



## TENORM Waste Sampling Project

Idaho promulgated rules establishing radiation protection standards for the possession, use, transfer, and disposal of technologically enhanced naturally occurring radioactive materials (TENORM). These rules require businesses that generate TENORM waste to manage it accordingly. However, TENORM already subject to regulation under the Atomic Energy Act (AEA) of 1954 exempt from IDAPA 58.01.10, Rules Regulating the Disposal of Radioactive Materials Not Regulated Under the Atomic Energy Act (AEA) of 1954.

### What is TENORM?

Naturally occurring radioactive material (NORM) is a substance that naturally contains one or more radioactive isotopes (also called radionuclides). NORM is present at low levels in groundwater, soils, and rocks. The amount of radioactivity in a material is expressed in units of picocuries per gram (pCi/g).

TENORM is NORM whose radionuclide concentrations were caused or increased by human practices. TENORM does not include background radiation or the natural radioactivity of rocks and soils. TENORM is not federal Nuclear Regulatory Commission (NRC) licensed material. TENORM is not nuclear waste.

### Why is TENORM regulated?

There are no federal regulations to guide proper management of TENORM wastes. It is up to individual states to regulate TENORM waste.

IDAPA 58.01.10 prohibits disposal of TENORM at a Resource Conservation and Recovery Act (RCRA) Subtitle D landfill (a landfill that accepts nonhazardous waste and household waste). DEQ is evaluating TENORM wastes generated by certain water and wastewater treatment facilities in Idaho. A change to the rule would implement a threshold value under which TENORM could be disposed of at a Subtitle D landfill. There is not a consensus on how potentially radioactive wastes from drinking water and wastewater treatment are managed in Idaho. Moreover, DEQ does not know whether these wastes are radioactive enough to warrant special disposal at facilities designed and permitted to manage radioactive waste or if they can be safely managed by other means. Drinking water and wastewater system operators may not be aware of the existing requirements and be hesitant to participate in this project due to concerns about potential DEQ enforcement. DEQ does not plan to issue enforcement actions to systems that are found to be out of compliance with the current rule.

TENORM may present radiation health risks to humans via direct radiation exposure or from inhalation or ingestion of dust particles associated with the material. The major concern with TENORM is when it is ingested through eating, drinking, or breathing. Individual risk depends on the type of radiation, the levels of radiation, type of exposure, duration of exposure, and individual sensitivity. DEQ is evaluating the current rule and identifying potential modifications to ensure TENORM management is protective of human health and the environment.

Proper landfilling of TENORM waste (e.g., requiring daily cover, dust monitoring, dust control) minimizes the potential radiation dose associated with radionuclides. Dose rate monitoring can be used to detect radiation that exceeds the limits.

## **Status and next steps**

DEQ is evaluating IDAPA 58.01.10 for potential changes. While some drinking water and wastewater treatment systems have the potential to generate TENORM waste, it is not clear how many systems properly generate or dispose of TENORM waste. It's possible the disposal of many water treatment wastes are out of compliance with IDAPA 58.01.10. However, it's also possible that these wastes do not pose an unacceptable risk when disposed of in Subtitle D landfills due to low radioactivity. Through sampling and evaluation, DEQ will first determine the prevalence of TENORM waste generated from drinking and wastewater treatment. Then, DEQ will evaluate if adequate protection can be achieved when low activity TENORM wastes are disposed at Subtitle D landfills. If Subtitle D disposal is deemed acceptable, the rulemaking process would allow the addition of a regulatory threshold for TENORM disposal at Subtitle D landfills to IDAPA 58.01.10.

## **For more information**

For specific questions, contact your DEQ regional office:

- Boise: (208) 373-0550
- Coeur d'Alene: (208) 769-1422
- Idaho Falls: (208) 528-2650
- Lewiston: (208) 799-4370
- Pocatello: (208) 799-4370
- Twin Falls: (208) 736-2190