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RBG-48149

April 27, 2022

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

Subject: 2021 Annual Radioactive Effluent Release Report
River Bend Station – Unit 1
Renewed Operating License No. NPF-47
Docket No. 50-458

Enclosed is the River Bend Station (RBS) Annual Radioactive Effluent Release Report for the period of January 1, 2021, through December 31, 2021. This report is submitted in accordance with the RBS Technical Specifications, Section 5.6.3.

Should you have any questions regarding the enclosed, please contact Tim Schenk, at (225) 381-4177.

Sincerely,

A handwritten signature in black ink, appearing to read 'Tim Schenk', written over a horizontal line.

Tim Schenk

TAS/twf

Enclosure: 2021 Annual Radioactive Effluent Release Report

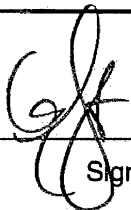
cc: NRC Senior Resident Inspector – River Bend Station, Unit 1

Enclosure
2021 Annual Radioactive Effluent Release Report




| | |
|---|---------------------|
| Plant: River Bend Nuclear Station | Page 1 of 87 |
| | YEAR: 2021 |
| Document Number: RBG-48149 | |
| Annual Radioactive Effluent Release Report | |


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Annual Radioactive Effluent Release Report

TABLE OF CONTENTS

1.0 INTRODUCTION3

2.0 SUPPLEMENTAL INFORMATION.....3

3.0 GASEOUS EFFLUENTS.....13

4.0 LIQUID EFFLUENTS17

5.0 SOLID WASTE SUMMARY22

6.0 RADIOLOGICAL IMPACT TO MAN25

7.0 METEOROLOGICAL DATA.....28

ATTACHMENTS

Attachment 1 - Groundwater Monitoring Well Sampling Results45

Attachment 2 - 2018 ARERR ERRATA.....81

Attachment 3 - 2019 ARERR ERRATA.....82

Attachment 4 - 2020 ARERR ERRATA.....85

Annual Radioactive Effluent Release Report**1.0 INTRODUCTION**

This is the Annual Radioactive Effluent Release Report for the period of January 1, 2021, through December 31, 2021. This report is submitted in accordance with Technical Specification 5.6.3 of Appendix A to River Bend Station (RBS) License Number NPF-47.

2.0 SUPPLEMENTAL INFORMATION**2.1 Regulatory Limits****2.1.1 10CFR50, Appendix I Limits**

1. Fission and activation gases:
 - a. In accordance with Technical Requirement (TR) 3.11.2.2, the air dose due to noble gases released in gaseous effluent to areas at and beyond the SITE BOUNDARY shall be limited to:
 - 1) Quarterly
 - Less than or equal to 5 mrad gamma
 - Less than or equal to 10 mrad beta
 - 2) Yearly
 - Less than or equal to 10 mrad gamma
 - Less than or equal to 20 mrad beta
2. Iodine, tritium, and all radionuclides in particulate form with half-lives greater than 8 days.
 - a. In accordance with Technical Requirement 3.11.2.3, the dose to a MEMBER OF THE PUBLIC from radioiodines (I-131 and I-133), tritium (H-3) and all radionuclides in particulate form with half-lives greater than 8 days, in gaseous effluent releases to areas at and beyond the SITE BOUNDARY shall be limited to:
 - 1) Quarterly
 - Less than or equal to 7.5 mrem to any organ
 - 2) Yearly
 - Less than or equal to 15 mrem to any organ

Annual Radioactive Effluent Release Report

3. Liquid Effluents Dose
 - a. In accordance with Technical Requirement 3.11.1.2, the dose or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluent released to UNRESTRICTED AREAS shall be limited to:
 - 1) Quarterly
 - Less than or equal to 1.5 mrem total body
 - Less than or equal to 5 mrem critical organ
 - 2) Yearly
 - Less than or equal to 3 mrem total body
 - Less than or equal to 10 mrem critical organ
4. Total Dose (40CFR190)
 - a. In accordance with Technical Requirement 3.11.4, the annual (calendar year) dose or dose commitment to any MEMBER OF THE PUBLIC, due to releases of radioactivity and to radiation from uranium fuel cycle sources, shall be limited to:
 - Less than or equal to 25 mrem, Total Body or any Organ except Thyroid.
 - Less than or equal to 75 mrem, Thyroid

2.1.2 Miscellaneous Limits

1. Technical Requirement 3.11.2.1 - Fission and Activation Gases
 - a. In accordance with Technical Requirement 3.11.2.1, the dose rate due to radioactive materials released in gaseous effluents from the site to areas at and beyond the SITE BOUNDARY shall be:
 - Less than or equal to 500 mrem/year to the total body
 - Less than or equal to 3000 mrem/year to the skin
2. Technical Requirement 3.11.2.1 - Radioiodine (I-131 & I-133) and Particulate
 - a. In accordance with Technical Requirement 3.11.2.1, the dose rate due to radioiodines, tritium, and all radionuclides in particulate form with half-lives greater than 8 days released in gaseous effluents from the site to areas at and beyond the SITE BOUNDARY shall be limited to:
 - Less than or equal to 1500 mrem/yr to any organ

Annual Radioactive Effluent Release Report

3. Technical Requirement 3.11.1.1 - Liquid Effluent
 - a. In accordance with Technical Requirement 3.11.1.1, the concentration of radioactive material released in liquid effluent to UNRESTRICTED AREAS shall be limited to ten times the concentrations specified in 10CFR20, Appendix B, Table 2, Column 2 for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall be limited to 2.0E-04 microcuries/milliliter total concentration.
4. Technical Requirement 3.11.2.5 - Ventilation Exhaust Treatment
 - a. In accordance with Technical Requirement 3.11.2.5, the VENTILATION EXHAUST TREATMENT SYSTEM shall be used to reduce radioactive materials in gaseous waste prior to their discharge when the projected doses, due to gaseous effluent releases to areas and beyond the SITE BOUNDARY would exceed 0.3 mrem to any organ in a 31-day period.
5. Technical Requirement 3.11.1.3 - Liquid Radwaste Treatment System
 - a. In accordance with Technical Requirement 3.11.1.3, the liquid radwaste treatment system shall be used to reduce the radioactive materials in liquid waste prior to their discharge when the projected doses, due to the liquid effluent, to UNRESTRICTED AREAS would exceed 0.06 mrem to the total body or 0.2 mrem to any organ in a 31-day period.

2.2 Effluent Concentration Limits

1. Gaseous Releases
 - a. The concentrations of radioactive gaseous releases are based on the dose rate restrictions in RBS Technical Requirements, rather than the Effluent Concentration Limits (ECL) listed in 10CFR20 Appendix B, Table 2, Column 1.
2. Liquid Releases
 - a. The Effluent Concentration Limits of radioactive materials in liquid effluents are limited to ten times 10CFR20, Appendix B, Table 2, Column 2.

2.3 Measurements & Approximations of Total Radioactivity

1. Gaseous Effluent
 - a. Fission & activation gases

Periodic grab samples are obtained from the Main Plant Exhaust Duct, Fuel Building Exhaust Vent and Radwaste Building Exhaust Vent. These samples are analyzed using high purity germanium detectors coupled to computerized pulse height analyzers. The sampling and analysis frequencies are described in Table 4.

Annual Radioactive Effluent Release Report

Sampling and analysis of these effluent streams provide noble gas radionuclide relative abundance that can then be applied to the noble gas gross activity and gross activity release rate to obtain nuclide specific activities and release rates. The noble gas gross activity released within a specific time period is determined by integrating the stack monitor release rate over the considered time period. If no activity was detected between the stack grab sample and a significant increase in hourly averages was recorded, the nuclide relative abundance of the last sample (or the last similar event), which indicated the presence of activity, was used to obtain nuclide specific activities. Correction factors for the monitors are derived and applied for each sampling period whenever noble gas radionuclides are detected in the effluent stream.

b. Particulate and Radioiodine (I-131 & I-133)

Particulates, Iodine-131 and Iodine-133 are continuously sampled from the three release points using a particulate filter and charcoal cartridge in line with a sample pump (stack monitor pump). These filters and charcoal cartridges are removed and analyzed in accordance with the frequencies specified in Table 4. Analysis is performed to identify and quantify radionuclides using high purity germanium detectors coupled to computerized pulse height analyzers. Given the nuclide specific activity concentrations, process flow rate, and duration of the sample, the nuclide specific activity released to the environment can be obtained. Due to the continuous sampling process, it is assumed that the radioactive material is released to the environment at a constant rate within the sampling period. Strontium-89, Strontium-90, and Gross alpha are quantitatively analyzed by counting by gas flow proportional counting.

c. Tritium

Tritium grab samples are obtained from the three gaseous release points at the specified frequencies listed in Table 4 using an ice bath condensation collection method. The collected sample is then analyzed using a liquid scintillation counter. Given the tritium concentration, process flow rate, and time period for which the sample is obtained, the tritium activity released to the environment can be determined. Due to the frequency of sampling, it is assumed that the tritium is released to the environment at a constant rate within the time period for which the sample is obtained.

Annual Radioactive Effluent Release Report

d. Carbon-14

The bounding annual dose from C-14 was calculated using guidance from Regulatory Guide 1.21, Revision 2, NUREG-0016, and the methodology in Regulatory Guide 1.109. The results of this calculation are listed in Table 13. The C-14 source term of 11 curies was taken from the site calculation PR(C)-359-3A, Gaseous Releases per NUREG-0016 Revision 1. Carbon-14 does not have dose factors associated with standing on contaminated ground; therefore, no ground plane dose was calculated. There is no milk pathway within five miles of River Bend Station, so this pathway is not evaluated. RBS does not take credit for decay in the X/Q. This calculation assumes the inhalation, meat and vegetation pathways are at the site boundary in the sector with the highest X/Q. The dose from liquid effluents is not calculated as the dose contribution from C-14 is considered to be insignificant as indicated in Regulatory Guide 1.21, Revision 2. According to EPRI 1021106, Estimation of Carbon-14 in Nuclear Power Plant Gaseous Effluents, 95% of the carbon released is in the form of carbon dioxide and this contributes the highest dose to man. The ingestion pathway, specifically vegetation, is the most likely route of intake for man. An assumption has been made for gaseous releases that plants obtain all of their C-14 from carbon dioxide.

e. Nickel-63

No Nickel-63 was quantified in 2021.

f. Gaseous Effluent Summary Information

Gaseous effluent summary information is located in Table 1, Table 2, and Table 3. It should be noted that an entry of "0.00E+00" Curie (Ci) or microcurie/second (uCi/sec) in this section indicates that the concentration of the particular radionuclide was below the Lower Limit of Detection (LLD) as listed in Table 4. Also, any nuclide not appearing in the tables was < LLD for all four quarters.

2. Liquid Effluents

a. Representative grab samples are obtained from the appropriate sample recovery tank and analyzed prior to release of the tank in accordance with the frequencies listed in Table 8. Analysis for gamma emitting nuclides (including dissolved and entrained noble gases) is performed using a high purity germanium detector coupled to a computerized pulse height analyzer. Tritium concentration is determined using a liquid scintillation counter. Strontium-89, Strontium-90, and Gross alpha analysis are performed using a gas flow proportional counter. Iron-55 is counted with a liquid scintillation counter after digestion of the iron. The activity of each nuclide released to the environment is determined from the nuclide specific concentration and total tank volume released.

b. Liquid effluent summation information is located in Table 5 and Table 6. It should be noted that an entry of "0.00E+00" Ci or uCi/ml in this section indicates that the concentration of the particular radionuclide was below the Lower Limit of Detection (LLD) as listed in Table 8. Also, any nuclide not appearing in the tables was < LLD for all four quarters.

Annual Radioactive Effluent Release Report

3. Estimate of Total Error

a. Liquid

The maximum error associated with sample collection, laboratory analysis, and discharge volume is collectively estimated to be:

| | |
|-------------------------------------|---------|
| Fission and Activation Products | ± 14.2% |
| Tritium | ± 14.2% |
| Dissolved and Entrained Noble Gases | ± 14.2% |
| Gross Alpha Radioactivity | ± 14.2% |

b. Gaseous

The maximum error (not including sample line loss) associated with sample flow, process flow, sample collection, monitor accuracy and laboratory analysis are collectively estimated to be:

| | |
|-------------|---------|
| Noble Gases | ± 37.0% |
| Iodines | ± 18.6% |
| Particulate | ± 18.6% |
| Tritium | ± 18.2% |

c. Determination of Total Error

The total error (i.e., collective error due to sample collection, laboratory analysis, sample flow, process flow, monitor accuracy, etc.) is calculated using the following equation:

$$E_T = \sqrt{[(E_1)^2 + (E_2)^2 + \dots + (E_n)^2]}$$

Where:

E_T = total error

$E_1 \dots E_n$ = individual errors due to sample collection, laboratory analysis, sample flow, process flow, monitor accuracy, etc.

Annual Radioactive Effluent Release Report**2.4 Batch Releases:****2.4.1 Liquid**

Batch releases and receiving stream flow from River Bend Station during the reporting period of January 1, 2021, through December 31, 2021 are shown in Table 7.

The Mississippi River stream flow is obtained by averaging data from the U. S. Army Corp of Engineers website using flow gauge data at Tarbert Landing.

2.4.2 Gaseous

There were no routine batch releases of gaseous effluents from River Bend Station during the reporting period of January 1, 2021, through December 31, 2021.

2.5 Abnormal Releases

There were no abnormal releases in 2021.

2.6 Major Changes to Radioactive Liquid, Gaseous, and Solid Waste Treatment Systems

Engineering performed a review of the Asset Suite database to evaluate non-administrative design changes completed or partially completed during 2021 involving the subject systems (i.e. changes classified as evaluations or nuclear changes). These design changes were then reviewed to determine if there have been any major changes to the subject systems. The review was based on a major change being defined as a modification which affected the method of processing or the effluent from the system. Also, to be a "major change" the change must have affected the Updated Safety Analysis Report (USAR).

No EC was identified as being completed during this time period that modified any radioactive waste system major component such that the processing method or effluent was changed. Also, no changes were identified affecting the method of processing solid, liquid or gaseous waste or the isotopic composition or the quantity of liquid, solid, or gaseous waste as described in the USAR.

In conclusion, no design changes were completed during the specified time period that constituted a major change to either the liquid, solid or gaseous radwaste treatment systems.

2.7 Land Use Census Changes

A Land Use Census was not conducted in 2021. The Land Use Census is performed every two years in accordance with procedure EN-CY-127, as required by the Technical Requirements Manual (TRM) (TR 3.12.2). The results of the Land Use Census are included in the Annual Radiological Environmental Operating Report pursuant to Technical Specification 5.6.2.

Annual Radioactive Effluent Release Report**2.8 Effluent Monitor Instrument Inoperability****2.8.1 Radioactive Liquid Effluent Monitoring Instrumentation Operability**

On 09/28/2021, CR-RBS-2021-06083 was initiated stating, "During the NRC RP Inspection the NRC identified a green non-cited violation for failure to operate liquid effluent monitor RMS-RE107 in accordance with TRM 3.3.11.2. Specifically, the monitor was inoperable for greater than 14-days from February 27 to April 2, 2021 without satisfying all the TRM action statements and for not completing all implementation actions. The NRC assigned cross-cutting aspect P.3 - Resolution for not addressing the issue in a timely manner commensurate with safety significance when it took 34-days to fix an issue that was required to be fixed within 14-days or to immediately suspend releases."

Specifically, TRM 3.3.11.2 action E.2 was not completed and logged. The NRC stated that once the 14 days of RMS-RE107 Inoperability were reached, Action D should have been exited and Action E.1 and E.2 should have been performed. While TRM 3.0.3 was used properly to answer Action E.1, Action E.2 was not completed. RBS Operations believed that due to the immediate concerns with Radwaste tank levels, as described in CR-RBS-2021-01395, it was permissible to move from TRM 3.3.11.2 Action D straight to TRM 3.0.3. The Operations Shift Manager at the time stated they believed that since there was no discharge in progress and CR-RBS-2021-02356 was initiated, Action E.1 and E.2 were completed. However, the CR did not mention Action E.2 and the eSOMS LCO Tracking Log for this entry does not include any record of E.1 or E.2.

CR-RBS-2021-01350 was initiated at 1353 on 02/27/2021. This condition was marked with an Operability Code of "EQUIP NON-FUNCTIONAL" and the LCO Log was updated with an Entry into TRM 3.3.11.2 at 14:14 on 02/27/2021. This was assigned to FIN Work Order# 557781. FIN investigated and found additional parts needed to be replaced. FIN requested a different printed circuit board (CAT ID 2596310178) (Need Date of 03/03/2021, issued 03/04/2021), a detector assembly (CAT ID 1666506953) (Need Date of 03/30/2021, pledged 03/31/2021), another printed circuit board (CAT ID 1666506495) (Need Date of 03/31/2021, issued 03/31/2021), and lastly a printed circuit board (CAT ID 2599944415) (Need Date of 04/01/2021, issued 04/01/2021). On 04/01/2021 FIN replaced the final part needed, completed the applicable STP, adjustments, and calibrations. The delay in return to operable was due to parts availability and delivery dates. Once the last part was received, the rad monitor repair was completed and returned to operable. RBS exited TRM 3.3.11.2 at 1928 on 04/02/2021.

2.8.2 Radioactive Gaseous Effluent Monitoring Instrumentation Operability

The minimum number of channels required to be OPERABLE as described in Table 3.3.11.3-1 of Technical Requirement 3.3.11.3 were, if inoperable at any time in the period January 1, 2021, through December 31, 2021, restored to operable status within the required time.

Annual Radioactive Effluent Release Report**2.9 Offsite Dose Calculation Manual Changes**

There were no changes to the Offsite Dose Calculation Manual in 2021.

2.10 Radiological Environmental Monitoring Program Changes

There were no changes to the Radiological Environmental Monitoring Program during the reporting period January 1, 2021, through December 31, 2021. Process Control Program (PCP) Changes

2.11 Process Control Program (PCP) Changes

There were no changes to the Process Control Program (PCP) in 2021. NON-REMP Groundwater Monitoring Results (NEI 07-07)

2.12 NON-REMP Groundwater Monitoring Results (NEI 07-07)

Ground water samples were taken in support of the Groundwater Protection Initiative (GPI). These samples are not part of the Radiological Environmental Monitoring Program. The sample results for 2021 are located in Table 17, Table 18, and Table 19.

River Bend Station made no NEI 07-07 voluntary notifications in 2021.

2.13 Outside Tanks

The maximum quantity of radioactive material, excluding tritium and dissolved or entrained noble gases, contained in any unprotected outdoor tank during the period of January 1, 2021, through December 31, 2021 was less than or equal to the 10 curie limit as required by Technical Specification 5.5.8.b.

Annual Radioactive Effluent Release Report**2.14 Errata/Corrections to Previous ARERRs**

CR-RBS-2022-00743 denotes inaccuracies in previous years ARERRs were discovered during QA audits and reviews by outside agencies. Corrections to previous years reports are identified below and the affected pages are included in their entirety as Attachments to this report.

- 2018
 - Table 1 Section B both I-131 and I-133 values were included which is conservatively high. RG 1.21 Rev 1 requires only I-131, therefore I-133 has been removed from these values.
- 2019
 - Table 1 Section B both I-131 and I-133 values were included which is conservatively high. RG 1.21 Rev 1 requires only I-131, therefore I-133 has been removed from these values.
 - Table 5, Average diluted concentration values were conservatively high. This table has been updated using actual dilution flows.
 - Table 14, errors were found in the dose evaluation. This table has been updated with the correct dose values.
- 2020
 - Table 1 Section B both I-131 and I-133 values were included which is conservatively high. RG 1.21 Rev 1 requires only I-131, therefore I-133 has been removed from these values. A note explaining the elevated release of Noble gases has been added.
 - Table 5, Average diluted concentration values were conservatively high. This table has been updated using actual dilution flows.
 - Table 14, errors were found in the dose evaluation. This table has been updated with the correct dose values.

Annual Radioactive Effluent Release Report

3.0 GASEOUS EFFLUENTS

3.1 Gas Effluent and Waste Disposal Report

Table 1, Gaseous Effluents-Summation of All Releases

| A. | Fission & Activation Gases | Unit | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Annual |
|----|-------------------------------------|---------|--------------|--------------|--------------|--------------|-----------|
| 1. | Total Release | Ci | 5.48E+02* | 6.49E+01 | 5.78E+01 | 1.44E+01 | 6.86E+02* |
| 2. | Average release rate for the period | μCi/sec | 7.05E+01 | 8.25E+00 | 7.28E+00 | 1.81E+00 | 2.17E+01 |

*Note: Elevated Noble gas release due to minor fuel element leaks. No TRM limits were exceeded.

| B. | Iodine | | | | | | |
|----|-------------------------------------|---------|----------|----------|----------|----------|----------|
| 1. | Total Iodine-131 | Ci | 3.59E-03 | 1.56E-03 | 1.48E-03 | 1.78E-03 | 8.41E-03 |
| 2. | Average release rate for the period | μCi/sec | 4.62E-04 | 1.98E-04 | 1.87E-04 | 2.24E-04 | 2.67E-04 |

| C. | Particulates | | | | | | |
|----|---------------------------------------|---------|----------|----------|----------|----------|----------|
| 1. | Particulates with half-lives > 8 days | Ci | 1.46E-04 | 7.08E-05 | 2.28E-04 | 7.16E-05 | 5.17E-04 |
| 2. | Average release rate for the period | μCi/sec | 1.88E-05 | 9.01E-06 | 2.87E-05 | 9.01E-06 | 1.64E-05 |

| D. | Tritium | | | | | | |
|----|-------------------------------------|---------|----------|----------|----------|----------|----------|
| 1. | Total Release | Ci | 2.38E+00 | 9.01E-01 | 1.09E+00 | 1.74E+00 | 6.10E+00 |
| 2. | Average release rate for the period | μCi/sec | 3.06E-01 | 1.15E-01 | 1.37E-01 | 2.18E-01 | 1.93E-01 |

| E. | Gross Alpha | | | | | | |
|----|-------------------------------------|---------|----------|----------|----------|----------|----------|
| 1. | Total Release | Ci | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 2. | Average release rate for the period | μCi/sec | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |

| F. | Carbon-14 | | | | | | |
|----|-------------------------------------|---------|----------|----------|----------|----------|----------|
| 1. | Total Release | Ci | 2.71E+00 | 2.74E+00 | 2.77E+00 | 2.77E+00 | 1.1E+01 |
| 2. | Average release rate for the period | μCi/sec | 3.49E-01 | 3.48E-01 | 3.48E-01 | 3.48E-01 | 3.49E-01 |

% of limit is located in the Radiological Impact to Man Table

Annual Radioactive Effluent Release Report

Table 2, Gaseous Effluents – Ground Level Release - Continuous Mode

| Radionuclide Released | Unit | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Total |
|-----------------------|------|-----------|-----------|-----------|-----------|----------|
| Fission Gases | | | | | | |
| Xe-131m | Ci | 0.00E+00 | 2.25E+01 | 3.90E-01 | 0.00E+00 | 2.29E+01 |
| Xe-133 | Ci | 2.58E+00 | 2.36E-01 | 0.00E+00 | 9.63E-01 | 3.78E+00 |
| Xe-135m | Ci | 2.49E+00 | 1.22E+00 | 1.95E+00 | 2.17E+00 | 7.83E+00 |
| Xe-135 | Ci | 1.50E+00 | 6.97E-01 | 1.12E+00 | 4.02E+00 | 7.34E+00 |
| Total For Period | Ci | 6.57E+00 | 2.46E+01 | 3.45E+00 | 7.16E+00 | 4.18E+01 |
| Iodines | | | | | | |
| I-131 | Ci | 1.14E-04 | 3.14E-05 | 1.68E-04 | 8.50E-05 | 3.99E-04 |
| I-133 | Ci | 5.00E-05 | 3.38E-05 | 6.98E-05 | 6.65E-05 | 2.20E-04 |
| Total For Period | Ci | 1.64E-04 | 6.52E-05 | 2.38E-04 | 1.51E-04 | 6.19E-04 |
| Particulates | | | | | | |
| Co-60 | Ci | 4.93E-06 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.93E-06 |
| Total For Period | Ci | 4.93E-06 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.93E-06 |
| Tritium | | | | | | |
| H-3 | Ci | 5.19E-01 | 1.72E-01 | 6.05E-01 | 3.20E-01 | 1.62E+00 |

Annual Radioactive Effluent Release Report

Table 3, Gaseous Effluents – Mixed Mode Release – Continuous Mode

| Radionuclide Released | Unit | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Total |
|-----------------------|------|-----------|-----------|-----------|-----------|----------|
| Fission Gases | | | | | | |
| Kr-85m | Ci | 7.14E+00 | 4.38E+00 | 4.38E+01 | 1.75E+00 | 5.71E+01 |
| Kr-87 | Ci | 8.72E-01 | 2.10E-01 | 0.00E+00 | 0.00E+00 | 1.08E+00 |
| Kr-88 | Ci | 5.96E+00 | 1.50E+00 | 4.98E-01 | 0.00E+00 | 7.96E+00 |
| Xe-133m | Ci | 1.40E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.40E+00 |
| Xe-133 | Ci | 1.84E+02 | 1.73E+01 | 3.33E-02 | 3.48E-02 | 2.02E+02 |
| Xe-135m | Ci | 1.22E+02 | 3.06E+00 | 9.60E-01 | 0.00E+00 | 1.26E+02 |
| Xe-135 | Ci | 1.97E+02 | 3.14E+00 | 7.66E+00 | 5.48E+00 | 2.14E+02 |
| Xe-137 | Ci | 1.17E+01 | 3.61E+00 | 0.00E+00 | 0.00E+00 | 1.53E+01 |
| Xe-138 | | 1.12E+01 | 7.08E+00 | 1.42E+00 | 0.00E+00 | 1.97E+01 |
| Total For Period | Ci | 5.42E+02 | 4.02E+01 | 5.44E+01 | 7.27E+00 | 6.44E+02 |
| Iodines | | | | | | |
| I-131 | Ci | 3.48E-03 | 1.53E-03 | 1.31E-03 | 1.69E-03 | 8.01E-03 |
| I-133 | Ci | 1.81E-02 | 1.37E-02 | 1.18E-02 | 1.34E-02 | 5.70E-02 |
| Total for Period | Ci | 2.16E-02 | 1.52E-02 | 1.32E-02 | 1.50E-02 | 6.50E-02 |
| Particulates | | | | | | |
| Co-58 | Ci | 0.00E+00 | 0.00E+00 | 0.00E+00 | 9.52E-07 | 9.52E-07 |
| Co-60 | Ci | 1.79E-05 | 8.06E-06 | 0.00E+00 | 0.00E+00 | 2.60E-05 |
| Zn-65 | Ci | 4.58E-06 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.58E-06 |
| Sr-89 | Ci | 1.45E-05 | 5.85E-06 | 1.63E-04 | 6.18E-05 | 2.45E-04 |
| Sb-125 | Ci | 0.00E+00 | 0.00E+00 | 4.29E-06 | 0.00E+00 | 4.29E-06 |
| Ba-140 | Ci | 1.03E-04 | 5.69E-05 | 4.18E-05 | 8.92E-06 | 2.11E-04 |
| La-140 | Ci | 0.00E+00 | 0.00E+00 | 1.87E-05 | 0.00E+00 | 1.87E-05 |
| Ce-141 | Ci | 1.08E-06 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.08E-06 |
| Total For Period | Ci | 1.41E-04 | 7.08E-05 | 2.28E-04 | 7.16E-05 | 5.12E-04 |
| Tritium | | | | | | |
| H-3 | Ci | 1.86E+00 | 7.29E-01 | 4.80E-01 | 1.42E+00 | 4.48E+00 |

Annual Radioactive Effluent Release Report

Table 4, Radioactive Gaseous Waste Sampling and Analysis Program

| Gaseous Release Type | Sampling Frequency | Minimum Analysis Frequency | Type of Activity Analysis | Lower Limit of Detection (LLD) uC/ml |
|--|--------------------|-----------------------------------|--|--------------------------------------|
| Main Plant Exhaust Duct | M Grab Sample | M | Principle Gamma Emitters | 1.00E-04 |
| | | | H-3 | 1.00E-06 |
| Fuel Building Ventilation Exhaust Duct | M Grab Sample | M | Principle Gamma Emitters | 1.00E-04 |
| | | | H-3 | 1.00E-06 |
| Radwaste Building Ventilation Exhaust Duct | M Grab Sample | M | Principle Gamma Emitters | 1.00E-04 |
| | | | H-3 | 1.00E-06 |
| All Release Types as listed above | Continuous | W Charcoal Sample | I-131 | 1.00E-12 |
| | | | I-133 | 1.00E-10 |
| | Continuous | W Particulate Sample | Principle Gamma Emitters (I-131, Others) | 1.00E-11 |
| | Continuous | M Composite Particulate Sample | Gross Alpha | 1.00E-11 |
| | Continuous | Q Composite Particulate Sample | Sr-89, Sr-90 | 1.00E-11 |
| | Continuous | Noble Gas Monitor | Noble Gases Gross Beta or Gamma | 1.00E-6 |

W = At least once per 7 days

M = At least once per 31 days

Q = At least once per 92 days

Annual Radioactive Effluent Release Report

4.0 LIQUID EFFLUENTS

4.1 Liquid Effluent and Waste Disposal Report

Table 5, Liquid Effluents-Summation of All Releases

| A | Fission & Activation Products | Unit | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Annual |
|---|---|--------|-----------|-----------|-----------|-----------|----------|
| 1. | Total Release (not including tritium, gases or alpha) | Ci | 4.10E-03 | 1.08E-02 | 4.37E-03 | 2.28E-03 | 2.16E-02 |
| 2. | Average diluted concentration during period | μCi/mL | 4.11E-09 | 8.17E-09 | 3.08E-09 | 1.55E-09 | 4.14E-09 |
| B. Tritium | | | | | | | |
| 1. | Total Release | Ci | 1.17E+01 | 6.76E+00 | 1.03E+01 | 7.21E+00 | 3.59E+01 |
| 2. | Average diluted concentration during period. | μCi/mL | 1.17E-05 | 5.12E-06 | 7.23E-06 | 4.91E-06 | 6.90E-06 |
| C. Dissolved & Entrained Gases | | | | | | | |
| 1. | Total Release | Ci | 3.79E-02 | 2.63E-02 | 1.03E-01 | 2.10E-02 | 1.88E-01 |
| 2. | Average diluted concentration during period | μCi/mL | 3.79E-08 | 1.99E-08 | 7.27E-08 | 1.43E-08 | 3.62E-08 |
| D. Gross Alpha Activity | | | | | | | |
| 1. | Total Release | Ci | 0.0E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| E. | Volume Of Waste Released (prior to dilution) | Liters | 3.08E+06 | 3.40E+06 | 4.65E+06 | 2.94E+06 | 1.41E+07 |
| F. | Volume Of Dilution Water Used During Period | Liters | 9.99E+08 | 1.32E+09 | 1.42E+09 | 1.47E+09 | 5.21E+09 |

% of limit is located in the Radiological Impact to Man Table

Annual Radioactive Effluent Release Report

Table 6, Liquid Effluents – Batch Release

| Radionuclide Released | Unit | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Total |
|--|------|-----------|-----------|-----------|-----------|----------|
| Fission and Activation Products | | | | | | |
| Cr-51 | Ci | 5.18E-05 | 2.17E-04 | 1.02E-05 | 1.71E-05 | 2.96E-04 |
| Mn-54 | Ci | 3.22E-05 | 5.02E-04 | 1.52E-04 | 4.55E-05 | 7.32E-04 |
| Fe-59 | Ci | 0.00E+00 | 4.16E-05 | 0.00E+00 | 0.00E+00 | 4.16E-05 |
| Co-58 | Ci | 5.38E-06 | 2.01E-04 | 8.10E-06 | 2.59E-05 | 2.40E-04 |
| Co-60 | Ci | 3.76E-03 | 9.56E-03 | 4.06E-03 | 1.42E-03 | 1.88E-02 |
| Ni-65 | Ci | 0.00E+00 | 0.00E+00 | 9.22E-06 | 0.00E+00 | 9.22E-06 |
| Zn-65 | Ci | 0.00E+00 | 1.21E-04 | 7.52E-06 | 7.56E-06 | 1.36E-04 |
| Sr-91 | Ci | 0.00E+00 | 0.00E+00 | 4.49E-06 | 0.00E+00 | 4.49E-06 |
| Y-92 | Ci | 0.00E+00 | 0.00E+00 | 4.29E-05 | 1.21E-04 | 1.64E-04 |
| Zr-95 | Ci | 0.00E+00 | 1.73E-06 | 0.00E+00 | 0.00E+00 | 1.73E-06 |
| Nb-95 | Ci | 0.00E+00 | 2.68E-06 | 2.71E-06 | 0.00E+00 | 5.39E-06 |
| Nb-97 | Ci | 8.49E-07 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 8.49E-07 |
| Mo-99 | Ci | 0.00E+00 | 0.00E+00 | 1.64E-05 | 8.91E-06 | 2.53E-05 |
| Tc-99m | Ci | 4.27E-06 | 6.32E-06 | 9.90E-07 | 5.08E-07 | 1.21E-05 |
| Ag-110m | Ci | 2.03E-05 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.03E-05 |
| Rh-105 | Ci | 1.51E-05 | 1.81E-05 | 5.37E-06 | 0.00E+00 | 3.85E-05 |
| Sb-125 | Ci | 0.00E+00 | 3.36E-06 | 0.00E+00 | 0.00E+00 | 3.36E-06 |
| Sb-126 | Ci | 0.00E+00 | 0.00E+00 | 6.69E-07 | 1.06E-06 | 1.73E-06 |
| I-131 | Ci | 6.83E-06 | 0.00E+00 | 5.57E-06 | 3.29E-06 | 1.57E-05 |
| I-133 | Ci | 0.00E+00 | 0.00E+00 | 1.31E-06 | 0.00E+00 | 1.31E-06 |
| I-134 | Ci | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.33E-06 | 2.33E-06 |
| I-135 | Ci | 0.00E+00 | 9.88E-06 | 5.85E-06 | 1.17E-05 | 2.74E-05 |
| Cs-134 | Ci | 4.13E-06 | 1.82E-05 | 5.44E-06 | 1.69E-06 | 2.95E-05 |
| Cs-136 | Ci | 0.00E+00 | 1.92E-06 | 0.00E+00 | 0.00E+00 | 1.92E-06 |
| Cs-137 | Ci | 6.57E-06 | 4.33E-05 | 1.23E-05 | 2.39E-06 | 6.46E-05 |
| Ba-141 | Ci | 5.83E-05 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 5.83E-05 |
| Ba-142 | Ci | 8.88E-05 | 0.00E+00 | 0.00E+00 | 5.84E-04 | 6.73E-04 |

Annual Radioactive Effluent Release Report

Table 6, Liquid Effluents – Batch Release

| Fission and Activation Products (CONTINUED) | | | | | | |
|---|----|----------|----------|----------|----------|----------|
| La-140 | Ci | 3.87E-05 | 1.41E-05 | 2.57E-05 | 2.01E-05 | 9.86E-05 |
| Ce-141 | Ci | 1.11E-05 | 8.46E-06 | 3.08E-06 | 0.00E+00 | 2.27E-05 |
| Ce-144 | Ci | 0.00E+00 | 2.83E-05 | 0.00E+00 | 0.00E+00 | 2.83E-05 |
| Total For Period | Ci | 4.10E-03 | 1.08E-02 | 4.37E-03 | 2.28E-03 | 2.16E-02 |
| Tritium | | | | | | |
| H-3 | Ci | 1.17E+01 | 6.76E+00 | 1.03E+01 | 7.21E+00 | 3.59E+01 |
| Total for Period | Ci | 1.17E+01 | 6.76E+00 | 1.03E+01 | 7.21E+00 | 3.59E+01 |

| Radionuclide Released | Unit | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Total |
|-------------------------------|------|-----------|-----------|-----------|-----------|----------|
| Dissolved and Entrained Gases | | | | | | |
| Kr-85m | Ci | 0.00E+00 | 0.00E+00 | 6.99E-06 | 0.00E+00 | 6.99E-06 |
| Kr-85 | Ci | 0.00E+00 | 0.00E+00 | 1.00E-04 | 2.03E-04 | 3.04E-04 |
| Kr-87 | Ci | 0.00E+00 | 0.00E+00 | 8.42E-06 | 0.00E+00 | 8.42E-06 |
| Kr-88 | Ci | 1.86E-05 | 4.37E-05 | 5.53E-05 | 1.99E-05 | 1.37E-04 |
| Kr-89 | Ci | 0.00E+00 | 0.00E+00 | 4.82E-02 | 0.00E+00 | 4.82E-02 |
| Xe-131m | Ci | 3.23E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.23E-04 |
| Xe-133m | Ci | 3.98E-04 | 1.92E-04 | 5.78E-04 | 2.77E-04 | 1.45E-03 |
| Xe-133 | Ci | 2.41E-02 | 9.00E-03 | 1.97E-02 | 9.97E-03 | 6.27E-02 |
| Xe-135m | Ci | 0.00E+00 | 0.00E+00 | 8.48E-04 | 0.00E+00 | 8.48E-04 |
| Xe-135 | Ci | 1.31E-02 | 1.71E-02 | 3.37E-02 | 1.05E-02 | 7.44E-02 |
| Total For Period | Ci | 3.79E-02 | 2.63E-02 | 1.03E-01 | 2.10E-02 | 1.88E-01 |

Annual Radioactive Effluent Release Report

Table 7, Supplemental Information for Liquid Effluents – Batch Mode

| Report for 2021 | Units | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Year |
|----------------------|---------|-----------|-----------|-----------|-----------|----------|
| Number of releases | | 40 | 41 | 73 | 51 | 205 |
| Total Release Time | minutes | 1.56E+04 | 1.65E+04 | 2.41E+04 | 1.56E+04 | 7.17E+04 |
| Maximum Release Time | minutes | 1.39E+03 | 1.09E+03 | 1.78E+03 | 3.79E+02 | 1.78E+03 |
| Average Release Time | minutes | 3.89E+02 | 4.02E+02 | 3.30E+02 | 3.05E+02 | 3.50E+02 |
| Minimum Release Time | minutes | 4.50E+01 | 2.72E+02 | 2.57E+02 | 7.00E+01 | 4.50E+01 |

| | Units | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 |
|---|----------------------|-----------|-----------|-----------|-----------|
| Average Mississippi River stream flow during periods of release into a flowing stream | ft ³ /sec | 634,578 | 788,300 | 418,527 | 307,975 |

Annual Radioactive Effluent Release Report

Table 8, Radioactive Liquid Waste Sampling and Analysis Program

| Liquid Release Type | Sampling Frequency | Minimum Analysis Frequency | Type of Activity Analysis | Lower Limit of Detection (LLD) uC/ml |
|---|---------------------|----------------------------|--|--------------------------------------|
| Batch Waste Release (Liquid Radwaste Recovery Sample Tanks) | P Each Batch | P Each Batch | Principle Gamma Emitters; except Ce-144 | 5.00E-07 5.00E-06 |
| | | | I-131 | 1.00E-06 |
| | P Each Batch / M | M | Dissolved and Entrained Gases (Gamma Emitters) | 1.00E-05 |
| | P Each Batch | M Composite | H-3 | 1.00E-05 |
| | | | Gross Alpha | 1.00E-07 |
| | P Each Batch | Q Composite | Sr-89, Sr-90 | 5.00E-8 |
| | | | Fe-55 | 1.00E-06 |

P = Prior to each radioactive release

M = At least once per 31 days

Q = At least once per 92 days

Annual Radioactive Effluent Release Report

5.0 SOLID WASTE SUMMARY

5.1 Solid Waste Shipped Offsite for Burial or Disposal (Not Irradiated Fuel)5.1.1 Types of Waste

Table 9, Types of Solid Waste Summary

| Types of Waste | Total Quantity (m ³) | Total Activity (Ci) | Est. Total Error (%) |
|---|----------------------------------|---------------------|----------------------|
| a. Spent resins, filter sludges, evaporator bottoms, etc. | 1.30E+02 | 6.88E+01 | 25 |
| b. Dry compressible waste, contaminated equip, etc. | 7.57E+02 | 3.95E+00 | 25 |
| c. Irradiated components, control rods, etc. | 0.00E+00 | 0.00E+00 | 25 |
| d. Other (Water, EHC, Waste Oil, etc.) | 2.55E+01 | 1.95E-02 | 25 |

5.1.2 Estimate of major nuclide composition (by waste type) only >1% ^[Note 1] are reported.

Table 10, Major Nuclides

| Major Nuclide Composition | Isotope | % | Curies |
|--|---------|--------|----------|
| a. Resins, filters, evaporator bottoms, etc. | Mn-54 | 1.78% | 1.23E+00 |
| | Fe-55 | 21.49% | 1.48E+01 |
| | Co-60 | 61.94% | 4.26E+01 |
| | Zn-65 | 1.58% | 1.08E+00 |
| | Sr-90 | 1.92% | 1.32E+00 |
| | Cs-134 | 3.14% | 2.16E+00 |
| | Cs-137 | 5.54% | 3.81E+00 |

Annual Radioactive Effluent Release Report

Table 10, Major Nuclides

| | | | |
|---|----------------|----------|---------------|
| b. Dry compressible waste, contaminated equip, etc. | Cr-51 | 1.41% | 5.59E-02 |
| | Mn-54 | 1.98% | 7.87E-02 |
| | Fe-55 | 35.88% | 1.42E+00 |
| | Co-60 | 43.48% | 1.72E+00 |
| | Ni-63 | 1.10% | 4.36E-02 |
| | Zn-65 | 1.60% | 6.36E-02 |
| | Sr-90 | 1.07% | 4.25E-02 |
| | Tc-99 | 4.71% | 1.87E-01 |
| | Cs-134 | 1.22% | 4.86E-02 |
| | Cs-137 | 1.18% | 4.69E-02 |
| | Ba-140 | 1.53% | 6.06E-02 |
| | Ce-141 | 2.85% | 1.13E-01 |
| c. Irradiated components, control rods, etc. | N/A | N/A | N/A |
| Major Nuclide Composition | Isotope | % | Curies |
| d. Other (Water, EHC, Waste Oil, Etc.) | Mn-54 | 1.80% | 3.51E-04 |
| | Fe-55 | 37.93% | 7.41E-03 |
| | Co-60 | 46.18% | 9.03E-03 |
| | Ni-63 | 1.30% | 2.55E-04 |
| | Zn-65 | 1.57% | 3.06E-04 |
| | Sr-90 | 1.15% | 2.25E-04 |
| | Tc-99 | 2.95% | 5.77E-04 |
| | Ce-141 | 2.18% | 4.27E-04 |

Determined by Measurement & Correlation.

Packaged in Strong, Tight Liners.

No Solidification Agent or Absorbent Used.

[Note 1] – “Major” radionuclide is equivalent to a “principle” radionuclide, i.e. greater than 1 percent of total activity.

Annual Radioactive Effluent Release Report5.1.3 Solid Waste Disposition**Table 11, Solid Waste Disposition (Specify Site or Unit)**

| Number of Shipments | Mode of Transportation | Destination |
|----------------------------|-------------------------------|---|
| 39 | Truck | Energy Solutions (Bear Creek) - Oak Ridge, TN |
| 1 | Truck | Energy Solutions (ResinSolution) - Erwin, TN |

Table 12, Irradiated Fuel Shipments Disposition

| Table 12, Irradiated Fuel Shipments Disposition | | |
|--|-------------------------------|--------------------|
| No Irradiated Fuel Shipments for 2021 | | |
| Number of Shipments | Mode of Transportation | Destination |
| N/A | N/A | N/A |

Annual Radioactive Effluent Release Report

6.0 RADIOLOGICAL IMPACT TO MAN

6.1 10CFR Part50, Appendix I Evaluation

Table 13, Dose Assessment

| | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Annual |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|
| Liquid Effluent Dose Limit, Total Body | 1.5 mrem | 1.5 mrem | 1.5 mrem | 1.5 mrem | 3 mrem |
| Total Body Dose | 2.69E-05 | 1.12E-04 | 4.79E-05 | 1.07E-05 | 2.00E-04 |
| % of Limit | 1.79E-03 | 7.43E-03 | 3.19E-03 | 7.12E-04 | 6.65E-03 |
| Liquid Effluent Dose Limit, Any Organ | 5 mrem | 5 mrem | 5 mrem | 5 mrem | 10 mrem |
| Maximum Organ Dose | 1.25E-04 | 7.38E-04 | 3.30E-04 | 6.73E-05 | 1.28E-03 |
| % of Limit | 2.49E-03 | 1.48E-02 | 6.60E-03 | 1.35E-03 | 1.28E-02 |
| Gaseous Effluent Dose Limit, Gamma Air | 5 mrad | 5 mrad | 5 mrad | 5 mrad | 10 mrad |
| Gamma Air Dose | 1.30E-01 | 2.49E-02 | 2.14E-02 | 2.18E-02 | 1.98E-01 |
| % of Limit | 2.59E+00 | 4.98E-01 | 4.28E-01 | 4.37E-01 | 1.98E+00 |
| Gaseous Effluent Dose Limit, Beta Air | 10 mrad | 10 mrad | 10 mrad | 10 mrad | 20 mrad |
| Beta Air Dose | 1.17E-01 | 5.00E-02 | 1.81E-02 | 1.85E-02 | 2.04E-01 |
| % of Limit | 1.17E+00 | 5.00E-01 | 1.81E-01 | 1.85E-01 | 1.02E+00 |
| Gaseous Effluent Organ Dose Limit (Iodine, Tritium, Particulates with > 8 day half-life) | 7.5 mrem | 7.5 mrem | 7.5 mrem | 7.5 mrem | 15 mrem |
| Gaseous Effluent Organ Dose (Iodine, Tritium, Particulates with > 8 day half-life) | 1.43E-01 | 6.54E-02 | 7.39E-02 | 7.73E-02 | 3.60E-01 |
| % of Limit | 1.91E+00 | 8.72E-01 | 9.85E-01 | 1.03E+00 | 2.40E+00 |

Annual Radioactive Effluent Release Report

Table 13, Dose Assessment (continued)

| | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Annual |
|--|-----------|-----------|-----------|-----------|----------|
| Gaseous Effluent Organ Dose Limit (Carbon-14 – Bounding Calculation) | 7.5 mrem | 7.5 mrem | 7.5 mrem | 7.5 mrem | 15 mrem |
| Gaseous Effluent Organ Dose (Carbon-14 – Bounding Calculation) | 1.17E+00 | 1.17E+00 | 1.18E+00 | 1.18E+00 | 4.70E+00 |
| % of Limit | 1.56E+01 | 1.56E+01 | 1.58E+01 | 1.58E+01 | 3.13E+01 |

6.2 Dose to Members of the Public Inside the Site Boundary

The maximally exposed member of the public was calculated to be member of the West Feliciana Parish Sheriff's Office (WFPSO) that opened a substation in a facility within the site boundary beginning in 2019. The office is estimated to be occupied during normal work hours for 2000 hours per year. It should be noted that the liquid effluent pathway dose was not considered since the individual would not engage in activities that would allow exposure to this pathway.

| Location | Annual Critical Organ Dose (mrem) | Annual Total Body Dose (mrem) | Annual Skin Dose (mrem) | Annual Duration Factor |
|-----------------|-----------------------------------|-------------------------------|-------------------------|------------------------|
| Alligator Bayou | 2.40E-05 | 1.68E-06 | 2.71E-07 | 4.57E-03 |
| Deer Hunters | 9.90E-04 | 1.18E-04 | 2.32E-05 | 1.36E-01 |
| Onsite RV Park | 2.31E-03 | 2.76E-04 | 5.41E-05 | 2.92E-02 |
| WFPSO Building | 7.73E-03 | 9.24E-04 | 1.81E-04 | 6.82E-02 |

Annual Radioactive Effluent Release Report

6.3 40CFR Part 190 Evaluation for an Individual in the Unrestricted Area

An assessment (see Table 14) was made of radiation doses to the likely most-exposed member of the public from River Bend and other nearby uranium fuel cycle sources (none within five miles). The annual (calendar year) dose or dose commitment to any MEMBER OF THE PUBLIC, due to releases of radioactivity and to radiation from uranium fuel cycle sources, shall be limited to less than or equal to 25 mrem to the total body or any organ, except the thyroid, which shall be limited to less than or equal to 75 mrem.

Table 14, EPA 40 CFR PART 190 Evaluation

| | Total Body | Thyroid | Any Other Organ |
|-----------------------|-------------------|-----------------|------------------------|
| Dose Limit | 25 mrem | 75 mrem | 25 mrem |
| Dose (Excluding C-14) | 1.94E-01 | 5.43E-01 | 1.96E-01 |
| % of Limit | 7.78E-01 | 7.24E-01 | 7.82E-01 |
| Dose (Including C-14) | 1.13E+00 | 1.48E+00 | 4.89E+00 |
| % of Limit | 4.53E+00 | 1.98E+00 | 1.96E+01 |

Gaseous dose including a bounding calculation of C-14 dose, direct shine, ISFSI and any other nuclear power related facility within 5 miles of the station are considered when calculating dose compliance with 40 CFR 190.

Annual Radioactive Effluent Release Report

7.0 METEOROLOGICAL DATA

Cumulative joint frequency distributions and annual average data for continuous releases are listed below. The meteorological recovery for 2021 was 97.39%.

7.1 Joint Frequency Distributions

All Stability Classes

Period of Record: 01/01/2021 - 12/31/2021

Elevation: Primary Sensors – 30 Foot

| Wind Speed (meters/second) | | | | | | | | | | | | | |
|----------------------------|-----------|-----------|----------|---------|---------|---------|---------|---------|----------|-----------|-----------|-------|-------|
| Wind Direction | 0.22-0.50 | 0.51-0.75 | 0.76-1.0 | 1.1-1.5 | 1.6-2.0 | 2.1-3.0 | 3.1-5.0 | 5.1-7.0 | 7.1-10.0 | 10.1-13.0 | 13.1-18.0 | >18.0 | Total |
| N | 87 | 43 | 87 | 109 | 95 | 226 | 82 | 1 | 0 | 0 | 0 | 0 | 730 |
| NNE | 61 | 46 | 73 | 159 | 111 | 141 | 34 | 3 | 1 | 0 | 0 | 0 | 629 |
| NE | 74 | 48 | 74 | 170 | 128 | 80 | 26 | 0 | 0 | 0 | 0 | 0 | 600 |
| ENE | 77 | 66 | 76 | 117 | 111 | 75 | 4 | 0 | 0 | 0 | 0 | 0 | 526 |
| E | 63 | 90 | 96 | 106 | 71 | 22 | 1 | 0 | 0 | 0 | 0 | 0 | 449 |
| ESE | 47 | 89 | 100 | 129 | 86 | 36 | 1 | 0 | 0 | 0 | 0 | 0 | 488 |
| SE | 50 | 85 | 135 | 207 | 178 | 188 | 34 | 0 | 0 | 0 | 0 | 0 | 877 |
| SSE | 45 | 59 | 85 | 201 | 187 | 264 | 87 | 0 | 0 | 0 | 0 | 0 | 928 |
| S | 42 | 56 | 54 | 133 | 123 | 189 | 80 | 0 | 0 | 0 | 0 | 0 | 677 |
| SSW | 39 | 24 | 44 | 95 | 90 | 78 | 14 | 0 | 0 | 0 | 0 | 0 | 384 |
| SW | 47 | 43 | 47 | 47 | 61 | 39 | 3 | 0 | 0 | 0 | 0 | 0 | 287 |
| WSW | 51 | 51 | 35 | 50 | 56 | 35 | 10 | 0 | 0 | 0 | 0 | 0 | 288 |
| W | 62 | 75 | 38 | 59 | 70 | 43 | 8 | 0 | 0 | 0 | 0 | 0 | 355 |
| WNW | 68 | 71 | 63 | 76 | 51 | 59 | 16 | 1 | 0 | 0 | 0 | 0 | 405 |
| NW | 116 | 62 | 54 | 123 | 85 | 85 | 35 | 1 | 0 | 0 | 0 | 0 | 561 |
| NNW | 88 | 53 | 45 | 103 | 71 | 94 | 56 | 1 | 0 | 0 | 0 | 0 | 511 |
| TOTAL | 1017 | 961 | 1106 | 1884 | 1574 | 1654 | 491 | 7 | 1 | 0 | 0 | 0 | 8695 |

Number of Calms: 23

Number of Invalid Hours: 42

Number of Valid Hours: 8718

Total Hours for the Period: 8760

Annual Radioactive Effluent Release Report

Stability Class A

Period of Record: 01/01/2021 - 12/31/2021

Elevation: Primary Sensors – 30 Foot

| Wind Speed (meters/second) | | | | | | | | | | | | | |
|----------------------------|-----------|-----------|----------|---------|---------|---------|---------|---------|----------|-----------|-----------|-------|-------|
| Wind Direction | 0.22-0.50 | 0.51-0.75 | 0.76-1.0 | 1.1-1.5 | 1.6-2.0 | 2.1-3.0 | 3.1-5.0 | 5.1-7.0 | 7.1-10.0 | 10.1-13.0 | 13.1-18.0 | >18.0 | Total |
| N | 0 | 0 | 3 | 6 | 12 | 51 | 39 | 0 | 0 | 0 | 0 | 0 | 111 |
| NNE | 0 | 0 | 4 | 10 | 35 | 51 | 15 | 0 | 0 | 0 | 0 | 0 | 115 |
| NE | 0 | 0 | 4 | 12 | 56 | 42 | 1 | 0 | 0 | 0 | 0 | 0 | 115 |
| ENE | 0 | 0 | 4 | 13 | 40 | 42 | 3 | 0 | 0 | 0 | 0 | 0 | 102 |
| E | 1 | 1 | 7 | 18 | 33 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 69 |
| ESE | 0 | 1 | 4 | 20 | 34 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 75 |
| SE | 0 | 0 | 2 | 24 | 65 | 93 | 20 | 0 | 0 | 0 | 0 | 0 | 204 |
| SSE | 0 | 0 | 1 | 10 | 26 | 89 | 62 | 0 | 0 | 0 | 0 | 0 | 188 |
| S | 0 | 0 | 1 | 10 | 33 | 88 | 50 | 0 | 0 | 0 | 0 | 0 | 182 |
| SSW | 0 | 0 | 2 | 10 | 23 | 35 | 5 | 0 | 0 | 0 | 0 | 0 | 75 |
| SW | 0 | 1 | 1 | 9 | 22 | 21 | 1 | 0 | 0 | 0 | 0 | 0 | 55 |
| WSW | 0 | 0 | 1 | 15 | 39 | 21 | 10 | 0 | 0 | 0 | 0 | 0 | 86 |
| W | 0 | 0 | 1 | 15 | 54 | 35 | 6 | 0 | 0 | 0 | 0 | 0 | 111 |
| WNW | 0 | 0 | 3 | 18 | 30 | 40 | 11 | 1 | 0 | 0 | 0 | 0 | 103 |
| NW | 1 | 0 | 4 | 19 | 30 | 44 | 18 | 0 | 0 | 0 | 0 | 0 | 116 |
| NNW | 0 | 0 | 2 | 10 | 11 | 38 | 33 | 1 | 0 | 0 | 0 | 0 | 95 |
| TOTAL | 2 | 3 | 44 | 219 | 543 | 715 | 274 | 2 | 0 | 0 | 0 | 0 | 1802 |

Number of Calms: 0

Number of Invalid Hours: 0

Number of Valid Hours: 1802

Total Hours for the Period: 1802

Annual Radioactive Effluent Release Report

Stability Class B

Period of Record: 01/01/2021 - 12/31/2021

Elevation: Primary Sensors – 30 Foot

| Wind Speed (meters/second) | | | | | | | | | | | | | |
|----------------------------|-----------|-----------|----------|---------|---------|---------|---------|---------|----------|-----------|-----------|-------|-------|
| Wind Direction | 0.22-0.50 | 0.51-0.75 | 0.76-1.0 | 1.1-1.5 | 1.6-2.0 | 2.1-3.0 | 3.1-5.0 | 5.1-7.0 | 7.1-10.0 | 10.1-13.0 | 13.1-18.0 | >18.0 | Total |
| N | 0 | 0 | 0 | 2 | 5 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 16 |
| NNE | 0 | 0 | 0 | 5 | 6 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 19 |
| NE | 0 | 0 | 1 | 9 | 6 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 22 |
| ENE | 0 | 1 | 0 | 3 | 11 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| E | 0 | 0 | 2 | 4 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 11 |
| ESE | 0 | 0 | 0 | 11 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| SE | 0 | 0 | 1 | 5 | 8 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 18 |
| SSE | 0 | 0 | 0 | 2 | 7 | 14 | 5 | 0 | 0 | 0 | 0 | 0 | 28 |
| S | 0 | 0 | 0 | 3 | 6 | 14 | 2 | 0 | 0 | 0 | 0 | 0 | 25 |
| SSW | 0 | 0 | 1 | 5 | 8 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| SW | 0 | 0 | 1 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| WSW | 0 | 0 | 1 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| W | 0 | 0 | 0 | 7 | 5 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 15 |
| WNW | 0 | 0 | 1 | 5 | 2 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 12 |
| NW | 0 | 0 | 1 | 9 | 2 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 18 |
| NNW | 0 | 0 | 2 | 5 | 4 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 18 |
| TOTAL | 0 | 1 | 11 | 82 | 79 | 74 | 22 | 1 | 0 | 0 | 0 | 0 | 270 |

NUMBER OF CALMS: 0

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 270

TOTAL HOURS FOR THE PERIOD: 270

Annual Radioactive Effluent Release Report

Stability Class C

Period of Record: 01/01/2021 - 12/31/2021

Elevation: Primary Sensors – 30 Foot

| Wind Speed (meters/second) | | | | | | | | | | | | | |
|----------------------------|-----------|-----------|----------|---------|---------|---------|---------|---------|----------|-----------|-----------|-------|-------|
| Wind Direction | 0.22-0.50 | 0.51-0.75 | 0.76-1.0 | 1.1-1.5 | 1.6-2.0 | 2.1-3.0 | 3.1-5.0 | 5.1-7.0 | 7.1-10.0 | 10.1-13.0 | 13.1-18.0 | >18.0 | Total |
| N | 0 | 0 | 4 | 4 | 7 | 23 | 5 | 1 | 0 | 0 | 0 | 0 | 44 |
| NNE | 0 | 0 | 1 | 11 | 9 | 10 | 2 | 0 | 1 | 0 | 0 | 0 | 34 |
| NE | 0 | 2 | 4 | 17 | 7 | 7 | 7 | 0 | 0 | 0 | 0 | 0 | 44 |
| ENE | 0 | 2 | 4 | 16 | 6 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 30 |
| E | 0 | 1 | 6 | 14 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| ESE | 0 | 1 | 2 | 11 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| SE | 0 | 0 | 3 | 10 | 17 | 14 | 1 | 0 | 0 | 0 | 0 | 0 | 45 |
| SSE | 0 | 0 | 0 | 7 | 22 | 32 | 6 | 0 | 0 | 0 | 0 | 0 | 67 |
| S | 0 | 0 | 2 | 13 | 20 | 20 | 8 | 0 | 0 | 0 | 0 | 0 | 63 |
| SSW | 0 | 0 | 2 | 9 | 16 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| SW | 0 | 0 | 2 | 5 | 8 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 19 |
| WSW | 0 | 0 | 3 | 6 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| W | 0 | 0 | 0 | 9 | 7 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 18 |
| WNW | 0 | 0 | 1 | 6 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 10 |
| NW | 0 | 0 | 2 | 13 | 5 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 28 |
| NNW | 1 | 0 | 2 | 7 | 8 | 7 | 3 | 0 | 0 | 0 | 0 | 0 | 28 |
| TOTAL | 1 | 6 | 38 | 158 | 146 | 135 | 40 | 1 | 1 | 0 | 0 | 0 | 526 |

NUMBER OF CALMS: 0

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 526

TOTAL HOURS FOR THE PERIOD: 526

Annual Radioactive Effluent Release Report

Stability Class D

Period of Record: 01/01/2021 - 12/31/2021

Elevation: Primary Sensors – 30 Foot

| Wind Speed (meters/second) | | | | | | | | | | | | | |
|----------------------------|-----------|-----------|----------|---------|---------|---------|---------|---------|----------|-----------|-----------|-------|-------|
| Wind Direction | 0.22-0.50 | 0.51-0.75 | 0.76-1.0 | 1.1-1.5 | 1.6-2.0 | 2.1-3.0 | 3.1-5.0 | 5.1-7.0 | 7.1-10.0 | 10.1-13.0 | 13.1-18.0 | >18.0 | Total |
| N | 2 | 1 | 8 | 24 | 27 | 105 | 34 | 0 | 0 | 0 | 0 | 0 | 201 |
| NNE | 0 | 3 | 9 | 48 | 33 | 42 | 9 | 3 | 0 | 0 | 0 | 0 | 147 |
| NE | 1 | 2 | 14 | 43 | 33 | 17 | 12 | 0 | 0 | 0 | 0 | 0 | 122 |
| ENE | 2 | 9 | 26 | 32 | 26 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 120 |
| E | 1 | 6 | 30 | 32 | 15 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 88 |
| ESE | 1 | 11 | 14 | 37 | 20 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 90 |
| SE | 2 | 11 | 31 | 54 | 38 | 47 | 6 | 0 | 0 | 0 | 0 | 0 | 189 |
| SSE | 1 | 5 | 12 | 43 | 48 | 87 | 13 | 0 | 0 | 0 | 0 | 0 | 209 |
| S | 0 | 8 | 6 | 35 | 37 | 48 | 14 | 0 | 0 | 0 | 0 | 0 | 148 |
| SSW | 0 | 4 | 11 | 29 | 26 | 23 | 5 | 0 | 0 | 0 | 0 | 0 | 98 |
| SW | 0 | 1 | 10 | 18 | 19 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 53 |
| WSW | 0 | 4 | 8 | 9 | 4 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| W | 1 | 6 | 8 | 11 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| WNW | 1 | 4 | 15 | 13 | 8 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 45 |
| NW | 2 | 5 | 6 | 21 | 25 | 20 | 10 | 0 | 0 | 0 | 0 | 0 | 89 |
| NNW | 0 | 2 | 6 | 16 | 15 | 28 | 14 | 0 | 0 | 0 | 0 | 0 | 81 |
| TOTAL | 14 | 82 | 214 | 465 | 377 | 468 | 119 | 3 | 0 | 0 | 0 | 0 | 1742 |

NUMBER OF CALMS: 0

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 1742

TOTAL HOURS FOR THE PERIOD: 1742

Annual Radioactive Effluent Release Report

Stability Class E

Period of Record: 01/01/2021 - 12/31/2021

Elevation: Primary Sensors – 30 Foot

| Wind Speed (meters/second) | | | | | | | | | | | | | |
|----------------------------|-----------|-----------|----------|---------|---------|---------|---------|---------|----------|-----------|-----------|-------|-------|
| Wind Direction | 0.22-0.50 | 0.51-0.75 | 0.76-1.0 | 1.1-1.5 | 1.6-2.0 | 2.1-3.0 | 3.1-5.0 | 5.1-7.0 | 7.1-10.0 | 10.1-13.0 | 13.1-18.0 | >18.0 | Total |
| N | 7 | 11 | 24 | 50 | 39 | 37 | 3 | 0 | 0 | 0 | 0 | 0 | 171 |
| NNE | 5 | 12 | 27 | 59 | 25 | 30 | 7 | 0 | 0 | 0 | 0 | 0 | 165 |
| NE | 5 | 12 | 18 | 57 | 23 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 129 |
| ENE | 13 | 16 | 24 | 42 | 25 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 124 |
| E | 16 | 26 | 30 | 28 | 12 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 118 |
| ESE | 15 | 37 | 47 | 33 | 25 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 166 |
| SE | 11 | 37 | 69 | 89 | 49 | 31 | 5 | 0 | 0 | 0 | 0 | 0 | 291 |
| SSE | 10 | 32 | 42 | 112 | 77 | 41 | 1 | 0 | 0 | 0 | 0 | 0 | 315 |
| S | 7 | 17 | 26 | 61 | 23 | 13 | 6 | 0 | 0 | 0 | 0 | 0 | 153 |
| SSW | 2 | 11 | 24 | 38 | 14 | 8 | 4 | 0 | 0 | 0 | 0 | 0 | 101 |
| SW | 6 | 20 | 17 | 8 | 9 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 66 |
| WSW | 9 | 16 | 14 | 9 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 54 |
| W | 13 | 21 | 12 | 11 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |
| WNW | 8 | 18 | 23 | 21 | 6 | 7 | 3 | 0 | 0 | 0 | 0 | 0 | 86 |
| NW | 6 | 20 | 23 | 54 | 19 | 13 | 2 | 0 | 0 | 0 | 0 | 0 | 137 |
| NNW | 4 | 9 | 12 | 48 | 30 | 15 | 3 | 0 | 0 | 0 | 0 | 0 | 121 |
| TOTAL | 137 | 315 | 432 | 720 | 378 | 240 | 35 | 0 | 0 | 0 | 0 | 0 | 2257 |

NUMBER OF CALMS: 4

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 2261

TOTAL HOURS FOR THE PERIOD: 2261

Annual Radioactive Effluent Release Report

Stability Class F

Period of Record: 01/01/2021 - 12/31/2021

Elevation: Primary Sensors – 30 Foot

| Wind Speed (meters/second) | | | | | | | | | | | | | |
|----------------------------|-----------|-----------|----------|---------|---------|---------|---------|---------|----------|-----------|-----------|-------|-------|
| Wind Direction | 0.22-0.50 | 0.51-0.75 | 0.76-1.0 | 1.1-1.5 | 1.6-2.0 | 2.1-3.0 | 3.1-5.0 | 5.1-7.0 | 7.1-10.0 | 10.1-13.0 | 13.1-18.0 | >18.0 | Total |
| N | 19 | 13 | 29 | 16 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 79 |
| NNE | 12 | 12 | 24 | 22 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 73 |
| NE | 14 | 17 | 24 | 30 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 87 |
| ENE | 13 | 13 | 11 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 |
| E | 9 | 14 | 9 | 6 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 40 |
| ESE | 12 | 14 | 16 | 12 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 57 |
| SE | 10 | 17 | 22 | 21 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 72 |
| SSE | 13 | 12 | 21 | 20 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 72 |
| S | 15 | 18 | 17 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 61 |
| SSW | 6 | 7 | 3 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| SW | 11 | 13 | 13 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 |
| WSW | 13 | 18 | 6 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 |
| W | 25 | 27 | 11 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 66 |
| WNW | 24 | 27 | 15 | 6 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 77 |
| NW | 28 | 10 | 14 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 59 |
| NNW | 16 | 13 | 11 | 15 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 59 |
| TOTAL | 240 | 245 | 246 | 188 | 28 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 955 |

NUMBER OF CALMS: 2

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 957

TOTAL HOURS FOR THE PERIOD: 957

Annual Radioactive Effluent Release Report

Stability Class G

Period of Record: 01/01/2021 - 12/31/2021

Elevation: Primary Sensors – 30 Foot

| Wind Speed (meters/second) | | | | | | | | | | | | | |
|----------------------------|-----------|-----------|----------|---------|---------|---------|---------|---------|----------|-----------|-----------|-------|-------|
| Wind Direction | 0.22-0.50 | 0.51-0.75 | 0.76-1.0 | 1.1-1.5 | 1.6-2.0 | 2.1-3.0 | 3.1-5.0 | 5.1-7.0 | 7.1-10.0 | 10.1-13.0 | 13.1-18.0 | >18.0 | Total |
| N | 59 | 18 | 19 | 7 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 108 |
| NNE | 44 | 19 | 8 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 76 |
| NE | 54 | 15 | 9 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 81 |
| ENE | 49 | 25 | 7 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 83 |
| E | 36 | 42 | 12 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 97 |
| ESE | 19 | 25 | 17 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 66 |
| SE | 27 | 20 | 7 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58 |
| SSE | 21 | 10 | 9 | 7 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 49 |
| S | 20 | 13 | 2 | 1 | 3 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 45 |
| SSW | 31 | 2 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 37 |
| SW | 30 | 8 | 3 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 43 |
| WSW | 29 | 13 | 2 | 3 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 51 |
| W | 23 | 21 | 6 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 54 |
| WNW | 35 | 22 | 5 | 7 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 72 |
| NW | 79 | 27 | 4 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 114 |
| NNW | 67 | 29 | 10 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 109 |
| TOTAL | 623 | 309 | 121 | 52 | 23 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 1143 |

NUMBER OF CALMS: 17

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 1160

TOTAL HOURS FOR THE PERIOD: 1160

Annual Radioactive Effluent Release Report

All Stability Classes

Period of Record: 01/01/2021 - 12/31/2021

Elevation: Primary Sensors – 150 Foot

| Wind Speed (meters/second) | | | | | | | | | | | | | |
|----------------------------|-----------|-----------|----------|---------|---------|---------|---------|---------|----------|-----------|-----------|-------|-------|
| Wind Direction | 0.22-0.50 | 0.51-0.75 | 0.76-1.0 | 1.1-1.5 | 1.6-2.0 | 2.1-3.0 | 3.1-5.0 | 5.1-7.0 | 7.1-10.0 | 10.1-13.0 | 13.1-18.0 | >18.0 | Total |
| N | 0 | 7 | 6 | 72 | 95 | 273 | 294 | 30 | 1 | 1 | 0 | 0 | 779 |
| NNE | 0 | 5 | 10 | 101 | 128 | 271 | 143 | 22 | 6 | 0 | 0 | 0 | 686 |
| NE | 0 | 11 | 19 | 95 | 141 | 210 | 171 | 6 | 1 | 0 | 0 | 0 | 654 |
| ENE | 3 | 4 | 13 | 78 | 126 | 179 | 113 | 28 | 1 | 0 | 0 | 0 | 545 |
| E | 2 | 8 | 17 | 66 | 97 | 169 | 217 | 53 | 7 | 1 | 0 | 0 | 637 |
| ESE | 0 | 5 | 8 | 64 | 78 | 285 | 378 | 46 | 13 | 1 | 0 | 0 | 878 |
| SE | 0 | 9 | 8 | 48 | 72 | 196 | 206 | 15 | 0 | 0 | 0 | 0 | 554 |
| SSE | 2 | 7 | 10 | 43 | 63 | 188 | 230 | 20 | 0 | 0 | 0 | 0 | 563 |
| S | 0 | 5 | 14 | 41 | 86 | 226 | 216 | 20 | 0 | 0 | 0 | 0 | 608 |
| SSW | 2 | 3 | 19 | 58 | 89 | 191 | 114 | 6 | 0 | 0 | 0 | 0 | 482 |
| SW | 0 | 10 | 6 | 51 | 78 | 126 | 58 | 3 | 0 | 0 | 0 | 0 | 332 |
| WSW | 1 | 8 | 7 | 50 | 76 | 95 | 37 | 10 | 5 | 0 | 0 | 0 | 289 |
| W | 1 | 5 | 20 | 46 | 77 | 148 | 50 | 4 | 2 | 0 | 0 | 0 | 353 |
| WNW | 0 | 6 | 9 | 34 | 46 | 116 | 187 | 22 | 2 | 0 | 0 | 0 | 422 |
| NW | 0 | 5 | 10 | 51 | 58 | 96 | 101 | 18 | 1 | 0 | 0 | 0 | 340 |
| NNW | 0 | 3 | 9 | 47 | 51 | 139 | 134 | 26 | 0 | 1 | 0 | 0 | 410 |
| TOTAL | 11 | 101 | 185 | 945 | 1361 | 2908 | 2649 | 329 | 39 | 4 | 0 | 0 | 8532 |

NUMBER OF CALMS: 0

NUMBER OF INVALID HOURS: 228

NUMBER OF VALID HOURS: 8532

TOTAL HOURS FOR THE PERIOD: 8760

Annual Radioactive Effluent Release Report

Stability Class A

Period of Record: 01/01/2021 - 12/31/2021

Elevation: Primary Sensors – 150 Foot

| Wind Speed (meters/second) | | | | | | | | | | | | | |
|----------------------------|-----------|-----------|----------|---------|---------|---------|---------|---------|----------|-----------|-----------|-------|-------|
| Wind Direction | 0.22-0.50 | 0.51-0.75 | 0.76-1.0 | 1.1-1.5 | 1.6-2.0 | 2.1-3.0 | 3.1-5.0 | 5.1-7.0 | 7.1-10.0 | 10.1-13.0 | 13.1-18.0 | >18.0 | Total |
| N | 0 | 0 | 0 | 7 | 17 | 40 | 40 | 11 | 0 | 0 | 0 | 0 | 115 |
| NNE | 0 | 0 | 0 | 16 | 15 | 43 | 19 | 2 | 0 | 0 | 0 | 0 | 95 |
| NE | 0 | 0 | 0 | 14 | 13 | 35 | 35 | 0 | 0 | 0 | 0 | 0 | 97 |
| ENE | 0 | 0 | 0 | 9 | 12 | 32 | 29 | 7 | 0 | 0 | 0 | 0 | 89 |
| E | 0 | 0 | 0 | 9 | 11 | 30 | 26 | 8 | 0 | 0 | 0 | 0 | 84 |
| ESE | 0 | 0 | 0 | 8 | 7 | 32 | 57 | 17 | 9 | 0 | 0 | 0 | 130 |
| SE | 0 | 0 | 0 | 7 | 6 | 26 | 44 | 4 | 0 | 0 | 0 | 0 | 87 |
| SSE | 0 | 0 | 0 | 4 | 7 | 20 | 60 | 12 | 0 | 0 | 0 | 0 | 103 |
| S | 0 | 0 | 0 | 4 | 11 | 45 | 71 | 9 | 0 | 0 | 0 | 0 | 140 |
| SSW | 0 | 0 | 0 | 10 | 21 | 30 | 35 | 1 | 0 | 0 | 0 | 0 | 97 |
| SW | 0 | 1 | 0 | 5 | 16 | 22 | 14 | 2 | 0 | 0 | 0 | 0 | 60 |
| WSW | 0 | 0 | 0 | 2 | 28 | 36 | 8 | 7 | 4 | 0 | 0 | 0 | 85 |
| W | 0 | 0 | 0 | 10 | 28 | 55 | 17 | 3 | 2 | 0 | 0 | 0 | 115 |
| WNW | 0 | 0 | 0 | 5 | 11 | 49 | 31 | 8 | 0 | 0 | 0 | 0 | 104 |
| NW | 0 | 0 | 0 | 9 | 12 | 20 | 17 | 10 | 0 | 0 | 0 | 0 | 68 |
| NNW | 0 | 0 | 0 | 8 | 13 | 20 | 30 | 9 | 0 | 0 | 0 | 0 | 80 |
| TOTAL | 0 | 1 | 0 | 127 | 228 | 535 | 533 | 110 | 15 | 0 | 0 | 0 | 1549 |

NUMBER OF CALMS: 0

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 1549

TOTAL HOURS FOR THE PERIOD: 1549

Annual Radioactive Effluent Release Report

Stability Class B

Period of Record: 01/01/2021 - 12/31/2021

Elevation: Primary Sensors – 150 Foot

| Wind Speed (meters/second) | | | | | | | | | | | | | |
|----------------------------|-----------|-----------|----------|---------|---------|---------|---------|---------|----------|-----------|-----------|-------|-------|
| Wind Direction | 0.22-0.50 | 0.51-0.75 | 0.76-1.0 | 1.1-1.5 | 1.6-2.0 | 2.1-3.0 | 3.1-5.0 | 5.1-7.0 | 7.1-10.0 | 10.1-13.0 | 13.1-18.0 | >18.0 | Total |
| N | 0 | 0 | 0 | 5 | 2 | 6 | 11 | 0 | 0 | 0 | 0 | 0 | 24 |
| NNE | 0 | 0 | 0 | 1 | 4 | 6 | 6 | 1 | 0 | 0 | 0 | 0 | 18 |
| NE | 0 | 0 | 0 | 3 | 9 | 7 | 5 | 1 | 0 | 0 | 0 | 0 | 25 |
| ENE | 0 | 0 | 0 | 2 | 5 | 10 | 6 | 0 | 0 | 0 | 0 | 0 | 23 |
| E | 0 | 0 | 0 | 3 | 4 | 2 | 3 | 0 | 1 | 0 | 0 | 0 | 13 |
| ESE | 0 | 0 | 0 | 3 | 8 | 7 | 24 | 5 | 0 | 0 | 0 | 0 | 47 |
| SE | 0 | 0 | 0 | 0 | 1 | 6 | 7 | 1 | 0 | 0 | 0 | 0 | 15 |
| SSE | 0 | 0 | 0 | 0 | 0 | 10 | 17 | 2 | 0 | 0 | 0 | 0 | 29 |
| S | 0 | 0 | 1 | 3 | 1 | 11 | 9 | 2 | 0 | 0 | 0 | 0 | 27 |
| SSW | 0 | 0 | 0 | 4 | 4 | 6 | 11 | 0 | 0 | 0 | 0 | 0 | 25 |
| SW | 0 | 0 | 0 | 2 | 2 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 9 |
| WSW | 0 | 0 | 0 | 5 | 4 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 15 |
| W | 0 | 0 | 0 | 6 | 2 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 19 |
| WNW | 0 | 0 | 0 | 3 | 4 | 5 | 5 | 2 | 1 | 0 | 0 | 0 | 20 |
| NW | 0 | 0 | 0 | 2 | 3 | 2 | 6 | 1 | 1 | 0 | 0 | 0 | 15 |
| NNW | 0 | 0 | 0 | 2 | 2 | 9 | 6 | 1 | 0 | 0 | 0 | 0 | 20 |
| TOTAL | 0 | 0 | 1 | 44 | 55 | 104 | 120 | 17 | 3 | 0 | 0 | 0 | 344 |

NUMBER OF CALMS: 0

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 344

TOTAL HOURS FOR THE PERIOD: 344

Annual Radioactive Effluent Release Report

Stability Class C

Period of Record: 01/01/2021 - 12/31/2021

Elevation: Primary Sensors – 150 Foot

| Wind Speed (meters/second) | | | | | | | | | | | | | |
|----------------------------|-----------|-----------|----------|---------|---------|---------|---------|---------|----------|-----------|-----------|-------|-------|
| Wind Direction | 0.22-0.50 | 0.51-0.75 | 0.76-1.0 | 1.1-1.5 | 1.6-2.0 | 2.1-3.0 | 3.1-5.0 | 5.1-7.0 | 7.1-10.0 | 10.1-13.0 | 13.1-18.0 | >18.0 | Total |
| N | 0 | 0 | 0 | 2 | 10 | 17 | 12 | 1 | 0 | 1 | 0 | 0 | 43 |
| NNE | 0 | 0 | 1 | 8 | 10 | 11 | 13 | 4 | 0 | 0 | 0 | 0 | 47 |
| NE | 0 | 0 | 1 | 7 | 20 | 10 | 10 | 1 | 1 | 0 | 0 | 0 | 50 |
| ENE | 0 | 0 | 0 | 4 | 5 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 16 |
| E | 0 | 0 | 0 | 7 | 8 | 10 | 10 | 5 | 0 | 0 | 0 | 0 | 40 |
| ESE | 0 | 0 | 0 | 4 | 7 | 12 | 28 | 5 | 0 | 0 | 0 | 0 | 56 |
| SE | 0 | 0 | 0 | 0 | 10 | 19 | 9 | 1 | 0 | 0 | 0 | 0 | 39 |
| SSE | 0 | 0 | 0 | 1 | 5 | 19 | 21 | 1 | 0 | 0 | 0 | 0 | 47 |
| S | 0 | 0 | 0 | 4 | 10 | 21 | 14 | 3 | 0 | 0 | 0 | 0 | 52 |
| SSW | 0 | 0 | 0 | 3 | 5 | 16 | 5 | 0 | 0 | 0 | 0 | 0 | 29 |
| SW | 0 | 0 | 0 | 2 | 3 | 11 | 5 | 0 | 0 | 0 | 0 | 0 | 21 |
| WSW | 0 | 0 | 0 | 7 | 6 | 3 | 3 | 1 | 0 | 0 | 0 | 0 | 20 |
| W | 0 | 0 | 0 | 0 | 6 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| WNW | 0 | 0 | 0 | 4 | 4 | 1 | 7 | 2 | 1 | 0 | 0 | 0 | 19 |
| NW | 0 | 0 | 0 | 8 | 8 | 7 | 10 | 1 | 0 | 0 | 0 | 0 | 34 |
| NNW | 0 | 0 | 0 | 5 | 2 | 10 | 2 | 2 | 0 | 1 | 0 | 0 | 22 |
| TOTAL | 0 | 0 | 2 | 66 | 119 | 177 | 150 | 27 | 2 | 2 | 0 | 0 | 545 |

NUMBER OF CALMS: 0

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 545

TOTAL HOURS FOR THE PERIOD: 545

Annual Radioactive Effluent Release Report

Stability Class D

Period of Record: 01/01/2021 - 12/31/2021

Elevation: Primary Sensors – 150 Foot

| Wind Speed (meters/second) | | | | | | | | | | | | | |
|----------------------------|-----------|-----------|----------|---------|---------|---------|---------|---------|----------|-----------|-----------|-------|-------|
| Wind Direction | 0.22-0.50 | 0.51-0.75 | 0.76-1.0 | 1.1-1.5 | 1.6-2.0 | 2.1-3.0 | 3.1-5.0 | 5.1-7.0 | 7.1-10.0 | 10.1-13.0 | 13.1-18.0 | >18.0 | Total |
| N | 0 | 0 | 1 | 16 | 18 | 78 | 103 | 8 | 1 | 0 | 0 | 0 | 225 |
| NNE | 0 | 0 | 0 | 18 | 26 | 42 | 48 | 6 | 6 | 0 | 0 | 0 | 146 |
| NE | 0 | 1 | 1 | 22 | 28 | 48 | 47 | 1 | 0 | 0 | 0 | 0 | 148 |
| ENE | 0 | 0 | 1 | 23 | 27 | 35 | 27 | 14 | 1 | 0 | 0 | 0 | 128 |
| E | 0 | 2 | 1 | 14 | 12 | 34 | 39 | 21 | 2 | 0 | 0 | 0 | 125 |
| ESE | 0 | 1 | 1 | 12 | 12 | 49 | 60 | 9 | 1 | 0 | 0 | 0 | 145 |
| SE | 0 | 2 | 0 | 9 | 15 | 32 | 47 | 7 | 0 | 0 | 0 | 0 | 112 |
| SSE | 0 | 0 | 1 | 15 | 18 | 32 | 66 | 4 | 0 | 0 | 0 | 0 | 136 |
| S | 0 | 0 | 3 | 8 | 22 | 32 | 66 | 3 | 0 | 0 | 0 | 0 | 134 |
| SSW | 0 | 0 | 1 | 11 | 11 | 41 | 44 | 2 | 0 | 0 | 0 | 0 | 110 |
| SW | 0 | 1 | 0 | 12 | 7 | 18 | 14 | 1 | 0 | 0 | 0 | 0 | 53 |
| WSW | 1 | 1 | 1 | 12 | 6 | 4 | 8 | 0 | 0 | 0 | 0 | 0 | 33 |
| W | 0 | 1 | 1 | 12 | 8 | 7 | 7 | 1 | 0 | 0 | 0 | 0 | 37 |
| WNW | 0 | 1 | 1 | 4 | 6 | 13 | 33 | 2 | 0 | 0 | 0 | 0 | 60 |
| NW | 0 | 0 | 0 | 10 | 10 | 12 | 26 | 6 | 0 | 0 | 0 | 0 | 64 |
| NNW | 0 | 0 | 2 | 11 | 8 | 21 | 42 | 8 | 0 | 0 | 0 | 0 | 92 |
| TOTAL | 1 | 10 | 15 | 209 | 234 | 498 | 677 | 93 | 11 | 0 | 0 | 0 | 1748 |

NUMBER OF CALMS: 0

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 1748

TOTAL HOURS FOR THE PERIOD: 1748

Annual Radioactive Effluent Release Report

Stability Class E

Period of Record: 01/01/2021 - 12/31/2021

Elevation: Primary Sensors – 150 Foot

| Wind Speed (meters/second) | | | | | | | | | | | | | |
|----------------------------|-----------|-----------|----------|---------|---------|---------|---------|---------|----------|-----------|-----------|-------|-------|
| Wind Direction | 0.22-0.50 | 0.51-0.75 | 0.76-1.0 | 1.1-1.5 | 1.6-2.0 | 2.1-3.0 | 3.1-5.0 | 5.1-7.0 | 7.1-10.0 | 10.1-13.0 | 13.1-18.0 | >18.0 | Total |
| N | 0 | 0 | 0 | 15 | 21 | 78 | 75 | 10 | 0 | 0 | 0 | 0 | 199 |
| NNE | 0 | 0 | 1 | 25 | 27 | 71 | 42 | 9 | 0 | 0 | 0 | 0 | 175 |
| NE | 0 | 3 | 1 | 19 | 33 | 57 | 51 | 2 | 0 | 0 | 0 | 0 | 166 |
| ENE | 2 | 2 | 4 | 15 | 32 | 44 | 27 | 7 | 0 | 0 | 0 | 0 | 133 |
| E | 1 | 0 | 3 | 16 | 38 | 62 | 116 | 19 | 4 | 1 | 0 | 0 | 260 |
| ESE | 0 | 0 | 1 | 15 | 21 | 120 | 134 | 9 | 2 | 1 | 0 | 0 | 303 |
| SE | 0 | 2 | 1 | 11 | 17 | 60 | 67 | 2 | 0 | 0 | 0 | 0 | 160 |
| SSE | 1 | 0 | 1 | 8 | 12 | 54 | 53 | 1 | 0 | 0 | 0 | 0 | 130 |
| S | 0 | 1 | 0 | 9 | 18 | 72 | 44 | 3 | 0 | 0 | 0 | 0 | 147 |
| SSW | 0 | 0 | 3 | 18 | 20 | 66 | 17 | 3 | 0 | 0 | 0 | 0 | 127 |
| SW | 0 | 0 | 1 | 7 | 16 | 43 | 15 | 0 | 0 | 0 | 0 | 0 | 82 |
| WSW | 0 | 0 | 2 | 13 | 13 | 23 | 10 | 1 | 1 | 0 | 0 | 0 | 63 |
| W | 0 | 0 | 1 | 8 | 12 | 22 | 16 | 0 | 0 | 0 | 0 | 0 | 59 |
| WNW | 0 | 0 | 0 | 9 | 9 | 16 | 78 | 6 | 0 | 0 | 0 | 0 | 118 |
| NW | 0 | 0 | 1 | 6 | 8 | 18 | 17 | 0 | 0 | 0 | 0 | 0 | 50 |
| NNW | 0 | 0 | 1 | 6 | 10 | 29 | 38 | 6 | 0 | 0 | 0 | 0 | 90 |
| TOTAL | 4 | 8 | 21 | 200 | 307 | 835 | 800 | 78 | 7 | 2 | 0 | 0 | 2262 |

NUMBER OF CALMS: 0

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 2262

TOTAL HOURS FOR THE PERIOD: 2262

Annual Radioactive Effluent Release Report

Stability Class F

Period of Record: 01/01/2021 - 12/31/2021

Elevation: Primary Sensors – 150 Foot

| Wind Speed (meters/second) | | | | | | | | | | | | | |
|----------------------------|-----------|-----------|----------|---------|---------|---------|---------|---------|----------|-----------|-----------|-------|-------|
| Wind Direction | 0.22-0.50 | 0.51-0.75 | 0.76-1.0 | 1.1-1.5 | 1.6-2.0 | 2.1-3.0 | 3.1-5.0 | 5.1-7.0 | 7.1-10.0 | 10.1-13.0 | 13.1-18.0 | >18.0 | Total |
| N | 0 | 0 | 2 | 9 | 10 | 30 | 29 | 0 | 0 | 0 | 0 | 0 | 80 |
| NNE | 0 | 0 | 3 | 14 | 22 | 38 | 7 | 0 | 0 | 0 | 0 | 0 | 84 |
| NE | 0 | 2 | 2 | 11 | 20 | 24 | 20 | 1 | 0 | 0 | 0 | 0 | 80 |
| ENE | 0 | 0 | 1 | 5 | 19 | 26 | 11 | 0 | 0 | 0 | 0 | 0 | 62 |
| E | 0 | 3 | 1 | 6 | 15 | 14 | 17 | 0 | 0 | 0 | 0 | 0 | 56 |
| ESE | 0 | 0 | 3 | 7 | 12 | 36 | 53 | 1 | 1 | 0 | 0 | 0 | 113 |
| SE | 0 | 1 | 0 | 9 | 7 | 26 | 20 | 0 | 0 | 0 | 0 | 0 | 63 |
| SSE | 0 | 1 | 5 | 6 | 13 | 27 | 3 | 0 | 0 | 0 | 0 | 0 | 55 |
| S | 0 | 2 | 0 | 4 | 19 | 26 | 5 | 0 | 0 | 0 | 0 | 0 | 56 |
| SSW | 0 | 1 | 2 | 6 | 14 | 26 | 2 | 0 | 0 | 0 | 0 | 0 | 51 |
| SW | 0 | 1 | 1 | 11 | 15 | 14 | 3 | 0 | 0 | 0 | 0 | 0 | 45 |
| WSW | 0 | 1 | 1 | 3 | 8 | 17 | 5 | 0 | 0 | 0 | 0 | 0 | 35 |
| W | 0 | 0 | 0 | 5 | 9 | 34 | 1 | 0 | 0 | 0 | 0 | 0 | 49 |
| WNW | 0 | 1 | 0 | 4 | 6 | 10 | 17 | 0 | 0 | 0 | 0 | 0 | 38 |
| NW | 0 | 0 | 2 | 7 | 7 | 9 | 14 | 0 | 0 | 0 | 0 | 0 | 39 |
| NNW | 0 | 1 | 2 | 6 | 7 | 26 | 13 | 0 | 0 | 0 | 0 | 0 | 55 |
| TOTAL | 0 | 14 | 25 | 113 | 203 | 383 | 220 | 2 | 1 | 0 | 0 | 0 | 961 |

NUMBER OF CALMS: 9

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 961

TOTAL HOURS FOR THE PERIOD: 961

Annual Radioactive Effluent Release Report

Stability Class G

Period of Record: 01/01/2021 - 12/31/2021

Elevation: Primary Sensors – 150 Foot

| Wind Speed (meters/second) | | | | | | | | | | | | | |
|----------------------------|-----------|-----------|----------|---------|---------|---------|---------|---------|----------|-----------|-----------|-------|-------|
| Wind Direction | 0.22-0.50 | 0.51-0.75 | 0.76-1.0 | 1.1-1.5 | 1.6-2.0 | 2.1-3.0 | 3.1-5.0 | 5.1-7.0 | 7.1-10.0 | 10.1-13.0 | 13.1-18.0 | >18.0 | Total |
| N | 0 | 7 | 3 | 18 | 17 | 24 | 24 | 0 | 0 | 0 | 0 | 0 | 93 |
| NNE | 0 | 5 | 5 | 19 | 24 | 60 | 8 | 0 | 0 | 0 | 0 | 0 | 121 |
| NE | 0 | 5 | 14 | 19 | 18 | 29 | 3 | 0 | 0 | 0 | 0 | 0 | 88 |
| ENE | 1 | 2 | 7 | 20 | 26 | 26 | 12 | 0 | 0 | 0 | 0 | 0 | 94 |
| E | 1 | 3 | 12 | 11 | 9 | 17 | 6 | 0 | 0 | 0 | 0 | 0 | 59 |
| ESE | 0 | 4 | 3 | 15 | 11 | 29 | 22 | 0 | 0 | 0 | 0 | 0 | 84 |
| SE | 0 | 4 | 7 | 12 | 16 | 27 | 12 | 0 | 0 | 0 | 0 | 0 | 78 |
| SSE | 1 | 6 | 3 | 9 | 8 | 26 | 10 | 0 | 0 | 0 | 0 | 0 | 63 |
| S | 0 | 2 | 10 | 9 | 5 | 19 | 7 | 0 | 0 | 0 | 0 | 0 | 52 |
| SSW | 2 | 2 | 13 | 6 | 14 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 43 |
| SW | 0 | 7 | 4 | 12 | 19 | 14 | 6 | 0 | 0 | 0 | 0 | 0 | 62 |
| WSW | 0 | 6 | 3 | 8 | 11 | 7 | 3 | 0 | 0 | 0 | 0 | 0 | 38 |
| W | 1 | 4 | 18 | 5 | 12 | 18 | 6 | 0 | 0 | 0 | 0 | 0 | 64 |
| WNW | 0 | 4 | 8 | 5 | 6 | 22 | 16 | 2 | 0 | 0 | 0 | 0 | 63 |
| NW | 0 | 5 | 7 | 9 | 10 | 28 | 11 | 0 | 0 | 0 | 0 | 0 | 70 |
| NNW | 0 | 2 | 4 | 9 | 9 | 24 | 3 | 0 | 0 | 0 | 0 | 0 | 51 |
| TOTAL | 6 | 68 | 121 | 186 | 215 | 376 | 149 | 2 | 0 | 0 | 0 | 0 | 1123 |

NUMBER OF CALMS: 0

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 1123

TOTAL HOURS FOR THE PERIOD: 1123

Annual Radioactive Effluent Release Report

7.2 Stability Class

Table 15, Classification of Atmospheric Stability

| Stability Condition | Pasquill Categories | Hours (Percentage) |
|---------------------|---------------------|--------------------|
| Extremely Unstable | A | 21 |
| Moderately Stable | B | 3 |
| Slightly Unstable | C | 6 |
| Neutral | D | 20 |
| Slightly Stable | E | 26 |
| Moderately Stable | F | 11 |
| Extremely Stable | G | 13 |

Table 16, Atmospheric Dispersion and Deposition Rates for the Maximum Individual Dose Calculations

| Analysis | Location (meters) | Ground Level Releases | Mixed Mode Releases |
|--------------------------------------|-------------------------|-------------------------------|-----------------------------|
| Gamma air dose (3) and Beta Air Dose | 994 m WNW (Containment) | CHI/Q - 421.0 | CHI/Q - 33.1 |
| Maximum Receptor (4) | 994 m WNW | CHI/Q - 421.0 | CHI/Q - 33.1 |
| Resident Garden | | D/Q - 50.3 | D/Q - 18.0 |
| Meat animal | | | |
| Immersion | | | |
| Milk animal (5) | 7,000 m WNW | CHI/Q - 3.58 D/Q - 0.38 | CHI/Q - .870 D/Q - .223 |
| Other on-site Receptors | 115 m ENE | CHI/Q - 5977.0 D/Q - 529.7 | CHI/Q - 407.5 D/Q - 46.9 |
| | 275 m N | CHI/Q - 1644.0 D/Q - 345.6 | CHI/Q - 169.1 D/Q - 68.4 |
| | 2500 SW | CHI/Q - 34.45 D/Q - 3.35 | CHI/Q - 4.65 D/Q - 1.40 |

Notes:(1) All CHI/Q = 10^{-7} sec/m³(2) All D/Q = 10^{-9} m⁻²

(3) Maximum offsite location (property boundary) with highest CHI/Q (unoccupied).

(4) Maximum hypothetical occupied offsite location with highest CHI/Q and D/Q.

(5) No milk animal within 5 miles radius, hypothetical location in worst sector.

(6) Other onsite receptors

(7) Revisions to X/Q and D/Q can be performed using NUREG/CR-2919, XOQDOQ, Computer Program for the Meteorological Evaluation of Routine Effluent Releases at Nuclear Power Stations

Annual Radioactive Effluent Release Report

Attachment 1

Page 1 of 36

Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

| Station ID | Sample Date | Units | MN-54 | CO-58 | FE-59 | CO-60 | ZN-65 | NB-95 | ZR-95 | I-131 | CS-134 | CS-137 | BA-140 | LA-140 |
|------------|-------------|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| MW-124 | 1/19/2021 | pCi/L | < 5.0E+00 | < 3.1E+00 | < 1.2E+01 | < 4.2E+00 | < 1.1E+01 | < 5.2E+00 | < 8.8E+00 | < 1.1E+01 | < 4.8E+00 | < 5.2E+00 | < 2.4E+01 | < 1.1E+01 |
| MW-124 | 1/19/2021 | pCi/L | < 6.0E+00 | < 6.4E+00 | < 1.0E+01 | < 5.8E+00 | < 8.6E+00 | < 6.1E+00 | < 8.4E+00 | < 1.2E+01 | < 5.9E+00 | < 3.7E+00 | < 3.4E+01 | < 1.1E+01 |
| MW-125 | 1/19/2021 | pCi/L | < 4.4E+00 | < 4.5E+00 | < 1.0E+01 | < 4.8E+00 | < 8.9E+00 | < 5.3E+00 | < 8.0E+00 | < 1.3E+01 | < 4.7E+00 | < 5.0E+00 | < 2.9E+01 | < 9.2E+00 |
| MW-142 | 1/19/2021 | pCi/L | < 5.9E+00 | < 4.1E+00 | < 1.1E+01 | < 4.6E+00 | < 1.2E+01 | < 4.4E+00 | < 8.0E+00 | < 7.9E+00 | < 5.9E+00 | < 4.5E+00 | < 2.8E+01 | < 1.0E+01 |
| MW-144 | 1/19/2021 | pCi/L | < 3.4E+00 | < 3.9E+00 | < 8.0E+00 | < 3.8E+00 | < 7.6E+00 | < 4.0E+00 | < 7.5E+00 | < 1.0E+01 | < 3.9E+00 | < 3.6E+00 | < 2.3E+01 | < 7.6E+00 |
| MW-146 | 1/19/2021 | pCi/L | < 4.5E+00 | < 5.0E+00 | < 1.2E+01 | < 4.0E+00 | < 9.5E+00 | < 5.9E+00 | < 8.8E+00 | < 1.4E+01 | < 5.2E+00 | < 4.8E+00 | < 3.8E+01 | < 1.0E+01 |
| MW-147 | 1/19/2021 | pCi/L | < 4.4E+00 | < 4.1E+00 | < 8.4E+00 | < 4.3E+00 | < 8.2E+00 | < 4.3E+00 | < 6.2E+00 | < 1.0E+01 | < 3.8E+00 | < 3.7E+00 | < 2.3E+01 | < 9.2E+00 |
| MW-148 | 1/19/2021 | pCi/L | < 4.9E+00 | < 4.6E+00 | < 1.0E+01 | < 5.8E+00 | < 1.0E+01 | < 5.3E+00 | < 8.7E+00 | < 1.2E+01 | < 5.4E+00 | < 5.7E+00 | < 3.5E+01 | < 1.0E+01 |
| MW-151 | 1/19/2021 | pCi/L | < 6.0E+00 | < 5.9E+00 | < 1.4E+01 | < 8.0E+00 | < 1.3E+01 | < 6.0E+00 | < 9.9E+00 | < 1.0E+01 | < 7.1E+00 | < 6.0E+00 | < 3.6E+01 | < 1.4E+01 |
| MW-155 | 1/19/2021 | pCi/L | < 4.0E+00 | < 4.5E+00 | < 9.0E+00 | < 5.0E+00 | < 9.7E+00 | < 4.7E+00 | < 7.6E+00 | < 1.2E+01 | < 5.0E+00 | < 4.9E+00 | < 2.5E+01 | < 1.0E+01 |
| MW-156 | 1/19/2021 | pCi/L | < 2.7E+00 | < 2.7E+00 | < 6.3E+00 | < 3.0E+00 | < 5.6E+00 | < 3.3E+00 | < 4.9E+00 | < 8.7E+00 | < 2.9E+00 | < 3.0E+00 | < 1.8E+01 | < 6.3E+00 |
| MW-157 | 1/19/2021 | pCi/L | < 5.1E+00 | < 4.4E+00 | < 1.2E+01 | < 4.5E+00 | < 1.0E+01 | < 5.9E+00 | < 8.3E+00 | < 1.3E+01 | < 4.5E+00 | < 5.6E+00 | < 3.0E+01 | < 1.0E+01 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 2 of 36

Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

| Station ID | Sample Date | Units | MN-54 | CO-58 | FE-59 | CO-60 | ZN-65 | NB-95 | ZR-95 | I-131 | CS-134 | CS-137 | BA-140 | LA-140 |
|------------|-------------|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| MW-158 | 1/19/2021 | pCi/L | < 3.3E+00 | < 3.4E+00 | < 7.3E+00 | < 3.2E+00 | < 7.0E+00 | < 3.9E+00 | < 6.7E+00 | < 1.0E+01 | < 3.3E+00 | < 3.7E+00 | < 2.4E+01 | < 8.5E+00 |
| MW-159 | 1/19/2021 | pCi/L | < 2.8E+00 | < 2.7E+00 | < 6.2E+00 | < 3.2E+00 | < 5.9E+00 | < 3.2E+00 | < 5.3E+00 | < 6.6E+00 | < 2.9E+00 | < 2.9E+00 | < 1.8E+01 | < 7.5E+00 |
| MW-162 | 1/19/2021 | pCi/L | < 6.2E+00 | < 5.5E+00 | < 1.5E+01 | < 7.1E+00 | < 1.4E+01 | < 5.3E+00 | < 9.2E+00 | < 1.2E+01 | < 6.3E+00 | < 6.8E+00 | < 3.1E+01 | < 1.3E+01 |
| MW-164 | 1/19/2021 | pCi/L | < 7.4E+00 | < 6.2E+00 | < 1.6E+01 | < 9.1E+00 | < 1.3E+01 | < 6.2E+00 | < 1.1E+01 | < 9.8E+00 | < 6.3E+00 | < 7.3E+00 | < 3.7E+01 | < 1.2E+01 |
| MW-165 | 1/19/2021 | pCi/L | < 6.3E+00 | < 8.8E+00 | < 1.6E+01 | < 9.3E+00 | < 9.7E+00 | < 8.6E+00 | < 1.0E+01 | < 1.3E+01 | < 8.9E+00 | < 5.4E+00 | < 3.1E+01 | < 7.1E+00 |
| MW-165 | 1/19/2021 | pCi/L | < 5.4E+00 | < 6.4E+00 | < 1.2E+01 | < 6.6E+00 | < 9.4E+00 | < 5.1E+00 | < 7.2E+00 | < 1.0E+01 | < 6.5E+00 | < 6.5E+00 | < 3.2E+01 | < 9.3E+00 |
| MW-178 | 1/19/2021 | pCi/L | < 5.1E+00 | < 5.8E+00 | < 9.6E+00 | < 6.0E+00 | < 9.4E+00 | < 5.3E+00 | < 1.1E+01 | < 1.4E+01 | < 5.7E+00 | < 5.3E+00 | < 3.5E+01 | < 9.3E+00 |
| MW-179 | 1/19/2021 | pCi/L | < 5.5E+00 | < 5.5E+00 | < 1.5E+01 | < 6.2E+00 | < 1.2E+01 | < 6.3E+00 | < 9.9E+00 | < 1.5E+01 | < 7.2E+00 | < 5.4E+00 | < 3.4E+01 | < 9.2E+00 |
| MW-179 | 1/19/2021 | pCi/L | < 2.9E+00 | < 2.8E+00 | < 6.9E+00 | < 3.0E+00 | < 5.6E+00 | < 3.1E+00 | < 5.5E+00 | < 8.4E+00 | < 3.1E+00 | < 2.9E+00 | < 2.1E+01 | < 6.8E+00 |
| MW-186 | 1/19/2021 | pCi/L | < 6.7E+00 | < 5.9E+00 | < 1.2E+01 | < 5.4E+00 | < 1.1E+01 | < 6.0E+00 | < 1.2E+01 | < 1.1E+01 | < 7.7E+00 | < 6.7E+00 | < 2.9E+01 | < 1.0E+01 |
| MW-187 | 1/19/2021 | pCi/L | < 4.2E+00 | < 5.1E+00 | < 1.2E+01 | < 6.1E+00 | < 1.2E+01 | < 5.2E+00 | < 7.7E+00 | < 7.8E+00 | < 5.4E+00 | < 5.2E+00 | < 2.4E+01 | < 1.1E+01 |
| MW-201 | 1/19/2021 | pCi/L | < 5.9E+00 | < 6.7E+00 | < 1.3E+01 | < 7.1E+00 | < 9.9E+00 | < 8.2E+00 | < 1.1E+01 | < 1.3E+01 | < 6.9E+00 | < 6.1E+00 | < 2.9E+01 | < 1.2E+01 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 3 of 36

Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

| Station ID | Sample Date | Units | MN-54 | CO-58 | FE-59 | CO-60 | ZN-65 | NB-95 | ZR-95 | I-131 | CS-134 | CS-137 | BA-140 | LA-140 |
|------------|-------------|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| MW-211 | 1/19/2021 | pCi/L | < 4.8E+00 | < 4.7E+00 | < 1.1E+01 | < 5.0E+00 | < 9.8E+00 | < 5.7E+00 | < 8.2E+00 | < 9.8E+00 | < 4.5E+00 | < 5.0E+00 | < 2.8E+01 | < 1.4E+01 |
| MW-211 | 1/19/2021 | pCi/L | < 6.0E+00 | < 5.3E+00 | < 1.2E+01 | < 5.7E+00 | < 9.7E+00 | < 5.9E+00 | < 8.1E+00 | < 1.5E+01 | < 5.0E+00 | < 5.4E+00 | < 3.5E+01 | < 9.7E+00 |
| MW-100 | 1/20/2021 | pCi/L | < 7.0E+00 | < 8.9E+00 | < 1.2E+01 | < 9.4E+00 | < 1.3E+01 | < 7.1E+00 | < 1.5E+01 | < 1.3E+01 | < 9.5E+00 | < 6.8E+00 | < 3.4E+01 | < 7.1E+00 |
| MW-110 | 1/20/2021 | pCi/L | < 4.3E+00 | < 5.9E+00 | < 9.8E+00 | < 6.9E+00 | < 1.2E+01 | < 6.2E+00 | < 1.1E+01 | < 1.3E+01 | < 6.4E+00 | < 5.3E+00 | < 4.0E+01 | < 8.4E+00 |
| MW-112 | 1/20/2021 | pCi/L | < 4.9E+00 | < 4.7E+00 | < 1.3E+01 | < 4.7E+00 | < 1.1E+01 | < 5.9E+00 | < 9.6E+00 | < 1.3E+01 | < 5.7E+00 | < 5.3E+00 | < 3.3E+01 | < 1.2E+01 |
| MW-114 | 1/20/2021 | pCi/L | < 5.2E+00 | < 4.6E+00 | < 8.9E+00 | < 6.0E+00 | < 1.2E+01 | < 5.0E+00 | < 1.2E+01 | < 1.4E+01 | < 5.6E+00 | < 5.0E+00 | < 3.0E+01 | < 1.2E+01 |
| MW-116 | 1/20/2021 | pCi/L | < 5.5E+00 | < 6.5E+00 | < 1.0E+01 | < 5.2E+00 | < 9.7E+00 | < 7.1E+00 | < 1.0E+01 | < 1.5E+01 | < 6.1E+00 | < 5.5E+00 | < 3.7E+01 | < 9.1E+00 |
| MW-118 | 1/20/2021 | pCi/L | < 5.4E+00 | < 5.8E+00 | < 1.3E+01 | < 6.0E+00 | < 1.1E+01 | < 5.5E+00 | < 9.4E+00 | < 1.5E+01 | < 6.9E+00 | < 6.0E+00 | < 3.2E+01 | < 1.0E+01 |
| MW-126 | 1/20/2021 | pCi/L | < 5.0E+00 | < 6.3E+00 | < 1.1E+01 | < 7.4E+00 | < 9.6E+00 | < 5.8E+00 | < 1.0E+01 | < 1.5E+01 | < 7.3E+00 | < 5.4E+00 | < 3.7E+01 | < 1.0E+01 |
| MW-137 | 1/20/2021 | pCi/L | < 4.5E+00 | < 4.4E+00 | < 1.0E+01 | < 4.4E+00 | < 8.8E+00 | < 4.7E+00 | < 7.0E+00 | < 1.2E+01 | < 4.5E+00 | < 4.4E+00 | < 2.6E+01 | < 7.7E+00 |
| MW-139 | 1/20/2021 | pCi/L | < 6.0E+00 | < 7.2E+00 | < 1.7E+01 | < 1.0E+01 | < 1.2E+01 | < 6.9E+00 | < 1.3E+01 | < 1.3E+01 | < 6.4E+00 | < 7.0E+00 | < 4.2E+01 | < 9.9E+00 |
| MW-141 | 1/20/2021 | pCi/L | < 6.2E+00 | < 4.6E+00 | < 1.1E+01 | < 6.3E+00 | < 1.0E+01 | < 4.9E+00 | < 1.1E+01 | < 1.5E+01 | < 6.9E+00 | < 5.1E+00 | < 3.2E+01 | < 1.0E+01 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 4 of 36

Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

| Station ID | Sample Date | Units | MN-54 | CO-58 | FE-59 | CO-60 | ZN-65 | NB-95 | ZR-95 | I-131 | CS-134 | CS-137 | BA-140 | LA-140 |
|------------|-------------|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| MW-153 | 1/20/2021 | pCi/L | < 5.6E+00 | < 6.7E+00 | < 1.3E+01 | < 6.4E+00 | < 1.3E+01 | < 6.0E+00 | < 1.0E+01 | < 1.5E+01 | < 7.0E+00 | < 5.7E+00 | < 3.5E+01 | < 1.1E+01 |
| MW-161 | 1/20/2021 | pCi/L | < 4.3E+00 | < 6.5E+00 | < 1.3E+01 | < 5.2E+00 | < 9.0E+00 | < 5.6E+00 | < 8.2E+00 | < 1.4E+01 | < 6.1E+00 | < 6.0E+00 | < 3.4E+01 | < 1.4E+01 |
| MW-170 | 1/20/2021 | pCi/L | < 8.7E+00 | < 7.7E+00 | < 1.2E+01 | < 8.7E+00 | < 1.5E+01 | < 7.7E+00 | < 9.9E+00 | < 1.0E+01 | < 6.3E+00 | < 6.3E+00 | < 3.1E+01 | < 1.4E+01 |
| MW-182 | 1/20/2021 | pCi/L | < 5.7E+00 | < 6.4E+00 | < 1.5E+01 | < 7.8E+00 | < 1.4E+01 | < 6.8E+00 | < 1.2E+01 | < 1.0E+01 | < 8.5E+00 | < 7.4E+00 | < 3.7E+01 | < 1.3E+01 |
| MW-185 | 1/20/2021 | pCi/L | < 7.5E+00 | < 6.9E+00 | < 1.4E+01 | < 6.8E+00 | < 1.4E+01 | < 6.9E+00 | < 1.7E+01 | < 1.3E+01 | < 9.0E+00 | < 8.1E+00 | < 3.9E+01 | < 1.0E+01 |
| MW-188 | 1/20/2021 | pCi/L | < 5.8E+00 | < 7.3E+00 | < 1.3E+01 | < 4.9E+00 | < 1.5E+01 | < 6.6E+00 | < 8.8E+00 | < 1.2E+01 | < 6.2E+00 | < 6.5E+00 | < 2.6E+01 | < 1.2E+01 |
| MW-205 | 1/20/2021 | pCi/L | < 6.8E+00 | < 6.4E+00 | < 8.9E+00 | < 5.9E+00 | < 1.2E+01 | < 6.6E+00 | < 9.6E+00 | < 1.1E+01 | < 7.0E+00 | < 7.5E+00 | < 3.3E+01 | < 1.2E+01 |
| MW-207 | 1/20/2021 | pCi/L | < 7.2E+00 | < 7.3E+00 | < 1.6E+01 | < 8.4E+00 | < 1.6E+01 | < 7.7E+00 | < 1.4E+01 | < 1.2E+01 | < 9.5E+00 | < 8.2E+00 | < 3.6E+01 | < 1.1E+01 |
| MW-207 | 1/20/2021 | pCi/L | < 7.4E+00 | < 6.5E+00 | < 1.2E+01 | < 7.1E+00 | < 1.1E+01 | < 6.6E+00 | < 1.1E+01 | < 1.1E+01 | < 5.6E+00 | < 5.8E+00 | < 3.4E+01 | < 9.3E+00 |
| MW-209 | 1/20/2021 | pCi/L | < 6.7E+00 | < 8.6E+00 | < 1.0E+01 | < 7.1E+00 | < 1.7E+01 | < 7.4E+00 | < 1.3E+01 | < 1.2E+01 | < 6.9E+00 | < 7.8E+00 | < 3.5E+01 | < 1.4E+01 |
| MW-209 | 1/20/2021 | pCi/L | < 7.5E+00 | < 7.1E+00 | < 1.5E+01 | < 7.5E+00 | < 1.1E+01 | < 7.3E+00 | < 1.2E+01 | < 1.2E+01 | < 7.5E+00 | < 5.5E+00 | < 3.5E+01 | < 1.4E+01 |
| MW-219 | 1/20/2021 | pCi/L | < 7.5E+00 | < 6.4E+00 | < 1.5E+01 | < 6.2E+00 | < 1.3E+01 | < 6.9E+00 | < 1.2E+01 | < 1.2E+01 | < 8.6E+00 | < 6.7E+00 | < 3.5E+01 | < 1.0E+01 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 5 of 36

Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

| Station ID | Sample Date | Units | MN-54 | CO-58 | FE-59 | CO-60 | ZN-65 | NB-95 | ZR-95 | I-131 | CS-134 | CS-137 | BA-140 | LA-140 |
|------------|-------------|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| MW-221 | 1/20/2021 | pCi/L | < 4.5E+00 | < 5.2E+00 | < 1.1E+01 | < 5.5E+00 | < 9.2E+00 | < 5.3E+00 | < 9.1E+00 | < 1.3E+01 | < 4.9E+00 | < 4.9E+00 | < 3.0E+01 | < 9.3E+00 |
| MW-223 | 1/20/2021 | pCi/L | < 6.5E+00 | < 9.1E+00 | < 1.6E+01 | < 6.6E+00 | < 1.3E+01 | < 7.3E+00 | < 1.5E+01 | < 1.1E+01 | < 9.3E+00 | < 6.6E+00 | < 3.5E+01 | < 1.3E+01 |
| MW-225 | 1/20/2021 | pCi/L | < 7.1E+00 | < 5.5E+00 | < 1.4E+01 | < 6.0E+00 | < 1.6E+01 | < 7.0E+00 | < 1.1E+01 | < 1.1E+01 | < 6.5E+00 | < 7.1E+00 | < 3.4E+01 | < 1.2E+01 |
| MW-227 | 1/20/2021 | pCi/L | < 5.5E+00 | < 6.7E+00 | < 9.4E+00 | < 6.9E+00 | < 1.4E+01 | < 5.9E+00 | < 1.2E+01 | < 1.0E+01 | < 7.7E+00 | < 5.9E+00 | < 3.4E+01 | < 8.8E+00 |
| MW-229 | 1/20/2021 | pCi/L | < 6.7E+00 | < 7.5E+00 | < 1.4E+01 | < 7.6E+00 | < 1.4E+01 | < 6.8E+00 | < 1.2E+01 | < 1.4E+01 | < 7.3E+00 | < 8.6E+00 | < 4.0E+01 | < 7.9E+00 |
| MW-231 | 1/20/2021 | pCi/L | < 6.1E+00 | < 7.5E+00 | < 1.3E+01 | < 5.3E+00 | < 1.3E+01 | < 6.9E+00 | < 9.4E+00 | < 1.2E+01 | < 7.0E+00 | < 7.2E+00 | < 3.1E+01 | < 1.3E+01 |
| MW-233 | 1/20/2021 | pCi/L | < 6.3E+00 | < 6.4E+00 | < 1.7E+01 | < 6.1E+00 | < 1.7E+01 | < 7.8E+00 | < 1.3E+01 | < 1.1E+01 | < 8.0E+00 | < 7.1E+00 | < 3.6E+01 | < 1.1E+01 |
| MW-235 | 1/20/2021 | pCi/L | < 5.5E+00 | < 4.8E+00 | < 1.1E+01 | < 7.0E+00 | < 9.9E+00 | < 6.4E+00 | < 1.1E+01 | < 7.7E+00 | < 5.9E+00 | < 6.1E+00 | < 2.3E+01 | < 1.3E+01 |
| PZ-01 | 1/20/2021 | pCi/L | < 4.3E+00 | < 5.4E+00 | < 1.3E+01 | < 7.6E+00 | < 1.2E+01 | < 6.5E+00 | < 1.0E+01 | < 1.4E+01 | < 6.8E+00 | < 4.9E+00 | < 3.9E+01 | < 9.0E+00 |
| SW-101 | 1/20/2021 | pCi/L | < 7.4E+00 | < 6.1E+00 | < 1.5E+01 | < 8.4E+00 | < 1.7E+01 | < 7.5E+00 | < 1.5E+01 | < 1.1E+01 | < 7.8E+00 | < 8.2E+00 | < 3.7E+01 | < 1.4E+01 |
| SW-102 | 1/20/2021 | pCi/L | < 5.1E+00 | < 5.7E+00 | < 1.1E+01 | < 6.0E+00 | < 1.1E+01 | < 5.2E+00 | < 8.1E+00 | < 7.7E+00 | < 4.6E+00 | < 5.2E+00 | < 2.3E+01 | < 1.1E+01 |
| SW-103 | 1/20/2021 | pCi/L | < 6.8E+00 | < 6.2E+00 | < 1.3E+01 | < 6.3E+00 | < 1.4E+01 | < 7.2E+00 | < 1.2E+01 | < 1.2E+01 | < 5.7E+00 | < 7.0E+00 | < 3.5E+01 | < 8.9E+00 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 6 of 36

Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

| Station ID | Sample Date | Units | MN-54 | CO-58 | FE-59 | CO-60 | ZN-65 | NB-95 | ZR-95 | I-131 | CS-134 | CS-137 | BA-140 | LA-140 |
|------------|-------------|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| SW-104 | 1/20/2021 | pCi/L | < 6.4E+00 | < 7.4E+00 | < 9.2E+00 | < 8.3E+00 | < 9.8E+00 | < 6.6E+00 | < 1.1E+01 | < 9.2E+00 | < 8.4E+00 | < 8.2E+00 | < 3.4E+01 | < 1.3E+01 |
| MW-124 | 5/11/2021 | pCi/L | < 4.6E+00 | < 4.5E+00 | < 1.1E+01 | < 4.1E+00 | < 9.5E+00 | < 4.7E+00 | < 9.4E+00 | < 1.5E+01 | < 5.3E+00 | < 4.3E+00 | < 3.3E+01 | < 1.2E+01 |
| MW-125 | 5/11/2021 | pCi/L | < 4.2E+00 | < 5.2E+00 | < 1.1E+01 | < 2.8E+00 | < 1.0E+01 | < 5.5E+00 | < 8.9E+00 | < 1.4E+01 | < 4.2E+00 | < 5.2E+00 | < 3.7E+01 | < 1.2E+01 |
| MW-142 | 5/11/2021 | pCi/L | < 2.3E+00 | < 2.4E+00 | < 6.0E+00 | < 2.7E+00 | < 4.8E+00 | < 2.7E+00 | < 4.5E+00 | < 8.4E+00 | < 2.2E+00 | < 2.2E+00 | < 1.8E+01 | < 5.8E+00 |
| MW-142 | 5/11/2021 | pCi/L | < 4.3E+00 | < 4.4E+00 | < 1.1E+01 | < 3.8E+00 | < 8.9E+00 | < 4.8E+00 | < 6.0E+00 | < 1.4E+01 | < 4.0E+00 | < 4.1E+00 | < 3.6E+01 | < 1.0E+01 |
| MW-144 | 5/11/2021 | pCi/L | < 3.3E+00 | < 3.5E+00 | < 8.5E+00 | < 3.4E+00 | < 6.8E+00 | < 3.5E+00 | < 7.0E+00 | < 1.4E+01 | < 4.0E+00 | < 3.6E+00 | < 2.4E+01 | < 7.2E+00 |
| MW-146 | 5/11/2021 | pCi/L | < 4.3E+00 | < 4.1E+00 | < 8.7E+00 | < 3.7E+00 | < 8.1E+00 | < 4.6E+00 | < 7.5E+00 | < 1.5E+01 | < 4.7E+00 | < 4.5E+00 | < 2.4E+01 | < 7.9E+00 |
| MW-147 | 5/11/2021 | pCi/L | < 4.3E+00 | < 4.4E+00 | < 7.1E+00 | < 4.5E+00 | < 9.6E+00 | < 4.7E+00 | < 9.1E+00 | < 1.5E+01 | < 4.1E+00 | < 4.4E+00 | < 3.6E+01 | < 1.0E+01 |
| MW-148 | 5/11/2021 | pCi/L | < 4.4E+00 | < 4.2E+00 | < 1.2E+01 | < 3.6E+00 | < 8.7E+00 | < 4.8E+00 | < 7.2E+00 | < 1.4E+01 | < 5.8E+00 | < 4.5E+00 | < 3.4E+01 | < 1.2E+01 |
| MW-158 | 5/11/2021 | pCi/L | < 3.8E+00 | < 4.8E+00 | < 9.3E+00 | < 3.4E+00 | < 9.2E+00 | < 4.9E+00 | < 8.8E+00 | < 1.5E+01 | < 4.5E+00 | < 4.1E+00 | < 2.7E+01 | < 1.0E+01 |
| MW-159 | 5/11/2021 | pCi/L | < 3.9E+00 | < 4.1E+00 | < 8.2E+00 | < 4.1E+00 | < 8.7E+00 | < 4.4E+00 | < 6.6E+00 | < 1.5E+01 | < 3.6E+00 | < 4.3E+00 | < 3.2E+01 | < 1.1E+01 |
| MW-162 | 5/11/2021 | pCi/L | < 5.0E+00 | < 5.9E+00 | < 1.0E+01 | < 4.0E+00 | < 1.2E+01 | < 7.1E+00 | < 1.0E+01 | < 1.1E+01 | < 6.3E+00 | < 5.7E+00 | < 3.0E+01 | < 1.0E+01 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 7 of 36

Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

| Station ID | Sample Date | Units | MN-54 | CO-58 | FE-59 | CO-60 | ZN-65 | NB-95 | ZR-95 | I-131 | CS-134 | CS-137 | BA-140 | LA-140 |
|------------|-------------|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| MW-207 | 5/11/2021 | pCi/L | < 5.8E+00 | < 5.2E+00 | < 1.2E+01 | < 6.4E+00 | < 6.2E+00 | < 8.9E+00 | < 1.1E+01 | < 1.2E+01 | < 7.4E+00 | < 5.7E+00 | < 2.9E+01 | < 1.1E+01 |
| MW-229 | 5/11/2021 | pCi/L | < 6.5E+00 | < 8.1E+00 | < 1.3E+01 | < 8.6E+00 | < 1.7E+01 | < 8.1E+00 | < 1.2E+01 | < 1.4E+01 | < 7.5E+00 | < 8.2E+00 | < 4.1E+01 | < 1.4E+01 |
| MW-100 | 5/12/2021 | pCi/L | < 7.3E+00 | < 7.5E+00 | < 1.6E+01 | < 7.9E+00 | < 1.3E+01 | < 7.8E+00 | < 1.3E+01 | < 1.3E+01 | < 6.6E+00 | < 8.0E+00 | < 3.2E+01 | < 8.0E+00 |
| MW-106 | 5/12/2021 | pCi/L | < 6.0E+00 | < 7.3E+00 | < 1.5E+01 | < 6.1E+00 | < 1.5E+01 | < 6.5E+00 | < 1.3E+01 | < 1.3E+01 | < 8.4E+00 | < 7.5E+00 | < 4.3E+01 | < 9.8E+00 |
| MW-106 | 5/12/2021 | pCi/L | < 3.6E+00 | < 4.9E+00 | < 1.0E+01 | < 5.6E+00 | < 8.8E+00 | < 5.7E+00 | < 7.6E+00 | < 9.0E+00 | < 5.6E+00 | < 4.6E+00 | < 2.8E+01 | < 8.9E+00 |
| MW-110 | 5/12/2021 | pCi/L | < 4.2E+00 | < 5.3E+00 | < 1.3E+01 | < 4.7E+00 | < 8.5E+00 | < 4.0E+00 | < 9.7E+00 | < 1.4E+01 | < 4.8E+00 | < 5.1E+00 | < 3.5E+01 | < 1.0E+01 |
| MW-112 | 5/12/2021 | pCi/L | < 3.8E+00 | < 4.3E+00 | < 1.1E+01 | < 4.9E+00 | < 8.5E+00 | < 4.5E+00 | < 7.4E+00 | < 1.4E+01 | < 4.8E+00 | < 4.3E+00 | < 3.0E+01 | < 1.0E+01 |
| MW-114 | 5/12/2021 | pCi/L | < 3.3E+00 | < 4.2E+00 | < 8.4E+00 | < 4.0E+00 | < 8.1E+00 | < 4.7E+00 | < 8.1E+00 | < 1.4E+01 | < 4.4E+00 | < 4.0E+00 | < 3.1E+01 | < 9.8E+00 |
| MW-116 | 5/12/2021 | pCi/L | < 2.9E+00 | < 3.6E+00 | < 7.1E+00 | < 3.4E+00 | < 6.8E+00 | < 3.9E+00 | < 5.8E+00 | < 1.1E+01 | < 3.2E+00 | < 3.2E+00 | < 2.4E+01 | < 7.5E+00 |
| MW-118 | 5/12/2021 | pCi/L | < 3.5E+00 | < 3.9E+00 | < 1.0E+01 | < 4.1E+00 | < 6.6E+00 | < 4.3E+00 | < 7.4E+00 | < 1.2E+01 | < 4.2E+00 | < 3.8E+00 | < 2.7E+01 | < 1.1E+01 |
| MW-120 | 5/12/2021 | pCi/L | < 6.0E+00 | < 5.2E+00 | < 1.5E+01 | < 7.1E+00 | < 1.6E+01 | < 7.6E+00 | < 9.5E+00 | < 1.3E+01 | < 7.7E+00 | < 6.4E+00 | < 3.2E+01 | < 9.5E+00 |
| MW-122R | 5/12/2021 | pCi/L | < 5.8E+00 | < 7.8E+00 | < 1.4E+01 | < 8.4E+00 | < 1.3E+01 | < 6.6E+00 | < 1.1E+01 | < 1.0E+01 | < 7.0E+00 | < 7.0E+00 | < 3.5E+01 | < 1.2E+01 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 8 of 36

Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

| Station ID | Sample Date | Units | MN-54 | CO-58 | FE-59 | CO-60 | ZN-65 | NB-95 | ZR-95 | I-131 | CS-134 | CS-137 | BA-140 | LA-140 |
|------------|-------------|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| MW-126 | 5/12/2021 | pCi/L | < 4.7E+00 | < 5.6E+00 | < 1.2E+01 | < 4.6E+00 | < 9.5E+00 | < 5.7E+00 | < 1.1E+01 | < 1.4E+01 | < 5.4E+00 | < 4.9E+00 | < 3.6E+01 | < 1.4E+01 |
| MW-128 | 5/12/2021 | pCi/L | < 7.6E+00 | < 5.8E+00 | < 1.7E+01 | < 6.8E+00 | < 1.3E+01 | < 7.5E+00 | < 1.3E+01 | < 1.2E+01 | < 6.4E+00 | < 8.4E+00 | < 3.2E+01 | < 1.0E+01 |
| MW-137 | 5/12/2021 | pCi/L | < 3.9E+00 | < 3.9E+00 | < 8.1E+00 | < 4.2E+00 | < 8.5E+00 | < 4.5E+00 | < 7.5E+00 | < 1.4E+01 | < 4.7E+00 | < 4.1E+00 | < 3.0E+01 | < 7.4E+00 |
| MW-139 | 5/12/2021 | pCi/L | < 6.3E+00 | < 4.3E+00 | < 1.0E+01 | < 7.9E+00 | < 1.2E+01 | < 6.1E+00 | < 1.3E+01 | < 1.1E+01 | < 7.3E+00 | < 6.4E+00 | < 2.8E+01 | < 1.2E+01 |
| MW-141 | 5/12/2021 | pCi/L | < 4.9E+00 | < 4.8E+00 | < 9.3E+00 | < 4.2E+00 | < 7.7E+00 | < 4.8E+00 | < 8.3E+00 | < 1.5E+01 | < 4.4E+00 | < 4.3E+00 | < 3.3E+01 | < 8.3E+00 |
| MW-151 | 5/12/2021 | pCi/L | < 6.7E+00 | < 6.2E+00 | < 1.4E+01 | < 2.6E+00 | < 1.0E+01 | < 6.4E+00 | < 1.0E+01 | < 1.1E+01 | < 5.8E+00 | < 5.4E+00 | < 2.6E+01 | < 6.4E+00 |
| MW-153 | 5/12/2021 | pCi/L | < 4.4E+00 | < 4.5E+00 | < 9.9E+00 | < 4.3E+00 | < 8.3E+00 | < 4.5E+00 | < 8.0E+00 | < 1.5E+01 | < 5.0E+00 | < 4.7E+00 | < 3.2E+01 | < 1.2E+01 |
| MW-155 | 5/12/2021 | pCi/L | < 4.0E+00 | < 4.4E+00 | < 1.1E+01 | < 4.9E+00 | < 9.3E+00 | < 4.2E+00 | < 7.9E+00 | < 1.4E+01 | < 5.2E+00 | < 4.6E+00 | < 3.4E+01 | < 1.1E+01 |
| MW-156 | 5/12/2021 | pCi/L | < 3.1E+00 | < 4.8E+00 | < 1.2E+01 | < 4.7E+00 | < 9.6E+00 | < 5.2E+00 | < 8.9E+00 | < 1.4E+01 | < 5.6E+00 | < 4.5E+00 | < 3.2E+01 | < 1.1E+01 |
| MW-157 | 5/12/2021 | pCi/L | < 3.9E+00 | < 4.0E+00 | < 9.1E+00 | < 4.4E+00 | < 8.3E+00 | < 4.5E+00 | < 7.9E+00 | < 1.4E+01 | < 4.2E+00 | < 4.4E+00 | < 2.9E+01 | < 9.7E+00 |
| MW-161 | 5/12/2021 | pCi/L | < 3.3E+00 | < 3.5E+00 | < 8.8E+00 | < 3.9E+00 | < 7.1E+00 | < 3.7E+00 | < 6.9E+00 | < 1.1E+01 | < 4.0E+00 | < 3.6E+00 | < 2.8E+01 | < 8.7E+00 |
| MW-164 | 5/12/2021 | pCi/L | < 3.6E+00 | < 3.6E+00 | < 7.5E+00 | < 3.6E+00 | < 7.0E+00 | < 3.7E+00 | < 7.0E+00 | < 6.2E+00 | < 3.9E+00 | < 4.6E+00 | < 1.9E+01 | < 6.1E+00 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 9 of 36

Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

| Station ID | Sample Date | Units | MN-54 | CO-58 | FE-59 | CO-60 | ZN-65 | NB-95 | ZR-95 | I-131 | CS-134 | CS-137 | BA-140 | LA-140 |
|------------|-------------|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| MW-164 | 5/12/2021 | pCi/L | < 5.3E+00 | < 6.3E+00 | < 1.2E+01 | < 6.6E+00 | < 1.1E+01 | < 4.8E+00 | < 8.6E+00 | < 8.5E+00 | < 5.9E+00 | < 5.4E+00 | < 2.7E+01 | < 7.6E+00 |
| MW-165 | 5/12/2021 | pCi/L | < 6.3E+00 | < 6.4E+00 | < 1.1E+01 | < 5.3E+00 | < 1.3E+01 | < 6.3E+00 | < 9.7E+00 | < 1.1E+01 | < 6.0E+00 | < 5.7E+00 | < 2.9E+01 | < 1.3E+01 |
| MW-170 | 5/12/2021 | pCi/L | < 4.8E+00 | < 3.6E+00 | < 7.7E+00 | < 5.9E+00 | < 9.2E+00 | < 4.2E+00 | < 7.2E+00 | < 8.9E+00 | < 5.8E+00 | < 4.4E+00 | < 2.3E+01 | < 7.2E+00 |
| MW-178 | 5/12/2021 | pCi/L | < 2.8E+00 | < 3.2E+00 | < 7.2E+00 | < 2.9E+00 | < 6.1E+00 | < 3.2E+00 | < 5.6E+00 | < 1.0E+01 | < 3.1E+00 | < 3.0E+00 | < 2.2E+01 | < 7.9E+00 |
| MW-179 | 5/12/2021 | pCi/L | < 2.8E+00 | < 3.0E+00 | < 7.5E+00 | < 3.0E+00 | < 6.2E+00 | < 2.9E+00 | < 5.6E+00 | < 9.6E+00 | < 3.1E+00 | < 2.9E+00 | < 2.0E+01 | < 7.0E+00 |
| MW-180 | 5/12/2021 | pCi/L | < 5.8E+00 | < 5.1E+00 | < 1.0E+01 | < 6.2E+00 | < 9.3E+00 | < 5.8E+00 | < 8.4E+00 | < 1.1E+01 | < 6.0E+00 | < 4.9E+00 | < 2.6E+01 | < 8.5E+00 |
| MW-185 | 5/12/2021 | pCi/L | < 5.2E+00 | < 6.2E+00 | < 1.4E+01 | < 5.4E+00 | < 1.3E+01 | < 6.6E+00 | < 1.0E+01 | < 1.0E+01 | < 7.8E+00 | < 5.7E+00 | < 2.8E+01 | < 1.2E+01 |
| MW-186 | 5/12/2021 | pCi/L | < 5.4E+00 | < 5.4E+00 | < 1.0E+01 | < 3.2E+00 | < 1.3E+01 | < 6.0E+00 | < 8.9E+00 | < 9.1E+00 | < 5.9E+00 | < 6.2E+00 | < 2.4E+01 | < 8.5E+00 |
| MW-187 | 5/12/2021 | pCi/L | < 6.1E+00 | < 7.3E+00 | < 1.7E+01 | < 8.4E+00 | < 1.7E+01 | < 7.8E+00 | < 1.0E+01 | < 1.1E+01 | < 6.0E+00 | < 5.7E+00 | < 2.6E+01 | < 9.2E+00 |
| MW-201 | 5/12/2021 | pCi/L | < 4.0E+00 | < 5.0E+00 | < 1.2E+01 | < 5.4E+00 | < 1.2E+01 | < 4.9E+00 | < 9.6E+00 | < 7.9E+00 | < 4.3E+00 | < 5.1E+00 | < 2.4E+01 | < 5.9E+00 |
| MW-203 | 5/12/2021 | pCi/L | < 5.8E+00 | < 5.1E+00 | < 1.4E+01 | < 7.9E+00 | < 4.4E+00 | < 6.3E+00 | < 1.1E+01 | < 1.0E+01 | < 7.0E+00 | < 7.3E+00 | < 3.0E+01 | < 1.3E+01 |
| MW-211 | 5/12/2021 | pCi/L | < 2.1E+00 | < 2.3E+00 | < 5.5E+00 | < 2.3E+00 | < 4.5E+00 | < 2.3E+00 | < 4.1E+00 | < 7.5E+00 | < 2.4E+00 | < 2.2E+00 | < 1.6E+01 | < 5.4E+00 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 10 of 36

Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

| Station ID | Sample Date | Unit s | MN-54 | CO-58 | FE-59 | CO-60 | ZN-65 | NB-95 | ZR-95 | I-131 | CS-134 | CS-137 | BA-140 | LA-140 |
|------------|-------------|--------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| MW-211 | 5/12/2021 | pCi/L | < 2.6E+00 | < 3.1E+00 | < 6.2E+00 | < 3.0E+00 | < 5.6E+00 | < 3.6E+00 | < 6.0E+00 | < 1.0E+01 | < 3.0E+00 | < 3.1E+00 | < 2.1E+01 | < 5.8E+00 |
| MW-213 | 5/12/2021 | pCi/L | < 4.6E+00 | < 5.5E+00 | < 9.9E+00 | < 5.5E+00 | < 1.0E+01 | < 5.4E+00 | < 1.0E+01 | < 8.9E+00 | < 5.7E+00 | < 5.3E+00 | < 2.7E+01 | < 9.8E+00 |
| MW-219 | 5/12/2021 | pCi/L | < 5.4E+00 | < 7.5E+00 | < 1.3E+01 | < 6.0E+00 | < 1.1E+01 | < 7.8E+00 | < 9.5E+00 | < 1.2E+01 | < 3.3E+00 | < 5.9E+00 | < 3.0E+01 | < 1.1E+01 |
| MW-221 | 5/12/2021 | pCi/L | < 3.6E+00 | < 4.0E+00 | < 8.3E+00 | < 3.6E+00 | < 7.6E+00 | < 3.9E+00 | < 7.1E+00 | < 1.3E+01 | < 3.9E+00 | < 3.8E+00 | < 2.6E+01 | < 8.6E+00 |
| MW-223 | 5/12/2021 | pCi/L | < 6.7E+00 | < 9.3E+00 | < 1.8E+01 | < 8.5E+00 | < 1.6E+01 | < 9.7E+00 | < 1.2E+01 | < 1.2E+01 | < 7.8E+00 | < 8.6E+00 | < 3.7E+01 | < 1.4E+01 |
| MW-231 | 5/12/2021 | pCi/L | < 5.9E+00 | < 6.0E+00 | < 1.3E+01 | < 6.3E+00 | < 1.1E+01 | < 5.8E+00 | < 9.2E+00 | < 1.1E+01 | < 6.4E+00 | < 5.6E+00 | < 2.8E+01 | < 1.1E+01 |
| MW-235 | 5/12/2021 | pCi/L | < 5.0E+00 | < 6.2E+00 | < 1.5E+01 | < 6.1E+00 | < 1.1E+01 | < 5.1E+00 | < 1.1E+01 | < 1.1E+01 | < 6.3E+00 | < 6.1E+00 | < 2.3E+01 | < 8.2E+00 |
| MW-235 | 5/12/2021 | pCi/L | < 5.0E+00 | < 4.8E+00 | < 6.4E+00 | < 6.8E+00 | < 1.5E+01 | < 6.9E+00 | < 1.0E+01 | < 1.0E+01 | < 6.7E+00 | < 5.8E+00 | < 2.7E+01 | < 1.0E+01 |
| PZ-01 | 5/12/2021 | pCi/L | < 2.8E+00 | < 2.5E+00 | < 5.5E+00 | < 3.0E+00 | < 5.0E+00 | < 2.7E+00 | < 4.7E+00 | < 8.8E+00 | < 2.8E+00 | < 2.6E+00 | < 1.8E+01 | < 5.7E+00 |
| PZ-01 | 5/12/2021 | pCi/L | < 3.7E+00 | < 5.0E+00 | < 9.9E+00 | < 4.1E+00 | < 8.4E+00 | < 4.7E+00 | < 8.8E+00 | < 1.5E+01 | < 4.8E+00 | < 4.0E+00 | < 3.3E+01 | < 1.0E+01 |
| PZ-03 | 5/12/2021 | pCi/L | < 7.9E+00 | < 7.9E+00 | < 1.3E+01 | < 5.1E+00 | < 1.3E+01 | < 7.1E+00 | < 1.1E+01 | < 1.1E+01 | < 8.2E+00 | < 5.7E+00 | < 2.7E+01 | < 4.4E+00 |
| MW-130 | 5/13/2021 | pCi/L | < 5.7E+00 | < 4.0E+00 | < 8.3E+00 | < 6.5E+00 | < 1.3E+01 | < 6.7E+00 | < 1.0E+01 | < 8.6E+00 | < 6.1E+00 | < 5.6E+00 | < 2.6E+01 | < 9.6E+00 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 11 of 36

Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

| Station ID | Sample Date | Unit s | MN-54 | CO-58 | FE-59 | CO-60 | ZN-65 | NB-95 | ZR-95 | I-131 | CS-134 | CS-137 | BA-140 | LA-140 |
|------------|-------------|--------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| MW-131 | 5/13/2021 | pCi/L | < 7.5E+00 | < 6.9E+00 | < 1.4E+01 | < 7.3E+00 | < 1.7E+01 | < 6.7E+00 | < 1.1E+01 | < 1.1E+01 | < 7.9E+00 | < 7.0E+00 | < 3.3E+01 | < 1.3E+01 |
| MW-132 | 5/13/2021 | pCi/L | < 7.6E+00 | < 8.4E+00 | < 1.7E+01 | < 9.3E+00 | < 1.7E+01 | < 8.5E+00 | < 1.1E+01 | < 1.2E+01 | < 8.2E+00 | < 6.6E+00 | < 3.6E+01 | < 1.0E+01 |
| MW-134 | 5/13/2021 | pCi/L | < 9.6E+00 | < 6.9E+00 | < 1.1E+01 | < 7.2E+00 | < 1.4E+01 | < 9.4E+00 | < 1.4E+01 | < 1.3E+01 | < 9.5E+00 | < 7.1E+00 | < 3.3E+01 | < 7.4E+00 |
| MW-134 | 5/13/2021 | pCi/L | < 4.9E+00 | < 7.5E+00 | < 1.2E+01 | < 6.2E+00 | < 1.1E+01 | < 6.7E+00 | < 8.0E+00 | < 9.2E+00 | < 6.0E+00 | < 5.2E+00 | < 2.4E+01 | < 7.9E+00 |
| MW-167 | 5/13/2021 | pCi/L | < 6.0E+00 | < 5.8E+00 | < 1.5E+01 | < 8.1E+00 | < 1.2E+01 | < 7.9E+00 | < 1.1E+01 | < 1.1E+01 | < 7.2E+00 | < 6.3E+00 | < 3.8E+01 | < 1.1E+01 |
| MW-169 | 5/13/2021 | pCi/L | < 7.4E+00 | < 7.0E+00 | < 1.2E+01 | < 6.7E+00 | < 1.4E+01 | < 8.6E+00 | < 1.1E+01 | < 1.2E+01 | < 7.8E+00 | < 6.6E+00 | < 3.6E+01 | < 1.4E+01 |
| MW-182 | 5/13/2021 | pCi/L | < 6.2E+00 | < 7.6E+00 | < 2.0E+01 | < 8.6E+00 | < 1.6E+01 | < 8.1E+00 | < 1.2E+01 | < 1.3E+01 | < 9.1E+00 | < 7.5E+00 | < 3.4E+01 | < 1.3E+01 |
| MW-205 | 5/13/2021 | pCi/L | < 5.8E+00 | < 6.9E+00 | < 1.2E+01 | < 7.2E+00 | < 1.6E+01 | < 8.3E+00 | < 1.1E+01 | < 1.3E+01 | < 8.6E+00 | < 7.4E+00 | < 3.3E+01 | < 9.6E+00 |
| MW-209 | 5/13/2021 | pCi/L | < 6.8E+00 | < 7.0E+00 | < 1.5E+01 | < 5.4E+00 | < 1.2E+01 | < 6.9E+00 | < 1.1E+01 | < 1.0E+01 | < 7.2E+00 | < 6.2E+00 | < 2.9E+01 | < 7.8E+00 |
| MW-215 | 5/13/2021 | pCi/L | < 7.2E+00 | < 6.5E+00 | < 1.0E+01 | < 4.5E+00 | < 1.4E+01 | < 7.0E+00 | < 1.1E+01 | < 1.1E+01 | < 8.5E+00 | < 7.4E+00 | < 3.3E+01 | < 8.1E+00 |
| MW-217 | 5/13/2021 | pCi/L | < 8.2E+00 | < 7.1E+00 | < 1.5E+01 | < 7.8E+00 | < 1.1E+01 | < 7.6E+00 | < 1.2E+01 | < 1.2E+01 | < 6.2E+00 | < 7.8E+00 | < 3.5E+01 | < 8.3E+00 |
| MW-225 | 5/13/2021 | pCi/L | < 7.0E+00 | < 6.0E+00 | < 1.2E+01 | < 7.3E+00 | < 1.6E+01 | < 7.3E+00 | < 1.3E+01 | < 1.2E+01 | < 7.9E+00 | < 6.7E+00 | < 3.4E+01 | < 1.4E+01 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 12 of 36

Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

| Station ID | Sample Date | Units | MN-54 | CO-58 | FE-59 | CO-60 | ZN-65 | NB-95 | ZR-95 | I-131 | CS-134 | CS-137 | BA-140 | LA-140 |
|------------|-------------|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| MW-227 | 5/13/2021 | pCi/L | < 6.9E+00 | < 7.8E+00 | < 1.8E+01 | < 7.9E+00 | < 1.6E+01 | < 8.6E+00 | < 1.3E+01 | < 1.3E+01 | < 8.5E+00 | < 8.6E+00 | < 3.8E+01 | < 1.5E+01 |
| MW-233 | 5/13/2021 | pCi/L | < 7.0E+00 | < 7.1E+00 | < 1.2E+01 | < 6.4E+00 | < 1.3E+01 | < 6.2E+00 | < 1.3E+01 | < 1.2E+01 | < 5.7E+00 | < 6.5E+00 | < 3.3E+01 | < 1.0E+01 |
| SW-101 | 5/13/2021 | pCi/L | < 5.1E+00 | < 3.7E+00 | < 1.2E+01 | < 4.1E+00 | < 1.0E+01 | < 5.5E+00 | < 1.0E+01 | < 9.0E+00 | < 5.0E+00 | < 5.1E+00 | < 2.4E+01 | < 9.0E+00 |
| SW-102 | 5/13/2021 | pCi/L | < 7.3E+00 | < 6.8E+00 | < 1.2E+01 | < 7.0E+00 | < 1.3E+01 | < 7.5E+00 | < 1.1E+01 | < 1.3E+01 | < 7.2E+00 | < 9.3E+00 | < 3.5E+01 | < 7.2E+00 |
| SW-103 | 5/13/2021 | pCi/L | < 7.3E+00 | < 7.6E+00 | < 1.3E+01 | < 7.4E+00 | < 1.1E+01 | < 6.9E+00 | < 1.1E+01 | < 7.1E+00 | < 7.3E+00 | < 5.4E+00 | < 2.6E+01 | < 9.6E+00 |
| SW-104 | 5/13/2021 | pCi/L | < 7.2E+00 | < 5.8E+00 | < 1.5E+01 | < 7.1E+00 | < 1.1E+01 | < 7.0E+00 | < 1.2E+01 | < 1.2E+01 | < 8.4E+00 | < 8.2E+00 | < 3.1E+01 | < 1.3E+01 |
| MW-188 | 6/22/2021 | pCi/L | < 4.7E+00 | < 5.1E+00 | < 1.1E+01 | < 2.8E+00 | < 1.2E+01 | < 4.6E+00 | < 7.2E+00 | < 6.2E+00 | < 5.3E+00 | < 4.4E+00 | < 1.9E+01 | < 7.1E+00 |
| MW-100 | 8/17/2021 | pCi/L | < 8.3E+00 | < 7.0E+00 | < 1.3E+01 | < 8.3E+00 | < 1.7E+01 | < 5.3E+00 | < 1.3E+01 | < 1.4E+01 | < 7.5E+00 | < 5.8E+00 | < 4.0E+01 | < 1.3E+01 |
| MW-124 | 8/17/2021 | pCi/L | < 1.8E+00 | < 2.1E+00 | < 4.9E+00 | < 1.7E+00 | < 3.4E+00 | < 2.1E+00 | < 3.7E+00 | < 1.3E+01 | < 1.9E+00 | < 1.7E+00 | < 2.1E+01 | < 6.5E+00 |
| MW-125 | 8/17/2021 | pCi/L | < 2.0E+00 | < 2.4E+00 | < 5.3E+00 | < 2.2E+00 | < 4.5E+00 | < 2.4E+00 | < 3.9E+00 | < 1.3E+01 | < 2.2E+00 | < 2.0E+00 | < 2.3E+01 | < 8.6E+00 |
| MW-126 | 8/17/2021 | pCi/L | < 1.5E+00 | < 1.8E+00 | < 4.5E+00 | < 1.8E+00 | < 3.4E+00 | < 1.8E+00 | < 3.1E+00 | < 1.1E+01 | < 1.8E+00 | < 1.6E+00 | < 1.9E+01 | < 6.8E+00 |
| MW-142 | 8/17/2021 | pCi/L | < 1.7E+00 | < 1.8E+00 | < 4.4E+00 | < 1.8E+00 | < 3.5E+00 | < 2.1E+00 | < 3.7E+00 | < 1.2E+01 | < 1.8E+00 | < 1.7E+00 | < 1.9E+01 | < 6.8E+00 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 13 of 36

Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

| Station ID | Sample Date | Units | MN-54 | CO-58 | FE-59 | CO-60 | ZN-65 | NB-95 | ZR-95 | I-131 | CS-134 | CS-137 | BA-140 | LA-140 |
|------------|-------------|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| MW-142 | 8/17/2021 | pCi/L | < 1.2E+00 | < 1.5E+00 | < 3.3E+00 | < 1.4E+00 | < 2.6E+00 | < 1.5E+00 | < 2.6E+00 | < 8.6E+00 | < 1.3E+00 | < 1.3E+00 | < 1.4E+01 | < 4.9E+00 |
| MW-144 | 8/17/2021 | pCi/L | < 5.5E+00 | < 7.6E+00 | < 1.3E+01 | < 5.9E+00 | < 1.5E+01 | < 7.0E+00 | < 1.2E+01 | < 1.4E+01 | < 8.7E+00 | < 7.3E+00 | < 3.6E+01 | < 1.2E+01 |
| MW-146 | 8/17/2021 | pCi/L | < 1.8E+00 | < 1.8E+00 | < 4.4E+00 | < 1.8E+00 | < 3.5E+00 | < 2.1E+00 | < 3.4E+00 | < 1.0E+01 | < 1.8E+00 | < 1.8E+00 | < 1.8E+01 | < 6.6E+00 |
| MW-147 | 8/17/2021 | pCi/L | < 2.1E+00 | < 2.5E+00 | < 5.2E+00 | < 2.0E+00 | < 4.3E+00 | < 2.4E+00 | < 4.2E+00 | < 1.5E+01 | < 2.3E+00 | < 2.2E+00 | < 2.6E+01 | < 7.6E+00 |
| MW-148 | 8/17/2021 | pCi/L | < 6.5E+00 | < 7.0E+00 | < 1.5E+01 | < 8.4E+00 | < 1.4E+01 | < 9.1E+00 | < 1.3E+01 | < 1.4E+01 | < 7.7E+00 | < 8.9E+00 | < 3.2E+01 | < 1.5E+01 |
| MW-151 | 8/17/2021 | pCi/L | < 6.3E+00 | < 5.9E+00 | < 1.1E+01 | < 7.7E+00 | < 1.6E+01 | < 8.3E+00 | < 1.2E+01 | < 1.4E+01 | < 6.1E+00 | < 7.4E+00 | < 3.7E+01 | < 9.4E+00 |
| MW-155 | 8/17/2021 | pCi/L | < 1.9E+00 | < 2.2E+00 | < 5.1E+00 | < 1.9E+00 | < 4.1E+00 | < 2.2E+00 | < 3.8E+00 | < 1.1E+01 | < 2.1E+00 | < 1.9E+00 | < 2.1E+01 | < 7.3E+00 |
| MW-156 | 8/17/2021 | pCi/L | < 1.8E+00 | < 2.1E+00 | < 4.7E+00 | < 1.8E+00 | < 3.6E+00 | < 2.1E+00 | < 3.7E+00 | < 1.2E+01 | < 2.0E+00 | < 1.8E+00 | < 1.9E+01 | < 6.5E+00 |
| MW-157 | 8/17/2021 | pCi/L | < 1.1E+00 | < 1.2E+00 | < 2.7E+00 | < 1.2E+00 | < 2.2E+00 | < 1.4E+00 | < 2.3E+00 | < 8.7E+00 | < 1.2E+00 | < 1.1E+00 | < 1.3E+01 | < 4.3E+00 |
| MW-158 | 8/17/2021 | pCi/L | < 1.3E+00 | < 1.4E+00 | < 3.0E+00 | < 1.4E+00 | < 2.7E+00 | < 1.5E+00 | < 2.5E+00 | < 7.7E+00 | < 1.3E+00 | < 1.2E+00 | < 1.4E+01 | < 4.3E+00 |
| MW-159 | 8/17/2021 | pCi/L | < 1.8E+00 | < 2.1E+00 | < 5.2E+00 | < 1.7E+00 | < 3.4E+00 | < 2.2E+00 | < 3.9E+00 | < 1.3E+01 | < 1.9E+00 | < 1.9E+00 | < 2.2E+01 | < 7.4E+00 |
| MW-162 | 8/17/2021 | pCi/L | < 6.8E+00 | < 4.5E+00 | < 1.2E+01 | < 5.6E+00 | < 1.6E+01 | < 6.9E+00 | < 1.1E+01 | < 9.7E+00 | < 7.1E+00 | < 6.3E+00 | < 3.2E+01 | < 1.0E+01 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 14 of 36

Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

| Station ID | Sample Date | Unit s | MN-54 | CO-58 | FE-59 | CO-60 | ZN-65 | NB-95 | ZR-95 | I-131 | CS-134 | CS-137 | BA-140 | LA-140 |
|------------|-------------|--------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| MW-164 | 8/17/2021 | pCi/L | < 6.1E+00 | < 5.2E+00 | < 1.1E+01 | < 5.2E+00 | < 1.1E+01 | < 6.2E+00 | < 1.1E+01 | < 1.2E+01 | < 7.2E+00 | < 5.6E+00 | < 2.7E+01 | < 1.1E+01 |
| MW-165 | 8/17/2021 | pCi/L | < 7.5E+00 | < 6.8E+00 | < 1.3E+01 | < 8.1E+00 | < 1.5E+01 | < 8.4E+00 | < 1.3E+01 | < 1.2E+01 | < 8.7E+00 | < 6.1E+00 | < 3.7E+01 | < 1.2E+01 |
| MW-178 | 8/17/2021 | pCi/L | < 1.8E+00 | < 2.1E+00 | < 5.0E+00 | < 1.9E+00 | < 3.6E+00 | < 2.2E+00 | < 3.6E+00 | < 1.2E+01 | < 2.1E+00 | < 1.8E+00 | < 2.0E+01 | < 6.9E+00 |
| MW-179 | 8/17/2021 | pCi/L | < 1.6E+00 | < 1.9E+00 | < 3.9E+00 | < 1.6E+00 | < 3.0E+00 | < 1.9E+00 | < 3.1E+00 | < 1.2E+01 | < 1.6E+00 | < 1.6E+00 | < 2.0E+01 | < 6.0E+00 |
| MW-185 | 8/17/2021 | pCi/L | < 6.2E+00 | < 5.3E+00 | < 9.5E+00 | < 6.6E+00 | < 9.3E+00 | < 4.8E+00 | < 1.1E+01 | < 1.0E+01 | < 4.6E+00 | < 4.9E+00 | < 2.3E+01 | < 1.1E+01 |
| MW-186 | 8/17/2021 | pCi/L | < 6.0E+00 | < 5.8E+00 | < 1.2E+01 | < 7.2E+00 | < 1.5E+01 | < 5.3E+00 | < 1.0E+01 | < 9.7E+00 | < 5.9E+00 | < 5.5E+00 | < 3.2E+01 | < 1.4E+01 |
| MW-187 | 8/17/2021 | pCi/L | < 7.8E+00 | < 7.0E+00 | < 1.9E+01 | < 7.1E+00 | < 1.1E+01 | < 7.7E+00 | < 1.4E+01 | < 1.4E+01 | < 1.1E+01 | < 8.4E+00 | < 4.2E+01 | < 1.3E+01 |
| MW-187 | 8/17/2021 | pCi/L | < 8.0E+00 | < 5.4E+00 | < 1.8E+01 | < 7.6E+00 | < 7.5E+00 | < 8.7E+00 | < 1.1E+01 | < 1.2E+01 | < 6.4E+00 | < 8.6E+00 | < 4.2E+01 | < 8.9E+00 |
| MW-188 | 8/17/2021 | pCi/L | < 5.7E+00 | < 6.2E+00 | < 1.1E+01 | < 6.5E+00 | < 1.2E+01 | < 6.0E+00 | < 1.1E+01 | < 1.1E+01 | < 6.0E+00 | < 5.7E+00 | < 3.3E+01 | < 1.0E+01 |
| MW-211 | 8/17/2021 | pCi/L | < 1.6E+00 | < 1.9E+00 | < 4.3E+00 | < 1.5E+00 | < 3.4E+00 | < 1.8E+00 | < 3.3E+00 | < 1.3E+01 | < 1.7E+00 | < 1.7E+00 | < 2.0E+01 | < 6.4E+00 |
| MW-211 | 8/17/2021 | pCi/L | < 2.0E+00 | < 2.3E+00 | < 5.2E+00 | < 1.9E+00 | < 3.8E+00 | < 2.3E+00 | < 4.0E+00 | < 1.5E+01 | < 2.0E+00 | < 2.0E+00 | < 2.3E+01 | < 6.8E+00 |
| MW-110 | 8/18/2021 | pCi/L | < 1.6E+00 | < 1.9E+00 | < 4.5E+00 | < 1.6E+00 | < 3.5E+00 | < 2.0E+00 | < 3.5E+00 | < 1.2E+01 | < 1.8E+00 | < 1.6E+00 | < 2.0E+01 | < 7.0E+00 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 15 of 36

Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

| Station ID | Sample Date | Units | MN-54 | CO-58 | FE-59 | CO-60 | ZN-65 | NB-95 | ZR-95 | I-131 | CS-134 | CS-137 | BA-140 | LA-140 |
|------------|-------------|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| MW-112 | 8/18/2021 | pCi/L | < 1.1E+00 | < 1.3E+00 | < 2.9E+00 | < 1.3E+00 | < 2.1E+00 | < 1.3E+00 | < 2.4E+00 | < 8.7E+00 | < 1.2E+00 | < 1.1E+00 | < 1.4E+01 | < 4.7E+00 |
| MW-114 | 8/18/2021 | pCi/L | < 1.8E+00 | < 1.8E+00 | < 4.6E+00 | < 1.8E+00 | < 3.0E+00 | < 2.1E+00 | < 3.3E+00 | < 1.2E+01 | < 1.8E+00 | < 1.6E+00 | < 1.9E+01 | < 6.6E+00 |
| MW-116 | 8/18/2021 | pCi/L | < 1.6E+00 | < 1.9E+00 | < 4.4E+00 | < 1.5E+00 | < 3.4E+00 | < 2.0E+00 | < 3.3E+00 | < 1.3E+01 | < 1.8E+00 | < 1.6E+00 | < 2.0E+01 | < 6.6E+00 |
| MW-118 | 8/18/2021 | pCi/L | < 1.8E+00 | < 2.1E+00 | < 4.7E+00 | < 1.6E+00 | < 3.6E+00 | < 2.2E+00 | < 4.1E+00 | < 1.3E+01 | < 2.0E+00 | < 2.0E+00 | < 2.1E+01 | < 7.9E+00 |
| MW-137 | 8/18/2021 | pCi/L | < 1.6E+00 | < 1.8E+00 | < 4.1E+00 | < 1.7E+00 | < 3.0E+00 | < 2.0E+00 | < 3.3E+00 | < 1.2E+01 | < 1.7E+00 | < 1.6E+00 | < 2.0E+01 | < 6.4E+00 |
| MW-139 | 8/18/2021 | pCi/L | < 1.8E+00 | < 2.0E+00 | < 4.7E+00 | < 1.7E+00 | < 3.6E+00 | < 2.2E+00 | < 3.3E+00 | < 1.2E+01 | < 2.0E+00 | < 1.8E+00 | < 2.0E+01 | < 6.5E+00 |
| MW-141 | 8/18/2021 | pCi/L | < 2.0E+00 | < 2.3E+00 | < 5.4E+00 | < 2.2E+00 | < 4.1E+00 | < 2.4E+00 | < 4.3E+00 | < 1.4E+01 | < 2.1E+00 | < 1.9E+00 | < 2.3E+01 | < 6.8E+00 |
| MW-153 | 8/18/2021 | pCi/L | < 1.9E+00 | < 2.1E+00 | < 4.9E+00 | < 2.0E+00 | < 3.6E+00 | < 2.4E+00 | < 4.2E+00 | < 1.4E+01 | < 2.1E+00 | < 2.1E+00 | < 2.5E+01 | < 6.7E+00 |
| MW-161 | 8/18/2021 | pCi/L | < 1.7E+00 | < 2.1E+00 | < 4.8E+00 | < 1.7E+00 | < 3.5E+00 | < 2.1E+00 | < 3.6E+00 | < 1.2E+01 | < 2.0E+00 | < 1.9E+00 | < 2.0E+01 | < 5.9E+00 |
| MW-170 | 8/18/2021 | pCi/L | < 7.1E+00 | < 7.1E+00 | < 1.1E+01 | < 7.5E+00 | < 1.2E+01 | < 6.4E+00 | < 1.2E+01 | < 1.1E+01 | < 9.2E+00 | < 7.7E+00 | < 3.8E+01 | < 1.0E+01 |
| MW-182 | 8/18/2021 | pCi/L | < 7.2E+00 | < 6.7E+00 | < 1.8E+01 | < 6.9E+00 | < 1.7E+01 | < 7.6E+00 | < 8.0E+00 | < 1.4E+01 | < 9.0E+00 | < 6.5E+00 | < 3.4E+01 | < 8.7E+00 |
| MW-209 | 8/18/2021 | pCi/L | < 6.7E+00 | < 8.4E+00 | < 1.4E+01 | < 8.5E+00 | < 1.8E+01 | < 6.1E+00 | < 1.3E+01 | < 1.1E+01 | < 8.0E+00 | < 7.0E+00 | < 3.8E+01 | < 1.3E+01 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 16 of 36

Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

| Station ID | Sample Date | Units | MN-54 | CO-58 | FE-59 | CO-60 | ZN-65 | NB-95 | ZR-95 | I-131 | CS-134 | CS-137 | BA-140 | LA-140 |
|------------|-------------|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| MW-209 | 8/18/2021 | pCi/L | < 7.3E+00 | < 8.3E+00 | < 1.5E+01 | < 6.3E+00 | < 1.7E+01 | < 7.9E+00 | < 1.1E+01 | < 1.3E+01 | < 8.7E+00 | < 6.5E+00 | < 2.9E+01 | < 8.8E+00 |
| MW-221 | 8/18/2021 | pCi/L | < 1.6E+00 | < 1.8E+00 | < 4.6E+00 | < 1.9E+00 | < 3.4E+00 | < 2.0E+00 | < 3.3E+00 | < 1.1E+01 | < 1.7E+00 | < 1.6E+00 | < 1.8E+01 | < 6.8E+00 |
| MW-221 | 8/18/2021 | pCi/L | < 1.7E+00 | < 2.0E+00 | < 4.5E+00 | < 1.6E+00 | < 3.5E+00 | < 2.1E+00 | < 3.8E+00 | < 1.4E+01 | < 1.9E+00 | < 1.8E+00 | < 2.3E+01 | < 6.7E+00 |
| MW-223 | 8/18/2021 | pCi/L | < 5.9E+00 | < 5.8E+00 | < 1.2E+01 | < 3.8E+00 | < 7.1E+00 | < 6.3E+00 | < 8.6E+00 | < 1.0E+01 | < 7.3E+00 | < 6.6E+00 | < 3.3E+01 | < 1.2E+01 |
| PZ-01 | 8/18/2021 | pCi/L | < 1.8E+00 | < 2.2E+00 | < 4.6E+00 | < 1.9E+00 | < 4.0E+00 | < 2.3E+00 | < 3.9E+00 | < 1.4E+01 | < 2.1E+00 | < 2.0E+00 | < 2.4E+01 | < 7.1E+00 |
| SW-101 | 8/18/2021 | pCi/L | < 7.1E+00 | < 7.3E+00 | < 1.6E+01 | < 9.0E+00 | < 1.6E+01 | < 6.6E+00 | < 1.0E+01 | < 1.2E+01 | < 9.0E+00 | < 8.3E+00 | < 3.6E+01 | < 9.8E+00 |
| SW-103 | 8/18/2021 | pCi/L | < 5.8E+00 | < 5.4E+00 | < 1.3E+01 | < 5.4E+00 | < 9.5E+00 | < 6.0E+00 | < 1.0E+01 | < 8.8E+00 | < 6.2E+00 | < 5.9E+00 | < 2.6E+01 | < 6.7E+00 |
| SW-104 | 8/18/2021 | pCi/L | < 5.3E+00 | < 5.5E+00 | < 1.2E+01 | < 5.3E+00 | < 1.0E+01 | < 4.8E+00 | < 1.1E+01 | < 1.0E+01 | < 6.1E+00 | < 5.6E+00 | < 2.8E+01 | < 1.0E+01 |
| MW-110 | 11/2/2021 | pCi/L | < 1.7E+00 | < 2.0E+00 | < 4.3E+00 | < 2.1E+00 | < 3.4E+00 | < 2.2E+00 | < 3.4E+00 | < 8.1E+00 | < 2.0E+00 | < 1.8E+00 | < 1.7E+01 | < 6.2E+00 |
| MW-112 | 11/2/2021 | pCi/L | < 1.9E+00 | < 2.1E+00 | < 4.7E+00 | < 1.9E+00 | < 3.7E+00 | < 2.2E+00 | < 3.9E+00 | < 9.2E+00 | < 2.2E+00 | < 2.1E+00 | < 1.7E+01 | < 5.2E+00 |
| MW-112 | 11/2/2021 | pCi/L | < 1.6E+00 | < 1.9E+00 | < 4.3E+00 | < 1.8E+00 | < 3.5E+00 | < 1.9E+00 | < 3.4E+00 | < 7.3E+00 | < 1.9E+00 | < 1.7E+00 | < 1.5E+01 | < 5.0E+00 |
| MW-114 | 11/2/2021 | pCi/L | < 2.0E+00 | < 2.1E+00 | < 4.8E+00 | < 1.9E+00 | < 3.8E+00 | < 2.3E+00 | < 3.7E+00 | < 9.0E+00 | < 2.1E+00 | < 2.0E+00 | < 1.7E+01 | < 5.4E+00 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 17 of 36

Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

| Station ID | Sample Date | Units | MN-54 | CO-58 | FE-59 | CO-60 | ZN-65 | NB-95 | ZR-95 | I-131 | CS-134 | CS-137 | BA-140 | LA-140 |
|------------|-------------|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| MW-116 | 11/2/2021 | pCi/L | < 2.0E+00 | < 2.1E+00 | < 4.8E+00 | < 1.9E+00 | < 3.8E+00 | < 2.2E+00 | < 3.9E+00 | < 8.2E+00 | < 2.1E+00 | < 1.9E+00 | < 1.6E+01 | < 5.7E+00 |
| MW-118 | 11/2/2021 | pCi/L | < 1.8E+00 | < 1.8E+00 | < 4.1E+00 | < 2.0E+00 | < 3.7E+00 | < 2.2E+00 | < 3.7E+00 | < 7.8E+00 | < 2.0E+00 | < 1.8E+00 | < 1.6E+01 | < 5.0E+00 |
| MW-124 | 11/2/2021 | pCi/L | < 1.9E+00 | < 2.1E+00 | < 4.6E+00 | < 2.2E+00 | < 4.0E+00 | < 2.2E+00 | < 3.9E+00 | < 9.0E+00 | < 2.1E+00 | < 2.1E+00 | < 1.6E+01 | < 4.7E+00 |
| MW-125 | 11/2/2021 | pCi/L | < 1.6E+00 | < 1.8E+00 | < 4.2E+00 | < 1.7E+00 | < 3.5E+00 | < 1.8E+00 | < 3.2E+00 | < 7.4E+00 | < 1.9E+00 | < 1.6E+00 | < 1.5E+01 | < 4.6E+00 |
| MW-137 | 11/2/2021 | pCi/L | < 1.8E+00 | < 2.1E+00 | < 4.4E+00 | < 1.9E+00 | < 3.8E+00 | < 2.2E+00 | < 3.6E+00 | < 7.5E+00 | < 2.1E+00 | < 2.0E+00 | < 1.6E+01 | < 5.2E+00 |
| MW-139 | 11/2/2021 | pCi/L | < 1.7E+00 | < 1.9E+00 | < 4.3E+00 | < 1.8E+00 | < 3.3E+00 | < 2.0E+00 | < 3.4E+00 | < 7.5E+00 | < 1.9E+00 | < 1.7E+00 | < 1.4E+01 | < 4.7E+00 |
| MW-141 | 11/2/2021 | pCi/L | < 1.7E+00 | < 1.9E+00 | < 4.1E+00 | < 1.7E+00 | < 3.6E+00 | < 2.0E+00 | < 3.5E+00 | < 7.4E+00 | < 2.0E+00 | < 1.8E+00 | < 1.4E+01 | < 4.5E+00 |
| MW-142 | 11/2/2021 | pCi/L | < 1.7E+00 | < 2.0E+00 | < 3.9E+00 | < 2.0E+00 | < 3.6E+00 | < 2.0E+00 | < 3.4E+00 | < 6.9E+00 | < 1.7E+00 | < 1.6E+00 | < 1.4E+01 | < 5.0E+00 |
| MW-144 | 11/2/2021 | pCi/L | < 6.0E+00 | < 6.8E+00 | < 1.2E+01 | < 5.1E+00 | < 1.2E+01 | < 6.0E+00 | < 8.9E+00 | < 1.3E+01 | < 6.5E+00 | < 7.0E+00 | < 3.9E+01 | < 7.7E+00 |
| MW-146 | 11/2/2021 | pCi/L | < 1.8E+00 | < 2.0E+00 | < 4.3E+00 | < 1.8E+00 | < 3.7E+00 | < 1.9E+00 | < 3.5E+00 | < 8.1E+00 | < 2.0E+00 | < 1.7E+00 | < 1.6E+01 | < 5.1E+00 |
| MW-147 | 11/2/2021 | pCi/L | < 1.5E+00 | < 1.8E+00 | < 3.5E+00 | < 1.7E+00 | < 3.1E+00 | < 1.8E+00 | < 3.1E+00 | < 7.1E+00 | < 1.7E+00 | < 1.6E+00 | < 1.3E+01 | < 4.4E+00 |
| MW-148 | 11/2/2021 | pCi/L | < 5.9E+00 | < 4.6E+00 | < 1.2E+01 | < 6.7E+00 | < 9.1E+00 | < 5.6E+00 | < 9.6E+00 | < 9.5E+00 | < 5.8E+00 | < 6.1E+00 | < 3.1E+01 | < 1.1E+01 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 18 of 36

Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

| Station ID | Sample Date | Units | MN-54 | CO-58 | FE-59 | CO-60 | ZN-65 | NB-95 | ZR-95 | I-131 | CS-134 | CS-137 | BA-140 | LA-140 |
|------------|-------------|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| MW-155 | 11/2/2021 | pCi/L | < 1.4E+00 | < 1.5E+00 | < 3.3E+00 | < 1.5E+00 | < 2.8E+00 | < 1.5E+00 | < 2.7E+00 | < 5.8E+00 | < 1.5E+00 | < 1.5E+00 | < 1.1E+01 | < 4.2E+00 |
| MW-156 | 11/2/2021 | pCi/L | < 1.8E+00 | < 2.1E+00 | < 4.8E+00 | < 2.0E+00 | < 4.0E+00 | < 2.2E+00 | < 3.8E+00 | < 8.4E+00 | < 2.0E+00 | < 2.1E+00 | < 1.6E+01 | < 5.4E+00 |
| MW-158 | 11/2/2021 | pCi/L | < 1.2E+00 | < 1.4E+00 | < 3.1E+00 | < 1.4E+00 | < 2.7E+00 | < 1.5E+00 | < 2.4E+00 | < 6.6E+00 | < 1.3E+00 | < 1.2E+00 | < 1.2E+01 | < 3.9E+00 |
| MW-159 | 11/2/2021 | pCi/L | < 1.6E+00 | < 2.0E+00 | < 4.2E+00 | < 1.7E+00 | < 3.3E+00 | < 2.1E+00 | < 3.4E+00 | < 8.9E+00 | < 1.8E+00 | < 1.7E+00 | < 1.7E+01 | < 5.5E+00 |
| MW-162 | 11/2/2021 | pCi/L | < 4.3E+00 | < 4.6E+00 | < 8.2E+00 | < 5.3E+00 | < 8.8E+00 | < 5.5E+00 | < 8.3E+00 | < 1.1E+01 | < 5.3E+00 | < 3.9E+00 | < 2.9E+01 | < 1.0E+01 |
| MW-172 | 11/2/2021 | pCi/L | < 5.6E+00 | < 4.8E+00 | < 1.2E+01 | < 5.9E+00 | < 1.2E+01 | < 5.9E+00 | < 1.1E+01 | < 1.2E+01 | < 5.8E+00 | < 5.9E+00 | < 3.2E+01 | < 1.1E+01 |
| MW-174 | 11/2/2021 | pCi/L | < 6.6E+00 | < 6.7E+00 | < 1.2E+01 | < 7.2E+00 | < 1.3E+01 | < 8.4E+00 | < 1.1E+01 | < 1.4E+01 | < 7.7E+00 | < 6.3E+00 | < 3.6E+01 | < 1.3E+01 |
| MW-185 | 11/2/2021 | pCi/L | < 6.5E+00 | < 5.5E+00 | < 1.5E+01 | < 7.8E+00 | < 1.3E+01 | < 7.7E+00 | < 1.4E+01 | < 1.0E+01 | < 6.5E+00 | < 7.4E+00 | < 3.1E+01 | < 1.1E+01 |
| MW-188 | 11/2/2021 | pCi/L | < 6.9E+00 | < 6.6E+00 | < 1.5E+01 | < 7.7E+00 | < 1.2E+01 | < 6.1E+00 | < 1.0E+01 | < 1.1E+01 | < 7.3E+00 | < 6.4E+00 | < 3.5E+01 | < 1.1E+01 |
| MW-205 | 11/2/2021 | pCi/L | < 4.9E+00 | < 5.7E+00 | < 1.3E+01 | < 5.4E+00 | < 1.0E+01 | < 5.9E+00 | < 9.1E+00 | < 1.3E+01 | < 5.4E+00 | < 5.7E+00 | < 2.7E+01 | < 1.2E+01 |
| MW-205 | 11/2/2021 | pCi/L | < 5.5E+00 | < 5.7E+00 | < 1.4E+01 | < 5.8E+00 | < 1.4E+01 | < 6.6E+00 | < 9.4E+00 | < 1.1E+01 | < 5.7E+00 | < 5.6E+00 | < 3.3E+01 | < 1.3E+01 |
| MW-221 | 11/2/2021 | pCi/L | < 2.1E+00 | < 2.2E+00 | < 4.8E+00 | < 2.1E+00 | < 4.2E+00 | < 2.2E+00 | < 3.9E+00 | < 7.9E+00 | < 2.2E+00 | < 2.0E+00 | < 1.7E+01 | < 6.2E+00 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 19 of 36

Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

| Station ID | Sample Date | Units | MN-54 | CO-58 | FE-59 | CO-60 | ZN-65 | NB-95 | ZR-95 | I-131 | CS-134 | CS-137 | BA-140 | LA-140 |
|------------|-------------|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| MW-221 | 11/2/2021 | pCi/L | < 1.7E+00 | < 2.0E+00 | < 4.7E+00 | < 1.8E+00 | < 3.6E+00 | < 2.1E+00 | < 3.5E+00 | < 6.6E+00 | < 2.0E+00 | < 1.8E+00 | < 1.5E+01 | < 4.8E+00 |
| MW-227 | 11/2/2021 | pCi/L | < 4.4E+00 | < 6.1E+00 | < 1.7E+01 | < 6.1E+00 | < 1.2E+01 | < 6.5E+00 | < 1.1E+01 | < 1.4E+01 | < 7.3E+00 | < 5.2E+00 | < 2.6E+01 | < 8.7E+00 |
| PZ-01 | 11/2/2021 | pCi/L | < 9.9E-01 | < 1.2E+00 | < 2.6E+00 | < 1.3E+00 | < 2.3E+00 | < 1.3E+00 | < 2.3E+00 | < 5.1E+00 | < 1.2E+00 | < 1.1E+00 | < 9.9E+00 | < 3.4E+00 |
| MW-04 | 11/3/2021 | pCi/L | < 4.0E+00 | < 4.8E+00 | < 8.7E+00 | < 5.0E+00 | < 9.0E+00 | < 5.7E+00 | < 7.9E+00 | < 1.3E+01 | < 5.3E+00 | < 4.6E+00 | < 2.9E+01 | < 1.2E+01 |
| MW-05 | 11/3/2021 | pCi/L | < 2.1E+00 | < 2.5E+00 | < 4.5E+00 | < 2.5E+00 | < 4.2E+00 | < 2.5E+00 | < 4.0E+00 | < 4.4E+00 | < 2.4E+00 | < 2.5E+00 | < 1.2E+01 | < 3.8E+00 |
| MW-08 | 11/3/2021 | pCi/L | < 2.3E+00 | < 2.5E+00 | < 5.3E+00 | < 2.7E+00 | < 4.6E+00 | < 2.7E+00 | < 4.4E+00 | < 5.1E+00 | < 2.8E+00 | < 2.7E+00 | < 1.3E+01 | < 4.0E+00 |
| MW-100 | 11/3/2021 | pCi/L | < 8.1E+00 | < 3.9E+00 | < 1.4E+01 | < 6.1E+00 | < 1.3E+01 | < 6.7E+00 | < 9.6E+00 | < 1.0E+01 | < 7.3E+00 | < 6.3E+00 | < 2.7E+01 | < 1.3E+01 |
| MW-103 | 11/3/2021 | pCi/L | < 8.2E+00 | < 8.8E+00 | < 1.8E+01 | < 9.3E+00 | < 1.2E+01 | < 9.8E+00 | < 1.8E+01 | < 1.4E+01 | < 1.0E+01 | < 9.4E+00 | < 4.7E+01 | < 1.3E+01 |
| MW-104 | 11/3/2021 | pCi/L | < 7.2E+00 | < 9.0E+00 | < 1.5E+01 | < 7.5E+00 | < 1.9E+01 | < 8.9E+00 | < 1.1E+01 | < 1.3E+01 | < 9.3E+00 | < 7.8E+00 | < 4.2E+01 | < 1.3E+01 |
| MW-106 | 11/3/2021 | pCi/L | < 1.7E+00 | < 1.9E+00 | < 3.6E+00 | < 1.9E+00 | < 3.9E+00 | < 1.9E+00 | < 3.1E+00 | < 3.8E+00 | < 1.9E+00 | < 1.9E+00 | < 1.0E+01 | < 2.9E+00 |
| MW-106 | 11/3/2021 | pCi/L | < 4.7E+00 | < 4.9E+00 | < 8.6E+00 | < 5.6E+00 | < 8.0E+00 | < 4.6E+00 | < 1.1E+01 | < 9.8E+00 | < 5.0E+00 | < 6.0E+00 | < 2.5E+01 | < 8.9E+00 |
| MW-107 | 11/3/2021 | pCi/L | < 2.4E+00 | < 2.6E+00 | < 5.4E+00 | < 2.4E+00 | < 5.3E+00 | < 2.7E+00 | < 4.3E+00 | < 4.4E+00 | < 2.7E+00 | < 2.6E+00 | < 1.2E+01 | < 4.1E+00 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 20 of 36

Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

| Station ID | Sample Date | Units | MN-54 | CO-58 | FE-59 | CO-60 | ZN-65 | NB-95 | ZR-95 | I-131 | CS-134 | CS-137 | BA-140 | LA-140 |
|------------|-------------|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| MW-108 | 11/3/2021 | pCi/L | < 4.5E+00 | < 5.5E+00 | < 1.4E+01 | < 8.4E+00 | < 1.3E+01 | < 6.9E+00 | < 1.3E+01 | < 1.3E+01 | < 9.6E+00 | < 6.6E+00 | < 3.4E+01 | < 1.3E+01 |
| MW-122R | 11/3/2021 | pCi/L | < 5.0E+00 | < 5.4E+00 | < 1.0E+01 | < 7.8E+00 | < 1.2E+01 | < 5.8E+00 | < 1.0E+01 | < 1.5E+01 | < 5.9E+00 | < 6.6E+00 | < 3.7E+01 | < 1.1E+01 |
| MW-126 | 11/3/2021 | pCi/L | < 2.1E+00 | < 2.3E+00 | < 5.4E+00 | < 2.0E+00 | < 4.4E+00 | < 2.2E+00 | < 4.2E+00 | < 1.1E+01 | < 2.4E+00 | < 2.2E+00 | < 2.0E+01 | < 6.0E+00 |
| MW-128 | 11/3/2021 | pCi/L | < 6.9E+00 | < 6.2E+00 | < 1.5E+01 | < 6.8E+00 | < 1.2E+01 | < 6.5E+00 | < 1.1E+01 | < 1.4E+01 | < 8.4E+00 | < 8.0E+00 | < 3.3E+01 | < 1.0E+01 |
| MW-130 | 11/3/2021 | pCi/L | < 5.2E+00 | < 6.4E+00 | < 1.3E+01 | < 6.7E+00 | < 1.2E+01 | < 4.7E+00 | < 1.5E+01 | < 9.0E+00 | < 7.8E+00 | < 4.9E+00 | < 2.7E+01 | < 9.4E+00 |
| MW-131 | 11/3/2021 | pCi/L | < 6.0E+00 | < 5.7E+00 | < 1.3E+01 | < 6.2E+00 | < 1.3E+01 | < 5.3E+00 | < 9.3E+00 | < 1.3E+01 | < 5.3E+00 | < 4.5E+00 | < 4.2E+01 | < 1.2E+01 |
| MW-14 | 11/3/2021 | pCi/L | < 2.4E+00 | < 2.2E+00 | < 4.6E+00 | < 2.3E+00 | < 4.6E+00 | < 2.4E+00 | < 3.9E+00 | < 4.5E+00 | < 2.4E+00 | < 2.3E+00 | < 1.1E+01 | < 4.0E+00 |
| MW-151 | 11/3/2021 | pCi/L | < 4.4E+00 | < 3.4E+00 | < 1.1E+01 | < 4.4E+00 | < 1.0E+01 | < 4.1E+00 | < 7.3E+00 | < 1.3E+01 | < 5.1E+00 | < 4.7E+00 | < 2.9E+01 | < 7.9E+00 |
| MW-153 | 11/3/2021 | pCi/L | < 2.1E+00 | < 2.6E+00 | < 5.6E+00 | < 2.4E+00 | < 4.7E+00 | < 2.7E+00 | < 4.2E+00 | < 9.9E+00 | < 2.2E+00 | < 2.3E+00 | < 2.0E+01 | < 6.5E+00 |
| MW-157 | 11/3/2021 | pCi/L | < 1.9E+00 | < 2.1E+00 | < 4.5E+00 | < 2.0E+00 | < 4.0E+00 | < 2.3E+00 | < 3.7E+00 | < 9.5E+00 | < 2.1E+00 | < 2.0E+00 | < 1.8E+01 | < 5.9E+00 |
| MW-161 | 11/3/2021 | pCi/L | < 1.6E+00 | < 1.9E+00 | < 4.3E+00 | < 1.8E+00 | < 3.7E+00 | < 1.8E+00 | < 3.4E+00 | < 8.8E+00 | < 1.9E+00 | < 1.7E+00 | < 1.6E+01 | < 5.0E+00 |
| MW-164 | 11/3/2021 | pCi/L | < 6.1E+00 | < 7.4E+00 | < 9.0E+00 | < 7.2E+00 | < 1.4E+01 | < 7.1E+00 | < 8.6E+00 | < 1.2E+01 | < 7.4E+00 | < 5.4E+00 | < 3.4E+01 | < 1.2E+01 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 21 of 36

Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

| Station ID | Sample Date | Units | MN-54 | CO-58 | FE-59 | CO-60 | ZN-65 | NB-95 | ZR-95 | I-131 | CS-134 | CS-137 | BA-140 | LA-140 |
|------------|-------------|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| MW-165 | 11/3/2021 | pCi/L | < 6.5E+00 | < 5.4E+00 | < 1.0E+01 | < 6.2E+00 | < 1.4E+01 | < 7.1E+00 | < 1.2E+01 | < 1.2E+01 | < 6.7E+00 | < 6.5E+00 | < 3.6E+01 | < 8.2E+00 |
| MW-167 | 11/3/2021 | pCi/L | < 6.3E+00 | < 7.2E+00 | < 1.5E+01 | < 6.0E+00 | < 1.6E+01 | < 7.4E+00 | < 1.0E+01 | < 1.3E+01 | < 7.8E+00 | < 6.8E+00 | < 3.0E+01 | < 1.0E+01 |
| MW-170 | 11/3/2021 | pCi/L | < 5.9E+00 | < 6.0E+00 | < 1.3E+01 | < 5.7E+00 | < 1.3E+01 | < 7.2E+00 | < 1.2E+01 | < 1.4E+01 | < 8.4E+00 | < 7.1E+00 | < 3.7E+01 | < 1.2E+01 |
| MW-178 | 11/3/2021 | pCi/L | < 1.0E+00 | < 1.3E+00 | < 2.7E+00 | < 1.1E+00 | < 2.1E+00 | < 1.3E+00 | < 2.3E+00 | < 5.9E+00 | < 1.3E+00 | < 1.2E+00 | < 1.0E+01 | < 3.7E+00 |
| MW-178 | 11/3/2021 | pCi/L | < 2.1E+00 | < 2.4E+00 | < 5.4E+00 | < 2.1E+00 | < 4.6E+00 | < 2.6E+00 | < 4.3E+00 | < 9.5E+00 | < 2.4E+00 | < 2.2E+00 | < 2.0E+01 | < 6.6E+00 |
| MW-179 | 11/3/2021 | pCi/L | < 1.5E+00 | < 1.7E+00 | < 3.9E+00 | < 1.6E+00 | < 3.1E+00 | < 1.9E+00 | < 3.1E+00 | < 7.7E+00 | < 1.7E+00 | < 1.6E+00 | < 1.5E+01 | < 4.3E+00 |
| MW-18 | 11/3/2021 | pCi/L | < 2.4E+00 | < 2.7E+00 | < 5.6E+00 | < 2.7E+00 | < 4.7E+00 | < 2.8E+00 | < 4.9E+00 | < 5.0E+00 | < 2.6E+00 | < 2.9E+00 | < 1.3E+01 | < 5.2E+00 |
| MW-180 | 11/3/2021 | pCi/L | < 7.6E+00 | < 6.3E+00 | < 1.8E+01 | < 9.0E+00 | < 1.5E+01 | < 6.6E+00 | < 1.2E+01 | < 1.3E+01 | < 9.8E+00 | < 6.2E+00 | < 3.7E+01 | < 1.5E+01 |
| MW-182 | 11/3/2021 | pCi/L | < 4.2E+00 | < 3.7E+00 | < 9.2E+00 | < 4.3E+00 | < 9.7E+00 | < 4.9E+00 | < 7.8E+00 | < 1.2E+01 | < 4.8E+00 | < 5.1E+00 | < 3.0E+01 | < 7.3E+00 |
| MW-186 | 11/3/2021 | pCi/L | < 7.4E+00 | < 7.5E+00 | < 1.6E+01 | < 6.7E+00 | < 1.3E+01 | < 6.1E+00 | < 1.1E+01 | < 1.2E+01 | < 6.3E+00 | < 7.0E+00 | < 3.3E+01 | < 1.0E+01 |
| MW-187 | 11/3/2021 | pCi/L | < 6.3E+00 | < 5.9E+00 | < 1.3E+01 | < 7.6E+00 | < 1.6E+01 | < 6.3E+00 | < 1.2E+01 | < 1.2E+01 | < 7.4E+00 | < 6.1E+00 | < 3.2E+01 | < 8.5E+00 |
| MW-201 | 11/3/2021 | pCi/L | < 3.5E+00 | < 4.2E+00 | < 9.6E+00 | < 3.8E+00 | < 8.3E+00 | < 3.9E+00 | < 7.1E+00 | < 9.2E+00 | < 3.5E+00 | < 3.5E+00 | < 2.2E+01 | < 7.2E+00 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 22 of 36

Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

| Station ID | Sample Date | Unit s | MN-54 | CO-58 | FE-59 | CO-60 | ZN-65 | NB-95 | ZR-95 | I-131 | CS-134 | CS-137 | BA-140 | LA-140 |
|------------|-------------|--------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| MW-207 | 11/3/2021 | pCi/L | < 5.8E+00 | < 6.5E+00 | < 1.4E+01 | < 6.2E+00 | < 1.5E+01 | < 7.3E+00 | < 1.2E+01 | < 1.1E+01 | < 5.8E+00 | < 5.9E+00 | < 3.8E+01 | < 1.3E+01 |
| MW-209 | 11/3/2021 | pCi/L | < 7.2E+00 | < 6.6E+00 | < 1.6E+01 | < 8.8E+00 | < 1.6E+01 | < 7.2E+00 | < 9.0E+00 | < 1.3E+01 | < 7.2E+00 | < 6.5E+00 | < 3.5E+01 | < 1.1E+01 |
| MW-209 | 11/3/2021 | pCi/L | < 4.6E+00 | < 4.8E+00 | < 1.1E+01 | < 4.4E+00 | < 8.8E+00 | < 5.7E+00 | < 6.9E+00 | < 1.2E+01 | < 5.9E+00 | < 4.6E+00 | < 3.2E+01 | < 1.2E+01 |
| MW-211 | 11/3/2021 | pCi/L | < 1.9E+00 | < 2.0E+00 | < 5.1E+00 | < 1.9E+00 | < 3.9E+00 | < 2.2E+00 | < 4.0E+00 | < 8.6E+00 | < 2.0E+00 | < 2.0E+00 | < 1.8E+01 | < 5.8E+00 |
| MW-211 | 11/3/2021 | pCi/L | < 2.2E+00 | < 2.2E+00 | < 5.3E+00 | < 2.3E+00 | < 4.3E+00 | < 2.6E+00 | < 4.4E+00 | < 1.0E+01 | < 2.6E+00 | < 2.2E+00 | < 2.1E+01 | < 6.3E+00 |
| MW-213 | 11/3/2021 | pCi/L | < 5.5E+00 | < 5.4E+00 | < 1.3E+01 | < 4.8E+00 | < 1.3E+01 | < 4.7E+00 | < 1.0E+01 | < 1.4E+01 | < 5.4E+00 | < 4.5E+00 | < 3.5E+01 | < 1.2E+01 |
| MW-215 | 11/3/2021 | pCi/L | < 6.4E+00 | < 6.2E+00 | < 1.4E+01 | < 6.2E+00 | < 1.1E+01 | < 5.0E+00 | < 1.0E+01 | < 1.3E+01 | < 6.1E+00 | < 6.4E+00 | < 3.0E+01 | < 1.2E+01 |
| MW-217 | 11/3/2021 | pCi/L | < 5.0E+00 | < 5.8E+00 | < 1.3E+01 | < 6.5E+00 | < 1.2E+01 | < 6.5E+00 | < 7.9E+00 | < 1.4E+01 | < 5.7E+00 | < 5.0E+00 | < 3.0E+01 | < 1.2E+01 |
| MW-219 | 11/3/2021 | pCi/L | < 2.3E+00 | < 2.5E+00 | < 5.4E+00 | < 2.2E+00 | < 4.6E+00 | < 2.4E+00 | < 4.1E+00 | < 4.5E+00 | < 2.7E+00 | < 2.3E+00 | < 1.2E+01 | < 3.9E+00 |
| MW-229 | 11/3/2021 | pCi/L | < 6.2E+00 | < 7.6E+00 | < 1.5E+01 | < 4.2E+00 | < 1.4E+01 | < 7.1E+00 | < 1.1E+01 | < 1.0E+01 | < 6.8E+00 | < 6.3E+00 | < 2.9E+01 | < 9.7E+00 |
| MW-231 | 11/3/2021 | pCi/L | < 5.0E+00 | < 5.5E+00 | < 8.7E+00 | < 5.7E+00 | < 1.1E+01 | < 5.1E+00 | < 9.4E+00 | < 1.3E+01 | < 4.2E+00 | < 3.6E+00 | < 3.1E+01 | < 1.2E+01 |
| MW-233 | 11/3/2021 | pCi/L | < 6.3E+00 | < 7.0E+00 | < 1.1E+01 | < 4.6E+00 | < 1.0E+01 | < 6.3E+00 | < 1.0E+01 | < 1.4E+01 | < 6.6E+00 | < 6.3E+00 | < 2.8E+01 | < 1.1E+01 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 23 of 36

Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

| Station ID | Sample Date | Units | MN-54 | CO-58 | FE-59 | CO-60 | ZN-65 | NB-95 | ZR-95 | I-131 | CS-134 | CS-137 | BA-140 | LA-140 |
|------------|-------------|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| MW-235 | 11/3/2021 | pCi/L | < 5.0E+00 | < 5.5E+00 | < 1.1E+01 | < 5.3E+00 | < 1.2E+01 | < 5.7E+00 | < 8.4E+00 | < 1.4E+01 | < 4.6E+00 | < 5.0E+00 | < 3.6E+01 | < 1.1E+01 |
| PZ-03 | 11/3/2021 | pCi/L | < 6.6E+00 | < 7.6E+00 | < 1.5E+01 | < 7.7E+00 | < 1.0E+01 | < 7.4E+00 | < 1.3E+01 | < 1.2E+01 | < 7.5E+00 | < 7.7E+00 | < 3.2E+01 | < 1.4E+01 |
| T-14 | 11/3/2021 | pCi/L | < 7.7E+00 | < 5.5E+00 | < 1.1E+01 | < 4.6E+00 | < 1.4E+01 | < 6.9E+00 | < 1.2E+01 | < 1.2E+01 | < 7.6E+00 | < 4.9E+00 | < 3.7E+01 | < 1.5E+01 |
| MW-111 | 11/4/2021 | pCi/L | < 4.6E+00 | < 4.8E+00 | < 9.2E+00 | < 3.7E+00 | < 9.5E+00 | < 4.7E+00 | < 7.0E+00 | < 1.2E+01 | < 4.2E+00 | < 4.5E+00 | < 2.5E+01 | < 7.4E+00 |
| MW-120 | 11/4/2021 | pCi/L | < 4.0E+00 | < 3.0E+00 | < 8.0E+00 | < 4.5E+00 | < 9.4E+00 | < 4.2E+00 | < 6.3E+00 | < 9.7E+00 | < 4.6E+00 | < 4.4E+00 | < 2.6E+01 | < 1.1E+01 |
| MW-132 | 11/4/2021 | pCi/L | < 7.7E+00 | < 7.1E+00 | < 1.8E+01 | < 9.3E+00 | < 1.5E+01 | < 9.7E+00 | < 1.4E+01 | < 1.3E+01 | < 7.3E+00 | < 7.0E+00 | < 4.0E+01 | < 1.2E+01 |
| MW-134 | 11/4/2021 | pCi/L | < 6.1E+00 | < 7.6E+00 | < 1.4E+01 | < 6.2E+00 | < 1.2E+01 | < 8.9E+00 | < 1.1E+01 | < 1.3E+01 | < 6.6E+00 | < 7.0E+00 | < 3.1E+01 | < 1.1E+01 |
| MW-169 | 11/4/2021 | pCi/L | < 9.1E+00 | < 6.5E+00 | < 1.8E+01 | < 5.0E+00 | < 1.5E+01 | < 9.5E+00 | < 1.7E+01 | < 1.4E+01 | < 9.4E+00 | < 9.8E+00 | < 4.7E+01 | < 1.3E+01 |
| MW-223 | 11/4/2021 | pCi/L | < 4.7E+00 | < 5.6E+00 | < 1.2E+01 | < 5.8E+00 | < 1.1E+01 | < 6.5E+00 | < 9.5E+00 | < 1.3E+01 | < 5.7E+00 | < 5.2E+00 | < 3.8E+01 | < 8.5E+00 |
| MW-225 | 11/4/2021 | pCi/L | < 5.2E+00 | < 5.5E+00 | < 1.2E+01 | < 5.4E+00 | < 9.6E+00 | < 5.1E+00 | < 9.9E+00 | < 1.5E+01 | < 6.6E+00 | < 5.5E+00 | < 2.9E+01 | < 9.9E+00 |
| SW-101 | 11/4/2021 | pCi/L | < 7.5E+00 | < 7.1E+00 | < 1.6E+01 | < 8.1E+00 | < 1.6E+01 | < 7.6E+00 | < 1.1E+01 | < 1.3E+01 | < 8.8E+00 | < 7.8E+00 | < 3.8E+01 | < 1.2E+01 |
| SW-103 | 11/4/2021 | pCi/L | < 8.5E+00 | < 7.2E+00 | < 1.8E+01 | < 3.8E+00 | < 1.8E+01 | < 8.8E+00 | < 1.2E+01 | < 1.3E+01 | < 8.0E+00 | < 6.4E+00 | < 4.0E+01 | < 9.3E+00 |

Groundwater Monitoring Well Sampling Results

Table 17, Gamma Isotopic Results

| Station ID | Sample Date | Units | MN-54 | CO-58 | FE-59 | CO-60 | ZN-65 | NB-95 | ZR-95 | I-131 | CS-134 | CS-137 | BA-140 | LA-140 |
|------------|-------------|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| SW-104 | 11/4/2021 | pCi/L | < 6.5E+00 | < 5.3E+00 | < 1.3E+01 | < 5.7E+00 | < 1.6E+01 | < 5.9E+00 | < 1.3E+01 | < 9.6E+00 | < 7.7E+00 | < 5.3E+00 | < 3.2E+01 | < 1.4E+01 |

Table 18, Hard to Detect Nuclides

| Station ID | Sample Date | Units | FE-55 | NI-63 | SR-89 | SR-90 | CM-242 | CM-243/244 | PU-238 |
|------------|-------------|-------|-----------|-----------|-----------|-----------|-----------|------------|-----------|
| MW-125 | 1/19/2021 | pCi/L | < 1.1E+02 | < 1.9E+01 | < 8.0E+00 | < 9.1E-01 | < 2.1E-02 | < 1.2E-01 | < 3.7E-01 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 25 of 36

Groundwater Monitoring Well Sampling Results

Table 19, Tritium Analysis Results

| Station ID | Start Date | Units | H-3 | | Station ID | Start Date | Units | H-3 |
|------------|------------|-------|-----------|--|------------|------------|-------|-----------|
| MW-124 | 1/19/2021 | pCi/L | 7.20E+04 | | MW-158 | 1/19/2021 | pCi/L | 2.50E+05 |
| MW-124 | 1/19/2021 | pCi/L | 8.80E+04 | | MW-159 | 1/19/2021 | pCi/L | 5.30E+04 |
| MW-125 | 1/19/2021 | pCi/L | 4.10E+05 | | MW-162 | 1/19/2021 | pCi/L | < 5.2E+02 |
| MW-142 | 1/19/2021 | pCi/L | < 5.8E+02 | | MW-164 | 1/19/2021 | pCi/L | < 5.1E+02 |
| MW-144 | 1/19/2021 | pCi/L | < 5.5E+02 | | MW-165 | 1/19/2021 | pCi/L | < 5.0E+02 |
| MW-146 | 1/19/2021 | pCi/L | 1.60E+05 | | MW-165 | 1/19/2021 | pCi/L | < 5.0E+02 |
| MW-147 | 1/19/2021 | pCi/L | 6.60E+04 | | MW-178 | 1/19/2021 | pCi/L | 1.40E+03 |
| MW-148 | 1/19/2021 | pCi/L | < 5.6E+02 | | MW-179 | 1/19/2021 | pCi/L | 1.50E+05 |
| MW-151 | 1/19/2021 | pCi/L | < 5.0E+02 | | MW-179 | 1/19/2021 | pCi/L | 1.60E+05 |
| MW-155 | 1/19/2021 | pCi/L | 1.30E+05 | | MW-186 | 1/19/2021 | pCi/L | < 5.1E+02 |
| MW-156 | 1/19/2021 | pCi/L | 3.30E+03 | | MW-187 | 1/19/2021 | pCi/L | < 5.1E+02 |
| MW-157 | 1/19/2021 | pCi/L | 2.10E+05 | | MW-201 | 1/19/2021 | pCi/L | < 5.0E+02 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 26 of 36

Groundwater Monitoring Well Sampling Results

Table 19, Tritium Analysis Results

| Station ID | Start Date | Units | H-3 | | Station ID | Start Date | Units | H-3 |
|------------|------------|-------|-----------|--|------------|------------|-------|-----------|
| MW-211 | 1/19/2021 | pCi/L | < 5.9E+02 | | MW-153 | 1/20/2021 | pCi/L | 8.10E+02 |
| MW-211 | 1/19/2021 | pCi/L | 7.00E+02 | | MW-161 | 1/20/2021 | pCi/L | 2.70E+03 |
| MW-100 | 1/20/2021 | pCi/L | < 5.1E+02 | | MW-170 | 1/20/2021 | pCi/L | < 5.2E+02 |
| MW-110 | 1/20/2021 | pCi/L | 1.90E+04 | | MW-182 | 1/20/2021 | pCi/L | < 5.1E+02 |
| MW-112 | 1/20/2021 | pCi/L | 3.20E+03 | | MW-185 | 1/20/2021 | pCi/L | < 5.0E+02 |
| MW-114 | 1/20/2021 | pCi/L | 1.70E+03 | | MW-188 | 1/20/2021 | pCi/L | < 5.0E+02 |
| MW-116 | 1/20/2021 | pCi/L | 1.70E+04 | | MW-205 | 1/20/2021 | pCi/L | < 5.2E+02 |
| MW-118 | 1/20/2021 | pCi/L | 3.10E+03 | | MW-207 | 1/20/2021 | pCi/L | < 5.0E+02 |
| MW-126 | 1/20/2021 | pCi/L | 1.40E+04 | | MW-207 | 1/20/2021 | pCi/L | < 5.3E+02 |
| MW-137 | 1/20/2021 | pCi/L | 7.90E+03 | | MW-209 | 1/20/2021 | pCi/L | < 5.0E+02 |
| MW-139 | 1/20/2021 | pCi/L | < 5.1E+02 | | MW-209 | 1/20/2021 | pCi/L | < 5.1E+02 |
| MW-141 | 1/20/2021 | pCi/L | 2.20E+03 | | MW-219 | 1/20/2021 | pCi/L | < 5.1E+02 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 27 of 36

Groundwater Monitoring Well Sampling Results

Table 19, Tritium Analysis Results

| Station ID | Start Date | Units | H-3 | | Station ID | Start Date | Units | H-3 |
|------------|------------|-------|-----------|--|------------|------------|-------|-----------|
| MW-221 | 1/20/2021 | pCi/L | 9.50E+02 | | SW-104 | 1/20/2021 | pCi/L | < 5.1E+02 |
| MW-223 | 1/20/2021 | pCi/L | < 5.0E+02 | | MW-124 | 5/11/2021 | pCi/L | 1.10E+05 |
| MW-225 | 1/20/2021 | pCi/L | < 5.1E+02 | | MW-125 | 5/11/2021 | pCi/L | 3.60E+05 |
| MW-227 | 1/20/2021 | pCi/L | < 5.2E+02 | | MW-142 | 5/11/2021 | pCi/L | 1.10E+03 |
| MW-229 | 1/20/2021 | pCi/L | < 5.1E+02 | | MW-142 | 5/11/2021 | pCi/L | 8.90E+02 |
| MW-231 | 1/20/2021 | pCi/L | < 5.1E+02 | | MW-144 | 5/11/2021 | pCi/L | < 5.4E+02 |
| MW-233 | 1/20/2021 | pCi/L | < 5.1E+02 | | MW-146 | 5/11/2021 | pCi/L | 1.30E+05 |
| MW-235 | 1/20/2021 | pCi/L | < 5.2E+02 | | MW-147 | 5/11/2021 | pCi/L | 1.20E+05 |
| PZ-01 | 1/20/2021 | pCi/L | 2.40E+04 | | MW-148 | 5/11/2021 | pCi/L | < 6.0E+02 |
| SW-101 | 1/20/2021 | pCi/L | < 5.2E+02 | | MW-158 | 5/11/2021 | pCi/L | 1.90E+05 |
| SW-102 | 1/20/2021 | pCi/L | < 5.3E+02 | | MW-159 | 5/11/2021 | pCi/L | 6.70E+04 |
| SW-103 | 1/20/2021 | pCi/L | < 5.1E+02 | | MW-162 | 5/11/2021 | pCi/L | < 5.6E+02 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 28 of 36

Groundwater Monitoring Well Sampling Results

Table 19, Tritium Analysis Results

| Station ID | Start Date | Units | H-3 | | Station ID | Start Date | Units | H-3 |
|------------|------------|-------|-----------|--|------------|------------|-------|-----------|
| MW-207 | 5/11/2021 | pCi/L | < 5.0E+02 | | MW-126 | 5/12/2021 | pCi/L | 1.00E+04 |
| MW-229 | 5/11/2021 | pCi/L | < 5.1E+02 | | MW-128 | 5/12/2021 | pCi/L | < 5.0E+02 |
| MW-100 | 5/12/2021 | pCi/L | < 5.0E+02 | | MW-137 | 5/12/2021 | pCi/L | 7.10E+03 |
| MW-106 | 5/12/2021 | pCi/L | < 5.0E+02 | | MW-139 | 5/12/2021 | pCi/L | < 5.4E+02 |
| MW-106 | 5/12/2021 | pCi/L | < 5.6E+02 | | MW-141 | 5/12/2021 | pCi/L | 2.00E+03 |
| MW-110 | 5/12/2021 | pCi/L | 2.10E+04 | | MW-151 | 5/12/2021 | pCi/L | < 5.4E+02 |
| MW-112 | 5/12/2021 | pCi/L | 3.20E+03 | | MW-153 | 5/12/2021 | pCi/L | 1.10E+03 |
| MW-114 | 5/12/2021 | pCi/L | 2.10E+03 | | MW-155 | 5/12/2021 | pCi/L | 1.80E+05 |
| MW-116 | 5/12/2021 | pCi/L | 4.60E+03 | | MW-156 | 5/12/2021 | pCi/L | 3.70E+03 |
| MW-118 | 5/12/2021 | pCi/L | 3.30E+03 | | MW-157 | 5/12/2021 | pCi/L | 2.50E+05 |
| MW-120 | 5/12/2021 | pCi/L | < 5.0E+02 | | MW-161 | 5/12/2021 | pCi/L | 2.60E+03 |
| MW-122R | 5/12/2021 | pCi/L | < 5.7E+02 | | MW-164 | 5/12/2021 | pCi/L | < 5.7E+02 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 29 of 36

Groundwater Monitoring Well Sampling Results

Table 19, Tritium Analysis Results

| Station ID | Start Date | Units | H-3 | | Station ID | Start Date | Units | H-3 |
|------------|------------|-------|-----------|--|------------|------------|-------|-----------|
| MW-164 | 5/12/2021 | pCi/L | < 5.9E+02 | | MW-211 | 5/12/2021 | pCi/L | 6.70E+02 |
| MW-165 | 5/12/2021 | pCi/L | < 5.8E+02 | | MW-213 | 5/12/2021 | pCi/L | < 6.0E+02 |
| MW-170 | 5/12/2021 | pCi/L | < 6.4E+02 | | MW-219 | 5/12/2021 | pCi/L | < 5.9E+02 |
| MW-178 | 5/12/2021 | pCi/L | 1.60E+03 | | MW-221 | 5/12/2021 | pCi/L | 8.90E+02 |
| MW-179 | 5/12/2021 | pCi/L | 1.60E+05 | | MW-223 | 5/12/2021 | pCi/L | < 5.0E+02 |
| MW-180 | 5/12/2021 | pCi/L | < 6.1E+02 | | MW-231 | 5/12/2021 | pCi/L | < 5.8E+02 |
| MW-185 | 5/12/2021 | pCi/L | < 5.8E+02 | | MW-235 | 5/12/2021 | pCi/L | < 5.6E+02 |
| MW-186 | 5/12/2021 | pCi/L | < 5.8E+02 | | MW-235 | 5/12/2021 | pCi/L | < 5.7E+02 |
| MW-187 | 5/12/2021 | pCi/L | < 4.9E+02 | | PZ-01 | 5/12/2021 | pCi/L | 2.10E+04 |
| MW-201 | 5/12/2021 | pCi/L | < 5.9E+02 | | PZ-01 | 5/12/2021 | pCi/L | 2.10E+04 |
| MW-203 | 5/12/2021 | pCi/L | < 5.0E+02 | | PZ-03 | 5/12/2021 | pCi/L | < 6.0E+02 |
| MW-211 | 5/12/2021 | pCi/L | < 5.8E+02 | | MW-130 | 5/13/2021 | pCi/L | < 5.9E+02 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 30 of 36

Groundwater Monitoring Well Sampling Results

Table 19, Tritium Analysis Results

| Station ID | Start Date | Units | H-3 | | Station ID | Start Date | Units | H-3 |
|------------|------------|-------|-----------|--|------------|------------|-------|-----------|
| MW-131 | 5/13/2021 | pCi/L | < 5.1E+02 | | MW-227 | 5/13/2021 | pCi/L | < 5.5E+02 |
| MW-132 | 5/13/2021 | pCi/L | < 5.6E+02 | | MW-233 | 5/13/2021 | pCi/L | < 5.6E+02 |
| MW-134 | 5/13/2021 | pCi/L | < 5.2E+02 | | SW-101 | 5/13/2021 | pCi/L | < 5.5E+02 |
| MW-134 | 5/13/2021 | pCi/L | < 5.0E+02 | | SW-102 | 5/13/2021 | pCi/L | < 5.6E+02 |
| MW-167 | 5/13/2021 | pCi/L | < 5.0E+02 | | SW-103 | 5/13/2021 | pCi/L | < 5.6E+02 |
| MW-169 | 5/13/2021 | pCi/L | < 5.6E+02 | | SW-104 | 5/13/2021 | pCi/L | < 6.1E+02 |
| MW-182 | 5/13/2021 | pCi/L | < 5.2E+02 | | MW-188 | 6/22/2021 | pCi/L | < 4.7E+02 |
| MW-205 | 5/13/2021 | pCi/L | < 5.5E+02 | | MW-100 | 8/17/2021 | pCi/L | < 5.2E+02 |
| MW-209 | 5/13/2021 | pCi/L | < 5.1E+02 | | MW-124 | 8/17/2021 | pCi/L | 1.30E+05 |
| MW-215 | 5/13/2021 | pCi/L | < 5.6E+02 | | MW-125 | 8/17/2021 | pCi/L | 4.40E+05 |
| MW-217 | 5/13/2021 | pCi/L | < 5.8E+02 | | MW-126 | 8/17/2021 | pCi/L | 1.40E+04 |
| MW-225 | 5/13/2021 | pCi/L | < 5.6E+02 | | MW-142 | 8/17/2021 | pCi/L | 9.50E+02 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 31 of 36

Groundwater Monitoring Well Sampling Results

Table 19, Tritium Analysis Results

| Station ID | Start Date | Units | H-3 | | Station ID | Start Date | Units | H-3 |
|------------|------------|-------|-----------|--|------------|------------|-------|-----------|
| MW-142 | 8/17/2021 | pCi/L | 7.40E+02 | | MW-164 | 8/17/2021 | pCi/L | < 5.0E+02 |
| MW-144 | 8/17/2021 | pCi/L | < 5.1E+02 | | MW-165 | 8/17/2021 | pCi/L | < 5.2E+02 |
| MW-146 | 8/17/2021 | pCi/L | 9.70E+04 | | MW-178 | 8/17/2021 | pCi/L | 6.80E+03 |
| MW-147 | 8/17/2021 | pCi/L | 3.70E+04 | | MW-179 | 8/17/2021 | pCi/L | 1.00E+05 |
| MW-148 | 8/17/2021 | pCi/L | < 5.2E+02 | | MW-185 | 8/17/2021 | pCi/L | < 5.2E+02 |
| MW-151 | 8/17/2021 | pCi/L | < 5.3E+02 | | MW-186 | 8/17/2021 | pCi/L | < 4.8E+02 |
| MW-155 | 8/17/2021 | pCi/L | 1.30E+05 | | MW-187 | 8/17/2021 | pCi/L | < 5.3E+02 |
| MW-156 | 8/17/2021 | pCi/L | 4.30E+03 | | MW-187 | 8/17/2021 | pCi/L | < 5.1E+02 |
| MW-157 | 8/17/2021 | pCi/L | 2.30E+05 | | MW-188 | 8/17/2021 | pCi/L | < 5.2E+02 |
| MW-158 | 8/17/2021 | pCi/L | 2.00E+05 | | MW-211 | 8/17/2021 | pCi/L | < 5.4E+02 |
| MW-159 | 8/17/2021 | pCi/L | 6.40E+04 | | MW-211 | 8/17/2021 | pCi/L | 6.80E+02 |
| MW-162 | 8/17/2021 | pCi/L | < 5.3E+02 | | MW-110 | 8/18/2021 | pCi/L | 2.80E+04 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 32 of 36

Groundwater Monitoring Well Sampling Results

Table 19, Tritium Analysis Results

| Station ID | Start Date | Units | H-3 | | Station ID | Start Date | Units | H-3 |
|------------|------------|-------|-----------|--|------------|------------|-------|-----------|
| MW-112 | 8/18/2021 | pCi/L | 2.20E+03 | | MW-209 | 8/18/2021 | pCi/L | < 5.2E+02 |
| MW-114 | 8/18/2021 | pCi/L | 1.90E+03 | | MW-221 | 8/18/2021 | pCi/L | 1.40E+03 |
| MW-116 | 8/18/2021 | pCi/L | 3.70E+03 | | MW-221 | 8/18/2021 | pCi/L | 1.20E+03 |
| MW-118 | 8/18/2021 | pCi/L | 3.10E+03 | | MW-223 | 8/18/2021 | pCi/L | < 4.9E+02 |
| MW-137 | 8/18/2021 | pCi/L | 1.10E+04 | | PZ-01 | 8/18/2021 | pCi/L | 2.30E+04 |
| MW-139 | 8/18/2021 | pCi/L | 7.70E+02 | | SW-101 | 8/18/2021 | pCi/L | < 5.2E+02 |
| MW-141 | 8/18/2021 | pCi/L | 2.20E+03 | | SW-102 | 8/18/2021 | pCi/L | < 5.0E+02 |
| MW-153 | 8/18/2021 | pCi/L | 1.60E+03 | | SW-103 | 8/18/2021 | pCi/L | < 5.1E+02 |
| MW-161 | 8/18/2021 | pCi/L | 2.90E+03 | | SW-104 | 8/18/2021 | pCi/L | < 5.2E+02 |
| MW-170 | 8/18/2021 | pCi/L | < 4.9E+02 | | MW-110 | 11/2/2021 | pCi/L | 2.90E+04 |
| MW-182 | 8/18/2021 | pCi/L | < 5.0E+02 | | MW-112 | 11/2/2021 | pCi/L | 2.70E+03 |
| MW-209 | 8/18/2021 | pCi/L | < 5.1E+02 | | MW-112 | 11/2/2021 | pCi/L | 2.90E+03 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 33 of 36

Groundwater Monitoring Well Sampling Results

Table 19, Tritium Analysis Results

| Station ID | Start Date | Units | H-3 | | Station ID | Start Date | Units | H-3 |
|------------|------------|-------|-----------|--|------------|------------|-------|-----------|
| MW-114 | 11/2/2021 | pCi/L | 2.40E+03 | | MW-148 | 11/2/2021 | pCi/L | < 5.9E+02 |
| MW-116 | 11/2/2021 | pCi/L | 6.80E+03 | | MW-155 | 11/2/2021 | pCi/L | 1.10E+05 |
| MW-118 | 11/2/2021 | pCi/L | 3.00E+03 | | MW-156 | 11/2/2021 | pCi/L | 7.00E+03 |
| MW-124 | 11/2/2021 | pCi/L | 1.60E+05 | | MW-158 | 11/2/2021 | pCi/L | 2.70E+05 |
| MW-125 | 11/2/2021 | pCi/L | 4.20E+05 | | MW-159 | 11/2/2021 | pCi/L | 4.30E+04 |
| MW-137 | 11/2/2021 | pCi/L | 9.80E+03 | | MW-162 | 11/2/2021 | pCi/L | < 5.3E+02 |
| MW-139 | 11/2/2021 | pCi/L | 9.20E+02 | | MW-172 | 11/2/2021 | pCi/L | < 5.5E+02 |
| MW-141 | 11/2/2021 | pCi/L | 1.60E+03 | | MW-174 | 11/2/2021 | pCi/L | < 5.7E+02 |
| MW-142 | 11/2/2021 | pCi/L | < 4.9E+02 | | MW-185 | 11/2/2021 | pCi/L | < 5.3E+02 |
| MW-144 | 11/2/2021 | pCi/L | 1.40E+03 | | MW-188 | 11/2/2021 | pCi/L | < 5.6E+02 |
| MW-146 | 11/2/2021 | pCi/L | 1.90E+05 | | MW-205 | 11/2/2021 | pCi/L | < 5.9E+02 |
| MW-147 | 11/2/2021 | pCi/L | 5.40E+04 | | MW-205 | 11/2/2021 | pCi/L | < 5.3E+02 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 34 of 36

Groundwater Monitoring Well Sampling Results

Table 19, Tritium Analysis Results

| Station ID | Start Date | Units | H-3 | | Station ID | Start Date | Units | H-3 |
|------------|------------|-------|-----------|--|------------|------------|-------|-----------|
| MW-221 | 11/2/2021 | pCi/L | 1.30E+03 | | MW-107 | 11/3/2021 | pCi/L | < 5.3E+02 |
| MW-221 | 11/2/2021 | pCi/L | 1.40E+03 | | MW-108 | 11/3/2021 | pCi/L | < 5.2E+02 |
| MW-227 | 11/2/2021 | pCi/L | < 5.8E+02 | | MW-122R | 11/3/2021 | pCi/L | < 5.4E+02 |
| PZ-01 | 11/2/2021 | pCi/L | 1.60E+04 | | MW-126 | 11/3/2021 | pCi/L | 1.50E+04 |
| MW-04 | 11/3/2021 | pCi/L | < 5.6E+02 | | MW-128 | 11/3/2021 | pCi/L | < 5.1E+02 |
| MW-05 | 11/3/2021 | pCi/L | < 5.5E+02 | | MW-130 | 11/3/2021 | pCi/L | < 5.4E+02 |
| MW-08 | 11/3/2021 | pCi/L | < 5.0E+02 | | MW-131 | 11/3/2021 | pCi/L | < 5.7E+02 |
| MW-100 | 11/3/2021 | pCi/L | < 5.1E+02 | | MW-14 | 11/3/2021 | pCi/L | < 5.3E+02 |
| MW-103 | 11/3/2021 | pCi/L | < 5.6E+02 | | MW-151 | 11/3/2021 | pCi/L | < 5.6E+02 |
| MW-104 | 11/3/2021 | pCi/L | < 4.8E+02 | | MW-153 | 11/3/2021 | pCi/L | 1.60E+03 |
| MW-106 | 11/3/2021 | pCi/L | < 5.8E+02 | | MW-157 | 11/3/2021 | pCi/L | 2.50E+05 |
| MW-106 | 11/3/2021 | pCi/L | < 5.5E+02 | | MW-161 | 11/3/2021 | pCi/L | 2.60E+03 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 35 of 36

Groundwater Monitoring Well Sampling Results

Table 19, Tritium Analysis Results

| Station ID | Start Date | Units | H-3 | | Station ID | Start Date | Units | H-3 |
|------------|------------|-------|-----------|--|------------|------------|-------|-----------|
| MW-164 | 11/3/2021 | pCi/L | < 5.4E+02 | | MW-201 | 11/3/2021 | pCi/L | < 5.6E+02 |
| MW-165 | 11/3/2021 | pCi/L | < 5.0E+02 | | MW-207 | 11/3/2021 | pCi/L | < 5.5E+02 |
| MW-167 | 11/3/2021 | pCi/L | < 5.2E+02 | | MW-209 | 11/3/2021 | pCi/L | < 4.7E+02 |
| MW-170 | 11/3/2021 | pCi/L | < 5.1E+02 | | MW-209 | 11/3/2021 | pCi/L | < 5.6E+02 |
| MW-178 | 11/3/2021 | pCi/L | 6.90E+03 | | MW-211 | 11/3/2021 | pCi/L | 9.50E+02 |
| MW-178 | 11/3/2021 | pCi/L | 8.30E+03 | | MW-211 | 11/3/2021 | pCi/L | 1.10E+03 |
| MW-179 | 11/3/2021 | pCi/L | 1.20E+05 | | MW-213 | 11/3/2021 | pCi/L | < 5.4E+02 |
| MW-18 | 11/3/2021 | pCi/L | < 5.0E+02 | | MW-215 | 11/3/2021 | pCi/L | < 6.0E+02 |
| MW-180 | 11/3/2021 | pCi/L | < 4.7E+02 | | MW-217 | 11/3/2021 | pCi/L | < 6.2E+02 |
| MW-182 | 11/3/2021 | pCi/L | < 5.9E+02 | | MW-219 | 11/3/2021 | pCi/L | < 5.0E+02 |
| MW-186 | 11/3/2021 | pCi/L | < 5.4E+02 | | MW-229 | 11/3/2021 | pCi/L | < 4.8E+02 |
| MW-187 | 11/3/2021 | pCi/L | < 5.4E+02 | | MW-231 | 11/3/2021 | pCi/L | < 6.3E+02 |

Annual Radioactive Effluent Release Report

Attachment 1

Page 36 of 36

Groundwater Monitoring Well Sampling Results

Table 19, Tritium Analysis Results

| Station ID | Start Date | Units | H-3 | | Station ID | Start Date | Units | H-3 |
|------------|------------|-------|-----------|--|------------|------------|-------|-----------|
| MW-233 | 11/3/2021 | pCi/L | < 5.7E+02 | | MW-169 | 11/4/2021 | pCi/L | < 5.4E+02 |
| MW-235 | 11/3/2021 | pCi/L | < 5.0E+02 | | MW-223 | 11/4/2021 | pCi/L | < 5.3E+02 |
| PZ-03 | 11/3/2021 | pCi/L | < 4.8E+02 | | MW-225 | 11/4/2021 | pCi/L | < 5.0E+02 |
| T-14 | 11/3/2021 | pCi/L | < 5.3E+02 | | SW-101 | 11/4/2021 | pCi/L | < 5.1E+02 |
| MW-111 | 11/4/2021 | pCi/L | < 5.4E+02 | | SW-102 | 11/4/2021 | pCi/L | < 5.7E+02 |
| MW-120 | 11/4/2021 | pCi/L | < 5.6E+02 | | SW-103 | 11/4/2021 | pCi/L | < 6.1E+02 |
| MW-132 | 11/4/2021 | pCi/L | < 5.4E+02 | | SW-104 | 11/4/2021 | pCi/L | < 5.8E+02 |
| MW-134 | 11/4/2021 | pCi/L | < 4.8E+02 | | | | | |

Annual Radioactive Effluent Release Report

Attachment 2

Page 1 of 1

2018 ARERR ERRATA

| | | |
|--|------------|---------------|
| Plant: River Bend Nuclear Station | Year: 2018 | Page 16 of 83 |
| Annual Radioactive Effluent Release Report | | |

3.0 GASEOUS EFFLUENTS

3.1 Gas Effluent and Waste Disposal Report

Table 1, Gaseous Effluents-Summation of All Releases

| A. | Fission & Activation Gases | Unit | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Annual |
|----|-------------------------------------|---------|--------------|--------------|--------------|--------------|----------|
| 1. | Total Release | Ci | 2.26E+02 | 8.71E+01 | 1.66E+02 | 4.82E+02 | 9.61E+02 |
| 2. | Average release rate for the period | μCi/sec | 2.91E+01 | 1.11E+01 | 2.09E+01 | 6.06E+01 | 3.05E+01 |

| B. | Iodine | Unit | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Annual |
|----|-------------------------------------|---------|--------------|--------------|--------------|--------------|----------|
| 1. | Total Iodine – 131 | Ci | 1.86E-03 | 3.85E-03 | 4.38E-03 | 7.65E-03 | 1.77E-02 |
| 2. | Average release rate for the period | μCi/sec | 2.39E-04 | 4.89E-04 | 5.51E-04 | 9.63E-04 | 5.62E-04 |

| C. | Particulates | Unit | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Annual |
|----|---------------------------------------|---------|--------------|--------------|--------------|--------------|----------|
| 1. | Particulates with half-lives > 8 days | Ci | 4.12E-04 | 4.62E-04 | 6.28E-04 | 6.98E-04 | 2.20E-03 |
| 2. | Average release rate for the period | μCi/sec | 5.30E-05 | 5.87E-05 | 7.90E-05 | 8.78E-05 | 6.97E-05 |

| D. | Tritium | Unit | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Annual |
|----|-------------------------------------|---------|--------------|--------------|--------------|--------------|----------|
| 1. | Total Release | Ci | 2.93E+00 | 3.85E+00 | 8.34E+00 | 3.04E+00 | 1.82E+01 |
| 2. | Average release rate for the period | μCi/sec | 3.77E-01 | 4.90E-01 | 1.05E+00 | 3.83E-01 | 5.76E-01 |

| E. | Gross Alpha | Unit | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Annual |
|----|-------------------------------------|---------|--------------|--------------|--------------|--------------|----------|
| 1. | Total Release | Ci | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 2. | Average release rate for the period | μCi/sec | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |

| F. | Carbon-14 | Unit | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Annual |
|----|-------------------------------------|---------|--------------|--------------|--------------|--------------|----------|
| 1. | Total Release | Ci | 2.71E+00 | 2.74E+00 | 2.77E+00 | 2.77E+00 | 1.1E+01 |
| 2. | Average release rate for the period | μCi/sec | 3.49E-01 | 3.48E-01 | 3.48E-01 | 3.48E-01 | 3.49E-01 |

% of limit is located in the Radiological Impact to Man Table

Annual Radioactive Effluent Release Report

Attachment 3

Page 1 of 3

2019 ARERR ERRATA

| | | |
|--|------------|---------------|
| Plant: River Bend Nuclear Station | Year: 2019 | Page 13 of 77 |
| Annual Radioactive Effluent Release Report | | |

3.0 GASEOUS EFFLUENTS

3.1 Gas Effluent and Waste Disposal Report

Table 1, Gaseous Effluents-Summation of All Releases

| A. | Fission & Activation Gases | Unit | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Annual |
|----|-------------------------------------|---------|--------------|--------------|--------------|--------------|----------|
| 1. | Total Release | Ci | 1.28E+02 | 6.40E+01 | 1.83E+01 | 4.94E+01 | 2.60E+02 |
| 2. | Average release rate for the period | μCi/sec | 1.65E+01 | 8.14E+00 | 2.30E+00 | 6.21E+00 | 8.25E+00 |

| B. | Iodine | Unit | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Annual |
|----|-------------------------------------|---------|--------------|--------------|--------------|--------------|----------|
| 1. | Total Iodine – 131 | Ci | 9.28E-03 | 2.26E-03 | 3.34E-03 | 4.24E-03 | 1.92E-02 |
| 2. | Average release rate for the period | μCi/sec | 1.19E-03 | 2.87E-04 | 4.20E-04 | 5.33E-04 | 6.08E-04 |

| C. | Particulates | Unit | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Annual |
|----|---------------------------------------|---------|--------------|--------------|--------------|--------------|----------|
| 1. | Particulates with half-lives > 8 days | Ci | 1.11E-03 | 2.11E-04 | 2.80E-04 | 6.29E-04 | 2.23E-03 |
| 2. | Average release rate for the period | μCi/sec | 1.43E-04 | 2.69E-05 | 3.52E-05 | 7.91E-05 | 7.08E-05 |

| D. | Tritium | Unit | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Annual |
|----|-------------------------------------|---------|--------------|--------------|--------------|--------------|----------|
| 1. | Total Release | Ci | 7.57E+00 | 5.77E+00 | 4.42E+00 | 4.36E+00 | 2.21E+01 |
| 2. | Average release rate for the period | μCi/sec | 9.74E-01 | 7.34E-01 | 5.56E-01 | 5.48E-01 | 7.01E-01 |

| E. | Gross Alpha | Unit | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Annual |
|----|-------------------------------------|---------|--------------|--------------|--------------|--------------|----------|
| 1. | Total Release | Ci | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 2. | Average release rate for the period | μCi/sec | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |

| F. | Carbon-14 | Unit | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Annual |
|----|-------------------------------------|---------|--------------|--------------|--------------|--------------|----------|
| 1. | Total Release | Ci | 2.71E+00 | 2.74E+00 | 2.77E+00 | 2.77E+00 | 1.1E+01 |
| 2. | Average release rate for the period | μCi/sec | 3.49E-01 | 3.48E-01 | 3.48E-01 | 3.48E-01 | 3.49E-01 |

% of limit is located in the Radiological Impact to Man Table

Annual Radioactive Effluent Release Report

Attachment 3

Page 2 of 3

2019 ARERR ERRATA

| | | |
|--|------------|---------------|
| Plant: River Bend Nuclear Station | Year: 2019 | Page 17 of 77 |
| Annual Radioactive Effluent Release Report | | |

4.0 LIQUID EFFLUENTS

4.1 Liquid Effluent and Waste Disposal Report

Table 5, Liquid Effluents-Summation of All Releases

| A. | Fission & Activation Products | Unit | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Annual |
|--|---|--------|-----------|-----------|-----------|-----------|----------|
| 1. | Total Release (not including tritium, gases or alpha) | Ci | 3.75E-03 | 6.96E-03 | 2.52E-03 | 1.90E-03 | 1.51E-02 |
| 2. | Average diluted concentration during period | µCi/mL | 6.14E-09 | 1.85E-09 | 1.37E-09 | 2.89E-09 | 6.14E-09 |
| B. Tritium | | | | | | | |
| 1. | Total Release | Ci | 1.11E+01 | 1.73E+01 | 1.57E+01 | 1.26E+01 | 5.67E+01 |
| 2. | Average diluted concentration during period. | µCi/mL | 8.18E-06 | 1.53E-05 | 1.15E-05 | 9.12E-06 | 1.08E-05 |
| C. Dissolved & Entrained Gases | | | | | | | |
| 1. | Total Release | Ci | 1.02E-01 | 2.28E-02 | 8.74E-02 | 5.68E-02 | 2.69E-01 |
| 2. | Average diluted concentration during period | µCi/mL | 7.51E-08 | 2.01E-08 | 6.43E-08 | 4.11E-08 | 5.14E-08 |
| D. Gross Alpha Activity | | | | | | | |
| 1. | Total Release | Ci | 0.0E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| E. Volume Of Waste Released (prior to dilution) | | | | | | | |
| | | Liters | 2.17E+06 | 4.94E+06 | 5.06E+06 | 3.29E+06 | 1.55E+07 |
| F. Volume Of Dilution Water Used During Period | | | | | | | |
| | | Liters | 1.36E+09 | 1.13E+09 | 1.36E+09 | 1.38E+09 | 5.23E+09 |

% of limit is located in the Radiological Impact to Man Table

Annual Radioactive Effluent Release Report

Attachment 3

Page 3 of 3

2019 ARERR ERRATA

Plant: River Bend Nuclear Station

Year: 2019

Page 26 of 77

Annual Radioactive Effluent Release Report

6.3 40CFR Part 190 Evaluation for an Individual in the Unrestricted Area

An assessment (see Table 14) was made of radiation doses to the likely most-exposed member of the public from River Bend and other nearby uranium fuel cycle sources (none within five miles). The annual (calendar year) dose or dose commitment to any MEMBER OF THE PUBLIC, due to releases of radioactivity and to radiation from uranium fuel cycle sources, shall be limited to less than or equal to 25 mrem to the total body or any organ, except the thyroid, which shall be limited to less than or equal to 75 mrem.

Table 14, EPA 40 CFR PART 190 Evaluation

| | Total Body | Thyroid | Any Other Organ |
|----------------------|------------|----------|-----------------|
| Dose Limit | 25 mrem | 75 mrem | 25 mrem |
| Dose(Excluding C-14) | 3.16E-01 | 1.11E+00 | 3.18E-01 |
| % of Limit | 1.26E+00 | 1.48E+00 | 1.27E+00 |
| Dose(Including C-14) | 1.25E+00 | 2.05E+00 | 5.01E+00 |
| % of Limit | 5.02E+00 | 2.73E+00 | 2.01E+01 |

Gaseous dose including a bounding calculation of C-14 dose, direct shine, ISFSI and any other nuclear power related facility within 5 miles of the station are considered when calculating dose compliance with 40 CFR 190.

Annual Radioactive Effluent Release Report

Attachment 4

Page 1 of 3

2020 ARERR ERRATA

| | | |
|--|------------|---------------|
| Plant: River Bend Nuclear Station | Year: 2020 | Page 14 of 81 |
| Annual Radioactive Effluent Release Report | | |

3.0 GASEOUS EFFLUENTS

3.1 Gas Effluent and Waste Disposal Report

Table 1, Gaseous Effluents-Summation of All Releases

| A. | Fission & Activation Gases | Unit | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Annual |
|----|-------------------------------------|---------|--------------|--------------|--------------|--------------|-----------|
| 1. | Total Release | Ci | 4.60E+01 | 2.12E+01 | 1.67E+02 | 4.40E+03* | 4.63E+03* |
| 2. | Average release rate for the period | μCi/sec | 5.85E+00 | 2.70E+00 | 2.11E+01 | 5.53E+02 | 1.46E+02 |

*Note: Elevated Noble gas release due to minor fuel element leaks. No TRM limits were exceeded.

| B. | Iodine | Unit | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Annual |
|----|-------------------------------------|---------|--------------|--------------|--------------|--------------|----------|
| 1. | Total Iodine – 131 | Ci | 4.36E-03 | 3.43E-03 | 5.50E-03 | 6.26E-03 | 1.95E-02 |
| 2. | Average release rate for the period | μCi/sec | 5.54E-04 | 4.36E-04 | 6.92E-04 | 7.88E-04 | 6.19E-04 |

| C. | Particulates | Unit | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Annual |
|----|---------------------------------------|---------|--------------|--------------|--------------|--------------|----------|
| 1. | Particulates with half-lives > 8 days | Ci | 1.57E-03 | 2.85E-04 | 5.19E-04 | 4.24E-04 | 2.80E-03 |
| 2. | Average release rate for the period | μCi/sec | 2.00E-04 | 3.63E-05 | 6.53E-05 | 5.33E-05 | 8.86E-05 |

| D. | Tritium | Unit | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Annual |
|----|-------------------------------------|---------|--------------|--------------|--------------|--------------|----------|
| 1. | Total Release | Ci | 4.12E+00 | 2.32E+00 | 4.03E+00 | 6.83E+00 | 1.73E+01 |
| 2. | Average release rate for the period | μCi/sec | 5.24E-01 | 2.95E-01 | 5.07E-01 | 8.60E-01 | 5.47E-01 |

| E. | Gross Alpha | Unit | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Annual |
|----|-------------------------------------|---------|--------------|--------------|--------------|--------------|----------|
| 1. | Total Release | Ci | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 2. | Average release rate for the period | μCi/sec | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |

| F. | Carbon-14 | Unit | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Annual |
|----|-------------------------------------|---------|--------------|--------------|--------------|--------------|----------|
| 1. | Total Release | Ci | 2.71E+00 | 2.74E+00 | 2.77E+00 | 2.77E+00 | 1.1E+01 |
| 2. | Average release rate for the period | μCi/sec | 3.49E-01 | 3.48E-01 | 3.48E-01 | 3.48E-01 | 3.49E-01 |

% of limit is located in the Radiological Impact to Man Table

Annual Radioactive Effluent Release Report

Attachment 4

Page 2 of 3

2020 ARERR ERRATA

| | | |
|--|------------|---------------|
| Plant: River Bend Nuclear Station | Year: 2020 | Page 18 of 81 |
| Annual Radioactive Effluent Release Report | | |

4.0 LIQUID EFFLUENTS

4.1 Liquid Effluent and Waste Disposal Report

Table 5, Liquid Effluents-Summation of All Releases

| A | Fission & Activation Products | Unit | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Annual |
|--|---|--------|-----------|-----------|-----------|-----------|----------|
| 1. | Total Release (not including tritium, gases or alpha) | Ci | 1.43E-03 | 1.72E-03 | 4.66E-03 | 1.02E-03 | 8.82E-03 |
| 2. | Average diluted concentration during period | µCi/mL | 1.04E-09 | 1.30E-09 | 3.30E-09 | 7.50E-10 | 1.62E-09 |
| B. Tritium | | | | | | | |
| 1. | Total Release | Ci | 8.45E+00 | 1.11E+01 | 1.58E+01 | 1.54E+01 | 5.07E+01 |
| 2. | Average diluted concentration during period. | µCi/mL | 6.17E-06 | 8.41E-06 | 1.12E-05 | 1.13E-05 | 9.29E-06 |
| C. Dissolved & Entrained Gases | | | | | | | |
| 1. | Total Release | Ci | 5.55E-02 | 4.85E-02 | 1.16E-01 | 4.07E-02 | 2.61E-01 |
| 2. | Average diluted concentration during period | µCi/mL | 4.05E-08 | 3.67E-08 | 8.23E-08 | 2.99E-08 | 4.78E-08 |
| D. Gross Alpha Activity | | | | | | | |
| 1. | Total Release | Ci | 0.0E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| E. Volume Of Waste Released (prior to dilution) | | | | | | | |
| | | Liters | 2.17E+06 | 3.32E+06 | 4.82E+06 | 2.11E+06 | 1.24E+07 |
| F. Volume Of Dilution Water Used During Period | | | | | | | |
| | | Liters | 1.37E+09 | 1.32E+09 | 1.41E+09 | 1.36E+09 | 5.46E+09 |

% of limit is located in the Radiological Impact to Man Table

Annual Radioactive Effluent Release Report

Attachment 4

Page 3 of 3

2020 ARERR ERRATA

Plant: River Bend Nuclear Station

Year: 2020

Page 28 of 81

Annual Radioactive Effluent Release Report

6.3 40CFR Part 190 Evaluation for an Individual in the Unrestricted Area

An assessment (see Table 14) was made of radiation doses to the likely most-exposed member of the public from River Bend and other nearby uranium fuel cycle sources (none within five miles). The annual (calendar year) dose or dose commitment to any MEMBER OF THE PUBLIC, due to releases of radioactivity and to radiation from uranium fuel cycle sources, shall be limited to less than or equal to 25 mrem to the total body or any organ, except the thyroid, which shall be limited to less than or equal to 75 mrem.

Table 14, EPA 40 CFR PART 190 Evaluation

| | Total Body | Thyroid | Any Other Organ |
|----------------------|------------|----------|-----------------|
| Dose Limit | 25 mrem | 75 mrem | 25 mrem |
| Dose(Excluding C-14) | 1.92E+00 | 2.72E+00 | 1.93E+00 |
| % of Limit | 7.69E+00 | 3.63E+00 | 7.72E+00 |
| Dose(Including C-14) | 2.86E+00 | 3.66E+00 | 6.63E+00 |
| % of Limit | 1.14E+01 | 4.88E+00 | 2.65E+01 |

Gaseous dose including a bounding calculation of C-14 dose, direct shine, ISFSI and any other nuclear power related facility within 5 miles of the station are considered when calculating dose compliance with 40 CFR 190.