

## RADIOACTIVE FRACKING WASTE DISPOSAL

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**Senate Bill 1195 as enacted**  
**Public Act 689 of 2018**  
**Sponsor: Sen. Rebekah Warren**

Analysis available at  
<http://www.legislature.mi.gov>

**Senate Bill 1196 as enacted**  
**Public Act 688 of 2018**  
**Sponsor: Sen. Tom Casperson**

**House Committee: Natural Resources**  
**Senate Committee: Natural Resources**

**Complete to 3-20-19**

### BRIEF SUMMARY:

Senate Bill 1196 would amend the Natural Resources and Environmental Protection Act (NREPA) to allow certain levels of *technologically enhanced naturally occurring radioactive material (TENORM)* to be disposed of at hazardous waste landfills. Disposal of TENORM, or waste in which human actions like “fracking” (hydraulic fracturing) have concentrated the naturally occurring radioactive material, is currently limited to 50 picocuries per gram for certain materials. The bill would allow the Department of Environmental Quality (DEQ) to authorize a limit of up to 500 picocuries per gram at landfills falling under Part 111 (Hazardous Waste Management) of NREPA, but maintain the current limit at Type II landfills falling under Part 115 (Solid Waste Management).

*Technologically enhanced naturally occurring radioactive material (TENORM)* would mean naturally occurring radioactive material whose radionuclide concentrations have been increased as a result of human practices. It would not include source material (uranium, thorium, or other materials determined by the Atomic Energy Commission, or ores containing those materials) and its progeny in equilibrium or material with concentrations of radium-226, radium-228, and lead-210 each less than 5 picocuries per gram.

Senate Bill 1195 would set a \$5 per ton tipping fee for TENORM deposited at a hazardous waste landfill, which landfill owners or operators would pay to DEQ to set up a TENORM account funding regulation and monitoring of TENORM.

The bills will take effect March 28, 2019.

## DETAILED SUMMARY:

### Senate Bill 1196

#### **Disposal limits and disclosures**

The bill would generally prohibit the disposal of TENORM with over 50 picocuries per gram of radium-226 or radium-228 or over 260 picocuries of lead-260 in Type II landfills<sup>1</sup> (governed in Part 115 of NREPA).

However, for landfills under Part 111 (Hazardous Waste Management),<sup>2</sup> the bill would allow DEQ to authorize the disposal of TENORM with concentrations in excess of those listed above, but not exceeding 500 picocuries per gram for each radionuclide, if requested by an owner/operator in a license renewal application or major modification to a license.

In order for TENORM to be disposed of at either type of landfill (unless otherwise specified in the operating license for a hazardous waste landfill), the generator would have to provide documentation to the landfill's owner/operator of concentrations of the specified materials in the TENORM, an estimate of the TENORM's total mass, total activity, and proposed date of delivery. For Type II landfills, DEQ could still test TENORM proposed to be delivered to a landfill.

#### **Rules for higher TENORM limit at hazardous waste landfills**

A license authorizing up to 500 picocuries per gram at hazardous waste landfills would be deemed a license from Michigan's Radiation Control Authority as long as it complied with certain licensing requirements in the applicable part of Michigan's Public Health Code.

The request would need to include all of the following:

- A radiation safety program addressing personnel radiation protection, worker training, radiation surveys, radiation instrument calibration, receipts and disposal of radioactive material, emergency procedures, and record keeping.
- A report evaluating the risks of exposure to residual radioactivity using a generally accepted and DEQ-approved model, as well as the potential radiation doses to workers and members of the public.
- A description of any steps necessary to ensure minimal public exposure.
- A description of an environmental monitoring program tracking TENORM exposure and risk.

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<sup>1</sup> Sanitary landfills are classified as Type II or Type III. Type II landfills are municipal solid waste landfills, including municipal solid waste incinerator ash landfills. Type III landfills are any landfills that are not municipal solid waste landfills or hazardous waste landfills, including construction and demolition waste landfills, industrial waste landfills, or landfills which accept waste other than household waste, municipal solid waste incinerator ash, or hazardous waste from conditionally exempt small quantity generators. (Michigan Administrative Code R 299.4105: [http://dmbinternet.state.mi.us/DMB/ORRDocs/AdminCode/1485\\_2014-146EQ\\_AdminCode.pdf](http://dmbinternet.state.mi.us/DMB/ORRDocs/AdminCode/1485_2014-146EQ_AdminCode.pdf))

<sup>2</sup> A landfill falling under Part 111 of NREPA is defined as a disposal facility or part of a facility where hazardous waste is placed in or on land and which is not a pile, a land treatment facility, a surface impoundment, an injection well, a salt dome formation, a salt bed formation, or an underground mine or cave.

### **Monitoring program required for disposal of TENORM**

If TENORM with a concentration of any of the three materials of more than 25 picocuries per gram was disposed of at a Type II landfill, the operator would have to conduct an *environmental monitoring program* complying with all of the following:

- Radiological monitoring of site workers and at the landfill property boundary are conducted as specified in the license.
- Radium-225, radium-228, and lead-210 are included among the parameters analyzed in leachate and groundwater at the frequency specified in the license.
- Results of all required monitoring are included in the environmental monitoring reports.

These same requirements would apply for hazardous waste landfills, except that they would need to be conducted for TENORM disposal at any level. Additionally, if the materials' levels were above the level allowed at Type II facilities, the landfill would also have to ensure that penetrating radiation, radioactivity in air, and radon in air were measured as specified in the operating license.

### **Additional owner/operator requirements**

By March 15 each year, the owner/operator of a hazardous waste landfill would have to submit a report summarizing the information disclosed by generators for all TENORM disposed of during the previous calendar year. The owner/operator of a Type II landfill would also have to submit this report annually, but it would cover TENORM disposal over the previous fiscal year.

Additionally, the owner/operator would have to ensure that all TENORM was deposited at least 10 feet below the bottom of the future landfill cap and maintain records of the location and elevation of any TENORM disposed of at the landfill. (For Type II landfills, this requirement would only apply if the concentrations of any of the three materials was more than 25 picocuries per gram.)

MCL 324.11104 and proposed MCL 324.11132 and 324.11514b

### **Senate Bill 1195**

Senate Bill 1195 would require a hazardous waste landfill owner/operator to pay DEQ \$5 per ton of TENORM deposited at the landfill, to be submitted quarterly along with a DEQ-approved form specifying the amount of TENORM disposed of in the previous quarter and the amount of the fee being submitted. DEQ would create a TENORM account within the Environmental Pollution Prevention Fund and forward fees collected to the state treasurer for deposit into the account. The treasurer could accept money or assets from any other source and would direct investment. Money in the account at the end of the fiscal year would not lapse to the general fund.

Upon appropriation, money from the account could be used only for the following purposes:

- To pay refunds to **generators** (defined in Part 111 (Hazardous Waste Management) of NREPA as any person, by site, whose act or process produces specified hazardous waste or whose act first causes a hazardous waste to become subject to regulation under Part 111).
- To fund DEQ's regulation and oversight of Michigan's TENORM disposal.
- To provide grants to local units of government and landfill operators to obtain equipment to monitor TENORM radiation.

Proposed MCL 324.11109

### **FISCAL IMPACT:**

Senate Bills 1195 and 1196 are likely to increase costs and revenues for DEQ. Departmental costs would rise as a result of an additional regulatory mandate imposed on DEQ by the bills, while departmental revenues would rise as a result of a \$5 per ton fee paid by landfill owners or operators on disposed TENORM. DEQ estimates that approximately 50,000 tons of TENORM would be subject to regulation annually, generating approximately \$250,000 in revenue for the department. A local unit of government would be required to pay the aforementioned fee if that government owned or operated a landfill facility that accepts disposed TENORM. The bills could also increase local government revenues by virtue of grants for TENORM radiation monitoring equipment.

Legislative Analyst: Jenny McInerney  
Fiscal Analyst: Austin Scott

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