Testimony of Vincent Sapienza, P.E.
Deputy Commissioner, New York City Department of Environmental Protection
before the
New York City Council Committee on Environmental Protection
concerning
Introduction 446: In relation to banning the discharge, disposal, sale or use within the City of New York of any wastewater or natural gas waste produced from the process of hydraulic fracturing.

Monday, February 22, 2016
250 Broadway, 16th Floor, 1 pm

Good afternoon Chairman Constantinides and Members. I am Vincent Sapienza, Deputy Commissioner of the Bureau of Engineering, Design and Construction in the New York City Department of Environmental Protection (DEP). I am joined today by Eric Landau, Acting Deputy Commissioner for the Bureau of Public Affairs. Thank you for the opportunity to present testimony on banning wastewater or natural gas waste from New York City.

As you know, DEP has overall responsibility for the City's water supply and sewer system, including providing drinking water to 8.5 million residents of New York City and one-million upstate residents, maintaining pressure to fire hydrants, managing storm water, and treating wastewater. In addition, DEP also regulates air quality, hazardous waste, and critical quality of life issues, including noise. Approximately 6,800 miles of water mains, tunnels and aqueducts bring water to homes and businesses throughout the five boroughs, and 7,500 miles of sewer lines and 96 pump stations take wastewater to 14 in-city treatment plants, where we treat approximately 1.2 billion gallons daily. Largely through our efforts, New York City's water bodies are the cleanest in over 100 years of monitoring. DEP has nearly 6,000 employees, including almost 1,000 in the upstate watershed and has a robust capital program, with a planned $14.7 billion in investments over the next 10 years.

The interest of energy companies in utilizing high volume hydraulic fracturing ("hydrofracking") to exploit the natural gas found in the Marcellus Shale in southeastern New York State, including New York City's watershed, created concern about the potential impacts of this activity of the City's water supply. In order to fully understand the potential risks, DEP commissioned an independent scientific assessment which concluded that current technologies and practices used in natural gas drilling and exploration were incompatible with the operation of New York City's Catskill/Delaware unfiltered water supply system and, therefore, posed unacceptable risks for millions of New Yorkers who rely on the City's water supply system.

DEP therefore welcomed the news in June 2011 that the New York State Department of Environmental Conservation (DEC) would prohibit the recovery of natural gas utilizing hydrofracking within the watersheds of the two large cities in the state that have Filtration Avoidance Determinations—New York City and Syracuse. While that ban reduced many of the previously identified risks to the water supply, some potential impacts remained of

concern, particularly risks to water supply infrastructure—the reservoirs, dams, and aqueducts that store and transport drinking water.

Governor Cuomo's decision in December 2014 to prohibit hydrofracking in the State alleviated DEP's concerns and was a necessary step to maintaining and protecting the City's water quality and the integrity of its infrastructure. As you know, Mayor de Blasio has also expressed his support for the ban on hydrofracking.

Intro. 446 proposes to protect New York City harbor waters by keeping hydrofracking wastewater and waste from being brought to or used within the City. The Administration fully supports the intent of the bill. We believe it will add another layer of protection from such byproducts to those already in place.

Intro. 446 further prohibits the sale or use of brine for de-icing roads. The Administration fully supports this prohibition and sees its use as harmful to the environment. During a snow or frozen precipitation event, the Department of Sanitation (DSNY) utilizes salt and liquid calcium chloride for pre-wetting salt to enable the melting of snow and ice at lower temperatures. DSNY does not utilize any "natural gas waste" on the roads for any purpose, including for the purpose of snow removal or de-icing. Furthermore, many towns upstate have already enacted bans on road spreading of fracking brine, and DEC has stated that it would not permit it to be used in the watershed.

While the Administration fully supports the intent of Intro. 446, we are concerned that an unintended consequence of this legislation is within the proposed definitions of natural gas extraction and natural gas waste which could adversely impact one of DEP's energy projects. As the Council knows, DEP is currently working with National Grid to use methane as a fuel from the sludge digestion process at the Newtown Creek Wastewater Treatment Plant. The process involves 'extracting' pipeline-grade natural gas from our digester gas by cryogenically separating methane, carbon dioxide, and water. We intend to send the water 'byproduct' back into the treatment process at Newtown Creek, and would hope that the definitions in the bill would not prohibit this important sustainable project.

Thank you again for the opportunity to present testimony. I would be happy to answer any questions.

RANKING MINORITY MEMBER
ENVIRONMENTAL CONSERVATION
INVESTIGATIONS & GOVERNMENT OPERATIONS

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TESTIMONY OF STATE SENATOR BRAD HOYLMAN TO THE NEW YORK CITY COUNCIL COMMITTEE ON ENVIRONMENTAL PROTECTION REGARDING INTRO 446

FEBRUARY 22, 2016

Thank you for the opportunity to submit testimony to the City Council Committee on Environmental Protection regarding Intro 446 to ban the discharge, disposal, sale or use within the city of New York of any wastewater or natural gas waste produced from the process of hydraulic fracturing. As Ranking Member of the New York State Senate's Environmental Conservation Committee, I fully support this legislation and encourage the Council to vote in its favor.

Following a two-year review by the New York State Department of Health, in December 2014 Governor Andrew Cuomo announced a ban on high-volume hydraulic fracturing, or fracking, in New York State. Fracking involves the high-pressure injection of millions of gallons of water and chemicals into rock to stimulate the production of oil and gas. The hydraulic fluid used in the fracking process contains up to 300 chemicals, in categories that can include proppants, acids, breakers, bactericides/biocides, clay stabilizers, corrosion inhibitors, crosslinkers, friction reducers, gelling agents, iron controls, scale inhibitors, and surfactants. The chemical solution includes many known or suspected carcinogens like benzene and formaldehyde, as well as significant amounts of naturally occurring radioactive materials (NORMs). The resulting wastewater and solid waste products contain all of the aforementioned residual chemicals.

Despite New York's fracking ban, fracking waste from other states continues to be dumped and used in New York. Much of this waste comes from fracking operations in Pennsylvania, where concerns about water contamination and the ability of treatment plants to properly handle fracking waste led the state to prohibit its treatment facilities from accepting such waste. A report by Environmental Advocates of New York (EANY) found that since 2010, the Pennsylvania Department of Environmental Protection has sent over 26,000 barrels of liquid fracking waste and 460,000 tons of solid fracking waste to be treated in New York, where there is no such ban. Alarmingly, we know that those

figures likely underreport the reality. Further, at least five landfills in New York State have accepted harmful fracking waste at some point since 2010.

If fracking waste is not treated properly, dangerous chemicals could enter our water supply and cause significant public health and environmental risks. However, most of our state's treatment facilities are not currently equipped to handle these chemicals and radioactive materials, while loopholes in federal and state laws continue to permit their unregulated transport and disposal in New York's wastewater treatment facilities and landfills.

Fracking waste has also found its way onto many of New York's roadways. The practice of spreading fracking brine on roads to de-ice surfaces is currently permitted by state law, and this fluid is sometimes used by local transportation departments in place of the simple salt and water brines. State documents obtained by the advocacy organization Riverkeeper make clear that since 2011, "road spreading of oil and natural gas production brine and natural gas storage brine has been approved for use in portions of at least 41 municipalities in nine New York counties, and for use on state roads in portions of at least 10 counties." Spreading radioactive fracking waste on roads exposes drivers, passengers, and pedestrians to dangerous pollutants, while passing vehicles can cause the waste to become airborne and contaminate nearby surface waters, residential areas, and other populated areas.

I sponsor several bills at the state level that would ban fracking waste in New York, including S.45A to prohibit wastewater treatment facilities from accepting fracking waste unless the facilities meet strict performance requirements, S.47 to prohibit the transportation of fracking waste throughout the state, S4.8 to prohibit the use of fracking waste on highways for activities such as melting ice, and S.340 to ban fracking waste from wastewater treatment facilities and landfills.

Banning fracking waste has widespread local support in New York. According to Riverkeeper, to date 15 counties in New York have banned fracking waste from wastewater treatment plants, landfills, and roads, including neighboring Nassau and Westchester Counties. In December 2015, Manhattan Community Board 6 passed a resolution in support of a fracking waste ban at the state and city levels.

While we wait for New York State to act, the New York City Council can move forward by implementing a local ban on fracking waste to protect the city's environment and public health.

Thank you for your consideration of my comments.

RANKING MINORITY MEMBER
ENVIRONMENTAL CONSERVATION
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TESTIMONY OF STATE SENATOR BRAD HOYLMAN TO THE NEW YORK CITY COUNCIL COMMITTEE ON ENVIRONMENTAL PROTECTION REGARDING RESOLUTION 791

FEBRUARY 22, 2016

Thank you for the opportunity to submit testimony to the City Council Committee on Environmental Protection regarding Resolution 791, calling upon the General Electric Corporation and the United States Environmental Protection Agency to enter into an agreement that expands the scope of the Hudson River PCBs remediation plan, and to implement an expanded remediation plan immediately. As Ranking Member of the New York State Senate's Environmental Conservation Committee, and as the representative of a district in Manhattan that abuts the Hudson River, I fully support this resolution and encourage the Council to vote in its favor.

Under a 2005 settlement agreement with the Environmental Protection Agency (EPA), General Electric (GE) has used the dredging facility at Fort Edward to clean up millions of pounds of PCBs – toxic chemicals the company was responsible for dumping into the Hudson River for over three decades. After completing the terms of the 2005 agreement, the EPA allowed GE to begin dismantling its dredging equipment in November 2015. Unfortunately, the Hudson River is far from remediated, and I have deep concerns with allowing the dismantling of the PCB processing facility to proceed.

Recent studies call into question the efficacy of the 2005 agreement's remedy. In May of 2015, the National Oceanic and Atmospheric Administration (NOAA) issued a report examining the model projections used as the basis of the 2005 agreement, finding that the "original models used were overly optimistic" and overestimated the rate of natural recovery in the Hudson River. As a result, achieving the EPA's remedial objectives "will take longer than predicted." Ultimately, NOAA concluded, "[a]dditional removal of PCB-contaminated sediment in the Upper Hudson River [is] needed to achieve [the] reductions in Lower Hudson River fish PCBs" that were initially anticipated by the EPA.

In other words, because of the flawed modeling used by the EPA over a decade ago, allowing GE to dismantle the Fort Edward operation and conclude dredging this year will result in a failure to achieve the intended remediation. According to NOAA, surface sediment PCBs in the Upper Hudson River will remain at higher rates longer than initially predicted and the reduction of PCB levels in fish found in the Lower Hudson River will take far longer – more than four decades – than the original models projected.

The Hudson River – from the foothills of the Adirondacks to Manhattan's Battery – is where diverse populations, geographies, natural resources, and economic opportunities converge. Allowing the dredging of the Hudson to fall short puts the health of millions of New Yorkers at risk. The PCB contaminants left behind are probable human carcinogens that have been linked to adverse health effects such as low birth weight, thyroid disease, and immune system disorders. Furthermore, New York State's future is tied to the restoration of the Hudson River and the return of the once-vibrant commercial fishing industry and lucrative cargo shipping on the Champlain Canal that existed prior to 1976. Committing to a more comprehensive cleanup now will lead to significant environmental and economic recovery of the Hudson River and better the lives of the 15 million Americans who live nearby.

A growing roster of environmental advocacy organizations, community groups, and municipalities has united behind this vision and called for the removal of residual PCB contamination immediately. Further, the EPA recently agreed to expedite its next "five-year review" of the Hudson, which will determine whether GE's dredging efforts were ultimately sufficient.

It is incumbent upon the EPA to ensure that the dredging of the Hudson River by GE actually meets the remediation goals it set out to achieve in the 2005 agreement, and it is incumbent upon GE to take full responsibility for its legacy of pollution. Failure to complete the cleanup effort will result in severe economic, environmental, and public health impacts. For these reasons, I strongly urge the Council to pass this resolution.

Thank you for your consideration of my comments.

February 22, 2016

New York City Council Committee on Environmental Protection

Dear Chairman Constantinides:

I'm Ling Tsou, co-founder of a New York City based grassroots group United for Action.

Chairman Constantinides, thank you very much for holding this hearing on Int 446 and Res 791. Thank you, council member Levin, for introducing Int 446 and for continuing to work with us on this important bill.

While New York State banned high-volume, horizontal hydraulic fracturing in November 2014, there are still thousands of vertical drilling wells in New York State producing radioactive, toxic fracking waste. Pennsylvania has continued to frack tens of thousands of wells. Fracking waste contains a toxic mixture of chemicals and naturally occurring radioactive material which are known carcinogens and detrimental to our health. New York State DEC is permitting certain kinds of frack waste to be spread on roads for de-icing and to suppress dust. DEC is also permitting acceptance of waste from Pennsylvania to landfills and solid and liquid treatment facilities for disposal. Since there is no federal and state laws regulating the disposal of fracking waste, New York City needs to join 15 other counties in New York State to pass Int 446 to ensure toxic oil and gas fracking waste is never used on New York City roads.

In order to make this bill as strong as possible we wish to request the following two crucial changes to Int 446:

1. Increase the penalty for violating the law from the current $100 per violation to at least $25,000 per violation. A $100 fine is not a deterrent. The fines for certain parking violation or not picking up after our dogs are more than $100. At least 11 counties in New York State, such as Westchester, Albany, Rockland, and others have included a penalty provision in their fracking waste bans that provide for a fine up to $25,000 per violation.
2. The definition of waste should not be limited to only waste from natural gas extraction activities. It should include all relevant forms of oil and natural gas waste, including waste from storage of oil and natural gas or liquefied petroleum gas. I'm attaching and submitting with my testimony a copy of the suggested changes to Int 446 drafted by Misti Duvall, attorney of Riverkeeper who has helped draft model fracking waste ban legislation in many counties in New York State.

I urge that we all work together to make Int 446 as strong a bill as possible and to pass this bill and have it signed into law as soon as possible to protect all who live and work in New York City.

I also wish to urge the passage of Res 791 to call out General Electric (GE) to continue cleaning up its PCB contamination of the Hudson River until the job is truly done.

Thank you very much for your effort and support.

Ling Tsou
United for Action

The New York City Council

City Hall
New York, NY 10007

Legislation Text

File #: Int 0446-2014, **Version:** *

Int. No. 446

By Council Members Levin, Johnson, Arroyo, Barron, Chin, Mendez and Richards

A Local Law to amend the administrative code of the city of New York, in relation to banning the discharge, disposal, sale or use within the city of New York of any wastewater or natural gas waste produced from the process of hydraulic fracturing.

Be it enacted by the Council as follows:

Section 1. Legislative findings and intent. The Council finds that hydraulic fracturing produces millions of gallons of wastewater that is often laced with highly corrosive salts, carcinogens like benzene and radioactive elements like radium, all of which can occur naturally thousands of feet underground, and that other carcinogenic materials are often added to the wastewater including the chemicals used in the hydraulic fracturing process.

The Council further finds that there are 14 wastewater treatment plants, owned and operated by New York City Department of Environmental Protection, and a number of privately owned wastewater treatment plans, operating within the City of New York. Because these facilities release effluent back into the surface water of the City of New York, it is important that such effluent be free from any harmful contaminants.

The Council also finds that the wastewater and other waste products produced from the hydraulic fracturing method of oil and natural gas extraction are dangerous and should be prevented from being used in New York City in any capacity including deicing and snow removal.

Therefore the Council finds that the wastewater and other oil and natural gas waste products produced by the hydraulic fracturing method of oil and natural gas extraction are dangerous and should be prevented from entering into the surface waters of the City of New York, and further finds that it is in the best interests of the City of New York to ban the discharge, disposal, sale, and use of hydraulic fracturing wastes within City of

New York.

§2. Subchapter 1 of chapter 3 of title 24 of the administrative code of the city of New York is amended by adding a new section 24-303.1 to read as follows:

§24-303.1 Protection of water supply; treatment of hydraulic fracturing wastewater prohibited. a. Definitions. 1. As used in this section, "oil or natural gas waste" means any waste that is generated as a result of oil or natural gas extraction activities, which may consist of water, chemical additives, or naturally occurring radioactive materials ("NORMs") and heavy metals. Oil or ~~N~~natural gas waste includes, but is not limited to, leachate from solid wastes associated with oil or natural gas extraction activities, any waste that is generated as a result of or in association with the underground storage of natural gas or liquefied petroleum gas, or any oil or natural gas waste byproduct.

2. As used in this section, "oil or natural gas extraction activities" means all geologic or geophysical activities related to the exploration for or extraction of oil or natural gas, including, but not limited to, core and rotary drilling and hydraulic fracturing.

3. As used in this section, "hydraulic fracturing" means the fracturing of underground rock formations, including shale and non-shale formations, by manmade fluid-driven techniques for the purpose of stimulating oil, natural gas, or other subsurface hydrocarbon production.

b. Prohibitions. 1. No person shall discharge or cause to be discharged any oil or natural gas waste to any surface water bodies located within the city of New York or to any wastewater treatment plant located within the city of New York.

2. No person shall dispose or cause to be disposed any oil or natural gas waste into any landfill within the city of New York. The department of environmental protection and the department of sanitation shall enforce this paragraph.

3. No person shall sell or offer for sale any oil or natural gas waste or oil or natural gas waste byproduct within the city of New York. The department of environmental protection and the department of consumer affairs shall enforce this paragraph.

4. No person shall apply or cause to be applied any oil or natural gas waste or oil or natural gas waste byproduct on any road or real property located within the city of New York. The department of environmental

protection and the department of transportation shall enforce this paragraph.

c. Contracting. All bids or contracts related to the purchase or acquisition of materials to construct or maintain a city road shall include a provision stating that no materials containing or manufactured from oil or natural gas waste shall be utilized in providing such a service.

d. Penalties. Any violation of section 24-303.1.b shall be an unclassified misdemeanor punishable by a fine not to exceed $25,000 per violation and/or up to thirty days imprisonment. Each sale, application, and/or discharge of oil or natural gas waste shall constitute a separate and distinct violation.

§ 3. This local law shall take effect ninety days after its enactment.

LS # 853 and 855 SS
Jtb 8/14/14 3:09pm

TESTIMONY OF DANIEL RAICHEL, STAFF ATTORNEY, NRDC – 2/22/16

Good afternoon, my name is Daniel Raichel, and I am an attorney for the Natural Resources Defense Council, an organization that for more than forty years has pushed the General Electric Corporation to address its responsibility for contaminating the Hudson River with toxic PCBs.

I'm here today because of an "oops" moment—one that is of great consequence to the health of New Yorkers. It happened about 10 years ago, just after EPA determined that the only remedy for the millions of pounds of PCBs that GE dumped in the Hudson River would be to dig them up and send them to a hazardous waste landfill. Because PCBs are extremely toxic—causing cancer, and linked with neurological and hormonal disorders and impaired cognitive development in children—this was good news. The bad news, however, was that the cleanup was limited—with EPA only ordering GE to dredge and remove what was then believed to be 65% of the PCBs in the Upper Hudson. But that wasn't the oops moment.

The oops moment came when EPA began extensive testing after the remedial decision, and discovered that the Upper Hudson was actually *2-3 times* more contaminated than ever thought, and not "naturally" remediating at anywhere near the levels it had anticipated. That was the "Oops."

Although this was already unfortunate news, EPA made matters worse by failing to respond appropriately. Instead of evaluating how this new abundance of PCBs would affect computer predictions of how PCB levels in fish and in the river would (or would not) come down as a result of the cleanup, EPA failed to thoroughly analyze the data or update the remedy—choosing instead to plod along with the original plan. However, in 2015, another federal agency, NOAA, did do updated computer analysis based on this data, and that analysis concluded plainly, that the current cleanup plan will fail to meet health and safety targets for fish in the Lower Hudson.

So what does this mean to New Yorkers, and New York City residents? First, it means that there will continue to be a very large amount of PCBs upriver—described by NOAA and the U.S. Fish and Wildlife Service as a *series* of Superfund-caliber sites—flowing down river to the city, and indeed the vast majority of the PCBs in the New York Harbor area are from GE. These PCBs come with a direct economic cost, as the Harbor requires annual maintenance dredging, and dredging heavily contaminated sediments is very expensive. For this reason, the Hudson River Foundation called legacy contaminants in the Hudson an "economic ball and chain" for the city.

Second, it means Hudson River fish are still dangerous to eat and will remain so for 40-50 years longer than expected, which is of particular concern, because we know that low-income and foreign-born residents are less likely to be aware of or have the means to follow longstanding Department of health advisories not to eat the fish.

Third, and perhaps most distressing, research in the last decade has demonstrated the potential harms of airborne PCBs along the Hudson. In particular, research from SUNY Albany shows that residents who live along the Hudson may be at risk of higher rates of heart disease, diabetes, and cancer as a result of chronic exposure to airborne PCBs from the river. This means that, especially for those who take a morning jog along the Hudson, it may not be enough to simply avoid eating Hudson River fish.

For these reasons and more, it is critical for the Council to act now. While GE completed the limited cleanup plan in October, EPA has now promised to thoroughly study it in what's known as a "five-year review." If done correctly, the results of this Review could lead to more cleanup. The first five-year review, however, was not, and if history repeats itself with another slapdash review, New Yorkers will be left "holding the bag" both with their health and their pocket book. That's why today we ask the Council,

on behalf of its millions of residents that GE's PCBs have put at risk, to add its strong voice to the more than 70 communities up and down the river calling for more cleanup.

Also, I'd like to add that for the reasons [that will be] outlined by my colleague Misti Duvall at Riverkeeper, NRDC strongly supports the New York City fracking waste ban.

Thank you.

THE LEAGUE OF WOMEN VOTERS OF THE CITY OF NEW YORK
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League of Women Voters of the City of the New York
Testimony Feb. 22, 2016, New York City Council Hearing on
Int 0446-2014

I'm Mary Anne Sullivan speaking on behalf of the League of Women Voters of the City of New York. We support Int 0446-2014 with a few needed changes. The League of Women Voters is a multi-issue, non-partisan political organization. We encourage informed and active participation in government, work to increase understanding of major policy issues, and influence public policy through advocacy and education.

Thank you, Steve Levin and City Council sponsors, for introducing this important bill to ban gas fracking waste from use within New York City. This bill aims to protect those who live, work and visit the city now and into the future from possible exposure to the unhealthy chemicals, metals and radioactive waste produced by the hydraulic fracturing process.

The Governor's ban on high-volume hydraulic fracturing does not protect the State from exposure to fracking waste. In fact, the State DEC has permitted solid and liquid treatment facilities and landfills to accept Pennsylvania's waste. It is also permitting conventional fracking waste from New York State vertical drilling to be used in road spreading to suppress dust, to stabilize and to de-ice roads. Pennsylvania seeks to get rid of the hundreds of millions of gallons of liquid fracking wastewater and hundreds of tons of fracking solid waste it has generated. 12 New York Counties have banned this waste and New York City should as well. The League of Women Voters of New York City informed Council members of the need for this bill several years ago and thanks Costa Constantinides for bringing this bill to a hearing.

While the City owns no landfills at this time, old or new ones could be approved in the future. Further, while wastewater treatment facilities may not currently be trucking in fracking wastewater, they could in the future. These centers are not capable of processing the hazardous chemicals and radioactive materials produced by drilling activities.

The League believes the greatest exposure to frack waste at this time is from the purchase of road salt from Chile, a country that permits fracking. Road salt from other sources also could contain brine and/or byproducts from fracking. The Mayor said 300,000 tons of road salt was ready for our last blizzard. We must monitor purchase of our road salt to ensure that it does not contain fracking waste to pollute our air and

groundwater because once inhaled and ingested by people and animals there is an increased risk of exposure to carcinogenic and endocrine disrupting chemicals.

The League strongly believes our City's people need to be protected from unhealthy exposure to frack waste into the future and this bill should be passed with these amendments: include oil as well as gas waste, stored waste, and include a strong deterrent of $25,000 penalty or jail time for each infraction of this law. A $100 penalty per infraction in the present bill does not suffice. At least 11 counties in New York State have included a penalty in their frack waste bans with a fine up to $25,000 per violation.

We ask the members of the City Council to pass the amended version of the bill in order to protect the health of the people of this great city.

Thank you for this opportunity to testify. We request future collaboration with Good Government Groups and the Council in the matter of public safety.

The New York City Council

City Hall
New York, NY 10007

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The Council further finds that there are 14 wastewater treatment plants, owned and operated by New York City Department of Environmental Protection, and a number of privately owned wastewater treatment plans, operating within the City of New York. Because these facilities release effluent back into the surface water of the City of New York, it is important that such effluent be free from any harmful contaminants.

The Council also finds that the wastewater and other waste products produced from the hydraulic fracturing method of oil and natural gas extraction are dangerous and should be prevented from being used in New York City in any capacity including deicing and snow removal.

Therefore the Council finds that the wastewater and other oil and natural gas waste products produced by the hydraulic fracturing method of oil and natural gas extraction are dangerous and should be prevented from entering into the surface waters of the City of New York, and further finds that it is in the best interests of the City of New York to ban the discharge, disposal, sale, and use of hydraulic fracturing wastes within City of

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2. No person shall dispose or cause to be disposed any oil or natural gas waste into any landfill within the city of New York. The department of environmental protection and the department of sanitation shall enforce this paragraph.

3. No person shall sell or offer for sale any oil or natural gas waste or oil or natural gas waste byproduct within the city of New York. The department of environmental protection and the department of consumer affairs shall enforce this paragraph.

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Damascus Citizens for Sustainability's comment regarding New York City Frack Waste Bill INT 446

It is our hope that the New York City Council will pass the Frack Waste Bill 446 with the following changes. One that the penalty for each violation be raised to $100,000. Clinton County which has a population of about 81,500 has a penalty of $25,000 per violation whereas the population of New York City is almost 8,500,000 residents. Moreover since frackwaste is a result of both oil and gas exploration, the bill should ban the deposit and use of frackwaste from both gas and oil production.

Our comment will specifically address the problems of using Publicly Owned Treatment Works (POTW) for disposing the produced fluids resulting from the drilling. The threats to the health of the City's entire water system are extensive and probable as forecasted by the lingering water crisis facing Pittsburgh. Between October, 2008 – 2010 there were multiple "bottle water alerts" (urging but not requiring residents to buy and drink bottled water instead of their own tap water) and the water has not been adequately tested since for all the materials that could cause negative health effects. The Pittsburgh events were caused by the disposal of frack fluids via POTWs into the Monongahela River which is the source of Pittsburgh's drinking water.
(See: http://www.propublica.org/article/wastewater-from-gas-drilling-boom-may-threaten-monongahela-river)

It was reported in December, 2014, "Contributing to the river's (Monongehela) water quality improvement was the voluntary elimination of Marcellus Shale gas drilling wastewater discharges into the river in May 2011, said Dave Spotts, chief of the state Fish and Boat Commission's Division of Environmental Services." The use of the word "improvement" does not mean that the damage from the wastewater discharges has been eliminated. The fact that the River "improved" when the wastewater dumping was halted demonstrates the deleterious effects of frack wastewater discharges have on our water bodies. (See: http://www.post-gazette.com/news/environment/2014/12/29/Report-on-water-quality-says-Mononghela-River-no-longer-degraded-by-sulfates/stories/201412290187)

One of the most important problems of high volume hydro fracturing in New York is what is to be done with the waste fluids. Three main methods of produced fluid disposal are shipping by trucks to various Publicly Owned Treatment Works(POTW), utilizing waste storage injection wells which penetrate deeply into the earth (See; http://www.dcbureau.org/20101123992/bulldog-blog/pennsylvania-gas-drillers-dumping-radioactive-waste-in-new-york.html and http://www.nytimes.com/2012/01/02/science/earth/youngstown-injection-well-stays-shut-after-earthquake.html?_r=1&emc=eta1 and re-injecting the frack fluid into the natural

gas producing wells themselves. There is also a fourth way that is often used which is the release of fluids anywhere when no one is looking. See:
http://williamahuston.blogspot.com/2010/12/more-illegal-dumping-of-frack-fluids.html
and http://www.pressconnects.com/article/20111201/NEWS01/112010437/
Each has enormous and dangerous environmental consequences. As long as these problems exist the Frack wastewater should not be permitted to be disposed in any of the Publicly Owned Treatment Works(POTW) in New York City.

Gas industry exemptions and hazardous waste loopholes leave us and our water at risk. Under current NYS law, each of the identified facilities could accept fracking wastewater for treatment and disposal. Under current NYSDEC guidance, only pretreatment facilities are supposed to accept such wastewater, but these facilities are designed to treat domestic sewage and not industrial wastewater. Produced frack water should be characterized as hazardous waste water due to its toxic chemicals, heavy metals, radioactivity properties and unknown properties which are now proprietary information for the Exploration and Production companies. (A bill, A 07013, passed in the NYS Assembly 109-35 in June, 2011, categorized frack fluid as hazardous waste,) Such fluids cannot be handled by these facilities.

New York State requires that these facilities ask for permission to receive the produced fluid, but it does raise the questions about additional costs and regulations. The questions are: considering the small staff at DEC, whether there will be regulators to inspect these plants to ensure public safety when the fluids are released after treatment to large bodies of water, and to insure that the radioactivity and heavy metals in the produced fluid are removed. A more important question is, even if there will be enough regulators to oversee the Sewage Treatment Plants, whether the sewage cleaning process can clean these toxic fluids.

Even the New York State Supplemental Generic environmental Impact Statement (SGEIS) raises questions as to whether it can, through its normal bacterial process, clean both sewage and frack fluid, which contain biocides that will destroy the first methods of cleaning sewage. (The sewage facility at Newtown Creek in Brooklyn, is famous for its large Digesters Eggs which processes 250million gallons daily. "Poop jokes aside, without facilities like Newtown Creek our waterways would be horrible. The Newtown Creek plant and the people who man it manage to turn millions of peoples' waste back into into clean, environmentally safe water." (See: http://gizmodo.com/where-new-york-citys-poop-goes-1622426763)

The SGEIS does admit there is a problem in getting rid of the produced fluids (See appendix 22, page 77 of dSGEIS: "Please note that this disposal option is limited to the extent that municipal POTWs which utilize biological wastewater treatment are generally optimized for the removal of domestic wastewater and as such are not designed to treat several of the contaminants present in high-volume hydraulic fracturing wastewater.") ProPublica as long ago as 2009 published an article about the serious problems of using wastewater disposal option in treating produced frack fluid. These problems are just as

relevant today as six years ago.
http://www.propublica.org/article/drill-wastewater-disposal-options-in-ny-report-have-problems-1229

How can a plant process produced fluids from fracking if the fluid contents are proprietary. Any publicly owned facility is obligated to protect the public good first and not private companies' secrets. I have spoken with engineers familiar with waste treatment. The following was pointed out:

The fact that fracking fluids are allowed to remain proprietary when they are injected to a publicly owned space, the lithosphere/hydrosphere, equivalent to our atmosphere or oceans is patently absurd. We should refuse the trumping of private rights over public needs in the City of New York. Fracking fluid contents must be completely disclosed. However, what we do know of the components of frack fluid and frack waste is that disposal is Waste Water Treatment plants is detrimental to the area's environment.

A company should not have a right to proprietary processes which could result in contamination or damage to our city, its waters, or goods. The fact that this fluid could be discharged, it remains impossible to recover 100.00% of the potentially toxic or damaging materials. As some of the materials (e.g. benzene, chromium, phenols, radioactive materials) can be hazardous in parts per million or billion and even small percentage of expected failure to recover is cause for concern since we do not know the actual chemicals analysis and definition of risk. The public interest in the prevention of processing of frackwaste override the legitimate desire for industrial privacy.

In appendix 22, the SGEIS tries to explain how to retrofit plants to accept this toxic water but examination of its flow chart raises questions as to whether this can be done in the first place. In addition, who will bare the costs of retrofitting the plants, if it can be done and who will oversee the changes in the process of sewage treatment is not clearly stated. Will these costs be a burden for the City's taxpayer? The SGEIS brings up the question of costs but does not answer it. (See SGEIS, appendix 22, page 77: "the additional monitoring and laboratory costs which will result from additional monitoring conditions in the permit must also be considered prior to deciding to accept this source of wastewater.")

Moreover since these fluids have radioactivity, heavy metals, and unknown propriety ingredients, the question begs; will residents accept discharging of such "treated" fluids in NYC rivers (Hudson and East Rivers), Long Island Sound and ocean shore lines? Thirteen counties in New York State now have bans on Frack waste because these communities will not accept such "treated" fluids in their estuaries or their lands. I believe, if they were informed, that the city's residents would welcome a law that would ban heavy metals, radioactive elements, unknown proprietary ingredients and biocides in their estuaries.

Biocides, heavy metals, benzene, toluene, ethylbenzene, zylenes(BTEX), radioactivity and unknown "proprietary" ingredients are likely to adversely affect the health and

economic well being of city residents. These and other materials in flow back waters are toxic even in very small quantities. Moreover the effectiveness of these plants are the bacteria generation needed to break down the sewage effluent. Biocides will kill this important aspect of processing our sewage. These materials have never previously been accepted into these water treatment plants, thus understanding the negative effects on these facilities, New York City Council should pass INT 446 with the changes recommended above.

New York City Publicly Owned Treatment Works(POTW) as Absorbers of Waste Water

The SGEIS has listed every POTW in New York City as possible destination points for produced frack fluid brought to these plants by trucks. The City of New York has numerous industries that are vital to the economic health of the nation. To consider that trucks would have to travel within the borders of the New York City carrying these toxic substances is unfathomable. Imagine the terrible outcomes of spills. If anything, considering the importance of this international city, the precautionary principle has to be applied. Yet the SGEIS has listed all 14 POTW plants. The billions of revenue that is generated by the city could be severely compromised. Imagine what will happen to the tourism, financial, technical, real estate, cultural, etc. industries if there is a spill or a trucking accident or if the sewage treatment plants would be unable to absorb and clean the normally generated sewage water? (See Addendum: New York City's Wastewater Treatment System)

(For Locations and for information regarding the water site of discharge, See ***New York City's Wastewater Treatment System***)
http://www.nyc.gov/html/dep/html/harbor_water/wwsystem-plants.shtml

Wards Island WPCP
Owls Head WPCP
Newtown Creek WPCP
Jamaica WPCP
North River WPCP
26th Ward WPCP
Coney Island WPCP
Red Hook WPCP
Tallman Island WPCP
Bowery Bay WPCP
Rockaway WPCP
Oakwood Beach WPCP
Port Richmond WPCP
Hunts Point WPCP

In conclusion, using POTW for processing frack fluids could pose many dangers to New York City. The purpose of the New York City's Government is to protect the public good.

Respectfully submitted by:

Margery Schab
Board Member of Damascus Citizens for Sustainability
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First I want to thank Councilman Stephen Levin for Sponsoring INT 446 and Chair of the Council Environmental Committee, Councilman Costa Constantinides for holding this important hearing.

My name is Margery Schab and I am a Board Member of Damascus Citizens for Sustainability. I am delivering on behalf of DCS a statement asking the New York City Council to approve the Frack Waste Bill INT 466 with the following extremely important changes.

1. The Penalty for violation of this bill should be raised to $100,000 per violation. I do not come to this figure lightly. Clinton County in New York State with a population of 81,500, has banned frack waste in their county and the penalty figure is $25,000 per violation. Given that New York City has a population of 8,500,000 and its value of its real estate, culture and finance sectors, such a increase in penalty for New York City is not unreasonable. It is unreasonable that a City whose economic sector is an important component of the economy of the United States have such a low penalty. Perhaps it is politically incorrect, but I believe a $100 penalty per violation would make INT 446 unenforceable. We simply cannot afford to have our waterways and sewage treatment plants be harmed.

2. Frackwastes also results from this extreme method of Oil production as well and thereby frackwastes from those operations should be banned from New York City too.

I live in Remsenburg, NY which is part of Southampton Town. Before Suffolk County passed its Frackwaste Ban, the Town of Southampton was so disturbed that such waste should find its ways on the roads for deicing or could threaten the precious, extremely fragile and stressed estuaries that it passed its own ban in the spring of 2014.

I have submitted to you DCS' comment focusing on the possible harm to the 14 sewage plants in New York City which cannot intake frackwaste and the testimony of Professor Lawrence Swanson of the Waste Reduction and Management Institute at Stony Brook University which expressed his concern regarding this waste and was submitted to the Southampton Town Board in April, 2014.

After all New York City is New York City, thereby passing INT 446 will be extremely important and perhaps it could make possible a statewide ban on frackwastes. It could also awaken counties in my home state of Pennsylvania to the threat of frackwastes. Water is a sacred and necessary treasure. For all our futures we cannot risk its further degradation.

Thank you.

Testimony of

R. Lawrence Swanson, Ph.D.
Waste Reduction and Management Institute
School of Marine and Atmospheric Sciences
Stony Brook University

Concerning

Prohibiting the Sale, Application and Disposal of Waste Associated with Natural Gas Exploration and Extraction Activities

Before

Southampton Town Board
Town of Southampton

Southampton, New York

April 22, 2014

Members of the Board of Trustees, I want to thank you for the opportunity to speak today concerning issues related to hydraulic fracking. My name is Larry Swanson, Director, Waste Reduction and Management Institute in the School of Marine and Atmospheric Sciences, Stony Brook University. I am here to enthusiastically support the adoption of Southampton Town Board Resolution (ID 20174) to Enact Town Code Chapter 159 Prohibiting the Sale, Application and Disposal of Waste Associated with Natural Gas Exploration and Extraction Activities.

In December 2012, the New York Marine Sciences Consortium, a group of some 28 degree-granting institutions in the state, prepared a position paper on hydraulic fracturing, which was sent to Governor Cuomo and the New York State Legislature (http://www.nymarinesciences.org/). The paper was entitled, "An Assessment of Some of the Environmental and Public Health Issues Surrounding Hydraulic Fracturing in New York State." I serve as director of the consortium and my comments come largely from that paper.

The very practice of fracking requires an exemption from the Safe Drinking Water Act, which is known as the Halliburton Loophole. Many of the chemicals used in the fracking process of breaking up the oil-bearing Marcellus Shale are unknown since the makeup solution is often proprietary and varies with location and company. The return flow or waste water from the fracking process not only contains chemicals injected into the well but some chemicals released from thousands of feet within the Earth. The return flow (flowback water) is generally stored in evaporation pits where some chemicals may degrade and those that are conservative become more concentrated.

The ultimate fate of the wastes in the evaporation pits is a concern. There are proposals to reuse some of these wastes in other fracking operations, to have them treated at sewage treatment plants, to use as an alternative for sand and salt on icy roads, and to use for dust control.

The latter three alternatives are potential public health and environmental threats. Roughly a third of the chemicals in the waste water are thought to be carcinogenic (e.g., benzene, formaldehyde), 90 percent are on the 2005 U.S. EPA Superfund List (e.g., toluene, ethyl benzene). Excessive exposure to the materials in evaporation pits can cause dizziness, headaches, nausea, asthma, and eye and skin irritations.

Back in 2008 and 2009, the NYS Department of Environmental Conservation (NYSDEC) ascertained that radium 226 occurred in the brine of the produced natural gas from the Marcellus Shale – in amounts that are thousands of times higher than those allowed in drinking water and hundreds of times greater than allowed in the general environment.

Appendix 21 of the NYSDEC Supplemental Generic Environmental Impact Statement on Oil, Gas and Solution Mining Regulatory Program identifies the 14 sewage treatment plants in New York City, Nassau County's Cedar Creek, Inwood, and Bay Park STPs, and the Southwest Sewer District in Suffolk as locations for treating fracking waste water. There is insufficient capacity upstate to handle the volume of fracking waste water.

Our sewage treatment plants should not be used for this purpose. They are not designed to remove many of the toxic and hazardous chemicals that are known to be in fracking waste water. We have and will continue to spend billions of dollars to clean up our coastal waters. We shouldn't be making that task even more onerous by willingly allowing those hazardous and possibly radioactive wastes to pass through treatment facilities to endanger the best uses of our waterways, including fishing, swimming, and ecological functioning.

I am pleased that after sharing the NYMSC paper with the Suffolk County Legislature, they passed a local law prohibiting the Southwest Sewer District STP from taking fracking waste water. I believe Nassau County has done the same. Such should be the case for all treatment plants, including those in New York City.

However, using fracking wastes on Long Island roads as a deicer or to control dust is perhaps even worse. The toxic, hazardous, and radioactive chemicals associated with fracking wastes will pollute our ground water and hence our drinking water supply via road runoff. That supply is already under stress from other pollutants. We need to protect its quality and hence quantity whenever we can. This runoff will also pollute our coastal waters directly and indirectly through groundwater discharge.

It is perhaps worthwhile to recall a community that no longer exists -- Times Beach, MO. In the 1970s, the roads there were sprayed with a waste oil for dust control. That oil contained dioxins, one of the most toxic anthropogenically produced chemicals known. The population was translocated and the U.S. EPA had to oversee an expensive cleanup. We don't need that possibility here on Long Island.

Fracking has the potential to destroy the environment of New York in the same way strip mining has destroyed much of Appalachia. Mitigation costs many times that of conservation. We need to adopt the Precautionary Principle with all aspects of hydraulic fracturing.

It is for these reasons that I encourage you to pass the proposed resolution to prohibit the sale and use of fracking waste water.

This concludes my testimony.

Feb. 22, 2016

Hilary Baum
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917 822 9445

Baum Comments on Int 446 in relation to banning the sale, disposal, discharge or use of fracking waste in New York City

I am Hilary Baum, a resident of New York City, represented by Councilman Andrew Cohen. I work with the New York State Sustainable Business Council and Chefs for the Marcellus, and have helped educate and mobilize small businesses around the issues of fracking, fracking waste and transitioning to renewable energy. The NYS Sustainable Business Council has actively supported similar laws related to fracking waste disposal specifically in Westchester, Rockland, Putnam and Albany County counties, all of which passed, and have actively supported proposed state laws including Senate and Assembly versions of laws on the hazardous waste loophole, fracking waste disposal, and fracking waste road spreading. Our support for these bills was grounded in part on the potential environmental and economic consequences of the migration of this waste to agricultural operations and water resources.

Since the New York State legislature has not yet passed legislation protecting all New Yorkers from this highly toxic waste it is imperative that the NY City Council act. A bold action by the NY City Council will send a signal to the industry as well to other local governments and NYS legislators that the use of this waste will not be tolerated.

Thanks to NYC Councilman Steve Levin for introducing Int 446, this critical issue is now in full view of the Environmental Protection Committee. While it has already taken 2 years to get this bill to this hearing, you can be sure that concerned citizens, including businesses, will continue to work together with urgency to promote this important bill and its necessary improvements, and will help keep this issue in public view.

Many of us learned about the public health threats of fracking waste as we worked together to keeping fracking out of New York. We also learned that even with the state's ban on high volume hydraulic fracturing, there are fracking waste by-products from operations in PA coming into NY, and now we understand that there is toxic waste generated in New York itself from non-banned gas and oil activities, including vertical and low volume hydraulic fracturing. While 15 counties in NY have prohibitions on waste disposal practices, the by-products are used by many municipalities and counties in different parts of the state for road spreading for de-icing and dust control.

This waste is known to contain harmful pollutants and high levels of naturally occurring radioactive material, posing a serious public health threat. In NYC, the use of these by-products for de-icing city streets, highways and park roads would create an unacceptable threat to drivers, roadworkers, traffic cops, pedestrians, pets, parklands and lakes, streams and waterways. New York City needs an absolute ban on the use of fracking waste and stiff penalties for non-compliance.

We ask that the definition of fracking waste in Int 446 be expanded to include waste generated from all relevant forms of oil and gas extraction, production and storage, and that penalties for non-compliance be raised from $100 to at least $25,000 per violation.

Testimony for NYC City Council Hearing Re: Intro 446 – 2/22/16

My name is Edie Kantrowitz – I'm a board member of United for Action, and also President of New York City Friends of Clearwater. But I'm speaking right now as an individual, to give my strongest support for Intro. 446, and also to ask for two modifications to the bill, which will give it even more impact.

Firstly, I believe the penalty for non-compliance should be increased from the current $100 per violation to at penalty of at least $25,000. In today's world, a $100 fine is not a deterrent, and for many businesses or organizations it can be seen as merely "the cost of doing business". At least 11 counties in New York State have included a penalty provision in their fracking waste bans that provide for a fine up to $25,000 per violation. New York City should also have a penalty provision that acts as a real deterrent.

Secondly, the definition of "waste" should not be limited only to waste from "fracking," or natural gas extraction activities. It should be expanded to include all relevant forms of oil and natural gas waste, including wastes resulting from oil and natural gas storage.

Governor Cuomo and New York State have taken a bold and extremely praiseworthy step by banning high-volume horizontal hydrofracking in New York State. But unfortunately that's not the whole story. In addition to concerns about pipelines, compressor stations, LNG shipments, fossil fuel storage facilities, and convention vertical drilling of oil and gas wells, we still have a situation where the New York State Department of Environmental Conservation is permitting solid and liquid waste treatment facilities in New York to accept waste from the fracking and drilling which is going on so extensively in Pennsylvania. DEC is also permitting waste from conventional fracking in New York State to be used for road spreading, to suppress dust and to act as a de-icer.

This means that, without this bill to protect New York City, we do not have any assurance that these toxic substances containing carcinogens and even radioactive elements will not be discharged into our surface waters and our landfills; nor do we have any assurance that they will not be spread on our city streets, where they present a danger not only for adults, but especially for children and pets. We all know how children love to play in the snow, and sometimes it gets in their mouths, too. I think in our most recent snowstorm, we saw just how much "rock salt" and de-icer is used to keep the city's streets and roadways clear and usable. We do not want these products to contain toxic and radioactive "brine" from fracking. This is why it is so important for New York City to pass a "fracking waste ban" to insure that its residents are protected from these toxic wastes both in our surrounding waters, and on our city streets.

I therefore want to give the City Council my greatest thanks and appreciation for introducing and considering this bill, and for holding today's hearing; and I am hoping that the bill will be adopted with the proposed modifications, so that we can have the strongest possible protection from these toxic threats to our public health.

Edie Kantrowitz
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Testimony by Marilyn Stern
City Council hearing on resolution Int 446 - Fracking Waste Ban

February 22, 2016

Most people would be surprised to learn that, despite New York's ban on high-volume hydraulic fracking, our state still imports and generates high volumes of fracking waste. And because of New York's fracking waste loophole, this waste is not classified as hazardous despite it containing some 2,500 different chemicals, including roughly 600 known and possible carcinogens, salts, heavy metals and radioactive isotopes. This toxic waste is dumped into landfills and wastewater treatment facilities not equipped to handle it, while toxic brine is poured onto icy roads.[1]

It is unconscionable that New York state allows this loophole. A Hazardous Waste Loophole Bill is pending in Albany and will hopefully be passed soon.[2] But until it is, local governments must protect their citizens. At least eleven counties in New York have passed a fracking waste ban, including the three counties adjoining New York City: Rockland, Westchester and Nassau.[3]

I applaud and thank council member Levin and his 10 colleagues who sponsored Int 446. I strongly urge more council members to become sponsors, and for the council to pass this vital legislation.

However this bill has a fatal flaw: It's missing the words penalty, violation and non-compliance. (I was told that penalties are set at $100 per violation, though I couldn't find this in the text.) Without teeth, this bill is useless. Penalties should be added following the model of Westchester, Nassau and most of the other counties: $25,000 penalty and/or imprisonment up to 30 days, plus possible civil penalties.[4] I suggest adding an additional three-strikes penalty, such as barring offenders from getting city contracts.

Also, the definition of fracking waste should be expanded beyond just waste from natural gas (NG) extraction. It should include all relevant forms of oil and NG waste, including from oil and NG storage.

Also, I suggest adding "storage and transportation of" hydraulic fracturing waste to the ban.

When the fracking waste ban became law in Westchester in 2013, legislator Pete Harckman told the press, "This waste doesn't belong in our wastewater treatment plants, and it certainly doesn't belong on the streets and roads that drain into our fragile drinking water supplies." I ask all of you council members: Does New York City not deserve the same protection?

In closing, I urge all council members to watch the 5-minute video No Second Chance - Legislators Talk About Fracking Waste, posted on the website grassrootsinfo.org/frackingwaste. Learn from your colleagues why a ban for our city is so important. Thank you.

FOOTNOTES

[1] "More than 510,000 tons and 23,000 barrels – and counting – of waste from oil and gas extraction operations in neighboring Pennsylvania have been shipped to New York landfills for disposal. Leachate from those landfills is then sent to nearby wastewater treatment facilities. And New York State continues to allow the use of certain kinds of waste from low-volume oil and gas extraction on our roads for de-icing and dust control." http://www.riverkeeper.org/fracking/time-to-close-new-yorks-fracking-waste-loophole/ "Some of (this waste) comes from more than 12,000 conventional, low-volume oil and gas extraction wells within New York State." http://www.riverkeeper.org/campaigns/safeguard/fracking-waste-in-new-york/what-is-fracking-waste/

[2] "Currently, the regulations promulgated by the Department of Environmental Conservation that govern the waste produced by the oil and natural gas industries exempt "drilling fluids, produced waters, and

United for Action

other wastes associated with the exploration, development or production of crude oil, natural gas or geo-thermal energy from being regulated as hazardous waste. This exemption is in place despite the fact that (this) waste... may be hazardous in many instances." Justification for the Hazardous Waste Loophole Bill sponsored by Assembly member Steve Englebright.
http://assembly.state.ny.us/leg/?default_fld=%0D%0A&bn=A6859&term=2015&Summary=Y&Actions=Y&Votes=Y&Memo=Y

[3] New York counties that have passed fracking waste bans are: Albany 1/ Albany 2, Rockland, Putnam, Westchester, Orange 1/ Orange 2, Tompkins, Nassau, Suffolk, Erie, Onondaga, Scoharie, Clinton, Cayuga. http://www.riverkeeper.org/campaigns/safeguard/fracking-waste-in-new-york/what-communities-are-doing/

[4] Westchester: http://westchesterlegislators.com/newsroom/2205-westchester-legislators-unanimously-approve-hydrofracking-waste-ban-in-county.html
Nassau: http://hbwresources.com/ny-county-bans-fracking-waste/

Testimony for NYC City Council Hearing Res. 791 – 2/22/16

My name is Edie Kantrowitz, and I'm President of New York City Friends of Clearwater. Both New York City Friends of Clearwater and Hudson River Sloop Clearwater strongly support Res. 791.

I would like to quote from Manna Jo Greene, the Environmental Director of Hudson River Sloop Clearwater. She says, "With dozens of editorials and more than 70 resolutions calling for a mutually-beneficial voluntary settlement agreement to ensure a more robust cleanup of Hudson River PCBs, GE failed to come to the table. By not agreeing to participate in a more comprehensive remediation they are delaying the recovery of the river and causing further health and environmental impacts, which can and should be prevented by a more proactive approach. They are again putting short-term profits ahead of the well-being of the river and people in its watershed, and their own long-term financial well-being, since this delayed restoration can result in greater damages."

We all know that the cleanup plan originally developed in 2002 has not completed all the necessary remediation in the river. The National Oceanic and Atmospheric Administration and the U.S. Fish and Wildlife Service have since found that PCBs concentrations will be more widespread, natural recovery rates slower, and declines in the PCB levels in fish slower than originally assumed; that PCB levels in River Sections 2 and 3 will be five times higher post-remediation than originally predicted; that 136 additional acres of dredging will be required to bring Sections 2 and 3 up to the same standard as Section 1; and that if the cleanup plan is not expanded, restoration of affected habitats will be limited, and there will be both short- and long-term adverse impacts to the river.

The EPA itself, after its 2002 plan, found that it had underestimated by a factor of 2 or 3 times the amount of PCBs in the upper Hudson River. It also soon became evident that the PCB pollution was not just confined to a few "hotspots" as originally thought, and that some of the natural processes by which the river was expected to heal itself were not happening as predicted. By 2012, both NOAA and the Fish and Wildlife Service had concluded unless the plan was modified, it would leave the "equivalent of a series of superfund-calibre sites" in the Hudson. In 2015, NOAA also found that many fish would remain contaminated with unsafe levels of PCBs for forty or fifty years longer than originally anticipated. It is therefore abundantly clear that the original plan is not adequate, and we must call upon GE to enter into an agreement with EPA for an expanded, and truly effective, remediation plan.

In addition to this incomplete cleanup continuing to expose New Yorkers to the PCBs with their carcinogenic and other health effects, New York has already suffered economically from loss of the river's fishing industry, and from negative impacts to commercial navigation and tourism. If meaningful remediation is not continued, environmental and economic recovery could be delayed for decades. A cleanup must be achieved that is comprehensive, and GE must not be allowed to leave hundreds of thousands of pounds of toxic PCBs in the river. The original plan has so far cleaned up only 65% of the PCBs. In school, that would be considered a "D," basically a failing grade.

The EPA has recently agreed to accelerate its next five-year review of the cleanup operations, which is very good news. However, I would like to mention that there are several items that should be included in this review beyond what is already discussed in the resolution. As suggested by the Natural Resources Defense Council, the review should include (1) New modeling or analysis addressing the findings of the NOAA study and accurately assessing the impact of the massive amounts of contamination EPA discovered after developing its cleanup plan, (2) An analysis of the threat of airborne or "volatile" PCBs not considered in 2002 because much less was known about the harms of these volatiles at that time, and (3) A comprehensive anglers study to understand who is eating Hudson River fish despite the advisories. It is likely that there may be an environmental justice issue here, with low income people depending on fish from the river for part of their diet.

The Hudson River is precious to New York, to the members of Clearwater and NYC Friends of Clearwater, and to all New Yorkers. I'd like to thank the City Council, and strongly encourage the passage of this resolution. With a truly robust and continued remediation, we'll look forward to seeing the day when the "river that runs both ways" can once again truly "run clear".

Edie Kantrowitz

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Brooklyn, NY 11218

NYC Council Hearing on Int.0446-2014 & Res. 0791-2015, 2/22/16, 1:00

Testimony of Catherine Skopic

Int. 0446-2014 - Banning the discharge, disposal, sale or use within NYC of any wastewater or natural gas waste produced from the process of hydraulic fracturing or the byproduct or application thereof on any road or real property or produce for use as materials to construct or maintain a city road.

We are in the 21st century with the development and installation of healthy and sustainable renewable energy. Continuation of this path will eventually stop and reverse the present, perverse global heating. There is no positive outcome for oil or gas at this stage in our planet's history, and any action, manufacturing or process that supports it is acting against life itself.

Hydraulic oil or gas drilling uses thousands of gallons of water for drilling each well. Of all the water on this planet, about 2% of it is potable - and drillers are using it to get fossil fuels, not for drinking or agriculture. This, in my opinion, is an obscene use of our resource.

These drilling processes and deep water well infusions cause earthquakes. Oklahoma has been experiencing hundreds of them, caused by this industry. Just last evening, the Weather Channel aired a program about this including geological studies, data and extensive supporting evidence that drilling and deep water well infusions cause earth quakes, as do dams. When water is forced below the surface of the earth, it fills up the cracks and spaces between rock. This weakens the sub-strata and causes rock shifts, producing earthquakes that are closer to the surface and more destructive than natural earthquakes.

If the drilling wastes good water and causes earthquakes when the now poisoned waste water is injected into deep water wells, what does the industry do with the waste water? The industry cannot be allowed to spread it on roads or use it in any other way where it will come into contact with people, plants or animals. Using it on roads or for construction will do all three. Run-off will end-up in our rivers, lakes, streams and ground water. This waste water, now filled with toxins, cannot be filtered or treated by any water processing facility to make it safe for human consumption or agriculture. The only safe solution is to not produce it in the first place.

Therefore, I fully support Int.0446-2014 to ban the use of oil and gas wastewater for use on roads or real property. This legislation will both protect us here in NYC and send a clear message to the oil and gas industry that their waste water is not acceptable or permitted within the city.

Res.0791-2015 - GE Corporation and the US EPA to enter into an agreement that expands the scope of the Hudson River PCBs remediation - issues raised by the US National Oceanic & Atmospheric Administration & the US Fish & Wildlife Service

Why didn't GE Corp. completely clean-up their PCBs in the Hudson River before it left? We hold them accountable and responsible for restoring the health of the Hudson River. I am in full support of this resolution and will do what I can to see that it is enacted and that GE completes a 100% clean-up and removal of all PCBs they placed in the river. I suggest the addition of an **amendment to follow-up and monitor this clean-up in conjunction with & direct reporting to the related Federal agencies.** Present & future generations count on us to leave earth as good as or better than we found it. It's our responsibility to Mother Earth that supports us and all life.

Testimony in favor of Int. 446
Eric Weltman
Food & Water Watch
February 22, 2016

Thank you for the opportunity to testify in favor of Int. 446.

My name is Eric Weltman, and I'm a Senior Organizer with Food & Water Watch, a nonprofit environmental organization, based in our Brooklyn office. We're working to label GMOs, ban the misuse of antibiotics on factory farms, and stop the Trans-Pacific Partnership.

And, like many of the organizations here today, we were involved in the campaign to ban fracking in New York. Over a year ago, Governor Cuomo boldly defied the oil and gas industry in announcing a ban on this devastating practice.

Yet, New York continues to bear a tremendous burden from fracking, from the pipelines that threaten to snake across our state to exposure to the radon-filled gas from the Marcellus shale to the climate change induced by fracking's massive emissions of methane.

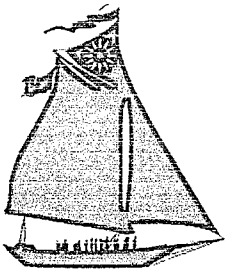
But today, the Council has the opportunity to strike an important blow against one of fracking's major harms: the large quantities of toxic waste it produces.

We urge the Committee on Environmental Protection to support this legislation to ban the discharge, disposal, sale or use of fracking waste in New York City.

Like many counties across the state, New York City has the obligation and the authority to fill the gap in state law to protect public health and the environment from exposure to this toxic waste.

New York City must lead the nation in transitioning from dirty fossil fuels to clean renewable energy. This includes mandates, procurement practices, and other policies to promote wind and solar. But it also includes rejecting the poisonous manifestations of fracking that threaten our communities.

Finally, I'll note that Food & Water Watch joins our colleagues in supporting amendments to strengthen the bill, particularly increasing the penalties and including all relevant forms of oil and gas waste.



Clearwater

February 22, 2016

To the City of New York City Council Members:

On behalf of Hudson River Sloop Clearwater and it members, we ask your support for **Resolution 0791-2015: Calling on General Electric Corporation and the United States Environmental Protection Agency (EPA) to enter into an agreement that expands the scope of the Hudson River PCBs remediation plan.**

In 1993 Clearwater published the first Angler Survey demonstrating the nexus between Hudson River PCB contamination and human consumption of fish, especially by communities of color, ethnicity and low income who were eating Hudson River fish as an important source of protein for their basic subsidence. This pattern was again confirmed in 2010 when Clearwater undertook a Community-Based Environmental Justice Inventory and Angler Survey in Peekskill and found that community members were still eating Hudson River fish and crabs despite NYS Department of Health advisories. Clearwater also submitted comments as far back as 2001 detailing potential health impacts of inhalation of PCBs, which volatilize into the air from the River and from PCB-containing sediment, and represent an unavoidable route of exposure. We've been monitoring the cleanup on an ongoing basis to ensure that air exceedances are minimized.

In 2015, the National Oceanic and Atmospheric Administration (NOAA) released the results of the first publically-available modeling conducted since 2002, which demonstrated that because the Hudson is substantially more contaminated than originally anticipated, EPA's remediation plan will not achieve key health and safety cleanup targets for the River. Specifically, the NOAA analysis predicted that **surface concentrations of PCBs would be *3-5 times higher* than expected** after the cleanup, and that many **fish would be contaminated with unsafe levels of PCBs for *40-50 years longer than anticipated.***

In December 2015 Hudson River Sloop Clearwater joined the Natural Resources Defense Council, Riverkeeper, Scenic Hudson, and the Atlantic Chapter of the Sierra Club in a petition to EPA urging that it take a hard look at the impact of the hundreds of thousands of pounds of toxic PCBs that the Agency is allowing GE to leave in the Hudson River. There are three things that are asking for as part of the review:

1. New modeling or analysis that addresses the findings of the NOAA study and accurately assesses the impact of the massive amounts of contamination EPA discovered after developing its cleanup plan.
2. An analysis of the threat of airborne PCBs that EPA ignored in 2002 because much less was known about the harms of these volatiles at that time.
3. A comprehensive anglers study to understand who is eating HR fish despite the advisories.

In spite of dozens of editorials and more than 70 municipal resolutions calling for a mutually-beneficial voluntary settlement agreement to ensure a more robust cleanup of Hudson River PCBs, General Electric has failed to come to the table. By not agreeing to participate in a more comprehensive remediation GE is seriously delaying the recovery of the river and causing further health and environmental impacts, which can and should be prevented by a more proactive approach. If GE were to negotiate with the Natural Resource Trustees, they could well reduce their damage assessment by agreeing to undertake the additional restoration dredging that the NOAA and U.S. Fish and Wildlife have consistently requested. However, GE continues to put short-term profits ahead of the well-being of the river and people in its watershed, and their own long-term financial well-being, since this delayed remediation can result in greater damages.

Sincerely,

Manna Jo Greene

Manna Jo Greene, Environmental Director, Hudson River Sloop Clearwater, Inc.
845-265-8080 x 7113 845-807-1270 (cell) mannajo@clearwater.org

FOR THE RECORD

City Council Hearing on Ban Fracking Waste in New York City. February 22,2016

Last year after studying the scientific impact of hydrofracking, Acting Health Commissioner Dr Howard Zucker recommended and Governor Andrew Cuomo responded by banning hydrofracking. This was an environmentally great moment for New York State.

Our immediate southern neighbor, Pennsylvania, continues to hydrofrack, sending huge volumes of toxic waste to New York State's solid and liquid treatment facilities. The NYS Department of Environmental Conservation is also allowing road spread from the fracking waste to be used for dust suppression and de-icing because NYS has not as yet enacted a ban of this, subjecting New Yorkers to the health and environmental perils we hoped to avoid by banning fracking in the first place. Hydrofracking close to NYS borders also has an impact on aquifers that supply water to residents of both states. First, the toxic chemicals can leach into the nearby water supplies, and also, the aquifers are at risk of being depleted faster than rainfall can replenish them.

I urge the City Council to pass Intiative 446 with 2 additions. First, natural gas, oil and natural gas storage waste should be included in the fracking waste definition. Second, increase the penalty per violation from $100 to $25,000.

Donna K. Sceusa BA, RDMS, RVT
Senior Ultrasound Technologist
NYU Langone Medical Center
Sierra Club Member
MoveOn.org Member
Food and Water Watch Member
350.org Member

145 West 96 Street
New York City 10025

FOR THE RECORD

NYC Council Hearing on Int.0446-2014 & Res. 0791-2015, 2/22/16, 1:00

Testimony of Catherine Skopic

Int. 0446-2014 - Banning the discharge, disposal, sale or use within NYC of any wastewater or natural gas waste produced from the process of hydraulic fracturing or the byproduct or application thereof on any road or real property or produce for use as materials to construct or maintain a city road.

We are in the 21st century with the development and installation of healthy and sustainable renewable energy. Continuation of this path will eventually stop and reverse the present, perverse global heating. There is no positive outcome for oil or gas at this stage in our planet's history, and any action, manufacturing or process that supports it is acting against life itself.

Hydraulic oil or gas drilling uses thousands of gallons of water for drilling each well. Of all the water on this planet, about 2% of it is potable - and drillers are using it to get fossil fuels, not for drinking or agriculture. This, in my opinion, is an obscene use of our resource.

These drilling processes and deep water well infusions cause earthquakes. Oklahoma has been experiencing hundreds of them, caused by this industry. Just last evening, the Weather Channel aired a program about this including geological studies, data and extensive supporting evidence that drilling and deep water well infusions cause earth quakes, as do dams. When water is forced below the surface of the earth, it fills up the cracks and spaces between rock. This weakens the sub-strata and causes rock shifts, producing earthquakes that are closer to the surface and more destructive than natural earthquakes.

If the drilling wastes good water and causes earthquakes when the now poisoned waste water is injected into deep water wells, what does the industry do with the waste water? The industry cannot be allowed to spread it on roads or use it in any other way where it will come into contact with people, plants or animals. Using it on roads or for construction will do all three. Run-off will end-up in our rivers, lakes, streams and ground water. This waste water, now filled with toxins, cannot be filtered or treated by any water processing facility to make it safe for human consumption or agriculture. The only safe solution is to not produce it in the first place.

Therefore, I fully support Int.0446-2014 to ban the use of oil and gas wastewater for use on roads or real property. This legislation will both protect us here in NYC and send a clear message to the oil and gas industry that their waste water is not acceptable or permitted within the city.

Res.0791-2015 - GE Corporation and the US EPA to enter into an agreement that expands the scope of the Hudson River PCBs remediation - issues raised by the US National Oceanic & Atmospheric Administration & the US Fish & Wildlife Service

Why didn't GE Corp. completely clean-up their PCBs in the Hudson River before it left? We hold them accountable and responsible for restoring the health of the Hudson River. I am in full support of this resolution and will do what I can to see that it is enacted and that GE completes a 100% clean-up and removal of all PCBs they placed in the river. I suggest the addition of an **amendment to follow-up and monitor this clean-up in conjunction with & direct reporting to the related Federal agencies.** Present & future generations count on us to leave earth as good as or better than we found it. It's our responsibility to Mother Earth that supports us and all life.

Good Afternoon And Thank You for Holding This Hearing.

My name is Ellen Durant and I am here to address the City Council to urge support and passage of Int 0446-2014 banning the discharge, disposal, sale or use within New York City of any wastewater or natural gas waste produced from the process of hydraulic fracturing or fracking.

While New York State has banned high-volume horizontal fracking, as I am sure you are aware, we still have conventional vertical drilling of oil and gas wells in the state and the waste from more than these 12,000 conventional, low volume wells must be disposed of.

I firmly believe that there are overwhelming public health concerns for New York City regarding this drilling waste as it contains a toxic mixture of chemicals that are brought to the surface via drilling in the practice of fracking.

Therefore, I feel that New York City ***must*** disallow the collection of waste and/or its ingredients and byproducts, its storage, handling, treatment, processing, application or discarding of any and all waste treated or untreated from oil and gas drilling.

We ***cannot*** bring this waste to our region as this will, amongst other things; jeopardize the safety of our drinking water aquifers because of things such as runoff, inadequate processing and containment tank corrosion, leaks, and ruptures.

As you probably know, the technology of fracking used for oil and gas extraction involves the injection of millions of gallons of fresh water mixed with hundreds of chemicals and sand forced under high pressure into the well bores to break open the shale. And, the fissures created by this fracturing are held open by the sand particles so that oil or gas can be released up the drill shaft.

While we know that fracking waste - which includes rock and lubricant that remain from drilling can contain a number of pollutants, such as chemicals, metals, excess salts, and carcinogens like benzene and naturally occurring radioactive materials - due to a loophole in state law, oil and gas industry waste is exempt from hazardous waste requirements and, thus, this waste is not classified as hazardous and, can, in fact, be disposed of at facilities unequipped to handle it, and in ways that can put our health and environment at risk.

.../

And, frighteningly, the waste from the produced water and semisolids would very well contain fracking emitting high levels of types of radium that are known carcinogens - and, that the gas can, in fact, contain elevated levels of radon - - - radon, that is a proven carcinogen and that is the leading cause of lung cancer among non-smokers!

In summary:

→ Public and private wastewater treatment facilities are incapable of processing the unsafe chemicals and radioactive materials produced by drilling, extraction, production and storage activities and there is no safe disposal plan for the billions of gallons of wastewater and tons of sludge, etc. currently being created by oil and gas drilling, its extraction and storage operations.

→ Oil and gas drilling waste is far too dangerous considering the presence of the potentially highly radioactive materials and other contaminants that could be found in local food products and that could cause severe damage and grave impacts to the health of our population *and* our economy.

→ The risk of using wastewater from treatment plants due to processing of hazardous chemicals is one that is far too great and we *must* safeguard New York City's health and environment from inappropriate reuse and disposal of fracking waste.

In addition to the above, I feel that the current penalty fee for non-compliance is hardly a deterrent and that we in New York City should join with the at least 11 New York State counties that now impose a fine of a minimum of $250.00 per violation.

Thank you for the opportunity to speak to you and to deliver this testimony.

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SCENIC HUDSON

Statement of

Audrey Friedrichsen
Land Use and Environmental Advocacy Attorney
Scenic Hudson, Inc.

New York City Council
Committee on Environmental Protection
New York, New York

February 22, 2016

Scenic Hudson works to protect and restore the Hudson River as an irreplaceable national treasure and a vital resource for residents and visitors. A crusader for the valley since 1963, today we are the largest environmental group focused on the Hudson River Valley. We urge you to adopt Resolution 791, which calls upon the General Electric Corporation (GE) and the U.S. Environmental Protection Agency (EPA) to expand remediation and ensure a full cleanup of toxic PCBs in the Hudson River.

- Between 1947 and 1977, GE dumped millions of pounds of toxic polychlorinated biphenyls (PCBs) into the Hudson River. Scenic Hudson and many other environmental and citizen groups have worked for over thirty years to ensure that GE cleans up the contamination that has spoiled the majestic Hudson, closing a once-vibrant commercial fishery and creating a Superfund site that runs from Hudson Falls north of Albany all the way down to the Battery here in New York City. At 200 miles, the Hudson is the largest Superfund site in the nation.

- GE has spent the past several years removing contaminated sediment from the river pursuant to an agreement with the EPA. Recent data and modeling by the National Oceanic and Atmospheric Administration (NOAA) shows that the extent of PCB contamination is three times greater than previously thought. These studies also show that natural recovery rates are slower and the levels of PCBs in fish are declining much more slowly than were predicted and assumed in the 2002 remediation plan. Because PCB concentrations will be five times higher after the cleanup than was predicted by the 2002 remediation plan, additional sediment removal is needed to put the Hudson on the path to recovery.

- The City of New York anchors this Superfund site and continues to be impacted by the PCBs that GE discharged. Over 70% of the PCBs dredged from the New York-New Jersey Harbor originated from GE's plants on the Upper Hudson.

- GE's PCBs continue to pose a significant health threat to people in NYC and all along the Hudson. The primary exposure pathway for people is through eating contaminated fish. This disproportionately impacts Environmental Justice communities, where many anglers depend on fish from the Hudson to feed their families. Further, new studies have shown that airborne PCBs from the Hudson River can accumulate in humans and cause detrimental health impacts.

- It is important that we act NOW to tell EPA and GE that New Yorkers will not settle for a cleanup that is half done. GE has pulled its equipment from the River and EPA has unofficially declared the dredging project complete. The EPA is about to begin its required evaluation of whether the cleanup met its goals of protecting human health and the environment.

GE and EPA want to declare victory and tell New Yorkers from Manhattan to Fort Edward the PCB pollution that is still in the river is your problem to fix and to pay for. The fact is, GE is liable for restoring the Hudson River's health and economy and it is EPA's responsibility to ensure the cleanup is done right. We urge New York City to join the more than 80 other communities up and down the Hudson in telling EPA and GE that the job isn't done and they must implement an expanded dredging plan.

In addition to Resolution 791, Scenic Hudson urges this committee to move forward with Int. 446 and establish a ban on the discharge, disposal, sale or use of fracking waste in New York City. Similar to PCBs, fracking waste contains carcinogens like benzene as well as pollutants such as metals, excess salts, and naturally-occurring radioactive materials.

- While New York State has banned high-volume horizontal hydraulic fracturing, the state still has thousands of conventional, low-volume oil and gas wells. The State allows certain kinds of waste from oil and natural gas wells and storage facilities on roads for deicing and dust control.

- In addition, more than 510,000 tons of solid waste and 23,000 barrels of liquid waste from oil and gas extraction operations in neighboring Pennsylvania have been shipped to New York landfills for disposal.

So far 15 other New York counties have passed bans on road spreading and/or disposal of fracking waste, and we urge New York City to join them and ensure that this toxic waste is never used on City roads or allowed to pollute our environment.

RIVERKEEPER®

Testimony of:
Misti Duvall, Staff Attorney
Riverkeeper

Before the New York City Council Committee on Environmental Protection

In Support of Introduction 446-2014 Relating to Natural Gas Waste and Resolution 791-2015 Relating to Hudson River PCBs

February 22, 2016

Good afternoon, Council Members, and thank you for the opportunity to speak about these important issues. My name is Misti Duvall, and I am a Staff Attorney with Riverkeeper, a member-supported watchdog organization dedicated to defending the Hudson River and its tributaries and protecting the drinking water supply of nine million New York City and Hudson Valley residents.

Riverkeeper strongly supports Introduction 446-2014, which would prohibit the discharge, disposal, sale, or use of natural gas waste within New York City, and Resolution 791-2015, calling for additional remediation of polychlorinated biphenyls (PCBs) in the Hudson River. I would like to thank Chairman Constantinides for holding this hearing today and for introducing Res. 791, and Council Members Levin and Johnson for their leadership on Int. No. 446.

Introduction 446-2014 Relating to Natural Gas Waste

While Riverkeeper shares the concerns of many of our colleagues here today who will testify about the importation of oil and natural gas waste from Pennsylvania and its disposal at landfills and wastewater treatment facilities, my testimony will focus on the use of oil and natural gas waste on roads for de-icing, dust control, and road stabilization, and two amendments we strongly suggest to strengthen the bill. I have attached to my testimony specific suggested amendments to Int. No. 446, recent information regarding the approval of oil and natural gas waste for road spreading, and

Riverkeeper factsheets addressing the use of oil and natural gas waste for road spreading and county bans in New York State.

The process of extracting oil and natural gas using hydraulic fracturing (fracking) produces large amounts of liquid and solid waste. This is true of high-volume hydraulic fracturing (HVHF) – which is banned in New York State – and conventional, low-volume fracking that continues in western New York. Fracking wastewater includes flowback fluid, which is fluid that returns to the surface soon after a well is drilled and fracked, and production brine, which is wastewater that flows to the surface during well production. Waste generated through the extraction of oil or natural gas – including production brine – can contain a number of pollutants, such as chemicals, metals, excess salts, and carcinogens like benzene and naturally-occurring radioactive materials. Due to a loophole in state law, oil and gas industry waste is exempt from hazardous waste requirements, meaning that – no matter what it contains – this waste is not classified as hazardous.

The New York State Department of Environmental Conservation (DEC) currently allows the use of production brine from conventional, low-volume oil and natural gas wells and gas storage facilities to be spread on roads for de-icing, dust control, and road stabilization. Riverkeeper obtained records from DEC regarding this practice, and found that, between 2011 and 2014, the use of this waste was approved in portions of forty-one municipalities in nine western New York counties. The New York State Department of Transportation was also granted permission to use this waste in portions of ten counties. In all, the use of oil and/or gas waste on roads has been approved in portions of at least fifteen New York counties.

Riverkeeper also received associated test results that showed excessive levels of chloride (salts) in brine from both natural gas production wells and gas storage facilities. Sample results for brine from gas storage facilities revealed the presence of benzene, a carcinogen, and toluene, which has been linked to nervous system, kidney, and liver problems. The results from oil production wells also indicated the presence of benzene and toluene.

All anyone wishing to use this waste material for road spreading has to do is apply to DEC for permission, also called a Beneficial Use Determination (BUD). Our review of BUD documents and DEC regulations and guidance raised a number of concerns, including the lack of required testing for naturally occurring radioactive materials, absence of publicly available numerical testing criteria, and the fact that approvals authorize multiple applications of oil or natural gas brine per roadway, yet do not appear to have an expiration date.

Despite these concerns, DEC continues to allow the use oil and natural gas brine on roads. According to a list of BUDs compiled by the agency in January 2016, DEC has

currently authorized sixty-six BUDs for the use of oil or natural gas waste for road de-icing, dust control, and/or stabilization.

By enacting Int. No. 446, New York City will join numerous communities across the state with similar bans. At least fifteen counties have prohibited the use of oil and/or natural gas waste for road spreading, disposal at landfills, and/or acceptance at wastewater treatment facilities. Counties with bans similar to Int. No. 446 include Albany, Rockland, Putnam, Westchester, Orange, Ulster, Oneida, Tompkins, Nassau, Suffolk, Erie, Onondaga, Schoharie, Clinton, and Cayuga. These measures have passed with broad, bi-partisan support.

In order to ensure that Int. No. 446 is as strong as possible and protects the environment and public health of New Yorkers, Riverkeeper strongly urges the Environmental Protection Committee to make two critical amendments.

First, the definition of waste should not be limited to waste from natural gas extraction activities. It should include all relevant forms of oil and natural gas waste, including waste from oil production wells and gas storage facilities. As I discussed earlier, the test results that Riverkeeper received from DEC showed the presence of benzene and toluene in brine from oil production wells and gas storage facilities. New York City's ban should include all forms of oil and gas brine that can be used on roads, and should be amended to include brine from oil production wells and gas storage in addition to brine from natural gas production wells.

Second, the bill should be amended to include a penalty provision that increases the penalty for non-compliance to at least $25,000. As drafted, it appears that only a $100 fine would apply per violation, which is less than the fine for failing to pick up after your dog. A higher penalty is in line with other county bans in New York State: at least eleven counties with similar legislation have included penalty provisions that provide for a fine up to $25,000 per violation.

Riverkeeper strongly supports Int. No. 446, and encourages New York City to join a growing number of communities across New York State and ensure that this toxic waste is never used on City roads or allowed to pollute our environment.

Resolution 791-2015 Relating to Hudson River PCBs

Between 1947 and 1977, General Electric Corporation (GE) dumped millions of pounds of toxic polychlorinated biphenyls (PCBs) into the Hudson River. The source of the PCB discharges was two GE capacitor manufacturing plants located in Fort Edward and Hudson Falls, New York, approximately 50 miles north of Albany. GE's PCBs are now found in sediment, water and wildlife throughout the Hudson River ecosystem as

far as New York City. And that will continue until they are cleaned up, as PCBs from sources upriver continue to flow south and contaminate New York Harbor.

PCBs are classified by the U.S. Environmental Protection Agency (EPA) as probable human carcinogens. When people eat fish contaminated with PCBs, they face greater threats from liver, kidney and nervous system disorders, and developmental and reproductive abnormalities. PCBs become more concentrated as they move up the food chain, so that they are at their highest levels in contaminated fish. The reality of PCB contamination in the Hudson not only decimates commercial fishing, it harms recreation fishing and risks the heath of any - likely lower income - fishermen who eat contaminated fish. There are also significant concerns about the health impacts of breathing in PCBs that have volatilized - moved from the River into the air - which could affect millions of New Yorkers living and recreating near the Hudson.

More than thirty years ago, EPA declared a 200 mile stretch of the Hudson River - from Hudson Falls to New York City - a Superfund hazardous waste site. GE has spent the past several years removing contaminated sediment from the Hudson pursuant to an agreement with EPA and is now calling its remediation complete. EPA agreed, giving the company permission to begin dismantling a key piece of cleanup infrastructure late last year.

However, information from the Federal Trustees for the Hudson River - the U.S. Fish and Wildlife Service (FWS) and the National Oceanic and Atmospheric Administration (NOAA) - has made clear that the original cleanup plan was inadequate and additional remediation is needed. An analysis released by NOAA in 2015 found that concentrations of PCBs will be three to five times higher after the cleanup than EPA originally predicted and that some fish will remain dangerously contaminated for forty to fifty years longer than anticipated. FWS and NOAA concluded that "additional sediment removal of PCB-contaminated sediment in the Upper Hudson River is needed." Otherwise, GE will be leaving behind PCB contamination hotspots that amount to "several Superfund-caliber sites."

Riverkeeper and our partners in Campaign for a Cleaner Hudson have called on EPA to immediately begin a legally-mandated review of the cleanup, and to ensure that GE lives up to its responsibility to the Hudson River and the millions of New Yorkers who use and enjoy it. So have a coalition of New York State Senators and Assemblymembers, dozens of municipalities up and down the River, and thousands of New Yorkers.

We cannot afford to let GE and EPA declare victory and go home. GE is liable for restoring the health of the Hudson River and the economic vitality of its communities. Riverkeeper strongly supports Res. 791, and urges New York City to add

its voice to a growing chorus of New Yorkers who are demanding that GE finish the job and clean up the Hudson River.

Thank you for the opportunity to speak here today. Please do not hesitate to contact me if you have any questions or if I can provide further information.

Misti Duvall, Staff Attorney
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mduvall@riverkeeper.org

www.riverkeeper.org
www.cleanerhudson.org

The New York City Council

City Hall
New York, NY 10007

Legislation Text

File #: Int 0446-2014, **Version:** *

Int. No. 446

By Council Members Levin, Johnson, Arroyo, Barron, Chin, Mendez and Richards

A Local Law to amend the administrative code of the city of New York, in relation to banning the discharge, disposal, sale or use within the city of New York of any wastewater or natural gas waste produced from the process of hydraulic fracturing.

Be it enacted by the Council as follows:

Section 1. Legislative findings and intent. The Council finds that hydraulic fracturing produces millions of gallons of wastewater that is often laced with highly corrosive salts, carcinogens like benzene and radioactive elements like radium, all of which can occur naturally thousands of feet underground, and that other carcinogenic materials are often added to the wastewater including the chemicals used in the hydraulic fracturing process.

The Council further finds that there are 14 wastewater treatment plants, owned and operated by New York City Department of Environmental Protection, and a number of privately owned wastewater treatment plans, operating within the City of New York. Because these facilities release effluent back into the surface water of the City of New York, it is important that such effluent be free from any harmful contaminants.

The Council also finds that the wastewater and other waste products produced from the hydraulic fracturing method of oil and natural gas extraction are dangerous and should be prevented from being used in New York City in any capacity including deicing and snow removal.

Therefore the Council finds that the wastewater and other oil and natural gas waste products produced by the hydraulic fracturing method of oil and natural gas extraction are dangerous and should be prevented from entering into the surface waters of the City of New York, and further finds that it is in the best interests of the City of New York to ban the discharge, disposal, sale, and use of hydraulic fracturing wastes within City of

New York.

§2. Subchapter 1 of chapter 3 of title 24 of the administrative code of the city of New York is amended by adding a new section 24-303.1 to read as follows:

§24-303.1 Protection of water supply; treatment of hydraulic fracturing wastewater prohibited. a. Definitions. 1. As used in this section, "oil or natural gas waste" means any waste that is generated as a result of oil or natural gas extraction activities, which may consist of water, chemical additives, or naturally occurring radioactive materials ("NORMs") and heavy metals. Oil or ~~N~~natural gas waste includes, but is not limited to, leachate from solid wastes associated with oil or natural gas extraction activities, any waste that is generated as a result of or in association with the underground storage of natural gas or liquefied petroleum gas, or any oil or natural gas waste byproduct.

2. As used in this section, "oil or natural gas extraction activities" means all geologic or geophysical activities related to the exploration for or extraction of oil or natural gas, including, but not limited to, core and rotary drilling and hydraulic fracturing.

3. As used in this section, "hydraulic fracturing" means the fracturing of underground rock formations, including shale and non-shale formations, by manmade fluid-driven techniques for the purpose of stimulating oil, natural gas, or other subsurface hydrocarbon production.

b. Prohibitions. 1. No person shall discharge or cause to be discharged any oil or natural gas waste to any surface water bodies located within the city of New York or to any wastewater treatment plant located within the city of New York.

2. No person shall dispose or cause to be disposed any oil or natural gas waste into any landfill within the city of New York. The department of environmental protection and the department of sanitation shall enforce this paragraph.

3. No person shall sell or offer for sale any oil or natural gas waste or oil or natural gas waste byproduct within the city of New York. The department of environmental protection and the department of consumer affairs shall enforce this paragraph.

4. No person shall apply or cause to be applied any oil or natural gas waste or oil or natural gas waste byproduct on any road or real property located within the city of New York. The department of environmental

protection and the department of transportation shall enforce this paragraph.

c. Contracting. All bids or contracts related to the purchase or acquisition of materials to construct or maintain a city road shall include a provision stating that no materials containing or manufactured from oil or natural gas waste shall be utilized in providing such a service.

d. Penalties. Any violation of section 24-303.1.b shall be an unclassified misdemeanor punishable by a fine not to exceed $25,000 per violation and/or up to thirty days imprisonment. Each sale, application, and/or discharge of oil or natural gas waste shall constitute a separate and distinct violation.

§ 3. This local law shall take effect ninety days after its enactment.

LS # 853 and 855 SS
Jtb 8/14/14 3:09pm

New York State Department of Environmental Conservation
Division of Materials Management, Bureau of Waste Reduction & Recycling
625 Broadway, Albany, NY 12233-7253

Granted Beneficial Use Determinations
Sorted by Waste Type

BUD No.	Facility Name	City	State	Waste Types	Beneficial Use
453-4-01	Lafarge Building Materials, Inc.	Ravena	NY	Abrasives	Cement (Iron Source)
517-9-32	Solid Surface Acrylics, Inc.	North Tonawanda	NY	Abrasives (Glass Bead Dust)	Filler (Table Tops)
333-0-00	US Technology Corporation	Canton	OH	Abrasives (Plastic)	Marble Products (Cultured)
427-0-00	Composite Leasing Corp.	Minocqua	WI	Abrasives (Plastic)	Resin Substitute (Acrylic)
037-6-45	St. Lawrence Seaway Development Corp.	Massena	NY	Abrasives (Sandblast)	Aggregate (Concrete)
219-6-45	St. Lawrence Seaway Development Corp.	Massena	NY	Abrasives (Sandblast)	Aggregate (Concrete)
334-6-45	Northeastern Industrial Maintenance, Inc.	Waddington	NY	Abrasives (Sandblast)	Base (sub)
739-4-20	St. Lawrence Cement Co., LLC	Catskill	NY	Abrasives (Sandblast)	Cement (Iron Substitute)
728-6-22	Sunbelt Industries	Little Falls	NY	Abrasives (Sandblast-Alumina)	Sandblasting Media
375-8-37	Innovative Municipal Products, Inc. (IM U.S.)	Ava	NY	Alcohol Distillate (Ethyl)	De-icer
195-4-20	St. Lawrence Cement Co., LLC	Catskill	NY	Alumina Sand	Cement
243-4-00	ACI Industries, Ltd., LP	Delaware	OH	Alumina Sand	Cement (Red Shale Substitute)
456-4-01	Lafarge Building Materials, Inc.	Ravena	NY	Alumina Tri-Nitrate Dust	Cement
392-9-07	Dunkirk International Glass & Ceramics	New York	NY	Alumina/Silica/Lime/Ash	Glass (Aluma) Manufacture
189-4-20	Lehigh Cement Company	Catskill	NY	Alumino-Silica Clay (Bauxite)	Cement (Red Shale Substitute)
587-0-00	Lafarge Building Materials, Inc.	Ravena	NY	Alumino-Silica Clay (Bauxite)	Cement (Alumina Source)
1141-0-00	Ames Goldsmith Corporation	South Glens Falls	NY	Ammonium Nitrate Solution	Fertilizer
968-9-32	Niagara Generation, LLC	Niagara Falls	NY	Ash (Coal & Alternative Fuel)	Flowable Fill
339-3-36	MKA Realty Corp. c/o Geovation Inc.	Florida	NY	Ash (Coal)	Base (sub)
472-3-14	Town of Stanford	Stanfordville	NY	Ash (Coal)	Base (sub)
539-7-55	Cornell University Central Heating Plant	Ithaca	NY	Ash (Coal)	Traction Agent
676-6-45	Black River Power, LLC	Syracuse	NY	Ash (Coal)	Bulking Agent (Waste Sludge)
745-9-61	Hillcrest Industries	Attica	NY	Ash (Coal)	Abrasive, Blasting Media
749-3-36	Dynegy Northeast Generation	Newburgh	NY	Ash (Coal)	Cinder Ballast
240-7-09	AES Jennison, LLC	Bainbridge	NY	Ash (Coal/CTS/Tire/Wood)	Cement
641-8-51	AES Hickling, LLC	Corning	NY	Ash (Coal/CTS/Tire/Wood)	Cement
273-8-51	AES Hickling, LLC	Corning	NY	Ash (Coal/CTS/Tire/Wood-Bottom	Traction Agent
642-7-09	AES Jennison, LLC	Bainbridge	NY	Ash (Coal/CTS/Tire/Wood-Bottom)	Traction Agent
489-9-15	NRG Huntley Operations, Inc.	Tonawanda	NY	Ash (Coal/CTS-Bottom)	Traction Agent, Asphalt, Shingles
488-9-15	NRG Huntley Operations, Inc.	Tonawanda	NY	Ash (Coal/CTS-Fly)	Aggregate, Gypsum, Calcium Chlor
578-9-07	Pohlman Materials Recovery Inc.	Lakeview	NY	Ash (Coal/Petro Coke-Fly)	Filler (Flowable Fill)
594-0-00	Pohlman Materials Recovery Inc.	Lakeview	NY	Ash (Coal/Petro Coke-Fly)	Filler (Concrete)
595-0-00	Pohlman Materials Recovery Inc.	Lakeview	NY	Ash (Coal/Petro Coke-Fly)	Filler (Aggregate)
596-0-00	Pohlman Materials Recovery Inc.	Lakeview	NY	Ash (Coal/Petro Coke-Fly)	Surface Material (Barnyard Pad)
536-9-15	Protective Closures, Inc.	Buffalo	NY	Ash (Coal/Slag/Ballast)	Fill (Structural-Bldg. Foundation)
165-7-09	AES Jennison, LLC	Bainbridge	NY	Ash (Coal/Tire-Bottom)	Traction Agent
164-7-09	AES Jennison, LLC	Bainbridge	NY	Ash (Coal/Tire-Fly)	Cement
122-0-34	NRG Dunkirk Operations, Inc.	Dunkirk	NY	Ash (Coal-Bottom)	Traction Agent, Fill (Structural)
212-7-34	NRG Dunkirk Operations, Inc.	Dunkirk	NY	Ash (Coal-Bottom)	Asphalt (Hot-Mix)
262-9-15	Valley Coal	Buffalo	NY	Ash (Coal-Bottom)	Fill (Structural), Traction Agent
286-9-32	AES Somerset, LLC	Barker	NY	Ash (Coal-Bottom)	Base (sub)
372-7-34	Trigen-Syracuse Energy Corporation	Syracuse	NY	Ash (Coal-Bottom)	Base (Road, Sub-Fill)
398-3-14	Harlem Valley Psy. Ctr c/oCDPC, Unit Q	Albany	NY	Ash (Coal-Bottom)	Base (sub)
429-8-28	Eastman Kodak Company	Rochester	NY	Ash (Coal-Bottom)	Surface Material (Trail)
443-7-38	Clark Concrete Company, Inc.	Syracuse	NY	Ash (Coal-Bottom)	Traction Agent
449-4-01	Town of Guilderland	Guilderland	NY	Ash (Coal-Bottom)	Traction Agent
450-8-26	Joseph A. Errigo	Conesus	NY	Ash (Coal-Bottom)	Traction Agent
482-8-28	Eastman Kodak Company	Rochester	NY	Ash (Coal-Bottom)	Road Construction
506-9-15	Gernatt Gravel Products, Inc.	Collins	NY	Ash (Coal-Bottom)	Concrete (Lt), Traction Agent
525-8-28	New York State Canal Corporation	Albany	NY	Ash (Coal-Bottom)	Sealant (Cofferdams)
597-0-00	NRG Huntley Operations, Inc.	Tonawanda	NY	Ash (Coal-Bottom)	Traction Agent, Fill (Structural)
598-0-00	NRG Huntley Operations, Inc.	Tonawanda	NY	Ash (Coal-Bottom)	Asphalt (Hot-Mix)
645-7-55	AES Cayuga, LLC	Lansing	NY	Ash (Coal-Bottom)	Surface Material (Running Track)
918-9-32	AES Somerset, LLC	Barker	NY	Ash (Coal-Bottom)	Fill
593-6-45	Black River Power, LLC	Syracuse	NY	Ash (Coal-FBC)	Aggregate (Road Surface)
023-4-20	Lehigh Cement Company	Catskill	NY	Ash (Coal-Fly)	Cement (Shale Substitute)
035-7-12	Pozzolanic International	Ithaca	NY	Ash (Coal-Fly)	Filler (Concrete)
048-4-20	St. Lawrence Cement Co., LLC	Catskill	NY	Ash (Coal-Fly)	Cement (Shale Substitute)
076-7-34	NRG Dunkirk Operations, Inc.	Dunkirk	NY	Ash (Coal-Fly)	Filler (Flowable Fill)

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BUD No.	Facility Name	City	State	Waste Types	Beneficial Use
096-4-20	St. Lawrence Cement Co., LLC	Catskill	NY	Ash (Coal-Fly)	Cement (Shale Substitute)
102-4-20	St. Lawrence Cement Co., LLC	Catskill	NY	Ash (Coal-Fly)	Cement (Shale Substitute)
113-6-23	Drum Ready Mix Company	Amsterdam	NY	Ash (Coal-Fly)	Filler (Concrete)
146-4-20	St. Lawrence Cement Co., LLC	Catskill	NY	Ash (Coal-Fly)	Cement (Shale Substitute)
171-3-56	Eastern Stabilized Products	Waldwick	NJ	Ash (Coal-Fly)	Stabilizing Agent
182-4-29	Cranesville Block Company, Inc.	Amsterdam	NY	Ash (Coal-Fly)	Filler (Concrete)
208-4-29	Cranesville Block Company, Inc.	Amsterdam	NY	Ash (Coal-Fly)	Filler (Concrete)
209-9-07	Jamestown Board of Public Utilities	Jamestown	NY	Ash (Coal-Fly)	Filler (Concrete)
265-4-20	Lehigh Cement Company	Catskill	NY	Ash (Coal-Fly)	Cement (Shale Substitute
284-9-15	NRG Energy, Inc.	Minneapolis	MN	Ash (Coal-Fly)	Fill (Structural)
303-9-32	NRG Huntley Operations, Inc.	Tonawanda	NY	Ash (Coal-Fly)	Fill
423-3-36	Ecomat, Inc.	Poughkeepsie	NY	Ash (Coal-Fly)	Filler (Lumber-Synthetic)
530-7-04	AES Westover, LLC	Johnson City	NY	Ash (Coal-Fly)	Filler (Flowable Fill)
542-7-04	AES Westover, LLC	Johnson City	NY	Ash (Coal-Fly)	Base (sub)
543-7-04	AES Westover, LLC	Johnson City	NY	Ash (Coal-Fly)	Landfill Cover (Posishell™)
599-0-00	NRG Huntley Operations, Inc.	Tonawanda	NY	Ash (Coal-Fly)	Filler (Flowable Fill)
632-4-48	Callanan Industries Incorporated	Albany	NY	Ash (Coal-Fly)	Cement (Additive)
635-9-15	NRG Huntley Operations, Inc.	Tonawanda	NY	Ash (Coal-Fly)	Absorbent
636-9-07	NRG Dunkirk Operations, Inc.	Dunkirk	NY	Ash (Coal-Fly)	Absorbent
900-8-08	United Environment & Energy, LLC	Horseheads	NY	Ash (Coal-Fly)	Fertilizer Research
944-7-09	AES Westover, LLC	Johnson City	NY	Ash (Coal-Fly)	Backfill (basement)
983-9-15	Forever Board	Buffalo	NY	Ash (Coal-Fly)	Filler
1008-8-08	United Environment & Energy, LLC	Horseheads	NY	Ash (Coal-Fly)	Bioasphalt Research
1066-9-15	Kaleida Health c/o HSE	Buffalo	NY	Ash (Coal-Fly)	Flowable Fill
272-1-52	Rolite, Inc., Ash Management	Wayne	PA	Ash (MSW)	Landfill Closure
341-3-14	Dutchess County Resource Recovery Agency	Poughkeepsie	NY	Ash (MSW)	Landfill Cover (Daily/Intermediate)
445-1-00	U.S. Environmental, Inc.	King of Prussia	PA	Ash (MSW)	Vitrified Product (Decorative Stone)
222-4-20	St. Lawrence Cement Co., LLC	Catskill	NY	Ash (Papermill Sludge)	Cement
384-6-25	Lyonsdale Energy Limited Partnership	Lyons Falls	NY	Ash (Unadulterated Wood)	Traction Agent
176-6-25	Lyonsdale Power Company LLC	Lyons Falls	NY	Ash (Wood)	Fertilizer
177-6-22	Union Tools Co., Inc.	Frankfurt	NY	Ash (Wood)	Fertilizer (Soil, Compost)
198-0-00	Generic BUD - Wood Ash	Unknown	NY	Ash (Wood)	Fertilizer
421-4-13	Norbord Industries, Inc.	Deposit	NY	Ash (Wood)	Land Application
583-5-16	International Paper Company, Ticonderoga Mill	Ticonderoga	NY	Ash (Wood)	Bulking, Stabilizing Agent
717-5-46	International Paper-Corinth	Corinth	NY	Ash (Wood)	WWTP sludge stabilizing agent
932-5-17	Boralex New York LP	Chateaugay	NY	Ash (Wood)	Aggregate
569-6-23	City of Watertown	Watertown	NY	Ash (WWTP Sludge)	Fill (Roads)
570-4-01	Albany County Sewer District	Albany	NY	Ash (WWTP Sludge)	Landfill Cover, Soil (Top)
933-1-30	Port Washington WPCD	Port Washington	NY	Ash (WWTP Sludge)	Fill
382-9-15	Natural Environmental, Inc.	Buffalo	NY	Asphalt Shingle	Base (road)
483-9-32	Modern Landfill, Inc.	Model City	NY	Asphalt Shingle	Landfill Base (Road-Parking)
484-4-01	King Road Materials, Inc.	Albany	NY	Asphalt Shingle	Asphalt (Hot-Mix) Pavement
516-9-32	Parker Bay Consultants, Inc.	Buffalo	NY	Asphalt Shingle	Base (Road, Sub)
970-9-15	Triad Recycle & Energy, Inc.	Tonawanda	NY	Asphalt Shingle	Asphalt (Hot-Mix)
1028-9-15	M&C Enterprise	Lockport	NY	Asphalt Shingle	Driveway Surfacing
1044-8-28	Lorric Development Corp of NY	Spencerport	NY	Asphalt Shingle	Driveway Surfacing
1070-0-00	Callanan Industries Incorporated	Albany	NY	Asphalt Shingle	Asphalt Pavement (Hot-Mix)
1108-4-42	Greenbush Renewables LLC	East Greenbush	NY	Asphalt Shingle	Feedstock (Asphalt-Hot-Mix)
1109-4-01	Shine Renewables	Colonie	NY	Asphalt Shingle	Feedstock (Asphalt-Hot-Mix)
145-0-41	Prolerized Schiabo Neu Co.	Jersey City	NJ	Auto Shredder Residue	Landfill Cover (Daily)
730-9-07	Hazard Evaluations, Inc.	Orchard Park	NY	Bauxite/alumiglass/ceramics	Fill
859-4-20	Lehigh Cement Company	Glens Falls	NY	Biosolids (Class A)	Fuel
1080-5-58	Maine Drilling & Blasting	Argyle	NY	Blasting Mats	Structural Berm
789-2-24	New York City Department of Sanitation	New York	NY	Brick (Refractory)	Fill
193-6-45	Aluminum Company of America (ALCOA)	Massena	NY	Brick (Refractory)/Cement	Base (Road), Fill
451-7-38	BBL Environmental Services, Inc.	Syracuse	NY	Brine (Calcium Chloride)	De-icer, Dust Control
1152-8-51	Town of Wayne B10-09	Wayne	NY	Brine (LPG Storage Cavern)	Dust Control
1153-7-12	Town of Virgil B11-09	Cortland	NY	Brine (LPG Storage Cavern)	Dust Control
1168-8-51	Town of Cohocton B27-11	Cohocton	NY	Brine (LPG Storage Cavern)	Road Stabilization, Dust Control

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1169-8-51	Town of Howard B28-11	Avoca	NY	Brine (LPG Storage Cavern)	Road Stabilization, Dust Control
1170-7-54	Town of Berkshire B29-11	Berkshire	NY	Brine (LPG Storage Cavern)	Road Stabilization, Dust Control
1172-8-51	Town of Prattsburgh B31-11	Prattsburgh	NY	Brine (LPG Storage Cavern)	Road Stabilization, Dust Control
1175-7-54	Town of Newark Valley B34-11	Newark Valley	NY	Brine (LPG Storage Cavern)	Road Stabilization, Dust Control
1180-7-12	Cortland County B40-11	Cortland	NY	Brine (LPG Storage Cavern)	Deicing
1183-8-51	Town of Urbana B43-12	Hammondsport	NY	Brine (LPG Storage Cavern)	Road Stabilization, Dust Control
1184-8-51	Town of Pulteney B44-12	Pulteney	NY	Brine (LPG Storage Cavern)	Dust Control
1186-8-51	Town of Thurston B46-12	Cameron Mills	NY	Brine (LPG Storage Cavern)	Road Stabilization, Dust Control
1187-7-54	Town of Richford B47-12	Richford	NY	Brine (LPG Storage Cavern)	Road Stabilization, Dust Control
1190-8-51	Town of Bath B50-12	Bath	NY	Brine (LPG Storage Cavern)	Road Stabilization, Dust Control
1196-7-12	Cortland City DPW B56-12	Cortland	NY	Brine (LPG Storage Cavern)	Deicing
1211-7-09	Al-Kleen, LLC B14-09	Earlville	NY	Brine (LPG Storage Cavern)	Deicing, Dust Control
1148-8-51	Town of Wheeler B06-08	Bath	NY	Brine (Non-HVHF Gas/Oil Well)	Road Treatment
1149-7-04	NYSDOT-Binghamton B07-08	Binghamton	NY	Brine (Non-HVHF Gas/Oil Well)	Road Treatment
1150-7-34	NYSDOT-Syracuse B08-08	Syracuse	NY	Brine (Non-HVHF Gas/Oil Well)	Road Treatment
1151-7-04	Town of Binghamton B09-09	Binghamton	NY	Brine (Non-HVHF Gas/Oil Well)	Road Treatment
1154-9-07	Triple C Trucking B12-09	Portland	NY	Brine (Non-HVHF Gas/Oil Well)	Dust Control
1155-9-07	DLH Energy B13-09	Lakewood	NY	Brine (Non-HVHF Gas/Oil Well)	Dust Control
1156-9-07	Chautauqua County B15-09	Falconer	NY	Brine (Non-HVHF Gas/Oil Well)	Deicing
1157-9-07	St. George Enterprise B16-09	Fredonia	NY	Brine (Non-HVHF Gas/Oil Well)	Dust Control
1158-9-07	Village of Mayville B17-09	Mayville	NY	Brine (Non-HVHF Gas/Oil Well)	Deicing
1159-8-28	NYSDOT-Rochester B18-09	Rochester	NY	Brine (Non-HVHF Gas/Oil Well)	Deicing
1160-9-61	Town of Sheldon B19-10	Strykersville	NY	Brine (Non-HVHF Gas/Oil Well)	Deicing
1161-8-19	Genesee County B20-10	Batavia	NY	Brine (Non-HVHF Gas/Oil Well)	Deicing
1162-8-19	Town of Oakfield B21-10	Oakfield	NY	Brine (Non-HVHF Gas/Oil Well)	Deicing
1163-9-61	Town of Bennington B22-10	Attica	NY	Brine (Non-HVHF Gas/Oil Well)	Dust Control
1164-8-19	Town of Darien B23-10	Darien	NY	Brine (Non-HVHF Gas/Oil Well)	Deicing
1165-8-51	Town of Hornellsville B24-10	Hornell	NY	Brine (Non-HVHF Gas/Oil Well)	Dust Control
1166-8-19	A.D. Call & Sons B25-10	Stafford	NY	Brine (Non-HVHF Gas/Oil Well)	Dust Control
1167-8-51	Town of Rathbone B26-10	Addison	NY	Brine (Non-HVHF Gas/Oil Well)	Dust Control
1171-9-02	Town of Allen B30-11	Filmore	NY	Brine (Non-HVHF Gas/Oil Well)	Dust Control
1173--9-15	Fox Construction B32-11	North Collins	NY	Brine (Non-HVHF Gas/Oil Well)	Road Stabilization, Dust Control
1174-9-05	Dallas Energy/ Morris & Sons B33-11	Bradford	PA	Brine (Non-HVHF Gas/Oil Well)	Road Stabilization, Dust Control
1176-9-15	Kabel's Service B35-11	Eden	NY	Brine (Non-HVHF Gas/Oil Well)	Dust Control
1177-9-02	Town of Ward B36-11	Scio	NY	Brine (Non-HVHF Gas/Oil Well)	Road Stabilization, Dust Control
1178-9-07	Town of Gerry B37-11	Gerry	NY	Brine (Non-HVHF Gas/Oil Well)	Deicing
1179-9-15	NYSDOT-Buffalo B39-11	Buffalo	NY	Brine (Non-HVHF Gas/Oil Well)	Deicing
1181-9-02	Town of Almond B41-12	Almond	NY	Brine (Non-HVHF Gas/Oil Well)	Road Stabilization, Dust Control
1182-9-02	Town of Genesee B42-12	Little Genesee	NY	Brine (Non-HVHF Gas/Oil Well)	Road Stabilization, Dust Control
1185-9-02	Town of Bolivar B45-12	Bolivar	NY	Brine (Non-HVHF Gas/Oil Well)	Road Stabilization, Dust Control
1188-8-51	Town of Jasper B48-12	Jasper	NY	Brine (Non-HVHF Gas/Oil Well)	Road Stabilization, Dust Control
1189-8-51	Town of Cameron B49-12	Cameron	NY	Brine (Non-HVHF Gas/Oil Well)	Road Stabilization, Dust Control
1191-9-15	WNYS&GA B51-12	Alden	NY	Brine (Non-HVHF Gas/Oil Well)	Road Stabilization, Dust Control
1192-8-51	Town of West Union B52-12	Rexville	NY	Brine (Non-HVHF Gas/Oil Well)	Road Stabilization, Dust Control
1193-8-51	Town of Hartsville B53-12	Hornell	NY	Brine (Non-HVHF Gas/Oil Well)	Road Stabilization, Dust Control
1194-8-50	D.C. Rauscher, Inc. B54-12	Waterloo	NY	Brine (Non-HVHF Gas/Oil Well)	Road Stabilization, Dust Control
1195-9-07	Town of North Harmony B55-12	Stow	NY	Brine (Non-HVHF Gas/Oil Well)	Deicing
1197-9-07	Town of Dunkirk B57-12	Dunkirk	NY	Brine (Non-HVHF Gas/Oil Well)	Deicing
1198-9-07	Village of Lakewood B58-13	Lakewood	NY	Brine (Non-HVHF Gas/Oil Well)	Deicing, Dust Control
1199-9-07	Town of Ellery B59-13	Bemus Point	NY	Brine (Non-HVHF Gas/Oil Well)	Deicing
1200-9-07	Town of Sheridan B60-13	Sheridan	NY	Brine (Non-HVHF Gas/Oil Well)	Deicing
1201-9-07	Town of Clymer B61-13	Clymer	NY	Brine (Non-HVHF Gas/Oil Well)	Road Stabilization, Dust Control, Deicing
1202-9-02	Town of Wirt B62-13	Richburg	NY	Brine (Non-HVHF Gas/Oil Well)	Road Stabilization, Dust Control
1203-9-02	Town of Alma B63-13	Allentown	NY	Brine (Non-HVHF Gas/Oil Well)	Road Stabilization, Dust Control
1204-9-02	K.S. Laforge B64-13	Wellsville	NY	Brine (Non-HVHF Gas/Oil Well)	Road Stabilization, Dust Control
1205-9-07	Lee's Water Hauling B65-13	Mayville	NY	Brine (Non-HVHF Gas/Oil Well)	Road Stabilization, Dust Control
1206-9-07	Empire Energy B66-13	Mayville	NY	Brine (Non-HVHF Gas/Oil Well)	Road Stabilization, Dust Control
1207-8-19	Town of Alexander B67-13	Alexander	NY	Brine (Non-HVHF Gas/Oil Well)	Deicing
1208-9-07	Town of Harmony, Village of Panama B68-13	Ashville	NY	Brine (Non-HVHF Gas/Oil Well)	Deicing

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1209-9-05	Copper Ridge Oil B69-14	Olean	NY	Brine (Non-HVHF Gas/Oil Well)	Road Stabilization, Dust Control, Deicing
1210-8-08	NYSDOT-Hornell B38-11	Hornell	NY	Brine (Non-HVHF Gas/Oil Well)	Deicing
1223-9-02	Town of Alfred B70-15	Alfred	NY	Brine (Non-HVHF Gas/Oil Well)	Road Stabilization, Dust Control
1224-8-26	Robert Bourgoine B71-15	Dansville	NY	Brine (Non-HVHF Gas/Oil Well)	Road Stabilization, Dust Control
309-3-03	Gun Hill Trucking, Ltd	Bronx	NY	C&D	Landfill Cover, Fill
1045-6-23	ReEnergy Black River, LLC	Fort Drum	NY	C&D (Adulterated Wood)	Fuel
180-9-15	Hartford Paving Corporation	Cheektowaga	NY	C&D (Concrete)	Base (Sub)
197-0-00	New York State Department of Transportation	Albany	NY	C&D (Concrete)	Aggregate (Concrete)
271-9-15	Custom Topsoil, Inc.	Buffalo	NY	C&D (Concrete)	Aggregate
278-9-15	Swift River Associates, Inc.	Tonawanda	NY	C&D (Concrete)	Base (sub)
353-9-32	Carborundum Company	Niagara Falls	NY	C&D (Concrete)	Aggregate
254-0-00	Generic BUD - Recycled Concrete	Unknown	NY	C&D (Concrete/Masonry)	Aggregate
698-3-36	TKM Materials, Inc.	Montgomery	NY	C&D (gypsum wallboard)	Feedstock
1017-9-15	Triad Recycle & Energy, Inc.	Tonawanda	NY	C&D (gysum wallboard)	Soil Amendment
1073-3-14	DAKA Plumbing & Heating Co.	Poughquag	NY	C&D (non-exempt)	Fill
892-6-23	NYSDOT Region 7	Watertown	NY	C&D (Recognizable Debris)	Fill
912-3-44	Mirant Lovett, LLC	Tomkins Cove	NY	C&D (Recognizable Debris)	Fill
914-2-31	New York City Department of Transportation	New York	NY	C&D (Recognizable Debris)	Fill
259-0-00	Generic BUD - Roofing Gravel	Unknown	NY	C&D (Roofing Gravel)	Fill, Roads
287-8-28	Xerox Corporation	Webster	NY	C&D (Roofing Gravel)	Base (Road)
290-3-44	CEK International	Setauket	NY	C&D (Screenings)	Landfill Cover (Daily)
336-3-24	Waste Management of New York	Brooklyn	NY	C&D (Screenings)	Landfill Cover (Daily/Interim)
656-2-41	Keyspan Energy	Hicksville	NY	C&D (Screenings)	Fill
948-3-44	Pebble Lane Associates	Stony Point	NY	C&D (Screenings)	Fill
989-3-56	Callanan Industries Incorporated	East Kingston	NY	C&D (Screenings)	Subbase
1075-3-56	Callanan Industries Incorporated	East Kingston	NY	C&D (Screenings)	Fill
904-1-52	New York State Department of Transportation	Hauppauge	NY	C&D (Street Sweepings)	Fill, Topsoil
1050-6-23	ReEnergy Black River, LLC	Fort Drum	NY	C&D (Unadulterated Wood)	Fuel
1085-3-44	MBC Contractors Inc.	Stony Kill	NY	C&D Debris	Fill
1006-3-44	Town of Haverstraw	Garnerville	NY	C&D Debris (non-exempt)	Fill
1010-9-32	Niagara Generation, LLC	Niagara Falls	NY	C&D Debris Wood	Fuel
1121-1-52	Crown Recycling Facility	Calverton	NY	C&D Debris Wood	Absorbent
849-3-60	L.C. Main, LLC	Bedford Hills	NY	C&D Material/Soil	Fill
344-3-40	COH Corporation, Inc.	Brewster	NY	Carbon (Activated)	Carbon (Reactivate)
510-3-60	Waste Conversion Technologies	White Plains	NY	Cardboard (Waxed)	Fuel Pellets
647-4-11	Will-Roc Farms c/o Earthworks	Claverack	NY	Cardboard (Waxed)	Bedding (Animal-Farm)
881-6-25	Lyonsdale Biomass, LLC	Lyons Falls	NY	Cardboard (Waxed)	Fuel
637-4-01	Lafarge Building Materials, Inc.	Ravena	NY	Catalyst (Alumina Silicate)	Cement (Alumina Source)
1047-9-32	Stollberg, Inc.	Niagara Falls	NY	Catalyst (Alumina Silicate)	Feedstock
149-4-20	St. Lawrence Cement Co., LLC	Catskill	NY	Catalyst (Alumina)	Cement (Alumina Source)
158-4-20	St. Lawrence Cement Co., LLC	Catskill	NY	Catalyst (Alumina)	Cement (Alumina Source)
223-4-20	St. Lawrence Cement Co., LLC	Catskill	NY	Catalyst (Alumina)	Cement (Alumina Source)
414-4-01	Lafarge Building Materials, Inc.	Ravena	NY	Catalyst (Alumina)	Cement (Alumina Source)
452-4-01	Lafarge Building Materials, Inc.	Ravena	NY	Catalyst (Alumina)	Cement (Alumina Source)
242-4-00	ACI Industries, Ltd., LP	Delaware	OH	Catalyst (Fe-Cr)	Cement (Iron Oxide Substitute)
241-4-00	ACI Industries, Ltd., LP	Delaware	OH	Catalyst (Ni-Mo)	Cement (Alumina Substitute)
605-4-20	St. Lawrence Cement Co., LLC	Catskill	NY	Catalyst (Regenerated Fluid)	Cement
972-0-00	Schlumberger	Horseheads	NY	Cement (Excess)	Flowable Fill
370-7-27	Gray-Syracuse, Inc. c/o PLS Engineering	Chittenango	NY	Ceramic Castings	Base (Road)
323-8-51	Corning, Inc.	Corning	NY	Ceramic Cullet	Fill (Structural)
742-9-05	Dal-Tile Corp.	Olean	NY	Ceramic Cullet	Aggregate Substitute
1040-7-55	Cornell University	Ithaca	NY	Char (Pyrolysis)	Soil Amendment
841-9-15	Zoladz Construction Co.	Alden	NY	China, off-spec	Base (sub)
009-9-15	Concrete Recycling Corp.	Niagara Falls	NY	Concrete	Aggregate (Concrete), Base (Sub)
091-9-32	Carbon/Graphite Group, Inc.	Niagara Falls	NY	Concrete	Fill (General Fill)
115-3-56	Fin-Pan	Albany	NY	Concrete	Base (Sub), Fill
894-3-60	General Motors Corp.	Sleepy Hollow	NY	Concrete	Fill
943-8-51	Corning, Inc.	Corning	NY	Concrete	Fill
032-9-32	Carbon/Graphite Group, Inc.	Niagara Falls	NY	Concrete	Fill (General Fill)

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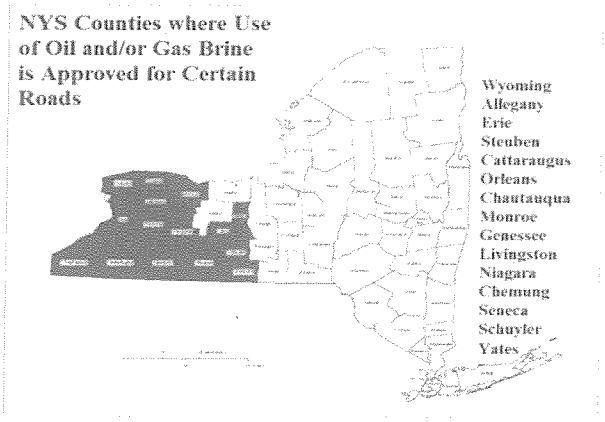
NY's clean water advocate

Fracking Waste in NY: Road Spreading

New York allows the use of production brine from conventional, low-volume oil and gas wells and natural gas storage to be used on roads for de-icing, dust control, and road stabilization. Once applied, this waste can run off into adjoining property and ultimately could contaminate rivers, streams, and underground aquifers. Riverkeeper obtained information from the NYS Department of Environmental Conservation regarding approval of oil and gas brine for road spreading from 2011 to 2014.

Brine Sources

The brine comes from conventional, low-volume oil and gas extraction and natural gas storage operations in New York State. Brine from conventional oil and gas extraction in Pennsylvania has also been sent to New York for use on roads.



Road Spreading Quick Facts:

- Approved in portions of 41 municipalities in western New York.
- The NYS Department of Transportation also received approval to spread this brine in portions of 10 counties.
- Cumulatively, road-spreading of oil and/or gas brine has been approved in portions of at least 15 New York counties.
- Counties where road spreading has been approved on certain roads can be seen in the map to the left.

Riverkeeper also received associated test results that showed excessive levels of chloride (salts) in brine from both natural gas production and storage facilities. Sample results for brine from natural gas storage facilities revealed the presence of benzene, a carcinogen, and toluene, which has been linked to nervous system, kidney, and liver problems. The results from oil production wells also indicated the presence of benzene and toluene.

Additional Concerns about the Approval Process

- Approvals authorize multiple applications of oil or gas brine per roadway, and do not appear to have an expiration date.
- The specific batch of oil or gas brine used for road spreading does not have to be tested. Rather, applicants need only submit testing results for representative samples, even though the level of contaminants may vary according to the specific well source.
- Testing for naturally-occurring radioactive materials is not required.
- There are no provisions for follow up monitoring or enforcement.
- New York State does not publish numerical testing criteria.

Learn more at www.riverkeeper.org/fracking-waste-in-new-york

RIVERKEEPER
NY's clean water advocate

Fracking Waste in New York: County Bans

At least 15 New York counties have enacted fracking waste bans. These bans prohibit the use of oil and/or gas waste on roads, disposal at landfills, and/or discharge into wastewater treatment facilities.

NYS Counties with Fracking Waste Bans

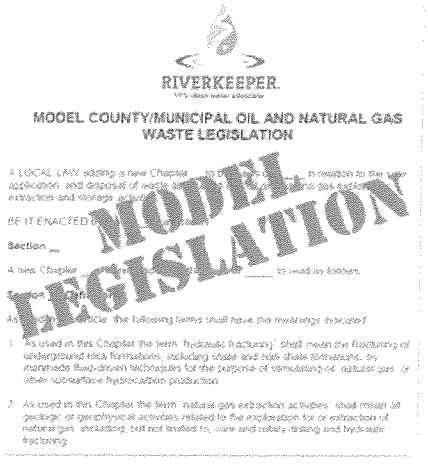
Albany	Rockland	Cayuga	Nassau
Putnam	Westchester	Schoharie	Erie
Orange	Ulster	Clinton	Suffolk
Oneida	Tompkins	Onondaga	

Case Study: Clinton County

In August 2014, Clinton County passed one of the most rigorous fracking waste bans in New York State, based on Riverkeeper's model legislation.

The measure prohibits application of oil and gas waste on roads, its sale within county limits, disposal at landfills, and acceptance at wastewater treatment facilities.

The legislation also provides for a fine of up to $25,000 per violation.


RIVERKEEPER
MODEL COUNTY/MUNICIPAL OIL AND NATURAL GAS WASTE LEGISLATION
MODEL LEGISLATION

Riverkeeper model legislation is available to help New York localities craft their own bans.

For questions, please contact info@riverkeeper.org.

Learn more at www.riverkeeper.org/fracking-waste-in-new-york

FOR THE RECORD

Regarding Int 446:

The gas and oil industry do not have a right to recycle the toxic waste they shouldn't be producing in the first place into my city and ecosystem which will slowly poison each and every one of us. It is time to take a stand for our health in this city and not to allow these polluters to encroach on us through any kind of storage or application.

This waste is not limited to the waste from NG extraction activities, but all relevant forms of oil and natural gas waste, including waste from oil and natural gas storage.

The penalty for non-compliance should be at minimum $100,000. We would not allow someone to poison our children. They would be criminally charged. I actually think any company who does not comply should be banned from entering the City and fined $100,000.

Feb 22, 2016
Angela Manno
42 Commerce St apt 3F
NYC 10014

GRASSROOTS
Environmental Education
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Memo of Support to the New York City Council for Int 0446-2014
February 22, 2016

A Local Law to amend the administrative code of the city of New York, in relation to banning the discharge, disposal, sale or use within the city of New York of any wastewater or natural gas waste produced from the process of hydraulic fracturing. The proposed local law amends Subchapter 1 of chapter 3 of title 24 of the administrative code of the city of New York by adding a new section 24-303.1 to prohibit discharge of any natural gas waste to any surface water bodies, disposal into a landfill located within the city of New York or to any wastewater treatment plant, sale of any natural gas waste or natural gas waste byproduct located within the city of New York, application of any natural gas waste or natural gas waste byproduct on any road or real property or purchase for use as materials to construct or maintain a city road.

Grassroots Environmental Education commends the City Council for introducing Int 446-2014 and strongly supports this critically important legislation that will protect the health and safety of New York City residents and the city's natural resources. We urge that the following important changes to the bill: 1) Increase the penalty for violating the law from the current $100 per violation to at least $25,000 per violation. A $100 fine is not a deterrent. At least 11 out of 15 New York counties that have enacted fracking waste bans included penalties of up to $25,000 per violation. 2) Definition of fracking waste should also include all relevant forms of oil and gas extraction, production and storage waste including waste from liquid petroleum gas storage.

Grassroots Environmental Education is a science-based, environmental health nonprofit, providing public education on environmental health issues and practical solutions for local and state governments, health care providers, school systems, environmental and health organizations nationwide. Grassroots works directly with a network of leading medical and scientific experts in the field of environmental health to bridge the gap between emerging science and public understanding through evidence-based tools and educational programs.

Although high volume hydraulic fracturing was recently banned in New York, highly contaminated radioactive fracking waste byproducts and their constituents continue to pose an urgent public health threat due its production by more than 12,000 vertical and low volume oil and gas wells in New York and the ongoing acceptance of radioactive oil and gas waste byproducts from extraction and production activities in Pennsylvania for disposal at wastewater treatment facilities and landfills and application on roads for de-icing, dust control and maintenance. Proliferation of radioactive waste byproducts and their constituents from oil and gas drilling, extraction, production and storage operations for disposal and other purposes could result in irreversible damage and place significant financial and health burdens on taxpayers. To date, 15 New York counties have enacted fracking waste bans including Westchester, Nassau, Suffolk, Rockland, Putnam, Ulster, Orange, Albany, Schoharie, Oneida, Tompkins, Cayuga, Clinton, Onondoga and Erie Counties.

Hydraulic fracturing, also known as " hydrofracking", is a technology used for oil and gas extraction from shale formations which involves the injection of millions gallons of fresh water mixed with hundreds of chemicals and sand forced under high pressure into the well bores to crack open the shale. Ten to forty percent of this highly toxic mixture is returned to the surface with the oil or gas and additional contaminants including volatile organic compounds (VOCs) such as benzene, a carcinogen

linked with blood disorders, heavy metals (e.g., arsenic, lead, chromium, mercury), brine 8 times saltier than seawater, and radioactive elements including Radon and Radium which are known carcinogens.

The extraction process produces two types of wastewater. Flowback water is the chemically treated fracking fluid that returns to the surface shortly after a fracking operation. Produced water, also known as formation water or fracking brine, is the fluid that comes out of the target drilling formation along with the oil or gas. The process also produces tons of semi-solid waste in the form of drilling muds, sludge and cuttings.

Produced water or fracking brine has high levels of chlorides and bromides and contains toxic heavy metals. Produced water and semi-solids (drill cuttings, sludge and drilling muds) can contain high levels of Radium-226 and Radium-228. Radium-226 has a half-life of 1600 years and is linked to anemia, cataracts, bone, liver and breast cancers and death.[1] It also emits gamma radiation that can travel fairly long distances through air, raising risks for cancer in communities. Radon, a decay product of Radium is considered the leading cause of lung cancer in non-smokers with no safe level of exposure. [2] There are approximately 21,000 deaths per year attributed to Radon. [3]. Radioactive materials including Radium and its decay product, Radon, are known to be significantly higher in the Marcellus Shale. [4]

Radon is an odorless, tasteless and colorless gas formed by the radioactive decay of Radium, Uranium and Thorium and has a half-life of 3.8 days. Polonium and Lead, the decay products of Radon, have a half-life of 138 days and 22.3 years respectively and are solids known to attach to dust particles. Lead is a neurotoxin with no safe threshold level of exposure and is linked with cognitive deficits and attention deficit/hyperactivity disorder in children and low birth weight. It is linked to elevated blood pressure in adults and is an important risk factor for renal failure. [5] U.S. EPA classifies Lead as a probable human carcinogen while Polonium is considered a radioactive carcinogen. Radon absorbed by the lungs decays further into Polonium and Lead damaging lung tissue. Lead and Polonium can also damage DNA and RNA. [6] The exposure pathway of all three of these radioactive materials is through inhalation and possible ingestion.

Data from the Pennsylvania Department of Environmental Protection (DEP) reveals that from 2010-2014, New York has accepted more than 500,000 tons and 23,000 barrels of fracking waste byproducts, including wastewater and drill cuttings, from fracking operations in Pennsylvania into New York landfills. [7] Leachate from those landfills is accepted at wastewater treatment plants ill equipped to process hazardous chemicals and radioactive materials in oil and gas drilling waste byproducts.

State and federal laws exclude oil and gas waste byproducts from the definition of hazardous waste even though it exceeds criteria for hazardous classification. These exemptions eliminate hazardous waste tracking requirements for handling, storage, treatment and disposal. [8]

New York reporting requirements and oversight for oil and gas waste are lax and provide no information about actual quantity, material, disposal process or specific destination for disposal. [9] The New York State Department of Environmental Conservation (NYS DEC) does not maintain a database of oil and gas waste management and disposal nor provide readily available information to the public.

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[1] http://www.atsdr.cdc.gov/toxprofiles/
[2] http://www.epa.gov/radon/
[3] Ibid.
[4] E. Rowan, M. Engle, 2011, Radium content of oil and gas field produced waters in the northern Appalachian Basin, U.S. Geological Survey Report 2011-1135
[5] Textbook of Children's Environmental Health, Edited by P. Landrigan, R. Etzel, Oxford University Press, 2014
[6] Ibid.
[7] http://www.depweb.state.pa.us/portal/server.pt/community/dep_home/5968
[8] http://www.earthworksaction.org/files/publications/FS_LoopholesForPollutersNEW.pdf
[9] Environmental Advocates of NY, "Out of Sight, Out of Mind: New York's Failure to Track or Treat Fracking Waste Endangers Public Health and the Environment, 2012

Road spreading applications of waste by products from extraction and storage activities via Beneficial Use Determinations (BUDs) receive approval by the New York State Department of Environmental Conservation (DEC). FOIL documents revealed that approval was granted via BUDs for road spreading applications of oil and gas production and gas storage brine to municipalities in nine New York counties and to the New York State Department of Transportation for state roads in ten counties. [10] There is limited testing of chemical content and no testing of radionuclides.

Due to the huge volume of fracking waste produced, industry is increasingly interested in repurposing waste byproducts by grinding and blending them with other materials for roads and construction. Other companies are processing or dewatering the waste and using the salts for icemelt. Significant gaps and serious concerns remain regarding the safety of processing fracking waste resulting in end products that could be even more hazardous containing excessively high levels of radioactive materials and other contaminants. [11]

In his report, **Consideration of Radiation in Hazardous Waste Produced from Horizontal Hydrofracking**, [12] Ivan White, a staff scientist for the congressionally commissioned National Council on Radiation Protection charged with the protection of military and civilian populations, expressed concern regarding the DEC's cavalier attitude toward human exposure to radioactive material and stated that radioactivity should never be released into the environment in an uncontrolled manner because of the potential for exposure from the many potential pathways that exist. [13] Radioactive materials can migrate through air exposing crops and plants, soil, animals, livestock, food supplies and humans. Radioactive contaminants can also migrate through soil and surface or groundwater exposing sand and sediment, aquatic animals and plants, fish, irrigation water, vegetation, animals, livestock, food supplies and humans. He further stated that the type of radioactive material found in the Marcellus Shale formation and brought to the surface by hydrofracking is the type that has a long half-life and could easily bio-accumulate over time delivering a dangerous radiation dose to potentially millions of people long after the drilling is over. [14]

According to a U.S. Geological Survey study, levels of total Radium tested in the wastewater from eleven active New York vertical gas wells averaged over 8,400 pCi/L exceeding the EPA's maximum contaminant level for drinking water (5 pCi/L for combined Radium-226 and Radium-228) by more than 1,000 times. [15]

In a 2011 review of federal, state and company records, the New York Times reported that in a sampling of wells studied in Pennsylvania and West Virginia, reported levels of Radium or other radioactive elements exceeded EPA's maximum contaminant level for drinking water by 100 times to more than 1,000 times. [16]

The recently released TENORM report by the Pennsylvania Department of Environmental Protection (PA DEP) indicates significant radioactivity levels in waste associated with gas development and production exceeding EPA's maximum contaminant levels by more than several thousand times. Radium-226 levels in flowback samples were measured between 551 pCi/L and 25,500 pCi/L while Radium-228 levels were measured between 248 pCi/L and 1,740 pCi/L. Radium-226 levels in produced water or brine samples were measured between 40 pCi/L and 26,600 pCi/L while

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[10] http://www.riverkeeper.org/wp-content/uploads/2013/12/BUDs-and-related-documents-from-DEC-2014.pdf
[11] Earthworks, "Wasting Away: Four States' Failure to Manage Gas and Oil Field Waste from the Marcellus and Utica Shale", April 2015.
[12] http://www.grassrootsinfo.org/pdf/whitereport.pdf
[13] Ibid.
[14] Ibid.
[15] E. Rowan, M. Engle, Radium content of oil and gas field produced waters in the northern Appalachian Basin, U.S. Geological Survey Report 2011-1135
[16] http://www.nytimes.com/interactive/2011/02/27/us/natural-gas-documents-1-intro.html?ref=us

Radium-228 concentrations were measured between 26 pCi/L and 1,900 pCi/L. [17]

Naturally occurring radioactive materials (NORM) are distributed through geologic formations and exist undisturbed in nature whether at the earth's surface or below the surface. However, when NORM are disturbed and transported by human activity to human environments they are considered technologically enhanced naturally occurring radioactive materials (TENORM) increasing potential of exposure that may result in concentration levels above background levels. [18] The term NORM is often misused when applied to radioactive material introduced into human environments by oil and gas extraction, production and storage operations. In New York State, radioactive oil and gas drilling waste byproducts are improperly classified as NORM instead of TENORM that have special disposal requirements.

In a recent peer-reviewed study at University of Texas and University of North Texas Health Science Center, School of Public Health, Department of Environmental and Occupational Health, [19] soil and water (sludge) obtained from reserve pits used in unconventional natural gas activities were analyzed for the presence of technologically enhanced naturally occurring radioactive material (TENORM). Samples were analyzed for total gamma, alpha, and beta radiation, and specific radionuclides. Laboratory analysis confirmed elevated beta readings. Specific radionuclides present included Thorium-232 and Radium-226 radionuclides. According to the authors, many of the radionuclides found in oil and gas drilling waste and their constituents are not addressed by regulatory guidance documents and negligible information is provided in determining potential of cumulative effects of simultaneous exposure to several radionuclides or potential human and animal health impacts. The study also indicated that the Environmental Protection Agency (EPA) and the Nuclear Regulatory Commission (NRC) do not have established federal regulations that directly govern NORM waste from the oil and gas industry. [20]

The authors describe synergistic catalysis, a relatively new field of chemical study concerned with the ability of synthetic chemicals to spontaneously form new chemical bonds when exposed to sunlight, water, air and radionuclides or other chemical catalysts. [21] The potential health risks of resulting compounds are unknown and pose a public health threat as mixtures of hydrofracking chemicals, interaction of chemicals with radioactive materials and reaction of chemicals with other contaminants under heat and pressure cause unknown synergistic reactions. [22]

Regulators and operators may be grossly underestimating radioactivity levels in oil and gas waste by using improper methods to detect radiation. Dr. Julie Weatherington, a soil scientist, describes the inability of casual readings of radioactivity of oil and gas waste byproducts for its proper assessment. She points out Radium-226 and Radium-228 emit Alpha and Beta but that the Gamma emitters cannot be measured in the field. [23] A sample must be taken and a minimum of 21 days waiting period is required in order to get an ingrowth curve measuring Lead and Bismuth, decay products of Radium. [24] At that time, gamma spectrometry must be conducted in the lab to assess the gamma emitters in the fracking waste sample.

Dr. Michael Schultz and his colleagues at the University of Iowa, in their recent peer-reviewed study, [25] tested the accuracy of the Radium measurement technique used and recommended by the U.S. EPA for analyzing radioactivity in drinking water since studies have shown that the drinking water method is

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[17] http://www.depweb.state.pa.us/portal/server.pt/community/dep_home/5968
[18] http://www.ncbi.nlm.nih.gov/pubmed/23552651
[19] Ibid.
[20] Ibid.
[21] Ibid.
[22] Ibid.
[23] https://www.youtube.com/watch?v=J9VIUa9AIB4 https://www.youtube.com/watch?v=s0zI9IX2EwU
[24] Ibid.
[25] http://pubs.acs.org/doi/abs/10.1021/ez5000379?source=cen

unsuitable for solutions with high radioactive concentrations characteristic of fracking waste byproducts. Several methods were used to assess Radium isotopes in a sample of gas drilling waste from the Marcellus Shale. One method, the co-precipitation technique used by the EPA recovered less than 1 % of Radium-226, the most abundant Radium isotope in the gas drilling waste byproduct sample. Another method known as gamma-ray spectroscopy, the gold standard for Radium analysis, detected 91% of the Radium. [26] The authors' findings indicated that the EPA method is ineffective for analyzing oil and gas drilling waste byproducts. Their subsequent study calls attention to the use of radium alone to predict radioactivity concentrations can greatly underestimate total radioactivity levels and that uranium and thorium decay series require scrutiny as well.[27]

The Pennsylvania Department of Environmental Protection (DEP) data noted a marked increase in radiation alarms at Pennsylvania landfills between 2009-2012 triggered by waste trucks from hydrofracking wells with over 1,000 of those radiation alarms coming from oil and gas drilling waste byproducts. [28]

Bill Hughes, chair of the Wetzel County Solid Waste Authority in West Virginia, reported that tests on water leaching from the Meadowfill landfill shows varying levels of radioactivity averaging 250 pCi/L in 2013 and at times spiking as high as 2,000 pCi/L, many times higher than the clean drinking water standard while another local landfill in Wetzel taking large amounts of hydrofracking waste also demonstrated significant levels of radioactivity. [29] Hughes acknowledged that radioactivity occurs in the drill cuttings and brine from the Marcellus gas wells.

Landfill disposal of radioactive waste from oil and gas extraction, production and storage operations could contaminate them for thousands of years. All landfill membranes fail eventually and leaching or flooding could result in contamination of nearby ponds, streams, or groundwater. Leachate from landfills is a frequent cause of groundwater contamination and its disposal cannot be safely handled by wastewater treatment facilities or via applications on farmland or other real property.

Fifty-nine scientists attested to the fact that wastewater treatment facilities are not designed to treat chemicals, contaminants and highly radioactive materials produced from hydrofracking operations. [30] High bromide levels in oil and gas waste byproducts are highly corrosive to equipment and can react during water treatment to form brominated trihalomethanes linked to bladder and colon cancers and are associated with birth defects. Once added to drinking water supplies, trihalomethanes are difficult to eliminate. [31]

According to another recent study conducted at Duke University, authors examined water quality and radioactivity of discharged effluents, surface waters, and stream sediments associated with a treatment facility site in western Pennsylvania. [32] Downstream from the treatment facility, concentrations of chloride and bromide were above background levels and Radium-226 levels in stream sediments at the point of discharge were 200 times greater than upstream and background sediments and above radioactive waste disposal threshold regulations posing potential public health and environmental risks of Radium bioaccumulation in areas of shale gas waste byproduct disposal. [33]

Agricultural areas are especially vulnerable to the immediate threat posed by radioactive oil and gas waste byproducts and their constituents. Mounting evidence reveals livestock illness and death from

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[26] Ibid.
[27] http://ehp.niehs.nih.gov/wp-content/uploads/advpub/2015/4/ehp.1408855.acco.pdf
[28] http://triblive.com/business/headlines/3945499-74/gas-radiation-radioactivity#axzz3X9aXRbFF
[29] http://www.publicnewsservice.org/2014-04-21/environment/marcellus-waste-radioactivity-in-water-leaching-from-landfills/a38864-1
[30] http://www.psehealthyenergy.org/site/view/1035
[31] http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1566350/
[32] http://pubs.acs.org/doi/abs/10.1021/es402165b
[33] Ibid.

acute toxicity poisoning from harmful exposures to oil and gas drilling waste byproducts. Reproductive problems in cows and higher rates of stillborn and deformed calves have also been reported. [34]

Presence of highly radioactive materials and other contaminants on farmland and in food products can cause irreparable damage and serious financial impacts. Protection of the quality and safety of food production is imperative for the health and safety of residents and to ensure consumer confidence in food production.

Vehicles transporting radioactive fracking waste byproducts increase the risk of human and animal exposure and contamination of water, air, soil and farmland when accidents, leaks, and spills occur. Due to lack of proper hazardous classification and tracking requirements, trucks hauling the waste have no special hazardous waste warning signs or emergency instructions placing first responders and residents at risk.

Truck accidents, spills, leaks and road spreading applications can expose drivers, passengers, pedestrians, animals and livestock to radioactive materials while contaminating nearby surface waters, residential areas, school properties and cropland. Radioactive particles may become airborne as trucks and passenger vehicles travel along roads and can be tracked on tires into driveways and garages and ultimately tracked in on shoes into homes. Rain and snowmelt carrying radioactive materials can run off road surfaces where it can migrate onto nearby property, farms and into streams, ponds and irrigation systems, leach into soil or seep into groundwater. These numerous pathways of exposure pose increased risk for human and livestock inhalation and ingestion of highly radioactive materials, and carcinogenic and endocrine disrupting chemicals.

Potential exposure to toxic chemicals and radioactive contaminants comes at a tremendous toll to human health and the economy. An updated and expanded analysis of the costs of environmentally mediated diseases in children nationwide by Dr. Leo Trasande, Associate Professor in the Department of Pediatric Environmental Medicine and Population Health at NYU Medical Center, found that the costs of childhood cancer, asthma, and neurological disorders had escalated from $54.9 billion in the 2002 analysis to $76.6 billion in 2008. (These numbers do not take into account the burden of costs of environmentally mediated diseases in adults) Dr. Trasande states that the analysis re-emphasizes for policy makers the implications of failing to prevent toxic chemical exposures not only for the health of children but also for the health of the economy. [35]

Emphasis must be placed on primary prevention, eliminating hazards BEFORE children and adults are exposed. Disease and dysfunction triggered by toxins can be prevented and it is imperative that strong measures be taken to prevent harmful exposures to hazardous materials in oil and gas waste from extraction, production and storage operations. The potential for irreversible damage is far too great a socio-economic burden for any region to withstand. The mere perception of contamination could have far-reaching consequences.

Grassroots Environmental Education strongly urges the swift passage of Int 446-2014 with full inclusion of the aforementioned edits to protect public health and safety and resources.

Grassroots is available to answer any questions you may have and provide further documentation.

Respectfully submitted by,

Ellen Weininger
Director, Educational Outreach
914-422-3141

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[34] http://www.psehealthyenergy.org/data/Bamberger_Oswald_NS22_in_press.pdf
[35] http://content.healthaffairs.org/content/30/5/863.abstract

The New York City Council

City Hall
New York, NY 10007

Legislation Text

File #: Int 0446-2014, **Version:** *

Int. No. 446

By Council Members Levin, Johnson, Arroyo, Barron, Chin, Mendez and Richards

A Local Law to amend the administrative code of the city of New York, in relation to banning the discharge, disposal, sale or use within the city of New York of any wastewater or natural gas waste produced from the process of hydraulic fracturing.

Be it enacted by the Council as follows:

Section 1. Legislative findings and intent. The Council finds that hydraulic fracturing produces millions of gallons of wastewater that is often laced with highly corrosive salts, carcinogens like benzene and radioactive elements like radium, all of which can occur naturally thousands of feet underground, and that other carcinogenic materials are often added to the wastewater including the chemicals used in the hydraulic fracturing process.

The Council further finds that there are 14 wastewater treatment plants, owned and operated by New York City Department of Environmental Protection, and a number of privately owned wastewater treatment plans, operating within the City of New York. Because these facilities release effluent back into the surface water of the City of New York, it is important that such effluent be free from any harmful contaminants.

The Council also finds that the wastewater and other waste products produced from the hydraulic fracturing method of oil and natural gas extraction are dangerous and should be prevented from being used in New York City in any capacity including deicing and snow removal.

Therefore the Council finds that the wastewater and other oil and natural gas waste products produced by the hydraulic fracturing method of oil and natural gas extraction are dangerous and should be prevented from entering into the surface waters of the City of New York, and further finds that it is in the best interests of the City of New York to ban the discharge, disposal, sale, and use of hydraulic fracturing wastes within City of

New York.

§2. Subchapter 1 of chapter 3 of title 24 of the administrative code of the city of New York is amended by adding a new section 24-303.1 to read as follows:

§24-303.1 Protection of water supply; treatment of hydraulic fracturing wastewater prohibited. a. Definitions. 1. As used in this section, "oil or natural gas waste" means any waste that is generated as a result of oil or natural gas extraction activities, which may consist of water, chemical additives, or naturally occurring radioactive materials ("NORMs") and heavy metals. Oil or ~~N~~natural gas waste includes, but is not limited to, leachate from solid wastes associated with oil or natural gas extraction activities, any waste that is generated as a result of or in association with the underground storage of natural gas or liquefied petroleum gas, or any oil or natural gas waste byproduct.

2. As used in this section, "oil or natural gas extraction activities" means all geologic or geophysical activities related to the exploration for or extraction of oil or natural gas, including, but not limited to, core and rotary drilling and hydraulic fracturing.

3. As used in this section, "hydraulic fracturing" means the fracturing of underground rock formations, including shale and non-shale formations, by manmade fluid-driven techniques for the purpose of stimulating oil, natural gas, or other subsurface hydrocarbon production.

b. Prohibitions. 1. No person shall discharge or cause to be discharged any oil or natural gas waste to any surface water bodies located within the city of New York or to any wastewater treatment plant located within the city of New York.

2. No person shall dispose or cause to be disposed any oil or natural gas waste into any landfill within the city of New York. The department of environmental protection and the department of sanitation shall enforce this paragraph.

3. No person shall sell or offer for sale any oil or natural gas waste or oil or natural gas waste byproduct within the city of New York. The department of environmental protection and the department of consumer affairs shall enforce this paragraph.

4. No person shall apply or cause to be applied any oil or natural gas waste or oil or natural gas waste byproduct on any road or real property located within the city of New York. The department of environmental

protection and the department of transportation shall enforce this paragraph.

c. Contracting. All bids or contracts related to the purchase or acquisition of materials to construct or maintain a city road shall include a provision stating that no materials containing or manufactured from oil or natural gas waste shall be utilized in providing such a service.

d. Penalties. Any violation of section 24-303.1.b shall be an unclassified misdemeanor punishable by a fine not to exceed $25,000 per violation and/or up to thirty days imprisonment. Each sale, application, and/or discharge of oil or natural gas waste shall constitute a separate and distinct violation.

§ 3. This local law shall take effect ninety days after its enactment.

LS # 853 and 855 SS
Jtb 8/14/14 3:09pm

Public Health Concerns for Local Governments Regarding Oil and Gas Drilling Waste

Hydraulic fracturing waste contains high levels of naturally occurring radioactive material brought to the surface by drilling as well as a toxic mixture of chemicals used in the fracking process. Bringing this waste to a region will:

- **Contaminate landfills** with **radioactive material** that could last *thousands* of years
- **Risk human exposure to radioactive material** from road spreading, truck accidents, leaks, and spills.
- **Risk safety of drinking water aquifers** from runoff, inadequate processing and containment tank corrosion, leaks, and ruptures.
- **Risk viability of wastewater treatment plants** due to processing of hazardous chemicals.
- **Risk contamination of food supply** from runoff, a contaminated water supply, airborne radioactive particles and disposal on farmland.

Hydraulic fracturing, also known as "hydrofracking" or "fracking", is a technology used for oil and gas extraction from shale formations which involves the injection of millions of gallons of fresh water mixed with hundreds of chemicals and sand forced under high pressure into the well bores to crack open the shale. The fissures created by this fracturing are held open by the sand particles so that oil or gas can be released up the drill shaft.

Ten to forty percent of this highly toxic chemical mixture is returned to the surface with the oil or gas and additional naturally occurring contaminants, including volatile organic compounds (VOCs), heavy metals (e.g., arsenic, lead, chromium, mercury), brine eight times saltier than seawater, and radioactive elements, including radium-226, radium-228 and radon.

The extraction process produces two types of wastewater: **Flowback water** is the chemically treated fracking fluid that returns to the surface shortly after a fracking operation. **Produced water,** also known as "formation water" or "fracking brine" is the fluid that comes out of the shale formation along with the oil or gas. The process also produces tons of semi-solid waste in the form of drilling muds, sludge and cuttings.

The **Marcellus Shale** contains potentially high levels of naturally occurring radioactive materials ("NORM").[1] Hence the gas from the region can contain high levels of **radon,** a proven carcinogen and the leading cause of lung cancer among non-smokers, and the produced water and semi-solids can contain high levels of **radium-226** and **radium-228,** both known carcinogens.[2] Radium-226 emits gamma radiation which can travel fairly long distances through air, raising risks for cancer in distant communities. It has a half-life of 1600 years, and is linked to anemia, cataracts, and bone, liver and breast cancers.

There is no safe disposal plan for the billions of gallons of wastewater and tons of sludge and cuttings currently being produced by oil and gas drilling, extraction and storage operations:

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[1] Naturally occurring radioactive materials (NORM) are distributed through geologic formations and exist undisturbed in nature far below the surface. However, when NORM are disturbed and transported by human activity to human environments they are considered "technologically enhanced naturally occurring radioactive materials" (TENORM), and may result in concentration levels above background levels.

[2] According to a U.S. Geological Survey study, levels of total radium tested in the wastewater from eleven active New York vertical gas wells averaged over 8,400 pCi/L, exceeding the EPA's maximum contaminant level for drinking water by more than 1,000 times (5 pCi/L for combined radium-226 and radium-228).

• Congress has exempted oil and gas waste from the definition of hazardous waste, even though it routinely exceeds criteria for such classification. This eliminates tracking requirements for its handling, storage, treatment and disposal.[3]

• Truck accidents, spills, and leaks from unmarked vehicles can expose drivers, police, EMTs and the public to hazardous chemicals and radioactive materials.

• Public and private wastewater treatment facilities are not capable of processing the hazardous chemicals and radioactive materials produced by drilling, extraction, production and storage activities.[4]

• Road spreading of fracking wastewater for dust control and de-icing on roads increases risk of exposure to drivers and pedestrians and contamination of nearby fields and surface waters. It also impacts groundwater, increasing risk for human and livestock inhalation and ingestion of highly radioactive materials, and carcinogenic and endocrine disrupting chemicals.[5] [6]

• Landfill disposal of radioactive sludge from oil and gas drilling operations could contaminate them for thousands of years. Storage in closed containment tanks could eventually result in permanent groundwater and surface water contamination.[7]

• Presence of highly radioactive materials and other contaminants in local food products could cause irreparable damage and serious impacts to the economy.

When NORM is brought to the surface by drilling it is considered "technologically enhanced naturally occurring radioactive material" ("TENORM"). There are no established federal regulations that govern TENORM waste from oil and gas drilling, extraction and storage operations. The potential of cumulative effects from simultaneous exposure to several radionuclides is unknown.

Regulators and operators may be grossly underestimating radium levels and other radioactive contaminants by using improper methodology to detect radiation.[8] The use of radium alone to predict radioactivity concentrations can greatly underestimate total radioactivity levels.[9]

RECOMMENDATION: Prohibit the procurement, acquisition, storage, handling, treatment, processing, application or disposal of all treated or untreated oil and gas drilling, extraction, production and storage waste byproducts and their constituents for any purpose.

This report was prepared by Grassroots Environmental Education, a science-based non-profit educational organization. An index to the Digest of Independent Research on Hydrofracking is available at

http://grassrootsinfo.org/issues/hydraulic-fracturing-fracking/digest-of-independent-science-on-hydrofracking/

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[3] Exemptions for oil and gas drilling enacted by Congress as part of the Energy Act of 2005 include the Safe Drinking Water Act, the Clean Water Act, the Clean Air Act, the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the National Environmental Policy Act (NEPA) and the Toxic Release Inventory of the Emergency Planning and Community Right-to-Know Act.

[4] High bromide levels in oil and gas drilling waste byproducts are highly corrosive to equipment and can react during water treatment to form brominated trihalomethanes linked to bladder and colon cancers and are associated with birth defects. Once added to drinking water supplies, trihalomethanes are difficult to eliminate.

[5] Consideration of Radiation in Hazardous Waste Produced from Horizontal Hydrofracking, Ivan White, Staff Scientist for the National Council on Radiation Protection http://www.grassrootsinfo.org/pdf/whitereport.pdf

[6] New York accepts oil and gas waste byproducts from Pennsylvania and has approximately 11,000 active wells in Western New York that produce toxic waste. NYS Department of Environmental Conservation provides approval of the use of production brine from vertical wells in the state for road applications via Beneficial Use Determination (BUDs)

[7] Data from Pennsylvania Department of Environmental Protection reveal New York landfills have accepted more than 23,000 barrels of liquid waste and more than 500,000 tons of solid waste from fracking operations in Pennsylvania

[8] Matrix Complications in the Determination of Radium Levels in Hydraulic Fracturing Flowback Water from Marcellus Shale, Schultz, Nelson, et al, Environmental Science and Technology, February 2014: http://pubs.acs.org/doi/abs/10.1021/ez5000379

[9] http://ehp.niehs.nih.gov/wp-content/uploads/advpub/2015/4/ehp.1408855.acco.pdf

MELISSA ELSTEIN'S STATEMENT IN SUPPORT OF INT. No. 446

I am a founding member of the West 80s Neighborhood Association on the UWS of Manhattan, as well as a member of several environmental organizations. I submit this letter as an individual NYC resident and not on behalf of any group, however. (We would need more notice to draft a letter from our Board).

I write in support of City Council Int. No. 446 which would ban frack waste from natural gas drilling from being spread on NYC roadways, into NYC waterways, and into NYC landfills. I support this important environmental bill, as waste from the practice of fracking contains known toxins (some proven carcinogens), radioactive elements, and corrosive salt/ sand. I worry that without this bill, NYC could accept such toxins from other municipalities and States where fracking is allowed, and said toxic waste would permanently pollute our local waterways and land, and harm NYC residents and wildlife. The environmental risks are too great to not pass this bill.

At least 15 other New York counties have already banned frack waste, and I believe NYC should join that ban. This is common-sense legislation.

The only changes I would add would be to increase financial penalties for those who violate the law. Riverkeeper recommends $25,000 fine, as a deterrent. This is very important so that the bill actually has teeth. See http://www.riverkeeper.org/wp-content/uploads/2016/02/FW-toolkit-ALL-handouts.pdf I believe that 11 other counties have this higher fine. NYC should follow suit.

In addition, the definition of waste should not be limited to only waste from natural gas extraction activities. It should include all relevant forms of oil and natural gas waste, including waste from oil and natural gas storage, and all types of fracking.

New York State banned horizontal hydraulic fracturing due to the environmental risks; NYC should not accept any by-products of fracking or other natural gas operations as the environmental risks are too great as well. Hazardous material clean-ups are very costly to municipalities and so

this is also a financially prudent bill. There are other safer alternatives than frack waste to be used for de-icing.

Thank you for the opportunity to comment. I would be interested in being able to comment or testify in the future on any other bills regarding toxic waste, as well as to have sufficient time to spread awareness to the local community about any upcoming hearings and/or proposed legislation.

Please submit this letter to the appropriate NYC Council Members and to the legislative record for public comments.

Thank you.

Yours,

Melissa Elstein
NY, NY 10024

LISA DICAPRIO: STATEMENT IN SUPPORT OF INT. 446

My name is Lisa DiCaprio. I am a professor of Social Sciences at NYU where I teach courses on sustainability. I am also the chair of the Sierra Club NYC Group Committee on City Council Energy Initiatives.

I am submitting a statement on behalf of the Sierra Club NYC Group in support of Int. 446 which would ban "the discharge, disposal, sale or use within the city of New York of any wastewater or natural gas waste produced from the process of hydraulic fracturing."

For several years, the Sierra Club Atlantic Chapter, to which the NYC Group belongs, advocated for a ban on hyrdrofracking in New York State. On December 17, 2014, Governor Cuomo imposed a ban on horizontal hydrofracking, but exempted vertical hydrofracking. The Sierra Club continues to oppose all forms of drilling for natural gas as well as the natural gas build-out in our state in the form of new pipelines, compressor stations and storage facilities.

As outlined in the text of Int. 446, this proposed legislation is necessary to protect NYC's streets, waste treatment plants, and waterways from the environmental hazards caused by the disposal of fracked wastewater, which contains various contaminants.

There are several precedents for this legislation throughout the U.S. Currently, about 200 municipalities and counties in New York State have passed resolutions and/or legislation against fracking, several of which include bans on the use of fracked waste water. See: http://www.foodandwaterwatch.org/insight/local-resolutions-against-fracking As of May 2014, the following 12 New York State counties specifically banned the use of fracked wastewater in various forms within their borders. See: http://www.damascuscitizensforsustainability.org/2014/05/twelve-ny-counties-ban-fracking-wastes/

Fracked wastewater, which cannot be treated in waste treatment plants, is emblematic of the concept of environmental debt in which the financial and health costs of an industry's environmentally destructive practices are shifted to the public.

Polluters should pay for the waste that they create rather than profiting from it at public expense.

To ensure compliance with the law, we join with other environmental organizations in calling for an increase in the fine from $100. to up to $25,000 per violation, the penalty specified in bans on fracked waste water that have been implemented in at least 11 other counties in New York State. I would also recommend requiring the Department of Sanitation to publicly disclose the source and content of the salt purchased for applications on NYC streets.

Finally, we express our appreciation to Committee Chair Costa Constantinides and the co-sponsors of the legislation for this important environmental initiative which protects our environment and the public health of New Yorkers.

Jessica Roff, Programs Manger
Catskill Mountainkeeper
February 22, 2016

New York City Council Hearing on Int. 0446-2014
A Local Law to amend the administrative code of the city of New York, in relation to banning the discharge, disposal, sale or use within the city of New York of any wastewater or natural gas waste produced from the process of hydraulic fracturing

Thank you Councilmember Levin, Chairperson Constantinides, and the rest of the committee for the opportunity to testify today. My name is Jessica Roff, I am the Catskill Mountainkeeper Program Manager working across the state to stop fossil fuel and fossil fuel infrastructure and for a just transition to a renewable energy future, but located in Brooklyn.

As everyone in this room knows, Governor Cuomo made history on December 17, 2015, when he banned high volume horizontal hydrofracking. As everyone in this room knows, but many people throughout the state do not, the fracking drilling ban only protected us from a fraction of the problems associated with extracting, processing, transporting, and using natural gas. Even without horizontal drilling in NY, fracking's myriad dangers affect New Yorkers every day from Pennsylvania drilling's effects on our shared food and water resources; to toxic, carcinogenic VOC exposure by compressor stations; to exposure to fracking waste ("brine") used to de-ice roads in many NY counties; to toxic, carcinogenic VOC exposure near fracking waste processing and storage sites. Every one of these means of exposure carries with it the exact same dangers to public health and safety that led Department of Health Commissioner Zucker's recommendation and Governor Cuomo's action to ban fracking. So we may have This bill addresses an incredibly important issue.
The proposed local law amends Subchapter 1 of chapter 3 of title 24 of the administrative code of the city of New York by adding a new section 24-303.1 to prohibit discharge of any natural gas waste to any surface water bodies, disposal into a landfill located within the city of New York or to any wastewater treatment plant, sale of any natural gas waste or natural gas waste byproduct located within the city of New York, application of any natural gas waste or natural gas waste byproduct on any road or real property or purchase for use as materials to construct or maintain a city road.

Why Wastewater From Fracking is Such a Threat
Somewhere between 20% – 40% of the water used for hydrofracking a well returns to the surface as wastewater, also known as produced water. This wastewater not only contains the toxic and hazardous chemicals used in fracking fluid but also contains contaminants that it picks up from deep within the earth, most notably heavy metals, volatile organic compounds, salty brine and radioactive materials. Theoretically, this toxic cocktail could be treated at treatment facilities assuming these plants were properly equipped to remove these chemicals and radioactivity, however, there are few if any plants in New York State that currently have the technology to do this. Insufficient or incomplete treatment of wastewater will result in water being released into our streams, rivers and lakes that contain contaminants that are in higher levels that are considered safe. This is in fact what is happening in neighboring Pennsylvania, presenting significant health risks
Wastewater Can Contain Normally Occurring Radioactive Materials
Naturally occurring radioactive materials, known by the acronym NORM, are common in gas drilling waste. Radium, a potent carcinogen, is among the most dangerous of these metals because it gives off radon gas and takes 1,600 years to decay. In an article first published in ProPublica and then in the

Albany Times Union on November 9, 2009, Abrahm Lustgarten reported that the New York Department of Environmental Conservation analyzed 13 samples of wastewater brought up thousands of feet to the surface from drilling and found that they contained levels of radium-226, a derivative of uranium, as high as 267 times the limit safe for discharge into the environment and thousands of times the limit safe for people to drink.

In early 2011, the New York Times ran a 3 part investigative series on their multi-month investigation of radiation in wastewater. They reviewed thousands of internal documents from the Environmental Protection Agency (EPA) that revealed that fracking wastewater contains radioactivity and other toxic materials at levels that are frequently geometrically higher than the level that federal regulators say is safe for wastewater treatment plants to handle. EPA and industry researchers say that the biggest danger of radioactive wastewater is its potential to contaminate drinking water and enter the food chain through fish or farming. Many federal studies show that once radium enters a person's body, by eating, drinking or breathing, it can cause cancer, asthma and a plethora of other health problems. For more on the health impacts of fracking, click here.

The Times also found never-reported studies by the EPA and a confidential study by the drilling industry that all concluded that radioactivity in drilling waste cannot be fully diluted in rivers and other waterways.

The Times' exhaustive study which included review of 30,000 pages of federal, state and company records relating to 200 gas wells in Pennsylvania, 40 in West Virginia and 20 public and private wastewater treatment plans found the following:

- More than 1.3 billion gallons of wastewater was produced by Pennsylvania wells from 2008 to 2010, far more than has been previously disclosed. Most of this water — enough to cover Manhattan in three inches — was sent to treatment plants not equipped to remove many of the toxic and hazardous materials in drilling waste.
- Treatment plants in Pennsylvania discharged waste into some of the state's major river basins including the Monongahela River, which provides drinking water to more than 800,000 people including Pittsburgh and the Susquehanna River, which feeds into Chesapeake Bay and provides drinking water to more than 6 million people.
- Drillers in Pennsylvania trucked at least half of their waste to at least 12 sewage treatment plants in three other states including two plants in New York that discharge into Southern Cayuga Lake near Ithaca and Owasco Outlet, near Auburn.
- Of more than 179 wells producing wastewater with high levels of radiation, at least 116 reported levels of radium or other radioactive materials 100 times as high as the levels set by federal drinking-water standards. At least 15 wells produced wastewater carrying more than 1,000 times the amount of radioactive elements considered acceptable.
- Most wastewater facilities cannot remove enough of the radioactive material to meet federal drinking-water standards before discharging the wastewater into rivers, sometimes just miles upstream from drinking–water intake plants.
- Federal and state regulators have given nearly all drinking-water intake facilities in Pennsylvania permission to only test for radioactivity once every six or nine years and with the blessing of regulators, have not tested for radioactivity since before 2006, even though the drilling boom began in 2008.

Brine Wastewater – Expensive and Difficult to Treat

Wastewater contains salty brine that is brought up from the earth. The saltiness of the brine creates high levels of total dissolved solids (TDS), which are compounds in the water that cannot be removed by a traditional filter. If these total dissolved solids (TDS) are not completely processed by a treatment facility, the water that is released by the facility into rivers and streams and then used for drinking water can create environmental pollutants known as Trihalomethanes (THMs) when the water high in TDS reacts with chlorine. THMs are considered by many to be carcinogenic.

Wastewater treatment plants like the one in Endicott, NY cannot treat salty wastewater because they use a biological treatment process where freshwater microbes clean the water. High levels of salt and total dissolved solids (TDS) could harm the process.

"If all of a sudden the water taken in is salty, it could kill the microbes, and pretty significant technology is involved in desalinization," said James Tierney, assistant commissioner for water resources at the state Department of Environmental Conservation. "That technology is used for turning saltwater into freshwater around the world, but it can be costly."

Frack Waste on New York State Roads

In July 2011, The Ithaca Journal reported that several municipalities in New York have approved the use of wastewater from drilling for use in winter snow and ice clearing and dust management. The DEC approved permit conditions include provisions that the road spreading be done in a manner that minimizes the chances of the brine running off into streams, creeks, lakes and other bodies of water. However, it is extremely unlikely that this toxic brine will NOT flow into the water in these areas. This means that the DEC will have sanctioned exposure to contaminated wastewater without having done any serious health or environmental assessment.

Significant Danger from Open Pits Where Fracking Waste is Stored

Historically the industry has used open pits to store fracking water prior to transport to treatment facilities. The New York Department of Environmental Conservation (DEC) has justified not banning this practice in the Draft Supplemental Generic Environmental Impact Statement (dSGEIS), the permit conditions under which they propose to allow horizontal gas drilling using hydrofracking in New York State, released in September 2011, because they say that the gas industry has asserted that they are unlikely to use open pits for the storage of wastewater. Instead they have proposed a system where a lone DEC employee could grant approval without doing an individual environmental impact study. Open pits create a tremendous hazard, from the threat of being flooded and leakage to a pathway for human and animal exposure to chemicals through volatilization of chemicals sitting in the pits. For example, benzene and other volatile (light) hydrocarbons that are dissolved in liquids will enter the air when the liquid is exposed to the atmosphere.

All Fracking Wastewater Disposal Methods Fail to Protect Public Health and Environment

A May 2012 study by the Natural Resources Defense Council, In Fracking's Wake – New Rules are Needed to Protect Our Health and Environment from Contaminated Wastewater showed that while fracking generates massive amounts of polluted wastewater that threaten the health of our drinking water supplies, rivers, streams, and groundwater, federal and state regulations have not kept up with the dramatic growth in the practice and must be significantly strengthened to reduce the risks of fracking throughout the Marcellus region and elsewhere.

Across the United States, industries have disposed of toxic waste by injecting it into the earth. Until recently, scientists and environmental officials have assumed that deep layers of rock beneath the earth would safely entomb the waste for millennia but as Abrahm Lustgarten reported in ProPublica on June 21, 2012, there are growing signs that they were mistaken. Records from disparate corners of the United States show that wells drilled to bury this waste deep beneath the ground have repeatedly leaked, sending dangerous chemicals and waste gurgling to the surface or, on occasion, seeping into shallow aquifers that store a significant portion of the nation's drinking water.

New York has a Terrible Record Tracking Waste from Current Wells

A May 2012 study by Environmental Advocates of New York, "Out of Sight, Out of Mind, New York's Failure to Track or Treat Fracking Waste Endangers Public Health & the Environment" found that there is no clear record of how waste was handled from 6628 active gas wells that were fracked in New York State as of 2009. They discovered that existing state laws and regulations do not require oil and gas companies to report with any specificity how much waste is being created, its chemical components, or how drilling waste is being disposed. They uncovered that much of fracking's waste would likely be

classified as hazardous waste if it were not exempt under flawed state regulations. This is yet another example of the failure of government to protect us from the dangers of gas drilling.

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Deputy Commissioner Eric Landau

Address: _____

I represent: NYC DEP

Address: _____

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Date: _____

(PLEASE PRINT)

Name: Deputy Commissioner Vincent Sapienza

Address: _____

I represent: NYC DEP

Address: _____

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THE CITY OF NEW YORK

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Date: 2/22/16

(PLEASE PRINT)

Name: ELLEN DURANT

Address: 609 COLUMBUS AVE. #1C

I represent: United for Action

Address: _____

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THE CITY OF NEW YORK

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I intend to appear and speak on Int. No. 446 + 791 Res. No. _____

☑ in favor ☐ in opposition

Date: 2/22/16

(PLEASE PRINT)

Name: Joyce Rosen

Address: 600 West End Ave #1A1 NY NY 10024

I represent: _____

Address: _____

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THE CITY OF NEW YORK

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☑ in favor ☐ in opposition

Date: 2/22/16

(PLEASE PRINT)

Name: Donna Sciuscia

Address: 145 West 96 St.

I represent: myself

Address: _____

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THE CITY OF NEW YORK

Appearance Card

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☑ in favor ☐ in opposition

Date: Feb 22, 2016

(PLEASE PRINT)

Name: Hilary Baum

Address: 5454 Palisade Ave Bx NY

I represent: NYS Sustainable Business Council

Address: _____

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THE CITY OF NEW YORK

Appearance Card

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☑ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Eric Weltman

Address: 148 Sackett St., Brooklyn

I represent: Food & Water Watch

Address: 68 Jay St. Brooklyn

Also speaking for Manna Jo Greene Env. Director of Clearwater

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THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 446 Res. No. 791

☑ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Edith Kantrowitz

Address: 333 McDonald Ave - #5D Bklyn NY 11218

I represent: NYC Friends of Clearwater

Address: _____

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THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 446 Res. No. _____

☑ in favor ☐ in opposition

Date: Feb 22, 2016

(PLEASE PRINT)

Name: ANGELA MANNO

Address: 42 COMMERCE ST

I represent: myself

Address: _____

Please complete this card and return to the Sergeant-at-Arms

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THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 0446-2014 Res. No. _____

☑ in favor ☐ in opposition

Date: 2/22/16

(PLEASE PRINT)

Name: Mary Anne Sullivan

Address: 60 Riverside Dr. 9D NY 10024

I represent: League of Women Voters of NYC

Address: 4 W 43rd St. NY

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THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 446 Res. No. _____

☒ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: CARL ARNOLD

Address: 156 Prospect Pk W, B'klyn NY 11215

I represent: Sierra Club

Address: _____

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THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 446 Res. No. 0901

☑ in favor ☐ in opposition

Date: 2-22-16

(PLEASE PRINT)

Name: Catherine Skopic

Address: 140 W. Broadway NY, NY 10013

I represent: Peoples Climate Movement - NY & UN

Address: _____

Please complete this card and return to the Sergeant-at-Arms

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THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 446 and Res. No. 791

☒ in favor ☐ in opposition

Date: 2/22/16

(PLEASE PRINT)

Name: Tasa Klein

Address:

I represent: Senator Brad Hoylman

Address: 322 8th Ave #1700 NY NY 10001

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THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 446 Res. No.

☒ in favor ☐ in opposition

Date: 2/22/2016

(PLEASE PRINT)

Name: Margery Schaus

Address: 3 Godfrey Place PO Box 603, Rensselaer NY

I represent: Damascus Citizens for Sustainability

Address: Nanuet NY

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THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 446 Res. No. 791

☒ in favor ☐ in opposition

Date: 2/22/16

(PLEASE PRINT)

Name: Ellen Weininger

Address: 24 Prescott Ave. White Plains, NY 10606

I represent: Grassroots Environmental Education

Address: 52 main St. Port Washington, NY 11050

Please complete this card and return to the Sergeant-at-Arms

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THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 446 Res. No. 791

☒ in favor ☐ in opposition

Date: 2/22/16

(PLEASE PRINT)

Name: Daniel Raichel

Address: 40 W. 20th St, 11th Fl

I represent: Natural Resources Defense Council

Address:

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THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 446 Res. No. 791

☒ in favor ☐ in opposition

Date:

(PLEASE PRINT)

Name: Ling Tsou

Address:

I represent: United for Action

Address:

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THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 446 Res. No. 791

☒ in favor ☐ in opposition

Date: 2/22/16

(PLEASE PRINT)

Name: AUDREY FRIEDRICHSEN

Address: 1 CIVIC CENTER PLAZA, POUGHKEEPSIE

I represent: SCENIC HUDSON, INC.

Address: 179 MAIN ST BEACON, NY

Please complete this card and return to the Sergeant-at-Arms

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 446 Res. No. 791

☐ in favor ☐ in opposition

Date: 2/22/16

(PLEASE PRINT)

Name: Misti Duvall

Address: 78 N. Broadway, E. Horse, White Plains, NY

I represent: Riverkeeper

Address:

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THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Reena Rondo

Address: 230 W. 79th St NYC 10024

I represent: United For Action.

Address:

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THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 446 Res. No. _____

☒ in favor ☐ in opposition

Date: 2/22/16

(PLEASE PRINT)

Name: Marilyn Stern

Address: 303 Park Ave So. 512, NYC 10010

I represent: United For Action

Address:

Please complete this card and return to the Sergeant-at-Arms

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: JESSICA RAFF

Address: 595 President St Brklyn 11215

I represent: Catskill Mountainkeeper

Address: Livingston Manor, NY

Please complete this card and return to the Sergeant-at-Arms

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 446 Res. No. _____

☑ in favor ☐ in opposition

Date: Feb 22 '16

(PLEASE PRINT)

Name: SHEILA GEIST

Address: 100 LASALLE ST NYC

I represent: myself

Address: _____

Please complete this card and return to the Sergeant-at-Arms