Frequently Asked Questions (FAQs)

What happens to radionuclides as they decay? As radionuclides decay, they become new elements called daughter products, which are also known as decay products. These daughter products may or may not be radioactive themselves. If a daughter product is also radioactive, it in turn will decay to form a different daughter product. This process will continue until a stable, nonradioactive product is formed. The radioactive decay of a radionuclide and all of its daughters is known as a decay chain.

What is half-life? The rate a radionuclide decays is its half-life. Half-life is defined as the amount of time it takes for half of the amount of a substance to emit radiation and change to a different substance. Radionuclide half-lives can be very long or very short. For example, uranium-238 has a half-life of 4.5 billion years, while carbon-11 has a half-life of only a few minutes.

How does EPA calculate risks to human health from radiation exposure at Superfund sites? EPA assesses the health effects of radiation by calculating excess cancer risk posed by radioactive contamination. Excess cancer risk is the additional probability that a person exposed to the contamination will develop cancer over a lifetime. EPA considers excess cancer risk to be any risk above the protective range. The protective range is a probability that a person exposed to radioactive and chemical contaminants will have between a one in ten thousand and a one in a million chance of developing cancer, known as the 10^{-4} to 10^{-6} cancer risk range. It is important to note that, even in the protective range, most people will have less of a chance of developing cancer than these numbers indicate. EPA uses assumptions about exposure levels that are higher than most people's actual exposure.

What is TENORM?

Technologically Enhanced Naturally Occurring Radioactive Material (TENORM) is defined as, "Naturally occurring radioactive materials that have been concentrated or exposed to the accessible environment as a result of human activities such as manufacturing, mineral extraction, or water processing."

"Technologically enhanced" means that the radiological, physical, and chemical properties of the radioactive material have been concentrated or further altered by having been processed, or beneficiated, or disturbed in a way that increases the potential for human and/or environmental exposures.

Naturally Occurring Radioactive Material (NORM) is defined as, "Materials which may contain any of the primordial radionuclides or radioactive elements as they occur in nature, such as radium, uranium, thorium, potassium, and their radioactive decay products, such as radium and radon, that are undisturbed as a result of human activities." [1]

Background radiation, which is present in terrestrial, cosmic, and cosmogenic sources, is always around us. Some man-made radioactivity is considered part of background for regulatory purposes (e.g., fallout from weapons testing).

Many of the materials that are considered TENORM have only trace amounts of radioactivity and are part of our everyday landscape. However, some TENORM has relatively higher concentrations of

radionuclides that can result in elevated exposures to radiation. EPA is investigating TENORM and its management because it can be a hazard to human health and the environment.

Who are the officials involved?

EPA is coordinating with the West Virginia Department of Environmental Protection (WV DEP), West Virginia Department of Health (WV DH), Marion County Office of Homeland Security and Emergency Services, and others to ensure a unified response to protect the public. EPA's response will focus on radionuclides in the form of TENORM (Technologically Enhanced Naturally Occurring Radioactive Material). TENORM is a naturally occurring radioactive material that has been concentrated or exposed to the environment because of human activities such as manufacturing, mineral extraction, or water processing.

Why do we have to use FOIA to get data?

If the information you want, or request, is not publicly available, you can submit a Freedom of Information Act (FOIA) request. A FOIA request can be submitted to the National FOIA Office in Headquarters. Requests can be delivered by mail, sent by overnight delivery, submitted to the EPA FOIA public access link, or submitted through FOIA.gov. There is no central office in the government which handles FOIA requests for all federal agencies. A request must be made to the agency that has the records you seek. A FOIA request can be made for any Agency record. This does not mean, however, that EPA will disclose every record sought.

There are nine exemptions that authorize the withholding of information of an appropriately sensitive nature. When EPA withholds information, it will specify which exemption of FOIA permits the withholding. You should be aware that the FOIA does not require agencies to do research for you, to analyze data, to answer questions, or to create records to respond to a request. When EPA cannot process your request due to the lack of necessary information, you may be contacted, and additional information will be requested.

Who owns the site now?

The Fairmont Brine Processing site is located at 168 AFR Drive in Fairmont West Virginia. The Brine processing facility was constructed between 2009 and 2010 by the AOP Clearwater LLC. The plant was acquired by Fairmont Brine Processing (FBP) in 2012. FBP began pre-treatment operations at the Site in 2013 and fully operated the plant in fall of 2014. FBP ceased operations at the site on or about March 1, 2018.

What is EPA's timeline?

EPA is using its authority under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) to perform a Time-Critical Removal Action. CERCLA outlines the timeline and process for Time-Critical Removal Actions. EPA has also been providing regular updates on progress and the timeline for the Fairmont Brine site.

West Virginia Department of Health [also known as WVDH (formerly known as WV DHHR)] has reviewed data from radiological testing which occurred in 2019 as part of routine compliance testing and also

conducted new tests of both raw (untreated) and finished (treated) drinking water at the Morgantown Utility Board water treatment facility in October 2023. This facility is operated by the only West Virginia public water system downstream of the former Fairmont Brine along the Monongahela River. All testing results for regulated radionuclides are well below EPA drinking water standards. This data provides strong evidence that the radioactivity at the former Fairmont Brine site has had no effect on public drinking water supplies.

EPA mailed informational postcards to addresses within 1.5 miles of the site on 12/12/2023. The postcards provide residents with current information regarding the site, and contact information to address potential concerns. A digital version of the postcard is uploaded in the documents section of this website. Visit www.response.epa.gov to view the postcard and read the entire timeline. Updates to the site will be posted as more information becomes available.

Is it safe to live around the site?

Based on current radiological data obtained at the Fairmont Brine site, none of the data collected suggests that there are measurable health impacts to the public resulting from the May 2023 fire. Individuals that would like to discuss specific health concerns may reach out to the West Virginia Department of Health, Bureau for Public Health's Office of Environmental Health Services Radiological Health Program at 304-558-2981.

Why did they build Fairmont Brine?

Fairmont Brine was built as a facility that would take brine from the oil and gas industry. Brine, or produced water, is a byproduct of oil and gas production. It consists of water from the geologic formation, injection water, oil and salts. Brine has a high salt concentration.

The Fairmont Brine treatment system separated the salts from the water and treated the water for reuse. The extracted salts were sold by the company.

Why weren't local first responders notified about the substances on site?

Once WVDH was notified of the fire at the facility, WVDH representatives spoke directly with the fire chief responding to the site. WVDH explained the need for proper PPE and ventilation devices to be used during the response and WVDH staff were dispatched to the fire.