Comments on
"**DRAFT SUPPLEMENTAL GENERIC ENVIRONMENTAL IMPACT STATEMENT (dSGEIS)**
12/31/09
Steve Coffman

DEFINING TERMS

It's difficult to comment on the dSGEIS document without some discussion of inconsistent terminology and seriously muddied distinctions between such essential terms as:

the conflation of "hydraulic fracturing" with "high-volume hydraulic fracturing"

insufficient distinctions on "water withdrawal," "water testing" and "flowback"

"waste treatment" vs. "waste disposal" vs. "dumping"

"cumulative effects" that fail to adequately distinguish between compounded effects of a single well and significant changes to the character and social well-being of an entire region (and, ultimately, the character of New York State as a whole)

1. THE 1992 GEIS AND THE DSGEIS

In the Executive Summary, dSGEIS (and all previous DEC documents on hydrofracking), the 1992 GEIS is invoked as the base document for "High-Volume Hydraulic Fracturing to Develop the Marcellus Shale." This invocation amounts to a false first-step that has seriously confused several important issues and strained DEC's credibility from the beginning.

The 1992 GEIS (much of which was researched and written in the 1980s) does not discuss "High-Volume Hydraulic Fracturing" or the "Marcellus Shale," and, in fact, could not have discussed it, because, at the time, "high-volume" hydraulic fracturing was still in its experimental infant stages in Texas' Barnett Shale where it was not fully developed until the late-1990's and effectively in use until the 2000s.

In an article of the history of "high-volume" hydraulic-fracture horizontal gas drilling, Eric Potter, associate director of the Bureau of Economic Geology at the University of Texas at Austin, writes:

"By the late 1990s, they [Four Sevens Oil Company] had perfected the technique in vertical wells and started applying it to several hundred wells. That's when it came to the attention of industry."

Potter quotes Larry Brogdon, partner and chief geologist for Four Sevens Oil:

"It took George Mitchell 18 years to make it work. He is the father of the Barnett Shale. He was tenacious. He started in 1981 and it really didn't take off until 1999. And even then, it took a long time to develop it."

In one of its latest website posting "Hydraulic Fracturing Considerations for Natural Gas Wells of the Marcellus Shale" DEC states:

Hydraulic Fracturing of the Marcellus Shale has been used in the Appalachia area since the early 1960s.

DEC's reference for this statement comes from a 2008 article "The Marcellus Shale—An Old 'New' Gas Reservoir in Pennsylvania" by Penn State geologist John A. Harper in *Pennsylvania Geology* (2008), which does indeed say:

"Since the early 1960s, Pennsylvania's oil and gas industry has used hydraulic fracturing . . . to enhance the recovery of oil and natural gas."

But the same article goes on to say:

"But it was not until development of the Barnett Shale play in the 1990s that a technique suitable for frac[k]ing shales was developed."

DEC's continual repetition that hydraulic fracturing and horizontal drilling have been "in common use in New York State for 50 or 60 years," clearly does not refer to the "high-volume" hydraulic fracturing described in the dSGEIS and being proposed for use throughout New York's Marcellus Shale regions.

This distinction becomes especially important when the dSGEIS defers to the 1992 GEIS Document to cover over important holes in scientific investigation and inconvenient disparities between the presumed innocuous effects of "high-volume" hydrofracking based on the "*non*-high-volume" process described in the GEIS. This false conflation is then often held evidence and precedence of proven benignity---in lieu of carrying out sufficient scientific investigation, or giving adequate credence to the actual consequences of "high volume" fracturing in other states.

The hydraulic fracturing referred to in the 1992 GEIS describes a process using "water mixed with gels or foams and other chemicals as the fracking fluid" (Ref: Grannis Testimony 10/15/08). These processes use much lower volumes of fluid---"20,000 to 80,000 gallons per well"---which is roughly 0.5 - 2.3% of the volumes proposed for "high volume" hydrofracking. (Ref: GEIS: See Chapter 9, Part F).

If we were discussing Toxicology, "high volume" hydrofracking would require its own CAS number and MSDS. In taxonomy, it would be classified as a **new species.** To refer to this new technology as though it were simply a later model of Chevrolet or larger can of Bush's Pork & Beans seriously belies vital distinctions specifically relevant to DEC's seminal mission:

"To conserve, improve, and protect New York's natural resources and environment, and control water, air, and land pollution, in order to enhance the health, safety and welfare of the people of the state and their overall economic and social well being."

Clearly, these two distinct drilling processes involve a huge disparity in the kind and amount of chemicals employed---reducing use of gelling agents, increasing friction reducers (thus the term "slickwater"), as well as exponentially increasing amounts to match huge increases in water use (ergo: "high-volume"). (Ref: Final Scope: See Section 2.1.2)."

1992 GEIS (9F.1) describes the fracking process this way:

Water-gel fracs are the most common stimulation technique. Twenty to eighty thousand gallons of fluid are injected into the producing formation under high pressure. Approximately 20 pounds of gel are added to every thousand gallons of water. . . .

To help maintain the producing formation's permeability, small amounts of chemicals are typically added to the frac fluid. Bactericides are sometimes utilized to prevent the growth of sulfate reducing bacteria that could clog the rock's pore spaces. Additives are also used to prevent clay particles or iron precipitates from plugging off the formation.

In dramatic contrast, the "high-volume" process described in the dSGEIS uses from 1 million to 7.8 millions gallons of fresh water per well. Is that really the same process as one that uses from 20 to 80 thousand gallons per well? Could it ever be the same in terms of environmental, social and community effects?

Or, is the use of 400 to 1600 pounds of gel the same process as one that adds dozens of chemicals from a list of 260 (most toxic to humans, wildlife and aquatic environments)?

The amount of the **new** "high-volume" chemicals to be used are variously estimated in DEC documents from .5% to 2.5%.

In "high volume" wells, the **minimum** amount of chemicals (.5% X 1 million gallons) would result in 50,000 gallons of chemical additives; the **maximum** amount (2.5% X 7.8 million gallons) would amount to 195,000 gallons.

And, given that one gallon of water weighs 8.34 pounds, what's really being compared is:

Minimum per well (1992 GEIS) -- 400 pounds of non-toxic gel
Minimum per well (2009 dSGEIS) -- 417,000 pounds of toxic chemicals

Maximum per well (1992 GEIS) -- 1600 pounds of non-toxic gel
Maximum per well (2009 dSGEIS) -- 1,626,300 pounds of toxic chemicals

To say that the 1992 process is the same as the 2009 process is like saying that a fifteen-pound Iguana is like a 15,000 pound Tyrannosaurus Rex---because they are both lizards!

2. WATER

For us in the Finger Lakes Region of NYS, no issue is more potent or emotionally-charged than water safety. Of course, the eponymous name of our region centers on the Finger Lakes, not only as the geographic and geological basis for our environment, the prime limiting factor of our access routes and population growth, the heart of our scenic beauty, the succor to our berries, apples, grapes and farmland, but, to us, who live with these lakes, we also recognize our responsibility to them---both for their majestic quality and for their irreplaceable value as one of the nation's largest reservoirs of fresh water. Historically, this is the essence of our regional and community character.

Added to that, in our times of increasing water needs and perilously decreasing water supplies worldwide, we in the Finger Lakes (and elsewhere, I know) have an absolute moral imperative to steward this irreplaceable resource into the future.

I know that DEC also recognizes this imperative as well. And that is why it is so essential that there be no fudging, no shortcutting, no hocus-pocus water treatment or Texas tale-telling self-reporting, no phony-baloney "if we pollute it now, we'll clean it up later" promises. The lakes, aquifers, wetlands and waterways in the Finger Lakes watershed must be protected *a priori,* not harum-scarum after the fact B.S.

Natural gas may or may not be a tolerable "bridge fuel," for our state and nation, but if there is no fresh water on the other side of that bridge, then it truly will be a fool's gold bridge---not only to nowhere but to oblivion.

Although the dSGEIS offers many studies, reasoned arguments and proposed regulations to water issues, deep doubts and concerns still remain unallayed.

Why?

The following questions remain inadequately discussed or resolved.

Water Withdrawals

Who owns the water?
Who has a right to take the water?
How much?
From where?
By what methods?
Permitted by whom?
Monitored by whom?
Reported to whom by whom?
Under what penalties?

While dSGEIS broaches some of these questions, the answers are oblique, confusing and even contradictory. And worse yet often defy common sense.

In at least two places, dSGEIS suggests that water commission boards (other than themselves, the Lead Agency) require a permit for the withdrawal of "more than 100,000 gallons per day average over a 30 day period."

But does "100,00 gallons" mean: Per truck? Per company? Per project? Could 50 different truckers (or companies) take 99,999 gallons a day *each*---in perpetuity---with no permit required?

And even more importantly---who is measuring? If there is no metering and monitoring of the water withdrawals, the rest is moot! (The effectiveness of self-reporting under the "Honor System" on the part of gas company haulers hardly engenders the kind of confidence that our mutual moral imperative requires.

Water Testing

Whether in reference to a family water well or the enormity of Seneca Lake, it is impossible to know the what effect "high volume" hydrofracking will have on our water quality and aquatic environments if we have not established a prior base.

But a prior base for what?

Do we need to test for all 260 chemicals listed in dSGEIS?

Is there any assurance that new chemicals will not be developed and used in the meantime?

Who will pay for the testing?

How long will the test results remain valid?

If a well is refracked, must new testing be done to reestablish the base?

Who will pay for all of the above?

Ditto for lakes, rivers, wetlands, aquifers? Who will test? Who will validate? Who will pay? And will retesting continue in order to bases current?

We are all too familiar with the scenario of a water source going bad and a company (or DEC) saying: “How can you prove that gas drilling was responsible?”

This perhaps-legal defense should not be good enough for DEC if it is to take the moral imperative of its mission seriously. Despite little absolute proof of a connection between “high volume” hydrofracking and water degradation, anecdotal evidence around the country follows this industry like skunk smell. If they are allowed to proceed, adequate precautions need to be not only discussed, but implemented and paid for. Before the Dimocks and Dunkard Creeks occur. That’s when responsible stewarding must take place, before the horse is out of the barn.

Flowback

dSGEIS 5.11.3 FLOWBACK WATER CHARACTERISTICS

The following description of flowback water characteristics was provided by URS Corporation, under contract to NYSERDA. This discussion is based on a limited number of analyses from out-of-state operations, without corresponding complete compositional information on the fracturing additives that were used at the source wells. ***The Department did not direct or oversee sample collection or analysis efforts. Most fracturing fluid components are not included in standard chemical scans of flowback samples that were provided to DEC, so little information is available to document whether and at what concentrations most fracturing chemicals occur in flowback water.***

The obvious question here is how can DEC feel so confident of protecting the environment from these chemicals if they don’t even know what they are or in what quantities?

And other questions must be clarified.

What exactly comprises “flowback water?”

Does it include “drilling fluids” as well as “fracking fluids?” Does it include “production water?” In dSGEIS, these distinction are extremely confusing.

The great majority of dSGEIS discussion is about fracking fluids. And yet, even so, we do not end up with clear answers to what is actually in fracking fluids, how toxic they are---or even what happens to them. In different DEC documents the amount of fracking fluid flowback has been variously characterized as 60-70% return, 50% return, 25-30% return. (I recently even read a study that claimed a 15% return rate). While some variance may be expected from well site to well site, surely if there is any reliable monitoring and data processing, some consistent average should be easy to calculate. The result of such inconsistent and wild disparity can only lead one to conclude that insufficient data is being collected and reported, or that these figures are being manipulated.

Given that DEC and the gas companies insist that the non-returned fracking fluids pose no possible dangers, one cannot help wondering if some fudging is going on here, perhaps to lessen the estimated fracking flowback water---that presents so many serious and expensive disposal problems. How else should we account for this precipitous decline in reported flowback? Surely, the companies know how much of it they are trucking away. Or isn’t it all being trucked away? Or is it being trucked away, but not reaching its prescribed destination? And, if so, what might be the effects of this highly-toxic non-reported flowback on its actually *non-prescribed* destination?

Do you see where this is going? Well no, not really. Which is the point. Who is watching? Who is monitoring? Who is reporting? Someone who shares the moral imperative of the responsible citizens and the DEC mission? Or someone who cares more about maximizing profits in some place that they have other connection to. before packing up their rigs and moving on?

One hates to suspect the worst, but that is what true precaution requires.

But even assuming a less-sinister scenario, the premise that all those extra millions of gallons of unaccounted for toxic fluids have, in fact, just been underestimated, the claim of dSGEIS that the unreturned fracking fluids cannot possibly cause future problems does not seem without a certain Titanic-hubris.

Post-fracking geological claims are based on a slender body of research that certainly can only guess at the impacts of a flood or earthquake or act of idiotic malice in terms moving these toxic reservoirs into interplay with ground or surface water sources.

Production Water

dSGEIS has very little to say about Production Water. My understanding is that production water is water that comes up with the gas and is then separated out, gas to compressor stations and production water to steel holding tanks.

But how much of this production water are we talking about? Does it continue to flowback as long as the gas flows? Does the amount of gas determine the amount of production water?

And what's in it? Certainly, its composition must be much less predictable than the composition of fracking fluid. Most of the fracking fluid contains what what put into it, but production water picks up all kinds of things.

1992 GEIS on Production Water

H.6.f. Formation Water/Production Fluid

During rock formation, some water (connate water) is trapped inside the rock's pore spaces. When a well is later drilled into the rock, some formation water may be released and mix with the drilling fluid present in the wellbore. It is usually the largest component of pit waste fluids. ***The volume of formation water a particular well produces will depend on the rock characteristics and the operator's drilling practices.***

The relevance of the base 1992 document here is questionable on two counts. First, it is not clear whether this description refers to all 1992 gas wells or just hydraulically fractured gas wells. Secondly, as hydraulically fractured gas wells in 1992 used only 20,000 - 80,000 gallons of fresh water and now uses 1-7.8 million gallons of fresh water, it is highly unlikely that Production Water is still "usually the largest component of pit waste fluids."

"The largest component of" 20,000 to 80,000 gallons per well, how much would that be? 15,000 to 50,000 gallons per well, say? But was that for a traditional well or hydrofracked well? Horizontally-drilled or not? Would that matter?

As to the amounts of production water in the Marcellus Shale, dSGEIS only says the following:

dSGEIS 5.16.5 Brine Storage

Based on experience to date in the northern tier of Pennsylvania, one operator reports that brine production has typically been less than 10 barrels [315 gallons] per day [9,500 gallons per month] after the initial flowback operation and once the well is producing gas. Another operator reports that the rate of brine production during the production phase is about to 5 - 20 barrels per million cubic feet of gas produced.

But these Pennsylvania reports from "one operator" and "another operator," are they for Marcellus Shale wells? "High-volume" hydrofracked? Horizonally-drilled or what?

Even if the amount of production water remains a relative constant, from the 1992 wells to the present "high volume" Marcellus wells, one well reasonably producing 1 billion cubic feet of gas over a 10-year lifespan, would produce from 5 - 20 thousand barrels of production water (or 16-63 thousand gallons).

Times 100 or 1,000 or 10,000+ wells projected for NYS in the next decade would still amount to 630 thousand or 63 million or 630 million+ gallons of the stuff---a fairly substantial amount of heavily-contaminated, heavily briny,

significantly radioactive waste to be added our environment---without any reliable analysis of its composition or proportions---without scientific studies to provide those analyses before issuing permits for massive drilling---without any viable plan of waste treatment or onsight regulation.

But the larger question here is: Considering the toxic contents of such production water, why is DEC content to rely on the anecdotal reporting of "one Pennsylvania operator" and "another operator," both of whom obviously have a vested interest in underestimation? Why is DEC not doing its own independent science here?

[This is especially disconcerting in consideration of DEC's dismissive attitude toward anecdotal reporting of local landowners reporting contamination of their land and water and ill effects to their health, presumably related to the oncet of hydrofracking.]

In the 1992 GEIS base document, the plan Production Water disposal was as follows:

1992 GEIS H.8.

Waste fluids cannot be stored at the drilling site indefinitely. Within 45 days after the cessation of drilling operations, waste fluids must be removed from the pits and tanks and disposed of in an environmentally acceptable manner. . . .

Most of the brine wastes produced during drilling and production operations are disposed of by spreading on dirt roads for dust control or on highways for deicing. . . .

The remainder of the wastes produced during drilling operations are disposed of at special, industrial treatment plants in Pennsylvania and Ohio or other out-of-state disposal facilities. *On occasion, a local sewage treatment plant may elect to accept drilling wastes if they will not upset the plant's operations.*

In dSGEIS, much of this has been amended. Production water can no longer be stored in pits (only steel tanks); more stringent rules have been proposed for injection and road spreading, and, while there is still one residual mention of out-of-state export as a viable solution, it is now understood that Pennsylvania and Ohio are themselves overwhelmed by lack of treatment capacity (and would dearly love to export their briny, radioactive waste to New York).

dSGEIS 5.16.6 Brine Disposal [**Production Water**]

Production brine disposal options include injection wells, treatment plants and road spreading for dust control and de-icing, which are all discussed in the GEIS.

If produced water is trucked off- site, it must be hauled by approved Part 364 Waste Transporters.

. . . [A]ny entity applying for a Part 364 permit or permit modification to use production fluid for road spreading must submit a petition for a beneficial use determination ("BUD") to the Department.

The BUD and Part 364 permit must be issued by the Department prior to any production brine being removed from a well site for road spreading.

5.16.7 Naturally Occurring Radioactive Materials in Marcellus Production Brine

Results of the Department's initial NORM analysis of Marcellus brine produced in New York are shown in Appendix 13. These samples were collected in late 2008 and 2009 from vertical gas wells in the Marcellus formation. ***The data indicate the need to collect additional samples of production brine to assess the need for mitigation and to require appropriate handling and treatment options, including possible radioactive materials licensing.***

Is it not environmentally-irresponsible to be permitting high-volume drilling **before** such sampling, assessing and requirements have been completed?

5.16.4

At the separator, water will be removed from the gas stream via a dump valve and sent by pipe ("water line") to the brine storage tanks. . . . ***At least one operator has indicated the possibility of constructing pipelines to move brine from the site,*** *in which case truck loading facilities would not be necessary.*

Pipelines going where? How will it be monitored? How will it be regulated at the other end of the pipeline?

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Who will test and monitor these NORMs? The operators? And who will monitor the monitors?

Given the expense of handling and disposing of "radioactive waste," should it not be anticipated that a certain number of self-reporters will attempt to avert that expense? And with so much at stake in terms of radioactive waste ending up in our environment, is it not imperative that regulations not only be **recommended**, but *scrupulously and vigorously enforced*?

In addition to large amounts of brine (possibly useful for icy roads, not so useful for crops or fresh water or aquatic life), Production Water also contains varying amounts of heavy metals: arsenic, barium,mercury, iron, lead, etc.---elements that will never dissolve or dissipate, only accumulate, along with their toxic properties.

And what about that unrecovered fracking fluid (up to 60 - 80% of it?)---is any of that in the production water? If so, how much? And should that not require production water to be handled with the same restrictions as fracking fluid?

And, as to those undetermined amounts of radioactive material, dSGEIS states a **need** for more sampling of production water to test for radioactivity. How? By whom? Under whose supervision? Should that not be done **before** regulations are passed and permit granted?

Is it sufficient to our mutual moral imperative to let self-defined profit-first gas companies test and self-report on such an important item as radioactive waste? Especially in light of them knowing that to find above a certain level of radioactivity will hugely inflate their handling and disposal costs?

Surely, this cannot be an acceptable answer for an issue with such impactful consequences. Again, the moral imperative must demand that these answers be known and enforceable regulations in place **before** the road spreading, reinjecting or just plain disappearance of these unknown quantities is allowed into our environment.

3. "WASTE TREATMENT" VS. "WASTE DISPOSAL" VS. "DUMPING"

Undoubtedly, DEC has received hundreds (if not thousands) of comments pertaining to the inadequacy of available facilities to properly "treat" the chemical briny toxic soup that would be created by 100, 1000 or 10,000+ "high volume" hydrofracked gas wells in NYS, but I cannot refrain from adding that, even more than leaks and spills and accidents, the greatest threat to environment is the immensity and complexity of toxic fluids that must be safely handled (several times) and **appropriately** treated before inevitably being returned to our waters or drainage basins.

The danger of the problem is intrinsically correlated to the *scale*. The more water used per well, the more wells dug, the more likelihood of egregious error, poorly monitored activity and catastrophic environmental effects.

4. CUMULATIVE EFFECTS

The 1992 Findings Statement defines project scope as an individual well, with project size defined as the surface acreage affected by development. It will take years, if not decades, for the Marcellus Shale to be fully developed, and once drilling operations are completed and sites reclaimed the longer term impact will consist of widely spaced and partially re-vegetated production sites and fully reclaimed plugged and abandoned well sites.

The number of wells which will ultimately be drilled cannot be known in advance, in large part because the productivity of any particular formation at any given location and depth is not known until drilling occurs.

*Changes in the market and other economic conditions also have an impact on whether and how quickly individual wells are drilled. In any given area, mineral rights may be held by a variety of entities with a variety of different lease terms, geologic interpretations, drilling budgets and business plans. Because of these factors and because companies employ a limited number of drilling rigs and personnel, oil and gas development operations in New York have historically presented more of a sequential or "rolling" impact than a cumulative impact, with activity moving from place to place and previously drilled sites fully or partially reclaimed as new sites are drilled. History shows that these factors affect the rate and pattern of development of widespread, blanket formations such as the Medina and Queenston formations just as they do geologically constrained reservoirs like the Trenton-Black River**.**

The timing, rate and pattern of development, on either a statewide or local basis, is very difficult to accurately predict.

The main premise here highlights the depth of the problem. The dSGEIS suggestion that DEC cannot accurately predict the number of wells to be drilled, or their timing, rate and pattern of development, and, therefore, cannot accurately assess or prevent deleterious cumulative effects is tantamount to a surrender of its seminal imperative as a protective and regulatory entity.

Given that the 2005 Energy Bill has eviscerated Federal oversight powers over natural gas development. And given that DEC has stepped into that breach to claim all rights to Lead Agency over such development---superseding all local oversight and regulatory power (excepting roads and local taxes), there can be no one **other than** the DEC who can do such predicting, assessing and regulating!

The dSGEIS conclusion (6.13.2.1)

Accordingly, any limitation on development, aside from the mitigation measures discussed in the next chapter, is more appropriately considered in the context of policy making, primarily at the local level, outside of the SGEIS.

is unfathomable, given DEC's Lead Agency reach over regulation of Marcellus Shale development. Is the Agency sincerely suggesting that "limitations on development" can indeed be altered by "policy making at the local level?"

If so, this fact desperately needs to be clarified and promulgated!

Unfortunately, I believe dSGEIS also makes it clear that it is only the DEC who can issue or withhold the drilling permits. It is only the DEC who decides where and why such permits are accepted, rejected or delayed. And (with the exception of road regulations and local tax policy) it is the DEC who supersedes local policy making on all aspects of Marcellus Shale gas development.

No one is suggesting that the DEC predict what an unregulated, runaway gas industry might decide that it want to do---left to its own whims, conveniences and board room greed.

It would seem that the main mission of DEC regulation should be to limit destructive behaviors on behalf of the well-being of the environment and local communities. Surely, this is the moral principal and legal rationale underlying all governmental powers of regulation.

Of course, DEC can and should determine the number of wells, timing and pattern of development. To do otherwise is to tell the people of New York (as was told to the Sioux during the Black Hills gold rush of 1874), "Pardon our dust and destruction, Chief, we're here to get as much gas as we can for as long as we can---and don't try to stop us!"

Are you George Armstrong Custer leading the charge from Deadwood? Or are you the Department of Environment Conservation charged to protect the health and well-being of the people and environment of New York?

Pardon the historical digression, but the whole overarching issue of Cumulative Effects depends on the answer to that question.

Protecting our precious water is a prime issue. Protecting the quality of air, soil and natural habitat are prime issues. But no issue embodies all the others as does Cumulative Effects. One spill is one too many, but it can be cleaned up, its victims compensated. A whiff of foul air might bring on an asthma attack, but can likely be ameliorated without significant damage. But the Cumulative Effect of spills, leaks, emissions and toxic wastes of hundreds or thousands of

insufficiently regulated gas wells will do untold damage to the health, beauty, vigor and historical character of any region.

One has only to get out and visit DISH or Cleburne, Texas, or Caddo Parish, Louisiana, or Sublette or Pavillion, Wyoming, or northwest Colorado, or Quitman, Arkansas, or Geauga County, Ohio, or Lycoming County, Pennsylvania to determine how this should proceed---in a controlled, circumspect and limited way that predicts, assess and protects the health, character, water and other resources of our state.

The issue of Cumulative Effects is not where DEC should shuffle and shrug, scratch its head and throw up its hands. Nothing to be done. How can we know? . . .

Cumulative Effects is where the rock bass meets the BE-3S, where the eastern bluebird meets the plume, where the Wine Trail disappears on Rte. 14A behind 437 tanker trucks. Cumulative Effects is the embodiment of where DEC's mission either stands or fails.

Do the Cumulative Effects of gas drilling conserve, improve, and protect New York's natural resources and environment . . . in order to enhance the health, safety and welfare of the people of the state and their overall economic and social well being?

Is that not the most relevant question, our mutually moral imperative, the mission and raison d'être for New York's Department of Environmental Conservation?

If so, the dSGEIS is terribly flawed.

My suggestions for mitigating those flaws:

1. DEC should avoid biting off more than it can chew. Panglossian claims of environmental conservation and safety, insufficient science and unenforceable regulations do more harm than good, not only to the environment that DEC is sworn to protect but to the reputation of the agency itself.

2. Share real decision-making power with localities. Trust localities to figure out their own priorities and character.

3. Proceed prudently.

4. Do not be blinded by the glitter

5. Consider implications for future generations. Is that not the essence of Environmental Conservation? Local communities ask for your help toward that end.

Most sincerely,

Steve Coffman
1874 Dombroski Road
Yates County
Dundee, NY 14837
stevecoffman@frontiernet.net