



## **Protecting Connecticut from Toxic, Radioactive Fracking & Oil & Gas Extraction Wastes**

- Fracking and other processes used to produce oil & gas are creating billions of gallons of liquid wastes and hundreds of thousands of tons of solid wastes annually in NY & PA.
- Huge amounts of liquid and solid wastes are coming from over 10,000 wells drilled in PA. This waste is being shipped to at least 8 states. It is estimated an additional 80,000 wells may be drilled in coming years, significantly increasing the amount of waste that will be exported from PA to other states.
- The dangers from chemical and radioactive contamination pose unacceptable risks to health and safety, municipal and private property values and natural resources, including aquifers providing well water and surface waters.
- Chemicals and naturally-occurring toxins in fracking & other extraction wastes are known to cause multiple cancers, multiple organ damage, neurological and developmental problems, birth defects, embryo toxicity and other serious health problems.
- Radium 226 is radioactive for 4,000 years and decays into lead. It is known to cause breast, bone and liver cancers, and is associated with adult and childhood leukemia.
- Radioactive and chemical contamination has spread due to accidents, spills, leaching and discharge into waterways after treatment efforts. Over 6,600 spills have been documented in just 4 states, more than half of them due to moving and transporting fracking waste.
- The CT General Assembly has failed three times in five years to ban all of these wastes. Current state law mandates that DEEP submit regulations for review and a temporary moratorium only bans some wastes from gas wells, leaving loopholes for other wastes to enter the state. 2018 Senate Bill 103 proposes to change this law and ban waste from one process, hydraulic fracturing, from gas wells only.
- Regulations in other states have not stopped accidents, spills and leaks from contaminating soil, waterways, aquifers and drinking water. Over 50% of spills occurring at waste treatment plants occur due to equipment and employee error. There are no good options for bringing this waste to Connecticut to store, treat, dispose or re-use in construction or brownfield remediation fill, or for road spreading.

### **Local Protection with Municipal Ordinance:**

Citizen groups, town & city officials across Connecticut are passing local ordinances banning all oil & gas drilling, extraction and storage wastes. Connecticut municipalities have legal authority to pass these ordinances, pursuant to CT General Statute 7-148. The following municipalities have passed waste bans in this region:

- 36 CT towns & cities - Andover, Ashford, Bloomfield, Bolton, Branford, Bristol, Chaplin, Columbia, Coventry, Eastford, East Hampton, Hampton, Glastonbury, Griswold, Hartford, Hebron, Lebanon, Litchfield, Mansfield, Meriden, Middletown, Milford,

New London, New Milford, Pomfret, Portland, Redding, Rocky Hill, Stratford, South Windsor, Thompson, Washington, Willington, Windham/Willimantic, Windsor, Woodstock.

- 400+ NY municipalities are protected from fracking wastes, due to laws passed by 15 NY county legislatures and local ordinances and regulations passed by town and city leaders.
- The State of Vermont; Pelham, MA; Dozens of municipalities and counties in New Jersey have also passed waste bans.

**Parents and Grandparents:** A radioactive legacy is being left for future generations where spills, accidents and discharge have occurred. Radium 226, commonly found in shale drilling waste, has a radioactive half-life of 1,600 years, takes over 4,000 years to completely decay, decays into other radioactive elements and finally, lead. Areas in other states are now permanently contaminated and being left without clean-up.

**Persons on Well Water:** Spills and leaks have seeped into the ground and contaminated aquifers in other states. Yale University research found trace amounts of multiple chemicals used for fracking still remaining in well water 5 years after spills and leaching occurred. The costs for repeated testing, legal action and remediation often fall on property owners using well water. Restitution costs falling on the State of CT and municipalities may be exorbitant.

**Watershed:** Radioactivity and chemical contamination has already occurred in other states where spills and discharge have occurred after treatment efforts. Bio-accumulation up the food chain with fishing and other recreational activities in contaminated areas may pose health problems, and future flooding may distribute contaminated sediment across large areas. Water intakes for drinking water downstream from treatment discharge may also pose problems. Small amounts of bromide can react synergistically with chlorine added to drinking water used to kill bacteria and create highly carcinogenic brominated trihalomethanes.

**Farming:** Where spills have occurred on farm land, nothing is growing 5-10 years later. The salt/bromide content is so high, it kills everything in the soil and it is no longer arable. Radioactivity and chemicals can be taken up by crops grown in the area, contaminating produce and animal feed, bio-accumulating up the food chain.

**Regarding Re-use & Costs of Remediation:** The high risk of contamination makes re-use of wastes and by-products a costly endeavor if remediation is necessary. CT towns or private contractors cannot know if toxins have been removed or if radioactivity has been properly tested for if they source products mixed with fracking waste. Towns reduce risk of contamination by banning this waste and asking contractors to sign a statement that they will not procure materials derived from these wastes. The West Virginia legislature commissioned an engineering study for re-using solid fracking wastes. The study concluded it was not advised, due to radioactivity levels, high silt content, potential future slippage and costly remediation where used for road base or construction, and high costs for treatment and transport from well sites. Despite warnings from environmental and public health advocates about risks of contamination, the State of Pennsylvania DEP issued permits for using solid wastes in construction fill and road base material. After five years, PADEP rescinded this policy and stopped issuing permits, citing "lack of transparency".

Example of CT costs for remediation: Greenwich has spent \$5.6 million for testing and partial remediation of PCB and arsenic contaminated fill brought in to build sports fields. It is estimated an additional \$14 million is needed to complete the remediation.

**Comparison of Local Ordinance Prohibitions vs Current CT Law and 2018 Senate Bill 103**

Oil & Gas Drilling & Extraction Wastes	Local Bans in 35 of 36 CT Towns	Current CT Law & SB103
Gas Drilling Process (DP) Drilling Muds	X	
Gas DP Drill Cuttings	X	
Gas DP Liquid Leachate from Solid Wastes	X	
Gas Hydraulic Fract. Process (HFP) Flowback	X	X
Gas HFP Flowback w/ Drill Cuttings Mix	X	X
Gas HFP Flowback w/ Brine Mix	X	X
Gas HFP Flowback w/ Used Frac Sand	X	X
Gas Production Process Brine w/ Gas Flow	X	?
Gas Dehydration Process Brine/Impurities	X	?
Gas Chemicals Used on Pad Surface	X	?
Gas Underground Storage Waste	X	
Liquified Petroleum Gas Waste	X	
Oil DP Drilling Muds	X	
Oil DP Drill Cuttings	X	
Oil DP Liquid Leachate from solid wastes	X	
Oil HFP Flowback	X	
Oil HFP Flowback w/ Drill Cuttings Mix	X	
Oil HFP Flowback w/ Brine Mix	X	
Oil HFP Flowback w/ Used Frac Sand	X	
Oil Production Process Brine w/ Oil Flow	X	
Oil-Chemicals Used on Pad Surface	X	

Current CT state law is a temporary moratorium with definitions that are incomplete and ambiguous. It mentions several types of wastes, but only wastes that come directly from or derived secondarily to the hydraulic fracturing process (the pumping of a chemical solution to create fractures in rock), and for gas wells only. This leaves out huge amounts of wastes that are created by the fracking industry. This includes solid and liquid wastes that are currently exported to numerous states from Pennsylvania. This same law mandates CTDEEP to submit regulations. These future regulations are a path to permits for storage tanks, transfer locations, treatment at HazMat facilities and discharge of partially-treated effluent. Regulations may permit re-use of wastes, for construction fill or brownfield remediation, as example. The temporary moratorium currently bans spreading fracking waste products on roads. However, in writing new regulations, the law leaves it to CTDEEP's discretion if materials spread on roads for de-icing or dust control will be permitted in the future.

The CT General Assembly Regulations Review Committee (RRC) members do not have the authority to enact a ban. Failure to have a quorum at a future RRC meeting will enact any draft regulations that are on the agenda of that cancelled meeting. Note: Section 561 of the state budget bill created a new rule - permit applications for some wastes will automatically be approved in 90 days, whether or not DEEP finishes it's review or Determination Process.

The 2018 Senate Bill 103 "An Act Concerning Hydraulic Fracturing Waste in Connecticut" proposes to ban waste from one process, hydraulic fracturing, and from gas wells only. Please contact legislators to support passing SB 103 and amending it to make it stronger.

## **Understanding Public Act 14-200 Language in Detail**

This law's language prohibits hydraulic fracturing waste, and other substances used for or generated secondarily to the purpose of hydraulic fracturing...the process of pumping a fluid to fracture rock. This is defined in Section 1(a)(4) and Section 1(a)(10).

The wording "generated secondarily to the purpose of hydraulic fracturing" is ambiguous. It doesn't appear to include the wastes coming from the drilling process, which happens before hydraulic fracturing takes place. It is unclear if wastes produced years after hydraulic fracturing is completed, or during the gas dehydration process is included. "Generated secondarily" does not mean wastes "associated with", environmental law language less likely to contribute to loopholes. In response, CT towns are passing more comprehensive and better-defined language written by legal counsel for Riverkeeper and Grassroots Environmental Education. Numerous types of wastes are mentioned in Section 1(a)(10), but what is missing in the definitions are the additional processes that also produce these wastes during the entire drilling and extraction lifecycle. This includes:

1. the drilling process which produces drill cuttings, muds and toxic liquids that leach from these solid wastes
2. the production process and dehydration process which produce brine, also called "produced water"
3. the storage process of gas & LPG which includes "fallout" brine.

Also, not included are any wastes from oil wells, as Sec 1(a)(4) only refers to the hydraulic fracturing process used for gas.

Section 1(a)(10)(b) also mandates future regulations and designates the moratorium as temporary..."such wastes shall be subject to the state's hazardous waste management regulations"...and the commissioner "shall submit regulations" to the CGA Regulations Review Committee (RRC). (It appears that DEEP may not meet their statutory deadline of July 1, 2018.)

The moratorium will end when the RRC finishes its review and regulations are adopted. There may be subsequent draft changes after the initial submission, but the RRC does not have the authority to enact a ban. Also, if discussion of regulations is part of a meeting agenda, and that meeting fails to have the required quorum, then regulations automatically pass. The possibility of further incomplete review exists for new permit applications, due to Section 561 that passed in the 2017 state budget

### **Summaries by the Office of Legislative Research have caused legislator & public misunderstanding:**

1. 2014 error – OLR stated when developing regulations, DEEP can ban fracking waste. This is incorrect. DEEP is required by Section 1(a)(10)(b) to submit regulations that bring fracking waste under federal hazardous waste guidelines. Once regulations are finalized, permits may be applied for to treat, store and transfer wastes. The error occurs due to the OLR confusing language in Section 1(a)(10)(d) which gives DEEP the discretion to ban only products used for "anti-icing, de-icing, pre-wetting or dust suppression" when writing regulations. DEEP may also choose to permit these products in CT under conditions that the Commissioner deems necessary. The law lacks language regarding re-using solid wastes.
2. 2014, 2015 & 2017 OLR summaries initially mention hydraulic fracturing waste, then continuously refer to fracking waste. The additional drilling and extraction processes that also produce wastes, but are not defined in PA14-200, are not explained. Readers unfamiliar with extraction processes & the original definition are left unaware that loopholes may exist.

**For more information, short presentations for elected & appointed officials and community events, please contact: Jennifer Siskind, Local Coordinator, Food & Water Watch, [jsiskind@fwwlocal.org](mailto:jsiskind@fwwlocal.org)**