

## **Ambient Air Concentrations**

### **Quarterly update for the third quarter of 2022 (September 2022)**

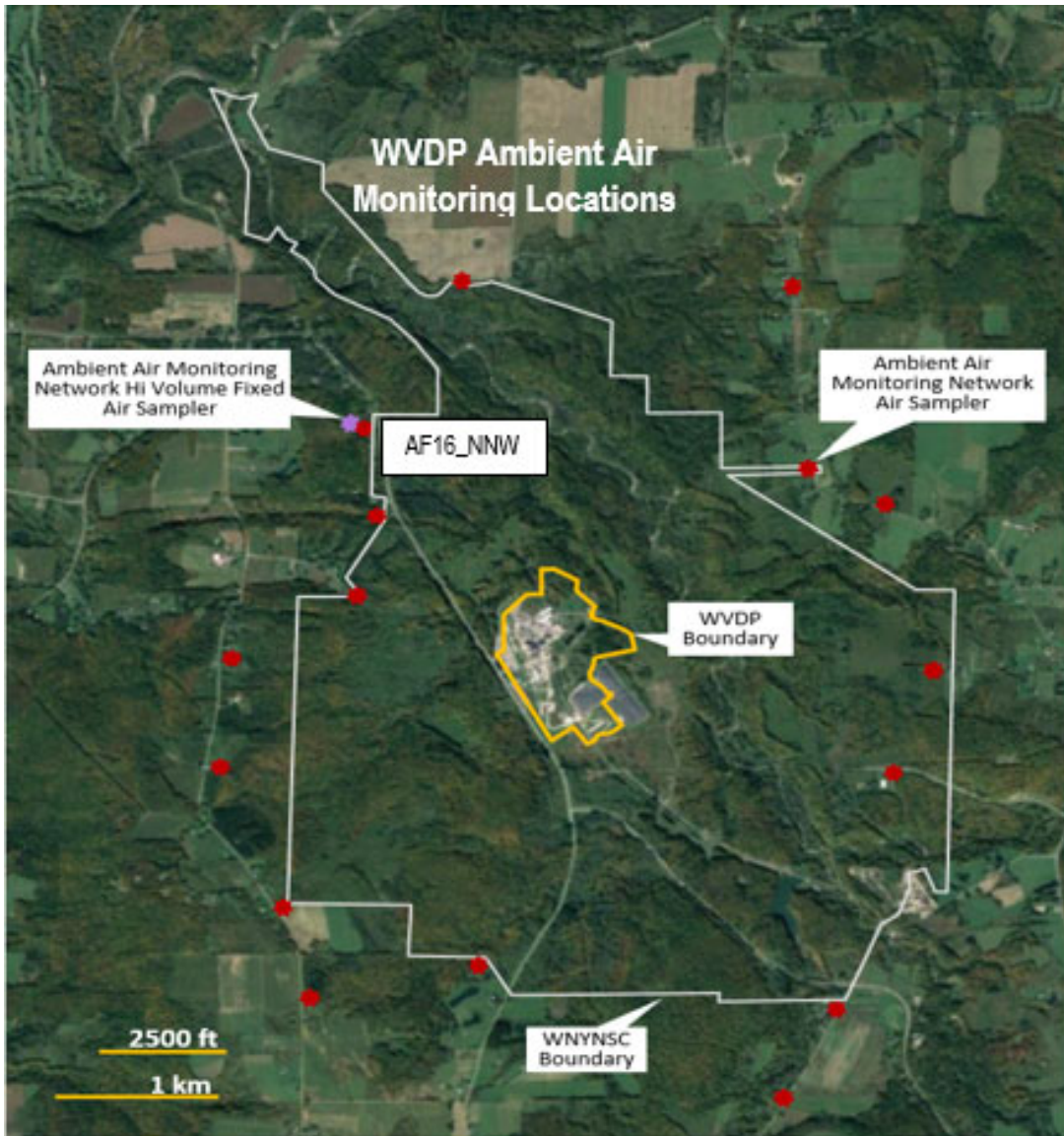
(The historical trend data includes the previous 5 years - 2017 to 2021.)

#### Notes:

- 1) The sampling location is indicated at AF16\_NNW as shown in Map 1 below and is approximately one mile northwest (in the prevailing wind direction) of the center of the West Valley Demonstration Project site.
- 2) The EPA National Emission Standards for Hazardous Air Pollutants (NESHAP) Compliance Limit is 10 mrem/year. In the 'NESHAP 10 mrem/year Limit' column, the concentration in air (in  $\mu\text{Ci/mL}$ ) for each isotope that would result in a dose equivalent of 10 mrem/year if sustained for a full year is shown.
- 3) Negative results in the data tables represent sampling results with zero activity present, where the instrument background slightly exceeds the instrument radioactivity count rate obtained for the sample.

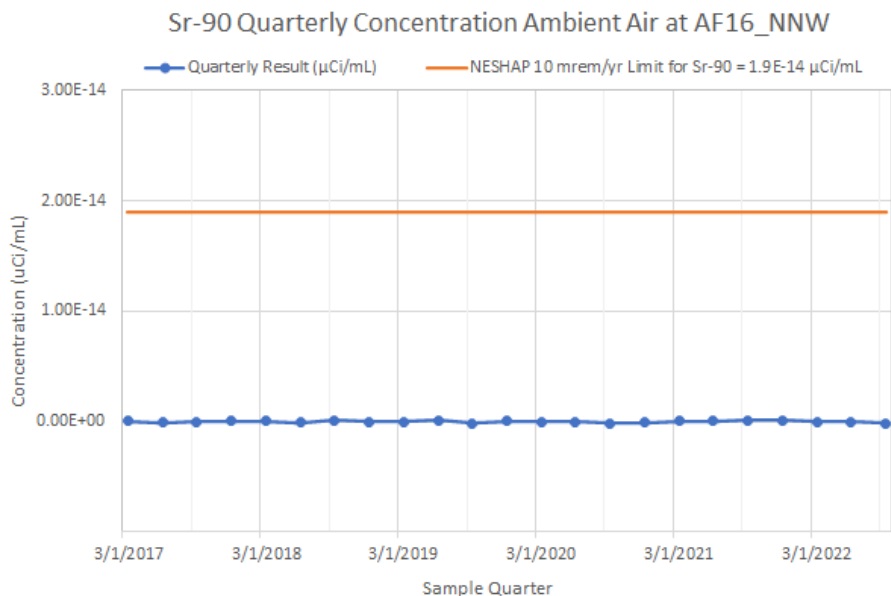
The concentrations of radioisotopes at this location continue to be well below the compliance limit through 3Q 2022 without significant changes in the concentrations.

Map 1



1. strontium-90 (Sr-90)

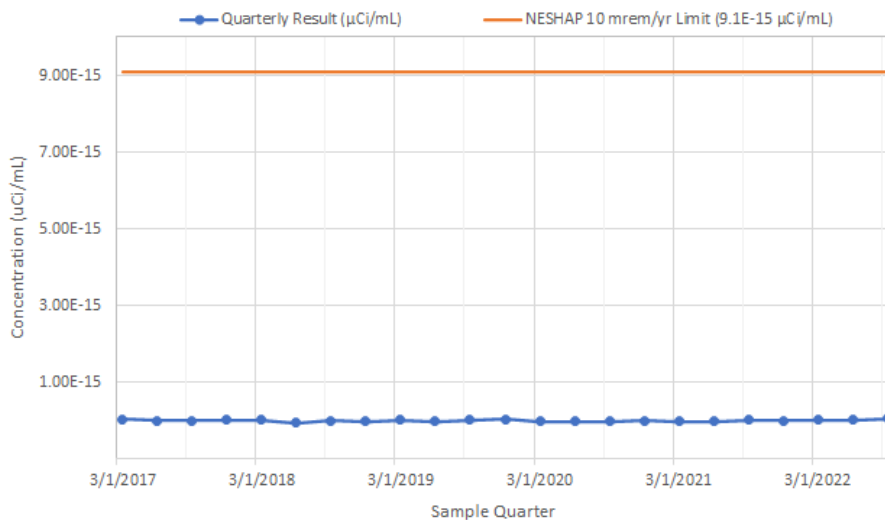
Location	Sample ID	Sample Date	Quarterly Result (μCi/mL)	Quarterly Uncertainty (μCi/mL)	NESHAP 10 mrem/yr Limit for Sr-90 = 1.9E-14 μCi/mL	Concentration (%) of NESHAP Limit
AF16_NNW	2017-00125	3/28/2017	6.58E-17	9.28E-17	1.90E-14	0.35%
AF16_NNW	2017-02597	6/20/2017	-7.63E-17	1.03E-16	1.90E-14	-0.40%
AF16_NNW	2017-04074	9/26/2017	-9.84E-18	9.42E-17	1.90E-14	-0.05%
AF16_NNW	2017-05992	12/19/2017	2.64E-17	5.16E-17	1.90E-14	0.14%
AF16_NNW	2018-00075	3/27/2018	2.77E-17	1.08E-16	1.90E-14	0.15%
AF16_NNW	2018-02591	6/19/2018	-8.08E-17	1.10E-16	1.90E-14	-0.43%
AF16_NNW	2018-03821	9/25/2018	9.93E-17	1.13E-16	1.90E-14	0.52%
AF16_NNW	2018-05930	12/18/2018	7.82E-18	8.88E-17	1.90E-14	0.04%
AF16_NNW	2019-00118	3/26/2019	-2.83E-17	9.31E-17	1.90E-14	-0.15%
AF16_NNW	2019-02458	6/18/2019	1.37E-16	1.61E-16	1.90E-14	0.72%
AF16_NNW	2019-04141	9/24/2019	-1.82E-16	1.35E-16	1.90E-14	-0.96%
AF16_NNW	2019-06029	12/17/2019	2.32E-17	1.30E-16	1.90E-14	0.12%
AF16_NNW	2020-00572	3/24/2020	-4.24E-17	6.68E-17	1.90E-14	-0.22%
AF16_NNW	2020-02347	6/16/2020	-2.31E-17	1.34E-16	1.90E-14	-0.12%
AF16_NNW	2020-04109	9/22/2020	-1.36E-16	1.10E-16	1.90E-14	-0.72%
AF16_NNW	2020-05758	12/15/2020	-1.03E-16	9.40E-17	1.90E-14	-0.54%
AF16_NNW	2021-00163	3/23/2021	5.93E-17	1.09E-16	1.90E-14	0.31%
AF16_NNW	2021-02606	6/15/2021	4.15E-17	1.42E-16	1.90E-14	0.22%
AF16_NNW	2021-04345	9/21/2021	1.17E-16	9.77E-17	1.90E-14	0.62%
AF16_NNW	2021-06770	12/28/2021	9.81E-17	8.93E-17	1.90E-14	0.52%
AF16_NNW	2022-00044	3/22/2022	1.10E-17	7.63E-17	1.90E-14	0.06%
AF16_NNW	2022-02606	6/28/2022	-8.81E-18	1.06E-16	1.90E-14	-0.05%
AF16_NNW	2022-05037	9/20/2022	-1.87E-16	1.15E-16	1.90E-14	-0.99%



**2. Iodine-129 (I-129)**

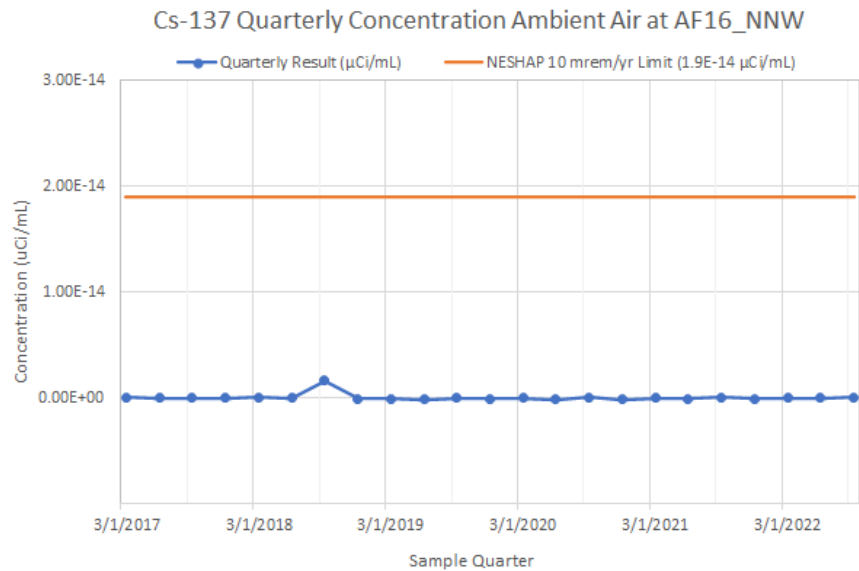
Location	Sample ID	Sample Date	Quarterly Result (μCi/mL)	Quarterly Uncertainty (μCi/mL)	NESHAP 10 mrem/yr Limit (9.1E-15 μCi/mL)	Concentration (%) of NESHAP Limit
AF16_NNW	2017-00125	3/28/2017	4.70E-17	9.52E-17	9.10E-15	0.52%
AF16_NNW	2017-02597	6/20/2017	2.66E-18	9.94E-17	9.10E-15	0.03%
AF16_NNW	2017-04074	9/26/2017	9.93E-18	5.29E-17	9.10E-15	0.11%
AF16_NNW	2017-05992	12/19/2017	1.61E-17	7.40E-17	9.10E-15	0.18%
AF16_NNW	2018-00075	3/27/2018	1.28E-17	4.65E-17	9.10E-15	0.14%
AF16_NNW	2018-02591	6/19/2018	-5.32E-17	5.85E-17	9.10E-15	-0.58%
AF16_NNW	2018-03821	9/25/2018	6.12E-18	5.73E-17	9.10E-15	0.07%
AF16_NNW	2018-05930	12/18/2018	-1.62E-17	4.92E-17	9.10E-15	-0.18%
AF16_NNW	2019-00118	3/26/2019	2.50E-17	4.58E-17	9.10E-15	0.27%
AF16_NNW	2019-02458	6/18/2019	-1.21E-17	2.75E-17	9.10E-15	-0.13%
AF16_NNW	2019-04141	9/24/2019	1.23E-17	4.99E-17	9.10E-15	0.13%
AF16_NNW	2019-06029	12/17/2019	3.04E-17	5.43E-17	9.10E-15	0.33%
AF16_NNW	2020-00572	3/24/2020	-2.07E-17	4.17E-17	9.10E-15	-0.23%
AF16_NNW	2020-02347	6/16/2020	-2.63E-17	7.44E-17	9.10E-15	-0.29%
AF16_NNW	2020-04109	9/22/2020	-1.02E-17	5.80E-17	9.10E-15	-0.11%
AF16_NNW	2020-05758	12/15/2020	4.11E-18	8.97E-17	9.10E-15	0.05%
AF16_NNW	2021-00163	3/23/2021	-1.47E-17	7.06E-17	9.10E-15	-0.16%
AF16_NNW	2021-02606	6/15/2021	-1.05E-17	5.98E-17	9.10E-15	-0.12%
AF16_NNW	2021-04345	9/21/2021	1.94E-17	8.63E-17	9.10E-15	0.21%
AF16_NNW	2021-06770	12/28/2021	-6.59E-18	2.76E-17	9.10E-15	-0.07%
AF16_NNW	2022-00044	3/22/2022	1.47E-17	4.40E-17	9.10E-15	0.16%
AF16_NNW	2022-02606	6/28/2022	2.26E-17	4.29E-17	9.10E-15	0.25%
AF16_NNW	2022-05037	9/20/2022	5.10E-17	6.99E-17	9.10E-15	0.56%

I-129 Quarterly Concentration Ambient Air at AF16\_NNW



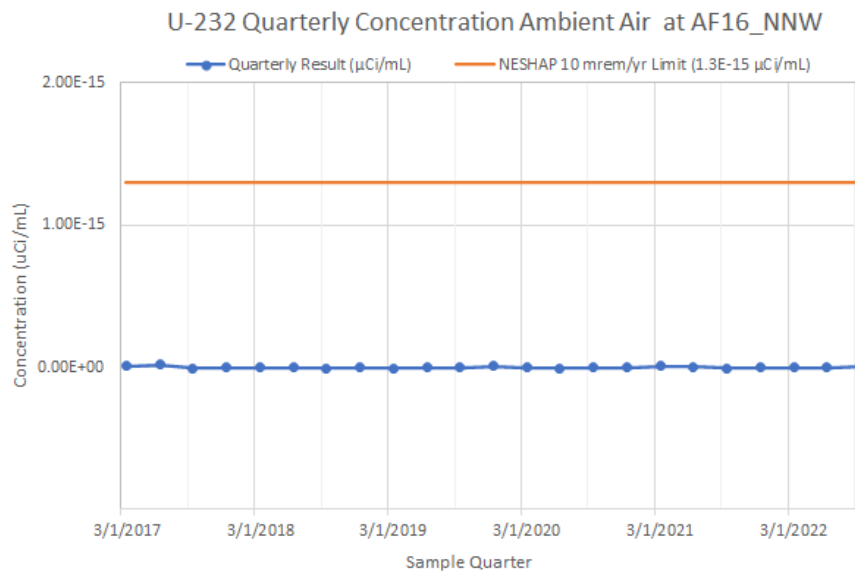
### 3. Cesium-137 (Cs-137)

Location	Sample ID	Sample Date	Quarterly Result (μCi/mL)	Quarterly Uncertainty (μCi/mL)	NESHAP 10 mrem/yr Limit (1.9E-14 μCi/mL)	Concentration (%) of NESHAP Limit
AF16_NNW	2017-00125	3/28/2017	5.63E-17	8.22E-17	1.90E-14	0.30%
AF16_NNW	2017-02597	6/20/2017	2.00E-17	9.15E-17	1.90E-14	0.11%
AF16_NNW	2017-04074	9/26/2017	3.35E-17	8.24E-17	1.90E-14	0.18%
AF16_NNW	2017-05992	12/19/2017	8.33E-18	7.34E-17	1.90E-14	0.04%
AF16_NNW	2018-00075	3/27/2018	4.93E-17	7.08E-17	1.90E-14	0.26%
AF16_NNW	2018-02591	6/19/2018	-1.01E-17	5.10E-17	1.90E-14	-0.05%
AF16_NNW	2018-03821	9/25/2018	1.66E-15	1.54E-16	1.90E-14	8.73%
AF16_NNW	2018-05930	12/18/2018	-2.49E-17	8.64E-17	1.90E-14	-0.13%
AF16_NNW	2019-00118	3/26/2019	-2.69E-17	9.55E-17	1.90E-14	-0.14%
AF16_NNW	2019-02458	6/18/2019	-1.50E-16	1.24E-16	1.90E-14	-0.79%
AF16_NNW	2019-04141	9/24/2019	-1.58E-19	9.02E-17	1.90E-14	0.00%
AF16_NNW	2019-06029	12/17/2019	-2.89E-17	1.07E-16	1.90E-14	-0.15%
AF16_NNW	2020-00572	3/24/2020	3.53E-17	5.74E-17	1.90E-14	0.19%
AF16_NNW	2020-02347	6/16/2020	-9.50E-17	1.27E-16	1.90E-14	-0.50%
AF16_NNW	2020-04109	9/22/2020	6.71E-17	8.71E-17	1.90E-14	0.35%
AF16_NNW	2020-05758	12/15/2020	-1.02E-16	1.04E-16	1.90E-14	-0.54%
AF16_NNW	2021-00163	3/23/2021	-1.17E-17	8.14E-17	1.90E-14	-0.06%
AF16_NNW	2021-02606	6/15/2021	-4.87E-17	1.08E-16	1.90E-14	-0.26%
AF16_NNW	2021-04345	9/21/2021	6.31E-17	6.86E-17	1.90E-14	0.33%
AF16_NNW	2021-06770	12/28/2021	-7.15E-17	9.15E-17	1.90E-14	-0.38%
AF16_NNW	2022-00044	3/22/2022	1.65E-17	1.02E-16	1.90E-14	0.09%
AF16_NNW	2022-02606	6/28/2022	7.76E-18	5.97E-17	1.90E-14	0.04%
AF16_NNW	2022-05037	9/20/2022	7.32E-17	9.11E-17	1.90E-14	0.39%



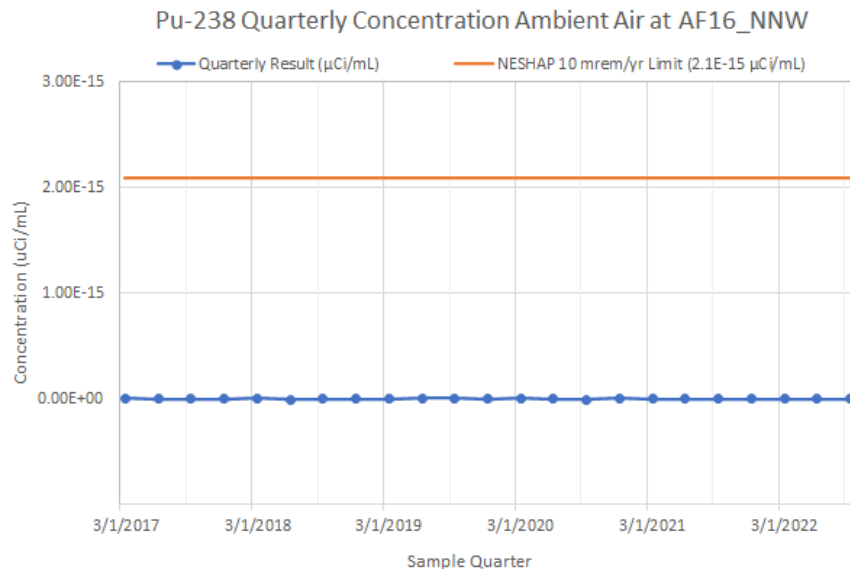
#### 4. Uranium-232 (U-232)

Location	Sample ID	Sample Date	Quarterly Result (μCi/mL)	Quarterly Uncertainty (μCi/mL)	NESHAP 10 mrem/yr Limit (1.3E-15 μCi/mL)	Concentration (%) of NESHAP Limit
AF16_NNW	2017-00125	3/28/2017	8.09E-18	1.31E-17	1.30E-15	0.62%
AF16_NNW	2017-02597	6/20/2017	1.70E-17	1.53E-17	1.30E-15	1.30%
AF16_NNW	2017-04074	9/26/2017	-6.48E-18	9.84E-18	1.30E-15	-0.50%
AF16_NNW	2017-05992	12/19/2017	-7.39E-19	6.65E-18	1.30E-15	-0.06%
AF16_NNW	2018-00075	3/27/2018	-9.52E-19	8.94E-18	1.30E-15	-0.07%
AF16_NNW	2018-02591	6/19/2018	-3.40E-18	9.68E-18	1.30E-15	-0.26%
AF16_NNW	2018-03821	9/25/2018	-8.57E-18	9.40E-18	1.30E-15	-0.66%
AF16_NNW	2018-05930	12/18/2018	-2.33E-18	1.13E-17	1.30E-15	-0.18%
AF16_NNW	2019-00118	3/26/2019	-5.76E-18	9.79E-18	1.30E-15	-0.44%
AF16_NNW	2019-02458	6/18/2019	3.39E-24	1.32E-17	1.30E-15	0.00%
AF16_NNW	2019-04141	9/24/2019	-1.12E-18	1.01E-17	1.30E-15	-0.09%
AF16_NNW	2019-06029	12/17/2019	6.04E-18	9.40E-18	1.30E-15	0.46%
AF16_NNW	2020-00572	3/24/2020	-3.93E-18	9.45E-18	1.30E-15	-0.30%
AF16_NNW	2020-02347	6/16/2020	-6.10E-18	8.63E-18	1.30E-15	-0.47%
AF16_NNW	2020-04109	9/22/2020	0.00E+00	7.94E-18	1.30E-15	0.00%
AF16_NNW	2020-05758	12/15/2020	-2.83E-18	1.11E-17	1.30E-15	-0.22%
AF16_NNW	2021-00163	3/23/2021	8.06E-18	9.82E-18	1.30E-15	0.62%
AF16_NNW	2021-02606	6/15/2021	1.37E-18	7.07E-18	1.30E-15	0.11%
AF16_NNW	2021-04345	9/21/2021	-8.49E-18	1.09E-17	1.30E-15	-0.65%
AF16_NNW	2021-06770	12/28/2021	-7.54E-19	3.61E-18	1.30E-15	-0.06%
AF16_NNW	2022-00044	3/22/2022	-1.47E-18	5.38E-18	1.30E-15	-0.11%
AF16_NNW	2022-02606	6/28/2022	-8.04E-19	5.68E-18	1.30E-15	-0.06%
AF16_NNW	2022-05037	9/20/2022	5.69E-18	1.11E-17	1.3E-15	0.44%



### 5. Plutonium-238 (Pu-238)

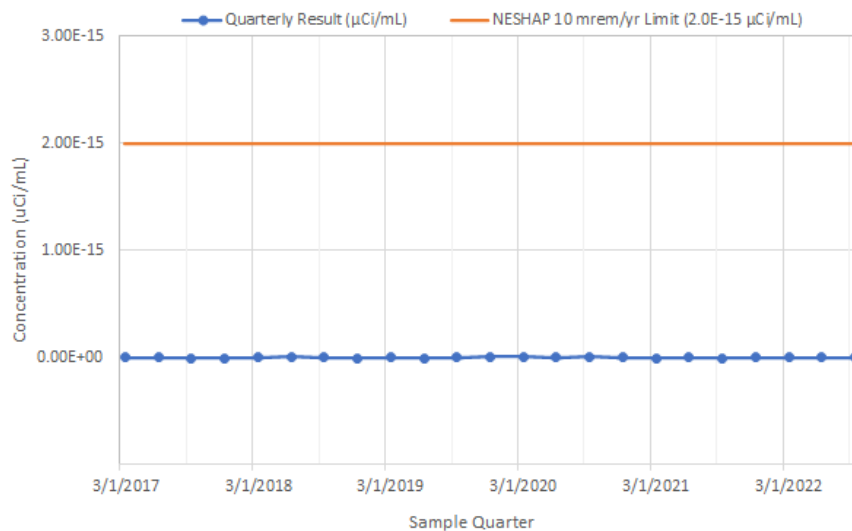
Location	Sample ID	Sample Date	Quarterly Result (μCi/mL)	Quarterly Uncertainty (μCi/mL)	NESHAP 10 mrem/yr Limit (2.1E-15 μCi/mL)	Concentration (%) of NESHAP Limit
AF16_NNW	2017-00125	3/28/2017	6.40E-18	7.52E-18	2.10E-15	0.30%
AF16_NNW	2017-02597	6/20/2017	0.00E+00	5.77E-18	2.10E-15	0.00%
AF16_NNW	2017-04074	9/26/2017	-1.20E-18	5.26E-18	2.10E-15	-0.06%
AF16_NNW	2017-05992	12/19/2017	1.20E-19	8.92E-18	2.10E-15	0.01%
AF16_NNW	2018-00075	3/27/2018	7.43E-18	1.08E-17	2.10E-15	0.35%
AF16_NNW	2018-02591	6/19/2018	-5.72E-18	1.02E-17	2.10E-15	-0.27%
AF16_NNW	2018-03821	9/25/2018	-9.33E-19	4.86E-18	2.10E-15	-0.04%
AF16_NNW	2018-05930	12/18/2018	-1.98E-18	1.03E-17	2.10E-15	-0.09%
AF16_NNW	2019-00118	3/26/2019	-2.04E-18	9.39E-18	2.10E-15	-0.10%
AF16_NNW	2019-02458	6/18/2019	5.13E-18	1.23E-17	2.10E-15	0.24%
AF16_NNW	2019-04141	9/24/2019	4.76E-18	6.98E-18	2.10E-15	0.23%
AF16_NNW	2019-06029	12/17/2019	1.88E-18	6.91E-18	2.10E-15	0.09%
AF16_NNW	2020-00572	3/24/2020	6.79E-18	8.28E-18	2.10E-15	0.32%
AF16_NNW	2020-02347	6/16/2020	1.89E-18	5.87E-18	2.10E-15	0.09%
AF16_NNW	2020-04109	9/22/2020	-4.50E-18	1.12E-17	2.10E-15	-0.21%
AF16_NNW	2020-05758	12/15/2020	6.14E-18	7.99E-18	2.10E-15	0.29%
AF16_NNW	2021-00163	3/23/2021	-5.47E-25	5.09E-18	2.10E-15	0.00%
AF16_NNW	2021-02606	6/15/2021	3.97E-18	6.15E-18	2.10E-15	0.19%
AF16_NNW	2021-04345	9/21/2021	-1.78E-18	6.05E-18	2.10E-15	-0.08%
AF16_NNW	2021-06770	12/28/2021	0.00E+00	4.40E-18	2.10E-15	0.00%
AF16_NNW	2022-00044	3/22/2022	-8.36E-19	4.33E-18	2.10E-15	-0.04%
AF16_NNW	2022-02606	6/28/2022	4.35E-18	6.86E-18	2.10E-15	0.21%
AF16_NNW	2022-05037	9/20/2022	4.39E-18	5.71E-18	2.10E-15	0.21%



**6. Plutonium-239/240 (Pu-239/240)**

Location	Sample ID	Sample Date	Quarterly Result (μCi/mL)	Quarterly Uncertainty (μCi/mL)	NESHAP 10 mrem/yr Limit (2.0E-15 μCi/mL)	Concentration (%) of NESHAP Limit
AF16_NNW	2017-00125	3/28/2017	1.28E-18	7.51E-18	2.00E-15	0.06%
AF16_NNW	2017-02597	6/20/2017	1.33E-18	9.98E-18	2.00E-15	0.07%
AF16_NNW	2017-04074	9/26/2017	-5.99E-18	7.04E-18	2.00E-15	-0.30%
AF16_NNW	2017-05992	12/19/2017	-2.77E-18	9.35E-18	2.00E-15	-0.14%
AF16_NNW	2018-00075	3/27/2018	1.23E-18	8.00E-18	2.00E-15	0.06%
AF16_NNW	2018-02591	6/19/2018	5.71E-18	1.12E-17	2.00E-15	0.29%
AF16_NNW	2018-03821	9/25/2018	1.87E-18	4.49E-18	2.00E-15	0.09%
AF16_NNW	2018-05930	12/18/2018	-6.93E-18	1.15E-17	2.00E-15	-0.35%
AF16_NNW	2019-00118	3/26/2019	3.48E-19	4.25E-18	2.00E-15	0.02%
AF16_NNW	2019-02458	6/18/2019	-2.56E-18	1.32E-17	2.00E-15	-0.13%
AF16_NNW	2019-04141	9/24/2019	1.85E-18	5.70E-18	2.00E-15	0.09%
AF16_NNW	2019-06029	12/17/2019	5.64E-18	5.83E-18	2.00E-15	0.28%
AF16_NNW	2020-00572	3/24/2020	9.01E-18	9.38E-18	2.00E-15	0.45%
AF16_NNW	2020-02347	6/16/2020	9.50E-19	6.15E-18	2.00E-15	0.05%
AF16_NNW	2020-04109	9/22/2020	5.61E-18	8.55E-18	2.00E-15	0.28%
AF16_NNW	2020-05758	12/15/2020	3.68E-18	6.36E-18	2.00E-15	0.18%
AF16_NNW	2021-00163	3/23/2021	-4.10E-18	6.62E-18	2.00E-15	-0.20%
AF16_NNW	2021-02606	6/15/2021	3.96E-18	5.49E-18	2.00E-15	0.20%
AF16_NNW	2021-04345	9/21/2021	-4.45E-18	6.74E-18	2.00E-15	-0.22%
AF16_NNW	2021-06770	12/28/2021	1.42E-18	5.89E-18	2.00E-15	0.07%
AF16_NNW	2022-00044	3/22/2022	8.36E-19	7.12E-18	2.00E-15	0.04%
AF16_NNW	2022-02606	6/28/2022	3.74E-18	8.60E-18	2.00E-15	0.19%
AF16_NNW	2022-05037	9/20/2022	1.75E-18	5.96E-18	2.00E-15	0.09%

Pu-239/240 Quarterly Concentration Ambient Air at AF16\_NNW





**7. Americium-241 (Am-241)**

Location	Sample ID	Sample Date	Quarterly Result (µCi/mL)	Quarterly Uncertainty (µCi/mL)	NESHAP 10 mrem/yr Limit (1.9E-15 µCi/mL)	Concentration (%) of NESHAP Limit
AF16_NNW	2017-00125	3/28/2017	1.59E-18	6.96E-18	1.90E-15	0.08%
AF16_NNW	2017-02597	6/20/2017	2.05E-18	6.09E-18	1.90E-15	0.11%
AF16_NNW	2017-04074	9/26/2017	-2.14E-18	5.51E-18	1.90E-15	-0.11%
AF16_NNW	2017-05992	12/19/2017	0.00E+00	4.69E-18	1.90E-15	0.00%
AF16_NNW	2018-00075	3/27/2018	6.91E-19	4.33E-18	1.90E-15	0.04%
AF16_NNW	2018-02591	6/19/2018	-7.10E-19	6.19E-18	1.90E-15	-0.04%
AF16_NNW	2018-03821	9/25/2018	-1.69E-18	6.63E-18	1.90E-15	-0.09%
AF16_NNW	2018-05930	12/18/2018	2.54E-18	6.90E-18	1.90E-15	0.13%
AF16_NNW	2019-00118	3/26/2019	1.89E-17	1.54E-17	1.90E-15	1.00%
AF16_NNW	2019-02458	6/18/2019	2.46E-24	1.29E-17	1.90E-15	0.00%
AF16_NNW	2019-04141	9/24/2019	1.29E-17	1.11E-17	1.90E-15	0.68%
AF16_NNW	2019-06029	12/17/2019	-1.05E-18	5.44E-18	1.90E-15	-0.06%
AF16_NNW	2020-00572	3/24/2020	2.26E-18	7.69E-18	1.90E-15	0.12%
AF16_NNW	2020-02347	6/16/2020	4.47E-25	4.95E-18	1.90E-15	0.00%
AF16_NNW	2020-04109	9/22/2020	1.67E-18	4.73E-18	1.90E-15	0.09%
AF16_NNW	2020-05758	12/15/2020	4.19E-18	5.81E-18	1.90E-15	0.22%
AF16_NNW	2021-00163	3/23/2021	-2.05E-18	6.95E-18	1.90E-15	-0.11%
AF16_NNW	2021-02606	6/15/2021	1.64E-18	8.48E-18	1.90E-15	0.09%
AF16_NNW	2021-04345	9/21/2021	1.31E-18	9.29E-18	1.90E-15	0.07%
AF16_NNW	2021-06770	12/28/2021	1.72E-18	4.13E-18	1.90E-15	0.09%
AF16_NNW	2022-00044	3/22/2022	4.60E-19	5.61E-18	1.90E-15	0.02%
AF16_NNW	2022-02606	6/28/2022	1.25E-18	8.11E-18	1.90E-15	0.07%
AF16_NNW	2022-05037	9/20/2022	9.55E-18	9.90E-18	1.90E-15	0.50%

Am-241 Quarterly Concentration Ambient Air at AF16\_NNW

