



January 11, 2012

Commissioner Joseph Martens  
New York State Department of Environmental Conservation  
625 Broadway  
Albany, NY 12233-6510  
Attn: dSGEIS Comments

Dear Commissioner Martens and DEC staff:

Thank you for the opportunity to submit written comments on the Revised Draft SGEIS (dSGEIS) on the Oil, Gas, and Solution Mining Regulatory Program.

Earthworks is a nonprofit organization dedicated to protecting communities and the environment from the impacts of irresponsible mineral and energy development while seeking sustainable solutions. For over two decades, we have worked nationwide to advance policy reforms, improve corporate practices, and safeguard land and public health. Founded in 1999, the Oil & Gas Accountability Project (OGAP) of Earthworks works with local communities, landowners, organizations, agencies, and elected officials to advance these goals, while also providing information and support to citizens and groups conducting public awareness and advocacy efforts on the local and state level.

We recognize the tremendous time and staff expertise that the Department of Environmental Conservation has invested in determining whether and how New York State should move forward with high-volume hydraulic fracturing using horizontal drilling (HVHF). As acknowledged in the dSGEIS, the proposed actions require much higher volumes of water, toxic chemicals, industrial equipment, and land—and therefore have much greater environmental and social impacts—than current oil and gas development in New York. Given that the state has never before seen this type of gas development, and the widespread and large-scale nature of the development that is envisioned by the gas industry in the coming years, an in-depth, comprehensive analysis is required to review all guidelines and regulations.

With this in mind, the current dSGEIS reflects significant progress over the previous draft issued in 2009, for example with regard to restricting development in fragile ecosystems and key water supplies and expanded consideration of mitigation measures to protect air and water quality. However, several critical flaws in the dSGEIS illustrate neglect on the part of the DEC to fully consider and guard against emerging evidence of the negative

impacts of gas development in the Marcellus and other deep shale regions—and thus to truly protect people and the environment across New York State.

## **General comments**

Earthworks believes that major flaws in the dSGEIS must be fixed in order to prevent long-term harm to communities and the environment, in particular:

The issuance of draft regulations concurrently with the dSGEIS, rather than waiting for the final SGEIS to be completed. New York should not be fast-tracking drilling by issuing regulations prematurely, but instead making sure they are the most protective possible. The final SGEIS will presumably reflect public comments and additional information not in the current draft—resulting in new analyses of impacts and proposed mitigation measures that should, in turn, be used to develop regulations. With this in mind, DEC should separate out and extend the public comment period for the regulations before they are finalized.

The lack of a cumulative impacts analysis of industrial gas development over time and under scenarios of increasing numbers and location of wells and facilities. Key aspects for such an analysis include air and water quality; land degradation; waste generation, treatment, and disposal; and the interrelationship with critical economic sectors such as farming and tourism. In addition, the environmental and social problems associated with air and water pollution, the loss of open space and wildlife habitat, and conversion of communities to include industrial activity can intensify over time. This “additive effect” can only be assessed through a cumulative impacts analysis, which could in turn inform limitations or prohibitions on gas development in particular areas.

The absence of a proposal to ban toxic chemicals used in hydraulic fracturing fluid, even those known—and acknowledged in the dSGEIS—to have serious human and animal carcinogenic and other health effects, for example benzene, toluene, 2-butoxyethanol (2-BE), ethylene glycol, and formaldehyde.

Not requiring that solid and liquid waste from gas extraction and production be subjected to state classification standards as hazardous waste. Doing so would potentially require related, stringent standards for the safe handling, transportation, and disposal of such waste—which would in turn reduce the risk of water and soil contamination and related impacts on human health, wildlife, and ecosystems.

Establishing protective setback requirements for gas wells and facilities from buildings and surface and groundwater supplies based on current, emerging science and evidence of contamination from shale drilling. (For example, a recent study by researchers at Duke University on methane migration indicated the need for setbacks of at least 2,500-3,000 feet, while some legislative proposals in Pennsylvania would require pre-drill water testing at that distance; see shale gas resources at [www.nicholas.duke.edu/cgc](http://www.nicholas.duke.edu/cgc).)

Failure to require gas operators to defer to communities’ local land use and zoning laws, despite the fact that home rule powers to control land use is well-established in New York.

When inconsistency exists between an operator's proposal and local land use laws, regulations, plans, or policies, the latter should take primacy in DEC permit decisions. Simply requiring operators to provide additional information on potential significant adverse environmental impacts resulting from such inconsistency is insufficient to uphold home rule.

### **Omission of health impacts analysis**

Earthworks is particularly concerned with the absence in the dSGEIS of a full analysis of the impacts of HVHF on human health, as well as the merely cursory mention of health concerns throughout the document. This issue is not only of growing importance as gas development becomes more widespread, but is increasingly evident over time in locations where development has become firmly established—including in other parts of the Marcellus and Utica Shale regions such as Pennsylvania and West Virginia.

The dSGEIS contains extensive information on impacts from HVHF and industrial gas development on water resources (Section 6.1), air quality (Section 6.5), and noise (Section 6.10). However, the links between these aspects and human (as well as animal) health is not explicitly considered, including with regard to their long-term implications for New York's residents, health care costs, and economic productivity. With this in mind, DEC is currently missing a tremendous opportunity to contribute to a growing body of knowledge on health impacts, and thereby concerns critical to the long-term well-being of New York's population and economy.

Earthworks requests that the DEC corrects this significant omission in the continued stages of the State Environmental Quality Review Act (SEQRA) process. We believe that a health impacts analysis must be conducted *before* the SGEIS process can be deemed complete.

Preferably, DEC would commission a comprehensive Health Impacts Assessment (HIA) by an independent institution with sufficient expertise. An HIA would ensure that public health is part of project planning and permit conditions and provide decisionmakers with recommendations to protect public health. For example, the HIA conducted by the Colorado School of Public Health for Garfield County, Colorado generated more than 70 recommendations for the mitigation of health impacts with regard to toxic disclosure, air emission reduction and monitoring, traffic, emergency response, and other aspects (see <http://www.garfield-county.com/public-health/battlement-mesa-health-impact-assessment-ehms.aspx>).

This view reflects prior requests (including from the U.S. Environmental Protection Agency) to give health impacts greater focus in the SGEIS, and is in agreement with the enclosed letter signed by over 250 health professionals and organizations (including Earthworks) that was sent in October 2011 to Governor Andrew Cuomo and copied to DEC Secretary Joe Martens and Department of Health Secretary Dr. Nirav R. Shah.

As noted in that letter, a comprehensive analysis of health impacts or a full HIA would

generate information that could influence how DEC and other agencies evaluate the impacts of expanded shale gas development and permit applications. Further, such action is necessary to inform regulations and mitigation measures proposed by the DEC, and to ensure that they are forward-looking, comprehensive, and preventative—and thereby effective in protecting public health from the actual impacts of gas development over time.

Without such an analysis, important aspects of the dSGEIS cannot be considered complete, in particular:

- Analysis of the effects of chemicals known to be carcinogenic and mutagenic, as well as of pathways of exposure to air emissions and water pollution.
- The necessary level of controls on water pollution, air emissions, and noise, as well as related mitigation measures and recommendations for “best practices.”
- Waste classification and disposal and treatment requirements, particularly by Publicly Owned Treatment Works and in landfills.
- Determination of setback distances from homes, public buildings such as schools and hospitals, agriculture, and surface water and groundwater supplies.

Overall, the dSGEIS does not consider (with regard to either impacts or possible mitigation measures) the health problems experienced by individuals and communities living in gas drilling areas nationwide, despite numerous sources of information on this growing trend. These are not simply “potential” problems, but real ones that are directly related to the type of gas development practices now being considered by New York State. This fact was the impetus behind the May 2011 hearing on the health impacts of hydraulic fracturing held by the New York Assembly Committee on Health and Committee on Environmental Conservation, which produced testimony and documentation.

Earthworks and other organizations are frequently contacted by residents living near gas facilities nationwide—from Louisiana to Texas, West Virginia to Pennsylvania, and Wyoming to Colorado—who report respiratory problems, rashes, nausea, headaches, bloody noses, and other symptoms consistent with exposure (via air and water) to chemicals used in gas development.

Such cases are frequently reported in the media and can be found through basic Internet research. Presentations at the Earthworks’ Peoples Oil and Gas Summit 2010 are also available at <http://earthworksaction.org/2010SummitAgenda.cfm> (see Panel 1: Health impacts from drilling, fracking, waste pits and gas production). Earthworks has also conducted health surveys (see enclosed reports on DISH, Texas and Pavillion, Wyoming) and documented numerous cases in Texas in which individuals became ill as a result of gas drilling and production (see enclosed report, *Flowback: How the Texas Natural Gas Boom Affects Health and Safety*). We are currently conducting a health survey project in Pennsylvania (a full report in forthcoming in 2012); the enclosed preliminary results indicate a strong correlation between health symptoms experienced by residents in gas development areas and the chemicals emitted into air and water by gas operations.

In addition, conferences held in November 2011 (“Health Effects of Shale Gas Extraction”

by the University of Pittsburgh School of Public Health; see <http://shalegas.pitt.edu>) and January 2012 (“Epidemiologic and Public Health Considerations of Shale Gas Production: The Missing Link” by Physicians, Scientists, and Engineers for Healthy Energy; see <http://psehealthyenergy.org/site/view/966>) brought together scientists, agencies, and medical professionals concerned with the public health impacts of industrial gas development and presented information on current understanding of the problem and research activities. Many are currently pursuing or planning to pursue relevant research.

For example, researchers from the University of Pennsylvania, University of Rochester, and the Agency for Toxic Substances Disease Registry have begun to gather information on contaminant exposure and health problems across the Marcellus Shale of Pennsylvania. The government of British Columbia recently announced the launch of a study on the human health impacts of fracturing, flaring, and other oil and gas development practices.

In addition, specific aspects of the dSGEIS are also lacking with regard to health impacts, such as:

- Section 5.4 lists chemicals contained in hydraulic fracturing fluid (based primarily on information collected by chemical suppliers and service companies) as well as basic information on the health-related effects of such chemicals. However, simply listing these aspects does not constitute an analysis of the health impacts that have occurred elsewhere, and could occur in New York, from HVHF—and are therefore insufficient to guide the regulations and recommendations necessary to protect human health.
- In Section 5.4, DEC indicates that its analysis of fracturing fluid included 235 products and 322 chemicals. However, information on a far greater number of chemicals is available and should be considered (see enclosed article by Colborn, Kwiatowski, Schultz, and Bachran and the Endocrine Disruption Exchange section on natural gas operations at [www.endocrinedisruption.com/chemicals.introduction.php](http://www.endocrinedisruption.com/chemicals.introduction.php)).
- DEC states on page 5-75 that there is limited toxicity testing data for chemicals used in hydraulic fracturing, as well as limited research on the human health impacts of chronic, low-level exposure of the type experienced in gas drilling areas. However, DEC should not use such a perspective as a rationale to dismiss the existence of such problems and to neglect its consideration in the dSGEIS.

As stated in a 2008 literature review on the human health effects of oil and gas development from the Colorado School of Public Health (see enclosed paper by Witter, Stinson, Sackett et al.), the absence of direct studies on particular contaminants and pathways does not mean an absence of risk, especially given all that is already known about the range of diseases and health problems caused by exposure to air pollutants, toxic chemicals, and other aspects present in gas development. The authors also conclude that sufficient scientific evidence exists to establish a link between symptoms or disease experienced in gas development areas

and certain ongoing exposures (for example, diesel or nitrogen oxide emissions from compressors and engines).

The same logic applies to the limited existence of long-term studies on the health impacts associated with chronic, long-term exposure to contaminants. As detailed above, many cases of health problems and patterns in gas drilling areas nationwide have come to light in recent years that provide evidence of the health risks faced by people exposed to gas development, and that are behind emerging scientific research and growing knowledge in the public health community—from which DEC can learn and to which it should contribute.

- DEC states on page 5-75 that the assessment of health risks “...would require obtaining detailed information specific to the event” that caused exposure, i.e., a particular spill or accident. This suggests that DEC would defer assessment of health impacts until a problem has already occurred. However, the analysis of impacts in Chapter 6 indicates that patterns of exposure and risk can be analyzed, and that evidence from other states and instances exists to do so.
- In Section 6.10, DEC states that HVHF in deep shale will generate more noise than past gas development because it requires more and larger equipment and higher pressure and pumping. However, DEC focuses only on noise as a disturbance, and does not consider health impacts, despite documentation of this link by the World Health Organization and scientists (see Earthworks’ noise resource page at [www.earthworksaction.org/issues/detail/noise\\_resources](http://www.earthworksaction.org/issues/detail/noise_resources)).

DEC also concludes on page 6-291 that with regard to well site preparation and road construction, “Such levels would not generally be considered acceptable on a permanent basis, but as a temporary, daytime occurrence, construction noise of this magnitude and duration is not likely to result in many complaints in the project area.” However, DEC’s presumption that noise from gas operations only occur during the day is not borne out by actual events in gas development areas nationwide. In addition, noise from operations can be constant and have cumulative affects, including mental and bodily fatigue; reductions in the quantity and quality of sleep; hearing damage; aggravation of heart and circulatory diseases; and translating annoyance into more extreme emotional responses and behaviors.

- Chapter 7 contains mitigation measures that are linked to health impacts. While useful as an indication of problems that can occur and practices that operators should follow to prevent them, mitigation measures are not subject to the most protective level of monitoring, reporting, and inspection requirements. DEC should work to ensure—as the agency suggests in several places in Chapter 7—that proposed mitigation measures be required through permit conditions and/or regulations.

In addition, particular shortcomings with the mitigation measures should be corrected:

Section 7.1 on water should not allow for “sunset dates” and site-specific individual environmental review rather than sufficient buffers and protections. For example, the 500-foot buffer for primary aquifers (Section 7.1.3.5) is insufficient in light of the large populations relying on these municipal water supplies, and would be reevaluated after two years. DEC should also not allow road-spreading of brine (Section 7.1.7.2) until more study is done on water contamination risks, rather than simply evaluating individual petitions; should this practice be allowed, it should be subject to conditional use permits and extensive buffer zones around water bodies must be established.

Section 7.5 on air quality impacts should take into consideration current National Ambient Air Quality Standards and current attainment status in regions of New York. DEC should also include controls for emissions sources used at all stages of gas development (i.e., equipment for extraction, production, and transport) based on the emissions rates associated with each source.

In Section 7.10 on noise, DEC suggests that the solution to noise problems is “increasing distance between the source and the receiver;” the agency should assess and recommend setbacks that would be large enough to reduce impacts. DEC also states that “Scheduling the more significant noise-generating operations during daylight hours provides for tolerance that may not be achievable during the evening hours;” the agency should provide guidelines for limiting the hours of operation and address the continual and cumulative impacts of noise on health and well-being.

## **Draft regulations—comments**

### Comments regarding Proposed Express Terms 6 NYCRR Parts 550 through 556 and 560

Sec. 550.1 – The regulation should be amended to add an objective that emphasizes protection of health, welfare, and the environment as part of mix for the rules set forth here.

Sec. 551.6 – We support revision to the “true cost” language through the removal of the \$2 million limit. We urge the addition of language that costs be calculated based upon third party contractors carrying out the work, as is done in New Mexico’s oil and gas regulations, for example.

Sec. 552.1 (b) We suggest the addition of a requirement that the plat map show all known seismic fractures within one mile of the well, similar to the requirement under Sec. 560.3 for abandoned wells.

(c) We support the need for a permit to refracture a well. We suggest that this subsection require pre-fracture notice, and disclosure of chemicals to be used, to both the Department and the landowner, as has been done under Wyoming’s and Colorado’s regulations.

(e) We do not believe that including a provision for good cause suspension of the term of a permit is necessary. If an exception is needed, the regulations allow for a variance. Otherwise, in the absence of criteria for what constitutes good cause, experience indicates that operators will use this section to “stockpile” permits, and will commence operations largely in conjunction with the market price for natural gas. Such stockpiling should be discouraged.

Sec. 552.3 (a) We suggest allowing reissuance of a permit to different operator only if that operator is not the subject of a sanction under Sec. 750-3.20. Our research across several states indicates that operators do not seem to pay much attention to penalties, unless they interfere with their access to producing wells. Therefore, one of the few effective enforcement mechanisms is to prevent an operator who is not in compliance with the regulations from getting new well permits. This subsection provides an appropriate place for such an enforcement mechanism.

Sec. 553.2 In light of the increased setbacks contained in portions of these proposed rules, this section needs to be amended to reflect those changes. In addition, we suggest that the minimum setback from any stream, river, other body of water, or private water well needs to be at least 3,000 feet. Furthermore, the setbacks listed here for public buildings and dwellings do not meet the minimum socially necessary distance to prevent conflict between appropriate surface uses and production of gas or oil. Certainly, other states have larger setbacks that could be looked to for guidance as to the appropriate setback distance; for example, California’s recommendation for industrial facilities is a quarter-mile setback from public buildings in order to maintain air quality.

Sec. 553.3 (e) In light of the addition of new language referring to notice and comment for “affected persons.” there needs to be a definition of who an “affected person” is. The controversy around downspacing in other states shows that this zone of who is affected must include landowners and local governments, at a minimum. Also, the regulation needs to define what a “reasonable opportunity to comment” is; that is, what kind of notice is necessary and how it should be provided.

Sec. 553.4 (a) The new language in this subsection needs to include that specific written notice of the variance request for the spacing/well location be given to the landowner and the local government.

Sec. 554.1 (b) This subsection should be amended to add that pollution of the air is also prohibited.

(c) This subsection should be modified from its current statement of “sufficient quantities to be deleterious to the surrounding environment” to “in more than de minimus quantities,” as the current language is so vague as to be unenforceable. We agree with the deletion of the sentence related to drilling muds. We also believe that the Department should explicitly take into account the seismic history of the area before approving a plan for disposal of fluids.

Sec. 554.2 This section should be amended to require a minimum of 48 hours notice to the



Department before drilling or fracking operations commence. This would allow for observation of such operations by Department staff.

Sec. 554.4 (a) We suggest that this subsection be amended to specify that cementing of the production casing be from a minimum of 100 feet below deepest potable fresh water to the surface.

Sec. 554.5 (d) The required information for horizontal or directional wells under this subsection must also include the names and contact information for landowners, the location of any water wells within one mile of down hole location, baseline monitoring data for each of those water wells, and documentation of delivery of that baseline data to each water well owner.

(e) The plan view should also require inclusion of any water wells present.

Sec. 554.7 (a) This subsection should be amended to require that within 30 days, an operator must also post a list of all chemicals used during drilling and fracturing on a publicly accessible website.

Sec. 555.5 (c) This section needs to state specifically that no waste from well operations—such as contaminated soil, pit liners, etc.—may be buried as part of the “earth” used to fill in any pit. In addition, the section should provide that no waivers are allowed as to the fill contents, even with landowner consent, as allowance of inclusion of these contaminated items will result in long term mini-dumps situated across the New York landscape.

Sec. 556.2 (c) This new subsection needs to specify an efficiency standard for flaring of at least 98 percent.

Sec. 560.2 (b) (8) The draft regulation should not limit the definition of high volume hydraulic fracturing to those instances where water is the primary carrier fluid. It may be unlikely, but the definition should apply to any fracking operation using 300,000 gallons or more, regardless of what the carrier fluid is. This definition should also accurately cross-reference to the primary carrier fluid definition, which is not limited to water (subsection 15).

(14) For primary water systems, the regulation needs to define the phrases “highly productive aquifer” and “major municipal” water system. What qualifies under each? Why is the definition limited to only those “presently being used?” The definition should include potential use, as well.

(16) The definition of “principal aquifer” has the same issues as primary water systems: “highly productive” and “not intensively used” lack definition and will be unenforceable, as drafted.

Sec. 560.3 (a) (6) The language of this subsection appears to mix horizontal and vertical distances. It should either be amended to specify the vertical distance to an aquifer boundary, which is commonly defined in terms of distance underground from surface, or move this portion of the section to stand on its own.

(9) The language of this subsection should not be limited to abandoned wells that are

subject to regulation. The language should simply require identification of all abandoned wells within one mile, as all such wells represent potential contamination pathways—whether currently subject to regulation or not.

(10) and (11) As the proposed changes to these regulations greatly restrict the availability of reserve pits as fluid management structures, we suggest that the rules simply prohibit the use of pits and require closed loop systems. If an operator believes that for technical or safety reasons, the use of a reserve pit is necessary, the variance section of these regulations would be available for such a request.

(13) We suggest that specific requirements for an air emissions control and monitoring plan should be required in this subsection. As currently worded, this subsection is so vague as to be meaningless.

(18) A description of best management practices (BMPs), as called for here, is not enforceable. This subsection should require a list of commitments for restoration of native plant cover. Experience has shown that voluntary BMPs are not effective.

(b) This subsection should be modified to require inclusion of surface ownership and structures on the required maps.

1 (c) Based upon our experience with disclosure regulations in other states, we suggest changing the word “product” to chemical, as product is a broader term that is subject to trade secret claims and can be a mix of chemicals. We support the subsection (v) requirement on alternative chemical evaluation. For subsection (2), the regulation should require disclosure of this information to the public on a publicly accessible website, by well, by geographic area and by operator, at a minimum. Furthermore, the website should be functionally searchable. Where an operator wishes to claim an exemption from disclosure, the operator/provider should have to file an exemption claim, with specific justifications for the claim.

Then, if an exemption is granted, the chemical family and purpose for the chemical should still be required to be disclosed, as is the case in Colorado’s and Wyoming’s disclosure regulations.

Sec. 560.4 (a) (1) The setback for private water wells should be 3,000 feet.

(2) We are aware of no scientific basis or credible risk analysis that specifies that a 500 foot buffer from a primary aquifer is sufficient. Therefore, we urge that the setback should be set at a greater distance, with the possibility for a lesser setback only if a specific and equally protective hydrogeologic basis is shown.

(3) We support the prohibition on wells in the 100 year floodplain.

(4) We suggest removing the exception for engineered hydrologic fracturing impoundments. If such an impoundment is technically necessary, the variance process in the regulations is the preferable route for such a request.

Sec. 560.5 (b) This subsection should also require that the operator provide the list of chemicals being used in operations to the emergency response office or fire department.

(c) We cannot imagine what a “routine” incident of potential environmental and/or public safety significance might be, and why such an incident would not have to be reported. Therefore, we suggest deleting the word “non-routine” and the word “may” from the fourth line in order to make clear that any incident of potential environmental and/or public safety significance must be reported.

(d) We believe that the Department needs to specify a minimum range of parameters for sampling here, with allowance for additional parameters on a case-by-case basis. Most water well owners, in our experience, do not have the knowledge or ability to determine what the most useful parameters might be.; for this reason, the minimum set of parameters should be explicitly specified in this subsection.

(f) We cannot find elsewhere in these amended regulations what information will be included on a “Drilling and Production Waste Tracking Form.” Therefore, we suggest that the minimum information requirements be specified here.

(g) We suggest that the term “off site” be more clearly defined. Does it mean off the well site, which is defined in this regulation; or something else, e.g., to a centralized facility that services several wells?

Sec. 560.6 (a) (4) We believe that the regulation should specify that multi-well pits must use geomembrane type liners (and not clay/bentonite). This is implied but not stated in this subsection. Furthermore, the regulation should require an actual freeboard/fluid depth measuring device, and it should require secondary containment and leak detection systems for all multi-well pits.

(b) (1) (ii) We can see no reason to allow an exception to the 500 foot buffer for fuel tanks from waterways. Therefore, the phrase “to the extent practical” should be deleted.

(2) We urge that the regulation specify that any liner with damage—such as a hole, tear, etc. —must be replaced before resuming use of the pit.

(c) While we appreciate the narrative performance requirements stated in this subsection, given the Department’s weak enforcement record and low staff levels, we do not see any practical way for ensuring that these blowout prevention and crew awareness responsibilities will be carried out. As the Macondo well blow-out in the Gulf of Mexico has shown, and as the recent state of Wyoming evaluation of the safety attitudes in its oil and gas industry has reinforced, there is no voluntary way to change the manner in which the industry functions. The Department, therefore, must have both the staffing capacity and the specific enforcement mechanisms, in regulation, to ensure that accidents are minimized. Narrative language, such as this subsection, that relies on self-enforcement by the industry, will do little or nothing to change the way things are done and the problems that often arise. Therefore, we suggest that this language be modified to provide for a funding mechanism for additional staff who will actually enforce the requirements of this subsection on a consistent, sufficient basis.

(4) The reference to compliance with “industry standards,” in regard to the presence of hydrogen sulfide, should be amended to require the preparation of a hydrogen sulfide management plan where the gas is present, as is done in most states where this toxic gas is found in connection with oil or gas.

(7) We support the required use of closed loop tank systems for Marcellus Shale well sites.

(9) We suggest that the regulation specify how biocides are to be registered. As with other chemicals, we urge that they be posted to a publicly accessible website.

(22) We support the 3 day notice of hydraulic fracturing operations requirement in this subsection.

(23) We support the restriction on the use of non-disclosed hydraulic fracturing products included in this subsection.

(24) We support the restriction on the use of diesel fuel as a primary carrier fluid. We believe that the regulation needs to add a definition of what is included in the term “diesel fuel.”

(26) (i) We suggest that the operator should have to certify, not just document, the pre-hydraulic fracturing inspection results.

(viii) We support the record-keeping requirement for flowback type and volume.

(27) We support the prohibition on storing flowback fluids in pits.

(29) We suggest that the regulation clarify that the reduced emissions completion requirement applies based upon the condition of the gas, and not on the availability of a connection to a sales or interconnection gathering line.

Sec. 560.7 (a) We support the requirement for removal of fluids from pits within 45 days of completion of stimulation operations.

(c) Based upon a written opinion from the Environmental Protection Agency in Region 8, we note that pit liners are non-exempt Resource Conservation and Recovery Act (RCRA) waste and must be disposed of accordingly. Therefore, the regulation cannot allow that they be buried on site. Additionally, if any waste of any type is to be allowed to be buried on-site, the department must put in place numeric closure soil standards for all potential contaminants that may be contained within the pit (such as both Colorado’s and New Mexico’s regulations have).

(d) The regulation must require that operator obtain the written consent of the landowner before allowing any on-site burial of cuttings. Such consent must include a specific description of the nature of the waste to be buried and any contamination or health risks associated with the waste.

(f) Given the presence of significant Naturally Occurring Radioactive Materials (NORM) in numerous Marcellus gas well flowback fluids, we support the requirement that flowback fluids and production brine be tested for NORM. However, the regulation provides no guidance nor any numeric standards for what levels of NORM require further action. Therefore, the regulation should also specify standards for NORM levels, and appropriate disposal options depending upon the NORM levels present.

### Comments on Proposed Express Terms 6 NYCRR Parts 750.1 and 750.3

Sec. 750-3.2 The definitions here do not necessarily match the definitions for the same terms in Sec. 560. For example, the definitions of High Volume Hydraulic Fracturing are different. In addition, there are definitions included in this section that are not included in Sec. 560, and vice versa, even though the terms are used in both sections.

(32) We suggest that the definition of NORM be modified to read: “any naturally occurring radioactive materials not subject to regulation under the Atomic Energy Act, whose radionuclide concentrations have been enhanced by human activities such that potential risk to human health or the environment are increased.” Consistent with the State Review of Oil and Natural Gas Regulations (STRONGER) guidelines, we suggest that these regulations should establish risk-based numerical action levels above which NORM is regulated taking into consideration the risk of exposure to human health and the environment.

(37) The same comments under Sec. 560, above, apply to the definitions for Primary

and Principal aquifers in this section of the proposed regulations.

(46) The definition of stimulation should be modified to read “the act of attempting to increase” a well’s productivity, as not all stimulation operations are successful.

(57) The definition of a well site needs some limitation, as the phrase “any other areas directly or indirectly impacted” is so broad as to include all gathering lines that connect the well with larger transmission lines, for example.

Sec. 750-3.3 (b) The setbacks listed in this subsection should be broadened in two ways.

First, under subsection (4), the distance should be extended to 3000 feet. Second, the list of areas in this subsection should include private water wells, as is done in Section 560.4, and not be limited to public water supply wells.

Sec. 750-3.4 (b) (1) Under this subsection, “documentation” should be changed to “Certified statement,” as the term documentation could include almost any document, whether accurate or not. Moreover, the remaining subsections under this section require certification for other items that are required as part of the HVHF permit application. For this reason, certification should also be required here.

(2) The allowance of on-site pits for disposal of cuttings should simply be removed from this subsection, so that closed loop drilling is required for all applications.

(4) If pits continue to be allowed under this subsection, a requirement should be added that written landowner consent be obtained, with specific description as to the nature and risks of long-term on-site burial.

Under subsection (viii), the language that materials be “chemically compatible with the substance stored and the environment” requires something that cannot be readily documented or shown. This language should be modified to indicate whether this refers to their breakdown into nontoxic substances, or their ability to withstand exposure to sunlight, etc., and how this is to be demonstrated by the operator.

(6) The certification that HVHF operations will take place at least 1,000 feet below the base of fresh groundwater requires a geologic and/or seismic evaluation in order to have any actual meaning in this subsection. Such an evaluation must consider whether that 1,000 foot interval is impervious to the movement of all fluids, for example, and what the factual basis for the certification is.

(7) The evaluation of chemical alternatives in this subsection must be carried out by someone with an advanced degree in chemistry or similar background. Otherwise, the evaluation is essentially useless, as any technician could provide this evaluation with no consequence if they were inaccurate or lacking in knowledge of basic chemistry.

(8) The certification required by this subsection is laudable, but needs to be made by someone with technical training and/or a degree in chemistry, hydrology or geochemistry to have any real meaning. To show reduced aquatic toxicity, or to show that something poses less risk to water resources and the environment requires scientific training in those areas, and is not credible when asserted by a petroleum geologist or engineer, for example. In addition, the language allowing documentation of less effectiveness or feasibility “to the Department’s satisfaction” should either be removed or strengthened to require a showing of technical infeasibility as the only exception. Based upon experience in other states, if not removed, this ‘loophole’ will quickly swallow the requirement, as industry will not make the effort to provide this certification and will, as a matter of course, simply assert

infeasibility.

Sec. 750-3.6 (a) We suggest the following modified language for this subsection: “Prior to submitting an HVHF SPDES permit application, an owner or operator must first develop and submit a Comprehensive SWPPP.....” This would more accurately reflect the intent that these requirements are part of the application process.

Sec. 750-3.11 (e) (1) (i) As the counterpart to Sec. 750-3.4 (8), above, the analysis of the criteria for evaluating chemical alternatives with lower toxicity, etc., must be carried out by someone with advanced scientific training and expertise. An operator cannot simply be allowed to “consider” the criteria; there must be a careful discussion of each criterion, or this requirement becomes meaningless.

(i) Given the presence of significant Naturally Occurring Radioactive Materials (NORM) in numerous Marcellus gas well flowback fluids, we support the requirement that flowback fluids be tested for NORM. However, the regulation provides no guidance or numeric standards for when levels of NORM require further action. In addition, the regulations need to require that the NORM testing results be reported to the Department. This section should also require that, if significant levels of NORM are found in flowback fluids, then the well equipment must also be tested for NORM, as NORM may deposit on pipes, tanks, valves and other producing or processing equipment.

Sec. 750-3.12 (b) The reference to 750-3.5(a) may be in error here, as that draft section has no narrative requirements.

(1) As was discussed under Sec. 750-3.4 (b) (1), above, we support the inclusion of a certification requirement by the operators of a proper disposal facility that available capacity exists for the projected amount of flowback and production brine over the projected life of a well.

(4) The language in this subsection should be modified to require identification of all chemicals and additives, with the word “products” deleted.

(5) This subsection should be broadened to require the posting to a publicly accessible website all the chemicals used and their concentrations, regardless of whether they have a Material Safety Data Sheet or not. The MSDS’ have numerous accuracy issues and only cover about half of the chemicals used during hydraulic fracturing, so the regulations need to address those chemicals without MSDS’ as well.

(d) (4) (i) and (ii) Injection well permits should be placed under Class or Type I wells, due to the need for complete seismic surveys in the area of the well. Recent experiences in Ohio and Arkansas show that the pressurized injection of waste in areas with active fault systems can result in earthquakes. In order to avoid this risk in the Marcellus region, seismic surveys should be required as part of the geotechnical information regarding “the ability of the disposal strata to accept and retain the injected fluid.”

Sec. 750-3.13 (e) The language in this subsection should be modified to require that the records include all chemicals, with no exclusions for confidential business information, or otherwise. If an operator wishes to make a trade secret claim for a specific chemical, the regulation should require a specific exemption request be made to the Department, with justification for the claim based upon the factors listed for such claims in the federal

Emergency Planning and Community Right to Know Act.

(h) The regulation should require that the operator sample and test all residential water wells within 3,000 feet of the well pad. Sampling should be required no more than 60 days prior to commencement of operations, and following completion of operations, at intervals of 60 days, 1 year and 5 years, at a minimum.

Sec. 750-3.20 The regulation should be changed to read that the Department shall deny, suspend, or revoke a HVHF SPDES, if the permittee fails to implement any measures certified or otherwise violates the regulations.

Sec. 750-3.21 (f) (4) The regulation should be modified to prohibit HVHF operations within 3000 feet of private water wells. In addition, this subsection should be made consistent with the HVHF operations prohibition distances listed in Sec. 750-3.3(b).

### **Additional considerations**

The best environmental analysis and strongest regulations in the world cannot protect the public health and the environment from the impact of gas development if the agency responsible for implementation and enforcement is not up to the task. As part of a six-state analysis of agency enforcement issues in the oil and gas sector, Earthworks has reviewed the DEC's enforcement capacity in a number of areas.

Generally, DEC's inspection and enforcement capacity needs to be increased, as it has neither the budget nor the staff to actually enforce the proposed regulations. So, prior to reviewing any permit applications or issuing any permits, in addition to making its case for an increased budget, DEC should consider increasing revenue for oil and gas enforcement efforts by taking more enforcement actions, increasing maximum penalties, and/or actually assessing and collecting all penalties that are allowed by law.

#### Penalties

New York's Discharge Monitoring Report (DMR) website does not provide any information on enforcement cases. DMR annual reports, however, do include statistics on penalties and other monies collected as a result of enforcement actions. (Our source for this is the DEC's Division of Mineral Resources. *Oil, Gas and Mineral Resources Annual Reports* (for 2009, 2008, 2007, and 2006) and Appendices at [www.dec.ny.gov/pubs/36033.html](http://www.dec.ny.gov/pubs/36033.html).)

Penalties for rule violations are rarely issued in New York, and the amounts collected annually are typically less than \$20,000. This amount doubled in 2009, but is still relatively low compared to other states. In 2006 and 2007, penalties were collected as a result of 12 and 10 administrative enforcement cases, respectively. And in both of those years, fines were also collected for environmental benefit projects and enforcement actions taken through the Attorney General's office. Reports for 2008 and 2009 do not provide information on how many administrative cases led to the collection of the penalties.

DEC needs to do a better job of documenting violations, penalties, and enforcement actions. All information on penalties should be documented in a consistent manner with clear definitions, and should be made publicly available.

Maximum penalty amounts should be increased so that penalties act as a greater deterrent to rule violations and can cover potential long-term costs of environmental remediation. In addition, the Department should publicize penalties to highlight bad actors, as a means of deterring other companies from violating the rules.

In addition, the Department should codify its penalty schedule as a means of reducing the discretion used in assessing the amount of a fine. The Department should also develop policies for determining the appropriate enforcement action for different types of violations. Policies should include escalating penalties/enforcement for bad actors (i.e., operators who repeatedly violate rules) and multiple offenses of the same type.

### Citizen Complaints

The Bureau of Oil and Gas Permitting and Management website states that the Bureau investigates and resolves citizen complaints and non-routine incidents. (Our source for this is DEC's Division of Mineral Resources, Bureau of Oil & Gas Permitting and Management website at [www.dec.ny.gov/about/801.html](http://www.dec.ny.gov/about/801.html).)

Currently, however, the Bureau does not track these complaints in a manner that is accessible to either agency staff or the public. The Bureau apparently is hoping to have such a website in operation at the time high-volume hydraulic fracturing activities are approved to go forward in the state, according to an email sent to us on Sept. 30, 2011. We do not think that "hope" is a realistic basis for addressing this issue.

DEC must have an accessible citizen complaint database that includes information on when complaints occurred, when an inspection occurred, the time taken to resolve complaints, any violations found, any enforcement actions taken as a result, and when and how the complaint was fully resolved. In addition, DEC should codify how they must respond to citizen complaints (e.g., required response time, follow-up procedures) to ensure fair treatment of all complaints, transparency, and communication with the public.

Furthermore, DEC needs to document, track, and publish annual or quarterly statistics on inspections, violations, penalties, different types of enforcement actions, and complaints. By doing so, it will help staff to know where to focus enforcement efforts (e.g., highlight bad actors, identify rules that are frequently violated) and show differences in compliance among operators. In addition to tracking this information, the Department needs to provide the information to the public so that citizens can know whether problems have been addressed and the agency can be held accountable for its enforcement practices.

In conclusion, without these basic elements of a good enforcement program in place prior to allowing gas development to move forward, DEC cannot realistically have any true basis



for assuring its citizens that impacts to the environment and human health will actually be addressed.

Sincerely,



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### Enclosures

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