

Sewer Disposal of Radioactive Material

1. In order to comply with current ARRA regulations, radiation permit holders must notify the RSO prior to any sewer disposal.
2. Criteria for sewer disposal:
 - a. Half-life over 120 days
 - b. Readily soluble or dispersible in water.
 - c. Contains no substances prohibited by the City of Flagstaff Wastewater Ordinances.
 - d. The quantity does not exceed the limit set forth in Arizona Administrative Code (AAC) Appendix B, Table III of Title 12 Chapter 1.
 - e. If disposing of more than one radionuclide, it must meet the requirements in AAC R12-1-436.
 - f. No more than 5 Ci of H-3, 1 Ci of C-14 and 1 Ci of all other isotopes may be disposed through the sewer system in a calendar year.
 - g. Only designated radioisotope sinks may be used.
2. If the material meets all of the criteria stated above, the material may be disposed of in the sewer system, and entries will be made on the Radioactive Waste Sewer Disposal Log-F:NAU:RAD:19.
3. The Radioactive Waste Sewer Disposal Log will be kept up-to-date, and will be reviewed by the Radiation Safety Officer on a quarterly basis.

Isotopes on NAU's permit with half-life over 120 days – Disposal Limits per Appendix B, Table III, Arizona Administrative Code – Title 12, Chapter 1

Isotope	Effluent Concentrations in $\mu\text{Ci/ml}$	Monthly Average Concentrations in $\mu\text{Ci/ml}$
Hydrogen-3	1.00E-03	1.00E-02
Carbon-14	3.00E-05	3.00E-04
Cadmium-109	6.00E-06	6.00E-05
Radium-226	6.00E-08	6.00E-07
Neptunium-237	2.00E-08	2.00E-07
Plutonium-238	2.00E-08	2.00E-07
Plutonium-239	2.00E-08	2.00E-07
Plutonium-240	2.00E-08	2.00E-07
Plutonium-241	1.00E-06	1.00E-05
Americium-241	2.00E-08	2.00E-07
Plutonium-242	2.00E-08	2.00E-07
Uranium-233	3.00E-07	3.00E-06
Uranium-238 Uranyl Acetate Uranyl Nitrate	3E-07	3E-06