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Croton Watershed Clean Water Coalition, Inc.



FRACKING ENDANGERS WATER, A PRECIOUS FINITE RESOURCE, AND LEAVES BEHIND TOXIC WASTEWATER WITH NO PLAN FOR DISPOSAL

*Ellen Weininger,
 Grassroots Environmental Education, Educational Outreach Coordinator
 Susan Van Dolsen,
 Westchester for Change, Co-Organizer*

High volume hydraulic fracturing (HVHF) or “fracking,” an extreme form of shale gas drilling, has emerged as the single greatest public health threat facing New York State. Governor Cuomo is poised to open up the Southern Tier to this relatively new form of fossil fuel extraction and is expected to make his announcement to begin the permitting process.

Much has been written about the inordinate amount of fresh water that is used during this process of extracting gas trapped within shale rock and the fact that the millions of gallons of water used are permanently removed from the earth’s finite water supply. Reports of air and water pollution from shale gas drilling continue to escalate. However, what is less well known is that the fracking process generates billions of gallons of radioactive, toxic waste with no practical plan for disposal. Every option that currently exists has serious drawbacks and this is cause for great alarm because fracking is occurring in 34 states and the volume of frack waste generated by the over 490,000 wells nationwide is monumental. Each day, more wells are being drilled across the United States and the wastewater problem continues to mount.

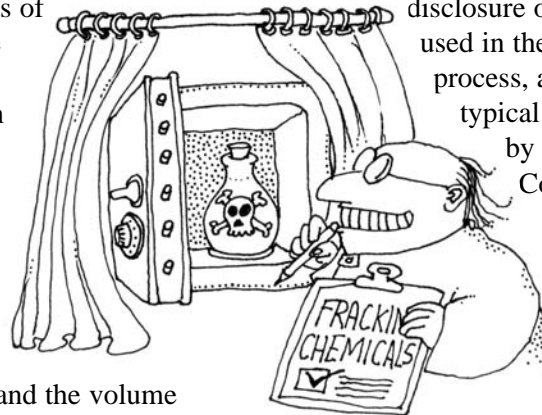
Why should we be concerned?

Fracking involves drilling deep underground into shale deposits, setting off explosive charges and injecting a mixture made up of millions of gallons of water, hundreds of toxic chemicals and sand. This highly-pressurized chemical mixture is then forced thousands of feet down a vertical well bore and thousands of feet across horizontal well bores in order to crack the shale so that the gas can be released. Although the gas

industry is exempt from disclosure of the chemicals used in the fracking process, an analysis of typical fracking fluid by Dr. Theo

Colburn revealed that 25% of the chemicals were carcinogens, 37% were endocrine disruptors,

more than 40% impair the immune and nervous systems and 75% irritate the eyes and lungs.



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Readers are invited to send comments, articles, feedback by email to fumir@aol.com or by conventional mail to:
 CWCWC, P O Box 484
 Bedford, NY 10506

Ten to forty percent of this highly toxic mixture returns to the surface with the gas along with other contaminants including heavy metals, volatile organic compounds (VOCs), brine (approximately eight times saltier than sea water) and naturally occurring radioactive materials, NORMs, including radium-226 and radium-228 among others. One fracking operation can require from two to eight million gallons of fresh water and between ten thousand and forty thousand gallons of highly toxic chemicals. Each well has the potential for eight horizontal legs or more and each well can be fracked as many as fifteen times. Estimates by the New York State Department of Environmental Conservation (NYS DEC) put well development in New York State upwards of forty thousand wells.

Wastewater from this shale gas extraction process is of two types. The chemically treated fracking fluid that returns to the surface soon after a fracking operation is known as flowback water, and the fluid that emerges from the target drilling formation along with the gas is known as produced water or brine characterized by its very high levels of chlorides and bromides, heavy metals, benzene, toluene, and high levels of radium-226 and other NORMs.

Fracking waste is classified as industrial waste, despite the fact that it exceeds the criteria for classification as hazardous waste which requires special handling, storage, treatment and disposal. This misclassification is a result of gas industry exemptions from federal and state regulations by which all other industries are bound. The Energy Policy Act of 2005 exempts the gas industry from the Clean Air Act, Safe Drinking Water Act, Clean Water Act, Superfund Act, Resource Conservation and Recovery Act, the Environmental Policy Act, or the Emergency Planning and Community Right to Know Act. These exemptions are also known as the Halliburton Loophole.

The FRAC Act, federal legislation proposed to close this loophole, would require that all fracking chemicals

be divulged, and would reinstate the provisions of the Safe Drinking Water Act to cover gas and oil operations. This legislation has stalled in both houses of Congress. At the state level, the NYS DEC has the power to declare fracking waste as hazardous, yet Commissioner Martens has not done so nor has he indicated that he will do so. The other option is for the state legislature to pass a law classifying the waste as hazardous rather than industrial. Although the New York State Assembly passed the hazardous waste bill, the New York State Senate did not even bring the companion bill up for a vote. Clearly this gap in regulation allows for fracking waste to retain its misclassification as industrial waste and continues to provide a great advantage to the gas and oil industry but no protections to public health and safety.

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There are several different methods by which the gas industry has been known to deal with fracking waste, none of them acceptable and each of them presenting serious risks to public health and the environment.

Open containment basins, waste pits or ponds store fracking waste and can off-gas dangerous chemicals. They are known for other countless hazards and accidents including walls that collapse, plastic liners that leak or burst leaching toxic fluids into the soil, accidents involving animals and people falling in, and impacts from overflows during flood events. Misters are sometimes used to spray the wastewater in the air to speed up the evaporation process; however, they can also generate toxic airborne contaminants.

Closed containment tanks are sometimes used for fracking waste storage, however they have a tendency to corrode with time and develop leaks. They may overflow if they have reached capacity and cannot hold additional fracking waste. If a leak were to develop the wastes could seep into the soil contaminating soil and

*It is important for you to write and express your concerns to the responsible agencies and officials such as:
Andrew M. Cuomo, Governor of NYS, Capitol Building, Albany, NY 12224
Joe Martens, Commissioner, Dept. of Environmental Conservation
625 Broadway, Albany, NY 12233-0001
Dr. Howard Freed, Director, Center for Environmental Health,
NYS Dept. of Health, Flanigan Square, 547 River St., Troy, NY 12180-2216*

potentially contaminating groundwater. Built-up gases in a closed tank can potentially cause the closed tank to rupture.

Gas industry drillers in some states re-inject fracking wastewater in deep underground wells known as injection wells. Recently, injection wells have been associated with repeated earthquakes in areas where earthquakes are known to be rare, such as Ohio, Texas, Colorado, Oklahoma, Arkansas and Great Britain.

One of the options the gas industry now utilizes to dispose of fracking wastewater is to send it to publicly owned treatment works (POTWs), despite the fact that according to numerous leading international scientists, these facilities are not designed to handle chemicals, contaminants, and radioactive materials resulting from fracking operations.

In a 2011 New York Times review of more than 30,000 pages of federal, state and company records of over 240 wells studied in Pennsylvania and West Virginia, the following was found: more than 1.3 billion gallons of wastewater was produced by Pennsylvania gas wells over the last 3 years, most of which was sent to wastewater treatment facilities ill-equipped to remove toxic chemicals and radioactive materials in the fracking waste.

The findings also showed that fracking wastewater from the gas companies was accepted by at least 12 wastewater treatment facilities in three states and only partially treated before it was discharged into rivers, lakes and streams. Many of these rivers provide the drinking water source for municipalities. At least 116 out of more than 179 gas wells producing highly radioactive wastewater reported levels of radium or other radioactive elements 100 times higher than federal drinking water standards. Fifteen gas wells produced fracking wastewater that was more than 1,000 times the federal standards.

Radium-226 has a half-life of 1600 years and can cause lymphoma, bone cancer and blood diseases such as leukemia and aplastic anemia. Radon, a radioactive decay product of radium,

is an extremely dangerous gas and is the second leading cause of lung cancer in the United States. The danger of radioactive wastewater is that it can contaminate drinking water or enter the food supply through fish and farmland. Federal and state regulators do not require testing for radioactivity by most wastewater treatment facilities that accept drilling waste.

High bromide levels in fracking wastewater can also cause corrosion to wastewater treatment facilities and interfere with industrial equipment. Bromides are particularly problematic since they can react during water treatment to form brominated trihalomethanes which are linked to cancer and birth defects and are difficult to eliminate once added to drinking water supplies.

The Pennsylvania Department of Environmental Protection called on all Marcellus Shale fracking operations to voluntarily stop disposal of gas drilling wastewater at fifteen municipal wastewater treatment facilities due to high levels of bromides and dissolved solids in streams and rivers that supply public drinking water. As a result, industry voluntarily increased its wastewater recycling.


Wastewater recycling by gas drillers is intended to enable reuse of fracking waste. However, the salts and sludge filled with radioactive material and other contaminants become a more highly concentrated toxic brew that is then trucked off to landfills.

Drill cuttings - another form of fracking waste from shale gas wells - are also a disposal nightmare. Covered with toxic drilling fluids, heavy metals and radioactive elements, drill cuttings are also typically dumped in landfills.

The growing volume of radioactive, toxic waste from fracking sludge and drill cuttings filling an increasing number of landfills has the potential for serious radioactive contamination from leaks and spills.

Many gas operators are selling their salty fracking waste for road spreading applications





including dust control and de-icing, which can then end up as stormwater runoff in drinking water supplies. Gas drilling contractors hauling fracking waste have also resorted to “midnight dumping” fracking waste in wetlands, streams, on farmland or in roadside ditches late at night.

Finally, fracking wastewater can seep from gas wells for many years - long after fracking operations have ended, especially when gas wells are abandoned, poorly capped or when well casings fail. Anthony Ingraffea, a drilling expert and professor of civil and environmental engineering at Cornell stated, *“This is important because as the well ages, the fluids that come up from it become more toxic, and the state or companies are even less likely to be tracking it.”*

So how will New York State handle its fracking waste if fracking is permitted?

It is unacceptable that the Revised Draft Supplemental Generic Environmental Impact Statement (RDSGEIS) contains no disposal plan for the billions of gallons of toxic, radioactive wastewater that will be generated if fracking proceeds in New York. *“This is the industry’s problem,”* NYS DEC Commissioner Joe Martens said in an interview. *“It’s not the state’s responsibility to identify disposal sites.”* In fact, Westchester’s seven wastewater treatment facilities are listed in the RDSGEIS appendix along with other facilities across New York State that could potentially receive fracking wastewater if permitted to do so.

In its RDSGEIS, the NYS DEC states, *“The disposal of flowback water could cause a significant adverse impact if the wastewater was not properly treated prior to disposal. Residual fracturing chemicals and naturally-occurring constituents from the rock formation could be present in flowback water and could result in treatment, sludge disposal, and receiving-water impacts. Salts and dissolved solids may not be sufficiently treated by municipal biological treatment and/or other treatment technologies which are not designed to remove pollutants of this nature.”* (Exec. Summary, p. 10).

The EPA, in its recent comments on NYS DEC RDSGEIS, pointed out that New York’s current

permitting system for wastewater treatment facilities does not include limits on pollutants often found in fracking wastewater, particularly radioactive materials.

Furthermore, although NYS DEC prohibits flowback water for road spreading applications, the DEC currently permits the use of produced water or brine from low-volume fracking operations for road applications if the road spreader obtains a Beneficial Use Determination (BUD). The NYS DEC’s RDSGEIS has placed a temporary prohibition on the use of brine from high volume fracking in the Marcellus Shale for road spreading applications pending further study of its radioactive ingredients. What’s the difference between fracking waste from low-volume and high-volume fracking? The distinction lies only in the quantity of waste generated.

A recent alarming report by Environmental Advocates, *“Out of Sight, Out of Mind: New York’s Failure to Track or Treat Fracking Waste Endanger Public Health & the Environment,”* indicated that New York State currently has six thousand active low volume fracking wells from which brine is permitted for road use applications despite its toxicity. The report continues, *“In short, the DEC does not know how much drilling waste is being produced or where it is going. Only the gas companies know, and they’re not talking.”* (p.4). Other news reports revealed that fracking waste from low-volume wells has been recently spread on the roads in at least two New York municipalities; Pittsfield in Otsego County and Columbus in Chenango County.

The NYS DEC estimates, according to its RDSGEIS, that almost 5,900 cubic feet of drill cuttings would be generated from an average shale gas well. Last year, NYS DEC Commissioner Martens released a detailed decision allowing the disposal of drill cuttings from Pennsylvania in New York landfills. The Cassella landfill in Chemung County has been accepting cuttings and the Angelica landfill in Allegany County and Seneca Meadows landfill in Seneca County are also accepting cuttings and fluids mixed with wood chips. Other landfills in New York State are also beginning to accept cuttings from Pennsylvania. What is the

cumulative impact of all of this radioactive, toxic waste being transported and dumped into our landfills?

Injection wells are not under consideration in New York State due to the inadequacy of its geological formations.

So where does that leave us regarding the prodigious amounts of homeless fracking waste?

In an effort to provide protections for their own residents in the absence of federal and state regulations, and in view of lax oversight, local municipalities have begun to address this question by passing legislation to ban the use of brine for road applications and also prohibiting the acceptance of fracking waste at their local POTWs. Municipalities are also exploring the prohibition of the storage, transport and dumping of all drilling waste, and penalties for violations. Here in New York State, fracking waste legislation has already been passed by Nassau, Suffolk and Ulster Counties and by the cities of Buffalo, Niagara Falls, Beacon, Albany, and Guilderland. Legislative efforts continue statewide and nationwide.

In recent months, a local working group composed of several organizations in Westchester – Cortlandt WATCH, Croton Watershed Clean Water Coalition, Grassroots Environmental Education, Riverkeeper and Westchester for Change has been working collaboratively with the Westchester County Board of Legislators to craft legislation which will provide the protections already outlined in other local laws including a ban of all drilling waste from Westchester's Publicly-owned Treatment Works (POTWs) and privately-owned wastewater treatment facilities, a ban of all drilling waste for road spreading as de-icer or dust suppressant or for any other purpose by the County on County roads, and a ban of procurement or acquisition of all drilling waste for any purpose by the County. The prohibition of dumping drilling waste and the transport of all drilling waste on County roads is also being studied. The involvement and support of Westchester residents are urgently needed in

order to secure passage of this critically important legislation.

Perhaps it is time to explore what materials your municipality uses for road use applications. Where do they come from? What is the source? Salts for road applications are typically purchased off of state contracts, but who knows the origin of those salts? Local laws in towns and villages will be needed to provide the safeguards against fracking waste that state and federal regulations fail to do.

Whether or not fracking is permitted in New York State, what is happening to the billions of gallons of fracking waste from other states? Where is it going? Gas industry contractors in other states including our neighbors in Pennsylvania and Ohio are currently hauling fracking waste out of state in search of recipients, and fracking waste from active low-volume fracking operations in New York State continues to be generated and transported. Labeled as industrial waste with exemptions from hazardous waste handling, storage, treatment and disposal tracking requirements coupled with a severely understaffed DEC and critical exemptions from federal and state regulations, how can this mounting toxic fracking waste problem possibly be swept under the rug?

As thousands of wells are added each year across the United States, the nightmare of the disposal of massive amounts of radioactive, toxic drilling waste, and the tens of thousands of trucks hauling it grows worse. Added to the pollution of air and water and contamination of our food supply from shale gas drilling operations and its infrastructure, the only realistic option is to ban hydrofracking in New York, ban receipt of all drilling waste from out-of-state, and to implement a strong energy policy promoting renewable energy resources and significant conservation measures.

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AUGUST 27TH RALLY IN ALBANY A HUGE SUCCESS



Photos: Suzannah Glidden

On Monday, August 27th, 1,500 demonstrators marched through the streets of Albany, NY to ban fracking - among them three CWCWC directors: Ann Fanizzi, Suzannah Glidden, and Marian Rose. Preceded by three mounted policemen, the demonstrators marched peacefully from Corning Preserve Riverside Park to the West Capitol Lawn, with a stop at DEC headquarters. There, the marchers staged a street theater showing how independent scientists have been systematically excluded from decisions regarding fracking. We saw several DEC employees looking out of the windows! Among the many speakers we note, in particular Bill McKibben, founder of 350.org, who, in reference to Bradley Field, the head of DEC's Division of Mineral Resources, and a global warming denier, said: "In this brutally hot summer, it was a real slap in the face to learn that Gov. Cuomo had turned over the environmental review of fracking to a global warming denier. And amidst the drought plaguing America, it's almost unbelievable that New York State would put its unparalleled water resources at risk." Josh Fox of Gasland fame stated "...the contamination of New York's water is certain. Surely, Governor Cuomo must listen to the science and roundly reject this industrial proposal." The demonstration has received excellent press coverage.

Continuation of My Response to David Brooks' New York Times Column, "Shale Gas Revolution" 11/4/11

This is the third in a series of articles counting the ways David Brooks's column disappoints, continuing with the second half of number 5: stormwater runoff

Many years ago I drove with a friend along route 22, soaking up the natural beauty on all sides, assuming it would always be there for us to enjoy, much as it appears Brooks takes our natural wealth for granted even now. From the porch of her house we viewed the small lake as if the weeds that choked it were part of a natural world we rented from an owner who would somehow repair what was, in fact, a symptom of the breakdown of an ecological system for which we were all collectively responsible.

We could hardly have imagined then that so much of our state would eventually be threatened by the industrialization of its bucolic landscapes. Little did we know how ill-equipped DEC was, even then. Yet Brooks maintains, despite an even more eviscerated DEC, that, "If done right, this [fracking] should not contaminate freshwater supplies...."

The devil's in the details, a few of which I invite Brooks to examine.

Stormwater runoff 5:

For most of my life, stormwater runoff hardly jumped to my mind as a major source of pollution. After all, didn't rain wash everything it fell upon? But what exactly did it wash and where did it go?

Typical pollutants found in runoff from roads and highways as noted by EPA:

Nitrogen, phosphorus, lead, zinc, iron, copper, cadmium, chromium, nickel, manganese, granular cyanide, sodium, calcium, chlorides, sulfates, and hydrocarbons

Runoff controls are essential to preventing polluted runoff from roads, highways, and bridges from reaching surface waters. Erosion during and after construction of roads, highways, and bridges can contribute



By David Ferguson
Vice President

large amounts of sediment and silt to runoff waters, which can deteriorate water quality and lead to fish kills and other ecological problems.

Heavy metals, oils, other toxic substances, and debris from construction traffic and spillage can be absorbed by soil at construction sites and carried with runoff to lakes, rivers, and bays. 1

Inexplicably missing from EPA's list are PAHs (polycyclic aromatic hydrocarbons), a byproduct of combustion particularly ruinous of human health, and asbestos used in brake pads and asphalt.

Even lawns, farms and especially golf courses, whose fairways, rendered all but impervious by matted roots, deliver insecticides, herbicides, as well as fertilizers, which nourish algae blooms that consume oxygen fish need to survive; a collection of pollutants incapacitating numerous beneficial biota necessary for a healthy water supply.

Stormwater runs off every impervious surface. Massive shopping mall parking lots concentrate the flow, causing destructive erosion. At the same time malls replace trees and permeable vegetated land with asphalt, paving land that would have absorbed the rain, along with runoff from the surrounding area, mitigating flood damage.

Trees and leaf litter also break up the force of the raindrops that might otherwise wash away soil. Roots hold the soil in place and provide conduits for water to recharge aquifers. Trees cool streams supporting aquatic life essential to maintaining water quality. The complex microbiology of various soils also

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serves as a filter to cleanse water.

But beneficial as soil is on land, plumes of eroded soil in streams, lakes and reservoirs, settle on streambeds so fish, especially trout, can't spawn. Deposits of silt curtail communities of insect larvae and aquatic creatures that support the life of streams as they replenish drinking water reservoirs. Minute grains of soil bind chemically with certain pathogens and toxins, inhibiting the efficacy of certain disinfectants at water treatment plants. And the velocity of stormwater runoff, focused by culverts and other conveyances, can scour banks, transforming healthy streams, storm after storm, into drainage ditches, exposing the ghostly roots reaching for a vanished earth. Unwise developments destroy, in a moment, ecosystems it took nature millions of years to evolve.

Now NY State proposes to radically compound this already serious menace with fracking's devastating onslaught, tens of thousands of heavy diesel trucks transporting loads of heavy drilling equipment, toxic flowback water and hazardous chemicals, millions of gallons of soon to be poisoned fresh water, and quantities of sand, plus vehicles hauling personnel to and from the drilling site, over roads and bridges never designed to endure such punishment, further

Now NY State proposes to radically compound this already serious menace with fracking's devastating onslaught...

contributing to accidents and spills contaminating the environment and water supply. Among the pollutants on EPA's stormwater runoff list are those delivered by the atmosphere. Fracking adds significantly to the threat of atmospheric deposition, including such proven carcinogens as benzene. Noxious fumes spew for weeks from the flaring of gas before it's hooked up to gathering lines, and from open pits, all compounded by leaks from storage tanks, compressor stations, gathering lines, dewatering facilities, and exhaust from thousands of heavy trucks, often idling, a hundred at a time, in traffic jams caused by their presence on rural roads.

To top it all off the DEC allows the spreading of toxic brine, often containing dangerous levels of radioactive materials, on roadways for deicing and dust control. The salinity of the brine (brought up with toxic

"produced water" from thousands of feet below the surface) is many times more than that of seawater, making it particularly deadly to vegetation and aquatic life. *"Most produced water is discharged into streams, discharged to land surfaces, or roadspread for ice and dust control. [85 to 90 percent]..."* 2 (Italics in original)

This is but a very truncated description of the importance of stormwater runoff, one of many aspects of watershed protection, a science unto itself, with which even a respected columnist might not be familiar. Yet, considering the stakes, this reader can only regret Brooks didn't at least avail himself of research available in the *Times* before writing with such conviction on this critical environmental issue. There is certainly no lack of expert, scientific literature delineating consequences so obvious that I wonder why I sometimes fail to anticipate them. For example, the threat of sediment flowing off of gravel roads.

Penn State's Center for Dirt and Gravel Road Studies ...recently completed a research project ... that begins to quantify sediment production from gravel roads The study found that [in pounds of sediment discharged by stormwater runoff]:

... [An] 0.7 pound event was generated from a flat narrow farm lane with grass growing between the wheel tracks. [A] 12.2 pound event was generated from a wider, mixed limestone/clay road at a 45% slope.... Using the average sediment runoff rate of 5.6 pound per event, a single 30 minute 0.55 inch rain event moving across Pennsylvania can be expected to generate over 3,000 tons of sediment from the State's 20,000+ miles of public unpaved roads. 3 (Italics in original)

Keep in mind these were only public roads and did not factor in new roads and the colossal impact of fracking traffic. Rudimentary farm roads have to be hardened and widened to accommodate such traffic, eliminating trees, exacerbating stormwater runoff, during both road construction and operation, in addition to vastly increasing toxic content of runoff.

When queried by DEC on the **"Potential stream degradation impacts from stormwater runoff from**

land disturbance and impervious surfaces (including gravel roads and wellpads),” IOGA [Independent Oil & Gas Association] responded:

Properly designed, permitted, and constructed well sites do not result in surface runoff that can migrate to and impact streams and other surface waters. Proper mitigation measures, such as hay bales or silt fences, prevent the offsite transport of sediment laden storm water, and thereby preclude stream degradation. 4

This wildly optimistic assessment hardly constitutes information. If hay bales and silt fences are still the state-of-the-art, then streams, wetlands and surface and ground waters will continue to be overwhelmed by contaminated runoff. These two “best management practices” (BMPs) have been at best problematic and at worst, notoriously ineffective barriers to storm water runoff even at conventional construction sites.

How is it the industry that invests so heavily in the advanced and increasingly hazardous technology of extracting gas, still relies upon this primitive, decades-old, egregious travesty of science to mitigate a process that continues to do irreparable harm to the environment?

[IOGA’s response continues] Furthermore, the potential for stream degradation is even less predictable than is the drilling rate and land disturbance. Stream degradation can occur from two potential sources: 1) erosion of soil from well pads and roads with transport to streams and subsequent deposition of sediment in streams, or 2) damage caused at stream crossings. Both... are addressed in the well permitting process and through field inspections.

Therefore, such occurrences would be potential violations subject to DEC enforcement. Because it is the *intention of operator members of IOGA to conduct their business in full compliance with applicable laws and regulations, and the industry’s compliance history in New York demonstrates this, the frequency of occurrence of such violations, which cannot be realistically predicted, is expected to be minimal.* 5

(Italics added)

Conventional “erosion and sediment control” is one thing. The horrific damage done by chemicals in frack fluid is quite another - the brine, chemicals and radioactive materials that IOGA’s tepid citations ignore.

Stating that, “the industry’s compliance history,” which has, in fact, been abysmal, demonstrates “full compliance with applicable laws and regulations,” suggests strict regulations are unnecessary. When any industry feels comfortable formally asserting to its regulator that violations are “expected to be minimal” as a reason for not actually addressing the regulator’s request for information, even the most credulous reader might be forgiven for being skeptical.

IOGA concludes with the unsubstantiated assertion that DEC should trust the gas industry to do the right thing based on its past performance. Where is the verify part of “trust but verify”? Reliance on “field inspections” is merely a diaphanous aspiration. As for the permitting process:

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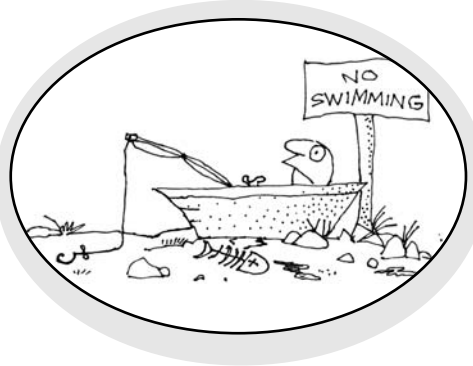
“DMR [Division of Mineral Resources] does not provide notice of intention to issue permits and does not allow public comment on drilling permits prior to issuance unless an EIS or other supplementary SEQR document is deemed necessary.” Since the release of the GEIS in 1992, no permit has required an EIS or other supplementary SEQR documents.

“Permits are usually issued within 10-14 days of application.” Indicating that they are rubberstamped by the DMR’s remaining skeleton crew without adequate inspection.

“The DMR’s ability to actually enforce any regulations remains in doubt which is why the DEC remains reluctant to actually promulgate any regulation” which it would then have to abide by and enforce. 6 (Italics

in original)

Environmental groups have had enough trouble trying to get DEC to enforce compliance with stormwater regulations for conventional developments. Now, in addition, we are faced with the industrial sprawl of fracking throughout counties and towns, thousands of sites - roads, drilling pads, gathering lines and the like - with the ubiquitous issue of stormwater runoff at every turn.



A few more details wherein the devil resides: the utter lack of cumulative impact assessments, leaving the environment to die the death of a thousand cuts; water withdrawals - millions of gallons a day, depleting already stressed streams, rivers and aquifers; pipelines devastating the streams they cross; runoff from drilling pads that experience leakage of one sort or another on a daily basis; the impracticality of such BMPs as detention basins which would require still more land disturbance; steep slopes down which chemical detritus will flow; unprotected headwaters, from which every stream and river flows; the history of devastating accidents, well-documented despite industry's efforts to suppress them.

New York is one of the few states that task the environmental agency, the DEC, with promoting drilling.

And who is going to make sure this industrial assault upon our life support system is done safely? Governor Cuomo, who proclaims his undying commitment to science while dismissing peer reviewed reports and

documented evidence of environmental devastation throughout the country? The climate-change denying head of the Division of Mineral Resources, Bradley Field, claiming that the fracking process used only, "sand, fresh water, nitrogen and a diluted soapy solution"? Not Pete Grannis, fired by Cuomo as DEC Commissioner for having the temerity to find DEC's budget inadequate to meet the agency's regulatory challenges. Grannis' successor, Joe Martens, whose cooperation with the industry has been documented in the exchange of 16 emails between DEC and the industry?

executive of the Independent Oil and Gas Association of New York, sends a letter to DEC

Commissioner Joe Martens, and copies other DEC staff, drilling industry attorneys West and Hennessey, drilling industry consultants and Cuomo. The letter outlines concerns about the DEC's proposed regulations.... The letter asks the DEC to substantially scale

back reporting requirements for the "Stormwater General Permit for High Volume Hydraulic Fracturing," the provision designed to address toxic runoff from drilling sites. The letter indicates that the drilling industry received draft permit language well before its release to the public on Sept. 28. 7

Perhaps someone else at DEC?

September 28, 2011, 1:30 pm: Drilling industry [Thomas] West [an Albany-based Lawyer representing gas drillers] emails Gertman, DEC executive deputy commissioner, and copies DEC General Counsel Russo, and West's partner Hennessey. "Marc and Steve," West writes, "consider this one last pitch before the stormwater permit is released to the public to encourage the Department to reduce or eliminate radionuclide testing." 8

Perhaps reading the 66,700 public comments on the RSGEIS will inspire DEC to finally promulgate comprehensive regulations.

New York State lacks an autonomous environmental oversight of shale gas. New York is one of the few states that task the environmental agency, the DEC, with promoting drilling. This compromises the DEC's effectiveness as an environmental agency. New York is the only shale gas state that does not tax gas production, leaving its regulatory agency chronically understaffed. The regulations are written by the industry. The DEC deviates from the industry line only to appease a political constituency such as New York City. Enforcement of gas well regulations is historically lax in New York. 9

September 7, 2011, 3:41 pm: Brad Gill,

Deluged with lavishly false ads, how is the general public to be informed if not by respected columnists such as David Brooks? How can anyone, Brooks included, imagine that, if only the “radicals” would quiet down, we could get this done safely? What chance does the public have for sane governance if the government and the media enable the true radicals, those proposing to make multimillions by sacrificing, in perpetuity, our beautiful, productive

environment, the health and wellbeing of those who live in it, and the rest of us who benefit from its bounty. “If done right, this should not contaminate freshwater supplies.” Really?

(To be continued)

1 EPA, *Erosion, Sediment and Runoff Control for Roads and Highways* (EPA841F95008d)

5 *Ibid*

2 James Northrup, “*Worst Practices*” *Failure of the DEC to Regulate Gas Drilling** *This paper is based largely on an analysis of the IOGCC [Interstate Oil & Gas Compact Commission] report by Brian Brock. . Northrup was in the energy business for 30 years, www.scribd.com/northrup49

6 James Northrup, “*Worst Practices*” *Failure of the DEC to Regulate Gas Drilling*

7 Thomas Cluderay, EWG [Environmental Working Group], *Cuomo Team Gives Drillers Jump Start to Influence Fracking Rules*, August 17, 2012

8 *Ibid*

3 Adams & Sitler, comments on DEC SGEIS, Attachment A, prepared for Natural Resources Defense Council, 2012

9 James Northrup, *New York’s Nonexistent Environmental Agency*, www.scribd.com/northrup49

4 *NYSDEC Request for Information*, prepared by the Independent Oil & Gas Association (IOGA). September 2011



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www.cwcwc.org/facebook.cfm***

Please consider participating in this crucial issue according to your abilities, talents and time by volunteering or contributions.

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GLOBAL CLIMATE CHANGE

Effects on People and the Environment

How will climate change affect you? Your community? The environment around you?

Global climate change will affect people and the environment in many ways. Some of these impacts, like stronger hurricanes and severe heat waves, could be life threatening. Others, like spreading weeds, will be less serious. And some effects, like longer growing seasons for crops, might even be good! However, as the Earth keeps getting warmer, the negative effects are expected to outweigh the positive ones.

The more we learn about how climate change will affect people and the environment, the more we can see why people need to take action to reduce the greenhouse gas emissions that are causing climate change. We can also take steps to prepare for the changes we know are coming.

Learn more about how climate change will affect people and the environment in the following ways:

Agriculture

The crops that we grow for food need specific conditions to thrive, including the right temperature and enough water. A changing climate could have both positive and negative effects on crops. For example, the northern parts of the United States have generally cool temperatures, so warmer weather could help certain crops grow. In southern areas where temperatures are already hot, even more heat could hurt crop growth. Global climate change will also affect agriculture and food supply in many other ways.

Crop Losses

Change could make it too hot to grow certain crops, and droughts caused by climate change could reduce the amount of water available for irrigation. Climate change is also likely to cause stronger storms and more floods, which can damage crops. Higher temperatures and changing rainfall patterns could help some kinds of weeds and pests to spread to new areas. If the global temperature rises an additional 3.6°F, U.S. corn production is expected to decrease by 10 to 30 percent.

What can people do about it?

Farmers may be able to prepare for climate change by planting crops during different times of the year, or by

planting crops that can survive better in hot and dry conditions.

Energy

Global climate change will affect how much energy we need and when we need it. As temperatures rise, more people will need to keep cool by using air conditioning, which uses a lot of electricity. However, some people might need less energy to heat buildings in the winter because it may not get as cold as it used to be. Climate change could also make it harder to produce certain types of electricity, such as hydropower.

Hydropower

As climate change causes precipitation patterns to shift, some areas that currently have plenty of water to make hydropower, such as northern California, might not have enough water in the future. Without enough water to produce electricity, these areas could experience power shortages and blackouts. They might have to use other energy sources to make more of the electricity they need, and if these sources are fossil fuels like coal, oil, or natural gas, more greenhouse gases will be added to the atmosphere.

What can people do about it?

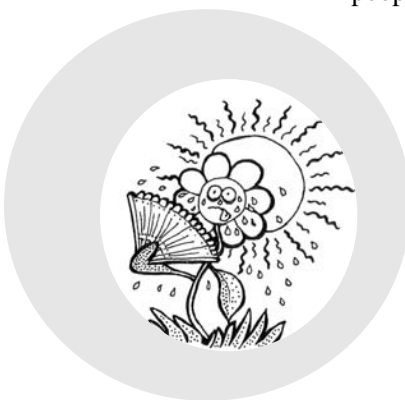
If climate change begins to affect hydropower production, people can adapt by using less energy, using energy in more efficient ways, or finding other clean energy sources.

Air Conditioning

Climate change will lead to more hot days and more heat waves. As a result, people will need to use more air conditioning to stay cool. As people use more air conditioning, electricity shortages and blackouts could increase. Because most electricity is currently produced by burning fossil fuels, using more electricity to run air conditioners will also add more greenhouse gases to the atmosphere.

What can people do about it?

People can plant trees near offices and homes to provide shade and keep them cool naturally. They can also use fans instead of air conditioners when it's not too hot. When air conditioning is needed, people can save energy by setting the thermostat a few degrees warmer. When



buying a new air conditioner, people can choose energy-efficient models.

Water Supplies

Climate change is affecting where, when, and how much water is available for people to use. Many parts of the world already have very little water, and climate change could make this problem worse. Rising temperatures, changing precipitation patterns, and increasing droughts will affect the amount of water in lakes, rivers, and streams, as well as the amount of water that seeps into the ground to replenish ground water.

Public Water Supplies

In 2007, a major drought hit the southeastern United States. Lake Lanier, which is the main source of drinking water for the Atlanta area, was reduced to record-low water levels. People had to use less water in their homes and businesses and make other changes, such as not watering their lawns.

What can people do about it?

As climate change continues, people might have to prepare for water shortages by using less water.

Lakes, Rivers, and Streams

Many places rely on snowmelt to fill the lakes, rivers, and streams that help keep drinking water reservoirs full and provide water to irrigate crops. For example, many parts of the western United States depend on water from the Colorado River, which is fed by melting snowpack in the Rocky Mountains. Less snowpack and earlier snowmelt will reduce the amount of water flowing into the Colorado and other rivers.

What can people do about it?

Communities might have to find new sources of water to support their needs. People might also have to adapt by using less water.

Health

Heat waves, severe storms, air pollution, and diseases linked to climate already threaten people's health in many areas of the world. Global climate change will increase these threats. Some people will be particularly at risk, especially those who are poor, very young or elderly, or disabled, or those who live in coastal areas or big cities.

Temperature-Related Illnesses

Heat waves are uncomfortable for everyone, but for infants and young children, the elderly, and people who are already sick, they can be especially dangerous.

Extreme heat can cause illnesses such as heat cramps, heat stroke, and even death. A 2003 heat wave in Europe caused about 50,000 deaths, and a 1995 heat wave in Chicago caused more than 600 deaths. In fact, heat waves cause more deaths in the United States every year than hurricanes, tornadoes, floods, and earthquakes combined.

On the flip side, as the world gets warmer, the number of illnesses and deaths related to extreme cold (like hypothermia and frostbite) may decrease.



What can people do about it?

People should take precautions on hot days to keep cool. Cities can also set up heat wave warning systems and air-conditioned shelters where people can cool off.

Air Pollution

You probably know someone with asthma, or maybe you have this condition yourself. Certain kinds of air pollutants, like ozone, can make asthma and other lung conditions worse. Ozone found high in the atmosphere is called "good ozone" because it protects life on Earth from the sun's harmful ultraviolet rays. Ozone can also be found close to the surface of the Earth, where it is considered "bad ozone" because it's the main ingredient of smog and is harmful for people to breathe. Bad ozone is created from pollutants that go through chemical reactions in the atmosphere. Climate change is likely to increase the amount of bad ozone in the air because more ozone is created when the temperature is warm. [Learn more about ozone.](#)

What can people do about it?

People can check the daily air quality forecast for their area by looking in the newspaper, on TV, or on weather websites. Air quality alerts can also be found at www.airnow.gov. When ozone levels are high, people should be careful about exercising or working outdoors.

Spreading Diseases

Climate change might allow some infectious diseases to spread. As winter temperatures increase, ticks and mosquitoes that carry diseases can survive longer throughout the year and expand their ranges, putting more people at risk. One big concern is malaria, a deadly disease spread by mosquitoes in many hot, humid parts of the world.

What can people do about it?

People should take common-sense steps to avoid tick and

mosquito bites, and communities can take actions to control mosquitoes, such as removing sources of standing



water. It's also important for doctors to know the symptoms of diseases that could be spreading to new areas so they can diagnose and treat their patients.

Plants, Animals, and Ecosystems

Most plants and animals live in areas with very specific climate conditions, such as temperature and rainfall patterns, that enable them to thrive. Any change in the climate of an area can affect the plants and animals living there, as well as the makeup of the entire ecosystem. Some species are already responding to a warmer climate by moving to cooler locations. For example, some North American animals and plants are moving farther north or to higher elevations to find suitable places to live. Climate change also alters the life cycles of plants and animals. For example, as temperatures get warmer, many plants are starting to grow and bloom earlier in the spring and survive longer into the fall. Some animals are waking from hibernation sooner or migrating at different times, too.

Disappearing Habitats

As the Earth gets warmer, plants and animals that need to live in cold places, like on mountaintops or in the Arctic, might not have a suitable place to live. If the Earth keeps getting warmer, up to one-fourth of all the plants and animals on Earth could become extinct within 100 years. Every plant and animal plays a role in the ecosystem (for example, as a source of food, a predator, a pollinator, a source of shelter), so losing one species can affect many others.

What can people do about it?

Just like people, plants and animals will have to adapt to climate change. Many types of birds in North America are already migrating further north as the temperature warms. People can help these animals adapt by protecting and preserving their habitats.

Coral Reefs

Coral reefs are created in shallow tropical waters by millions of tiny animals called corals. Each coral makes a skeleton for itself, and over time, these skeletons build up to create coral reefs, which provide habitat for lots of fish and other ocean creatures. Warmer water has already caused coral bleaching (a type of damage to corals) in many parts of the world. By 2050, live corals could become rare in tropical and sub-tropical reefs due to the combined effects of warmer water and increased ocean acidity caused by more carbon dioxide in the atmosphere. The loss of coral reefs will reduce habitats for many other sea creatures, and it will disrupt the food web that connects all the living things in the ocean.

What can people do about it?

To help give coral reefs a better chance of surviving the effects of climate change, swimmers, boaters, and divers should treat these fragile ecosystems with care. People can also support groups working to protect coral reefs.

Forests

Forests provide homes for many kinds of plants and animals. They also protect water quality, offer opportunities for recreation, and provide people with wood. Forests are sensitive to many effects of climate change, including shifting weather patterns, drought, wildfires, and the spread of pests like the mountain pine beetle. Unlike some animals, trees can't just get up and move when the temperature gets too hot or other conditions change!

Wildfires

Wildfires are already common in the forests and grasslands of the western United States. As the Earth gets warmer and droughts increase, wildfires are expected to occur more often and be more destructive. Wildfires do occur naturally, but the extremely dry conditions resulting from droughts allow fires to start more easily, spread faster, and burn longer. In fact, if the Earth gets just 3.6°F warmer, we can expect wildfires in the western United States to burn four times more land than they do now. Fires don't just change the landscape; they also threaten people's homes and lives.

What can people do about it?

As the climate continues to change, people will have to prepare for the risk of increasing wildfires by becoming more aware of the danger, taking extra precautions to prevent fires, not building in fire-prone areas, and being ready to manage fires when they do occur.

Coastal Areas

Global climate change threatens coastlines and the build-

ings and cities located along them. Hundreds of millions of people around the world live in low-lying areas near the coast that could be flooded as the sea level rises. Rising sea level will also erode beaches and damage many coastal wetlands. Rising sea level and stronger storms caused by warmer oceans could completely wipe out certain beaches and islands.

Coastal Cities

Climate change poses risks for cities near the ocean. Places like Miami; New York City; New Orleans; and Venice, Italy, could flood more often or more severely if sea level continues to rise. If that happens, many people will lose their homes and businesses.

What can people do about it?

Coastal cities can prepare for climate change by protecting or restoring natural shoreline buffers like sand dunes and wetlands, improving storm drainage systems, and building protective barriers where necessary.

Rising sea level threatens wetlands along the U.S. Mid-Atlantic Coast. The more vulnerable a wetland is, the more likely it will become submerged (and disappear) as sea level rises in the future. *Source: Adapted from U.S. Climate Change Science Program (2009).*

Coastal Wetlands

Climate change will damage coastal wetlands all over the world. Wetlands protect the shore from flooding, and they also provide important habitats for many types of plants and animals. For example, the Everglades are wetlands close to sea level in southern Florida that are home to diverse ecosystems. As sea level rises, salt water could flood parts of the Everglades, leaving animals such as birds, alligators, turtles, and panthers with less habitat.

What can people do about it?

People can protect wetlands as much as possible by not disturbing the land, the flow of water, or plants in these areas.

Recreation

In addition to causing all sorts of problems, such as heat waves, droughts, and coastline damage, warmer temperatures could also affect people's jobs, recreational activities, and hobbies. For example, in areas that usually experience cold winters, warmer temperatures could reduce opportunities for skiing, ice fishing, and other winter sports. Also, rising sea

level could wash away beaches.

Ski Season

As air temperatures continue to rise, ski season won't last as long. Places that are used to getting lots of snow might get more rain instead. Some ski resorts might have to close because of climate change. There may be shorter seasons for other cold weather activities, like outdoor ice skating, snowmobiling, and ice fishing.

What can people do about it?

Owners of ski resorts and other businesses (such as



hotels and restaurants) that depend on winter sports can take steps to prepare for a shorter or less profitable winter season. For example, some ski resorts have added activities like golf and mountain biking to make money during other parts of the year.

Beaches

Higher sea level will mean less space at the beach. A combination of stronger storms and sea level rise could increase the rate of erosion along the coast, and some beaches could disappear altogether.

What can people do about it?

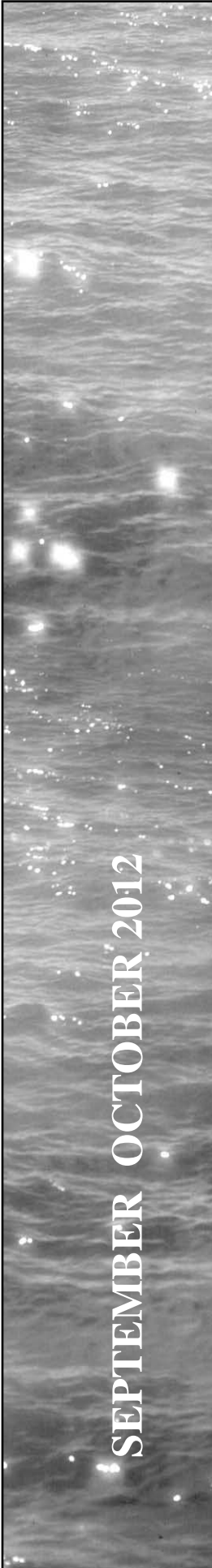
People already add sand to certain beaches to replace sand that has washed away. In the future, people might have to replenish beach sand more often, but this will cost more money. In other places, people might choose to build sea walls or other structures to protect the shore from erosion. Ideally, these projects will be planned carefully to prevent them from damaging important habitats for plants and animals.

Source: US-Environmental Protection Agency



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