RADIOACTIVE FRACKING WASTE AT FAIRMONT BRINE:
PROTECTING COMMUNITIES IN MARION COUNTY, WEST VIRGINIA

FAIRMONT BRINE SITE TIMELINE

Construction of the Fairmont Brine Processing site near Fairmont was completed in **2010** by AOP Clearwater. After acquiring it, Fairmont Brine Processing began operations in **2013**, ceasing operations in **2018**.

Hydraulic fracturing ("fracking") uses millions of gallons of water and chemicals to fracture shale deep underground. When these fluids return to the surface, this "**flowback**" also contains water, salts, and naturally occurring radioactive materials from the shale formation. Most of this flowback is injected underground, but some is sent to sites like Fairmont Brine for "treatment."

Fluids from fracking operations can contain **Technologically Enhanced Naturally Occurring Radioactive Material (TENORM)**. TENORM can be more concentrated than naturally occurring radioactive materials.

On **May 30, 2023**, a fire and explosion at the Fairmont Brine site damaged an aboveground storage tank. Elevated radiation readings due to TENORM were then found in several areas of the site. The U.S. Environmental Protection Agency (EPA) helped the West Virginia Department of Environmental Protection (DEP) and other state agencies respond. EPA and its contractors posted "No Trespassing signs at the site, and by November they had fenced the site to mitigate long-term exposure to radiation to trespassers, responders, and the public.

In **November 2023**, EPA reported that none of the then-current radiological data suggested that there were measurable health impacts to the public resulting from the fire. However, EPA's data did confirm the presence of certain types of radioactivity, including radium-226. According to EPA, the highest dose rate of 3 mrem per hour in one location would not cause immediate health effects. EPA did acknowledge, however, that exposure over a lifetime to lower levels can increase the risk of cancer.

In **February 2024**, EPA and its contractors installed additional security measures, including new fencing panels and locks on gates around the site. They also secured roll-off dumpsters and covered them with tarps.

EPA'S JUNE 2024 REPORT

In June 2024, EPA released a report called "Fairmont Brine Processing Site Final Report," which summarizes the results of radiation testing performed in March. EPA scanned all accessible parts of the site and found six locations with elevated radiation levels that were at least three times higher than background. EPA found two additional locations with somewhat lower radiation levels, but that still approached three times background levels. EPA also assessed which types of radionuclides were detected and found that all gamma-emitting radionuclides were TENORM.

The highest readings were found inside the Complex Building and near the roll-off dumpsters. At both of these locations, radiation was approximately 30 times higher than background.

WHAT IT MEANS FOR THE COMMUNITY

EPA's June 2024 report confirms that high levels of radiation are still at the Fairmont Brine site. The type of radiation found at the site is dangerous. Alpha and beta particles are most dangerous when ingested or inhaled. Gamma radiation can pass through the human body, causing cell damage that can lead to health impacts including cancer. The most important thing that members of the community can do to stay safe is to stay off the site. If you or a member of the community was on the site, consider consulting with a medical professional.

RECOMMENDATIONS

Limit site access. EPA should continue to limit access to the site. Frequent inspections of the fencing and signs should be conducted to ensure they are secure. There is evidence of trespassing and partying at the site. The public needs to be aware of the health hazards.

Remove the radioactive material. EPA should remove all radioactive material that is present due to human activities and that is above a site-specific background activity level established for the area. These materials should be disposed of properly so that there will be no further human exposure. EPA has made cleanup of Fairmont Brine a priority, requesting emergency resources to decrease hazards. The surrounding neighborhood is at risk from dust exposure and water runoff during removal of radioactive materials. All caution must be taken to reduce risk.

Confirm that the site is fully remediated. After removal of radioactive materials, EPA should conduct further testing to confirm that radiation levels at the site have returned to background levels.

Engage with the public. EPA should continue to communicate with the public on its progress addressing the radioactive materials at the site. This communication should include a graphical and written presentation of all pathways for human and ecological exposures to radioactivity identified at the site for affected soils, water, and air.

We further recommend that DEP review its permitting, inspection, and enforcement procedures to understand how a permitted facility such as the Fairmont Brine site was able to become contaminated with radioactive material, be abandoned by its operator, and sit unprotected to human access, even after a fire and explosion.

EPA RESOURCES

Fairmont Brine Site. https://response.epa.gov/site/site_profile.aspx?site_id=16192
Fairmont Brine Processing Site Final Report. June 15, 2024. https://response.epa.gov/sites/16192/files/FBP_FinalReport_NCRFO.pdf
Technologically Enhanced Naturally Occurring Radioactive Materials (TENORM). https://www.epa.gov/radiation/technologically-enhanced-naturally-occurring-radioactive-materials-tenorm
National Primary Drinking Water Regulations for Radionuclides. https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations#RADS