



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

Current state law mandates that DEEP submit regulations for review, which means future permits. A temporary moratorium bans only some wastes, leaving loopholes for other wastes to enter the state.

2018 Senate Bill 103 was introduced to permanently ban these wastes from one process, hydraulic fracturing, from gas wells only. After public hearing, the Environment Committee passed much stronger language that proposes banning all wastes from oil & gas wells. It remains to be seen if this bill will be amended, or possibly weakened, and passed in both the Senate and House.

- 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.
- 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.
- 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. 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.

### Local Protection with Municipal Ordinance:

#### **38 CT towns & cities who have protected their communities from fracking waste with their legal authority to pass these ordinances, pursuant to CT General Statute 7-148:**

- Andover, Ashford, Bloomfield, Bolton, Branford, Bristol, Chaplin, Columbia, Coventry, Eastford, East Hampton, Hampton, Glastonbury, Griswold, Hamden, Hartford, Hebron, Lebanon, Litchfield, Mansfield, Meriden, Middletown, Milford, New London, New Milford, Pomfret, Portland, Redding, Rocky Hill, Stratford, South Windsor, Thompson, Washington\*, Wethersfield, Willington, Windham/Willimantic, Windsor, Woodstock. (\*Washington used different language than other 37)
- 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 Beneficial Re-use (BUD) Permits & Costs of Remediation:** The high risk of contamination makes re-use of wastes and by-products a costly endeavor if remediation is necessary. It cannot be known if toxins have been removed or if radioactivity has been properly tested for. The State of CT, and cities and towns can prevent contamination and risk of premature crumbling and slippage in infrastructure projects by banning fracking waste turned into by-products...such as using very fine frac sand in concrete, silt-laden drill cuttings in construction fill and brine or dewatered salts as de-icers.

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 and high silt content, potential future slippage with costly remediation where used for road base or construction, and high costs for treatment and transport from well sites.

Despite testimony from environmental and public health advocates about lack of monitoring, potential inadequate testing and treatment for radioactivity & chemicals, 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 echoing what they were told years earlier, 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.

Many natural toxins, including arsenic, lead, radioactive materials other heavy metals, and hazardous chemicals are found in fracking waste, and may contaminate by-products.

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

| Types of Oil & Gas Drilling & Extraction Waste | Bans in 37 of 38 CT Towns | Current CT Law | SB 103 TBD |
|--|---------------------------|----------------|------------|
| Gas Drilling Process (DP) Drilling Muds        | X                         |                | ? X        |
| Gas DP Drill Cuttings                          | X                         |                | ? X        |
| Gas DP Liquid Leachate from Solid Wastes       | X                         |                | ? X        |
| Gas Hydraulic Fract. Process (HFP) Flowback    | X                         | X              | ? X        |
| Gas HFP Flowback w/ Drill Cuttings Mix         | X                         | X              | ? X        |
| Gas HFP Flowback w/ Brine Mix                  | X                         | X              | ? X        |
| Gas HFP Flowback w/ Used Frac Sand             | X                         | X              | ? X        |
| Gas Chemicals Used on Rig/Service Fluids       | X                         | X              | ? X        |
| Gas Production Process Brine w/ Gas Flow       | X                         | ?              | ? X        |
| Gas Dehydration Process Brine/Impurities       | X                         | ?              | ? X        |
| Gas Underground Storage Waste                  | X                         |                | ? X        |
| Liquified Petroleum Gas Waste                  | X                         |                | ? X        |
| Oil DP Drilling Muds                           | X                         |                | ? X        |
| Oil DP Drill Cuttings                          | X                         |                | ? X        |
| Oil DP Liquid Leachate from solid wastes       | X                         |                | ? X        |
| Oil HFP Flowback                               | X                         |                | ? X        |
| Oil HFP Flowback w/ Drill Cuttings Mix         | X                         |                | ? X        |
| Oil HFP Flowback w/ Brine Mix                  | X                         |                | ? X        |
| Oil HFP Flowback w/ Used Frac Sand             | X                         |                | ? X        |
| Oil Production Process Brine w/ Oil Flow       | X                         |                | ? X        |
| Oil Chemicals Used on Rig/Service Fluids       | X                         |                | ? X        |

Current CT state law is a temporary moratorium with definitions that are incomplete and vague. 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 & oil & gas industry. 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 road de-icing, construction fill or brownfield remediation, as example.

As passed out of Env C, 2018 Senate Bill 103 "An Act Concerning Hydraulic Fracturing Waste in Connecticut" proposes to ban all wastes. This is a huge step. Phone calls and letters to state Senators and Representatives are needed to prevent weakening amendments and urge passage.

## **Understanding the Problems with Current State Statute Language**

State law temporarily prohibits waste from one process, hydraulic fracturing, *and other substances used for or generated secondarily to the purpose of hydraulic fracturing*...which is clearly defined as the process of pumping a fluid to fracture rock.

The wording "generated secondarily to the purpose of hydraulic fracturing" is vague. This wording may not include solid and liquid wastes that come from the drilling process, which happens for a month before hydraulic fracturing takes place.

It is unclear if brine that is produced many years after hydraulic fracturing is completed would be included.

Wastes derived from the dehydration process (removing brine & impurities from gas before it is shipped by pipeline) and storage process (holding of gas underground or LPG storage before it is shipped) may also not be included. These processes produce huge amounts of brine.

State law does not cover drilling and extraction activity that do not use the hydraulic fracturing process, but still produce large amounts of wastes. Also, the moratorium does not include any wastes from oil wells.

In response, CT towns are passing more comprehensive language, written by legal counsel for Riverkeeper. There are additional definitions and prohibitions that exist in the local ordinances that do not exist in state law or Senate Bill 103.

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

1. 2014 error – The OLR initially stated that DEEP can ban fracking waste when writing regulations. This was incorrect. DEEP is required to submit regulations that bring hydraulic fracturing waste under federal hazardous waste guidelines. Once regulations are finalized, the moratorium will end and permits may be applied for to treat, store and transfer wastes. The error likely occurred because there is language which gives DEEP the discretion to specifically ban products used for "anti-icing, de-icing, pre-wetting or dust suppression" when writing regulations. DEEP may also choose to permit these products under conditions that the Commissioner deems necessary. The law lacks specific language banning re-use of wastes from the drilling process during the moratorium, though products for anti-icing, etc. is temporarily banned.
2. 2014, 2015 & 2017 OLR summaries initially mention hydraulic fracturing waste, then continuously refer to fracking waste. The additional drilling and extraction processes that are combined with hydraulic fracturing also produce wastes, and are not explained by OLR as missing. Readers unfamiliar with extraction processes are left unaware that loopholes may exist.
3. A 2017 OLR report on local ordinances was issued in December 2017. It reported on 19 towns with ordinance, when at the time 34 towns and cities had passed local laws. As of March 2018, this number has grown to 18.

**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)**