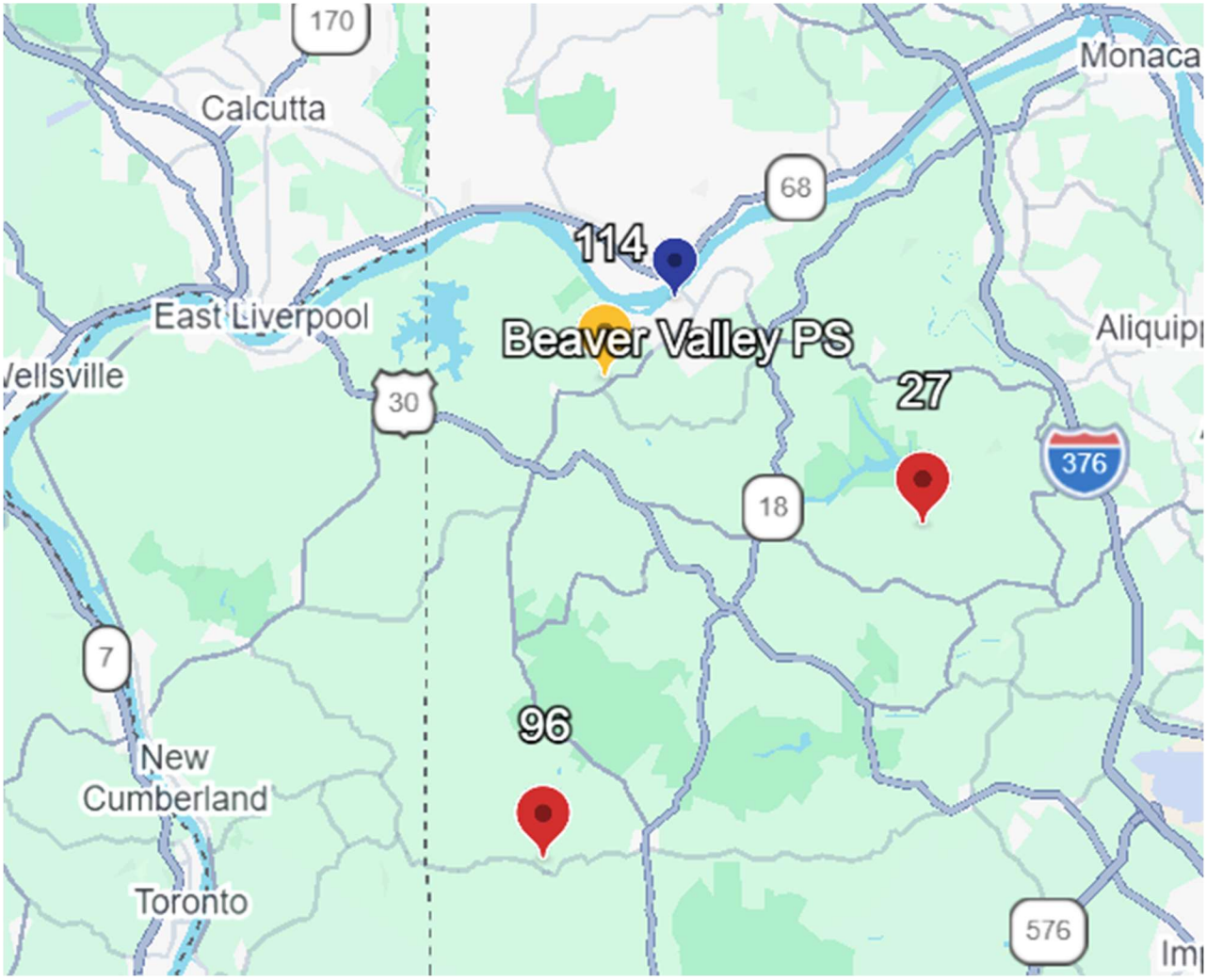
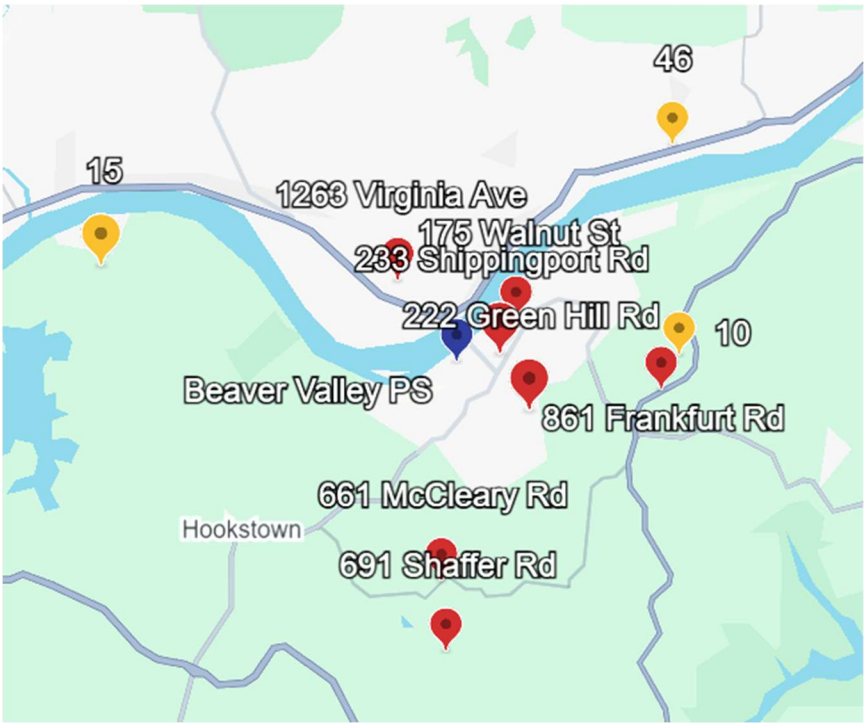


Figure 6, REMP Fish Sampling Locations

Figure 7, REMP Food Products Sampling Locations



6.0 REPORTING LEVELS FOR RADIOACTIVITY CONCENTRATIONS IN ENVIRONMENTAL SAMPLES

Table 6, Reporting Levels for Radioactivity Concentrations in Environmental Samples

Radionuclide	Water (pCi/L)	Air Particulates or Gases (pCi/m^3)	Fish (pCi/kg-wet)	Milk (pCi/L)	Food Products (pCi/Kg-wet)
H-3	20,000[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	2[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 7, Maximum Values for the Limit of Detection

Radionuclide	Water (pCi/L)	Air Particulates or Gases (pCi/m^3)	Fish (pCi/kg-wet)	Milk (pCi/L)	Food Products (pCi/Kg-wet)	Sediment (pCi/Kg-dry)
H-3	2,000[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	1[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** drinking water samples: **If** no drinking water pathway exists, a value **of 30,000 pCi/L** may be used.
[2] **If** no drinking water pathway exists, a value of 20 pCi/l may be used
[3] **If** no drinking water pathway exists, a value **of 3,000 pCi/L** may be used. Some states may require a lower LLD for drinking water sources- per 40CFR141 Safe drinking water ACT.
[4] **If** no drinking water pathway exists, a value of 15 pCi/l may be used

7.0 SAMPLING PROGRAM, PROGRAM MODIFICATION AND INTEPRETATION OF RESULTS

At most nuclear stations, data was collected prior to plant operation to determine background radioactivity levels in the environment. Annual data is routinely compared to preoperational and/or 10-year average values to determine if changes in the 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, 2025, are described below.

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

7.1 Environmental Direct Radiation Dosimetry Sample 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 90^{th} 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.

During this calendar year 2025, a total of 496 samples were collected and analyzed in accordance with the requirements in Table 1, Radiological Environmental Sampling Program – Exposure Pathway – Direct Radiation. Attachment 4, Environmental Direct Radiation Dosimetry Sample Results, includes the annual direct radiation dosimetry sample results.

There were 35 inner ring, outer ring, and special interest locations with detectable dose. There was no detectable annual dose greater than 5 mrem except for location #47, #60, #72, #76, #78, #91, #92, #93, #94 which have slightly lower annual baseline in comparison to other locations. Additionally, no annual monitoring data was greater than the annual baseline for the control.

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

7.2 Air Particulate and Radioiodine Sample Results

Summary

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 2025, a total of 520 samples (260 particulate filters and 260 iodine cartridges) were collected and analyzed for gross beta, gamma emitters, and iodine. Particulate samplers are used to analyze for 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.

Samples are collected at each of these locations by continuously drawing two cubic feet per minute (2 CFM) of atmosphere air through a glass fiber filter paper and a charcoal cartridge. The glass fiber filter paper is used for collection of airborne particulates, whereas the charcoal cartridge is used for collection of radioiodine.

Analysis is performed by placing the glass fiber filter paper form the weekly air sample in a 2-inch planchet followed by analysis in a low background, gas flow proportional counter. Gamma isotopic analysis is performed by stacking all of the glass fiber filter papers collected from a monitoring station during the quarter and scanning the composite on a high-resolution germanium gamma spectrometer. I-131 analysis is performed by a gamma scan of each charcoal cartridge.

Conclusions

A total of 260 samples were analyzed for gross beta. Results were comparable to that of previous years. Gross beta activity was detected in all 208 of the indicator location samples at concentrations ranging from $7E^{-03}$ pCi/m^3 to $59E^{-03}$ pCi/m^3 with an average concentration of $21E^{-03}$ pCi/m^3. Control location concentration ranged from $7E^{-03}$ pCi/m^3 to $51E^{-03}$ pCi/m^3 with an average concentration of $21E^{-03}$ 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 individual samples.

Gamma spectroscopy was performed on each of the 20 composite samples. Naturally occurring Be-7 was detected and no other gamma emitters were detected in any of the samples. Naturally occurring Be-7, attributed to cosmic ray activity in the atmosphere, was detected in all 16 indicator locations at concentrations ranging from $42E^{-03}$ pCi/m^3 to $89E^{-03}$ pCi/m^3 with an average concentration of $65E^{-03}$ pCi/m^3. Control location concentration ranged from $51E^{-03}$ pCi/m^3 to $88E^{-03}$ pCi/m^3 with an average concentration of $68E^{-03}$ pCi/m^3.

A total of 260 samples were analyzed for I-131. All 260 samples were less than the MDC for both indicator and control locations during the reporting period.

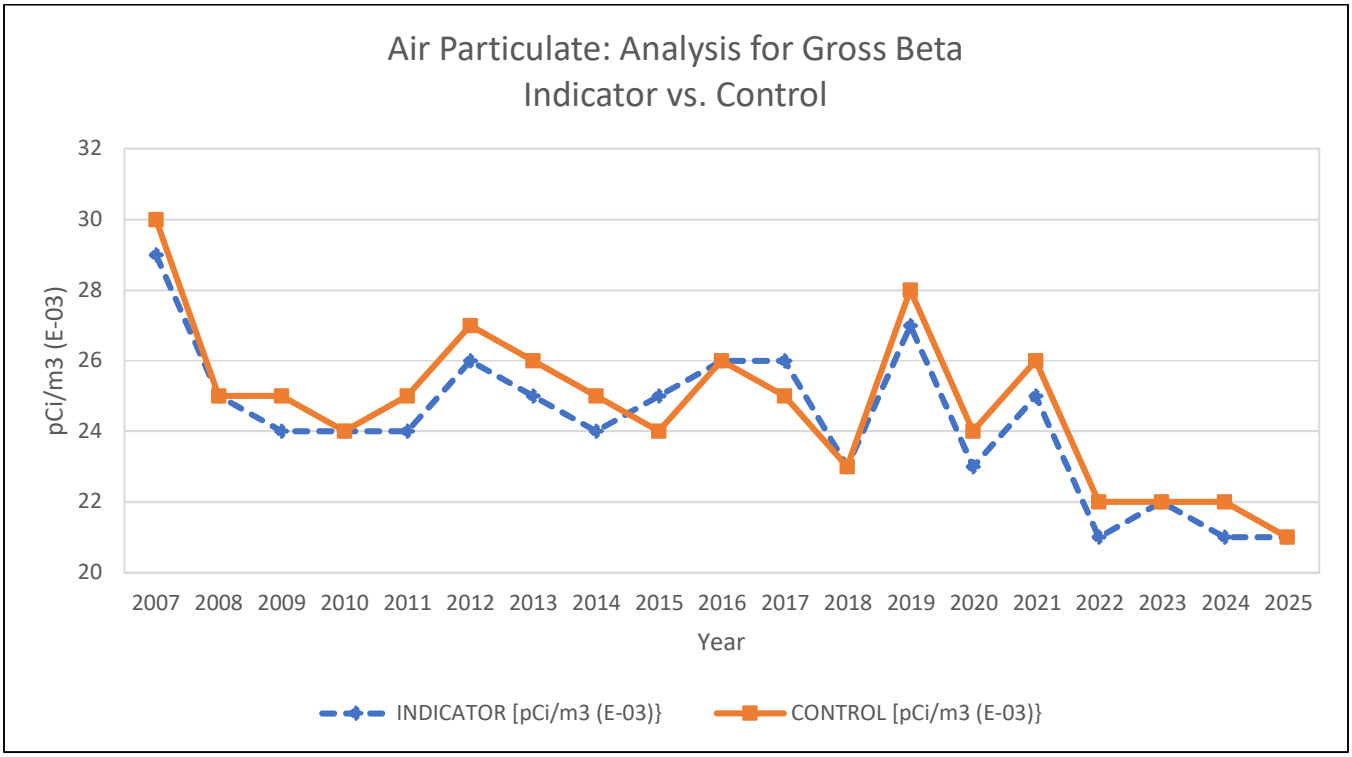


Figure 8: Air Particulate: Analysis for Gross Beta, Average Mean for All Indicator Vs. Control

7.3 Waterborne Sample Results

7.3.1 Surface Water (River)

Summary

The Ohio River is the main body of water in the area and is the main surface water supply for drinking water in the area. The BVPS obtains water from the Ohio River for plant make-up water and discharges water to the Ohio River via National Pollutant Discharge Elimination System (NPDES) discharge points (e.g., cooling tower blowdown, liquid effluent releases, etc.)

Downstream raw water samples are collected daily and combined into weekly composite samples. The water sample is collected with a composite sampler. An automatic sampler aliquots 20-40 mL of sample every 15 minutes for a weekly sample. Weekly samples are then combined for a monthly composite. Monthly composite samples are analyzed for gamma emitters. Aliquots from the monthly composites are combined to form quarterly composites which are then analyzed for tritium.

A weekly grab sample is taken upstream of the Montgomery Dam. This upstream sample is used as a control sample. Weekly grab samples are then combined for a monthly composite. Monthly composite samples are analyzed for gamma emitters. Aliquots from the monthly composites are combined to form quarterly composites which are then analyzed for tritium.

During this calendar year 2025, a total of 104 surface water samples were collected and analyzed in accordance with the requirements in the ODCM and shown in Table 3, Radiological Environmental Sampling Program – Exposure Pathway - Waterborne.

Gamma isotopic analysis is performed by placing a one liter of the sample into a Marinelli container and analyzing on a high-resolution germanium gamma spectrometry system. Tritium is determined by liquid scintillation analysis.

Conclusions

A total of twenty-four (24) surface water samples were analyzed by gamma spectrometry during the report period. Gamma emitting radionuclides were not detected in the twelve (12) indicator samples, nor were they detected in the twelve (12) control samples.

A total of eight (8) surface water samples were analyzed for tritium during the report period. Tritium was not detected in the three (3) indicator samples or four (4) control samples. H-3 was detected in one indicator sample.

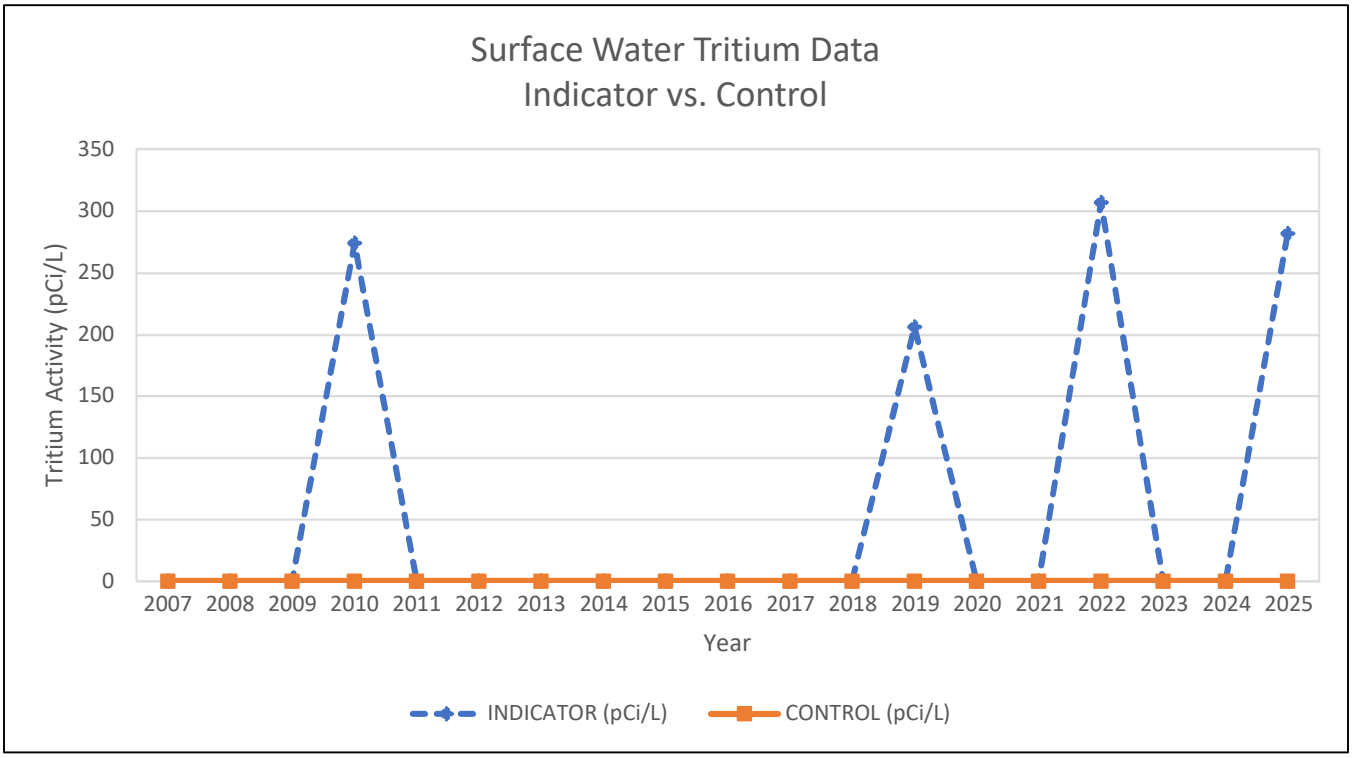


Figure 9: Surface Water Tritium Results Indicator vs. Control

7.3.2 REMP Groundwater (Offsite Impact Monitoring)

Summary

Historically, groundwater samples were collected by grab samples at locations within four miles of the site. Precipitation, when available, was collected each week and combined for quarterly composite samples. Groundwater composites were analyzed for tritium and gamma emitting nuclides. Since these samples are not required, they are no longer collected as of 2017. No groundwater samples were collected from offsite monitoring wells and analyzed in accordance with the requirements in the ODCM and shown in Table 3: Radiological Environmental Sampling Program – Exposure Pathway - Waterborne.

7.3.3 Drinking Water

Summary

The Ohio River is the main surface water supply source for residents both upstream and downstream. The closest user of the Ohio River as a potable water source is the Midland Borough Municipal Water Authority. The intake of the treatment plant is approximately 1.5 miles downstream of the Midland Borough Municipal Authority and is located on the opposite side of the river. The subsequent downstream user is East Liverpool, Ohio and is approximately 6 miles downstream.

Drinking water (i.e., treated water) is collected at both the Water Treatment Plant in Midland, PA and the Water Treatment Plan in East Liverpool, OH. The water sample is collected with a composite sampler. An automatic sampler at each location aliquots 20-40 mL of sample every 20 minutes which is combined for a weekly sample. Bi-weekly composites are analyzed for I-131. Weekly samples are also combined for a monthly composite. Monthly composite samples are analyzed for gamma emitters. Aliquots from the monthly composites are combined to form quarterly composites which are then analyzed for tritium.

A total of 104 drinking water samples were obtained in 2025. These samples were analyzed for I-131 bi-weekly, gamma isotopic analysis monthly, and tritium quarterly, in accordance with requirements in the ODCM and shown in Table 3, Radiological Environmental Sampling Program – Exposure Pathway - Waterborne.

I-131 is analyzed with a low-level beta counting system. Gamma isotopic analysis is performed by placing a one liter of the sample into a Marinelli container and analyzing on a high-resolution germanium gamma spectrometry system. Tritium is determined by liquid scintillation analysis.

Conclusion

A total of fifty-two (52) drinking water samples were analyzed for I-131. Iodine-131 was detected in zero (0) indicator samples and one (1) control sample. The composite date was negative for the indicator sample. Identification of I-131 in one location was most likely due to medical diagnosis and treatment procedures performed at upstream facilities.

A total of twenty-four (24) drinking water samples were analyzed by gamma spectrometry during the report period. Gamma emitting radionuclides were not detected in the twelve (12) indicator samples, nor were they detected in the twelve (12) control samples.

A total of eight (8) drinking water samples were analyzed for tritium during the report period. Tritium was not detected in the four (4) indicator samples or three (3) control samples. H-3 was detected in one control sample.

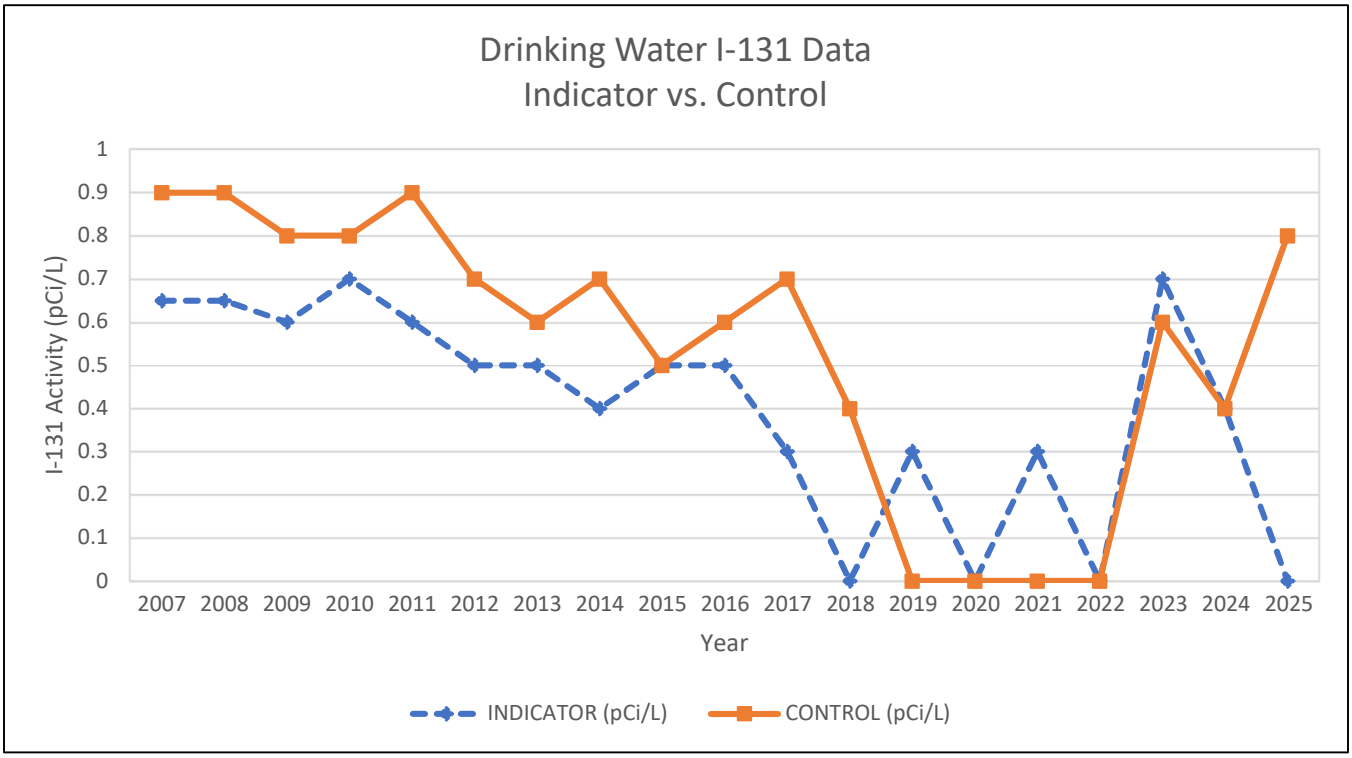


Figure 10: Drinking Water I-131 Samples Indicator vs. Control

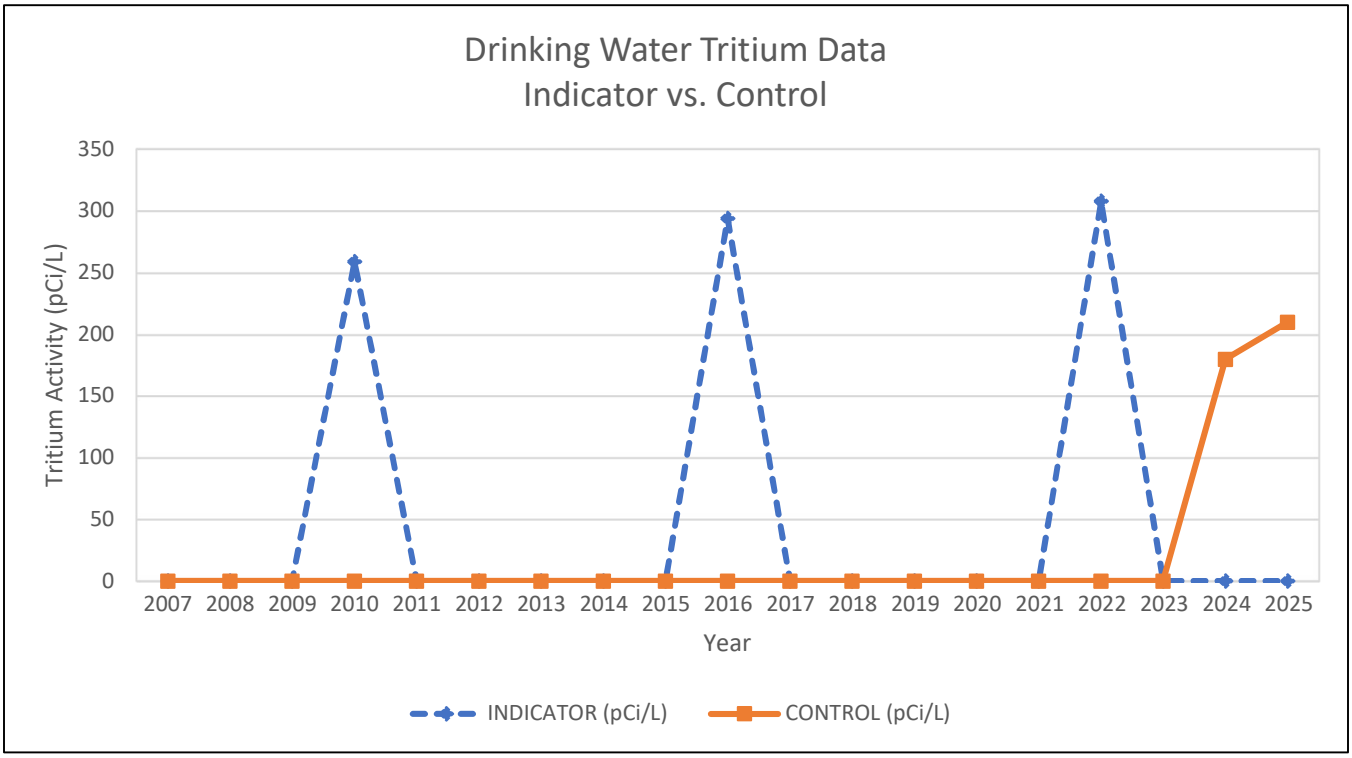


Figure 11: Drinking Water Tritium Sample Results Indicator vs. Control

7.3.4 Sediment from Shoreline

Summary

The stream sediment (river bottoms) consists largely of sand and silt. Soil samples may vary from sand and silt to a heavy clay with variable amounts of organic material. Shoreline sediment is collected semi-annually above the Montgomery Dam and near the BVPS outfall structure. A Ponar or Eckman dredge is used to collect the sample.

Shoreline sediment collections were made in June 2025 and September 2025 and analyzed for tritium and gamma-emitting isotopes. Along with indicator locations samples are also collected at the control locations. A total of 4 shoreline samples were analyzed in accordance with requirements in the ODCM and shown in Table 3, Radiological Environmental Sampling Program – Exposure Pathway - Waterborne.

Sediment is analyzed for gamma-emitting radionuclides. Analysis is performed in a 300 mL plastic bottle and analyzed by gamma spectrometry.

Conclusion

A total of four (4) sediment samples were analyzed by gamma spectrometry during the report period. Naturally occurring potassium-40, thallium-208, bismuth-214, lead-212, lead-214, radium-226, and actinium-228 were detected in two of two (2 of 2) indicator samples and two of two (2 of 2) control samples.

Radionuclide cesium-137 was identified in two of two (2 of 2) indicator samples and one of two (1 of 2) control samples. Results were comparable to that of previous years (current annual range = 0.061 – 0.065 pCi/gm dry)

Radionuclide cobalt-58 was identified in one of two (1 of 2) indicator samples and zero of two (0 of 2) control samples. Results were comparable to that of previous years (current annual range = 0.068 – 0.068 pCi/gm dry)

Radionuclide cobalt-60 was identified in two of two (2 of 2) indicator samples and zero of two (0 of 2) control samples. Results were comparable to that of previous years (current annual range = 0.342 – 0.431 pCi/gm dry)

The identification of Cs-137, Co-58, and Co-60 in the shoreline sediment near the main outfall facility is an expected plant discharge in liquid effluent release as characterized by the DAW profile. Analysis is consistent with discharge data of authorized liquid effluent releases. No liquid effluent releases during the report period exceeded the limits set forth in the ODCM.

7.4 Ingestion Pathway Sample Results

7.4.1 Milk

Summary

Samples of fresh milk are obtained from milch animals. Dairy cow sampling is performed at the Brunton Dairy and the Windsheimer Dairy Farm. Additionally, one goat milk sampling location is also available.

Milk samples from milking animals were collected at 1 location within 5 km having the highest dose potential, along with samples collected from a control location 15-30 km in the least prevalent wind direction. Samples from 1 location were also collected between 5-8 km away from the plant center, where doses are calculated to be greater than 1 mrem per year. Note: When there are not enough milk sample locations available to meet the ODCM requirements, three (3) different types of broad leaf vegetation are to be sampled at each of two (2) indicator locations based on the highest predicted annual average ground D/Q (as determined from the previous year's Land Use Census results), in addition to those samples described above.

Milk samples are collected and analyzed bi-weekly when animals are on pasture and monthly at other times. A total of 57 milk samples were obtained in 2025. These samples were analyzed for I-131, gamma isotopic analysis, and strontium-89/90, in accordance with requirements in the ODCM and shown in Table 4, Radiological Environmental Sampling Program – Exposure Pathway - Ingestion Table **4**

I-131 is analyzed with a low-level beta counting system. Gamma isotopic analysis is performed by placing a one liter of the sample into a Marinelli container and analyzing on a high-resolution germanium gamma spectrometry system. Milk samples are prepared by adding a stable strontium carrier and evaporating to dryness, then asking in a muffle furnace, followed by precipitating phosphates. Strontium is purified in all samples by the Argonne method using 3 grams of extraction material in a chromatographic column. Stable yttrium-carrier is added and the sample is allowed to stand for a minimum of 5 days for the in-growth of yttrium-90 (Y-90). Yttrium is then precipitated as hydroxide dissolved and re-precipitated as oxalate. The yttrium oxalate is mounted on a nylon planchet and is counted in a low-level beta counter to infer strontium-90 activity. Strontium-89 is determined by precipitating strontium carbonate ($SrCO_3$) from the sample after yttrium separation. This precipitate is mounted on a nylon planchet and is covered with an 80 mg/cm^2 aluminum absorber for low level beta counting. Chemical yields of strontium and yttrium are determined by gravimetric means.

Conclusion

A total of fifty-seven (57) milk samples were analyzed for I-131, gamma emitting radionuclides, and strontium 89/90 during the report period. Iodine-131, gamma emitting radionuclides, and strontium-89 were not detected in the twenty-seven (27) indicator samples or twenty (20) control samples.

Radionuclide strontium-90 was identified in fifteen of twenty-seven (15 of 27) indicator samples and four of twenty (14 of 20) control samples. The level detected are attributed to previous nuclear weapons tests and are within the expected range.

7.4.2 Fish and Invertebrates

Summary

Fish samples are collected semi-annually in the New Cumberland pool of the Ohio River at the Beaver Valley effluent discharge point and upstream of the Montgomery Dam.

A total of five (5) fish samples were collected in 2025. These samples were analyzed for gamma emitting radionuclides in the edible portions in accordance with requirements of the ODCM and summarized in Table 4, Radiological Environmental Sampling Program – Exposure Pathway - Ingestion. These samples are collected from the indicator and control areas as required by the ODCM. Note: only the edible portions are analyzed excluding head, tail, bones, and shell fragments.

A sample is prepared in a standard tare weight 300 mL plastic bottle and scanned for gamma emitting nuclides utilizing a high-resolution germanium detector.

Conclusion

A total of five (5) fish samples were analyzed by gamma spectrometry during the report period. Gamma emitting nuclides were not detected in any of the four (4) indicator samples, nor were they detected in any of the one (1) control samples.

7.4.3 Food Products

Summary

Representative samples of feedstuff (i.e., cattle feed) are collected monthly from the nearest dairy farm (Brunton Dairy) and analyzed by gamma spectrometry.

A total of seven (7) feedstuff samples were analyzed in 2025, for gamma emitting radionuclides in accordance with requirements of the ODCM, as summarized in Table 4, Radiological Environmental Sampling Program – Exposure Pathway - Ingestion.

Analysis is performed by scanning a dried, homogenized sample with a gamma spectrometry system. Samples of feedstuff are loaded into a tare weight of 150- or 300-mL plastic bottles or 1-liter Marinelli containers, weighed, and the net weight of the sample is determined prior to scanning.

Conclusion

A total of seven (7) feedstuff were analyzed by gamma spectrometry during the report period. Naturally occurring potassium-40 was detected in seven of seven (7 of 7) samples and Beryllium-7 was detected in three of ten (3 of 10) samples. No other gamma emitting nuclides were detected.

7.4.4 Grass and Leafy Vegetation

Summary

Food products are collected at garden locations during the growing season. Leafy vegetables (e.g., cabbage) are obtained from Industry, Raccoon, Georgetown, Pennsylvania. Samples are obtained from two (2) additional locations based upon the highest predicted annual average ground D/Q when milk locations are unavailable. Additionally, samples are collected from the control location in Weirton, WV.

In accordance with the ODCM and as described in Table 4, Radiological Environmental Sampling Program – Exposure Pathway - Ingestion, 9 broad leaf vegetation samples were collected from growing locations nearest site boundary in areas of highest predicted annual average ground level D/Q. Samples are collected and analyzed for gamma isotopic and I-131 from the indicator and control locations annually at the time of harvest. It is common to detect Cs-137 in broadleaf samples at both indicator and control locations. Cs-137 can be attributed to offsite sources such as weapons testing, Chernobyl, and Fukushima events. While Cs-137 is periodically found in vegetation samples, the historical relationship between the indicator and control locations demonstrate that the plant is not the source of activity detected.

Sample preparation for analysis is identical to food products preparation described above.

Conclusion

A total of eight (8) samples were analyzed by spectrometry. Naturally occurring potassium-40 was identified in seven of eight (8 of 8) samples. No other gamma emitting nuclides were detected.

8.0 LAND USE CENSUS EXPOSURE PATHWAY

Annual 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.

A Land Use Census was conducted during the calendar year, 2025, within the growing season to identify changes in land use, receptor locations, and new exposure pathways. The results for the 2025 Land Use Census are listed in Table 8: Land Use Census – Nearest Residence within 5 miles. In summary, the highest D/Q locations for nearest garden, nearest residence, and nearest milk animal did not change following the 2025 census.

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

Sector	Direction	Nearest Resident (Miles)	Nearest Milk Animal (Miles)	Nearest Garden (Miles)	Nearest Meat Animal (Miles)
1	N	1.604	None	2.92	None
2	NNE	1.643	None	1.97	None
3	NE	0.474	None	0.73	None
4	ENE	0.438	None	0.45	None
5	E	1.200	None	2.04	None
6	ESE	0.852	None	1.44	3.50

7	SE	1.501	None	0.86	None
8	SSE	2.106	None	1.71	None
9	S	1.367	None	2.13	None
10	SSW	0.760	None	2.22	2.05
11	SW	1.463	2.131	1.98	2.30
12	WSW	1.417	None	2.30	None
13	W	2.222	None	2.49	None
14	WNW	2.300	None	3.50	None
15	NW	0.892	None	0.98	5.00
16	NNW	0.910	None	1.25	None

9.0 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 2025, the following three terms are used to describe the issues: Sample Anomalies (SA), Sample Deviation (SD), and Unavailable Samples (US).

Media that experienced downtime (i.e., air samplers or water samplers) during a surveillance period are classified a “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 9: Sample Deviation Summary

Sample Type and Analysis	Location	Collection Date or Period	Reason for not conducting REMP sampling as required by ODCM	Plans for preventing reoccurrence
MLK	114	1-20-2025	US – Animals not milking	N/A
SWA	49A	1-28-2025	SD - Compositor frozen	
MLK	114	2-17-2025	US – Animals not milking	N/A

MLK	114	3-9-2025	US – Animals not milking	N/A
MLK	114	5-27-25	SA - Sample lost in transit	
MLK	96	5-27-25	SA - Sample lost in transit	
ESF	49A	7-18-25	US - Unable to obtain/catch fish	N/A
MLK	114	9-29-25	US - Animals not milking	N/A
FPL	48D	10-2-25	US – No garden	Verify gardens are available before the growing season
MLK	114	10-13-25	US - Animals not milking	N/A
MLK	114	10-27-25	US - Animals not milking	N/A
MLK	114	11-17-25	US - Animals not milking	N/A
MLK	114	12-16-25	US - Animals not milking	N/A

10.0 OTHER SUPPLEMENTAL INFORMATION

10.1 NEI 07-07 Onsite Radiological Groundwater Monitoring Program

Beaver Valley Power Station 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 groundwater monitoring program are not part of the Radiological Environmental Monitoring Program (REMP). Results of NEI 07-07 Radiological Groundwater Monitoring Program for onsite Wells are communicated in the ARERR.

10.2 Independent Spent Fuel Storage Installation (ISFSI) Monitoring Program

ISFSI information is reported in the BVPS ARERR.

10.3 Corrections to Previous Reports

There are no corrections to be addressed from the previous report.

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Attachment 1, Data Table Summary

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	ANALYSIS AND TOTAL NUMBER OF ANALYSIS PERFORMED	Lower Limit of Detection (LLD)	Indicator Mean[5]; (f[6]). Range[1]	Location with Highest Annual Mean		Control Mean[1] (f[2]). Range[1]	Number of Nonroutine Reported Measurements
				Name Distance and Direction	Mean[1] (f[2]) Range[1]		
I. DIRECT							
DIRECT RADIATION (mR/standard quarter)	**TLD-Quarterly** (496)	4.6	19.6 (488) (13.1/82.6)	#245	34.9 (8/8) (16.6/82.6)	22.5 (8/8) (17.5/26.2)	1
II. AIRBORNE							
AIR PARTICULATE (E^{-03} pCi/m3)	**Gr-B** (260)	< 2	21 (208/208) (7/59)	#46.1 2.28 miles NE	22 (52/52) (9/52)	21 (52/52) (7/51)	0
	Gamma (20)						
	Be-7	N/A	65 (16/16) (42/89)	#32 0.75 miles NW	69 (4/4) (50/85)	68 (4/4) (51/88)	0
	Co-60	N/A	<MDC	N/A	N/A	<MDC	0
	Cs-134	< 0.5	<MDC	N/A	N/A	<MDC	0
	Cs-137	< 0.5	<MDC	N/A	N/A	<MDC	0
	Ba-La-140	N/A	<MDC	N/A	N/A	<MDC	0

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

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	ANALYSIS AND TOTAL NUMBER OF ANALYSIS PERFORMED	Lower Limit of Detection (LLD)	Indicator Mean[5]; (f[6]). Range[1]	Location with Highest Annual Mean		Control Mean[1] (f[2]). Range[1]	Number of Nonroutine Reported Measurements
				Name Distance and Direction	Mean[1] (f[2]) Range[1]		
AIR IODINE (E^{-03} pCi/m3)	**Gamma** I-131 (260)	< 40	<MDC	N/A	N/A	<MDC	0
III. WATERBORNE							
SURFACE WATER (pCi/L)	**Gamma** (24)						
	Mn-54	< 5	<MDC	N/A	N/A	<MDC	0
	Fe-59	< 10	<MDC	N/A	N/A	<MDC	0
	Co-58	< 5	<MDC	N/A	N/A	<MDC	0
	Co-60	< 5	<MDC	N/A	N/A	<MDC	0
	Zn-65	< 10	<MDC	N/A	N/A	<MDC	0
	Zr-Nb-95	< 5	<MDC	N/A	N/A	<MDC	0
	Cs-134	< 5	<MDC	N/A	N/A	<MDC	0
	Cs-137	< 5	<MDC	N/A	N/A	<MDC	0
	Ba-La-140	< 10	<MDC	N/A	N/A	<MDC	0
	H-3 (8)	< 200	282 (1/4) (282/282)	05 4.90 miles WNW	282 (1/4) (282/282)	<MDC	0

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	ANALYSIS AND TOTAL NUMBER OF ANALYSIS PERFORMED	Lower Limit of Detection (LLD)	Indicator Mean[5]; (f^6). Range[1]	Location with Highest Annual Mean		Control Mean[1] (f^2). Range[1]	Number of Nonroutine Reported Measurements
				Name Distance and Direction	Mean[1] (f^2) Range[1]		
POTABLE WATER (pCi/L)	**I-131** (52)	< 0.5	<MDC	N/A	N/A	0.8 (1/26) (0.8/0.8)	0
	Gamma (24)						
	Mn-54	< 5	<MDC	N/A	N/A	<MDC	0
	Fe-59	< 10	<MDC	N/A	N/A	<MDC	0
	Co-58	< 5	<MDC	N/A	N/A	<MDC	0
	Co-60	< 5	<MDC	N/A	N/A	<MDC	0
	Zn-65	< 10	<MDC	N/A	N/A	<MDC	0
	Zr-Nb-95	< 5	<MDC	N/A	N/A	<MDC	0
	Cs-134	< 5	<MDC	N/A	N/A	<MDC	0
	Cs-137	< 5	<MDC	N/A	N/A	<MDC	0
	Ba-La-140	< 10	<MDC	N/A	N/A	<MDC	0
	H-3 (8)	< 200	<MDC	N/A	N/A	210 (1/4) (210/210)	0

	GAMMA (4)	**GAMMA** (4)					
	K-40	N/A	10.88 (2/2) (10.02/11.74)	#2A 0.31 Miles WSW	10.88 (2/2) (10.02/11.74)	6.647 (2/2) (4.973/8.321)	0
	Mn-54	< 0.02	<MDC	N/A	N/A	<MDC	0
	Fe-59	< 0.03	<MDC	N/A	N/A	<MDC	0
	Co-58	< 0.02	0.068 (1/2) (0.068/0.068)	#2A 0.31 Miles WSW	0.068 (1/2) (0.068/0.068)	<MDC	0
	Co-60	< 0.02	0.387 (2/2) (0.342/0.431)	#2A 0.31 Miles WSW	0.387 (2/2) (0.342/0.431)	<MDC	0
	Zn-65	< 0.04	<MDC	N/A	N/A	<MDC	0
	Zr-95	< 0.03	<MDC	N/A	N/A	<MDC	0
SEDIMENT (pCi/g - dry)	Nb-95	< 0.03	<MDC	N/A	N/A	<MDC	0
	Cs-134	< 0.06	<MDC	N/A	N/A	<MDC	0
	Cs-137	< 0.08	0.063 (2/2) (0.061/0.065)	#2A 0.31 Miles WSW	0.063 (2/2) (0.061/0.065)	0.023 (1/2) (0.023/0.023)	0
	Ba-La-140	< 0.03	<MDC	N/A	N/A	<MDC	0
	Tl-208	N/A	0.376 (2/2) (0.350/0.402)	#2A 0.31 Miles WSW	0.376 (2/2) (0.350/0.402)	0.207 (2/2) (0.162/0.252)	0
	Bi-214	N/A	1.215 (2/2) (1.128/1.302)	#2A 0.31 Miles WSW	1.215 (2/2) (1.128/1.302)	0.757 (2/2) (0.587/0.927)	0
	Pb-212	N/A	1.039 (2/2) (0.941/1.137)	#2A 0.31 Miles WSW	1.039 (2/2) (0.941/1.137)	0.558 (2/2) (0.410/0.706)	0
	Pb-214	N/A	1.245 (2/2) (1.188/1.302)	#2A 0.31 Miles WSW	1.245 (2/2) (1.188/1.302)	0.810 (2/2) (0.664/0.956)	0

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	ANALYSIS AND TOTAL NUMBER OF ANALYSIS PERFORMED	Lower Limit of Detection (LLD)	Indicator Mean[5]; (f[6]). Range[1]	Location with Highest Annual Mean		Control Mean[1] (f[2]). Range[1]	Number of Nonroutine Reported Measurements
				Name Distance and Direction	Mean[1] (f[2]) Range[1]		
	Ra-226	N/A	1.691 (2/2) (1.172/2.209)	#2A 0.31 Miles WSW	1.691 (2/2) (1.172/2.209)	1.307 (2/2) (0.937/1.676)	0
	Ac-228	N/A	1.114 (2/2) (1.042/1.185)	#2A 0.31 Miles WSW	1.114 (2/2) (1.042/1.185)	0.637 (2/2) (0.519/0.754)	0
IV. INGESTION							

MILK (pCi/L)	**GAMMA** (47)						
	I131	< 0.5	<MDC	<N/A	<N/A	<MDC	0
	Sr-89	< 2.0	<MDC	<N/A	<N/A	<MDC	0
	Sr-90	< 0.7	0.8 (15/27) (0.6/1.6)	#114 1.9 Miles SW	1.0 (11/12) (0.7/1.6)	0.8 (14/20) (0.5/1.0)	0
	K-40	< 150	1367(27/27) (1141/1607)	#114 1.9 Miles SW	1430 (12/12) (1275/1607)	1291 (20/20) 1115/1435)	0
	Mn-54	< 5	<MDC	<N/A	<N/A	<MDC	0
	Fe-59	< 10	<MDC	<N/A	<N/A	<MDC	0
	Co--58	< 5	<MDC	<N/A	<N/A	<MDC	0
	Co-60	< 5	<MDC	<N/A	<N/A	<MDC	0
	Zn-65	< 10	<MDC	<N/A	<N/A	<MDC	0
	Zr-Nb-95	< 5	<MDC	<N/A	<N/A	<MDC	0
	Cs-134	< 5	<MDC	<N/A	<N/A	<MDC	0
	Cs-137	< 5	<MDC	<N/A	<N/A	<MDC	0
	Ba-La-140	< 10	<MDC	<N/A	<N/A	<MDC	0

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	ANALYSIS AND TOTAL NUMBER OF ANALYSIS PERFORMED	Lower Limit of Detection (LLD)	Indicator Mean[5]; (f[6]). Range[1]	Location with Highest Annual Mean		Control Mean[1] (f[2]). Range[1]	Number of Nonroutine Reported Measurements
				Name Distance and Direction	Mean[1] (f[2]) Range[1]		
VEGETATION (pCi/g - wet)	**GAMMA** (8)						
	I-131	< 0.06	<MDC	N/A	N/A	<MDC	0
	K-40	N/A	5.77 (8/8) (2.04/8.41)	#12B	8.36 (1/1) (8.36/8.36)	N/A	0
	Mn-54	N/A	<MDC	N/A	N/A	<MDC	0
	Fe-59	N/A	<MDC	N/A	N/A	<MDC	0
	Co-58	N/A	<MDC	N/A	N/A	<MDC	0
	Co-60	N/A	<MDC	N/A	N/A	<MDC	0
	Zn-65	N/A	<MDC	N/A	N/A	<MDC	0
	Zr-Nb-95	N/A	<MDC	N/A	N/A	<MDC	0
	Cs-134	< 0.04	<MDC	N/A	N/A	<MDC	0
	Cs-137	< 0.06	<MDC	N/A	N/A	<MDC	0
	Ba-La-140	N/A	<MDC	N/A	N/A	<MDC	0

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	ANALYSIS AND TOTAL NUMBER OF ANALYSIS PERFORMED	Lower Limit of Detection (LLD)	Indicator Mean[5]; (f^6). Range[1]	Location with Highest Annual Mean		Control Mean[1] (f^2). Range[1]	Number of Nonroutine Reported Measurements
				Name Distance and Direction	Mean[1] (f^2) Range[1]		
	GAMMA (5)						
	Mn-54	< 0.05	<MDC	N/A	N/A	<MDC	0
	Fe-59	< 0.10	<MDC	N/A	N/A	<MDC	0
	Co-58	< 0.05	<MDC	N/A	N/A	<MDC	0
FISH (pCi/g - wet)	Co-60	< 0.05	<MDC	N/A	N/A	<MDC	0
	Zn-65	< 0.10	<MDC	N/A	N/A	<MDC	0
	Zr-Nb-95	< 0.01	<MDC	N/A	N/A	<MDC	0
	Cs-134	< 0.05	<MDC	N/A	N/A	<MDC	0
	Cs-137	< 0.05	<MDC	N/A	N/A	<MDC	0
	Ba-La-140	< 0.01	<MDC	N/A	N/A	<MDC	0

FEEDSTUFF (pCi/g – wet)	**GAMMA** (7)						
	Be-7	< 0.2	0.20 (3/7) (0.13/0.26)	#27 6.16 miles SE	0.20 (3/7) (0.13/0.26)	-	0
	K-40	< 0.15	7.29 (7/7) (5.47/11.12)	#27 6.16 miles SE	7.29 (7/7) (5.47/11.12)	-	0
	Mn-54	< 0.02	<MDC	N/A	N/A	-	0
	Fe-59	< 0.04	<MDC	N/A	N/A	-	0
	Co-58	< 0.02	<MDC	N/A	N/A	-	0
	Co-60	< 0.02	<MDC	N/A	N/A	-	0
	Zn-65	< 0.04	<MDC	N/A	N/A	-	0
	Zr-Nb-95	< 0.03	<MDC	N/A	N/A	-	0
	Ru-103	< 0.03	<MDC	N/A	N/A	-	0
	I-131	< 0.06	<MDC	N/A	N/A	-	0
	Cs-134	< 0.04	<MDC	N/A	N/A	-	0
	Cs-137	< 0.06	<MDC	N/A	N/A	-	0
	Ba-La-140	< 0.01	<MDC	N/A	N/A	-	0

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

Table 10: Concentrations of Gross Beta Emitters in Air Particulates (E^{-03} pCi/m^3 ± 2σ)

Date/ Sample ID	CONTROL		INDICATORS			
	#48		#13	#30	#32	#46.1
01-06-25	20 ± 3		23 ± 3	21 ± 3	19 ± 3	28 ± 3
01-13-25	13 ± 3		17 ± 3	14 ± 2	19 ± 3	20 ± 3
01-21-25	21 ± 3		18 ± 3	19 ± 2	23 ± 3	18 ± 3
01-27-25	24 ± 4		23 ± 3	24 ± 3	21 ± 3	31 ± 4
02-03-25	18 ± 3		17 ± 3	14 ± 3	17 ± 3	19 ± 3
02-10-25	21 ± 3		13 ± 3	20 ± 3	21 ± 3	20 ± 3
02-17-25	18 ± 3		17 ± 3	15 ± 3	15 ± 3	18 ± 3
02-24-25	22 ± 3		16 ± 3	16 ± 3	16 ± 3	19 ± 3
03-03-25	20 ± 3		17 ± 3	17 ± 3	21 ± 3	21 ± 3
03-10-25	15 ± 3		15 ± 3	14 ± 3	18 ± 3	18 ± 3
03-17-25	27 ± 3		23 ± 3	21 ± 3	23 ± 3	24 ± 3
03-24-25	13 ± 3		16 ± 3	18 ± 3	17 ± 3	16 ± 3
03-31-25	18 ± 3		17 ± 3	17 ± 3	18 ± 3	22 ± 3
04-07-25	14 ± 3		16 ± 3	15 ± 3	13 ± 3	14 ± 3
04-14-25	18 ± 3		16 ± 3	16 ± 3	17 ± 3	19 ± 3
04-21-25	19 ± 3		18 ± 3	17 ± 3	19 ± 3	21 ± 3
04-28-25	18 ± 2		19 ± 3	17 ± 2	22 ± 3	18 ± 2
05-05-25	14 ± 2		13 ± 2	12 ± 2	15 ± 2	12 ± 2
05-12-25	12 ± 2		12 ± 2	10 ± 2	11 ± 2	13 ± 2
05-19-25	14 ± 2		12 ± 2	11 ± 2	9 ± 2	12 ± 2
05-27-25	7 ± 2		9 ± 2	7 ± 2	7 ± 2	9 ± 2
06-02-25	9 ± 3		12 ± 3	10 ± 3	9 ± 2	9 ± 3
06-09-25	20 ± 3		20 ± 3	20 ± 3	19 ± 3	20 ± 3
06-16-25	18 ± 3		18 ± 3	16 ± 3	17 ± 3	15 ± 3
06-24-25	17 ± 3		19 ± 2	17 ± 2	17 ± 2	17 ± 3
06-30-25	24 ± 3		25 ± 3	20 ± 3	22 ± 3	22 ± 3
07-07-25	24 ± 3		27 ± 3	22 ± 3	22 ± 3	26 ± 3
07-14-25	23 ± 3		26 ± 3	25 ± 3	26 ± 3	28 ± 3
07-21-25	21 ± 3		22 ± 3	23 ± 3	23 ± 3	26 ± 3

Table 10: Concentrations of Gross Beta Emitters in Air Particulates (E^{-03} pCi/m^3 ± 2σ)

Date/ Sample ID	CONTROL		INDICATORS			
	#48		#13	#30	#32	#46.1
07-28-25	22 ± 3		24 ± 3	22 ± 3	19 ± 3	23 ± 3
08-05-25	28 ± 3		22 ± 3	19 ± 3	20 ± 3	19 ± 3
08-12-25	24 ± 3		28 ± 3	27 ± 3	26 ± 3	28 ±3
08-19-25	27 ± 3		26 ± 3	24 ± 3	29 ± 3	29 ± 3
08-26-25	17 ± 2		21 ± 3	16 ± 2	16 ± 2	15 ± 2
09-02-25	19 ± 3		21 ± 3	20 ± 3	19 ± 3	17 ± 3
09-09-25	21 ± 3		23 ± 3	21 ± 3	23 ± 3	24 ± 3
09-15-25	34 ± 4		40 ± 4	36 ± 4	34 ± 3	33 ± 3
09-23-25	51 ± 3		55 ± 4	48 ± 3	47 ± 3	52 ± 3
09-29-25	37 ± 4		37 ± 4	33 ± 3	32 ± 3	33 ± 3
10-08-25	36 ± 3		44 ± 3	46 ± 3	41 ± 3	43 ± 3
10-15-25	22 ± 4		24 ± 4	19 ± 3	21 ± 3	21 ± 3
10-22-25	22 ± 3		26 ± 3	18 ± 3	20± 3	17 ± 3
10-29-25	19 ± 2		18 ± 3	17 ± 3	21 ± 3	16 ± 2
11-03-25	20 ± 3		16 ± 3	19 ± 3	20 ± 3	18 ± 3
11-10-25	25 ± 3		21 ± 3	23 ± 3	20 ± 3	27 ± 3
11-17-25	22 ± 3		19 ± 3	17 ± 3	20 ± 3	18 ± 3
11-24-25	31 ± 3		30 ± 3	31 ± 3	33 ± 3	31 ± 3
12-01-25	19 ± 3		17 ± 3	17 ± 3	20 ± 3	20 ± 3
12-08-25	21 ± 3		18 ± 3	19 ± 3	20 ± 3	23 ± 3
12-16-25	16 ± 2		17 ± 2	16 ± 2	16 ± 2	14 ± 2
12-22-25	23 ± 3		25 ± 3	26 ± 3	30 ± 3	25 ± 3
12-29-25	19 ± 3		22 ± 3	24 ± 3	26 ± 3	25 ± 3
AVERAGE	21 ± 3		21 ± 3	20 ± 3	21 ± 3	22 ± 3
ALL INDICATOR AVERAGE: 21 ± 3						

Table 11: Concentrations of I-131 in Air Particulates (E^{-03} pCi/m^3 ± 2σ)

Date/ Sample ID	CONTROL		INDICATORS			
	#48		#13	#30	#32	#46.1
01-06-25	< 40		< 40	< 40	< 40	< 40
01-13-25	< 40		< 40	< 40	< 40	< 40
01-21-25	< 40		< 40	< 40	< 40	< 40
01-27-25	< 40		< 40	< 40	< 40	< 40
02-03-25	< 40		< 40	< 40	< 40	< 40
02-10-25	< 40		< 40	< 40	< 40	< 40
02-17-25	< 40		< 40	< 40	< 40	< 40
02-24-25	< 40		< 40	< 40	< 40	< 40
03-03-25	< 40		< 40	< 40	< 40	< 40
03-10-25	< 40		< 40	< 40	< 40	< 40
03-17-25	< 40		< 40	< 40	< 40	< 40
03-24-25	< 40		< 40	< 40	< 40	< 40
03-31-25	< 40		< 40	< 40	< 40	< 40
04-07-25	< 40		< 40	< 40	< 40	< 40
04-14-25	< 40		< 40	< 40	< 40	< 40
04-21-25	< 40		< 40	< 40	< 40	< 40
04-28-25	< 40		< 40	< 40	< 40	< 40
05-05-25	< 40		< 40	< 40	< 40	< 40
05-12-25	< 40		< 40	< 40	< 40	< 40
05-19-25	< 40		< 40	< 40	< 40	< 40
05-27-25	< 40		< 40	< 40	< 40	< 40
06-02-25	< 40		< 40	< 40	< 40	< 40
06-09-25	< 40		< 40	< 40	< 40	< 40
06-16-25	< 40		< 40	< 40	< 40	< 40
06-24-25	< 40		< 40	< 40	< 40	< 40
06-30-25	< 40		< 40	< 40	< 40	< 40
07-07-25	< 40		< 40	< 40	< 40	< 40
07-14-25	< 40		< 40	< 40	< 40	< 40
07-21-25	< 40		< 40	< 40	< 40	< 40
07-28-25	< 40		< 40	< 40	< 40	< 40

Table 11: Concentrations of I-131 in Air Particulates (E^{-03} pCi/m^3 ± 2σ)

Date/ Sample ID	CONTROL		INDICATORS			
	#48		#13	#30	#32	#46.1
08-05-25	< 40		< 40	< 40	< 40	< 40
08-12-25	< 40		< 40	< 40	< 40	< 40
08-19-25	< 40		< 40	< 40	< 40	< 40
08-26-25	< 40		< 40	< 40	< 40	< 40
09-02-25	< 40		< 40	< 40	< 40	< 40
09-09-25	< 40		< 40	< 40	< 40	< 40
09-16-25	< 40		< 40	< 40	< 40	< 40
09-23-25	< 40		< 40	< 40	< 40	< 40
09-30-25	< 40		< 40	< 40	< 40	< 40
10-07-25	< 40		< 40	< 40	< 40	< 40
10-14-25	< 40		< 40	< 40	< 40	< 40
10-21-25	< 40		< 40	< 40	< 40	< 40
10-28-25	< 40		< 40	< 40	< 40	< 40
11-04-25	< 40		< 40	< 40	< 40	< 40
11-11-25	< 40		< 40	< 40	< 40	< 40
11-18-25	< 40		< 40	< 40	< 40	< 40
11-25-25	< 40		< 40	< 40	< 40	< 40
12-02-25	< 40		< 40	< 40	< 40	< 40
12-08-25	< 40		< 40	< 40	< 40	< 40
12-16-25	< 40		< 40	< 40	< 40	< 40
12-23-25	< 40		< 40	< 40	< 40	< 40
12-30-25	< 40		< 40	< 40	< 40	< 40
AVERAGE	**< 40**		**< 40**	**< 40**	**< 40**	**< 40**
ALL INDICATOR AVERAGE: < 40						

Table 12: Concentrations of Gamma Emitters in Quarterly Composites of Air Particulates (E^{-03} pCi/m^3)

Location	Date/Sample ID	--- Gamma Emitters ---				
		Be-7	Co-60	Cs-134	Cs-137	Ba-La-140
13	Q1	53 ± 9	< 0.5	< 0.4	< 0.5	< 4.9
	Q2	68 ± 7	< 0.4	< 0.4	< 0.4	< 1.4
	Q3	89 ± 10	< 0.3	< 0.4	< 0.5	< 5.6
	Q4	42 ± 5	< 0.4	< 0.4	< 0.4	< 1.8
	Average	**63 ± 8**	-	-	-	-
30	Q1	50 ± 9	< 0.2	< 0.4	< 0.5	< 3.0
	Q2	68 ± 8	< 0.3	< 0.4	< 0.4	< 1.1
	Q3	73 ± 9	< 0.5	< 0.4	< 0.4	< 2.4
	Q4	56 ± 6	< 0.4	< 0.3	< 0.4	< 1.2
	Average	**62 ± 8**	-	-	-	-
32	Q1	63 ± 10	< 0.5	< 0.4	< 0.5	< 4.0
	Q2	76 ± 9	< 0.4	< 0.4	< 0.5	< 0.6
	Q3	85 ± 9	< 0.3	< 0.4	< 0.4	< 2.6
	Q4	50 ± 6	< 0.3	< 0.3	< 0.3	< 1.6
	Average	**69 ± 6**	-	-	-	-

Table 12: Concentrations of Gamma Emitters in Quarterly Composites of Air Particulates (E^{-03} pCi/m^3)

Location	Date/Sample ID	--- Gamma Emitters ---				
		Be-7	Co-60	Cs-134	Cs-137	Ba-La-140
46.1	Q1	62 ± 10	< 0.3	< 0.4	< 0.5	< 2.2
	Q2	70 ± 8	< 0.5	< 0.3	< 0.3	< 1.2
	Q3	87 ± 10	< 0.3	< 0.4	< 0.5	< 3.2
	Q4	48 ± 7	< 0.5	< 0.3	< 0.4	< 1.3
	Average	**51 ± 4**	**-**	**-**	**-**	**-**
48 (control)	Q1	62 ± 10	< 0.4	< 0.4	< 0.4	< 1.9
	Q2	72 ± 8	< 0.2	< 0.4	< 0.3	< 1.0
	Q3	88 ± 12	< 0.5	< 0.5	< 0.4	< 3.5
	Q4	51 ± 8	< 0.3	< 0.4	< 0.3	< 1.4
	Average	**68 ± 10**	**-**	**-**	**-**	**-**
ALL INDICATOR AVERAGE:		**78 ± 9**	**-**	**-**	**-**	**-**

Table 13: Concentrations of Gamma Emitters in Surface Water (pCi/L ± 2σ)

Location	Date/Sample ID	--- Gamma Emitters ---								
		Mn-54	Fe-59	Co-58	Co-60	Zn-65	Zr-Nb-95	Cs-134	Cs-137	Ba-La-140
05	Jan	< 3.8	< 6.6	< 3.7	< 3.7	< 6.8	< 3.8	< 4.5	< 3.3	< 3.7
	Feb	< 3.2	< 4.5	< 2.5	< 3.4	< 2.3	< 2.5	< 3.9	< 4.5	< 3.1
	Mar	< 3.7	< 5.7	< 3.4	< 3.9	< 7.4	< 3.6	< 4.4	< 4.6	< 2.1
	Apr	< 3.3	< 6.0	< 2.4	< 3.0	< 5.9	< 4.5	< 4.3	< 4.7	< 3.9
	May	< 2.5	< 3.0	< 2.3	< 3.8	< 1.5	< 3.0	< 2.9	< 3.0	< 3.0
	Jun	< 2.7	< 4.0	< 2.6	< 2.3	< 2.9	< 3.2	< 3.7	< 3.4	< 3.4
	Jul	< 3.8	< 3.1	< 3.8	< 2.3	< 3.3	< 2.8	< 4.5	< 3.5	< 2.7
	Aug	< 1.1	< 2.8	< 1.1	< 0.7	< 1.9	< 1.2	< 1.1	< 1.2	< 2.5
	Sep	< 1.7	< 6.9	< 2.1	< 2.4	< 3.9	< 2.6	< 3.5	< 1.9	< 6.5
	Oct	< 2.1	< 4.3	< 2.5	< 2.2	< 3.8	< 2.7	< 2.7	< 2.9	< 2.1
	Nov	< 2.1	< 5.5	< 2.7	< 2.2	< 3.9	< 2.2	< 2.3	< 2.5	< 3.2
	Dec	< 1.1	< 1.6	< 1.3	< 1.0	< 2.0	< 1.5	< 1.0	< 0.8	< 8.4
	Average	-	-	-	-	-	-	-	-	-
49A (control)	Jan	< 2.0	< 4.6	< 2.0	< 2.1	< 4.7	< 2.4	< 2.3	< 2.5	< 2.2
	Feb	< 1.4	< 4.5	< 1.2	< 2.3	< 4.1	< 1.8	< 2.2	< 2.0	< 2.5
	Mar	< 2.3	< 4.9	< 3.2	< 3.6	< 5.0	< 2.4	< 3.5	< 4.7	< 1.9
	Apr	< 2.9	< 3.2	< 3.2	< 2.3	< 3.3	< 4.1	< 3.5	< 2.7	< 3.3
	May	< 2.1	< 5.4	< 3.8	< 4.9	< 5.6	< 2.9	< 4.8	< 4.3	< 3.1
	Jun	< 2.3	< 3.7	< 2.1	< 3.2	< 4.3	< 2.2	< 3.4	< 4.8	< 2.9
	Jul	< 1.5	< 4.1	< 4.1	< 2.6	< 3.6	< 3.5	< 3.8	< 3.6	< 2.8
	Aug	< 2.5	< 5.5	< 2.7	< 2.7	< 3.0	< 2.8	< 2.7	< 2.5	< 3.1
	Sep	< 3.6	< 4.9	< 2.4	< 2.6	< 4.8	< 2.9	< 2.8	< 1.9	< 4.5
	Oct	< 2.5	< 3.5	< 2.1	< 3.1	< 2.0	< 2.0	< 2.4	< 2.6	< 1.3
	Nov	< 1.8	< 4.5	< 2.1	< 1.6	< 3.6	< 2.1	< 1.8	< 1.3	< 5.5
	Dec	< 1.2	< 3.4	< 1.3	< 1.3	< 2.1	< 1.8	< 1.0	< 1.2	< 4.7
	Average	-	-	-	-	-	-	-	-	-

Table 14: Concentrations of Tritium in Surface Water (pCi/L ± 2σ)			
Location			**--- Tritium ---**
05	Q1 Q2 Q3 Q4 **Average**		< 182 < 175 282 ± 96 < 177 282 ± 96
49A (control)	Q1 Q2 Q3 Q4 **Average**		< 182 < 175 < 172 < 177 **-**

Table 15: Concentrations of I-131 in Potable Water (pCi/L ± 2σ)

Location	Date/Sample ID		--- I-131 ---
04	01-07-25		< 0.4
	01-21-25		< 0.3
	02-04-25		< 0.3
	02-18-25		< 0.3
	03-04-25		< 0.3
	03-18-25		< 0.3
	04-01-25		< 0.4
	04-15-25		< 0.3
	04-30-25		< 0.3
	05-13-25		< 0.3
	05-27-25		< 0.4
	06-10-25		< 0.3
	06-24-25		< 0.3
	07-08-25		< 0.3
	07-22-25		< 0.3
	08-05-25		< 0.3
	08-19-25		< 0.2
	09-02-25		< 0.5
	09-16-25		< 0.3
	09-30-25		< 0.2
	10-14-25		< 0.3
	10-28-25		< 0.2
	11-11-25		< 0.2
	11-25-25		< 0.4
	12-09-25		< 0.2
	12-23-25		< 0.3
	Average		-

Table 15: Concentrations of I-131 in Potable Water (pCi/L ± 2σ)

Location	Date/Sample ID		--- I-131 ---
05 (control)	01-07-25		< 0.4
	01-21-25		< 0.3
	02-04-25		< 0.3
	02-18-25		< 0.3
	03-04-25		< 0.3
	03-18-25		< 0.3
	04-01-25		< 0.4
	04-15-25		< 0.3
	04-30-25		< 0.3
	05-13-25		< 0.3
	05-27-25		< 0.4
	06-10-25		< 0.3
	06-24-25		< 0.3
	07-08-25		< 0.3
	07-22-25		< 0.3
	08-05-25		< 0.3
	08-19-25		< 0.2
	09-02-25		< 0.5
	09-16-25		0.8 ± 0.1
	00-30-25		< 0.2
	10-14-25		< 0.3
	10-28-25		< 0.2
	11-11-25		< 0.3
	11-25-25		< 0.4
	12-09-25		< 0.2
	12-23-25		< 0.2
	Average		0.8 ± 0.1

Table 16: Concentrations of Gamma Emitters in Potable Water (pCi/L ± 2σ)

Location	Date/Sample ID	--- Gamma Emitters ---								
		Mn-54	Fe-59	Co-58	Co-60	Zn-65	Zr-Nb-95	Cs-134	Cs-137	Ba-La-140
04	Jan	< 1.5	< 1.8	< 1.8	< 2.3	< 4.2	< 2.6	< 2.1	< 2.3	< 1.5
	Feb	< 1.0	< 2.1	< 1.1	< 1.1	< 1.7	< 1.2	< 1.1	< 1.1	< 1.3
	Mar	< 2.9	< 4.8	< 2.7	< 4.0	< 5.4	< 2.3	< 4.1	< 4.5	< 1.9
	Apr	< 3.0	< 8,4	< 4.0	< 4.4	< 5.4	< 3.0	< 3.9	< 4.3	< 4.3
	May	< 2.9	< 6.3	< 4.0	< 3.5	< 4.3	< 2.9	< 2.9	< 4.5	< 2.2
	Jun	< 2.6	< 6.8	< 2.6	< 3.4	< 2.0	< 3.3	< 4.2	< 4.2	< 2.0
	Jul	< 3.2	< 3.9	< 2.9	< 2.1	< 2.7	< 3.2	< 3.6	< 3.5	< 2.1
	Aug	< 2.2	< 3.9	< 2.0	< 2.4	< 3.4	< 4.1	< 2.8	< 2.5	< 5.2
	Sep	< 2.0	< 5.3	< 1.9	< 2.6	< 5.0	< 2.7	< 2.5	< 3.0	< 3.3
	Oct	< 1.9	< 4.6	< 2.4	< 3.1	< 5.8	< 3.1	< 2.8	< 2.7	< 2.2
	Nov	< 1.4	< 4.7	< 2.3	< 2.6	< 4.2	< 3.4	< 2.2	< 2.8	< 4.1
	Dec	< 1.0	< 3.3	< 1.6	< 1.2	< 1.7	< 1.6	< 1.0	< 1.2	< 5.1
	Average	-	-	-	-	-	-	-	-	-
05 (control)	Jan	< 2.3	< 3.1	< 2.8	< 2.8	< 4.2	< 2.9	< 3.0	< 3.9	< 2.1
	Feb	< 0.8	< 1.3	< 1.0	< 1.1	< 1.9	< 1.1	< 1.0	< 1.2	< 1.2
	Mar	< 2.1	< 5.1	< 2.8	< 4.1	< 3.9	< 2.3	< 3.7	< 4.6	< 3.2
	Apr	< 2.3	< 4.0	< 3.0	< 2.8	< 4.9	< 3.9	< 2.5	< 3.3	< 4.8
	May	< 3.4	< 2.6	< 3.0	< 1.9	< 2.6	< 4.0	< 2.9	< 4.3	< 4.4
	Jun	< 2.3	< 3.1	< 1.9	< 2.4	< 2.6	< 1.9	< 2.3	< 2.7	< 3.1
	Jul	< 2.7	< 2.7	< 3.2	< 3.1	< 3.0	< 4.7	< 4.6	< 5.0	< 2.3
	Aug	< 1.5	< 3.7	< 1.4	< 1.7	< 2.0	< 1.9	< 1.4	< 1.6	< 3.6
	Sep	< 1.3	< 4.1	< 1.4	< 1.6	< 1.9	< 2.0	< 1.9	< 1.5	< 2.5
	Oct	< 1.7	< 4.2	< 1.8	< 2.6	< 3.3	< 1.4	< 2.9	< 3.2	< 1.4
	Nov	< 2.7	< 5.1	< 1.7	< 3.2	< 5.1	< 2.6	< 2.4	< 3.5	< 5.2
	Dec	< 1.0	< 2.7	< 1.1	< 1.2	< 1.8	< 2.4	< 1.1	< 1.0	< 6.8
	Average	-	-	-	-	-	-	-	-	-

Table 17: Concentrations of Tritium in Potable Water (pCi/L ± 2σ)

Location			--- Tritium ---
04	Q1		< 182
	Q2		< 175
	Q3		< 172
	Q4		< 177
	Average		**-**
05 (control)	Q1		< 182
	Q2		< 175
	Q3		210 ± 92
	Q4		< 177
	Average		210 ± 92

Table 18: Concentrations of Gamma Emitters in Sediment (pCi/kg (dry) ± 2σ)

Location	Date/ Sample ID		--- Gamma Emitters ---					
2A			**K-40**	**Mn-54**	**Fe-59**	**Co-58**	**Co-60**	**Zn-65**
	06-04-25		10020 ± 646	< 30	< 56	68 ± 28	431 ± 36	< 64
	09-08-25		11740 ± 346	< 19	< 85	< 30	342 ± 20	< 29
	Average		10880 ± 496	-	-	68 ± 28	387 ± 28	-
			Zr-95	**Nb-95**	**Cs-134**	**Cs-137**	**Ba-La-140**	**Tl-208**
	06-04-25		< 56	< 69	< 28	65 ± 21	< 210	350 ± 42
	09-08-25		< 54	< 70	< 15	61 ± 12	< 750	402 ± 25
	Average		-	-	-	63 ± 17	-	376 ± 34
			Bi-214	**Pb-212**	**Pb-214**	**Ra-226**	**Ac-228**	
	06-04-25		1128 ± 75	941 ± 55	1188 ± 72	1172 ± 403	1042 ± 115	
	09-08-25		1302 ± 267	1137 ± 29	1302 ± 38	2209 ± 223	1185 ± 62	
	Average		1215 ± 269	1039 ± 42	1245 ± 55	2211 ± 313	1114 ± 89	
49A (control)			**K-40**	**Mn-54**	**Fe-59**	**Co-58**	**Co-60**	**Zn-65**
	06-04-25		4973 ± 324	< 19	< 42	< 18	< 13	< 35
	09-08-25		8321 ± 233	< 11	< 27	< 17	< 6	< 22
	Average		6647 ± 279	-	-	-	-	-
			Zr-95	**Nb-95**	**Cs-134**	**Cs-137**	**Ba-La-140**	**Tl-208**
	06-04-25		< 26	< 35	< 10	< 13	< 57	162 ± 20
	09-08-25		< 34	< 47	< 8	23 ± 6	< 422	252 ± 14
	Average		-	-	-	23 ± 6	-	207 ± 17
			Bi-214	**Pb-212**	**Pb-214**	**Ra-226**	**Ac-228**	
	06-04-25		587 ± 43	410 ± 26	664 ± 44	937 ± 195	519 ± 68	

Table 18: Concentrations of Gamma Emitters in Sediment (pCi/kg (dry) ± 2σ)

Location	Date/ Sample ID		--- Gamma Emitters ---					
	09-08-25		927 ± 25	706 ± 17	956 ± 27	1676 ± 267	754 ± 54	
	Average		757 ± 34	558 ± 22	810 ± 36	1307 ± 231	637 ± 61	

Table 19: Concentrations of I-131 and Gamma Emitters in Milk (pCi/L ± 2σ)

Location	Date/ Sample ID		--- I-131 & Gamma Emitters ---						
			I-131	**Sr-89**	**Sr-90**	**K-40**	**Mn-54**	**Fe-59**	**Co-58**
27	01-20-25		NS	NS	NS	NS	NS	NS	NS
	02-17-25		NS	NS	NS	NS	NS	NS	NS
	03-09-25		NS	NS	NS	NS	NS	NS	NS
	03-31-25		NS	NS	NS	NS	NS	NS	NS
	04-14-25		NS	NS	NS	NS	NS	NS	NS
	04-29-25		NS	NS	NS	NS	NS	NS	NS
	05-12-25		< 0.3	< 0.5	< 0.4	1344 ± 41	< 1.2	< 3.6	< 0.9
	05-29-25		< 0.2	< 0.6	< 0.6	1141 ± 139	< 1.4	< 5.6	< 4.0
	06-09-25		< 0.3	< 0.6	0.6 ± 0.3	1245 ± 90	< 3.2	< 3.3	< 3.5
	06-23-25		< 0.4	< 0.6	0.6 ± 0.3	1223 ± 103	< 3.3	< 3.2	< 3.9
	07-07-25		< 0.2	< 0.5	< 0.5	1327 ± 93	< 2.7	< 7.8	< 2.5
	07-22-25		< 0.4	< 0.6	< 0.5	1353 ± 41	< 1.2	< 3.3	< 0.9
	08-04-25		< 0.2	< 0.4	0.6 ± 0.3	1267 ± 132	< 3.0	< 3.8	< 3.4
	08-18-25		< 0.3	< 0.5	< 0.5	1406 ± 77	< 3.4	< 4.9	< 2.6
	09-02-25		< 0.3	< 1.0	< 0.6	1404 ± 109	< 3.3	< 7.3	< 3.2
	09-15-25		< 0.2	< 0.9	0.6 ± 0.3	1412 ± 115	< 3.7	< 8.8	< 2.7
	09-29-25		< 0.2	< 0.7	< 0.5	1293 ± 77	< 1.4	< 6.9	< 2.9
	10-13-25		< 0.3	< 0.6	< 0.6	1261 ± 96	< 1.9	< 4.6	< 4.1
	10-27-25		< 0.3	< 0.7	< 0.9	1229 ± 108	< 3.6	< 5.9	< 2.3
	11-17-25		< 0.2	< 1.1	< 0.6	1392 ± 87	< 2.9	< 9.2	< 3.2
	12-22-25		< 0.4	< 0.8	< 0.9	1240 ± x 99	< 2.8	< 8.9	< 2.9
	Average		-	-	0.6 ± 0.3	1303 ± 94	-	-	-
			Co-60	**Zn-65**	**Zr-Nb-95**	**Cs-134**	**Cs-137**	**Ba-La-140**	
	01-20-25		NS	NS	NS	NS	NS	NS	
	02-17-25		NS	NS	NS	NS	NS	NS	
	03-09-25		NS	NS	NS	NS	NS	NS	

Table 19: Concentrations of I-131 and Gamma Emitters in Milk (pCi/L ± 2σ)

Location	Date/ Sample ID		--- I-131 & Gamma Emitters ---						
	03-31-25		NS	NS	NS	NS	NS	NS	
	04-14-25		NS	NS	NS	NS	NS	NS	
	04-29-25		NS	NS	NS	NS	NS	NS	
	05-12-25		< 1.8	< 3.5	< 1.5	< 1.5	< 1.9	< 0.9	
	05-29-25		< 3.9	< 11.8	< 4.3	< 4.4	< 4.3	< 4.0	
	06-09-25		< 3.4	< 8.0	< 3.1	< 2.7	< 3.5	< 1.9	
	06-23-25		< 3.2	< 5.1	< 2.9	< 2.2	< 3.7	< 2.1	
	07-07-25		< 3.5	< 6.0	< 3.5	< 3.5	< 4.0	< 2.0	
	07-22-25		< 2.0	< 3.0	< 1.7	< 1.5	< 1.8	< 1.8	
	08-04-25		< 3.6	< 5.1	< 3.1	< 4.0	< 4.5	< 2.4	
	08-18-25		< 3.0	< 3.0	< 1.9	< 2.8	< 3.1	< 1.4	
	09-02-25		< 4.0	< 4.3	< 2.7	< 3.8	< 4.3	< 2.6	
	09-15-25		< 3.9	< 8.0	< 4.7	< 4.7	< 4.8	< 7.9	
	09-29-25		< 2.6	< 6.9	< 2.4	< 2.2	< 2.6	< 1.7	
	10-13-25		< 3.1	< 7.4	< 2.7	< 2.8	< 3.3	< 2.5	
	10-27-25		< 2.8	< 5.9	< 2.1	< 2.8	< 3.1	< 1.1	
	11-17-25		< 4.0	< 6.6	< 4.4	< 3.6	< 4.1	< 1.4	
	12-x-25		< 2.8	< 7.6	< 3.8	< 3.4	< 3.6	< 3.7	
			-	-	-	-	-	-	
			I-131	**Sr-89**	**Sr-90**	**K-40**	**Mn-54**	**Fe-59**	**Co-58**
114	01-20-25		NS	NS	NS	NS	NS	NS	NS
	02-17-25		NS	NS	NS	NS	NS	NS	NS
	03-09-25		NS	NS	NS	NS	NS	NS	NS
	03-31-25		< 0.3	< 0.6	0.9 ± 0.3	1464 ± 41	< 0.8	< 3.2	< 1.2
	04-14-25		< 0.2	< 0.7	0.7	1505 ± 102	< 3.3	< 6.8	< 3.7
	04-29-25		< 0.3	< 0.6	0.9 ± 0.3	1418 ± 39	< 0.8	< 2.7	< 1.3
	05-12-25		< 0.3	< 0.6	0.8 ± 0.3	1365 ± 105	< 2.7	< 4.9	< 2.5
	05-27-25		NS	NS	NS	NS	NS	NS	NS
	06-09-25		< 0.4	< 0.6	0.7 ± 0.3	1381 ± 103	< 1.9	< 5.6	< 2.5

Table 19: Concentrations of I-131 and Gamma Emitters in Milk (pCi/L ± 2σ)

Location	Date/ Sample ID		--- I-131 & Gamma Emitters ---						
	06-23-25		< 0.4	< 0.6	0.8 ± 0.4	1503 ± 123	< 3.0	< 11.0	< 3.4
	07-07-25		< 0.5	< 0.5	1.2 ± 0.3	1387 ± 110	< 3.3	< 5.4	< 2.5
	07-21-25		< 0.4	< 0.5	1.1 ± 0.3	1275 ± 100	< 3.3	< 7.2	< 2.7
	08-04-25		< 0.3	< 0.6	1.6 ± 0.5	1419 ± 137	< 1.9	< 9.8	< 3.8
	08-18-25		< 0.2	< 0.5	0.7 ± 0.3	1486 ± 77	< 1.2	< 4.5	< 1.9
	09-02-25		< 0.5	< 0.8	0.8 ± 0.3	1607 ± 102	< 2.7	< 7.8	< 2.8
	09-17-25		< 0.3	< 0.8	1.5 ± 0.4	1350 ± 101	< 2.7	< 5.0	< 3.7
	09-29-25		NS	NS	NS	NS	NS	NS	NS
	10-13-25		NS	NS	NS	NS	NS	NS	NS
	10-27-25		NS	NS	NS	NS	NS	NS	NS
	11-17-25		NS	NS	NS	NS	NS	NS	NS
	12-x-25		NS	NS	NS	NS	NS	NS	NS
	Average		-	-	1.0 ± 0.3	1430 ± 95	-	-	-
			Co-60	**Zn-65**	**Zr-Nb-95**	**Cs-134**	**Cs-137**	**Ba-La-140**	
	01-20-25		NS	NS	NS	NS	NS	NSNS	
	02-17-25		NS	NS	NS	NS	NS	NS	
	03-09-25		NS	NS	NS	NS	NS	NS	
	03-31-25		< 1.6	< 3.6	< 1.7	< 1.5	< 1.9	< 2.5	
	04-14-25		< 3.6	< 5.5	< 3.2	< 3.9	< 4.9	< 2.6	
	04-29-25		< 1.9	< 2.8	< 1.5	< 1.4	< 1.7	< 1.4	
	05-12-25		< 3.4	< 8.0	< 2.6	< 3.	< 3.5	< 3.1	
	05-27-25		NS	NS	NS	NS	NS	NS	
	06-09-25		< 3.4	< 3.9	< 2.6	< 3.3	< 4.3	< 2.2	
	06-23-25		< 4.7	< 9.4	< 3.1	< 4.6	< 4.9	< 1.5	
	07-07-25		< 3.5	< 4.2	< 3.0	< 2.6	< 3.9	< 3.0	
	07-21-25		< 2.3	< 4.1	< 3.7	< 3.2	< 3.4	< 2.0	
	08-04-25		< 2.6	< 7.7	< 2.8	< 3.5	< 3.9	< 2.0	
	08-18-25		< 2.1	< 4.8	< 1.8	< 2.1	< 2.8	< 2.3	
	09-02-25		< 3.5	< 7.8	< 4.6	< 3.7	< 4.9	< 2.9	

Table 19: Concentrations of I-131 and Gamma Emitters in Milk (pCi/L ± 2σ)

Location	Date/ Sample ID		--- I-131 & Gamma Emitters ---						
	09-17-25		< 4.1	< 6.4	< 3.7	< 3.0	< 4.2	< 2.2	
	09-29-25		NS	NS	NS	NS	NS	NS	
	10-13-25		NS	NS	NS	NS	NS	NS	
	10-27-25		NS	NS	NS	NS	NS	NS	
	11-17-25		NS	NS	NS	NS	NS	NS	
	12-16-25		NS	NS	NS	NS	NS	NS	
	Average		-	-	-	-	-	-	
			I-131	**Sr-89**	**Sr-90**	**K-40**	**Mn-54**	**Fe-59**	**Co-58**
96 (Control)	01-20-25		< 0.3	< 0.6	0.7 ± 0.3	1216 ± 93	< 2.5	< 5.7	< 3.3
	02-17-25		< 0.4	< 0.6	0.8 ± 0.3	1221 ± 87	< 2.8	< 5.7	< 3.0
	03-09-25		< 0.3	< 0.6	0.7 ± 0.3	1435 ± 116	< 3.7	< 7.5	< 2.8
	03-31-25		< 0.4	< 0.7	0.5 ± 0.3	1379 ± 97	< 2.8	< 4.9	< 2.5
	04-14-25		< 0.2	< 0.6	0.9 ± 0.3	1350 ± 85	< 2.9	< 5.0	< 2.9
	04-30-25		< 0.3	< 0.6	< 0.5	1230 ± 35	< 1.0	< 2.4	< 1.4
	05-12-25		< 0.3	< 0.7	0.6 ± 0.3	1231 ± 40	< 1.2	< 1.9	< 1.4
	05-27-25		NS	NS	NS	NS	NS	NS	NS
	06-09-25		< 0.4	< 0.5	0.7 ± 0.3	1173 ± 104	< 3.5	< 7.1	< 3.7
	06-23-25		< 0.3	< 0.5	< 0.6	1235 ± 109	< 2.9	< 3.9	< 3.7
	07-07-25		< 0.5	< 0.6	< 0.6	1296 ± 109	< 3.7	< 9.2	< 4.1
	07-21-25		< 0.4	< 0.6	< 0.5	1212 ± 103	< 2.6	< 7.7	< 2.1
	08-04-25		< 0.2	< 0.5	0.8 ± 0.4	1115 ± 112	< 1.9	< 5.5	< 2.2
	08-18-25		< 0.2	< 0.5	< 0.5	1254 ± 71	< 2.0	< 5.3	< 2.1
	09-01-25		< 0.3	< 0.8	0.9 ± x	1352 ± 94	< 3.2	< 4.6	< 3.6
	09-15-25		< 0.3	< 0.7	0.5	1273 ± 97	< 3.6	< 5.9	< 3.5
	09-29-25		< 0.2	< 0.5	0.6 ± 0.3	1349 ± 85	< 2.0	< 6.4	< 3.2
	10-13-25		< 0.3	< 0.6	0.8 ± 0.4	1327 ± 119	< 3.0	< 7.2	< 4.5
	10-27-25		< 0.3	< 0.8	0.8 ± 5.0	1276 ± 99	< 3.2	< 4.7	< 2.7
	11-27-25		< 0.2	< 1.1	1.0 ± 0.5	1323 ± 80	< 2.7	< 6.7	< 3.1
	12-16-25		< 0.2	< 1.0	0.9 ± 0.6	`1427 ± 108	< 4.1	< 9.7	< 4.4

Table 19: Concentrations of I-131 and Gamma Emitters in Milk (pCi/L ± 2σ)

Location	Date/ Sample ID		--- I-131 & Gamma Emitters ---						
	Average		-	-	0.8 ± 0.7	1291 ± 92	-	-	-
			Co-60	**Zn-65**	**Zr-Nb-95**	**Cs-134**	**Cs-137**	**Ba-La-140**	
	01-20-25		< 2.3	< 6.9	< 2.6	< 3.1	< 2.9	< 2.2	
	02-17-25		< 3.1	< 5.8	< 2.7	< 2.7	< 3.4	< 2.5	
	03-09-25		< 4.5	< 4.8	< 4.7	< 4.6	< 4.8	< 1.6	
	03-31-25		< 4.3	< 8.1	< 3.4	< 3.5	< 4.7	< 2.5	
	04-14-25		< 3.6	< 5.9	< 2.0	< 3.3	< 4.4	< 2.7	
	04-30-25		< 1.5	< 2.5	< 1.3	< 1.2	< 1.3	< 1.5	
	05-12-25		< 1.5	< 2.7	< 1.3	< 1.2	< 1.1	< 1.5	
	05-27-25		NS	NS	NS	NS	NS	NS	
	06-09-25		< 4.3	< 6.2	< 2.8	< 4.0	< 4.9	< 1.4	
	06-23-25		< 2.1	< 6.4	< 3.8	< 3.6	< 4.1	< 2.1	
	07-07-25		< 4.8	< 8.0	< 4.3	< 4.6	< 5.0	< 1.6	
	07-21-25		< 2.9	< 7.9	< 2.0	< 3.0	< 3.6	< 2.7	
	08-04-25		< 3.3	< 3.9	< 3.9	< 3.3	< 4.0	< 2.5	
	08-18-25		< 1.4	< 3.4	< 2.4	< 2.1	< 2.4	< 2.1	
	09-01-25		< 3.3	< 8.1	< 4.0	< 2.7	< 3.3	< 2.5	
	09-15-25		< 1.9	< 8.5	< 2.2	< 3.2	< 2.8	< 3.1	
	09-29-25		< 2.8	< 6.0	< 3.3	< 3.3	< 4.4	< 1.7	
	10-13-25		< 3.6	< 4.9	< 2.0	< 3.5	< 5.0	< 1.9	
	10-27-25		< 3.0	< 3.8	< 3.6	< 3.4	< 2.6	< 1.6	
	11-17-25		< 2.5	< 6.1	< 2.1	< 2.6	< 2.0	< 3.3	
	12-16-25		< 4.5	< x	< 4.5	< 3.8	< 4.9	< 5.5	
	Average		-	-	-	-	-	-	

Table 20: Concentrations of Gamma Emitters in Edible Fish (pCi/kg wet ± 2σ)

Location	Date/Sample ID		--- Gamma Emitters ---								
			Mn-54	Fe-59	Co-58	Co-60	Zn-65	Zr-Nb-95	Cs-134	Cs-137	Ba-La-140
2A	07-18-25		< 11	< 49	< 11	< 9	< 23	< 18	< 11	< 12	< 120
	07-18-25		< 19	< 50	< 14	< 15	< 33	< 24	< 15	< 15	< 185
	10-01-25		< 8	< 78	< 21	< 9	< 24	< 50	< 9	< 10	< 5930
	10-01-25		< 67	< 70	< 14	< 6	< 23	< 24	< 7	< 7	< 3393
	Average		-	-	-	-	-	-	-	-	-
49A (control)	10-26-25		< 3	< 34	< 11	< 4	< 10	< 16	< 4	< 4	< 639
	Average		-	-	-	-	-	-	-	-	-

Table 21: Concentrations of I-131 and Gamma Emitters in Broadleaf Vegetation (pCi/kg ± 2σ)

Location	Date/ Sample ID	Sample Type	--- I-131 & Gamma Emitters ---						
12A			**I-131**	**K-40**	**Mn-54**	**Fe-59**	**Co-58**	**Co-60**	**Zn-65**
	07-22-25	Cabbage	< 15	3430 ± 370	< 14	< 30	< 12	< 15	< 23
	07-22-25	Rhubarb	< 22	4030 ± 440	< 10	< 31	<11	< 8	< 21
	07-22-25	Kale	< 17	5900 ± 450	< 13	< 28	< 12	< 12	< 26
	07-22-25	Swiss Chard	< 24	8410 ± 510	< 7	< 24	< 14	< 11	< 22
	Average		-	5443 ± 443	-	-	-	-	-
			Zr-Nb-95	**Cs-134**	**Cs-137**	**Ba-La-140**			
	07-22-25	Cabbage	< 10	< 12	< 16	< 5			
	07-22-25	Rhubarb	< 9	< 14	< 13	< 11			
	07-22-25	Kale	< 10	< 13	< 7	< 12			
	07-22-25	Swiss Chard	< 8	< 11	< 11	< 5			
	Average		-	-	-	-			
12B			**I-131**	**K-40**	**Mn-54**	**Fe-59**	**Co-58**	**Co-60**	**Zn-65**
	09-10-25	Lettuce	< 45	8360 ± 560	< 14	< 36	< 15	< 11	< 31
	Average		-	8360 ± 560	-	-	-	-	-
			Zr-Nb-95	**Cs-134**	**Cs-137**	**Ba-La-140**			
	09-10-25	Lettuce	< 29	< 15	< 20	< 10			
	Average		-	-	-	-			
15F			**I-131**	**K-40**	**Mn-54**	**Fe-59**	**Co-58**	**Co-60**	**Zn-65**

Table 21: Concentrations of I-131 and Gamma Emitters in Broadleaf Vegetation (pCi/kg ± 2σ)

Location	Date/ Sample ID	Sample Type	--- I-131 & Gamma Emitters ---						
48D (Control)	08-28-25	Cabbage	< 28	4350 ± 280	< 9	< 16	< 7	< 11	< 19
	08-28-25	Kale	< 30	4330 ± 340	< 9	< 23	< 10	< 13	< 31
	08-28-25	Rhubarb	< 19	2040 ± 210	< 7	< 17	< 7	< 7	< 13
	Average		-	3573 ± 277	-	-	-	-	-
			Zr-Nb-95	**Cs-134**	**Cs-137**	**Ba-La-140**			
	08-28-25	Cabbage	< 9	< 9	< 8	< 15			
	08-28-25	Kale	< 9	< 13	< 14	< 20			
	08-28-25	Rhubarb	< 8	< 8	< 9	< 9			
	Average		-	-	-	-			
			I-131	**K-40**	**Mn-54**	**Fe-59**	**Co-58**	**Co-60**	**Zn-65**
	-	-	-	-	-	-	-	-	-
	Average		-	-	-	-	-	-	-
			Zr-Nb-95	**Cs-134**	**Cs-137**	**Ba-La-140**			
	-	-	-	-	-	-			
	Average		-	-	-	-			

Table 22: Concentrations of I-131 and Gamma Emitters in Fodder Crops (pCi/kg ± 2σ)

Location	Date/ Sample ID	Sample Type		--- I-131 & Gamma Emitters ---						
				Be-7	**K-40**	**Mn-54**	**Fe-59**	**Co-58**	**Co-60**	**Zn-65**
27	06-09-25			< 140	11120 ± 870	< 15	< 23	< 17	< 14	< 37
	07-22-25			260 ± 120	6590 ± 440	< 11	< 20	<10	< 16	< 16
	08-18-25			130 ± 80	5470 ± 300	< 7	< 21	< 7	< 8	< 21
	09-15-25			< 120	6770 ± 370	< 9	< 16	< 9	< 10	< 17
	10-13-25			200 ± 100	6850 ± 390	< 14	< 17	< 12	< 10	< 12
	11-17-25			< 90	5620 ± 310	< 6	< 19	< 8	< 8	< 17
	12-22-25			< 70	8640 ± 300	< 6	< 20	< 5	< 8	< 21
	Average			197 ± 100	7294 ± 426	-	-	-	-	-
				Zr-Nb-95	**Ru-103**	**I-131**	**Cs-134**	**Cs-137**	**Ba-La-140**	
	06-09-25			< 20	< 14	< 29	< 12	< 17	< 11	
	07-22-25			< 6	< 10	< 15	< 13	< 15	< 5	
	08-18-15			< 8	< 9	< 15	< 8	< 9	< 4	
	09-15-25			< 12	< 9	< 20	< 9	< 9	< 10	
	10-13-25			< 7	< 10	< 17	< 13	< 13	< 4	
	11-17-25			< 12	< 7	< 37	< 8	< 7	< 11	
	12-22-25			< 8	< 11	< 37	< 8	< 9	< 11	
	Average			-	-	-	-	-	-	

Attachment 3, Cross Check Intercomparison Program

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

Microbac participated in the following proficiency testing studies provided by Eckert & Ziegler Analytics in 2025. The Laboratory's intercomparison program results for 2025 are summarized below.

Table **24**: Cross Check Intercomparison Results – 1st Quarter

Table **25**: Cross Check Intercomparison Results – 2nd Quarter

Table **26**: Cross Check Intercomparison Results – 3rd Quarter

Table **27**: Cross Check Intercomparison Results – 4th Quarter

NRC Inspection Manual Inspection Procedure 84750 and 84525 is used for acceptance criteria for comparisons of results of spikes samples between the Contractor Laboratory and the Independent Laboratory. The comparisons are performed by dividing the comparison standard (i.e., Independent Lab Result) by its associated uncertainty to obtain the resolution. The comparison standard value is multiplied by the ratio values obtained from the following table below to determine the acceptance band. In cases in which the counting precision of the standard yields a resolution less than 4, a valid comparison is not practical and therefore not performed.

Table 23: NRC Criteria

Resolution	Ratio
< 4	--
4 – 7	0.5 – 2.00
8 – 15	0.60 – 1.66
16 – 50	0.75 – 1.33
51 – 200	0.80 – 1.25
> 200	0.85 – 1.18

Table 24: Cross Check Intercomparison Results – 1st Quarter						
Radionuclide	**Reported Value**	**Assigned Value**	**Uncertainty**	**Acceptance Limits**	**Ratio**	**Evaluation**
Concentration of Tritium in Water (pCi/L)						
H-3	8.61E+03	8.12E+03	1.22E+02	0.80 – 1.25	1.06	Acceptable
Concentrations of I-131, Gamma Emitters, and Hard-To-Detect in Water (pCi/L)						
Cr-51	2.98E+02	2.98E+02	6.28E+00	0.75 – 1.33	1.00	Acceptable
Mn-54	1.99E+02	1.99E+02	3.49E+00	0.80 – 1.25	1.00	Acceptable
Fe-59	1.49E+02	1.43E+02	5.21E+00	0.75 – 1.33	1.04	Acceptable
Co-60	1.93E+02	1.95E+02	2.39E+00	0.80 – 1.25	0.99	Acceptable
Zn-65	2.53E+02	2.67E+02	4.61E+00	0.80 – 1.25	0.95	Acceptable
I-131	7.25E+01	7.63E+01	1.73E+00	0.75 – 1.33	0.95	Acceptable
Cs-134	1.17E+02	1.39E+02	2.82E+00	0.75 – 1.33	0.84	Acceptable
Cs-137	1.71E+02	1.71E+02	4.09E+00	0.75 – 1.33	1.00	Acceptable
Ce-141	7.34E+01	7.60E+01	1.26E+00	0.80 – 1.25	0.97	Acceptable
Sr-89	8.74E+01	8.72E+01	1.46E+00	0.80 – 1.25	1.00	Acceptable
Sr-90	1.34E+01	1.48E+01	2.47E-01	0.80 – 1.25	0.91	Acceptable
Concentrations of I-131, Gamma Emitters, and Hard-To-Detect in Milk (pCi/L)						
Cr-51	3.07E+02	2.90E+02	1.23E+01	0.75 – 1.33	1.06	Acceptable
Mn-54	1.94E+02	1.95E+02	5.42E+00	0.75 – 1.33	0.99	Acceptable
Fe-59	1.38E+02	1.44E+02	7.11E+00	0.75 – 1.33	0.96	Acceptable
Co-60	1.89E+02	1.97E+02	3.85E+00	0.80 – 1.25	0.96	Acceptable
Zn-65	2.42E+02	2.66E+02	9.09E+00	0.75 – 1.33	0.91	Acceptable
I-131	9.68E+01	9.33E+01	2.65E+00	0.75 – 1.33	1.04	Acceptable
Cs-134	1.26E+02	1.37E+02	4.56E+00	0.75 – 1.33	0.92	Acceptable
Cs-137	1.68E+02	1.68E+02	4.76E+00	0.75 – 1.33	1.00	Acceptable
Ce-141	7.04E+01	7.44E+01	1.83E+00	0.75 – 1.33	0.95	Acceptable
Sr-89	8.75E+01	9.19E+01	1.54E+00	0.80 – 1.25	0.95	Acceptable
Sr-90	1.57E+01	1.56E+01	2.61E-01	0.80 – 1.25	1.01	Acceptable
Concentrations of I-131 in Charcoal (pCi)						
I-131	7.04E+02	6.92E+01	1.74E+00	0.75 – 1.33	1.02	Acceptable
Concentrations of Gross Beta in Filter (pCi)						
Gross β	8.46E+01	9.16E+01	2.22E+00	0.75 – 1.33	0.92	Acceptable

Table 25: Cross Check Intercomparison Results – 2nd Quarter						
Radionuclide	**Reported Value**	**Assigned Value**	**Uncertainty**	**Acceptance Limits**	**Ratio**	**Evaluation**
Concentration of Tritium in Water (pCi/L)						
H-3	1.29E+04	1.24E+04	1.87E+02	0.80 – 1.25	1.04	Acceptable
Concentrations of I-131, Gamma Emitters, and Hard-To-Detect in Water (pCi/L)						
Cr-51	2.73E+02	2.84E+02	6.12E+00	0.75 – 1.33	0.96	Acceptable
Mn-54	1.41E+02	1.57E+02	2.78E+00	0.80 – 1.25	0.90	Acceptable
Fe-59	1.38E+02	1.43E+02	5.20E+00	0.75 – 1.33	0.97	Acceptable
Co-60	2.06E+02	2.19E+02	2.61E+00	0.80 – 1.25	0.94	Acceptable
Zn-65	2.83E+02	3.04E+02	5.04E+00	0.80 – 1.25	0.93	Acceptable
I-131	5.71E+01	6.26E+01	1.43E+00	0.75 – 1.33	0.91	Acceptable
Cs-134	1.72E+02	1.94E+02	3.74E+00	0.80 – 1.25	0.89	Acceptable
Cs-137	1.46E+02	1.50E+02	3.58E+00	0.75 – 1.33	0.97	Acceptable
Ce-141	1.27E+02	1.37E+02	2.10E+00	0.80 – 1.25	0.93	Acceptable
Sr-89	7.48E+01	7.70E+01	1.29E+00	0.80 – 1.25	0.97	Acceptable
Sr-90	1.10E+01	1.15E+01	1.93E-01	0.80 – 1.25	0.96	Acceptable
Concentrations of I-131, Gamma Emitters, and Hard-To-Detect in Milk (pCi/L)						
Cr-51	2.96E+02	2.81E+02	7.15E+00	0.75 – 1.33	1.05	Acceptable
Mn-54	1.57E+02	1.57E+02	4.69E+00	0.75 – 1.33	1.00	Acceptable
Fe-59	1.47E+02	1.47E+02	7.09E+00	0.75 – 1.33	1.00	Acceptable
Co-60	2.15E+02	2.25E+02	4.62E+00	0.75 – 1.33	0.96	Acceptable
Zn-65	2.95E+02	3.10E+02	9.69E+00	0.75 – 1.33	0.95	Acceptable
I-131	7.30E+01	7.24E+01	2.09E+00	0.75 – 1.33	1.01	Acceptable
Cs-134	1.84E+02	1.98E+02	6.09E+00	0.75 – 1.33	0.93	Acceptable
Cs-137	1.60E+02	1.53E+02	4.93E+00	0.75 – 1.33	1.05	Acceptable
Ce-141	1.30E+02	1.41E+02	3.64E+00	0.75 – 1.33	0.92	Acceptable
Sr-89	9.04E+01	9.46E+01	1.58E+00	0.80 – 1.25	0.96	Acceptable
Sr-90	1.40E+01	1.42E+01	2.37E-01	0.80 – 1.25	0.99	Acceptable

Table 26: Cross Check Intercomparison Results – 3rd Quarter

Radionuclide	Reported Value	Assigned Value	Uncertainty	Acceptance Limits	Ratio	Evaluation
Concentration of Tritium in Water (pCi/L)						
H-3	9.63E+03	9.84E+03	1.48E+02	0.80 – 1.25	0.98	Acceptable
Concentrations of I-131, Gamma Emitters, and Hard-To-Detect in Water (pCi/L)						
Cr-51	2.93E+02	2.72E+02	7.32E+00	0.75 – 1.33	1.08	Acceptable
Mn-54	1.67E+02	1.84E+02	4.60E+00	0.75 – 1.33	0.91	Acceptable
Fe-59	1.11E+02	1.12E+02	4.62E+00	0.75 – 1.33	0.99	Acceptable
Co-60	1.53E+02	1.72E+02	2.90E+00	0.80 – 1.25	0.90	Acceptable
Zn-65	2.13E+02	2.33E+02	5.75E+00	0.75 – 1.33	0.91	Acceptable
I-131	8.36E+01	7.45E+01	2.07E+00	0.75 – 1.33	1.12	Acceptable
Cs-134	1.29E+02	1.44E+02	3.96E+00	0.75 – 1.33	0.90	Acceptable
Cs-137	1.29E+02	1.35E+02	4.18E+00	0.75 – 1.33	0.96	Acceptable
Ce-141	9.61E+01	1.02E+02	2.09E+00	0.75 – 1.33	0.94	Acceptable
Sr-89	7.34E+01	8.31E+01	1.39E+00	0.80 – 1.25	0.88	Acceptable
Sr-90	1.18E+01	1.21E+01	2.02E-01	0.80 – 1.25	0.98	Acceptable
Concentrations of I-131, Gamma Emitters, and Hard-To-Detect in Milk (pCi/L)						
Cr-51	2.80E+02	2.57E+02	6.68E+00	0.75 – 1.33	1.09	Acceptable
Mn-54	1.82E+02	1.73E+02	4.38E+00	0.75 – 1.33	1.05	Acceptable
Fe-59	1.14E+02	1.10E+02	6.16E+00	0.75 – 1.33	1.04	Acceptable
Co-60	1.60E+02	1.57E+02	3.29E+00	0.75 – 1.33	1.02	Acceptable
Zn-65	2.19E+02	2.18E+02	7.28E+00	0.75 – 1.33	1.00	Acceptable
I-131	8.81E+01	7.68E+01	2.42E+00	0.75 – 1.33	1.15	Acceptable
Cs-134	1.29E+02	1.34E+02	4.44E+00	0.75 – 1.33	0.96	Acceptable
Cs-137	1.37E+02	1.28E+02	4.41E+00	0.75 – 1.33	1.07	Acceptable
Ce-141	9.31E+01	9.43E+01	2.27E+00	0.75 – 1.33	0.99	Acceptable
Sr-89	7.95E+01	8.98E+01	1.50E+00	0.80 – 1.25	0.89	Acceptable
Sr-90	1.54E+01	1.31E+01	2.18E-01	0.80 – 1.25	1.18	Acceptable
Concentrations of I-131 in Charcoal (pCi)						
I-131	7.77E+01	8.11E+01	2.03E+00	0.75 – 1.33	0.96	Acceptable
Concentrations of Gross Beta in Filter (pCi)						
Gross β	1.28E+02	1.26E+02	3.11E+00	0.75 – 1.33	1.02	Acceptable

Table 27: Cross Check Intercomparison Results – 4th Quarter						
Radionuclide	**Reported Value**	**Assigned Value**	**Uncertainty**	**Acceptance Limits**	**Ratio**	**Evaluation**
Concentration of Tritium in Water (pCi/L)						
H-3	1.20E+04	1.18E+04	1.77E+02	0.80 – 1.25	1.02	Acceptable
Concentrations of I-131, Gamma Emitters, and Hard-To-Detect in Water (pCi/L)						
Cr-51	3.00E+02	2.81E+02	6.22E+00	0.75 – 1.33	1.07	Acceptable
Mn-54	1.90E+02	1.93E+02	3.41E+00	0.80 – 1.25	0.98	Acceptable
Fe-59	1.41E+02	1.40E+02	5.14E+00	0.75 – 1.33	1.01	Acceptable
Co-60	2.13E+02	2.20E+02	2.66E+00	0.80 – 1.25	0.97	Acceptable
Zn-65	2.50E+02	2.57E+02	4.49E+00	0.80 – 1.25	0.97	Acceptable
I-131	4.79E+01	4.49E+01	1.04E+00	0.75 – 1.33	1.07	Acceptable
Cs-134	1.25E+02	1.32E+02	2.70E+00	0.75 – 1.33	0.95	Acceptable
Cs-137	1.69E+02	1.67E+02	4.01E+00	0.75 – 1.33	1.01	Acceptable
Ce-141	1.39E+02	1.46E+02	2.25E+00	0.80 – 1.25	0.95	Acceptable
Sr-89	8.35E+01	8.92E+01	1.49E+00	0.80 – 1.25	0.94	Acceptable
Sr-90	1.60E+01	1.64E+01	2.73E-01	0.80 – 1.25	0.98	Acceptable
Concentrations of I-131, Gamma Emitters, and Hard-To-Detect in Milk (pCi/L)						
Cr-51	3.07E+02	3.15E+02	6.89E+00	0.75 – 1.33	0.97	Acceptable
Mn-54	2.02E+02	2.02E+02	3.47E+00	0.80 – 1.25	1.00	Acceptable
Fe-59	1.48E+02	1.49E+02	5.42E+00	0.75 – 1.33	0.99	Acceptable
Co-60	2.21E+02	2.25E+02	2.64E+00	0.80 – 1.25	0.98	Acceptable
Zn-65	2.58E+02	2.71E+02	4.51E+00	0.80 – 1.25	0.95	Acceptable
I-131	9.11E+01	8.87E+01	2.06E+00	0.75 – 1.33	1.03	Acceptable
Cs-134	1.32E+02	1.37E+02	2.71E+00	0.80 – 1.25	0.96	Acceptable
Cs-137	1.78E+02	1.74E+02	4.11E+00	0.75 – 1.33	1.02	Acceptable
Ce-141	1.43E+02	1.51E+02	2.31E+00	0.80 – 1.25	0.95	Acceptable
Sr-89	7.53E+01	8.49E+01	1.42E+00	0.80 – 1.25	0.89	Acceptable
Sr-90	1.64E+01	1.56E+01	2.60E-01	0.80 – 1.25	1.05	Acceptable

Attachment 4, 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			
BV-7-Q1	25.6	23.4	25.4	25.9	27.8	ND	ND	0.3	2.2	97.1	102.5	5.4
BV-7-Q2	25.7	29.7	28.6	26.8	30.3	4.0	2.9	1.1	4.6	97.8	115.4	17.6
BV-8-Q1	23.6	25.7	26.2	24.3	24.5	2.2	2.7	0.8	1.0	94.2	100.7	6.5
BV-8-Q2	24.2	26.5	26.7	28.9	25.9	2.3	2.5	4.7	1.7	96.7	108.0	11.3
BV-14-Q1	15.5	18.3	18.0	17.8	18.6	2.8	2.5	2.3	3.1	62.1	72.7	10.6
BV-14-Q2	16.8	17.9	16.8	20.3	19.7	1.1	0.0	3.5	2.9	67.2	74.7	7.5
BV-30-Q1	17.0	15.9	16.5	17.2	19.9	ND	ND	0.2	2.9	67.9	69.5	1.6
BV-30-Q2	16.8	17.6	18.2	18.6	17.3	0.8	1.4	1.8	0.5	67.3	71.7	4.4
BV-32-Q1	17.2	20.0	17.4	20.7	21.2	2.8	0.2	3.5	4.0	68.9	79.3	10.4
BV-32-Q2	18.3	21.6	15.1	22.3	18.3	3.3	ND	4.0	ND	73.4	77.3	3.9
BV-33-Q1	19.5	23.0	20.0	23.3	21.7	3.5	0.5	3.8	2.2	77.8	88.0	10.2
BV-33-Q2	18.2	17.2	18.3	17.4	21.4	ND	0.1	ND	3.2	72.7	74.3	1.6
BV-34-Q1	15.8	18.5	13.1	19.3	16.1	2.7	ND	3.5	0.3	63.3	67.0	3.7
BV-34-Q2	14.6	16.6	13.6	17.6	16.2	2.0	ND	3.0	1.6	58.6	64.0	5.4
BV-35-Q1	19.7	21.2	23.7	22.3	22.8	1.5	4.0	2.6	3.1	79.0	90.0	11.0
BV-35-Q2	21.0	24.1	21.2	25.7	24.6	3.1	0.2	4.7	3.6	83.9	95.6	11.7
BV-36-Q1	17.2	18.9	18.6	19.9	18.1	1.7	1.4	2.7	0.9	68.8	75.5	6.7
BV-36-Q2	16.5	19.7	15.4	20.4	19.3	3.2	ND	3.9	2.8	66.0	74.8	8.8
BV-37-Q1	16.6	15.4	17.1	16.9	15.8	ND	0.5	0.3	ND	66.2	65.2	ND
BV-37-Q2	16.7	19.9	14.6	18.8	18.1	3.2	ND	2.1	1.4	66.7	71.4	4.7
BV-38-Q1	16.0	18.7	15.6	20.9	18.9	2.8	ND	5.0	3.0	63.8	74.1	10.3
BV-38-Q2	16.4	18.2	20.4	20.2	22.6	1.8	4.0	3.8	6.2	65.5	81.4	15.9
BV-39-Q1	17.8	18.3	18.0	20.6	21.2	0.5	0.2	2.8	3.4	71.1	78.1	7.0
BV-39-Q2	18.3	15.9	20.4	17.8	16.3	ND	2.1	ND	ND	73.4	70.4	ND

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			
BV-40-Q1	18.7	21.8	21.0	22.1	23.6	3.1	2.3	3.4	4.9	74.8	88.5	13.7
BV-40-Q2	18.5	21.2	18.5	22.7	21.8	2.7	0.0	4.2	3.3	73.8	84.2	10.4
BV-41-Q1	18.1	17.8	17.0	19.2	20.1	ND	ND	1.1	2.0	72.2	74.1	1.9
BV-41-Q2	18.7	19.8	17.8	20.7	20.7	1.1	ND	2.0	2.0	74.8	79.0	4.2
BV-42-Q1	19.7	21.0	21.0	23.6	21.1	1.3	1.3	3.9	1.4	78.9	86.7	7.8
BV-42-Q2	20.2	18.1	23.6	20.8	28.1	ND	3.4	0.6	7.9	80.7	90.6	9.9
BV-43-Q1	15.4	18.1	15.7	19.6	18.3	2.7	0.3	4.2	2.9	61.8	71.7	9.9
BV-43-Q2	14.9	16.3	15.0	18.4	17.8	1.4	0.1	3.5	2.9	59.5	67.5	8.0
BV-44-Q1	14.4	16.6	14.8	18.3	17.2	2.2	0.4	3.9	2.8	57.7	66.9	9.2
BV-44-Q2	15.2	17.4	18.0	18.1	18.6	2.2	2.8	2.9	3.4	60.8	72.1	11.3
BV-45-Q1	19.2	20.7	19.7	21.9	22.7	1.5	0.5	2.7	3.5	76.8	85.0	8.2
BV-45-Q2	19.0	21.2	18.7	24.5	21.4	2.2	ND	5.5	2.4	75.8	85.8	10.0
BV-46-Q1	16.3	17.1	17.3	15.6	20.4	0.8	1.0	ND	4.1	65.4	70.4	5.0
BV-46-Q2	16.5	18.4	17.9	20.6	18.1	1.9	1.4	4.1	1.6	66.1	75.0	8.9
BV-47-Q1	17.1	19.4	16.0	20.5	18.6	2.3	ND	3.4	1.5	68.3	74.5	6.2
BV-47-Q2	16.8	18.9	18.9	19.8	17.9	2.1	2.1	3.0	1.1	67.3	75.5	8.2
BV-52-Q1	15.9	18.2	15.2	18.8	17.7	2.3	ND	2.9	1.8	63.8	69.9	6.1
BV-52-Q2	15.6	19.5	16.7	20.5	18.8	3.9	1.1	4.9	3.2	62.4	75.5	13.1
BV-53-Q1	17.7	19.7	18.9	18.2	21.7	2.0	1.2	0.5	4.0	70.8	78.5	7.7
BV-53-Q2	16.6	18.7	15.8	19.9	18.9	2.1	ND	3.3	2.3	66.4	73.3	6.9
BV-54-Q1	15.4	17.1	15.7	18.9	17.1	1.7	0.3	3.5	1.7	61.7	68.8	7.1
BV-54-Q2	14.6	15.2	16.4	17.3	17.7	0.6	1.8	2.7	3.1	58.4	66.6	8.2
BV-55-Q1	14.7	17.3	17.0	18.1	15.9	2.6	2.3	3.4	1.2	58.9	68.3	9.4
BV-55-Q2	14.9	17.2	16.5	18.4	17.2	2.3	1.6	3.5	2.3	59.6	69.3	9.7
BV-56-A	19.3	21.5	22.4	22.9	25.3	2.2	3.1	3.6	6.0	77.2	92.1	14.9
BV-56-B	19.2	22.4	19.6	24.0	16.3	3.2	0.4	4.8	ND	76.8	82.3	5.5

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			
BV-56-C	19.0	18.5	20.6	21.0	23.4	ND	1.6	2.0	4.4	75.8	83.5	7.7
BV-56-D	19.7	18.8	20.7	21.5	20.3	ND	1.0	1.8	0.6	78.8	81.3	2.5
BV-59-Q1	16.9	17.8	16.2	19.5	18.6	0.9	ND	2.6	1.7	67.4	72.1	4.7
BV-59-Q2	16.7	17.7	16.6	20.9	18.9	1.1	ND	4.3	2.3	66.6	74.1	7.5
BV-60-Q1	20.8	22.1	19.8	25.6	23.5	1.3	ND	4.8	2.7	83.0	91.0	8.0
BV-60-Q2	22.0	22.1	23.4	25.6	26.5	0.1	1.5	3.7	4.6	87.8	97.6	9.8
BV-70-Q1	17.5	18.1	19.2	20.9	16.4	0.6	1.7	3.4	ND	70.0	74.6	4.6
BV-70-Q2	17.9	18.8	17.8	21.8	20.1	0.9	ND	3.9	2.2	71.7	78.5	6.8
BV-72-Q1	16.2	17.4	18.5	19.0	17.5	1.2	2.3	2.8	1.3	64.7	72.4	7.7
BV-72-Q2	16.5	14.2	15.8	17.3	18.7	ND	ND	0.8	2.2	66.1	66.0	ND
BV-75-Q1	17.9	17.1	21.5	20.5	23.7	ND	3.6	2.6	5.8	71.5	82.8	11.3
BV-75-Q2	18.4	20.1	19.7	24.2	15.5	1.7	1.3	5.8	ND	73.8	79.5	5.7
BV-76-Q1	17.9	18.3	21.3	22.4	19.6	0.4	3.4	4.5	1.7	67.6	81.6	14.0
BV-76-Q2	17.6	17.2	20.9	20.3	19.0	ND	3.3	2.7	1.4	70.6	77.4	6.8
BV-78-Q1	17.9	18.0	19.8	19.7	21.8	0.1	1.9	1.8	3.9	71.7	79.3	7.6
BV-78-Q2	17.6	15.9	17.4	19.4	19.6	ND	ND	1.8	2.0	70.4	72.3	1.9
BV-79-Q1	16.3	16.7	18.6	19.2	19.1	0.4	2.3	2.9	2.8	65.4	73.6	8.2
BV-79-Q2	16.2	17.5	16.5	19.8	18.2	1.3	0.3	3.6	2.0	64.9	72.0	7.1
BV-81-Q1	18.2	15.0	17.0	18.0	18.1	ND	ND	ND	ND	72.8	68.1	ND
BV-81-Q2	16.1	14.7	16.8	18.6	19.0	ND	0.7	2.5	2.9	64.6	69.1	4.5
BV-83-Q1	18.3	16.1	18.6	19.3	20.8	ND	0.3	1.0	2.5	73.4	74.8	1.4
BV-83-Q2	18.8	18.2	21.6	17.6	21.3	ND	2.8	ND	2.5	75.3	78.7	3.4
BV-84-Q1	17.0	16.0	16.6	18.9	18.8	ND	ND	1.9	1.8	68.0	70.3	2.3
BV-84-Q2	17.9	16.0	17.7	17.2	15.5	ND	ND	ND	ND	71.8	66.4	ND
BV-89-Q1	17.9	17.8	20.6	20.7	15.3	ND	2.7	2.8	ND	67.9	74.4	6.5
BV-89-Q2	18.3	17.8	20.0	21.3	15.5	ND	1.7	3.0	ND	73.4	74.6	1.2

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			
BV-91-Q1	18.1	17.6	16.1	21.0	17.7	ND	ND	3.0	ND	72.2	72.4	0.2
BV-91-Q2	17.6	13.4	16.9	16.5	18.0	ND	ND	ND	0.4	70.3	64.8	ND
BV-92-Q1	17.7	17.7	17.1	20.4	18.8	0.0	ND	2.7	1.1	67.2	74.0	6.8
BV-92-Q2	17.8	17.7	15.4	19.2	18.1	ND	ND	1.4	0.3	67.6	70.4	2.8
BV-93-Q1	17.5	16.7	17.4	20.0	18.0	ND	ND	2.5	0.5	70.1	72.1	2.0
BV-93-Q2	17.8	17.7	18.8	21.3	16.1	ND	1.1	3.6	ND	71.0	73.9	2.9
BV-94-Q1	16.9	15.7	17.7	18.9	18.9	ND	0.8	2.0	2.0	67.7	71.2	3.5
BV-94-Q2	17.7	16.3	14.2	20.2	15.2	ND	ND	2.5	ND	70.8	65.9	ND
BV-95-Q1	18.3	17.4	18.2	21.5	19.0	ND	ND	3.2	0.7	73.1	76.1	3.0
BV-95-Q2	18.0	17.3	15.9	17.3	16.6	ND	ND	ND	ND	71.9	67.1	ND
BV-111-Q1	19.3	18.9	18.3	22.5	18.1	ND	ND	3.2	ND	77.2	77.8	0.6
BV-111-Q2	18.8	16.8	19.5	20.5	20.1	ND	0.7	1.7	1.3	75.4	76.9	1.5
BV-112-Q1	22.5	21.0	22.8	20.5	23.1	ND	0.3	ND	0.6	89.9	87.4	ND
BV-112-Q2	20.9	19.1	20.0	22.7	19.6	ND	ND	1.8	ND	83.5	81.4	ND
BV-231-Q1	19.2	17.7	17.6	21.8	18.8	ND	ND	2.6	ND	76.9	75.9	ND
BV-231-Q2	20.6	17.0	19.3	21.1	20.4	ND	ND	0.5	ND	82.3	77.8	ND
BV-232-Q1	18.4	17.1	18.6	20.4	14.8	ND	0.2	2.0	ND	73.5	70.9	ND
BV-232-Q2	17.0	15.8	17.4	19.8	18.6	ND	0.4	2.8	1.6	68.0	71.6	3.6
BV-233-Q1	18.0	16.4	19.2	19.6	20.1	ND	1.2	1.6	2.1	71.9	75.3	3.4
BV-233-Q2	17.8	17.6	19.0	21.9	20.3	ND	1.3	4.2	2.6	71.0	78.8	7.8
BV-234-Q1	19.7	18.3	20.2	18.5	19.2	ND	0.5	ND	ND	78.9	76.2	ND
BV-234-Q2	20.5	18.6	21.3	19.3	21.8	ND	0.8	ND	1.4	81.8	81.0	ND
BV-235-Q1	20.9	21.9	19.6	25.9	21.5	1.0	ND	5.0	0.6	83.6	88.9	5.3
BV-235-Q2	20.2	19.3	20.2	24.2	21.6	ND	0.1	4.1	1.5	80.6	85.3	4.7
BV-236-Q1	19.9	17.5	21.5	22.2	22.7	ND	1.6	2.3	2.8	79.5	83.9	4.4
BV-236-Q2	19.2	18.5	17.3	18.0	18.6	ND	ND	ND	ND	76.7	72.4	ND

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			
BV-237-Q1	19.9	18.4	20.2	22.4	19.9	ND	0.3	2.5	ND	79.7	80.9	1.2
BV-237-Q2	20.8	20.0	20.6	24.0	20.3	ND	ND	3.2	ND	83.1	84.9	1.8
BV-238-Q1	17.8	16.1	17.9	19.9	19.0	ND	0.1	2.1	1.2	71.1	72.9	1.8
BV-238-Q2	17.2	17.1	17.8	22.5	19.9	ND	0.6	5.3	2.7	68.7	77.3	8.6
BV-239-Q1	21.4	22.3	18.1	26.1	19.4	0.9	ND	4.7	ND	85.6	85.9	0.3
BV-239-Q1	22.5	22.4	20.9	25.3	22.2	ND	ND	2.9	ND	89.8	90.8	1.0
BV-240-Q1	21.3	19.7	21.9	21.8	20.6	ND	0.6	0.5	ND	85.2	84.0	ND
BV-240-Q2	20.9	19.4	22.3	24.0	23.4	ND	1.4	3.1	2.5	83.5	89.1	5.6
BV-241-Q1	ND	24.1	22.1	23.7	24.4	ND	ND	ND	ND	70.7	94.3	23.6
BV-241-Q2	ND	20.5	19.4	22.4	25.5	ND	ND	ND	ND	74.9	87.8	12.9
BV-242-Q1	17.6	16.5	22.1	18.8	14.0	ND	4.5	1.2	ND	70.4	71.4	1.0
BV-242-Q2	16.8	17.5	17.5	21.7	18.5	0.7	0.7	4.9	1.7	67.1	75.2	8.1
BV-243-Q1	18.6	16.5	19.1	20.1	19.7	ND	0.5	1.5	1.1	74.4	75.4	1.0
BV-243-Q2	17.7	19.4	16.3	23.0	16.5	1.8	ND	5.4	ND	70.6	75.2	4.6
BV-244-Q1	16.7	15.2	17.9	18.8	19.5	ND	1.2	2.1	2.8	66.7	71.4	4.7
BV-244-Q2	16.3	15.2	16.5	18.7	17.0	ND	0.2	2.4	0.7	65.1	67.4	2.3
BV-245-Q1	ND	20.2	16.6	23.3	18.9	ND	ND	ND	ND	61.8	79.0	17.2
BV-245-Q2	ND	18.4	82.6	21.5	16.9	ND	ND	ND	ND	56.1	139.4	83.3
BV-246-Q1	18.9	18.9	19.5	23.1	20.1	0.0	0.6	4.3	1.3	75.4	81.6	6.2
BV-246-Q2	19.4	16.5	20.5	19.9	20.8	ND	1.1	0.5	1.4	77.7	77.7	0.0
BV-48-Q1	20.1	24.2	19.6	25.9	22.4	4.2	ND	5.9	2.4	80.2	92.1	11.9
BV-48-Q2	19.4	23.6	20.6	26.2	17.5	4.2	1.2	6.8	ND	77.7	87.9	10.2

MDD_Q = Quarterly Minimum Differential Dose = 5 mrem
MDD_A = Annual Minimum Differential Dose = 10 mrem
ND = Not Detected, where $M_Q \leq (B_Q+MDD_Q)$ or $M_A \leq (B_A+MDD_A)$

Enclosure B
L-26-096

2025 Annual Environmental Operating Report (Non-Radiological)
(Report follows)

RTL# A9.630F

VISTRA

BEAVER VALLEY NUCLEAR POWER PLANT

2025

ANNUAL ENVIRONMENTAL OPERATING REPORT

NON-RADIOLOGICAL

UNIT NOs. 1 AND 2

LICENSES DPR-66 AND NPF-73

T5.1.1 BEAVER VALLEY POWER STATION

ENVIRONMENTAL & CHEMISTRY SECTION

Technical Report Approval

2025 ANNUAL ENVIRONMENTAL OPERATING REPORT

(Non-Radiological)

UNITS NO. 1 AND 2

LICENSES DPR-66 AND NPF-73

Prepared by: Cameron L. Lange *(Via E-mail)* **Date:** December 8, 2025

Prepared by: Ron Bigley Ronald Bigley Ronald Bigley (Mar 12, 2026 08:02:01 EDT) **Date:** 03/12/2026

Reviewed by: Darren Bollman Darren Bollman **Date:** 03/17/2026

Reviewed by: Albert Magnotta Jr. Albert Magnotta **Date:** 04/11/2026

Approved by: Scott York **Date:** 04/16/2026

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1.0 EXECUTIVE SUMMARY

1.1 INTRODUCTION

This report is submitted in accordance with Section 5.4.1 of **Appendix B: To Facility Operating License No. NPF-73, Beaver Valley Power Station Unit 2, Environmental Protection Plan (Non-Radiological).** Beaver Valley Power Station (BVPS) is operated by Vistra Corp (Vistra). The Objectives of the Environmental Protection Plan (EPP) are to:

- Verify that the facility is operated in an environmentally acceptable manner, as established by the Final Environmental Statement-Operating License Stage (FES-OL) and other Nuclear Regulatory Commission (NRC) environmental impact assessments,

- Keep plant operations personnel appraised of changes in environmental conditions that may affect the facility,

- Coordinate NRC requirements and maintain consistency with other Federal, State, and local requirements for environmental protection, and

- Keep the NRC informed of the environmental effects of facility construction and operation and of actions taken to control those effects.

To achieve the objectives of the Environmental Protection Plan (EPP), both Vistra and BVPS have written programs and procedures to comply with the EPP, protect the environment, and comply with governmental requirements primarily including the US Environmental Protection Agency (EPA) and the Pennsylvania Department of Environmental Protection (PADEP) requirements. Water quality matters identified in the Final Environmental Statements-Operating License Stage (FES-OL) are regulated under the National Pollutants Discharge Elimination System (NPDES) Permit No. PA0025615. Waste is regulated under EPA Identification No. PAR000040485. Attachment 10.1 contains a listing of permits and certificates for environmental compliance.

The BVPS programs and procedures include pre-work and pre-project environmental evaluations, operating procedures, pollution prevention and response programs procedures and plans, process improvement and corrective action programs, and human performance programs. Technical and managerial monitoring of tasks, operations, and other activities are performed. Any identified challenges, concerns, or questions are captured in the Vistra Corrective Action Program with a Condition Report. Condition Reports are reviewed and closed through investigations, cause determinations, and corrective actions.

During 2025 BVPS continued an Aquatic Monitoring Program to provide information on potential impacts to BVPS operation from macrofoulers such as Asian clams (*Corbicula*) and zebra mussels (*Dreissena* spp.).

1.2 SUMMARY & CONCLUSIONS

There were no significant environmental events and no significant changes to operations that affect the environment made at Beaver Valley Power Station in 2025.

1.3 ANALYSIS OF SIGNIFICANT ENVIRONMENTAL CHANGE

During 2025 no significant changes were made at Beaver Valley Power Station to cause any significant negative impacts on the environment.

1.4 AQUATIC MONITORING PROGRAM EXECUTIVE SUMMARY

The 2025 Beaver Valley Power Station (BVPS) Units 1 and 2 Non-Radiological Monitoring Program consisted of an Aquatic Program that included surveillance and field sampling of the Ohio River's aquatic life in the vicinity of the station. Historically, the Aquatic Program was an annual program conducted to provide baseline aquatic resources data, to assess the impact of the operation of BVPS on the aquatic ecosystem of the Ohio River, and to monitor for potential impacts of biofouling organisms (*Corbicula* and zebra mussels) on BVPS operations. This is the 50th year of operational environmental monitoring for Unit 1 and the 39th year for Unit 2. In 2025, comparable to the previous eight (8) years, no fish or benthic macroinvertebrate sampling occurred, however, the zebra mussel and *Corbicula* monitoring programs were continued.

The monthly reservoir ponar samples collected at Unit 1 and 2 cooling towers and the three samples collected in the Ohio River at the intake during 2025 indicated that *Corbicula* were present in the Ohio River, as well as entering and becoming established at the station. In 2025, six (6) live and three (3) dead settled *Corbicula* were collected from the Unit 1 cooling tower reservoir during monthly ponar sampling. Also in 2025, 33 live and 14 dead settled *Corbicula* were collected from the Unit 2 cooling tower reservoir. Further, 10 live *Corbicula* were collected from the Ohio River at the intake during three sampling events in 2025. Juvenile *Corbicula* were also collected in pump samples collected in 2025. ***The numbers of live* Corbicula *collected in the 2025 samples taken outside the intake and in cooling towers were generally comparable to the previous three years. The continued presence of* Corbicula *adults and juveniles in and near BVPS indicates that they could still impact the facility if the current control program is not continued. Continued monitoring of* Corbicula *densities is also recommended to determine whether changes in the* Corbicula *populations that could impact facility operations are occurring.***

In 1995, live macrofouling zebra mussels were collected for the first time by divers in the BVPS main intake and auxiliary intake structures during scheduled cleanings. Zebra Mussels have been found at BVPS every year since. Overall, both the number of observations and densities of settled mussels in 2025 were consistent to those recorded in 2008-2024, and much higher than the five years prior to that. Although densities of settled mussels are lower than other populations such as the Lower Great Lakes, densities present in the Ohio River are more than sufficient to cause problems in the operation of untreated cooling water intake systems. ***Whether the population of zebra mussels in this reach of the Ohio River will remain the same or increase cannot be determined. In any case, the densities of mussels that presently exist are more than sufficient to impact the BVPS if continued prudent monitoring and control activities are not conducted.***

2.0 ENVIRONMENTAL PROTECTION PLAN NON-COMPLIANCES

There were Environmental Protection Plan non-compliances identified in 2025 and also in previous years that were inadvertently omitted from previous years reports. The following are the Environmental Protection Plan non-compliances identified in 2025 and also the previously omitted:

December 2022 – Sample collection less frequent than required. BVPS NPDES Permit (PA0025615) requires continuous, measured flow at Outfall 001. The Outfall 001 flowmeter was in service through 12/9/2022 but failed and remained out of service for the remainder of the month. Available data reported.

January 2023 – Sample collection less frequent than required. BVPS NPDES Permit (PA0025615) requires continuous, measured flow at Outfall 001. The Outfall 001 flowmeter was in service through 12/9/2022 but failed and remained out of service through the end of this monitoring period.

February 2023 – Sample collection less frequent than required. BVPS NPDES Permit (PA0025615) requires continuous, measured flow at Outfall 001. The Outfall 001 flowmeter was in service through 12/9/2022 but failed and remained out of service through the end of this monitoring period.

March 2023 – Sample collection less frequent than required. BVPS NPDES Permit (PA0025615) requires continuous, measured flow at Outfall 001. The Outfall 001 flowmeter was in service through 12-9-2022 but failed and remained out of service through 3/29/2023. Available data reported.

July 2023 – Sample collection less frequent than required. For Outfall 004, BVPS NPDES Permit (PA0025615) requires daily temperature, weekly pH and 2/month aluminum and copper samples when the Outfall is discharging. This Outfall only discharged once during the month of July 2023; however, the aforementioned samples were not obtained as required for this discharged.

September 2023 – Violation of NPDES Permit (PA0025615) Nalco H150M Exceedance. Concentration at Outfall 003 for the 9/12/2023 Unit 1 B Train dosing exceeded the permit limit. NPDES permit renewal on 11/1/2021 instituted TSS limits during treatment which changed the volume of dry bentonite clay that can be added. Limited clay allowed for an exceedance to occur. Procedure changes and bentonite clay addition methodology has been made to prevent further permit exceedances.

April 2024 – Violation of NPDES Permit (PA0025615) effluent limitations. Mercury discharge limits for Max and Monthly average were exceeded. BVPS is a nuclear-powered electric generating facility and has no sources of mercury on site so contribution to any outfall is not expected. Suspected lab error.

November 2024 – Violation of NPDES Permit (PA0025615) effluent limitations. Mercury discharge limits for Max and Monthly average were exceeded. BVPS is a nuclear-powered electric generating facility and has no sources of mercury on site so contribution to any outfall is not expected. Suspected lab error.

September 2025 – Sample collection less frequent than required. BVPS NPDES Permit (PA0025615) requires continuous, measured flow at Outfall 001. The Outfall 001 flowmeter was out of service on 9/1/2025 and no value was able to be obtained for reporting. Available data reported.

3.0 CHANGES INVOLVING UN-REVIEWED ENVIRONMENTAL QUESTIONS

No Un-reviewed Environmental Questions were identified in 2025. Therefore, there were no changes involving an Un-reviewed Environmental Questions.

4.0 NON-ROUTINE ENVIRONMENTAL REPORTS

There were no non-routine environmental reports in 2025.

5.0 AQUATIC MONITORING PROGRAM

This section of the report summarizes the Non-Radiological Environmental Program conducted for the BVPS Units 1 and 2; Operating License Numbers DPR-66 and NPF-73. This is a non-mandatory program, because on February 26, 1980, the NRC granted BVPS's request to delete all of the Aquatic Monitoring Program, with the exception of the fish impingement program (Amendment No. 25), from the Environmental Technical Specifications (ETS). In 1983, BVPS was permitted to also delete the fish impingement studies from the ETS program of required sampling along with non-radiological water quality requirements. In 2017, BVPS elected to not conduct the fish and benthic macroinvertebrate tasks related to this program. The zebra mussel and *Corbicula* monitoring tasks were maintained and conducted as in previous years.

The objectives of the 2025 environmental program were:

- To evaluate the presence, growth, and reproduction of macrofouling *Corbicula* (Asiatic clam) and zebra mussels (*Dreissena* spp.) at BVPS.
- To keep plant operations appraised of any changes in environmental conditions that may affect the facility.

5.1 SITE DESCRIPTION

BVPS is located on an approximately 453-acre tract of land on the south bank of the Ohio River in the Borough of Shippingport, Beaver County, Pennsylvania. The Shippingport Atomic Power Station once shared the site with BVPS, before being decommissioned. Figure 5.1 is a plan view of BVPS. The site is approximately 1 mile (1.6 km) from Midland, Pennsylvania; 5 miles (8 km) from East Liverpool, Ohio; and 25 miles (40 km) from Pittsburgh, Pennsylvania. The population within a 5-mile (8 km) radius of the plant is approximately 18,000. The Borough of Midland, Pennsylvania has a population of approximately 3,500.

The station is situated at Ohio River Mile 34.8 (Latitude: 40° 36' 18"; Longitude: 80° 26' 02") at a location on the New Cumberland Pool that is 3.1 river miles (5.3 km) downstream from Montgomery Lock and Dam and 19.6 miles (31.2 km) upstream from New Cumberland Lock and Dam. The Pennsylvania-Ohio-West Virginia border is 5.2 river miles (8.4 km) downstream from the site. The river flow is regulated by a series of dams and reservoirs on the Beaver, Allegheny, Monongahela, and Ohio Rivers and their tributaries.

The study site lies along the Ohio River in a valley that has a gradual slope which extends from the river at an elevation of 665 ft. (203 m) above mean sea level; to an elevation of 1,160 ft. (354 m)

along a ridge south of BVPS. The plant entrance elevation at the station is approximately 735 ft. (224 m) above mean sea level.

BVPS Units 1 and 2 have a thermal rating of 2,900 megawatts (MW). Units 1 and 2 have a design electrical rating of 994 MW and 1,009 MW, respectively. The circulating water systems for each unit are considered a closed cycle system with continuous overflow, using a cooling tower to minimize heat released to the Ohio River. Commercial operation of BVPS Unit 1 began in 1976 and Unit 2 began operation in 1987.

5.2 METHODS

Civil & Environmental Consultants, Incorporated (CEC Inc.) was contracted to perform the 2025 Aquatic Monitoring Program as specified in BVBP-ENV-001-Aquatic Monitoring (procedural guide). This procedural guide references and describes in detail the field and laboratory procedures used in the various monitoring programs, as well as the data analysis and reporting requirements. These procedures are summarized according to task in the following subsections. Sampling was conducted according to the schedule presented in Table 5.1.

5.2.1 *Corbicula* Density Determinations for Cooling Tower Reservoirs

The *Corbicula* Monitoring Program at BVPS includes sampling the circulating river water and the service water systems of the BVPS (intake structure and cooling towers). The objectives of the ongoing Monitoring Program were to evaluate the presence of *Corbicula* at BVPS and to evaluate the potential for and timing of infestation of the BVPS. This program was conducted in conjunction with a program to monitor for the presence of macrofouling zebra mussels (see Section 5.2.3).

Corbicula enter the BVPS from the Ohio River by passing through the water intakes and eventually settling in low flow areas including the lower reservoirs of the Units 1 and 2 cooling towers. *Corbicula* residing in the cooling water system can also produce young that will settle in the system. The density and growth of these *Corbicula* were monitored by collecting monthly samples from the lower reservoir sidewalls and sediments. The sampler used on the sidewalls consisted of a D-frame net attached behind a 24-inch long metal scraping edge. This device was connected to a pole long enough to allow the sampler to extend down into the reservoir area from the outside wall of the cooling tower. Sediments were sampled with a petite Ponar dredge. All equipment was tied off prior to sampling to prevent equipment from accidentally falling into the reservoirs.

Cooling tower reservoir sampling was historically conducted once per month. Beginning in December 1997, it was decided to forego sampling in cold water months, since buildup and growth of *Corbicula* does not occur then. Monthly sampling has been maintained throughout the warmer water months of the year. In 2025, sampling was scheduled to begin in April and end in October. The cooling tower of Unit 1 was not sampled in October due to a unit outage. All other months were sampled as scheduled.

In 2025, a single petite Ponar grab sample was taken in the reservoir of each cooling tower to obtain density and growth information on *Corbicula* present in the bottom sediment.

The samples collected from each cooling tower were returned to the laboratory and processed. Samples were individually washed, and any *Corbicula* removed and rinsed through a series of stacked

U.S. Standard sieves that ranged in mesh size from 1.00 mm to 9.49 mm. Live and dead clams retained in each sieve were counted and the numbers were recorded. The size distribution data obtained using the sieves reflected clam width, rather than length. Samples containing a small number of *Corbicula* were not sieved; individuals were measured and placed in their respective size categories. A scraping sample of about 12 square feet was also collected at each cooling tower during each monthly sampling effort. This sample was processed in a manner consistent with the petite ponar samples.

5.2.2 *Corbicula* Juvenile Monitoring

The *Corbicula* juvenile study was designed to collect data on *Corbicula* spawning activities and growth of individuals entering the intake from the Ohio River. From 1988 through 1998, clam cages were deployed in the intake forebay to monitor for *Corbicula* that entered the BVPS.

During the 1998 sampling season, at the request of BVPS personnel, all clam cages were removed after the May collection. Monthly petite ponar grabs from the forebay in the intake building continued thereafter. Samples were processed in the same manner as Cooling Tower samples (Section 5.2.1).

From 2002 to present, because of site access restrictions, sampling with the petite ponar has been moved to the Ohio River directly in front of the Intake Structure Building. Collections are presently scheduled to be made in May, July, and September. During each sampling month, two ponar grabs were taken just offshore of the intake building. These grab samples were processed in the same manner as when they were collected during monthly sampling.

5.2.3 Zebra Mussel Monitoring

The Zebra Mussel Monitoring Program includes sampling the Ohio River and the circulating river water system of the BVPS.

The objectives of the Monitoring Program are:

(1) To identify if zebra mussels were in the Ohio River adjacent to BVPS and provide early warning to operations personnel as to their possible infestation;

(2) To provide data as to when the larvae were mobile in the Ohio River and insights as to their vulnerability to potential treatments; and

(3) To provide data on their overall density and growth rates under different water temperatures and provide estimates on the time it requires these mussels to reach the size and density that could impact the plant.

The zebra mussel sampling for settled adults was historically conducted once per month throughout the year. Beginning in December 1997, it was decided to forego sampling in the colder water months of each year, since buildup of zebra mussels and growth of the individuals that were present, does not occur. Monthly sampling has been maintained throughout the balance of the year (April through October).

A pump sample for zebra mussel veligers was collected at the barge slip location monthly from April through October in 1996 and 1997. The scope of the sampling was expanded in 1998 to also include the Ohio River near the intake structure. In June 1998, the Emergency Outfall and the Emergency

Outfall Impact Basin (impact basin) locations were also added. Additional pump samples were collected from the cooling towers of Unit 1 and Unit 2 in October 1998. In 2025, veliger sampling took place monthly from April through October, except for in the cooling tower reservoir at Unit 1 in October due to a unit outage.

At the Intake Structure and Barge Slip the following surveillance techniques were used:

- Wall scraper sample collections on a monthly basis from the barge slip and the riprap near the intake structure to detect attached adults; and
- Pump sample collections from the barge slip and outside the intake structure, to detect the planktonic early life forms.

At each of the cooling towers the following techniques were used:

- Monthly reservoir scraper sample collections in each cooling tower; and
- Monthly pump samples to detect planktonic life forms.

At the Emergency Outfall and the impact basin the following techniques were used:

- Monthly scraper sample collections in each; and
- Monthly pump samples in each to detect planktonic life forms.

5.2.4 Reports

Each month when sampling was performed, activity reports summarizing the activities that took place in the previous month were prepared and submitted. These reports included the results of the monthly *Corbicula* and zebra mussel monitoring including any trends observed and any preliminary results available. The reports addressed progress made on each task and reported any observed biological activity of interest.

5.3 AQUATIC MONITORING PROGRAM RESULTS

The following sections summarize the findings for each of the program elements. Sampling dates for each of the program elements are presented in Table 5.1.

5.3.1 *Corbicula* Monitoring Program

In 2025, all monthly scheduled sampling was successfully conducted, except for the Unit 1 Cooling Tower Reservoir, where no sampling was conducted in October due to a unit outage.

In 2025, six (6) settled live *Corbicula* were collected from the Unit 1 cooling tower reservoir during monthly ponar sampling (Table 5.2 and Figure 5.2). Three (3) individuals were collected during the May sampling event, two (2) during the June sampling event, and one (1) during the July sampling event. Based on their sizes, the live *Corbicula* included individuals that settled in 2025 as well as during prior years. Three (3) dead *Corbicula* were also collected in 2025 in the Unit 1 cooling tower

reservoir and were likely killed during scheduled molluscicide treatments. The seasonal average density of settled live *Corbicula* was 43/m^2, which was comparable to the density of Corbicula in 2024 (34/m^2), but lower than in 2023 (193/m^2) and 2022 (145/m^2). *Corbicula* juveniles were also collected in monthly pump samples collected in the Unit 1 cooling tower reservoir in April, July and August, which indicates that *Corbicula* are continuing to be available for settlement in the cooling tower reservoir. No *Corbicula* were collected in the scraping samples, which is a gear that generally does not collect *Corbicula*, and focusses on monitoring zebra mussels.

In 2025, 33 live settled *Corbicula* were collected from the Unit 2 cooling tower reservoir (Table 5.3 and Figure 5.3). Live mussels were collected during all sampling events except in April. They ranged in size from 3.35 mm to greater than 9.5 mm, which indicated that some settled in 2025 while others settled in prior years. Fourteen (14) dead *Corbicula* were also collected during 2025. These dead *Corbicula* were probably killed by scheduled molluscicide treatments. The seasonal average density of settled live *Corbicula* was 203/m^2, which was comparable to the densities collected in 2024 (244/m^2), and 2023 (244/m^2), but much greater than in 2022 (43/m^2). In 2025, *Corbicula* juveniles were collected in monthly pump samples collected in the Unit 2 cooling tower reservoir in April, July, September and October. The density of *Corbicula* juveniles collected in August and October were relatively high (430/m^3 and 473/m^2 respectively). No *Corbicula* were collected in the scraping samples.

Corbicula juveniles were collected at non-cooling tower locations during monthly pump sampling from May through September 2024. *Corbicula* juveniles were collected at the impact basin in May through September, and at the barge slip from June through September. They were also collected at the intake and at the emergency outfall facility in July. This indicates that there is a significant reproducing population of *Corbicula* in the vicinity of the BVPS that could impact plant operations if steps are not taken to control them with BVPS.

In 2025, BVPS continued its *Corbicula* control program that included the use of a molluscicide to prevent the proliferation of *Corbicula* within BVPS. BVPS was granted permission by the PADEP to use a molluscicide to target the Unit 1 river water system and the Unit 2 service water system.

In 1990 through 1994, the molluscicide applications focused on reducing the *Corbicula* population throughout the entire river water system of each BVPS plant (Units 1 and 2). In 1994 and 1995, the applications targeted the internal water systems; therefore, the molluscicide concentrations in the cooling towers were reduced during applications. Consequently, adult and juvenile *Corbicula* in the cooling towers often survived the applications. Reservoir sediment samples taken after molluscicide applications represent mortality of *Corbicula* in the cooling tower only and do not reflect mortality in BVPS internal water systems.

The monthly reservoir sediment samples and pump samples collected in Units 1 and 2 Cooling Towers in 2025 and in recent years demonstrated that *Corbicula* were entering and colonizing the reservoirs. Live adult *Corbicula* were collected at both Unit 1 and 2. *Corbicula* juveniles were also collected in the cooling tower pump samples as well as at all other pump sampling locations, which indicates that they still are available for establishment in the cooling towers. The presence of live adult *Corbicula* in the cooling tower samples and the presence of juveniles in the cooling towers as well as at the other sampled locations indicates that monitoring and treatment of *Corbicula* should continue at BVPS.

5.3.2 Ohio River *Corbicula* Monitoring

Figure 5.4 presents the abundance and size distribution data for samples collected in the Ohio River near the intake structure by petite ponar dredge in 2025. Ten (10) live *Corbicula* were collected in 2025, which is comparable to the previous three years (nine (9) in 2024, 14 in 2023, and nine (9) in 2022). In 2025, they ranged in size from 3.35 mm to greater than 9.5 mm and were likely spawned in 2025 and in prior years. Live individuals were collected during each of the three sampling events. A spring/early-summer spawning period typically occurs in the Ohio River near BVPS each year when preferred spawning temperatures are reached (60-65^{O} F) (Figure 5.5). The offspring from this spawning event generally begin appearing in the sample collections in July. The settled clams then generally increase in size throughout the late summer and fall. The number of *Corbicula* in the Ohio River samples is consistent with the density of individuals found in the cooling towers. The on-going presence of *Corbicula* in the Ohio River near the intake indicates that continued monitoring of *Corbicula* densities should continue to determine whether changes in the *Corbicula* populations that could impact facility operations occur.

5.3.3 Zebra Mussel Monitoring Program

Zebra mussels (*Dreissena polymorpha* and the closely related species *Dreissena bugensis*) are exotic freshwater mollusks that have ventrally flattened shells, which are generally marked with alternating dark and lighter bands. They are believed to have been introduced into North America through the ballast water of ocean-going cargo vessels probably from Eastern Europe. They were first identified in Lake St. Clair in 1988 and rapidly spread to other Great Lakes and the Mississippi River drainage system, and have become abundant in the lower, middle, and upper Ohio River. They use strong adhesive byssal threads, collectively referred to as their byssus, to attach themselves to any hard surfaces (e.g. intake pipes, cooling water intake systems, and other mussels). Responding to NRC Notice No. 89-76 (Biofouling Agent-Zebra Mussel, November 21, 1989), BVPS instituted a Zebra Mussel Monitoring Program in January 1990. Studies have been conducted each year since then.

Spawning begins as water temperature reaches approximately 57^{o} F and peaks at water temperatures of 74^{o} F. The veliger form is a small, planktonic early life stage form of the zebra mussel that remains in the water column for approximately two weeks prior to settling and transforming into the adult. Veliger densities usually peak about two weeks after the optimum water temperature for spawning is reached. Veliger densities then fall off as veligers mature and settle, although female mussels continue to broadcast mature eggs throughout the season. River water temperature in April was 58.0^{o} F, which is just above the low end of the spawning range (Figure 5.5). River water temperature in July reached nearly 83.4^{o} F, which is in the preferred spawning temperature and was just below the low end of the spawning range (56.5^{o} F) in October.

Zebra mussels were detected in both the pump samples (Figures 5.6 and 5.7) and the substrate samples (Figure 5.8 and 5.9) in 2025. Veligers were collected at all of the six sites that were sampled in 2025. Zebra mussel veligers were collected in pump samples from April through October.

Veligers were present at the Unit 1 cooling tower reservoir from April through September. There was no sampling at this location in October due to a unit outage. They were collected from the Unit 2 cooling tower reservoir and the impact basin from June through October. Veligers were collected at the barge slip and emergency outfall facility from June through September and from the Ohio River near the intake from July through October. By sampling location, the highest annual densities in zebra mussel veligers occurred in July at all locations except in sample collected at the barge slip where the highest densities were collected in August. Throughout the year, the majority of the veligers were D-form, which were very recently spawned and not able to settle. The percentage of mussels capable of settling generally increased throughout the sampling season.

The greatest density of veligers in any sample collected in 2025 was present in the sample collected at the Unit 2 cooling tower in July (24,780/m^3). This was comparable to the highest veliger densities found in 2024 (23,400/m^3) and 2022 (35,800/m^3), but higher than in 2023 (9,775/m^3). Overall, the densities of mussels were sufficient to contribute to significant settlement and potential fouling of BVPS systems.

As in past years, in 2025 settled zebra mussels were frequently collected in scrape samples taken at the barge slip and at the intake (Figures 5.8 and 5.9). In 2025 they were not collected at any other location. The highest density of settled mussels in any sample collected was at the barge slip (23.1 mussels/m^2) in the May sample. The highest density at the intake was 9.0 mussels/m^2 that occurred in April. The mussels collected at both locations included individuals that had overwintered and were capable of reproducing as well as mussels settled during 2025. Overall, both the number of observations and densities of settled mussels in 2025 were consistent to those recorded in 2001 through 2024.

Although densities of settled mussels are low compared to other populations such as the Lower Great Lakes, densities comparable to those in the Ohio River are sufficient to cause problems in the operation of untreated cooling water intake systems.

Whether the population of settled zebra mussels in this reach of the Ohio River will remain the same or increase cannot be determined. In any case, the densities of mussels that presently exist are more than sufficient to impact BVPS if continued prudent monitoring and control activities are not conducted.

6.0 ZEBRA MUSSEL AND *CORBICULA* CONTROL ACTIVITIES

In 2025, BVPS continued its *Corbicula* and zebra mussel control program (36th year), which includes the use of a molluscicide to prevent the proliferation of *Corbicula* and zebra mussels within BVPS. BVPS was granted permission by the PADEP to use a molluscicide to target the Unit 1 river water system and the Unit 2 service water system.

In 1990 through 1994, the molluscicide applications (CT-1) focused on reducing the *Corbicula* population throughout the entire river water system of each BVPS plant (Units 1 and 2). In 1994 through 2006, the CT-1 or CT-2 (reformulated CT-1) applications targeted zebra mussels and

Corbicula in the internal water systems; therefore, the molluscicide concentrations in the cooling towers were reduced during CT-1 or CT-2 applications. Consequently, adult and juvenile *Corbicula* in the cooling towers often survived the applications. Reservoir sediment samples taken after CT-1 or CT-2 applications represented mortality of *Corbicula* in the cooling tower only and do not reflect mortality in BVPS internal water systems. In 2007 BVPS began using Nalco H150M as the molluscicide. This product, which has the same active ingredients as the CT-1 and CT-2, was applied in the same manner.

In addition to clamicide treatments, preventive measures were taken that included spring and fall cleanings of the Intake Bays. The bay cleanings are intended to minimize the accumulation and growth of mussels within the bays. This practice prevents creating an uncontrolled internal colonization habitat.

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8.0 TABLES

TABLE 5.1

BEAVER VALLEY POWER STATION (BVPS)
SAMPLING DATES FOR 2025

Study	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Benthic Macroinvertebrate*												
Fish*												
Corbicula and Zebra Mussel				22	21	25	30	27	23	29		
Zebra Mussel Veliger				22	21	25	30	27	23	29		

* Not scheduled in 2025

TABLE 5.2

UNIT 1 COOLING RESERVOIR MONTHLY SAMPLING
CORBICULA DENSITY DATA FOR
2025 FROM BVPS

Collection Date	Area Sampled (sq ft)	Live or Dead	Count	Maximum Length Range (mm)	Minimum Length Range(mm)	Estimated Number (per sq m)
4/22/2025	0.25	Dead	0	---	---	0
		Live	0	---	---	0
5/21/2025	0.25	Dead	3	4.75-6.29	3.35-4.74	129
		Live	3	6.30-9.49	4.75-6.29	129
6/25/2025	0.25	Dead	0	---	---	0
		Live	2	3.35-4.74	3.35-4.74	86
7/30/2025	0.25	Dead	0	---	---	0
		Live	1	2.00-3.34	2.00-3.34	43
8/27/2025	0.25	Dead	0	---	---	0
		Live	0	---	---	0
9/23/2025	0.25	Dead	0	---	---	0
		Live	0	---	---	0
10/29/2025*	0.25	Dead	---	---	---	---
		Live	---	---	---	---
Unit summary		**Dead**	**3**	**4.75-6.29**	**3.35-4.74**	**22**
		Live	**6**	**6.30-9.49**	**2.00-3.34**	**43**

Not Sampled in October Due to Unit Outage

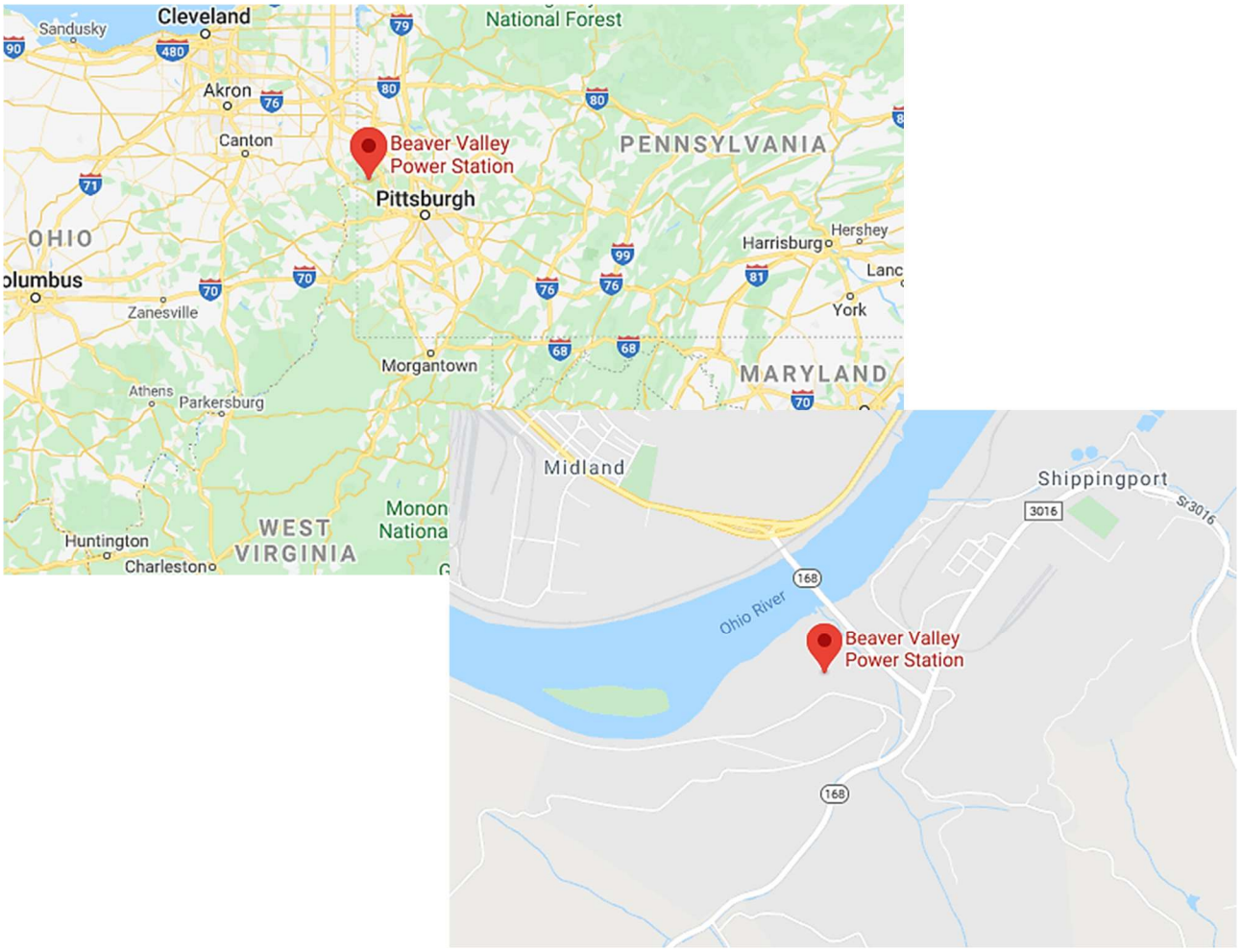
TABLE 5.3

UNIT 2 COOLING RESERVOIR MONTHLY SAMPLING
CORBICULA DENSITY DATA FOR
2025 FROM BVPS

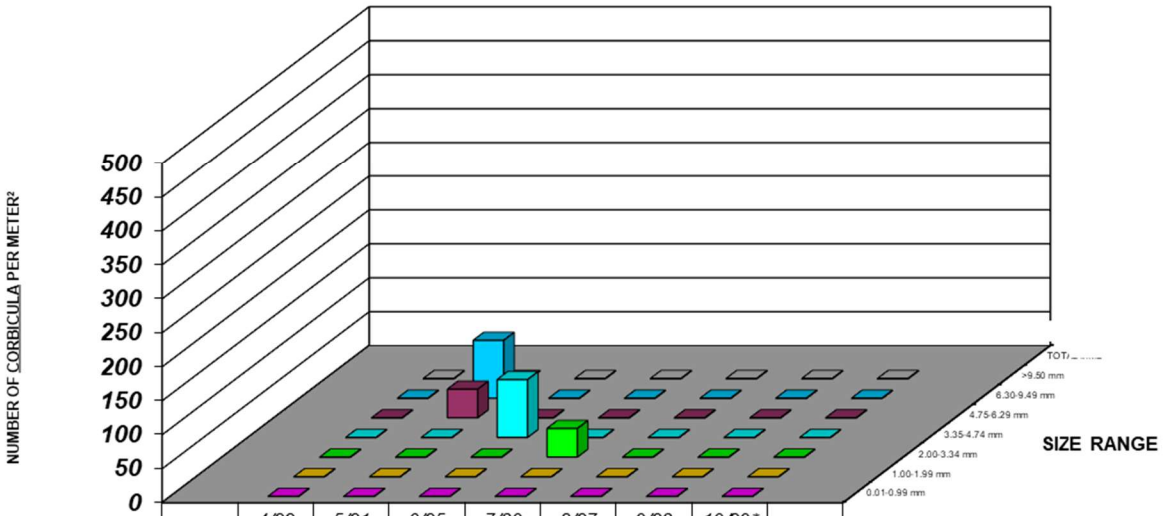
Collection Date	Area Sampled (sq ft)	Live or Dead	Count	Maximum Length Range (mm)	Minimum Length Range(mm)	Estimated Number (per sq m)
4/22/2025	0.25	Dead	0	---	---	0
		Live	0	---	---	0
5/21/2025	0.25	Dead	1	6.30-9.49	6.30-9.49	43
		Live	3	3.35-4.74	2.00-3.34	129
6/21/2025	0.25	Dead	2	4.75-6.29	3.35-4.74	86
		Live	5	6.30-9.49	3.35-4.74	215
7/23/2025	0.25	Dead	3	6.30-9.49	3.35-4.74	129
		Live	1	>9.50	>9.50	43
8/27/2025	0.25	Dead	2	6.30-9.49	6.30-9.49	86
		Live	10	6.30-9.49	3.35-4.74	430
9/23/2025	0.25	Dead	2	6.30-9.49	3.35-4.74	86
		Live	3	6.30-9.49	4.75-6.29	129
10/29/2025	0.25	Dead	4	4.75-6.29	4.75-6.29	172
		Live	11	4.75-6.29	4.75-6.29	473
Unit summary		**Dead**	**14**	**6.30-9.49**	**3.35-4.74**	**86**
		Live	**33**	**>9.50**	**2.00-3.34**	**203**

9.0 FIGURES

Figure 5.1 Location of study area: Beaver Valley Power Station (BVPS), Shippingport, PA



Comparison of live Corbicula clam density estimates among 2025 BVPS Unit 1 cooling tower reservoir events, for various clam shell groups.

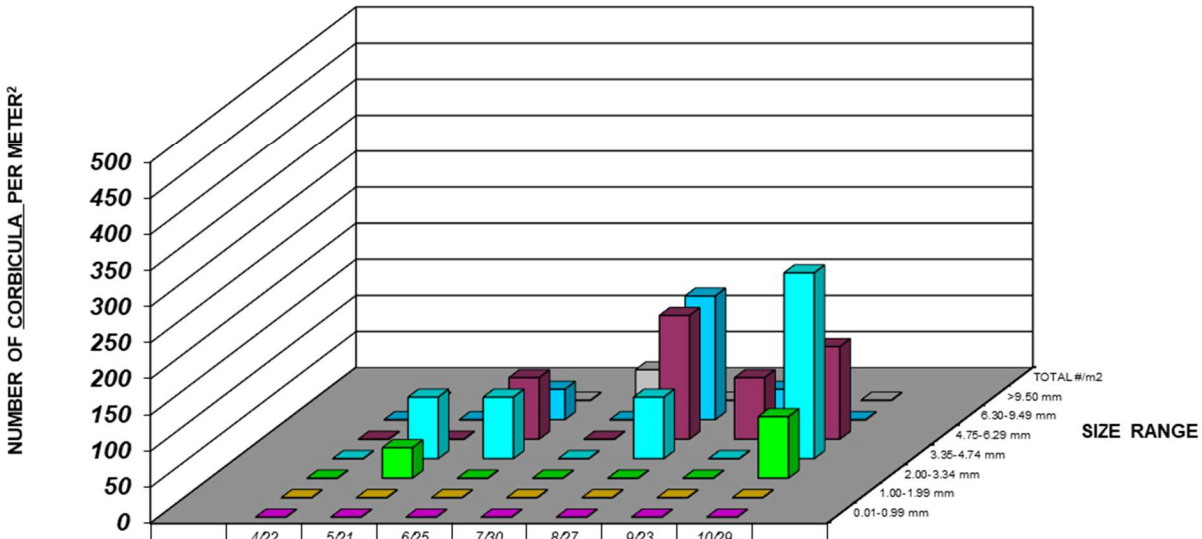


	4/22	5/21	6/25	7/30	8/27	9/23	10/29*
0.01-0.99 mm	0	0	0	0	0	0	0
1.00-1.99 mm	0	0	0	0	0	0	0
2.00-3.34 mm	0	0	0	43	0	0	0
3.35-4.74 mm	0	0	86	0	0	0	0
4.75-6.29 mm	0	43	0	0	0	0	0
6.30-9.49 mm	0	86	0	0	0	0	0
>9.50 mm	0	0	0	0	0	0	0
TOTAL #/m2	0	129	86	43	0	0	0

Figure 5.2

*Not sampled in October due to unit outage.

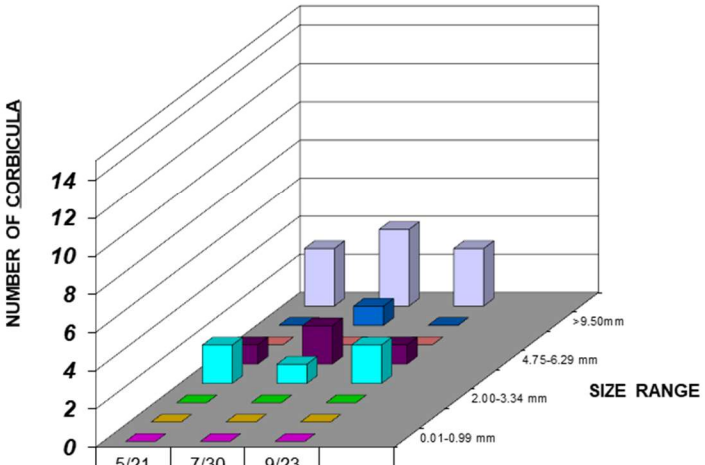
Comparison of live Corbicula clam density estimates among 2025 BVPS Unit 2 cooling tower reservoir events, for various clam shell groups.



	4/22	5/21	6/25	7/30	8/27	9/23	10/29
0.01-0.99 mm	0	0	0	0	0	0	0
1.00-1.99 mm	0	0	0	0	0	0	0
2.00-3.34 mm	0	43	0	0	0	0	86
3.35-4.74 mm	0	86	86	0	86	0	258
4.75-6.29 mm	0	0	86	0	172	86	129
6.30-9.49 mm	0	0	43	0	172	43	0
>9.50 mm	0	0	0	43	0	0	0
TOTAL #/m2	0	129	215	43	430	129	473

Figure 5.3

Comparison of live Corbicula clam density estimates among 2025 BVPS Near-Shore Intake sample events, for various clam shell groups.



	5/21	7/30	9/23	
0.01-0.99 mm	0	0	0	
1.00-1.99 mm	0	0	0	
2.00-3.34 mm	0	0	0	
3.35-4.74 mm	2	1	2	
4.75-6.29 mm	1	2	1	
6.30-9.49 mm	0	0	0	
>9.50mm	0	1	0	
TOTAL	3	4	3	

Intake structure bottom samples are collected from the Ohio River at the Intake Building.

Figure 5.4

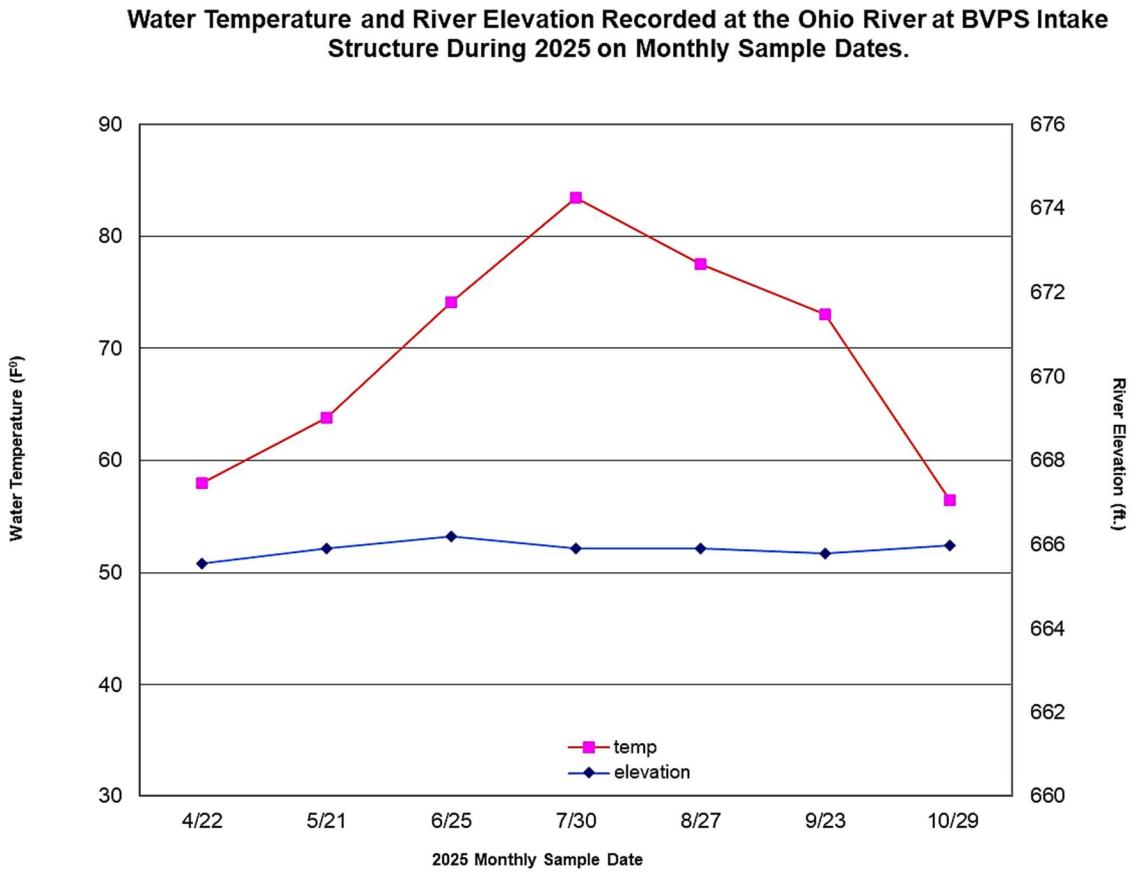
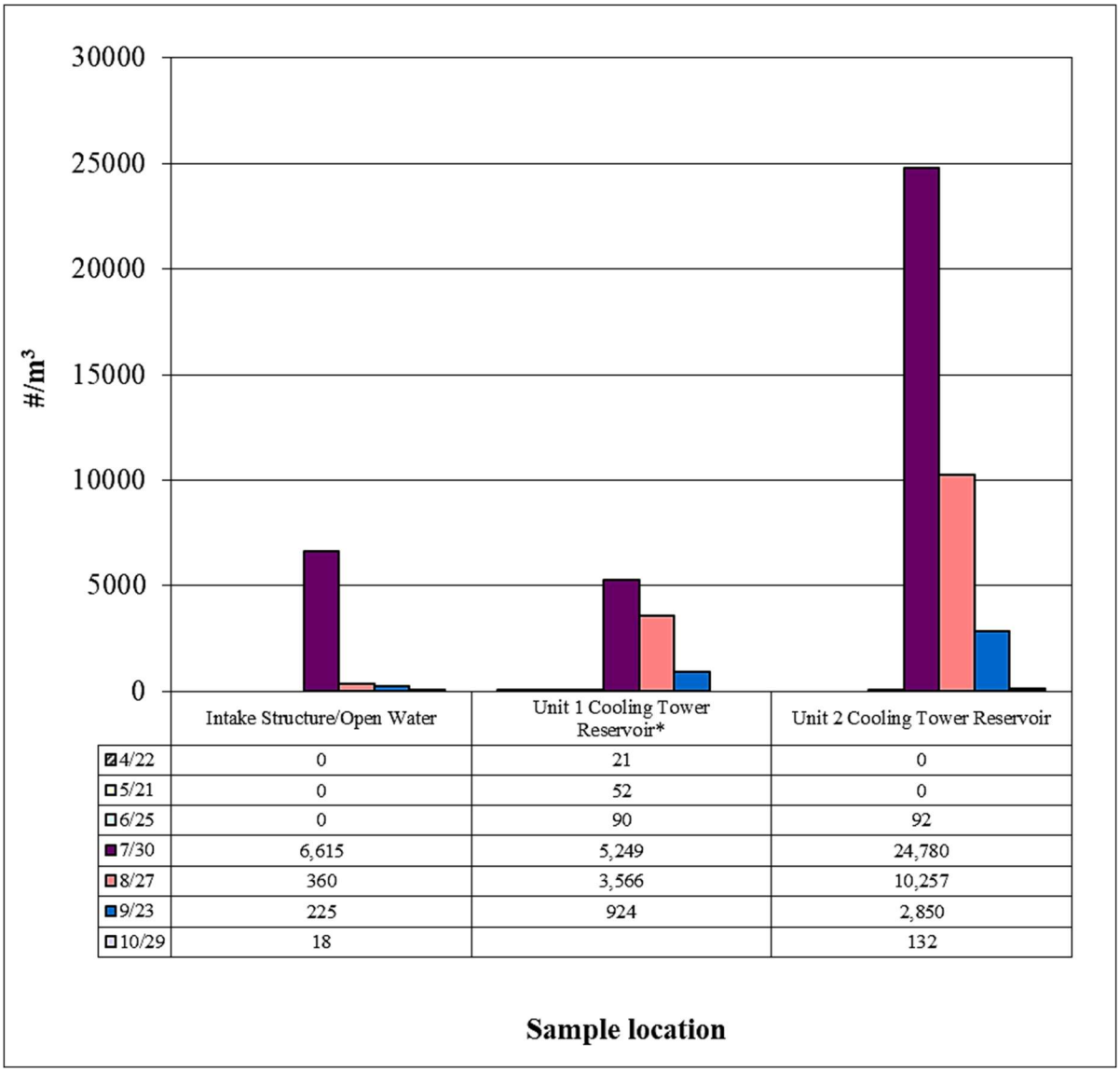
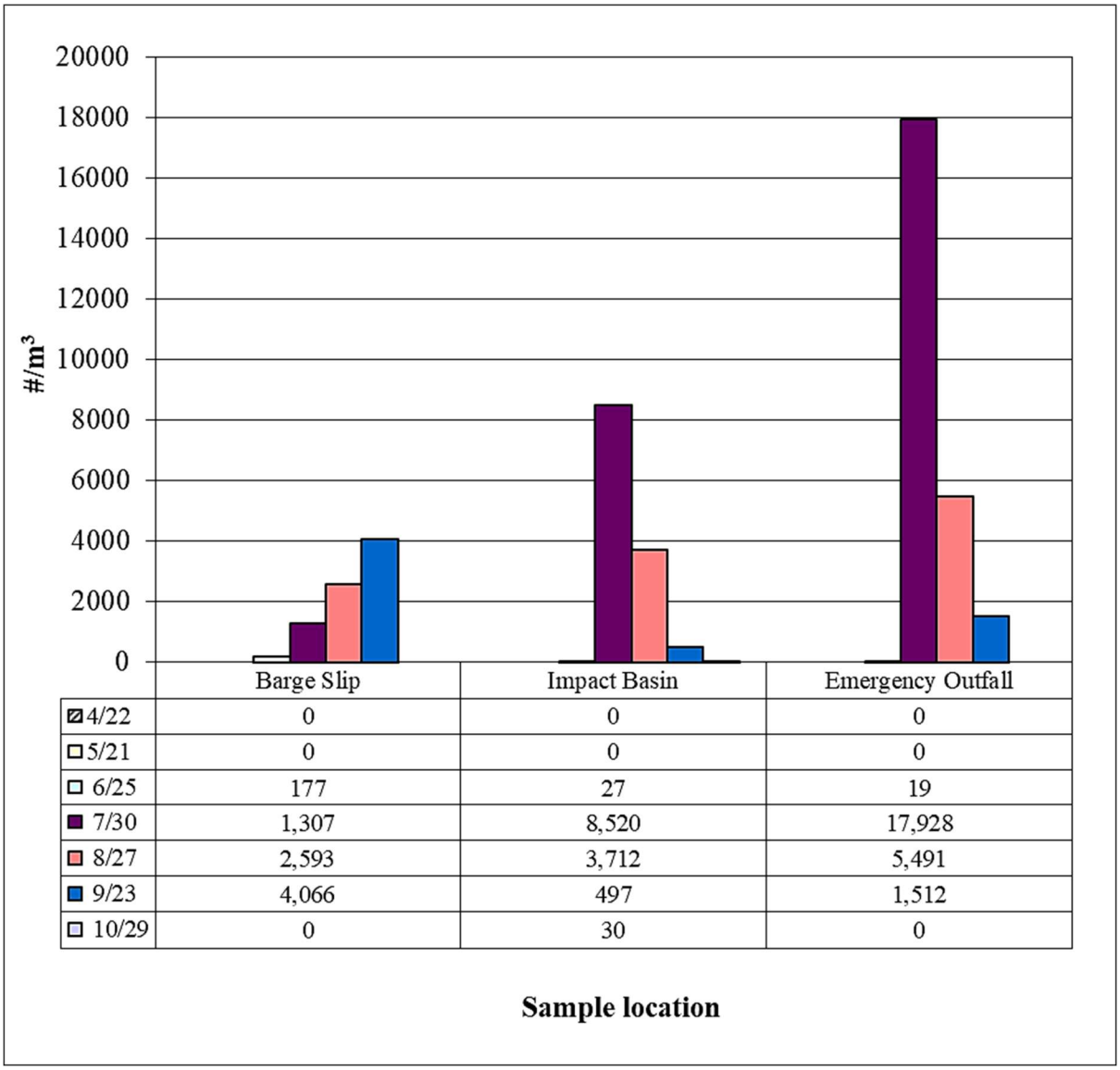

Water Temperature and River Elevation Recorded at the Ohio River at BVPS Intake Structure During 2025 on Monthly Sample Dates.
Water Temperature (F⁰)
River Elevation (ft.)
90
80
70
60
50
40
30
676
674
672
670
668
666
664
662
660
temp
elevation
4/22
5/21
6/25
7/30
8/27
9/23
10/29
2025 Monthly Sample Date

Figure 5.5



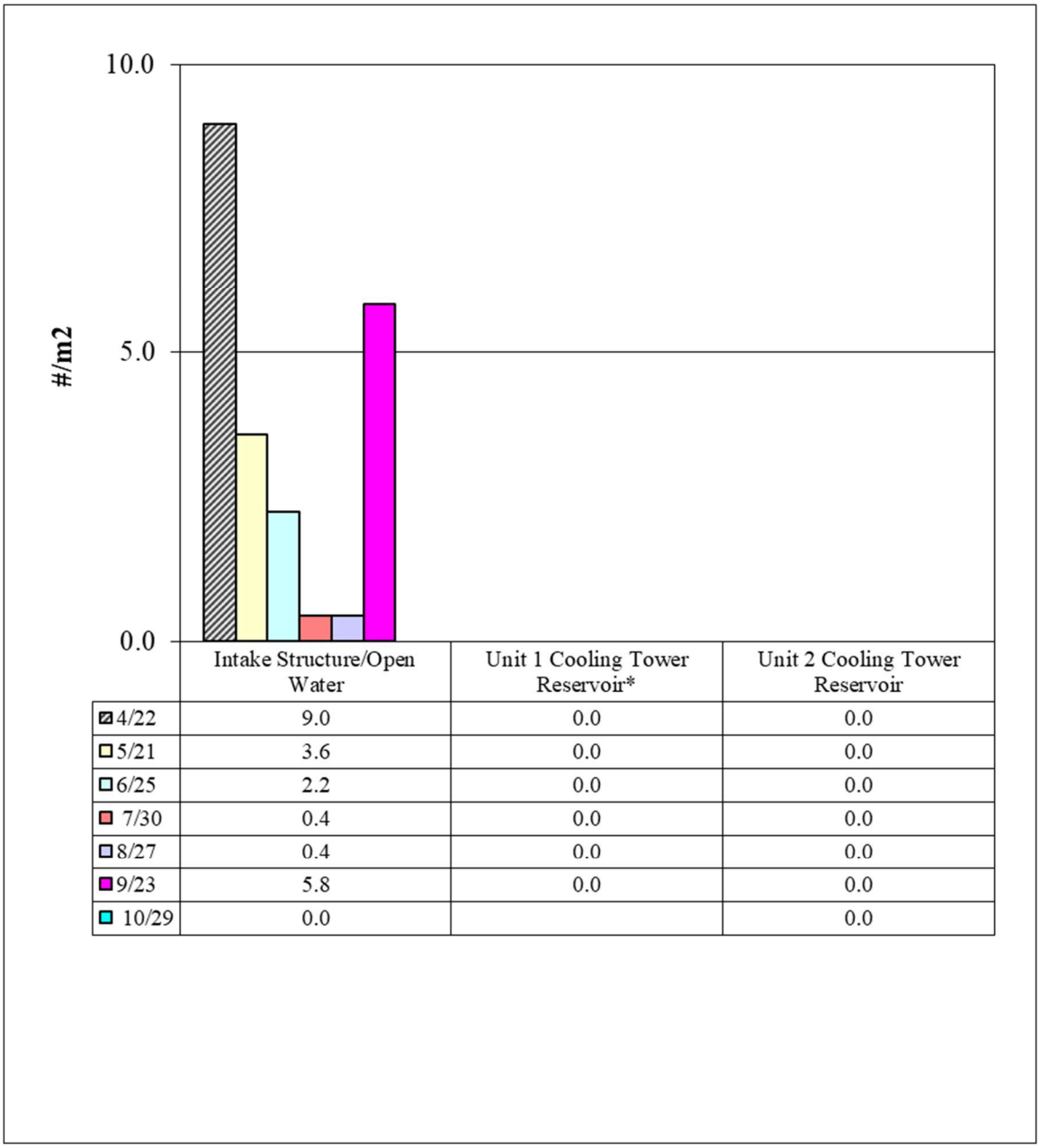
	Intake Structure/Open Water	Unit 1 Cooling Tower Reservoir*	Unit 2 Cooling Tower Reservoir
4/22	0	21	0
5/21	0	52	0
6/25	0	90	92
7/30	6,615	5,249	24,780
8/27	360	3,566	10,257
9/23	225	924	2,850
10/29	18		132

Figure 5.6. Density of zebra mussel veligers collected at Beaver Valley Power Station, 2025.
*Unit 1 not sampled in October due to unit outage.



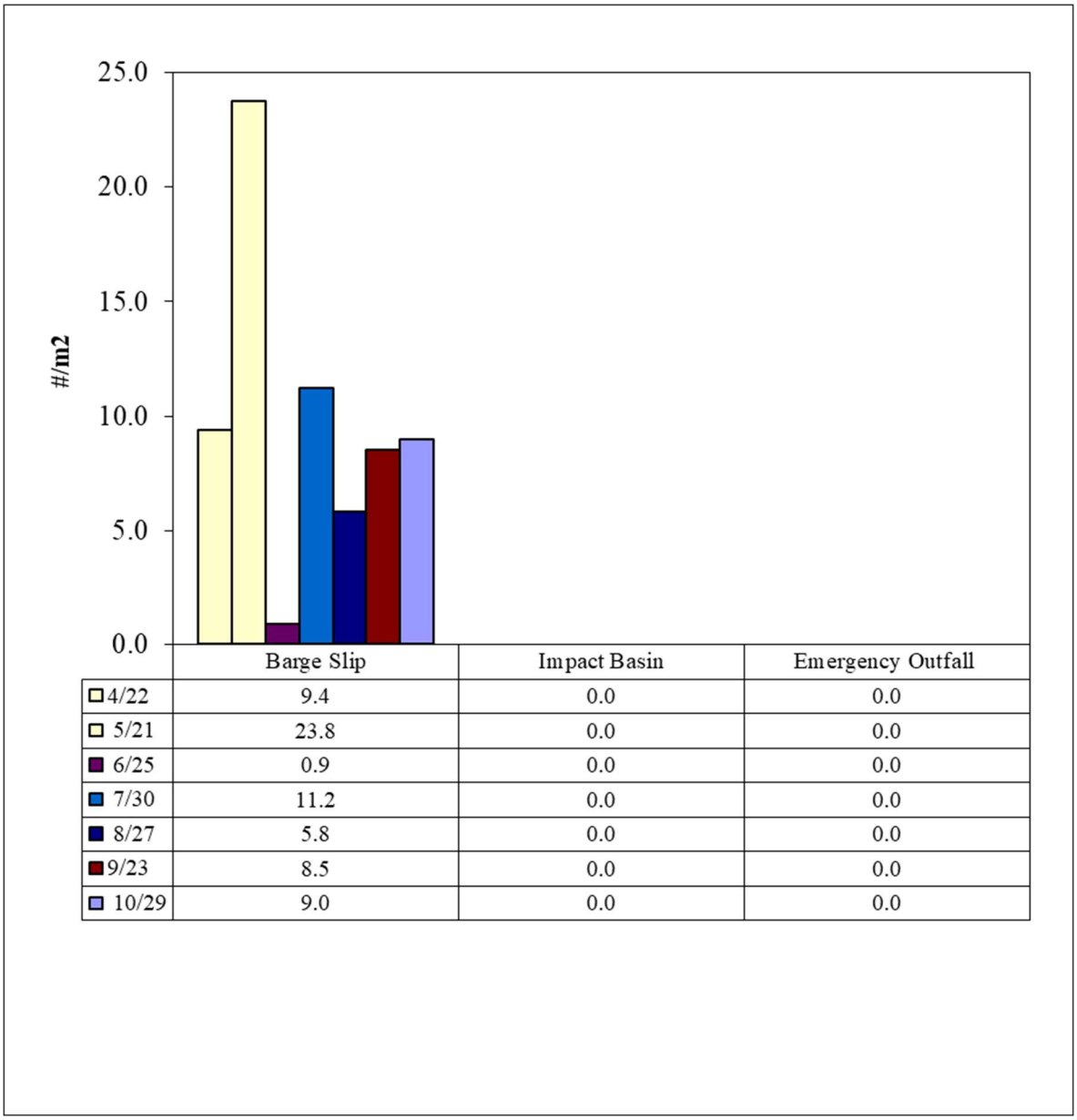
	Barge Slip	Impact Basin	Emergency Outfall
4/22	0	0	0
5/21	0	0	0
6/25	177	27	19
7/30	1,307	8,520	17,928
8/27	2,593	3,712	5,491
9/23	4,066	497	1,512
10/29	0	30	0

Figure 5.7. Density of zebra mussel veligers collected at Beaver Valley Power Station, 2025.



	Intake Structure/Open Water	Unit 1 Cooling Tower Reservoir*	Unit 2 Cooling Tower Reservoir
4/22	9.0	0.0	0.0
5/21	3.6	0.0	0.0
6/25	2.2	0.0	0.0
7/30	0.4	0.0	0.0
8/27	0.4	0.0	0.0
9/23	5.8	0.0	0.0
10/29	0.0		0.0

Figure 5.8. Density of settled zebra mussels at Beaver Valley Power Station, 2025.
* Unit 1 not sampled in October due to unit outage.



	Barge Slip	Impact Basin	Emergency Outfall
4/22	9.4	0.0	0.0
5/21	23.8	0.0	0.0
6/25	0.9	0.0	0.0
7/30	11.2	0.0	0.0
8/27	5.8	0.0	0.0
9/23	8.5	0.0	0.0
10/29	9.0	0.0	0.0

Figure 5.9. Density of settled zebra mussels at Beaver Valley Power Station, 2025.

10.0 PERMITS

Attachment 10.1

BEAVER VALLEY POWER STATION (BVPS)
PERMITS AND CERTIFICATES FOR ENVIRONMENTAL COMPLIANCE

Registration Number	Regulator/Description	Expiration
PAR000040485	BVPS EPA generator identification Resource Conservation & Recovery Act (RCRA) Identification number for regulated waste activity. Also used by PA DEP to monitor regulated waste activity under the Pennsylvania Solid Waste Management Act (SWMA)	Indefinite
04-02474	BVPS EPA Facility Identification Number for CERCLA/EPCRA/SARA. Used for SARA Tier II reporting and emergency planning.	Indefinite
04-02475	FE Long Term Distribution Center/Warehouse (22) EPA Facility Identification Number for CERCLA/EPCRA/SARA. Used for Sara Tier II reporting and emergency planning.	Indefinite
PA0025615	BVPS NPDES Permit Number under US EPA and PA DEP.	10/31/2026
04-13281	BVPS Unit 1 PA DEP Facility Identification & certification number for regulated storage tanks.	Indefinite
04-13361	BVPS Unit 2 PA DEP Facility Identification & certification number for regulated storage tanks.	Indefinite
OP-04-00086	PA DEP State Only Synthetic Minor Permit for emergency auxiliary boilers, emergency diesel generators, paint shop and other miscellaneous sources.	6/12/2030
N/A	PA DEP Open Burning Permit for operation of the BVPS Fire School – annual application and renewal.	1/1/2021 Did not renew
060425550224H	US Department of Transportation Hazardous Materials Registration.	6/30/2026
2001-242	US Army Permit for maintenance dredging (with Encroachment/Submerged Lands Agreement #0477705, this allows maintenance dredging).	12/31/2032
477705	Encroachment Permit/Submerged Lands Agreement for construction and maintenance of current barge slip (with US Army Permit #2000100242, this allows maintenance dredging).	Indefinite
06786A	Encroachment Permit/Submerged Lands Agreement for transmission line over Ohio River at Mile 34.5.	Indefinite
18737	Encroachment Permit/Submerged Lands Agreement for Unit 1 intake and discharge (main combined intake and outfall structures).	Indefinite
475711	Encroachment Permit/Submerged Lands Agreement for construction and maintenance of Unit 2 auxiliary line.	Indefinite