

THESE MINUTES ARE SUBJECT TO APPROVAL BY THE SUSTAINABLE ENERGY COMMISSION

The Sustainable Energy Commission held a regular meeting Thursday, March 16, 2017 in shared meeting room 3 of the Municipal Center located at 3 Primrose Street, Newtown, CT 06470.

The meeting was called to order by Chairman, Kathy Quinn at 7:08p.m.

Present: Chairman Kathy Quinn, Allen Adriani, George Brown, Graham Clifford, Jeff Jorgenson, Thomas Snayd, Dave Stout, Barbara Toomey

Also Present: Fred Hurley

Absent: Mark Sievel, Dave Stout

Communications: none.

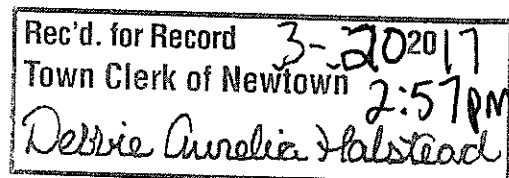
Public Comments: none.

Acceptance of Minutes: Mr. Jorgenson moved to accept the minutes of 02/16/17. Ms. Toomey seconded. All in favor.

Business

Discussion and possible action:

- a. **Status of Landfill Solar Project:** The interconnect agreement with Eversource has been approved. The project is on schedule for construction this summer and is anticipated to be operational by August.
- b. **Reed School solar project:** The project is in process, the panels are ready to be installed.
- c. **Solomon Solar project:** The application has been submitted and is pending.
- d. **MLS Group – Nunnawauk Meadows – solar:** there is new interest in a solar system. The latest contract proposal will be submitted. There was a proposal to wire the complex for a backup generator.
Sound Solar and Altus Power are looking to get into the storage industry.
- e. **Batchelder site – potential for solar:** There is an RFQ (Request for Qualifications) out, companies are turning in their qualifications. The next step is to get an RFP (Request for Proposals) from the qualified companies. A solar farm would make the site useful. The state forgave some of the environmental clean up at the site.
- f. **Grant Funds – EV charging station:** Money has been received by the state. Upon approval from Fairfield Hills Authority Mr. Hurley will put one EV charging station at the campus and one at the Department of Public Works.



g. Energy Savings program update

Municipal Center: this project is complete.

Waste Water Treatment Plant: this project will be complete next week.

Next Projects:

Head O' Meadow – Ms. Quinn hasn't heard anything from Gino Faiella; Mr. Hurley will follow up with him.

Public Works – JK is in the process of making a proposal.

Library – the library will supply a list of completed projects. They have had work done on the lights and HVAC.

h. Microgrid feasibility study: no update.

i. Street Lighting: Mr. Hurley will work with the CCM identified companies. There will be sampling of color rendition.

j. Funding for High School program: The school wants the greenery program. Mr. Hurley said there is grant money through the watershed group; the waste water plant will have interns. Ms. Toomey suggested having the high school students do the building assessments.

k. High School Sustainability course: (see j).

l. Dashboard for website: Sound Solar worked with IT; within 30 days we should have a brochure.

m. Fracking waste – request to Legislative Council to review: Jennifer Siskind, local coordinator with Food & Watch out of South Glastonbury presented a power point (att.) highlighting the negative aspects and results of importing and disposing of fracking waste (att.) Ms. Quinn and Mr. Hurley met with the First Selectman, Rob Sibley and Donna Culbert for input on this topic. Mr. Hurley said that towns are limited and cannot interfere with interstate commerce. Municipalities do have local zoning control through a Legislative Council ordinance. Newtown is more at risk for groundwater contamination because the drinking water comes from reservoirs, the aquifer or private wells. Mr. Jorgenson suggested replacing the term 'fracking waste' with 'anything toxic' and ask for disclosure of the waste. Ms. Toomey stated fracking waste is not considered toxic therefore current state laws will not ban it. Mr. Hurley said disclosure could be required but believes the restriction needs to be fairly narrow because legislation is never easy. Mr. Hurley said that the Legislative Ordinance Committee will research the topic thoroughly when Mr. Jorgenson asked if the commission was going to hear from anyone others that may have opposing opinions. Mr. Brown moved to refer the fracking information to the Legislative Council ordinance committee for thorough review. Mr. Snayd seconded. All in favor.

n. VW Settlement: no update.

Additional Items for discussion:

1. Sustainable CT: no update.

2. Newtown Forward: this is a newly formed group, which presented the Before the Flood movie at the Edmond Town Hall. They have a sub group working on climate change issues. Ms. Toomey will represent the Sustainable Energy Commission at a Newtown Forward pot luck.

3. **Municipal Energy Plan:** no update.
4. **Energy Star Portfolio Manager:** no update.
5. **Web Site:** no update.
6. **Bridgeport Eco-Park:** no update.
7. **Organic Recycling:** Mr. Jorgenson said that the Newtown Cub Scout group increased the recycling program by 1.7%, which brought the total signed up to over 400. The Cub Scouts learned about composting and recycling. Mr. Hurley said that the town is now looking at a commercial organic program.
8. **Earth Day** – Earth Day is April 22, 2017, on the lawn of Middle Gate School.

Mr. Hurley stated that Altus power is looking at an additional virtual net metering project. In addition to the direct usage projects, plus the land fill, it would bring us up to about 2 megawatts. The Solomon project is 2 megawatts dedicated to the high school. The total usage in the town is between 11-12 million KW hours. Altus is looking at a project that could sell 2 megawatts. This would bring us up to almost 100% of all the electricity used in municipal buildings. You can only dedicate five accounts for any particular virtual net metering projects; they are not looking for small buildings, they are looking for a handful of larger buildings. Both of the project applications are non-binding until we know we have a project.

Adjournment: Having no other business, the Sustainable Energy Commission adjourned their regular meeting at 8:38p.m.

The next regular meeting will be held on April 20, 2017.

Attachments: Fracking waste presentation

Submitted, Susan Marcinek, clerk



Food & Water Watch Testimony

HB 6329 An Act Concerning Hydraulic Fracturing in CT

To Senator Kennedy, Senator Miner, Representative Demicco and members of the Environment Committee,

On behalf of:

- our 20,000 members and supporters in Connecticut
- the citizen groups we have collaborated with to help pass local ordinances banning oil and gas drilling and extraction wastes
- the citizens in more than twenty additional towns working to move local ordinances forward,

Food & Water Watch fully supports House Bill 6329.

We also recommend that additional language be included to further strengthen this bill, to prohibit all drilling and extraction wastes from both oil and gas wells, to continue to designate this waste as hazardous and potentially radioactive, allowing for appropriately placarded transport on Connecticut roads, and to include significant penalties for violations.

Hydraulic fracturing is one part of the multi-stage drilling and extraction process, the period when each well is injected on average with 4-5 million gallons of chemically-laced solution, sand and other proppant. The extreme pressure shatters, or fractures, the shale, releasing oil and gas and additional toxins buried in the ground.

Additional wastes are produced across the drilling and extraction life cycle, including:

- Drilling muds - a toxic, chemical slurry used to assist the drill bit to create the well bore and lift materials up to the surface.
- Drill cuttings - solid materials removed from the earth during drilling.
- Produced water or brine - a saline fluid that comes to the surface with gas and oil, contaminated with naturally-occurring toxins and may be mingled with chemical additives introduced into the well.
- Leachate - chemical and naturally-occurring toxins that drain from frac sand, drill cuttings and landfills accepting oil and gas drilling wastes.
- Sludges - Sediment that settles in tanks and holding ponds. Brine fallout from underground and liquified gas storage.



- Wastes from additional chemicals used, such as:
 - Toxic fluids used to clean infrastructure at well pads
 - Acids and solvents used to remove paraffin and highly radioactive scale that can build up inside pipes restricting gas and oil flow.

Prohibition of all oil and gas drilling and extraction wastes is needed because these wastes are:

- Partially-treated and sent contaminated to numerous well sites for re-use before final disposal. This can be done with mobile units at well pads or co-mingled at a centralized waste treatment facility.
- Each well site can contaminate the waste with different naturally-occurring toxins, depending on what is buried in the ground at that particular location. These naturally-occurring toxins are not fully tested for or properly categorized, making the total contaminants in the waste unknown.
- Each well site can have separate geological challenges, requiring different types of chemical additives to be used.
- There are multiple sub-contractors at each well site contributing to the waste stream, including:
 - drillers creating the well bore
 - companies that specialize in hydraulic fracturing
 - waste hauling companies that transport liquids and solid wastes
 - workers who deal with waste separated from condensate tanks
 - workers who provide mat and container cleaning, and other infrastructure care at the well site.

Lack of supervision and enforcement during the entire drilling and extraction process, co-mingling of wastes, inadequate testing and treatment, and failure to categorize all toxins produced at each well site make it impossible for Commissioner Klee and DEEP staff to track this waste from “cradle to grave” or to reasonably know what contaminants it contains.

According to research released by Yale University in 2016, there are 1,157 known chemicals used nation-wide for gas and oil drilling and extraction. It is unclear how many chemicals are used at well sites, as proprietary chemicals are kept as trade secrets and not openly reported, possibly dozens or more are mixed and used simultaneously, and additional additives may be added to the waste stream during the entire process of drilling and extraction.

As laypeople, we know not to mix ammonia and bleach together in cleaning products, because these chemicals react synergistically with each other and create chloramine, a highly toxic and fatal gas, also present in “mustard” gas. Synergistic reactions can also occur mixing multiple chemicals during drilling and extraction, and can react with naturally occurring toxins and bacterium. Full knowledge of all synergistic reactions, among the myriad of combinations from the 1,157 known chemicals that may be used, has not been identified by researchers, preventing DEEPs knowledge of all contaminants in this waste.

Radium 226 and 228 are radioactive contaminants commonly found in oil and gas drilling and extraction wastes.

- Radium is known to cause breast, bone and liver cancers, and is associated with childhood and adult leukemia.
- Radium 226 has a half-life of 1,600 years, meaning any release into the CT environment will be causing radioactive contamination for many generations to come.
- Radium decays into additional radioactive progeny, including Polonium and Lead210, and finally, lead.
- Radioactive elements, and other contaminants, are extremely difficult and costly to remove.
- Adequate testing of radioactive material requires holding sampled material for 15-30 days in a closed container, and testing for all radioactive progeny produced during this decay period.

To adequately test for radioactive material, each tanker load would require this lengthy and costly testing prior to entering the state, and any effluent or sludge passed from hazardous waste treatment facilities to city sewage systems, publicly owned treatment works (POTWs) or energy incinerators would also require this testing to prevent cumulative radioactive contamination. This is not likely to be included in DEEPs Best Management Practices; including these requirements may result in companies bringing costly legal challenges for regulations deemed burdensome.

Regulations cannot prevent accidents, spills, leaks, inadequate testing and treatment, resulting in contaminated discharge, run-off and leaching into shallow aquifers. Thousands of spills have already been documented in 4 states, more than half of which have occurred through handling and moving oil and gas drilling and extraction wastes.

Regulations do not give DEEP additional enforcement capability and DEEP is currently operating with a severely reduced workforce and budget.



Regulations do not provide supervision for multiple out of state contractors or ensure manifests are accurately written. These problems are already being seen in other states where waste is produced, transported, treated and disposed.

With regard to use of by-products through Beneficial Use Determination (BUD) permits:

- The waste materials being sold by private contractors have limited oversight - no one is monitoring how these companies are testing their product.
- "Screening" or likely using Geiger counters is not an adequate testing procedure for radioactivity (not calibrated properly, difficulty measuring low-level radioactivity, alpha & beta radiation, total decay progeny not tested).
- Expensive 15-30 day hold periods prior to specialized gamma spectroscopy testing is likely not done, due to storage limitations and profit margins.
- Separated salts and drill cuttings that are processed and inadequately tested may no longer be classified as hazardous waste by wholesalers and retailers, due to faulty testing procedures, but nevertheless may still be radioactive and chemically contaminated, qualifying as hazardous.

It deserves to be noted that:

- after 5 years of allowing solid wastes to be used for construction fill projects, Pennsylvania is no longer issuing BUD permits for construction, citing "lack of transparency".
- The state of West Virginia commissioned researchers and engineers at Marshall University to explore re-using solid wastes for construction fill. Their report determined BUD permitting would not be appropriate due to:
 - High silt and fluid content, which could result in future settling and costly remediation
 - Cost to transport from well site and process
 - Radioactive and other contamination

In neighboring New York, fifteen county legislatures and hundreds of municipalities have banned hydraulic fracturing and other drilling and extraction wastes. All of the fifteen county legislatures have included civil penalties, most with \$25,000 fines and up to 30 days imprisonment per each violation. One New York county has legislation that includes a \$100,000 penalty and up to a year imprisonment per violation. We urge you to include similar penalties, both as deterrent and as a means to partially finance remediation, should costs fall on state and municipal budgets.



The simple truth is that fracking waste is inherently unsafe and must be banned statewide. We ask you to demonstrate strong leadership and pass HB 6329 out of the Environment Committee with amendments. We further request that each member of the committee sign on as co-sponsors of the bill, and work within your caucuses to ensure passage through the General Assembly.

Thank you for considering this testimony. Please see the addendum images and information below.

Signed,

Jennifer Siskind
Local Coordinator
Food & Water Watch
South Glastonbury, CT

Nisha Swinton
Senior Organizer-New England
Food & Water Watch
Portland, ME

Consideration of Radiation of Hazardous Waste Produced from Horizontal Hydrofracking, Fig 1,2,& 3
 E. Ivan White, Senior Staff Scientist, National Council on Radiation Protection

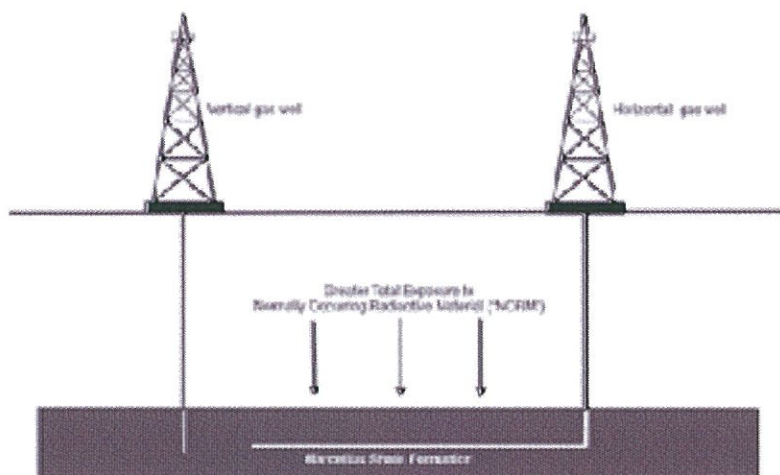


Figure 1: Comparison of Exposure to NORM in Marcellus Shale for Vertical Wells and Horizontal Wells

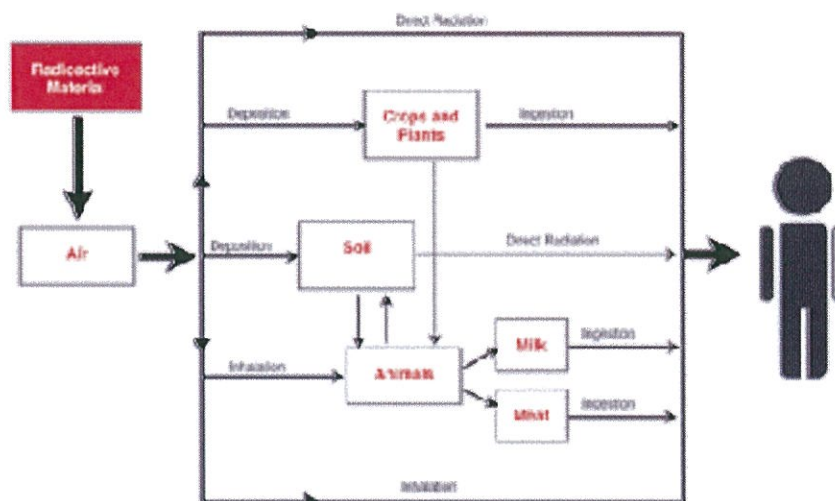


Figure 2: Pathways for Radiation Migration Through Air

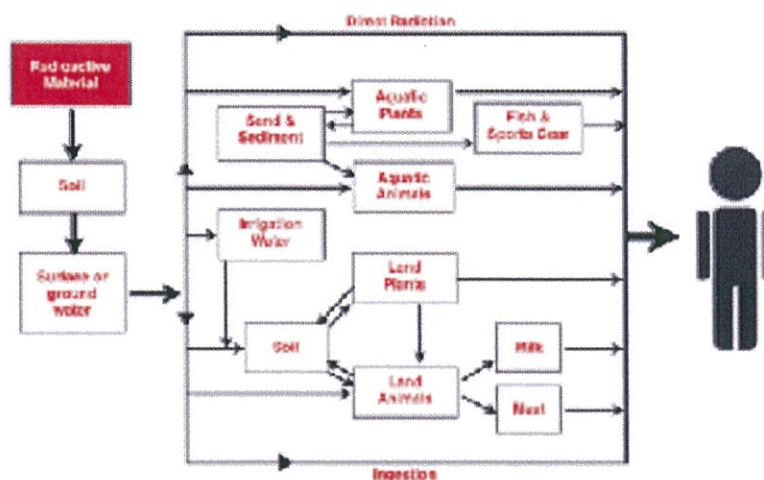


Figure 3: Pathways for Radiation Migration Through Soil and Water

US Geological Survey (USGS) Radium Content of Oil- and Gas-Field Produced Waters in the Northern Appalachian Basin (USA): Summary and Discussion of Data By E.L. Rowan,¹ M.A. Engle,¹ C.S. Kirby,² and T.F. Kraemer¹

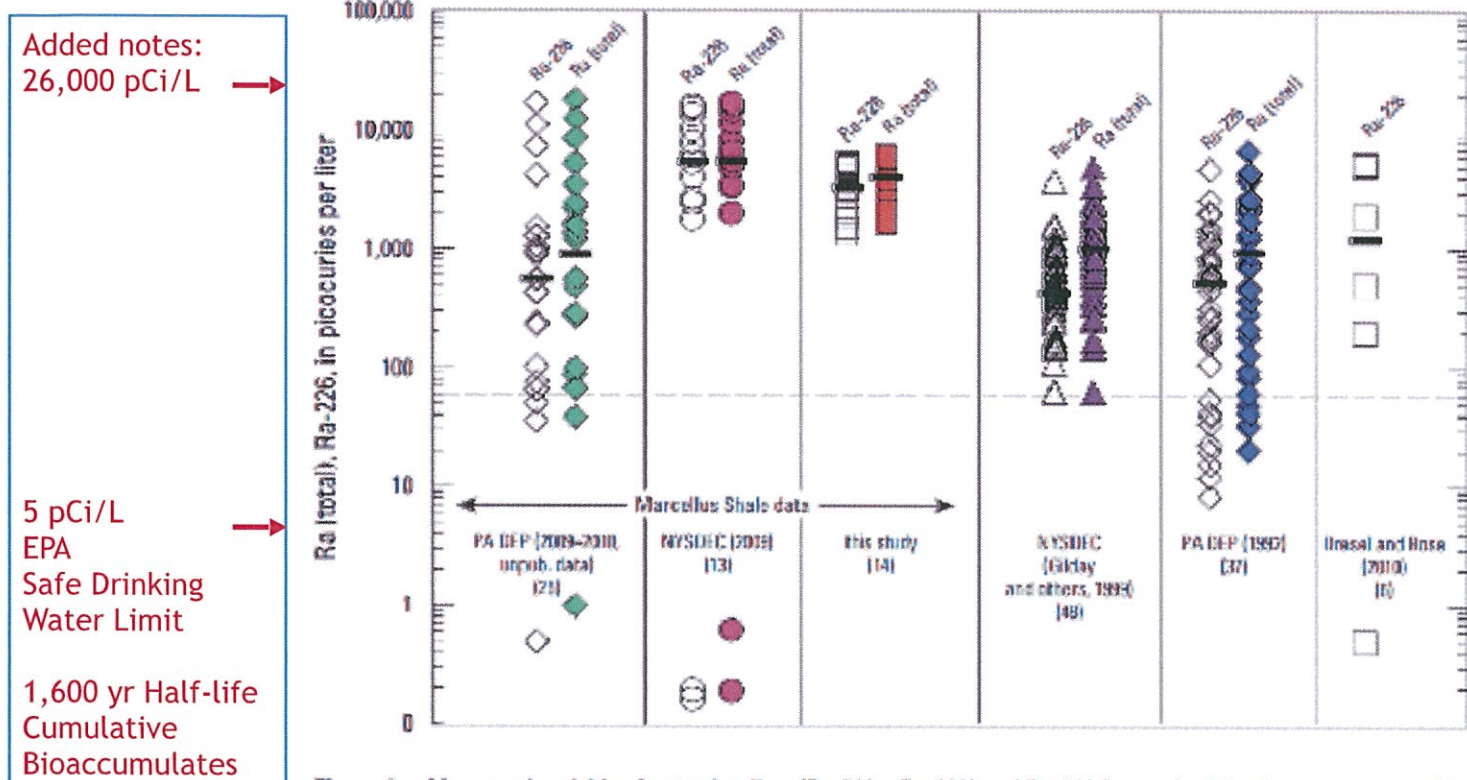


Figure 4. Measured activities for total radium (Ra-226 + Ra-228) and Ra-226 for each of the data sources used in the study. The three datasets for produced water from Marcellus Shale wells are shown on the left; the remaining three datasets are for non-Marcellus Shale wells. The number of points in each dataset is shown in parentheses, and the median values are plotted as heavy black lines. For reference, the dashed line shows the industrial effluent discharge limit (60 pCi/L) for Ra-226 (U.S. Nuclear Regulatory Commission, <http://www.nrc.gov/reading-rm/doc-collections/cfr/part020/appb/Radium-226.html>).

Colborn, T. et al., "Natural Gas Operations from a Public Health Perspective,"
 International Journal of Human and Ecological Risk Assessment. 17:1039-1056. 2011
 649 Known chemicals: 56% Examined by CAS #; 44% No information or research on
 Excerpted Infographic: Physicians for Social Responsibility-LA

FOR THE 56% OF
 FRACKING
 CHEMICALS WE
 CAN IDENTIFY



58%

SOLUBLE
 IN WATER



36%

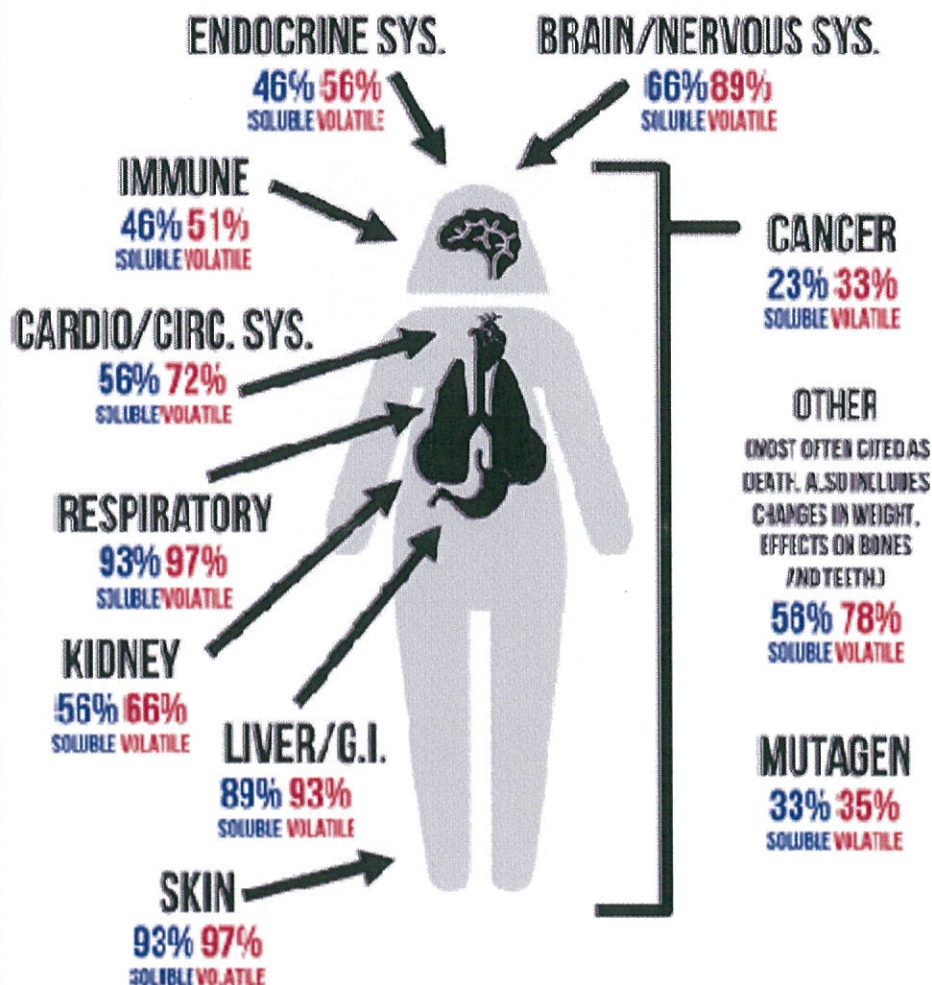
VOLATILE

SMALLER PERCENTAGE,
 BUT BIGGER IMPACT. THESE
 CHEMICALS CAN BE
 INHALED, SWALLOWED,
 AND/OR ABSORBED
 THROUGH THE SKIN

ALL IMAGES FROM
 THE NUN PROJECT —
 FRACKING: TOM ANANTHERP,
 STOMACH: SERB DELGADO
 GARCIA, HEART: CATHERINE
 PLEASE, LUNGS: JARISH HODGE-
 DOORN, WATER DROP: CRIS
 DOBBINS, CLOUD: JAMES FEN-
 TON, QUESTION CLOUD: ANAS
 RAMALAN, WOMAN: LUIS PRADO

BODY SYSTEMS AFFECTED FRACKING CHEMICALS*

SHOWN WITH % OF CHEMICALS AFFECTING EACH BODY SYSTEM
 (SOLUBLE CHEMICALS IN BLUE AND VOLATILE CHEMICALS IN RED)



A sampling of studies regarding hydraulic fracturing:

Yale SCHOOL OF PUBLIC HEALTH

Toxins Linked to Developmental &
Reproductive Health Problems
1,157 known chemical additives

Yale SCHOOL OF PUBLIC HEALTH

119 Carcinogens Known & Suspected
Travel Through Air and Water

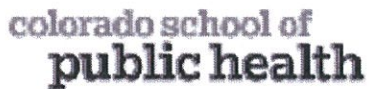


**Study: Fracking associated with migraines,
fatigue, chronic nasal and sinus symptoms**



**Johns Hopkins study links fracking to
premature births, high-risk pregnancies**

Researchers look at nearly 11,000 births in north-central Pennsylvania



Ages 5-24 with Leukemia
4.3x likely to live near
dense drilling activity



**Increased
Hospitalizations:
Cardiology
Neurology
Dermatology
Neonatology
Urology**



- **Radioactive sediment in waterways, sediments and soils in PA & ND
Spills and post-treatment discharge causing contamination**
- **Iodide, Bromide + Chlorine = Carcinogenic Trihalomethane**
- **6,648 spills in 4 states over 10 years - 50% storing & moving waste**

For more information on peer-reviewed, independent research, visit:

concernedhealthny.org/compendium/

Compendium 2016 4th Ed

Concerned Health Professionals of NY

750+ studies summarized and referenced



Non-compliance and EPA ECHO records of CT's 3 privately-owned, for-profit hazardous waste treatment facilities, as compiled by Rivers Alliance. See the Rivers Alliance website for more detailed information.

EPA Violations

Clean Harbors of CT Inc. of Bristol													
(USEPA ECHO ID: 110002083478)													
	QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11	QTR 12	QTR 13
Clean Water Act Permit Compliance For The Past Three Years	Apr Jun 2013	Jul Sep 2013	Oct Dec 2013	Jan Mar 2014	Apr Jun 2014	Jul Sep 2014	Oct Dec 2014	Jan Mar 2015	Apr Jun 2015	Jul Sep 2015	Oct Dec 2015	Jan Mar 2016	Apr Jun 2016
Facility Status During That Quarter:	In Viol	In Viol	In Viol	In Viol	In Viol	In Viol	In Viol (Reluct)	In Viol (Reluct)	No Viol	In Viol	In Viol	In Viol	In Viol



Tradebe Treatment and Recycling Northeast LLC of Meriden													
(USEPA ECHO ID: 110000316248)													
	QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11	QTR 12	QTR 13
Clean Water Act Permit Compliance For The Past Three Years	Apr Jun 2013	Jul Sep 2013	Oct Dec 2013	Jan Mar 2014	Apr Jun 2014	Jul Sep 2014	Oct Dec 2014	Jan Mar 2015	Apr Jun 2015	Jul Sep 2015	Oct Dec 2015	Jan Mar 2016	Apr Jun 2016
Facility Status During That Quarter:	In Viol (Reluct)	In Viol (Reluct)	In Viol (Reluct)	In Viol	SNC / Cat 1	In Viol	In Viol	In Viol	In Viol	In Viol	In Viol	In Viol (Reluct)	In Viol

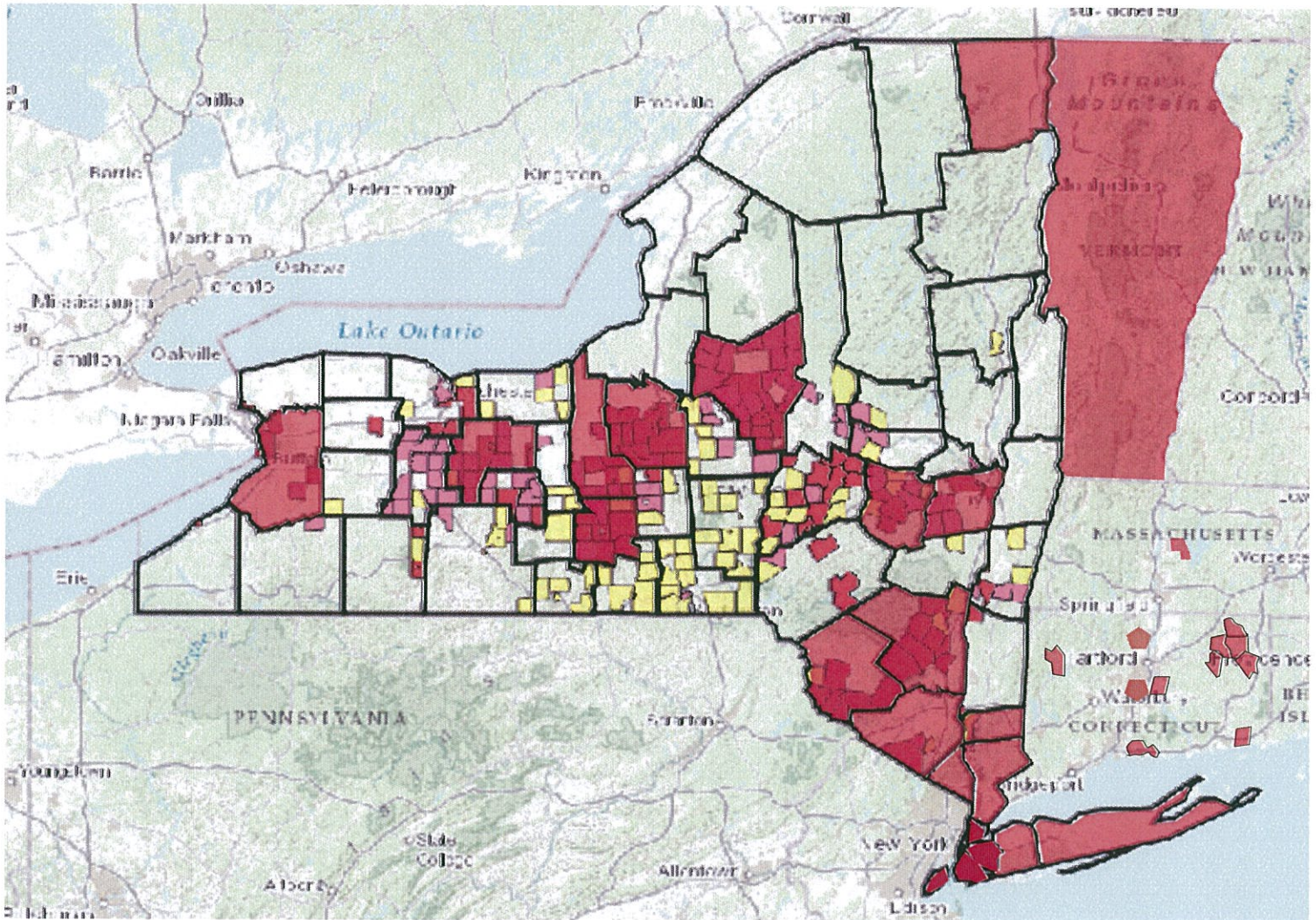
www.riversalliance.org

Click on:

- **Priority Topics**
- **HazWaste Treatment**
- **CT HazWaste Treatment Facility Compliance Overview**

Tradebe Treatment and Recycling of Bridgeport													
(USEPA ECHO ID: 110000312650)													
	QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11	QTR 12	QTR 13
Clean Water Act Permit Compliance For The Past Three Years	Apr Jun 2013	Jul Sep 2013	Oct Dec 2013	Jan Mar 2014	Apr Jun 2014	Jul Sep 2014	Oct Dec 2014	Jan Mar 2015	Apr Jun 2015	Jul Sep 2015	Oct Dec 2015	Jan Mar 2016	Apr Jun 2016
Facility Status During That Quarter:	In Viol	SNC / Cat 1	SNC / Cat 1	SNC / Cat 1	SNC / Cat 1	In Viol	In Viol	SNC / Cat 1	SNC / Cat 1	In Viol (Reluct)	SNC / Cat 1	SNC / Cat 1	In Viol

Map of Northeastern bans, moratoria and movements toward bans Hydraulic fracturing and oil & gas drilling and extraction wastes



NY County, State of Vermont, Massachusetts & Connecticut Municipal Waste Bans
NY Municipal HVHF drilling and waste bans
NY Municipal HVHF drilling and waste moratoria
NY Municipal movements toward waste bans

CT ordinances banning oil and gas drilling and extraction wastes have passed in Andover, Ashford, Branford, Coventry, Mansfield, Middletown, New London, Portland, Washington, Windham (inc. Willimantic), Windsor, and citizens in 20+ towns are organizing to bring additional ordinances forward.